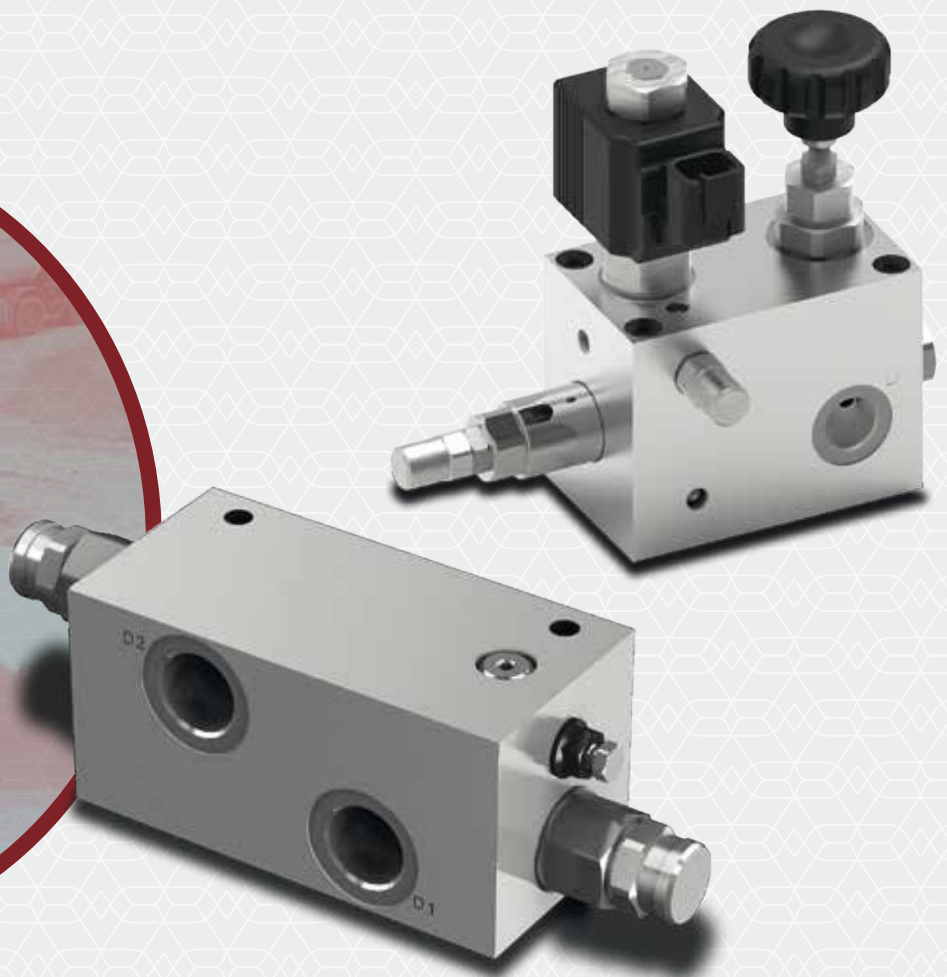


## Hydraulic Valves (Parts in body)



COMPACT HYDRAULICS

#### **Additional information**

This catalogue shows the product in the most standard configurations.  
Please contact Sales Dpt. for more detailed information or special request.

#### **WARNING!**

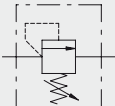
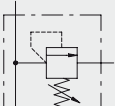
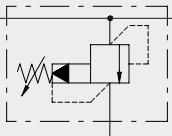
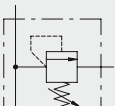
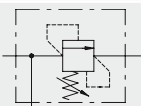
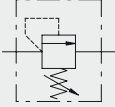
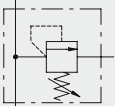
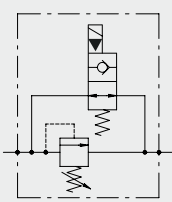
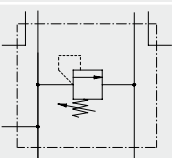
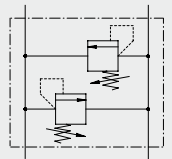
All specifications of this catalogue refer to the standard product at this date.  
Walvoil, oriented to a continuous improvement, reserves the right to  
discontinue, modify or revise the specifications, without notice.

WALVOIL IS NOT RESPONSIBLE FOR ANY DAMAGE CAUSED BY AN  
INCORRECT USE OF THE PRODUCT.

3<sup>rd</sup> edition April 2025

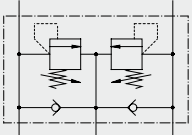
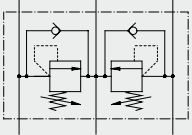
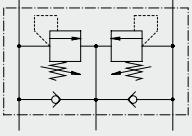
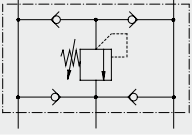


## Pressure control valves

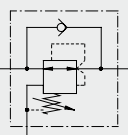
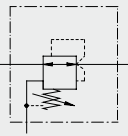
| Pressure relief valves                                                              |                                                     |           |                                                                    |                 |        |                                        |                                          |      |
|-------------------------------------------------------------------------------------|-----------------------------------------------------|-----------|--------------------------------------------------------------------|-----------------|--------|----------------------------------------|------------------------------------------|------|
| Hydraulic diagram                                                                   | Type                                                | Execution | Operation/<br>Features                                             | Max. flow up to |        | Max. press. up to                      |                                          | Page |
|                                                                                     |                                                     |           |                                                                    | l/min           | US gpm | bar                                    | psi                                      |      |
|    | <b>VMD20</b>                                        |           | direct acting                                                      | 20              | 5.3    | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 17   |
|    | <b>VMP/B/L</b>                                      |           | direct acting                                                      | 100             | 26.4   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 19   |
|    | <b>VMPP/B/L</b>                                     |           | pilot operated                                                     | 250             | 66     | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 19   |
|    | <b>VMDL..20</b><br><b>VMD..35</b><br><b>VMD..80</b> |           | direct acting                                                      | 80              | 21.1   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 25   |
|   | <b>VMPD/B</b>                                       | poppet    | differential acting                                                | 180             | 47.6   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 29   |
|  | <b>VMD150</b>                                       |           | differential acting                                                | 150             | 39.6   | 210<br>alum. body                      | 3050<br>alum. body                       | 33   |
|  | <b>VMDS150</b>                                      |           | differential acting                                                | 150             | 39.6   | 350<br>steel body                      | 5100<br>steel body                       | 37   |
|  | <b>VMP/VE</b>                                       |           | pilot operated,<br>electric venting                                | 250             | 66     | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 41   |
|  | <b>PBL</b>                                          |           | direct acting,<br>subplate with VMP,<br>CETOP flange<br>connection | 60              | 16     | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 45   |
|  | <b>VAIL</b>                                         |           | direct acting                                                      | 120             | 31.7   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 49   |
|                                                                                     | <b>VADDL</b>                                        |           | differential acting,<br>double antishock type                      | 180             | 47.6   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 53   |
|                                                                                     | <b>VBDC35</b><br><b>VBDC80</b>                      |           | dual cross                                                         | 80              | 21     | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>4350<br>steel body | 57   |

## Pressure control valves

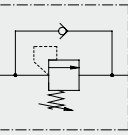
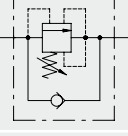
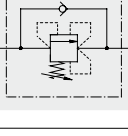
### Pressure relief valves

| Hydraulic diagram                                                                  | Type             | Execution | Operation/<br>Features                                              | Max. flow up to |        | Max. press. up to                      |                                          | Page |
|------------------------------------------------------------------------------------|------------------|-----------|---------------------------------------------------------------------|-----------------|--------|----------------------------------------|------------------------------------------|------|
|                                                                                    |                  |           |                                                                     | l/min           | US gpm | bar                                    | psi                                      |      |
|   | <b>VAIL/VA</b>   |           | direct acting,<br>double antishock and<br>anticavitation type       | 80              | 21     | 210<br>alum. body<br>300<br>steel body | 3050<br>alum. body<br>4350<br>steel body | 61   |
|   | <b>VMDACSV</b>   |           | differential acting,<br>double antishock and<br>anticavitation type | 70              | 18.5   | 350<br>steel body                      | 5100<br>steel body                       | 65   |
|   | <b>VADDL/VA</b>  |           | differential acting,<br>double antishock and<br>anticavitation type | 180             | 47.6   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 67   |
|  | <b>VAA/RU/DL</b> |           | direct acting,<br>antishock and<br>anticavitation type              | 180             | 47.6   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 71   |

### Pressure reducing valves

| Hydraulic diagram                                                                   | Type           | Execution | Operation/<br>Features                           | Max. flow up to |        | Max. press. up to                      |                                          | Page |
|-------------------------------------------------------------------------------------|----------------|-----------|--------------------------------------------------|-----------------|--------|----------------------------------------|------------------------------------------|------|
|                                                                                     |                |           |                                                  | l/min           | US gpm | bar                                    | psi                                      |      |
|  | <b>VRPRL</b>   |           | with relieving and<br>reverse free-flow<br>check | 50              | 13.2   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 75   |
|  | <b>VRPRL/U</b> |           | with relieving                                   | 50              | 13.2   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 75   |

### Sequence valves

| Hydraulic diagram                                                                   | Type             | Execution | Operation/<br>Features                | Max. flow up to |        | Max. press. up to                      |                                          | Page |
|-------------------------------------------------------------------------------------|------------------|-----------|---------------------------------------|-----------------|--------|----------------------------------------|------------------------------------------|------|
|                                                                                     |                  |           |                                       | l/min           | US gpm | bar                                    | psi                                      |      |
|  | <b>VDSRL</b>     |           | direct acting                         | 120             | 31.7   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 79   |
|  | <b>VDSRL/APP</b> |           | direct acting,<br>back-pressure proof | 120             | 31.7   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 83   |
|  | <b>VDSB/B</b>    |           | differential acting                   | 200             | 52.8   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 87   |

## Motion control valves

## Check valves and shuttle valves

| Hydraulic diagram | Type                        | Execution   | Operation/<br>Features | Max. flow up to |        | Max. press. up to |                    | Page |
|-------------------|-----------------------------|-------------|------------------------|-----------------|--------|-------------------|--------------------|------|
|                   |                             |             |                        | l/min           | US gpm | bar               | psi                |      |
|                   | <b>VUI</b>                  | poppet type |                        | 160             | 42.3   | 400               | 5800               | 91   |
|                   | <b>VUS/INC</b>              | ball type   |                        | 78              | 20.6   | 350               | 5100               | 95   |
|                   | <b>VUS/INC/A</b>            | poppet type |                        | 80              | 21.1   | 350               | 5100               | 97   |
|                   | <b>VUS/INC/B</b>            | poppet type |                        | 80              | 21.1   | 350               | 5100               | 99   |
|                   | <b>VUC</b>                  | poppet type |                        | 380             | 100    | 400               | 5800               | 101  |
|                   | <b>VUC/M</b>                | poppet type |                        | 250             | 66     | 400               | 5800               | 103  |
|                   | <b>VT</b>                   | ball type   |                        | 180             | 47.6   | 350               | 5100               | 105  |
|                   | <b>VBD</b><br><b>VBD/VP</b> |             | double acting          | 90              | 23.8   | 350               | 5100               | 107  |
|                   | <b>VB</b>                   |             | hose burst             | 225             | 59.4   | 350<br>steel body | 5100<br>steel body | 111  |

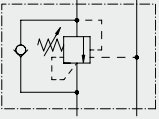
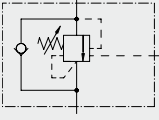
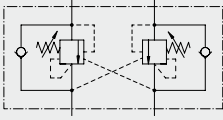
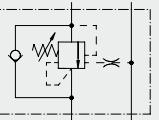
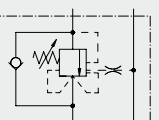
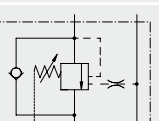
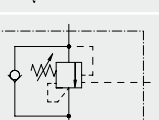
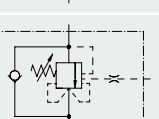
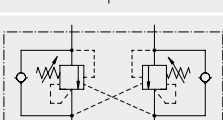
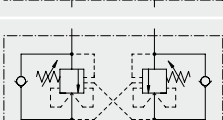
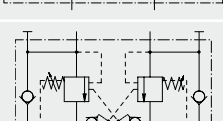
## Pilot operated check valves

| Hydraulic diagram | Type             | Execution | Operation/<br>Features             | Max. flow up to |        | Max. press. up to                      |                                          | Page |
|-------------------|------------------|-----------|------------------------------------|-----------------|--------|----------------------------------------|------------------------------------------|------|
|                   |                  |           |                                    | l/min           | US gpm | bar                                    | psi                                      |      |
|                   | <b>VUPSL</b>     |           | single acting                      | 130             | 34.3   | 350<br>steel body                      | 5100<br>steel body                       | 115  |
|                   | <b>VBPSL</b>     |           | single acting                      | 120             | 31.7   | 350<br>steel body                      | 5100<br>steel body                       | 117  |
|                   | <b>VRSE..A</b>   |           | single acting<br>DIN2353           | 80              | 21.1   | 350<br>steel body                      | 5100<br>steel body                       | 121  |
|                   | <b>VRSE..CIL</b> |           | single acting,<br>bolt connection  | 20              | 5.3    | 300<br>steel body                      | 4350<br>steel body                       | 125  |
|                   | <b>VBPSL/T</b>   |           | single acting                      | 100             | 26.4   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 127  |
|                   | <b>VBPSF</b>     |           | single acting and<br>face mounting | 100             | 26.4   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 129  |

## Motion control valves

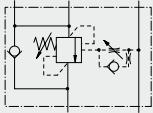
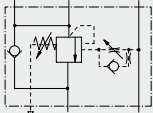
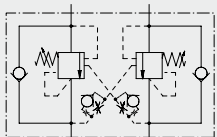
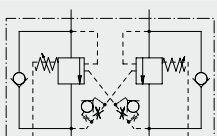
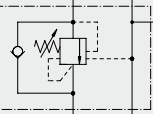
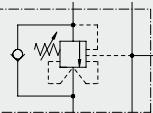
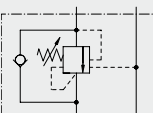
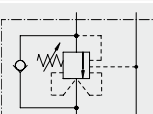
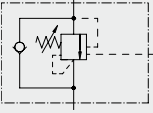
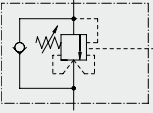
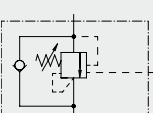
| Pilot operated check valves |                   |                  |                                           |                 |        |                                        |                                          |      |
|-----------------------------|-------------------|------------------|-------------------------------------------|-----------------|--------|----------------------------------------|------------------------------------------|------|
| Hydraulic diagram           | Type              | Execution        | Operation/<br>Features                    | Max. flow up to |        | Max. press. up to                      |                                          | Page |
|                             |                   |                  |                                           | l/min           | US gpm | bar                                    | psi                                      |      |
|                             | <b>VBPSL/R</b>    |                  | single acting<br>with shut-off            | 50              | 13.2   | 350<br>steel body                      | 5100<br>steel body                       | 133  |
|                             | <b>VRPSE..A..</b> |                  | single acting<br>DIN2353<br>with shut-off | 50              | 13.2   | 350<br>steel body                      | 5100<br>steel body                       | 135  |
|                             | <b>VBPSL/PS</b>   |                  | external pilot<br>operated type           | 35              | 9.2    | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 137  |
|                             | <b>VBPDL</b>      |                  | double acting                             | 120             | 31.7   | 350<br>steel body                      | 5100<br>steel body                       | 139  |
|                             | <b>VRDE..A</b>    |                  | double acting<br>DIN2353                  | 80              | 21.1   | 350<br>steel body                      | 5100<br>steel body                       | 143  |
|                             | <b>VRDE..CIL</b>  |                  | double acting<br>bolt connection          | 20              | 5.3    | 300<br>steel body                      | 4350<br>steel body                       | 147  |
|                             | <b>VBPDL/T</b>    | double<br>acting |                                           | 100             | 26.4   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 149  |
|                             | <b>VBPDF</b>      | double<br>acting | face mounting                             | 100             | 26.4   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 151  |
|                             | <b>VBPDL/R</b>    | double<br>acting |                                           | 50              | 13.2   | 350<br>steel body                      | 5100<br>steel body                       | 155  |
|                             | <b>VRPDE..A</b>   | double<br>acting | DIN2353 connection                        | 50              | 13.2   | 350<br>steel body                      | 5100<br>steel body                       | 157  |

## Motion control valves

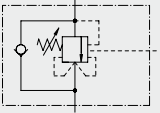
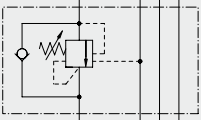
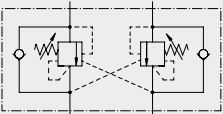
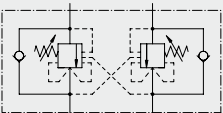
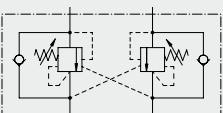
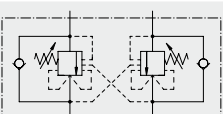
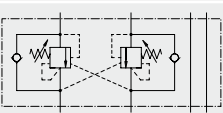
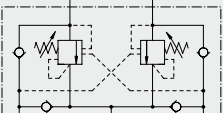
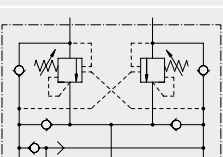
| Counterbalance valves                                                               |                                           |               |                                        |                 |        |                                        |                                          |      |
|-------------------------------------------------------------------------------------|-------------------------------------------|---------------|----------------------------------------|-----------------|--------|----------------------------------------|------------------------------------------|------|
| Hydraulic diagram                                                                   | Type                                      | Execution     | Operation/<br>Features                 | Max. flow up to |        | Max. press. up to                      |                                          | Page |
|                                                                                     |                                           |               |                                        | l/min           | US gpm | bar                                    | psi                                      |      |
|    | <b>VOSL/N78</b><br><b>VOSL/N78/PB</b>     | single acting | load sensitive                         | 40              | 10.6   | 350<br>steel body                      | 5100<br>steel body                       | 159  |
|    | <b>VOSLP/N78</b>                          | single acting | external pilot                         | 40              | 10.6   | 350<br>steel body                      | 5100<br>steel body                       | 163  |
|    | <b>VODL/N78</b><br><b>VODL/N78/PB</b>     | double acting | load sensitive                         | 40              | 10.6   | 350<br>steel body                      | 5100<br>steel body                       | 165  |
|    | <b>VOSL/N1116</b><br><b>VOSL/N1116/PB</b> | single acting | load sensitive                         | 60              | 15.9   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 169  |
|   | <b>VOSL/R1116</b>                         | single acting | relief compensated                     | 60              | 15.9   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 169  |
|  | <b>VOSL/V1116</b>                         | single acting | vented                                 | 60              | 15.9   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 169  |
|  | <b>VOSLP/N1116</b>                        | single acting | load sensitive with external pilot     | 60              | 15.9   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 179  |
|  | <b>VOSLP/R1116</b>                        | single acting | relief compensated with external pilot | 60              | 15.9   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 179  |
|  | <b>VODL/N1116</b><br><b>VODL/N1116/PB</b> | double acting | load sensitive                         | 60              | 15.9   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 187  |
|  | <b>VODL/R1116</b>                         | double acting | relief compensated                     | 60              | 15.9   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 187  |
|  | <b>VODL/V1116/CS</b>                      | double acting | vented                                 | 60              | 15.9   | 350<br>steel body                      | 5100<br>steel body                       | 195  |



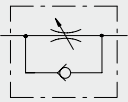
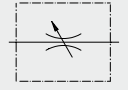
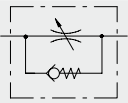
## Motion control valves

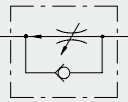
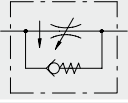
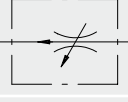
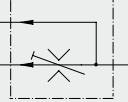
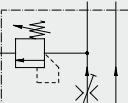
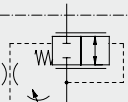
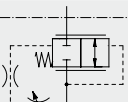
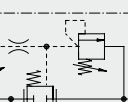
| Counterbalance valves                                                               |                      |               |                                                            |                 |        |                                        |                                          |      |
|-------------------------------------------------------------------------------------|----------------------|---------------|------------------------------------------------------------|-----------------|--------|----------------------------------------|------------------------------------------|------|
| Hydraulic diagram                                                                   | Type                 | Execution     | Operation/<br>Features                                     | Max. flow up to |        | Max. press. up to                      |                                          | Page |
|                                                                                     |                      |               |                                                            | l/min           | US gpm | bar                                    | psi                                      |      |
|    | <b>VOSL/N1516</b>    | single acting | load sensitive                                             | 160             | 42.3   | 400<br>steel body                      | 5800<br>steel body                       | 199  |
|    | <b>VOSL/V1516</b>    | single acting | vented                                                     | 160             | 42.3   | 400<br>steel body                      | 5800<br>steel body                       | 199  |
|     | <b>VODL/N1516/CS</b> | double acting | load sensitive                                             | 160             | 42.3   | 400<br>steel body                      | 5800<br>steel body                       | 207  |
|     | <b>VODL/V1516/CS</b> | double acting | vented                                                     | 160             | 42.3   | 400<br>steel body                      | 5800<br>steel body                       | 207  |
|  | <b>VOSL</b>          | single acting | load sensitive                                             | 180             | 47.6   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 215  |
|  | <b>VOSL/CC</b>       | single acting | relief compensated                                         | 180             | 47.6   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 219  |
|  | <b>VOSL/SC</b>       | single acting |                                                            | 180             | 47.6   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 223  |
|  | <b>VOSL/SC/CC</b>    | single acting |                                                            | 180             | 47.6   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 227  |
|  | <b>VOSLP</b>         | single acting | with external pilot                                        | 180             | 47.6   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 231  |
|  | <b>VOSLP/CC</b>      | single acting | relief compensated,<br>with external pilot                 | 180             | 47.6   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 235  |
|  | <b>VOSLP/SC</b>      | single acting | load sensitive,<br>with external pilot                     | 180             | 47.6   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 239  |
|                                                                                     | <b>VOSLP/SC/RO</b>   | single acting | load sensitive,<br>with external pilot,<br>bolt connection | 180             | 47.6   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 243  |

## Motion control valves

| Counterbalance valves                                                               |                    |               |                                                 |                 |        |                                  |                                    |      |
|-------------------------------------------------------------------------------------|--------------------|---------------|-------------------------------------------------|-----------------|--------|----------------------------------|------------------------------------|------|
| Hydraulic diagram                                                                   | Type               | Execution     | Operation/<br>Features                          | Max. flow up to |        | Max. press. up to                |                                    | Page |
|                                                                                     |                    |               |                                                 | l/min           | US gpm | bar                              | psi                                |      |
|    | <b>VOSLP/SC/CC</b> | single acting | relief compensated, with external pilot         | 180             | 47.6   | 210 alum. body<br>350 steel body | 3050 alum. body<br>5100 steel body | 247  |
|    | <b>VOSL/ML</b>     | single acting | load sensitive, CETOP flange connection         | 70              | 18.5   | 210 alum. body<br>350 steel body | 3050 alum. body<br>5100 steel body | 251  |
|    | <b>VODL</b>        | double acting | load sensitive                                  | 180             | 47.6   | 210 alum. body<br>350 steel body | 3050 alum. body<br>5100 steel body | 255  |
|    | <b>VODL/CC</b>     | double acting | relief compensated                              | 180             | 47.6   | 210 alum. body<br>350 steel body | 3050 alum. body<br>5100 steel body | 259  |
|   | <b>VODL/SC</b>     | double acting | load sensitive                                  | 180             | 47.6   | 210 alum. body<br>350 steel body | 3050 alum. body<br>5100 steel body | 263  |
|  | <b>VODL/SC/CC</b>  | double acting | relief compensated                              | 180             | 47.6   | 210 alum. body<br>350 steel body | 3050 alum. body<br>5100 steel body | 267  |
|  | <b>VODL/ML</b>     | double acting | load sensitive, CETOP flange connection         | 70              | 18.5   | 210 alum. body<br>350 steel body | 3050 alum. body<br>5100 steel body | 271  |
|  | <b>VABAL</b>       | double acting | load sensitive, relief valve for motion control | 180             | 47.5   | 210 alum. body<br>350 steel body | 3050 alum. body<br>5100 steel body | 275  |
|  | <b>VABAL/SF</b>    | double acting | load sensitive, relief valve for motion control | 180             | 47.6   | 210 alum. body<br>350 steel body | 3050 alum. body<br>5100 steel body | 279  |

## Flow control valves

| Needle valves                                                                     |               |             |                        |                 |        |                   |                    |      |
|-----------------------------------------------------------------------------------|---------------|-------------|------------------------|-----------------|--------|-------------------|--------------------|------|
| Hydraulic diagram                                                                 | Type          | Execution   | Operation/<br>Features | Max. flow up to |        | Max. press. up to |                    | Page |
|                                                                                   |               |             |                        | l/min           | US gpm | bar               | psi                |      |
|  | <b>VSRU/C</b> | poppet type | with check valve       | 280             | 74     | 350<br>steel body | 5100<br>steel body | 283  |
|  | <b>VSRB</b>   |             | bidirectional          | 150             | 39.6   | 350<br>steel body | 5100<br>steel body | 287  |
|                                                                                   | <b>VRFB90</b> | 2 way       | bidirectional          | 110             | 29.1   | 350<br>steel body | 5100<br>steel body | 289  |
|  | <b>VRFU90</b> | 2 way       | with check valve       | 180             | 47.6   | 350<br>steel body | 5100<br>steel body | 291  |

| Flow control pressure compensated valves                                            |                     |           |                                                                 |                 |        |                                        |                                          |      |
|-------------------------------------------------------------------------------------|---------------------|-----------|-----------------------------------------------------------------|-----------------|--------|----------------------------------------|------------------------------------------|------|
| Hydraulic diagram                                                                   | Type                | Execution | Operation/<br>Features                                          | Max. flow up to |        | Max. press. up to                      |                                          | Page |
|                                                                                     |                     |           |                                                                 | l/min           | US gpm | bar                                    | psi                                      |      |
|   | <b>VPR/2/RL</b>     | 2 way     | reverse free-flow<br>check                                      | 150             | 39.6   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 295  |
|  | <b>VPR/2/RL/EX</b>  | 2 way     | compensated,<br>with check valve                                | 45              | 11.9   | 300<br>steel body                      | 4350<br>steel body                       | 299  |
|  | <b>VPR/2/U</b>      | 2 way     | variable<br>constant flow                                       | 150             | 39.6   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 301  |
|  | <b>VPF/3/EP</b>     | 3 way     | exceeding flow to<br>pressure,<br>with constant flow in<br>"C"  | 150             | 39.6   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 305  |
|  | <b>VPF/3/EP+VMP</b> | 3 way     | exceeding flow to<br>pressure,<br>with pressure relief<br>valve | 150             | 39.6   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 309  |
|  | <b>VPR/3/ET</b>     | 3 way     |                                                                 | 350             | 92.5   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 313  |
|  | <b>VPR/3/ET/RL</b>  | 3 way     | with reverse<br>free-flow check                                 | 150             | 39.6   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 317  |
|  | <b>VPR/3/ET/VMP</b> | 3 way     | with pressure relief<br>valve                                   | 350             | 92.5   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 321  |

## Flow control valves

| Flow control pressure compensated valves |                            |                  |                                                                                                |                 |        |                                  |                                    |      |
|------------------------------------------|----------------------------|------------------|------------------------------------------------------------------------------------------------|-----------------|--------|----------------------------------|------------------------------------|------|
| Hydraulic diagram                        | Type                       | Execution        | Operation/<br>Features                                                                         | Max. flow up to |        | Max. press. up to                |                                    | Page |
|                                          |                            |                  |                                                                                                | l/min           | US gpm | bar                              | psi                                |      |
|                                          | <b>VPR/3/ET/RL/VMP</b>     | 3 way            | with reverse free-flow check and pressure relief valve                                         | 150             | 39.6   | 210 alum. body<br>350 steel body | 3050 alum. body<br>5100 steel body | 325  |
|                                          | <b>VPR/3/ET VMP+VE</b>     | 3 way            | electric venting                                                                               | 240             | 63.4   | 210 alum. body<br>350 steel body | 3050 alum. body<br>5100 steel body | 329  |
|                                          | <b>VPR/3/EP</b>            | 3 way            | exceeding flow to pressure                                                                     | 450             | 119    | 210 alum. body<br>350 steel body | 3050 alum. body<br>5100 steel body | 335  |
|                                          | <b>VPR/3/EP/VMP+VE</b>     | 3 way            | exceeding flow to pressure, with pressure relief valve and electric venting                    | 450             | 119    | 210 alum. body<br>350 steel body | 3050 alum. body<br>5100 steel body | 341  |
|                                          | <b>VPR/3/EP/VMP+VE/LPD</b> | 3 way            | exceeding flow to pressure, with pressure relief valve and electric venting, low pressure drop | 450             | 119    | 350 steel body                   | 5100 steel body                    | 347  |
|                                          | <b>VDR</b>                 | cartridge        | adjustable type                                                                                | 220             | 58.1   | 350 steel body                   | 5100 steel body                    | 351  |
|                                          | <b>VDR/CO</b>              | cartridge        | fixed type                                                                                     | 60              | 15.9   | 350 steel body                   | 5100 steel body                    | 355  |
|                                          | <b>VSCOR</b>               | pop-in cartridge | fixed type                                                                                     | 25              | 6.6    | 350 steel body                   | 5100 steel body                    | 359  |
|                                          | <b>VDFR</b>                |                  | flow divider combiners                                                                         | 250             | 66     | 210 alum. body<br>350 steel body | 3050 alum. body<br>5100 steel body | 361  |

## Directional solenoid valves

| Directional solenoid valves |                        |           |                                                |                 |        |                                  |                                    |      |
|-----------------------------|------------------------|-----------|------------------------------------------------|-----------------|--------|----------------------------------|------------------------------------|------|
| Hydraulic diagram           | Type                   | Execution | Operation/<br>Features                         | Max. flow up to |        | Max. press. up to                |                                    | Page |
|                             |                        |           |                                                | l/min           | US gpm | bar                              | psi                                |      |
|                             | <b>VE/B</b>            | 2 way     | pilot operated with emergency                  | 160             | 42.3   | 210 alum. body<br>350 steel body | 3050 alum. body<br>5100 steel body | 365  |
|                             | <b>VE/B/RO</b>         |           | pilot operated with emergency, bolt connection | 40              | 10.6   | 210 alum. body<br>350 steel body | 3050 alum. body<br>5100 steel body | 369  |
|                             | <b>VE/B/VMP/VUI/SR</b> |           | block for single acting cylinder               | 150             | 39.6   | 210 alum. body<br>350 steel body | 3050 alum. body<br>5100 steel body | 373  |

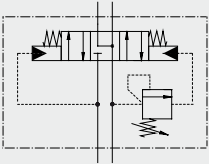
## Logic valves

| Stroke end valves |                               |             |                        |                 |        |                   |                 |      |
|-------------------|-------------------------------|-------------|------------------------|-----------------|--------|-------------------|-----------------|------|
| Hydraulic diagram | Type                          | Execution   | Operation/<br>Features | Max. flow up to |        | Max. press. up to |                 | Page |
|                   |                               |             |                        | l/min           | US gpm | bar               | psi             |      |
|                   | <b>FCS..C</b><br><b>FC..C</b> | double lock | normally closed        | 60              | 15.9   | 300 steel body    | 4350 steel body | 377  |
|                   | <b>FC..A</b>                  |             | normally open          | 60              | 15.9   | 300 steel body    | 4350 steel body | 379  |

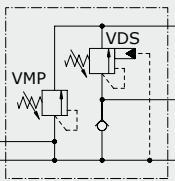
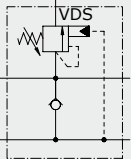
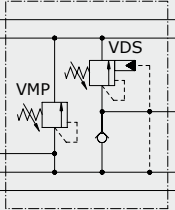
| Unloader valves   |               |           |                        |                 |        |                                  |                                    |      |
|-------------------|---------------|-----------|------------------------|-----------------|--------|----------------------------------|------------------------------------|------|
| Hydraulic diagram | Type          | Execution | Operation/<br>Features | Max. flow up to |        | Max. press. up to                |                                    | Page |
|                   |               |           |                        | l/min           | US gpm | bar                              | psi                                |      |
|                   | <b>VDA</b>    |           | single acting          | 100             | 26.5   | 210 alum. body<br>350 steel body | 3050 alum. body<br>5100 steel body | 381  |
|                   | <b>VDA/FL</b> |           | face mounting          | 50              | 13.2   | 210 alum. body<br>350 steel body | 3050 alum. body<br>5100 steel body | 385  |

## Logic valves

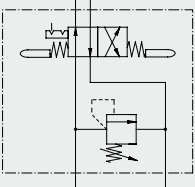
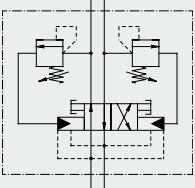
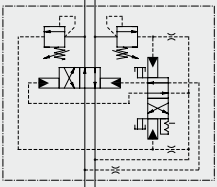
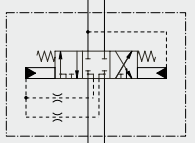
### Regenerative valves

| Hydraulic diagram                                                                 | Type           | Execution | Operation/<br>Features | Max. flow up to |        | Max. press. up to |                    | Page |
|-----------------------------------------------------------------------------------|----------------|-----------|------------------------|-----------------|--------|-------------------|--------------------|------|
|                                                                                   |                |           |                        | l/min           | US gpm | bar               | psi                |      |
|  | <b>VRCL/KD</b> |           | regenerative           | 150             | 39.6   | 350<br>steel body | 5100<br>steel body | 389  |

### Two pump "hi low" unloading-valves

| Hydraulic diagram                                                                   | Type          | Execution | Operation/<br>Features        | Max. flow up to |        | Max. press. up to                      |                                          | Page |
|-------------------------------------------------------------------------------------|---------------|-----------|-------------------------------|-----------------|--------|----------------------------------------|------------------------------------------|------|
|                                                                                     |               |           |                               | l/min           | US gpm | bar                                    | psi                                      |      |
|    | <b>VEP</b>    |           | single acting                 | 250             | 66     | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 393  |
|  | <b>VEP/FC</b> |           | face mounting on<br>gear pump | 180             | 47.6   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 397  |
|  | <b>VEP/FL</b> |           | cetop base 3-5-7              | 100             | 26.5   | 210<br>alum. body<br>350<br>steel body | 3050<br>alum. body<br>5100<br>steel body | 401  |

## Logic valves

| Automatic reversing valves                                                          |                         |           |                                  |                 |        |                          |                           |      |
|-------------------------------------------------------------------------------------|-------------------------|-----------|----------------------------------|-----------------|--------|--------------------------|---------------------------|------|
| Hydraulic diagram                                                                   | Type                    | Execution | Operation/<br>Features           | Max. flow up to |        | Max. press. up to        |                           | Page |
|                                                                                     |                         |           |                                  | l/min           | US gpm | bar                      | psi                       |      |
|    | <b>SD.../IAM</b>        |           | mechanical control               | 65              | 17.2   | 210<br>cast iron<br>body | 3050<br>cast iron<br>body | 407  |
|    | <b>VIA/AP</b>           |           | CETOP flange connection          | 60              | 15.9   | 210<br>cast iron<br>body | 3050<br>cast iron<br>body | 411  |
|    | <b>VIA/AP 12/L/CMEB</b> |           | mechanical and hydraulic control | 60              | 15.9   | 210<br>cast iron<br>body | 3050<br>cast iron<br>body | 415  |
|  | <b>VIA/DSL</b>          |           | CETOP flange connection          | 60              | 15.9   | 210<br>cast iron<br>body | 3050<br>cast iron<br>body | 419  |

## Accessories

| Coils                                                                             |      |             |                      |                                            |                      |      |
|-----------------------------------------------------------------------------------|------|-------------|----------------------|--------------------------------------------|----------------------|------|
| Diagram                                                                           | Type | Description | Nominal power rating | Available nominal voltage                  |                      | Page |
|                                                                                   |      |             | W                    | VDC                                        | RAC                  |      |
|  | BER  | coil        | 19                   | 10 - 12<br>14 - 24<br>28 - 48<br>110 - 220 | 24 - 48<br>110 - 220 | 421  |
|  | BT   | coil        | 21                   | 10 - 12<br>24 - 26<br>48 - 110<br>220      | 24 - 48<br>110 - 220 | 421  |







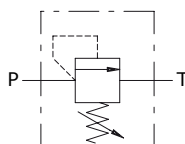
## Type VMD..20 pressure relief valves

- Direct acting

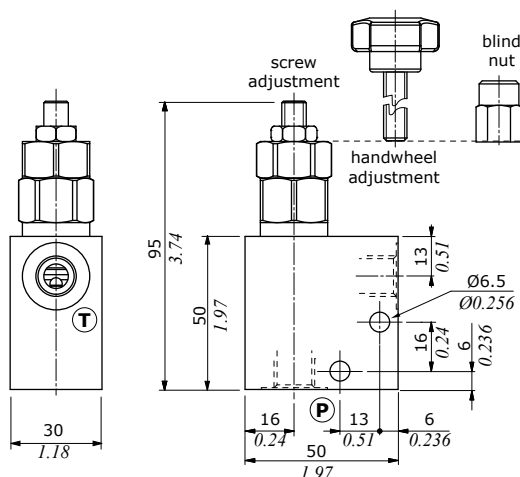
Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                           | VMD..2001                                                              | VMD..2002             |
|-------------------------------------------|------------------------------------------------------------------------|-----------------------|
| Nominal flow                              | 20 l/min (5.3 US gpm)                                                  | 20 l/min (5.3 US gpm) |
| Max. pressure                             | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                       |
| Fluid                                     | mineral based oil                                                      |                       |
| Viscosity                                 | from 10 to 200 cSt                                                     |                       |
| Max. level of contamination               | 18/16/13 ISO4406                                                       |                       |
| Fluid temperature                         | with NBR seals from -20°C (-4°F) to 80°C (176°F)                       |                       |
| Environmental temp.for working conditions | from -40°C (-40°F) to 100°C (212°F)                                    |                       |
| Weight                                    | aluminium                                                              | 0.30 kg (0.66 lb)     |
|                                           | steel                                                                  | 0.61 kg (1.34 lb)     |
|                                           |                                                                        | 0.28 kg (0.62 lb)     |
|                                           |                                                                        | 0.59 kg (1.30 lb)     |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



## Dimensions



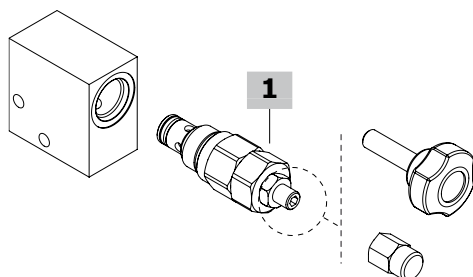
Dimensions are in mm-in

| Valve type | All ports |
|------------|-----------|
| VMD..20 01 | G1/4      |
| VMD..20 02 | G3/8      |

## Ordering codes and description composition

Port size: **VMD..20 01**  
 - aluminium  
 S = steel

Setting range: **B 1**  
 Adjustment option:  
 1 = screw type  
 2 = handwheel type  
 3 = blind nut



| Spring type | Setting range<br>bar (psi) | Std. setting<br>bar (psi) |
|-------------|----------------------------|---------------------------|
| A           | 5-60 (72.5-870)            | 40 (580)                  |
| B           | 50-240 (725-3500)          | 100 (1450)                |
| C           | 90-350 (130-5100)          | 100 (1450)                |
| D           | 20-130 (290-1900)          | 100 (1450)                |

### VMD..20 complete valves

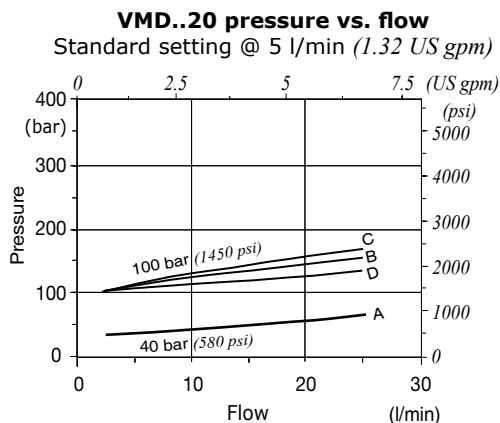
| TYPE                                           | CODE       | DESCRIPTION                                                                                                             |
|------------------------------------------------|------------|-------------------------------------------------------------------------------------------------------------------------|
| <b>Configuration with G1/4 standard thread</b> |            |                                                                                                                         |
| VMD2001B1                                      | 1110611100 | Aluminium body, setting range from 50 to 240 bar (725-3500 psi), std setting 100 bar @ 5 l/min (1450 psi @ 1.32 US gpm) |
| VMDS2001B1                                     | 1110612100 | Steel body, as previous                                                                                                 |
| <b>Configuration with G3/8 standard thread</b> |            |                                                                                                                         |
| VMD2002B1                                      | 1110621100 | Aluminium body, setting range from 50 to 240 bar (725-3500 psi), std setting 100 bar @ 5 l/min (1450 psi @ 1.32 US gpm) |
| VMDS2002B1                                     | 1110622100 | Steel body, as previous                                                                                                 |

For different configurations and SAE thread please contact our Sales Dpt.

### 1 Direct acting pressure relief valves

| TYPE       | CODE        | DESCRIPTION                                                       |
|------------|-------------|-------------------------------------------------------------------|
| MC08F/0G2B | 0MC08002069 | Screw adjustment, setting range from 50 to 240 bar (725-3500 psi) |

## Rating diagrams





## Type VMP/B/L - VMPP/B/L pressure relief valves

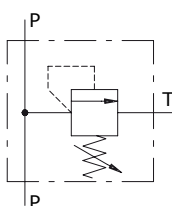
- Direct acting
- Piloted operated

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

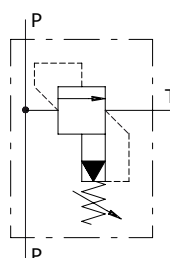
| VMP/B/L                                            |                                                                                      |                                    |                                    |                                    |                                    |                                    | VMPP/B/L                            |                                     |                                     |                              |
|----------------------------------------------------|--------------------------------------------------------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|------------------------------|
|                                                    | 02-14                                                                                | 03-14                              | 5-38<br>5-12                       | 5Y-38                              | 10-12<br>10-34                     | 20-34<br>20-100                    | 10-12                               | 20-34<br>20-100                     | 45-114                              |                              |
| Nominal flow                                       | 5 l/min<br><i>(1.3 US gpm)</i>                                                       | 10 l/min<br><i>(2.6 US gpm)</i>    | 35 l/min<br><i>(9.2 US gpm)</i>    | 35 l/min<br><i>(9.2 US gpm)</i>    | 60 l/min<br><i>(16 US gpm)</i>     | 100 l/min<br><i>(26.4 US gpm)</i>  | 70 l/min<br><i>(18.5 US gpm)</i>    | 120 l/min<br><i>(31.7 US gpm)</i>   | 250 l/min<br><i>(66 US gpm)</i>     |                              |
| Max. pressure                                      | Aluminium body = 210 bar <i>(3050 psi)</i><br>Steel body = 350 bar <i>(5100 psi)</i> |                                    |                                    |                                    |                                    |                                    |                                     |                                     |                                     |                              |
| Oil leakage at 80%<br>of max. setting              | 5 cm³/min<br><i>(0.30 in³/min)</i>                                                   | 5 cm³/min<br><i>(0.30 in³/min)</i> | 3 cm³/min<br><i>(0.18 in³/min)</i> | 1 cm³/min<br><i>(0.06 in³/min)</i> | 3 cm³/min<br><i>(0.18 in³/min)</i> | 3 cm³/min<br><i>(0.18 in³/min)</i> | 20 cm³/min<br><i>(1.22 in³/min)</i> | 25 cm³/min<br><i>(1.52 in³/min)</i> | 40 cm³/min<br><i>(2.44 in³/min)</i> |                              |
| Fluid                                              | mineral based oil                                                                    |                                    |                                    |                                    |                                    |                                    |                                     |                                     |                                     |                              |
| Viscosity                                          | from 10 to 200 cSt                                                                   |                                    |                                    |                                    |                                    |                                    |                                     |                                     |                                     |                              |
| Max. level of<br>contamination                     | 18/16/13 ISO4406                                                                     |                                    |                                    |                                    |                                    |                                    |                                     |                                     |                                     |                              |
| Fluid temp.                                        | with NBR seals from -20°C <i>(-4°F)</i> to 80°C <i>(176°F)</i>                       |                                    |                                    |                                    |                                    |                                    |                                     |                                     |                                     |                              |
| Environmental<br>temp. for wor-<br>king conditions | from -40°C <i>(-40°F)</i> to 100°C <i>(212°F)</i>                                    |                                    |                                    |                                    |                                    |                                    |                                     |                                     |                                     |                              |
| Weight                                             | alum.                                                                                | 0.21 kg<br><i>(0.46 lb)</i>        | 0.40 kg<br><i>(0.88 lb)</i>        | 38: 0.48 kg<br><i>(1.06 lb)</i>    | 0.47 kg<br><i>(1.04lb)</i>         | 12: 0.66kg<br><i>(1.46 lb)</i>     | 34: 1.18 kg<br><i>(2.60 lb)</i>     | 0.66 kg<br><i>(1.46 lb)</i>         | 34: 1.27 kg<br><i>(2.80 lb)</i>     | 2.73 kg<br><i>(6.02 lb)</i>  |
|                                                    |                                                                                      |                                    |                                    | 12: 0.46 kg<br><i>(1.01 lb)</i>    |                                    | 34: 0.76 kg<br><i>(1.68 lb)</i>    | 100: 1.77 kg<br><i>(3.90 lb)</i>    |                                     | 100: 1.85 kg<br><i>(4.08 lb)</i>    |                              |
|                                                    | steel                                                                                | 0.99 kg<br><i>(2.18 lb)</i>        | 0.85 kg<br><i>(1.87 lb)</i>        | 38: 1.08 kg<br><i>(2.38 lb)</i>    |                                    | 12: 1.40 kg<br><i>(3.09lb)</i>     | 34: 2.52 kg<br><i>(5.56 lb)</i>     | 1.39 kg<br><i>(3.06 lb)</i>         | 34: 2.60 kg<br><i>(5.73 lb)</i>     | 6.12 kg<br><i>(13.49 lb)</i> |
|                                                    |                                                                                      |                                    |                                    | 12: 0.99 kg<br><i>(2.18 lb)</i>    |                                    | 34: 1.67 kg<br><i>(3.68 lb)</i>    | 100: 4.08 kg<br><i>(8.99 lb)</i>    |                                     | 100: 4.16 kg<br><i>(9.17 lb)</i>    |                              |

NOTE - For different conditions, please contact Walvoil Sales Dpt.

VMP

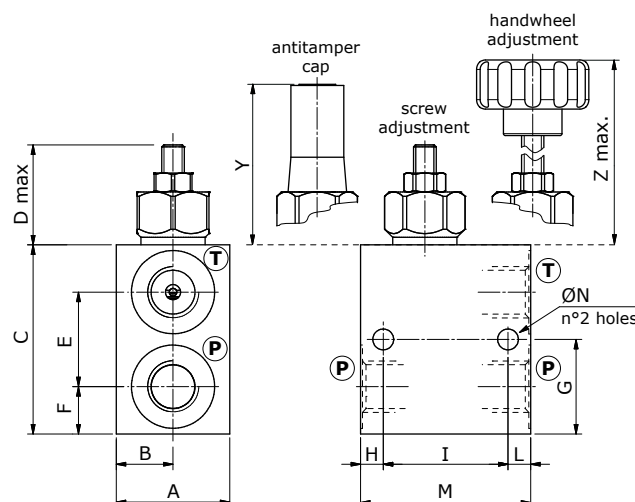


VMPP



## Dimensions

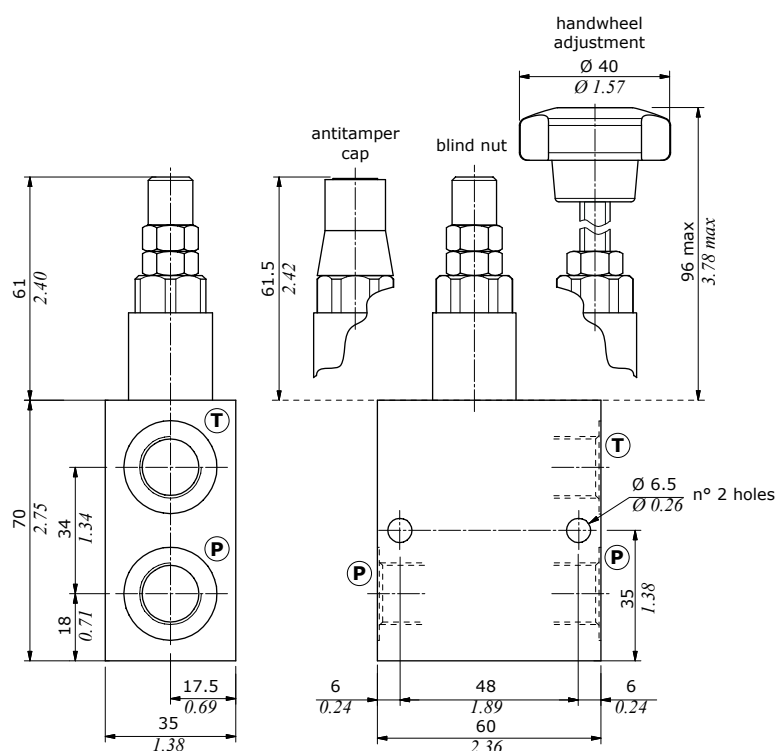
| Valve type        | All ports |
|-------------------|-----------|
| VMP/B/L 02-14     | G1/4      |
| VMP/B/L 03-14     | G1/4      |
| Valve type        | All ports |
| VMP/B/L 02-14/SAE | SAE6      |
| VMP/B/L 03-14/SAE | SAE6      |



Dimensions are in mm-in

| Valve type        | A       | B       | C       | D max   | E       | F         | G       | H-L    | I       | M       | ØN       | Y         | ØK      | Z max     |
|-------------------|---------|---------|---------|---------|---------|-----------|---------|--------|---------|---------|----------|-----------|---------|-----------|
| VMP/B/L 02-14     | 30-1.18 | 15-0.59 | 50-1.97 | 29-1.14 | 25-0.98 | 12.5-0.49 | 25-0.98 | 6-0.24 | 33-1.30 | 45-1.77 | 5.5-0.22 | 42.5-1.67 | 30-1.18 | 49-1.93   |
| VMP/B/L 02-14/SAE | 30-1.18 | 15-0.59 | 50-1.97 | 29-1.14 | 25-0.98 | 12.5-0.49 | 25-0.98 | 6-0.24 | 33-1.30 | 45-1.77 | 5.5-0.22 | 42.5-1.67 | 30-1.18 | 49-1.93   |
| VMP/B/L 03-14     | 30-1.18 | 15-0.59 | 60-2.36 | 53-2.09 | 32-1.26 | 14-0.55   | 30-1.18 | 6-0.24 | 48-1.89 | 60-2.98 | 6.5-0.25 | 52-2.05   | 40-1.57 | 86.5-3.41 |
| VMP/B/L 03-14/SAE | 30-1.18 | 15-0.59 | 60-2.36 | 53-2.09 | 32-1.26 | 14-0.55   | 30-1.18 | 6-0.24 | 48-1.89 | 60-2.98 | 6.5-0.25 | 52-2.05   | 40-1.57 | 86.5-3.41 |

| Valve type        | All ports |
|-------------------|-----------|
| VMP/B/L 5-38      | G3/8      |
| VMP/B/L 5-12      | G1/2      |
| VMP/B/L 5Y-38     | G3/8      |
| VMP/B/L 5Y-12     | G1/2      |
| Valve type        | All ports |
| VMP/B/L 5-38/SAE  | SAE8      |
| VMP/B/L 5-12/SAE  | SAE10     |
| VMP/B/L 5Y-38/SAE | SAE8      |
| VMP/B/L 5Y-12/SAE | SAE10     |



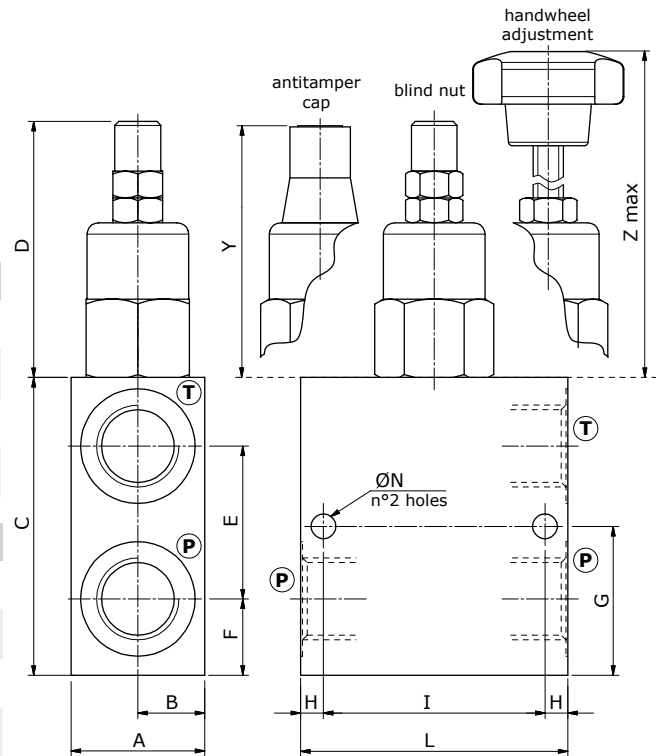
**Ordering codes**

| Valve type            | All ports | Valve type                | All ports |
|-----------------------|-----------|---------------------------|-----------|
| <b>VMP/B/L 10-12</b>  | G1/2      | <b>VMP/B/L 10-12/SAE</b>  | SAE10     |
| <b>VMP/B/L 10-34</b>  | G3/4      | <b>VMP/B/L 10-34/SAE</b>  | SAE12     |
| <b>VMP/B/L 20-34</b>  | G3/4      | <b>VMP/B/L 20-34/SAE</b>  | SAE12     |
| <b>VMP/B/L 20-100</b> | G1"       | <b>VMP/B/L 20-100/SAE</b> | SAE16     |

Dimensions are in mm-in

| Valve type                | A       | B         | C        | D         | E       | E       |
|---------------------------|---------|-----------|----------|-----------|---------|---------|
| <b>VMP/B/L 10-12</b>      | 35-1.38 | 17.5-0.69 | 78-3.07  | 67-2.64   | 40-2.28 | 40-2.28 |
| <b>VMP/B/L 10-12/SAE</b>  |         |           |          |           |         |         |
| <b>VMP/B/L 10-34</b>      | 40-1.57 | 20-0.79   | 90-3.54  | 67-2.64   | 50-1.97 | 50-1.97 |
| <b>VMP/B/L 10-34/SAE</b>  |         |           |          |           |         |         |
| <b>VMP/B/L 20-34</b>      | 50-1.97 | 25-0.98   | 100-3.94 | 76.5-3.01 | 57-2.24 | 57-2.24 |
| <b>VMP/B/L 20-34/SAE</b>  |         |           |          |           |         |         |
| <b>VMP/B/L 20-100</b>     | 60-3.34 | 30-1.18   | 120-4.72 | 76.5-3.01 | 65-2.56 | 65-2.56 |
| <b>VMP/B/L 20-100/SAE</b> |         |           |          |           |         |         |

| F       | G       | H       | I       | L       | ØN       | ØK      | Y         | Z max     |
|---------|---------|---------|---------|---------|----------|---------|-----------|-----------|
| 20-0.79 | 39-1.53 | 6-0.24  | 70-2.75 | 58-2.28 | 6.5-0.25 | 40-1.57 | 64.7-2.55 | 98-3.59   |
| 20-0.79 | 45-1.77 | 8-0.31  | 70-2.75 | 54-2.12 | 8.5-0.33 | 40-1.57 | 64.7-2.55 | 98-3.59   |
| 22-0.87 | 50-1.97 | 8-0.31  | 70-2.75 | 54-2.12 | 8.5-0.33 | 40-1.57 | 74-2.91   | 89.5-3.52 |
| 30-1.18 | 63-2.48 | 10-0.39 | 85-3.34 | 65-2.56 | 8.5-0.33 | 40-1.57 | 74-2.91   | 89.5-3.52 |

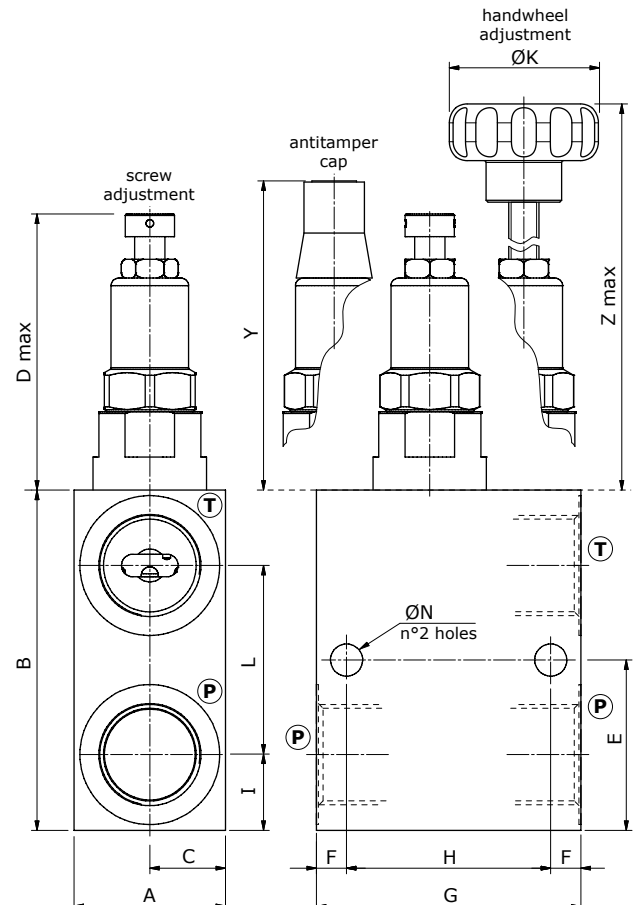


| Valve type             | All ports | Valve type                 | All ports |
|------------------------|-----------|----------------------------|-----------|
| <b>VMPP/B/L 10-12</b>  | G1/2      | <b>VMPP/B/L 10-12/SAE</b>  | SAE10     |
| <b>VMPP/B/L 20-34</b>  | G3/4      | <b>VMPP/B/L 20-34/SAE</b>  | SAE12     |
| <b>VMPP/B/L 20-100</b> | G1"       | <b>VMPP/B/L 20-100/SAE</b> | SAE16     |
| <b>VMPP/B/L 45-114</b> | G1 1/4"   | <b>VMPP/B/L 45-114/SAE</b> | SAE20     |

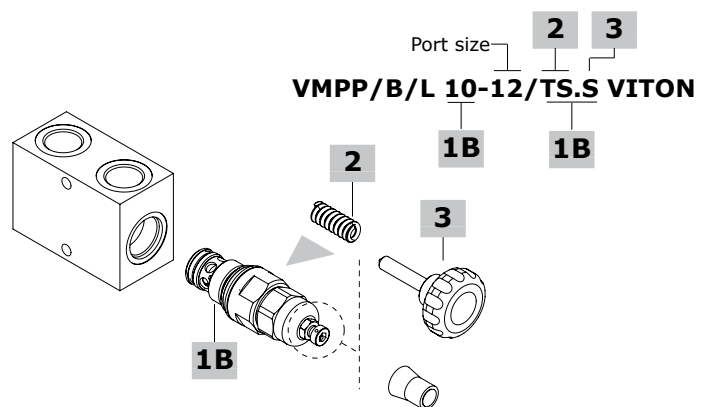
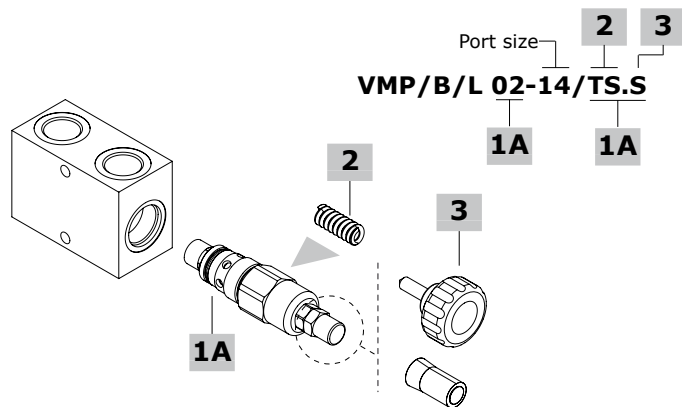
Dimensions are in mm-in

| Valve type                 | A       | B        | C         | D max     | E       | F       |
|----------------------------|---------|----------|-----------|-----------|---------|---------|
| <b>VMPP/B/L 10-12</b>      | 35-1.38 | 78-3.07  | 17.5-0.69 | 74.3-2.96 | 39-1.53 | 6-0.24  |
| <b>VMPP/B/L 10-12/SAE</b>  |         |          |           |           |         |         |
| <b>VMPP/B/L 20-34</b>      | 50-1.97 | 100-3.94 | 25-0.98   | 77.5-3.05 | 50-1.97 | 8-0.31  |
| <b>VMPP/B/L 20-34/SAE</b>  |         |          |           |           |         |         |
| <b>VMPP/B/L 20-100</b>     | 60-2.36 | 120-4.72 | 30-1.18   | 77.5-3.05 | 63-2.48 | 10-0.39 |
| <b>VMPP/B/L 20-100/SAE</b> |         |          |           |           |         |         |
| <b>VMPP/B/L 45-114</b>     | 70-2.75 | 135-5.31 | 35-1.38   | 94.5-3.72 | 70-2.75 | 10-0.39 |
| <b>VMPP/B/L 45-114/SAE</b> |         |          |           |           |         |         |

| G        | H       | I       | L       | ØN        | Y       | ØK      | Z max   |
|----------|---------|---------|---------|-----------|---------|---------|---------|
| 70-2.75  | 58-2.28 | 20-0.79 | 40-1.57 | 6.5-0.25  | 25.5-1  | 40-1.57 | 56-2.2  |
| 70-2.75  | 54-2.12 | 22-0.87 | 57-2.44 | 8.5-0.33  | 25.5-1  | 40-1.57 | 56-2.2  |
| 85-3.34  | 65-2.56 | 30-1.18 | 65-2.56 | 8.5-0.33  | 25.5-1  | 40-1.57 | 56-2.2  |
| 100-3.94 | 80-3.15 | 35-1.38 | 68-2.68 | 10.5-0.41 | 28-1.10 | 40-1.57 | 56-2.20 |



### Ordering codes and description composition



#### VMP/B/L complete direct acting valves

| TYPE                                                               | CODE       | DESCRIPTION                                     |
|--------------------------------------------------------------------|------------|-------------------------------------------------|
| <b>Configuration with G1/4 standard thread</b>                     |            |                                                 |
| <i>Standard setting 150 bar @ 3 l/min (2175 psi @ 0.79 US gpm)</i> |            |                                                 |
| VMP/B/L 02-14/TS.G                                                 | 1111001104 | Aluminium body, range 50-220 bar (725-3200 psi) |
| VMP/B/L 02-14/TS.G/ac                                              | 1111002103 | Steel body, as previous one                     |
| VMP/B/L 03-14/TS.S                                                 | 1111011104 | Aluminium body, range 50-200 bar (725-3200 psi) |
| VMP/B/L 03-14/TS.S/ac                                              | 1111012101 | Steel body, as previous one                     |
| <b>Configuration with G3/8 standard thread</b>                     |            |                                                 |
| <i>Standard setting 160 bar @ 5 l/min (2320 psi @ 1.32 US gpm)</i> |            |                                                 |
| VMP/B/L 5-38/TS.S                                                  | 1111021104 | Aluminium body, range 50-220 bar (725-3200 psi) |
| VMP/B/L 5-38/TS.S/ac                                               | 1111022101 | Steel body, as previous one                     |
| VMP/B/L 5Y-38/TS.S                                                 | 1111021116 | Aluminium body, range 50-220 bar (725-3200 psi) |
| <b>Configuration with G1/2 standard thread</b>                     |            |                                                 |
| <i>Standard setting 160 bar @ 5 l/min (2320 psi @ 1.32 US gpm)</i> |            |                                                 |
| VMP/B/L 5-12/TS.S                                                  | 1111021154 | Aluminium body, range 50-220 bar (725-3200 psi) |
| VMP/B/L 5-12/TS.S/ac                                               | 1111022150 | Steel body, as previous one                     |
| VMP/B/L 10-12/TS.S                                                 | 1111031104 | Aluminium body, range 50-220 bar (725-3200 psi) |
| VMP/B/L 10-12/TS.S/ac                                              | 1111032100 | Steel body, as previous one                     |
| <b>Configuration with G3/4 standard thread</b>                     |            |                                                 |
| <i>Standard setting 160 bar @ 5 l/min (2320 psi @ 1.32 US gpm)</i> |            |                                                 |
| VMP/B/L 10-34/TS.S                                                 | 1111031154 | Aluminium body, range 50-220 bar (725-3200 psi) |
| VMP/B/L 10-34/TS.S/ac                                              | 1111032151 | Steel body, as previous one                     |
| VMP/B/L 20-34/TS.S                                                 | 1111041104 | Aluminium body, range 50-220 bar (725-3200 psi) |
| VMP/B/L 20-34/TS.S/ac                                              | 1111042102 | Steel body, as previous one                     |
| <b>Configuration with G1" standard thread</b>                      |            |                                                 |
| <i>Standard setting 160 bar @ 5 l/min (2320 psi @ 1.32 US gpm)</i> |            |                                                 |
| VMP/B/L 20-100/TS.S                                                | 1111041154 | Aluminium body, range 50-220 bar (725-3200 psi) |
| VMP/B/L 20-100/TS.S/ac                                             | 1111042150 | Steel body, as previous one                     |
| <b>Configuration with SAE6 standard thread</b>                     |            |                                                 |
| <i>Standard setting 150 bar @ 3 l/min (2175 psi @ 0.79 US gpm)</i> |            |                                                 |
| VMP/B/L 02-14/TS.G/SAE                                             | 1111001201 | Aluminium body, range 50-220 bar (725-3200 psi) |
| VMP/B/L 03-14/TS.S/SAE                                             | 1111011200 | Aluminium body, range 50-200 bar (725-3200 psi) |
| <b>Configuration with SAE8 standard thread</b>                     |            |                                                 |
| <i>Standard setting 160 bar @ 5 l/min (2320 psi @ 1.32 US gpm)</i> |            |                                                 |
| VMP/B/L 5-38/TS.S/SAE                                              | 1111021200 | Aluminium body, range 50-220 bar (725-3200 psi) |
| <b>Configuration with SAE10 standard thread</b>                    |            |                                                 |
| <i>Standard setting 160 bar @ 5 l/min (2320 psi @ 1.32 US gpm)</i> |            |                                                 |
| VMP/B/L 5-12/TS.S/SAE                                              | 1111021250 | Aluminium body, range 50-220 bar (725-3200 psi) |
| VMP/B/L 10-12/TS.S/SAE                                             | 1111031200 | Aluminium body, range 50-220 bar (725-3200 psi) |

#### VMP/B/L complete direct acting valves (cont.)

##### Configuration with SAE12 standard thread

*Standard setting 160 bar @ 5 l/min (2320 psi @ 1.32 US gpm)*

|                        |            |                                                 |
|------------------------|------------|-------------------------------------------------|
| VMP/B/L 10-34/TS.S/SAE | 1111031250 | Aluminium body, range 50-220 bar (725-3200 psi) |
| VMP/B/L 20-34/TS.S/SAE | 1111041200 | Aluminium body, range 50-220 bar (725-3200 psi) |

##### Configuration with SAE16 standard thread

*Standard setting 160 bar @ 5 l/min (2320 psi @ 1.32 US gpm)*

|                         |            |                                                 |
|-------------------------|------------|-------------------------------------------------|
| VMP/B/L 20-100/TS.S/SAE | 1111041250 | Aluminium body, range 50-220 bar (725-3200 psi) |
|-------------------------|------------|-------------------------------------------------|

#### VMPP/B/L complete pilot operated valves

##### Configuration with G1/2 standard thread

*Standard setting 120 bar @ 10 l/min (1740 psi @ 2.64 US gpm)*

|                                                              |                  |
|--------------------------------------------------------------|------------------|
| TYPE: VMPP/B/L 10-12/TS.W VITON                              | CODE: 1132031100 |
| DESCRIPTION: Aluminium body, range 20-400 bar (290-5800 psi) |                  |
| TYPE: VMPP/B/L 10-12/TS.W/ac VITON                           | CODE: 1132032100 |
| DESCRIPTION: Steel body, as previous one                     |                  |

##### Configuration with G3/4 standard thread

*Standard setting 120 bar @ 10 l/min (1740 psi @ 2.64 US gpm)*

|                                                              |                  |
|--------------------------------------------------------------|------------------|
| TYPE: VMPP/B/L 20-34/TS.W VITON                              | CODE: 1132041100 |
| DESCRIPTION: Aluminium body, range 20-400 bar (290-5800 psi) |                  |
| TYPE: VMPP/B/L 20-34/TS.W/ac VITON                           | CODE: 1132042100 |
| DESCRIPTION: Steel body, as previous one                     |                  |

##### Configuration with G1" standard thread

*Standard setting 120 bar @ 10 l/min (1740 psi @ 2.64 US gpm)*

|                                                              |                  |
|--------------------------------------------------------------|------------------|
| TYPE: VMPP/B/L 20-100/TS.W VITON                             | CODE: 1132041150 |
| DESCRIPTION: Aluminium body, range 20-400 bar (290-5800 psi) |                  |
| TYPE: VMPP/B/L 20-100/TS.W/ac VITON                          | CODE: 1132042151 |
| DESCRIPTION: Steel body, as previous one                     |                  |

##### Configuration with G1 1/4 standard thread

*Standard setting 160 bar @ 5 l/min (2320 psi @ 1.32 US gpm)*

|                                                              |                  |
|--------------------------------------------------------------|------------------|
| TYPE: VMPP/B/L 45-114/TS.S                                   | CODE: 1132061104 |
| DESCRIPTION: Aluminium body, range 50-220 bar (725-3200 psi) |                  |
| TYPE: VMPP/B/L 45-114/TS.S/ac                                | CODE: 1132062101 |
| DESCRIPTION: Steel body, as previous one                     |                  |

##### Configuration with SAE10 standard thread

*Standard setting 120 bar @ 10 l/min (1740 psi @ 2.64 US gpm)*

|                                                              |                  |
|--------------------------------------------------------------|------------------|
| TYPE: VMPP/B/L 10-12/TS.W SAE VITON                          | CODE: 1132031200 |
| DESCRIPTION: Aluminium body, range 20-400 bar (290-5800 psi) |                  |

##### Configuration with SAE12 standard thread

*Standard setting 120 bar @ 10 l/min (1740 psi @ 2.64 US gpm)*

|                                                              |                  |
|--------------------------------------------------------------|------------------|
| TYPE: VMPP/B/L 20-34/TS.W VITON SAE                          | CODE: 1132041200 |
| DESCRIPTION: Aluminium body, range 20-400 bar (290-5800 psi) |                  |

##### Configuration with SAE20 standard thread

*Standard setting 160 bar @ 5 l/min (2320 psi @ 1.32 US gpm)*

|                                                              |                  |
|--------------------------------------------------------------|------------------|
| TYPE: VMPP/B/L 45-114/TS.S/SAE                               | CODE: 1132061200 |
| DESCRIPTION: Aluminium body, range 50-220 bar (725-3200 psi) |                  |

For other steel body configurations, SAE thread and configurations with FPM (Viton) seals, please contact our Sales Dept.

## Ordering codes and description composition

### 1A Direct acting pressure relief valves

| TYPE                                         | CODE        | DESCRIPTION                       |
|----------------------------------------------|-------------|-----------------------------------|
| <b>For G1/4 ports configuration</b>          |             |                                   |
| <b>VMP 02/TS.G</b>                           | 1100000101  | Range 50-220 bar (725-3200 psi)   |
| <b>For VMP/B/L 03-14 valve</b>               |             |                                   |
| <b>MC08A/0S2B</b>                            | 0MC08002000 | Range 50-200 bar (725-2900 psi)   |
| <b>MC08R/0Y2B</b>                            | 0MC08002051 | Range 40-200 bar (580-2900 psi)   |
| <b>For G3/8 and G1/2 ports configuration</b> |             |                                   |
| <b>VMP 5/TS.S</b>                            | 1100520400  | Range 50-220 bar (725-3200 psi)   |
| <b>VMP 5Y/TS.S</b>                           | 1100520406  | Range 140-190 bar (2030-2755 psi) |
| <b>VMP 5J/TS.S</b>                           | 1100520432  | Range 63-200 bar (913-2900 psi)   |
| <b>For G1/2 and G3/4 ports configuration</b> |             |                                   |
| <b>VMP 10/TS.S</b>                           | 1100530400  | Range 50-220 bar (725-3200 psi)   |
| <b>VMP 10Y/TS.S</b>                          | 1100530407  | Range 125-250 bar (1810-3600 psi) |
| <b>For G3/4 and G1" ports configuration</b>  |             |                                   |
| <b>VMP 20/TS.S</b>                           | 1100540400  | Range 50-220 bar (725-3200 psi)   |
| <b>VMP 20Y/TS.S</b>                          | 1100540407  | Range 125-250 bar (1810-3600 psi) |

### 1B Pilot operated pressure relief valves

| TYPE                                        | CODE       | DESCRIPTION                     |
|---------------------------------------------|------------|---------------------------------|
| <b>For G1/2 ports configuration</b>         |            |                                 |
| <b>VMPP 10/1(XG)</b>                        | XCAR110313 | Range 20-400 bar (290-5800 psi) |
| <b>For G3/4 and G1" ports configuration</b> |            |                                 |
| <b>VMPP 20/1(XG)</b>                        | X007211120 | Range 20-400 bar (290-5800 psi) |
| <b>For G1"1/4 ports configuration</b>       |            |                                 |
| <b>VMPP 45/TS.S</b>                         | 1130060404 | Range 50-250 bar (725-3600 psi) |

### 2 Pressure setting spring

| TYPE                                        | CODE       | DESCRIPTION                       |
|---------------------------------------------|------------|-----------------------------------|
| <b>For VMP 02 valve</b>                     |            |                                   |
| <b>TV</b>                                   | 3ML1081400 | Range 5-80 bar (72.5-1160 psi)    |
| <b>TS</b>                                   | 3ML1081401 | Range 50-220 bar (725-3200 psi)   |
| <b>TR</b>                                   | 3ML1081402 | Range 180-350 bar (2600-5100 psi) |
| <b>For MC08 valve</b>                       |            |                                   |
| <b>TB</b>                                   | 3ML1092500 | Range 5-50 bar (72.5-725 psi)     |
| <b>TS</b>                                   | 3ML1092501 | Range 50-200 bar (725-2900 psi)   |
| <b>TR</b>                                   | 3ML1092502 | Range 180-350 bar (2600-5100 psi) |
| <b>For VMP 5, VMP 5J and VMPP 45 valves</b> |            |                                   |
| <b>TB</b>                                   | 3MOL314311 | Range 5-40 bar (72.5-580 psi)     |
| <b>TV</b>                                   | 3MOL314330 | Range 20-80 bar (290-1160 psi)    |
| <b>TS</b>                                   | 3MOL315330 | Range 50-220 bar (725-3200 psi)   |
| <b>TR</b>                                   | 3ML1143600 | Range 180-350 bar (2600-5100 psi) |

### 2 Pressure setting spring (continue)

|                          |            |                                   |
|--------------------------|------------|-----------------------------------|
| <b>For VMP 5Y valve</b>  |            |                                   |
| <b>TB</b>                | 3MOL314311 | Range 5-80 bar (72.5-1160 psi)    |
| <b>TV</b>                | 3MOL314330 | Range 40-150 bar (580-2200 psi)   |
| <b>TS</b>                | 3ML1143400 | Range 140-190 bar (2600-5100 psi) |
| <b>TR</b>                | 3MOL315330 | Range 180-350 bar (2600-5100 psi) |
| <b>For VMP 10 valve</b>  |            |                                   |
| <b>TB</b>                | 3MOL316410 | Range 5-40 bar (72.5-580 psi)     |
| <b>TV</b>                | 3ML1154300 | Range 20-80 bar (290-1160 psi)    |
| <b>TS</b>                | 3MOL317420 | Range 50-220 bar (725-3200 psi)   |
| <b>TR</b>                | 3MOL317440 | Range 180-350 bar (2600-5100 psi) |
| <b>For VMP 10Y valve</b> |            |                                   |
| <b>TV</b>                | 3MOL316580 | Range 100-160 bar (1450-3220 psi) |
| <b>TS</b>                | 3MOL317560 | Range 125-250 bar (1800-3600 psi) |
| <b>TR</b>                | 3MOL317570 | Range 200-315 bar (2900-4600 psi) |
| <b>For VMP 20 valve</b>  |            |                                   |
| <b>TB</b>                | 3ML1184300 | Range 5-40 bar (72.5-580 psi)     |
| <b>TV</b>                | 3ML1174500 | Range 20-80 bar (290-1160 psi)    |
| <b>TS</b>                | 3ML1204200 | Range 50-220 bar (725-3200 psi)   |
| <b>TR</b>                | 3ML1214500 | Range 180-350 bar (2600-5100 psi) |
| <b>For VMP 20Y valve</b> |            |                                   |
| <b>TV</b>                | 3MOL318690 | Range 100-160 bar (1450-3220 psi) |
| <b>TS</b>                | 3MOL321621 | Range 125-250 bar (1800-3600 psi) |
| <b>TR</b>                | 3MOL321620 | Range 200-315 bar (2900-4600 psi) |

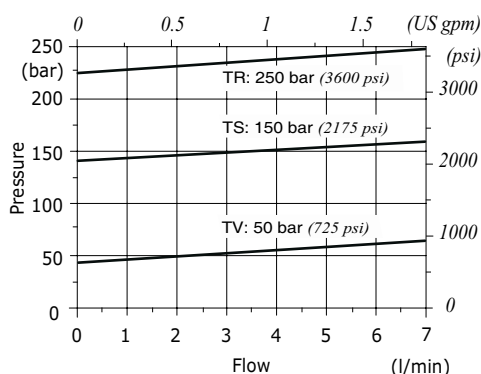
### 3 Adjusting options

| TYPE                                              | CODE       | DESCRIPTION             |
|---------------------------------------------------|------------|-------------------------|
| <b>For VMP 02</b>                                 |            |                         |
| <b>G</b>                                          | -          | Standard, screw type    |
| <b>V</b>                                          | 4VL2307000 | Handwheel               |
| <b>X</b>                                          | 4COP116420 | Antitamper cap          |
| <b>For MC08, VMP 5, VMP 10 and VMPP 45 valves</b> |            |                         |
| <b>S</b>                                          | -          | Standard with blind nut |
| <b>V</b>                                          | 4VL2407100 | Handwheel               |
| <b>X</b>                                          | 4COP120420 | Antitamper cap          |
| <b>For VMP 20 valve</b>                           |            |                         |
| <b>S</b>                                          | -          | Standard with blind nut |
| <b>V</b>                                          | 4VL2407101 | Handwheel               |
| <b>X</b>                                          | 4AC6102800 | Antitampering cap       |
| <b>For VMPP 10 and VMPP 20 valves</b>             |            |                         |
| <b>W</b>                                          | -          | Standard, screw type    |
| <b>V</b>                                          | XVOL105140 | Handwheel               |
| <b>Z</b>                                          | 5COP120420 | Antitamper kit          |

## Rating diagrams

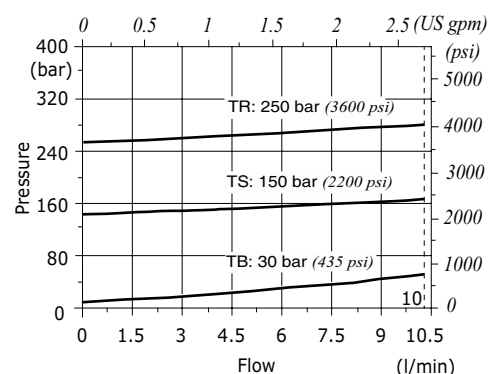
**VMP/B/L 02-14 pressure vs. flow**

Std. setting @ 3 l/min (0.79 US gpm)



**VMP/B/L 03-14 pressure vs. flow**

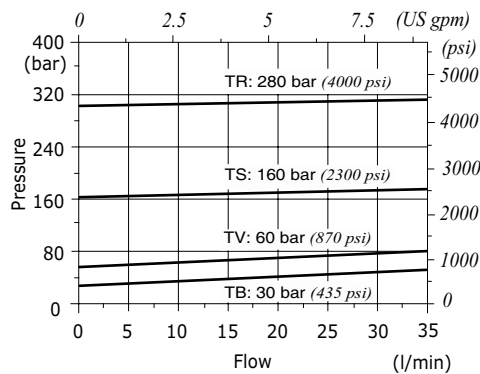
Std. setting @ 5 l/min (1.32 US gpm)



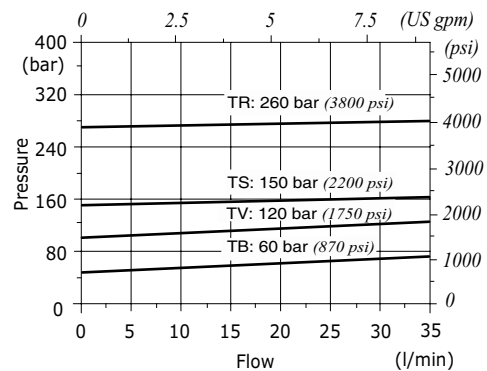


### Rating diagrams

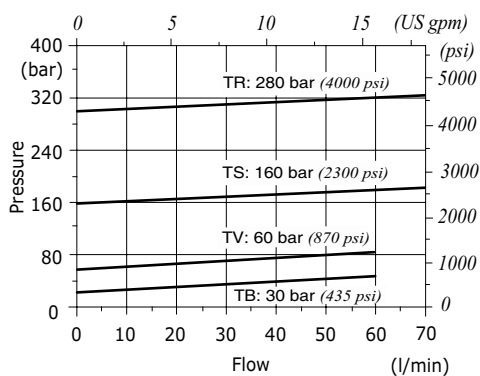
**VMP/B/L 5 38-12 pressure vs. flow**  
Std. setting @ 5 l/min (1.32 US gpm)



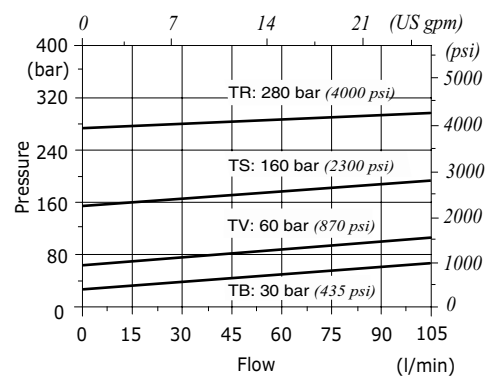
**VMP/B/L 5Y 38-12 pressure vs. flow**  
Std. setting @ 5 l/min (1.32 US gpm)



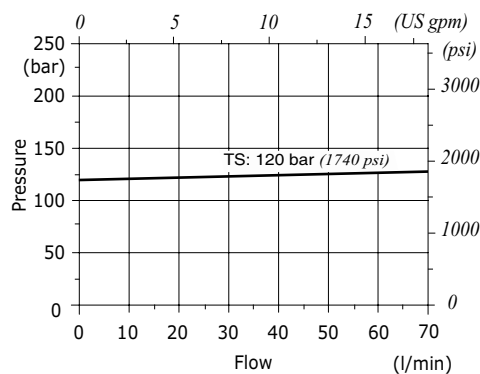
**VMP/B/L 10 12-34 pressure vs. flow**  
Std. setting @ 5 l/min (1.32 US gpm)



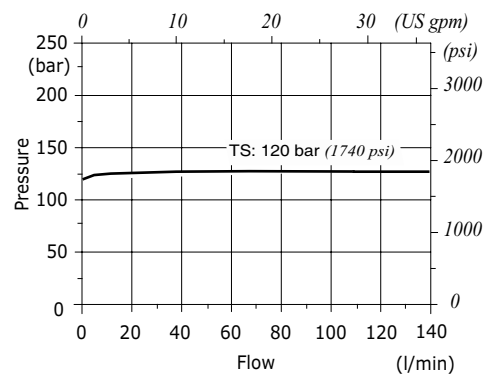
**VMP/B/L 20 34-100 pressure vs. flow**  
Std. setting @ 5 l/min (1.32 US gpm)



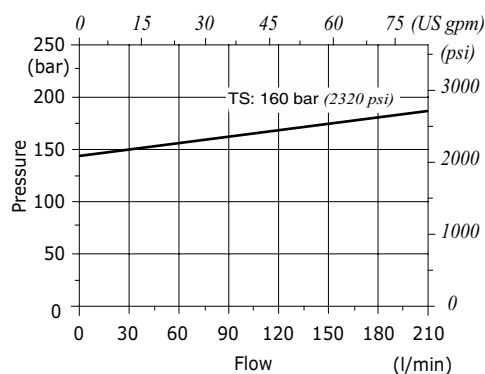
**VMPP/B/L 10-12 pressure vs. flow**  
Std. setting @ 10 l/min (2.64 US gpm)



**VMPP/B/L 20 34-100 pressure vs. flow**  
Std. setting @ 10 l/min (2.64 US gpm)



**VMPP/B/L 45-114 pressure vs. flow**  
Std. setting @ 5 l/min (1.32 US gpm)





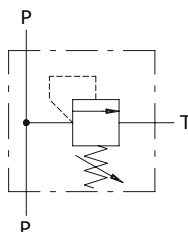
## Type VMDL..20 - VMD..35 - VMD..80 pressure relief valves

- Direct acting

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

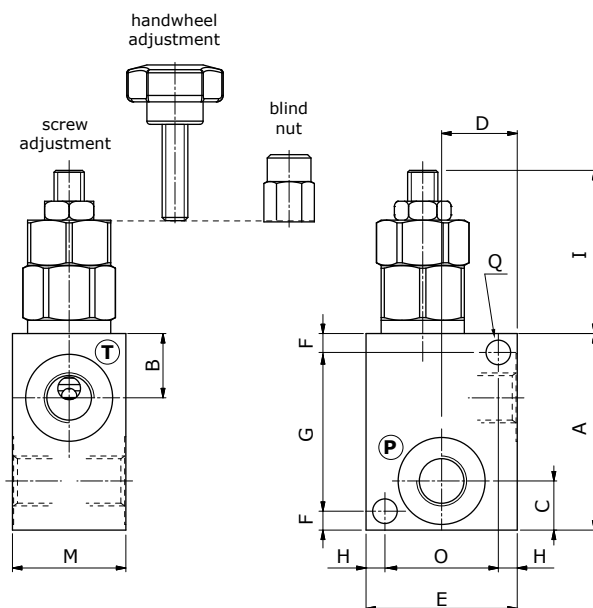
|                                            |           | VMDL..2001                                                             | VMDL..2002        | VMD..3502             | VMD..3503         | VMD..8003              | VMD..8004         |
|--------------------------------------------|-----------|------------------------------------------------------------------------|-------------------|-----------------------|-------------------|------------------------|-------------------|
| Nominal flow                               |           | 20 l/min (5.3 US gpm)                                                  |                   | 35 l/min (9.2 US gpm) |                   | 80 l/min (21.1 US gpm) |                   |
| Max. pressure                              |           | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                   |                       |                   |                        |                   |
| Fluid                                      |           | mineral based oil                                                      |                   |                       |                   |                        |                   |
| Viscosity                                  |           | from 10 to 200 cSt                                                     |                   |                       |                   |                        |                   |
| Max. level of contamination                |           | 18/16/13 ISO4406                                                       |                   |                       |                   |                        |                   |
| Fluid temperature                          |           | with NBR seals from -20°C (-4°F) to 80°C (176°F)                       |                   |                       |                   |                        |                   |
| Environmental temp. for working conditions |           | from -40°C (-40°F) to 100°C (212°F)                                    |                   |                       |                   |                        |                   |
| Weight                                     | aluminium | 0.24 kg (0.53 lb)                                                      | 0.24 kg (0.53 lb) | 0.40 kg (0.88 lb)     | 0.39 kg (0.86 lb) | 0.72 kg (1.59 lb)      | 0.72 kg (1.59 lb) |
|                                            | steel     | -                                                                      | -                 | 0.85 kg (1.87 lb)     | 0.78 kg (1.72 lb) | 1.45 kg (3.20 lb)      | 1.35 kg (2.98 lb) |

NOTE - For different conditions, please contact Walvoil Sales Dpt.

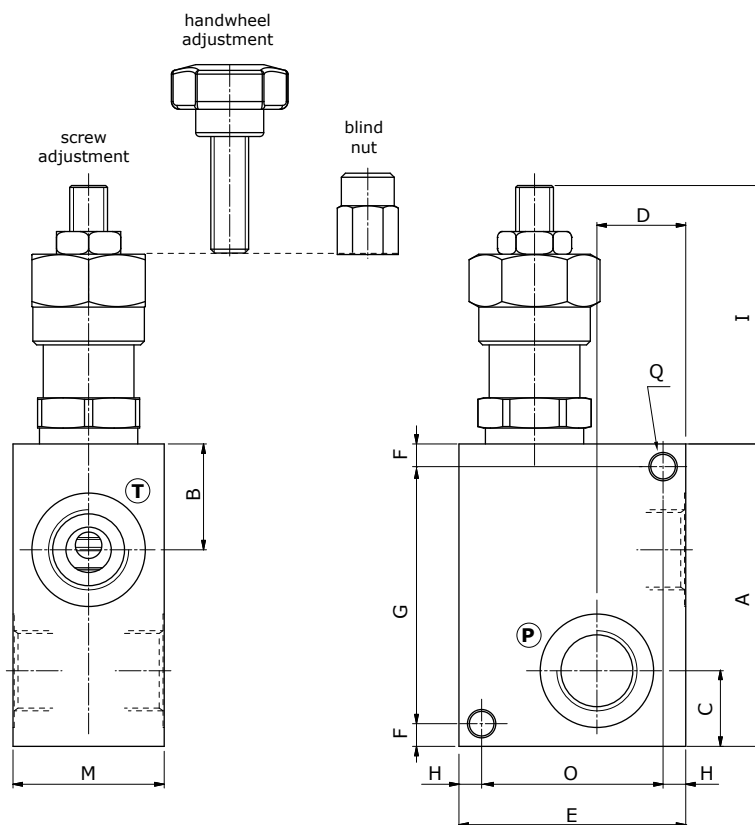


## Dimensions

### VMDL..20



### VMD..35 - VMD..80



| Valve type | All ports |
|------------|-----------|
| VMDL..2001 | G1/4      |
| VMDL..2002 | G3/8      |
| VMD..3502  | G3/8      |
| VMD..3503  | G1/2      |
| VMD..8003  | G1/2      |
| VMD..8004  | G3/4      |

Dimensions are in mm-in

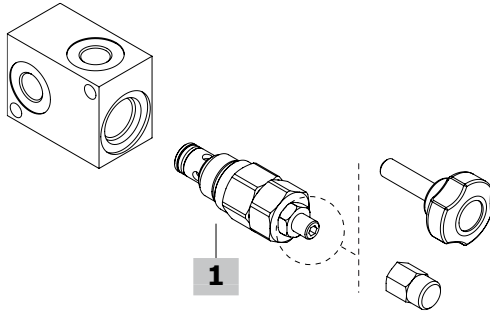
| Valve type | A       | B       | C       | D         | E       | F       | G       | H       | I       | M       | O       | ØQ        |
|------------|---------|---------|---------|-----------|---------|---------|---------|---------|---------|---------|---------|-----------|
| VMDL..20   | 45-1.77 | 17-0.67 | 13-0.51 | 20-0.79   | 40-1.57 | 5-0.197 | 42-1.65 | 5-0.197 | 44-1.73 | 30-1.18 | 30-1.18 | 6.5-0.256 |
| VMD..35    | 65-2.56 | 24-0.95 | 17-0.67 | 20-0.79   | 50-1.97 | 5-0.197 | 53-2.09 | 6-0.236 | 64-2.52 | 35-1.38 | 34-1.34 | 6.5-0.256 |
| VMD..80    | 80-3.15 | 28-1.10 | 20-0.79 | 23.5-0.93 | 60-2.36 | 6-0.236 | 68-2.68 | 6-0.236 | 77-3.03 | 40-1.57 | 48-1.89 | 6.5-0.256 |

## Ordering codes and description composition

Port size: **01**  
- aluminium  
**S** = steel

setting range: **B**  
Adjustment option:  
**1** = screw type  
**2** = handwheel type  
**3** = blind nut

**1**



| Type            |          | Setting range<br>bar (psi) | Std. setting<br>bar (psi) |
|-----------------|----------|----------------------------|---------------------------|
| <b>VMDL..20</b> | <b>A</b> | 5-60 (72.5-870)            | 40 (580)                  |
|                 | <b>B</b> | 50-240 (725-3500)          | 100 (1450)                |
|                 | <b>C</b> | 90-350 (130-5100)          | 100 (1450)                |
|                 | <b>D</b> | 20-100 (290-1450)          | 100 (1450)                |
| <b>VMD..35</b>  | <b>A</b> | 5-50 (72.5-725)            | 40 (580)                  |
|                 | <b>B</b> | 40-210 (580-3050)          | 100 (1450)                |
|                 | <b>C</b> | 100-350 (1450-5100)        | 100 (1450)                |
| <b>VMD..80</b>  | <b>A</b> | 5-50 (72.5-725)            | 40 (580)                  |
|                 | <b>B</b> | 20-260 (290-3770)          | 100 (1450)                |
|                 | <b>C</b> | 120-350 (1750-5100)        | 120 (1740)                |

### VMD complete valves

*Standard setting 150 bar @ 5 l/min (2200 psi @ 1.32 US gpm)*

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

#### Configuration with G1/4 standard thread

|                   |            |                                                                 |
|-------------------|------------|-----------------------------------------------------------------|
| <b>VMDL2001B1</b> | 1110711100 | Aluminium body, setting range from 50 to 240 bar (725-3500 psi) |
|-------------------|------------|-----------------------------------------------------------------|

#### Configuration with G3/8 standard thread

|                   |            |                                                                 |
|-------------------|------------|-----------------------------------------------------------------|
| <b>VMDL2002B1</b> | 1110721100 | Aluminium body, setting range from 50 to 240 bar (725-3500 psi) |
|-------------------|------------|-----------------------------------------------------------------|

|                  |            |                                                                 |
|------------------|------------|-----------------------------------------------------------------|
| <b>VMD3502B1</b> | 1110821100 | Aluminium body, setting range from 40 to 210 bar (580-3050 psi) |
|------------------|------------|-----------------------------------------------------------------|

|                   |            |                                                             |
|-------------------|------------|-------------------------------------------------------------|
| <b>VMDS3502B1</b> | 1110822100 | Steel body, setting range from 40 to 210 bar (580-3050 psi) |
|-------------------|------------|-------------------------------------------------------------|

#### Configuration with G1/2 standard thread

|                  |            |                                                                 |
|------------------|------------|-----------------------------------------------------------------|
| <b>VMD3503B1</b> | 1110821101 | Aluminium body, setting range from 40 to 210 bar (580-3050 psi) |
|------------------|------------|-----------------------------------------------------------------|

|                  |            |                                                                 |
|------------------|------------|-----------------------------------------------------------------|
| <b>VMD8003B1</b> | 1110831100 | Aluminium body, setting range from 20 to 260 bar (290-3770 psi) |
|------------------|------------|-----------------------------------------------------------------|

|                   |            |                                                             |
|-------------------|------------|-------------------------------------------------------------|
| <b>VMDS3503B1</b> | 1110822101 | Steel body, setting range from 40 to 210 bar (580-3050 psi) |
|-------------------|------------|-------------------------------------------------------------|

|                   |            |                                                             |
|-------------------|------------|-------------------------------------------------------------|
| <b>VMDS8003B1</b> | 1110832100 | Steel body, setting range from 20 to 260 bar (290-3770 psi) |
|-------------------|------------|-------------------------------------------------------------|

#### Configuration with G3/4 standard thread

|                  |            |                                                                 |
|------------------|------------|-----------------------------------------------------------------|
| <b>VMD8004B1</b> | 1110831101 | Aluminium body, setting range from 20 to 260 bar (290-3770 psi) |
|------------------|------------|-----------------------------------------------------------------|

|                   |            |                                                             |
|-------------------|------------|-------------------------------------------------------------|
| <b>VMDS8004B1</b> | 1110832101 | Steel body, setting range from 20 to 260 bar (290-3770 psi) |
|-------------------|------------|-------------------------------------------------------------|

For different configurations and SAE thread please contact our Sales Dpt.

### 1 Direct acting pressure relief valves

*Standard setting 150 bar @ 5 l/min (2200 psi @ 1.32 US gpm)*

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

#### For VMDL..20 valve

|                   |             |                                                    |
|-------------------|-------------|----------------------------------------------------|
| <b>MC08F/0G2B</b> | 0MC08002069 | Screw adjustment from 50 to 240 bar (725-3500 psi) |
|-------------------|-------------|----------------------------------------------------|

#### For VMD..35 valve

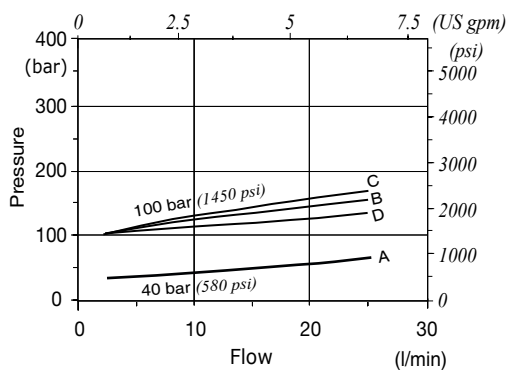
|                          |            |                                                    |
|--------------------------|------------|----------------------------------------------------|
| <b>VMDC35B1(M20X1,5)</b> | 1100220400 | Screw adjustment from 40 to 210 bar (580-3050 psi) |
|--------------------------|------------|----------------------------------------------------|

#### For VMD..80 valve

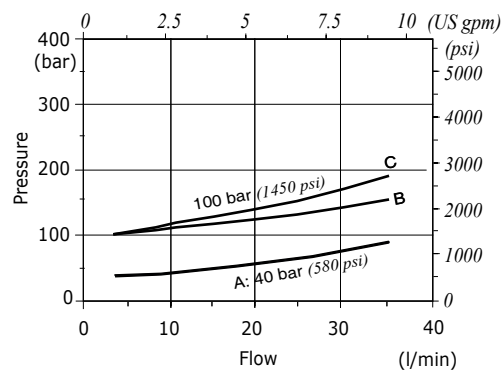
|                          |            |                                                    |
|--------------------------|------------|----------------------------------------------------|
| <b>VMDC80B1(M26X1,5)</b> | 1100230400 | Screw adjustment from 40 to 260 bar (290-3770 psi) |
|--------------------------|------------|----------------------------------------------------|

### Rating diagrams

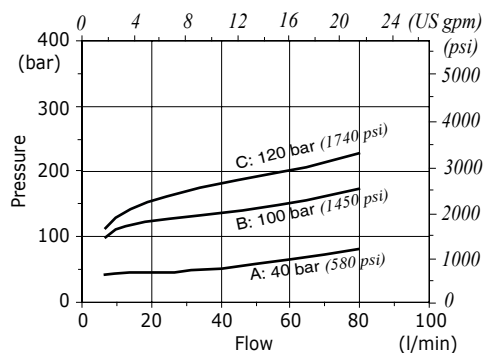
**VMDL..20 pressure vs. flow**  
standard setting @ 5 l/min (1.32 US gpm)



**VMD..35 pressure vs. flow**  
standard setting @ 5 l/min (1.32 US gpm)



**VMD..80 pressure vs. flow**  
standard setting @ 5 l/min (1.32 US gpm)





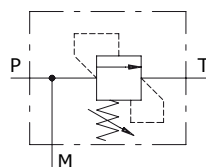
## Type VMPD/B pressure relief valves

- Differential pressure relief valve
- Poppet type

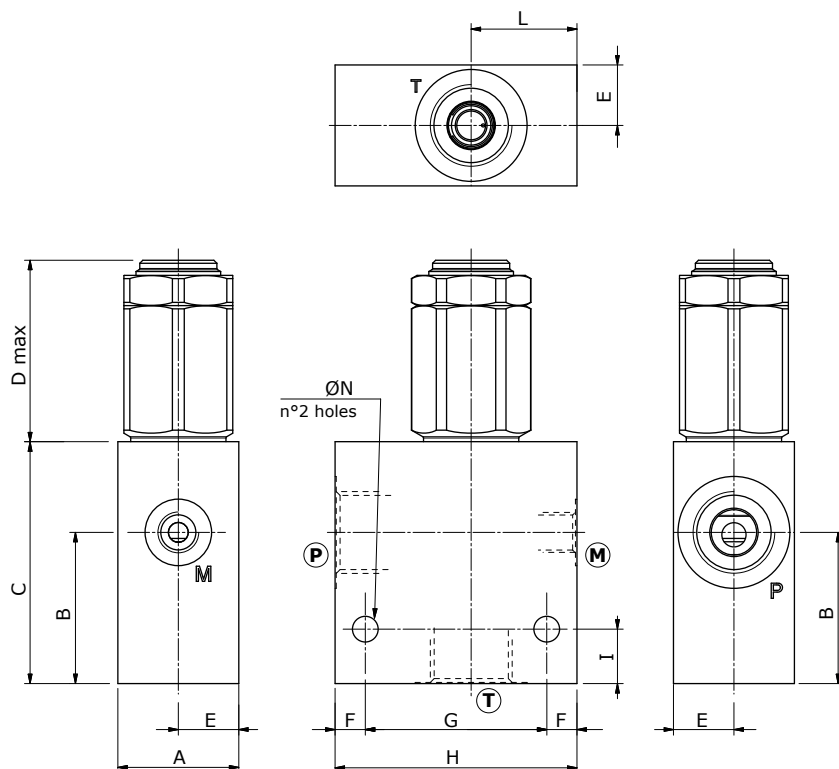
Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                            | VMPD/B 38                                                              | VMPD/B 12            | VMPD/B 34               | VMPD/B 100              |
|--------------------------------------------|------------------------------------------------------------------------|----------------------|-------------------------|-------------------------|
| Nominal flow                               | 35 l/min (9.2 US gpm)                                                  | 60 l/min (16 US gpm) | 100 l/min (26.4 US gpm) | 180 l/min (47.6 US gpm) |
| Max. pressure                              | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                      |                         |                         |
| Oil leakage at 80% of max. setting         | 0.25 cm <sup>3</sup> /min (0.01 in <sup>3</sup> /min)                  |                      |                         |                         |
| Fluid                                      | mineral based oil                                                      |                      |                         |                         |
| Viscosity                                  | from 10 to 200 cSt                                                     |                      |                         |                         |
| Max. level of contamination                | 18/16/13 ISO4406                                                       |                      |                         |                         |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F)                       |                      |                         |                         |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                                    |                      |                         |                         |
| Weight                                     | alum.                                                                  | 0.50 kg (1.10 lb)    | 0.68 kg (1.50 lb)       | 1.12 kg (2.47 lb)       |
|                                            | steel                                                                  | 0.92 kg (2.03 lb)    | 1.28 kg (2.82 lb)       | 2.04 kg (4.50 lb)       |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



## Dimensions

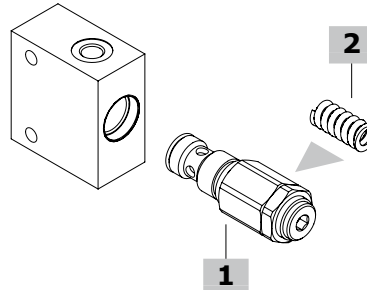
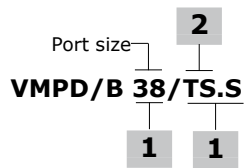


| Valve type | T    | P    | M    |
|------------|------|------|------|
| VMPD/B 38  | G3/8 | G3/8 | G1/4 |
| VMPD/B 12  | G1/2 | G1/2 | G1/4 |
| VMPD/B 34  | G3/4 | G3/4 | G1/4 |
| VMPD/B 100 | G1"  | G1"  | G1/4 |

Dimensions are in mm-in

| Valve type | A       | B       | C       | D max     | E         | F       | G       | H       | I       | L       | ØN        |
|------------|---------|---------|---------|-----------|-----------|---------|---------|---------|---------|---------|-----------|
| VMPD/B 38  | 30-1.18 | 38-1.50 | 60-2.36 | 57.7-2.27 | 15-0.59   | 10-0.39 | 40-1.57 | 60-2.36 | 15-0.59 | 30-1.18 | 6.5-0.25  |
| VMPD/B 12  | 35-1.38 | 43-1.69 | 65-2.55 | 56.2-2.21 | 17.5-0.69 | 10-0.39 | 50-1.97 | 70-2.75 | 15-0.59 | 33-1.30 | 8.5-0.33  |
| VMPD/B 34  | 40-1.57 | 50-1.97 | 80-3.15 | 68.8-2.71 | 20-0.79   | 10-0.39 | 60-2.36 | 80-3.15 | 18-0.71 | 35-1.38 | 8.5-0.33  |
| VMPD/B 100 | 50-1.97 | 59-2.32 | 90-3.54 | 68.8-2.71 | 25-0.98   | 10-0.39 | 70-2.75 | 90-3.54 | 20-0.79 | 42-1.65 | 10.5-0.41 |

## Ordering codes and description composition



### VMPD/B complete valves

| TYPE                                           | CODE       | DESCRIPTION                                                                                                       |
|------------------------------------------------|------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Configuration with G3/8 standard thread</b> |            |                                                                                                                   |
| <b>VMPD/B 38/TS.S</b>                          | 1121021102 | Aluminium body, setting range 5-210 bar (72.5-3045 psi), std. setting 150 bar @ 5 l/min (2175 psi at 1.32 US gpm) |
| <b>VMPD/B 38/TS.S/ac</b>                       | 1121022102 | Steel body, as previous one                                                                                       |
| <b>Configuration with G1/2 standard thread</b> |            |                                                                                                                   |
| <b>VMPD/B 12/TS.S</b>                          | 1121031102 | Aluminium body, setting range 5-210 bar (72.5-3045 psi), std. setting 150 bar @ 5 l/min (2175 psi at 1.32 US gpm) |
| <b>VMPD/B 12/TS.S/ac</b>                       | 1121032100 | Steel body, as previous one)                                                                                      |
| <b>Configuration with G3/4 standard thread</b> |            |                                                                                                                   |
| <b>VMPD/B 34/TS.S</b>                          | 1121041102 | Aluminium body, setting range 5-210 bar (72.5-3045 psi), std. setting 150 bar @ 5 l/min (2175 psi at 1.32 US gpm) |
| <b>VMPD/B 34/TS.S/ac</b>                       | 1121042100 | Steel body, as previous one                                                                                       |
| <b>Configuration with G1" standard thread</b>  |            |                                                                                                                   |
| <b>VMPD/B 100/TS.S</b>                         | 1121051102 | Aluminium body, setting range 5-210 bar (72.5-3045 psi), std. setting 150 bar @ 5 l/min (2175 psi at 1.32 US gpm) |
| <b>VMPD/B 100/TR.S/ac</b>                      | 1121052100 | Steel body, setting range 50-350 bar (725-5100 psi), std. setting 250 bar @ 5 l/min (3600 psi at 1.32 US gpm)     |

For other steel body configurations, SAE thread and configurations with FPM (Viton) seals please contact our Sales Dpt.

### 1 Direct acting pressure relief valves

*Standard setting 150 bar at 5 l/min (2175 psi at 1.32 US gpm)*

| TYPE                                        | CODE       | DESCRIPTION                             |
|---------------------------------------------|------------|-----------------------------------------|
| <b>For G3/8 ports configuration</b>         |            |                                         |
| <b>VMPD 38/TS.S</b>                         | 1120020402 | Setting range 5-210 bar (72.5-3050 psi) |
| <b>For G1/2 ports configuration</b>         |            |                                         |
| <b>VMPD 12/TS.S</b>                         | 1120030402 | Setting range 5-210 bar (72.5-3050 psi) |
| <b>For G3/4 and G1" ports configuration</b> |            |                                         |
| <b>VMPD 34/TS.S</b>                         | 1120040402 | Setting range 5-210 bar (72.5-3050 psi) |

### 2 Pressure setting spring

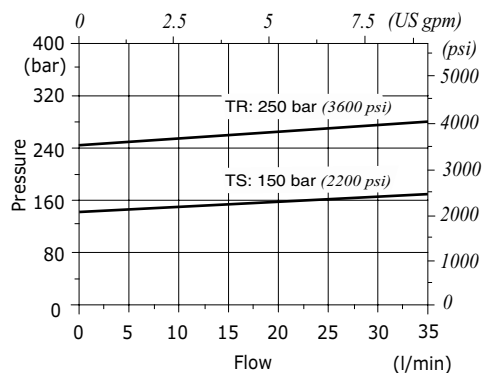
| TYPE                                     | CODE       | DESCRIPTION                             |
|------------------------------------------|------------|-----------------------------------------|
| <b>For VMPD/B38 valve</b>                |            |                                         |
| <b>TS</b>                                | 3ML1144000 | Setting range 5-210 bar (72.5-3050 psi) |
| <b>TR</b>                                | 3ML1144001 | Setting range 50-350 bar (725-5100 psi) |
| <b>For VMPD/B12 valve</b>                |            |                                         |
| <b>TS</b>                                | 3ML1164000 | Setting range 5-210 bar (72.5-3050 psi) |
| <b>TR</b>                                | 3ML1164001 | Setting range 50-350 bar (725-5100 psi) |
| <b>For VMPD/B34 and VMPD/B100 valves</b> |            |                                         |
| <b>TS</b>                                | 3ML1194500 | Setting range 5-210 bar (72.5-3050 psi) |
| <b>TR</b>                                | 3ML1194501 | Setting range 50-350 bar (725-5100 psi) |



## Rating diagrams

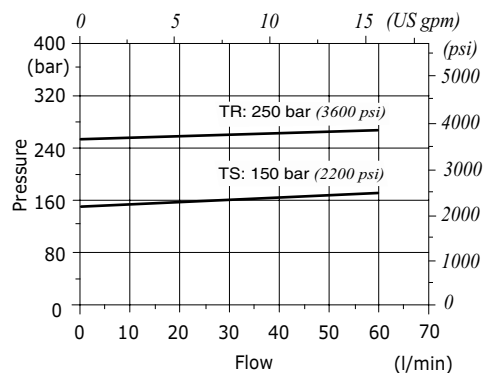
### VMPD/B 38 pressure vs. flow

Std. setting @ 5 l/min (1.32 US gpm)



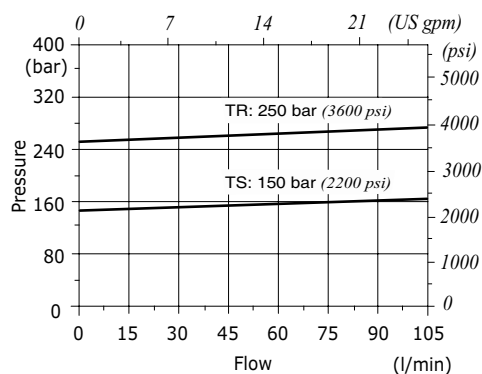
### VMPD/B 12 pressure vs. flow

Std. setting @ 5 l/min (1.32 US gpm)



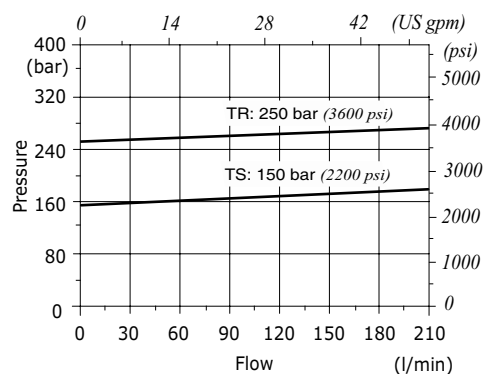
### VMPD/B 34 pressure vs. flow

Std. setting @ 5 l/min (1.32 US gpm)



### VMPD/B 100 pressure vs. flow

Std. setting @ 5 l/min (1.32 US gpm)





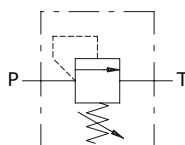
## Type VMD150 pressure relief valves

- Differential acting

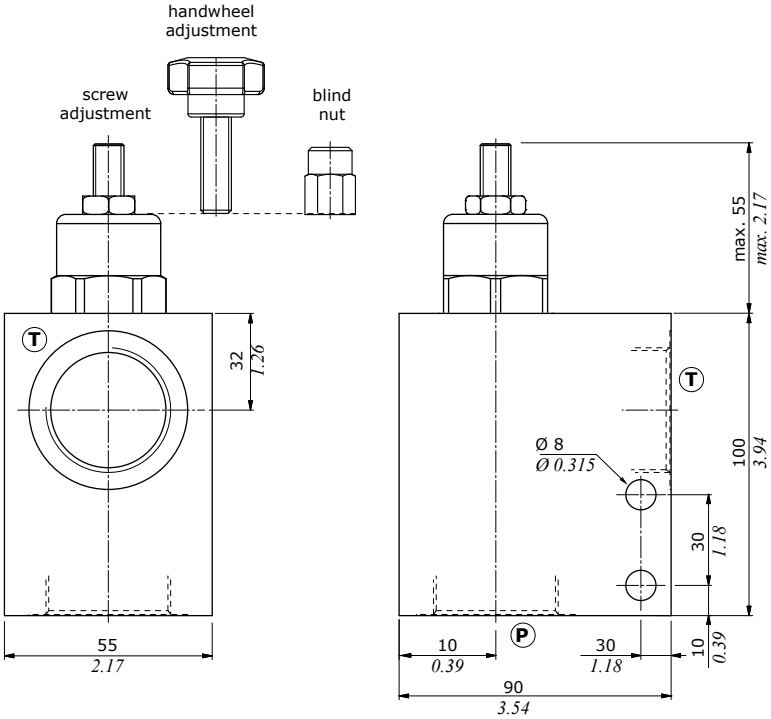
Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

| VMD15005                                         |                                                  | VMD15006          |
|--------------------------------------------------|--------------------------------------------------|-------------------|
| Nominal flow                                     | 150 l/min (39.6 US gpm)                          |                   |
| Max. pressure                                    | Aluminium body = 210 bar (3050 psi)              |                   |
| Fluid                                            | mineral based oil                                |                   |
| Viscosity                                        | from 10 to 200 cSt                               |                   |
| Max. level of contamination                      | 18/16/13 ISO4406                                 |                   |
| Fluid temperature                                | with NBR seals from -20°C (-4°F) to 80°C (176°F) |                   |
| Environmental temperature for working conditions | from -40°C (-40°F) to 100°C (212°F)              |                   |
| Weight                                           | aluminium                                        | 1.49 kg (3.28 lb) |
|                                                  |                                                  | 1.41 kg (3.11 lb) |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



Dimensions

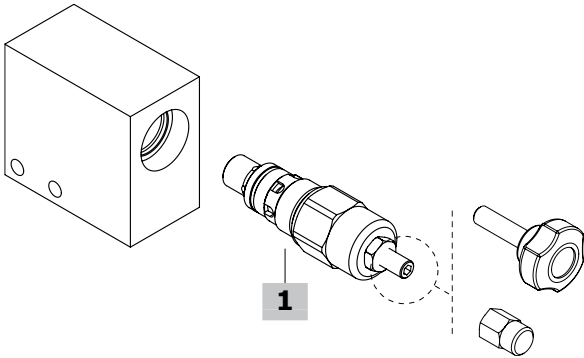


| Valve type | All ports |
|------------|-----------|
| VMD15005   | G1"       |
| VMD15006   | G1"1/4    |

Ordering codes and description composition

Port size  
**VMD150 05 B 1**  
1

setting range  
Adjustment option:  
1 = screw type  
2 = handwheel type  
3 = blind nut



VMD150 complete valves

*Standard setting 250 bar @ 5 l/min (3600 psi @ 1.32 US gpm)*

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

**Configuration with G1 standard thread**

|                   |            |                                                         |
|-------------------|------------|---------------------------------------------------------|
| <b>VMD15005B1</b> | 1121251100 | Aluminium body, setting range 30-250 bar (435-3600 psi) |
|-------------------|------------|---------------------------------------------------------|

**Configuration with G1 1/4 standard thread**

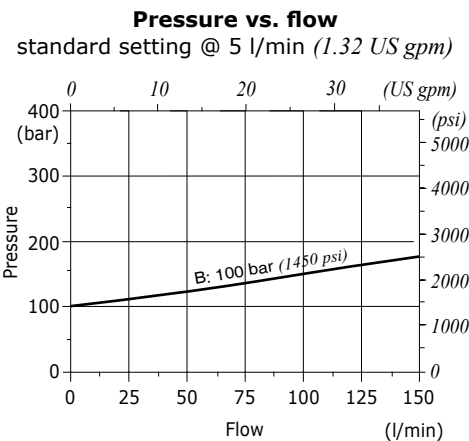
|                   |            |                                                         |
|-------------------|------------|---------------------------------------------------------|
| <b>VMD15006B1</b> | 1121261100 | Aluminium body, setting range 30-250 bar (435-3600 psi) |
|-------------------|------------|---------------------------------------------------------|

For different configurations and SAE thread please contact our Sales Dpt.

**1 Direct acting pressure relief valves**

| TYPE             | CODE       | DESCRIPTION                                                                                                       |
|------------------|------------|-------------------------------------------------------------------------------------------------------------------|
| <b>VMDC150B1</b> | 1120250400 | Screw adjustment, setting range 30-250 bar (435-3600 psi), std setting 100 bar @ 5 l/min (1450 psi @ 1.32 US gpm) |

Rating diagrams







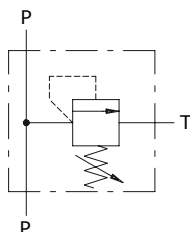
## Type VMDS150 pressure relief valves

- Differential acting

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

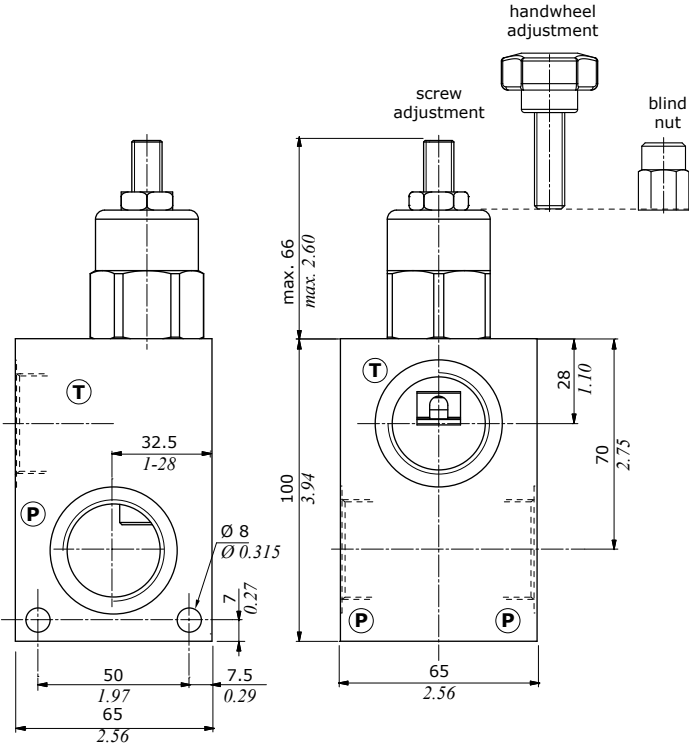
| VMDS15005                                        |                                                  | VMDS15006         |
|--------------------------------------------------|--------------------------------------------------|-------------------|
| Nominal flow                                     | 150 l/min (39.6 US gpm)                          |                   |
| Max. pressure                                    | Steel body = 350 bar (5100 psi)                  |                   |
| Fluid                                            | mineral based oil                                |                   |
| Viscosity                                        | from 10 to 200 cSt                               |                   |
| Max. level of contamination                      | 18/16/13 ISO4406                                 |                   |
| Fluid temperature                                | with NBR seals from -20°C (-4°F) to 80°C (176°F) |                   |
| Environmental temperature for working conditions | from -40°C (-40°F) to 100°C (212°F)              |                   |
| Weight                                           | steel 2.76 kg (6.08 lb)                          | 2.43 kg (5.42 lb) |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



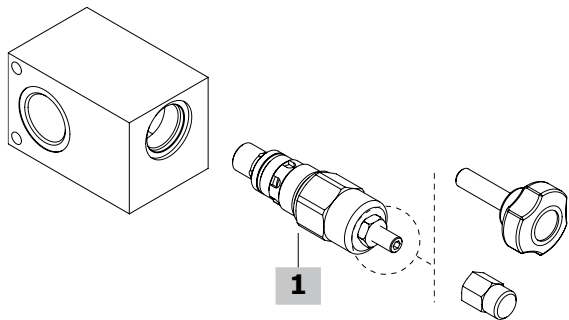
Dimensions

| Valve type | All ports |
|------------|-----------|
| VMDS15005  | G1"       |
| VMDS150 06 | G1"1/4    |



Ordering codes and description composition

Port size  
**VMDS150 05 B 1**  
setting range  
Adjustment option:  
**1** = screw type  
**2** = handwheel type  
**3** = blind nut



VMDS150 complete valves

Standard setting 250 bar @ 5 l/min (3600 psi @ 1.32 US gpm)

CODE DESCRIPTION

Configuration with G1 standard thread

**VMDS15005B1** 1121352100 Steel body, setting range  
(3 ATTACCHI) 30-250 bar (435-3600 psi)

Configuration with G1 1/4 standard thread

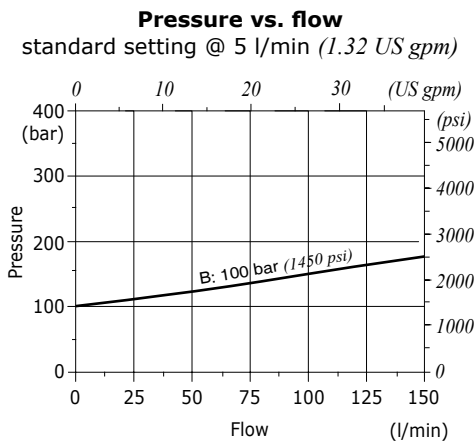
**VMDS15006B1** 1121362100 Steel body, setting range  
(3 ATTACCHI) 30-250 bar (435-3600 psi)

For different configurations and SAE thread please contact our Sales  
Dpt.

1 Direct acting pressure relief valves

| TYPE             | CODE       | DESCRIPTION                                                                                                                |
|------------------|------------|----------------------------------------------------------------------------------------------------------------------------|
| <b>VMDC150B1</b> | 1120250400 | Screw adjustment, setting range<br>30-250 bar (435-3600 psi),<br>std setting 100 bar @ 5 l/min<br>(1450 psi @ 1.32 US gpm) |

Rating diagrams









## Type VMP/VE pressure relief valves

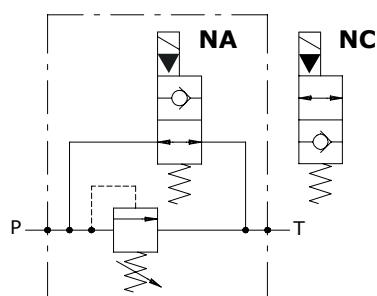
- Piloted operated
- With electric venting

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

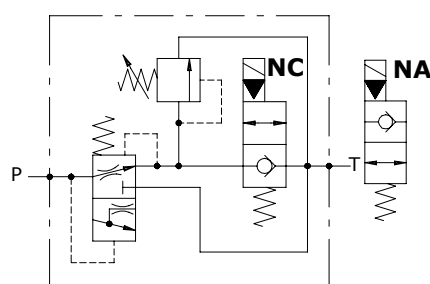
|                                               | VMP/VE 14                                                                            | VMP/VE 38                          | VMP/VE 12                             | VMP/VE 34                             | VMP/VE 100                            | VMP/VE 114                            |                           |
|-----------------------------------------------|--------------------------------------------------------------------------------------|------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------|
| Nominal flow                                  | 20 l/min<br><i>(5.3 US gpm)</i>                                                      | 35 l/min<br><i>(9.2 US gpm)</i>    | 90 l/min<br><i>(23.8 US gpm)</i>      | 90 l/min<br><i>(23.8 US gpm)</i>      | 150 l/min<br><i>(39.6 US gpm)</i>     | 250 l/min<br><i>(66 US gpm)</i>       |                           |
| Max. pressure                                 | Aluminium body = 210 bar <i>(3050 psi)</i><br>Steel body = 350 bar <i>(5100 psi)</i> |                                    |                                       |                                       |                                       |                                       |                           |
| Oil leakage at 80%<br>of max. setting         | 3 cm³/min<br><i>(0.18 in³/min)</i>                                                   | 3 cm³/min<br><i>(0.18 in³/min)</i> | 200 cm³/min<br><i>(12.20 in³/min)</i> | 200 cm³/min<br><i>(12.20 in³/min)</i> | 200 cm³/min<br><i>(12.20 in³/min)</i> | 200 cm³/min<br><i>(12.20 in³/min)</i> |                           |
| Fluid                                         | mineral based oil                                                                    |                                    |                                       |                                       |                                       |                                       |                           |
| Viscosity                                     | from 10 to 200 cSt                                                                   |                                    |                                       |                                       |                                       |                                       |                           |
| Max. level of<br>contamination                | 18/16/13 ISO4406                                                                     |                                    |                                       |                                       |                                       |                                       |                           |
| Fluid temperature                             | with NBR seals from -20°C <i>(-4°F)</i> to 80°C <i>(176°F)</i>                       |                                    |                                       |                                       |                                       |                                       |                           |
| Environmental temp.<br>for working conditions | from -40°C <i>(-40°F)</i> to 100°C <i>(212°F)</i>                                    |                                    |                                       |                                       |                                       |                                       |                           |
| Weight                                        | <i>aluminium</i>                                                                     | 0.67 kg <i>(1.48 lb)</i>           | 0.66 kg <i>(1.46 lb)</i>              | 1.42 kg <i>(3.13 lb)</i>              | 1.26 kg <i>(2.78 lb)</i>              | 1.92 kg <i>(4.23 lb)</i>              | 3.77 kg <i>(8.31 lb)</i>  |
|                                               | <i>steel</i>                                                                         | 1.13 kg <i>(2.49 lb)</i>           | 1.27 kg <i>(2.80 lb)</i>              | 2.58 kg <i>(5.69 lb)</i>              | 2.57 kg <i>(5.67 lb)</i>              | 3.95 kg <i>(8.71 lb)</i>              | 7.73 kg <i>(17.04 lb)</i> |

NOTE - For different conditions, please contact Walvoil Sales Dpt.

VMP/VE 14-38



VMP/VE 12-34-100-114



| Valve type | All ports |
|------------|-----------|
| VMP/VE 14  | G1/4      |
| VMP/VE 38  | G3/8      |

| Valve type    | All ports |
|---------------|-----------|
| VMP/VE 38/SAE | SAE8      |

Dimensions are in mm-in

(\*) With normally open valve

| Valve type | All ports |
|------------|-----------|
| VMP/VE 12  | G1/2      |
| VMP/VE 34  | G3/4      |
| VMP/VE 100 | G1"       |
| VMP/VE 114 | G1"1/4    |

| Valve type     | All ports |
|----------------|-----------|
| VMP/VE 12/SAE  | SAE10     |
| VMP/VE 34/SAE  | SAE12     |
| VMP/VE 100/SAE | SAE16     |

Dimensions are in mm-*in*

| Valve type                                 | A       | B       | C       | D        | E         | F*        | G        | H       | I       | L        | ØN        | Q       |
|--------------------------------------------|---------|---------|---------|----------|-----------|-----------|----------|---------|---------|----------|-----------|---------|
| <b>VMP/VE 12</b><br><b>VMP/VE 12/SAE</b>   | 40-1.57 | 20-0.70 | 53-2.09 | 100-3.93 | 51.5-2.03 | 66.5-2.62 | 85-3.35  | 42-1.65 | 8-0.31  | 84-3.31  | 8.5-0.33  | 14-0.55 |
| <b>VMP/VE 34</b><br><b>VMP/VE 34/SAE</b>   | 40-1.57 | 20-0.70 | 53-2.09 | 100-3.93 | 51.5-2.03 | 66.5-2.62 | 85-3.35  | 42-1.65 | 8-0.31  | 84-3.31  | 8.5-0.3   | 14-0.55 |
| <b>VMP/VE 100</b><br><b>VMP/VE 100/SAE</b> | 50-1.97 | 25-0.98 | 60-2.36 | 110-4.33 | 53-2.09   | 66.5-2.62 | 100-3.94 | 50-1.97 | 10-0.40 | 90-3.54  | 10.5-0.41 | 17-0.67 |
| <b>VMP/VE 114</b>                          | 70-2.75 | 35-2.75 | 72-2.83 | 130-5.12 | 53-2.09   | 66.5-2.62 | 130-5.12 | 62-2.44 | 12-0.47 | 106-4.17 | 12.5-0.49 | 18-0.71 |

(\*) With normally open valve

## Ordering codes and description composition

### VMP/VE complete valves

*With direct acting valves; standard setting is referred to 5 l/min (1.32 US gpm)*

#### Configuration with G1/4 standard thread

TYPE: **VMP/VE 14/NA/5.TS.S/EC08M** CODE: 1116011104  
DESCRIPTION: Aluminium body, range 50-220 bar (725-3200 psi).  
Std setting 160 bar (2300 psi), with (NA) normally open solenoid valve  
TYPE: **VMP/VE 14/NC/5.TS.S/EC08M** CODE: 1116011105  
DESCRIPTION: As previous one, with (NC) normally closed solenoid valve

#### Configuration with G3/8 standard thread

TYPE: **VMP/VE 38/NA/5.TS.S/EC08M** CODE: 1116021104  
DESCRIPTION: Aluminium body, range 50-220 bar (725-3200 psi).  
Std setting 160 bar (2300 psi), with (NA) normally open solenoid valve  
TYPE: **VMP/VE 38/NC/5.TS.S/EC08M** CODE: 1116021105  
DESCRIPTION: As previous one, with (NC) normally closed solenoid valve  
TYPE: **VMP/VE 38/NA/5.TR.S/EC08M/ac** CODE: 1116022101  
DESCRIPTION: Steel body, range 180-350 bar (2600-5100 psi).  
Std setting 280 bar (4050 psi), with (NA) normally open solenoid valve  
TYPE: **VMP/VE 38/NC/5.TR.S/EC08M/ac** CODE: 1116022100  
DESCRIPTION: As previous one, with (NC) normally closed solenoid valve

#### Configuration with G1/2 standard thread

TYPE: **VMP/VE 12/NA/03.TS.S/EC08M** CODE: 1116031102  
DESCRIPTION: Aluminium body, range 50-200 bar (725-2900 psi).  
Std setting 150 bar (2200 psi), with (NA) normally open solenoid valve  
TYPE: **VMP/VE 12/NC/03.TS.S/EC08M** CODE: 1116031103  
DESCRIPTION: As previous one, with (NC) normally closed solenoid valve  
TYPE: **VMP/VE 12/NA/03.TR.S/EC08M/ac** CODE: 1116032100  
DESCRIPTION: Steel body, range 180-350 bar (2600-5100 psi).  
Std setting 250 bar (3600 psi), with (NA) normally open solenoid valve  
TYPE: **VMP/VE 12/NC/03.TR.S/EC08M/ac** CODE: 1116032103  
DESCRIPTION: As previous one, with (NC) normally closed solenoid valve

#### Configuration with G3/4 standard thread

TYPE: **VMP/VE 34/NA/03.TS.S/EC08M** CODE: 1116041102  
DESCRIPTION: Aluminium body, range 50-200 bar (725-2900 psi).  
Std setting 150 bar (2200 psi), with (NA) normally open solenoid valve  
TYPE: **VMP/VE 34/NC/03.TS.S/EC08M** CODE: 1116041103  
DESCRIPTION: As previous one, with (NC) normally closed solenoid valve  
TYPE: **VMP/VE 34/NA/03.TR.S/EC08M/ac** CODE: 1116042100  
DESCRIPTION: Steel body, range 150-350 bar (2175-5100 psi).  
Std setting 250 bar (3600 psi), with (NA) normally open solenoid valve  
TYPE: **VMP/VE 34/NC/03.TR.S/EC08M/ac** CODE: 1116042101  
DESCRIPTION: As previous one, with (NC) normally closed solenoid valve

#### Configuration with G1" standard thread

TYPE: **VMP/VE 100/NA/03.TS.S/EC08M** CODE: 1116051102  
DESCRIPTION: Aluminium body, range 50-200 bar (725-2900 psi).  
Std setting 150 bar (2200 psi), with (NA) normally open solenoid valve  
TYPE: **VMP/VE 100/NC/03.TS.S/EC08M** CODE: 1116051103  
DESCRIPTION: As previous one, with (NC) normally closed solenoid valve  
TYPE: **VMP/VE 100/NA/03.TR.S/EC08M/ac** CODE: 1116052100  
DESCRIPTION: Steel body, range 150-350 bar (2175-5100 psi).  
Std setting 250 bar (3600 psi), with (NA) normally open solenoid valve  
TYPE: **VMP/VE 100/NC/03.TR.S/EC08M/ac** CODE: 1116052101  
DESCRIPTION: As previous one, with (NC) normally closed solenoid valve

#### Configuration with G1"1/4 standard thread

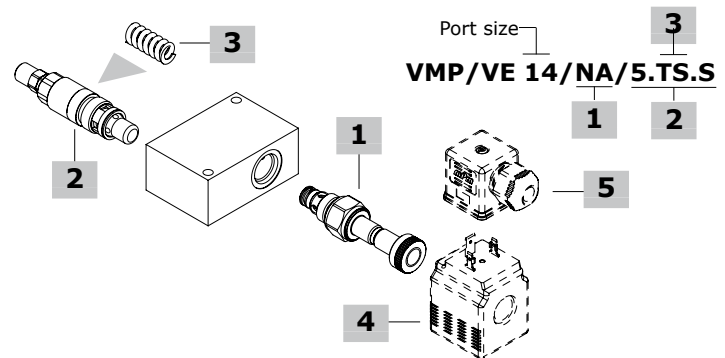
TYPE: **VMP/VE 114/NA/03.TS.S/EC08M** CODE: 1116061102  
DESCRIPTION: Aluminium body, range 50-200 bar (725-2900 psi).  
Std setting 150 bar (2200 psi), with (NA) normally open solenoid valve  
TYPE: **VMP/VE 114/NC/03.TS.S/EC08M** CODE: 1116061103  
DESCRIPTION: As previous one, with (NC) normally closed solenoid valve  
TYPE: **VMP/VE 114/NA/03.TR.S/EC08M/ac** CODE: 1116062100  
DESCRIPTION: Steel body, range 150-350 bar (2175-5100 psi).  
Std setting 250 bar (3600 psi), with (NA) normally open solenoid valve  
TYPE: **VMP/VE 114/NC/03.TR.S/EC08M/ac** CODE: 1116062101  
DESCRIPTION: As previous one, with (NC) normally closed solenoid valve

#### Configuration with SAE8 standard thread

TYPE: **VMP/VE 38/NA/5.TS.S/EC08M/SAE** CODE: 1116021200  
DESCRIPTION: Aluminium body, range 50-220 bar (725-3200 psi).  
Std setting 160 bar (2300 psi), with (NA) normally open solenoid valve

#### Configuration with SAE10 standard thread

TYPE: **VMP/VE 12/NA/03.TS.S/EC08M** CODE: 1116031200  
DESCRIPTION: Aluminium body, range 50-200 bar (725-2900 psi).  
Std setting 150 bar (2200 psi), with (NA) normally open solenoid valve



### VMP/VE complete valves

#### Configuration with SAE12 standard thread

TYPE: **VMP/VE 34/NA/03.TS.S/EC08M/SAE** CODE: 1116041201  
DESCRIPTION: Aluminium body, range 50-200 bar (725-2900 psi).  
Std setting 150 bar (2200 psi), with (NA) normally open solenoid valve

#### Configuration with SAE16 standard thread

TYPE: **VMP/VE 100/NA/03.TS.S/EC08M/SAE** CODE: 1116051200  
DESCRIPTION: Aluminium body, range 50-200 bar (725-2900 psi).  
Std setting 150 bar (2200 psi), with (NA) normally open solenoid valve

### 1 Solenoid valves

| TYPE              | CODE        | DESCRIPTION                            |
|-------------------|-------------|----------------------------------------|
| <b>EC08M/10NB</b> | 0EC08002031 | (NA) normally open, electric venting   |
| <b>EC08M/20NB</b> | 0EC08002032 | (NC) normally closed, electric venting |

Note: BER coils are required

### 2 Direct acting pressure relief valves

*Standard setting is referred to 5 l/min (1.32 US gpm)*

| TYPE                                                      | CODE        | DESCRIPTION                                                                      |
|-----------------------------------------------------------|-------------|----------------------------------------------------------------------------------|
| <b>For G3/8, G1/4 and SAE8 ports configuration</b>        |             |                                                                                  |
| <b>VMP 5/TS.S</b>                                         | 1100520400  | Setting range 50-220 bar (725-3200 psi)<br>Standard setting 160 bar (2300 psi)   |
| <b>VMP 5/TR.S</b>                                         | 1100520401  | Setting range 180-350 bar (2600-5100 psi)<br>Standard setting 280 bar (4050 psi) |
| <b>For G1/2, G3/4, G1" and G1"1/4 ports configuration</b> |             |                                                                                  |
| <b>MC08A/0S2B</b>                                         | 0MC08002000 | Setting range 50-200 bar (725-2900 psi)<br>Standard setting 150 bar (2200 psi)   |
| <b>MC08A/0S3B</b>                                         | 0MC08002002 | Setting range 150-350 bar (2200-5100 psi)<br>Standard setting 250 bar (3600 psi) |

### 3 Pressure setting springs

| TYPE                    | CODE       | DESCRIPTION                               |
|-------------------------|------------|-------------------------------------------|
| <b>For VMP 5 valves</b> |            |                                           |
| <b>TB</b>               | 3MOL314311 | Setting range 5-40 bar (72.5-580 psi)     |
| <b>TV</b>               | 3MOL314330 | Setting range 20-80 bar (290-1160 psi)    |
| <b>TS</b>               | 3MOL315330 | Setting range 50-220 bar (725-3200 psi)   |
| <b>TR</b>               | 3ML1143600 | Setting range 180-350 bar (2600-5100 psi) |
| <b>For MC08A valves</b> |            |                                           |
| <b>TB</b>               | 3ML1092500 | Setting range 5-50 bar (72.5-725 psi)     |
| <b>TS</b>               | 3ML1092501 | Setting range 50-200 bar (725-2900 psi)   |
| <b>TR</b>               | 3ML1092502 | Setting range 180-350 bar (2600-5100 psi) |

### 4 Coils

| TYPE             | CODE        | DESCRIPTION                  |
|------------------|-------------|------------------------------|
| <b>BER 12VDC</b> | 4SLE001200A | 12VDC-ISO4400, BER type coil |

For complete coil list see from page 437

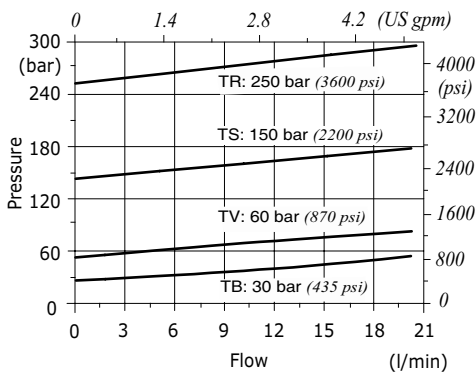
### 5 Connector

| TYPE           | CODE       | DESCRIPTION |
|----------------|------------|-------------|
| <b>ISO4400</b> | 4CN1009995 | Connector   |

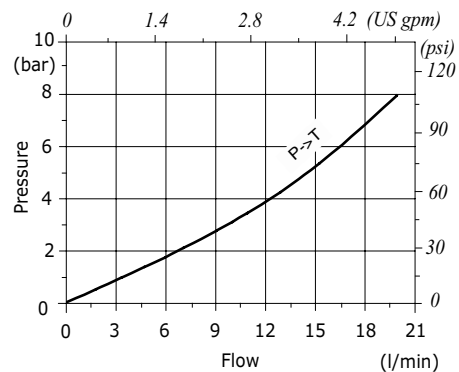
For complete connectors list see from page 437  
For other steel body configurations, other port sizes and configurations with FPM (Viton) seals please contact our Sales Dpt.

## Rating diagrams

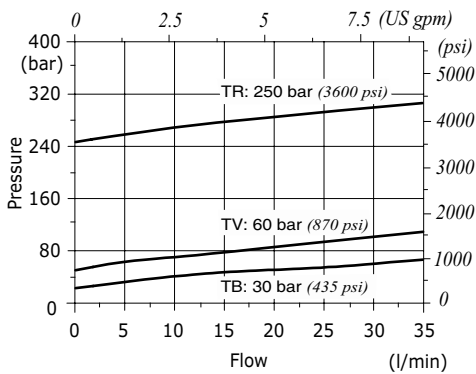
**VMP/VE 14 pressure vs. flow**  
Std. setting @ 5 l/min (1.32 US gpm)



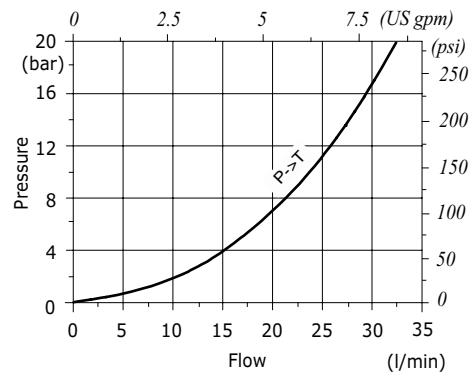
**VMP/VE 14 pressure drop diagram**



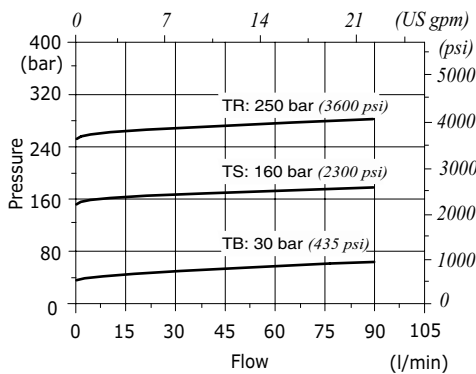
**VMP/VE 38 pressure vs. flow**  
Std. setting @ 5 l/min (1.32 US gpm)



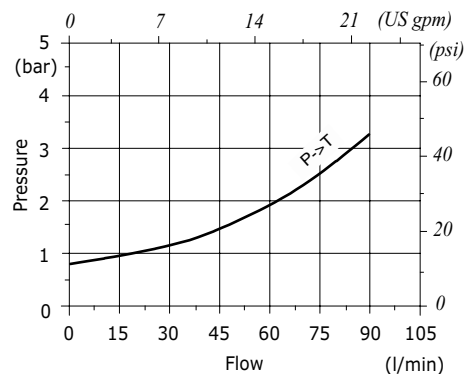
**VMP/VE 38 pressure drop diagram**



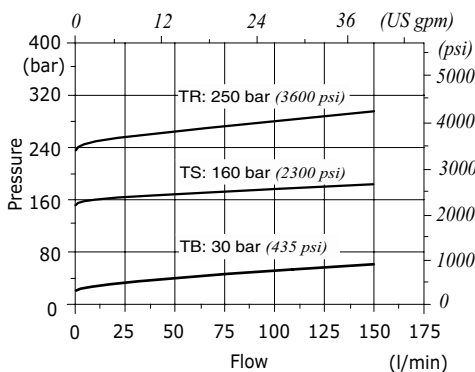
**VMP/VE 12-34 pressure vs. flow**  
Std. setting @ 5 l/min (1.32 US gpm)



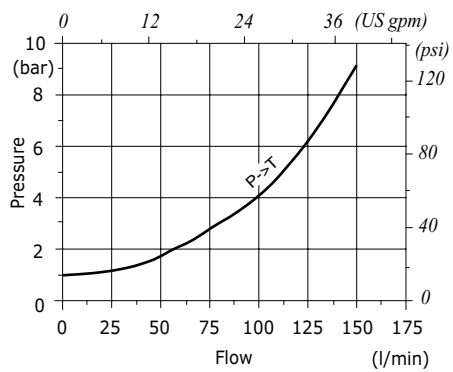
**VMP/VE 12-34 pressure drop diagram**



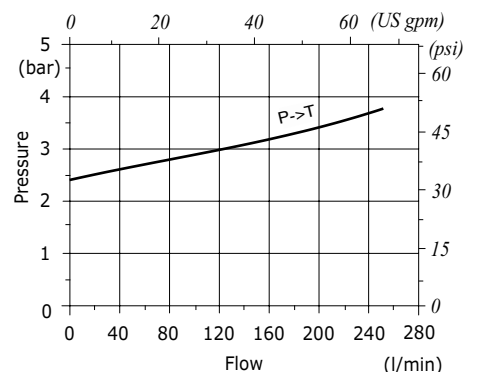
**VMP/VE 100-114 pressure vs. flow**  
Std. setting @ 5 l/min (1.32 US gpm)



**VMP/VE 100 pressure drop diagram**



**VMP/VE 114 pressure drop diagram**





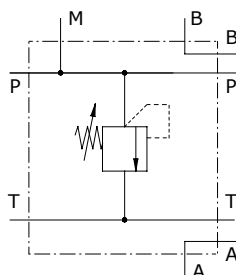
## Type PBL pressure relief valves

- Subplates with pressure relief valve face mounting cetop 3 (6-38) or 5 (10-12)

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

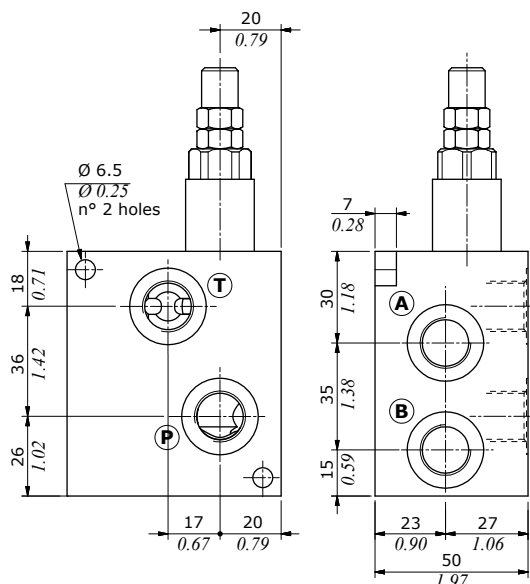
|                                            | <b>PBL 6/VMP 38</b>                                                    | <b>PBL 6/VMP 38/5Y</b>                             | <b>PBL 10/VMP 12</b>                               |
|--------------------------------------------|------------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------|
| Nominal flow                               | 35 l/min (9.2 US gpm)                                                  | 35 l/min (9.2 US gpm)                              | 60 l/min (16 US gpm)                               |
| Max. pressure                              | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                                                    |                                                    |
| Oil leakage at 80% of max. setting         | 3 cm <sup>3</sup> /min (0.18 in <sup>3</sup> /min)                     | 1 cm <sup>3</sup> /min (0.06 in <sup>3</sup> /min) | 5 cm <sup>3</sup> /min (0.30 in <sup>3</sup> /min) |
| Fluid                                      | mineral based oil                                                      |                                                    |                                                    |
| Viscosity                                  | from 10 to 200 cSt                                                     |                                                    |                                                    |
| Max. level of contamination                | 18/16/13 ISO4406                                                       |                                                    |                                                    |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F)                       |                                                    |                                                    |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                                    |                                                    |                                                    |
| Weight                                     | aluminium                                                              | 0.80 kg (1.76 lb)                                  | 1.70 kg (3.75 lb)                                  |
|                                            | steel                                                                  | 1.98 kg (4.36 lb)                                  | 4.29 kg (9.46 lb)                                  |

NOTE - For different conditions, please contact Walvoil Sales Dpt.

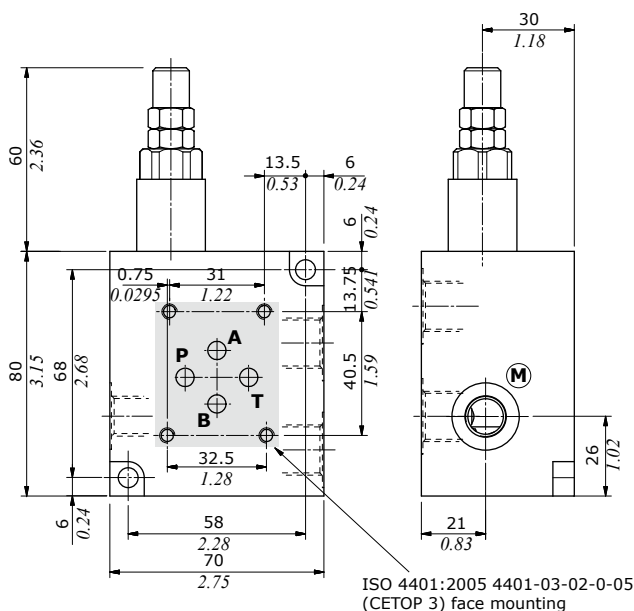


## Dimensions

| Valve type      | (P) (T) (A) (B) (M) |
|-----------------|---------------------|
| PBL 6/VMP 38    | G3/8 G1/4           |
| PBL 6/VMP 38/5Y | G3/8 G1/4           |

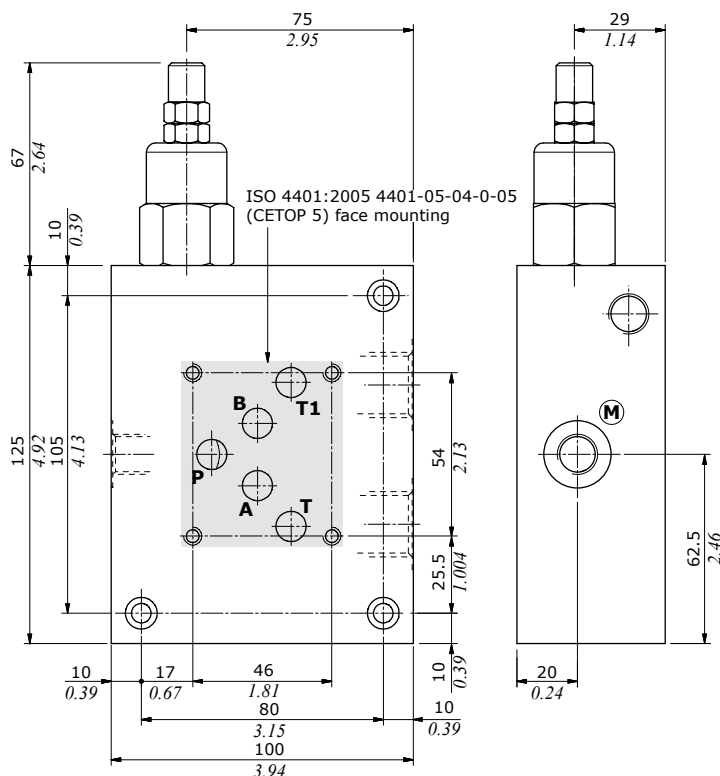
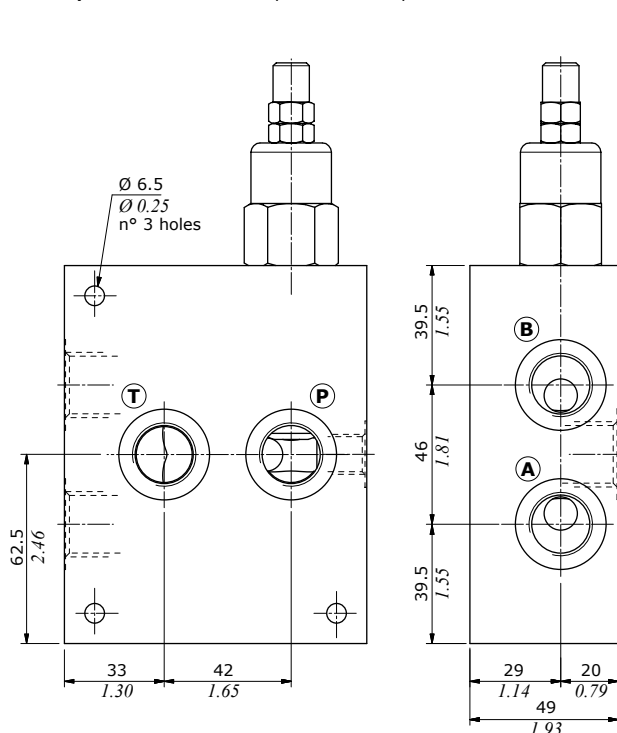


| Valve type       | (P) (T) (A) (B) (M) |
|------------------|---------------------|
| PBL 6/VMP 38/SAE | SAE8 SAE6           |



ISO 4401:2005 4401-03-02-0-05  
(CETOP 3) face mounting

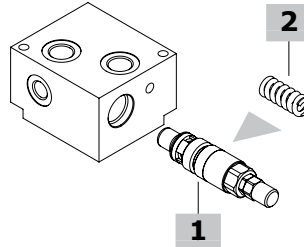
| Valve type    | (P) (T) (A) (B) (M) |
|---------------|---------------------|
| PBL 10/VMP 12 | G1/2 G1/4           |



ISO 4401:2005 4401-05-04-0-05  
(CETOP 5) face mounting

## Ordering codes and description composition

Port size **2**  
**PBL 6/VMP 38/5.TS.S**  
**1**



### PBL complete valves

*With direct acting valves; standard setting is referred to 5 l/min (1.32 US gpm)*

#### **Configuration with G3/8 standard thread and ISO 4401:2005 4401-03-02-0-05 (CETOP 3) face mounting**

TYPE: **PBL 6/VMP 38/5.TS.S** CODE: 1114021102  
DESCRIPTION: Aluminium body, range 50-220 bar (725-3200 psi).  
Standard setting 160 bar (2300 psi)

TYPE: **PBL 6/VMP 38/5.TS.S/ac** CODE: 1114022101  
DESCRIPTION: Steel body, as previous one  
TYPE: **PBL 6/VMP 38/5Y.TS.S** CODE: 1114021123

DESCRIPTION: Aluminium body, range 140-190 bar (2030-2755 psi).  
Standard setting 150 bar (2200 psi)

#### **Configuration with G1/2 standard thread and ISO 4401:2005 4401-05-04-0-05 (CETOP 5) face mounting**

TYPE: **PBL 10/VMP 12/10.TS.S** CODE: 1114031102  
DESCRIPTION: Aluminium body, range 50-220 bar (725-3200 psi).  
Standard setting 160 bar (2300 psi)

TYPE: **PBL 10/VMP 12/10.TS.S/ac** CODE: 1114032101  
DESCRIPTION: Steel body, as previous one

#### **Configuration with SAE8 standard thread and ISO 4401:2005 4401-03-02-0-05 (CETOP 3) face mounting**

TYPE: **PBL 6/VMP 38/5.TS.S/SAE** CODE: 1114021200  
DESCRIPTION: Aluminium body, range 50-220 bar (725-3200 psi).  
Standard setting 160 bar (2300 psi)

For other steel body configurations, SAE thread and configurations with FPM (Viton) seals please contact our Sales Dpt.

### 1 Direct acting pressure relief valves

*Standard setting is referred to 5 l/min (1.32 US gpm)*

TYPE CODE DESCRIPTION

#### **For G3/8 and SAE8 ports configuration**

**VMP 5/TS.S** 1100520400 Setting range 50-220 bar (725-3200 psi)  
Standard setting 160 bar (2300 psi)  
**VMP 5Y/TS.S** 1100520406 Setting range 140-190 bar (2030-2755 psi)  
Standard setting 150 bar (2200 psi)

#### **For G1/2 ports configuration**

**VMP 10/TS.S** 1100530400 Setting range 50-220 bar (725-3200 psi)

### 2 Pressure setting spring

TYPE CODE DESCRIPTION

#### **For VMP 5 valve**

**TB** 3MOL314311 Setting range 5-40 bar (72.5-580 psi)  
**TV** 3MOL314330 Setting range 20-80 bar (290-1160 psi)  
**TS** 3MOL315330 Setting range 50-220 bar (725-3200 psi)  
**TR** 3ML1143600 Setting range 180-350 bar (2600-5100 psi)

#### **For VMP 5Y valve**

**TB** 3MOL314311 Setting range 5-80 bar (72.5-1160 psi)  
**TV** 3MOL314330 Setting range 40-150 bar (580-2200 psi)  
**TS** 3ML1143400 Setting range 140-190 bar (2600-5100 psi)  
**TR** 3MOL315330 Setting range 180-350 bar (2600-5100 psi)

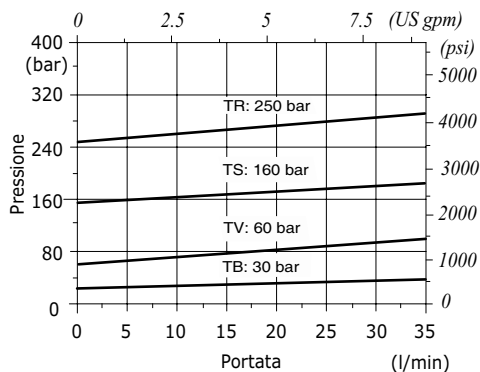
#### **For VMP 10 valve**

**TB** 3MOL316410 Setting range 5-40 bar (72.5-580 psi)  
**TV** 3ML1154300 Setting range 20-80 bar (290-1160 psi)  
**TS** 3MOL317420 Setting range 50-220 bar (725-3200 psi)  
**TR** 3MOL317440 Setting range 180-350 bar (2600-5100 psi)

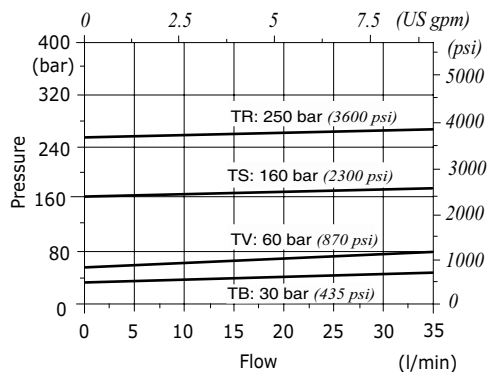


## Rating diagrams

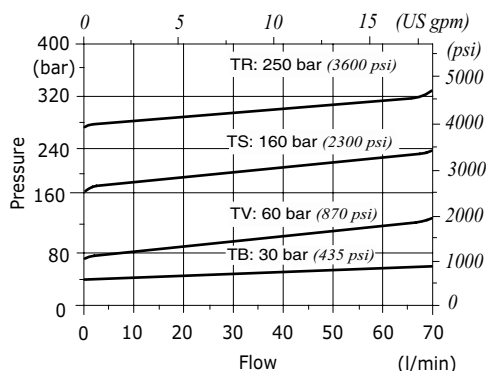
**PBL 6/VMP 38 pressure vs. flow**  
Std. setting @ 5 l/min (1.32 US gpm)



**PBL 6/VMP 38/5Y pressure vs. flow**  
Std. setting @ 5 l/min (1.32 US gpm)



**PBL 10/VMP 12 pressure vs. flow**  
Std. setting @ 5 l/min (1.32 US gpm)





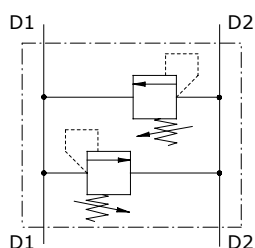
## Type VAIL pressure relief valves

- Double antishock direct acting relief valve

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

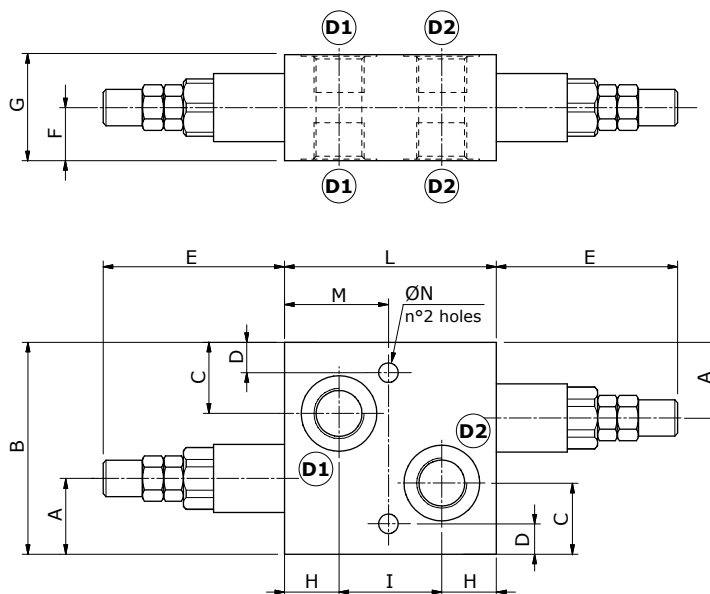
|                                               | VAIL 5-38                                                              | VAIL 5-12                | VAIL 10-12                | VAIL 10-34                | VAIL 20-34                 | VAIL 20-100                |                   |
|-----------------------------------------------|------------------------------------------------------------------------|--------------------------|---------------------------|---------------------------|----------------------------|----------------------------|-------------------|
| Nominal flow                                  | 25 l/min<br>(6.6 US gpm)                                               | 35 l/min<br>(9.2 US gpm) | 70 l/min<br>(18.4 US gpm) | 70 l/min<br>(18.4 US gpm) | 100 l/min<br>(26.4 US gpm) | 120 l/min<br>(31.7 US gpm) |                   |
| Max. pressure                                 | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                          |                           |                           |                            |                            |                   |
| Oil leakage at 80%<br>of max. setting         | 3 cm³/min (0.18 in³/min)                                               |                          |                           |                           |                            |                            |                   |
| Fluid                                         | mineral based oil                                                      |                          |                           |                           |                            |                            |                   |
| Viscosity                                     | from 10 to 200 cSt                                                     |                          |                           |                           |                            |                            |                   |
| Max. level of<br>contamination                | 18/16/13 ISO4406                                                       |                          |                           |                           |                            |                            |                   |
| Fluid temperature                             | with NBR seals from -20°C (-4°F) to 80°C (176°F)                       |                          |                           |                           |                            |                            |                   |
| Environmental temp.<br>for working conditions | from -40°C (-40°F) to 100°C (212°F)                                    |                          |                           |                           |                            |                            |                   |
| Weight                                        | aluminium                                                              | 0.67 kg (1.48 lb)        | 0.69 kg (1.52 lb)         | 1.12 kg (2.47 lb)         | 1.10 kg (2.43 lb)          | 1.87 kg (4.12 lb)          | 1.85 kg (4.08 lb) |
|                                               | steel                                                                  | 1.31 kg (2.89 lb)        | 1.35 kg (2.98 lb)         | 2.20 kg (4.85 lb)         | 2.11 kg (4.65 lb)          | 3.55 kg (7.83 lb)          | 3.93 kg (8.66 lb) |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



### Dimensions

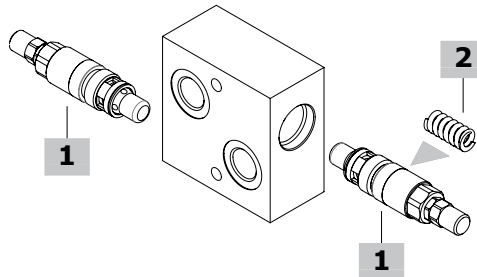
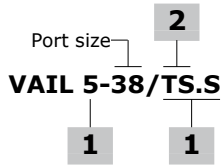
| Valve type      | All ports |
|-----------------|-----------|
| VAIL 5-38       | G3/8      |
| VAIL 5-12       | G1/2      |
| VAIL 10-12      | G1/2      |
| VAIL 10-34      | G3/4      |
| VAIL 20-34      | G3/4      |
| VAIL 20-100     | G1        |
| Valve type      | All ports |
| VAIL 5-38/SAE   | SAE8      |
| VAIL 5-12/SAE   | SAE10     |
| VAIL 10-12/SAE  | SAE10     |
| VAIL 10-34/SAE  | SAE12     |
| VAIL 20-34/SAE  | SAE12     |
| VAIL 20-100/SAE | SAE16     |



Dimensions are in mm-in

| Valve type      | A         | B       | C         | D        | E         | F         | G       | H       | I       | L        | M         | ØN       |
|-----------------|-----------|---------|-----------|----------|-----------|-----------|---------|---------|---------|----------|-----------|----------|
| VAIL 5-38       | 25-0.98   | 70-2.75 | 23.5-0.92 | 10-0.39  | 60-4.92   | 17.5-0.69 | 35-1.38 | 18-0.70 | 34-1.34 | 70-2.75  | 35-1.38   | 6.5-0.25 |
| VAIL 5-38/SAE   |           |         |           |          |           |           |         |         |         |          |           |          |
| VAIL 5-12       | 25-0.98   | 70-2.75 | 23.5-0.92 | 10-0.39  | 60-4.92   | 17.5-0.69 | 35-1.38 | 18-0.70 | 39-1.53 | 75-2.95  | 37.5-1.48 | 6.5-0.25 |
| VAIL 5-12/SAE   |           |         |           |          |           |           |         |         |         |          |           |          |
| VAIL 10-12      | 29-1.41   | 82-3.23 | 25-0.98   | 8.5-0.33 | 67-2.64   | 20-0.79   | 40-1.57 | 20-0.79 | 50-1.97 | 90-3.54  | 45-1.77   | 8.5-0.33 |
| VAIL 10-12/SAE  |           |         |           |          |           |           |         |         |         |          |           |          |
| VAIL 10-34      | 29-1.41   | 82-3.23 | 25-0.98   | 8.5-0.33 | 67-2.64   | 20-0.79   | 40-1.57 | 20-0.79 | 50-1.97 | 90-3.54  | 45-1.77   | 8.5-0.33 |
| VAIL 10-34/SAE  |           |         |           |          |           |           |         |         |         |          |           |          |
| VAIL 20-34      | 31.5-1.84 | 95-3.74 | 30.5-1.2  | 10-0.39  | 76.5-3.01 | 25-0.98   | 50-1.97 | 22-0.87 | 56-2.20 | 100-3.93 | 50-1.97   | 8.5-0.33 |
| VAIL 20-34/SAE  |           |         |           |          |           |           |         |         |         |          |           |          |
| VAIL 20-100     | 31.5-1.84 | 95-3.74 | 30.5-1.2  | 10-0.39  | 76.5-3.01 | 25-0.98   | 50-1.97 | 32-1.26 | 56-2.20 | 120-4.72 | 60-2.36   | 8.5-0.33 |
| VAIL 20-100/SAE |           |         |           |          |           |           |         |         |         |          |           |          |

## Ordering codes and description composition



### VAIL complete valves

*With direct acting valves: standard setting 160 bar @ 5 l/min (2300 psi at 1.32 US gpm)*

| TYPE                                            | CODE       | DESCRIPTION                                             |
|-------------------------------------------------|------------|---------------------------------------------------------|
| <b>Configuration with G3/8 standard thread</b>  |            |                                                         |
| <b>VAIL 5-38/TS.S</b>                           | 1140021102 | Aluminium body, range 50-220 bar (725-3200 psi)         |
| <b>VAIL 5-38/TS.S/ac</b>                        | 1140022100 | Steel body, as previous one                             |
| <b>Configuration with G1/2 standard thread</b>  |            |                                                         |
| <b>VAIL 5-12/TS.S</b>                           | 1140021152 | Aluminium body, setting range 50-220 bar (725-3200 psi) |
| <b>VAIL 5-12/TS.S/ac</b>                        | 1140022150 | Steel body, as previous one                             |
| <b>VAIL 10-12/TS.S</b>                          | 1140031102 | Aluminium body, setting range 50-220 bar (725-3200 psi) |
| <b>VAIL 10-12/TS.S/ac</b>                       | 1140032101 | Steel body, as previous one                             |
| <b>Configuration with G3/4 standard thread</b>  |            |                                                         |
| <b>VAIL 10-34/TS.S</b>                          | 1140031152 | Aluminium body, setting range 50-220 bar (725-3200 psi) |
| <b>VAIL 10-34/TS.S/ac</b>                       | 1140032150 | Steel body, as previous one                             |
| <b>VAIL 20-34/TS.S</b>                          | 1140041102 | Aluminium body, setting range 50-220 bar (725-3200 psi) |
| <b>VAIL 20-34/TS.S/ac</b>                       | 1140042101 | Steel body, as previous one                             |
| <b>Configuration with G1" standard thread</b>   |            |                                                         |
| <b>VAIL 20-100/TS.S</b>                         | 1140041152 | Aluminium body, setting range 50-220 bar (725-3200 psi) |
| <b>VAIL 20-100/TS.S/ac</b>                      | 1140042151 | Steel body, as previous one                             |
| <b>Configuration with SAE8 standard thread</b>  |            |                                                         |
| <b>VAIL 5-38/TS.S/SAE</b>                       | 1140021200 | Aluminium body, range 50-220 bar (725-3200 psi)         |
| <b>Configuration with SAE10 standard thread</b> |            |                                                         |
| <b>VAIL 5-12/TS.S/SAE</b>                       | 1140021250 | Aluminium body, setting range 50-220 bar (725-3200 psi) |
| <b>VAIL 10-12/TS.S</b>                          | 1140031200 | Aluminium body, setting range 50-220 bar (725-3200 psi) |
| <b>Configuration with SAE12 standard thread</b> |            |                                                         |
| <b>VAIL 10-34/TS.S/SAE</b>                      | 1140031250 | Aluminium body, setting range 50-220 bar (725-3200 psi) |
| <b>VAIL 20-34/TS.S/SAE</b>                      | 1140041200 | Aluminium body, setting range 50-220 bar (725-3200 psi) |
| <b>Configuration with SAE16 standard thread</b> |            |                                                         |
| <b>VAIL 20-100/TS.S/SAE</b>                     | 1140041250 | Aluminium body, setting range 50-220 bar (725-3200 psi) |

For other steel body configurations, SAE thread and configurations with FPM (Viton) seals please contact our Sales Dpt.

### 1 Direct acting pressure relief valves

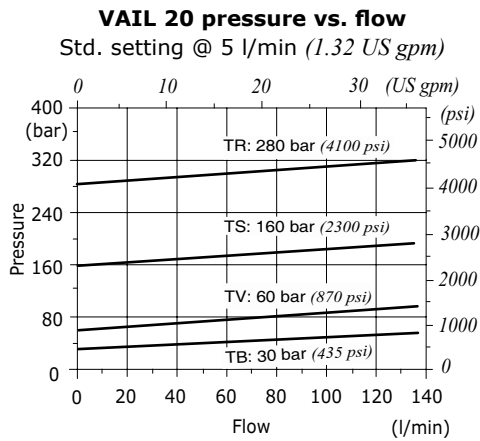
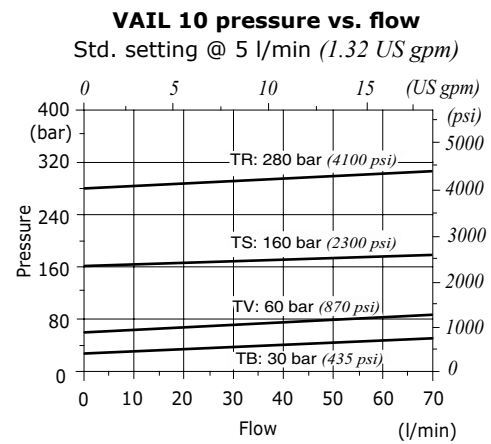
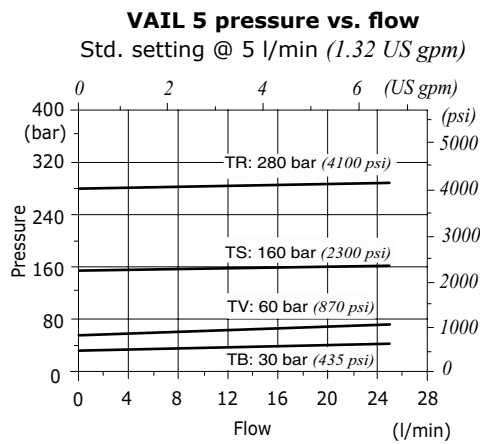
*Standard setting 160 bar @ 5 l/min (2300 psi at 1.32 US gpm)*

| TYPE                                         | CODE       | DESCRIPTION                             |
|----------------------------------------------|------------|-----------------------------------------|
| <b>For G1/2 and G3/4 ports configuration</b> |            |                                         |
| <b>VMP 5/TS.S</b>                            | 1100520400 | Setting range 50-220 bar (725-3200 psi) |
| <b>VMP 10/TS.S</b>                           | 1100530400 | Setting range 50-220 bar (725-3200 psi) |
| <b>For G3/4 and G1" ports configuration</b>  |            |                                         |
| <b>VMP 20/TS.S</b>                           | 1100540400 | Setting range 50-220 bar (725-3200 psi) |

### 2 Pressure setting spring

| CODE                    | TYPE       | DESCRIPTION                               |
|-------------------------|------------|-------------------------------------------|
| <b>For VMP 5 valve</b>  |            |                                           |
| <b>TB</b>               | 3MOL314311 | Setting range 5-40 bar (72.5-580 psi)     |
| <b>TV</b>               | 3MOL314330 | Setting range 20-80 bar (290-1160 psi)    |
| <b>TS</b>               | 3MOL315330 | Setting range 50-220 bar (725-3200 psi)   |
| <b>TR</b>               | 3ML1143600 | Setting range 180-350 bar (2600-5100 psi) |
| <b>For VMP 10 valve</b> |            |                                           |
| <b>TB</b>               | 3ML1154100 | Setting range 5-40 bar (72.5-580 psi)     |
| <b>TV</b>               | 3ML1154300 | Setting range 20-80 bar (290-1160 psi)    |
| <b>TS</b>               | 3ML1164200 | Setting range 50-220 bar (725-3200 psi)   |
| <b>TR</b>               | 3ML1164400 | Setting range 180-350 bar (2600-5100 psi) |
| <b>For VMP 20 valve</b> |            |                                           |
| <b>TB</b>               | 3MOL316410 | Setting range 5-40 bar (72.5-580 psi)     |
| <b>TV</b>               | 3ML1154300 | Setting range 20-80 bar (290-1160 psi)    |
| <b>TS</b>               | 3MOL317420 | Setting range 50-220 bar (725-3200 psi)   |
| <b>TR</b>               | 3MOL317440 | Setting range 180-350 bar (2600-5100 psi) |

### Rating diagrams





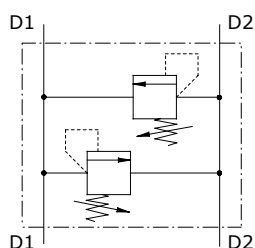
## Type VADDL pressure relief valves

- Double antishock differential acting relief valve

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                               | VADDL 38                                                                                              | VADDL 12             | VADDL 34                | VADDL 100               |                   |
|-----------------------------------------------|-------------------------------------------------------------------------------------------------------|----------------------|-------------------------|-------------------------|-------------------|
| Nominal flow                                  | 35 l/min (9.2 US gpm)                                                                                 | 60 l/min (16 US gpm) | 120 l/min (31.7 US gpm) | 180 l/min (47.6 US gpm) |                   |
| Max. pressure                                 | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi)                                |                      |                         |                         |                   |
| Oil leakage at 80%<br>of max. setting         | 0.5 cm³/min (0.03 in³/min)                                                                            |                      |                         |                         |                   |
| Fluid                                         | mineral based oil                                                                                     |                      |                         |                         |                   |
| Viscosity                                     | from 10 to 200 cSt                                                                                    |                      |                         |                         |                   |
| Max. level of<br>contamination                | 18/16/13 ISO4406                                                                                      |                      |                         |                         |                   |
| Fluid temperature                             | with NBR seals from -20°C (-4°F) to 80°C (176°F)<br>with FPM seals from -20°C (-4°F) to 100°C (212°F) |                      |                         |                         |                   |
| Environmental temp.<br>for working conditions | from -40°C (-40°F) to 100°C (212°F)                                                                   |                      |                         |                         |                   |
| Weight                                        | aluminium                                                                                             | 0.88 kg (1.94 lb)    | 1.17 kg (2.58 lb)       | 1.93 kg (4.25 lb)       | 2.29 kg (5.05 lb) |
|                                               | steel                                                                                                 | 1.53 kg (3.37 lb)    | 2.04 kg (4.50 lb)       | 4.77 kg (7.30 lb)       | 4.16 kg (9.17 lb) |

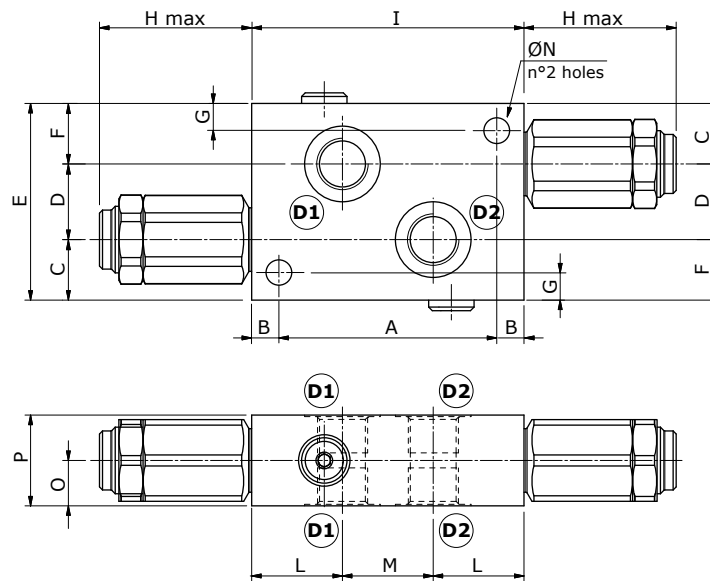
NOTE - For different conditions, please contact Walvoil Sales Dpt.



## Dimensions

| Valve type | All ports |
|------------|-----------|
| VADDL 38   | G3/8      |
| VADDL 12   | G1/2      |
| VADDL 34   | G3/4      |
| VADDL 100  | G1        |

| Valve type    | All ports |
|---------------|-----------|
| VADDL 38/SAE  | SAE8      |
| VADDL 12/SAE  | SAE10     |
| VADDL 34/SAE  | SAE12     |
| VADDL 100/SAE | SAE16     |

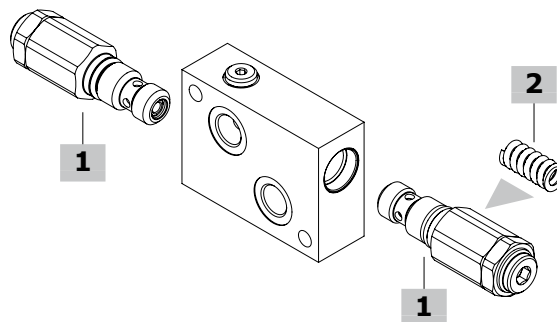


Dimensions are in mm-in

| Valve type    | A       | B       | C       | D       | E        | F       | G       | H max     | I        | L       | M       | ØN       | O         | P       |
|---------------|---------|---------|---------|---------|----------|---------|---------|-----------|----------|---------|---------|----------|-----------|---------|
| VADDL 38      | 72-2.83 | 9-0.35  | 20-0.79 | 25-0.98 | 65-2.56  | 20-0.79 | 9-0.35  | 57.7-2.27 | 90-3.54  | 30-1.18 | 30-1.18 | 8.5-0.33 | 15-0.59   | 30-1.18 |
| VADDL 38/SAE  |         |         |         |         |          |         |         |           |          |         |         |          |           |         |
| VADDL 12      | 80-3.15 | 10-0.39 | 21-0.82 | 27-1.06 | 70-2.75  | 22-0.87 | 10-0.39 | 56.2-2.21 | 100-3.94 | 31-1.22 | 38-1.50 | 8.5-0.33 | 17.5-0.69 | 35-1.38 |
| VADDL 12/SAE  |         |         |         |         |          |         |         |           |          |         |         |          |           |         |
| VADDL 34      | 90-3.54 | 10-0.39 | 31-1.22 | 32-1.26 | 90-3.54  | 27-1.06 | 10-0.39 | 68.8-2.71 | 110-4.33 | 36-1.42 | 38-1.50 | 8.5-0.33 | 20-0.79   | 40-1.57 |
| VADDL 34/SAE  |         |         |         |         |          |         |         |           |          |         |         |          |           |         |
| VADDL 100     | 90-3.54 | 10-0.39 | 34-1.34 | 38-1.50 | 100-3.94 | 28-1.10 | 10-0.39 | 68.8-2.71 | 110-4.33 | 30-1.18 | 50-1.97 | 8.5-0.33 | 25-0.98   | 50-1.97 |
| VADDL 100/SAE |         |         |         |         |          |         |         |           |          |         |         |          |           |         |

## Ordering codes and description composition

Port size **2**  
**VADDL 38/TS.S**  
**1**



### VADDL complete valves

Differential type valve configuration

Standard setting 150 bar @ 5 l/min (2100 psi at 1.32 US gpm)

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

#### Configuration with G3/8 standard thread

|                      |            |                                                         |
|----------------------|------------|---------------------------------------------------------|
| <b>VADDL 38/TS.S</b> | 1150021102 | Aluminium body, setting range 5-210 bar (72.5-3045 psi) |
|----------------------|------------|---------------------------------------------------------|

|                         |            |                             |
|-------------------------|------------|-----------------------------|
| <b>VADDL 38/TS.S/ac</b> | 1150022100 | Steel body, as previous one |
|-------------------------|------------|-----------------------------|

#### Configuration with G1/2 standard thread

|                      |            |                                                         |
|----------------------|------------|---------------------------------------------------------|
| <b>VADDL 12/TS.S</b> | 1150031102 | Aluminium body, setting range 5-210 bar (72.5-3045 psi) |
|----------------------|------------|---------------------------------------------------------|

|                         |            |                             |
|-------------------------|------------|-----------------------------|
| <b>VADDL 12/TS.S/ac</b> | 1150032100 | Steel body, as previous one |
|-------------------------|------------|-----------------------------|

#### Configuration with G3/4 standard thread

|                      |            |                                                         |
|----------------------|------------|---------------------------------------------------------|
| <b>VADDL 34/TS.S</b> | 1150041102 | Aluminium body, setting range 5-210 bar (72.5-3045 psi) |
|----------------------|------------|---------------------------------------------------------|

|                         |            |                             |
|-------------------------|------------|-----------------------------|
| <b>VADDL 34/TS.S/ac</b> | 1150042101 | Steel body, as previous one |
|-------------------------|------------|-----------------------------|

#### Configuration with G1" standard thread

|                       |            |                                                         |
|-----------------------|------------|---------------------------------------------------------|
| <b>VADDL 100/TS.S</b> | 1150051102 | Aluminium body, setting range 5-210 bar (72.5-3045 psi) |
|-----------------------|------------|---------------------------------------------------------|

|                          |            |                             |
|--------------------------|------------|-----------------------------|
| <b>VADDL 100/TS.S/ac</b> | 1150052100 | Steel body, as previous one |
|--------------------------|------------|-----------------------------|

#### Configuration with SAE8 standard thread

|                          |            |                                                         |
|--------------------------|------------|---------------------------------------------------------|
| <b>VADDL 38/TS.S/SAE</b> | 1150021200 | Aluminium body, setting range 5-210 bar (72.5-3045 psi) |
|--------------------------|------------|---------------------------------------------------------|

#### Configuration with SAE10 standard thread

|                          |            |                                                         |
|--------------------------|------------|---------------------------------------------------------|
| <b>VADDL 12/TS.S/SAE</b> | 1150031201 | Aluminium body, setting range 5-210 bar (72.5-3045 psi) |
|--------------------------|------------|---------------------------------------------------------|

#### Configuration with SAE12 standard thread

|                          |            |                                                         |
|--------------------------|------------|---------------------------------------------------------|
| <b>VADDL 34/TS.S/SAE</b> | 1150041200 | Aluminium body, setting range 5-210 bar (72.5-3045 psi) |
|--------------------------|------------|---------------------------------------------------------|

#### Configuration with SAE16 standard thread

|                           |            |                                                         |
|---------------------------|------------|---------------------------------------------------------|
| <b>VADDL 100/TS.S/SAE</b> | 1150051200 | Aluminium body, setting range 5-210 bar (72.5-3045 psi) |
|---------------------------|------------|---------------------------------------------------------|

For other steel body configurations, SAE thread and configurations with FPM (Viton) seals, please contact our Sales Dpt.

### 1 Direct acting pressure relief valves

Standard setting 150 bar @ 5 l/min (2100 psi at 1.32 US gpm)

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

#### For G3/8 ports configuration

|                     |            |                                         |
|---------------------|------------|-----------------------------------------|
| <b>VMPD 38/TS.S</b> | 1120020402 | Setting range 5-210 bar (72.5-3050 psi) |
|---------------------|------------|-----------------------------------------|

#### For G1/2 ports configuration

|                     |            |                                         |
|---------------------|------------|-----------------------------------------|
| <b>VMPD 12/TS.S</b> | 1120030402 | Setting range 5-210 bar (72.5-3050 psi) |
|---------------------|------------|-----------------------------------------|

#### For G3/4 and G1" ports configuration

|                     |            |                                         |
|---------------------|------------|-----------------------------------------|
| <b>VMPD 34/TS.S</b> | 1120040402 | Setting range 5-210 bar (72.5-3050 psi) |
|---------------------|------------|-----------------------------------------|

### 2 Pressure setting spring

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

#### For VMPD 38 valve

|           |            |                                         |
|-----------|------------|-----------------------------------------|
| <b>TS</b> | 3ML1144000 | Setting range 5-210 bar (72.5-3050 psi) |
|-----------|------------|-----------------------------------------|

|           |            |                                         |
|-----------|------------|-----------------------------------------|
| <b>TR</b> | 3ML1144001 | Setting range 50-350 bar (725-5100 psi) |
|-----------|------------|-----------------------------------------|

#### For VMPD 12 valve

|           |            |                                         |
|-----------|------------|-----------------------------------------|
| <b>TS</b> | 3ML1164000 | Setting range 5-210 bar (72.5-3050 psi) |
|-----------|------------|-----------------------------------------|

|           |            |                                         |
|-----------|------------|-----------------------------------------|
| <b>TR</b> | 3ML1164001 | Setting range 50-350 bar (725-5100 psi) |
|-----------|------------|-----------------------------------------|

#### For VMPD 34 valve

|           |            |                                         |
|-----------|------------|-----------------------------------------|
| <b>TS</b> | 3ML1194500 | Setting range 5-210 bar (72.5-3050 psi) |
|-----------|------------|-----------------------------------------|

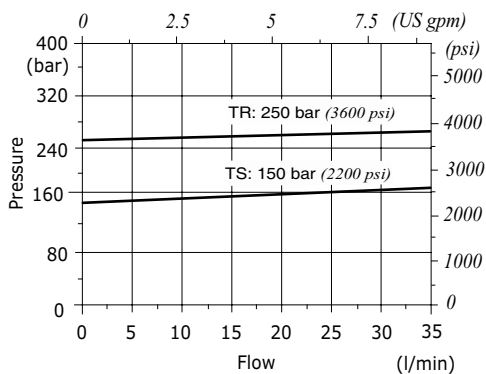
|           |            |                                         |
|-----------|------------|-----------------------------------------|
| <b>TR</b> | 3ML1194501 | Setting range 50-350 bar (725-5100 psi) |
|-----------|------------|-----------------------------------------|



## Rating diagrams

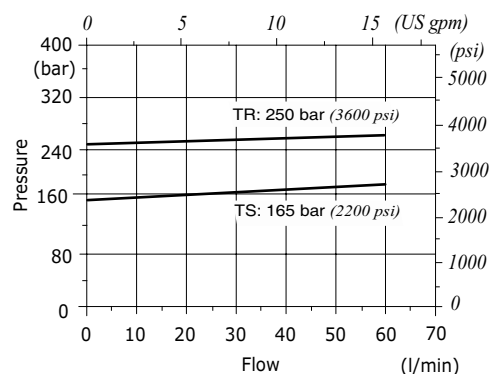
### VADDL 38 pressure drop vs. flow

Std. setting @ 5 l/min (1.32 US gpm)



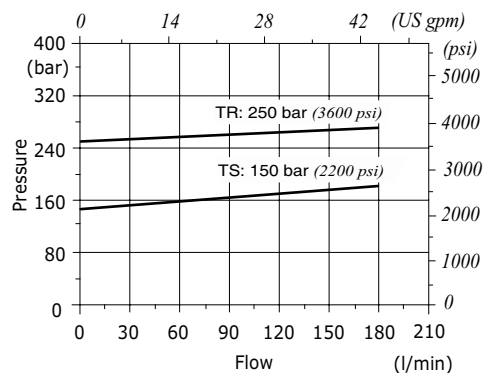
### VADDL 12 pressure drop vs. flow

Std. setting @ 5 l/min (1.32 US gpm)



### VADDL 34-100 pressure drop vs. flow

Std. setting @ 5 l/min (1.32 US gpm)





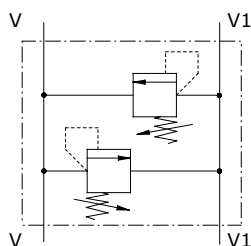
## Type VBDC..35 - VBDC..80 pressure relief valves

- Dual cross relief valve

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

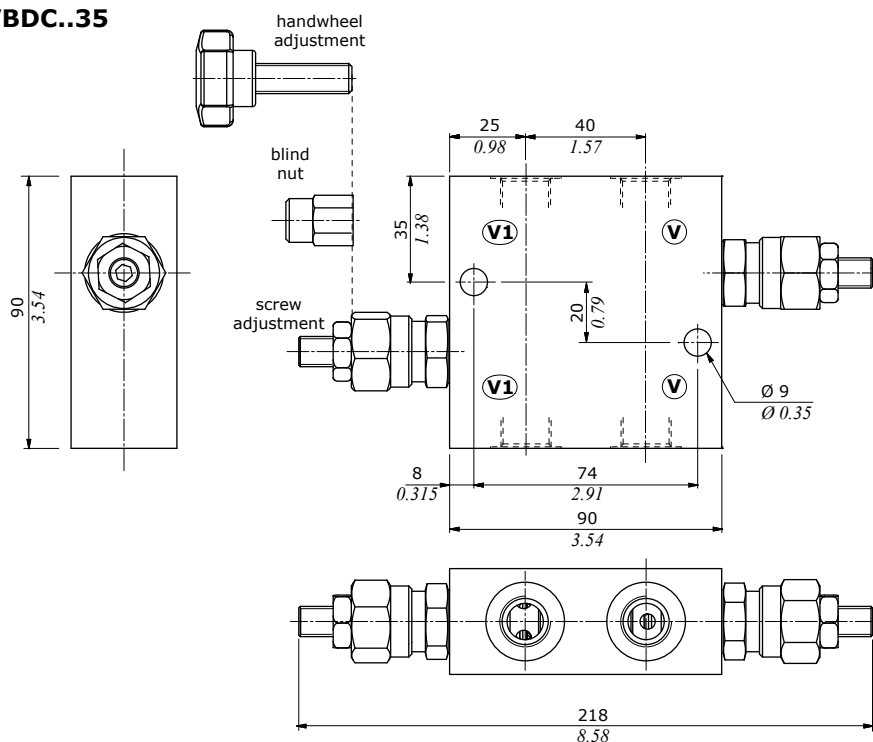
|                                            | <b>VBDC..3502</b>                                                      | <b>VBDC..3503</b>     | <b>VBDC..8003</b>    | <b>VBDC..8004</b>    |
|--------------------------------------------|------------------------------------------------------------------------|-----------------------|----------------------|----------------------|
| Nominal flow                               | 35 l/min (9.2 US gpm)                                                  | 35 l/min (9.2 US gpm) | 80 l/min (21 US gpm) | 80 l/min (21 US gpm) |
| Max. pressure                              | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                       |                      |                      |
| Fluid                                      | mineral based oil                                                      |                       |                      |                      |
| Viscosity                                  | from 10 to 200 cSt                                                     |                       |                      |                      |
| Max. level of contamination                | 18/16/13 ISO4406                                                       |                       |                      |                      |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F)                       |                       |                      |                      |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                                    |                       |                      |                      |
| Weight                                     | alum.                                                                  | 0.80 kg (1.76 lb)     | 0.80 kg (1.76 lb)    | 1.65 kg (3.64 lb)    |
|                                            | steel                                                                  | 2.10 kg (4.63 lb)     | 2 kg (4.41 lb)       | 3.40 kg (7.49 lb)    |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



### Dimensions

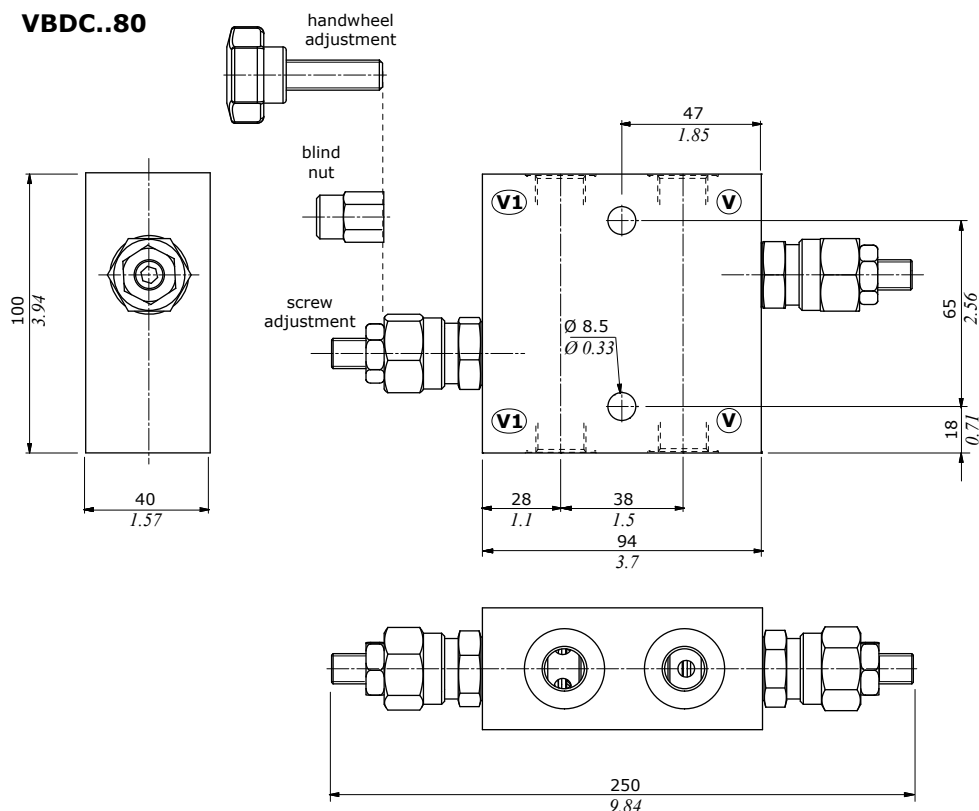
#### VBDC..35



| Valve type | All ports |
|------------|-----------|
| VBDC..3502 | G3/8      |
| VBDC..3503 | G1/2      |

Dimensions are in mm-in

#### VBDC..80



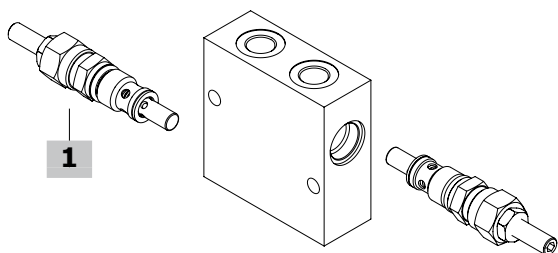
| Valve type | All ports |
|------------|-----------|
| VBDC..8003 | G1/2      |
| VBDC..8004 | G3/4      |

Dimensions are in mm-in

## Ordering codes and description composition

Port size: **02**  
- aluminium  
**S** = steel

Setting range: **B 1**  
Adjustment option:  
**1** = screw type  
**2** = handwheel type  
**3** = blind nut



| Type           |          | Setting range<br>bar (psi) | Std. setting<br>bar (psi) |
|----------------|----------|----------------------------|---------------------------|
| <b>VMD..35</b> | <b>A</b> | 5-50 (72.5-725)            | 40 (580)                  |
|                | <b>B</b> | 40-210 (580-3050)          | 100 (1450)                |
|                | <b>C</b> | 100-350 (1450-5100)        | 100 (1450)                |
| <b>VMD..80</b> | <b>A</b> | 5-50 (72.5-725)            | 40 (580)                  |
|                | <b>B</b> | 20-260 (290-3770)          | 100 (1450)                |
|                | <b>C</b> | 120-350 (1750-5100)        | 120 (1740)                |

### VBDC..35 - VBDC..80 complete valves

Standard setting 100 bar @ 3 l/min (1450 psi @ 0.79 US gpm)

| TYPE               | CODE       | DESCRIPTION                                             |
|--------------------|------------|---------------------------------------------------------|
| <b>VBDC3502B1</b>  | 1145221100 | Aluminium body, setting range 40-210 bar (580-3045 psi) |
| <b>VBDCS3502B1</b> | 1145222100 | Steel body, setting range 40-210 bar (580-3045 psi)     |

### Configuration with G1/2 standard thread

|                    |            |                                                         |
|--------------------|------------|---------------------------------------------------------|
| <b>VBDC3503B1</b>  | 1145221101 | Aluminium body, setting range 40-210 bar (580-3045 psi) |
| <b>VBDCS3503B1</b> | 1145222101 | Steel body, setting range 40-210 bar (580-3045 psi)     |

### Configuration with G3/4 standard thread

|                    |            |                                                         |
|--------------------|------------|---------------------------------------------------------|
| <b>VBDC8004B1</b>  | 1145231100 | Aluminium body, setting range 20-260 bar (290-3770 psi) |
| <b>VBDCS8004C1</b> | 1145232100 | Steel body, setting range 120-350 bar (1740-5070 psi)   |

For different configurations and SAE thread please contact our Sales Dpt.

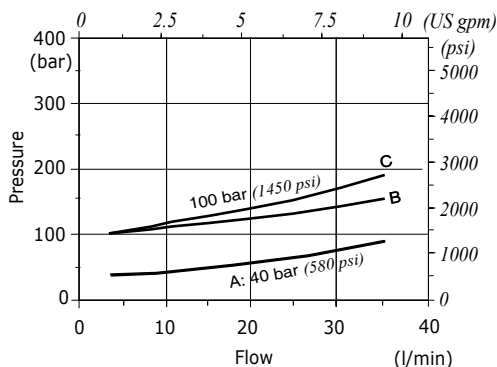
### 1 Direct acting pressure relief valves

Standard setting 100 bar @ 3 l/min (1450 psi @ 0.79 US gpm)

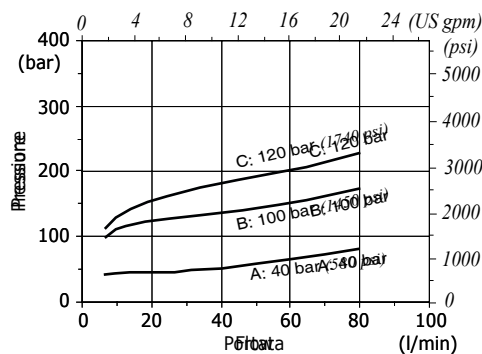
| TYPE                      | CODE       | DESCRIPTION                                        |
|---------------------------|------------|----------------------------------------------------|
| <b>For VBDC..35 valve</b> |            |                                                    |
| <b>VMDC35B1(M20X1,5)</b>  | 1100220400 | Screw adjustment from 40 to 210 bar (580-3050 psi) |
| <b>For VBDC..80 valve</b> |            |                                                    |
| <b>VMDC80B1(M26X1,5)</b>  | 1100230400 | Screw adjustment from 40 to 260 bar (580-3770 psi) |

## Rating diagrams

**VBDC..35 pressure vs. flow**  
Std. setting @ 5 l/min (1.32 US gpm)



**VBDC..80 pressure vs. flow**  
Std. setting @ 5 l/min (1.32 US gpm)







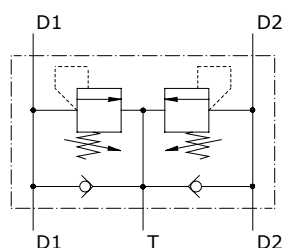
## Type VAIL/VA pressure relief valves

- Double antishock direct acting relief valve with anticavitation

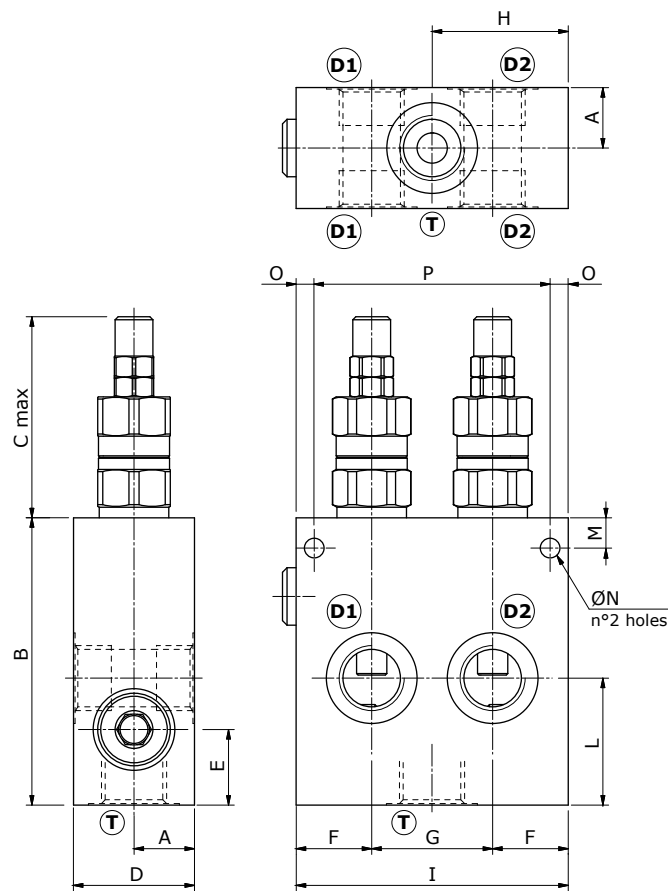
Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

| VAIL/VA 12                                    |           | VAIL/VA 34                                                                                            |  |                      |  |
|-----------------------------------------------|-----------|-------------------------------------------------------------------------------------------------------|--|----------------------|--|
| Nominal flow                                  |           | 35 l/min (9.2 US gpm)                                                                                 |  | 80 l/min (21 US gpm) |  |
| Max. pressure                                 |           | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi)                                |  |                      |  |
| Oil leakage at 80%<br>of max. setting         |           | 6 cm³/min (0.37 in³/min)                                                                              |  |                      |  |
| Fluid                                         |           | mineral based oil                                                                                     |  |                      |  |
| Viscosity                                     |           | from 10 to 200 cSt                                                                                    |  |                      |  |
| Max. level of<br>contamination                |           | 18/16/13 ISO4406                                                                                      |  |                      |  |
| Fluid temperature                             |           | with NBR seals from -20°C (-4°F) to 80°C (176°F)<br>with FPM seals from -20°C (-4°F) to 100°C (212°F) |  |                      |  |
| Environmental temp.<br>for working conditions |           | from -40°C (-40°F) to 100°C (212°F)                                                                   |  |                      |  |
| Weight                                        | aluminium | 2.48 kg (5.47 lb)                                                                                     |  | 2.23 kg (4.92 lb)    |  |
|                                               | steel     | 3.49 kg (7.69 lb)                                                                                     |  | 4.47 kg (9.85 lb)    |  |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



Dimensions



| Valve type | All ports |
|------------|-----------|
| VAIL/VA 12 | G1/2      |
| VAIL/VA 34 | G3/4      |

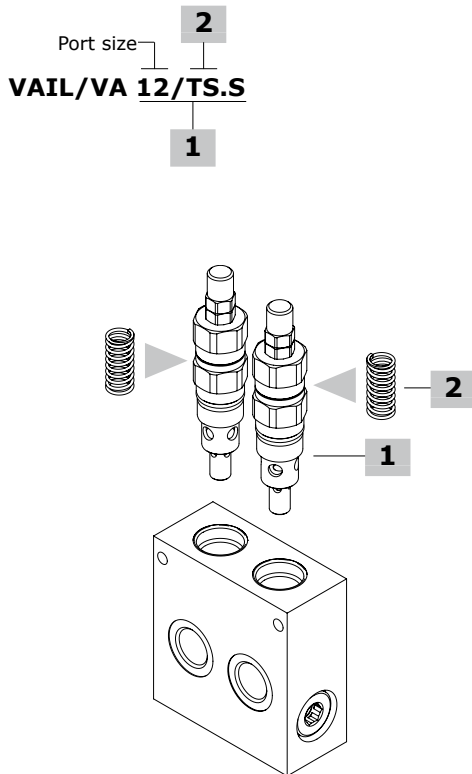
  

| Valve type     | All ports |
|----------------|-----------|
| VAIL/VA 12/SAE | SAE10     |
| VAIL/VA 34/SAE | SAE12     |

Dimensions are in mm-in

| Valve type                   | A       | B        | C         | D       | E       | F       | G       | H       | I        | L       | M       | ØN       | O      | P       |
|------------------------------|---------|----------|-----------|---------|---------|---------|---------|---------|----------|---------|---------|----------|--------|---------|
| VAIL/VA 12<br>VAIL/VA 12/SAE | 20-0.79 | 95-3.74  | 68-2.68   | 40-1.57 | 25-0.98 | 25-0.98 | 40-1.57 | 45-1.77 | 90-3.54  | 42-1.65 | 10-0.39 | 6.5-0.25 | 6-0.24 | 78-3.07 |
| VAIL/VA 34<br>VAIL/VA 34/SAE | 25-0.98 | 110-4.33 | 82.5-3.25 | 50-1.97 | 24-0.94 | 29-1.14 | 52-2.05 | 55-2.05 | 110-4.33 | 47-1.85 | 10-0.39 | 8.5-0.33 | 8-0.31 | 94-3.70 |

## Ordering codes and description composition



### VAIL/VA complete valves

*Aluminium body configuration, with direct acting valves; standard setting 140 bar @ 5 l/min (2030 psi at 1.32 US gpm)*

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

#### Configuration with G1/2 standard thread

**VAIL/VA 12/TS.S** 1142031102 Range 50-200 bar (725-2900 psi)

**VAIL/VA 12/TS.S/ac** 1142032101 Range 50-200 bar (725-2900 psi)

#### Configuration with G3/4 standard thread

**VAIL/VA 34/TS.S** 1142041102 Range 50-200 bar (725-2900 psi)

**VAIL/VA 34/TS.S/ac** 1142042100 Range 50-200 bar (725-2900 psi)

#### Configuration with SAE10 standard thread

**VAIL/VA 12/TS.S/SAE** 1142031200 Range 50-200 bar (725-2900 psi)

#### Configuration with SAE12 standard thread

**VAIL/VA 34/TS.S/SAE** 1142041200 Range 50-200 bar (725-2900 psi)

### 1 Direct acting pressure relief valves

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

#### For G1/2 and SAE10 ports configuration

**VMP 12/TS.S** 1100030406 Setting range 50-200 bar (725-2900 psi)

#### For G3/4 and SAE12 ports configuration

**VMP 34/TS.S** 1100040406 Setting range 50-200 bar (725-2900 psi)

### 2 Pressure setting spring

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

#### For VAIL/VA 12 valve

**TB** 3ML1144600 Setting range 5-30 bar (72.5-435 psi)

**TV** 3ML1144601 Setting range 20-100 bar (290-1450 psi)

**TS** 3ML1144602 Setting range 50-200 bar (725-2900 psi)

**TR** 3ML1144603 Setting range 100-300 bar (1450-4350 psi)

#### For VAIL/VA 34 valve

**TV** 3ML1166804 Setting range 5-100 bar (72.5- 1450 psi)

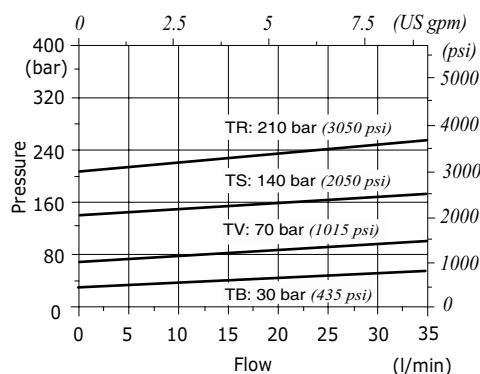
**TS** 3ML1146800 Setting range 50-200 bar (725-2900 psi)

**TR** 3ML1166805 Setting range 100-300 bar (1450-4350 psi)

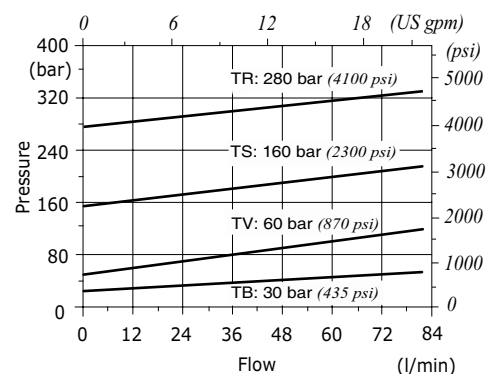
For other steel body configurations, SAE thread and configurations with FPM (Viton) seals, please contact our Sales Dpt.

## Rating diagrams

**VAIL/VA 12 pressure drop vs. flow**  
Std. setting @ 5 l/min (1.32 US gpm)



**VAIL/VA 34 pressure drop vs. flow**  
Std. setting @ 5 l/min (1.32 US gpm)









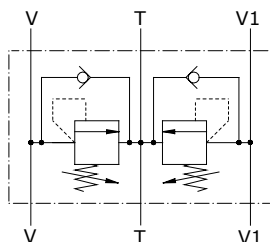
## Type VMDACSV pressure relief valves

- Double antishock differential relief valve with anticavitation

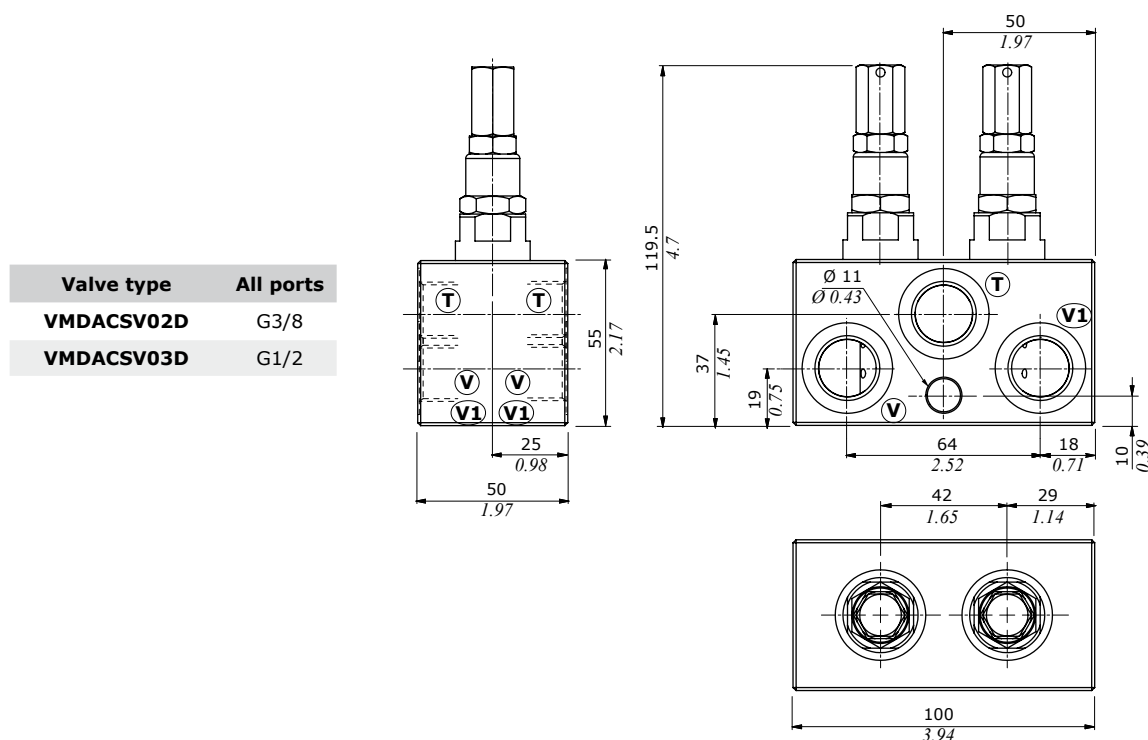
Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                                  | VMDACSV 02                                       | VMDACSV 03             |
|--------------------------------------------------|--------------------------------------------------|------------------------|
| Nominal flow                                     | 45 l/min (11.9 US gpm)                           | 70 l/min (18.5 US gpm) |
| Max. pressure                                    | Steel body = 350 bar (5100 psi)                  |                        |
| Fluid                                            | mineral based oil                                |                        |
| Viscosity                                        | from 10 to 200 cSt                               |                        |
| Max. level of contamination                      | 18/16/13 ISO4406                                 |                        |
| Fluid temperature                                | with NBR seals from -20°C (-4°F) to 80°C (176°F) |                        |
| Environmental temperature for working conditions | from -40°C (-40°F) to 100°C (212°F)              |                        |
| Weight                                           | steel 1.96 kg (4.31 lb)                          | 1.85 kg (4.08 lb)      |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



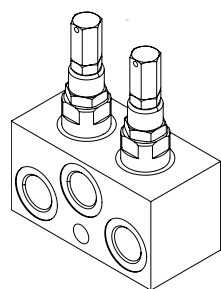
## Dimensions



## Ordering codes and description composition

Port size | Setting range

**VMDACSV 03 D**



| Spring type | Setting range         | Std. setting  |
|-------------|-----------------------|---------------|
|             | bar (psi)             | bar (psi)     |
| D           | 95-160<br>(1800-2300) | 140<br>(2030) |

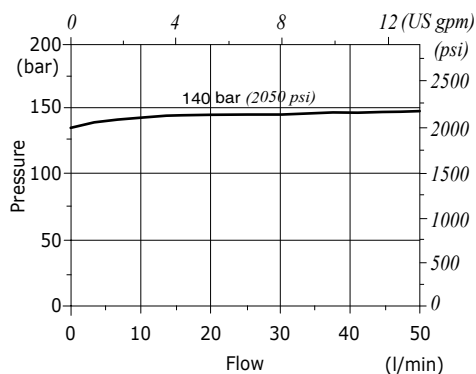
### VMDACSV complete valves

| TYPE                                           | CODE       | DESCRIPTION                                                                                                  |
|------------------------------------------------|------------|--------------------------------------------------------------------------------------------------------------|
| <b>Configuration with G3/8 standard thread</b> |            |                                                                                                              |
| VMDACSV02D                                     | 1152521100 | Steel body, setting range 95-160 bar (1380-2300 psi), std setting 140 bar @ 5 l/min (2030 psi @ 1.32 US gpm) |
| <b>Configuration with G1/2 standard thread</b> |            |                                                                                                              |
| VMDACSV03D                                     | 1152531101 | Steel body, setting range 95-160 bar (1380-2300 psi), std setting 140 bar @ 5 l/min (2030 psi @ 1.32 US gpm) |

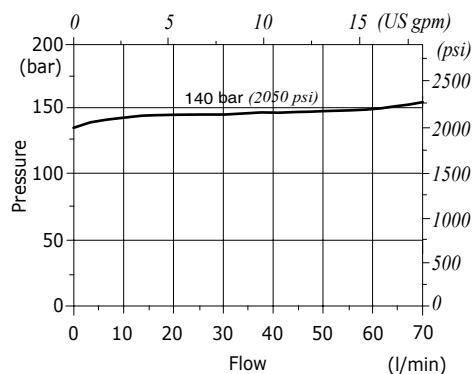
For different configurations and SAE thread please contact our Sales Dpt.

## Rating diagrams

**VMDACSV02D pressure vs. flow**  
Examples setting range @ 5 l/min (1.32 US gpm)



**VMDACSV03D pressure vs. flow**  
Examples setting range @ 5 l/min (1.32 US gpm)





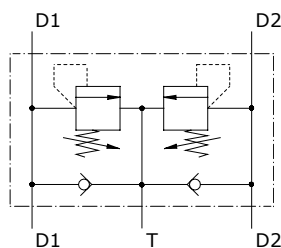
## Type VADDL/VA pressure relief valves

- Double antishock differential acting relief valve with anticavitation

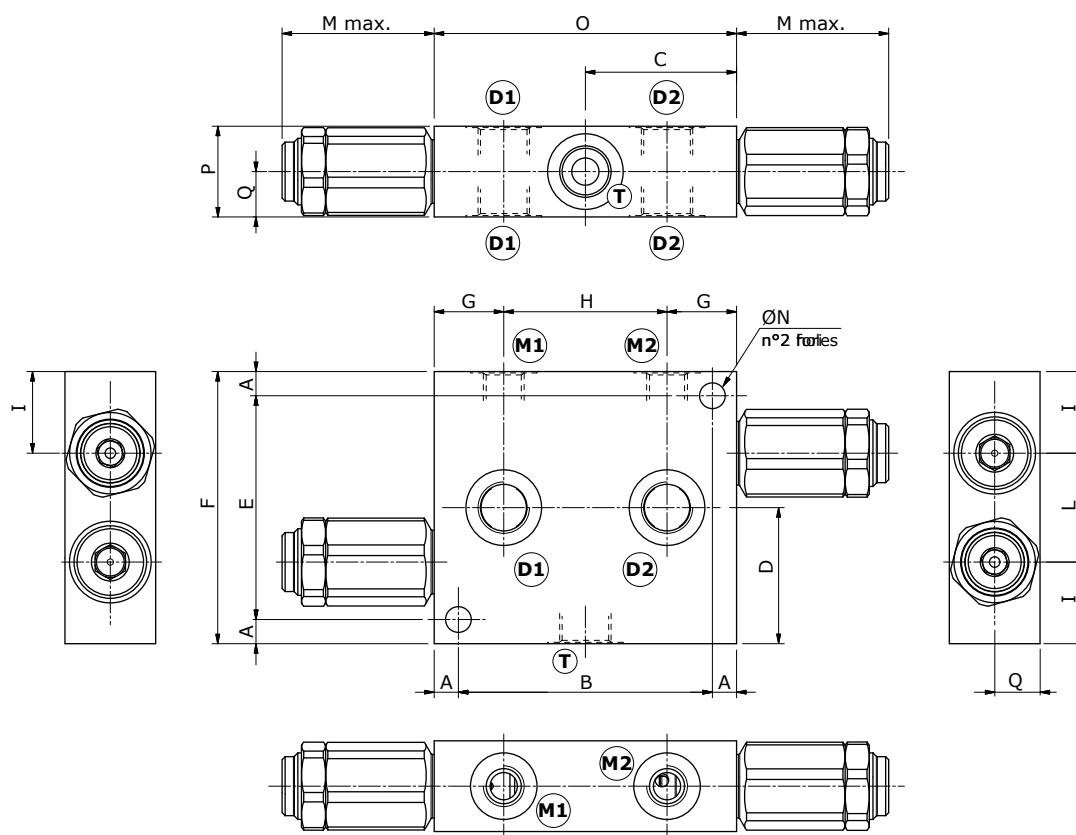
Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                                  | VADDL/VA 38                                                            | VADDL/VA 12          | VADDL/VA 34             | VADDL/VA 100            |                    |
|--------------------------------------------------|------------------------------------------------------------------------|----------------------|-------------------------|-------------------------|--------------------|
| Nominal flow                                     | 35 l/min (9.2 US gpm)                                                  | 60 l/min (16 US gpm) | 120 l/min (31.7 US gpm) | 180 l/min (47.6 US gpm) |                    |
| Max. pressure                                    | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                      |                         |                         |                    |
| Oil leakage at 80% of max. setting               | 0.50 cm³/min (0.03 in³/min)                                            |                      |                         |                         |                    |
| Fluid                                            | mineral based oil                                                      |                      |                         |                         |                    |
| Viscosity                                        | from 10 to 200 cSt                                                     |                      |                         |                         |                    |
| Max. level of contamination                      | 18/16/13 ISO4406                                                       |                      |                         |                         |                    |
| Fluid temperature                                | with NBR seals from -20°C (-4°F) to 80°C (176°F)                       |                      |                         |                         |                    |
| Environmental temperature for working conditions | from -40°C (-40°F) to 100°C (212°F)                                    |                      |                         |                         |                    |
| Weight                                           | aluminium                                                              | 1.14 kg (2.51 lb)    | 1.58 kg (3.48 lb)       | 3.25 kg (7.16 lb)       | 3.57 kg (7.87 lb)  |
|                                                  | steel                                                                  | 2.10 kg (4.63 lb)    | 3.10 kg (6.83 lb)       | 6.50 kg (14.33 lb)      | 7.78 kg (17.15 lb) |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



## Dimensions



| Valve type   | D1   | D2   | T | M1 | M2 |
|--------------|------|------|---|----|----|
| VADDL/VA 38  | G3/8 | G1/4 |   |    |    |
| VADDL/VA 12  | G1/2 | G1/4 |   |    |    |
| VADDL/VA 34  | G3/4 | G1/4 |   |    |    |
| VADDL/VA 100 | G1"  | G1/4 |   |    |    |

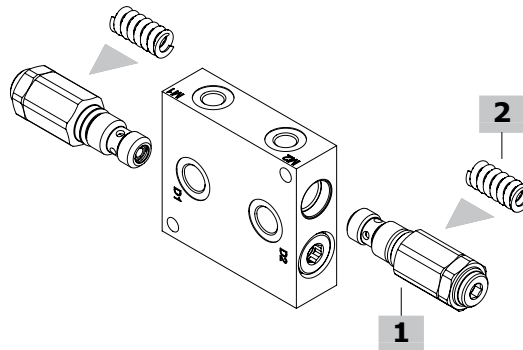
| Valve type       | D1    | D2   | T | M1 | M2 |
|------------------|-------|------|---|----|----|
| VADDL/VA 38/SAE  | SAE8  | SAE6 |   |    |    |
| VADDL/VA 12/SAE  | SAE10 | SAE6 |   |    |    |
| VADDL/VA 34/SAE  | SAE12 | SAE6 |   |    |    |
| VADDL/VA 100/SAE | SAE16 | SAE6 |   |    |    |

Dimensions are in mm-in

| Valve type                       | A       | B        | C       | D max     | E        | F        | G       | H       | I       | L       | M       | ØN        | O        | P       | Q       |
|----------------------------------|---------|----------|---------|-----------|----------|----------|---------|---------|---------|---------|---------|-----------|----------|---------|---------|
| VADDL/VA 38<br>VADDL/VA 38/SAE   | 8-0.31  | 84-3.31  | 50-1.97 | 57.7-2.27 | 74-2.91  | 90-3.54  | 23-0.90 | 54-2.12 | 27-1.06 | 36-1.42 | 52-2.05 | 8.5-0.33  | 100-3.94 | 30-1.18 | 15-0.59 |
| VADDL/VA 12<br>VADDL/VA 12/SAE   | 8-0.31  | 84-3.31  | 46-1.81 | 56.2-2.21 | 84-3.30  | 100-3.94 | 23-0.90 | 54-2.12 | 30-1.18 | 40-1.57 | 57-2.24 | 8.5-0.33  | 100-3.94 | 40-1.57 | 20-0.79 |
| VADDL/VA 34<br>VADDL/VA 34/SAE   | 10-0.39 | 110-4.33 | 55-1.97 | 68.8-2.71 | 100-3.94 | 120-4.72 | 28-1.10 | 64-2.52 | 37-1.46 | 46-1.81 | 66-2.60 | 10.5-0.41 | 120-4.72 | 60-3.15 | 30-1.18 |
| VADDL/VA 100<br>VADDL/VA 100/SAE | 10-0.39 | 110-4.33 | 70-2.75 | 68.8-2.71 | 110-4.33 | 130-5.11 | 30-1.18 | 70-2.75 | 37-1.46 | 56-2.20 | 66-2.60 | 10.5-0.41 | 130-5.11 | 70-2.75 | 35-1.38 |

## Ordering codes and description composition

Port size **2**  
**VADDL/VA 38/TS.S**  
**1**



### VADDL/VA complete valves

Differential type valve configuration

Standard setting 150 bar @ 5 l/min (2100 psi at 1.32 US gpm)

| TYPE                                                   | CODE       | DESCRIPTION                                             |
|--------------------------------------------------------|------------|---------------------------------------------------------|
| <b><u>Configuration with G3/8 standard thread</u></b>  |            |                                                         |
| <b>VADDL/VA 38/TS.S</b>                                | 1152021102 | Aluminium body, setting range 5-210 bar (72.5-3045 psi) |
| <b>VADDL/VA 38/TS.S/ac</b>                             | 1152022100 | Steel body, as previous one                             |
| <b><u>Configuration with G1/2 standard thread</u></b>  |            |                                                         |
| <b>VADDL/VA 12/TS.S</b>                                | 1152031102 | Aluminium body, setting range 5-210 bar (72.5-3045 psi) |
| <b>VADDL/VA 12/TS.S/ac</b>                             | 1152032100 | Steel body, as previous one                             |
| <b><u>Configuration with G3/4 standard thread</u></b>  |            |                                                         |
| <b>VADDL/VA 34/TS.S</b>                                | 1152041102 | Aluminium body, setting range 5-210 bar (72.5-3045 psi) |
| <b>VADDL/VA 34/TS.S/ac</b>                             | 1152042100 | Steel body, as previous one                             |
| <b><u>Configuration with G1" standard thread</u></b>   |            |                                                         |
| <b>VADDL/VA 100/TS.S</b>                               | 1152051102 | Aluminium body, setting range 5-210 bar (72.5-3045 psi) |
| <b>VADDL/VA 100/TS.S/ac</b>                            | 1152052100 | Steel body, as previous one                             |
| <b><u>Configuration with SAE8 standard thread</u></b>  |            |                                                         |
| <b>VADDL/VA 38/TS.S/SAE</b>                            | 1152021200 | Aluminium body, setting range 5-210 bar (72.5-3045 psi) |
| <b><u>Configuration with SAE10 standard thread</u></b> |            |                                                         |
| <b>VADDL/VA 12/TS.S/SAE</b>                            | 1152031200 | Aluminium body, setting range 5-210 bar (72.5-3045 psi) |
| <b><u>Configuration with SAE12 standard thread</u></b> |            |                                                         |
| <b>VADDL/VA 34/TS.S/SAE</b>                            | 1152041200 | Aluminium body, setting range 5-210 bar (72.5-3045 psi) |
| <b><u>Configuration with SAE16 standard thread</u></b> |            |                                                         |
| <b>VADDL/VA 100/TS.S/SAE</b>                           | 1152051200 | Aluminium body, setting range 5-210 bar (72.5-3045 psi) |

For other steel body configurations, SAE thread and configurations with FPM (Viton) seals, please contact our Sales Dpt.

### 1 Direct acting pressure relief valves

Standard setting 150 bar @ 5 l/min (2100 psi at 1.32 US gpm)

| TYPE                                                             | CODE       | DESCRIPTION                             |
|------------------------------------------------------------------|------------|-----------------------------------------|
| <b><u>For G3/8 and SAE8 ports configuration</u></b>              |            |                                         |
| <b>VMPD 38/TS.S</b>                                              | 1120020402 | Setting range 5-210 bar (72.5-3050 psi) |
| <b><u>For G1/2 and SAE10 ports configuration</u></b>             |            |                                         |
| <b>VMPD 12/TS.S</b>                                              | 1120030402 | Setting range 5-210 bar (72.5-3050 psi) |
| <b><u>For G3/4, G1", SAE12 and SAE16 ports configuration</u></b> |            |                                         |
| <b>VMPD 34/TS.S</b>                                              | 1120040402 | Setting range 5-210 bar (72.5-3050 psi) |

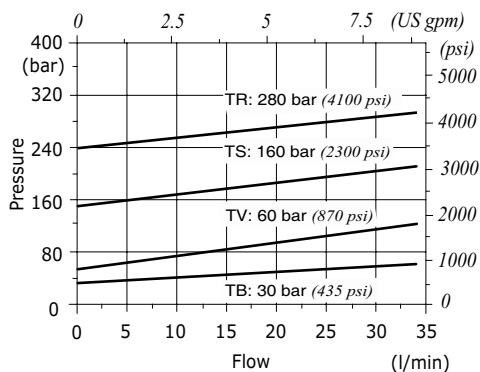
### 2 Pressure setting spring

| TYPE                            | CODE       | DESCRIPTION                                |
|---------------------------------|------------|--------------------------------------------|
| <b><u>For VMPD 38 valve</u></b> |            |                                            |
| <b>TS</b>                       | 3ML1144000 | Spring for range 5-210 bar (72.5-3050 psi) |
| <b>TR</b>                       | 3ML1144001 | Spring for range 50-350 bar (725-5100 psi) |
| <b><u>For VMPD 12 valve</u></b> |            |                                            |
| <b>TS</b>                       | 3ML1164000 | Spring for range 5-210 bar (72.5-3050 psi) |
| <b>TR</b>                       | 3ML1164001 | Spring for range 50-350 bar (725-5100 psi) |
| <b><u>For VMPD 34 valve</u></b> |            |                                            |
| <b>TS</b>                       | 3ML1194500 | Spring for range 5-210 bar (72.5-3050 psi) |
| <b>TR</b>                       | 3ML1194501 | Spring for range 50-350 bar (725-5100 psi) |

### Rating diagrams

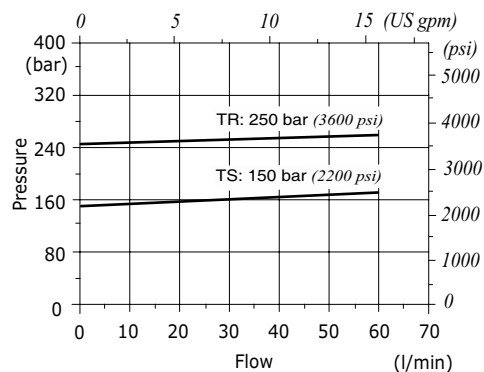
#### VADDL/VA 38 pressure vs. flow

Std. setting @ 5 l/min (1.32 US gpm)



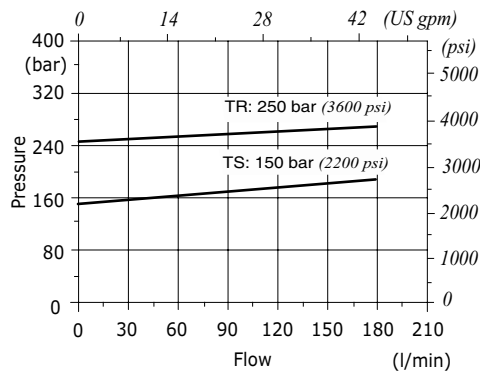
#### VADDL/VA 12 pressure vs. flow

Std. setting @ 5 l/min (1.32 US gpm)



#### VADDL/VA 34-100 pressure vs. flow

Std. setting @ 5 l/min (1.32 US gpm)





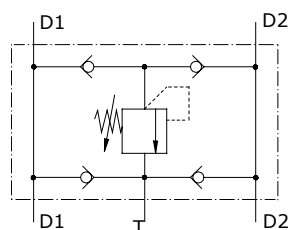
## Type VAA/RU/DL pressure relief valves

- Antishock direct acting relief valve with anticavitation, with single adjustment

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

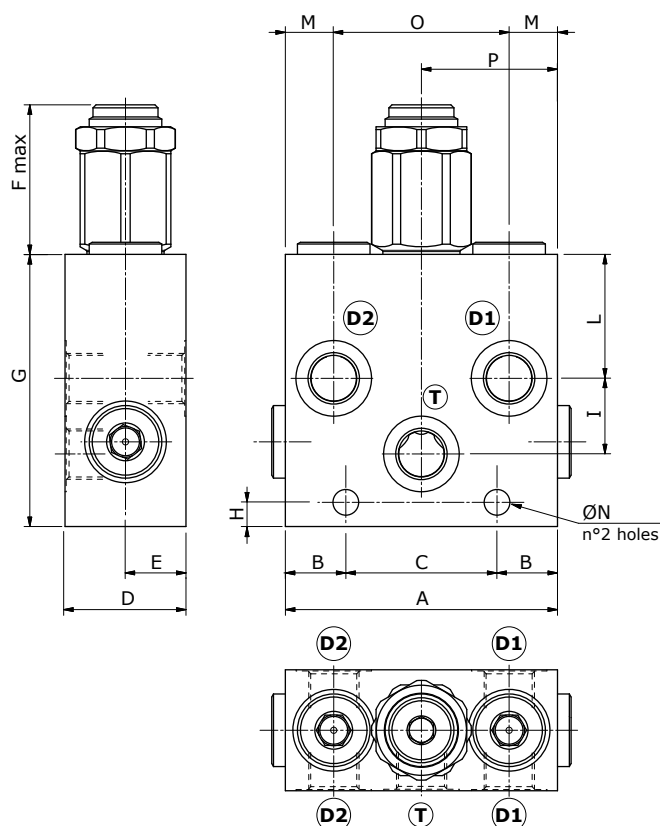
|                                                  | VAA/RU/DL 38                                                           | VAA/RU/DL 12         | VAA/RU/DL 34            | VAA/RU/DL 100           |                    |
|--------------------------------------------------|------------------------------------------------------------------------|----------------------|-------------------------|-------------------------|--------------------|
| Nominal flow                                     | 35 l/min (9.2 US gpm)                                                  | 60 l/min (16 US gpm) | 120 l/min (31.7 US gpm) | 180 l/min (47.6 US gpm) |                    |
| Max. pressure                                    | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                      |                         |                         |                    |
| Oil leakage at 80% of max. setting               | 0.75 cm³/min (0.04 in³/min)                                            |                      |                         |                         |                    |
| Fluid                                            | mineral based oil                                                      |                      |                         |                         |                    |
| Viscosity                                        | from 10 to 200 cSt                                                     |                      |                         |                         |                    |
| Max. level of contamination                      | 18/16/13 ISO4406                                                       |                      |                         |                         |                    |
| Fluid temperature                                | with NBR seals from -20°C (-4°F) to 80°C (176°F)                       |                      |                         |                         |                    |
| Environmental temperature for working conditions | from -40°C (-40°F) to 100°C (212°F)                                    |                      |                         |                         |                    |
| Weight                                           | aluminium                                                              | 1.18 kg (2.60 lb)    | 1.15 kg (2.53 lb)       | 2.32 kg (5.11 lb)       | 3.95 kg (8.71 lb)  |
|                                                  | steel                                                                  | 2.44 kg (5.38 lb)    | 2.38 kg (5.25 lb)       | 4.73 kg (10.43 lb)      | 8.12 kg (17.90 lb) |

NOTE - For different conditions, please contact Walvoil Sales Dpt.





### Dimensions



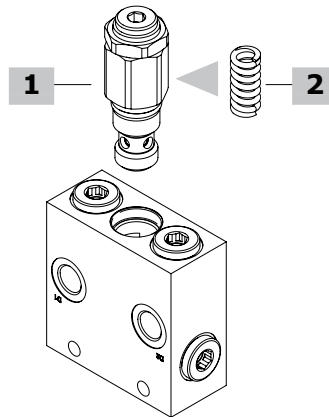
| Valve type    | All ports |
|---------------|-----------|
| VAA/RU/DL 38  | G3/8      |
| VAA/RU/DL 12  | G1/2      |
| VAA/RU/DL 34  | G3/4      |
| VAA/RU/DL 100 | G1"       |

Dimensions are in mm-in

| Valve type    | A        | B       | C       | D       | E         | F         | G        | H       | I       | L       | M       | ØN        | O       | P       |
|---------------|----------|---------|---------|---------|-----------|-----------|----------|---------|---------|---------|---------|-----------|---------|---------|
| VAA/RU/DL 38  | 90-3.54  | 20-0.79 | 50-1.97 | 40-1.57 | 20-0.79   | 57.7-2.27 | 90-3.54  | 8-0.31  | 25-0.98 | 41-1.61 | 16-0.39 | 8.5-0.33  | 58-2.28 | 45-1.77 |
| VAA/RU/DL 12  | 90-3.54  | 20-0.79 | 50-1.97 | 40-1.57 | 20-0.79   | 56.2-2.21 | 90-3.54  | 8-0.31  | 25-0.98 | 41-1.61 | 16-0.39 | 8.5-0.33  | 58-2.28 | 45-1.77 |
| VAA/RU/DL 34  | 110-4.33 | 24-0.94 | 62-2.44 | 55-2.16 | 27.5-1.08 | 68.8-2.71 | 110-4.33 | 8-0.31  | 31-1.22 | 53-2.08 | 24-0.94 | 8.5-0.33  | 62-2.44 | 56-2.20 |
| VAA/RU/DL 100 | 140-5.51 | 32-1.26 | 76-2.99 | 60-2.36 | 30-1.18   | 68.8-2.72 | 140-5.51 | 11-0.43 | 37-1.46 | 65-2.56 | 27-1.06 | 10.5-0.41 | 86-3.38 | 70-2.75 |

## Ordering codes and description composition

Port size **2**  
**VAA/RU/DL 38/TS.S**  
**1**



### VAA/RU/DL complete valves

#### Direct acting valve configuration

Standard setting 150 bar @ 5 l/min (2100 psi at 1.32 US gpm)

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

#### Configuration with G3/8 standard thread

|                          |            |                                                         |
|--------------------------|------------|---------------------------------------------------------|
| <b>VAA/RU/DL 38/TS.S</b> | 1160021102 | Aluminium body, setting range 5-210 bar (72.5-3045 psi) |
|--------------------------|------------|---------------------------------------------------------|

|                             |            |                             |
|-----------------------------|------------|-----------------------------|
| <b>VAA/RU/DL 38/TS.S/ac</b> | 1160022100 | Steel body, as previous one |
|-----------------------------|------------|-----------------------------|

#### Configuration with G1/2 standard thread

|                          |            |                                                         |
|--------------------------|------------|---------------------------------------------------------|
| <b>VAA/RU/DL 12/TS.S</b> | 1160031102 | Aluminium body, setting range 5-210 bar (72.5-3045 psi) |
|--------------------------|------------|---------------------------------------------------------|

|                             |            |                             |
|-----------------------------|------------|-----------------------------|
| <b>VAA/RU/DL 12/TS.S/ac</b> | 1160032100 | Steel body, as previous one |
|-----------------------------|------------|-----------------------------|

#### Configuration with G3/4 standard thread

|                          |            |                                                         |
|--------------------------|------------|---------------------------------------------------------|
| <b>VAA/RU/DL 34/TS.S</b> | 1160041102 | Aluminium body, setting range 5-210 bar (72.5-3045 psi) |
|--------------------------|------------|---------------------------------------------------------|

|                             |            |                             |
|-----------------------------|------------|-----------------------------|
| <b>VAA/RU/DL 34/TS.S/ac</b> | 1160042100 | Steel body, as previous one |
|-----------------------------|------------|-----------------------------|

#### Configuration with G1" standard thread

|                           |            |                                                         |
|---------------------------|------------|---------------------------------------------------------|
| <b>VAA/RU/DL 100/TS.S</b> | 1160051100 | Aluminium body, setting range 5-210 bar (72.5-3045 psi) |
|---------------------------|------------|---------------------------------------------------------|

|                              |            |                             |
|------------------------------|------------|-----------------------------|
| <b>VAA/RU/DL 100/TS.S/ac</b> | 1160052101 | Steel body, as previous one |
|------------------------------|------------|-----------------------------|

For other steel body configurations, SAE thread and configurations with FPM (Viton) seals, please contact our Sales Dpt.

### 1 Direct acting pressure relief valves

Standard setting 150 bar @ 5 l/min (2100 psi at 1.32 US gpm)

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

#### For G3/8 and G1/2 ports configuration

|                     |            |                                         |
|---------------------|------------|-----------------------------------------|
| <b>VMPD 12/TS.S</b> | 1120030402 | Setting range 5-210 bar (72.5-3050 psi) |
|---------------------|------------|-----------------------------------------|

#### For G3/4 ports configuration

|                     |            |                                         |
|---------------------|------------|-----------------------------------------|
| <b>VMPD 34/TS.S</b> | 1120040402 | Setting range 5-210 bar (72.5-3050 psi) |
|---------------------|------------|-----------------------------------------|

#### For G1" ports configuration

|                      |            |                                         |
|----------------------|------------|-----------------------------------------|
| <b>VMPD 100/TS.S</b> | 1120050402 | Setting range 5-210 bar (72.5-3050 psi) |
|----------------------|------------|-----------------------------------------|

### 2 Pressure setting spring

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

#### For VAA/RU/DL 38, 12 and 100 valves

|           |            |                                            |
|-----------|------------|--------------------------------------------|
| <b>TS</b> | 3ML1164000 | Spring for range 5-210 bar (72.5-3050 psi) |
|-----------|------------|--------------------------------------------|

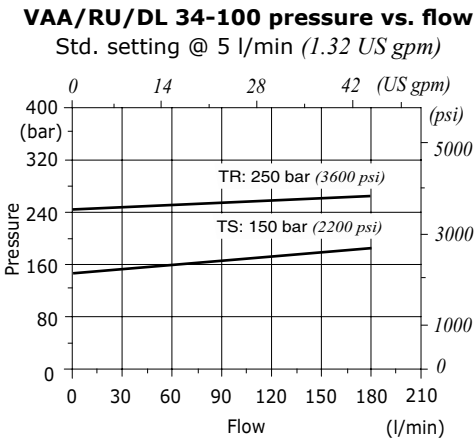
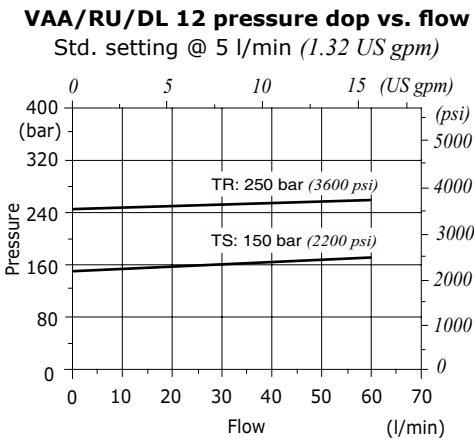
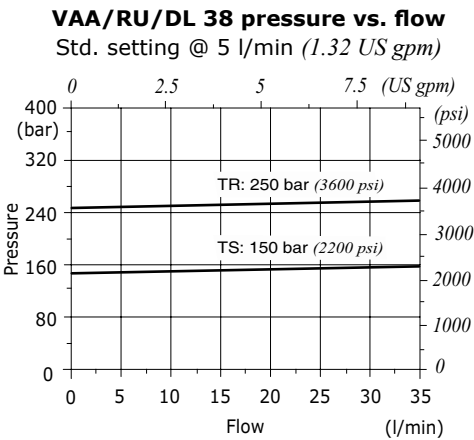
|           |            |                                            |
|-----------|------------|--------------------------------------------|
| <b>TR</b> | 3ML1164001 | Spring for range 50-350 bar (725-5100 psi) |
|-----------|------------|--------------------------------------------|

#### For VAA/RU/DL 34 valve

|           |            |                                            |
|-----------|------------|--------------------------------------------|
| <b>TS</b> | 3ML1194500 | Spring for range 5-210 bar (72.5-3050 psi) |
|-----------|------------|--------------------------------------------|

|           |            |                                            |
|-----------|------------|--------------------------------------------|
| <b>TR</b> | 3ML1194501 | Spring for range 50-350 bar (725-5100 psi) |
|-----------|------------|--------------------------------------------|

Rating diagrams





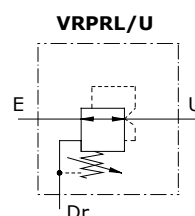
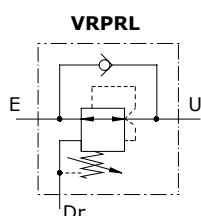
## Type VRPRL-VRPRL/U pressure reducing valves

- With relieving

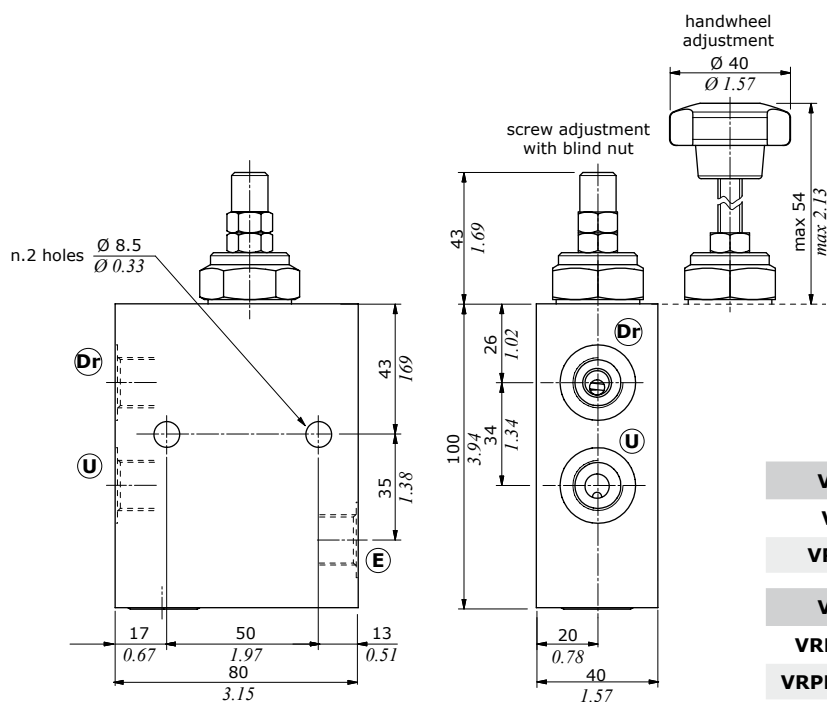
Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                            | VRPRL-VRPRL/U 38                                                            | VRPRL-VRPRL/U 12       |
|--------------------------------------------|-----------------------------------------------------------------------------|------------------------|
| Nominal flow                               | 20 l/min (5.3 US gpm)                                                       | 50 l/min (13.2 US gpm) |
| Max. pressure                              | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi)      |                        |
| Oil leakage                                | 20 cm <sup>3</sup> /min at 150 bar (1.22 in <sup>3</sup> /min. at 2200 psi) |                        |
| Fluid                                      | mineral based oil                                                           |                        |
| Viscosity                                  | from 10 to 200 cSt                                                          |                        |
| Max. level of contamination                | 18/16/13 ISO4406                                                            |                        |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F)                            |                        |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                                         |                        |
| Weight                                     | aluminium                                                                   | 0.83 kg (1.83 lb)      |
|                                            | steel                                                                       | 1.75 kg (3.86 lb)      |
|                                            |                                                                             | 1.20 kg (2.64 lb)      |
|                                            |                                                                             | 2.58 kg (5.69 lb)      |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



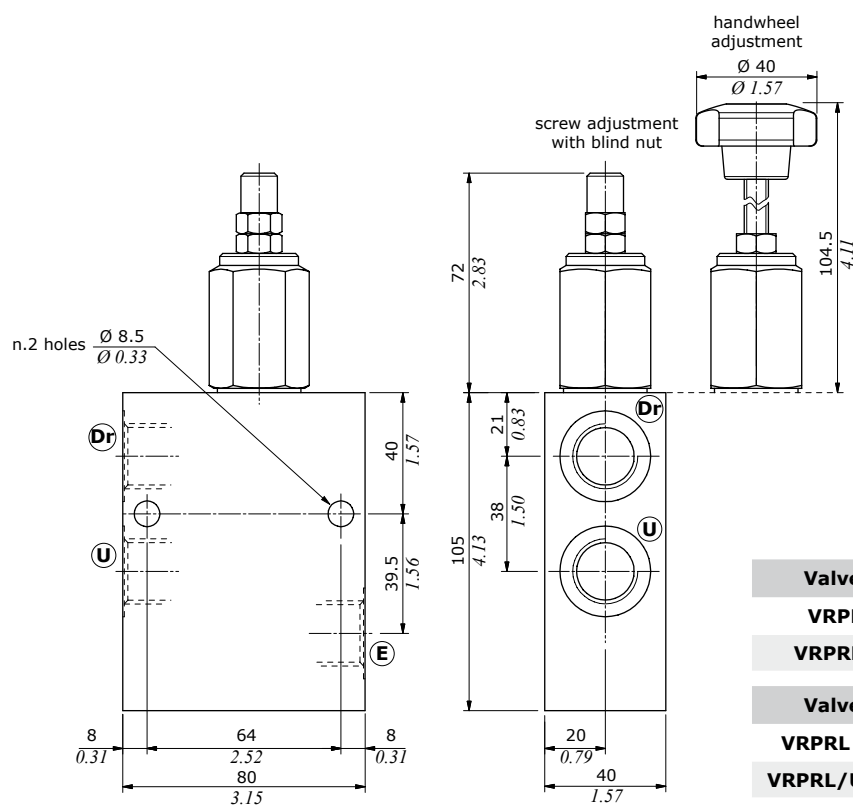
### Dimensions



| Valve type | All ports |
|------------|-----------|
| VRPRL 38   | G3/8      |
| VRPRL/U 38 | G3/8      |

| Valve type     | All ports |
|----------------|-----------|
| VRPRL 38/SAE   | SAE8      |
| VRPRL/U 38/SAE | SAE8      |



| Valve type | All ports |
|------------|-----------|
| VRPRL 12   | G1/2      |
| VRPRL/U 12 | G1/2      |

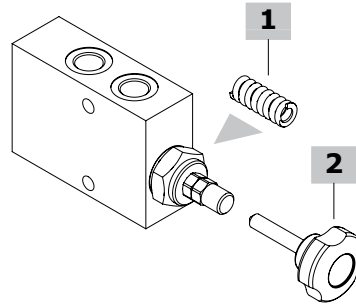
  

| Valve type     | All ports |
|----------------|-----------|
| VRPRL 12/SAE   | SAE10     |
| VRPRL/U 12/SAE | SAE10     |

**Ordering codes and description composition**

Port size  
**VRPRL-VRPRL/U 38/TV.S**

**1** **2**



**VRPRL-VRPRL/U complete valves**

Valve configuration with reverse free flow check

Standard setting 90 bar @ 5 l/min (1300 psi @ 1.32 US gpm)

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

**Configuration with G3/8 standard thread**

|                      |            |                                                         |
|----------------------|------------|---------------------------------------------------------|
| <b>VRPRL 38/TV.S</b> | 1230021125 | Aluminium body, setting range 40-110 bar (580-1600 psi) |
|----------------------|------------|---------------------------------------------------------|

|                         |            |                             |
|-------------------------|------------|-----------------------------|
| <b>VRPRL 38/TV.S/ac</b> | 1230022111 | Steel body, as previous one |
|-------------------------|------------|-----------------------------|

**Configuration with G1/2 standard thread**

|                      |            |                                                         |
|----------------------|------------|---------------------------------------------------------|
| <b>VRPRL 12/TV.S</b> | 1230031102 | Aluminium body, setting range 40-110 bar (580-1600 psi) |
|----------------------|------------|---------------------------------------------------------|

|                         |            |                             |
|-------------------------|------------|-----------------------------|
| <b>VRPRL 12/TV.S/ac</b> | 1230032100 | Steel body, as previous one |
|-------------------------|------------|-----------------------------|

**Configuration with SAE8 standard thread**

|                          |            |                                                         |
|--------------------------|------------|---------------------------------------------------------|
| <b>VRPRL 38/TV.S/SAE</b> | 1230021210 | Aluminium body, setting range 40-110 bar (580-1600 psi) |
|--------------------------|------------|---------------------------------------------------------|

**Configuration with SAE10 standard thread**

|                          |            |                                                         |
|--------------------------|------------|---------------------------------------------------------|
| <b>VRPRL 12/TV.S/SAE</b> | 1230031200 | Aluminium body, setting range 40-110 bar (580-1600 psi) |
|--------------------------|------------|---------------------------------------------------------|

Valve configuration with check valve

Standard setting 90 bar @ 5 l/min (1300 psi @ 1.32 US gpm)

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

**Configuration with G3/8 standard thread**

|                        |            |                                                         |
|------------------------|------------|---------------------------------------------------------|
| <b>VRPRL/U 38/TV.S</b> | 1233021102 | Aluminium body, setting range 40-110 bar (580-1600 psi) |
|------------------------|------------|---------------------------------------------------------|

|                           |            |                             |
|---------------------------|------------|-----------------------------|
| <b>VRPRL/U 38/TV.S/ac</b> | 1233022100 | Steel body, as previous one |
|---------------------------|------------|-----------------------------|

**Configuration with G1/2 standard thread**

|                        |            |                                                         |
|------------------------|------------|---------------------------------------------------------|
| <b>VRPRL/U 12/TV.S</b> | 1233031102 | Aluminium body, setting range 40-110 bar (580-1600 psi) |
|------------------------|------------|---------------------------------------------------------|

|                           |            |                             |
|---------------------------|------------|-----------------------------|
| <b>VRPRL/U 12/TV.S/ac</b> | 1233032102 | Steel body, as previous one |
|---------------------------|------------|-----------------------------|

**Configuration with SAE8 standard thread**

|                            |            |                                                         |
|----------------------------|------------|---------------------------------------------------------|
| <b>VRPRL/U 38/TV.S/SAE</b> | 1233021201 | Aluminium body, setting range 40-110 bar (580-1600 psi) |
|----------------------------|------------|---------------------------------------------------------|

**Configuration with SAE10 standard thread**

|                            |            |                                                         |
|----------------------------|------------|---------------------------------------------------------|
| <b>VRPRL/U 12/TV.S/SAE</b> | 1233031105 | Aluminium body, setting range 40-110 bar (580-1600 psi) |
|----------------------------|------------|---------------------------------------------------------|

For other steel body configurations, SAE thread and configurations with FPM (Viton) seals please contact our Sales Dpt.

**1 Pressure setting spring**

| TYPE                             | CODE       | DESCRIPTION                               |
|----------------------------------|------------|-------------------------------------------|
| <b><u>For VRPRL 38 valve</u></b> |            |                                           |
| <b>TB</b>                        | 3ML1133100 | Setting range 5-50 bar (72.5-725 psi)     |
| <b>TV</b>                        | 3MOL314330 | Setting range 40-110 bar (580-1600 psi)   |
| <b>TS</b>                        | 3MOL315330 | Setting range 100-200 bar (1450-2900 psi) |
| <b><u>For VRPRL 12 valve</u></b> |            |                                           |
| <b>TB</b>                        | 3ML1166804 | Setting range 5-50 bar (72.5-725 psi)     |
| <b>TV</b>                        | 3ML1146800 | Setting range 40-110 bar (580-1600 psi)   |
| <b>TS</b>                        | 3ML1166805 | Setting range 100-200 bar (1450-2900 psi) |

**2 Accessories**

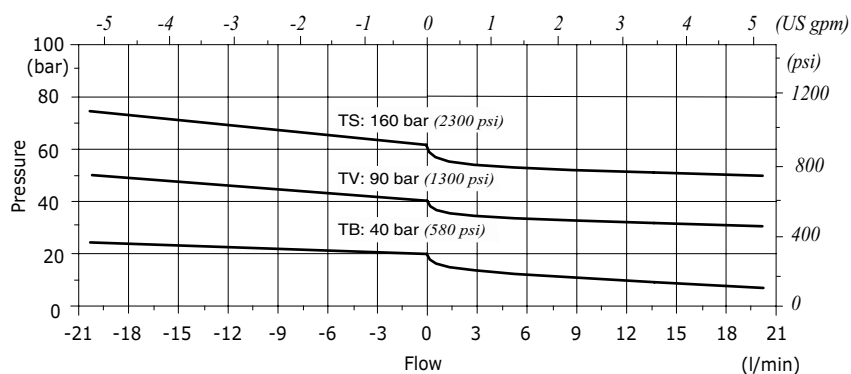
| TYPE     | CODE       | DESCRIPTION |
|----------|------------|-------------|
| <b>V</b> | 4VL2407100 | Handwheel   |
| <b>S</b> | -          | Blind nut   |

## Rating diagrams

### VRPRL-VRPRL/U 38

Relieving diagram from U to Dr

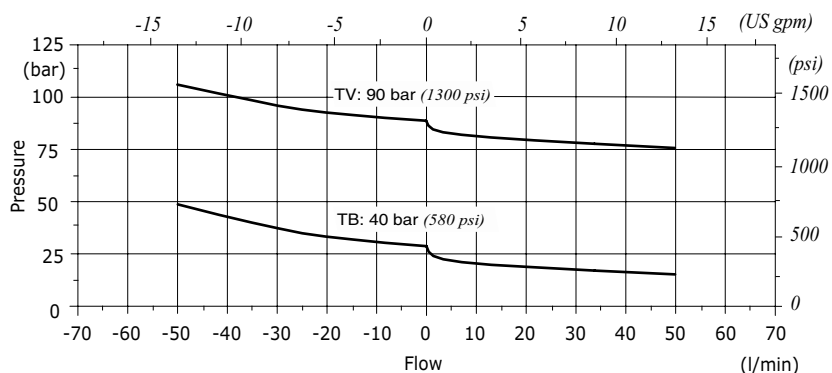
Pressure vs. Flow from E to U



### VRPRL-VRPRL/U 12

Relieving diagram from U to Dr

Pressure vs. Flow from E to U





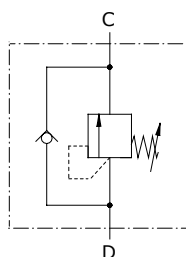
## Type VDSRL sequence valves

- Direct acting

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

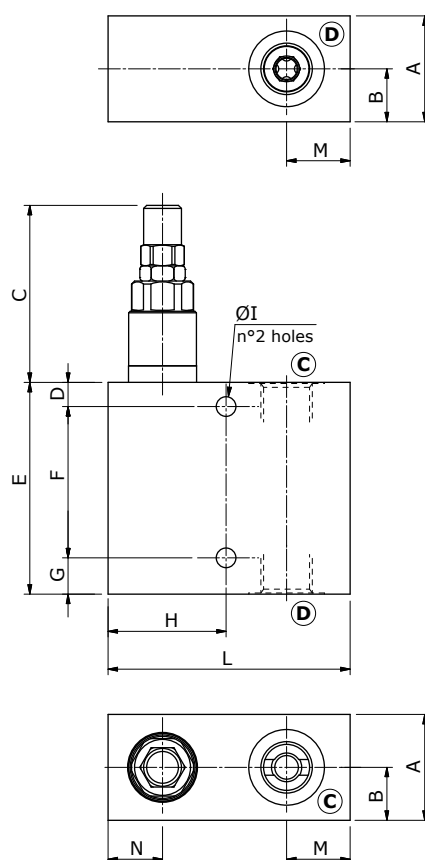
|                                            | VDSRL 3-14                                                             | VDSRL 5-38<br>VDSRL 5Y-38 | VDSRL 5-12<br>VDSRL 5Y-12 | VDSRL 10-12               | VDSRL 10-34               | VDSRL 20-34                |                   |
|--------------------------------------------|------------------------------------------------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|----------------------------|-------------------|
| Nominal flow                               | 10 l/min<br>(2.6 US gpm)                                               | 25 l/min<br>(6.6 US gpm)  | 35 l/min<br>(9.2 US gpm)  | 50 l/min<br>(13.2 US gpm) | 70 l/min<br>(18.5 US gpm) | 120 l/min<br>(31.7 US gpm) |                   |
| Max. pressure                              | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                           |                           |                           |                           |                            |                   |
| Fluid                                      | mineral based oil                                                      |                           |                           |                           |                           |                            |                   |
| Viscosity                                  | from 10 to 200 cSt                                                     |                           |                           |                           |                           |                            |                   |
| Max. level of contamination                | 18/16/13 ISO4406                                                       |                           |                           |                           |                           |                            |                   |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F)                       |                           |                           |                           |                           |                            |                   |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                                    |                           |                           |                           |                           |                            |                   |
| Weight                                     | alum.                                                                  | 0.48 kg (1.06 lb)         | 0.63 kg (1.39 lb)         | 0.67 kg (1.48 lb)         | 1 kg (2.20 lb)            | 1.10 kg (2.42 lb)          | 1.80 kg (3.97 lb) |
|                                            | steel                                                                  | 1.08 kg (2.38 lb)         | 1.49 kg (3.28 lb)         | 1.54 kg (3.40 lb)         | 2.15 kg (4.74 lb)         | 2.13 kg (4.70 lb)          | 4 kg (8.82 lb)    |

NOTE - For different conditions, please contact Walvoil Sales Dpt.





## Dimensions

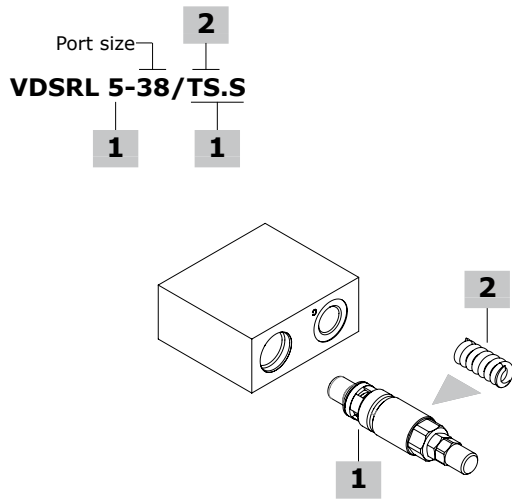


| Valve type  | All ports |
|-------------|-----------|
| VDSRL 3-14  | G1/4      |
| VDSRL 5-38  | G3/8      |
| VDSRL 5Y-38 |           |
| VDSRL 5-12  | G1/2      |
| VDSRL 5Y-12 |           |
| VDSRL 10-12 | G1/2      |
| VDSRL 10-34 | G3/4      |
| VDSRL 20-34 | G3/4      |

Dimensions are in mm-in

| Valve type  | A       | B         | C         | D      | E        | F       | G       | ØI       | H       | L        | M       | N       |
|-------------|---------|-----------|-----------|--------|----------|---------|---------|----------|---------|----------|---------|---------|
| VDSRL 3-14  | 30-1.18 | 15-0.59   | 53-2.09   | 7-0.27 | 70-2.75  | 50-1.97 | 13-0.51 | 6.5-0.25 | 34-1.34 | 65-2.56  | 15-0.59 | 15-0.59 |
| VDSRL 5-38  | 35-1.38 | 17.5-0.69 | 60-1.36   | 8-0.31 | 70-2.75  | 50-1.97 | 12-0.47 | 6.5-0.25 | 39-1.53 | 80-3.15  | 21-0.83 | 18-0.71 |
| VDSRL 5Y-38 |         |           |           |        |          |         |         |          |         |          |         |         |
| VDSRL 5-12  | 35-1.38 | 17.5-0.69 | 60-1.36   | 8-0.31 | 75-2.95  | 55-2.16 | 12-0.47 | 8.5-0.33 | 39-1.53 | 80-3.15  | 21-0.83 | 18-0.71 |
| VDSRL 5Y-12 |         |           |           |        |          |         |         |          |         |          |         |         |
| VDSRL 10-12 | 40-1.57 | 20-0.79   | 67-2.64   | 8-0.31 | 80-3.15  | 60-2.36 | 12-0.47 | 8.5-0.33 | 44-1.73 | 90-3.54  | 24-0.94 | 20-0.79 |
| VDSRL 10-34 | 40-1.57 | 20-0.79   | 67-2.64   | 8-0.31 | 90-3.54  | 70-2.75 | 12-0.47 | 8.5-0.33 | 44-1.73 | 95-3.74  | 27-1.06 | 20-0.79 |
| VDSRL 20-34 | 50-1.97 | 25-0.98   | 76.5-3.01 | 8-0.31 | 100-3.94 | 80-3.15 | 12-0.47 | 8.5-0.33 | 53-2.09 | 110-4.33 | 32-1.26 | 25-0.98 |

## Ordering codes and description composition



### VDSRL complete valves

*With direct acting valve type: standard setting is referred to 5 l/min (1.32 US gpm)*

| TYPE                                 | CODE       | DESCRIPTION                                                                                      |
|--------------------------------------|------------|--------------------------------------------------------------------------------------------------|
| <b>Configuration with G1/4 ports</b> |            |                                                                                                  |
| <b>VDSRL 03-14/TS.S</b>              | 1200011102 | Aluminium body, setting range 50-200 bar (725-2900 psi)<br>Standard setting 160 bar (2300 psi)   |
| <b>VDSRL 03-14/TS.S/ac</b>           | 1200012100 | Steel body, as previous one                                                                      |
| <b>Configuration with G3/8 ports</b> |            |                                                                                                  |
| <b>VDSRL 5-38/TS.S</b>               | 1200021102 | Aluminium body, setting range 50-220 bar (725-3200 psi)<br>Standard setting 160 bar (2300 psi)   |
| <b>VDSRL 5-38/TS.S/ac</b>            | 1200022102 | Steel body, as previous one                                                                      |
| <b>VDSRL 5Y-38/TS.S</b>              | 1200021112 | Aluminium body, setting range 140-190 bar (2030-2755 psi)<br>Standard setting 150 bar (2200 psi) |
| <b>Configuration with G1/2 ports</b> |            |                                                                                                  |
| <b>VDSRL 5-12/TS.S</b>               | 1200021152 | Aluminium body, setting range 50-220 bar (725-3200 psi)<br>Standard setting 160 bar (2300 psi)   |
| <b>VDSRL 5-12/TS.S/ac</b>            | 1200022150 | Steel body, as previous one                                                                      |
| <b>VDSRL 10-12/TS.S</b>              | 1200031102 | Aluminium body, setting range 50-220 bar (725-3200 psi)<br>Standard setting 160 bar (2300 psi)   |
| <b>VDSRL 10-12/TS.S/ac</b>           | 1200032100 | Steel body, as previous one                                                                      |
| <b>Configuration with G3/4 ports</b> |            |                                                                                                  |
| <b>VDSRL 10-34/TS.S</b>              | 1200031152 | Aluminium body, setting range 50-220 bar (725-3200 psi)<br>Standard setting 160 bar (2300 psi)   |
| <b>VDSRL 10-34/TS.S/ac</b>           | 1200032100 | Steel body, as previous one                                                                      |
| <b>VDSRL 20-34/TS.S</b>              | 1200041102 | Aluminium body, setting range 50-220 bar (725-3200 psi)<br>Standard setting 160 bar (2300 psi)   |
| <b>VDSRL 20-34/TS.S/ac</b>           | 1200042100 | Steel body, as previous one                                                                      |

For other steel body configurations, SAE thread and configurations with FPM (Viton) seals please contact our Sales Dpt.

### 1 Direct acting pressure relief valves

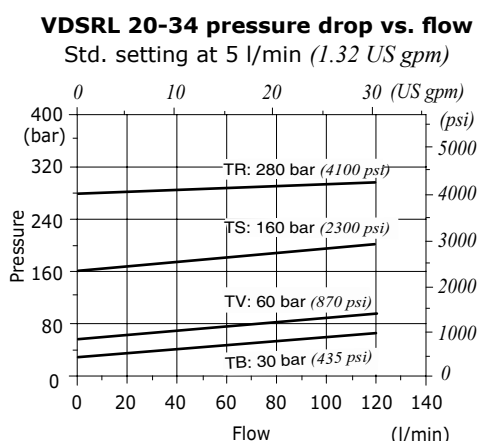
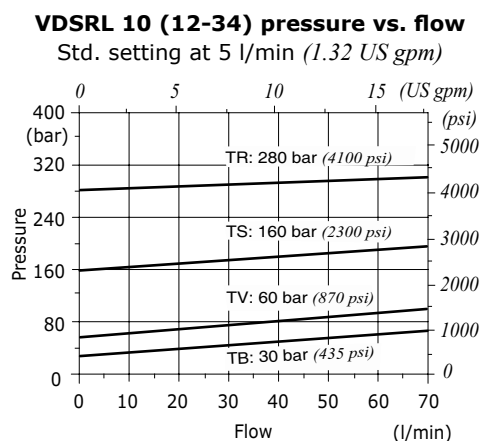
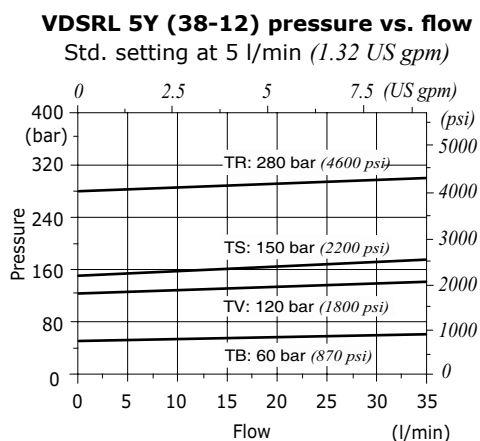
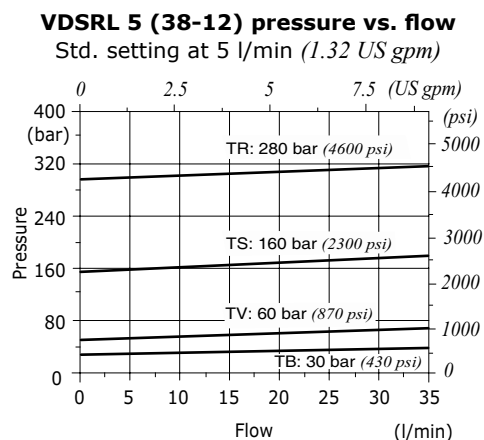
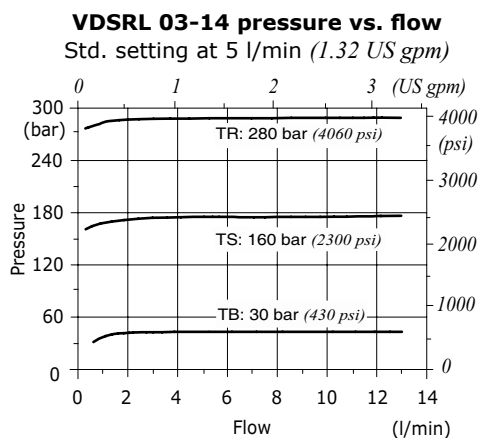
*Standard setting 160 bar at 5 l/min (2300 psi at 1.32 US gpm)*

| TYPE                                | CODE        | DESCRIPTION                                                                      |
|-------------------------------------|-------------|----------------------------------------------------------------------------------|
| <b>For G1/4 ports configuration</b> |             |                                                                                  |
| <b>MC08A/0S2B</b>                   | 0MC08002000 | Setting range 50-200 bar (725-2900 psi)<br>Standard setting 160 bar (2300 psi)   |
| <b>For G3/8 ports configuration</b> |             |                                                                                  |
| <b>VMP 5/TS.S</b>                   | 1100520408  | Setting range 50-220 bar (725-3200 psi)<br>Standard setting 160 bar (2300 psi)   |
| <b>VMP 5Y/TS.S</b>                  | 1100520406  | Setting range 140-190 bar (2030-2755 psi)<br>Standard setting 150 bar (2200 psi) |
| <b>For G1/2 ports configuration</b> |             |                                                                                  |
| <b>VMP 5/TS.S</b>                   | 1100520408  | Setting range 50-220 bar (725-3200 psi)<br>Standard setting 160 bar (2300 psi)   |
| <b>VMP 5Y/TS.S</b>                  | 1100520406  | Setting range 140-190 bar (2030-2755 psi)<br>Standard setting 150 bar (2200 psi) |
| <b>VMP 10/TS.S</b>                  | 1100530400  | Setting range 50-220 bar (725-3200 psi)<br>Standard setting 160 bar (2300 psi)   |
| <b>For G3/4 ports configuration</b> |             |                                                                                  |
| <b>VMP 10/TS.S</b>                  | 1100530400  | Setting range 50-220 bar (725-3200 psi)<br>Standard setting 160 bar (2300 psi)   |
| <b>VMP 20/TS.S</b>                  | 1100540400  | Setting range 50-220 bar (725-3200 psi)<br>Standard setting 160 bar (2300 psi)   |

### 2 Pressure setting springs

| TYPE                    | CODE       | DESCRIPTION                               |
|-------------------------|------------|-------------------------------------------|
| <b>For MC08A valve</b>  |            |                                           |
| <b>TB</b>               | 3ML1092500 | Setting range 5-50 bar (72.5-725 psi)     |
| <b>TS</b>               | 3ML1092501 | Setting range 50-200 bar (725-2900 psi)   |
| <b>TR</b>               | 3ML1092502 | Setting range 150-350 bar (2175-5075 psi) |
| <b>For VMP 5 valve</b>  |            |                                           |
| <b>TB</b>               | 3MOL314311 | Setting range 5-40 bar (72.5-580 psi)     |
| <b>TV</b>               | 3MOL314330 | Setting range 20-80 bar (290-1150 psi)    |
| <b>TS</b>               | 3MOL315330 | Setting range 50-220 bar (725-3200 psi)   |
| <b>TR</b>               | 3ML1143600 | Setting range 180-350 bar (2600-5100 psi) |
| <b>For VMP 5Y valve</b> |            |                                           |
| <b>TB</b>               | 3MOL314311 | Setting range 5-80 bar (72.5-1150 psi)    |
| <b>TV</b>               | 3MOL314330 | Setting range 40-150 bar (580-2200 psi)   |
| <b>TS</b>               | 3ML1143400 | Setting range 140-190 bar (2050-2750 psi) |
| <b>TR</b>               | 3MOL315330 | Setting range 180-350 bar (2600-5075 psi) |
| <b>For VMP 10 valve</b> |            |                                           |
| <b>TB</b>               | 3MOL316410 | Setting range 5-40 bar (72.5-580 psi)     |
| <b>TV</b>               | 3ML1154300 | Setting range 20-80 bar (290-1150 psi)    |
| <b>TS</b>               | 3MOL317420 | Setting range 50-220 bar (725-3200 psi)   |
| <b>TR</b>               | 3MOL317440 | Setting range 180-350 bar (2600-5100 psi) |
| <b>For VMP 20 valve</b> |            |                                           |
| <b>TB</b>               | 3ML1184300 | Setting range 5-40 bar (72.5-580 psi)     |
| <b>TV</b>               | 3ML1174500 | Setting range 20-80 bar (290-1150 psi)    |
| <b>TS</b>               | 3ML1204200 | Setting range 50-220 bar (725-3200 psi)   |
| <b>TR</b>               | 3ML1214500 | Setting range 180-350 bar (2600-5100 psi) |

### Rating diagrams





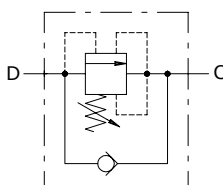
## Type VDSRL/APP sequence valves

- Direct acting
- Back-pressure proof type

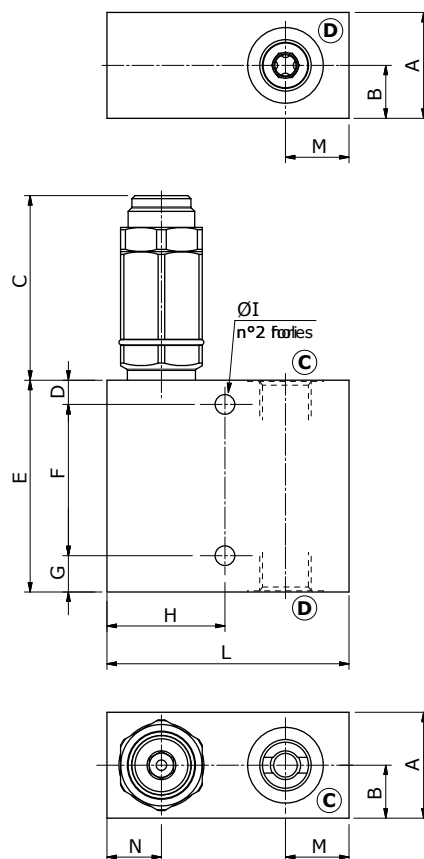
Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                            |       | VDSRL/APP 5-38                                                         | VDSRL/APP 5-12           | VDSRL/APP 10-12           | VDSRL/APP 10-34           | VDSRL/APP 20-34            |
|--------------------------------------------|-------|------------------------------------------------------------------------|--------------------------|---------------------------|---------------------------|----------------------------|
| Nominal flow                               |       | 25 l/min<br>(6.6 US gpm)                                               | 35 l/min<br>(9.2 US gpm) | 50 l/min<br>(13.2 US gpm) | 70 l/min<br>(18.5 US gpm) | 120 l/min<br>(31.7 US gpm) |
| Max. pressure                              |       | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                          |                           |                           |                            |
| Fluid                                      |       | mineral based oil                                                      |                          |                           |                           |                            |
| Viscosity                                  |       | from 10 to 200 cSt                                                     |                          |                           |                           |                            |
| Max. level of contamination                |       | 18/16/13 ISO4406                                                       |                          |                           |                           |                            |
| Fluid temperature                          |       | with NBR seals from -20°C (-4°F) to 80°C (176°F)                       |                          |                           |                           |                            |
| Environmental temp. for working conditions |       | from -40°C (-40°F) to 100°C (212°F)                                    |                          |                           |                           |                            |
| Weight                                     | alum. | 0.75 kg (1.65 lb)                                                      | 0.78 kg (1.72 lb)        | 1.02 kg (2.25 lb)         | 1.12 kg (2.47 lb)         | 2.03 kg (4.48 lb)          |
|                                            | steel | 1.60 kg (3.53 lb)                                                      | 1.65 kg (3.64 lb)        | 2.17 kg (4.78 lb)         | 2.46 kg (5.42 lb)         | 4.24 kg (9.35 lb)          |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



## Dimensions



| Valve type      | All ports |
|-----------------|-----------|
| VDSRL/APP 5-38  | G3/8      |
| VDSRL/APP 5-12  | G1/2      |
| VDSRL/APP 10-12 | G1/2      |
| VDSRL/APP 10-34 | G3/4      |
| VDSRL/APP 20-34 | G3/4      |

| Valve type         | All ports |
|--------------------|-----------|
| VDSRL/APP 5-38/SAE | SAE8      |

Dimensions are in mm-in

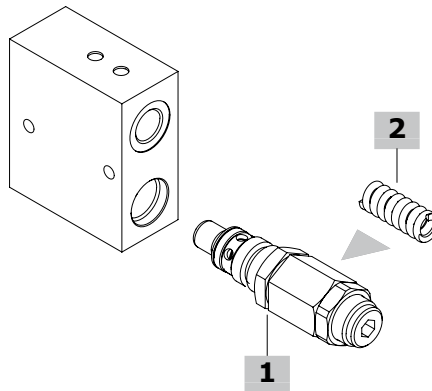
| Valve type         | A       | B         | C       | D      | E        | F       | G       | H       | L        | M       | ØI       | N       |
|--------------------|---------|-----------|---------|--------|----------|---------|---------|---------|----------|---------|----------|---------|
| VDSRL/APP 5-38     | 35-1.38 | 17.5-0.69 | 62-2.44 | 8-0.31 | 70-2.75  | 50-1.97 | 12-0.47 | 39-1.53 | 80-3.15  | 21-0.83 | 6.5-0.25 | 18-0.71 |
| VDSRL/APP 5-38/SAE | 35-1.38 | 17.5-0.69 | 62-2.44 | 8-0.31 | 75-2.95  | 55-2.16 | 12-0.47 | 39-1.53 | 80-3.15  | 21-0.83 | 8.5-0.33 | 18-0.71 |
| VDSRL/APP 10-12    | 40-1.57 | 20-0.79   | 62-2.44 | 8-0.31 | 80-3.15  | 60-2.36 | 12-0.47 | 44-1.73 | 90-3.54  | 24-0.94 | 8.5-0.33 | 20-0.79 |
| VDSRL/APP 10-34    | 40-1.57 | 20-0.79   | 62-2.44 | 8-0.31 | 90-3.54  | 70-2.75 | 12-0.47 | 44-1.73 | 95-3.74  | 27-1.10 | 8.5-0.33 | 20-0.79 |
| VDSRL/APP 20-34    | 50-1.97 | 25-0.98   | 82-3.23 | 8-0.31 | 100-3.94 | 80-3.15 | 12-0.47 | 53-2.09 | 110-4.33 | 32-1.26 | 8.5-0.33 | 25-0.98 |

## Ordering codes and description composition

Port size

**VDSRL 5-38/APP/TS.S**

1 2 1



### VDSRL/APP complete valves

*With direct acting valve: standard setting 160 bar at 5 l/min (2320 psi at 1.32 US gpm)*

| TYPE                                 | CODE       | DESCRIPTION                                              |
|--------------------------------------|------------|----------------------------------------------------------|
| <b>Configuration with G3/8 ports</b> |            |                                                          |
| <b>VDSRL 5-38/APP/TS.S</b>           | 1201021101 | Aluminium body, setting range 50-220 bar (725-3200 psi). |
| <b>VDSRL 5-38/APP/TS.S/ac</b>        | 1201022100 | Steel body, as previous one                              |
| <b>Configuration with G1/2 ports</b> |            |                                                          |
| <b>VDSRL 5-12/APP/TS.S</b>           | 1201021151 | Aluminium body, setting range 50-220 bar (725-3200 psi)  |
| <b>VDSRL 10-12/APP/TS.S</b>          | 1201031100 | Aluminium body, setting range 50-220 bar (725-3200 psi)  |
| <b>VDSRL 10-12/APP/TS.S/ac</b>       | 1201032100 | Steel body, as previous one                              |
| <b>Configuration with G3/4 ports</b> |            |                                                          |
| <b>VDSRL 10-34/APP/TS.S</b>          | 1201031150 | Aluminium body, setting range 50-220 bar (725-3200 psi)  |
| <b>VDSRL 10-34/APP/TS.S/ac</b>       | 1201031150 | Steel body, as previous one                              |
| <b>VDSRL 20-34/APP/TS.S</b>          | 1201041100 | Aluminium body, setting range 50-220 bar (725-3200 psi)  |
| <b>VDSRL 20-34/APP/TS.S/ac</b>       | 1201042100 | Steel body, as previous one                              |
| <b>Configuration with SAE8 ports</b> |            |                                                          |
| <b>VDSRL 5-38/APP/TS.S/SAE</b>       | 1201021200 | Aluminium body, setting range 50-220 bar (725-3200 psi). |
| <b>VDSRL 5-38/APP/TS.S/ac/SAE</b>    | 1201022203 | Steel body, as previous one                              |

For other steel body configurations, SAE thread and configurations with FPM (Viton) seals please contact our Sales Dpt.

### 1 Direct acting pressure relief valve

*Standard setting 160 bar at 5 l/min (2320 psi at 1.32 US gpm)*

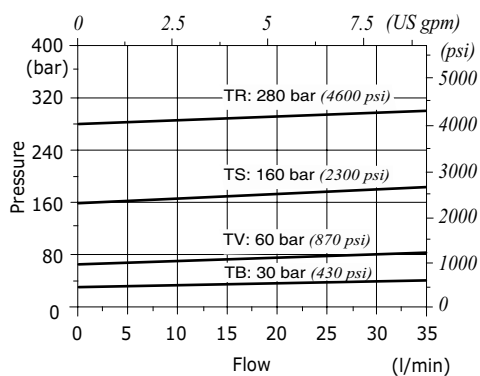
| TYPE                                              | CODE       | DESCRIPTION                                                 |
|---------------------------------------------------|------------|-------------------------------------------------------------|
| <b>For G/8, G1/2 and SAE8 ports configuration</b> |            |                                                             |
| <b>VMP 5/APP/TS.S</b>                             | 1101020400 | Direct acting type, setting range 50-220 bar (725-3200 psi) |
| <b>For G1/2 and G3/4 ports configuration</b>      |            |                                                             |
| <b>VMP 10/APP/TS.S</b>                            | 1101030400 | Direct acting type, setting range 50-220 bar (725-3200 psi) |
| <b>For G3/4 ports configuration</b>               |            |                                                             |
| <b>VMP 20/APP/TS.S</b>                            | 1101040400 | Direct acting type, setting range 50-220 bar (725-3200 psi) |

### 2 Pressure setting springs

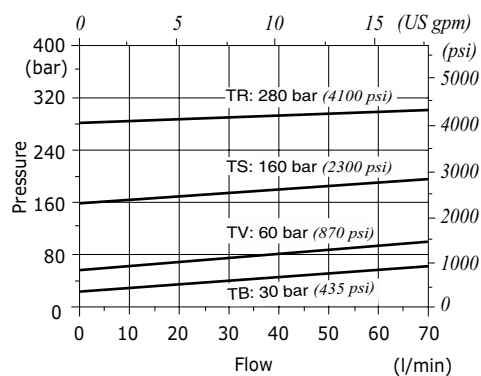
| TYPE                                       | CODE       | DESCRIPTION                               |
|--------------------------------------------|------------|-------------------------------------------|
| <b>For VMP 5/APP and VMP 10/APP valves</b> |            |                                           |
| <b>TB</b>                                  | 3MOL314330 | Setting range 5-50 bar (72.5-725 psi)     |
| <b>TV</b>                                  | 3ML1144000 | Setting range 20-100 bar (290-1450 psi)   |
| <b>TS</b>                                  | 3ML1144001 | Setting range 50-220 bar (725-3200 psi)   |
| <b>TR</b>                                  | 3ML1144002 | Setting range 100-350 bar (1450-5100 psi) |
| <b>For VMP 20/APP valve</b>                |            |                                           |
| <b>TB</b>                                  | 3ML1174500 | Setting range 5-50 bar (72.5-725 psi)     |
| <b>TV</b>                                  | 3ML1194500 | Setting range 20-100 bar (290-1450 psi)   |
| <b>TS</b>                                  | 3ML1194501 | Setting range 50-220 bar (725-3200 psi)   |
| <b>TR</b>                                  | 3ML1194502 | Setting range 100-350 bar (1450-5100 psi) |

### Rating diagrams

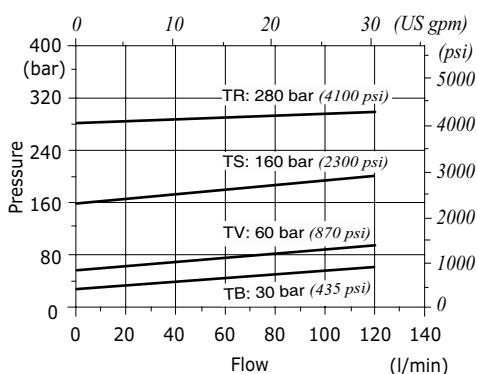
**VDSRL 5 (38-12)/APP pressure vs. flow**  
Std. setting at 5 l/min (1.32 US gpm)



**VDSRL 10 (12-34)/APP pressure vs. flow**  
Std. setting at 5 l/min (1.32 US gpm)



**VDSRL 20-34/APP pressure vs. flow**  
Std. setting at 5 l/min (1.32 US gpm)





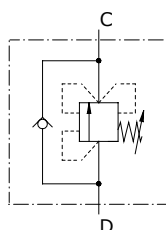
## Type VDSD/B sequence valves

- Differential acting

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

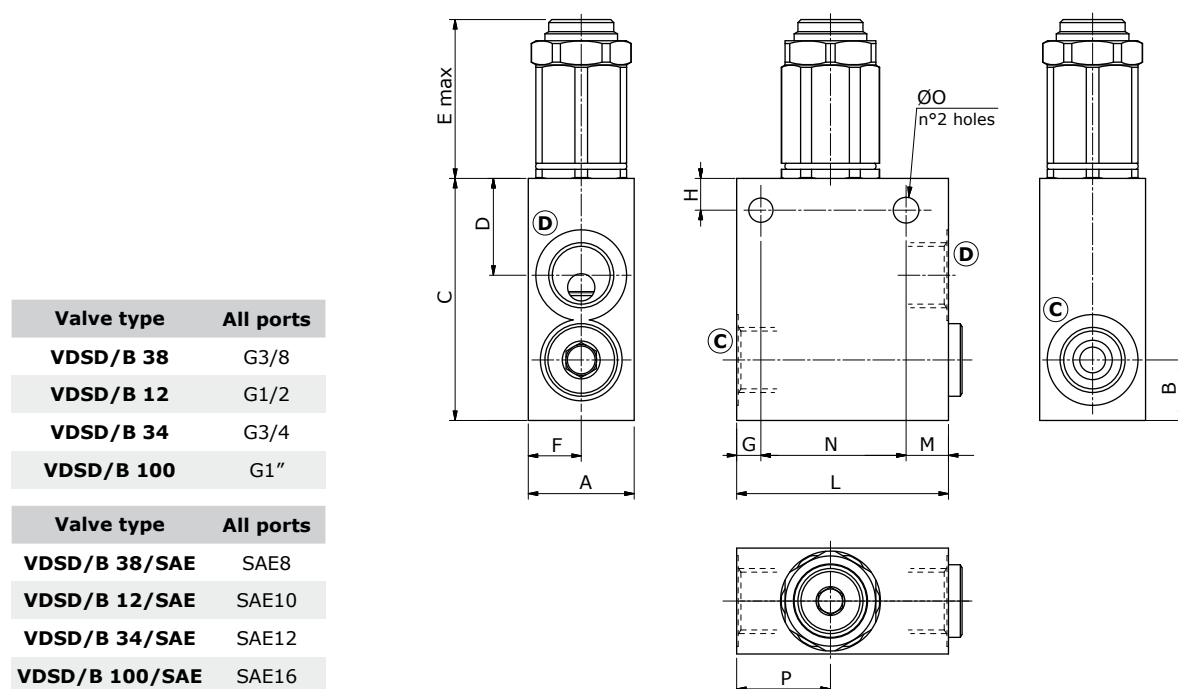
|                                            | <b>VDSD/B 38</b>                                                       | <b>VDSD/B 12</b>     | <b>VDSD/B 34</b>        | <b>VDSD/B 100</b>       |
|--------------------------------------------|------------------------------------------------------------------------|----------------------|-------------------------|-------------------------|
| Nominal flow                               | 30 l/min (7.9 US gpm)                                                  | 60 l/min (16 US gpm) | 120 l/min (31.7 US gpm) | 200 l/min (52.8 US gpm) |
| Max. pressure                              | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                      |                         |                         |
| Fluid                                      | mineral based oil                                                      |                      |                         |                         |
| Viscosity                                  | 10-200 cSt                                                             |                      |                         |                         |
| Max. level of contamination                | 18/16/13 ISO4406                                                       |                      |                         |                         |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F)                       |                      |                         |                         |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                                    |                      |                         |                         |
| Weight                                     | alum.                                                                  | 0.60 kg (1.32 lb)    | 0.80 kg (1.76 lb)       | 1.13 kg (2.49 lb)       |
|                                            | steel                                                                  | 1.06 kg (2.34 lb)    | 1.53 kg (3.37 lb)       | 2.33 kg (5.14 lb)       |

NOTE - For different conditions, please contact Walvoil Sales Dpt.





## Dimensions



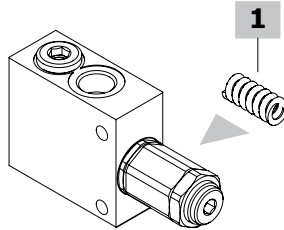
Dimensions are in mm-in

| Valve type     | A       | B       | C        | D         | E max     | F         | G       | ØO        | H         | L       | M       | N       | P       |
|----------------|---------|---------|----------|-----------|-----------|-----------|---------|-----------|-----------|---------|---------|---------|---------|
| VDSD/B 38      | 30-1.18 | 16-0.63 | 74-2.91  | 32,5-1.28 | 59-2.32   | 15-0.59   | 8-0.31  | 8.5-0.33  | 11.5-0.45 | 60-2.36 | 12-0.47 | 40-1.57 | 28-1.10 |
| VDSD/B 38/SAE  |         |         |          |           |           |           |         |           |           |         |         |         |         |
| VDSD/B 12      | 35-1.38 | 20-0.79 | 80-3.15  | 32-1.26   | 58-2.28   | 17.5-0.69 | 8-0.31  | 8.5-0.33  | 10.5-0.41 | 70-2.75 | 14-0.55 | 48-1.89 | 31-1.22 |
| VDSD/B 12/SAE  |         |         |          |           |           |           |         |           |           |         |         |         |         |
| VDSD/B 34      | 40-1.57 | 22-0.87 | 90-3.54  | 34-1.34   | 58-2.28   | 20-0.79   | 10-0.39 | 10.5-0.41 | 11-0.43   | 90-3.54 | 10-0.39 | 70-2.75 | 36-1.42 |
| VDSD/B 34/SAE  |         |         |          |           |           |           |         |           |           |         |         |         |         |
| VDSD/B 100     | 60-2.36 | 38-1.50 | 126-4.96 | 42-1.65   | 51,5-2.03 | 30-1.18   | 12-0.47 | 12-0.47   | 12-0.47   | 90-3.54 | 18-0.71 | 60-2.36 | 36-1.42 |
| VDSD/B 100/SAE |         |         |          |           |           |           |         |           |           |         |         |         |         |

## Ordering codes and description composition

Port size  
**VDSD/B 38/TS.S**

**1**



### VDSD/B complete valves

*With differential valve type: standard setting 160 bar at 5 l/min (2320 psi at 1.32 US gpm)*

| TYPE                                            | CODE       | DESCRIPTION                                             |
|-------------------------------------------------|------------|---------------------------------------------------------|
| <b>Configuration with G3/8 standard thread</b>  |            |                                                         |
| <b>VDSD/B 38/TS.S</b>                           | 1204021102 | Aluminium body, setting range 50-220 bar (725-3200 psi) |
| <b>VDSD/B 38/TS.S/ac</b>                        | 1204022101 | Steel body, as previous one                             |
| <b>Configuration with G1/2 standard thread</b>  |            |                                                         |
| <b>VDSD/B 12/TS.S</b>                           | 1204031102 | Aluminium body, setting range 50-220 bar (725-3200 psi) |
| <b>VDSD/B 12/TS.S/ac</b>                        | 1204032100 | Steel body, as previous one                             |
| <b>Configuration with G3/4 standard thread</b>  |            |                                                         |
| <b>VDSD/B 34/TS.S</b>                           | 1204041102 | Aluminium body, setting range 50-220 bar (725-3200 psi) |
| <b>VDSD/B 34/TS.S/ac</b>                        | 1204042100 | Steel body, as previous one                             |
| <b>Configuration with G1" standard thread</b>   |            |                                                         |
| <b>VDSD/B 100/TS.S</b>                          | 1204051102 | Aluminium body, setting range 50-220 bar (725-3200 psi) |
| <b>VDSD/B 100/TS.S/ac</b>                       | 1204052100 | Steel body, as previous one                             |
| <b>Configuration with SAE8 standard thread</b>  |            |                                                         |
| <b>VDSD/B 38/TS.S/SAE</b>                       | 1204021200 | Aluminium body, setting range 50-220 bar (725-3200 psi) |
| <b>Configuration with SAE10 standard thread</b> |            |                                                         |
| <b>VDSD/B 12/TS.S/SAE</b>                       | 1204031201 | Aluminium body, setting range 50-220 bar (725-3200 psi) |
| <b>Configuration with SAE12 standard thread</b> |            |                                                         |
| <b>VDSD/B 34/TS.S/SAE</b>                       | 1204041200 | Aluminium body, setting range 50-220 bar (725-3200 psi) |
| <b>Configuration with SAE16 standard thread</b> |            |                                                         |
| <b>VDSD/B 100/TS.S/SAE</b>                      | 1204051200 | Aluminium body, setting range 50-220 bar (725-3200 psi) |

For other steel body configurations, SAE thread and configurations with FPM (Viton) seals please contact our Sales Dpt.

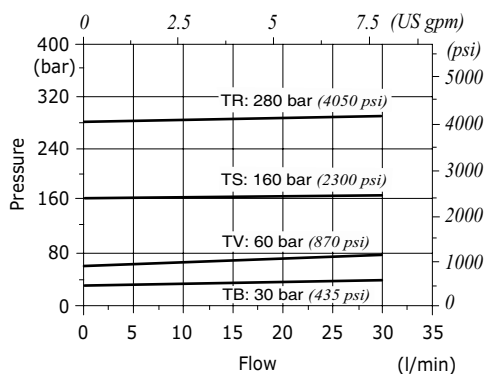
### 1 Pressure setting springs

| TYPE                                    | CODE       | DESCRIPTION                               |
|-----------------------------------------|------------|-------------------------------------------|
| <b>For VDSD/B 38 valve</b>              |            |                                           |
| <b>TV</b>                               | 3ML1144000 | Setting range 20-100 bar (290-1450 psi)   |
| <b>TS</b>                               | 3ML1144001 | Setting range 50-220 bar (725-3200 psi)   |
| <b>TR</b>                               | 3ML1144002 | Setting range 100-350 bar (1450-5100 psi) |
| <b>For VDSD/B 12, 34 and 100 valves</b> |            |                                           |
| <b>TV</b>                               | 3ML1164000 | Setting range 20-100 bar (290-1450 psi)   |
| <b>TS</b>                               | 3ML1164001 | Setting range 50-220 bar (725-3200 psi)   |
| <b>TR</b>                               | 3ML1164002 | Setting range 100-350 bar (1450-5100 psi) |

### Rating diagrams

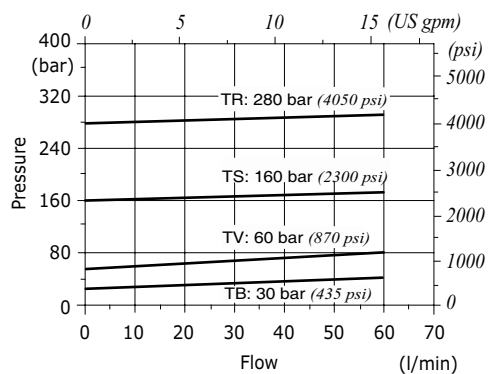
**VDSD/B 38 pressure vs. flow**

Std. setting at 5 l/min (1.32 US gpm)



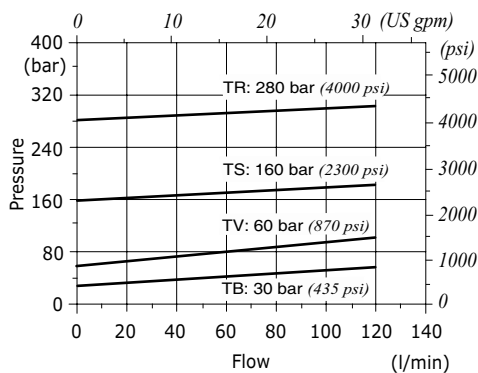
**VDSD/B 12 pressure vs. flow**

Std. setting at 5 l/min (1.32 US gpm)



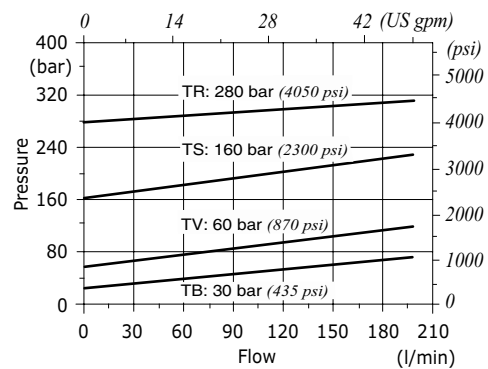
**VDSD/B 34 pressure vs. flow**

Std. setting at 5 l/min (1.32 US gpm)



**VDSD/B 100 pressure vs. flow**

Std. setting at 5 l/min (1.32 US gpm)





**Type VUI**  
**check valves**

- Poppet type

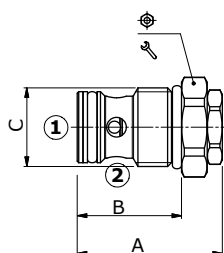
Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                                  | VUI 38                                                                       | VUI 38/HF                 | VUI 12                    | VUI 34                     | VUI 100                    |
|--------------------------------------------------|------------------------------------------------------------------------------|---------------------------|---------------------------|----------------------------|----------------------------|
| Nominal flow                                     | 25 l/min<br>(6.6 US gpm)                                                     | 40 l/min<br>(10.6 US gpm) | 40 l/min<br>(10.6 US gpm) | 100 l/min<br>(26.4 US gpm) | 160 l/min<br>(42.3 US gpm) |
| Max. pressure                                    | 400 bar (5800 psi)                                                           | 300 bar (4350 psi)        | 400 bar (5800 psi)        | 400 bar (5800 psi)         | 400 bar (5800 psi)         |
| Oil leakage                                      | 0.25 cm <sup>3</sup> /min (0.015 in <sup>3</sup> /min) at 210 bar (3050 psi) |                           |                           |                            |                            |
| Fluid                                            | mineral based oil                                                            |                           |                           |                            |                            |
| Viscosity                                        | from 10 to 200 cSt                                                           |                           |                           |                            |                            |
| Max. level of contamination                      | 18/16/13 ISO4406                                                             |                           |                           |                            |                            |
| Fluid temperature                                | with NBR seals: from -20°C (-4°F) to 80°C (176°F)                            |                           |                           |                            |                            |
| Environmental temperature for working conditions | from -40°C (-40°F) to 100°C (212°F)                                          |                           |                           |                            |                            |
| Weight                                           | Steel 0.08 kg (0.18 lb)                                                      | 0.075 kg (0.16 lb)        | 0.15 kg (0.33 lb)         | 0.30 kg (0.66 lb)          | 0.54 kg (1.19 lb)          |

NOTE - For different conditions, please contact Walvoil Sales Dpt.

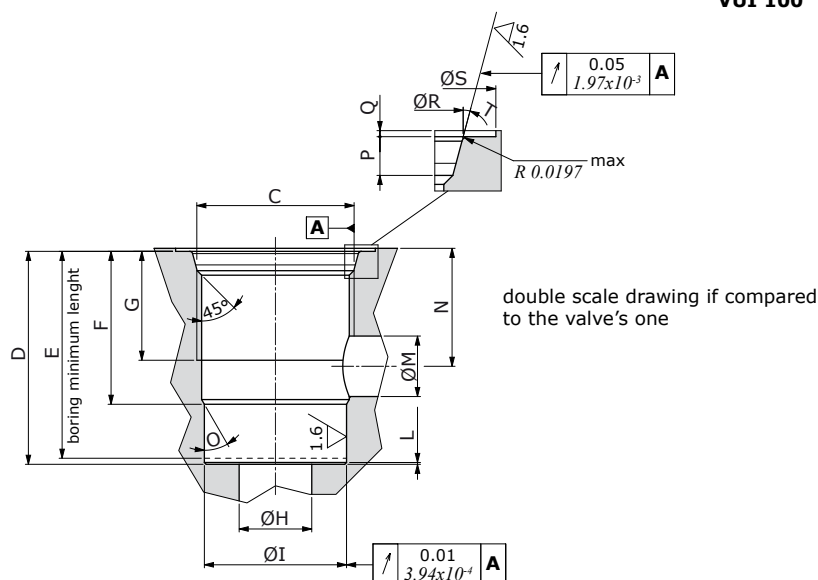


# Dimensions



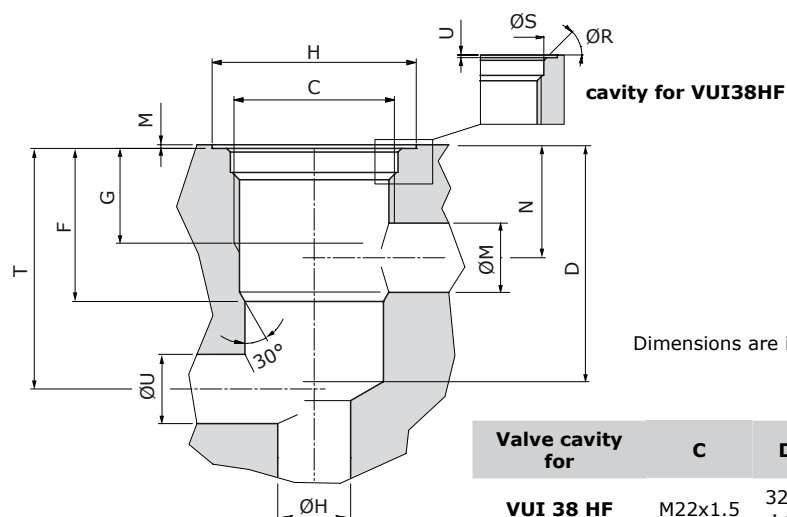
Dimensions are in mm-in

| Valve type       | A           | B         | C       |    | Nm-lbft |
|------------------|-------------|-----------|---------|----|---------|
| <b>VUI 38</b>    | 42-1.65     | 27-1.06   | M20x1.5 | 24 | 40-29   |
| <b>VUI 38/HF</b> | 34.5 - 1.36 | 28 - 1.10 | M22x1.5 | 27 | 50-37   |
| <b>VUI 12</b>    | 48-1.89     | 34.5-1.36 | M26x1.5 | 30 | 60-44   |
| <b>VUI 34</b>    | 68-2.68     | 51-2.01   | M33x2   | 38 | 70-51   |
| <b>VUI 100</b>   | 75-2.95     | 54.5-2.14 | M42x2   | 46 | 80-59   |



Dimensions are in mm-in

| Valve cavity for | C       | D            | E            | F             | G          | ØH         | ØI                  | L                    | ØM         | N            | O   | P            | Q            | ØR           | ØS         |
|------------------|---------|--------------|--------------|---------------|------------|------------|---------------------|----------------------|------------|--------------|-----|--------------|--------------|--------------|------------|
| <b>VUI 38</b>    | M20x1.5 | 29.5<br>1.16 | 28<br>1.10   | 20.5<br>0.81  | 16<br>0.63 | 10<br>0.39 | 16 H9<br>0.630 H9   | /                    | 7<br>0.275 | 16<br>0.63   | 30° | 3<br>0.118   | 0.5<br>0.020 | 21<br>0.83   | 30<br>1.18 |
| <b>VUI 12</b>    | M26x1.5 | 35.2<br>1.39 | 34.2<br>1.35 | 25.3<br>0.996 | 18<br>0.71 | 12<br>0.47 | 23.5 H9<br>0.925 H9 | 0.3x45°<br>0.012x45° | 10<br>0.39 | 19.5<br>0.77 | 30° | 3.2<br>0.126 | 0.5<br>0.020 | 27.6<br>1.09 | 33<br>1.30 |
| <b>VUI 34</b>    | M33x2   | 52.5<br>2.07 | 51.5<br>2.03 | 39<br>1.54    | 28<br>1.10 | 20<br>0.79 | 27 H9<br>1.063 H9   | 0.5x45°<br>0.020x45  | 15<br>0.59 | 29.5<br>1.16 | 20° | 3.2<br>0.126 | 0.5<br>0.020 | 34<br>1.35   | 40<br>1.57 |
| <b>VUI 100</b>   | 75-2.95 | 57<br>2.24   | 55<br>2.17   | 41<br>1.61    | 29<br>1.14 | 28<br>1.10 | 38 H9<br>1.496 H9   | 1.5x45°<br>0.059x45  | 18<br>0.71 | 30<br>1.18   | 30° | 4.5<br>0.177 | 0.5<br>0.020 | 43.5<br>1.71 | 50<br>1.97 |



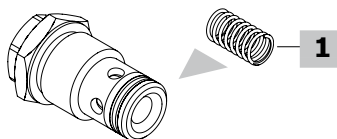
Dimensions are in mm-in

| Valve cavity for | C       | D            | F          | G          | ØH                   | ØM                 | N            | T          | ØU          |
|------------------|---------|--------------|------------|------------|----------------------|--------------------|--------------|------------|-------------|
| <b>VUI 38 HF</b> | M22x1.5 | 32.5<br>1.28 | 21<br>0.83 | 15<br>0.59 | max. 18<br>max. 0.71 | max.9<br>max. 0.35 | 15.5<br>0.61 | 33<br>1.30 | 9.5<br>0.37 |

## Ordering codes and description composition

### VUI 38/Pa0,5

1



#### VUI complete valves

| TYPE                   | CODE       | DESCRIPTION                                     |
|------------------------|------------|-------------------------------------------------|
| <b>VUI 38/Pa0,5</b>    | 1300020400 | Steel body, opening pressure 0.5 bar (7.25 psi) |
| <b>VUI 38/HF/Pa0,5</b> | 1300020900 | Steel body, opening pressure 0.5 bar (7.25 psi) |
| <b>VUI 12/Pa0,5</b>    | 1300030400 | Steel body, opening pressure 0.5 bar (7.25 psi) |
| <b>VUI 34/Pa0,5</b>    | 1300040400 | Steel body, opening pressure 0.5 bar (7.25 psi) |
| <b>VUI 100/Pa0,5</b>   | 1300050400 | Steel body, opening pressure 0.5 bar (7.25 psi) |

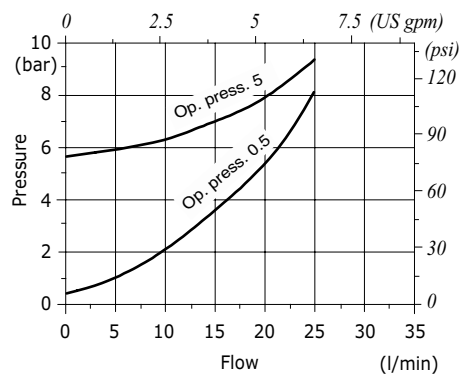
For configurations with FPM (Viton) seals please contact our Sales Dpt.

#### 1 Pressure setting springs

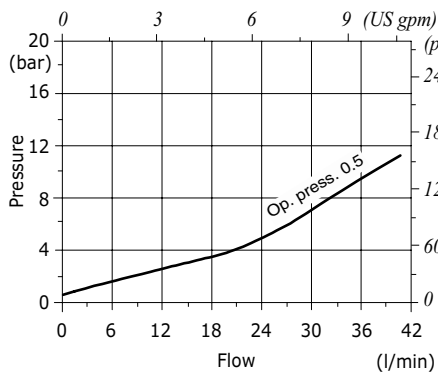
| TYPE                       | CODE       | DESCRIPTION                         |
|----------------------------|------------|-------------------------------------|
| <b>For VUI 38 valve</b>    |            |                                     |
| <b>Pa0,5</b>               | 3ML1072001 | Opening pressure 0.5 bar (7.25 psi) |
| <b>Pa5</b>                 | 3ML1072003 | Opening pressure 5 bar (72.5 psi)   |
| <b>For VUI 38 HF valve</b> |            |                                     |
| <b>Pa0,5</b>               | 1300020900 | Opening pressure 0.5 bar (7.25 psi) |
| <b>For VUI 12 valve</b>    |            |                                     |
| <b>Pa0,5</b>               | 3ML1112900 | Opening pressure 0.5 bar (7.25 psi) |
| <b>Pa5</b>                 | 3ML1102801 | Opening pressure 5 bar (72.5 psi)   |
| <b>For VUI 34 valve</b>    |            |                                     |
| <b>Pa0,5</b>               | 3ML1155200 | Opening pressure 0.5 bar (7.25 psi) |
| <b>Pa5</b>                 | 3ML1155000 | Opening pressure 5 bar (72.5 psi)   |
| <b>For VUI 100 valve</b>   |            |                                     |
| <b>Pa0,5</b>               | 3ML1172801 | Opening pressure 0.5 bar (7.25 psi) |
| <b>Pa5</b>                 | 3ML1172800 | Opening pressure 5 bar (72.5 psi)   |

## Rating diagrams

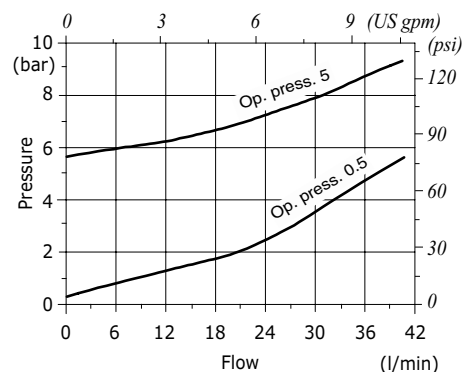
**VUI 38 pressure drop vs. flow**



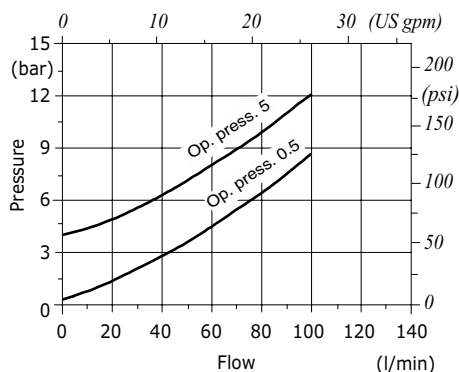
**VUI 38 HF pressure drop vs. flow**



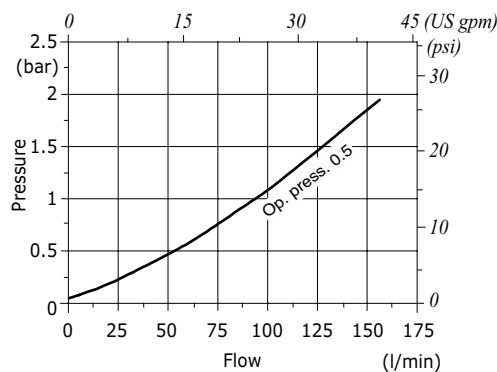
**VUI 12 pressure drop vs. flow**



**VUI 34 pressure drop vs. flow**



**VUI 100 pressure drop vs. flow**







## Type VUS/INC check valves

- Ball type

Technical specifications and diagrams are measured with mineral oil ISO VG32 at 50°C (122°F) temperature.

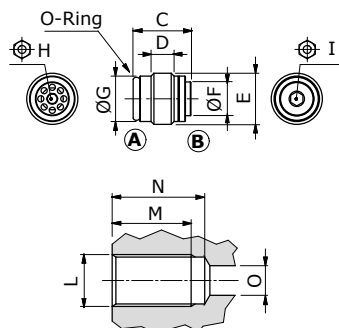
|                                            | VUS/INC 14                                                                   | VUS/INC 38               | VUS/INC 12                | VUS/INC 34                |
|--------------------------------------------|------------------------------------------------------------------------------|--------------------------|---------------------------|---------------------------|
| Nominal flow                               | 18 l/min<br>(4.8 US gpm)                                                     | 25 l/min<br>(6.6 US gpm) | 50 l/min<br>(13.2 US gpm) | 78 l/min<br>(20.6 US gpm) |
| Max. pressure                              | 350 bar (5100 psi)                                                           |                          |                           |                           |
| Oil leakage                                | 0.25 cm <sup>3</sup> /min (0.015 in <sup>3</sup> /min) at 210 bar (3050 psi) |                          |                           |                           |
| Fluid                                      | mineral based oil                                                            |                          |                           |                           |
| Viscosity                                  | from 10 to 200 cSt                                                           |                          |                           |                           |
| Max. level of contamination                | 18/16/13 ISO4406                                                             |                          |                           |                           |
| Fluid temperature                          | with NBR seals: from -20°C (-4°F) to 80°C (176°F)                            |                          |                           |                           |
| Environmental temp. for working conditions | -40°C (-40°F) to 100°C (212°F)                                               |                          |                           |                           |
| Weight                                     | Steel 0.01 kg (0.02 lb)                                                      | 0.02 kg (0.04 lb)        | 0.04 kg (0.09 lb)         | 0.07 kg (0.15 lb)         |

NOTE - For different conditions, please contact Walvoil Sales Dpt.





### Dimensions



Dimensions are in mm-in

| Valve type | ØC        | D         | E     | G        | ØG         | ØH | ØI | O-Ring     |
|------------|-----------|-----------|-------|----------|------------|----|----|------------|
| VUS/INC14  | 17-0.67   | 6-0.24    | G 1/4 | 9.2-0.36 | 11.3-0.445 | 3  | 3  | 1x9        |
| VUS/INC38  | 18.5-0.73 | 7.5-0.29  | G 3/8 | 11-0.43  | 14.8-0.57  | 3  | 4  | 1.78x10.82 |
| VUS/INC12  | 23-0.90   | 9.5-0.37  | G 1/2 | 14-0.55  | 18.5-0.73  | 5  | 6  | 1.78x14    |
| VUS/INC34  | 28.5-1.12 | 14.5-0.57 | G 3/4 | 19-0.75  | 24-0.94    | 8  | 8  | 2.62x18.72 |

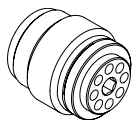
| Valve cavity for | L     | M       | N       | O       |
|------------------|-------|---------|---------|---------|
| VUS/INC14        | G 1/4 | 25-0.98 | 28-1.1  | 8-0.31  |
| VUS/INC38        | G 3/8 | 27-1.06 | 30-1.18 | 9-0.35  |
| VUS/INC12        | G 1/2 | 32-1.26 | 36-1.42 | 12-0.47 |
| VUS/INC34        | G 3/4 | 37-1.46 | 42-1.65 | 17-0.67 |

### Ordering codes and description composition

VUS/INC 14/Pa0,5

Port size

Opening pressure (bar)



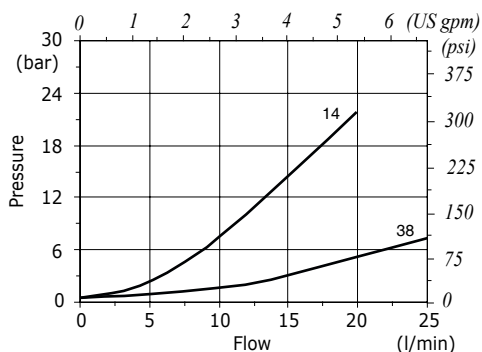
#### VUS/INC complete valves

| TYPE             | CODE       | DESCRIPTION                                      |
|------------------|------------|--------------------------------------------------|
| VUS/INC 14/Pa0,5 | 1312110100 | Opening pressure 0.5 bar (7.25 psi), G1/4 thread |
| VUS/INC 38/Pa0,5 | 1312120100 | Opening pressure 0.5 bar (7.25 psi), G3/8 thread |
| VUS/INC 12/Pa0,5 | 1312130100 | Opening pressure 0.5 bar (7.25 psi), G1/2 thread |
| VUS/INC 34/Pa0,5 | 1312140100 | Opening pressure 0.5 bar (7.25 psi), G3/4 thread |

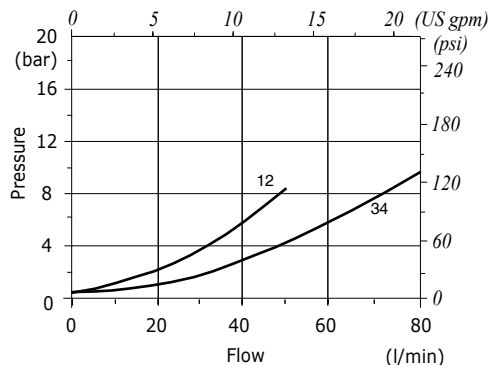
For different configurations and SAE thread please contact our Sales Dpt.

### Rating diagrams

VUS/INC14-38 pressure drop vs. flow  
opening pressure 0.5 bar (725 psi)



VUS/INC12-34 pressure drop vs. flow  
opening pressure 0.5 bar (725 psi)





**Type VUS/INC/A**  
**check valves**

- Poppet type

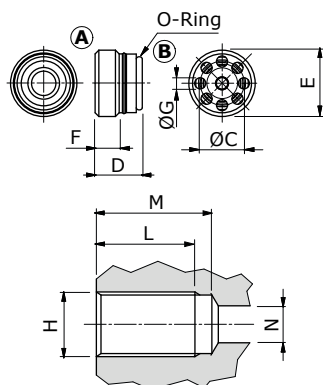
Technical specifications and diagrams are measured with mineral oil ISO VG32 at 50°C (122°F) temperature.

|                                                  | VUS/INC/A14           |                   | VUS/INC/A38                                                                  | VUS/INC/A12            |
|--------------------------------------------------|-----------------------|-------------------|------------------------------------------------------------------------------|------------------------|
| Nominal flow                                     | 20 l/min (5.3 US gpm) |                   | 50 l/min (13.2 US gpm)                                                       | 80 l/min (21.1 US gpm) |
| Max. pressure                                    |                       |                   | 350 bar (5100 psi)                                                           |                        |
| Oil leakage                                      |                       |                   | 0.25 cm <sup>3</sup> /min (0.015 in <sup>3</sup> /min) at 210 bar (3050 psi) |                        |
| Fluid                                            |                       |                   | mineral based oil                                                            |                        |
| Viscosity                                        |                       |                   | from 10 to 200 cSt                                                           |                        |
| Max. level of contamination                      |                       |                   | 18/16/13 ISO4406                                                             |                        |
| Fluid temperature                                |                       |                   | with NBR seals: from -20°C (-4°F) to 80°C (176°F)                            |                        |
| Environmental temperature for working conditions |                       |                   | from -40°C (-40°F) to 100°C (212°F)                                          |                        |
| Weight                                           | Steel                 | 0.01 kg (0.02 lb) | 0.02 kg (0.04 lb)                                                            | 0.03 kg (0.06 lb)      |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



### Dimensions



Dimensions are in mm-in

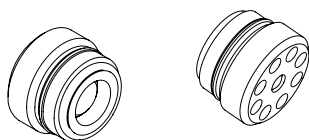
| Valve type         | ØC          | D           | E     | F          | ØG         | O-Ring  |
|--------------------|-------------|-------------|-------|------------|------------|---------|
| <b>VUS/INC/A14</b> | 8.8 - 0.35  | 8.8 - 0.35  | G 1/4 | 4.2 - 0.16 | 2.2 - 0.09 | 1x8     |
| <b>VUS/INC/A38</b> | 10.8 - 0.42 | 12 - 0.47   | G 3/8 | 7 - 0.27   | 3 - 0.12   | 1.5x11  |
| <b>VUS/INC/A12</b> | 13.8 - 0.54 | 14.8 - 0.58 | G 1/2 | 8 - 0.31   | 3.5 - 0.14 | 1.78x14 |

| Valve cavity for   | H     | L           | M           | N         |
|--------------------|-------|-------------|-------------|-----------|
| <b>VUS/INC/A14</b> | G 1/4 | 21 - 0.83   | 23.5 - 0.92 | 7 - 0.27  |
| <b>VUS/INC/A38</b> | G 3/8 | 24 - 0.94   | 26.5 - 1.04 | 9 - 0.35  |
| <b>VUS/INC/A12</b> | G 1/2 | 27.5 - 1.08 | 31 - 1.22   | 12 - 0.47 |

### Ordering codes and description composition

Port size  
**VUS/INC/A 38/Pa0,5**  
 Opening pressure (bar)



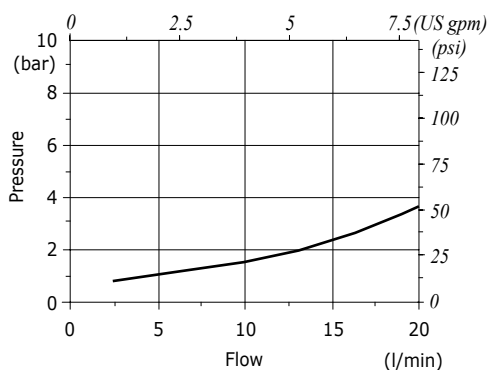
#### VUS/INC/A complete valves

| TYPE                     | CODE       | DESCRIPTION                                      |
|--------------------------|------------|--------------------------------------------------|
| <b>VUS/INC/A14/Pa0,5</b> | 1312210101 | Opening pressure 0.5 bar (7.25 psi), G1/4 thread |
| <b>VUS/INC/A38/Pa0,5</b> | 1312220100 | Opening pressure 0.5 bar (7.25 psi), G3/8 thread |
| <b>VUS/INC/A12/Pa0,5</b> | 1312230100 | Opening pressure 0.5 bar (7.25 psi), G1/2 thread |

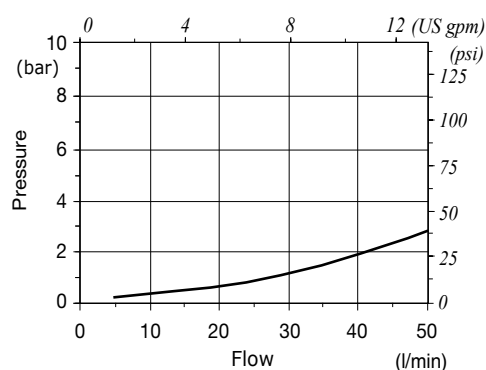
For different configurations and SAE thread please contact our Sales Dpt.

### Rating diagrams

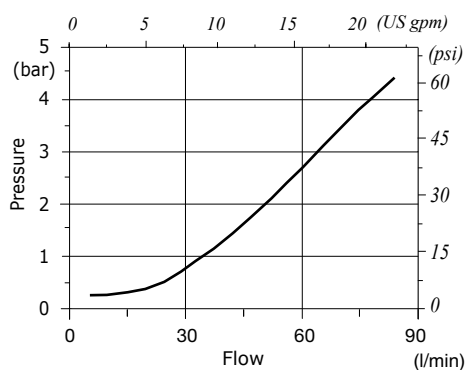
**VUS/INC/A14 pressure drop vs. flow**  
 opening pressure 0.5 bar (725 psi)



**VUS/INC/A38 pressure drop vs. flow**  
 opening pressure 0.5 bar (725 psi)



**VUS/INC/A12 pressure drop vs. flow**  
 opening pressure 0.5 bar (725 psi)





## Type VUS/INC/B check valves

- Poppet type

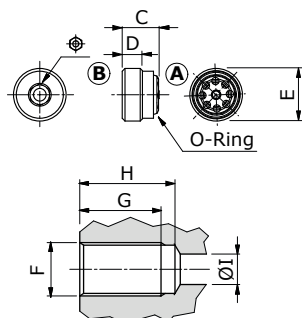
Technical specifications and diagrams are measured with mineral oil ISO VG32 at 50°C (122°F) temperature.

|                                                  | <b>VUS/INC/B14</b>    |                   | <b>VUS/INC/B38</b>                                                           | <b>VUS/INC/B12</b>     |
|--------------------------------------------------|-----------------------|-------------------|------------------------------------------------------------------------------|------------------------|
| Nominal flow                                     | 20 l/min (5.3 US gpm) |                   | 50 l/min (13.2 US gpm)                                                       | 80 l/min (21.1 US gpm) |
| Max. pressure                                    |                       |                   | 350 bar (5100 psi)                                                           |                        |
| Oil leakage                                      |                       |                   | 0.25 cm <sup>3</sup> /min (0.015 in <sup>3</sup> /min) at 210 bar (3050 psi) |                        |
| Fluid                                            |                       |                   | mineral based oil                                                            |                        |
| Viscosity                                        |                       |                   | from 10 to 200 cSt                                                           |                        |
| Max. level of contamination                      |                       |                   | 18/16/13 ISO4406                                                             |                        |
| Fluid temperature                                |                       |                   | with NBR seals: from -20°C (-4°F) to 80°C (176°F)                            |                        |
| Environmental temperature for working conditions |                       |                   | from -40°C (-40°F) to 100°C (212°F)                                          |                        |
| Weight                                           | Steel                 | 0.01 kg (0.02 lb) | 0.02 kg (0.04 lb)                                                            | 0.03 kg (0.06 lb)      |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



## Dimensions



Dimensions are in mm-in

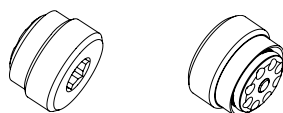
| Valve type         | ØC          | D        | E     | Ø | O-Ring   |
|--------------------|-------------|----------|-------|---|----------|
| <b>VUS/INC/B14</b> | 10 - 0.39   | 6 - 0.24 | G 1/4 | 5 | 1x9      |
| <b>VUS/INC/B38</b> | 11.5 - 0.45 | 7 - 0.27 | G 3/8 | 6 | 1.5x10   |
| <b>VUS/INC/B12</b> | 13.5 - 0.53 | 8 - 0.31 | G 1/2 | 8 | 1.6x14.1 |

| Valve cavity for   | F     | G           | H          | ØI        |
|--------------------|-------|-------------|------------|-----------|
| <b>VUS/INC/B14</b> | G 1/4 | 21.5 - 0.85 | 24 - 0.94  | 7 - 0.27  |
| <b>VUS/INC/B38</b> | G 3/8 | 23 - 0.90   | 25.5 - 1   | 9 - 0.35  |
| <b>VUS/INC/B12</b> | G 1/2 | 28 - 1.10   | 30.5 - 1.2 | 12 - 0.47 |

## Ordering codes and description composition

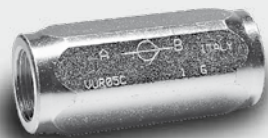
Port size  
**VUS/INC/B 14/Pa0,5**  
Opening pressure (bar)



### Complete valves

| TYPE                     | CODE       | DESCRIPTION                                      |
|--------------------------|------------|--------------------------------------------------|
| <b>VUS/INC/B14/Pa0,5</b> | 1312310100 | Opening pressure 0.5 bar (7.25 psi), G1/4 thread |
| <b>VUS/INC/B38/Pa0,5</b> | 1312320100 | Opening pressure 0.5 bar (7.25 psi), G3/8 thread |
| <b>VUS/INC/B12/Pa0,5</b> | 1312330100 | Opening pressure 0.5 bar (7.25 psi), G1/2 thread |

For different configurations and SAE thread please contact our Sales Dpt.



## Type VUC check valves

- Poppet type

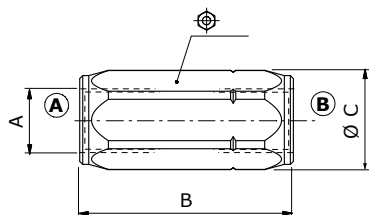
Technical specifications and diagrams are measured with mineral oil ISO VG32 at 50°C (122°F) temperature.

|                                            |       | VUC 14                                             | VUC 38                    | VUC 12                    | VUC 34                     | VUC 100                    | VUC 114                  | VUC 112                   |
|--------------------------------------------|-------|----------------------------------------------------|---------------------------|---------------------------|----------------------------|----------------------------|--------------------------|---------------------------|
| Nominal flow                               |       | 30 l/min<br>(7.9 US gpm)                           | 50 l/min<br>(13.2 US gpm) | 90 l/min<br>(23.8 US gpm) | 130 l/min<br>(34.3 US gpm) | 180 l/min<br>(47.6 US gpm) | 250 l/min<br>(66 US gpm) | 380 l/min<br>(100 US gpm) |
| Max. pressure                              |       | 400 bar<br>(5800 psi)                              | 400 bar<br>(5800 psi)     | 350 bar<br>(5100 psi)     | 300 bar<br>(4350 psi)      | 270 bar<br>(3900 psi)      | 250 bar<br>(3600 psi)    | 200 bar<br>(2900 psi)     |
| Oil leakage                                |       | 0.25 cm³/min (0.015 in³/min) at 210 bar (3050 psi) |                           |                           |                            |                            |                          |                           |
| Fluid                                      |       | mineral based oil                                  |                           |                           |                            |                            |                          |                           |
| Viscosity                                  |       | from 10 to 200 cSt                                 |                           |                           |                            |                            |                          |                           |
| Max. level of contamination                |       | 18/16/13 ISO4406                                   |                           |                           |                            |                            |                          |                           |
| Fluid temperature                          |       | with NBR seals: from -20°C (-4°F) to 80°C (176°F)  |                           |                           |                            |                            |                          |                           |
| Environmental temp. for working conditions |       | -40°C (-40°F) to 100°C (212°F)                     |                           |                           |                            |                            |                          |                           |
| Weight                                     | Steel | 0.10 kg<br>(0.22 lb)                               | 0.18 kg<br>(0.40 lb)      | 0.31 kg<br>(0.68 lb)      | 0.56 kg<br>(1.23 lb)       | 0.91 kg<br>(2.01 lb)       | 1.48 kg<br>(3.26 lb)     | 2.37 kg<br>(5.22 lb)      |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



## Dimensions



Dimensions are in mm-in

| Valve type | A       | B          | Ø C       | Ø  |
|------------|---------|------------|-----------|----|
| VUC 14     | G 1/4   | 58 - 2.28  | 21 - 0.83 | 19 |
| VUC 38     | G 3/8   | 62 - 2.44  | 27 - 1.05 | 24 |
| VUC 12     | G 1/2   | 71 - 2.79  | 33 - 1.30 | 30 |
| VUC 34     | G 3/4   | 84 - 3.31  | 40 - 1.57 | 36 |
| VUC 100    | 1       | 106 - 4.17 | 49 - 1.93 | 45 |
| VUC 114    | G 1 1/4 | 127 - 5    | 61 - 2.40 | 55 |
| VUC 112    | G 1 1/2 | 138 - 5.43 | 72 - 2.83 | 65 |

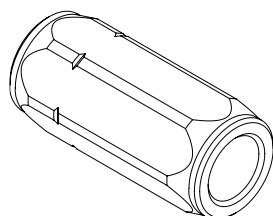
## Ordering codes and description composition

Port size      Opening pressure (bar)

**VUC14/Pa0,5 FO**

- without hole

**FO** with metering hole



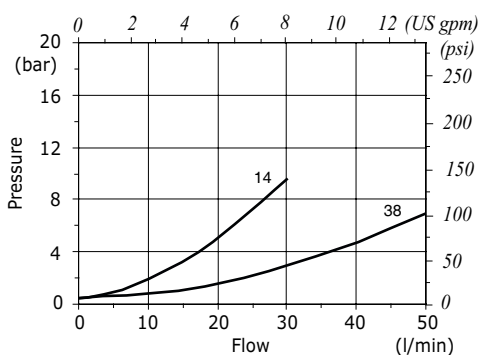
### VUC complete valves

| TYPE         | CODE       | DESCRIPTION                                                    |
|--------------|------------|----------------------------------------------------------------|
| VUC14/Pa0,5  | 1312510100 | Steel body, opening pressure 0.5 bar (7.25 psi), G1/4 thread   |
| VUC38/Pa0,5  | 1312520100 | Steel body, opening pressure 0.5 bar (7.25 psi), G3/8 thread   |
| VUC12/Pa0,5  | 1312530100 | Steel body, opening pressure 0.5 bar (7.25 psi), G1/2 thread   |
| VUC34/Pa0,5  | 1312540100 | Steel body, opening pressure 0.5 bar (7.25 psi), G3/4 thread   |
| VUC100/Pa0,5 | 1312550100 | Steel body, opening pressure 0.5 bar (7.25 psi), G1 thread     |
| VUC114/Pa0,5 | 1312560100 | Steel body, opening pressure 0.5 bar (7.25 psi), G1 1/4 thread |
| VUC112/Pa0,5 | 1312570100 | Steel body, opening pressure 0.5 bar (7.25 psi), G1 1/2 thread |

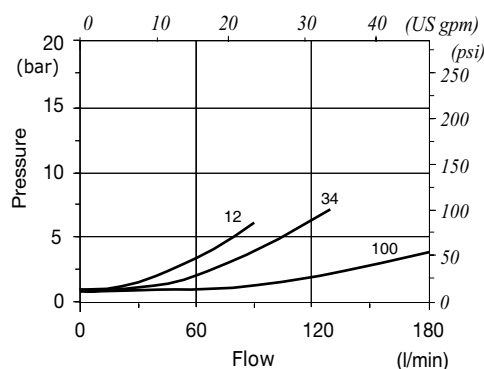
For different configurations and SAE thread please contact our Sales Dpt.

## Rating diagrams

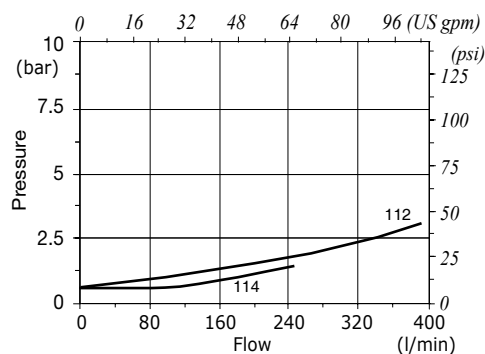
**VUC14-VUC38 pressure drop vs. flow**  
opening pressure 0.5 bar (7.25 psi)

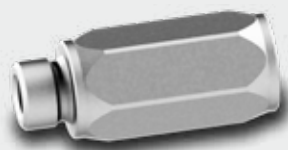


**VUC12-VUC34-VUC100 pressure drop vs. flow**  
opening pressure 0.5 bar (7.25 psi)



**VUC114-VUC112 pressure drop vs. flow**  
opening pressure 0.5 bar (7.25 psi)





## Type VUC/M check valves

- Poppet type

Technical specifications and diagrams are measured with mineral oil ISO VG32 at 50°C (122°F) temperature.

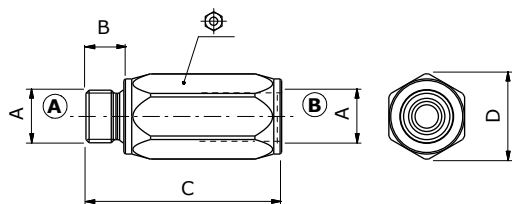
|                                            | VUC/M 14                                                               | VUC/M 38                         | VUC/M 12                         | VUC/M 34                          | VUC/M 100                         | VUC/M 114                       |                             |
|--------------------------------------------|------------------------------------------------------------------------|----------------------------------|----------------------------------|-----------------------------------|-----------------------------------|---------------------------------|-----------------------------|
| Nominal flow                               | 30 l/min<br><i>(7.9 US gpm)</i>                                        | 50 l/min<br><i>(13.2 US gpm)</i> | 90 l/min<br><i>(23.8 US gpm)</i> | 130 l/min<br><i>(34.3 US gpm)</i> | 180 l/min<br><i>(47.6 US gpm)</i> | 250 l/min<br><i>(66 US gpm)</i> |                             |
| Max. pressure                              | 400 bar<br><i>(5800 psi)</i>                                           | 400 bar<br><i>(5800 psi)</i>     | 350 bar<br><i>(5100 psi)</i>     | 300 bar<br><i>(4350 psi)</i>      | 270 bar<br><i>(3900 psi)</i>      | 250 bar<br><i>(3600 psi)</i>    |                             |
| Oil leakage                                | 0.25 cm³/min <i>(0.015 in³/min)</i> at 210 bar <i>(3050 psi)</i>       |                                  |                                  |                                   |                                   |                                 |                             |
| Fluid                                      | mineral based oil                                                      |                                  |                                  |                                   |                                   |                                 |                             |
| Viscosity                                  | from 10 to 200 cSt                                                     |                                  |                                  |                                   |                                   |                                 |                             |
| Max. level of contamination                | 18/16/13 ISO4406                                                       |                                  |                                  |                                   |                                   |                                 |                             |
| Fluid temperature                          | <i>with NBR seals:</i> from -20°C <i>(-4°F)</i> to 80°C <i>(176°F)</i> |                                  |                                  |                                   |                                   |                                 |                             |
| Environmental temp. for working conditions | -40°C <i>(-40°F)</i> to 100°C <i>(212°F)</i>                           |                                  |                                  |                                   |                                   |                                 |                             |
| Weight                                     | <i>Steel</i>                                                           | 0.10 kg<br><i>(0.22 lb)</i>      | 0.18 kg<br><i>(0.40 lb)</i>      | 0.31 kg<br><i>(0.68 lb)</i>       | 0.56 kg<br><i>(1.23 lb)</i>       | 0.91 kg<br><i>(2.01 lb)</i>     | 1.48 kg<br><i>(3.26 lb)</i> |

NOTE - For different conditions, please contact Walvoil Sales Dpt.





### Dimensions



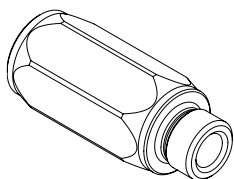
Dimensions are in mm-in

| Valve type       | A       | B         | C          | D         | ⌀  |
|------------------|---------|-----------|------------|-----------|----|
| <b>VUC/M 14</b>  | G 1/4   | 12 - 0.47 | 58 - 2.28  | 21 - 0.83 | 19 |
| <b>VUC/M 38</b>  | G 3/8   | 12 - 0.47 | 62 - 2.44  | 27 - 1.05 | 24 |
| <b>VUC/M 12</b>  | G 1/2   | 14 - 0.55 | 71 - 2.79  | 33 - 1.30 | 30 |
| <b>VUC/M 34</b>  | G 3/4   | 16 - 0.63 | 76 - 2.99  | 40 - 1.57 | 36 |
| <b>VUC/M 100</b> | 1       | 18 - 0.71 | 106 - 4.17 | 49 - 1.93 | 45 |
| <b>VUC/M 114</b> | G 1 1/4 | 20 - 0.78 | 122 - 4.80 | 63 - 2.48 | 55 |

### Ordering codes and description composition

Port size — Opening pressure (bar)

**VUC/M 14/Pa0,5**



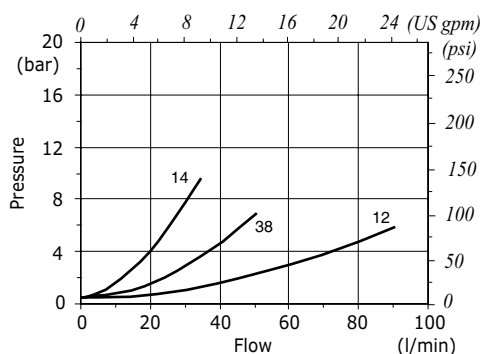
#### VUC/M complete valves

| TYPE                  | CODE       | DESCRIPTION                                                    |
|-----------------------|------------|----------------------------------------------------------------|
| <b>VUC/M14/Pa0,5</b>  | 1312610100 | Steel body, opening pressure 0.5 bar (7.25 psi), G1/4 thread   |
| <b>VUC/M38/Pa0,5</b>  | 1312620100 | Steel body, opening pressure 0.5 bar (7.25 psi), G3/8 thread   |
| <b>VUC/M12/Pa0,5</b>  | 1312630100 | Steel body, opening pressure 0.5 bar (7.25 psi), G1/2 thread   |
| <b>VUC/M34/Pa0,5</b>  | 1312640100 | Steel body, opening pressure 0.5 bar (7.25 psi), G3/4 thread   |
| <b>VUC/M100/Pa0,5</b> | 1312650100 | Steel body, opening pressure 0.5 bar (7.25 psi), G1 thread     |
| <b>VUC/M114/Pa0,5</b> | 1312660100 | Steel body, opening pressure 0.5 bar (7.25 psi), G1 1/4 thread |

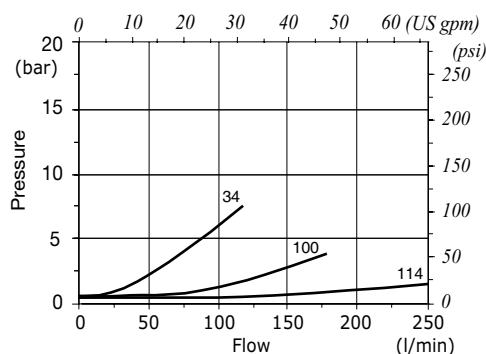
For different configurations and SAE thread please contact our Sales Dpt.

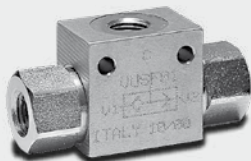
### Rating diagrams

**VUC/M14-38-12 pressure drop vs. flow**  
opening pressure 0.5 bar (7.25 psi)



**VUC/M34-100-114 pressure drop vs. flow**  
opening pressure 0.5 bar (7.25 psi)





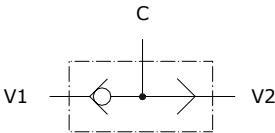
## Type VT shuttle valves

- Shuttle valves
- Ball type

Technical specifications and diagrams are measured with mineral oil ISO VG32 at 50°C (122°F) temperature.

|                                            | VT 14                                             | VT 38                     | VT 12                     | VT 34                    | VT 100                     |
|--------------------------------------------|---------------------------------------------------|---------------------------|---------------------------|--------------------------|----------------------------|
| Nominal flow                               | 35 l/min<br>(9.3 US gpm)                          | 50 l/min<br>(13.2 US gpm) | 90 l/min<br>(23.8 US gpm) | 140 l/min<br>(37 US gpm) | 180 l/min<br>(47.6 US gpm) |
| Max. pressure                              | 350 bar (5100 psi)                                |                           |                           |                          |                            |
| Fluid                                      | mineral based oil                                 |                           |                           |                          |                            |
| Viscosity                                  | from 10 to 200 cSt                                |                           |                           |                          |                            |
| Max. level of contamination                | 18/16/13 ISO4406                                  |                           |                           |                          |                            |
| Fluid temperature                          | with NBR seals: from -20°C (-4°F) to 80°C (176°F) |                           |                           |                          |                            |
| Environmental temp. for working conditions | -40°C (-40°F) to 100°C (212°F)                    |                           |                           |                          |                            |
| Weight                                     | Steel 0.27 kg (0.59 lb)                           | 0.464 kg (1.02 lb)        | 0.74 kg (1.63 lb)         | 1.406 kg (3.1 lb)        | 1.87 kg (4.12 lb)          |

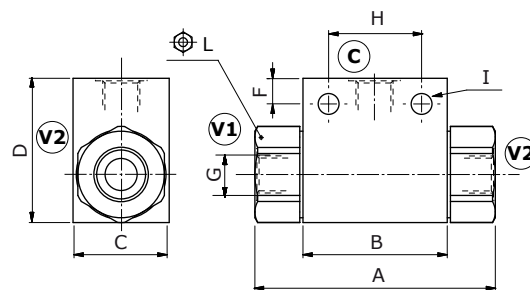
NOTE - For different conditions, please contact Walvoil Sales Dpt.



## Dimensions

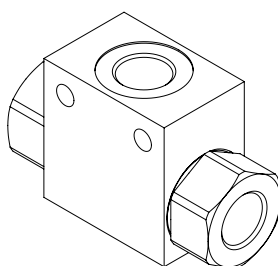
Dimensions are in mm-in

| Valve type    | A           | B          | C          | D          | E            | F           | G        | H          | I            | L  |
|---------------|-------------|------------|------------|------------|--------------|-------------|----------|------------|--------------|----|
| <b>VT 14</b>  | 69<br>2.71  | 36<br>1.42 | 25<br>0.98 | 35<br>1.38 | 22.5<br>0.88 | 7<br>0.27   | G<br>1/4 | 25<br>0.98 | 6<br>0.24    | 22 |
| <b>VT 38</b>  | 75<br>2.95  | 45<br>1.77 | 30<br>1.18 | 45<br>1.77 | 30<br>1.18   | 8<br>0.31   | G<br>3/8 | 29<br>1.14 | 6.5<br>0.25  | 27 |
| <b>VT 12</b>  | 94<br>3.7   | 57<br>2.24 | 35<br>1.38 | 50<br>1.97 | 32<br>1.26   | 9<br>0.35   | G<br>1/2 | 36<br>1.42 | 5.5<br>0.22  | 30 |
| <b>VT 34</b>  | 100<br>3.94 | 65<br>2.56 | 50<br>1.97 | 60<br>2.36 | 37.5<br>1.48 | 6.5<br>0.25 | G<br>3/4 | 50<br>1.97 | 6.5<br>0.25  | 41 |
| <b>VT 100</b> | 126<br>4.96 | 80<br>3.15 | 50<br>1.97 | 80<br>3.15 | 54.5<br>2.14 | 11<br>0.43  | G 1      | 60<br>2.36 | 10.5<br>0.41 | 46 |



## Ordering codes and description composition

Port size  
**VT 14**



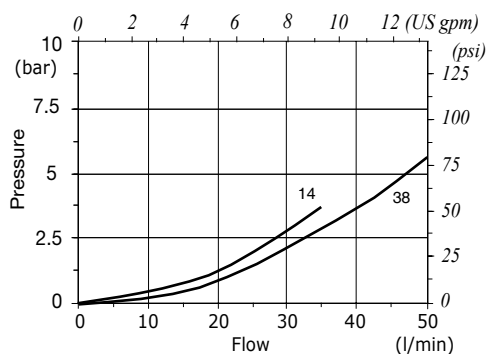
### 1 VT complete valves

| TYPE         | CODE       | DESCRIPTION            |
|--------------|------------|------------------------|
| <b>VT14</b>  | 1323012100 | Steel body, G1/4 ports |
| <b>VT38</b>  | 1323022100 | Steel body, G3/8 ports |
| <b>VT12</b>  | 1323032100 | Steel body, G1/2 ports |
| <b>VT34</b>  | 1323042100 | Steel body, G3/4 ports |
| <b>VT100</b> | 1323052100 | Steel body, G1 ports   |

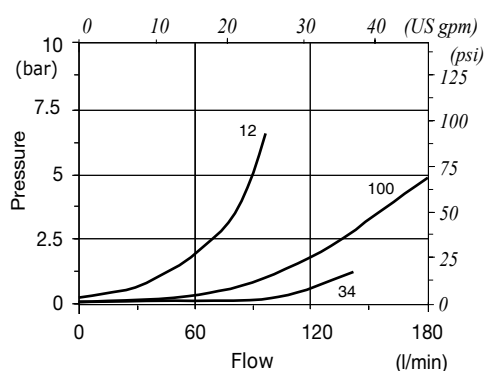
For different configurations and SAE thread please contact our Sales Dpt.

## Rating diagrams

**VT14-38 pressure drop vs. flow**



**VT12-34-100 pressure drop vs. flow**





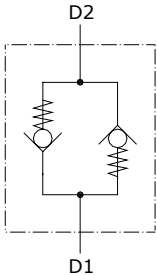
**Type VBD-VBD/VP  
check valves**

- Double acting

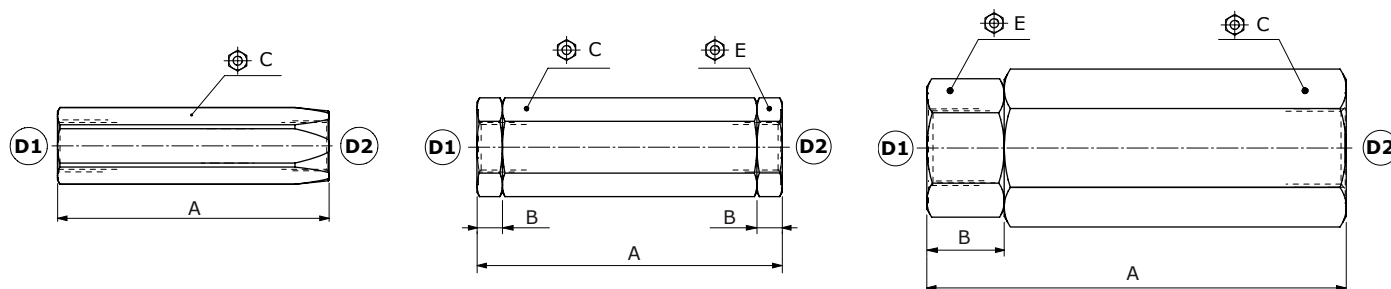
Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                            | VBD/VP 38                                                                                               |                   | VBD 38                 | VBD 12                 | VBD 34                 |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------|-------------------|------------------------|------------------------|------------------------|
| Nominal flow                               | 20 l/min (5.2 US gpm)                                                                                   |                   | 40 l/min (10.5 US gpm) | 60 l/min (15.8 US gpm) | 90 l/min (23.8 US gpm) |
| Max. pressure                              | 350 bar (5100 psi)                                                                                      |                   |                        |                        |                        |
| Oil leakage                                | 0.5 cm <sup>3</sup> /min (0.030 in <sup>3</sup> /min) at 210 bar (3050 psi): at 75% of pressure setting |                   |                        |                        |                        |
| Fluid                                      | mineral based oil                                                                                       |                   |                        |                        |                        |
| Viscosity                                  | from 10 to 200 cSt                                                                                      |                   |                        |                        |                        |
| Max. level of contamination                | 18/16/13 ISO4406                                                                                        |                   |                        |                        |                        |
| Fluid temperature                          | with NBR seals: from -20°C (-4°F) to 80°C (176°F)                                                       |                   |                        |                        |                        |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                                                                     |                   |                        |                        |                        |
| Weight                                     | Steel                                                                                                   | 0.21 kg (0.46 lb) | 0.46 kg (1.01 lb)      | 0.54 kg (1.19 lb)      | 1.51 kg (3.33 lb)      |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



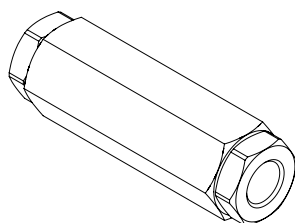
## Dimensions



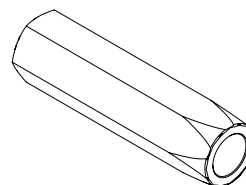
| Valve type    | All ports | Valve type    | A        | B         | ⌀C | ⌀E |
|---------------|-----------|---------------|----------|-----------|----|----|
| VBD 38/VP     | G 3/8     | VBD 38/VP     | 87-3.43  | /         | 22 | /  |
| VBD 38        | G 3/8     | VBD 38        | 102-4.02 | 8.5-0.335 | 30 | 27 |
| VBD 12        | G 1/2     | VBD 12        | 129-5.08 | 22-0.87   | 30 | 27 |
| VBD 34        | G 3/4     | VBD 34        | 141-5.55 | 26-1.02   | 46 | 46 |
| Valve type    | All ports | Valve type    | A        | B         | ⌀C | ⌀E |
| VBD 38/VP/SAE | SAE8      | VBD 38/VP/SAE | 87-3.43  | /         | 22 | /  |
| VBD 38/SAE    | SAE8      | VBD 38/SAE    | 102-4.02 | 8.5-0.335 | 30 | 27 |

## Ordering codes and description composition

Port size  
**VBD 38/Pa0.5-8**  
 Opening pressure (bar)



Port size  
**VBD/VP 38/Pa0.5-15**  
 Opening pressure (bar)



### VBD complete valves

| TYPE               | CODE       | DESCRIPTION                                                                     |
|--------------------|------------|---------------------------------------------------------------------------------|
| VBD 38/Pa0.5-8     | 1313020100 | Steel body, opening pressure 0.5 bar (7.25 psi) and 8 bar (116 psi), G3/8 ports |
| VBD 12/Pa0.5-8     | 1313030100 | Steel body, opening pressure 0.5 bar (7.25 psi) and 8 bar (116 psi), G1/2 ports |
| VBD 34/Pa0.5-8     | 1313040100 | Steel body, opening pressure 0.5 bar (7.25 psi) and 8 bar (116 psi), G3/4 ports |
| VBD 38/Pa0.5-8/SAE | 1313020100 | Steel body, opening pressure 0.5 bar (7.25 psi) and 8 bar (116 psi), G3/8 ports |

For configurations with special opening pressure or SAE threads please contact our Sales Dpt.

### VBD/VP complete valves

| TYPE                                | CODE       | DESCRIPTION                                                           |
|-------------------------------------|------------|-----------------------------------------------------------------------|
| <b>Only G3/8 port configuration</b> |            |                                                                       |
| VBD/VP 38/Pa0.5-15                  | 1313020902 | Steel body, opening pressure 0.5 bar (7.25 psi) and 15 bar (217 psi)  |
| VBD/VP 38/Pa0.5-20                  | 1313020907 | Steel body, opening pressure 0.5 bar (7.25 psi) and 20 bar (290 psi)  |
| VBD/VP 38/Pa0.5-40                  | 1313020900 | Steel body, opening pressure 0.5 bar (7.25 psi) and 40 bar (580 psi)  |
| VBD/VP 38/Pa0.5-60                  | 1313020905 | Steel body, opening pressure 0.5 bar (7.25 psi) and 60 bar (870 psi)  |
| VBD/VP 38/Pa0.5-80                  | 1313020901 | Steel body, opening pressure 0.5 bar (7.25 psi) and 80 bar (1160 psi) |

#### SAE8 port configuration

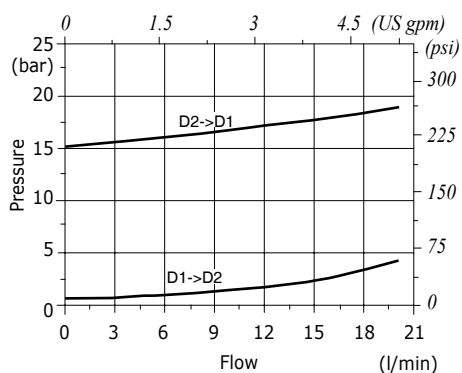
|                        |            |                                                                      |
|------------------------|------------|----------------------------------------------------------------------|
| VBD/VP 38/Pa0.5-40/SAE | 1313020909 | Steel body, opening pressure 0.5 bar (7.25 psi) and 40 bar (580 psi) |
|------------------------|------------|----------------------------------------------------------------------|

For configurations with special opening pressure or SAE threads please contact our Sales Dpt.

**Rating diagrams**

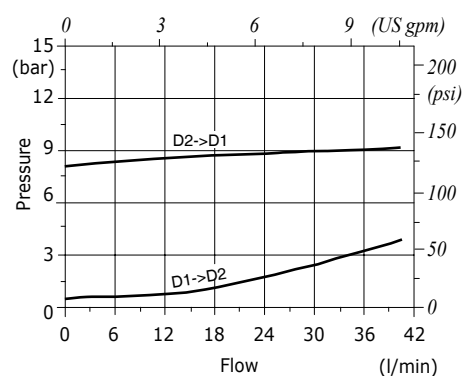
**VBD/VP 38 pressure drop vs. flow**

Opening pressure 0.5 bar (7.25 psi) and 15 bar (217 psi)



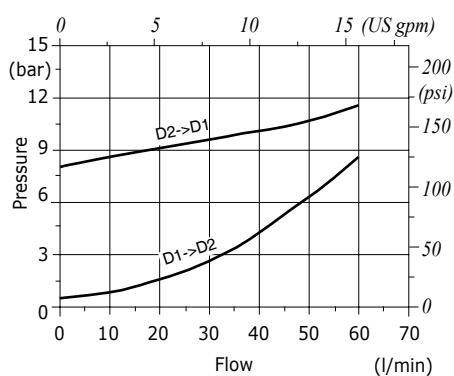
**VBD 38 pressure drop vs. flow**

Opening pressure 0.5 bar (7.25 psi) and 8 bar (116 psi)



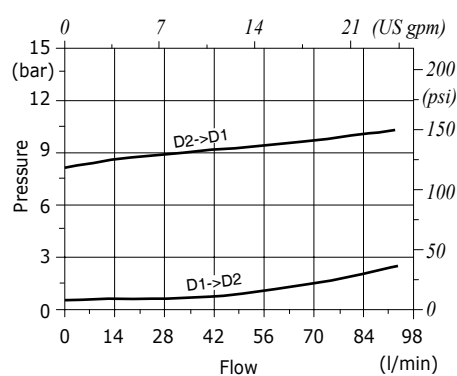
**VBD 12 pressure drop vs. flow**

Opening pressure 0.5 bar (7.25 psi) and 8 bar (116 psi)



**VBD 34 pressure drop vs. flow**

Opening pressure 0.5 bar (7.25 psi) and 8 bar (116 psi)







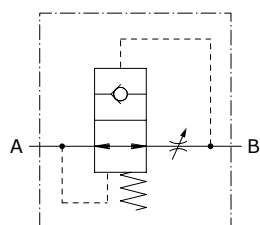
## Type VB check valves

- Hose burst valve
- Automatic stop for sudden flow increase

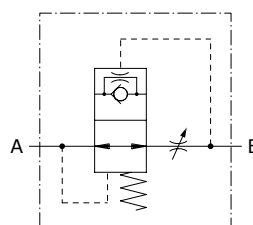
Technical specifications and diagrams are measured with mineral oil ISO VG32 at 40°C (104°F) temperature.

|                                            | VB 14                                            | VB 38                     | VB 12                     | VB 34                      | VB 100                     |                       |
|--------------------------------------------|--------------------------------------------------|---------------------------|---------------------------|----------------------------|----------------------------|-----------------------|
| Max. flow                                  | 30 l/min<br>(7.9 US gpm)                         | 45 l/min<br>(11.9 US gpm) | 65 l/min<br>(17.2 US gpm) | 170 l/min<br>(44.9 US gpm) | 225 l/min<br>(59.4 US gpm) |                       |
| Max. pressure                              | 350 bar (5100 psi)                               |                           |                           |                            |                            |                       |
| Fluid                                      | mineral based oil                                |                           |                           |                            |                            |                       |
| Viscosity                                  | 10-200 cSt                                       |                           |                           |                            |                            |                       |
| Max. level of contamination                | 18/16/13 ISO4406                                 |                           |                           |                            |                            |                       |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F) |                           |                           |                            |                            |                       |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)              |                           |                           |                            |                            |                       |
| Weight                                     | steel                                            | 0.01 kg<br>(0.022 lb)     | 0.015 kg<br>(0.033 lb)    | 0.025 kg<br>(0.055 lb)     | 0.045 kg<br>(0.099 lb)     | 0.098 kg<br>(0.22 lb) |

**NOTES - Replace the valve after each operation.** For different conditions, please contact Walvoil Sales Dpt.



### With metering hole

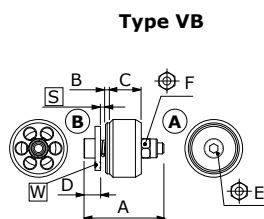


NOTE - For valve with optional calibration hole, please contact our Sales Dpt.

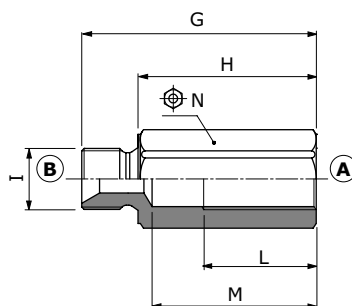


## Dimension

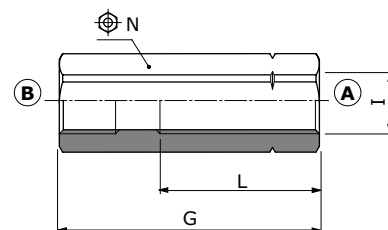
| Valve type    | All ports |
|---------------|-----------|
| <b>VB 14</b>  | G 1/4     |
| <b>VB 38</b>  | G 3/8     |
| <b>VB 12</b>  | G 1/2     |
| <b>VB 34</b>  | G 3/4     |
| <b>VB 100</b> | G 1       |



Housing type VB/M



Housing type VB/F



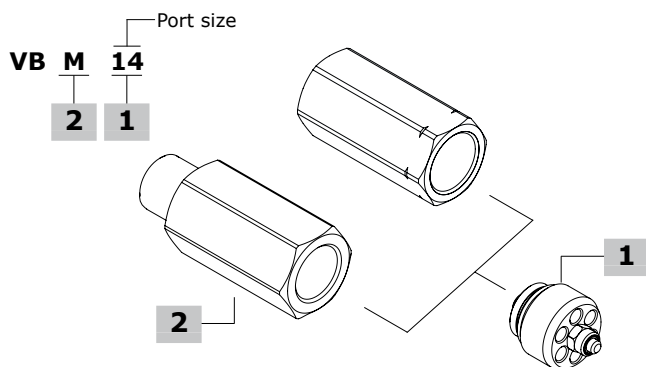
Dimensions are in mm-in

| Valve type    | A          | B            | C            | D           | E   | F   |
|---------------|------------|--------------|--------------|-------------|-----|-----|
| <b>VB 14</b>  | 19<br>0.75 | 1<br>0.039   | 7<br>0.27    | 5<br>0.2    | 5.5 | 2.5 |
| <b>VB 38</b>  | 23<br>0.9  | 1.5<br>0.059 | 9.5<br>0.37  | 5<br>0.2    | 5.5 | 2.5 |
| <b>VB 12</b>  | 29<br>1.14 | 1.5<br>0.059 | 11.5<br>0.45 | 6<br>0.23   | 7   | 3   |
| <b>VB 34</b>  | 34<br>1.34 | 2.5<br>0.098 | 15.5<br>0.61 | 6<br>0.23   | 7   | 3   |
| <b>VB 100</b> | 40<br>1.57 | 1.5<br>0.059 | 18.5<br>0.73 | 8.5<br>0.33 | 8   | 4   |

NOTE - The setting of **S** is recommended to be 1.5 - 2 times the maximum descent flow  
W= optional calibration hole

| Housing type | G                   | H         | I     | L         | M         | N  |
|--------------|---------------------|-----------|-------|-----------|-----------|----|
| <b>M</b>     | <b>01</b> 50 - 1.97 | 38 - 1.50 | G 1/4 | 23 - 0.9  | 31 - 1.22 | 19 |
|              | <b>02</b> 60 - 2.36 | 48 - 1.89 | G 3/8 | 30 - 1.18 | 43 - 1.69 | 22 |
|              | <b>03</b> 63 - 2.48 | 49 - 1.93 | G 1/2 | 33 - 1.30 | 45 - 1.77 | 27 |
|              | <b>04</b> 75 - 2.95 | 59 - 2.32 | G 3/4 | 36 - 1.42 | 50 - 1.97 | 32 |
|              | <b>05</b> 88 - 3.46 | 70 - 2.75 | G 1   | 46 - 1.81 | 60 - 2.36 | 41 |
| <b>F</b>     | <b>01</b> 50 - 1.97 | -         | G 1/4 | 20 - 0.79 | -         | 19 |
|              | <b>02</b> 58 - 2.28 | -         | G 3/8 | 27 - 1.06 | -         | 22 |
|              | <b>03</b> 60 - 2.36 | -         | G 1/2 | 33 - 1.30 | -         | 27 |
|              | <b>04</b> 76 - 2.99 | -         | G 3/4 | 36 - 1.42 | -         | 32 |
|              | <b>05</b> 85 - 3.35 | -         | G 1   | 46 - 1.81 | -         | 41 |

## Ordering codes and description composition



## VB complete valves

Cartridge with steel housing

| TYPE                  | CODE       | DESCRIPTION              |
|-----------------------|------------|--------------------------|
| <b>VB/M 14 S=1</b>    | 1431210100 | Male-female G1/4 ports   |
| <b>VB/F 14 S=1</b>    | 1431110100 | Female-female G1/4 ports |
| <b>VB/M 38 S=1,5</b>  | 1431220100 | Male-female G3/8 ports   |
| <b>VB/F 38 S=1,5</b>  | 1431120100 | Female-female G3/8 ports |
| <b>VB/M 12 S=1,8</b>  | 1431230100 | Male-female G1/2 ports   |
| <b>VB/F 12 S=1,8</b>  | 1431130100 | Female-female G1/2 ports |
| <b>VB/M 34 S=2,2</b>  | 1431240100 | Male-female G3/4 ports   |
| <b>VB/F 34 S=2,2</b>  | 1431140100 | Female-female G3/4 ports |
| <b>VB/M 100 S=2,6</b> | 1431250100 | Male-female G1 ports     |
| <b>VB/F 100 S=2,6</b> | 1431150100 | Female-female G1 ports   |

For different configurations, SAE thread and valve with optional calibration hole, please contact our Sales Dpt.

## 1 Cartridge

| TYPE                | CODE       | DESCRIPTION                                                                 |
|---------------------|------------|-----------------------------------------------------------------------------|
| <b>VB 14 S=1</b>    | 1431010100 | G1/4, "S" standard setting 1, standard flow rate 18.5 l/min (4.89 US gpm)   |
| <b>VB 38 S=1,5</b>  | 1431020100 | G3/8, "S" standard setting 1.5, standard flow rate 35.5 l/min (9.38 US gpm) |
| <b>VB 12 S=1,8</b>  | 1431030100 | G1/2, "S" standard setting 1.9, standard flow rate 60 l/min (15.85 US gpm)  |
| <b>VB 34 S=2,2</b>  | 1431040100 | G3/4, "S" standard setting 2.2, standard flow rate 149 l/min (39.36 US gpm) |
| <b>VB 100 S=2,6</b> | 1431050100 | G1, "S" standard setting 2.6, standard flow rate 190 l/min (50.19 US gpm)   |

For different configurations or SAE thread please contact our Sales Dpt.

## 2 Housing

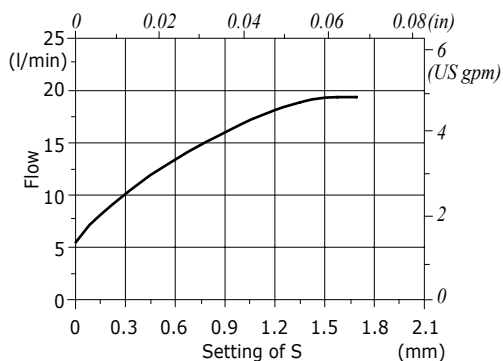
M-F (male-female) or F-F (female-female) steel housing

| TYPE        | CODE          | DESCR.    | TYPE        | CODE      | DESCR.    |
|-------------|---------------|-----------|-------------|-----------|-----------|
| <b>MF14</b> | CMFVUBA01     | G1/4, M-F | <b>MF04</b> | CMFVUBA04 | G3/4, M-F |
| <b>FF14</b> | CFFVUBA-VSC01 | G1/4, F-F | <b>FF04</b> | CFFVUBA04 | G3/4, F-F |
| <b>MF02</b> | CMFVUBA02     | G3/8, M-F | <b>MF05</b> | CMFVUBA05 | G1, M-F   |
| <b>FF02</b> | CFFVUBA02     | G3/8, F-F | <b>FF05</b> | CFFVUBA04 | G1, F-F   |
| <b>MF03</b> | CMFVUBA03     | G1/2, M-F |             |           |           |
| <b>FF03</b> | CFFVUBA03     | G1/2, F-F |             |           |           |

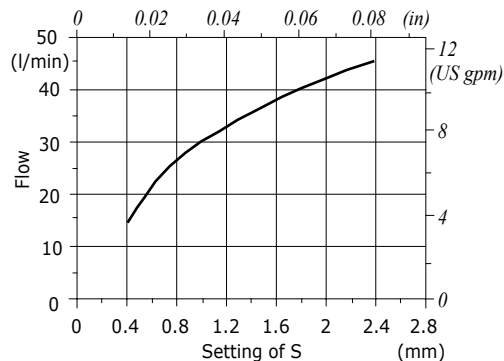
## Rating diagrams

The diagrams represent nominal values measured by the manufacturer (with  $\pm 10\%$  tolerance) which must be adapted to the customer's actual working conditions; please contact Walvoil Sales Dpt.

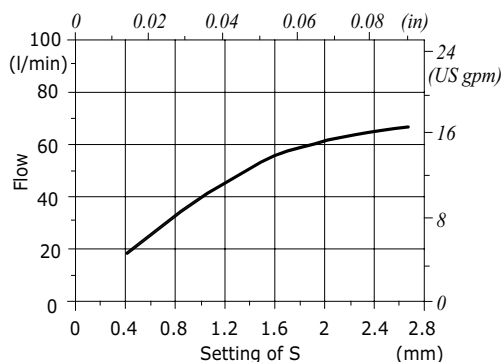
**VB G 1/4 flow vs. setting of S**



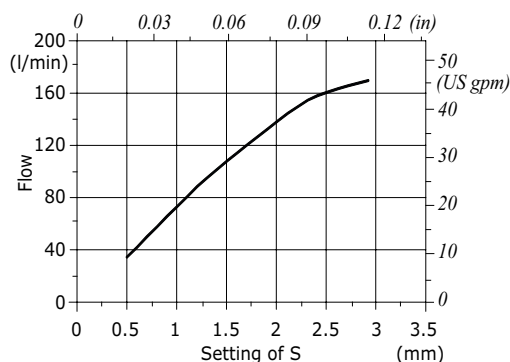
**VB G 3/8 flow vs. setting of S**



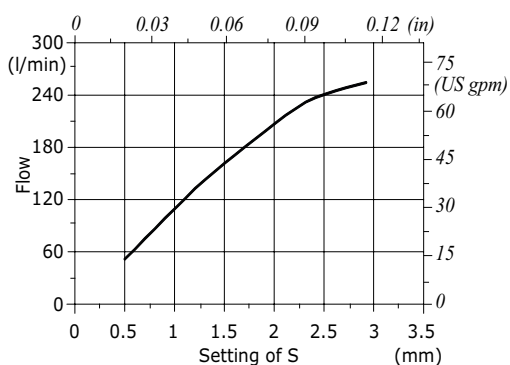
**VB G 1/2 flow vs. setting of S**



**VB G 3/4 flow vs. setting of S**



**VB G 1 flow vs. quote S**







**Type VUPSL**  
**pilot operated check valves**

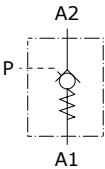
- Single acting

Technical specifications and diagrams are measured with mineral oil ISO VG32 at 50°C (122°F) temperature.

|                                            | VUPSL 14 <sup>(1)</sup>                                                      | VUPSL 38                  | VUPSL 12                  | VUPSL 34                  | VUPSL 100                  |
|--------------------------------------------|------------------------------------------------------------------------------|---------------------------|---------------------------|---------------------------|----------------------------|
| Nominal flow                               | 25 l/min<br>(6.6 US gpm)                                                     | 40 l/min<br>(10.6 US gpm) | 60 l/min<br>(15.9 US gpm) | 90 l/min<br>(23.8 US gpm) | 130 l/min<br>(34.3 US gpm) |
| Max. pressure                              | 350 bar (5100 psi)                                                           | 350 bar (5100 psi)        | 350 bar (5100 psi)        | 300 bar (4350 psi)        | 260 bar (3750 psi)         |
| Oil leakage                                | 0.25 cm <sup>3</sup> /min (0.015 in <sup>3</sup> /min) at 210 bar (3050 psi) |                           |                           |                           |                            |
| Fluid                                      | mineral based oil                                                            |                           |                           |                           |                            |
| Viscosity                                  | from 10 to 200 cSt                                                           |                           |                           |                           |                            |
| Max. level of contamination                | 18/16/13 ISO4406                                                             |                           |                           |                           |                            |
| Fluid temperature                          | with NBR seals: from -28°C (-18°F) to 100°C (212°F)                          |                           |                           |                           |                            |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                                          |                           |                           |                           |                            |
| Weight                                     | steel 0.69 kg (1.52 lb)                                                      | 0.93 kg (2.05 lb)         | 1.08 kg (2.38 lb)         | 2.316 kg (5.10 lb)        | 2.355 kg (5.19 lb)         |

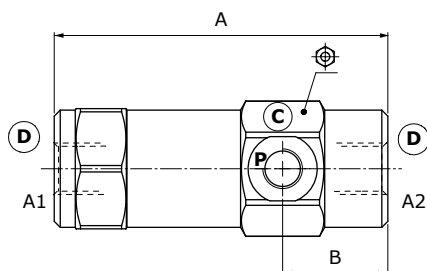
NOTE - For different conditions, please contact Walvoil Sales Dpt.

<sup>(1)</sup> VUPSL14 valve require the bonded seal cod. 440068 on port P.



### Dimensions

| Valve type | P    | D    |
|------------|------|------|
| VUPSL 14   | G1/4 | G1/4 |
| VUPSL 38   | G1/4 | G3/8 |
| VUPSL 12   | G1/4 | G1/2 |
| VUPSL 34   | G1/4 | G3/4 |
| VUPSL 100  | G1/4 | G1   |

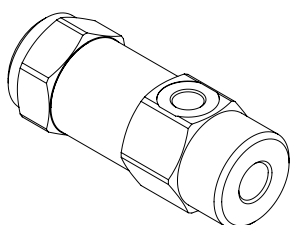


Dimensions are in mm-in

| Valve type | A          | B         | C  |
|------------|------------|-----------|----|
| VUPSL 14   | 103-4.05   | 32.5-1.28 | 36 |
| VUPSL 38   | 111-4.37   | 35-1.38   | 40 |
| VUPSL 12   | 122-4.8    | 38-1.5    | 42 |
| VUPSL 34   | 145.5-5.73 | 44.5-1.75 | 55 |
| VUPSL 100  | 164-6.46   | 44.5-1.75 | 55 |

### Ordering codes and description composition

Port size      Opening pressure  
**VUPSL 38/p6 /Pa1**  
 Pilot ratio



#### VUPSL complete valves

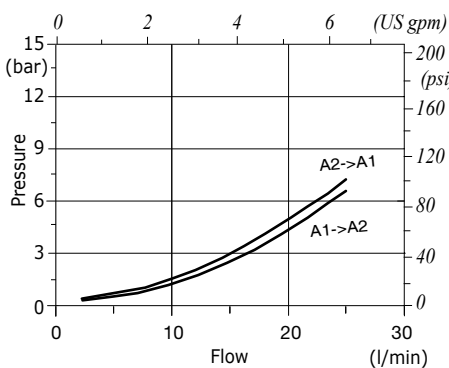
With steel body

| TYPE               | CODE       | DESCRIPTION                  |
|--------------------|------------|------------------------------|
| VUPSL 14/p9,5/Pa1  | 1401010100 | G1/4 port, pilot ratio 1:9.5 |
| VUPSL 38/p6/Pa1    | 1401020100 | G3/8 port, pilot ratio 1:6   |
| VUPSL 12/p4,3/Pa1  | 1401030100 | G1/2 port, pilot ratio 1:4.3 |
| VUPSL 34/p4,4/Pa1  | 1401040100 | G3/4 port, pilot ratio 1:4.4 |
| VUPSL 100/p3,5/Pa1 | 1401050100 | G1" port, pilot ratio 1:3.5  |

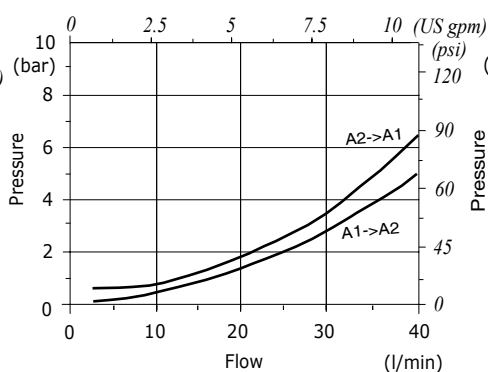
For different configurations or SAE thread please contact our Sales Dpt.

### Rating diagrams

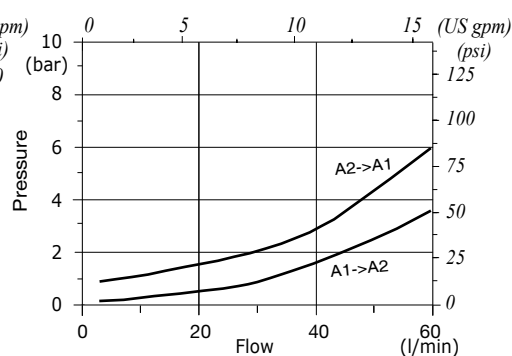
VUPSL 14 pressure drop vs. flow



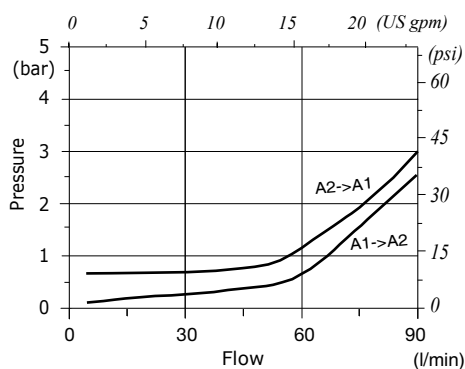
VUPSL 38 pressure drop vs. flow



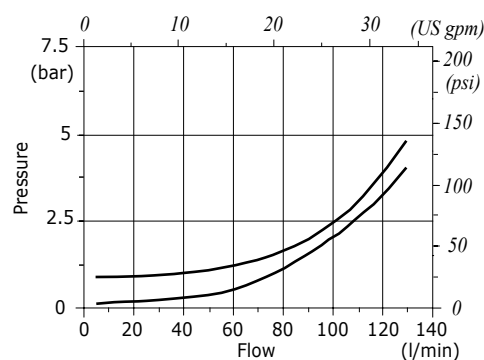
VUPSL 12 pressure drop vs. flow



VUPSL 34 pressure drop vs. flow



VUPSL 100 pressure drop vs. flow





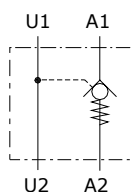
## Type VBPSL pilot operated check valves

- Single acting

Technical specifications and diagrams are measured with mineral oil ISO VG32 at 50°C (122°F) temperature.

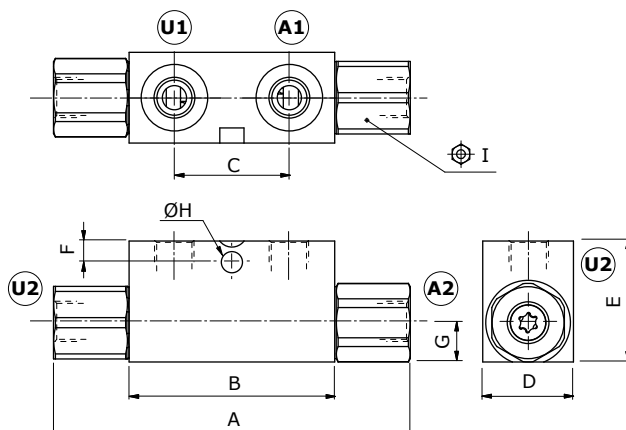
|                                            | VBPSL 14                                                               | VBPSL/VP 38                     | VBPSL 38                         | VBPSL/VP 12                      | VBPSL 12                         | VBPSL 34                          |                             |
|--------------------------------------------|------------------------------------------------------------------------|---------------------------------|----------------------------------|----------------------------------|----------------------------------|-----------------------------------|-----------------------------|
| Nominal flow                               | 30 l/min<br><i>(7.9 US gpm)</i>                                        | 30 l/min<br><i>(7.9 US gpm)</i> | 50 l/min<br><i>(13.2 US gpm)</i> | 50 l/min<br><i>(13.2 US gpm)</i> | 80 l/min<br><i>(21.1 US gpm)</i> | 120 l/min<br><i>(31.7 US gpm)</i> |                             |
| Max. pressure                              | 350 bar<br><i>(5100 psi)</i>                                           | 350 bar<br><i>(5100 psi)</i>    | 300 bar<br><i>(4350 psi)</i>     | 300 bar<br><i>(4350 psi)</i>     | 300 bar<br><i>(4350 psi)</i>     | 300 bar<br><i>(4350 psi)</i>      |                             |
| Oil leakage                                | 0.25 cm³/min <i>(0.015 in³/min)</i> at 210 bar <i>(3050 psi)</i>       |                                 |                                  |                                  |                                  |                                   |                             |
| Fluid                                      | mineral based oil                                                      |                                 |                                  |                                  |                                  |                                   |                             |
| Viscosity                                  | from 10 to 200 cSt                                                     |                                 |                                  |                                  |                                  |                                   |                             |
| Max. level of contamination                | 18/16/13 ISO4406                                                       |                                 |                                  |                                  |                                  |                                   |                             |
| Fluid temperature                          | <i>with NBR seals:</i> from -20°C <i>(-4°F)</i> to 80°C <i>(176°F)</i> |                                 |                                  |                                  |                                  |                                   |                             |
| Environmental temp. for working conditions | -40°C <i>(-40°F)</i> to 100°C <i>(212°F)</i>                           |                                 |                                  |                                  |                                  |                                   |                             |
| Weight                                     | <i>steel</i>                                                           | 0.68 kg<br><i>(1.50 lb)</i>     | 0.63 kg<br><i>(1.39 lb)</i>      | 0.97 kg<br><i>(2.14 lb)</i>      | 0.90 kg<br><i>(1.98 lb)</i>      | 1.69 kg<br><i>(3.72 lb)</i>       | 3.06 kg<br><i>(6.75 lb)</i> |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



### Dimensions

| Valve type         | All ports |
|--------------------|-----------|
| <b>VBPSL 14</b>    | G1/4      |
| <b>VBPSL/VP 38</b> | G3/8      |
| <b>VBPSL 38</b>    | G3/8      |
| <b>VBPSL/VP 12</b> | G1/2      |
| <b>VBPSL 12</b>    | G1/2      |
| <b>VBPSL 34</b>    | G3/4      |



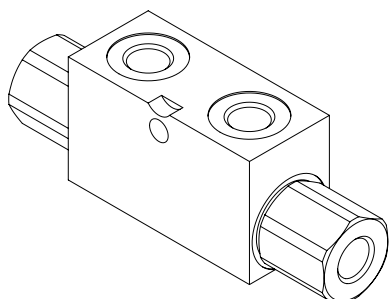
Dimensions are in mm-in

| Valve type         | A max.           | B        | C       | D       | E       | F       | G       | ØH       | ⊕I |
|--------------------|------------------|----------|---------|---------|---------|---------|---------|----------|----|
| <b>VBPSL 14</b>    | 118-4.64         | 68-2.68  | 38-1.50 | 30-1.18 | 40-1.57 | 7-0.27  | 13-0.51 | 8-0.31   | 24 |
| <b>VBPSL/VP 38</b> | 118-4.64         | 68-2.68  | 38-1.50 | 30-1.18 | 40-1.57 | 7-0.27  | 13-0.51 | 8-0.31   | 24 |
| <b>VBPSL 38</b>    | 144-5.67         | 80-3.15  | 40-1.57 | 30-1.18 | 50-1.97 | 15-0.59 | 16-0.63 | 8.5-0.33 | 27 |
| <b>VBPSL/VP 12</b> | 144-5.67         | 80-3.15  | 40-1.57 | 30-1.18 | 50-1.97 | 15-0.59 | 16-0.63 | 8.5-0.33 | 27 |
| <b>VBPSL 12</b>    | 171-6.73         | 90-3.54  | 40-1.57 | 40-1.57 | 60-2.36 | 15-0.59 | 20-0.79 | 8.5-0.33 | 30 |
| <b>VBPSL 34</b>    | 196 (¹)-7.72 (¹) | 107-4.21 | 60-2.36 | 50-1.97 | 70-2.75 | 16-0.63 | 23-0.90 | 8.5-0.33 | 41 |

NOTE - (¹) only for 04 SAE 208

### Ordering codes and description composition

Port size  
 Opening pressure  
**VBPSL 14 / p4,5 / Pa4 / ac**  
 Pilot ratio



#### VBPSL complete valves

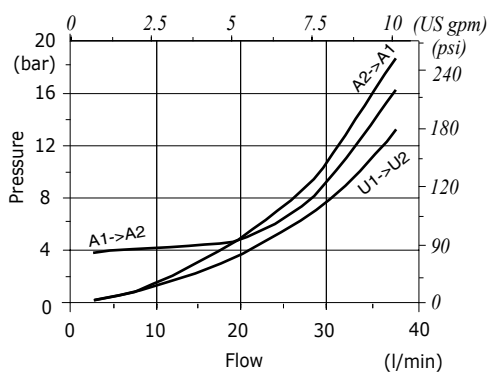
##### Steel body

| TYPE                           | CODE       | DESCRIPTION                                                 |
|--------------------------------|------------|-------------------------------------------------------------|
| <b>VBPSL 14/p4,5/Pa4/ac</b>    | 1410112100 | G1/4 port, pilot ratio 1:4.5, opening press. 4 bar (58 psi) |
| <b>VBPSL 38/p4/Pa4/ac</b>      | 1410122100 | G3/8 port, pilot ratio 1:4, opening press. 4 bar (58 psi)   |
| <b>VBPSL/VP 38/p4,5/Pa4/ac</b> | 1410122101 | G3/8 port, pilot ratio 1:4.5, opening press. 4 bar (58 psi) |
| <b>VBPSL 12/p4/Pa4/ac</b>      | 1410132100 | G1/2 port, pilot ratio 1:4, opening press. 4 bar (58 psi)   |
| <b>VBPSL/VP 12/p4/Pa4/ac</b>   | 1410132101 | G1/2 port, pilot ratio 1:4, opening press. 4 bar (58 psi)   |
| <b>VBPSL 34/p4/Pa4/ac</b>      | 1410142100 | G3/4 port, pilot ratio 1:4, opening press. 4 bar (58 psi)   |

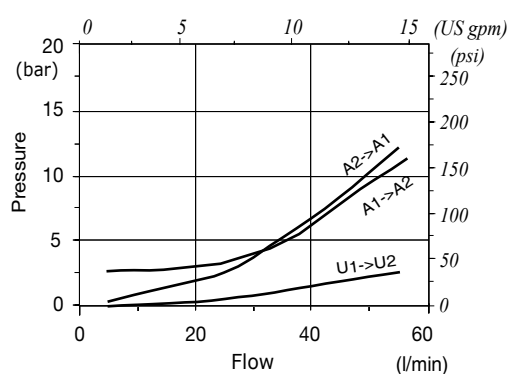
For different configurations or SAE thread please contact our Sales Dpt.

**Rating diagrams**

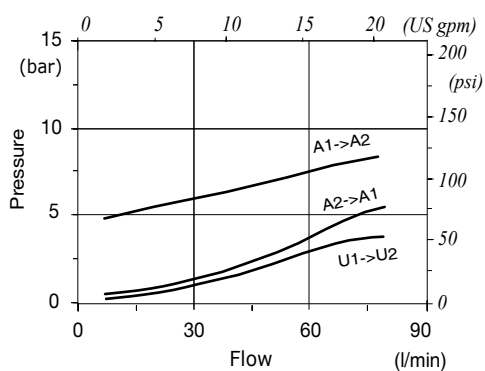
**VBPSL 14 pressure drop vs. flow**



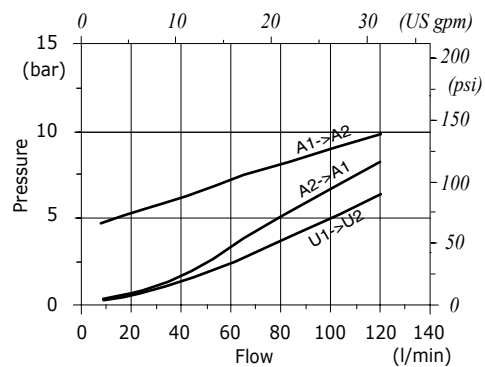
**VBPSL 38 pressure drop vs. flow**



**VBPSL 12 pressure drop vs. flow**

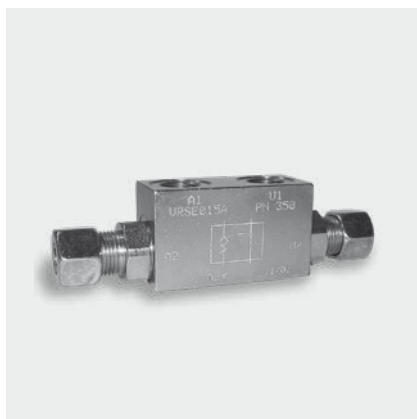


**VBPSL 34 pressure drop vs. flow**









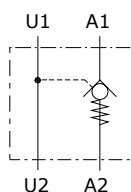
## Type VRSE..A pilot operated check valves

- Single acting
- DIN 2353

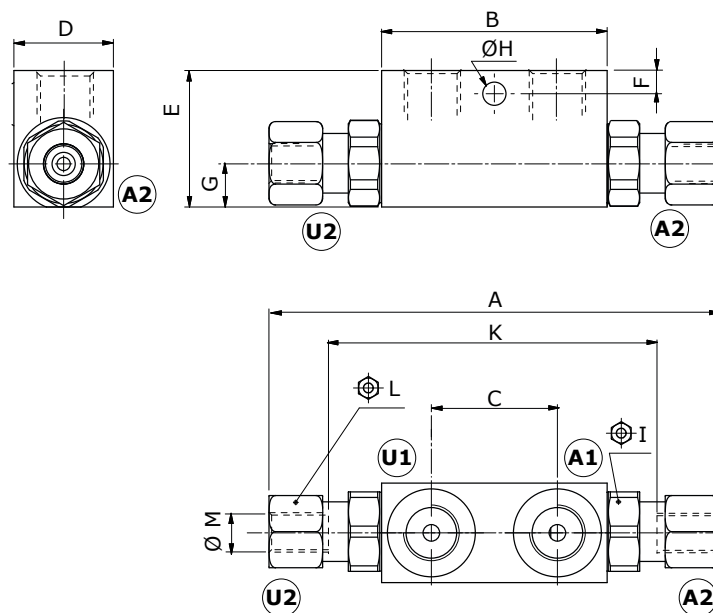
Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                            | VRSE01A                                            | VRSE015A                 | VRSE02A                   | VRSE025A                  | VRSE03A                   |                      |
|--------------------------------------------|----------------------------------------------------|--------------------------|---------------------------|---------------------------|---------------------------|----------------------|
| Nominal flow                               | 30 l/min<br>(7.9 US gpm)                           | 30 l/min<br>(7.9 US gpm) | 50 l/min<br>(13.2 US gpm) | 50 l/min<br>(13.2 US gpm) | 80 l/min<br>(21.1 US gpm) |                      |
| Max. pressure                              | 350 bar (5100 psi)                                 | 350 bar (5100 psi)       | 300 bar (4350 psi)        | 300 bar (4350 psi)        | 300 bar (4350 psi)        |                      |
| Oil leakage                                | 0.25 cm³/min (0.015 in³/min) at 210 bar (3050 psi) |                          |                           |                           |                           |                      |
| Fluid                                      | mineral based oil                                  |                          |                           |                           |                           |                      |
| Viscosity                                  | from 10 to 200 cSt                                 |                          |                           |                           |                           |                      |
| Max. level of contamination                | 18/16/13 ISO4406                                   |                          |                           |                           |                           |                      |
| Fluid temperature                          | with NBR seals: from -20°C (-4°F) to 80°C (176°F)  |                          |                           |                           |                           |                      |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                |                          |                           |                           |                           |                      |
| Weight                                     | steel                                              | 0.67 kg<br>(1.48 lb)     | 0.66 kg<br>(1.45 lb)      | 0.97 kg<br>(2.14 lb)      | 0.91 kg<br>(2.01 lb)      | 1.67 kg<br>(3.68 lb) |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



### Dimensions



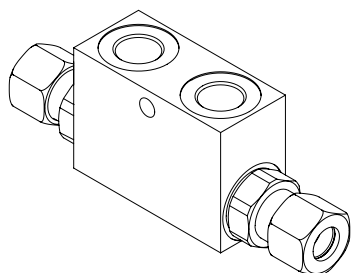
| Valve type | A1-U1 | A2-U2 (Ø M) |
|------------|-------|-------------|
| VRSE01A    | G1/4  | 12-0.47     |
| VRSE015A   | G3/8  | 12-0.47     |
| VRSE02A    | G3/8  | 15-0.59     |
| VRSE025A   | G1/2  | 15-0.59     |
| VRSE03A    | G1/2  | 18-0.71     |

Dimensions are in mm-in

| Valve type | A        | B max.  | C       | D       | E       | F       | G       | ØH       | ØI | ØL | K        |
|------------|----------|---------|---------|---------|---------|---------|---------|----------|----|----|----------|
| VRSE01A    | 138-5.43 | 68-2.68 | 38-1.50 | 30-1.18 | 40-1.57 | 7-0.27  | 13-0.51 | 8-0.31   | 24 | 22 | 86-3.38  |
| VRSE015A   | 138-5.43 | 68-2.68 | 38-1.50 | 30-1.18 | 40-1.57 | 7-0.27  | 13-0.51 | 8-0.31   | 24 | 22 | 86-3.38  |
| VRSE02A    | 166-6.53 | 80-3.15 | 40-1.57 | 30-1.18 | 50-1.97 | 15-0.59 | 16-0.63 | 8.5-0.33 | 27 | 27 | 108-4.25 |
| VRSE025A   | 166-6.53 | 80-3.15 | 40-1.57 | 30-1.18 | 50-1.97 | 15-0.59 | 16-0.63 | 8.5-0.33 | 27 | 27 | 108-4.25 |
| VRSE03A    | 180-7.09 | 90-3.54 | 40-1.57 | 40-1.57 | 60-2.36 | 15-0.59 | 20-0.79 | 8.5-0.33 | 30 | 32 | 133-5.24 |

### Ordering codes and description composition

Port size  
VRSE 02 A



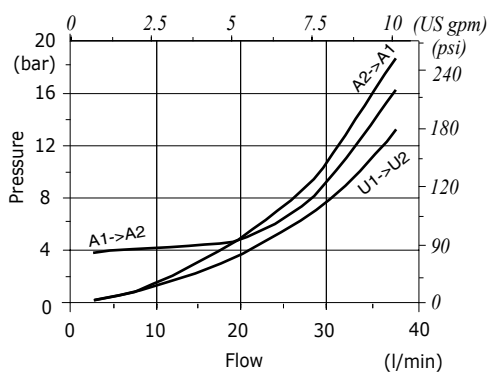
#### VRSE complete valves

| TYPE     | CODE       | DESCRIPTION                                                               |
|----------|------------|---------------------------------------------------------------------------|
| VRSE01A  | 1410212100 | Steel body, G1/4 port, pilot ratio 1:4.5, opening pressure 4 bar (58 psi) |
| VRSE015A | 1410222100 | Steel body, G3/8 port, pilot ratio 1:4.5, opening pressure 4 bar (58 psi) |
| VRSE02A  | 1410222101 | Steel body, G3/8 port, pilot ratio 1:4, opening pressure 4 bar (58 psi)   |
| VRSE025A | 1410232100 | Steel body, G1/2 port, pilot ratio 1:4, opening pressure 4 bar (58 psi)   |
| VRSE03A  | 1410232101 | Steel body, G1/2 port, pilot ratio 1:4, opening pressure 4 bar (58 psi)   |

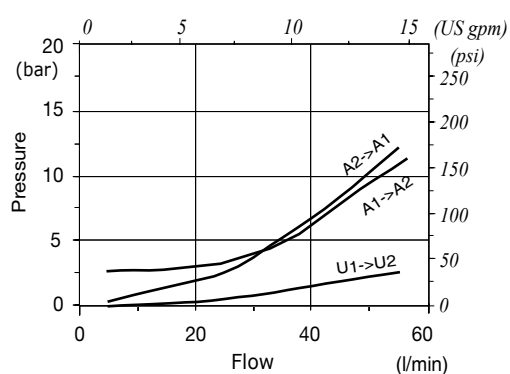
For different configurations or SAE thread please contact our Sales Dpt.

**Rating diagrams**

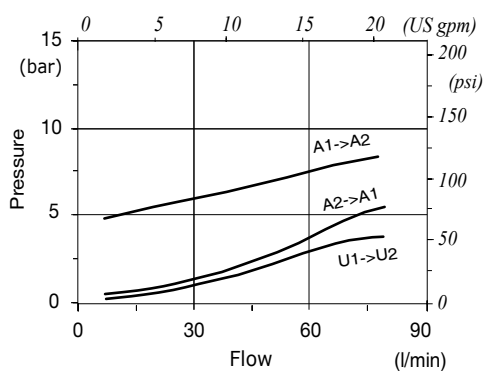
**VRSE01A pressure drop vs. flow**



**VRSE02A pressure drop vs. flow**



**VRSE03A pressure drop vs. flow**







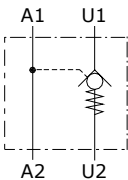
**Type VRSE..CIL**  
**pilot operated check valves**

- Single acting
- Bolt connection

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

| VRSE01CIL                                        |                                                    | VRSE02CIL         |
|--------------------------------------------------|----------------------------------------------------|-------------------|
| Nominal flow                                     | 20 l/min (5.3 US gpm)                              |                   |
| Max. pressure                                    | 300 bar (4350 psi)                                 |                   |
| Oil leakage                                      | 0.25 cm³/min (0.015 in³/min) at 210 bar (3050 psi) |                   |
| Fluid                                            | mineral based oil                                  |                   |
| Viscosity                                        | from 10 to 200 cSt                                 |                   |
| Max. level of contamination                      | 18/16/13 ISO4406                                   |                   |
| Fluid temperature                                | with NBR seals: from -20°C (-4°F) to 80°C (176°F)  |                   |
| Environmental temperature for working conditions | from -40°C (-40°F) to 100°C (212°F)                |                   |
| Weight                                           | steel 0.45 kg (0.99 lb)                            | 0.65 kg (1.43 lb) |

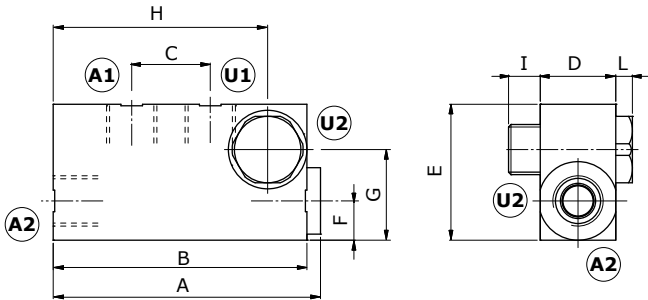
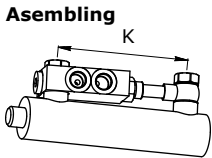
NOTE - For different conditions, please contact Walvoil Sales Dpt.



Dimensions

VRSE CIL valve

| Valve type | All ports |
|------------|-----------|
| VRSE01CIL  | G1/4      |
| VRSE01CIL  | G3/8      |



Dimensions are in mm-in

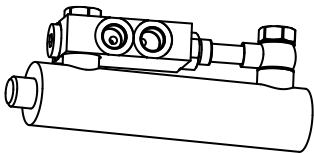
| Valve type | A         | B       | C       | D       | E       | F       | G       | H        | I       | L      | K min    |
|------------|-----------|---------|---------|---------|---------|---------|---------|----------|---------|--------|----------|
| VRSE01CIL  | 88.5-3.48 | 84-3.31 | 24-0.94 | 20-0.79 | 40-1.57 | 10-0.39 | 27-1.06 | 68.5-2.7 | 10-0.39 | 6-0.23 | 123-4.84 |
| VRSE01CIL  | 90.5-3.56 | 86-3.38 | 29-1.14 | 25-0.98 | 45-1.77 | 12-0.47 | 31-1.22 | 72-2.83  | 11-0.43 | 7-0.27 | 127-5    |

Ordering codes and description composition

VRSE 02 CIL

Port size

- without mounting hole  
FF with mounting hole

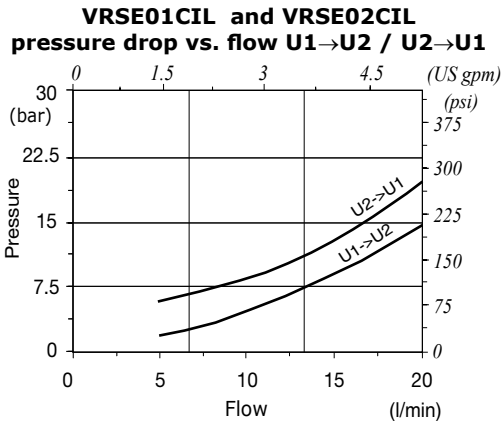
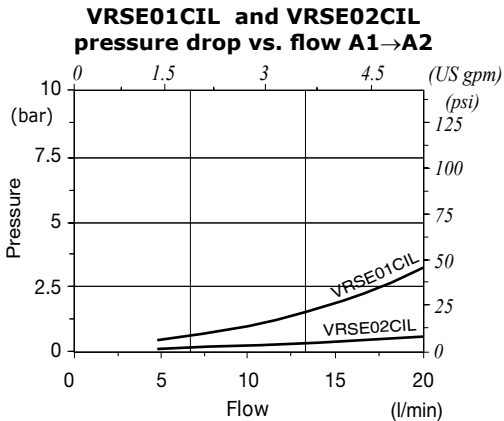


Complete valves

| TYPE      | CODE       | DESCRIPTION                                                                               |
|-----------|------------|-------------------------------------------------------------------------------------------|
| VRSE01CIL | 1410312100 | Steel body, G1/4 port configuration, opening pressure 1 bar (14,5 psi), pilot ratio 1:4.9 |
| VRSE02CIL | 1410322100 | Steel body, G3/8 port configuration, opening pressure 1 bar (14,5 psi), pilot ratio 1:4.9 |

For different configurations or SAE thread please contact our Sales Dpt.

Rating diagram





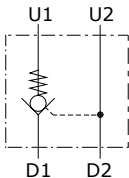
**Type VBPSL/T**  
**pilot operated check valves**

- Single acting

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                            |           | VBPSL/T 38                                                             | VBPSL/T 12             | VBPSL/T 34              |
|--------------------------------------------|-----------|------------------------------------------------------------------------|------------------------|-------------------------|
| Nominal flow                               |           | 25 l/min (6.6 US gpm)                                                  | 50 l/min (13.2 US gpm) | 100 l/min (26.4 US gpm) |
| Max. pressure                              |           | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                        |                         |
| Oil leakage                                |           | 0.25 cm³/min (0.015 in³/min) at 210 bar (3050 psi)                     |                        |                         |
| Fluid                                      |           | mineral based oil                                                      |                        |                         |
| Viscosity                                  |           | from 10 to 200 cSt                                                     |                        |                         |
| Max. level of contamination                |           | 18/16/13 ISO4406                                                       |                        |                         |
| Fluid temperature                          |           | with NBR seals: from -20°C (-4°F) to 80°C (176°F)                      |                        |                         |
| Environmental temp. for working conditions |           | from -40°C (-40°F) to 100°C (212°F)                                    |                        |                         |
| Weight                                     | aluminium | 0.48 kg (1.06 lb)                                                      | 0.75 kg (1.65 lb)      | 1.79 kg (3.95 lb)       |
|                                            | steel     | 1.16 kg (2.56 lb)                                                      | 1.63 kg (3.59 lb)      | 4.19 kg (9.24 lb)       |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



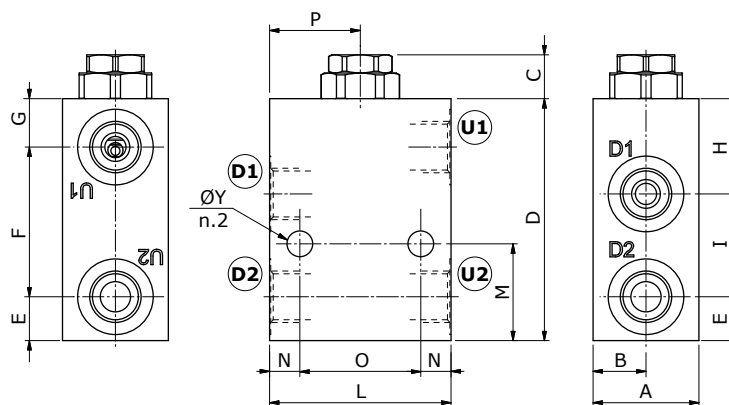


### Dimensions

| Valve type     | All ports |
|----------------|-----------|
| VBPSL/T 38     | G3/8      |
| VBPSL/T 12     | G1/2      |
| VBPSL/T 34     | G3/4      |
| Valve type     | All ports |
| VBPSL/T 12/SAE | SAE10     |
| VBPSL/T 34/SAE | SAE12     |

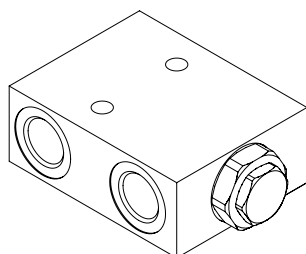
Dimensions are in mm-in

| Valve type     | A          | B            | C            | D           | E            | F            | G          | H            | I            | L          | M          | N          | O          | P          | ØY           |
|----------------|------------|--------------|--------------|-------------|--------------|--------------|------------|--------------|--------------|------------|------------|------------|------------|------------|--------------|
| VBPSL/T 38     | 35<br>1.38 | 17.5<br>0.69 | 14.5<br>0.57 | 80<br>3.15  | 14.5<br>0.57 | 49.5<br>1.95 | 16<br>0.63 | 31.5<br>1.24 | 34<br>1.34   | 60<br>2.36 | 32<br>1.26 | 10<br>0.39 | 40<br>1.57 | 20<br>0.79 | 8.5<br>0.33  |
| VBPSL/T 12     | 35<br>1.38 | 17.5<br>0.69 | 13<br>0.51   | 90<br>3.54  | 18<br>0.71   | 51<br>2.01   | 21<br>0.83 | 38<br>1.50   | 34<br>1.34   | 70<br>2.75 | 35<br>1.38 | 15<br>0.59 | 40<br>1.57 | 20<br>0.79 | 8.5<br>0.33  |
| VBPSL/T 34     | 50<br>1.97 | 25<br>0.98   | 16.5<br>0.65 | 135<br>5.31 | 22<br>0.87   | 83<br>3.27   | 30<br>1.18 | 57.5<br>2.26 | 55.5<br>2.18 | 90<br>3.54 | 55<br>2.16 | 20<br>0.79 | 50<br>1.97 | 25<br>0.98 | 10.5<br>0.41 |
| VBPSL/T 34/SAE |            |              |              |             |              |              |            |              |              |            |            |            |            |            |              |



### Ordering codes and description composition

Port size — Pilot ratio  
**VBPSL/T 38/p4**



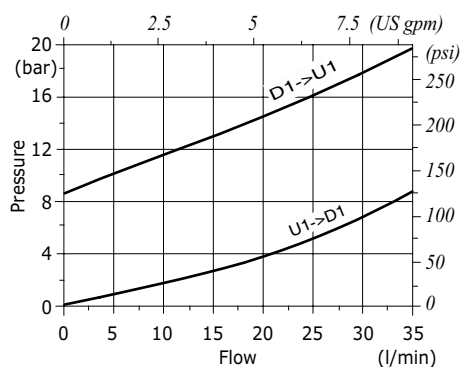
#### VBPSL/T complete valves

| TYPE                     | CODE       | DESCRIPTION                                  |
|--------------------------|------------|----------------------------------------------|
| <b>VBPSL/T 38/p4</b>     | 1412021100 | Aluminium body, pilot ratio 1:4, G3/8 ports  |
| <b>VBPSL/T 38/p4/ac</b>  | 1412022100 | Steel body, as previous one                  |
| <b>VBPSL/T 12/p4</b>     | 1412031100 | Aluminium body, pilot ratio 1:4, G1/2 ports  |
| <b>VBPSL/T 12/p4/ac</b>  | 1412032100 | Steel body, as previous one                  |
| <b>VBPSL/T 34/p4</b>     | 1412041100 | Aluminium body, pilot ratio 1:4, G3/4 ports  |
| <b>VBPSL/T 34/p4/ac</b>  | 1412042101 | Steel body, as previous one                  |
| <b>VBPSL/T 12/p4/SAE</b> | 1412031200 | Aluminium body, pilot ratio 1:4, SAE10 ports |
| <b>VBPSL/T 34/p4/SAE</b> | 1412042200 | Aluminium body, pilot ratio 1:4, SAE12 ports |

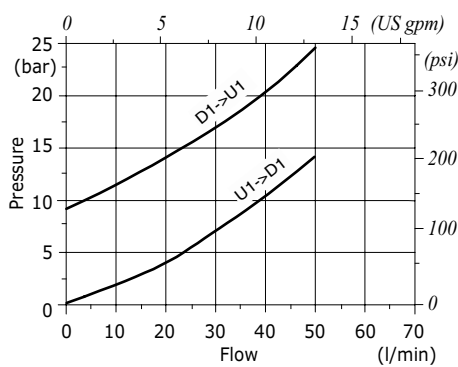
For other steel body configurations, other port sizes, SAE thread and configurations with FPM (Viton) seals, please contact our Sales Dpt.

### Rating diagram

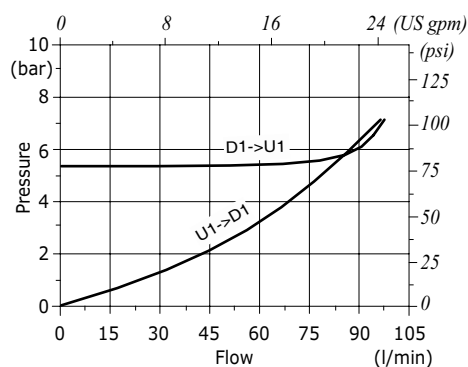
VBPSL/T 38 pressure drop vs. flow



VBPSL/T 12 pressure drop vs. flow



VBPSL/T 34 pressure drop vs. flow





# Type VBPSF

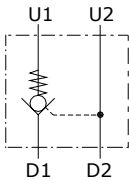
## pilot operated check valves

- Single acting
- Face mounting

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

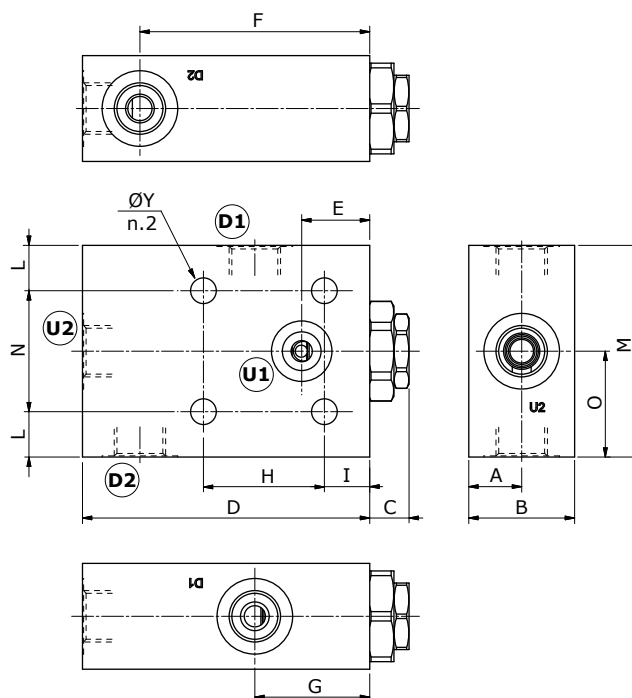
|                                            |           | VBPSF 14                                                               | VBPSF 38              | VBPSF 12               | VBPSF 34                |
|--------------------------------------------|-----------|------------------------------------------------------------------------|-----------------------|------------------------|-------------------------|
| Nominal flow                               |           | 15 l/min (4.0 US gpm)                                                  | 35 l/min (9.2 US gpm) | 50 l/min (13.2 US gpm) | 100 l/min (26.4 US gpm) |
| Max. pressure                              |           | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                       |                        |                         |
| Oil leakage                                |           | 0.25 cm³/min (0.015 in³/min) at 210 bar (3050 psi)                     |                       |                        |                         |
| Fluid                                      |           | mineral based oil                                                      |                       |                        |                         |
| Viscosity                                  |           | from 10 to 200 cSt                                                     |                       |                        |                         |
| Max. level of contamination                |           | 18/16/13 ISO4406                                                       |                       |                        |                         |
| Fluid temperature                          |           | with NBR seals: from -20°C (-4°F) to 80°C (176°F)                      |                       |                        |                         |
| Environmental temp. for working conditions |           | from -40°C (-40°F) to 100°C (212°F)                                    |                       |                        |                         |
| Weight                                     | aluminium | 0.34 kg (0.75 lb)                                                      | 0.81 kg (1.79 lb)     | 0.73 kg (1.61 lb)      | 1.67 kg (3.68 lb)       |
|                                            | steel     |                                                                        | 1.71 kg (3.77 lb)     | 1.65 kg (3.63 lb)      | 3.84 kg (8.47 lb)       |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



### Dimension

| Valve type      | All ports |
|-----------------|-----------|
| <b>VBPSF 14</b> | G1/4      |
| <b>VBPSF 38</b> | G3/8      |
| <b>VBPSF 12</b> | G1/2      |
| <b>VBPSF 34</b> | G3/4      |

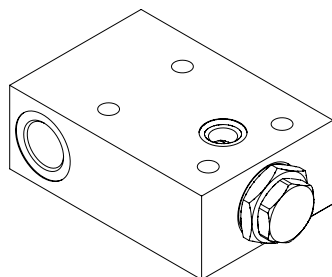


Dimensions are in mm-in

| Valve type      | A            | B          | C            | D           | E            | F             | G          | H            | I           | L            | M          | N          | O            | ØY           |
|-----------------|--------------|------------|--------------|-------------|--------------|---------------|------------|--------------|-------------|--------------|------------|------------|--------------|--------------|
| <b>VBPSF 14</b> | 15<br>0.59   | 30<br>1.18 | 14.5<br>0.57 | 70<br>2.75  | 17.5<br>0.69 | 67<br>2.64    | 30<br>1.18 | 35<br>1.38   | 8.5<br>0.33 | 7.5<br>0.29  | 50<br>1.97 | 35<br>1.38 | 25<br>0.98   | 6.5<br>0.25  |
| <b>VBPSF 38</b> | 17.5<br>0.69 | 35<br>1.38 | 13<br>0.51   | 95<br>3.74  | 22.5<br>0.88 | 76<br>2.99    | 38<br>1.50 | 40<br>1.57   | 15<br>0.59  | 15<br>0.59   | 70<br>2.75 | 40<br>1.57 | 35<br>1.38   | 8.5<br>0.33  |
| <b>VBPSF 12</b> | 17.5<br>0.69 | 35<br>1.38 | 13<br>0.51   | 95<br>3.74  | 22.5<br>0.88 | 76<br>2.99    | 38<br>1.50 | 40<br>1.57   | 15<br>0.59  | 15<br>0.59   | 70<br>2.75 | 40<br>1.57 | 35<br>1.38   | 8.5<br>0.33  |
| <b>VBPSF 34</b> | 24.5<br>0.96 | 49<br>1.93 | 16.5<br>0.65 | 130<br>5.12 | 30<br>1.18   | 107.5<br>4.23 | 58<br>2.28 | 67.5<br>2.66 | 15<br>0.59  | 19.5<br>0.77 | 89<br>3.51 | 50<br>1.97 | 44.5<br>1.75 | 10.5<br>0.41 |

## Ordering codes and description composition

Port size  
**VBPSF 14/p4**  
Pilot ratio



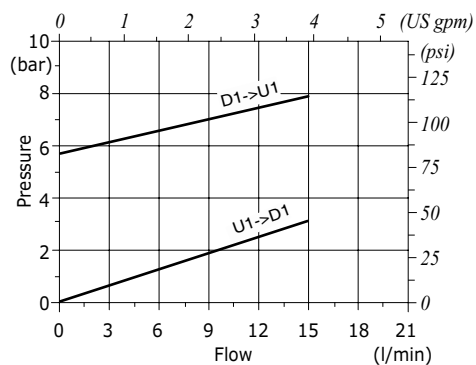
### VBPSF complete valves

| TYPE                  | CODE       | DESCRIPTION                                 |
|-----------------------|------------|---------------------------------------------|
| <b>VBPSF 14/p4</b>    | 1416011100 | Aluminium body, pilot ratio 1:4, G1/4 ports |
| <b>VBPSF 38/p4</b>    | 1416021100 | Aluminium body, pilot ratio 1:4, G3/8 ports |
| <b>VBPSF 38/p4/ac</b> | 1416022100 | Steel body, as previous one                 |
| <b>VBPSF 12/p4</b>    | 1416031100 | Aluminium body, pilot ratio 1:4, G1/2 ports |
| <b>VBPSF 12/p4/ac</b> | 1416032100 | Steel body, as previous one                 |
| <b>VBPSF 34/p4</b>    | 1416041100 | Aluminium body, pilot ratio 1:4, G3/4 ports |
| <b>VBPSF 34/p4/ac</b> | 1416042100 | Steel body, as previous one                 |

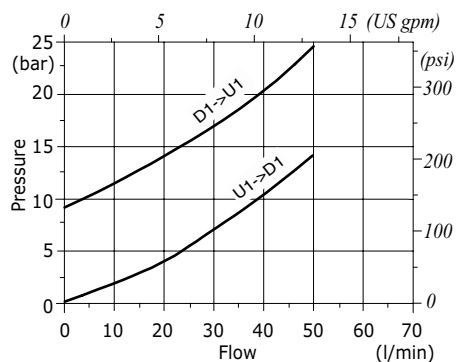
For other steel body configurations, SAE thread and configurations with FPM (Viton) seals, please contact our Sales Dpt.

## Rating diagrams

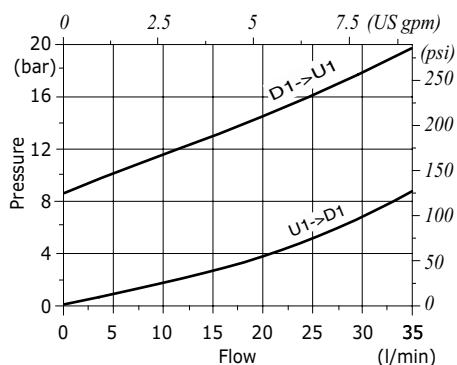
**VBPSF 14 pressure drop vs. flow**



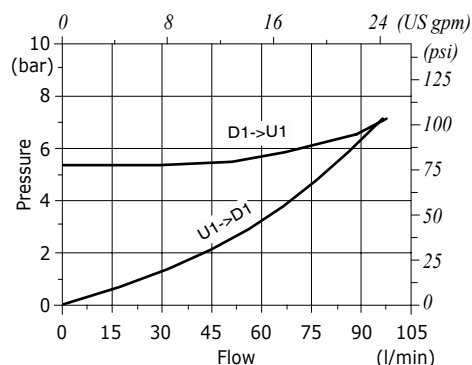
**VBPSF 12 pressure drop vs. flow**



**VBPSF 38 pressure drop vs. flow**



**VBPSF 34 pressure drop vs. flow**







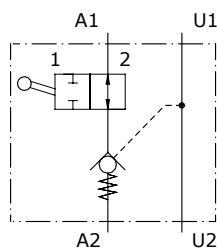
## Type VBPSL/R pilot operated check valves

- Single acting
- Shut-off

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

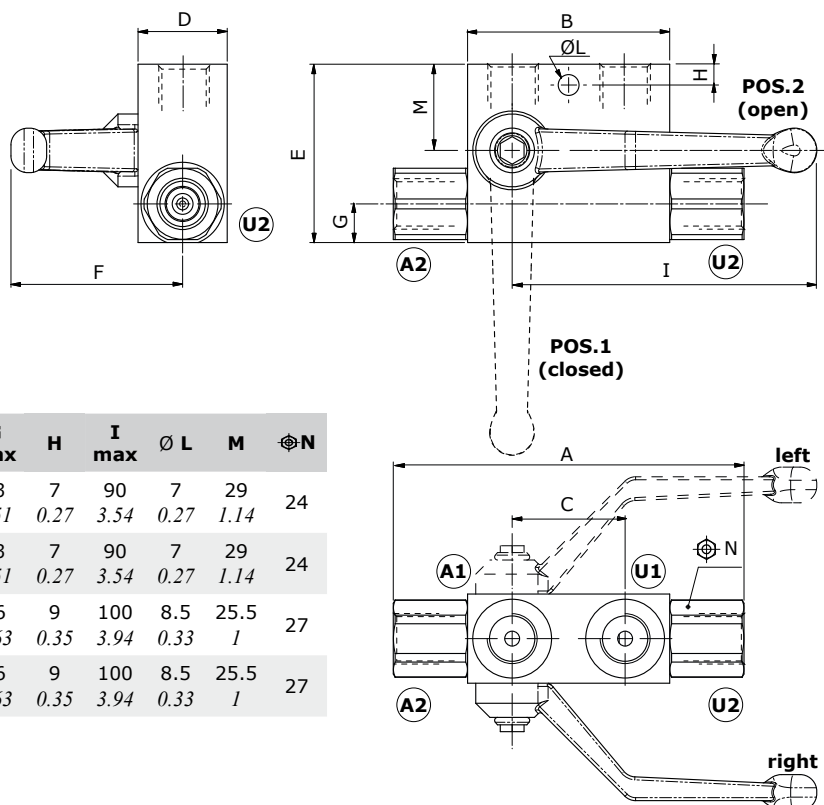
|                                            | VBPSL/R..14                                                                  | VBPSL/VP/R..38        | VBPSL/R..38            | VBPSL/VP/R..12         |
|--------------------------------------------|------------------------------------------------------------------------------|-----------------------|------------------------|------------------------|
| Nominal flow                               | 25 l/min (6.6 US gpm)                                                        | 25 l/min (6.6 US gpm) | 50 l/min (13.2 US gpm) | 50 l/min (13.2 US gpm) |
| Max. pressure                              | 350 bar (5100 psi)                                                           | 350 bar (5100 psi)    | 300 bar (4350 psi)     | 300 bar (4350 psi)     |
| Oil leakage                                | 0.25 cm <sup>3</sup> /min (0.015 in <sup>3</sup> /min) at 210 bar (3050 psi) |                       |                        |                        |
| Fluid                                      | mineral based oil                                                            |                       |                        |                        |
| Viscosity                                  | from 10 to 200 cSt                                                           |                       |                        |                        |
| Max. level of contamination                | 18/16/13 ISO4406                                                             |                       |                        |                        |
| Fluid temperature                          | with NBR seals: from -20°C (-4°F) to 80°C (176°F)                            |                       |                        |                        |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                                          |                       |                        |                        |
| Weight                                     | steel                                                                        | 0.95 kg (2.09 lb)     | 0.95 kg (2.09 lb)      | 1.12 kg (2.47 lb)      |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



### Dimension

| Valve type     | All ports |
|----------------|-----------|
| VBPSL/R..14    | G1/4      |
| VBPSL/VP/R..38 | G3/8      |
| VBPSL/R..38    | G3/8      |
| VBPSL/VP/R..12 | G1/2      |



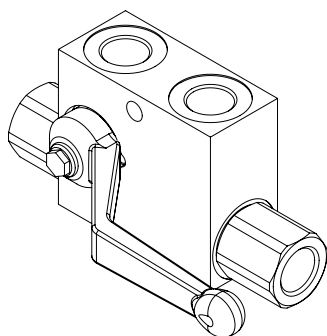
Dimensions are in mm-in

| Valve type     | A           | B          | C          | D          | E          | F max      | G max      | H         | I max       | Ø L         | M          | ⊕ N |
|----------------|-------------|------------|------------|------------|------------|------------|------------|-----------|-------------|-------------|------------|-----|
| VBPSL/R..14    | 118<br>4.64 | 68<br>2.68 | 38<br>1.50 | 30<br>1.18 | 60<br>2.36 | 65<br>2.56 | 13<br>0.51 | 7<br>0.27 | 90<br>3.54  | 7<br>0.27   | 29<br>1.14 | 24  |
| VBPSL/VP/R..38 | 118<br>4.64 | 68<br>2.68 | 38<br>1.50 | 30<br>1.18 | 60<br>2.36 | 65<br>2.56 | 13<br>0.51 | 7<br>0.27 | 90<br>3.54  | 7<br>0.27   | 29<br>1.14 | 24  |
| VBPSL/R..38    | 143<br>5.63 | 80<br>3.15 | 40<br>1.57 | 30<br>1.18 | 60<br>2.36 | 60<br>2.36 | 16<br>0.63 | 9<br>0.35 | 100<br>3.94 | 8.5<br>0.33 | 25.5<br>1  | 27  |
| VBPSL/VP/R..12 | 143<br>5.63 | 80<br>3.15 | 40<br>1.57 | 30<br>1.18 | 60<br>2.36 | 60<br>2.36 | 16<br>0.63 | 9<br>0.35 | 100<br>3.94 | 8.5<br>0.33 | 25.5<br>1  | 27  |

### Ordering codes and description composition

D - right  
S - left  
Port size

VBPSL/R D 14



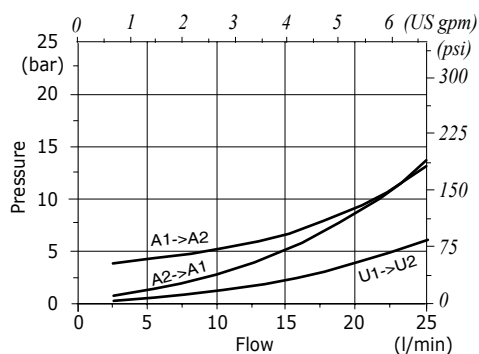
#### VBPSLR complete valves

| TYPE                        | CODE       | DESCRIPTION                                                                            |
|-----------------------------|------------|----------------------------------------------------------------------------------------|
| VBPSL/R/S 14/p4,5/Pa4/ac    | 1415312100 | Steel body, opening pressure 4 bar (58 psi), pilot ratio 1:4.5, G1/4 ports, left lever |
| VBPSL/R/D 14/p4,5/Pa4/ac    | 1415312101 | As previous with right lever                                                           |
| VBPSL/R/S 38/p4/Pa4/ac      | 1415322100 | Steel body, opening pressure 4 bar (58 psi), pilot ratio 1:4, G3/8 ports, left lever   |
| VBPSL/R/D 38/p4/Pa4/ac      | 1415322101 | As previous with right lever                                                           |
| VBPSL/VP/R/S 38/p4,5/Pa4/ac | 1415322102 | Steel body, opening pressure 4 bar (58 psi), pilot ratio 1:4.5, G3/8 ports, left lever |
| VBPSL/VP/R/D 38/p4,5/Pa4/ac | 1415322103 | As previous with right lever                                                           |
| VBPSL/VP/R/S 12/p4/Pa4/ac   | 1415332100 | Steel body, opening pressure 4 bar (58 psi), pilot ratio 1:4, G1/2 ports, left lever   |
| VBPSL/VP/R/D 12/p4/Pa4/ac   | 1415332101 | As previous with right lever                                                           |

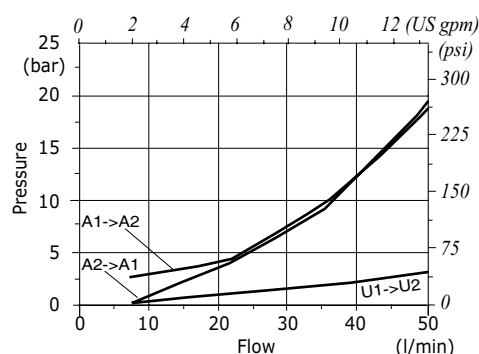
For different configurations or SAE threads please contact our Sales Dpt.

### Rating diagram

VBPSL/R..14 pressure drop vs. flow



VBPSL/R..38 pressure drop vs. flow





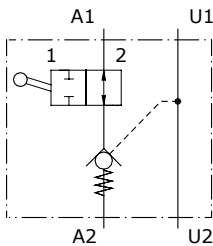
**Type VRPSE..A..**  
**pilot operated check valves**

- Single acting
- Shut-off
- DIN 2353

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                            | VRPSE01A..                                                                   | VRPSE015A..           | VRPSE02A..             | VRPSE025A..            |
|--------------------------------------------|------------------------------------------------------------------------------|-----------------------|------------------------|------------------------|
| Nominal flow                               | 25 l/min (6.6 US gpm)                                                        | 25 l/min (6.6 US gpm) | 50 l/min (13.2 US gpm) | 50 l/min (13.2 US gpm) |
| Max. pressure                              | 350 bar (5100 psi)                                                           | 350 bar (5100 psi)    | 300 bar (4350 psi)     | 300 bar (4350 psi)     |
| Oil leakage                                | 0.25 cm <sup>3</sup> /min (0.015 in <sup>3</sup> /min) at 210 bar (3050 psi) |                       |                        |                        |
| Fluid                                      | mineral based oil                                                            |                       |                        |                        |
| Viscosity                                  | from 10 to 200 cSt                                                           |                       |                        |                        |
| Max. level of contamination                | 18/16/13 ISO4406                                                             |                       |                        |                        |
| Fluid temperature                          | with NBR seals: from -20°C (-4°F) to 80°C (176°F)                            |                       |                        |                        |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                                          |                       |                        |                        |
| Weight                                     | steel                                                                        | 0.95 kg (2.09 lb)     | 0.95 kg (2.09 lb)      | 1.12 kg (2.47 lb)      |

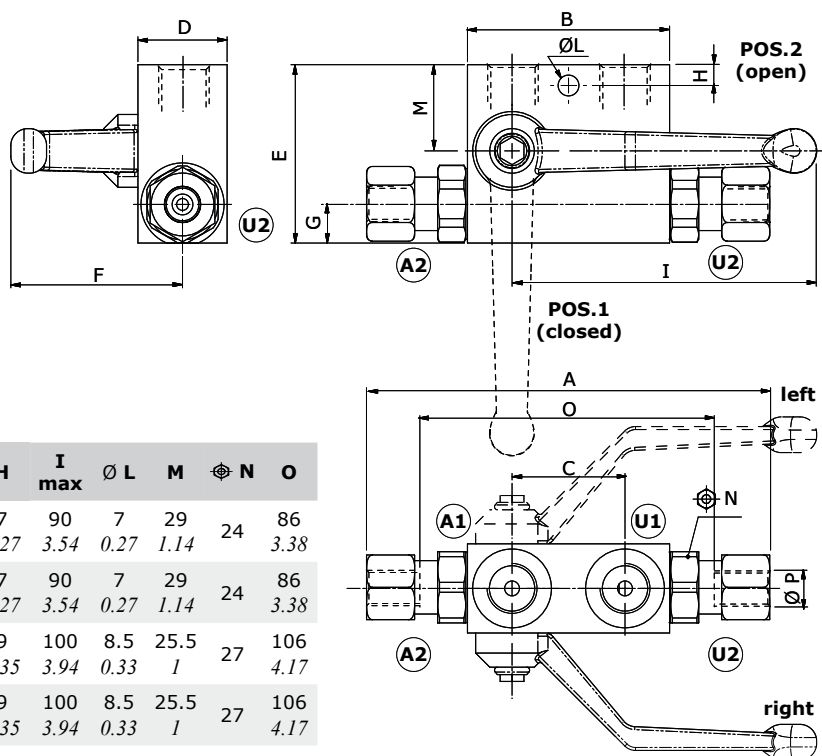
NOTE - For different conditions, please contact Walvoil Sales Dpt.





### Dimension

| Valve type  | A1-U1 | A2-U2<br>(Ø P) |
|-------------|-------|----------------|
| VRPSE01A..  | G1/4  | 12<br>0.27     |
| VRPSE015A.. | G3/8  | 12<br>0.27     |
| VRPSE02A..  | G3/8  | 15<br>0.59     |
| VRPSE025A.. | G1/2  | 15<br>0.59     |

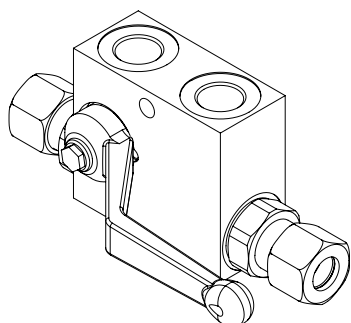


Dimensions are in mm-in

| Valve type  | A           | B          | C          | D          | E          | F<br>max   | G<br>max   | H         | I<br>max    | Ø L         | M          | N  | O           |
|-------------|-------------|------------|------------|------------|------------|------------|------------|-----------|-------------|-------------|------------|----|-------------|
| VRPSE01A..  | 138<br>5.43 | 68<br>2.68 | 38<br>1.50 | 30<br>1.18 | 60<br>2.36 | 65<br>2.56 | 13<br>0.51 | 7<br>0.27 | 90<br>3.54  | 7<br>0.27   | 29<br>1.14 | 24 | 86<br>3.38  |
| VRPSE015A.. | 138<br>5.43 | 68<br>2.68 | 38<br>1.50 | 30<br>1.18 | 60<br>2.36 | 65<br>2.56 | 13<br>0.51 | 7<br>0.27 | 90<br>3.54  | 7<br>0.27   | 29<br>1.14 | 24 | 86<br>3.38  |
| VRPSE02A..  | 140<br>5.51 | 80<br>3.15 | 40<br>1.57 | 30<br>1.18 | 60<br>2.36 | 60<br>2.36 | 16<br>0.63 | 9<br>0.35 | 100<br>3.94 | 8.5<br>0.33 | 25.5<br>1  | 27 | 106<br>4.17 |
| VRPSE025A.. | 140<br>5.51 | 80<br>3.15 | 40<br>1.57 | 30<br>1.18 | 60<br>2.36 | 60<br>2.36 | 16<br>0.63 | 9<br>0.35 | 100<br>3.94 | 8.5<br>0.33 | 25.5<br>1  | 27 | 106<br>4.17 |

### Ordering codes and description composition

Port size **A** **R** - right  
**L** - left



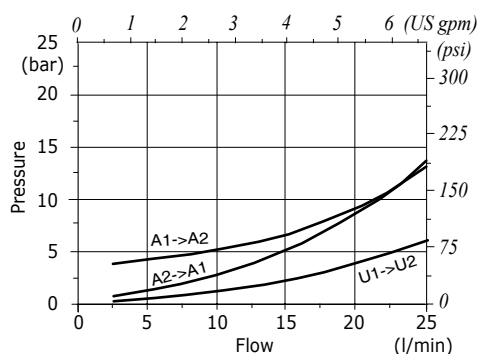
#### VRPSE complete valves

| TYPE       | CODE       | DESCRIPTION                                                                             |
|------------|------------|-----------------------------------------------------------------------------------------|
| VRPSE01AL  | 1415412100 | Steel body, opening pressure 4 bar (58 psi), pilot ratio 1:4.5, G1/4 ports, left lever  |
| VRPSE01AR  | 1415412101 | Steel body, opening pressure 4 bar (58 psi), pilot ratio 1:4.5, G1/4 ports, right lever |
| VRPSE02AL  | 1415422100 | Steel body, opening pressure 4 bar (58 psi), pilot ratio 1:4, G3/8 ports, left lever    |
| VRPSE02AR  | 1415422101 | Steel body, opening pressure 4 bar (58 psi), pilot ratio 1:4, G3/8 ports, right lever   |
| VRPSE015AL | 1415422102 | Steel body, opening pressure 4 bar (58 psi), pilot ratio 1:4.5, G3/8 ports, left lever  |
| VRPSE015AR | 1415422103 | Steel body, opening pressure 4 bar (58 psi), pilot ratio 1:4.5, G3/8 ports, right lever |
| VRPSE025AL | 1415432100 | Steel body, opening pressure 4 bar (58 psi), pilot ratio 1:4, G1/2 ports, left lever    |
| VRPSE025AR | 1415432101 | Steel body, opening pressure 4 bar (58 psi), pilot ratio 1:4, G1/2 ports, right lever   |

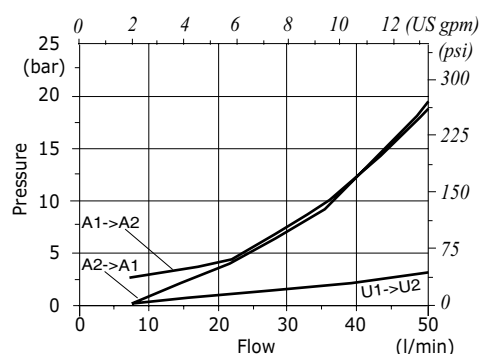
For different configurations or SAE thread please contact our Sales Dpt.

### Rating diagram

VRPSE01A pressure drop vs. flow



VRPSE02A pressure drop vs. flow





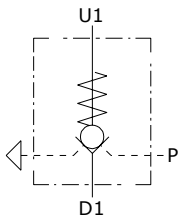
**Type VBPSL/PS**  
**pilot operated check valves**

- External pilot operated type

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

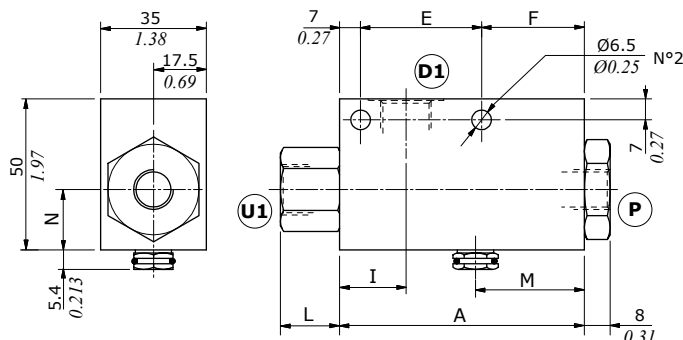
|                                                     |           | VBPSL/PS 38                                                            | VBPSL/PS 12           |
|-----------------------------------------------------|-----------|------------------------------------------------------------------------|-----------------------|
| Nominal flow                                        |           | 25 l/min (6.6 US gpm)                                                  | 35 l/min (9.2 US gpm) |
| Max. pressure                                       |           | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                       |
| Oil leakage                                         |           | 0.25 cm³/min (0.015 in³/min) at 210 bar (3050 psi)                     |                       |
| Fluid                                               |           | mineral based oil                                                      |                       |
| Viscosity                                           |           | from 10 to 200 cSt                                                     |                       |
| Max. level of contamination                         |           | 18/16/13 ISO4406                                                       |                       |
| Fluid temperature                                   |           | with NBR seals from -20°C (-4°F) to 80°C (176°F)                       |                       |
| Environmental temperature<br>for working conditions |           | from -40°C (-40°F) to 100°C (212°F)                                    |                       |
| Weight                                              | aluminium | 0.53 kg (1.17 lb)                                                      | 0.65 kg (1.43 lb)     |
|                                                     | steel     | 1.07 kg (2.36 lb)                                                      | 1.22 kg (2.69 lb)     |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



### Dimensions

| Valve type      | U1 - D1 | P    |
|-----------------|---------|------|
| VBPSL/PS 38     | G3/8    | G1/4 |
| VBPSL/PS 12     | G1/2    | G1/4 |
| Valve type      | U1 - D1 | P    |
| VBPSL/PS 38/SAE | SAE8    | SAE6 |
| VBPSL/PS 12/SAE | SAE10   | SAE6 |

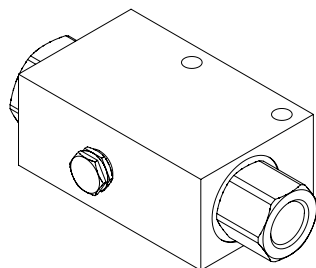


Dimensions are in mm-in

| Valve type                     | A       | E       | F       | I       | L         | M       | N       |
|--------------------------------|---------|---------|---------|---------|-----------|---------|---------|
| VBPSL/PS 38<br>VBPSL/PS 38/SAE | 81-3.19 | 40-1.57 | 34-1.34 | 22-0.87 | 19.5-0.77 | 36-1.42 | 20-0.79 |
| VBPSL/PS 12<br>VBPSL/PS 12/SAE | 90-3.54 | 50-1.97 | 33-1.30 | 32-1.26 | 33-1.30   | 35-1.38 | 30-1.18 |

### Ordering codes and description composition

VBPSL/PS 38/p10  
 Port size  
 Pilot ratio



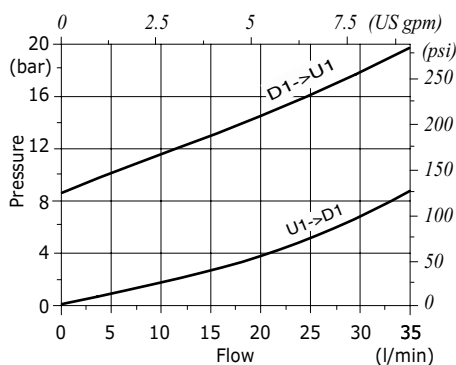
#### VBPSL/PS complete valves

| TYPE                | CODE       | DESCRIPTION                                  |
|---------------------|------------|----------------------------------------------|
| VBPSL/PS 38/p10     | 1413021100 | Aluminium body, pilot ratio 1:10, G3/8 ports |
| VBPSL/PS 38/p10/ac  | 1413022100 | Steel body, as previous one                  |
| VBPSL/PS 12/p6      | 1413031100 | Aluminium body, pilot ratio 1:6, G1/2 ports  |
| VBPSL/PS 12/p6/ac   | 1413032100 | Steel body, as previous one                  |
| VBPSL/PS 38/p10/SAE | 1413021200 | Aluminium body, pilot ratio 1:10, SAE8 ports |
| VBPSL/PS 12/p6/SAE  | 1413031200 | Aluminium body, pilot ratio 1:6, SAE10 ports |

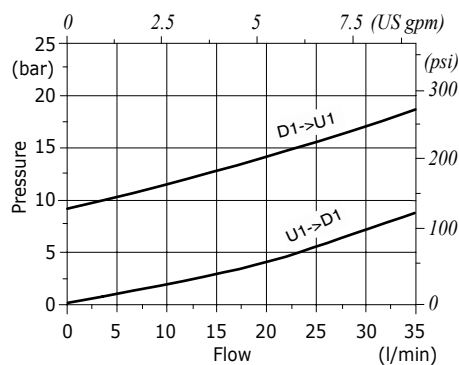
For other steel body configurations, SAE thread and configurations with FPM (Viton) seals, please contact our Sales Dpt.

### Rating diagram

VBPSL/PS 38 pressure drop vs. flow



VBPSL/PS 12 pressure drop vs. flow





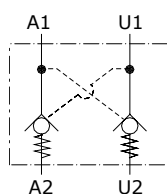
## Type VBPDL pilot operated check valves

- Double acting

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

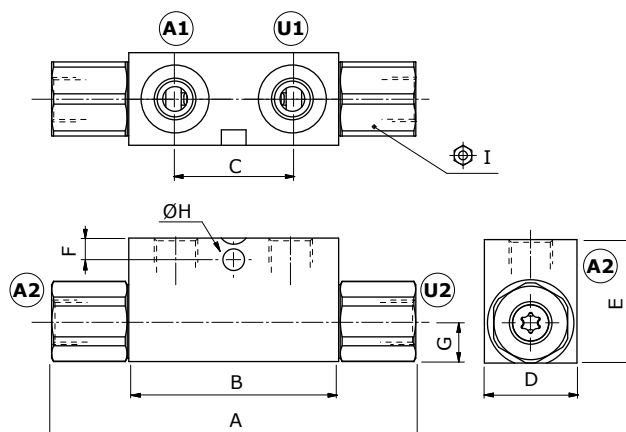
|                                            |              | VBPDL 14                                                              | VBPDL VP 38                     | VBPDL 38                         | VBPDL VP 12                      | VBPDL 12                         | VBPDL 34                          |
|--------------------------------------------|--------------|-----------------------------------------------------------------------|---------------------------------|----------------------------------|----------------------------------|----------------------------------|-----------------------------------|
| Nominal flow                               |              | 30 l/min<br><i>(7.9 US gpm)</i>                                       | 30 l/min<br><i>(7.9 US gpm)</i> | 50 l/min<br><i>(13.2 US gpm)</i> | 50 l/min<br><i>(13.2 US gpm)</i> | 80 l/min<br><i>(21.1 US gpm)</i> | 120 l/min<br><i>(31.7 US gpm)</i> |
| Max. pressure                              |              | 350 bar<br><i>(5100 psi)</i>                                          | 350 bar<br><i>(5100 psi)</i>    | 300 bar<br><i>(4350 psi)</i>     | 300 bar<br><i>(4350 psi)</i>     | 300 bar<br><i>(4350 psi)</i>     | 300 bar<br><i>(4350 psi)</i>      |
| Oil leakage                                |              | 0.25 cm³/min <i>(0.015 in³/min)</i> at 210 bar <i>(3050 psi)</i>      |                                 |                                  |                                  |                                  |                                   |
| Fluid                                      |              | mineral based oil                                                     |                                 |                                  |                                  |                                  |                                   |
| Viscosity                                  |              | 10-200 cSt                                                            |                                 |                                  |                                  |                                  |                                   |
| Max. level of contamination                |              | 18/16/13 ISO4406                                                      |                                 |                                  |                                  |                                  |                                   |
| Fluid temperature                          |              | <i>with NBR seals</i> from -20°C <i>(-4°F)</i> to 80°C <i>(176°F)</i> |                                 |                                  |                                  |                                  |                                   |
| Environmental temp. for working conditions |              | from -40°C <i>(-40°F)</i> to 100°C <i>(212°F)</i>                     |                                 |                                  |                                  |                                  |                                   |
| Weight                                     | <i>Steel</i> | 0.68 kg<br><i>(1.5 lb)</i>                                            | 0.63 kg<br><i>(1.39 lb)</i>     | 0.97 kg<br><i>(2.14 lb)</i>      | 0.9 kg<br><i>(1.98 lb)</i>       | 1.69 kg<br><i>(3.72 lb)</i>      | 3.06 kg<br><i>(6.75 lb)</i>       |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



### Dimensions

| Valve type         | All ports |
|--------------------|-----------|
| <b>VBPDL 14</b>    | G1/4      |
| <b>VBPDL VP 38</b> | G3/8      |
| <b>VBPDL 38</b>    | G3/8      |
| <b>VBPDL VP 12</b> | G1/2      |
| <b>VBPDL 12</b>    | G1/2      |
| <b>VBPDL 34</b>    | G3/4      |



Dimensions are in mm-in

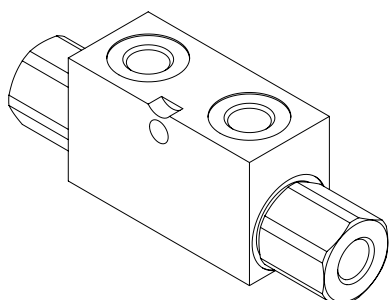
| Valve type         | A max.           | B        | C       | D       | E       | F       | G       | ØH       | ⊕I |
|--------------------|------------------|----------|---------|---------|---------|---------|---------|----------|----|
| <b>VBPDL 14</b>    | 118-4.64         | 68-2.68  | 38-1.50 | 30-1.18 | 40-1.57 | 7-0.27  | 13-0.51 | 8-0.31   | 24 |
| <b>VBPDL VP 38</b> | 118-4.64         | 68-2.68  | 38-1.50 | 30-1.18 | 40-1.57 | 7-0.27  | 13-0.51 | 8-0.31   | 24 |
| <b>VBPDL 38</b>    | 144-5.67         | 80-3.15  | 40-1.57 | 30-1.18 | 50-1.97 | 15-0.59 | 16-0.63 | 8.5-0.33 | 27 |
| <b>VBPDL VP 12</b> | 144-5.67         | 80-3.15  | 40-1.57 | 30-1.18 | 50-1.97 | 15-0.59 | 16-0.63 | 8.5-0.33 | 27 |
| <b>VBPDL 12</b>    | 171-6.73         | 90-3.54  | 40-1.57 | 40-1.57 | 60-2.36 | 15-0.59 | 20-0.79 | 8.5-0.33 | 30 |
| <b>VBPDL 34</b>    | 196 (¹)-7.72 (¹) | 107-4.21 | 60-2.36 | 50-1.97 | 70-2.75 | 16-0.63 | 23-0.90 | 8.5-0.33 | 41 |

NOTE - (¹) Only for 04 SAE 208

### Ordering codes and description composition

VBPDL 14 / p4,5 / Pa4 / ac

Port size: 14  
Opening pressure: p4,5  
Pilot ratio: Pa4  
Ac: ac



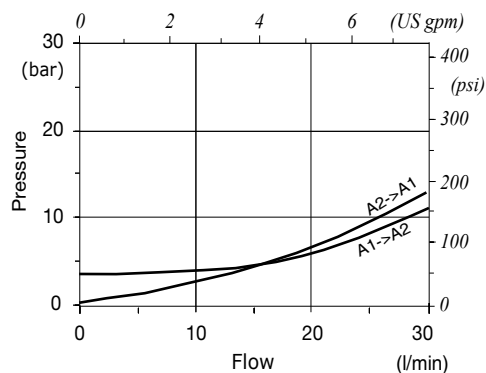
#### VBPDL Complete valves

| TYPE                         | CODE       | DESCRIPTION                                                                             |
|------------------------------|------------|-----------------------------------------------------------------------------------------|
| <b>VBPDL 14/p4,5/Pa4/ac</b>  | 1420112100 | Steel body, G1/4 port configuration, pilot ratio 1:4.5, opening pressure 4 bar (58 psi) |
| <b>VBPDL 38/p4/Pa4/ac</b>    | 1420122100 | Steel body, G3/8 port configuration, pilot ratio 1:4, opening pressure 4 bar (58 psi)   |
| <b>VBPDL VP 38/p4/Pa4/ac</b> | 1420122101 | Steel body, G3/8 port configuration, pilot ratio 1:4.5, opening pressure 4 bar (58 psi) |
| <b>VBPDL 12/p4/Pa4/ac</b>    | 1420132100 | Steel body, G1/2 port configuration, pilot ratio 1:4, opening pressure 4 bar (58 psi)   |
| <b>VBPDL VP 12/p4/Pa4/ac</b> | 1420132101 | Steel body, G1/2 port configuration, pilot ratio 1:4, opening pressure 4 bar (58 psi)   |
| <b>VBPDL 34/p4/Pa4/ac</b>    | 1420142100 | Steel body, G3/4 port configuration, pilot ratio 1:4, opening pressure 4 bar (58 psi)   |

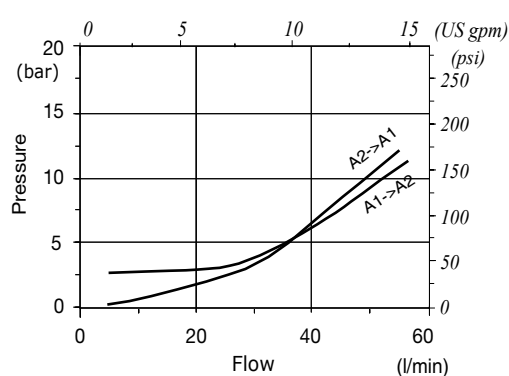
For different configurations or SAE thread please contact our Sales Dpt.

**Rating diagrams**

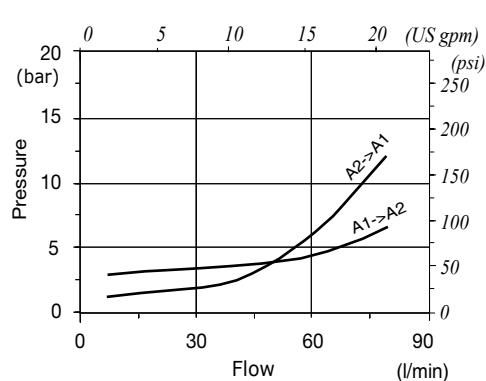
**VBPDL 14 pressure drop vs. flow**



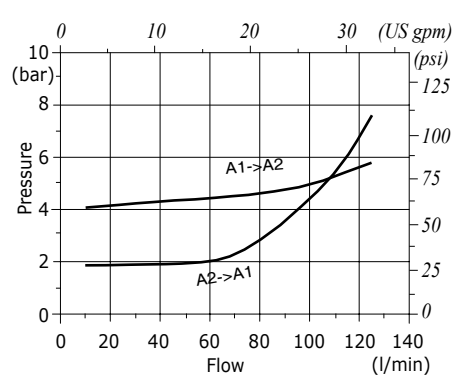
**VBPD 38 pressure drop vs. flow**



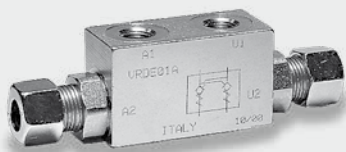
**VBPD 12 pressure drop vs. flow**



**VBPD 34 pressure drop vs. flow**







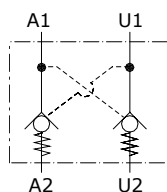
## Type VRDE..A pilot operated check valves

- Double acting
- DIN 2353

Technical specifications and diagrams are measured with mineral oil ISO VG32 at 50°C (122°F) temperature.

|                                            | VRDE01A                                            | VRDE015A                  | VRDE02A                   | VRDE025A                  | VRDE03A                   |                      |
|--------------------------------------------|----------------------------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|----------------------|
| Nominal flow                               | 30 l/min<br>(7.92 US gpm)                          | 30 l/min<br>(7.92 US gpm) | 50 l/min<br>(13.2 US gpm) | 50 l/min<br>(13.2 US gpm) | 80 l/min<br>(21.1 US gpm) |                      |
| Max. pressure                              | 350 bar (5100 psi)                                 | 350 bar (5100 psi)        | 300 bar (4350 psi)        | 300 bar (4350 psi)        | 300 bar (4350 psi)        |                      |
| Oil leakage                                | 0.25 cm³/min (0.015 in³/min) at 210 bar (3050 psi) |                           |                           |                           |                           |                      |
| Fluid                                      | mineral based oil                                  |                           |                           |                           |                           |                      |
| Viscosity                                  | 10-200 cSt                                         |                           |                           |                           |                           |                      |
| Max. level of contamination                | 18/16/13 ISO4406                                   |                           |                           |                           |                           |                      |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F)   |                           |                           |                           |                           |                      |
| Environmental temp. for working conditions | -40°C (-40°F) to 100°C (212°F)                     |                           |                           |                           |                           |                      |
| Weight                                     | steel                                              | 0.67 kg<br>(1.48 lb)      | 0.66 kg<br>(1.45 lb)      | 0.97 kg<br>(2.14 lb)      | 0.91 kg<br>(2.01 lb)      | 1.67 kg<br>(3.68 lb) |

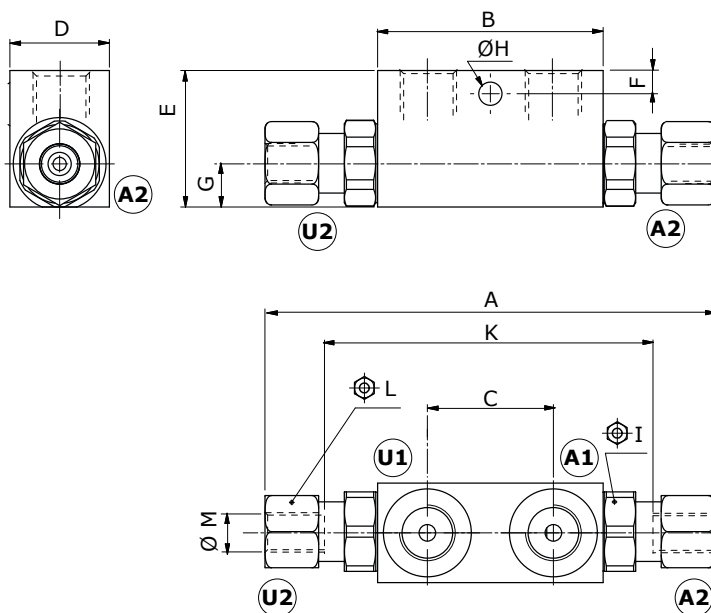
NOTE - For different conditions, please contact Walvoil Sales Dpt.





### Dimension

| Valve type | A1-U1 | A2-U2<br>(Ø M) |
|------------|-------|----------------|
| VRDE01A    | G1/4  | 12-0.47        |
| VRDE015A   | G3/8  | 12-0.47        |
| VRDE02A    | G3/8  | 15-0.59        |
| VRDE025A   | G1/2  | 15-0.59        |
| VRDE03A    | G1/2  | 18-0.71        |

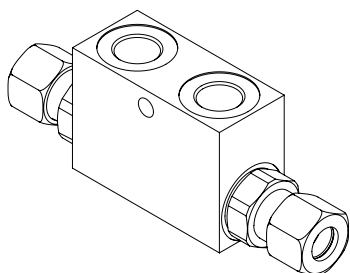


Dimensions are in mm-in

| Valve type | A        | B max.  | C       | D       | E       | F       | G       | ØH       | ØI | ØL | K        |
|------------|----------|---------|---------|---------|---------|---------|---------|----------|----|----|----------|
| VRDE01A    | 138-5.43 | 68-2.68 | 38-1.50 | 30-1.18 | 40-1.57 | 7-0.27  | 13-0.51 | 8-0.31   | 24 | 22 | 86-3.38  |
| VRDE 015A  | 138-5.43 | 68-2.68 | 38-1.50 | 30-1.18 | 40-1.57 | 7-0.27  | 13-0.51 | 8-0.31   | 24 | 22 | 86-3.38  |
| VRDE02A    | 166-6.53 | 80-3.15 | 40-1.57 | 30-1.18 | 50-1.97 | 15-0.59 | 16-0.63 | 8.5-0.33 | 27 | 27 | 108-4.25 |
| VRDE025A   | 166-6.53 | 80-3.15 | 40-1.57 | 30-1.18 | 50-1.97 | 15-0.59 | 16-0.63 | 8.5-0.33 | 27 | 27 | 108-4.25 |
| VRDE03A    | 180-7.09 | 90-3.54 | 40-1.57 | 40-1.57 | 60-2.36 | 15-0.59 | 20-0.79 | 8.5-0.33 | 30 | 32 | 133-5.24 |

### Ordering codes and description composition

Port size  
VRDE 02 A



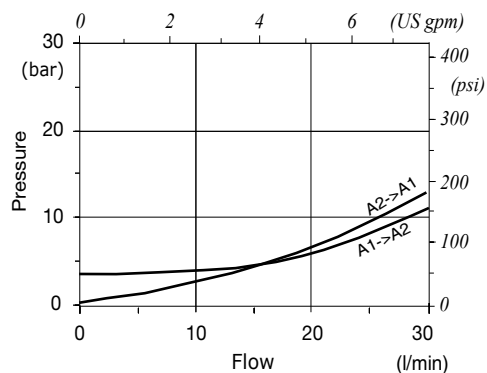
#### VRDE A complete valves

| TYPE     | CODE       | DESCRIPTION                                                               |
|----------|------------|---------------------------------------------------------------------------|
| VRDE01A  | 1420212100 | Steel body, G1/4 port, pilot ratio 1:4.5, opening pressure 4 bar (58 psi) |
| VRDE015A | 1420222100 | Steel body, G3/8 port, pilot ratio 1:4.5, opening pressure 4 bar (58 psi) |
| VRDE02A  | 1420222101 | Steel body, G3/8 port, pilot ratio 1:4, opening pressure 4 bar (58 psi)   |
| VRDE025A | 1420232100 | Steel body, G1/2 port, pilot ratio 1:4, opening pressure 4 bar (58 psi)   |
| VRDE03A  | 1420232101 | Steel body, G1/2 port, pilot ratio 1:4, opening pressure 4 bar (58 psi)   |

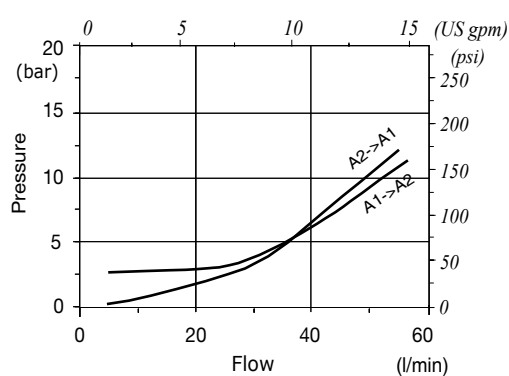
For different configurations or SAE threads please contact our Sales Dpt.

**Rating diagrams**

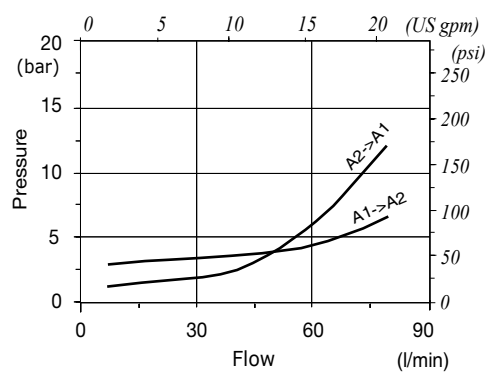
**VRDE01A pressure drop vs. flow**



**VRDE02A pressure drop vs. flow**



**VRDE03A pressure drop vs. flow**







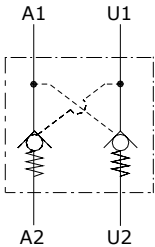
**Type VRDE..CIL**  
**pilot operated check valves**

- Double acting
- With bolt connection

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

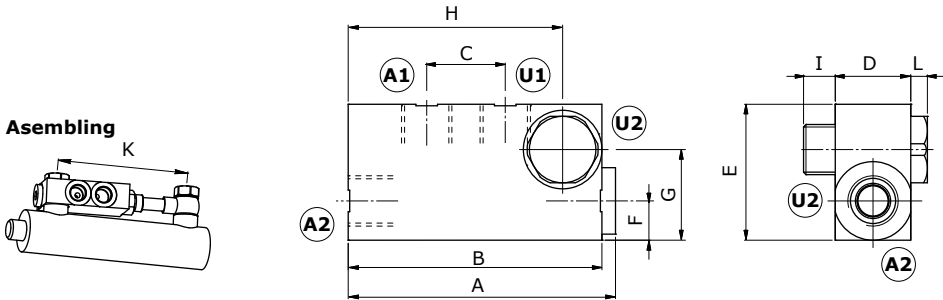
| VRDE01CIL                                  |       | VRDE02CIL                                          |
|--------------------------------------------|-------|----------------------------------------------------|
| Nominal flow                               |       | 20 l/min (5.3 US gpm)                              |
| Max. pressure                              |       | 300 bar (4350 psi)                                 |
| Oil leakage                                |       | 0.25 cm³/min (0.015 in³/min) at 210 bar (3050 psi) |
| Fluid                                      |       | mineral based oil                                  |
| Viscosity                                  |       | from 10 to 200 cSt                                 |
| Max. level of contamination                |       | 18/16/13 ISO4406                                   |
| Fluid temperature                          |       | with NBR seals from -20°C (-4°F) to 80°C (176°F)   |
| Environmental temp. for working conditions |       | from -40°C (-40°F) to 100°C (212°F)                |
| Weight                                     | Steel | 0.45 kg (0.99 lb) 0.65 kg (1.43 lb)                |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



Dimensions

| Valve type | All ports |
|------------|-----------|
| VRDE01CIL  | G1/4      |
| VRDE02CIL  | G3/8      |

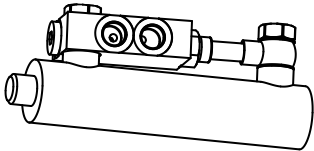


Dimensions are in mm-in

| Valve type | A         | B       | C       | D       | E       | F       | G       | H        | I       | L      | K min    |
|------------|-----------|---------|---------|---------|---------|---------|---------|----------|---------|--------|----------|
| VRDE01CIL  | 88.5-3.48 | 84-3.31 | 24-0.94 | 20-0.79 | 40-1.57 | 10-0.39 | 27-1.06 | 68.5-2.7 | 10-0.39 | 6-0.23 | 123-4.84 |
| VRDE02CIL  | 90.5-3.56 | 86-3.38 | 26-1.02 | 25-0.98 | 45-1.77 | 12-0.47 | 31-1.22 | 72-2.83  | 11-0.43 | 7-0.27 | 127-5    |

Ordering codes and description composition

Port size  
VRDE 02 CIL

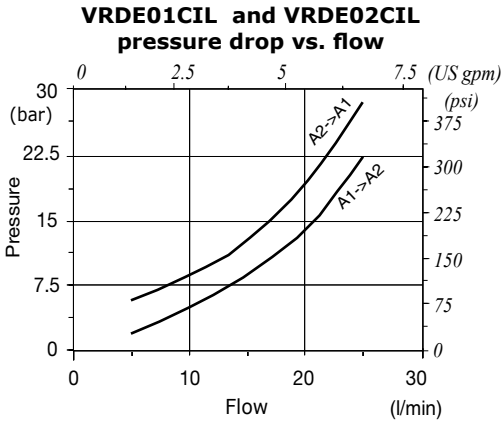


VRDECIL complete valves

| TYPE      | CODE       | DESCRIPTION                                                                 |
|-----------|------------|-----------------------------------------------------------------------------|
| VRDE01CIL | 1420312100 | Steel body, G1/4 port, opening pressure 1 bar (14,5 psi), pilot ratio 1:4.9 |
| VRDE02CIL | 1420322100 | Steel body, G3/8 port, opening pressure 1 bar (14,5 psi), pilot ratio 1:4.9 |

For different configurations or SAE threads please contact our Sales Dpt.

Rating diagram





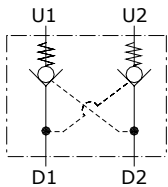
**Type VBPD/L/T**  
**pilot operated check valves**

- Double acting

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                            | VBPD/L/T 38           |                   | VBPD/L/T 12                                                                  | VBPD/L/T 34             |
|--------------------------------------------|-----------------------|-------------------|------------------------------------------------------------------------------|-------------------------|
| Nominal flow                               | 25 l/min (6.6 US gpm) |                   | 50 l/min (13.2 US gpm)                                                       | 100 l/min (26.4 US gpm) |
| Max. pressure                              |                       |                   | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi)       |                         |
| Oil leakage                                |                       |                   | 0.25 cm <sup>3</sup> /min (0.015 in <sup>3</sup> /min) at 210 bar (3050 psi) |                         |
| Fluid                                      |                       |                   | mineral based oil                                                            |                         |
| Viscosity                                  |                       |                   | from 10 to 200 cSt                                                           |                         |
| Max. level of contamination                |                       |                   | 18/16/13 ISO4406                                                             |                         |
| Fluid temperature                          |                       |                   | with NBR seals from -20°C (-4°F) to 80°C (176°F)                             |                         |
| Environmental temp. for working conditions |                       |                   | from -40°C (-40°F) to 100°C (212°F)                                          |                         |
| Weight                                     | aluminium             | 0.63 kg (1.39 lb) | 1.19 kg (2.62 lb)                                                            | 2.46 kg (5.42 lb)       |
|                                            | steel                 | 1.69 kg (3.73 lb) | 2.13 kg (4.70 lb)                                                            | 5.36 kg (11.81 lb)      |

NOTE - For different conditions, please contact Walvoil Sales Dpt.

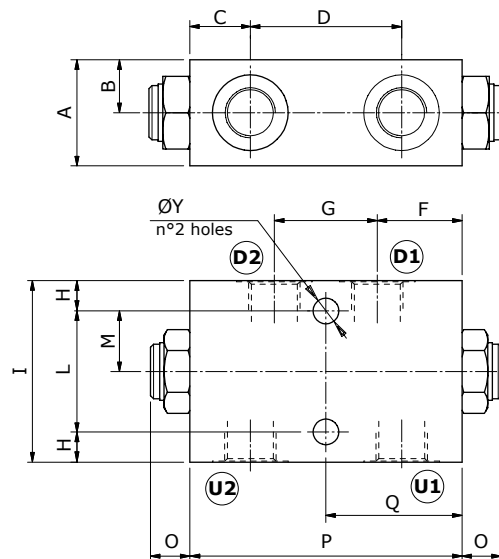


### Dimensions

| Valve type        | All ports | Valve type            | All ports |
|-------------------|-----------|-----------------------|-----------|
| <b>VBPDL/T 38</b> | G3/8      | <b>VBPDL/T 38/SAE</b> | SAE8      |
| <b>VBPDL/T 12</b> | G1/2      | <b>VBPDL/T 12/SAE</b> | SAE10     |
| <b>VBPDL/T 34</b> | G3/4      | <b>VBPDL/T 34/SAE</b> | SAE12     |

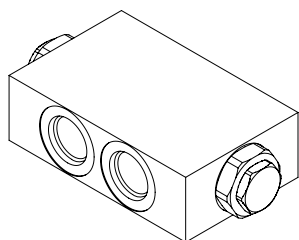
Dimensions are in mm-in

| Valve type            | A       | B         | C       | D        | F         | G        | ØY        |
|-----------------------|---------|-----------|---------|----------|-----------|----------|-----------|
| <b>VBPDL/T 38</b>     | 35-5.39 | 17.5-5.39 | 20-0.79 | 50-1.97  | 28-1.10   | 34-1.34  | 8.5-0.33  |
| <b>VBPDL/T 38/SAE</b> | 35-5.39 | 17.5-5.39 | 21-0.83 | 68-2.68  | 38-1.50   | 34-1.34  | 8.5-0.33  |
| <b>VBPDL/T 12</b>     | 35-5.39 | 17.5-5.39 | 21-0.83 | 68-2.68  | 38-1.50   | 34-1.34  | 8.5-0.33  |
| <b>VBPDL/T 12/SAE</b> | 35-5.39 | 17.5-5.39 | 21-0.83 | 68-2.68  | 38-1.50   | 34-1.34  | 8.5-0.33  |
| <b>VBPDL/T 34</b>     | 50-1.97 | 25-0.98   | 30-1.18 | 105-4.13 | 57.5-2.26 | 50-1.97  | 8.5-0.33  |
| <b>VBPDL/T 34/SAE</b> | 50-1.97 | 25-0.98   | 30-1.18 | 105-4.13 | 57.5-2.26 | 50-1.97  | 8.5-0.33  |
| Valve type            | H       | I         | L       | M        | O         | P        | Q         |
| <b>VBPDL/T 38</b>     | 10-0.39 | 60-2.36   | 40-1.57 | 20-0.79  | 14.5-0.57 | 90-3.54  | 45-1.77   |
| <b>VBPDL/T 38/SAE</b> | 10-0.39 | 60-2.36   | 40-1.57 | 20-0.79  | 14.5-0.57 | 90-3.54  | 45-1.77   |
| <b>VBPDL/T 12</b>     | 15-0.59 | 70-2.36   | 40-1.57 | 20-0.79  | 13-0.39   | 110-4.3  | 55-2.16   |
| <b>VBPDL/T 12/SAE</b> | 15-0.59 | 70-2.36   | 40-1.57 | 20-0.79  | 13-0.39   | 110-4.3  | 55-2.16   |
| <b>VBPDL/T 34</b>     | 15-0.59 | 90-3.54   | 60-1.97 | 30-1.18  | 16.5-0.65 | 165-6.50 | 82.5-3.25 |
| <b>VBPDL/T 34/SAE</b> | 15-0.59 | 90-3.54   | 60-1.97 | 30-1.18  | 16.5-0.65 | 165-6.50 | 82.5-3.25 |



### Ordering codes and description composition

Port size  
**VBPDL/T 38/p4**  
Pilot ratio



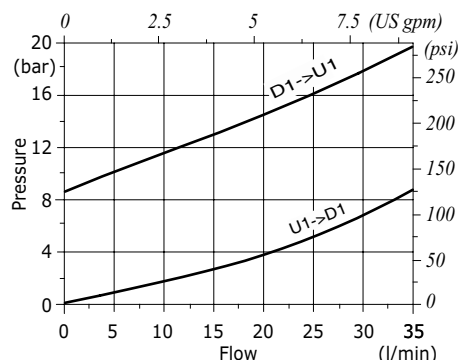
#### VBPDL/T complete valves

| TYPE                        | CODE       | DESCRIPTION                                  |
|-----------------------------|------------|----------------------------------------------|
| <b>VBPDL/T 38/p4</b>        | 1422021100 | Aluminium body, pilot ratio 1:4, G3/8 ports  |
| <b>VBPDL/T 38/p4/ac</b>     | 1422022100 | Steel body, as previous one                  |
| <b>VBPDL/T 12/p4</b>        | 1422031100 | Aluminium body, pilot ratio 1:4, G1/2 ports  |
| <b>VBPDL/T 12/p4/ac</b>     | 1422032100 | Steel body, as previous one                  |
| <b>VBPDL/T 34/p4</b>        | 1422041100 | Aluminium body, pilot ratio 1:4, G3/4 ports  |
| <b>VBPDL/T 34/p4/ac</b>     | 1422042100 | Steel body, as previous one                  |
| <b>VBPDL/T 38/p4/SAE</b>    | 1422021200 | Aluminium body, pilot ratio 1:4, SAE8 ports  |
| <b>VBPDL/T 38/p4/ac/SAE</b> | 1422022200 | Steel body, as previous one                  |
| <b>VBPDL/T 12/p4/SAE</b>    | 1422031200 | Aluminium body, pilot ratio 1:4, SAE10 ports |
| <b>VBPDL/T 34/p4/SAE</b>    | 1422041200 | Aluminium body, pilot ratio 1:4, SAE12 ports |

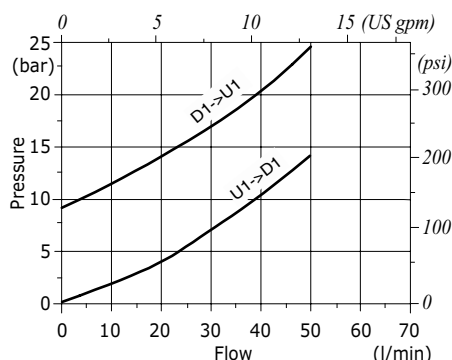
For other steel body configurations, other port sizes and configurations with FPM (Viton) seals please contact our Sales Dpt.

### Rating diagram

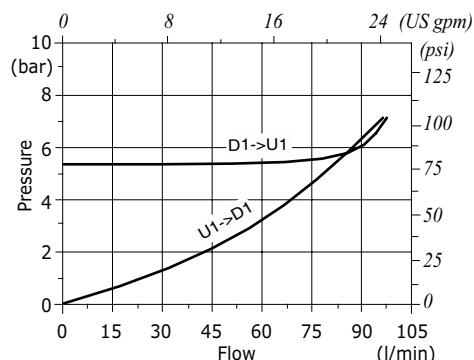
**VBPDL/T 38 pressure drop vs. flow**



**VBPDL/T 12 pressure drop vs. flow**



**VBPDL/T 34 pressure drop vs. flow**





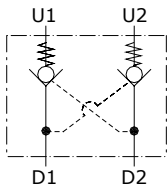
**Type VBPDF**  
**pilot operated check valves**

- Double acting
- Face mounting

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                            |           | VBPDF 14                                                               | VBPDF 38              | VBPDF 12               | VBPDF 34                |
|--------------------------------------------|-----------|------------------------------------------------------------------------|-----------------------|------------------------|-------------------------|
| Nominal flow                               |           | 15 l/min (4.0 US gpm)                                                  | 35 l/min (9.2 US gpm) | 50 l/min (13.2 US gpm) | 100 l/min (26.4 US gpm) |
| Max. pressure                              |           | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                       |                        |                         |
| Oil leakage                                |           | 0.25 cm³/min (0.015 in³/min) at 210 bar (3050 psi)                     |                       |                        |                         |
| Fluid                                      |           | mineral based oil                                                      |                       |                        |                         |
| Viscosity                                  |           | from 10 to 200 cSt                                                     |                       |                        |                         |
| Max. level of contamination                |           | 18/16/13 ISO4406                                                       |                       |                        |                         |
| Fluid temperature                          |           | with NBR seals from -20°C (-4°F) to 80°C (176°F)                       |                       |                        |                         |
| Environmental temp. for working conditions |           | from -40°C (-40°F) to 100°C (212°F)                                    |                       |                        |                         |
| Weight                                     | aluminium | 0.47 kg (1.04 lb)                                                      | 1.17 kg (2.58 lb)     | 1.15 kg (2.54 lb)      | 2.52 kg (5.56 lb)       |
|                                            | steel     | 0.95 kg (2.09 lb)                                                      | 2.13 kg (4.70 lb)     | 2.05 kg (4.52 lb)      | 5.23 kg (11.53 lb)      |

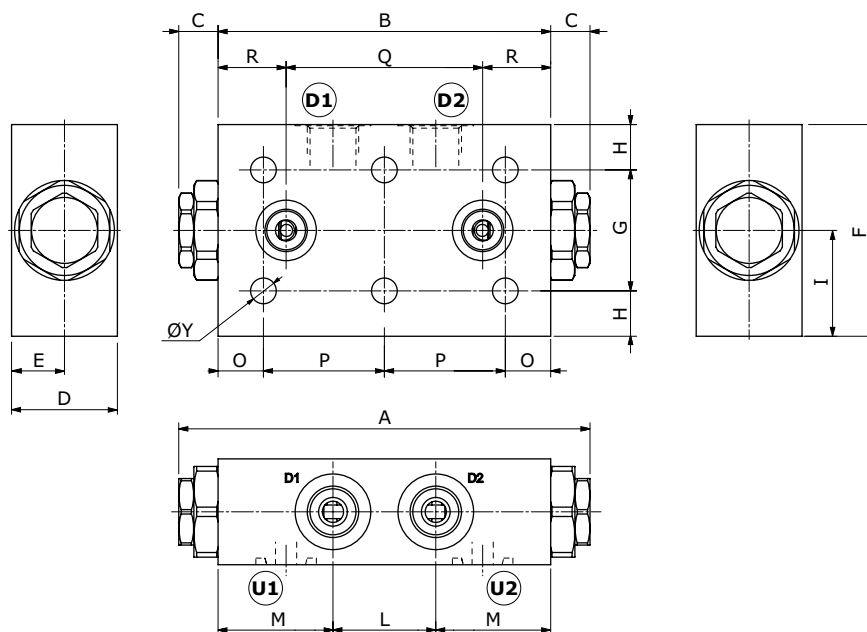
NOTE - For different conditions, please contact Walvoil Sales Dpt.





## Dimensions

| Valve type           | D1 - D2 | U1 - U2        |
|----------------------|---------|----------------|
| <b>VBP</b> DF 14     | G1/4    | Ø 5<br>Ø 0.20  |
| <b>VBP</b> DF 38     | G3/8    | Ø 7<br>Ø 0.27  |
| <b>VBP</b> DF 12     | G1/2    | Ø 7<br>Ø 0.27  |
| <b>VBP</b> DF 34     | G3/4    | Ø 14<br>Ø 0.55 |
| Valve type           | D1 - D2 | U1 - U2        |
| <b>VBP</b> DF 12/SAE | SAE10   | Ø 7<br>Ø 0.27  |

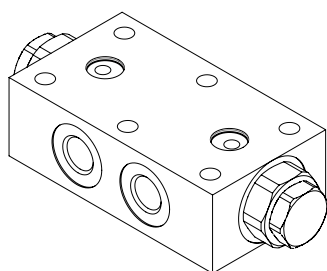


Dimensions are in mm-in

| Valve type                               | A           | B           | C            | D          | E            | F          | G          | H           | I            | L          | M            | O           | P            | Q           | R            | ØY           |
|------------------------------------------|-------------|-------------|--------------|------------|--------------|------------|------------|-------------|--------------|------------|--------------|-------------|--------------|-------------|--------------|--------------|
| <b>VBP</b> DF 14                         | 119<br>4.69 | 90<br>3.54  | 14.5<br>0.57 | 30<br>1.18 | 15<br>0.59   | 50<br>1.97 | 35<br>1.38 | 7.5<br>0.29 | 17.5<br>0.69 | 30<br>1.18 | 30<br>1.18   | 8.5<br>0.33 | 36.5<br>1.44 | 55<br>2.16  | 17.5<br>0.69 | 6.5<br>0.25  |
| <b>VBP</b> DF 38                         | 136<br>5.35 | 110<br>4.33 | 13<br>0.51   | 35<br>1.38 | 17.5<br>0.69 | 70<br>2.75 | 40<br>1.57 | 15<br>0.59  | 20<br>0.79   | 34<br>1.34 | 38<br>1.50   | 15<br>0.59  | 40<br>1.57   | 65<br>2.56  | 22.5<br>0.88 | 8.5<br>0.33  |
| <b>VBP</b> DF 12<br><b>VBP</b> DF 12/SAE | 136<br>5.35 | 110<br>4.33 | 13<br>0.51   | 35<br>1.38 | 17.5<br>0.69 | 70<br>2.75 | 40<br>1.57 | 15<br>0.59  | 20<br>0.79   | 34<br>1.34 | 38<br>1.50   | 15<br>0.59  | 40<br>1.57   | 65<br>2.56  | 22.5<br>0.88 | 8.5<br>0.33  |
| <b>VBP</b> DF 34                         | 198<br>7.80 | 165<br>6.50 | 16.5<br>0.71 | 49<br>1.93 | 24.5<br>0.96 | 90<br>3.54 | 50<br>1.97 | 20<br>0.79  | 55<br>2.17   | 50<br>1.97 | 57.5<br>2.26 | 15<br>0.59  | 67.5<br>2.65 | 105<br>4.13 | 30<br>1.18   | 10.5<br>0.41 |

## Ordering codes and description composition

Port size  
**VBPDF 14/p4**  
Pilot ratio



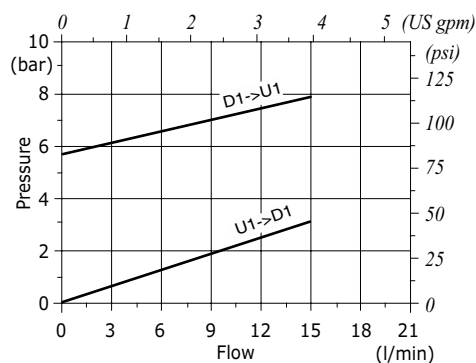
### VBPDF complete valves

| TYPE                      | CODE       | DESCRIPTION                                  |
|---------------------------|------------|----------------------------------------------|
| <b>VBPDF 14/p4</b>        | 1426011100 | Aluminium body, pilot ratio 1:4, G1/4 ports  |
| <b>VBPDF 14/p4/ac</b>     | 1426012100 | Steel body, as previous one                  |
| <b>VBPDF 38/p4</b>        | 1426021100 | Aluminium body, pilot ratio 1:4, G3/8 ports  |
| <b>VBPDF 38/p4/ac</b>     | 1426022100 | Steel body, as previous one                  |
| <b>VBPDF 12/p4</b>        | 1426031100 | Aluminium body, pilot ratio 1:4, G1/2 ports  |
| <b>VBPDF 12/p4/ac</b>     | 1426032100 | Steel body, as previous one                  |
| <b>VBPDF 34/p4</b>        | 1426041100 | Aluminium body, pilot ratio 1:4, G3/4 ports  |
| <b>VBPDF 34/p4/ac</b>     | 1426042100 | Steel body, as previous one                  |
| <b>VBPDF 12/p4/SAE</b>    | 1426031200 | Aluminium body, pilot ratio 1:4, SAE10 ports |
| <b>VBPDF 12/p4/ac/SAE</b> | 1426032200 | Steel body, as previous one                  |

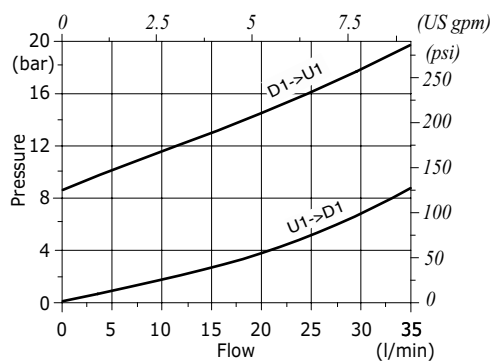
For other steel body configurations, SAE threads and configurations with FPM (Viton) seals, please contact our Sales Dpt.

## Rating diagrams

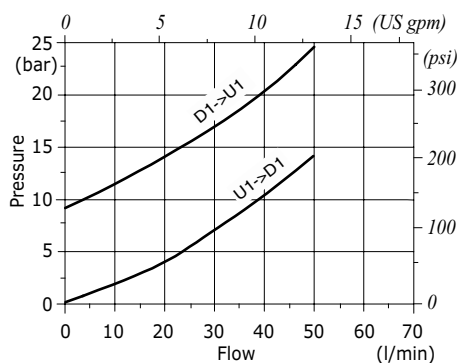
**VBPDF 14 pressure drop vs. flow**



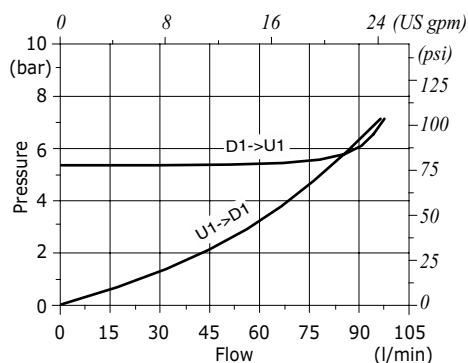
**VBPDF 38 pressure drop vs. flow**



**VBPDF 12 pressure drop vs. flow**



**VBPDF 34 pressure drop vs. flow**







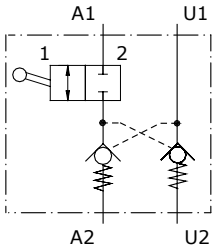
## Type VBPD/L/R pilot operated check valves

- Double acting
- Check valve by pass type

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

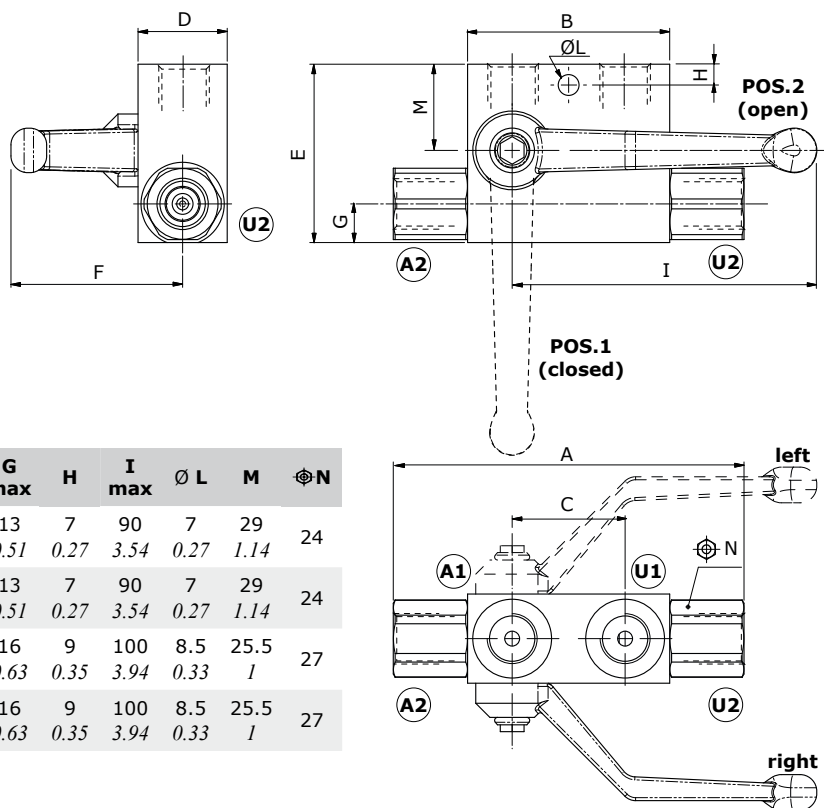
|                                            |       | VBPDL/R/..14                                       | VBPDL/VP/R/..38       | VBPDL/R/..38           | VBPDL/VP/R/..12        |
|--------------------------------------------|-------|----------------------------------------------------|-----------------------|------------------------|------------------------|
| Nominal flow                               |       | 25 l/min (6.6 US gpm)                              | 25 l/min (6.6 US gpm) | 50 l/min (13.2 US gpm) | 50 l/min (13.2 US gpm) |
| Max. pressure                              |       | 350 bar (5100 psi)                                 | 350 bar (5100 psi)    | 300 bar (4350 psi)     | 300 bar (4350 psi)     |
| Oil leakage                                |       | 0.25 cm³/min (0.015 in³/min) at 210 bar (3050 psi) |                       |                        |                        |
| Fluid                                      |       | mineral based oil                                  |                       |                        |                        |
| Viscosity                                  |       | from 10 to 200 cSt                                 |                       |                        |                        |
| Max. level of contamination                |       | 18/16/13 ISO4406                                   |                       |                        |                        |
| Fluid temperature                          |       | with NBR seals from -20°C (-4°F) to 80°C (176°F)   |                       |                        |                        |
| Environmental temp. for working conditions |       | from -40°C (-40°F) to 100°C (212°F)                |                       |                        |                        |
| Weight                                     | steel | 0.95 kg (2.09 lb)                                  | 0.95 kg (2.09 lb)     | 1.12 kg (2.47 lb)      | 1.12 kg (2.47 lb)      |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



### Dimension

| Valve type       | All ports |
|------------------|-----------|
| VBPD/L/R/..14    | G1/4      |
| VBPD/L/VP/R/..38 | G3/8      |
| VBPD/L/R/..38    | G3/8      |
| VBPD/L/VP/R/..12 | G1/2      |



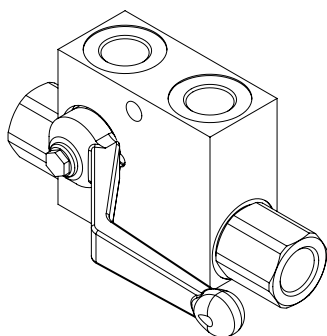
Dimensions are in mm-in

| Valve type       | A           | B          | C          | D          | E          | F max      | G max      | H         | I max       | Ø L         | M          | ⊕N |
|------------------|-------------|------------|------------|------------|------------|------------|------------|-----------|-------------|-------------|------------|----|
| VBPD/L/R/..14    | 118<br>4.64 | 68<br>2.68 | 38<br>1.50 | 30<br>1.18 | 60<br>2.36 | 65<br>2.56 | 13<br>0.51 | 7<br>0.27 | 90<br>3.54  | 7<br>0.27   | 29<br>1.14 | 24 |
| VBPD/L/VP/R/..38 | 118<br>4.64 | 68<br>2.68 | 38<br>1.50 | 30<br>1.18 | 60<br>2.36 | 65<br>2.56 | 13<br>0.51 | 7<br>0.27 | 90<br>3.54  | 7<br>0.27   | 29<br>1.14 | 24 |
| VBPD/L/R/..38    | 143<br>5.63 | 80<br>3.15 | 40<br>1.57 | 30<br>1.18 | 60<br>2.36 | 60<br>2.36 | 16<br>0.63 | 9<br>0.35 | 100<br>3.94 | 8.5<br>0.33 | 25.5<br>1  | 27 |
| VBPD/L/VP/R/..12 | 143<br>5.63 | 80<br>3.15 | 40<br>1.57 | 30<br>1.18 | 60<br>2.36 | 60<br>2.36 | 16<br>0.63 | 9<br>0.35 | 100<br>3.94 | 8.5<br>0.33 | 25.5<br>1  | 27 |

### Ordering codes and description composition

D - right  
S - left  
Port size

VBPD/L/R/ D 14



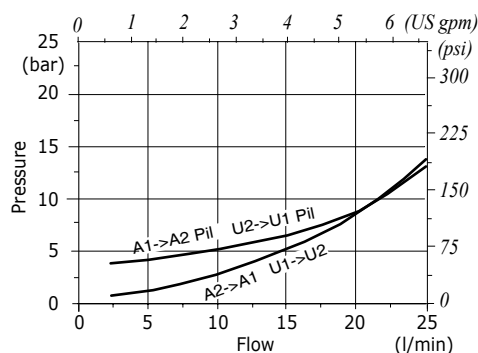
#### VBPD/L/R complete valves

| TYPE                         | CODE       | DESCRIPTION                                                                          |
|------------------------------|------------|--------------------------------------------------------------------------------------|
| VBPD/L/R/S 14/p4,5/Pa4/ac    | 1425312100 | Steel body, opening press. 4 bar (58 psi), pilot ratio 1:4.5, G1/4 ports, left lever |
| VBPD/L/R/D 14/p4,5/Pa4/ac    | 1425312101 | As previous with right lever                                                         |
| VBPD/L/R/S 38/p4/Pa4/ac      | 1425322100 | Steel body, opening press. 4 bar (58 psi), pilot ratio 1:4, G3/8 ports, left lever   |
| VBPD/L/R/D 38/p4/Pa4/ac      | 1425322101 | As previous with right lever                                                         |
| VBPD/L/VP/R/S 38/p4,5/Pa4/ac | 1425322102 | Steel body, opening press. 4 bar (58 psi), pilot ratio 1:4, G3/8 ports, left lever   |
| VBPD/L/VP/R/D 38/p4,5/Pa4/ac | 1425322103 | As previous with right lever                                                         |
| VBPD/L/VP/R/S 12/p4/Pa4/ac   | 1425332100 | Steel body, opening press. 4 bar (58 psi), pilot ratio 1:4, G1/2 ports, left lever   |
| VBPD/L/VP/R/D 12/p4/Pa4/ac   | 1425332101 | As previous with right lever                                                         |

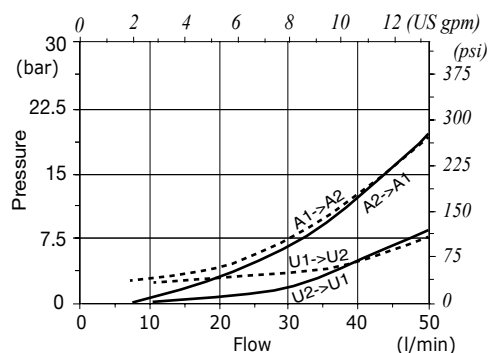
For different configurations or SAE threads please contact our Sales Dpt.

### Rating diagram

VBPD/L/R/..14 pressure drop vs. flow



VBPD/L/R/..38 pressure drop vs. flow





## Type VRPDE..A

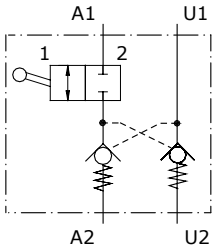
### pilot operated check valves

- Double acting
- Check valve DIN 2353 by pass type
- Shut-off

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

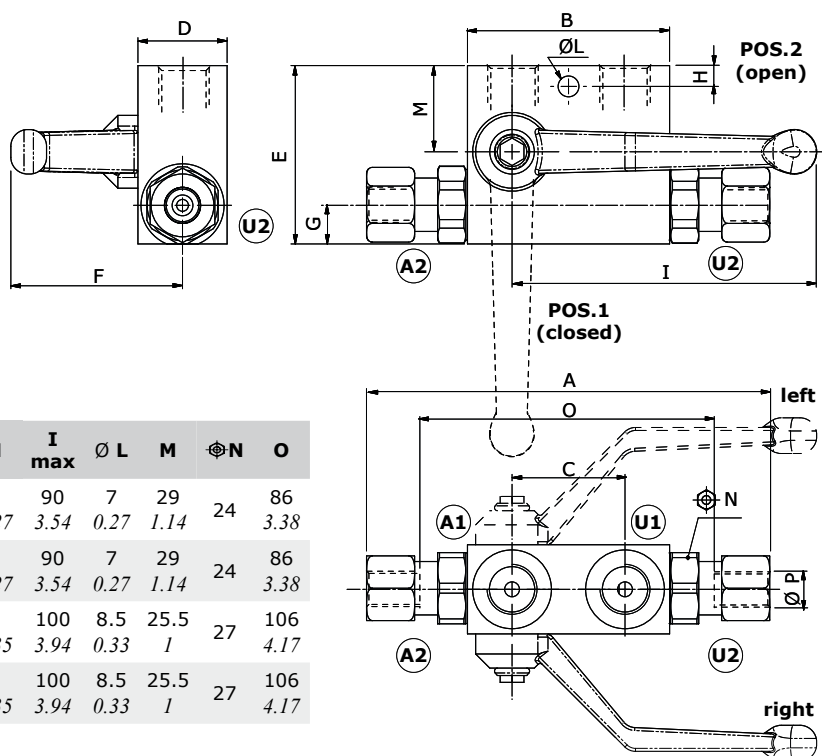
|                                            | VRPDE01A                                           | VRPDE015A             | VRPDE02A               | VRPDE025A              |
|--------------------------------------------|----------------------------------------------------|-----------------------|------------------------|------------------------|
| Nominal flow                               | 25 l/min (6.6 US gpm)                              | 25 l/min (6.6 US gpm) | 50 l/min (13.2 US gpm) | 50 l/min (13.2 US gpm) |
| Max. pressure                              | 350 bar (5100 psi)                                 | 350 bar (5100 psi)    | 300 bar (4350 psi)     | 300 bar (4350 psi)     |
| Oil leakage                                | 0.25 cm³/min (0.015 in³/min) at 210 bar (3050 psi) |                       |                        |                        |
| Fluid                                      | mineral based oil                                  |                       |                        |                        |
| Viscosity                                  | from 10 to 200 cSt                                 |                       |                        |                        |
| Max. level of contamination                | 18/16/13 ISO4406                                   |                       |                        |                        |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F)   |                       |                        |                        |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                |                       |                        |                        |
| Weight                                     | steel                                              | 0.95 kg (2.09 lb)     | 0.95 kg (2.09 lb)      | 1.12 kg (2.47 lb)      |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



### Dimension

| Valve type | A1-U1 | A2-U2 (Ø P) |
|------------|-------|-------------|
| VRPDE01A   | G1/4  | 12<br>0.27  |
| VRPDE015A  | G3/8  | 12<br>0.27  |
| VRPDE02A   | G3/8  | 15<br>0.59  |
| VRPDE025A  | G1/2  | 15<br>0.59  |

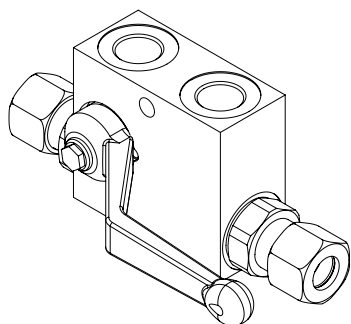


Dimensions are in mm-in

| Valve type | A           | B          | C          | D          | E          | F max      | G max      | H         | I max       | Ø L         | M          | Ø N | O           |
|------------|-------------|------------|------------|------------|------------|------------|------------|-----------|-------------|-------------|------------|-----|-------------|
| VRPDE01A   | 138<br>5.43 | 68<br>2.68 | 38<br>1.50 | 30<br>1.18 | 60<br>2.36 | 65<br>2.56 | 13<br>0.51 | 7<br>0.27 | 90<br>3.54  | 7<br>0.27   | 29<br>1.14 | 24  | 86<br>3.38  |
| VRPDE015A  | 138<br>5.43 | 68<br>2.68 | 38<br>1.50 | 30<br>1.18 | 60<br>2.36 | 65<br>2.56 | 13<br>0.51 | 7<br>0.27 | 90<br>3.54  | 7<br>0.27   | 29<br>1.14 | 24  | 86<br>3.38  |
| VRPDE02A   | 140<br>5.51 | 80<br>3.15 | 40<br>1.57 | 30<br>1.18 | 60<br>2.36 | 60<br>2.36 | 16<br>0.63 | 9<br>0.35 | 100<br>3.94 | 8.5<br>0.33 | 25.5<br>1  | 27  | 106<br>4.17 |
| VRPDE025A  | 140<br>5.51 | 80<br>3.15 | 40<br>1.57 | 30<br>1.18 | 60<br>2.36 | 60<br>2.36 | 16<br>0.63 | 9<br>0.35 | 100<br>3.94 | 8.5<br>0.33 | 25.5<br>1  | 27  | 106<br>4.17 |

### Ordering codes and description composition

Port size  
VRPDE 01 A R  
R - right  
L - left



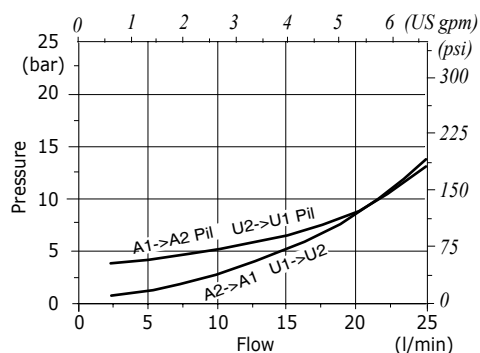
#### VRPDE complete valves

| TYPE       | CODE       | DESCRIPTION                                                                           |
|------------|------------|---------------------------------------------------------------------------------------|
| VRPDE01AR  | 1425412100 | Steel body, opening press. 4 bar (58 psi), pilot ratio 1:4.5, G1/4 ports, right lever |
| VRPDE015AL | 1425422102 | Steel body, opening press. 4 bar (58 psi), pilot ratio 1:4.5, G3/8 ports, left lever  |
| VRPDE015AR | 1425422103 | Steel body, opening press. 4 bar (58 psi), pilot ratio 1:4.5, G3/8 ports, right lever |
| VRPDE02AL  | 1425422100 | Steel body, opening press. 4 bar (58 psi), pilot ratio 1:4, G3/8 ports, left lever    |
| VRPDE02AR  | 1425422101 | Steel body, opening press. 4 bar (58 psi), pilot ratio 1:4, G3/8 ports, right lever   |
| VRPDE025AL | 1425432100 | Steel body, opening press. 4 bar (58 psi), pilot ratio 1:4, G1/2 ports, left lever    |
| VRPDE025AR | 1425432101 | Steel body, opening press. 4 bar (58 psi), pilot ratio 1:4, G1/2 ports, right lever   |

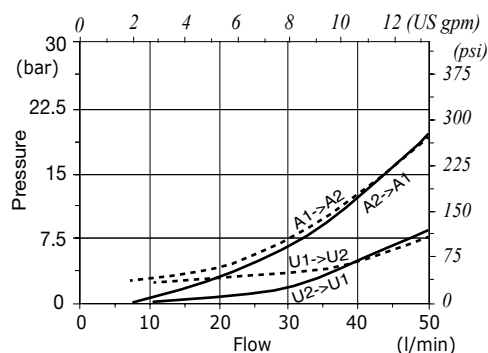
For different configurations or SAE thread please contact our Sales Dpt.

### Rating diagram

VRPDE 01 A pressure drop vs. flow



VRPDE 02 A pressure drop vs. flow





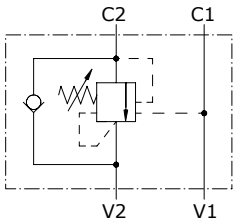
**Type VOSL/N78/....  
counterbalance valves**

- Single acting
- Load sensitive

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

| VOSL/N78 - VOSL/N78/..PB                   |                                                                                              |
|--------------------------------------------|----------------------------------------------------------------------------------------------|
| Nominal flow                               | 40 l/min (10.57 US gpm)                                                                      |
| Max. pressure                              | Steel body = 350 bar (5100 psi)                                                              |
| Oil leakage                                | 0.25 cm <sup>3</sup> /min - 0.015 in <sup>3</sup> /min. (5 drops) at 80% of pressure setting |
| Fluid                                      | mineral based oil                                                                            |
| Viscosity                                  | from 10 to 200 cSt                                                                           |
| Max. level of contamination                | 18/16/13 ISO4406                                                                             |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F)                                             |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                                                          |
|                                            | steel 0.723 kg ( 1.59 lb)                                                                    |

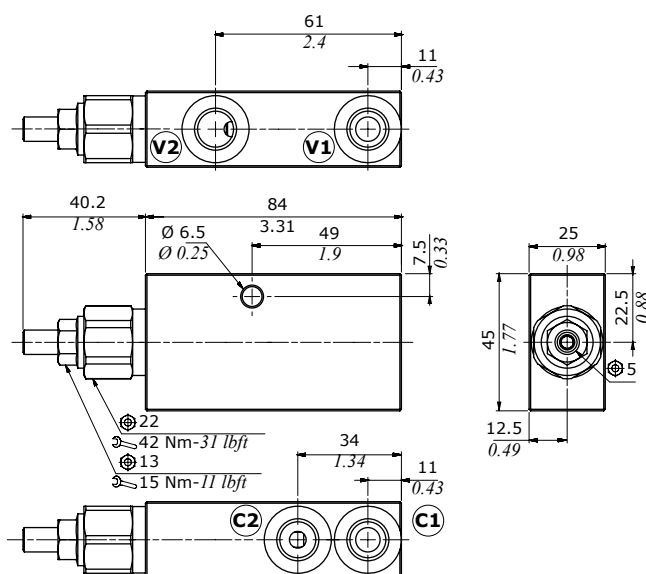
NOTE - For different conditions, please contact Walvoil Sales Dpt.





### Dimensions

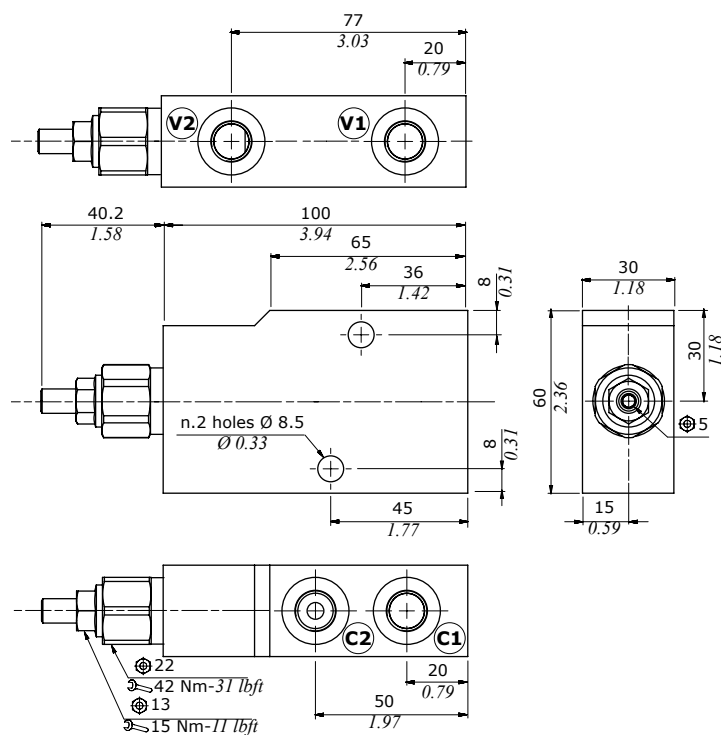
#### VOSL/N78/14



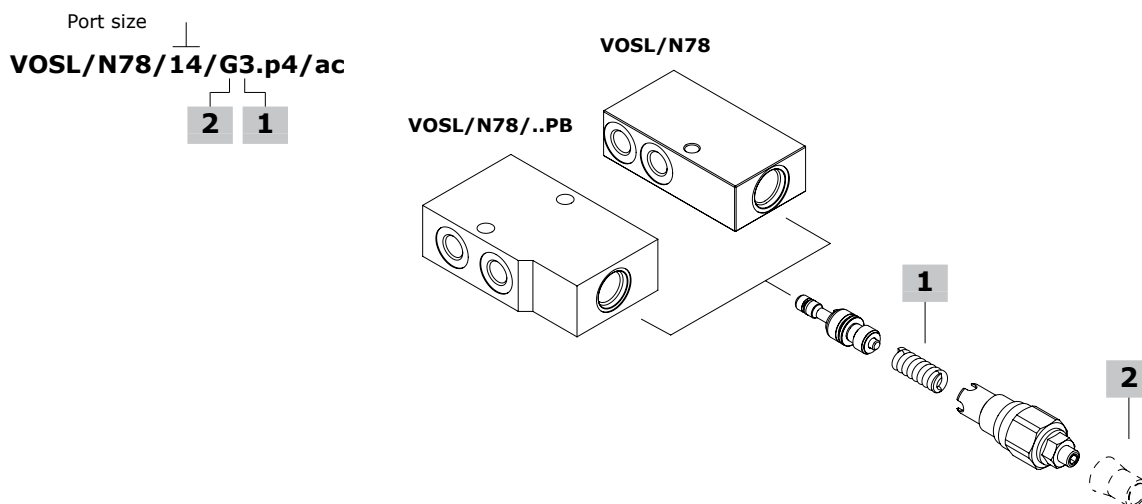
| Valve type    | V1   | V2   | C1 | C2 |
|---------------|------|------|----|----|
| VOSL/N78/14   | G1/4 | G1/4 |    |    |
| VOSL/N78/14PB | G1/4 | G1/4 |    |    |

| Valve type  | V1   | V2   | C1 | C2 |
|-------------|------|------|----|----|
| VOSL/N78/S6 | SAE6 | SAE6 |    |    |

#### VOSL/N78/14PB



## Ordering codes and description composition



### VOSL/N78 complete valves

TYPE: **VOSL/N78/14/G5.p4/ac** CODE: 1513512100  
DESCRIPTION: Steel body, pilot ratio 1:4, range 100-350 bar (1450-5075 psi), standard setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VOSL/N78/14/G3.p4/ac** CODE: 1513512101  
DESCRIPTION: Steel body, pilot ratio 1:4, range 60-220 bar (870-3190 psi), standard setting 150 bar (2170 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VOSL/N78/S6/G5.p4/ac** CODE: 1513512200  
DESCRIPTION: Steel body, pilot ratio 1:4, range 100-350 bar (1450-5075 psi), standard setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VOSL/N78/S6/G3.p4/ac** CODE: 1513512201  
DESCRIPTION: Steel body, pilot ratio 1:4, range 60-220 bar (870-3190 psi), standard setting 150 bar (2170 psi) @ 5 l/min (1.32 US gpm)

### VOSL/N78....PB complete valves

TYPE: **VOSL/N78/14PB/G5.p4/ac** CODE: 1513612100  
DESCRIPTION: Steel body, pilot ratio 1:4, range 100-350 bar (1450-5075 psi), standard setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VOSL/N78/14PB/G3.p4/ac** CODE: 1513612101  
DESCRIPTION: Steel body, pilot ratio 1:4, range 60-220 bar (870-3190 psi), standard setting 150 bar (2170 psi) @ 5 l/min (1.32 US gpm)

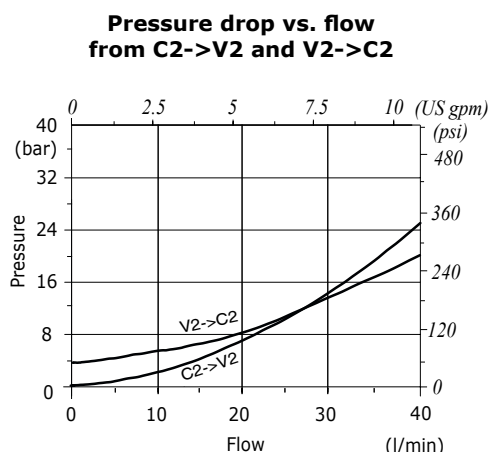
### 1 Pressure setting spring

| TYPE                       | CODE       | DESCRIPTION                                                                                       |
|----------------------------|------------|---------------------------------------------------------------------------------------------------|
| <b>For 1:4 pilot ratio</b> |            |                                                                                                   |
| <b>3</b>                   | 3MOL310282 | For range 60-220 bar (870-3190 psi) standard setting 150 bar (2170 psi) @ 5 l/min (1.32 US gpm)   |
| <b>5</b>                   | 380113     | For range 100-350 bar (1450-5075 psi) standard setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm) |

### 2 Setting type

| TYPE     | CODE       | DESCRIPTION       |
|----------|------------|-------------------|
| <b>G</b> | -          | Screw setting     |
| <b>Z</b> | 4COP120420 | Antitampering cap |

## Rating diagrams







## Type VOSLP/N78/.... counterbalance valves

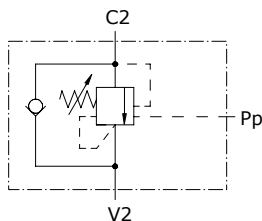
- Single acting
- External pilot

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

### VOSLP/N78 - VOSLP/N78/..PB

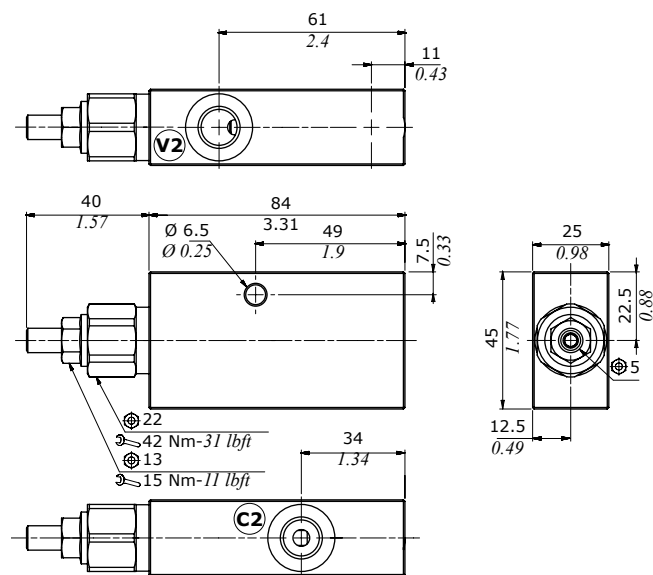
|                                            |                                                                                              |
|--------------------------------------------|----------------------------------------------------------------------------------------------|
| Nominal flow                               | 40 l/min (10.57 US gpm)                                                                      |
| Max. pressure                              | Steel body = 350 bar (5100 psi)                                                              |
| Oil leakage                                | 0.25 cm <sup>3</sup> /min - 0.015 in <sup>3</sup> /min. (5 drops) at 80% of pressure setting |
| Fluid                                      | mineral based oil                                                                            |
| Viscosity                                  | from 10 to 200 cSt                                                                           |
| Max. level of contamination                | 18/16/13 ISO4406                                                                             |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F)                                             |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                                                          |
|                                            | steel 0.723 kg (1.59 lb)                                                                     |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



### Dimensions

#### VOSLP/N78/14

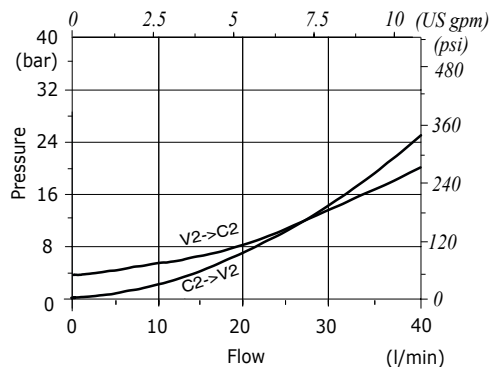


| Valve type   | V1 | V2   | C1 | C2   |
|--------------|----|------|----|------|
| VOSLP/N78/14 |    | G1/4 |    | G1/4 |

| Valve type   | V1 | V2   | C1 | C2   |
|--------------|----|------|----|------|
| VOSLP/N78/S6 |    | SAE6 |    | SAE6 |

### Rating diagrams

Pressure drop vs. flow  
from C2->V2 and V2->C2

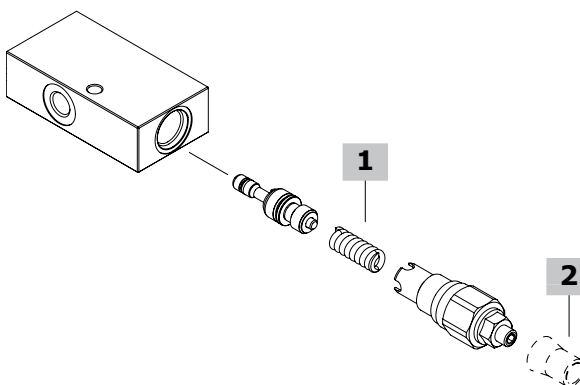


### Ordering codes and description composition

Port size  
VOSLP/N78/14/G3.p4/ac

2 1

#### VOSLP/N78



#### VOSLP/N78 complete valves

TYPE: **VOSLP/N78/14/G5.p4/ac** CODE: 1533612100  
DESCRIPTION: Steel body, pilot ratio 1:4, range 100-350 bar (1450-5075 psi), standard setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VOSLP/N78/14/G3.p4/ac** CODE: 1533612101  
DESCRIPTION: Steel body, pilot ratio 1:4, range 60-220 bar (870-3190 psi), standard setting 150 bar (2170 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VOSLP/N78/S6/G5.p4/ac** CODE: 1533612200  
DESCRIPTION: Steel body, pilot ratio 1:4, range 100-350 bar (1450-5075 psi), standard setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VOSLP/N78/S6/G3.p4/ac** CODE: 1533612201  
DESCRIPTION: Steel body, pilot ratio 1:4, range 60-220 bar (870-3190 psi), standard setting 150 bar (2170 psi) @ 5 l/min (1.32 US gpm)

#### 1 Pressure setting spring

| TYPE                       | CODE       | DESCRIPTION                                                                                       |
|----------------------------|------------|---------------------------------------------------------------------------------------------------|
| <b>For 1:4 pilot ratio</b> |            |                                                                                                   |
| 3                          | 3MOL310282 | For range 60-220 bar (870-3190 psi) standard setting 150 bar (2170 psi) @ 5 l/min (1.32 US gpm)   |
| 5                          | 380113     | For range 100-350 bar (1450-5075 psi) standard setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm) |

#### 2 Setting type

| TYPE | CODE       | DESCRIPTION       |
|------|------------|-------------------|
| G    | -          | Screw setting     |
| Z    | 4COP120420 | Antitampering cap |



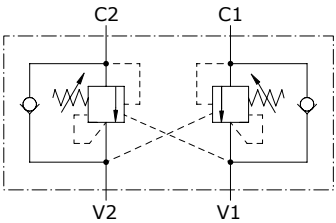
**Type VODL/N78 /....  
counterbalance valves**

- Double acting
- Load sensitive

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

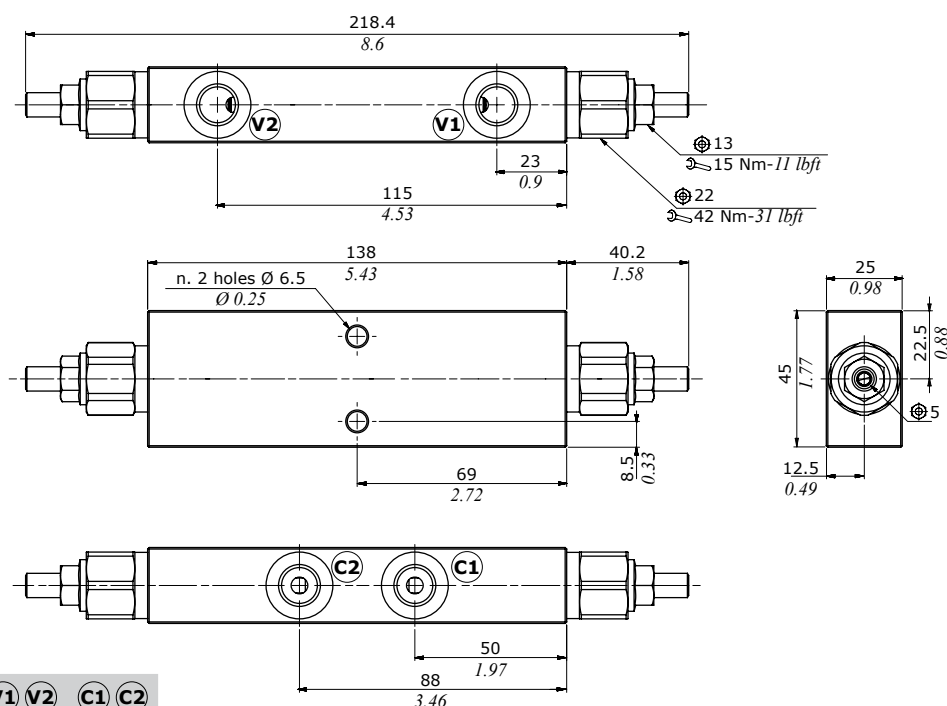
| VODL/N78 - VODL/N78/..PB                   |                                                                    |
|--------------------------------------------|--------------------------------------------------------------------|
| Nominal flow                               | 40 l/min (10.57 US gpm)                                            |
| Max. pressure                              | Steel body = 350 bar (5100 psi)                                    |
| Oil leakage                                | 0.25 cm³/min - 0.015 in³/min. (5 drops) at 80% of pressure setting |
| Fluid                                      | mineral based oil                                                  |
| Viscosity                                  | from 10 to 200 cSt                                                 |
| Max. level of contamination                | 18/16/13 ISO4406                                                   |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F)                   |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                                |
|                                            | steel 1.25 kg (2.75 lb)                                            |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



## Dimensions

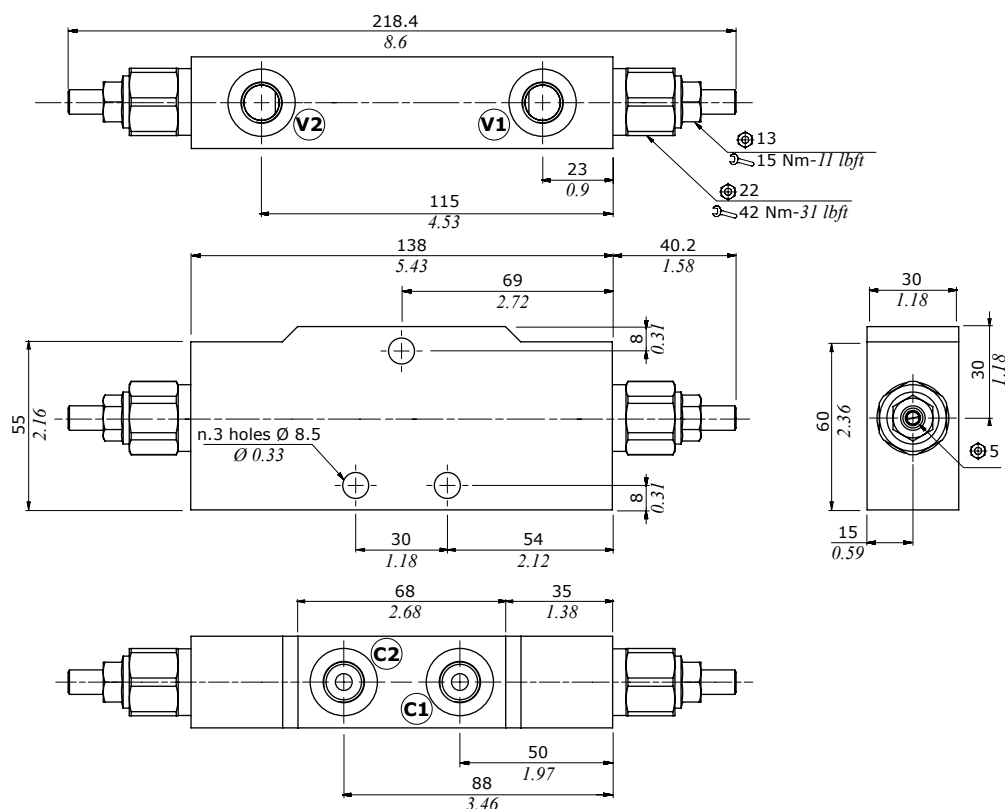
### VODL/N78/14



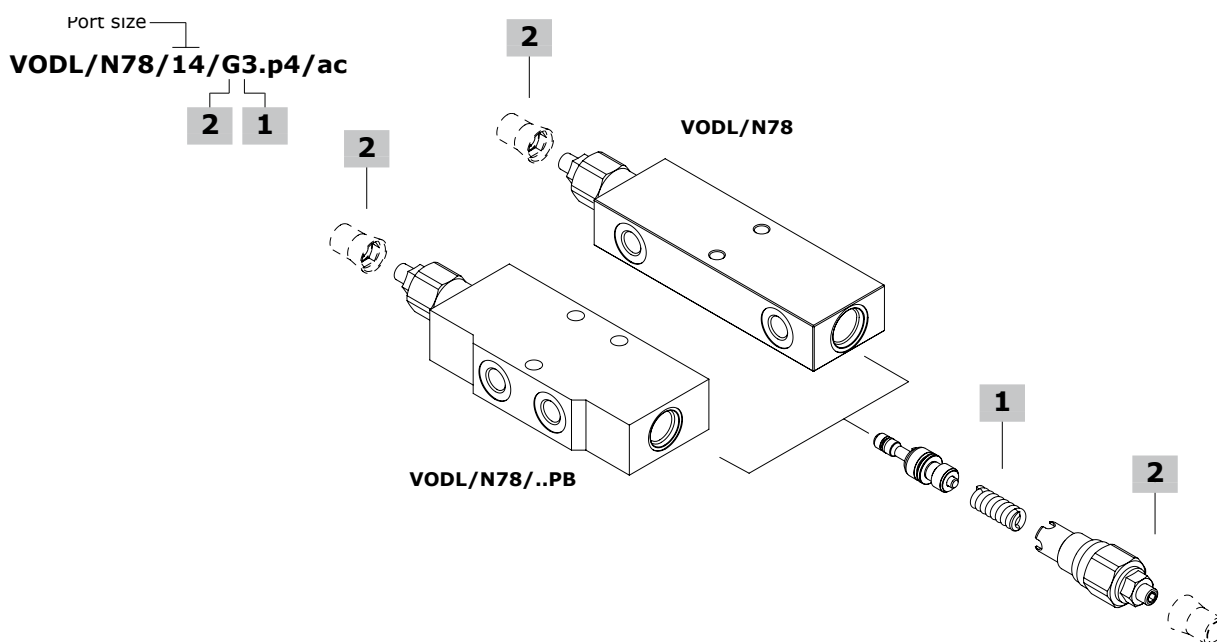
| Tipo valvola  | V1   | V2   | C1 | C2 |
|---------------|------|------|----|----|
| VODL/N78/14   | G1/4 | G1/4 |    |    |
| VODL/N78/14PB | G1/4 | G1/4 |    |    |

| Tipo valvola | V1   | V2   | C1 | C2 |
|--------------|------|------|----|----|
| VODL/N78/S6  | SAE6 | SAE6 |    |    |

### VODL/N78/14PB



## Ordering codes and description composition



### VODL/N78 complete valves

TYPE: **VODL/N78/14/G5.p4/ac** CODE: 1553612100  
DESCRIPTION: Steel body, pilot ratio 1:4, range 100-350 bar (1450-5075 psi), standard setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VODL/N78/14/G3.p4/ac** CODE: 1553612101  
DESCRIPTION: Steel body, pilot ratio 1:4, range 60-220 bar (870-3190 psi), standard setting 150 bar (2170 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VODL/N78/S6/G5.p4/ac** CODE: 1553612200  
DESCRIPTION: Steel body, pilot ratio 1:4, range 100-350 bar (1450-5075 psi), standard setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VODL/N78/S6/G3.p4/ac** CODE: 1553612201  
DESCRIPTION: Steel body, pilot ratio 1:4, range 60-220 bar (870-3190 psi), standard setting 150 bar (2170 psi) @ 5 l/min (1.32 US gpm)

### VODL/N78....PB complete valves

TYPE: **VODL/N78/14PB/G5.p4/ac** CODE: 1553712100  
DESCRIPTION: Steel body, pilot ratio 1:4, range 100-350 bar (1450-5075 psi), standard setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VODL/N78/14PB/G3.p4/ac** CODE: 1553712101  
DESCRIPTION: Steel body, pilot ratio 1:4, range 60-220 bar (870-3190 psi), standard setting 150 bar (2170 psi) @ 5 l/min (1.32 US gpm)

### 1 Pressure setting spring

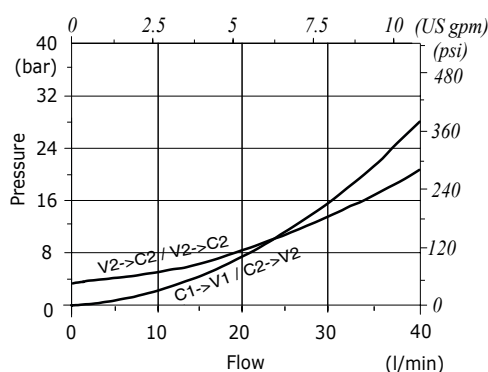
| TYPE                       | CODE       | DESCRIPTION                                                                                       |
|----------------------------|------------|---------------------------------------------------------------------------------------------------|
| <b>For 1:4 pilot ratio</b> |            |                                                                                                   |
| <b>3</b>                   | 3MOL310282 | For range 60-220 bar (870-3190 psi) standard setting 150 bar (2170 psi) @ 5 l/min (1.32 US gpm)   |
| <b>5</b>                   | 380113     | For range 100-350 bar (1450-5075 psi) standard setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm) |

### 2 Setting type

| TYPE     | CODE       | DESCRIPTION       |
|----------|------------|-------------------|
| <b>G</b> | -          | Screw setting     |
| <b>Z</b> | 4COP120420 | Antitampering cap |

## Rating diagrams

**Pressure drop vs. flow  
from C2->V2 and V2->C2**









## Type VOSL/N1116 - VOSL/R1116 - VOSL/V1116 counterbalance valves

- Single acting
- Load Sensitive (type N)
- Relief compensated (type R)
- Vented (type V)
- Configuration with F1 and F2 flange

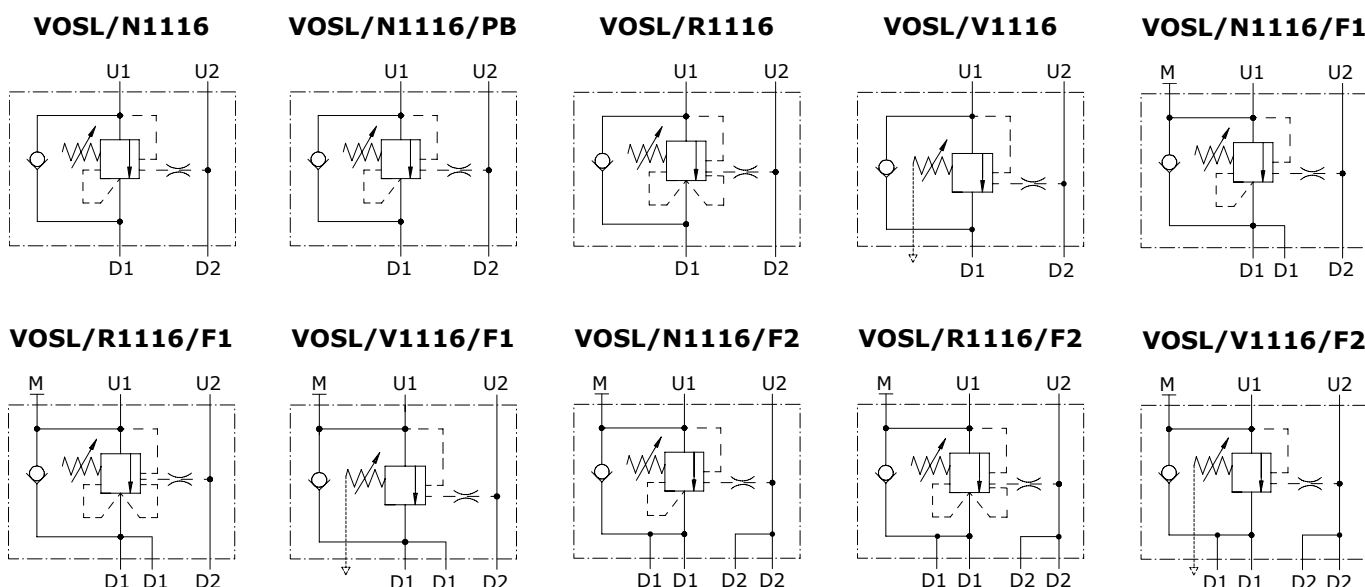
Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

### VOSL/N1116 (38-12) - VOSL/R1116 (38-12) - VOSL/V1116 (38-12)

|                                            |                                                                                         |
|--------------------------------------------|-----------------------------------------------------------------------------------------|
| Nominal flow                               | 60 l/min (15.9 US gpm)                                                                  |
| Max. pressure                              | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi)                  |
| Oil leakage                                | 0.25 cm <sup>3</sup> /min - 0.015 in <sup>3</sup> /min. (5 drops) at 210 bar - 3050 psi |
| Fluid                                      | mineral based oil                                                                       |
| Viscosity                                  | from 10 to 200 cSt                                                                      |
| Max. level of contamination                | 18/16/13 ISO4406                                                                        |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F)                                        |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                                                     |

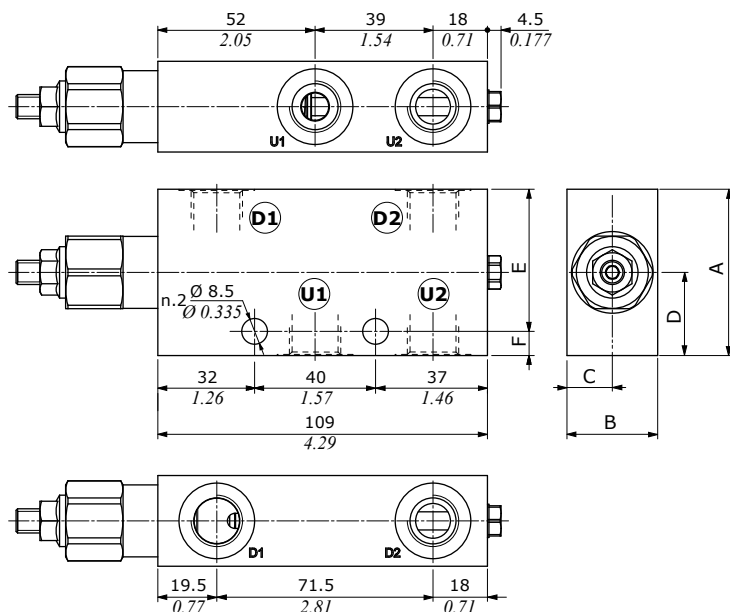
|        |           |                                                                                                                                                                                                                                                                                                                  |
|--------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Weight | aluminium | <b>VOSL/N1116/38:</b> 0.59 kg (1.30 lb) - <b>VOSL/N1116/12:</b> 0.75 kg (1.65 lb)<br><b>VOSL/R1116/38:</b> 0.64 kg (1.41 lb) - <b>VOSL/R1116/12:</b> 0.82 kg (1.81 lb)<br><b>VOSL/V1116/38:</b> 0.66 kg (1.46 lb) - <b>VOSL/V1116/12:</b> 0.83 kg (1.83 lb)                                                      |
|        | steel     | <b>VOSL/N1116/38:</b> 1.31 kg (2.88 lb) - <b>VOSL/N1116/12:</b> 1.74 kg (3.84 lb)<br><b>VOSL/R1116/38PB:</b> - <b>VOSL/N1116/12PB:</b><br><b>VOSL/R1116/38:</b> 1.34 kg (2.95 lb) - <b>VOSL/R1116/12:</b> 1.73 kg (3.81 lb)<br><b>VOSL/V1116/38:</b> 1.36 kg (2.88 lb) - <b>VOSL/V1116/12:</b> 1.78 kg (3.92 lb) |

NOTE - For different conditions, please contact Walvoil Sales Dpt.

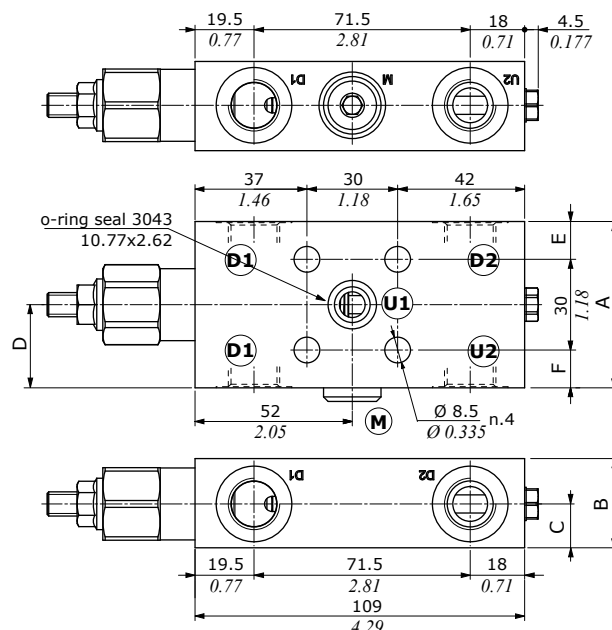


# Dimensions

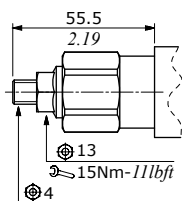
## VOSL/...1116/38 - VOSL/...1116/12



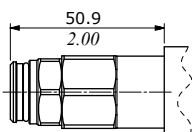
## VOSL/...1116/38F1 - VOSL/...1116/12F1



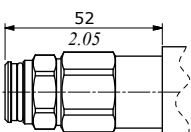
## VOSL/N configuration



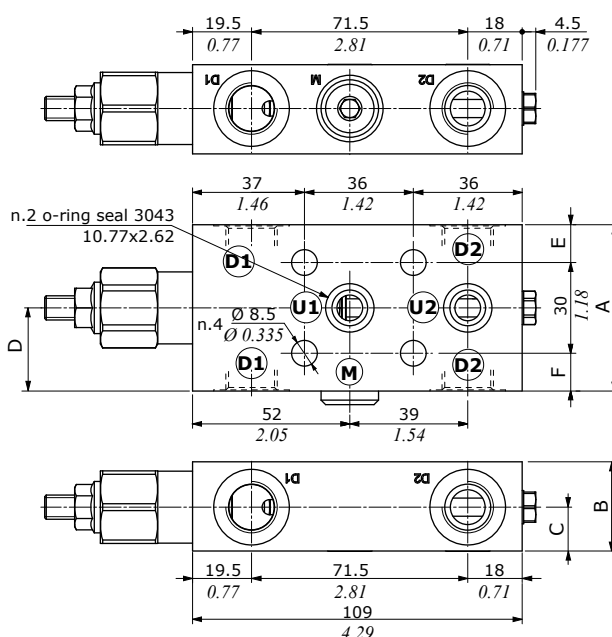
## VOSL/R configuration



## VOSL/V configuration



## VOSL/...1116/38F2 - VOSL/...1116/12F2



Dimensions are in mm-in

| Valve type        | D1   | D2   | U1             | U2             | M    |
|-------------------|------|------|----------------|----------------|------|
| VOSL/...1116/38   | G3/8 | G3/8 | G3/8           | G3/8           | -    |
| VOSL/...1116/12   | G1/2 | G1/2 | G1/2           | G1/2           | -    |
| VOSL/...1116/38F1 | G3/8 | G3/8 | Ø8.5<br>Ø0.335 | G3/8           | G1/4 |
| VOSL/...1116/12F1 | G1/2 | G1/2 | Ø8.5<br>Ø0.335 | G1/2           | G1/4 |
| VOSL/...1116/38F2 | G3/8 | G3/8 | Ø8.5<br>Ø0.335 | Ø8.5<br>Ø0.335 | G1/4 |
| VOSL/...1116/12F2 | G1/2 | G1/2 | Ø8.5<br>Ø0.335 | Ø8.5<br>Ø0.335 | G1/4 |

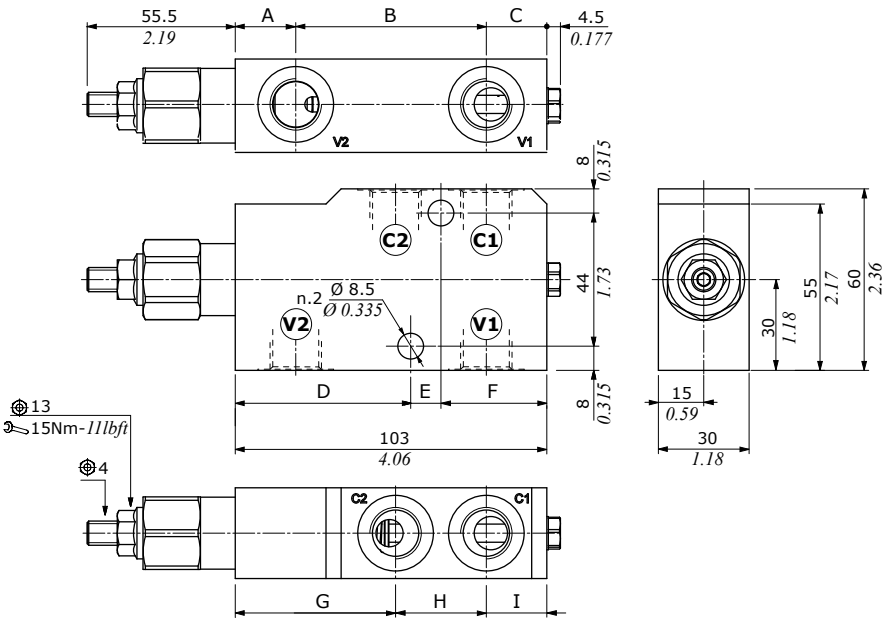
| Valve type         | D1    | D2    | U1             | U2             | M    |
|--------------------|-------|-------|----------------|----------------|------|
| VOSL/...1116/S8    | SAE8  | SAE8  | SAE8           | SAE8           | -    |
| VOSL/...1116/S10   | SAE10 | SAE10 | SAE10          | SAE10          | -    |
| VOSL/...1116/S8F1  | SAE8  | SAE8  | Ø8.5<br>Ø0.335 | SAE8           | G1/4 |
| VOSL/...1116/S10F1 | SAE10 | SAE10 | Ø8.5<br>Ø0.335 | SAE10          | G1/4 |
| VOSL/...1116/S8F2  | SAE8  | SAE8  | Ø8.5<br>Ø0.335 | Ø8.5<br>Ø0.335 | G1/4 |
| VOSL/...1116/S10F2 | SAE10 | SAE10 | Ø8.5<br>Ø0.335 | Ø8.5<br>Ø0.335 | G1/4 |

| Valve type         | A    | B    | C    | D    | E    | F     |
|--------------------|------|------|------|------|------|-------|
| VOSL/...1116/38    | 55   | 30   | 15   | 27.5 | 47   | 8     |
| VOSL/...1116/S8    | 2.17 | 1.18 | 0.59 | 1.08 | 1.85 | 0.315 |
| VOSL/...1116/12    | 65   | 35   | 17.5 | 32.5 | 57   | 8     |
| VOSL/...1116/S10   | 2.26 | 1.38 | 0.69 | 1.28 | 2.24 | 0.315 |
| VOSL/...1116/38F1  | 55   | 29.5 | 14.5 | 27.5 | 12.5 | 12.5  |
| VOSL/...1116/S8F1  | 2.17 | 1.16 | 0.57 | 1.08 | 0.49 | 0.49  |
| VOSL/...1116/12F1  | 65   | 34.5 | 17   | 32.5 | 17.5 | 17.5  |
| VOSL/...1116/S10F1 | 2.26 | 1.36 | 0.67 | 1.28 | 0.69 | 0.69  |
| VOSL/...1116/38F2  | 55   | 29.5 | 14.5 | 27.5 | 12.5 | 12.5  |
| VOSL/...1116/S8F2  | 2.17 | 1.16 | 0.57 | 1.08 | 0.49 | 0.49  |
| VOSL/...1116/12F2  | 65   | 34.5 | 17   | 32.5 | 17.5 | 17.5  |
| VOSL/...1116/S10F2 | 2.26 | 1.36 | 0.67 | 1.28 | 0.69 | 0.69  |

Ordering codes and description composition

VOSL/N1116/38PB - VOSL/N1116/12PB

| Valve type      | All ports |
|-----------------|-----------|
| VOSL/N1116/38PB | G3/8      |
| VOSL/N1116/12PB | G1/2      |



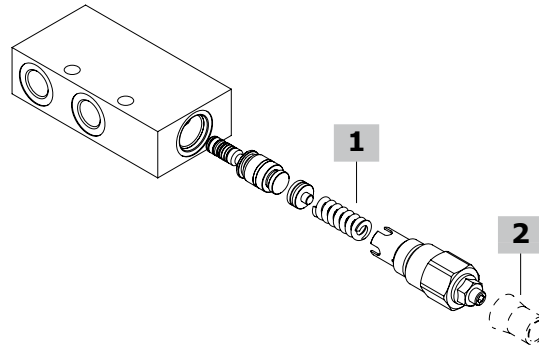
Dimensions are in mm-in

| Valve type      | A       | B       | C       | D         | E        | F         | G       | H       | I       |
|-----------------|---------|---------|---------|-----------|----------|-----------|---------|---------|---------|
| VOSL/N1116/38PB | 20-0.79 | 63-2.48 | 20-0.79 | 58-2.28   | 10-0.394 | 35-1.38   | 53-2.09 | 30-1.18 | 20-0.79 |
| VOSL/N1116/12PB | 20-0.79 | 69-2.72 | 14-0.55 | 60.5-2.38 | 10-0.394 | 32.5-1.28 | 53-2.09 | 36-1.42 | 14-0.55 |

## Ordering codes and description composition

Port size  
VOSL/N1116/38/G3.p4/ac

2 1



## VOSL/N1116 complete valves

**Load sensitive (N) configuration with G3/8 thread**Pilot ratio 1:4

TYPE: **VOSL/N1116/38/G3.p4/ac** CODE: 1514322101  
DESCRIPTION: Steel body, range 50-210 bar (725-3050 psi),  
std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1116/38/G5.p4/ac** CODE: 1514322100  
DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1116/38/G5.p4** CODE: 1514321100  
DESCRIPTION: Aluminium body, range 150-350 bar (2175-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

Pilot ratio 1:8

TYPE: **VOSL/N1116/38/G5.p8/ac** CODE: 1514322104  
DESCRIPTION: Steel body, range 180-350 bar (2610-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

Zero differential pilot ratio

TYPE: **VOSL/N1116/38/G3.p0/ac** CODE: 1514322106  
DESCRIPTION: Steel body, range 5-210 bar (72.5-3050 psi). Std setting  
150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1116/38/G5.p0/ac** CODE: 1514322107  
DESCRIPTION: Steel body, range 50-350 bar (725-5075 psi), std setting  
280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

**Load sensitive (N) configuration with G3/8 thread and F1 flange**

TYPE: **VOSL/N1116/38F1/G5.p4/ac** CODE: 1515022100  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1116/38F1/G5.p8/ac** CODE: 1515022101  
DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1116/38F1/G5.p0/ac** CODE: 1515022102  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

**Load sensitive (N) configuration with G3/8 thread and F2 flange**

TYPE: **VOSL/N1116/38F2/G5.p4/ac** CODE: 1515022103  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1116/38F2/G5.p8/ac** CODE: 1515022104  
DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1116/38F2/G5.p0/ac** CODE: 1515022105  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

## VOSL/N1116 complete valves (continua)

**Load sensitive (N) configuration with SAE8 thread**Pilot ratio 1:4

TYPE: **VOSL/N1116/S8/G3.p4/ac** CODE: 1514322200  
DESCRIPTION: Steel body, range 50-210 bar (725-3050 psi), std setting  
150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1116/S8/G5.p4/ac** CODE: 1514322201  
DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1116/S8/G5.p4** CODE: 1514321200  
DESCRIPTION: Aluminium body, range 150-350 bar (2175-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

Pilot ratio 1:8

TYPE: **VOSL/N1116/S8/G5.p8/ac** CODE: 1514322204  
DESCRIPTION: Steel body, range 180-350 bar (2610-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

Zero differential pilot ratio

TYPE: **VOSL/N1116/S8/G3.p0/ac** CODE: 1514322206  
DESCRIPTION: Steel body, range 5-210 bar (72.5-3050 psi). Std setting  
150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1116/S8/G5.p0/ac** CODE: 1514322207  
DESCRIPTION: Steel body, range 50-350 bar (725-5075 psi), std setting  
280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

**Load sensitive (N) configuration with SAE8 thread and F1 flange**

TYPE: **VOSL/N1116/S8F1/G5.p4/ac** CODE: 1515022200  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1116/S8F1/G5.p8/ac** CODE: 1515022201  
DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1116/S8F1/G5.p0/ac** CODE: 1515022202  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

**Load sensitive (N) configuration with SAE8 thread and F2 flange**

TYPE: **VOSL/N1116/S8F2/G5.p4/ac** CODE: 1515022203  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1116/S8F2/G5.p8/ac** CODE: 1515022204  
DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1116/S8F2/G5.p0/ac** CODE: 1515022205  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

**Ordering codes and description composition**

**VOSL/N1116 complete valves**

**Load sensitive (N) configuration with G1/2 thread**

TYPE: **VOSL/N1116/12/G5.p4/ac** CODE: 1514332100

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1116/12/G5.p8/ac** CODE: 1514332101

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1116/12/G5.p0/ac** CODE: 1514332102

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1116/12/G5.p4** CODE: 1514331100

DESCRIPTION: Aluminium body, pilot ratio 1:4 range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

**Load sensitive (N) configuration with G1/2 thread and F1 flange**

TYPE: **VOSL/N1116/12F1/G5.p4/ac** CODE: 1515032100

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1116/12F1/G5.p8/ac** CODE: 1515032101

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1116/12F1/G5.p0/ac** CODE: 1515032102

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

**Load sensitive (N) configuration with G1/2 thread and F1 flange**

TYPE: **VOSL/N1116/12F2/G5.p4/ac** CODE: 1515032103

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1116/12F2/G5.p8/ac** CODE: 1515032104

DESCRIPTION: Steel body, pilot ratio 1:8, Range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1116/12F2/G5.p0/ac** CODE: 1515032105

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

For other configurations please contact our Sales Dpt.

**VOSL/N1116 complete valves**

**Load sensitive (N) configuration with SAE10 thread**

TYPE: **VOSL/N1116/S10/G5.p4/ac** CODE: 1514332200

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1116/S10/G5.p8/ac** CODE: 1514332201

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1116/S10/G5.p0/ac** CODE: 1514332202

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

**Load sensitive (N) configuration with SAE10 thread and F1 flange**

TYPE: **VOSL/N1116/S10F1/G5.p4/ac** CODE: 1515032200

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1116/S10F1/G5.p8/ac** CODE: 1515032201

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1116/S10F1/G5.p0/ac** CODE: 1515032202

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

**Load sensitive (N) configuration with SAE10 thread and F2 flange**

TYPE: **VOSL/N1116/S10F2/G5.p4/ac** CODE: 1515032203

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1116/S10F2/G5.p8/ac** CODE: 1515032204

DESCRIPTION: Steel body, pilot ratio 1:8, Range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1116/S10F2/G5.p0/ac** CODE: 1515032205

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

For other configurations please contact our Sales Dpt.

**1 Pressure setting spring**

TYPE CODE DESCRIPTION

**For 1:4 and zero differential pilot ratio**

**3** 3ML1133201 For range 50-210 bar (725-3050 psi)

**5** 3ML1133200 For range 150-350 bar (2175-5075 psi)

**For 1:8 pilot ratio**

**5** 3ML1133201 For range 180-350 bar (2610-5075 psi)

**2 Setting type**

TYPE CODE DESCRIPTION

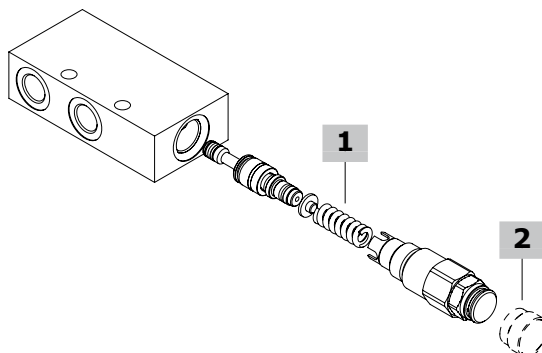
**G** - Screw setting

**Z** 4COP120420 Antitampering cap

## Ordering codes and description composition

Port size  
**VOSL/R1116/38/G3.p4/ac**

**2 1**



### VOSL/R1116 complete valves

#### **Relief compensated (R) configuration with G3/8 thread**

##### Pilot ratio 1:4

TYPE: **VOSL/R1116/38/G3.p4/ac** CODE: 1514422101

DESCRIPTION: Steel body, range 50-210 bar (725-3050 psi), std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/R1116/38/G5.p4/ac** CODE: 1514422100

DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/R1116/38/G5.p4** CODE: 1514421100

DESCRIPTION: Aluminium body, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

##### Pilot ratio 1:8

TYPE: **VOSL/R1116/38/G5.p8/ac** CODE: 1514422104

DESCRIPTION: Steel body, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

##### Zero differential pilot ratio

TYPE: **VOSL/R1116/38/G3.p0/ac** CODE: 1514422106

DESCRIPTION: Steel body, range 5-210 bar (72.5-3050 psi), std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/R1116/38/G5.p0/ac** CODE: 1514422107

DESCRIPTION: Steel body, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### **Relief compensated (R) configuration with G3/8 thread and F1 flange**

TYPE: **VOSL/R1116/38F1/G5.p4/ac** CODE: 1515122100

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/R1116/38F1/G5.p8/ac** CODE: 1515122101

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/R1116/38F1/G5.p0/ac** CODE: 1515122102

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### **Relief compensated (R) configuration with G3/8 thread and F2 flange**

TYPE: **VOSL/R1116/38F2/G5.p4/ac** CODE: 1515122103

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/R1116/38F2/G5.p8/ac** CODE: 1515122104

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/R1116/38F2/G5.p0/ac** CODE: 1515122105

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

### VOSL/R1116 complete valves

#### **Relief compensated (R) configuration with SAE8 thread**

##### Pilot ratio 1:4

TYPE: **VOSL/R1116/S8/G3.p4/ac** CODE: 1514422200

DESCRIPTION: Steel body, range 50-210 bar (725-3050 psi), std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/R1116/S8/G5.p4/ac** CODE: 1514422201

DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

##### Pilot ratio 1:8

TYPE: **VOSL/R1116/S8/G5.p8/ac** CODE: 1514422204

DESCRIPTION: Steel body, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

##### Zero differential pilot ratio

TYPE: **VOSL/R1116/S8/G3.p0/ac** CODE: 1514422206

DESCRIPTION: Steel body, range 5-210 bar (72.5-3050 psi), std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/R1116/S8/G5.p0/ac** CODE: 1514422207

DESCRIPTION: Steel body, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### **Relief compensated (R) configuration with SAE8 thread and F1 flange**

TYPE: **VOSL/R1116/S8F1/G5.p4/ac** CODE: 1515122200

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/R1116/S8F1/G5.p8/ac** CODE: 1515122201

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/R1116/S8F1/G5.p0/ac** CODE: 1515122202

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### **Relief compensated (R) configuration with SAE8 thread and F2 flange**

TYPE: **VOSL/R1116/S8F2/G5.p4/ac** CODE: 1515122203

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/R1116/S8F2/G5.p8/ac** CODE: 1515122204

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/R1116/S8F2/G5.p0/ac** CODE: 1515122205

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)



**Ordering codes and description composition**

**VOSL/R1116 complete valves**

**Relief compensated (R) configuration with G1/2 thread**

TYPE: **VOSL/R1116/12/G5.p4/ac** CODE: 1514432100

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/R1116/12/G5.p8/ac** CODE: 1514432101

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/R1116/12/G5.p0/ac** CODE: 1514432102

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/R1116/12/G5.p4** CODE: 1514431100

DESCRIPTION: Aluminium body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

**Relief compensated (R) configuration with G1/2 thread and F1 flange**

TYPE: **VOSL/R1116/12F1/G5.p4/ac** CODE: 1515132100

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/R1116/12F1/G5.p8/ac** CODE: 1515132101

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/R1116/12F1/G5.p0/ac** CODE: 1515132102

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

**Relief compensated (R) configuration with G1/2 thread and F2 flange**

TYPE: **VOSL/R1116/12F2/G5.p4/ac** CODE: 1515132103

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/R1116/12F2/G5.p8/ac** CODE: 1515132104

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/R1116/12F2/G5.p0/ac** CODE: 1515132105

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

For other configurations please contact our Sales Dpt.

**VOSL/R1116 complete valves**

**Relief compensated (R) configuration with SAE10 thread**

TYPE: **VOSL/R1116/S10/G5.p4/ac** CODE: 1514432200

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/R1116/S10/G5.p8/ac** CODE: 1514432201

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/R1116/S10/G5.p0/ac** CODE: 1514432202

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/R1116/S10/G5.p4** CODE: 1514431200

DESCRIPTION: Aluminium body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

**Relief compensated (R) configuration with SAE10 thread and F1 flange**

TYPE: **VOSL/R1116/S10F1/G5.p4/ac** CODE: 1515132200

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/R1116/S10F1/G5.p8/ac** CODE: 1515132201

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/R1116/S10F1/G5.p0/ac** CODE: 1515132202

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

**Relief compensated (R) configuration with SAE10 thread and F2 flange**

TYPE: **VOSL/R1116/S10F2/G5.p4/ac** CODE: 1515132203

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/R1116/S10F2/G5.p8/ac** CODE: 1515132204

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/R1116/S10F2/G5.p0/ac** CODE: 1515132205

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

For other configurations please contact our Sales Dpt.

**1 Pressure setting spring**

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

**For 1:4 and zero differential pilot ratio**

|          |            |                                     |
|----------|------------|-------------------------------------|
| <b>3</b> | 3ML1133201 | For range 50-210 bar (725-3050 psi) |
|----------|------------|-------------------------------------|

|          |            |                                       |
|----------|------------|---------------------------------------|
| <b>5</b> | 3ML1133200 | For range 150-350 bar (2175-5075 psi) |
|----------|------------|---------------------------------------|

**For 1:8 pilot ratio**

|          |            |                                       |
|----------|------------|---------------------------------------|
| <b>5</b> | 3ML1133201 | For range 180-350 bar (2610-5075 psi) |
|----------|------------|---------------------------------------|

**2 Setting type**

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

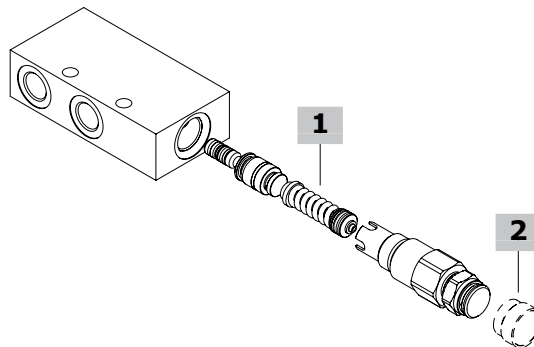
|          |   |               |
|----------|---|---------------|
| <b>G</b> | - | Screw setting |
|----------|---|---------------|

|          |            |                   |
|----------|------------|-------------------|
| <b>Z</b> | 4COP130200 | Antitampering cap |
|----------|------------|-------------------|



## Ordering codes and description composition

Port size  
**VOSL/V1116/38/G3.p4/ac**  
2 1



### VOSL/V1116 complete valves

#### Vented (V) configuration with G3/8 thread

*Pilot ratio 1:4*

TYPE: **VOSL/V1116/38/G3.p4/ac** CODE: 1514522101

DESCRIPTION: Steel body, range 50-210 bar (725-3050 psi),

std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1116/38/G5.p4/ac** CODE: 1514522100

DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi),

std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1116/38/G5.p4** CODE: 1514521100

DESCRIPTION: Aluminium body, range 150-350 bar (2175-5075 psi),

std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

*Pilot ratio 1:8*

TYPE: **VOSL/V1116/38/G5.p8/ac** CODE: 1514522104

DESCRIPTION: Steel body, range 180-350 bar (2610-5075 psi),

std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

*Zero differential pilot ratio*

TYPE: **VOSL/V1116/38/G3.p0/ac** CODE: 1514522106

DESCRIPTION: Steel body, range 5-210 bar (72.5-3050 psi), std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1116/38/G5.p0/ac** CODE: 1514522107

DESCRIPTION: Steel body, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Vented (V) configuration with G3/8 thread and F1 flange

TYPE: **VOSL/V1116/38F1/G5.p4/ac** CODE: 1515222100

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1116/38F1/G5.p8/ac** CODE: 1515222101

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1116/38F1/G5.p0/ac** CODE: 1515222102

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Vented (V) configuration with G3/8 thread and F2 flange

TYPE: **VOSL/V1116/38F2/G5.p4/ac** CODE: 1515222103

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1116/38F2/G5.p8/ac** CODE: 1515222104

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1116/38F2/G5.p0/ac** CODE: 1515222105

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

### VOSL/V1116 complete valves

#### Vented (V) configuration with SAE8 thread

*Pilot ratio 1:4*

TYPE: **VOSL/V1116/S8/G3.p4/ac** CODE: 1514522200

DESCRIPTION: Steel body, range 50-210 bar (725-3050 psi),

std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1116/S8/G5.p4/ac** CODE: 1514522201

DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi),

std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

*Pilot ratio 1:8*

TYPE: **VOSL/V1116/S8/G5.p8/ac** CODE: 1514522204

DESCRIPTION: Steel body, range 180-350 bar (2610-5075 psi),

std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

*Zero differential pilot ratio*

TYPE: **VOSL/V1116/S8/G3.p0/ac** CODE: 1514522206

DESCRIPTION: Steel body, range 5-210 bar (72.5-3050 psi), std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1116/S8/G5.p0/ac** CODE: 1514522207

DESCRIPTION: Steel body, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Vented (V) configuration with SAE8 thread and F1 flange

TYPE: **VOSL/V1116/S8F1/G5.p4/ac** CODE: 1515222200

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1116/S8F1/G5.p8/ac** CODE: 1515222201

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1116/S8F1/G5.p0/ac** CODE: 1515222202

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Vented (V) configuration with SAE8 thread and F2 flange

TYPE: **VOSL/V1116/S8F2/G5.p4/ac** CODE: 1515222203

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1116/S8F2/G5.p8/ac** CODE: 1515222204

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1116/S8F2/G5.p0/ac** CODE: 1515222205

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

**Ordering codes and description composition**

**VOSL/V1116 complete valves**

**Vented (V) configuration with G1/2 thread**

TYPE: **VOSL/V1116/12/G5.p4/ac** CODE: 1514532100

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1116/12/G5.p8/ac** CODE: 1514532101

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1116/12/G5.p0/ac** CODE: 1514532102

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1116/12/G5.p4** CODE: 1514531100

DESCRIPTION: Aluminium body pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

**Vented (V) configuration with G1/2 thread and F1 flange**

TYPE: **VOSL/V1116/12F1/G5.p4/ac** CODE: 1515232100

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1116/12F1/G5.p8/ac** CODE: 1515232101

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1116/12F1/G5.p0/ac** CODE: 1515232102

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

**Vented (V) configuration with G1/2 thread and F2 flange**

TYPE: **VOSL/V1116/12F2/G5.p4/ac** CODE: 1515232103

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1116/12F2/G5.p8/ac** CODE: 1515232104

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1116/12F2/G5.p0/ac** CODE: 1515232105

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

For other configurations please contact our Sales Dpt.

**VOSL/V1116 complete valves**

**Vented (V) configuration with SAE10 thread**

TYPE: **VOSL/V1116/S10/G5.p4/ac** CODE: 1514532200

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1116/S10/G5.p8/ac** CODE: 1514532201

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1116/S10/G5.p0/ac** CODE: 1514532202

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

**Vented (V) configuration with SAE10 thread and F1 flange**

TYPE: **VOSL/V1116/S10F1/G5.p4/ac** CODE: 1515232200

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1116/S10F1/G5.p8/ac** CODE: 1515232201

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1116/S10F1/G5.p0/ac** CODE: 1515232202

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

**Vented (V) configuration with SAE10 thread and F2 flange**

TYPE: **VOSL/V1116/S10F2/G5.p4/ac** CODE: 1515232203

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1116/S10F2/G5.p8/ac** CODE: 1515232204

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1116/S10F2/G5.p0/ac** CODE: 1515232205

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

For other configurations please contact our Sales Dpt.

**1 Pressure setting spring**

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

**For 1:4 and zero differential pilot ratio**

|          |            |                                     |
|----------|------------|-------------------------------------|
| <b>3</b> | 3ML1133201 | For range 50-210 bar (725-3050 psi) |
|----------|------------|-------------------------------------|

|          |            |                                       |
|----------|------------|---------------------------------------|
| <b>5</b> | 3ML1133200 | For range 150-350 bar (2175-5075 psi) |
|----------|------------|---------------------------------------|

**For 1:8 pilot ratio**

|          |            |                                       |
|----------|------------|---------------------------------------|
| <b>5</b> | 3ML1133201 | For range 180-350 bar (2610-5075 psi) |
|----------|------------|---------------------------------------|

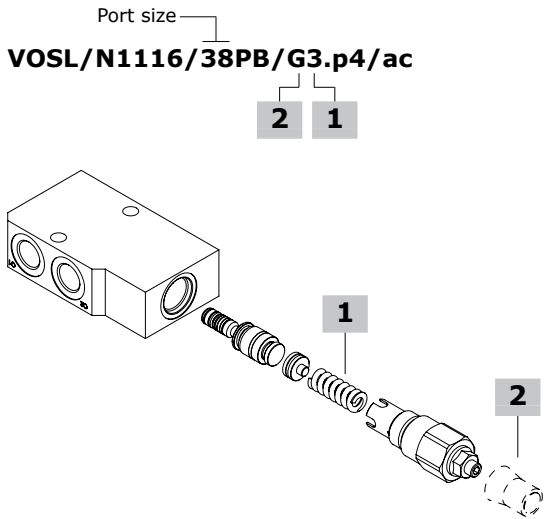
**2 Setting type**

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

|          |   |               |
|----------|---|---------------|
| <b>G</b> | - | Screw setting |
|----------|---|---------------|

|          |            |                   |
|----------|------------|-------------------|
| <b>Z</b> | 4COP130200 | Antitampering cap |
|----------|------------|-------------------|

Ordering codes and description composition



VOSL/N1116/PB complete valves

Load sensitive (N) configuration with G3/8 thread

Pilot ratio 1:4  
TYPE: **VOSL/N1116/38PB/G3.p4/ac** CODE: 1514222101  
DESCRIPTION: Steel body, range 50-210 bar (725-3050 psi),  
std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VOSL/N1116/38PB/G5.p4/ac** CODE: 1514222100  
DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

Pilot ratio 1:8  
TYPE: **VOSL/N1116/38PB/G5.p8/ac** CODE: 1514222102  
DESCRIPTION: Steel body, range 180-350 bar (2610-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

Zero differential pilot ratio  
TYPE: **VOSL/N1116/38PB/G5.p0/ac** CODE: 1514222103  
DESCRIPTION: Steel body, range 50-350 bar (725-5075 psi), std setting  
280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

Load sensitive (N) configuration with G1/2 thread

Pilot ratio 1:4  
TYPE: **VOSL/N1116/12PB/G3.p4/ac** CODE: 1514232101  
DESCRIPTION: Steel body, range 50-210 bar (725-3050 psi),  
std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VOSL/N1116/12PB/G5.p4/ac** CODE: 1514232100  
DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

Pilot ratio 1:8  
TYPE: **VOSL/N1116/12PB/G5.p8/ac** CODE: 1514232102  
DESCRIPTION: Steel body, range 180-350 bar (2610-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

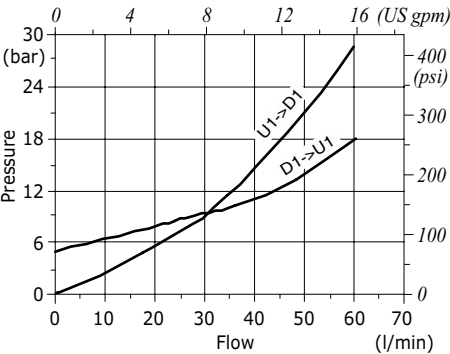
Zero differential pilot ratio  
TYPE: **VOSL/N1116/12PB/G5.p0/ac** CODE: 1514232103  
DESCRIPTION: Steel body, range 50-350 bar (725-5075 psi), std setting  
280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
For other configurations please contact our Sales Dpt.

| 1 Pressure setting spring                        |            |                                       |
|--------------------------------------------------|------------|---------------------------------------|
| TYPE                                             | CODE       | DESCRIPTION                           |
| <b>For 1:4 and zero differential pilot ratio</b> |            |                                       |
| 3                                                | 3ML1133201 | For range 50-210 bar (725-3050 psi)   |
| 5                                                | 3ML1133200 | For range 150-350 bar (2175-5075 psi) |
| <b>For 1:8 pilot ratio</b>                       |            |                                       |
| 5                                                | 3ML1133201 | For range 180-350 bar (2610-5075 psi) |

| 2 Setting type |            |                   |
|----------------|------------|-------------------|
| TYPE           | CODE       | DESCRIPTION       |
| G              | -          | Screw setting     |
| Z              | 4COP130200 | Antitampering cap |

Ordering codes and description composition

VOSL/(N-R-V) 1116 (38-12) pressure drop vs. flow  
from D1->U1 and U1->D1





## Type VOSLP/N1116 - VOSLP/R1116 counterbalance valves

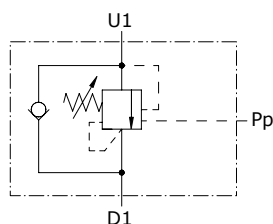
- Single acting
- External pilot
- Load Sensitive (type N)
- Relief Compensated (type R)

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

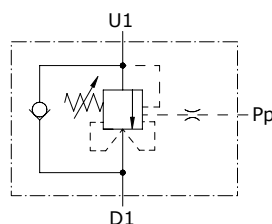
| VOSLP/N1116 (38-12) - VOSLP/R1116 (38-12)  |                                                                                         |                                                                                                                                                                            |
|--------------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nominal flow                               | 60 l/min (15.9 US gpm)                                                                  |                                                                                                                                                                            |
| Max. pressure                              | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi)                  |                                                                                                                                                                            |
| Oil leakage                                | 0.25 cm <sup>3</sup> /min - 0.015 in <sup>3</sup> /min. (5 drops) at 210 bar - 3050 psi |                                                                                                                                                                            |
| Fluid                                      | mineral based oil                                                                       |                                                                                                                                                                            |
| Viscosity                                  | from 10 to 200 cSt                                                                      |                                                                                                                                                                            |
| Max. level of contamination                | 18/16/13 ISO4406                                                                        |                                                                                                                                                                            |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F)                                        |                                                                                                                                                                            |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                                                     |                                                                                                                                                                            |
| Weight                                     | aluminium                                                                               | <b>VOSLP/N1116/38:</b> 0.51kg (1.12 lb) - <b>VOSLP/N1116/12:</b> 0.65 kg (1.43 lb)                                                                                         |
|                                            | steel                                                                                   | <b>VOSLP/N1116/38:</b> 1.13 kg (2.49 lb) - <b>VOSLP/N1116/12:</b> 1.51 kg (3.33 lb)<br><b>VOSLP/R1116/38:</b> 1.20 kg (2.64 lb) - <b>VOSLP/R1116/12:</b> 1.58 kg (3.48 lb) |

NOTE - For different conditions, please contact Walvoil Sales Dpt.

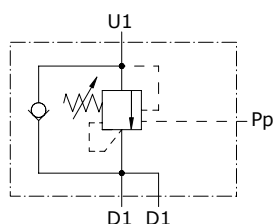
**VOSLP/N1116**



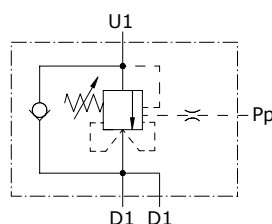
**VOSLP/R1116**



**VOSLP/N1116/F1**

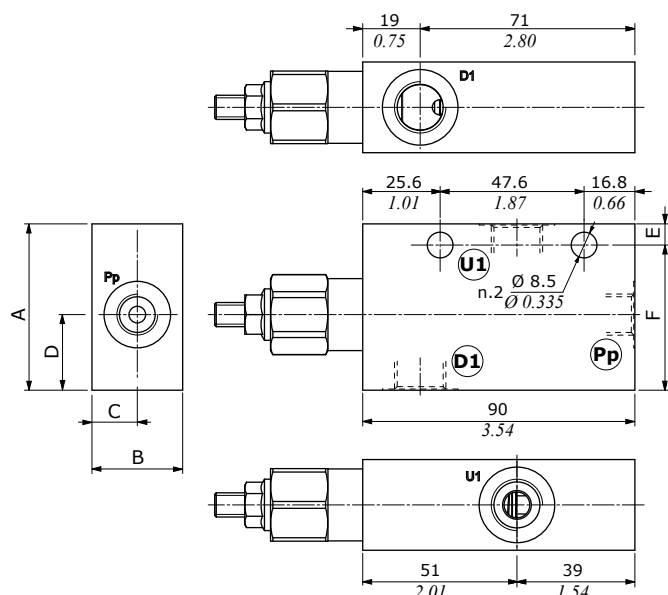


**VOSLP/R1116/F1**

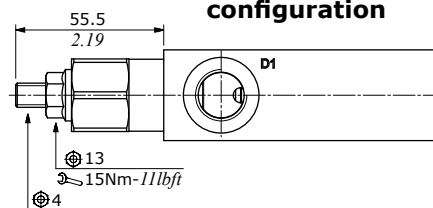


## Dimensions

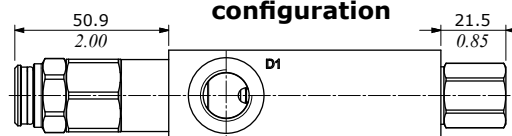
### VOSLP/...1116/38 - VOSLP/...1116/12



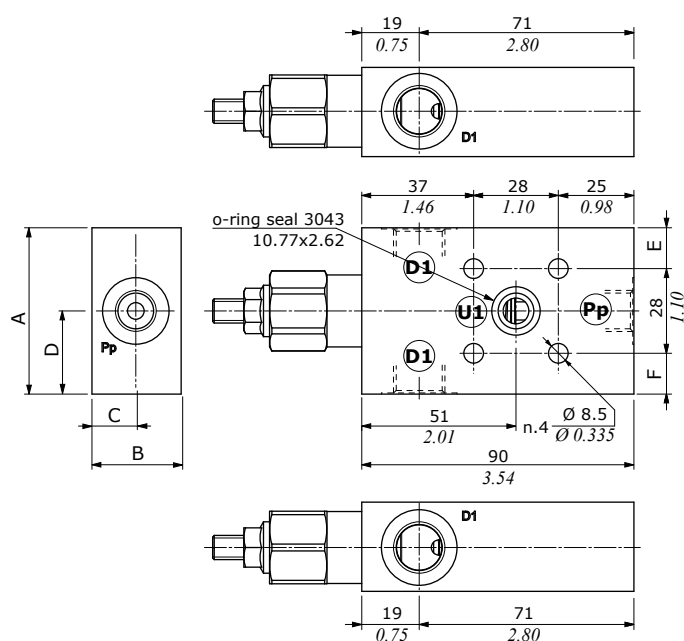
### VOSLP/N configuration



### VOSLP/R configuration



### VOSLP/...1116/38F1 - VOSLP/...1116/12F1



| Valve type         | D1   | U1             | Pp   |
|--------------------|------|----------------|------|
| VOSLP/...1116/38   | G3/8 | G3/8           | G1/4 |
| VOSLP/...1116/12   | G1/2 | G1/2           | G1/4 |
| VOSLP/...1116/38F1 | G3/8 | Ø8.5<br>Ø0.335 | G1/4 |
| VOSLP/...1116/12F1 | G1/2 | Ø8.5<br>Ø0.335 | G1/4 |

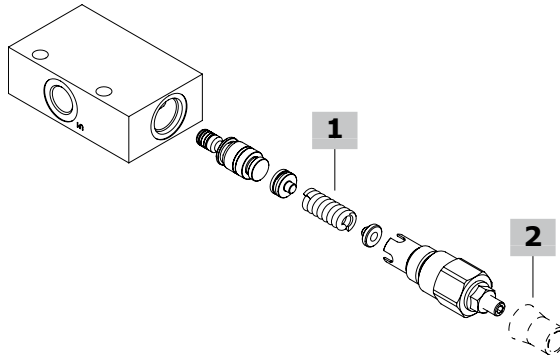
| Valve type          | D1    | U1             | Pp   |
|---------------------|-------|----------------|------|
| VOSLP/...1116/S8    | SAE8  | SAE8           | SAE6 |
| VOSLP/...1116/S10   | SAE10 | SAE10          | SAE6 |
| VOSLP/...1116/S8F1  | SAE8  | Ø8.5<br>Ø0.335 | SAE6 |
| VOSLP/...1116/S10F1 | SAE10 | Ø8.5<br>Ø0.335 | SAE6 |

Dimensions are in mm-in

| Valve type          | A    | B    | C    | D    | E    | F     |
|---------------------|------|------|------|------|------|-------|
| VOSLP/...1116/38    | 55   | 30   | 15   | 25   | 48   | 7     |
| VOSLP/...1116/S8    | 2.17 | 1.18 | 0.59 | 0.98 | 1.89 | 0.276 |
| VOSLP/...1116/12    | 65   | 35   | 17.5 | 32.5 | 54   | 11    |
| VOSLP/...1116/S10   | 2.26 | 1.38 | 0.69 | 1.28 | 2.13 | 0.433 |
| VOSLP/...1116/38F1  | 55   | 29.5 | 14.5 | 27.5 | 13.5 | 13.5  |
| VOSLP/...1116/S8F1  | 2.17 | 1.16 | 0.57 | 1.08 | 0.53 | 0.53  |
| VOSLP/...1116/12F1  | 65   | 34.5 | 17   | 32.5 | 18.5 | 18.5  |
| VOSLP/...1116/S10F1 | 2.26 | 1.36 | 0.67 | 1.28 | 0.73 | 0.73  |

## Ordering codes and description composition

Port size  
**VOSLP/N1116/38/G3.p4/ac**  
**2 1**



### VOSLP/N1116 complete valves

#### Load sensitive (N) configuration with G3/8 thread

##### Pilot ratio 1:4

TYPE: **VOSLP/N1116/38/G3.p4/ac** CODE: 1534322101

DESCRIPTION: Steel body, range 50-210 bar (725-3050 psi),  
std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/N1116/38/G5.p4/ac** CODE: 1534322100

DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi), std  
setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/N1116/38/G5.p4** CODE: 1534321100

DESCRIPTION: Aluminium body, range 150-350 bar (2175-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

##### Pilot ratio 1:8

TYPE: **VOSLP/N1116/38/G5.p8/ac** CODE: 1534322104

DESCRIPTION: Steel body, range 180-350 bar (2610-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

##### Zero differential pilot ratio

TYPE: **VOSLP/N1116/38/G3.p0/ac** CODE: 1534322106

DESCRIPTION: Steel body, range 5-210 bar (72.5-3050 psi), std setting  
150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/N1116/38/G5.p0/ac** CODE: 1534322107

DESCRIPTION: Steel body, range 50-350 bar (725-5075 psi), std setting  
280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Load sensitive (N) configuration with G3/8 thread and F1 flange

TYPE: **VOSLP/N1116/38F1/G5.p4/ac** CODE: 1535522100

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/N1116/38F1/G5.p8/ac** CODE: 1535522101

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/N1116/38F1/G5.p0/ac** CODE: 1535522102

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

### VOSLP/N1116 complete valves

#### Load sensitive (N) configuration with SAE8 thread

##### Pilot ratio 1:4

TYPE: **VOSLP/N1116/S8/G3.p4/ac** CODE: 1534322200

DESCRIPTION: Steel body, range 50-210 bar (725-3050 psi),  
std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/N1116/S8/G5.p4/ac** CODE: 1534322201

DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi), std  
setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/N1116/S8/G5.p4** CODE: 1534321200

DESCRIPTION: Aluminium body, range 150-350 bar (2175-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

##### Pilot ratio 1:8

TYPE: **VOSLP/N1116/S8/G5.p8/ac** CODE: 1534322204

DESCRIPTION: Steel body, range 180-350 bar (2610-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

##### Zero differential pilot ratio

TYPE: **VOSLP/N1116/S8/G3.p0/ac** CODE: 1534322206

DESCRIPTION: Steel body, range 5-210 bar (72.5-3050 psi), std setting  
150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/N1116/S8/G5.p0/ac** CODE: 1534322207

DESCRIPTION: Steel body, range 50-350 bar (725-5075 psi), std setting  
280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Load sensitive (N) configuration with SAE8 thread and F1 flange

TYPE: **VOSLP/N1116/S8F1/G5.p4/ac** CODE: 1535522200

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/N1116/S8F1/G5.p8/ac** CODE: 1535522201

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/N1116/S8F1/G5.p0/ac** CODE: 1535522202

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

### 1 Pressure setting spring

| TYPE                                             | CODE       | DESCRIPTION                           |
|--------------------------------------------------|------------|---------------------------------------|
| <b>For 1:4 and zero differential pilot ratio</b> |            |                                       |
| 3                                                | 3ML1133201 | For range 50-210 bar (725-3050 psi)   |
| 5                                                | 3ML1133200 | For range 150-350 bar (2175-5075 psi) |
| <b>For 1:8 pilot ratio</b>                       |            |                                       |
| 5                                                | 3ML1133201 | For range 180-350 bar (2610-5075 psi) |

#### **For 1:4 and zero differential pilot ratio**

3 3ML1133201 For range 50-210 bar (725-3050 psi)

5 3ML1133200 For range 150-350 bar (2175-5075 psi)

#### **For 1:8 pilot ratio**

5 3ML1133201 For range 180-350 bar (2610-5075 psi)

### 2 Setting type

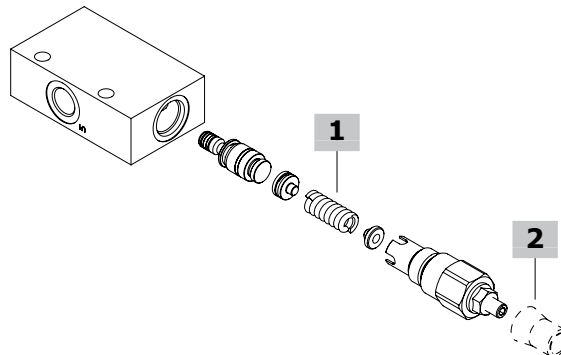
| TYPE | CODE       | DESCRIPTION       |
|------|------------|-------------------|
| G    | -          | Screw setting     |
| Z    | 4COP120420 | Antitampering cap |



## Dimensions

Port size  
**VOSLP/N1116/12/G3.p4/ac**

**2 1**



### VOSLP/N1116 complete valves

#### Load sensitive (N) configuration with G1/2 thread

TYPE: **VOSLP/N1116/12/G5.p4/ac** CODE: 1534332100

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/N1116/12/G5.p8/ac** CODE: 1534332101

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/N1116/12/G5.p0/ac** CODE: 1534332102

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/N1116/12/G5.p4** CODE: 1534331100

DESCRIPTION: Aluminium body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Load sensitive (N) configuration with G1/2 thread and F1 flange

TYPE: **VOSLP/N1116/12F1/G5.p4/ac** CODE: 1535532100

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/N1116/12F1/G5.p8/ac** CODE: 1535532101

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/N1116/12F1/G5.p0/ac** CODE: 1535532102

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm).

For other configurations please contact our Sales Dpt.

### VOSLP/N1116 complete valves

#### Load sensitive (N) configuration with SAE10 thread

TYPE: **VOSLP/N1116/S10/G5.p4/ac** CODE: 1534332200

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/N1116/S10/G5.p8/ac** CODE: 1534332201

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/N1116/S10/G5.p0/ac** CODE: 1534332202

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/N1116/S10/G5.p4** CODE: 1534331200

DESCRIPTION: Aluminium body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Load sensitive (N) configuration with SAE10 thread and F1 flange

TYPE: **VOSLP/N1116/S10F1/G5.p4/ac** CODE: 1535532200

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/N1116/S10F1/G5.p8/ac** CODE: 1535532201

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/N1116/S10F1/G5.p0/ac** CODE: 1535532202

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

For other configurations please contact our Sales Dpt.

### 1 Pressure setting spring

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

#### For 1:4 and zero differential pilot ratio

|          |            |                                     |
|----------|------------|-------------------------------------|
| <b>3</b> | 3ML1133201 | For range 50-210 bar (725-3050 psi) |
|----------|------------|-------------------------------------|

|          |            |                                       |
|----------|------------|---------------------------------------|
| <b>5</b> | 3ML1133200 | For range 150-350 bar (2175-5075 psi) |
|----------|------------|---------------------------------------|

#### For 1:8 pilot ratio

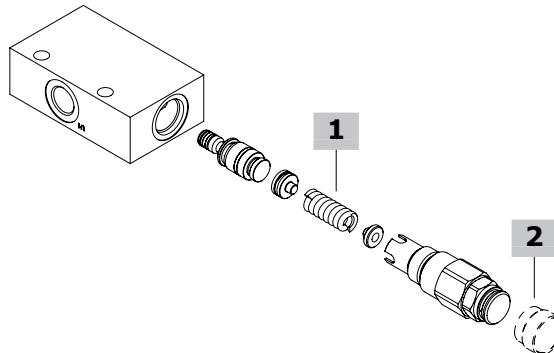
|          |            |                                       |
|----------|------------|---------------------------------------|
| <b>5</b> | 3ML1133201 | For range 180-350 bar (2610-5075 psi) |
|----------|------------|---------------------------------------|

### 2 Setting type

| TYPE     | CODE       | DESCRIPTION       |
|----------|------------|-------------------|
| <b>G</b> | -          | Screw setting     |
| <b>Z</b> | 4COP120420 | Antitampering cap |

**Ordering codes and description composition**

Port size  
**VOSLP/R1116/38/G3.p4/ac**  
**2 1**



**VOSLP/R1116 complete valves**

**Relief compensated (R) configuration with G3/8 thread**

Pilot ratio 1:4

TYPE: **VOSLP/R1116/38/G3.p4/ac** CODE: 1534422101  
DESCRIPTION: Steel body, range 50-210 bar (725-3050 psi),  
std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/R1116/38/G5.p4/ac** CODE: 1534422100  
DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

Pilot ratio 1:8

TYPE: **VOSLP/R1116/38/G5.p8/ac** CODE: 1534422104  
DESCRIPTION: Steel body, range 180-350 bar (2610-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

Zero differential pilot ratio

TYPE: **VOSLP/R1116/38/G3.p0/ac** CODE: 1534422106  
DESCRIPTION: Steel body, range 5-210 bar (72.5-3050 psi), std setting  
150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/R1116/38/G5.p0/ac** CODE: 1534422107  
DESCRIPTION: Steel body, range 50-350 bar (725-5075 psi), std setting  
280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

**Relief compensated (R) configuration with G3/8 thread and F1 flange**

TYPE: **VOSLP/R1116/38F1/G5.p4/ac** CODE: 1535622100  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/R1116/38F1/G5.p8/ac** CODE: 1535622101  
DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/R1116/38F1/G5.p0/ac** CODE: 1535622102  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350  
bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US

**VOSLP/R1116 complete valves**

**Relief compensated (R) configuration with SAE8 thread**

Pilot ratio 1:4

TYPE: **VOSLP/R1116/S8/G3.p4/ac** CODE: 1534422200  
DESCRIPTION: Steel body, range 50-210 bar (725-3050 psi),  
std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/R1116/S8/G5.p4/ac** CODE: 1534422201  
DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

Pilot ratio 1:8

TYPE: **VOSLP/R1116/S8/G5.p8/ac** CODE: 1534422204  
DESCRIPTION: Steel body, range 180-350 bar (2610-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

Zero differential pilot ratio

TYPE: **VOSLP/R1116/S8/G3.p0/ac** CODE: 1534422206  
DESCRIPTION: Steel body, range 5-210 bar (72.5-3050 psi), std setting  
150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/R1116/S8/G5.p0/ac** CODE: 1534422207  
DESCRIPTION: Steel body, range 50-350 bar (725-5075 psi), std setting  
280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

**Relief compensated (R) configuration with SAE8 thread and F1 flange**

TYPE: **VOSLP/R1116/S8F1/G5.p4/ac** CODE: 1535622200  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/R1116/S8F1/G5.p8/ac** CODE: 1535622201  
DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/R1116/S8F1/G5.p0/ac** CODE: 1535622202  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350  
bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

**1 Pressure setting spring**

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

**For 1:4 and zero differential pilot ratio**

|          |            |                                     |
|----------|------------|-------------------------------------|
| <b>3</b> | 3ML1133201 | For range 50-210 bar (725-3050 psi) |
|----------|------------|-------------------------------------|

|          |            |                                       |
|----------|------------|---------------------------------------|
| <b>5</b> | 3ML1133200 | For range 150-350 bar (2175-5075 psi) |
|----------|------------|---------------------------------------|

**For 1:8 pilot ratio**

|          |            |                                       |
|----------|------------|---------------------------------------|
| <b>5</b> | 3ML1133201 | For range 180-350 bar (2610-5075 psi) |
|----------|------------|---------------------------------------|

**2 Setting type**

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

|          |   |               |
|----------|---|---------------|
| <b>G</b> | - | Screw setting |
|----------|---|---------------|

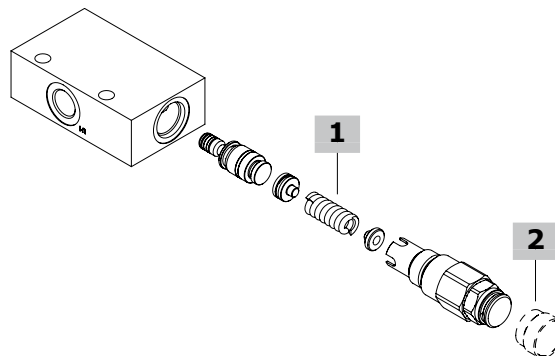
|          |            |                   |
|----------|------------|-------------------|
| <b>Z</b> | 4COP130200 | Antitampering cap |
|----------|------------|-------------------|



## Ordering codes and description composition

Port size  
**VOSLP/R1116/12/G3.p4/ac**

**2** **1**



gpm)

### VOSLP/R1116 complete valves

#### Relief compensated (R) configuration with G1/2 thread

TYPE: **VOSLP/R1116/12/G5.p4/ac** CODE: 1534432100  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VOSLP/R1116/12/G5.p8/ac** CODE: 1534432101  
DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VOSLP/R1116/12/G5.p0/ac** CODE: 1534432102  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Relief compensated (R) configuration with G1/2 thread and F1 flange

TYPE: **VOSLP/R1116/12F1/G5.p4/ac** CODE: 1535632100  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VOSLP/R1116/12F1/G5.p8/ac** CODE: 1535632101  
DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VOSLP/R1116/12F1/G5.p0/ac** CODE: 1535632102  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
For other configurations please contact our Sales Dpt.

### VOSLP/R1116 complete valves

#### Relief compensated (R) configuration with SAE10 thread

TYPE: **VOSLP/R1116/S10/G5.p4/ac** CODE: 1534432200  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VOSLP/R1116/S10/G5.p8/ac** CODE: 1534432201  
DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VOSLP/R1116/S10/G5.p0/ac** CODE: 1534432202  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Relief compensated (R) configuration with SAE10 thread and F1 flange

TYPE: **VOSLP/R1116/S10F1/G5.p4/ac** CODE: 1535632200  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VOSLP/R1116/S10F1/G5.p8/ac** CODE: 1535632201  
DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VOSLP/R1116/S10F1/G5.p0/ac** CODE: 1535632202  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
For other configurations please contact our Sales Dpt.

### 1 Pressure setting spring

TYPE CODE DESCRIPTION

#### For 1:4 and zero differential pilot ratio

**3** 3ML1133201 For range 50-210 bar (725-3050 psi)  
**5** 3ML1133200 For range 150-350 bar (2175-5075 psi)

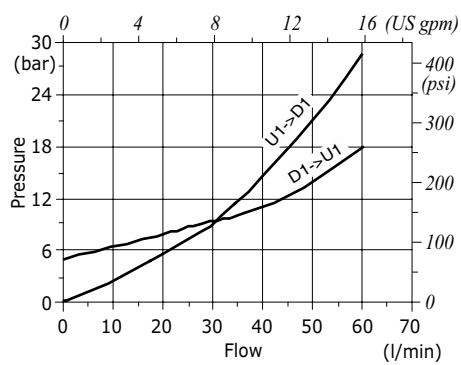
#### For 1:8 pilot ratio

**5** 3ML1133201 For range 180-350 bar (2610-5075 psi)

### 2 Setting type

TYPE CODE DESCRIPTION  
**G** - Screw setting  
**Z** 4COP130200 Antitampering cap

**VOSLP/(N-R) 1116 (38-12) pressure drop vs. flow  
from D1->U1 and U1->D1**







## Type VODL/N1116 - VODL/R1116 counterbalance valves

- Double acting
- Load Sensitive (type N)
- Relief Compensated (type R)

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

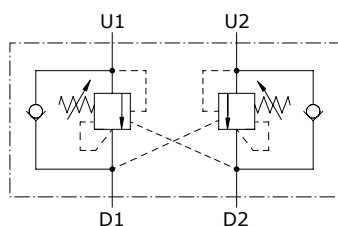
### VODL/N1116 (38-12) - VODL/R1116 (38-12)

|                                            |                                                                                         |
|--------------------------------------------|-----------------------------------------------------------------------------------------|
| Nominal flow                               | 60 l/min (15.9 US gpm)                                                                  |
| Max. pressure                              | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi)                  |
| Oil leakage                                | 0.25 cm <sup>3</sup> /min - 0.015 in <sup>3</sup> /min. (5 drops) at 210 bar - 3050 psi |
| Fluid                                      | mineral based oil                                                                       |
| Viscosity                                  | from 10 to 200 cSt                                                                      |
| Max. level of contamination                | 18/16/13 ISO4406                                                                        |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F)                                        |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                                                     |

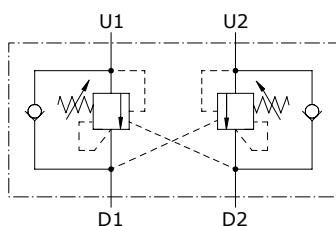
|        |           |                                                                                                                                                                                                                             |
|--------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Weight | aluminium | <b>VODL/N1116/38:</b> 0.91 kg (2.01 lb) - <b>VODL/N1116/12:</b> 1.13 kg (2.49 lb)<br><b>VODL/R1116/38:</b> 1.06 kg (2.34 lb) - <b>VODL/R1116/12:</b> 1.29 kg (2.84 lb)                                                      |
|        | steel     | <b>VODL/N1116/38:</b> 1.91 kg (4.21 lb) - <b>VODL/N1116/12:</b> 2.55 kg (5.62 lb)<br><b>VODL/N1116/38PB:</b> - <b>VODL/N1116/12PB:</b><br><b>VODL/R1116/38:</b> 2.06 kg (4.54 lb) - <b>VODL/R1116/12:</b> 2.69 kg (5.93 lb) |

NOTE - For different conditions, please contact Walvoil Sales Dpt.

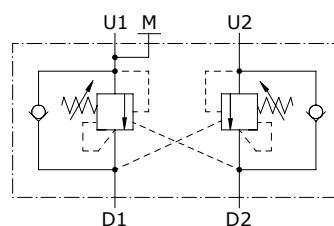
#### VODL/N1116 VODL/N1116/F2



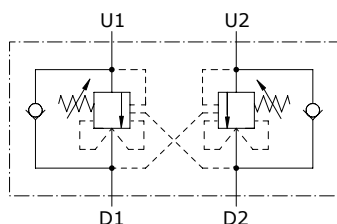
#### VODL/N1116/PB



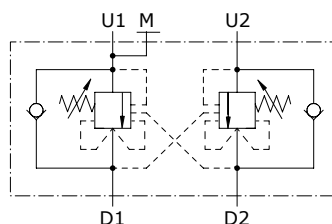
#### VODL/N1116/F1



#### VODL/R1116 VODL/R1116/F2

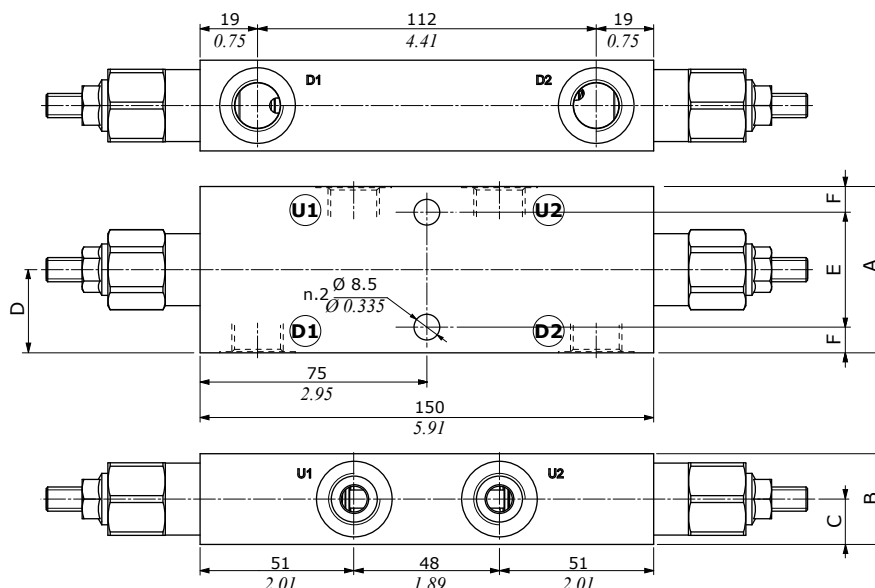


#### VODL/R1116/F1

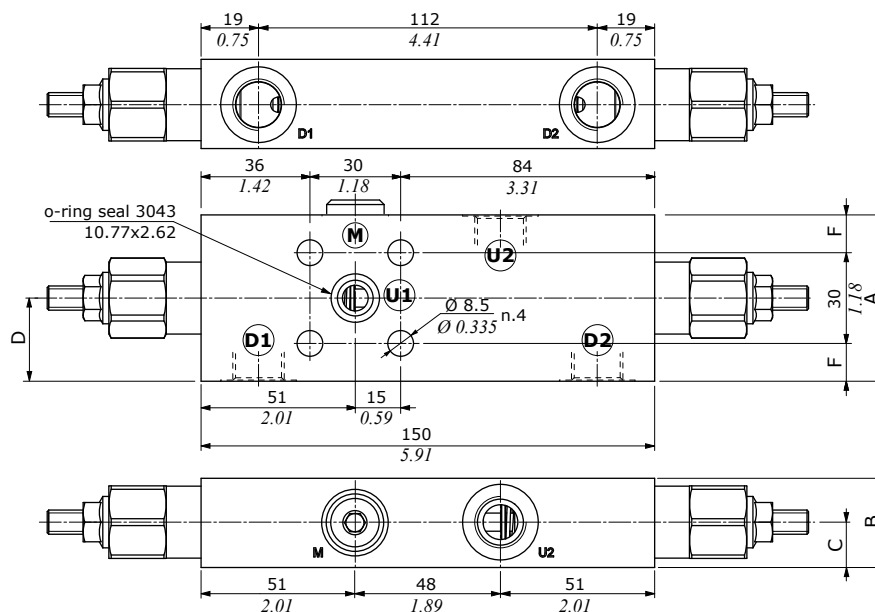


## Dimensions

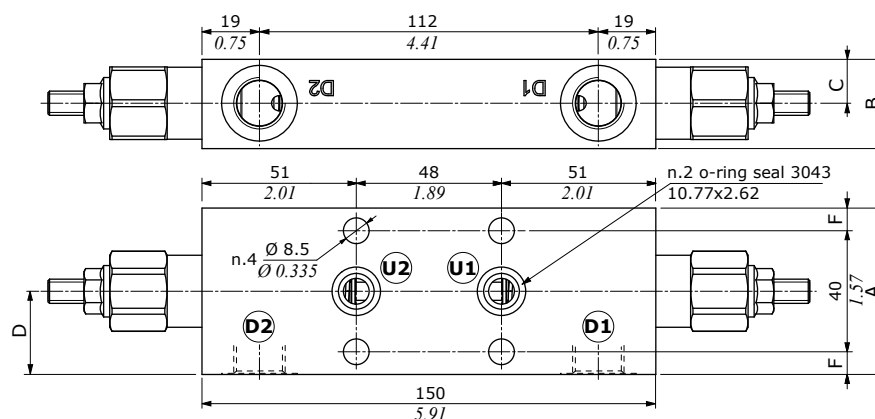
### VODL/...1116/38 - VODL/...1116/12



### VODL/...1116/38F1 - VODL/...1116/12F1

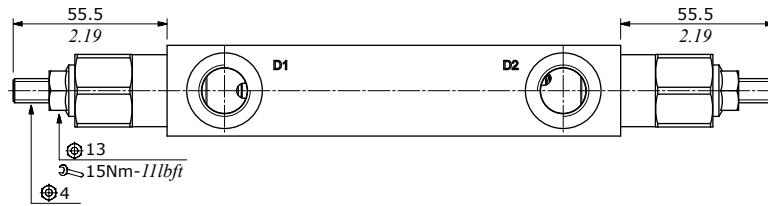


### VODL/...1116/38F2 - VODL/...1116/12F2

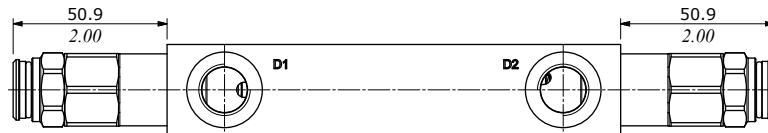


**Dimensions**

**VODL/N configuration**



**VODL/R configuration**



| Valve type        | D1   | D2   | U1            | U2            | M    |
|-------------------|------|------|---------------|---------------|------|
| VODL/...1116/38   | G3/8 | G3/8 | G3/8          | G3/8          | -    |
| VODL/...1116/12   | G1/2 | G1/2 | G1/2          | G1/2          | -    |
| VODL/...1116/38F1 | G3/8 | G3/8 | Ø8.5 - Ø0.335 | G3/8          | G1/4 |
| VODL/...1116/12F1 | G1/2 | G1/2 | Ø8.5 - Ø0.335 | G1/2          | G1/4 |
| VODL/...1116/38F2 | G3/8 | G3/8 | Ø8.5 - Ø0.335 | Ø8.5 - Ø0.335 | -    |
| VODL/...1116/12F2 | G1/2 | G1/2 | Ø8.5 - Ø0.335 | Ø8.5 - Ø0.335 | -    |

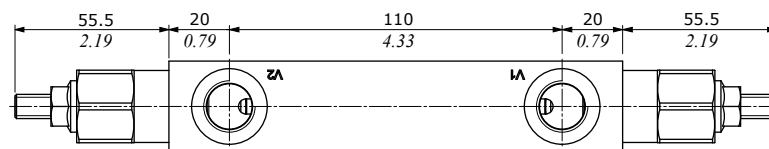
  

| Valve type         | D1    | D2    | U1            | U2            | M    |
|--------------------|-------|-------|---------------|---------------|------|
| VODL/...1116/S8    | SAE8  | SAE8  | SAE8          | SAE8          | -    |
| VODL/...1116/S10   | SAE10 | SAE10 | SAE10         | SAE10         | -    |
| VODL/...1116/S8F1  | SAE8  | SAE8  | Ø8.5 - Ø0.335 | SAE8          | G1/4 |
| VODL/...1116/S10F1 | SAE10 | SAE10 | Ø8.5 - Ø0.335 | SAE10         | G1/4 |
| VODL/...1116/S8F2  | SAE8  | SAE8  | Ø8.5 - Ø0.335 | Ø8.5 - Ø0.335 | -    |
| VODL/...1116/S10F2 | SAE10 | SAE10 | Ø8.5 - Ø0.335 | Ø8.5 - Ø0.335 | -    |

Dimensions are in mm-in

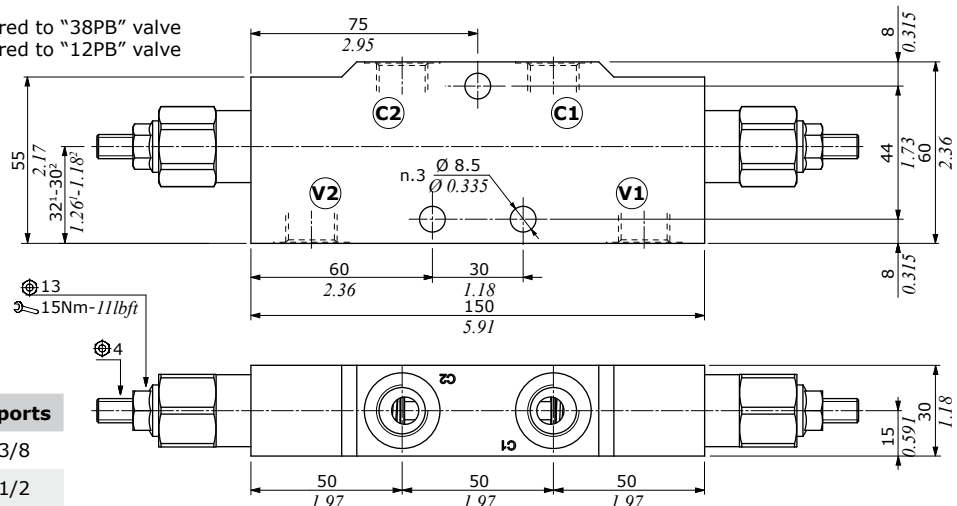
| Valve type         | A    | B    | C    | D    | E    | F     | G     |
|--------------------|------|------|------|------|------|-------|-------|
| VODL/...1116/38    | 55   | 30   | 15   | 27.5 | 38   | 8.5   | 8.5   |
| VODL/...1116/S8    | 2.17 | 1.18 | 0.59 | 1.08 | 1.50 | 0.334 | 0.334 |
| VODL/...1116/12    | 65   | 35   | 17.5 | 32.5 | 43   | 11    | 11    |
| VODL/...1116/S10   | 2.26 | 1.38 | 0.69 | 1.28 | 1.69 | 0.433 | 0.433 |
| VODL/...1116/38F1  | 55   | 29.5 | 15   | 27.5 | 30   | 7.5   | 7.5   |
| VODL/...1116/S8F1  | 2.17 | 1.16 | 0.59 | 1.08 | 1.18 | 0.295 | 0.295 |
| VODL/...1116/12F1  | 65   | 34.5 | 17   | 32.5 | 30   | 17.5  | 17.5  |
| VODL/...1116/S10F1 | 2.26 | 1.36 | 0.67 | 1.28 | 1.18 | 0.69  | 0.69  |
| VODL/...1116/38F2  | 55   | 29.5 | 14.5 | 27.5 | 40   | 7.5   | 7.5   |
| VODL/...1116/S8F2  | 2.17 | 1.16 | 0.57 | 1.08 | 1.57 | 0.295 | 0.295 |
| VODL/...1116/12F2  | 65   | 34.5 | 17   | 32.5 | 40   | 12.5  | 12.5  |
| VODL/...1116/S10F2 | 2.26 | 1.36 | 0.67 | 1.28 | 1.57 | 0.49  | 0.49  |

**VODL/N1116/38PB - VODL/N1116/12PB**



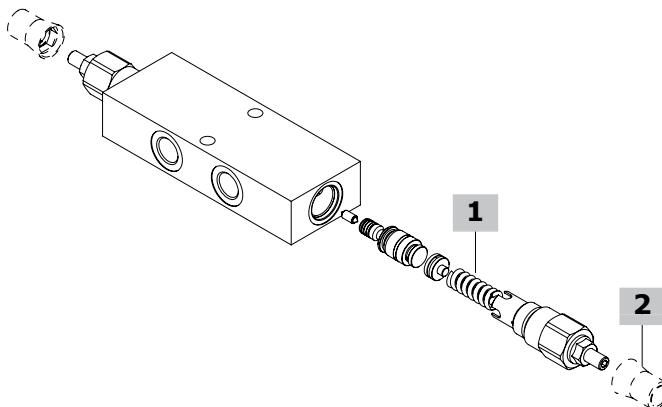
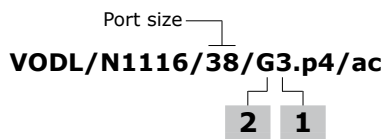
**NOTES**

- (1): dimension referred to "38PB" valve  
(2): dimension referred to "12PB" valve



| Valve type      | All ports |
|-----------------|-----------|
| VODL/N1116/38PB | G3/8      |
| VODL/N1116/12PB | G1/2      |

## Ordering codes and description composition



### VODL/N1116 complete valves

#### Load sensitive (N) configuration with G3/8 thread

##### Pilot ratio 1:4

TYPE: **VODL/N1116/38/G3.p4/ac** CODE: 1554322103  
DESCRIPTION: Steel body, range 50-210 bar (725-3050 psi),  
std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1116/38/G5.p4/ac** CODE: 1554322100  
DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1116/38/G5.p4** CODE: 1554321100  
DESCRIPTION: Aluminium body, range 150-350 bar (2175-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

##### Pilot ratio 1:8

TYPE: **VODL/N1116/38/G5.p8/ac** CODE: 1554322106  
DESCRIPTION: Steel body, range 180-350 bar (2610-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

##### Zero differential pilot ratio

TYPE: **VODL/N1116/38/G3.p0/ac** CODE: 1554322108  
DESCRIPTION: Steel body, range 5-210 bar (72.5-3050 psi), std setting  
150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1116/38/G5.p0/ac** CODE: 1554322109  
DESCRIPTION: Steel body, range 50-350 bar (725-5075 psi), std setting  
280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Load sensitive (N) configuration with G3/8 thread and F1 flange

TYPE: **VODL/N1116/38F1/G5.p4/ac** CODE: 1555122100  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1116/38F1/G5.p8/ac** CODE: 1555122101  
DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1116/38F1/G5.p0/ac** CODE: 1555122102  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Load sensitive (N) configuration with G3/8 thread and F2 flange

TYPE: **VODL/N1116/38F2/G5.p4/ac** CODE: 1555122103  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1116/38F2/G5.p8/ac** CODE: 1555122104  
DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1116/38F2/G5.p0/ac** CODE: 1555122105  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

### VODL/N1116 complete valves

#### Load sensitive (N) configuration with SAE8 thread

##### Pilot ratio 1:4

TYPE: **VODL/N1116/S8/G3.p4/ac** CODE: 1554322200  
DESCRIPTION: Steel body, range 50-210 bar (725-3050 psi),  
std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1116/S8/G5.p4/ac** CODE: 1554322201  
DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1116/S8/G5.p4** CODE: 1554321200  
DESCRIPTION: Aluminium body, range 150-350 bar (2175-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

##### Pilot ratio 1:8

TYPE: **VODL/N1116/S8/G5.p8/ac** CODE: 1554322204  
DESCRIPTION: Steel body, range 180-350 bar (2610-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

##### Zero differential pilot ratio

TYPE: **VODL/N1116/S8/G3.p0/ac** CODE: 1554322206  
DESCRIPTION: Steel body, range 5-210 bar (72.5-3050 psi), std setting  
150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1116/S8/G5.p0/ac** CODE: 1554322207  
DESCRIPTION: Steel body, range 50-350 bar (725-5075 psi), std setting  
280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Load sensitive (N) configuration with SAE8 thread and F1 flange

TYPE: **VODL/N1116/S8F1/G5.p4/ac** CODE: 1555122200  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1116/S8F1/G5.p8/ac** CODE: 1555122201  
DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1116/S8F1/G5.p0/ac** CODE: 1555122202  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Load sensitive (N) configuration with SAE8 thread and F2 flange

TYPE: **VODL/N1116/S8F2/G5.p4/ac** CODE: 1555122203  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1116/S8F2/G5.p8/ac** CODE: 1555122204  
DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-  
5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1116/S8F2/G5.p0/ac** CODE: 1555122205  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

**VODL/N1116 complete valves**

**Load sensitive (N) configuration with G1/2 thread**

TYPE: **VODL/N1116/12/G5.p4/ac** CODE: 1554332100  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VODL/N1116/12/G5.p8/ac** CODE: 1554332101  
DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VODL/N1116/12/G5.p0/ac** CODE: 1554332102  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VODL/N1116/12/G5.p4** CODE: 1554331100  
DESCRIPTION: Aluminium body, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

**Load sensitive (N) configuration with G1/2 thread and F1 flange**

TYPE: **VODL/N1116/12F1/G5.p4/ac** CODE: 1555132100  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VODL/N1116/12F1/G5.p8/ac** CODE: 1555132101  
DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VODL/N1116/12F1/G5.p0/ac** CODE: 1555132102  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

**Load sensitive (N) configuration with G1/2 thread and F2 flange**

TYPE: **VODL/N1116/12F2/G5.p4/ac** CODE: 1555132103  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VODL/N1116/12F2/G5.p8/ac** CODE: 1555132104  
DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VODL/N1116/12F2/G5.p0/ac** CODE: 1555132105  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

For other configurations please contact our Sales Dpt.

**VODL/N1116 complete valves**

**Load sensitive (N) configuration with SAE10 thread**

TYPE: **VODL/N1116/S10/G5.p4/ac** CODE: 1554332200  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VODL/N1116/S10/G5.p8/ac** CODE: 1554332201  
DESCRIPTION: Steel body, pilot ratio 1:8, range 5-350 bar (72.5-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VODL/N1116/S10/G5.p0/ac** CODE: 1554332202  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VODL/N1116/S10/G5.p4** CODE: 1554331201  
DESCRIPTION: Aluminium body, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

**Load sensitive (N) configuration with SAE10 thread and F1 flange**

TYPE: **VODL/N1116/S10F1/G5.p4/ac** CODE: 1555132200  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VODL/N1116/S10F1/G5.p8/ac** CODE: 1555132201  
DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VODL/N1116/S10F1/G5.p0/ac** CODE: 1555132202  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

**Load sensitive (N) configuration with SAE10 thread and F2 flange**

TYPE: **VODL/N1116/S10F2/G5.p4/ac** CODE: 1555132203  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VODL/N1116/S10F2/G5.p8/ac** CODE: 1555132204  
DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VODL/N1116/S10F2/G5.p0/ac** CODE: 1555132205  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

For other configurations please contact our Sales Dpt.

**1 Pressure setting spring**

| TYPE                                             | CODE       | DESCRIPTION                           |
|--------------------------------------------------|------------|---------------------------------------|
| <b>For 1:4 and zero differential pilot ratio</b> |            |                                       |
| <b>3</b>                                         | 3ML1133201 | For range 50-210 bar (725-3050 psi)   |
| <b>5</b>                                         | 3ML1133200 | For range 150-350 bar (2175-5075 psi) |
| <b>For 1:8 pilot ratio</b>                       |            |                                       |
| <b>5</b>                                         | 3ML1133201 | For range 180-350 bar (2610-5075 psi) |

**2 Setting type**

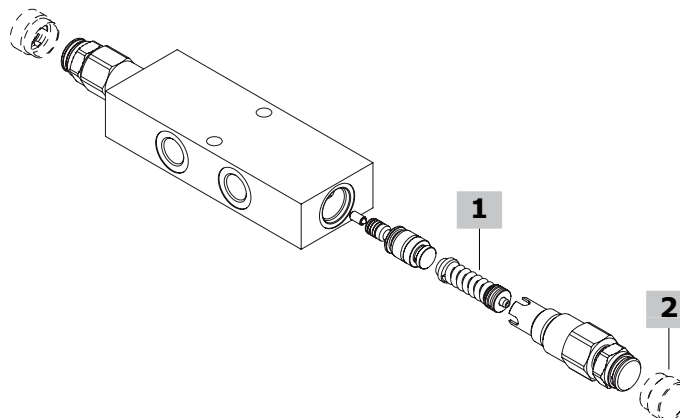
| TYPE     | CODE       | DESCRIPTION       |
|----------|------------|-------------------|
| <b>G</b> | -          | Screw setting     |
| <b>Z</b> | 4COP120420 | Antitampering cap |



## Ordering codes and description composition

Port size  
**VODL/R1116/38/G3.p4/ac**

**2 1**



### VODL/R1116 complete valves

#### Relief compensated (R) configuration with G3/8 thread

##### Pilot ratio 1:4

TYPE: **VODL/R1116/38/G3.p4/ac** CODE: 1554422101  
DESCRIPTION: Steel body, range 50-210 bar (725-3050 psi), std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/R1116/38/G5.p4/ac** CODE: 1554422100  
DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/R1116/38/G5.p4** CODE: 1554421100  
DESCRIPTION: aluminium body configuration range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

##### Pilot ratio 1:8

TYPE: **VODL/R1116/38/G5.p8/ac** CODE: 1554422104  
DESCRIPTION: Steel body, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

##### Zero differential pilot ratio

TYPE: **VODL/R1116/38/G3.p0/ac** CODE: 1554422106  
DESCRIPTION: Steel body, range 5-210 bar (72.5-3050 psi), std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/R1116/38/G5.p0/ac** CODE: 1554422107  
DESCRIPTION: Steel body, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Relief compensated (R) configuration with G3/8 thread and F1 flange

TYPE: **VODL/R1116/38F1/G5.p4/ac** CODE: 1555022100  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/R1116/38F1/G5.p8/ac** CODE: 1555022101  
DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/R1116/38F1/G5.p0/ac** CODE: 1555022102  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Relief compensated (R) configuration with G3/8 thread and F2 flange

TYPE: **VODL/R1116/38F2/G5.p4/ac** CODE: 1555022103  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/R1116/38F2/G5.p8/ac** CODE: 1555022104  
DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/R1116/38F2/G5.p0/ac** CODE: 1555022105  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

### VODL/R1116 complete valves

#### Relief compensated (R) configuration with SAE8 thread

##### Pilot ratio 1:4

TYPE: **VODL/R1116/S8/G3.p4/ac** CODE: 1554422200  
DESCRIPTION: Steel body, range 50-210 bar (725-3050 psi), std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/R1116/S8/G5.p4/ac** CODE: 1554422201  
DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/R1116/S8/G5.p4** CODE: 1554421200  
DESCRIPTION: aluminium body configuration range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

##### Pilot ratio 1:8

TYPE: **VODL/R1116/S8/G5.p8/ac** CODE: 1554422204  
DESCRIPTION: Steel body, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

##### Zero differential pilot ratio

TYPE: **VODL/R1116/S8/G3.p0/ac** CODE: 1554422206  
DESCRIPTION: Steel body, range 5-210 bar (72.5-3050 psi), std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/R1116/S8/G5.p0/ac** CODE: 1554422207  
DESCRIPTION: Steel body, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Relief compensated (R) configuration with SAE8 thread and F1 flange

TYPE: **VODL/R1116/S8F1/G5.p4/ac** CODE: 1555022200  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/R1116/S8F1/G5.p8/ac** CODE: 1555022201  
DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/R1116/S8F1/G5.p0/ac** CODE: 1555022202  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Relief compensated (R) configuration with SAE8 thread and F2 flange

TYPE: **VODL/R1116/S8F2/G5.p4/ac** CODE: 1555022203  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/R1116/S8F2/G5.p8/ac** CODE: 1555022204  
DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/R1116/S8F2/G5.p0/ac** CODE: 1555022205  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

## Ordering codes and description composition

### VODL/R1116 complete valves

#### Relief compensated (R) configuration with G1/2 thread

TYPE: **VODL/R1116/12/G5.p4/ac** CODE: 1554432101

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/R1116/12/G5.p8/ac** CODE: 1554432100

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/R1116/12/G5.p0/ac** CODE: 1554432102

DESCRIPTION: Steel body, zero differential pilot ratio. Range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) 5 l/min (1.32 US gpm)

TYPE: **VODL/R1116/12/G5.p4** CODE: 1554431100

DESCRIPTION: Aluminium body, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Relief compensated (R) configuration with G1/2 thread and F1 flange

TYPE: **VODL/R1116/12F1/G5.p4/ac** CODE: 1555032103

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) 5 l/min (1.32 US gpm)

TYPE: **VODL/R1116/12F1/G5.p8/ac** CODE: 1555032104

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) 5 l/min (1.32 US gpm)

TYPE: **VODL/R1116/12F1/G5.p0/ac** CODE: 1555032105

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) 5 l/min (1.32 US gpm)

#### Relief compensated (R) configuration with G1/2 thread and F2 flange

TYPE: **VODL/R1116/12F2/G5.p4/ac** CODE: 1555032100

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) 5 l/min (1.32 US gpm)

TYPE: **VODL/R1116/12F2/G5.p8/ac** CODE: 1555032101

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) 5 l/min (1.32 US gpm)

TYPE: **VODL/R1116/12F2/G5.p0/ac** CODE: 1555032102

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) 5 l/min (1.32 US gpm)

For other configurations please contact our Sales Dpt.

### VODL/R1116 complete valves

#### Relief compensated (R) configuration with SAE10 thread

TYPE: **VODL/R1116/S10/G5.p4/ac** CODE: 1554432200

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/R1116/S10/G5.p8/ac** CODE: 1554432201

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/R1116/S10/G5.p0/ac** CODE: 1554432202

DESCRIPTION: Steel body, zero differential pilot ratio. Range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) 5 l/min (1.32 US gpm)

TYPE: **VODL/R1116/S10/G5.p4** CODE: 1554431200

DESCRIPTION: Aluminium body, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Relief compensated (R) configuration with SAE10 thread and F1 flange

TYPE: **VODL/R1116/S10F1/G5.p4/ac** CODE: 1555032200

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) 5 l/min (1.32 US gpm)

TYPE: **VODL/R1116/S10F1/G5.p8/ac** CODE: 1555032201

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) 5 l/min (1.32 US gpm)

TYPE: **VODL/R1116/S10F1/G5.p0/ac** CODE: 1555032202

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) 5 l/min (1.32 US gpm)

#### Relief compensated (R) configuration with SAE10 thread and F2 flange

TYPE: **VODL/R1116/S10F2/G5.p4/ac** CODE: 1555032203

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) 5 l/min (1.32 US gpm)

TYPE: **VODL/R1116/S10F2/G5.p8/ac** CODE: 1555032204

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) 5 l/min (1.32 US gpm)

TYPE: **VODL/R1116/S10F2/G5.p0/ac** CODE: 1555032205

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) 5 l/min (1.32 US gpm)

For other configurations please contact our Sales Dpt.

### 1 Pressure setting spring

| TYPE                                             | CODE       | DESCRIPTION                           |
|--------------------------------------------------|------------|---------------------------------------|
| <b>For 1:4 and zero differential pilot ratio</b> |            |                                       |
| <b>3</b>                                         | 3ML1133201 | For range 50-210 bar (725-3050 psi)   |
| <b>5</b>                                         | 3ML1133200 | For range 150-350 bar (2175-5075 psi) |
| <b>For 1:8 pilot ratio</b>                       |            |                                       |
| <b>5</b>                                         | 3ML1133201 | For range 180-350 bar (2610-5075 psi) |

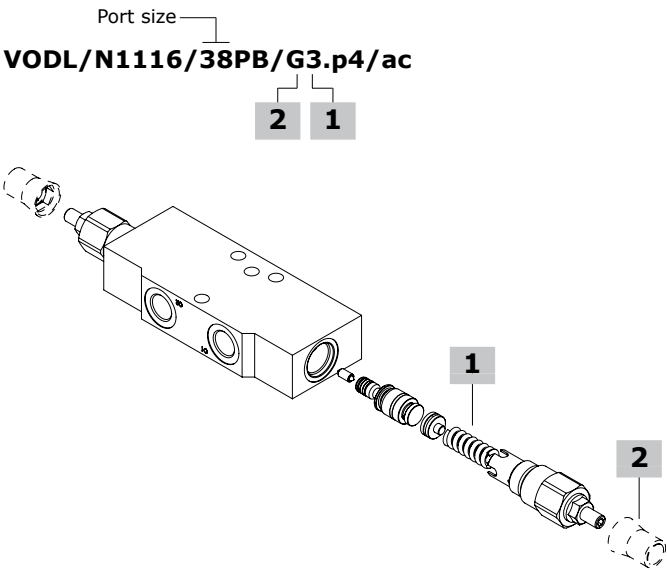
#### For 1:4 and zero differential pilot ratio

#### For 1:8 pilot ratio

### 2 Setting type

| TYPE     | CODE       | DESCRIPTION       |
|----------|------------|-------------------|
| <b>G</b> | -          | Screw setting     |
| <b>Z</b> | 4COP130200 | Antitampering cap |

Rating diagrams



VODL/N1116/PB complete valves

Load sensitive (N) configuration with G3/8 thread

Pilot ratio 1:4  
TYPE: **VODL/N1116/38PB/G3.p4/ac** CODE: 1555422101

DESCRIPTION: Steel body, range 50-210 bar (725-3050 psi),  
std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1116/38PB/G5.p4/ac** CODE: 1555422100

DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

Pilot ratio 1:8  
TYPE: **VODL/N1116/38PB/G5.p8/ac** CODE: 1555422102

DESCRIPTION: Steel body, range 180-350 bar (2610-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

Zero differential pilot ratio  
TYPE: **VODL/N1116/38PB/G5.p0/ac** CODE: 1555422103

DESCRIPTION: Steel body, range 5-350 bar (72.5-5075 psi), std setting  
280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

Load sensitive (N) configuration with G1/2 thread

Pilot ratio 1:4  
TYPE: **VODL/N1116/12PB/G3.p4/ac** CODE: 1555432101

DESCRIPTION: Steel body, range 50-210 bar (725-3050 psi),  
std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1116/2PB/G5.p4/ac** CODE: 1555432100

DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

Pilot ratio 1:8  
TYPE: **VODL/N1116/12PB/G5.p8/ac** CODE: 1555432102

DESCRIPTION: Steel body, range 180-350 bar (2610-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

Zero differential pilot ratio  
TYPE: **VODL/N1116/12PB/G5.p0/ac** CODE: 1555432103

DESCRIPTION: Steel body, range 5-350 bar (72.5-5075 psi), std setting  
280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

For other configurations please contact our Sales Dpt.

1 Pressure setting spring

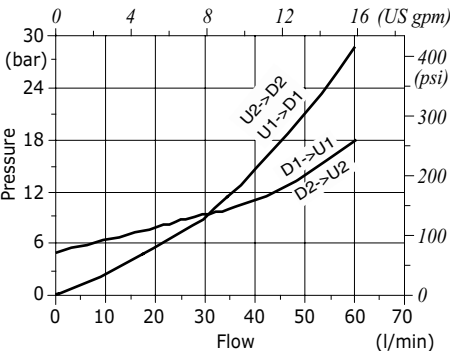
| TYPE                                             | CODE       | DESCRIPTION                           |
|--------------------------------------------------|------------|---------------------------------------|
| <b>For 1:4 and zero differential pilot ratio</b> |            |                                       |
| <b>3</b>                                         | 3ML1133201 | For range 50-210 bar (725-3050 psi)   |
| <b>5</b>                                         | 3ML1133200 | For range 150-350 bar (2175-5075 psi) |
| <b>For 1:8 pilot ratio</b>                       |            |                                       |
| <b>5</b>                                         | 3ML1133201 | For range 180-350 bar (2610-5075 psi) |

2 Setting type

| TYPE     | CODE       | DESCRIPTION       |
|----------|------------|-------------------|
| <b>G</b> | -          | Screw setting     |
| <b>Z</b> | 4COP120420 | Antitampering cap |

Rating diagrams

VODL/(N-R) 1116 (38-12) pressure drop vs. flow  
from D1->U1 and U1->D1 (D2->U2 and U2->D2)





## Type VODL/V1116/CS counterbalance valves

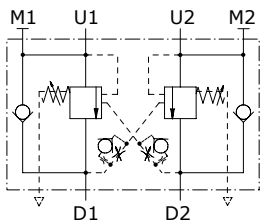
- Double acting
- Vented

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

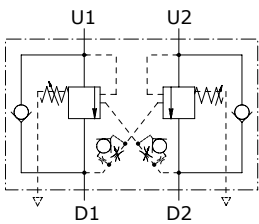
| VODL/V1116/CS (38-12)                      |                                                                                         |
|--------------------------------------------|-----------------------------------------------------------------------------------------|
| Nominal flow                               | 60 l/min (15.9 US gpm)                                                                  |
| Max. pressure                              | 350 bar (5100 psi)                                                                      |
| Oil leakage                                | 0.25 cm <sup>3</sup> /min - 0.015 in <sup>3</sup> /min. (5 drops) at 210 bar - 3050 psi |
| Fluid                                      | mineral based oil                                                                       |
| Viscosity                                  | from 10 to 200 cSt                                                                      |
| Max. level of contamination                | 18/16/13 ISO4406                                                                        |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F)                                        |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                                                     |
| Weight                                     | <b>VODL/V1116/CS/38:</b> 3.64 kg (8.02 lb) - <b>VODL/V1116/CS/12:</b> 3.50 kg (7.72 lb) |

NOTE - For different conditions, please contact Walvoil Sales Dpt.

VODL/V1116/CS

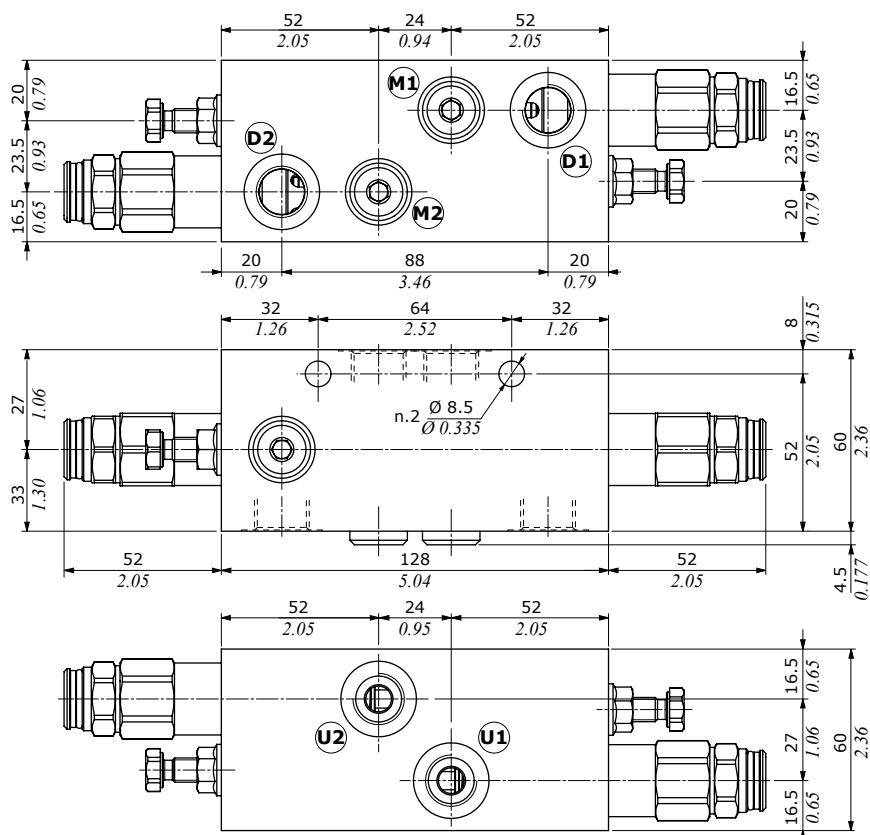


VODL/V1116/CS/F2

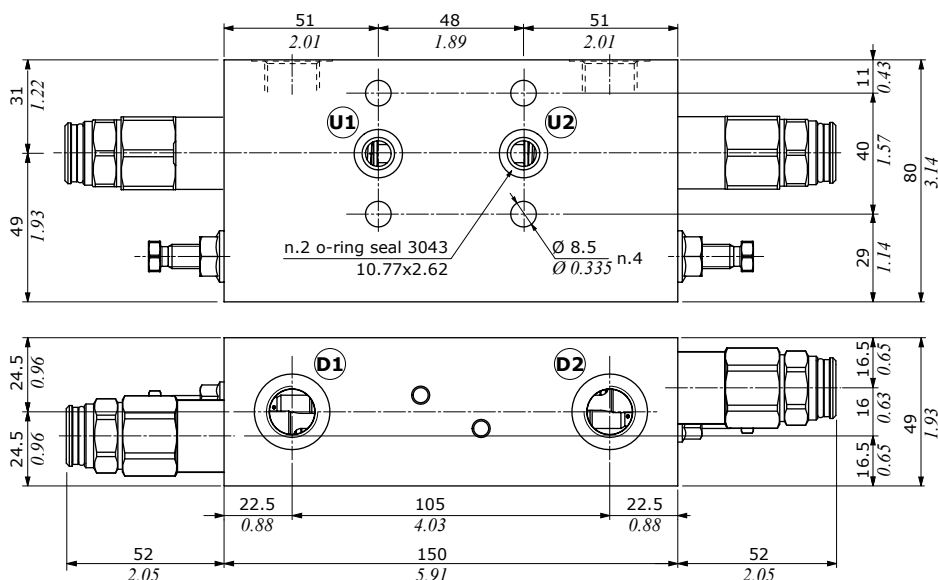


## Dimensions

### VODL/V1116/CS/38 - VODL/V1116/CS/12



### VODL/V1116/CS/38F2 - VODL/V1116/CS/12F2



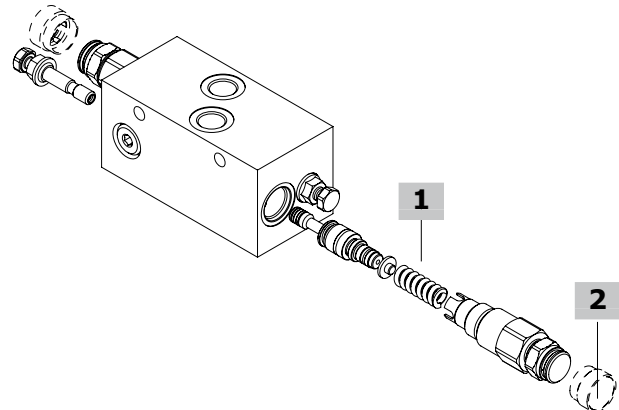
| Valve type         | D1 D2 | U1 U2         | M1 M2 |
|--------------------|-------|---------------|-------|
| VODL/V1116/CS/38   | G3/8  | G3/8          | G1/4  |
| VODL/V1116/CS/12   | G1/2  | G1/2          | G1/4  |
| VODL/V1116/CS/38F2 | G3/8  | Ø8.5 - Ø0.335 | -     |
| VODL/V1116/CS/12F2 | G1/2  | Ø8.5 - Ø0.335 | -     |

| Valve type          | D1 D2 | U1 U2         | M1 M2 |
|---------------------|-------|---------------|-------|
| VODL/V1116/CS/S8    | SAE8  | SAE8          | G1/4  |
| VODL/V1116/CS/S10   | SAE10 | SAE10         | G1/4  |
| VODL/V1116/CS/S8F2  | SAE8  | Ø8.5 - Ø0.335 | -     |
| VODL/V1116/CS/S10F2 | SAE10 | Ø8.5 - Ø0.335 | -     |

## Ordering codes and description composition

Port size  
**VODL/V1116/CS/38/G3.p4.PR/ac**

**2 1**



### Complete valves

#### **Vented (V) configuration with G3/8 thread**

##### Pilot ratio 1:4

TYPE: **VODL/V1116/CS/38/G3.p4.PR/ac** CODE: 1554522102  
DESCRIPTION: Steel body, range 50-210 bar (725-3050 psi),  
std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1116/CS/38/G5.p4.PR/ac** CODE: 1554522100  
DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

##### Pilot ratio 1:8

TYPE: **VODL/V1116/CS/38/G5.p8.PR/ac** CODE: 1554522105  
DESCRIPTION: Steel body, range 180-350 bar (2610-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

##### Zero differential pilot ratio

TYPE: **VODL/V1116/CS/38/G3.p0.PR/ac** CODE: 1554522107  
DESCRIPTION: Steel body, range 5-210 bar (72.5-3050 psi), std setting  
150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1116/CS/38/G5.p0.PR/ac** CODE: 1554522101  
DESCRIPTION: Steel body, range 50-350 bar (725-5075 psi), std setting  
280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### **Vented (V) configuration with G3/8 thread and F2 flange**

TYPE: **VODL/V1116/CS/38F2/G5.p4.PR/ac** CODE: 1556022100  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 min (1.32 US gpm)

TYPE: **VODL/V1116/CS/38F2/G5.p8.PR/ac** CODE: 1556022101  
DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1116/CS/38F2/G5.p0.PR/ac** CODE: 1556022102  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

### Complete valves

#### **Vented (V) configuration with SAE8 thread**

##### Pilot ratio 1:4

TYPE: **VODL/V1116/CS/S8/G3.p4.PR/ac** CODE: 1554522200  
DESCRIPTION: Steel body, range 50-210 bar (725-3050 psi),  
std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1116/CS/S8/G5.p4.PR/ac** CODE: 1554522201  
DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

##### Pilot ratio 1:8

TYPE: **VODL/V1116/CS/S8/G5.p8.PR/ac** CODE: 1554522204  
DESCRIPTION: Steel body, range 180-350 bar (2610-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

##### Zero differential pilot ratio

TYPE: **VODL/V1116/CS/S8/G3.p0.PR/ac** CODE: 1554522206  
DESCRIPTION: Steel body, range 5-210 bar (72.5-3050 psi), std setting  
150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1116/CS/S8/G5.p0.PR/ac** CODE: 1554522207  
DESCRIPTION: Steel body, range 50-350 bar (725-5075 psi), std setting  
280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### **Vented (V) configuration with SAE8 thread and F2 flange**

TYPE: **VODL/V1116/CS/S8F2/G5.p4.PR/ac** CODE: 1556022200  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 min (1.32 US gpm)

TYPE: **VODL/V1116/CS/S8F2/G5.p8.PR/ac** CODE: 1556022201  
DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar  
(2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1116/CS/S8F2/G5.p0.PR/ac** CODE: 1556022202  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

### 1 Pressure setting spring

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

#### **For 1:4 and zero differential pilot ratio**

|          |            |                                     |
|----------|------------|-------------------------------------|
| <b>3</b> | 3ML1133201 | For range 50-210 bar (725-3050 psi) |
|----------|------------|-------------------------------------|

|          |            |                                       |
|----------|------------|---------------------------------------|
| <b>5</b> | 3ML1133200 | For range 150-350 bar (2175-5075 psi) |
|----------|------------|---------------------------------------|

#### **For 1:8 pilot ratio**

|          |            |                                       |
|----------|------------|---------------------------------------|
| <b>5</b> | 3ML1133201 | For range 180-350 bar (2610-5075 psi) |
|----------|------------|---------------------------------------|

### 2 Setting type

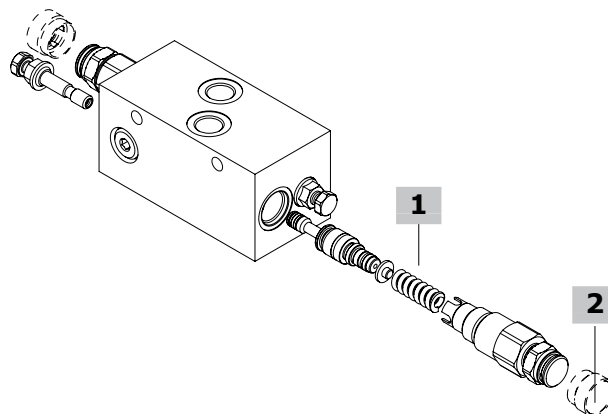
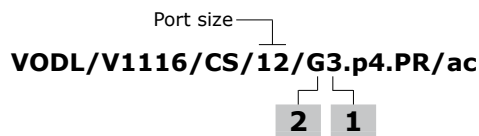
| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

|          |   |               |
|----------|---|---------------|
| <b>G</b> | - | Screw setting |
|----------|---|---------------|

|          |            |                   |
|----------|------------|-------------------|
| <b>Z</b> | 4COP130200 | Antitampering cap |
|----------|------------|-------------------|



## Rating diagrams



### Complete valves

#### Vented (V) configuration with G1/2 thread

TYPE: **VODL/V1116/CS/12/G5.p4.PR/ac** CODE: 1554532100

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1116/CS/12/G5.p8.PR/ac** CODE: 1554532101

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1116/CS/12/G5.p0/ac** CODE: 1554532102

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Vented (V) configuration with G1/2 thread and F2 flange

TYPE: **VODL/V1116/CS/12F2/G5.p4.PR/ac** CODE: 1556032100

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1116/CS/12F2/G5.p8.PR/ac** CODE: 1556032101

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1116/CS/12F2/G5.p0.PR/ac** CODE: 1556032102

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

For other configurations please contact our Sales Dpt.

#### Vented (V) configuration with SAE10 thread

TYPE: **VODL/V1116/CS/S10/G5.p4.PR/ac** CODE: 1554532200

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1116/CS/S10/G5.p8.PR/ac** CODE: 1554532201

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1116/CS/S10/G5.p0/ac** CODE: 1554532202

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

### Complete valves

#### Vented (V) configuration with SAE10 thread and F2 flange

TYPE: **VODL/V1116/CS/S10F2/G5.p4.PR/ac** CODE: 1556032200

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1116/CS/S10F2/G5.p8.PR/ac** CODE: 1556032201

DESCRIPTION: Steel body, pilot ratio 1:8, range 180-350 bar (2610-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1116/CS/S10F2/G5.p0.PR/ac** CODE: 1556032202

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

For other configurations please contact our Sales Dpt.

### 1 Pressure setting spring

| TYPE                                             | CODE       | DESCRIPTION                           |
|--------------------------------------------------|------------|---------------------------------------|
| <b>For 1:4 and zero differential pilot ratio</b> |            |                                       |
| <b>3</b>                                         | 3ML1133201 | For range 50-210 bar (725-3050 psi)   |
| <b>5</b>                                         | 3ML1133200 | For range 150-350 bar (2175-5075 psi) |
| <b>For 1:8 pilot ratio</b>                       |            |                                       |
| <b>5</b>                                         | 3ML1133201 | For range 180-350 bar (2610-5075 psi) |

#### For 1:4 and zero differential pilot ratio

**3** 3ML1133201 For range 50-210 bar (725-3050 psi)

**5** 3ML1133200 For range 150-350 bar (2175-5075 psi)

#### For 1:8 pilot ratio

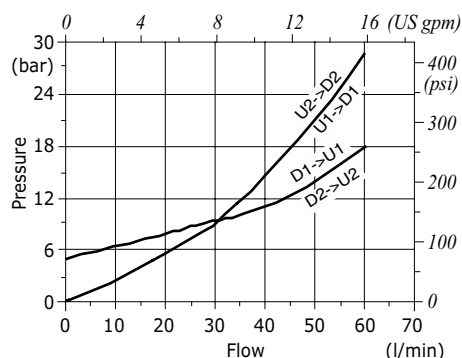
**5** 3ML1133201 For range 180-350 bar (2610-5075 psi)

### 2 Setting type

| TYPE     | CODE       | DESCRIPTION       |
|----------|------------|-------------------|
| <b>G</b> | -          | Screw setting     |
| <b>Z</b> | 4COP130200 | Antitampering cap |

## Rating diagrams

VODL/V/1116/CS pressure drop vs. flow  
from D1->U1 and U1 to D1 (D2->U2 and U2 to D2)





## Type VOSL/N1516 - VOSL/V1516 counterbalance valves

- Single acting
- Load Sensitive (type N)
- Vented (type V)
- Configuration with F1 and F2 flange

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

### VOSL/N1516 (12-34) - VOSL/V1516 (12-34)

|                                            |                                                                                                 |
|--------------------------------------------|-------------------------------------------------------------------------------------------------|
| Nominal flow                               | 160 l/min (42.3 US gpm)                                                                         |
| Max. pressure                              | 350 bar <sup>(1)</sup> (5100 psi) - 400 bar <sup>(2)</sup> (5800 psi)                           |
| Oil leakage                                | 0.5 cm <sup>3</sup> /min (0.030 in <sup>3</sup> /min) - 10 drops/min at 80% of pressure setting |
| Fluid                                      | mineral based oil                                                                               |
| Viscosity                                  | from 10 to 200 cSt                                                                              |
| Max. level of contamination                | 18/16/13 ISO4406                                                                                |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 90°C (194°F)                                                |
| Environmental temp. for working conditions | from -20°C (-4°F) to 50°C (122°F)                                                               |

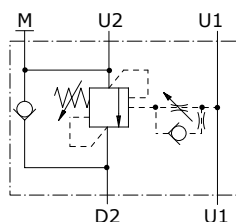
Weight

**VOSL/N1516/12:** 2.50 kg (5.51 lb) - **VOSL/N1516/34:** 3.30 kg (7.27 lb)

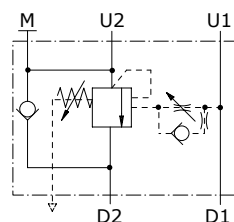
**VOSL/V1516/12:** 2.50 kg (5.51 lb) - **VOSL/V1516/34:** 3.30 kg (7.27 lb)

**NOTE** - For different conditions, please contact Walvoil Sales Dpt. - <sup>(1)</sup>According to NFPA T 2.6.1., fatigue rating verified for 1 million cycles on 6 sample valves with test Pressure = 1.23 x Max. pressure indicated - <sup>(2)</sup>Intermittent pressure at max. 100,000 cycles with specific internal testing.

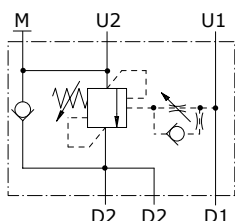
**VOSL/N1516**



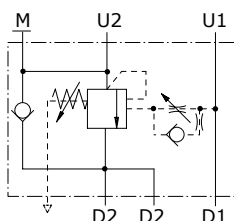
**VOSL/V1516**



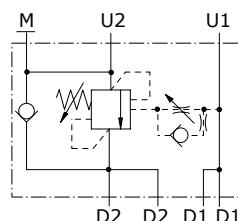
**VOSL/N1516/F1**



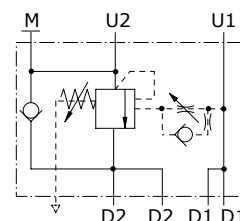
**VOSL/V1516/F1**



**VOSL/N1516/F2**



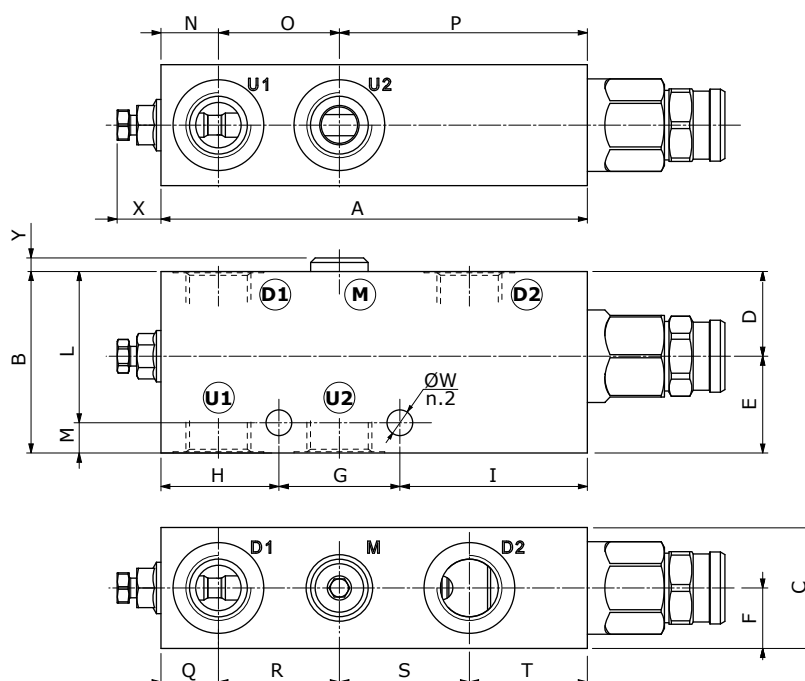
**VOSL/V1516/F2**



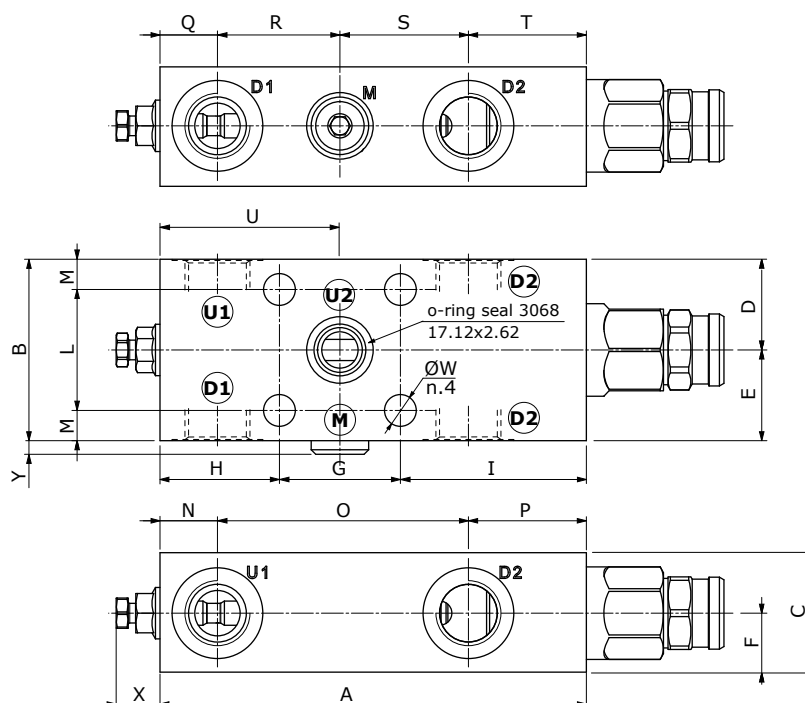


## Dimensions

### VOSL/...1516/12 - VOSL/...1516/34

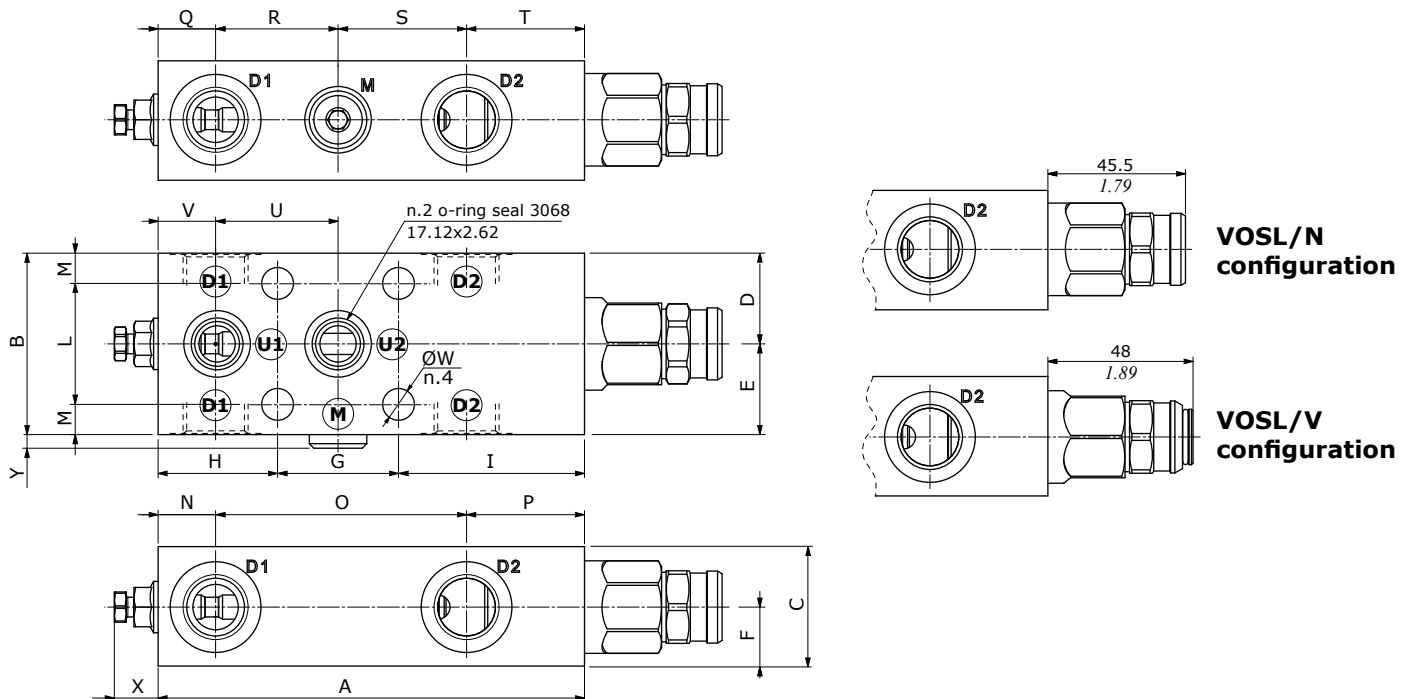


### VOSL/...1516/12F1 - VOSL/...1516/34F1



## Dimensions

### VOSL/...1516/12F2 - VOSL/...1516/34F2



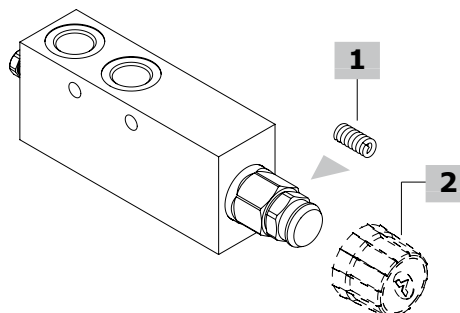
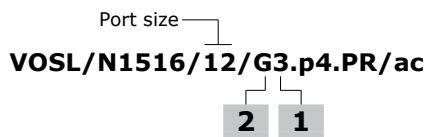
| Valve type        | D1   | D2   | U1         | U2         | M    | Valve type         | D1    | D2    | U1         | U2         | M    |
|-------------------|------|------|------------|------------|------|--------------------|-------|-------|------------|------------|------|
| VOSL/...1516/12   | G1/2 | G1/2 | G1/2       | G1/2       | G1/4 | VOSL/...1516/S10   | SAE10 | SAE10 | SAE10      | SAE10      | G1/4 |
| VOSL/...1516/34   | G3/4 | G3/4 | G3/4       | G3/4       | G1/4 | VOSL/...1516/S12   | SAE12 | SAE12 | SAE12      | SAE12      | G1/4 |
| VOSL/...1516/12F1 | G1/2 | G1/2 | G1/2       | Ø12-Ø0.472 | G1/4 | VOSL/...1516/S10F1 | SAE10 | SAE10 | SAE10      | Ø12-Ø0.472 | G1/4 |
| VOSL/...1516/34F1 | G3/4 | G3/4 | G3/4       | Ø12-Ø0.472 | G1/4 | VOSL/...1516/S12F1 | SAE12 | SAE12 | SAE12      | Ø12-Ø0.472 | G1/4 |
| VOSL/...1516/12F2 | G1/2 | G1/2 | Ø12-Ø0.472 | Ø12-Ø0.472 | G1/4 | VOSL/...1516/S10F2 | SAE10 | SAE10 | Ø12-Ø0.472 | Ø12-Ø0.472 | G1/4 |
| VOSL/...1516/34F2 | G3/4 | G3/4 | Ø12-Ø0.472 | Ø12-Ø0.472 | G1/4 | VOSL/...1516/S12F2 | SAE12 | SAE12 | Ø12-Ø0.472 | Ø12-Ø0.472 | G1/4 |

Dimensions are in mm-in

| Valve type                              | A        | B       | C         | D       | E       | F         | G       | H         | I         | L       | M        | N       |
|-----------------------------------------|----------|---------|-----------|---------|---------|-----------|---------|-----------|-----------|---------|----------|---------|
| VOSL/...1516/12<br>VOSL/...1516/S10     | 141-5.55 | 60-2.36 | 40-1.57   | 28-1.10 | 32-1.26 | 20-0.79   | 40-1.57 | 39-1.54   | 62-2.44   | 50-1.97 | 10-0.394 | 19-0.75 |
| VOSL/...1516/34<br>VOSL/...1516/S12     | 147-5.79 | 80-3.15 | 40-1.57   | 39-1.54 | 41-1.61 | 20-0.79   | 40-1.57 | 45-1.77   | 62-2.44   | 60-2.36 | 20-0.79  | 22-0.87 |
| VOSL/...1516/12F1<br>VOSL/...1516/S10F1 | 141-5.55 | 60-2.36 | 39.5-1.56 | 30-1.18 | 30-1.18 | 19.5-0.77 | 40-1.57 | 39.5-1.56 | 61.5-2.42 | 40-1.57 | 10-0.394 | 19-0.75 |
| VOSL/...1516/34F1<br>VOSL/...1516/S12F1 | 147-5.79 | 80-3.15 | 39.5-1.56 | 40-1.57 | 40-1.57 | 19.5-0.77 | 40-1.57 | 45-1.77   | 62-2.44   | 40-1.57 | 20-0.79  | 22-0.87 |
| VOSL/...1516/12F2<br>VOSL/...1516/S10F2 | 141-5.55 | 60-2.36 | 39.5-1.56 | 30-1.18 | 30-1.18 | 19.5-0.77 | 40-1.57 | 39.5-1.56 | 61.5-2.42 | 40-1.57 | 10-0.394 | 19-0.75 |
| VOSL/...1516/34F2<br>VOSL/...1516/S12F2 | 147-5.79 | 80-3.15 | 39.5-1.56 | 40-1.57 | 40-1.57 | 19.5-0.77 | 40-1.57 | 45-1.77   | 62-2.44   | 40-1.57 | 20-0.79  | 22-0.87 |

| Valve type                              | O       | P       | Q       | R         | S         | T       | U         | V         | ØW         | X(max)  | Y         |
|-----------------------------------------|---------|---------|---------|-----------|-----------|---------|-----------|-----------|------------|---------|-----------|
| VOSL/...1516/12<br>VOSL/...1516/S10     | 40-1.57 | 82-3.23 | 19-0.75 | 40-1.57   | 43-1.69   | 39-1.54 | -         | -         | 8.5-0.335  | 22-0.87 | 4.5-0.177 |
| VOSL/...1516/34<br>VOSL/...1516/S12     | 43-1.69 | 65-2.56 | 22-0.87 | 43-1.69   | 43-1.69   | 39-1.54 | -         | -         | 10.5-0.413 | 22-0.87 | 4.5-0.177 |
| VOSL/...1516/12F1<br>VOSL/...1516/S10   | 83-3.27 | 39-1.54 | 19-0.75 | 40.5-1.59 | 42.5-1.67 | 39-1.54 | 59.5-2.34 | -         | 10.5-0.413 | 22-0.87 | 4.5-0.177 |
| VOSL/...1516/34F1<br>VOSL/...1516/S12F1 | 86-3.39 | 39-1.54 | 22-0.87 | 43-1.69   | 43-1.69   | 39-1.54 | 65-2.56   | -         | 10.5-0.413 | 22-0.87 | 4.5-0.177 |
| VOSL/...1516/12F2<br>VOSL/...1516/S10F2 | 83-3.27 | 39-1.54 | 19-0.75 | 40.5-1.59 | 42.5-1.67 | 39-1.54 | 40-1.57   | 19.5-0.77 | 10.5-0.413 | 22-0.87 | 4.5-0.177 |
| VOSL/...1516/34F2<br>VOSL/...1516/S12F2 | 86-3.39 | 39-1.54 | 22-0.87 | 43-1.69   | 43-1.69   | 39-1.54 | 43-1.69   | 22-0.87   | 10.5-0.413 | 22-0.87 | 4.5-0.177 |

## Ordering codes and description composition



### VOSL/N1516 Complete valves

#### Load sensitive (N) configuration with G1/2 thread

##### Pilot ratio 1:4

TYPE: **VOSL/N1516/12/G3.p4.PR/ac** CODE: 1514632100

DESCRIPTION: Steel body, range 100-210 bar (1450-3050 psi),  
std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/12/G5.p4.PR/ac** CODE: 1514632101

DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/12/G7.p4.PR/ac** CODE: 1514632102

DESCRIPTION: Steel body, range 200-400 bar (2900-5800 psi),  
std setting 350 bar (5075 psi) @ 5 l/min (1.32 US gpm)

##### Pilot ratio 1:8

TYPE: **VOSL/N1516/12/G5.p8.PR/ac** CODE: 1514632104

DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/12/G7.p8.PR/ac** CODE: 1514632105

DESCRIPTION: Steel body, range 200-400 bar (2900-5800 psi),  
std setting 350 bar (5075 psi) @ 5 l/min (1.32 US gpm)

##### Zero differential pilot ratio

TYPE: **VOSL/N1516/12/G3.p0.PR/ac** CODE: 1514632106

DESCRIPTION: Steel body, range 50-210 bar (725-3050 psi), std setting  
150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/12/G5.p0.PR/ac** CODE: 1514632107

DESCRIPTION: Steel body, range 50-350 bar (725-5075 psi), std setting  
280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/12/G7.p0.PR/ac** CODE: 1514632108

DESCRIPTION: Steel body, range 150-400 bar (2175-5800 psi), std  
setting 350 bar (5075 psi) @ 5 l/min (1.32 US gpm)

#### Load sensitive (N) configuration with G1/2 thread and F1 flange

TYPE: **VOSL/N1516/12F1/G5.p4.PR/ac** CODE: 1515632100

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/12F1/G5.p8.PR/ac** CODE: 1515632101

DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/12F1/G5.p0.PR/ac** CODE: 1515632102

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Load sensitive (N) configuration with G1/2 thread and F2 flange

TYPE: **VOSL/N1516/12F2/G5.p4.PR/ac** CODE: 1515632103

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/12F2/G5.p8.PR/ac** CODE: 1515632104

DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/12F2/G5.p0.PR/ac** CODE: 1515632105

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) 5 l/min (1.32 US gpm)

### VOSL/N1516 Complete valves

#### Load sensitive (N) configuration with SAE10 thread

##### Pilot ratio 1:4

TYPE: **VOSL/N1516/S10/G3.p4.PR/ac** CODE: 1514632200

DESCRIPTION: Steel body, range 100-210 bar (1450-3050 psi),  
std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/S10/G5.p4.PR/ac** CODE: 1514632201

DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/S10/G7.p4.PR/ac** CODE: 1514632202

DESCRIPTION: Steel body, range 200-400 bar (2900-5800 psi),  
std setting 350 bar (5075 psi) @ 5 l/min (1.32 US gpm)

##### Pilot ratio 1:8

TYPE: **VOSL/N1516/S10/G5.p8.PR/ac** CODE: 1514632204

DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi),  
std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/S10/G7.p8.PR/ac** CODE: 1514632205

DESCRIPTION: Steel body, range 200-400 bar (2900-5800 psi),  
std setting 350 bar (5075 psi) @ 5 l/min (1.32 US gpm)

##### Zero differential pilot ratio

TYPE: **VOSL/N1516/S10/G3.p0.PR/ac** CODE: 1514632206

DESCRIPTION: Steel body, range 50-210 bar (725-3050 psi), std setting  
150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/S10/G5.p0.PR/ac** CODE: 1514632207

DESCRIPTION: Steel body, range 50-350 bar (725-5075 psi), std setting  
280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/S10/G7.p0.PR/ac** CODE: 1514632208

DESCRIPTION: Steel body, range 150-400 bar (2175-5800 psi), std  
setting 350 bar (5075 psi) @ 5 l/min (1.32 US gpm)

#### Load sensitive (N) configuration with SAE10 thread and F1 flange

TYPE: **VOSL/N1516/S10F1/G5.p4.PR/ac** CODE: 1515632200

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/S10F1/G5.p8.PR/ac** CODE: 1515632201

DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/S10F1/G5.p0.PR/ac** CODE: 1515632202

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Load sensitive (N) configuration with SAE10 thread and F2 flange

TYPE: **VOSL/N1516/S10F2/G5.p4.PR/ac** CODE: 1515632203

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/S10F2/G5.p8.PR/ac** CODE: 1515632204

DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar  
(2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/S10F2/G5.p0.PR/ac** CODE: 1515632205

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar  
(725-5075 psi), std setting 280 bar (4060 psi) 5 l/min (1.32 US gpm)

## Ordering codes and description composition

### VOSL/N1516 Complete valves

#### Load sensitive (N) configuration with G3/4 thread

TYPE: **VOSL/N1516/34/G5.p4.PR/ac** CODE: 1514642100

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/34/G5.p8.PR/ac** CODE: 1514642101

DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/34/G5.p0.PR/ac** CODE: 1514642102

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Load sensitive (N) configuration with G3/4 thread and F1 flange

TYPE: **VOSL/N1516/34F1/G5.p4.PR/ac** CODE: 1515642100

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/34F1/G5.p8.PR/ac** CODE: 1515642101

DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/34F1/G5.p0.PR/ac** CODE: 1515642102

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Load sensitive (N) configuration with G3/4 thread and F2 flange

TYPE: **VOSL/N1516/34F2/G5.p4.PR/ac** CODE: 1515642103

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/34F2/G5.p8.PR/ac** CODE: 1515642104

DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/34F2/G5.p0.PR/ac** CODE: 1515642105

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

For other configurations please contact our Sales Dpt.

### VOSL/N1516 Complete valves

#### Load sensitive (N) configuration with SAE12 thread

TYPE: **VOSL/N1516/S12/G5.p4.PR/ac** CODE: 1514642200

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/S12/G5.p8.PR/ac** CODE: 1514642201

DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/S12/G5.p0.PR/ac** CODE: 1514642202

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Load sensitive (N) configuration with SAE12 thread and F1 flange

TYPE: **VOSL/N1516/S12F1/G5.p4.PR/ac** CODE: 1515642200

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/S12F1/G5.p8.PR/ac** CODE: 1515642201

DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/S12F1/G5.p0.PR/ac** CODE: 1515642202

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Load sensitive (N) configuration with SAE12 thread and F2 flange

TYPE: **VOSL/N1516/S12F2/G5.p4.PR/ac** CODE: 1515642203

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/S12F2/G5.p8.PR/ac** CODE: 1515642204

DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/N1516/S12F2/G5.p0.PR/ac** CODE: 1515642205

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

For other configurations please contact our Sales Dpt.

### 1 Pressure setting spring

TYPE CODE DESCRIPTION

#### For 1:4 and zero differential pilot ratio

**3** 3MOL316450 For range 100-210 bar (1450-3050 psi)

**5** 3MOL316430 For range 150-350 bar (2175-5075 psi)

**7** 3MOL316411 For range 200-400 bar (2900-5800 psi)

#### For 1:8 pilot ratio

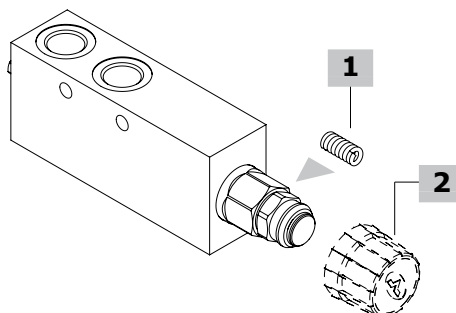
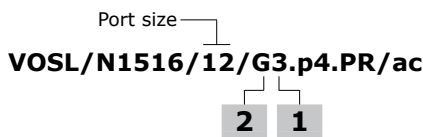
**5** 3MOL316450 For range 150-350 bar (2175-5075 psi)

**7** 3MOL316430 For range 200-400 bar (2900-5800 psi)

### 2 Antitampering cap

| TYPE     | CODE       | DESCRIPTION       |
|----------|------------|-------------------|
| <b>G</b> | -          | Screw setting     |
| <b>Z</b> | 4COP140311 | Antitampering cap |

## Ordering codes and description composition



### VOSL/V1516 Complete valves

#### Vented (V) configuration with G1/2 thread

##### Pilot ratio 1:4

TYPE: **VOSL/V1516/12/G3.p4.PR/ac** CODE: 1514732100

DESCRIPTION: Steel body, range 100-210 bar (1450-3050 psi), std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/12/G5.p4.PR/ac** CODE: 1514732101

DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/12/G7.p4.PR/ac** CODE: 1514732102

DESCRIPTION: Steel body, range 200-400 bar (2900-5800 psi), std setting 350 bar (5075 psi) @ 5 l/min (1.32 US gpm)

##### Pilot ratio 1:8

TYPE: **VOSL/V1516/12/G5.p8.PR/ac** CODE: 1514732104

DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/12/G7.p8.PR/ac** CODE: 1514732105

DESCRIPTION: Steel body, range 200-400 bar (2900-5800 psi), std setting 350 bar (5075 psi) @ 5 l/min (1.32 US gpm)

##### Zero differential pilot ratio

TYPE: **VOSL/V1516/12/G3.p0.PR/ac** CODE: 1514732106

DESCRIPTION: Steel body, range 50-210 bar (725-3050 psi), std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/12/G5.p0.PR/ac** CODE: 1514732107

DESCRIPTION: Steel body, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/12/G7.p0.PR/ac** CODE: 1514732108

DESCRIPTION: Steel body, range 150-400 bar (2175-5800 psi), std setting 350 bar (5075 psi) @ 5 l/min (1.32 US gpm)

#### Vented (V) configuration with G1/2 thread and F1 flange

TYPE: **VOSL/V1516/12F1/G5.p4.PR/ac** CODE: 1515732100

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/12F1/G5.p8.PR/ac** CODE: 1515732101

DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/12F1/G5.p0.PR/ac** CODE: 1515732102

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Vented (V) configuration with G1/2 thread and F2 flange

TYPE: **VOSL/V1516/12F2/G5.p4.PR/ac** CODE: 1515732103

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/12F2/G5.p8.PR/ac** CODE: 1515732104

DESCRIPTION: Steel body, Pilot ratio 1:8, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/12F2/G5.p0.PR/ac** CODE: 1515732105

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

### VOSL/V1516 Complete valves

#### Vented (V) configuration with SAE10 thread

##### Pilot ratio 1:4

TYPE: **VOSL/V1516/S10/G3.p4.PR/ac** CODE: 1514732200

DESCRIPTION: Steel body, range 100-210 bar (1450-3050 psi), std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/S10/G5.p4.PR/ac** CODE: 1514732201

DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/S10/G7.p4.PR/ac** CODE: 1514732202

DESCRIPTION: Steel body, range 200-400 bar (2900-5800 psi), std setting 350 bar (5075 psi) @ 5 l/min (1.32 US gpm)

##### Pilot ratio 1:8

TYPE: **VOSL/V1516/S10/G5.p8.PR/ac** CODE: 1514732204

DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/S10/G7.p8.PR/ac** CODE: 1514732205

DESCRIPTION: Steel body, range 200-400 bar (2900-5800 psi), std setting 350 bar (5075 psi) @ 5 l/min (1.32 US gpm)

##### Zero differential pilot ratio

TYPE: **VOSL/V1516/S10/G3.p0.PR/ac** CODE: 1514732206

DESCRIPTION: Steel body, range 50-210 bar (725-3050 psi), std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/S10/G5.p0.PR/ac** CODE: 1514732207

DESCRIPTION: Steel body, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/S10/G7.p0.PR/ac** CODE: 1514732208

DESCRIPTION: Steel body, range 150-400 bar (2175-5800 psi), std setting 350 bar (5075 psi) @ 5 l/min (1.32 US gpm)

#### Vented (V) configuration with SAE10 thread and F1 flange

TYPE: **VOSL/V1516/S10F1/G5.p4.PR/ac** CODE: 1515732200

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/S10F1/G5.p8.PR/ac** CODE: 1515732201

DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/S10F1/G5.p0.PR/ac** CODE: 1515732202

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Vented (V) configuration with SAE10 thread and F2 flange

TYPE: **VOSL/V1516/S10F2/G5.p4.PR/ac** CODE: 1515732203

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/S10F2/G5.p8.PR/ac** CODE: 1515732204

DESCRIPTION: Steel body, Pilot ratio 1:8, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/S10F2/G5.p0.PR/ac** CODE: 1515732205

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)



## Ordering codes and description composition

### VOSL/V1516 Complete valves

#### Vented (V) configuration with G2/4 thread

TYPE: **VOSL/V1516/34/G5.p4.PR/ac** CODE: 1514742100

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/34/G5.p8.PR/ac** CODE: 1514742101

DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/34/G5.p0.PR/ac** CODE: 1514742102

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Vented (V) configuration with G3/4 thread and F1 flange

TYPE: **VOSL/V1516/34F1/G5.p4.PR/ac** CODE: 1515742100

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/34F1/G5.p8.PR/ac** CODE: 1515742101

DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/34F1/G5.p0.PR/ac** CODE: 1515742102

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Vented (V) configuration with G3/4 thread and F2 flange

TYPE: **VOSL/V1516/34F2/G5.p4.PR/ac** CODE: 1515742103

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/34F2/G5.p8.PR/ac** CODE: 1515742104

DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/34F2/G5.p0.PR/ac** CODE: 1515742105

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

For other configurations please contact our Sales Dpt.

### VOSL/V1516 Complete valves

#### Vented (V) configuration with SAE12 thread

TYPE: **VOSL/V1516/S12/G5.p4.PR/ac** CODE: 1514742200

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/S12/G5.p8.PR/ac** CODE: 1514742201

DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/S12/G5.p0.PR/ac** CODE: 1514742202

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Vented (V) configuration with SAE12 thread and F1 flange

TYPE: **VOSL/V1516/S12F1/G5.p4.PR/ac** CODE: 1515742100

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/S12F1/G5.p8.PR/ac** CODE: 1515742101

DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/S12F1/G5.p0.PR/ac** CODE: 1515742102

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Vented (V) configuration with SAE12 thread and F2 flange

TYPE: **VOSL/V1516/S12F2/G5.p4.PR/ac** CODE: 1515742103

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/S12F2/G5.p8.PR/ac** CODE: 1515742104

DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/V1516/S12F2/G5.p0.PR/ac** CODE: 1515742105

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

For other configurations please contact our Sales Dpt.

### 1 Pressure setting spring

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

#### For 1:4 and zero differential pilot ratio

|          |            |                                       |
|----------|------------|---------------------------------------|
| <b>3</b> | 3MOL316450 | For range 100-210 bar (725-3050 psi)  |
| <b>5</b> | 3MOL316430 | For range 150-350 bar (2175-5075 psi) |
| <b>7</b> | 3MOL316411 | For range 200-400 bar (2900-5800 psi) |

#### For 1:8 pilot ratio

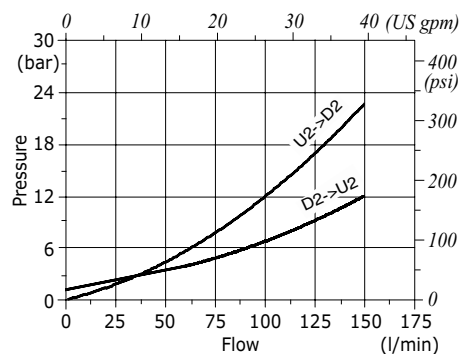
|          |            |                                       |
|----------|------------|---------------------------------------|
| <b>5</b> | 3MOL316450 | For range 150-350 bar (2175-5075 psi) |
| <b>7</b> | 3MOL316430 | For range 200-400 bar (2900-5800 psi) |

### 2 Antitampering cap

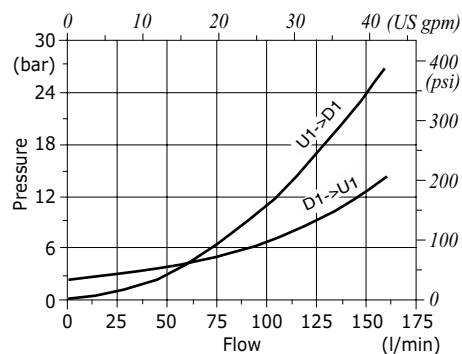
| TYPE     | CODE       | DESCRIPTION       |
|----------|------------|-------------------|
| <b>G</b> | -          | Screw setting     |
| <b>Z</b> | 4COP140311 | Antitampering cap |

### Rating diagrams

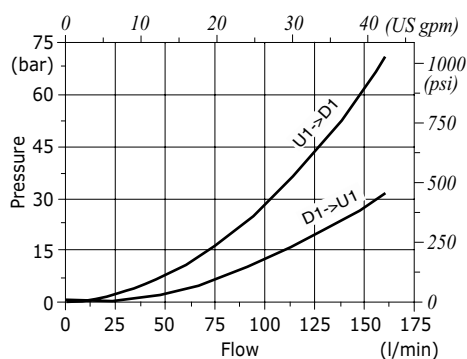
**VOSL/(N-V) 1516 (12-34) pressure drop vs. flow  
from D2->U2 and U2->D2**



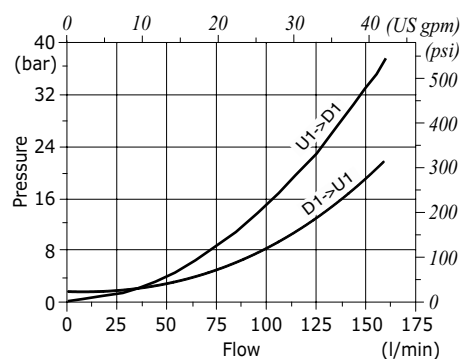
**VOSL/(N-V) 1516 (12-34) pressure drop vs. flow  
from D1->U1 and U1->D1 pilot ratio 1:4**



**VOSL/(N-V) 1516 (12-34) pressure drop vs. flow  
from D1->U1 and U1->D1 pilot ratio 1:8**



**VOSL/(N-V) 1516 (12-34) pressure drop vs. flow  
from D1->U1 and U1->D1 zero differential pilot ratio**





## Type VODL/N1516/CS - VODL/V1516/CS counterbalance valves

- Double acting
- Load Sensitive (type N)
- Vented (type V)

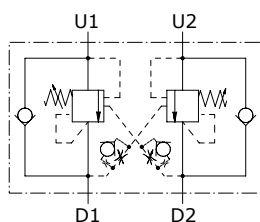
Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

### VODL/N1516/CS (12-34) - VODL/V1516/CS (12-34)

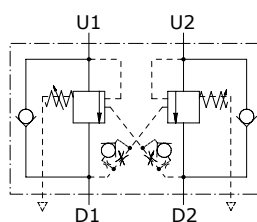
|                                            |                                                                                                                                                                                        |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nominal flow                               | 160 l/min (42.3 US gpm)                                                                                                                                                                |
| Max. pressure                              | 350 bar <sup>(1)</sup> (5100 psi) - 400 bar <sup>(2)</sup> (5800 psi)                                                                                                                  |
| Oil leakage                                | 0.5 cm <sup>3</sup> /min (0.030 in <sup>3</sup> /min) - 10 drops/min at 80% of pressure setting                                                                                        |
| Fluid                                      | mineral based oil                                                                                                                                                                      |
| Viscosity                                  | from 10 to 200 cSt                                                                                                                                                                     |
| Max. level of contamination                | 18/16/13 ISO4406                                                                                                                                                                       |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 90°C (194°F)                                                                                                                                       |
| Environmental temp. for working conditions | from -20°C (-4°F) to 50°C (122°F)                                                                                                                                                      |
| Weight                                     | <b>VODL/N1516/CS/12:</b> 5.40 kg (11.90 lb) - <b>VODL/N1516/CS/34:</b> 5.30 kg (11.68 lb)<br><b>VODL/V1516/CS/12:</b> 5.40 kg (11.90 lb) - <b>VODL/V1516/CS/34:</b> 5.30 kg (11.68 lb) |

NOTE - For different conditions, please contact Walvoil Sales Dpt. - <sup>(1)</sup>According to NFPA T 2.6.1., fatigue rating verified for 1 million cycles on 6 sample valves with test Pressure = 1.23 x Max. pressure indicated - <sup>(2)</sup>Intermittent pressure at max. 100,000 cycles with specific internal testing.

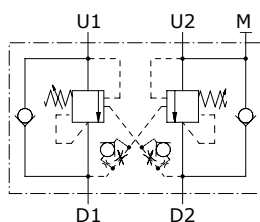
#### VODL/N1516/CS



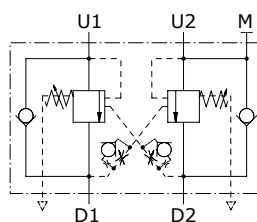
#### VODL/V1516/CS



#### VODL/N1516/CS/F2



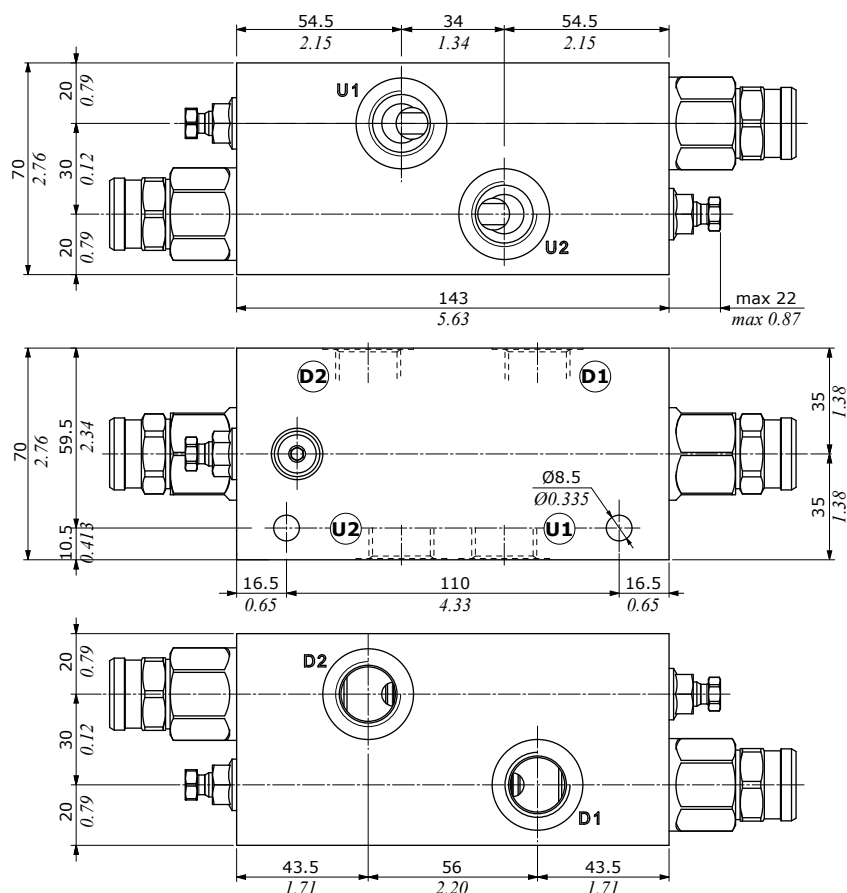
#### VODL/V1516/CS/F2





# Dimensions

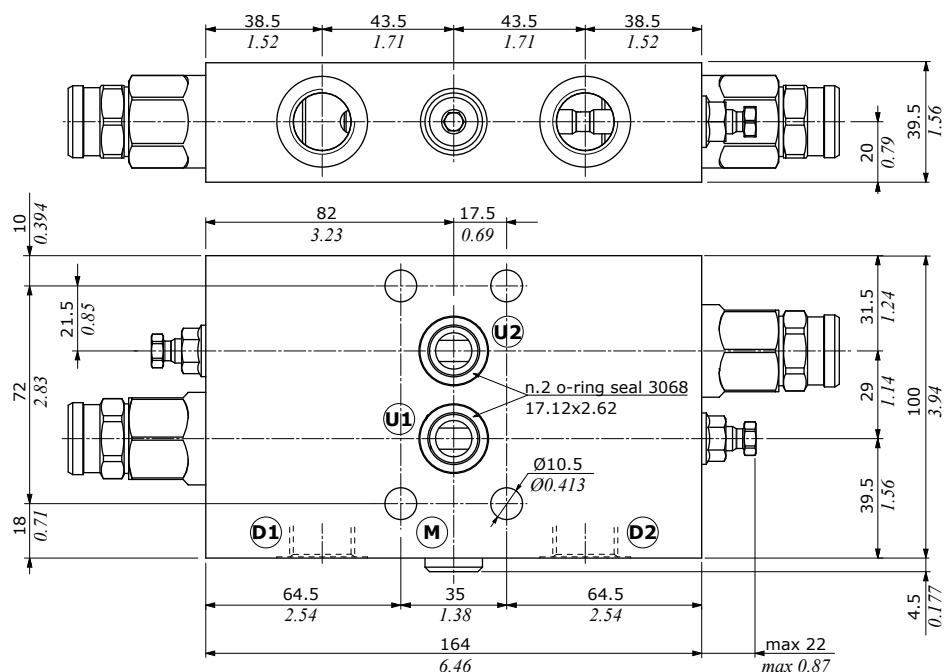
## VODL/...1516/CS/12 - VODL/...1516/CS/34



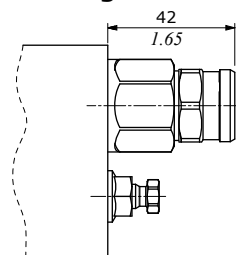
| Valve type           | D1   | D2            | U1   | U2 | M |
|----------------------|------|---------------|------|----|---|
| VODL/...1516/CS/12   | G1/2 | G1/2          | -    | -  | - |
| VODL/...1516/CS/34   | G3/4 | G3/4          | -    | -  | - |
| VODL/...1516/CS/12F2 | G1/2 | Ø12<br>Ø0.472 | G1/4 | -  | - |
| VODL/...1516/CS/34F2 | G3/4 | Ø12<br>Ø0.472 | G1/4 | -  | - |

| Valve type            | D1    | D2            | U1   | U2 | M |
|-----------------------|-------|---------------|------|----|---|
| VODL/...1516/CS/S10   | SAE10 | SAE10         | -    | -  | - |
| VODL/...1516/CS/S12   | SAE12 | SAE12         | -    | -  | - |
| VODL/...1516/CS/S10F2 | SAE10 | Ø12<br>Ø0.472 | G1/4 | -  | - |
| VODL/...1516/CS/S12F2 | SAE12 | Ø12<br>Ø0.472 | G1/4 | -  | - |

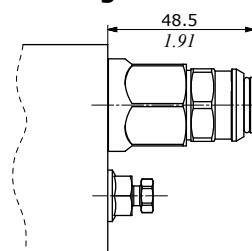
## VODL/...1516/CS/12F2 - VODL/...1516/CS/34F2



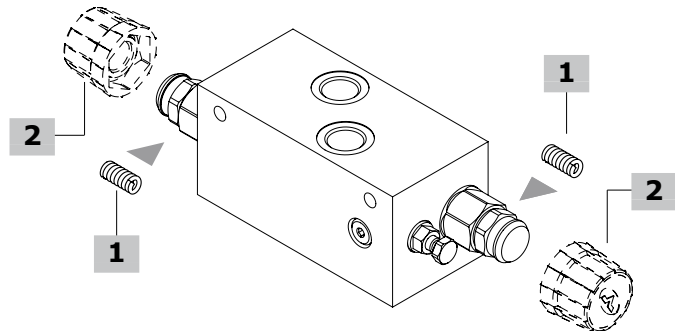
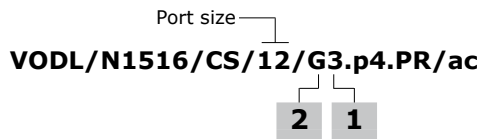
## VODL/N configuration



## VODL/V configuration



## Ordering codes and description composition



### VODL/N1516 Complete valves

#### Load sensitive (N) configuration with G1/2 thread

##### Pilot ratio 1:4

TYPE: **VODL/N1516/CS/12/G3.p4.PR/ac** CODE: 1556532100  
DESCRIPTION: Steel body, range 100-210 bar (1450-3050 psi), std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1516/CS/12/G5.p4.PR/ac** CODE: 1556532101  
DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1516/CS/12/G7.p4.PR/ac** CODE: 1556532102  
DESCRIPTION: range 200-400 bar (2900-5800 psi), std setting 350 bar (5075 psi) @ 5 l/min (1.32 US gpm)

##### Pilot ratio 1:8

TYPE: **VODL/N1516/CS/12/G5.p8.PR/ac** CODE: 1556532104  
DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1516/CS/12/G7.p8.PR/ac** CODE: 1556532105  
DESCRIPTION: Steel body, range 200-400 bar (2900-5800 psi), std setting 350 bar (5075 psi) @ 5 l/min (1.32 US gpm)

##### Zero differential pilot ratio

TYPE: **VODL/N1516/CS/12/G3.p0.PR/ac** CODE: 1556532106  
DESCRIPTION: Steel body, range 50-210 bar (725-3050 psi), std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1516/CS/12/G5.p0.PR/ac** CODE: 1556532107  
DESCRIPTION: Steel body, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1516/CS/12/G7.p0.PR/ac** CODE: 1556532108  
DESCRIPTION: Steel body, range 150-400 bar (2175-5800 psi), std setting 350 bar (5075 psi) @ 5 l/min (1.32 US gpm)

#### Load sensitive (N) configuration with G1/2 thread and F2 flange

TYPE: **VODL/N1516/CS/12F2/G5.p4.PR/ac** CODE: 1557032100  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1516/CS/12F2/G5.p8.PR/ac** CODE: 1557032101  
DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1516/CS/12F2/G5.p0.PR/ac** CODE: 1557032102  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Load sensitive (N) configuration with SAE10 thread

##### Pilot ratio 1:4

TYPE: **VODL/N1516/CS/S10/G3.p4.PR/ac** CODE: 1556532200  
DESCRIPTION: Steel body, range 100-210 bar (1450-3050 psi), std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1516/CS/S10/G5.p4.PR/ac** CODE: 1556532201  
DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1516/CS/S10/G7.p4.PR/ac** CODE: 1556532202  
DESCRIPTION: range 300-400 bar (2900-5800 psi), std setting 350 bar (5075 psi) @ 5 l/min (1.32 US gpm)

### VODL/N1516 Complete valves (continue)

#### Load sensitive (N) configuration with SAE10 thread

##### Pilot ratio 1:8

TYPE: **VODL/N1516/CS/S10/G5.p8.PR/ac** CODE: 1556532204  
DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1516/CS/S10/G7.p8.PR/ac** CODE: 1556532205  
DESCRIPTION: Steel body, range 200-400 bar (2900-5800 psi), std setting 350 bar (5075 psi) @ 5 l/min (1.32 US gpm)

##### Zero differential pilot ratio

TYPE: **VODL/N1516/CS/S10/G3.p0.PR/ac** CODE: 1556532206  
DESCRIPTION: Steel body, range 50-210 bar (725-3050 psi), std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1516/CS/S10/G5.p0.PR/ac** CODE: 1556532207  
DESCRIPTION: Steel body, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1516/CS/S10/G7.p0.PR/ac** CODE: 1556532208  
DESCRIPTION: Steel body, range 150-400 bar (2175-5800 psi), std setting 350 bar (5075 psi) @ 5 l/min (1.32 US gpm)

#### Load sensitive (N) configuration with SAE10 thread and F2 flange

TYPE: **VODL/N1516/CS/S10F2/G5.p4.PR/ac** CODE: 1557032200  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1516/CS/S10F2/G5.p8.PR/ac** CODE: 1557032201  
DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1516/CS/S10F2/G5.p0.PR/ac** CODE: 1557032202  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

### 1 Pressure setting spring

| TYPE                                             | CODE       | DESCRIPTION                           |
|--------------------------------------------------|------------|---------------------------------------|
| <b>For 1:4 and zero differential pilot ratio</b> |            |                                       |
| <b>3</b>                                         | 3MOL316450 | For range 100-210 bar (725-3050 psi)  |
| <b>5</b>                                         | 3MOL316430 | For range 150-350 bar (2175-5075 psi) |
| <b>7</b>                                         | 3MOL316411 | For range 200-400 bar (2900-5800 psi) |
| <b>For 1:8 pilot ratio</b>                       |            |                                       |
| <b>5</b>                                         | 3MOL316450 | For range 150-350 bar (2175-5075 psi) |
| <b>7</b>                                         | 3MOL316430 | For range 200-400 bar (2900-5800 psi) |

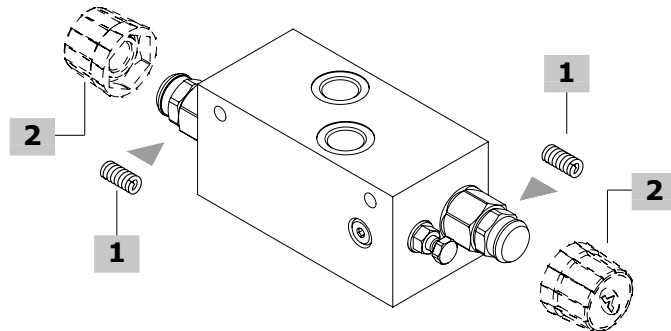
### 2 Antitampering cap

| TYPE     | CODE       | DESCRIPTION       |
|----------|------------|-------------------|
| <b>G</b> | -          | Screw setting     |
| <b>Z</b> | 4COP140311 | Antitampering cap |

## Ordering codes and description composition

Port size  
VODL/N1516/CS/34/G3.p4.PR/ac

2 1



## VODL/N1516 Complete valves

**Load sensitive (N) configuration with G3/4 thread**TYPE: **VODL/N1516/CS/34/G5.p4.PR/ac** CODE: 1556542100

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1516/CS/34/G5.p8.PR/ac** CODE: 1556542101

DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1516/CS/34/G5.p0.PR/ac** CODE: 1556542102

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) 5 l/min (1.32 US gpm)

**Load sensitive (N) configuration with G3/4 thread and F2 flange**TYPE: **VODL/N1516/CS/34F2/G5.p4.PR/ac** CODE: 1557042100

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1516/CS/34F2/G5.p8.PR/ac** CODE: 1557042101

DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1516/CS/34F2/G5.p0.PR/ac** CODE: 1557042102

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

For other configurations please contact our Sales Dpt.

## VODL/N1516 Complete valves

**Load sensitive (N) configuration with SAE12 thread**TYPE: **VODL/N1516/CS/S12/G5.p4.PR/ac** CODE: 1556542200

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1516/CS/S12/G5.p8.PR/ac** CODE: 1556542201

DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1516/CS/S12/G5.p0.PR/ac** CODE: 1556542202

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) 5 l/min (1.32 US gpm)

**Load sensitive (N) configuration with SAE12 thread and F2 flange**TYPE: **VODL/N1516/CS/S12F2/G5.p4.PR/ac** CODE: 1557042200

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1516/CS/S12F2/G5.p8.PR/ac** CODE: 1557042201

DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1516/CS/S12F2/G5.p0.PR/ac** CODE: 1557042202

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

For other configurations please contact our Sales Dpt.

**1 Pressure setting spring**

TYPE CODE DESCRIPTION

**For 1:4 and zero differential pilot ratio**

|          |            |                                       |
|----------|------------|---------------------------------------|
| <b>3</b> | 3MOL316450 | For range 100-210 bar (1450-3050 psi) |
| <b>5</b> | 3MOL316430 | For range 150-350 bar (2175-5075 psi) |
| <b>7</b> | 3MOL316411 | For range 200-400 bar (2900-5800 psi) |

**For 1:8 pilot ratio**

|          |            |                                       |
|----------|------------|---------------------------------------|
| <b>5</b> | 3MOL316450 | For range 150-350 bar (2175-5075 psi) |
| <b>7</b> | 3MOL316430 | For range 200-400 bar (2900-5800 psi) |

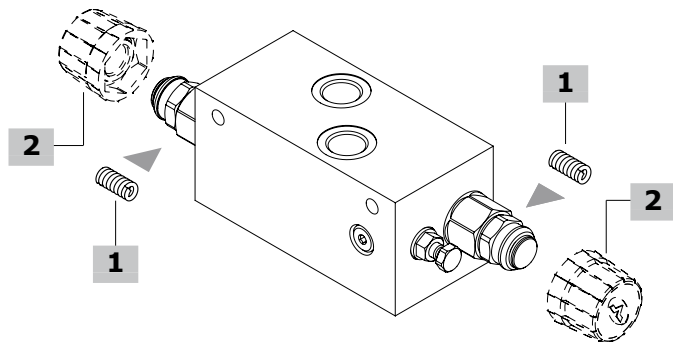
**2 Antitampering cap**

|          |            |                   |
|----------|------------|-------------------|
| TYPE     | CODE       | DESCRIPTION       |
| <b>G</b> | -          | Screw setting     |
| <b>Z</b> | 4COP140311 | Antitampering cap |

## Ordering codes and description composition

Port size  
**VODL/V1516/CS/12/G3.p4.PR/ac**

**2 1**



### VODL/V1516 Complete valves

#### Vented (V) configuration with G1/2 thread

##### Pilot ratio 1:4

TYPE: **VODL/V1516/CS/12/G3.p4.PR/ac** CODE: 1556632100  
DESCRIPTION: Steel body, range 100-210 bar (1450-3050 psi), std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1516/CS/12/G5.p4.PR/ac** CODE: 1556632101  
DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1516/CS/12/G7.p4.PR/ac** CODE: 1556632102  
DESCRIPTION: Steel body, range 200-400 bar (2900-5800 psi), std setting 350 bar (5075 psi) @ 5 l/min (1.32 US gpm)

##### Pilot ratio 1:8

TYPE: **VODL/V1516/CS/12/G5.p8.PR/ac** CODE: 1556632104  
DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/N1516/CS/12/G7.p8.PR/ac** CODE: 1556532105  
DESCRIPTION: Steel body, range 200-400 bar (2900-5800 psi), std setting 350 bar (5075 psi) @ 5 l/min (1.32 US gpm)

##### Zero differential pilot ratio

TYPE: **VODL/V1516/CS/12/G3.p0.PR/ac** CODE: 1556632106  
DESCRIPTION: Steel body, range 50-210 bar (725-3050 psi), std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1516/CS/12/G5.p0.PR/ac** CODE: 1556632107  
DESCRIPTION: Steel body, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1516/CS/12/G7.p0.PR/ac** CODE: 1556632108  
DESCRIPTION: Steel body, range 150-400 bar (2175-5800 psi), std setting 350 bar (5075 psi) @ 5 l/min (1.32 US gpm)

#### Vented (V) configuration with G1/2 thread and F2 flange

TYPE: **VODL/V1516/CS/12F2/G5.p4.PR/ac** CODE: 1557132100  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1516/CS/12F2/G5.p8.PR/ac** CODE: 1557132101  
DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1516/CS/12F2/G5.p0.PR/ac** CODE: 1557132102  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

#### Vented (V) configuration with SAE10 thread

##### Pilot ratio 1:4

TYPE: **VODL/V1516/CS/S10/G3.p4.PR/ac** CODE: 1556632200  
DESCRIPTION: Steel body, range 100-210 bar (725-3050 psi), std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1516/CS/S10/G5.p4.PR/ac** CODE: 1556632201  
DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1516/CS/S10/G7.p4.PR/ac** CODE: 1556632202  
DESCRIPTION: Steel body, range 200-400 bar (2900-5800 psi), std setting 350 bar (5075 psi) @ 5 l/min (1.32 US gpm)

### VODL/V1516 Complete valves

#### Vented (V) configuration with SAE10 thread

##### Pilot ratio 1:8

TYPE: **VODL/V1516/CS/S10/G5.p8.PR/ac** CODE: 1556632204  
DESCRIPTION: Steel body, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1516/CS/S10/G7.p8.PR/ac** CODE: 1556632205  
DESCRIPTION: Steel body, range 200-400 bar (2900-5800 psi), std setting 350 bar (5075 psi) @ 5 l/min (1.32 US gpm)

##### Zero differential pilot ratio

TYPE: **VODL/V1516/CS/S10/G3.p0.PR/ac** CODE: 1556632206  
DESCRIPTION: Steel body, range 50-210 bar (725-3050 psi), std setting 150 bar (2175 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1516/CS/S10/G5.p0.PR/ac** CODE: 1556632207  
DESCRIPTION: Steel body, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1516/CS/S10/G7.p0.PR/ac** CODE: 1556632208  
DESCRIPTION: Steel body, range 150-400 bar (2175-5800 psi), std setting 350 bar (5075 psi) @ 5 l/min (1.32 US gpm)

#### Vented (V) configuration with SAE10 thread and F2 flange

TYPE: **VODL/V1516/CS/S10F2/G5.p4.PR/ac** CODE: 1557132200  
DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1516/CS/S10F2/G5.p8.PR/ac** CODE: 1557132201  
DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1516/CS/S10F2/G5.p0.PR/ac** CODE: 1557132202  
DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

For other configurations please contact our Sales Dpt.

### 1 Pressure setting spring

| TYPE                                             | CODE       | DESCRIPTION                           |
|--------------------------------------------------|------------|---------------------------------------|
| <b>For 1:4 and zero differential pilot ratio</b> |            |                                       |
| <b>3</b>                                         | 3MOL316450 | For range 100-210 bar (725-3050 psi)  |
| <b>5</b>                                         | 3MOL316430 | For range 150-350 bar (2175-5075 psi) |
| <b>7</b>                                         | 3MOL316411 | For range 200-400 bar (2175-5800 psi) |

#### **For 1:8 pilot ratio**

|          |            |                                       |
|----------|------------|---------------------------------------|
| <b>5</b> | 3MOL316450 | For range 150-350 bar (2175-5075 psi) |
| <b>7</b> | 3MOL316430 | For range 200-400 bar (2900-5800 psi) |

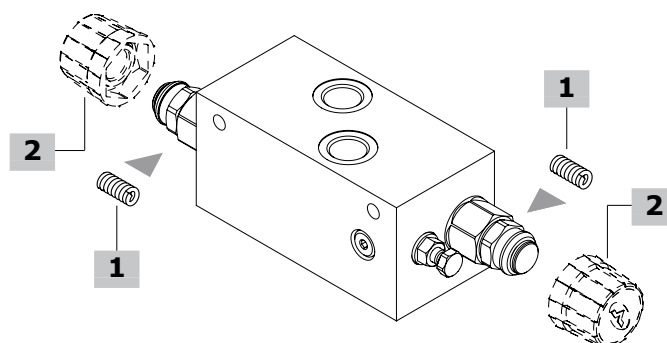
### 2 Antitampering cap

| TYPE     | CODE       | DESCRIPTION       |
|----------|------------|-------------------|
| <b>G</b> | -          | Screw setting     |
| <b>Z</b> | 4COP140311 | Antitampering cap |

## Ordering codes and description composition

Port size  
VODL/V1516/CS/34/G3.p4.PR/ac

2 1



## VODL/V1516 Complete valves

**Vented (V) configuration with G3/4 thread**

TYPE: **VODL/V1516/CS/34/G5.p4.PR/ac** CODE: 1556642100

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1516/CS/34/G5.p8.PR/ac** CODE: 1556642101

DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1516/CS/34/G5.p0.PR/ac** CODE: 1556642102

DESCRIPTION: Steel body, zero differential pilot ratio, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

**Vented (V) configuration with G3/4 thread and F2 flange**

TYPE: **VODL/V1516/CS/34F2/G5.p4.PR/ac** CODE: 1557142100

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1516/CS/34F2/G5.p8.PR/ac** CODE: 1557142101

DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1516/CS/34F2/G5.p0.PR/ac** CODE: 1557142102

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

For other configurations please contact our Sales Dpt.

## VODL/V1516 Complete valves

**Vented (V) configuration with SAE12 thread**

TYPE: **VODL/V1516/CS/S12/G5.p4.PR/ac** CODE: 1556642200

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1516/CS/S12/G5.p8.PR/ac** CODE: 1556642201

DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1516/CS/S12/G5.p0.PR/ac** CODE: 1556642202

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

**Vented (V) configuration with SAE12 thread and F2 flange**

TYPE: **VODL/V1516/CS/S12F2/G5.p4.PR/ac** CODE: 1557142200

DESCRIPTION: Steel body, pilot ratio 1:4, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1516/CS/S12F2/G5.p8.PR/ac** CODE: 1557142201

DESCRIPTION: Steel body, pilot ratio 1:8, range 150-350 bar (2175-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/V1516/CS/S12F2/G5.p0.PR/ac** CODE: 1557142202

DESCRIPTION: Steel body, zero differential pilot ratio, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

For other configurations please contact our Sales Dpt.

## 1 Pressure setting spring

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

**For 1:4 and zero differential pilot ratio**

|   |            |                                       |
|---|------------|---------------------------------------|
| 3 | 3MOL316450 | For range 100-210 bar (1450-3050 psi) |
|---|------------|---------------------------------------|

|   |            |                                       |
|---|------------|---------------------------------------|
| 5 | 3MOL316430 | For range 150-350 bar (2175-5075 psi) |
|---|------------|---------------------------------------|

|   |            |                                       |
|---|------------|---------------------------------------|
| 7 | 3MOL316411 | For range 200-400 bar (2900-5800 psi) |
|---|------------|---------------------------------------|

**For 1:8 pilot ratio**

|   |            |                                       |
|---|------------|---------------------------------------|
| 5 | 3MOL316450 | For range 150-350 bar (2175-5075 psi) |
|---|------------|---------------------------------------|

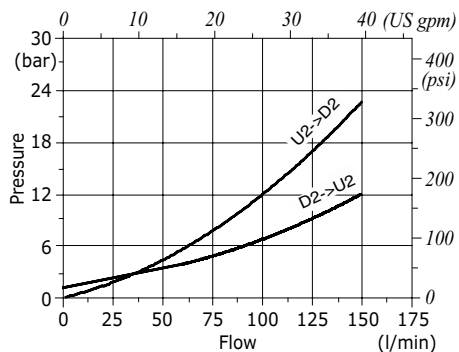
|   |            |                                       |
|---|------------|---------------------------------------|
| 7 | 3MOL316430 | For range 200-400 bar (2900-5800 psi) |
|---|------------|---------------------------------------|

## 2 Antitampering cap

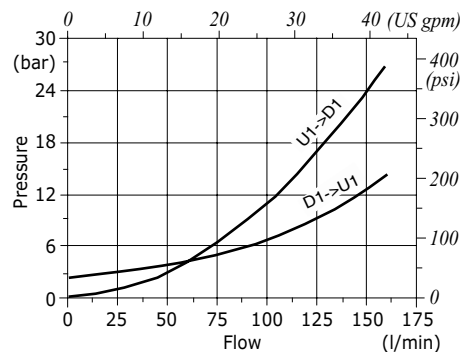
| TYPE | CODE       | DESCRIPTION       |
|------|------------|-------------------|
| G    | -          | Screw setting     |
| Z    | 4COP140311 | Antitampering cap |

**Rating diagrams**

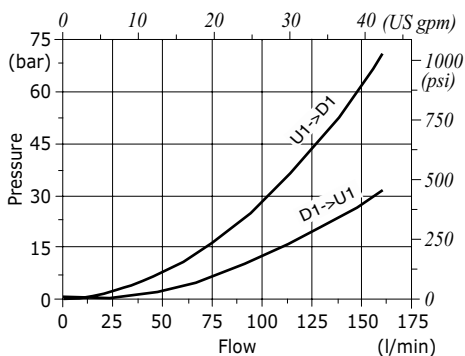
**VODL/(N-V) 1516/CS (12-34) pressure drop vs. flow from D2->U2 and U2->D2**



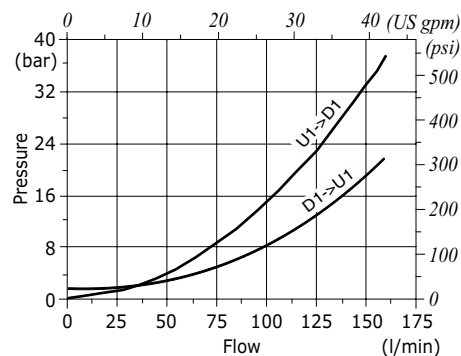
**VODL/(N-V) 1516/CS (12-34) pressure drop vs. flow from D1->U1 and U1->D1 pilot ratio 1:4**



**VODL/(N-V) 1516/CS (12-34) pressure drop vs. flow from D1->U1 and U1->D1 pilot ratio 1:8**



**VODL/(N-V) 1516/CS (12-34) pressure drop vs. flow from D1->U1 and U1->D1 zero differential pilot ratio**









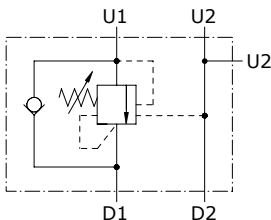
## Type VOSL counterbalance valves

- Single acting
- Load sensitive

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

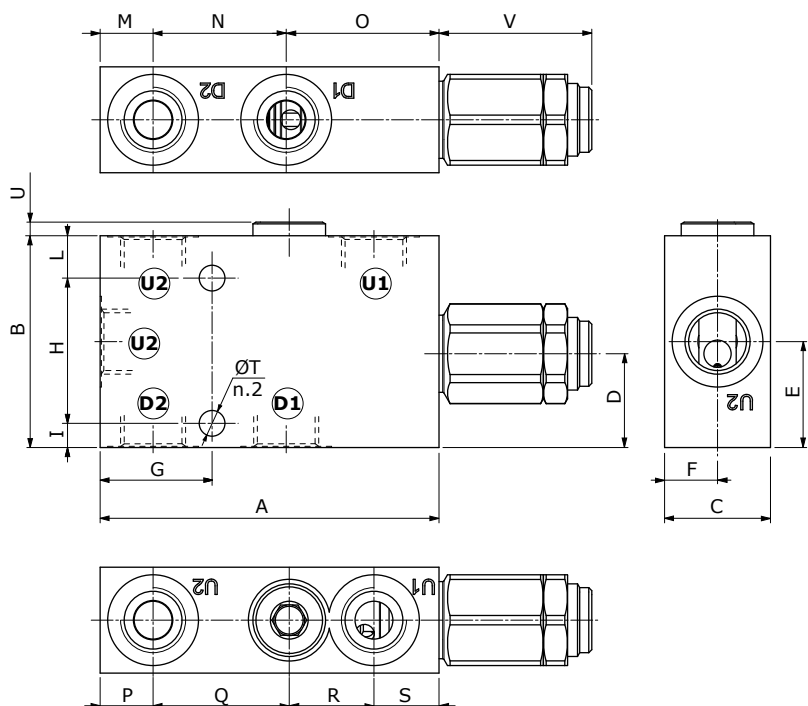
|                                            |           | VOSL 38                                                                                  | VOSL 12                   | VOSL 34                    | VOSL 100                   |
|--------------------------------------------|-----------|------------------------------------------------------------------------------------------|---------------------------|----------------------------|----------------------------|
| Nominal flow                               |           | 35 l/min<br>(9.2 US gpm)                                                                 | 70 l/min<br>(18.4 US gpm) | 100 l/min<br>(26.4 US gpm) | 180 l/min<br>(47.6 US gpm) |
| Max. pressure                              |           | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi)                   |                           |                            |                            |
| Oil leakage                                |           | 0.25 cm³/min - 0.015 in³/min. (5 drops) at 210 bar - 3050 psi at 80% of pressure setting |                           |                            |                            |
| Fluid                                      |           | mineral based oil                                                                        |                           |                            |                            |
| Viscosity                                  |           | from 10 to 200 cSt                                                                       |                           |                            |                            |
| Max. level of contamination                |           | 18/16/13 ISO4406                                                                         |                           |                            |                            |
| Fluid temperature                          |           | with NBR seals from -20°C (-4°F) to 80°C (176°F)                                         |                           |                            |                            |
| Environmental temp. for working conditions |           | from -40°C (-40°F) to 100°C (212°F)                                                      |                           |                            |                            |
| Weight                                     | aluminium | 0.78 kg (1.71 lb)                                                                        | 1.00 kg (2.20 lb)         | 1.85 kg (4.07 lb)          | 3.26 kg (7.18 lb)          |
|                                            | steel     | 1.52 kg (3.35 lb)                                                                        | 1.95 kg (4.29 lb)         | 3.55 kg (7.82 lb)          | 7.07 kg (15.5 lb)          |

NOTE - For different conditions, please contact Walvoil Sales Dpt.





### Dimensions



| Valve type | D1   | D2 | U1   | U2 |
|------------|------|----|------|----|
| VOSL 38    | G3/8 |    | G3/8 |    |
| VOSL 12    | G1/2 |    | G1/2 |    |
| VOSL 34    | G3/4 |    | G3/4 |    |
| VOSL 100   | G1"  |    | G1"  |    |

Dimensions are in mm-in

| Valve type | A           | B           | C          | D          | E            | F            | G          | H          | I           | L           | M            | N          | O            | P            | Q          | R          | S            | ØT            | U             | V          |
|------------|-------------|-------------|------------|------------|--------------|--------------|------------|------------|-------------|-------------|--------------|------------|--------------|--------------|------------|------------|--------------|---------------|---------------|------------|
| VOSL 38    | 105<br>4.13 | 65<br>2.56  | 30<br>1.18 | 27<br>1.06 | 32.5<br>1.30 | 15<br>0.59   | 34<br>1.34 | 40<br>1.57 | 8<br>0.315  | 17<br>0.67  | 16<br>0.63   | 38<br>1.50 | 51<br>2.01   | 16<br>0.63   | 38<br>1.50 | 29<br>1.14 | 22<br>0.87   | 8.5<br>0.335  | 4.5<br>0.177  | 52<br>2.05 |
| VOSL 12    | 112<br>4.41 | 70<br>2.76  | 35<br>1.38 | 31<br>1.22 | 35<br>1.38   | 17.5<br>0.69 | 37<br>1.46 | 48<br>1.89 | 8<br>0.315  | 14<br>0.55  | 17.5<br>0.69 | 44<br>1.73 | 50.5<br>1.99 | 17.5<br>0.69 | 45<br>1.77 | 28<br>1.10 | 21.5<br>0.85 | 8.5<br>0.335  | 4.5<br>0.177  | 57<br>2.24 |
| VOSL 34    | 140<br>5.51 | 90<br>3.54  | 40<br>1.57 | 36<br>1.42 | 45<br>1.77   | 20<br>0.79   | 52<br>2.05 | 70<br>2.76 | 10<br>0.394 | 10<br>0.394 | 22<br>0.87   | 53<br>2.09 | 65<br>2.56   | 22<br>0.87   | 53<br>2.09 | 35<br>1.38 | 30<br>1.18   | 10.5<br>0.413 | 5.5<br>0.217  | 66<br>2.60 |
| VOSL 100   | 174<br>6.85 | 100<br>3.64 | 60<br>2.36 | 37<br>1.46 | 50<br>1.97   | 37<br>1.46   | 64<br>2.52 | 80<br>3.15 | 10<br>0.394 | 10<br>0.394 | 32<br>1.26   | 66<br>2.60 | 76<br>2.99   | 32<br>1.26   | 66<br>2.60 | 46<br>1.81 | 30<br>1.18   | 10.5<br>0.413 | 12.5<br>0.492 | 66<br>2.60 |

### Ordering codes

#### VOSL complete valves

TYPE: **VOSL 38/TR.S.p4** CODE: 1510021102  
 DESCRIPTION: Aluminium body, G3/8 ports, pilot ratio 1:4, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL 12/TR.S.p7** CODE: 1510031102  
 DESCRIPTION: Aluminium body, G1/2 ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

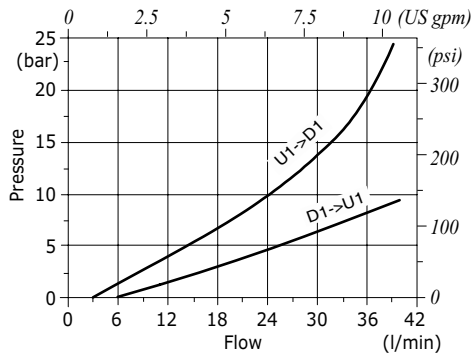
TYPE: **VOSL 34/TR.S.p7** CODE: 1510041102  
 DESCRIPTION: Aluminium body, G3/4 ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL 100/TR.S.p7** CODE: 1510051102  
 DESCRIPTION: Aluminium body, G1" ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

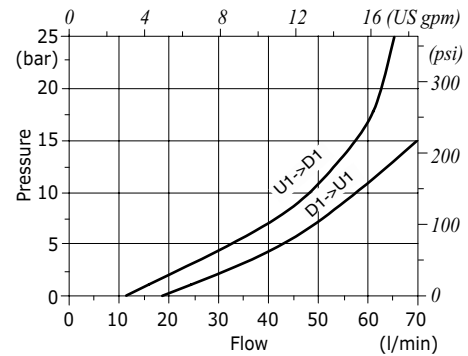
For other configurations and steel body, please contact our Sales Dpt

**Rating diagrams**

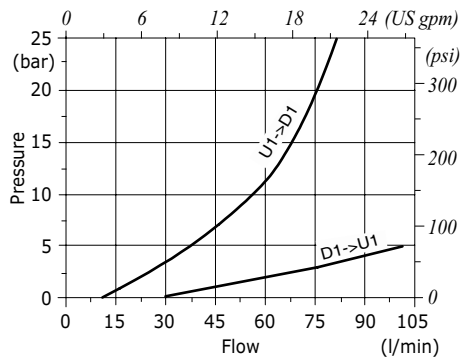
**VOSL 38 pressure drop vs. flow  
from D1->U1 and U1->D1**



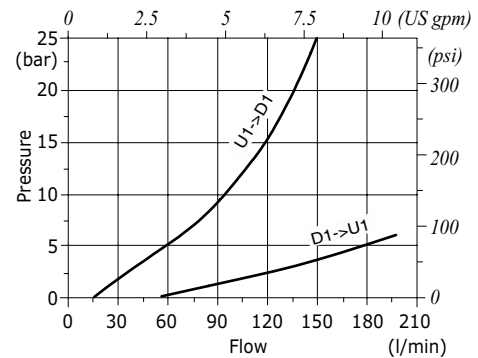
**VOSL 12 pressure drop vs. flow  
from D1->U1 and U1->D1**



**VOSL 34 pressure drop vs. flow  
from D1->U1 and U1->D1**



**VOSL 100 pressure drop vs. flow  
from D1->U1 and U1->D1**







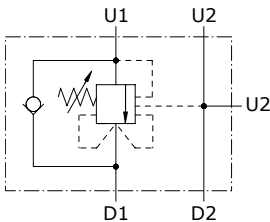
## Type VOSL/CC counterbalance valves

- Single acting
- Relief compensated

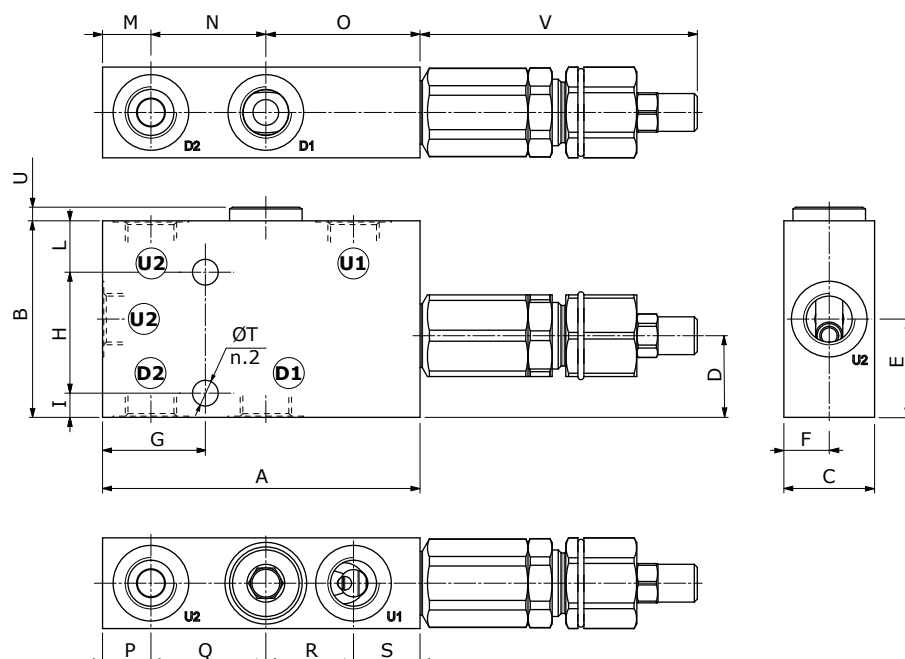
Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                            | VOSL/CC 38                                                                               | VOSL/CC 12                | VOSL/CC 34                 | VOSL/CC 100                |                   |
|--------------------------------------------|------------------------------------------------------------------------------------------|---------------------------|----------------------------|----------------------------|-------------------|
| Nominal flow                               | 35 l/min<br>(9.2 US gpm)                                                                 | 70 l/min<br>(18.4 US gpm) | 100 l/min<br>(26.4 US gpm) | 180 l/min<br>(47.6 US gpm) |                   |
| Max. pressure                              | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi)                   |                           |                            |                            |                   |
| Oil leakage                                | 0.25 cm³/min - 0.015 in³/min. (5 drops) at 210 bar - 3050 psi at 80% of pressure setting |                           |                            |                            |                   |
| Fluid                                      | mineral based oil                                                                        |                           |                            |                            |                   |
| Viscosity                                  | from 10 to 200 cSt                                                                       |                           |                            |                            |                   |
| Max. level of contamination                | 18/16/13 ISO4406                                                                         |                           |                            |                            |                   |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F)                                         |                           |                            |                            |                   |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                                                      |                           |                            |                            |                   |
| Weight                                     | aluminium                                                                                | 1.01 kg (2.23 lb)         | 1.16 kg (2.56 lb)          | 1.94 kg (4.28 lb)          | 3.33 kg (7.34 lb) |
|                                            | steel                                                                                    | 1.81 kg (3.99 lb)         | 2.11 kg (4.65 lb)          | 3.61 kg (7.96 lb)          | 7.07 kg (15.5 lb) |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



### Dimensions



| Valve type  | D1   | D2   | U1 | U2 |
|-------------|------|------|----|----|
| VOSL/CC 38  | G3/8 | G3/8 |    |    |
| VOSL/CC 12  | G1/2 | G1/2 |    |    |
| VOSL/CC 34  | G3/4 | G3/4 |    |    |
| VOSL/CC 100 | G1"  | G1"  |    |    |

Dimensions are in mm-in

| Valve type  | A    | B    | C    | D    | E    | F    | G    | H    | I     | L     | M    | N    | O    | P    | Q    | R    | S    | ØT    | U     | V     |
|-------------|------|------|------|------|------|------|------|------|-------|-------|------|------|------|------|------|------|------|-------|-------|-------|
| VOSL/CC 38  | 105  | 65   | 30   | 27   | 32.5 | 15   | 34   | 40   | 8     | 17    | 16   | 38   | 51   | 16   | 38   | 29   | 22   | 8.5   | 4.5   | 92.2  |
|             | 4.13 | 2.56 | 1.18 | 1.06 | 1.30 | 0.59 | 1.34 | 1.57 | 0.315 | 0.67  | 0.63 | 1.50 | 2.01 | 0.63 | 1.50 | 1.14 | 0.87 | 0.335 | 0.177 | 3.63  |
| VOSL/CC 12  | 112  | 70   | 35   | 31   | 35   | 17.5 | 37   | 48   | 8     | 14    | 17.5 | 44   | 50.5 | 17.5 | 45   | 28   | 21.5 | 8.5   | 4.5   | 99.7  |
|             | 4.41 | 2.76 | 1.38 | 1.22 | 1.38 | 0.69 | 1.46 | 1.89 | 0.315 | 0.55  | 0.69 | 1.73 | 1.99 | 0.69 | 1.77 | 1.10 | 0.85 | 0.335 | 0.177 | 3.93  |
| VOSL/CC 34  | 140  | 90   | 40   | 36   | 45   | 20   | 52   | 70   | 10    | 10    | 22   | 53   | 65   | 22   | 53   | 35   | 30   | 10.5  | 5.5   | 101.7 |
|             | 5.51 | 3.54 | 1.57 | 1.42 | 1.77 | 0.79 | 2.05 | 2.76 | 0.394 | 0.394 | 0.87 | 2.09 | 2.56 | 0.87 | 2.09 | 1.38 | 1.18 | 0.413 | 0.217 | 4.00  |
| VOSL/CC 100 | 174  | 100  | 60   | 37   | 50   | 37   | 64   | 80   | 10    | 10    | 32   | 66   | 76   | 32   | 66   | 46   | 30   | 10.5  | 12.5  | 101.7 |
|             | 6.85 | 3.64 | 2.36 | 1.46 | 1.97 | 1.46 | 2.52 | 3.15 | 0.394 | 0.394 | 1.26 | 2.60 | 2.99 | 1.26 | 2.60 | 1.81 | 1.18 | 0.413 | 0.492 | 4.00  |

### Ordering codes

#### VOSL/CC complete valves

TYPE: **VOSL/CC 38/TR.S.p4** CODE: 1514921100  
 DESCRIPTION: Aluminium body, G3/8 ports, pilot ratio 1:4, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/CC 12/TR.S.p7** CODE: 1514931100  
 DESCRIPTION: Aluminium body, G1/2 ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) 5 l/min (1.32 US gpm)

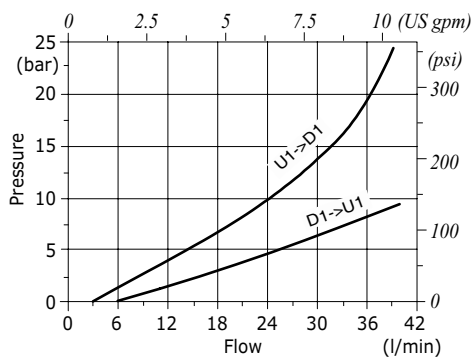
TYPE: **VOSL/CC 34/TR.S.p7** CODE: 1514941101  
 DESCRIPTION: Aluminium body, G3/4 ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) 5 l/min (1.32 US gpm)

TYPE: **VOSL/CC 100/TR.S.p7** CODE: 1514951100  
 DESCRIPTION: Aluminium body, G1" ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) 5 l/min (1.32 US gpm)

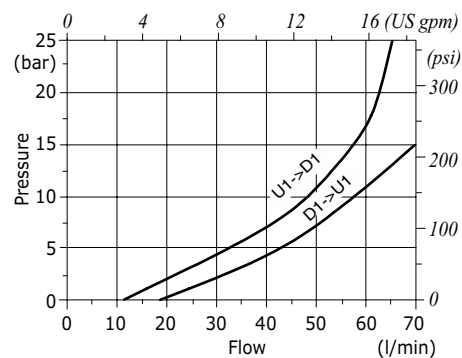
For other configurations and steel body, please contact our Sales Dpt

**Rating diagrams**

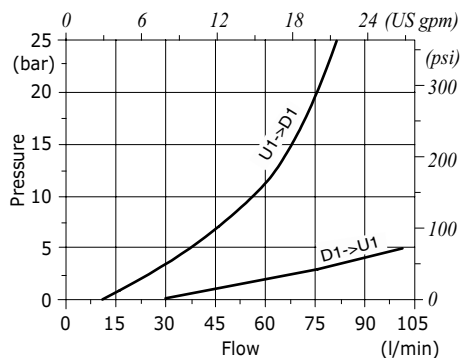
**VOSL/CC 38 pressure drop vs. flow  
from D1->U1 and U1->D1**



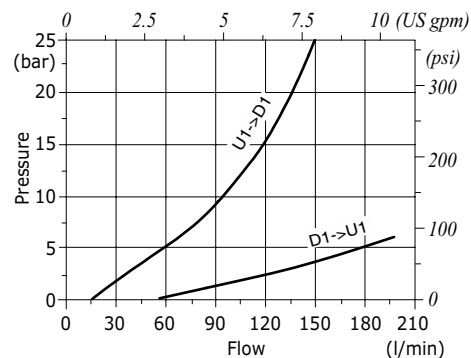
**VOSL/CC 12 pressure drop vs. flow  
from D1->U1 and U1->D1**



**VOSL/CC 34 pressure drop vs. flow  
from D1->U1 and U1->D1**



**VOSL/CC 100 pressure drop vs. flow  
from D1->U1 and U1->D1**







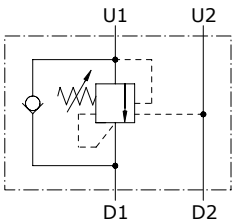
## Type VOSL/SC counterbalance valves

- Single acting

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

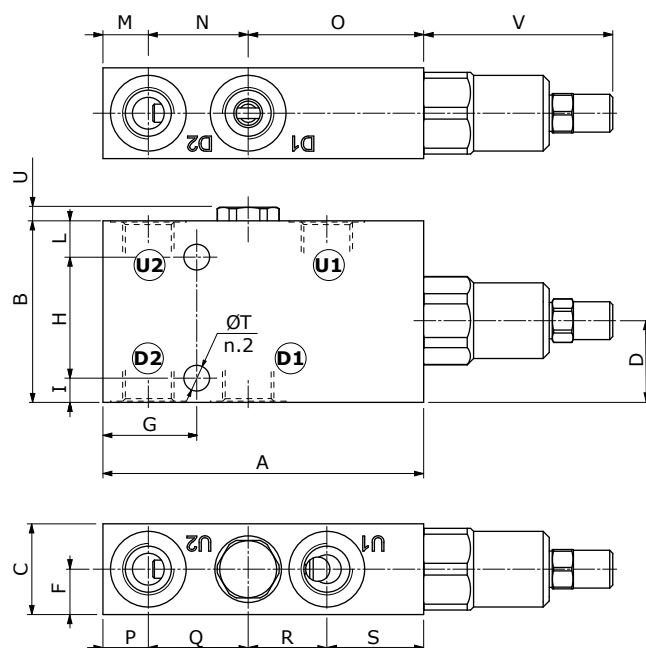
|                                            |           | VOSL/SC 38                                                                               | VOSL/SC 12                | VOSL/SC 34                 | VOSL/SC 100                |
|--------------------------------------------|-----------|------------------------------------------------------------------------------------------|---------------------------|----------------------------|----------------------------|
| Nominal flow                               |           | 40 l/min<br>(10.6 US gpm)                                                                | 75 l/min<br>(19.8 US gpm) | 120 l/min<br>(31.7 US gpm) | 180 l/min<br>(47.6 US gpm) |
| Max. pressure                              |           | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi)                   |                           |                            |                            |
| Oil leakage                                |           | 0.25 cm³/min - 0.015 in³/min. (5 drops) at 210 bar - 3050 psi at 80% of pressure setting |                           |                            |                            |
| Fluid                                      |           | mineral based oil                                                                        |                           |                            |                            |
| Viscosity                                  |           | from 10 to 200 cSt                                                                       |                           |                            |                            |
| Max. level of contamination                |           | 18/16/13 ISO4406                                                                         |                           |                            |                            |
| Fluid temperature                          |           | with NBR seals from -20°C (-4°F) to 80°C (176°F)                                         |                           |                            |                            |
| Environmental temp. for working conditions |           | from -40°C (-40°F) to 100°C (212°F)                                                      |                           |                            |                            |
| Weight                                     | aluminium | 0.80 kg (1.76 lb)                                                                        | 1.06 kg (2.34 lb)         | 1.48 kg (3.26 lb)          | 3.13 kg (6.90 lb)          |
|                                            | steel     | 1.54 kg (3.40 lb)                                                                        | 2.15 kg (4.74 lb)         | 3.34 kg (7.36 lb)          | 7.64 kg (16.8 lb)          |

NOTE - For different conditions, please contact Walvoil Sales Dpt.





### Dimensions



| Valve type  | D1   | D2   | U1 | U2 |
|-------------|------|------|----|----|
| VOSL/SC 38  | G3/8 | G3/8 |    |    |
| VOSL/SC 12  | G1/2 | G1/2 |    |    |
| VOSL/SC 34  | G3/4 | G3/4 |    |    |
| VOSL/SC 100 | G1"  | G1"  |    |    |

Dimensions are in mm-in

| Valve type  | A           | B           | C          | D          | F            | G          | H          | I           | L           | M          | N          | O          | P          | Q          | R          | S          | ØT            | U             | V            |
|-------------|-------------|-------------|------------|------------|--------------|------------|------------|-------------|-------------|------------|------------|------------|------------|------------|------------|------------|---------------|---------------|--------------|
| VOSL/SC 38  | 106<br>4.17 | 60<br>2.36  | 30<br>1.18 | 27<br>1.06 | 15<br>0.89   | 31<br>1.22 | 40<br>1.57 | 8<br>0.315  | 12<br>0.472 | 15<br>0.59 | 33<br>1.30 | 58<br>2.28 | 15<br>0.59 | 33<br>1.30 | 26<br>1.02 | 32<br>1.26 | 8.5<br>0.335  | 4.5<br>0.177  | 62.5<br>2.46 |
| VOSL/SC 12  | 116<br>4.57 | 70<br>2.76  | 35<br>1.38 | 31<br>1.22 | 17.5<br>0.69 | 36<br>1.42 | 48<br>1.89 | 8<br>0.315  | 14<br>0.55  | 16<br>0.63 | 40<br>1.57 | 60<br>2.36 | 16<br>0.63 | 40<br>1.57 | 28<br>1.10 | 32<br>1.26 | 8.5<br>0.335  | 4.5<br>0.177  | 62.5<br>2.46 |
| VOSL/SC 34  | 136<br>5.35 | 90<br>3.54  | 40<br>1.57 | 36<br>1.42 | 20<br>0.79   | 44<br>1.73 | 70<br>2.76 | 10<br>0.394 | 10<br>0.394 | 20<br>0.79 | 48<br>1.89 | 68<br>2.68 | 20<br>0.79 | 48<br>1.89 | 34<br>1.34 | 34<br>1.34 | 10.5<br>0.413 | 5.5<br>0.217  | 62.5<br>2.46 |
| VOSL/SC 100 | 185<br>7.28 | 100<br>3.94 | 60<br>2.36 | 38<br>1.50 | 30<br>1.18   | 62<br>2.44 | 80<br>3.15 | 10<br>0.394 | 10<br>0.394 | 32<br>1.26 | 70<br>2.76 | 83<br>3.27 | 32<br>1.26 | 70<br>2.76 | 48<br>1.89 | 35<br>1.38 | 10.5<br>0.413 | 12.5<br>0.492 | 62.5<br>2.46 |

### Ordering codes

#### VOSL/SC complete valves

TYPE: **VOSL/SC 38/TR.S.p4.PG** CODE: 1520021108

DESCRIPTION: Aluminium body, G3/8 ports, pilot ratio 1:4, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/SC 12/TR.S.p7.PG** CODE: 1520031107

DESCRIPTION: Aluminium body, G1/2 ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/SC 34/TR.S.p7.PG** CODE: 1520041102

DESCRIPTION: Aluminium body, G3/4 ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

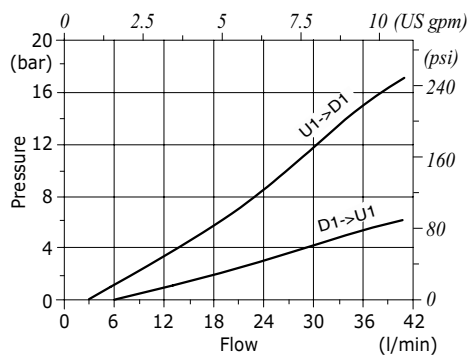
TYPE: **VOSL/SC 100/TR.S.p7.PG** CODE: 1520051102

DESCRIPTION: Aluminium body, G1" ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

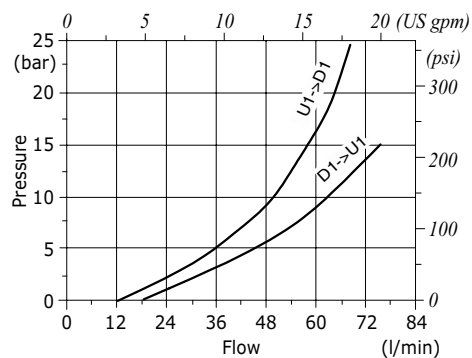
For other configurations and steel body, please contact our Sales Dpt.

**Rating diagrams**

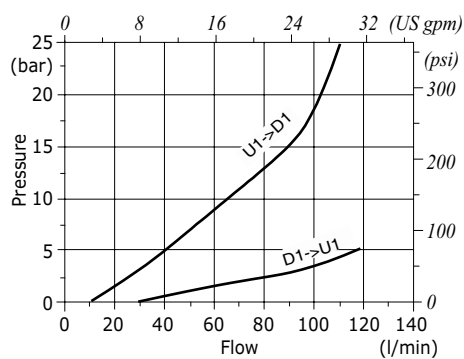
**VOSL/SC 38 pressure drop vs. flow  
from D1->U1 and U1->D1**



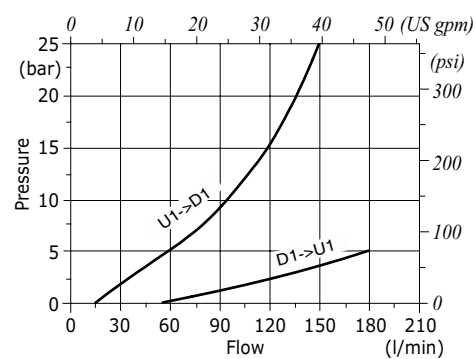
**VOSL/SC 12 pressure drop vs. flow  
from D1->U1 and U1->D1**



**VOSL/SC 34 pressure drop vs. flow  
from D1->U1 and U1->D1**



**VOSL/SC 100 pressure drop vs. flow  
from D1->U1 and U1->D1**







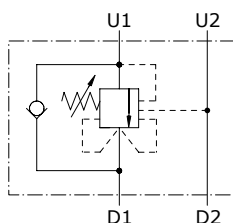
## Type VOSL/SC/CC counterbalance valves

- Single acting

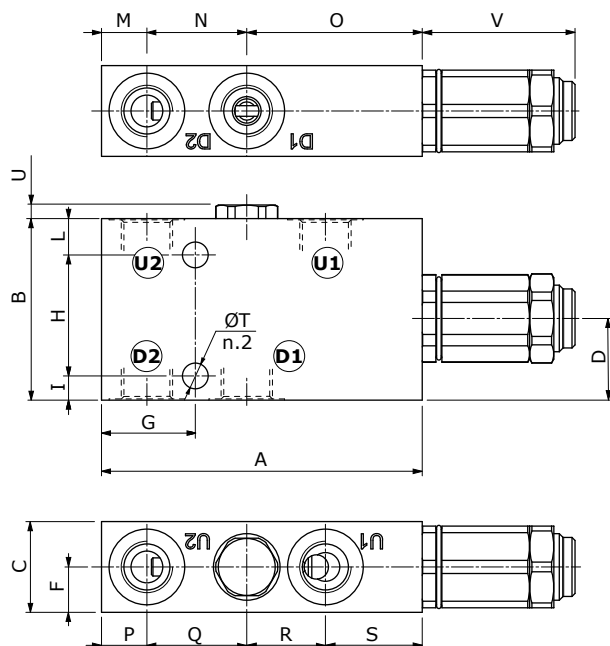
Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                            | VOSL/SC/CC 38                                                                                                      | VOSL/SC/CC 12             | VOSL/SC/CC 34              | VOSL/SC/CC 100             |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------------|----------------------------|----------------------------|
| Nominal flow                               | 40 l/min<br>(10.6 US gpm)                                                                                          | 75 l/min<br>(19.8 US gpm) | 120 l/min<br>(31.7 US gpm) | 180 l/min<br>(47.6 US gpm) |
| Max. pressure                              | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi)                                             |                           |                            |                            |
| Oil leakage                                | 0.25 cm <sup>3</sup> /min - 0.015 in <sup>3</sup> /min. (5 drops) at 210 bar - 3050 psi at 80% of pressure setting |                           |                            |                            |
| Fluid                                      | mineral based oil                                                                                                  |                           |                            |                            |
| Viscosity                                  | from 10 to 200 cSt                                                                                                 |                           |                            |                            |
| Max. level of contamination                | 18/16/13 ISO4406                                                                                                   |                           |                            |                            |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F)                                                                   |                           |                            |                            |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                                                                                |                           |                            |                            |
| Weight                                     | aluminium                                                                                                          | 0.83 kg (1.83 lb)         | 1.11 kg (2.45 lb)          | 1.53 kg (3.37 lb)          |
|                                            | steel                                                                                                              | 1.56 kg (3.44 lb)         | 2.32 kg (5.11 lb)          | 3.39 kg (7.47 lb)          |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



### Dimensions



| Valve type     | D1   | D2   | U1 | U2 |
|----------------|------|------|----|----|
| VOSL/SC/CC 38  | G3/8 | G3/8 |    |    |
| VOSL/SC/CC 12  | G1/2 | G1/2 |    |    |
| VOSL/SC/CC 34  | G3/4 | G3/4 |    |    |
| VOSL/SC/CC 100 | G1"  | G1"  |    |    |

Dimensions are in mm-in

| Valve type     | A    | B    | C    | D    | F    | G    | H    | I     | L     | M    | N    | O    | P    | Q    | R    | S    | ØT    | U     | V    |
|----------------|------|------|------|------|------|------|------|-------|-------|------|------|------|------|------|------|------|-------|-------|------|
| VOSL/SC 38/CC  | 106  | 60   | 30   | 27   | 15   | 31   | 40   | 8     | 12    | 15   | 33   | 58   | 15   | 33   | 26   | 32   | 8.5   | 4.5   | 51   |
|                | 4.17 | 2.36 | 1.18 | 1.06 | 0.89 | 1.22 | 1.57 | 0.315 | 0.472 | 0.59 | 1.30 | 2.28 | 0.59 | 1.30 | 1.02 | 1.26 | 0.335 | 0.177 | 2.01 |
| VOSL/SC/CC 12  | 116  | 70   | 35   | 31   | 17.5 | 36   | 48   | 8     | 14    | 16   | 40   | 60   | 16   | 40   | 28   | 32   | 8.5   | 4.5   | 51   |
|                | 4.57 | 2.76 | 1.38 | 1.22 | 0.69 | 1.42 | 1.89 | 0.315 | 0.55  | 0.63 | 1.57 | 2.36 | 0.63 | 1.57 | 1.10 | 1.26 | 0.335 | 0.177 | 2.01 |
| VOSL/SC/CC 34  | 136  | 90   | 40   | 36   | 20   | 44   | 70   | 10    | 10    | 20   | 48   | 68   | 20   | 48   | 34   | 34   | 10.5  | 5.5   | 51   |
|                | 5.35 | 3.54 | 1.57 | 1.42 | 0.79 | 1.73 | 2.76 | 0.394 | 0.394 | 0.79 | 1.89 | 2.68 | 0.79 | 1.89 | 1.34 | 1.34 | 0.413 | 0.217 | 2.01 |
| VOSL/SC/CC 100 | 185  | 100  | 60   | 38   | 30   | 62   | 80   | 10    | 10    | 32   | 70   | 83   | 32   | 70   | 48   | 35   | 10.5  | 12.5  | 51   |
|                | 7.28 | 3.94 | 2.36 | 1.50 | 1.18 | 2.44 | 3.15 | 0.394 | 0.394 | 1.26 | 2.76 | 3.27 | 1.26 | 2.76 | 1.89 | 1.38 | 0.413 | 0.492 | 2.01 |

### Ordering codes

#### VOSL/SC/CC complete valves

TYPE: **VOSL/SC/CC 38/TR.S.p4.PG** CODE: 1525021102

DESCRIPTION: Aluminium body, G3/8 ports, pilot ratio 1:4, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/SC/CC 12/TR.S.p7.PG** CODE: 1525031102

DESCRIPTION: Aluminium body, G1/2 ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSL/SC/CC 34/TR.S.p7.PG** CODE: 1525041102

DESCRIPTION: Aluminium body, G3/4 ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

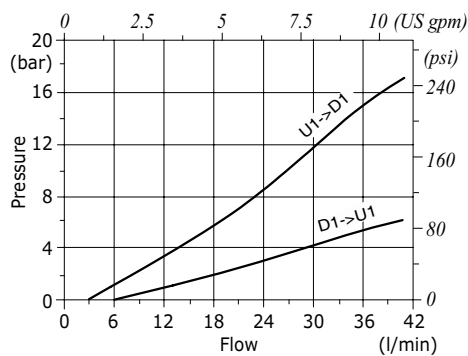
TYPE: **VOSL/SC/CC 100/TR.S.p7.PG** CODE: 1525051102

DESCRIPTION: Aluminium body, G1" ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

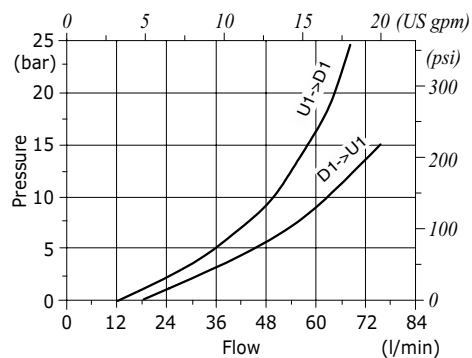
For other configurations and steel body, please contact our Sales Dept.

**Rating diagrams**

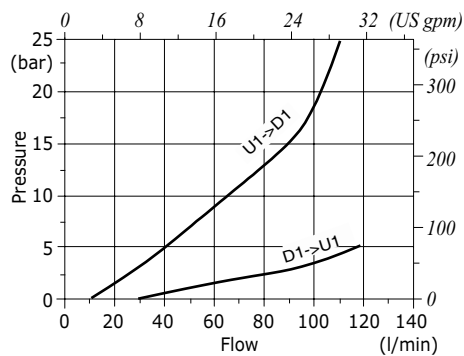
**VOSL/SC 38 pressure drop vs. flow  
from D1->U1 and U1->D1**



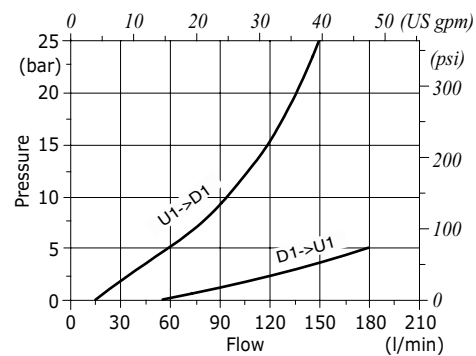
**VOSL/SC 12 pressure drop vs. flow  
from D1->U1 and U1->D1**



**VOSL/SC 34 pressure drop vs. flow  
from D1->U1 and U1->D1**



**VOSL/SC 100 pressure drop vs. flow  
from D1->U1 and U1->D1**







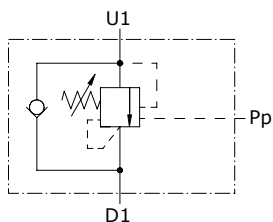
## Type VOSLP counterbalance valves

- Single acting

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

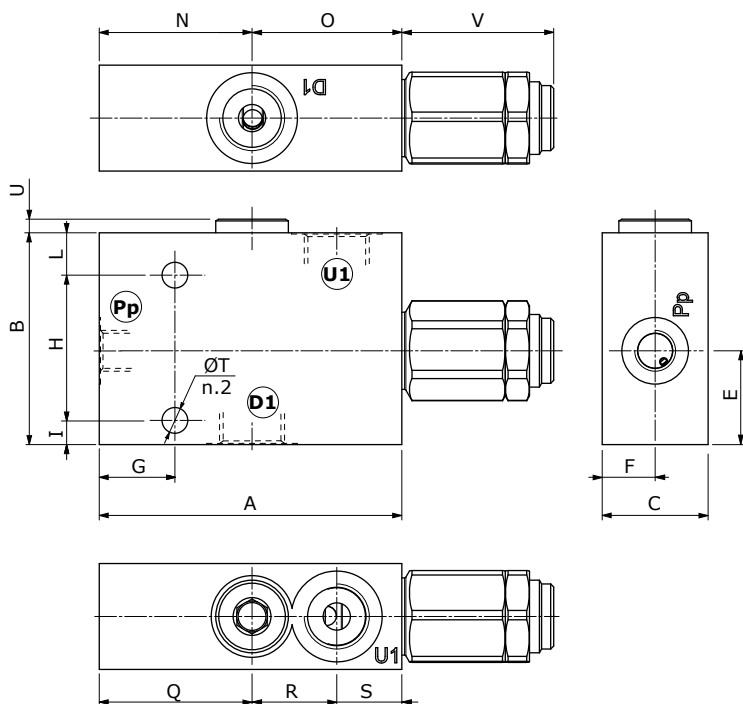
|                                            | VOSLP 38                                                                                 | VOSLP 12                  | VOSLP 34                   | VOSLP 100                  |                   |
|--------------------------------------------|------------------------------------------------------------------------------------------|---------------------------|----------------------------|----------------------------|-------------------|
| Nominal flow                               | 35 l/min<br>(9.2 US gpm)                                                                 | 70 l/min<br>(18.5 US gpm) | 100 l/min<br>(26.4 US gpm) | 180 l/min<br>(47.6 US gpm) |                   |
| Max. pressure                              | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi )                  |                           |                            |                            |                   |
| Oil leakage                                | 0.25 cm³/min - 0.015 in³/min. (5 drops) at 210 bar - 3050 psi at 80% of pressure setting |                           |                            |                            |                   |
| Fluid                                      | mineral based oil                                                                        |                           |                            |                            |                   |
| Viscosity                                  | from 10 to 200 cSt                                                                       |                           |                            |                            |                   |
| Max. level of contamination                | 18/16/13 ISO4406                                                                         |                           |                            |                            |                   |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F)                                         |                           |                            |                            |                   |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                                                      |                           |                            |                            |                   |
| Weight                                     | aluminium                                                                                | 0.89 kg (1.96 lb)         | 0.97 kg (2.14 lb)          | 1.75 kg (3.86 lb)          | 2.90 kg (6.39 lb) |
|                                            | steel                                                                                    | 1.59 kg (3.51 lb)         | 1.88 kg (4.14 lb)          | 3.29 kg (7.25 lb)          | 6.18 kg (13.6 lb) |

NOTE - For different conditions, please contact Walvoil Sales Dpt.





### Dimensions



| Valve type | Ø1   | U1   | Pp |
|------------|------|------|----|
| VOSLP 38   | G3/8 | G1/4 |    |
| VOSLP 12   | G1/2 | G1/4 |    |
| VOSLP 34   | G3/4 | G1/4 |    |
| VOSLP 100  | G1"  | G1/4 |    |

Dimensions are in mm-in

| Valve type | A           | B           | C          | E          | F            | G          | H          | I           | L           | N            | O            | Q            | R          | S            | ØT           | V          |
|------------|-------------|-------------|------------|------------|--------------|------------|------------|-------------|-------------|--------------|--------------|--------------|------------|--------------|--------------|------------|
| VOSLP 38   | 98<br>3.86  | 65<br>2.56  | 30<br>1.18 | 27<br>1.06 | 15<br>0.59   | 27<br>1.06 | 40<br>1.57 | 8<br>0.315  | 17<br>0.70  | 47<br>1.85   | 51<br>2.01   | 47<br>1.85   | 29<br>1.14 | 22<br>0.87   | 8.5<br>0.335 | 52<br>2.05 |
| VOSLP 12   | 100<br>3.94 | 70<br>2.76  | 35<br>1.38 | 31<br>1.22 | 17.5<br>0.69 | 25<br>0.98 | 48<br>1.89 | 8<br>0.315  | 14<br>0.551 | 50.5<br>1.99 | 49.5<br>1.95 | 50.5<br>1.99 | 28<br>1.10 | 21.5<br>0.85 | 8.5<br>0.335 | 57<br>2.24 |
| VOSLP 34   | 120<br>4.72 | 90<br>3.54  | 40<br>1.57 | 36<br>1.42 | 20<br>0.79   | 32<br>1.26 | 70<br>2.76 | 10<br>0.394 | 10<br>0.394 | 55<br>2.16   | 65<br>2.56   | 55<br>2.17   | 35<br>1.38 | 30<br>1.18   | 10.5<br>0.41 | 66<br>2.60 |
| VOSLP 100  | 140<br>5.51 | 100<br>3.94 | 60<br>2.36 | 37<br>1.46 | 30<br>1.18   | 30<br>1.18 | 80<br>3.15 | 10<br>0.394 | 10<br>0.394 | 64<br>2.52   | 76<br>2.99   | 64<br>2.52   | 46<br>1.81 | 30<br>1.18   | 10.5<br>0.41 | 66<br>2.60 |

### Ordering codes

#### VOSLP complete valves

TYPE: **VOSLP 38/TR.S.p4** CODE: 1530021102

DESCRIPTION: Aluminium body, G3/8 ports, pilot ratio 1:4, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP 12/TR.S.p7** CODE: 1530031102

DESCRIPTION: Aluminium body, G1/2 ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP 34/TR.S.p7** CODE: 1530041102

DESCRIPTION: Aluminium body, G3/4 ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

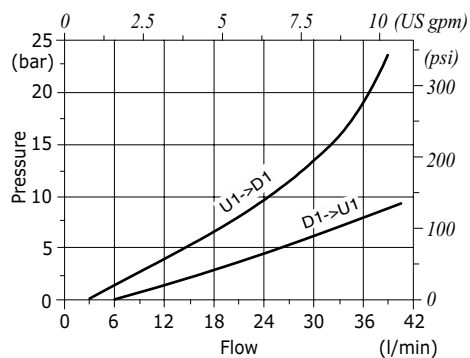
TYPE: **VOSLP 100/TR.S.p7** CODE: 1530051102

DESCRIPTION: Aluminium body, G1" ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

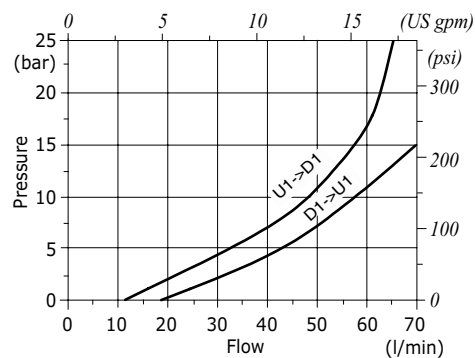
For other configurations and steel body, please contact our Sales Dept.

**Rating diagrams**

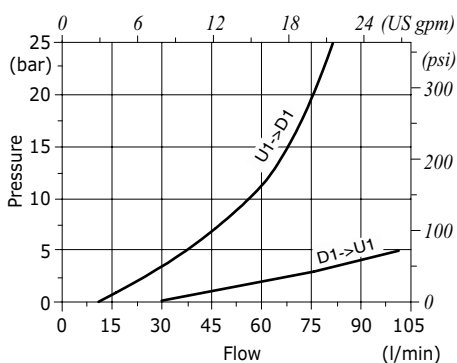
**VOSLP 38 pressure drop vs. flow  
from D1->U1 and U1->D1**



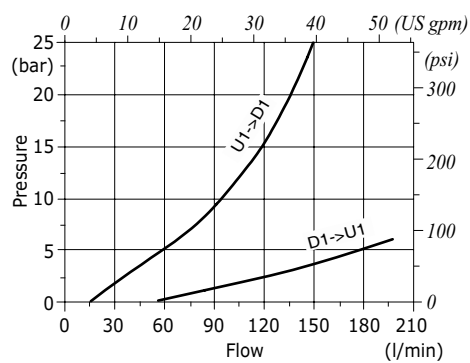
**VOSLP 12 pressure drop vs. flow  
from D1->U1 and U1->D1**



**VOSLP 34 pressure drop vs. flow  
from D1->U1 and U1->D1**



**VOSLP 100 pressure drop vs. flow  
from D1->U1 and U1->D1**







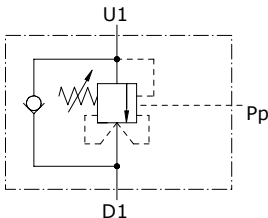
## Type VOSLP/CC counterbalance valves

- Single acting
- Relief compensated

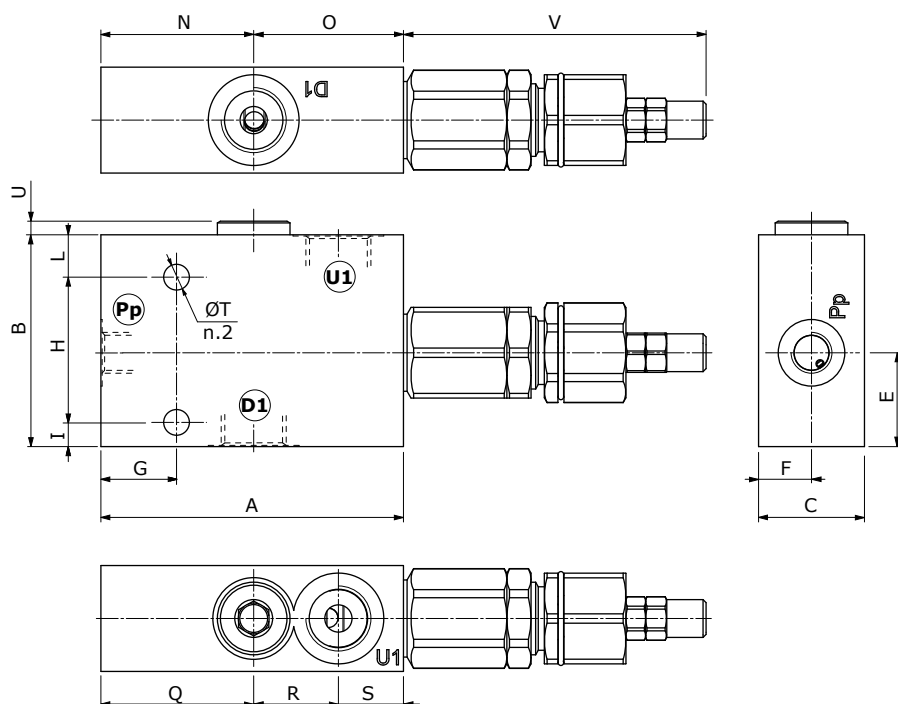
Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                            | VOSLP/CC 38                                                                              | VOSLP/CC 12               | VOSLP/CC 34                | VOSLP/CC 100               |                   |
|--------------------------------------------|------------------------------------------------------------------------------------------|---------------------------|----------------------------|----------------------------|-------------------|
| Nominal flow                               | 35 l/min<br>(9.2 US gpm)                                                                 | 70 l/min<br>(18.5 US gpm) | 100 l/min<br>(26.4 US gpm) | 180 l/min<br>(47.6 US gpm) |                   |
| Max. pressure                              | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi)                   |                           |                            |                            |                   |
| Oil leakage                                | 0.25 cm³/min - 0.015 in³/min. (5 drops) at 210 bar - 3050 psi at 80% of pressure setting |                           |                            |                            |                   |
| Fluid                                      | mineral based oil                                                                        |                           |                            |                            |                   |
| Viscosity                                  | from 10 to 200 cSt                                                                       |                           |                            |                            |                   |
| Max. level of contamination                | 18/16/13 ISO4406                                                                         |                           |                            |                            |                   |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F)                                         |                           |                            |                            |                   |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                                                      |                           |                            |                            |                   |
| Weight                                     | aluminium                                                                                | 1.01 kg (2.23 lb)         | 1.13 kg (2.49 lb)          | 1.83 kg (4.03 lb)          | 2.98 kg (6.57 lb) |
|                                            | steel                                                                                    | 1.70 kg (3.75 lb)         | 2.01 kg (4.43lb)           | 3.37 kg (7.43 lb)          | 6.26 kg (13.8 lb) |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



### Dimensions



| Valve type   | D1   | U1   | Pp |
|--------------|------|------|----|
| VOSLP/CC 38  | G3/8 | G1/4 |    |
| VOSLP/CC 12  | G1/2 | G1/4 |    |
| VOSLP/CC 34  | G3/4 | G1/4 |    |
| VOSLP/CC 100 | G1"  | G1/4 |    |

Dimensions are in mm-in

| Valve type   | A           | B           | C          | E          | F            | G          | H          | I           | L           | N            | O            | Q            | R          | S            | ØT           | V             |
|--------------|-------------|-------------|------------|------------|--------------|------------|------------|-------------|-------------|--------------|--------------|--------------|------------|--------------|--------------|---------------|
| VOSLP/CC 38  | 98<br>3.86  | 65<br>2.56  | 30<br>1.18 | 27<br>1.06 | 15<br>0.59   | 27<br>1.06 | 40<br>1.57 | 8<br>0.315  | 17<br>0.70  | 47<br>1.85   | 51<br>2.01   | 47<br>1.85   | 29<br>1.14 | 22<br>0.87   | 8.5<br>0.335 | 92.2<br>3.63  |
| VOSLP/CC 12  | 100<br>3.94 | 70<br>2.76  | 35<br>1.38 | 31<br>1.22 | 17.5<br>0.69 | 25<br>0.98 | 48<br>1.89 | 8<br>0.315  | 14<br>0.551 | 50.5<br>1.99 | 49.5<br>1.95 | 50.5<br>1.99 | 28<br>1.10 | 21.5<br>0.85 | 8.5<br>0.335 | 99.7<br>3.93  |
| VOSLP/CC 34  | 120<br>4.72 | 90<br>3.54  | 40<br>1.57 | 36<br>1.42 | 20<br>0.79   | 32<br>1.26 | 70<br>2.76 | 10<br>0.394 | 10<br>0.394 | 55<br>2.16   | 65<br>2.56   | 55<br>2.17   | 35<br>1.38 | 30<br>1.18   | 10.5<br>0.41 | 101.7<br>4.00 |
| VOSLP/CC 100 | 140<br>5.51 | 100<br>3.94 | 60<br>2.36 | 37<br>1.46 | 30<br>1.18   | 30<br>1.18 | 80<br>3.15 | 10<br>0.394 | 10<br>0.394 | 64<br>2.52   | 76<br>2.99   | 64<br>2.52   | 46<br>1.81 | 30<br>1.18   | 10.5<br>0.41 | 101.7<br>4.00 |

### Ordering codes

#### VOSLP/CC complete valves

TYPE: **VOSLP/CC 38/TR.S.p4** CODE: 1534921100

DESCRIPTION: Aluminium body, G3/8 ports, pilot ratio 1:4, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/CC 12/TR.S.p7** CODE: 1534931100

DESCRIPTION: Aluminium body, G1/2 ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/CC 34/TR.S.p7** CODE: 1534941100

DESCRIPTION: Aluminium body, G3/4 ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

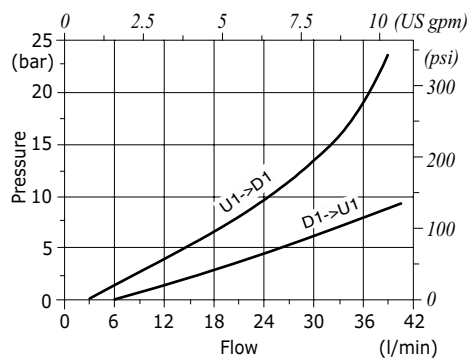
TYPE: **VOSLP/CC 100/TR.S.p7** CODE: 1534951100

DESCRIPTION: Aluminium body, G1" ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

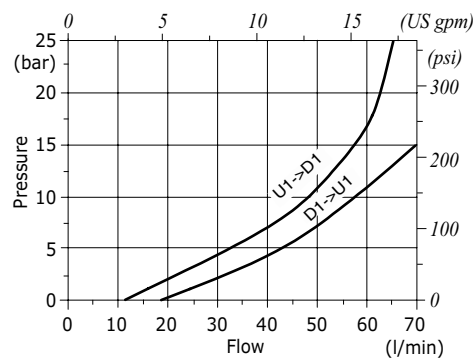
For other configurations and steel body, please contact our Sales Dept.

**Rating diagrams**

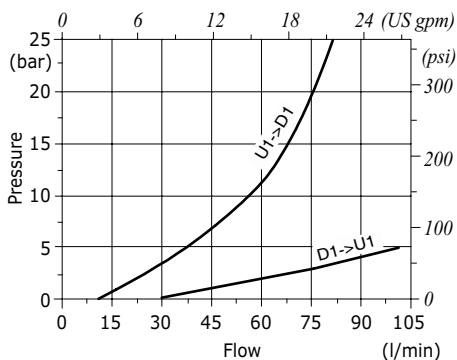
**VOSLP/CC 38 pressure drop vs. flow  
from D1->U1 and U1->D1**



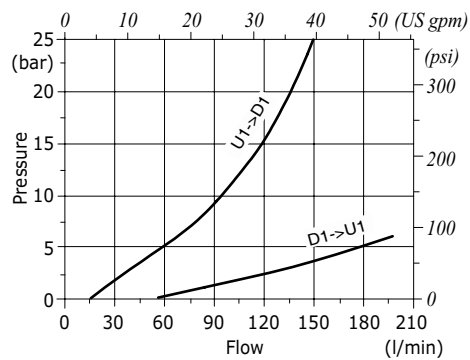
**VOSLP/CC 12 pressure drop vs. flow  
from D1->U1 and U1->D1**



**VOSLP/CC 34 pressure drop vs. flow  
from D1->U1 and U1->D1**



**VOSLP/CC 100 pressure drop vs. flow  
from D1->U1 and U1->D1**







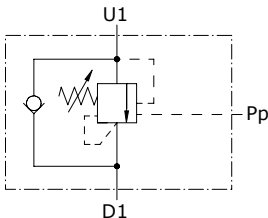
**Type VOSLP/SC  
counterbalance valves**

- Single acting
- Load sensitive

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

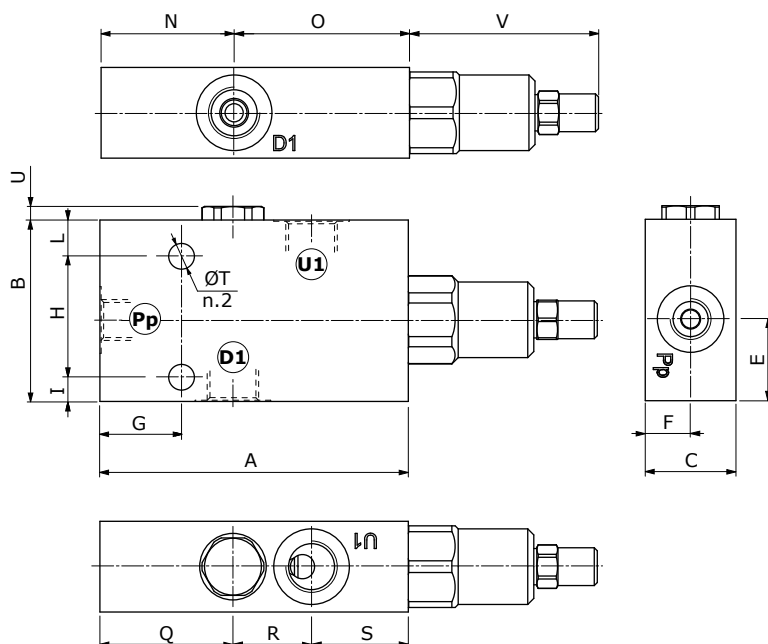
|                                            |           | VOSLP/SC 38                                                                              | VOSLP/SC 12               | VOSLP/SC 34                | VOSLP/SC 100               |
|--------------------------------------------|-----------|------------------------------------------------------------------------------------------|---------------------------|----------------------------|----------------------------|
| Nominal flow                               |           | 40 l/min<br>(10.6 US gpm)                                                                | 75 l/min<br>(19.8 US gpm) | 120 l/min<br>(31.7 US gpm) | 180 l/min<br>(47.6 US gpm) |
| Max. pressure                              |           | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi)                   |                           |                            |                            |
| Oil leakage                                |           | 0.25 cm³/min - 0.015 in³/min. (5 drops) at 210 bar - 3050 psi at 80% of pressure setting |                           |                            |                            |
| Fluid                                      |           | mineral based oil                                                                        |                           |                            |                            |
| Viscosity                                  |           | from 10 to 200 cSt                                                                       |                           |                            |                            |
| Max. level of contamination                |           | 18/16/13 ISO4406                                                                         |                           |                            |                            |
| Fluid temperature                          |           | with NBR seals from -20°C (-4°F) to 80°C (176°F)                                         |                           |                            |                            |
| Environmental temp. for working conditions |           | from -40°C (-40°F) to 100°C (212°F)                                                      |                           |                            |                            |
| Weight                                     | aluminium | 0.68 kg (1.50 lb)                                                                        | 0.95 kg (2.09 lb)         | 1.40 kg (3.09 lb)          | 2.70 kg (5.95 lb)          |
|                                            | steel     | 1.41 kg (3.11 lb)                                                                        | 2.03 kg (4.47 lb)         | 3.20 kg (7.05 lb)          | 6.52 kg (14.37 lb)         |

NOTE - For different conditions, please contact Walvoil Sales Dpt.





### Dimensions



| Valve type   | D1   | U1   | Pp |
|--------------|------|------|----|
| VOSLP/SC 38  | G3/8 | G1/4 |    |
| VOSLP/SC 12  | G1/2 | G1/4 |    |
| VOSLP/SC 34  | G3/4 | G1/4 |    |
| VOSLP/SC 100 | G1"  | G1/4 |    |

Dimensions are in mm-in

| Valve type   | A           | B           | C          | E          | F            | G          | H          | I           | L           | N          | O          | Q          | R          | S          | ØT            | V            |
|--------------|-------------|-------------|------------|------------|--------------|------------|------------|-------------|-------------|------------|------------|------------|------------|------------|---------------|--------------|
| VOSLP/SC 38  | 102<br>4.02 | 60<br>2.36  | 30<br>1.18 | 27<br>1.06 | 15<br>0.59   | 27<br>1.06 | 40<br>1.57 | 8<br>0.315  | 12<br>0.472 | 44<br>1.73 | 58<br>2.28 | 44<br>1.73 | 26<br>1.02 | 32<br>1.26 | 8.5<br>0.335  | 62.5<br>2.46 |
| VOSLP/SC 12  | 110<br>4.33 | 70<br>2.76  | 35<br>1.38 | 31<br>1.22 | 17.5<br>0.69 | 30<br>1.18 | 48<br>1.89 | 8<br>0.315  | 14<br>0.551 | 50<br>1.97 | 60<br>2.36 | 50<br>1.97 | 28<br>1.10 | 32<br>1.26 | 8.5<br>0.335  | 63.5<br>2.48 |
| VOSLP/SC 34  | 123<br>4.84 | 90<br>3.54  | 40<br>1.57 | 36<br>1.42 | 20<br>0.78   | 31<br>1.22 | 70<br>2.76 | 10<br>0.394 | 10<br>0.394 | 55<br>2.17 | 68<br>2.68 | 55<br>2.17 | 34<br>1.34 | 34<br>1.34 | 10.5<br>0.413 | 63.5<br>2.48 |
| VOSLP/SC 100 | 153<br>6.02 | 100<br>3.94 | 30<br>1.18 | 38<br>1.38 | 30<br>1.18   | 37<br>1.46 | 80<br>3.15 | 10<br>0.394 | 10<br>0.394 | 70<br>2.76 | 83<br>3.27 | 70<br>2.76 | 48<br>1.89 | 35<br>1.38 | 10.5<br>0.413 | 63.5<br>2.48 |

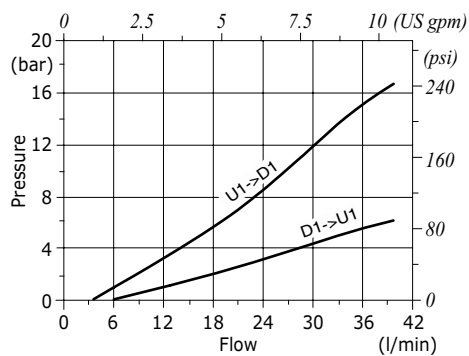
### Ordering codes

#### VOSLP/SC complete valves

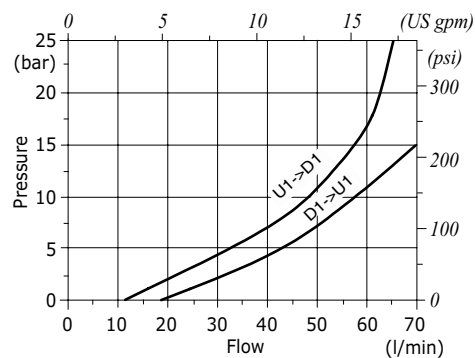
TYPE: **VOSLP/SC 38/TR.S.p4** CODE: 1540021102  
 DESCRIPTION: Aluminium body, G3/8 ports, pilot ratio 1:4, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
 TYPE: **VOSLP/SC 12/TR.S.p7** CODE: 1540031102  
 DESCRIPTION: Aluminium body, G1/2 ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
 TYPE: **VOSLP/SC 34/TR.S.p7** CODE: 1540041102  
 DESCRIPTION: Aluminium body, G3/4 ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
 TYPE: **VOSLP/SC 100/TR.S.p7** CODE: 1540051102  
 DESCRIPTION: Aluminium body, G1" ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
 For other configurations and steel body, please contact our Sales Dept.

**Rating diagrams**

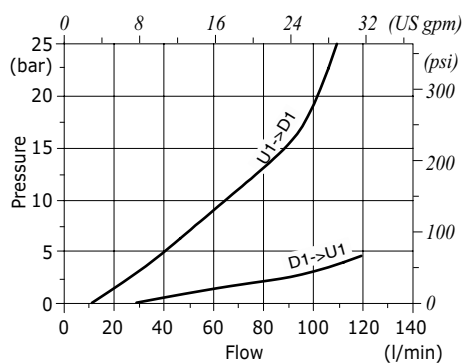
**VOSLP/SC 38 pressure drop vs. flow  
from D1->U1 and U1->D1**



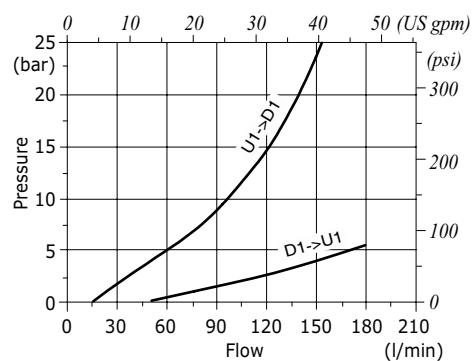
**VOSLP/SC 12 pressure drop vs. flow  
from D1->U1 and U1->D1**



**VOSLP/SC 34 pressure drop vs. flow  
from D1->U1 and U1->D1**



**VOSLP/SC 100 pressure drop vs. flow  
from D1->U1 and U1->D1**







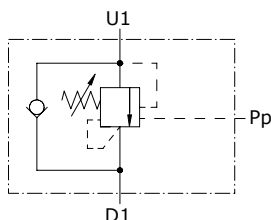
## Type VOSLP/SC/RO counterbalance valves

- Single acting
- Load sensitive
- Bolt connection

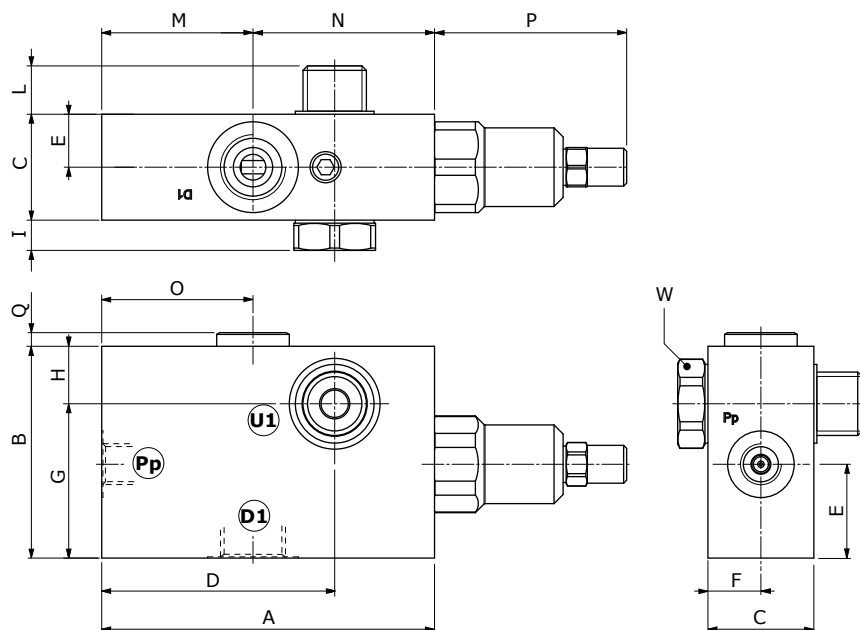
Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                            |           | VOSLP/SC/RO 38                                                                           | VOSLP/SC/RO 12            | VOSLP/SC/RO 34             | VOSLP/SC/RO 100            |
|--------------------------------------------|-----------|------------------------------------------------------------------------------------------|---------------------------|----------------------------|----------------------------|
| Nominal flow                               |           | 40 l/min<br>(10.6 US gpm)                                                                | 75 l/min<br>(19.8 US gpm) | 120 l/min<br>(31.7 US gpm) | 180 l/min<br>(47.6 US gpm) |
| Max. pressure                              |           | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi)                   |                           |                            |                            |
| Oil leakage                                |           | 0.25 cm³/min - 0.015 in³/min. (5 drops) at 210 bar - 3050 psi at 80% of pressure setting |                           |                            |                            |
| Fluid                                      |           | mineral based oil                                                                        |                           |                            |                            |
| Viscosity                                  |           | from 10 to 200 cSt                                                                       |                           |                            |                            |
| Max. level of contamination                |           | 18/16/13 ISO4406                                                                         |                           |                            |                            |
| Fluid temperature                          |           | with NBR seals from -20°C (-4°F) to 80°C (176°F)                                         |                           |                            |                            |
| Environmental temp. for working conditions |           | from -40°C (-40°F) to 100°C (212°F)                                                      |                           |                            |                            |
| Weight                                     | aluminium | 0.87 kg (1.91 lb)                                                                        | 1.19 kg (2.62 lb)         | 1.57 kg (3.46 lb)          | 3.19 kg (7.03 lb)          |
|                                            | steel     | 1.61 kg (3.55 lb)                                                                        | 2.24 kg (4.94 lb)         | 3.17 kg (7.19 lb)          | 6.91 kg (15.23 lb)         |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



### Dimensions



| Valve type      | D1<br>female | U1<br>male | Pp   |
|-----------------|--------------|------------|------|
| VOSLP/SC/RO 38  | G3/8         | G3/8       | G1/4 |
| VOSLP/SC/RO 12  | G1/2         | G1/2       | G1/4 |
| VOSLP/SC/RO 34  | G3/4         | G3/4       | G1/4 |
| VOSLP/SC/RO 100 | G1"          | G1"        | G1/4 |

Dimensions are in mm-in

| Valve type      | A           | B           | C          | D           | E          | F            | G          | H          | I           | L          | M          | N          | O          | P            | Q             | W          |
|-----------------|-------------|-------------|------------|-------------|------------|--------------|------------|------------|-------------|------------|------------|------------|------------|--------------|---------------|------------|
| VOSLP/SC/RO 38  | 102<br>4.02 | 60<br>2.36  | 30<br>1.18 | 68<br>2.68  | 27<br>1.06 | 15<br>0.59   | 44<br>1.73 | 16<br>0.63 | 9<br>0.354  | 22<br>0.87 | 44<br>1.73 | 58<br>2.28 | 44<br>1.73 | 62.5<br>2.46 | 4.5<br>0.177  | 22<br>0.87 |
| VOSLP/SC/RO 12  | 110<br>4.33 | 70<br>2.76  | 35<br>1.38 | 77<br>3.03  | 31<br>1.22 | 17.5<br>0.68 | 51<br>2.01 | 19<br>0.75 | 10<br>0.394 | 16<br>0.63 | 50<br>1.97 | 60<br>2.36 | 50<br>1.97 | 63.5<br>2.50 | 4.5<br>0.177  | 27<br>1.06 |
| VOSLP/SC/RO 34  | 116<br>4.57 | 90<br>3.54  | 40<br>1.57 | 84<br>3.31  | 36<br>1.42 | 20<br>0.79   | 61<br>2.40 | 29<br>1.14 | 10<br>0.394 | 17<br>0.67 | 48<br>1.89 | 68<br>2.68 | 48<br>1.89 | 63.5<br>2.50 | 5.5<br>0.217  | 32<br>1.26 |
| VOSLP/SC/RO 100 | 153<br>6.02 | 100<br>3.94 | 60<br>2.36 | 118<br>4.65 | 38<br>1.50 | 30<br>1.18   | 69<br>2.72 | 31<br>1.22 | 12<br>0.472 | 22<br>0.87 | 70<br>2.76 | 73<br>2.87 | 70<br>2.76 | 63.5<br>2.50 | 12.5<br>0.492 | 41<br>1.61 |

### Ordering codes

#### VOSLP/SC/RO complete valves

TYPE: **VOSLP/SC/RO 38/TR.S.p4.PG** CODE: 1544021102  
 DESCRIPTION: Aluminium body, G3/8 ports, pilot ratio 1:4, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/SC/RO 12/TR.S.p7.PG** CODE: 1544031102  
 DESCRIPTION: Aluminium body, G1/2 ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

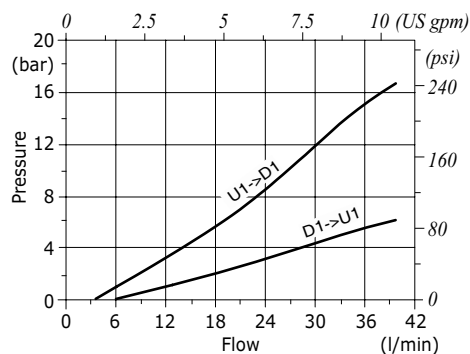
TYPE: **VOSLP/SC/RO 34/TR.S.p7.PG** CODE: 1544041102  
 DESCRIPTION: Aluminium body, G3/4 ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VOSLP/SC/RO 100/TR.S.p7.PG** CODE: 1544051106  
 DESCRIPTION: Aluminium body, G1" ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

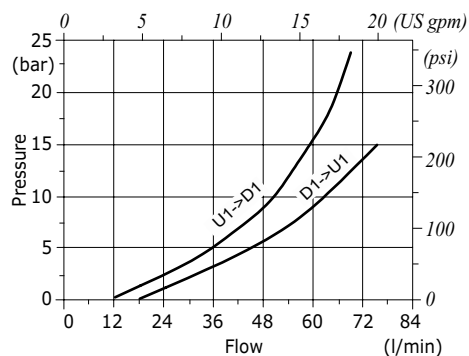
For other configurations and steel body, please contact our Sales Dept.

**Rating diagrams**

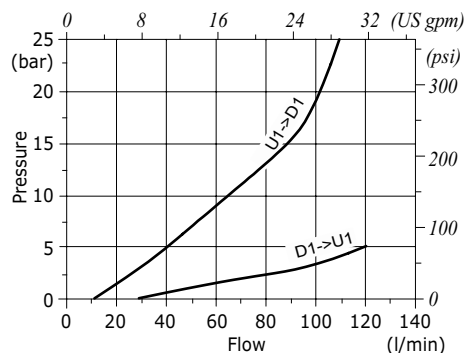
**VOSLP/SC/RO 38 pressure drop vs. flow  
from D1->U1 and U1->D1**



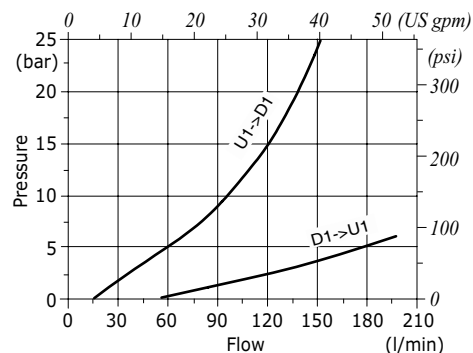
**VOSLP/SC/RO 12 pressure drop vs. flow  
from D1->U1 and U1->D1**



**VOSLP/SC/RO 34 pressure drop vs. flow  
from D1->U1 and U1->D1**



**VOSLP/SC/RO 100 pressure drop vs. flow  
from D1->U1 and U1->D1**







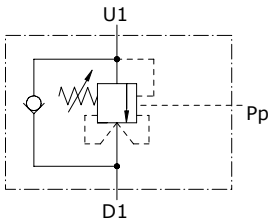
**Type VOSLP/SC/CC  
counterbalance valves**

- Single acting
- Relief compensated

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

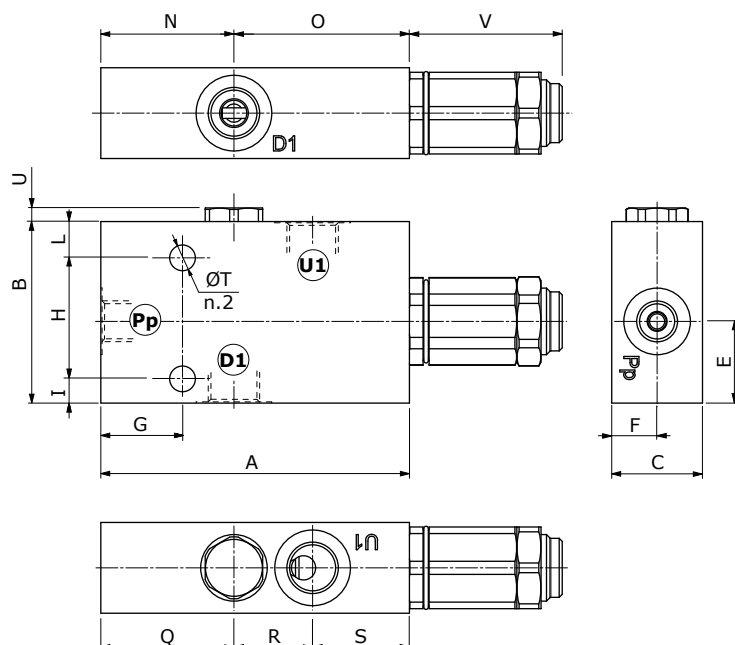
|                                            |           | VOSLP/SC/CC 38                                                                           | VOSLP/SC/CC 12            | VOSLP/SC/CC 34             | VOSLP/SC/CC 100            |
|--------------------------------------------|-----------|------------------------------------------------------------------------------------------|---------------------------|----------------------------|----------------------------|
| Nominal flow                               |           | 40 l/min<br>(10.6 US gpm)                                                                | 75 l/min<br>(19.8 US gpm) | 120 l/min<br>(31.7 US gpm) | 180 l/min<br>(47.6 US gpm) |
| Max. pressure                              |           | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi)                   |                           |                            |                            |
| Oil leakage                                |           | 0.25 cm³/min - 0.015 in³/min. (5 drops) at 210 bar - 3050 psi at 80% of pressure setting |                           |                            |                            |
| Fluid                                      |           | mineral based oil                                                                        |                           |                            |                            |
| Viscosity                                  |           | from 10 to 200 cSt                                                                       |                           |                            |                            |
| Max. level of contamination                |           | 18/16/13 ISO4406                                                                         |                           |                            |                            |
| Fluid temperature                          |           | with NBR seals from -20°C (-4°F) to 80°C (176°F)                                         |                           |                            |                            |
| Environmental temp. for working conditions |           | from -40°C (-40°F) to 100°C (212°F)                                                      |                           |                            |                            |
| Weight                                     | aluminium | 0.82 kg (1.81 lb)                                                                        | 1.10 kg (2.43 lb)         | 1.45 kg (3.20 lb)          | 2.78 kg (6.13 lb)          |
|                                            | steel     | 1.93 kg (4.25 lb)                                                                        | 2.20 kg (485 lb)          | 3.24 kg (7.14 lb)          | 6.64 kg (14.6 lb)          |

NOTE - For different conditions, please contact Walvoil Sales Dpt.





### Dimensions



| Valve type      | D1   | U1   | Pp |
|-----------------|------|------|----|
| VOSLP/SC/CC 38  | G3/8 | G1/4 |    |
| VOSLP/SC/CC 12  | G1/2 | G1/4 |    |
| VOSLP/SC/CC 34  | G3/4 | G1/4 |    |
| VOSLP/SC/CC 100 | G1"  | G1/4 |    |

Dimensions are in mm-in

| Valve type      | A           | B           | C          | E          | F            | G          | H          | I           | L           | N          | O          | Q          | R          | S          | ØT            | V            |
|-----------------|-------------|-------------|------------|------------|--------------|------------|------------|-------------|-------------|------------|------------|------------|------------|------------|---------------|--------------|
| VOSLP/SC/CC 38  | 102<br>4.02 | 60<br>2.36  | 30<br>1.18 | 27<br>1.06 | 15<br>0.59   | 27<br>1.06 | 40<br>1.57 | 8<br>0.315  | 12<br>0.472 | 44<br>1.73 | 58<br>2.28 | 44<br>1.73 | 26<br>1.02 | 32<br>1.26 | 8.5<br>0.335  | 50.5<br>1.99 |
| VOSLP/SC/CC 12  | 110<br>4.33 | 70<br>2.76  | 35<br>1.38 | 31<br>1.22 | 17.5<br>0.69 | 30<br>1.18 | 48<br>1.89 | 8<br>0.315  | 14<br>0.551 | 50<br>1.97 | 60<br>2.36 | 50<br>1.97 | 28<br>1.10 | 32<br>1.26 | 8.5<br>0.335  | 50.5<br>1.99 |
| VOSLP/SC/CC 34  | 123<br>4.84 | 90<br>3.54  | 40<br>1.57 | 36<br>1.42 | 20<br>0.78   | 31<br>1.22 | 70<br>2.76 | 10<br>0.394 | 10<br>0.394 | 55<br>2.17 | 68<br>2.68 | 55<br>2.17 | 34<br>1.34 | 34<br>1.34 | 10.5<br>0.413 | 50.5<br>1.99 |
| VOSLP/SC/CC 100 | 153<br>6.02 | 100<br>3.94 | 30<br>1.18 | 38<br>1.38 | 30<br>1.18   | 37<br>1.46 | 80<br>3.15 | 10<br>0.394 | 10<br>0.394 | 70<br>2.76 | 83<br>3.27 | 70<br>2.76 | 48<br>1.89 | 35<br>1.38 | 10.5<br>0.413 | 50.5<br>1.99 |

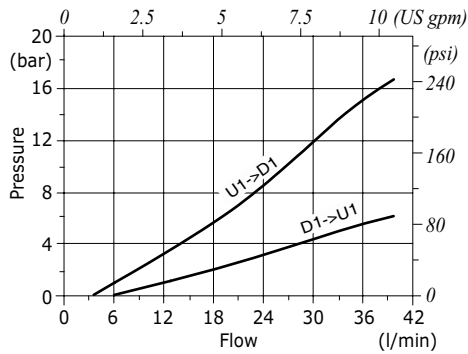
### Ordering codes

#### VOSLP/SC/CC complete valves

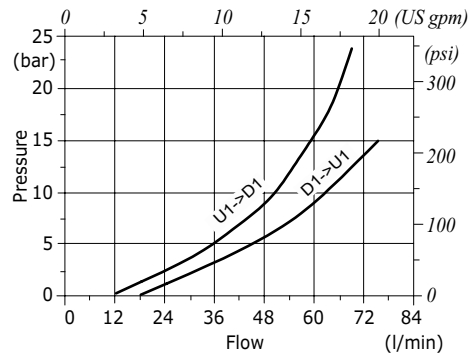
TYPE: **VOSLP/SC/CC 38/TR.S.p4.PG** CODE: 1545021102  
 DESCRIPTION: Aluminium body, G3/8 ports, pilot ratio 1:4, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
 TYPE: **VOSLP/SC/CC 12/TR.S.p7.PG** CODE: 1545031102  
 DESCRIPTION: Aluminium body, G1/2 ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
 TYPE: **VOSLP/SC/CC 34/TR.S.p7.PG** CODE: 1545041102  
 DESCRIPTION: Aluminium body, G3/4 ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
 TYPE: **VOSLP/SC/CC 100/TR.S.p7.PG** CODE: 1545051102  
 DESCRIPTION: Aluminium body, G1" ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
 For other configurations and steel body, please contact our Sales Dept.

**Rating diagrams**

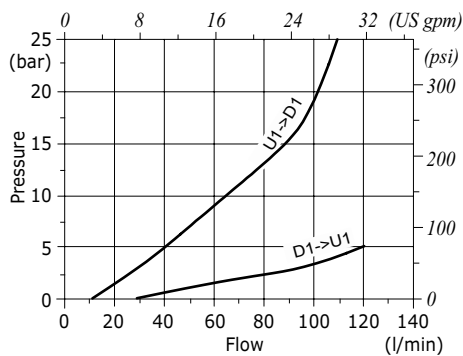
**VOSLP/SC/CC 38 pressure drop vs. flow  
from D1->U1 and U1->D1**



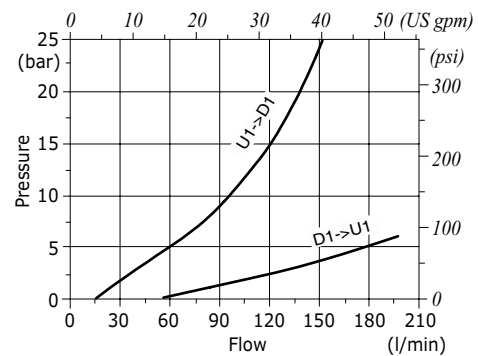
**VOSLP/SC/CC 12 pressure drop vs. flow  
from D1->U1 and U1->D1**



**VOSLP/SC/CC 34 pressure drop vs. flow  
from D1->U1 and U1->D1**



**VOSLP/SC/CC 100 pressure drop vs. flow  
from D1->U1 and U1->D1**







## Type VOSL/ML counterbalance valves

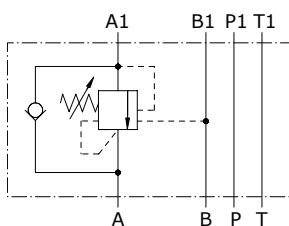
- Single acting
- Load sensitive
- Flange assembling according to ISO 4401:2005 (CETOP)

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

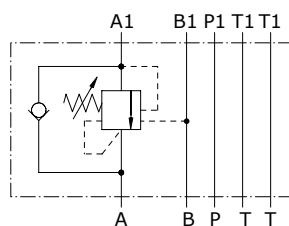
|                                            | VOSL/ML 6-38                                                                                                       | VOSL/ML 10-12             |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------------|
| Nominal flow                               | 35 l/min<br>(9.2 US gpm)                                                                                           | 70 l/min<br>(18.5 US gpm) |
| Max. pressure                              | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi)                                             |                           |
| Oil leakage                                | 0.25 cm <sup>3</sup> /min - 0.015 in <sup>3</sup> /min. (5 drops) at 210 bar - 3050 psi at 80% of pressure setting |                           |
| Fluid                                      | mineral based oil                                                                                                  |                           |
| Viscosity                                  | from 10 to 200 cSt                                                                                                 |                           |
| Max. level of contamination                | 18/16/13 ISO4406                                                                                                   |                           |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F)                                                                   |                           |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                                                                                |                           |
| Weight                                     | aluminium                                                                                                          | 1.27 kg (2.80 lb)         |
|                                            | steel                                                                                                              | 2.68 kg (5.91 lb)         |
| Weight                                     | aluminium                                                                                                          | 2.27 kg (5.00 lb)         |
|                                            | steel                                                                                                              | 5.46 kg (12.04 lb)        |

NOTE - For different conditions, please contact Walvoil Sales Dpt.

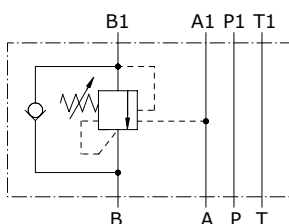
**VOSL/ML 6-38A**



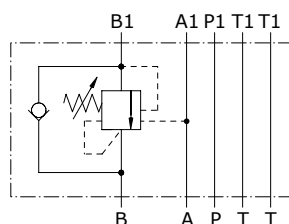
**VOSL/ML 10-12A**



**VOSL/ML 6-38B**

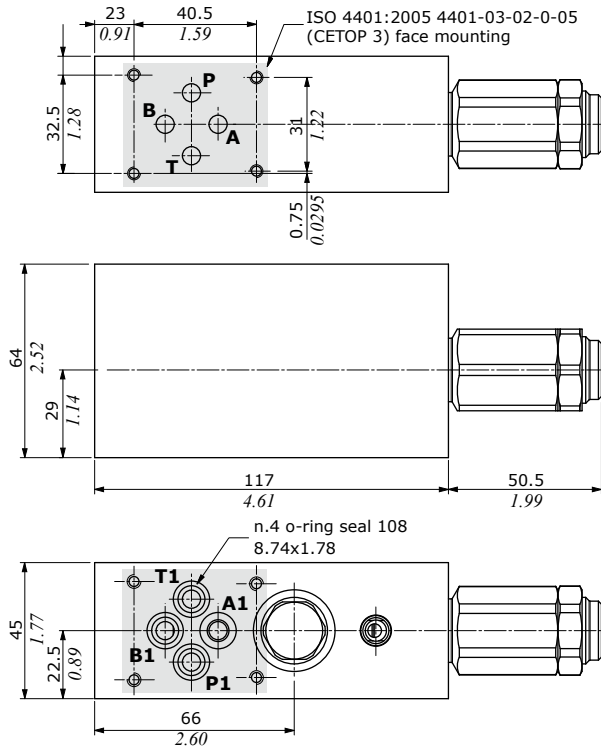


**VOSL/ML 10-12B**

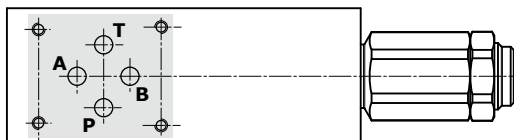


### Dimensions

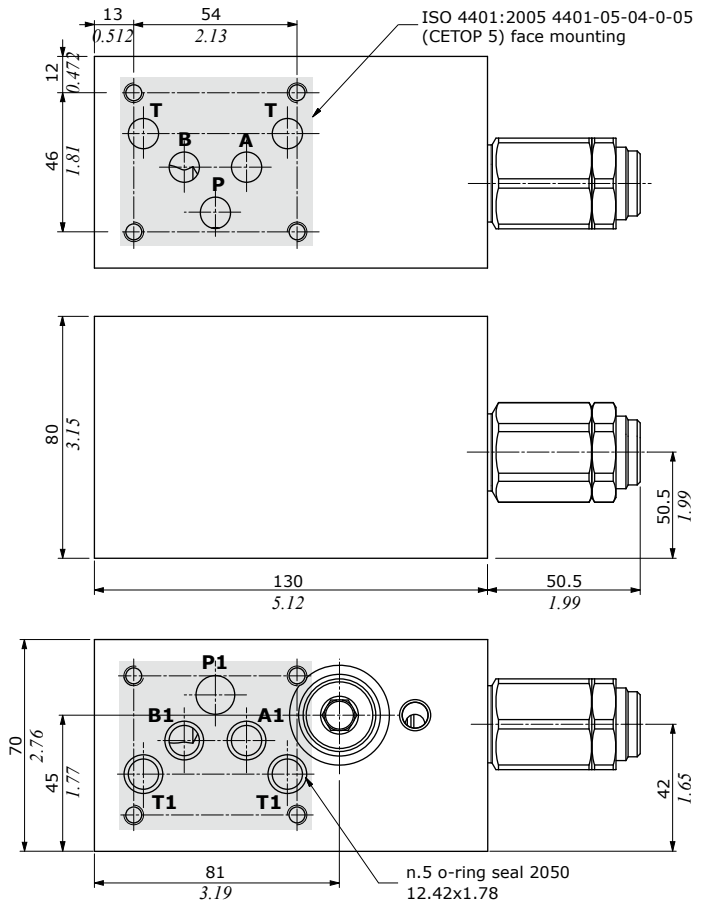
#### VOSL/ML 6-38A



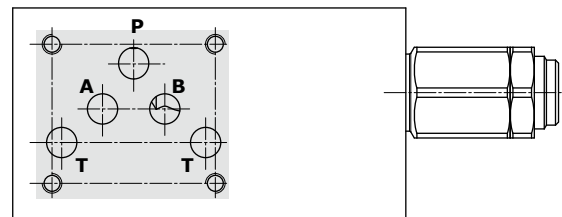
#### VOSL/ML 6-38B



#### VOSL/ML 10-12A



#### VOSL/ML 10-12B



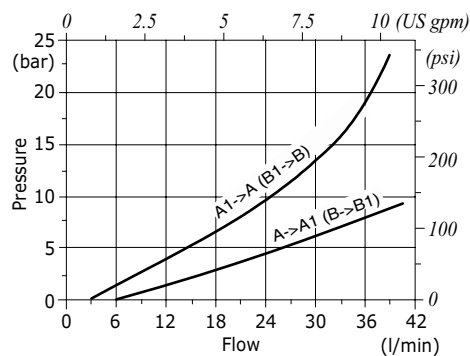
### Ordering codes

#### VOSL/ML complete valves

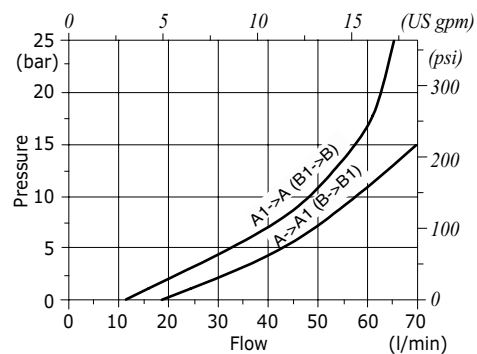
TYPE: **VOSL/ML 6-38A/TR.S.p4** CODE: 1518021802  
 DESCRIPTION: Aluminium body, CETOP 3 flange, pilot ratio 1:4, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
 TYPE: **VOSL/ML 6-38B/TR.S.p4** CODE: 1518021808  
 DESCRIPTION: Aluminium body, CETOP 3 flange, pilot ratio 1:4, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
 TYPE: **VOSL/ML 10-12A/TR.S.p7.PG** CODE: 1518031802  
 DESCRIPTION: Aluminium body, CETOP 5 flange, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
 TYPE: **VOSL/ML 10-12B/TR.S.p7.PG** CODE: 1518031808  
 DESCRIPTION: Aluminium body, CETOP 5 flange, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
 For other configurations and steel body, please contact our Sales Dept.

**Rating diagrams**

**VOSL/ML 6-38 pressure drop vs. flow  
from A->A1 (B->B1) and A1->A (B1->B)**



**VOSL/ML 10-12 pressure drop vs. flow  
from A->A1 (B->B1) and A1->A (B1->B)**







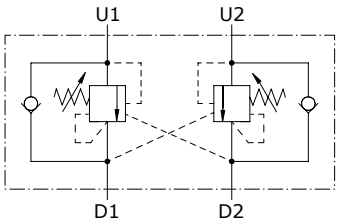
## Type VODL counterbalance valves

- Double acting
- Load sensitive

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

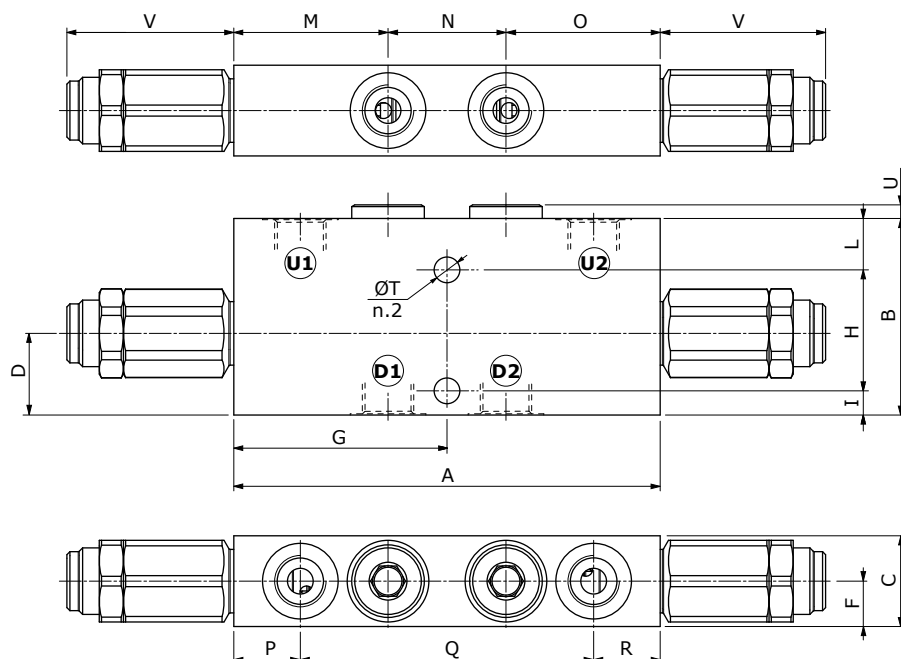
|                                            |           | VODL 38                                                                                  | VODL 12                   | VODL 34                    | VODL 100                   |
|--------------------------------------------|-----------|------------------------------------------------------------------------------------------|---------------------------|----------------------------|----------------------------|
| Nominal flow                               |           | 35 l/min<br>(9.2 US gpm)                                                                 | 70 l/min<br>(18.5 US gpm) | 100 l/min<br>(26.4 US gpm) | 180 l/min<br>(47.6 US gpm) |
| Max. pressure                              |           | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi)                   |                           |                            |                            |
| Oil leakage                                |           | 0.25 cm³/min - 0.015 in³/min. (5 drops) at 210 bar - 3050 psi at 80% of pressure setting |                           |                            |                            |
| Fluid                                      |           | mineral based oil                                                                        |                           |                            |                            |
| Viscosity                                  |           | from 10 to 200 cSt                                                                       |                           |                            |                            |
| Max. level of contamination                |           | 18/16/13 ISO4406                                                                         |                           |                            |                            |
| Fluid temperature                          |           | with NBR seals from -20°C (-4°F) to 80°C (176°F)                                         |                           |                            |                            |
| Environmental temp. for working conditions |           | from -40°C (-40°F) to 100°C (212°F)                                                      |                           |                            |                            |
| Weight                                     | aluminium | 1.32 kg (2.91 lb)                                                                        | 1.69 kg (3.73 lb)         | 2.92 kg (6.44 lb)          | 4.75 kg (10.47 lb)         |
|                                            | steel     | 2.39 kg (5.27 lb)                                                                        | 2.95 kg (6.50 lb)         | 5.13 kg (11.31 lb)         | 9.60 kg (21.16 lb)         |

NOTE - For different conditions, please contact Walvoil Sales Dpt.





### Dimensions



| Valve type      | D1   | D2   | U1 | U2 |
|-----------------|------|------|----|----|
| <b>VODL 38</b>  | G3/8 | G3/8 |    |    |
| <b>VODL 12</b>  | G1/2 | G1/2 |    |    |
| <b>VODL 34</b>  | G3/4 | G3/4 |    |    |
| <b>VODL 100</b> | G1"  | G1"  |    |    |

Dimensions are in mm-in

| Valve type      | A           | B           | C            | F             | G            | H          | I           | L           | M            | N          | O            | P            | Q           | R            | ØT            | U             | V            |
|-----------------|-------------|-------------|--------------|---------------|--------------|------------|-------------|-------------|--------------|------------|--------------|--------------|-------------|--------------|---------------|---------------|--------------|
| <b>VODL 38</b>  | 141<br>5.55 | 65<br>2.56  | 30<br>1.18   | 15<br>0.59    | 70.5<br>2.76 | 40<br>1.57 | 8<br>0.315  | 17<br>0.67  | 51<br>2.01   | 39<br>1.54 | 51<br>2.01   | 22<br>0.87   | 97<br>3.82  | 22<br>0.87   | 8.5<br>0.335  | 4.5<br>0.177  | 55<br>2.17   |
| <b>VODL 12</b>  | 149<br>5.87 | 70<br>2.76  | 34.5<br>1.36 | 17.25<br>0.68 | 74.5<br>2.93 | 48<br>1.89 | 8<br>0.315  | 14<br>0.551 | 50.5<br>1.99 | 48<br>1.89 | 50.5<br>1.99 | 21.5<br>0.85 | 106<br>4.17 | 21.5<br>0.85 | 8.5<br>0.335  | 4.5<br>0.177  | 50.5<br>1.99 |
| <b>VODL 34</b>  | 184<br>7.25 | 90<br>3.54  | 40<br>1.57   | 20<br>0.79    | 92<br>3.62   | 70<br>2.76 | 10<br>0.394 | 10<br>0.394 | 65<br>2.56   | 54<br>2.13 | 65<br>2.56   | 30<br>1.18   | 124<br>4.88 | 30<br>1.18   | 10.5<br>0.413 | 5.5<br>0.217  | 61<br>2.40   |
| <b>VODL 100</b> | 218<br>8.58 | 100<br>3.94 | 60<br>2.36   | 30<br>1.18    | 109<br>4.29  | 80<br>3.15 | 10<br>0.394 | 10<br>0.394 | 76<br>2.99   | 66<br>2.60 | 76<br>2.99   | 30<br>1.18   | 158<br>6.22 | 30<br>1.18   | 10.5<br>0.413 | 12.5<br>0.492 | 61<br>2.40   |

### Ordering codes

#### VODL complete valves

TYPE: **VODL 38/TR.S.p4** CODE: 1550021102

DESCRIPTION: Aluminium body, G3/8 ports, pilot ratio 1:4, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL 12/TR.S.p7** CODE: 1550031102

DESCRIPTION: Aluminium body, G1/2 ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL 34/TR.S.p7** CODE: 155041102

DESCRIPTION: Aluminium body, G3/4 ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

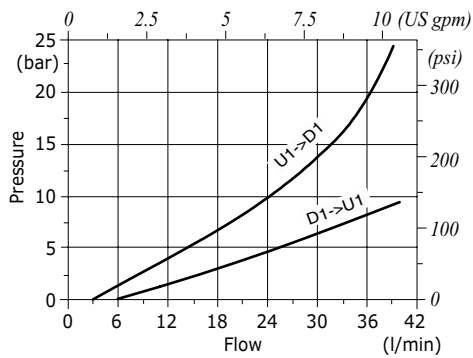
TYPE: **VODL 100/TR.S.p7** CODE: 1550051102

DESCRIPTION: Aluminium body, G1" ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

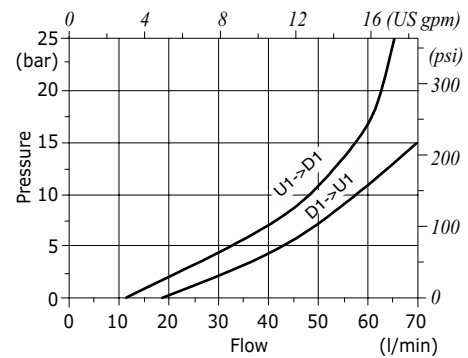
For other configurations, SAE thread and steel body, please contact our Sales Dept.

**Rating diagrams**

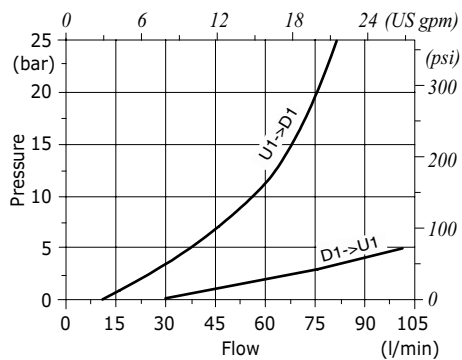
**VODL 38 pressure drop vs. flow  
from D1->U1 and U1->D1**



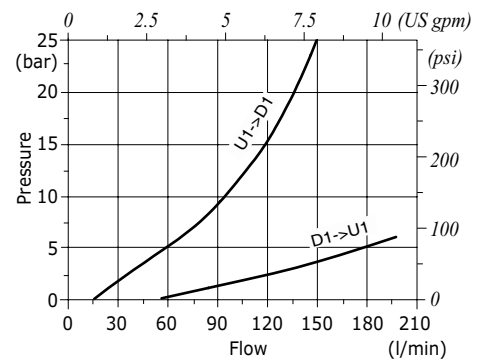
**VODL 12 pressure drop vs. flow  
from D1->U1 and U1->D1**



**VODL 34 pressure drop vs. flow  
from D1->U1 and U1->D1**



**VODL 100 pressure drop vs. flow  
from D1->U1 and U1->D1**







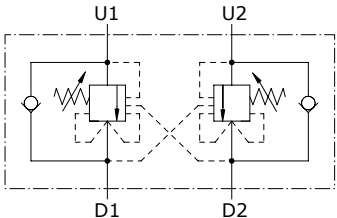
## Type VODL/CC counterbalance valves

- Double acting
- Relief compensated

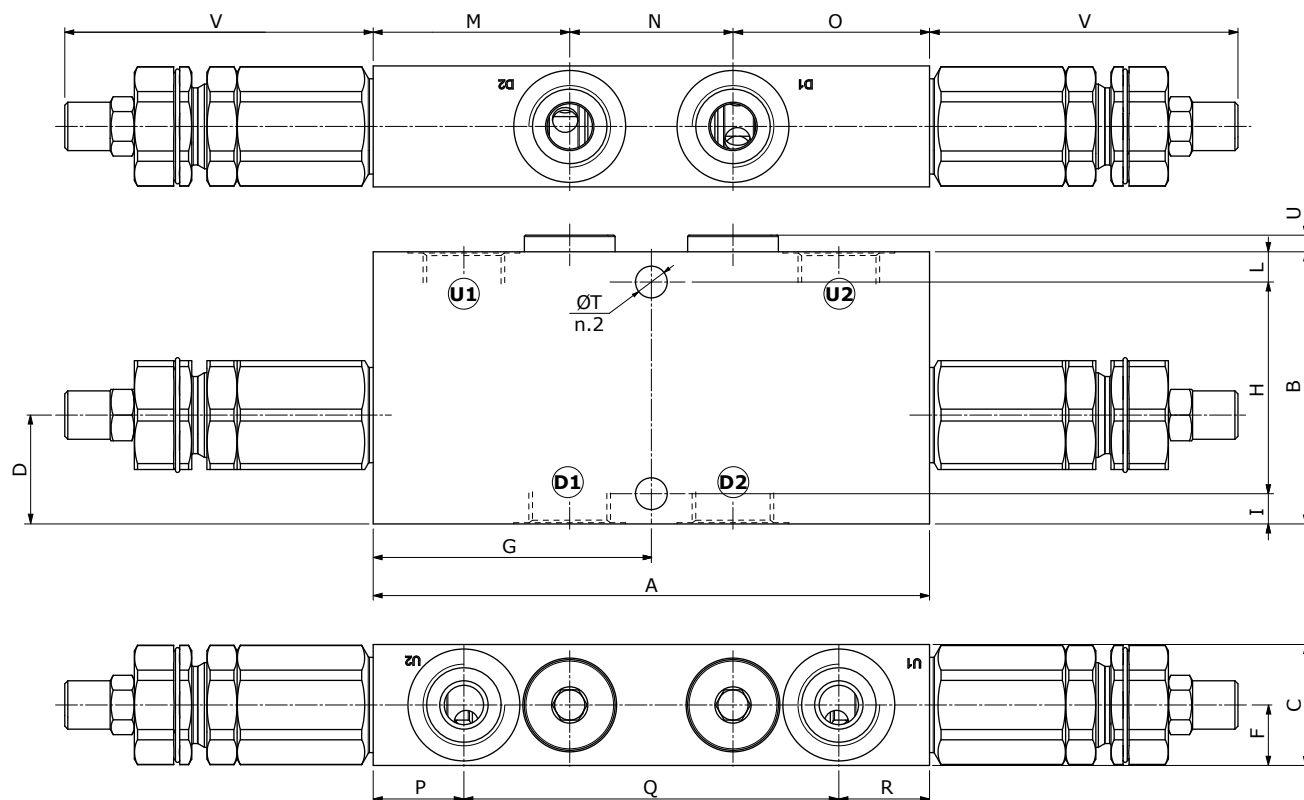
Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                            |           | VODL/CC 38                                                                               | VODL/CC 12                | VODL/CC 34                 | VODL/CC 100                |
|--------------------------------------------|-----------|------------------------------------------------------------------------------------------|---------------------------|----------------------------|----------------------------|
| Nominal flow                               |           | 35 l/min<br>(9.2 US gpm)                                                                 | 70 l/min<br>(18.5 US gpm) | 100 l/min<br>(26.4 US gpm) | 180 l/min<br>(47.6 US gpm) |
| Max. pressure                              |           | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi)                   |                           |                            |                            |
| Oil leakage                                |           | 0.25 cm³/min - 0.015 in³/min. (5 drops) at 210 bar - 3050 psi at 80% of pressure setting |                           |                            |                            |
| Fluid                                      |           | mineral based oil                                                                        |                           |                            |                            |
| Viscosity                                  |           | from 10 to 200 cSt                                                                       |                           |                            |                            |
| Max. level of contamination                |           | 18/16/13 ISO4406                                                                         |                           |                            |                            |
| Fluid temperature                          |           | with NBR seals from -20°C (-4°F) to 80°C (176°F)                                         |                           |                            |                            |
| Environmental temp. for working conditions |           | from -40°C (-40°F) to 100°C (212°F)                                                      |                           |                            |                            |
| Weight                                     | aluminium | 1.45 kg (3.20 lb)                                                                        | 2.00 kg (4.41 lb)         | 3.08 kg (6.79 lb)          | 4.91 kg (10.82 lb)         |
|                                            | steel     | 2.62 kg (5.78 lb)                                                                        | 3.26 kg (7.19 lb)         | 5.29 kg (11.66 lb)         | 9.76 kg (21.52 lb)         |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



### Dimensions



Dimensions are in mm-in

| Valve type         | A           | B           | C            | F             | G            | H          | I           | L           | M            | N          | O            | P            | Q           | R            | ØT            | U             | V             | D1 D2 | U1 U2 |
|--------------------|-------------|-------------|--------------|---------------|--------------|------------|-------------|-------------|--------------|------------|--------------|--------------|-------------|--------------|---------------|---------------|---------------|-------|-------|
| <b>VODL 38/CC</b>  | 141<br>5.55 | 65<br>2.56  | 30<br>1.18   | 15<br>0.59    | 70.5<br>2.76 | 40<br>1.57 | 8<br>0.315  | 17<br>0.67  | 51<br>2.01   | 39<br>1.54 | 51<br>2.01   | 22<br>0.87   | 97<br>3.82  | 22<br>0.87   | 8.5<br>0.335  | 4.5<br>0.177  | 92.5<br>3.64  | G3/8  | G3/8  |
| <b>VODL 12/CC</b>  | 149<br>5.87 | 70<br>2.76  | 34.5<br>1.36 | 17.25<br>0.68 | 74.5<br>2.93 | 48<br>1.89 | 8<br>0.315  | 14<br>0.551 | 50.5<br>1.99 | 48<br>1.89 | 50.5<br>1.99 | 21.5<br>0.85 | 106<br>4.17 | 21.5<br>0.85 | 8.5<br>0.335  | 4.5<br>0.177  | 100.5<br>1.99 | G1/2  | G1/2  |
| <b>VODL 34/CC</b>  | 184<br>7.25 | 90<br>3.54  | 40<br>1.57   | 20<br>0.79    | 92<br>3.62   | 70<br>2.76 | 10<br>0.394 | 10<br>0.394 | 65<br>2.56   | 54<br>2.13 | 65<br>2.56   | 30<br>1.18   | 124<br>4.88 | 30<br>1.18   | 10.5<br>0.413 | 5.5<br>0.217  | 102<br>4.02   | G3/4  | G3/4  |
| <b>VODL 100/CC</b> | 218<br>8.58 | 100<br>3.94 | 60<br>2.36   | 30<br>1.18    | 109<br>4.29  | 80<br>3.15 | 10<br>0.394 | 10<br>0.394 | 76<br>2.99   | 66<br>2.60 | 76<br>2.99   | 30<br>1.18   | 158<br>6.22 | 30<br>1.18   | 10.5<br>0.413 | 12.5<br>0.492 | 101<br>3.98   | G1"   | G1"   |

### Ordering codes and description

#### VODL/CC complete valves

TYPE: **VODL/CC 38/TR.S.p4** CODE: 1559421100  
 DESCRIPTION: Aluminium body, G3/8 ports, pilot ratio 1:4, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/CC 12/TR.S.p7** CODE: 1559431100  
 DESCRIPTION: Aluminium body, G1/2 ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

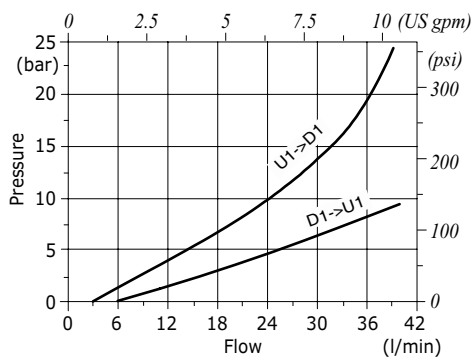
TYPE: **VODL/CC 34/TR.S.p7** CODE: 1559441100  
 DESCRIPTION: Aluminium body, G3/4 ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/CC 100/TR.S.p7** CODE: 1559451100  
 DESCRIPTION: Aluminium body, G1" ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

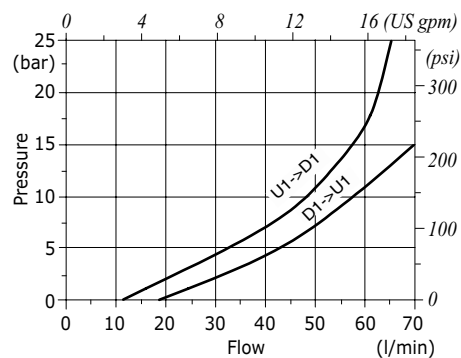
For other configurations and steel body, please contact our Sales Dept.

**Rating diagrams**

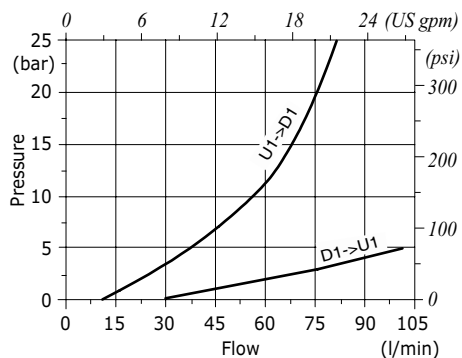
**VODL/CC 38 pressure drop vs. flow  
from D1->U1 and U1->D1**



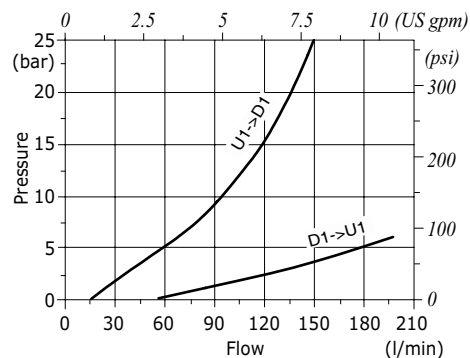
**VODL/CC 12 pressure drop vs. flow  
from D1->U1 and U1->D1**



**VODL/CC 34 pressure drop vs. flow  
from D1->U1 and U1->D1**



**VODL/CC 100 pressure drop vs. flow  
from D1->U1 and U1->D1**







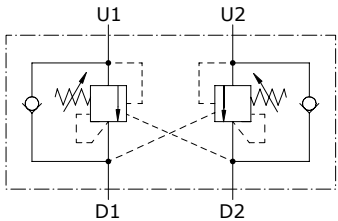
**Type VODL/SC  
counterbalance valves**

- Double acting
- Load sensitive

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

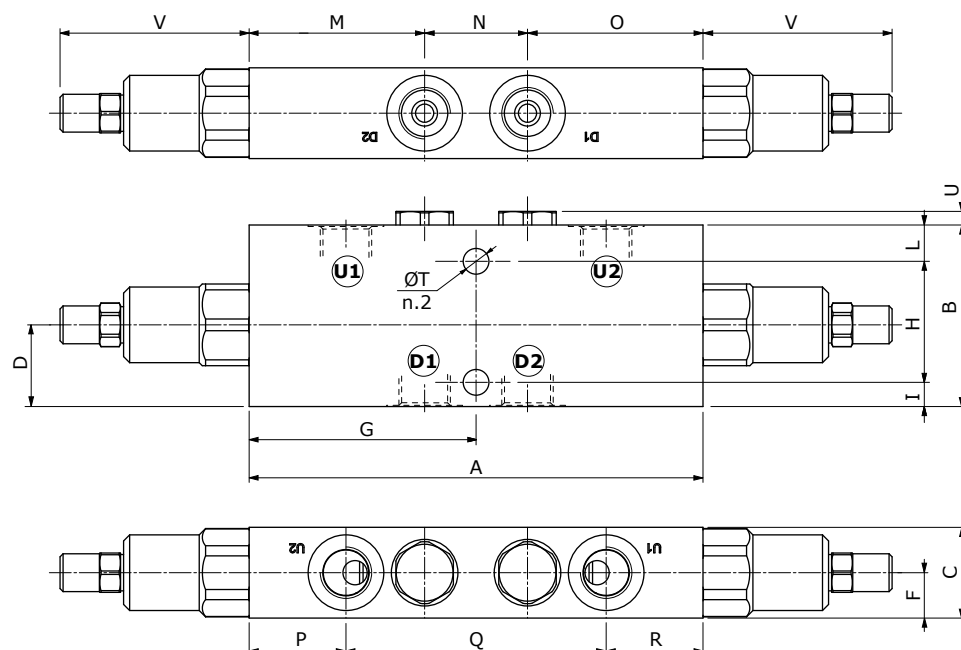
|                                            |           | VODL/SC 38                                                                               | VODL/SC 12                | VODL/SC 34                 | VODL/SC 100                |
|--------------------------------------------|-----------|------------------------------------------------------------------------------------------|---------------------------|----------------------------|----------------------------|
| Nominal flow                               |           | 40 l/min<br>(10.6 US gpm)                                                                | 75 l/min<br>(19.8 US gpm) | 120 l/min<br>(31.7 US gpm) | 180 l/min<br>(47.6 US gpm) |
| Max. pressure                              |           | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi)                   |                           |                            |                            |
| Oil leakage                                |           | 0.25 cm³/min - 0.015 in³/min. (5 drops) at 210 bar - 3050 psi at 80% of pressure setting |                           |                            |                            |
| Fluid                                      |           | mineral based oil                                                                        |                           |                            |                            |
| Viscosity                                  |           | from 10 to 200 cSt                                                                       |                           |                            |                            |
| Max. level of contamination                |           | 18/16/13 ISO4406                                                                         |                           |                            |                            |
| Fluid temperature                          |           | with NBR seals from -20°C (-4°F) to 80°C (176°F)                                         |                           |                            |                            |
| Environmental temp. for working conditions |           | from -40°C (-40°F) to 100°C (212°F)                                                      |                           |                            |                            |
| Weight                                     | aluminium | 1.09 kg (2.40 lb)                                                                        | 1.53 kg (3.37 lb)         | 2.26 kg (4.98 lb)          | 4.24 kg (9.35 lb)          |
|                                            | steel     | 2.15 kg (4.74 lb)                                                                        | 2.96 kg (6.53 lb)         | 4.78 kg (10.54 lb)         | 9.71 kg (21.41 lb)         |

NOTE - For different conditions, please contact Walvoil Sales Dpt.





### Dimensions



| Valve type | D1   | D2   | U1 | U2 |
|------------|------|------|----|----|
| VODL 38    | G3/8 | G3/8 |    |    |
| VODL 12    | G1/2 | G1/2 |    |    |
| VODL 34    | G3/4 | G3/4 |    |    |
| VODL 100   | G1"  | G1"  |    |    |

Dimensions are in mm-in

| Valve type | A    | B    | C    | F    | G    | H    | I     | L     | M    | N    | O    | P    | Q    | R    | ØT    | U     | V    |
|------------|------|------|------|------|------|------|-------|-------|------|------|------|------|------|------|-------|-------|------|
| VODL 38    | 150  | 60   | 30   | 15   | 75   | 40   | 8     | 12    | 58   | 34   | 58   | 32   | 86   | 32   | 8.5   | 4.5   | 62.5 |
|            | 5.91 | 2.36 | 1.18 | 0.59 | 2.95 | 1.57 | 0.315 | 0.472 | 2.28 | 1.34 | 2.28 | 1.26 | 3.82 | 1.26 | 0.335 | 0.177 | 2.46 |
| VODL 12    | 156  | 70   | 35   | 17.5 | 78   | 48   | 8     | 14    | 60   | 36   | 60   | 32   | 92   | 32   | 8.5   | 4.5   | 57.5 |
|            | 6.14 | 2.76 | 1.38 | 0.69 | 3.07 | 1.89 | 0.315 | 0.551 | 2.52 | 1.89 | 2.52 | 1.26 | 3.62 | 1.26 | 0.335 | 0.177 | 2.26 |
| VODL 34    | 186  | 90   | 40   | 20   | 93   | 70   | 10    | 10    | 68   | 50   | 68   | 34   | 118  | 34   | 10.5  | 5.5   | 63.5 |
|            | 7.32 | 3.54 | 1.57 | 0.79 | 3.66 | 2.76 | 0.394 | 0.394 | 2.68 | 1.97 | 2.68 | 2.28 | 4.65 | 2.28 | 0.413 | 0.217 | 2.50 |
| VODL 100   | 232  | 100  | 60   | 30   | 116  | 80   | 10    | 10    | 83   | 66   | 83   | 35   | 162  | 35   | 10.5  | 12.5  | 63.5 |
|            | 9.13 | 3.94 | 2.36 | 1.18 | 4.57 | 3.15 | 0.394 | 0.394 | 3.27 | 2.60 | 3.27 | 1.38 | 6.38 | 1.38 | 0.413 | 0.492 | 2.50 |

### Ordering codes and description

#### VODL/SC complete valves

TYPE: **VODL/SC 38/TR.S.p4** CODE: 1560021102  
 DESCRIPTION: Aluminium body, G3/8 ports, pilot ratio 1:4, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/SC 12/TR.S.p7** CODE: 1560031102  
 DESCRIPTION: Aluminium body, G1/2 ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

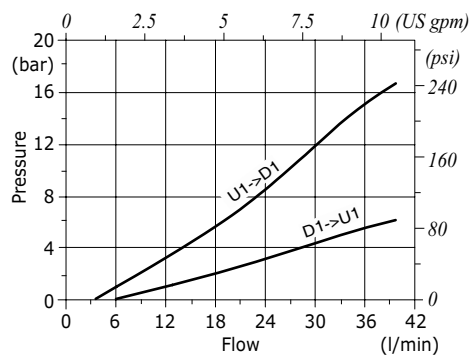
TYPE: **VODL/SC 34/TR.S.p7** CODE: 1560041102  
 DESCRIPTION: Aluminium body, G3/4 ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/SC 100/TR.S.p7** CODE: 1560051102  
 DESCRIPTION: Aluminium body, G1" ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

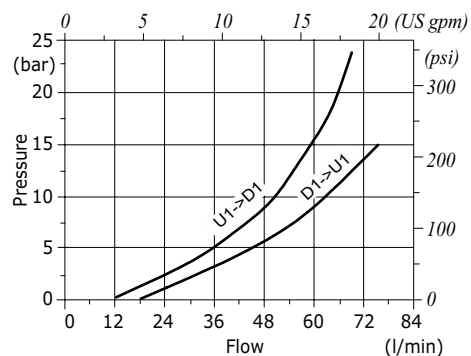
For other configurations and steel body, please contact our Sales Dept.

**Rating diagrams**

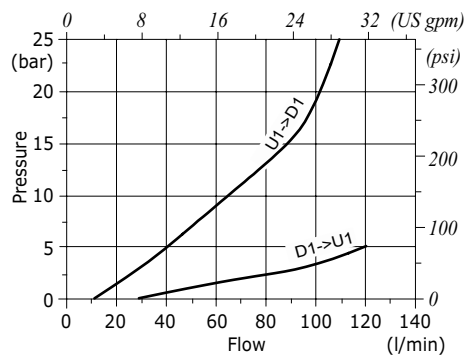
**VODL/SC 38 pressure drop vs. flow  
from D1->U1 and U1->D1**



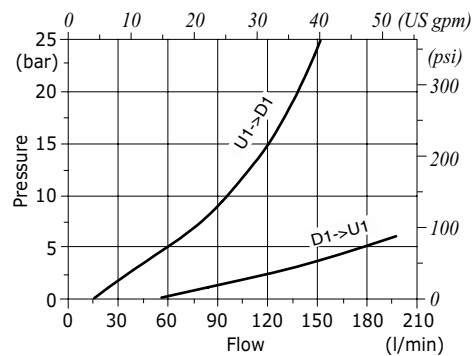
**VODL/SC 12 pressure drop vs. flow  
from D1->U1 and U1->D1**



**VODL/SC 34 pressure drop vs. flow  
from D1->U1 and U1->D1**



**VODL/SC 100 pressure drop vs. flow  
from D1->U1 and U1->D1**







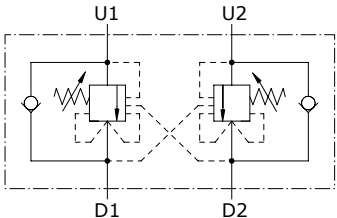
**Type VODL/SC/CC  
counterbalance valves**

- Double acting
- Relief compensated

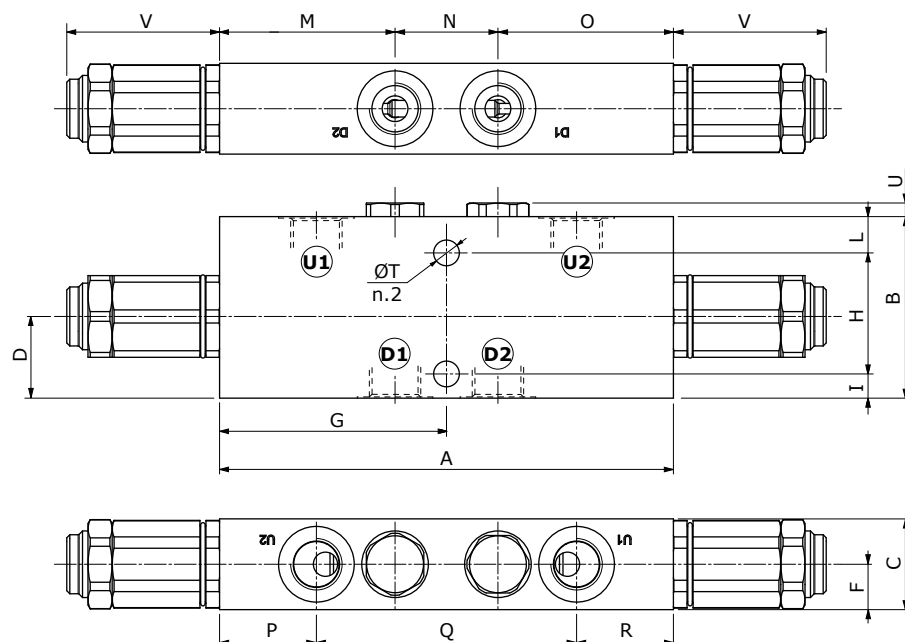
Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                            |           | VODL/SC/CC 38                                                                            | VODL/SC/CC 12             | VODL/SC/CC 34              | VODL/SC/CC 100             |
|--------------------------------------------|-----------|------------------------------------------------------------------------------------------|---------------------------|----------------------------|----------------------------|
| Nominal flow                               |           | 40 l/min<br>(10.6 US gpm)                                                                | 75 l/min<br>(18.5 US gpm) | 120 l/min<br>(31.7 US gpm) | 180 l/min<br>(47.6 US gpm) |
| Max. pressure                              |           | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi)                   |                           |                            |                            |
| Oil leakage                                |           | 0.25 cm³/min - 0.015 in³/min. (5 drops) at 210 bar - 3050 psi at 80% of pressure setting |                           |                            |                            |
| Fluid                                      |           | mineral based oil                                                                        |                           |                            |                            |
| Viscosity                                  |           | from 10 to 200 cSt                                                                       |                           |                            |                            |
| Max. level of contamination                |           | 18/16/13 ISO4406                                                                         |                           |                            |                            |
| Fluid temperature                          |           | with NBR seals from -20°C (-4°F) to 80°C (176°F)                                         |                           |                            |                            |
| Environmental temp. for working conditions |           | from -40°C (-40°F) to 100°C (212°F)                                                      |                           |                            |                            |
| Weight                                     | aluminium | 1.14 kg (2.51 lb)                                                                        | 1.63 kg (3.59 lb)         | 2.37 kg (5.22 lb)          | 4.35 kg (9.59 lb)          |
|                                            | steel     | 2.18 kg (4.81 lb)                                                                        | 3.06 kg (6.75 lb)         | 4.85 kg (10.69 lb)         | 9.82 kg (21.65 lb)         |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



### Dimensions



| Valve type | D1   | D2   | U1 | U2 |
|------------|------|------|----|----|
| VODL 38    | G3/8 | G3/8 |    |    |
| VODL 12    | G1/2 | G1/2 |    |    |
| VODL 34    | G3/4 | G3/4 |    |    |
| VODL 100   | G1"  | G1"  |    |    |

Dimensions are in mm-in

| Valve type | A    | B    | C    | F    | G    | H    | I     | L     | M    | N    | O    | P    | Q    | R    | ØT    | U     | V    |
|------------|------|------|------|------|------|------|-------|-------|------|------|------|------|------|------|-------|-------|------|
| VODL 38    | 150  | 60   | 30   | 15   | 75   | 40   | 8     | 12    | 58   | 34   | 58   | 32   | 86   | 32   | 8.5   | 4.5   | 50.5 |
|            | 5.91 | 2.36 | 1.18 | 0.59 | 2.95 | 1.57 | 0.315 | 0.472 | 2.28 | 1.34 | 2.28 | 1.26 | 3.82 | 1.26 | 0.335 | 0.177 | 1.99 |
| VODL 12    | 156  | 70   | 35   | 17.5 | 78   | 48   | 8     | 14    | 60   | 36   | 60   | 32   | 92   | 32   | 8.5   | 4.5   | 50.5 |
|            | 6.14 | 2.76 | 1.38 | 0.69 | 3.07 | 1.89 | 0.315 | 0.551 | 2.52 | 1.89 | 2.52 | 1.26 | 3.62 | 1.26 | 0.335 | 0.177 | 1.99 |
| VODL 34    | 186  | 90   | 40   | 20   | 93   | 70   | 10    | 10    | 68   | 50   | 68   | 34   | 118  | 34   | 10.5  | 5.5   | 50.5 |
|            | 7.32 | 3.54 | 1.57 | 0.79 | 3.66 | 2.76 | 0.394 | 0.394 | 2.68 | 1.97 | 2.68 | 2.28 | 4.65 | 2.28 | 0.413 | 0.217 | 1.99 |
| VODL 100   | 232  | 100  | 60   | 30   | 116  | 80   | 10    | 10    | 83   | 66   | 83   | 35   | 162  | 35   | 10.5  | 12.5  | 50.5 |
|            | 9.13 | 3.94 | 2.36 | 1.18 | 4.57 | 3.15 | 0.394 | 0.394 | 3.27 | 2.60 | 3.27 | 1.38 | 6.38 | 1.38 | 0.413 | 0.492 | 1.99 |

### Ordering codes and description

#### VODL/SC/CC complete valves

TYPE: **VODL/SC/CC 38/TR.S.p4** CODE: 1565021102  
 DESCRIPTION: Aluminium body, G3/8 ports, pilot ratio 1:4, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/SC/CC 12/TR.S.p7** CODE: 1565031102  
 DESCRIPTION: Aluminium body, G1/2 ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

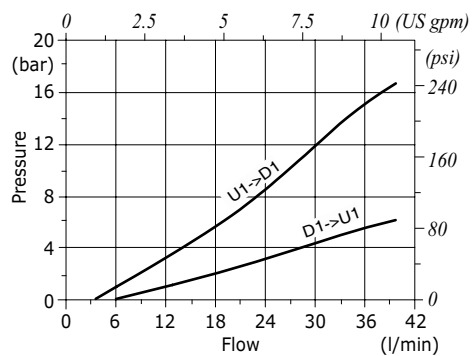
TYPE: **VODL/SC/CC 34/TR.S.p7** CODE: 1565041102  
 DESCRIPTION: Aluminium body, G3/4 ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

TYPE: **VODL/SC/CC 100/TR.S.p7** CODE: 1565051102  
 DESCRIPTION: Aluminium body, G1" ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)

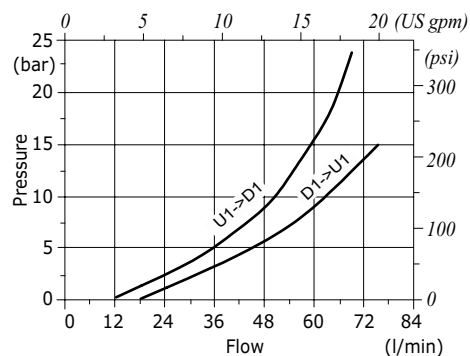
For other configurations and steel body, please contact our Sales Dept.

**Rating diagrams**

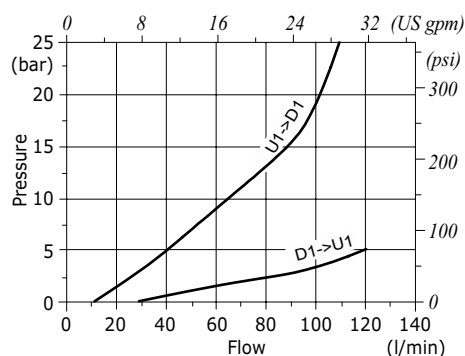
**VODL/SC/CC 38 pressure drop vs. flow  
from D1->U1 and U1->D1**



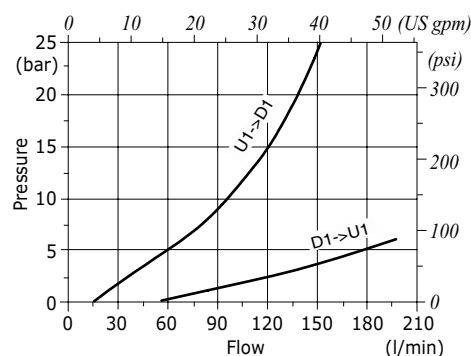
**VODL/SC/CC 12 pressure drop vs. flow  
from D1->U1 and U1->D1**



**VODL/SC/CC 34 pressure drop vs. flow  
from D1->U1 and U1->D1**



**VODL/SC/CC 100 pressure drop vs. flow  
from D1->U1 and U1->D1**







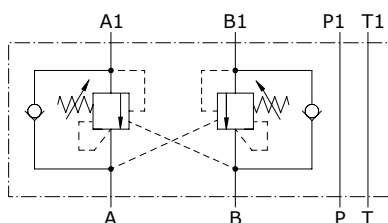
## Type VODL/ML counterbalance valves

- Double acting
- Load sensitive
- Flange assembling according to ISO 4401:2005 (CETOP)

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                            | VODL/ML 6-38                                                                                                       | VODL/ML 10-12          |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------|------------------------|
| Nominal flow                               | 35 l/min (9.2 US gpm)                                                                                              | 70 l/min (18.5 US gpm) |
| Max. pressure                              | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi)                                             |                        |
| Oil leakage                                | 0.25 cm <sup>3</sup> /min - 0.015 in <sup>3</sup> /min. (5 drops) at 210 bar - 3050 psi at 80% of pressure setting |                        |
| Fluid                                      | mineral based oil                                                                                                  |                        |
| Viscosity                                  | from 10 to 200 cSt                                                                                                 |                        |
| Max. level of contamination                | 18/16/13 ISO4406                                                                                                   |                        |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F)                                                                   |                        |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                                                                                |                        |
| Weight                                     | aluminium                                                                                                          | 1.75 kg (3.86 lb)      |
|                                            | steel                                                                                                              | 3.70 kg (8.16 lb)      |
|                                            |                                                                                                                    | 3.25 kg (7.147 lb)     |
|                                            |                                                                                                                    | 7.55 kg (16.64 lb)     |

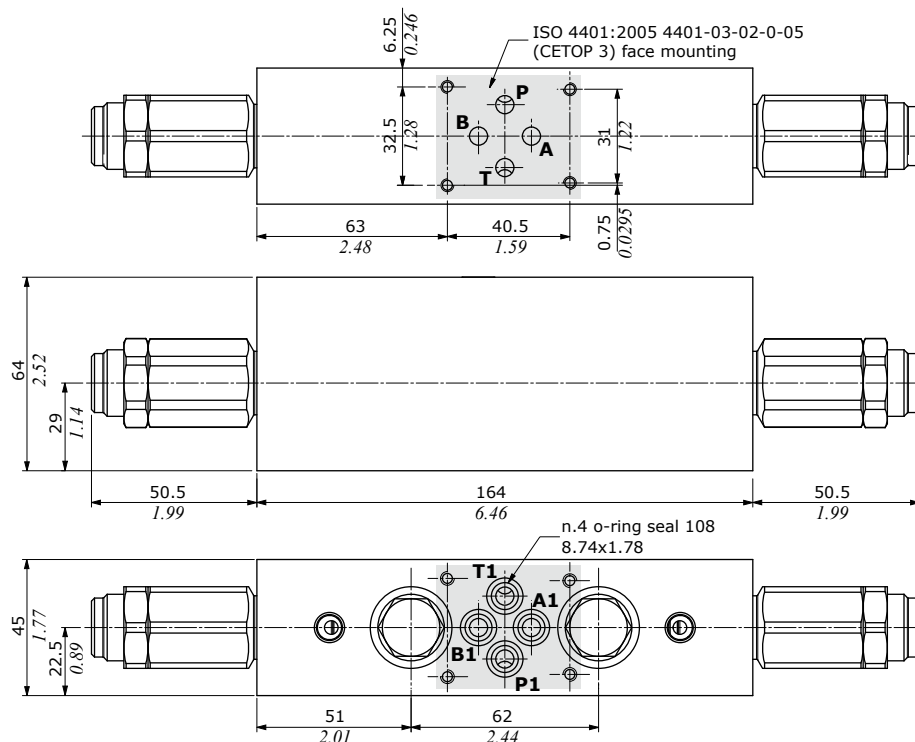
NOTE - For different conditions, please contact Walvoil Sales Dpt.



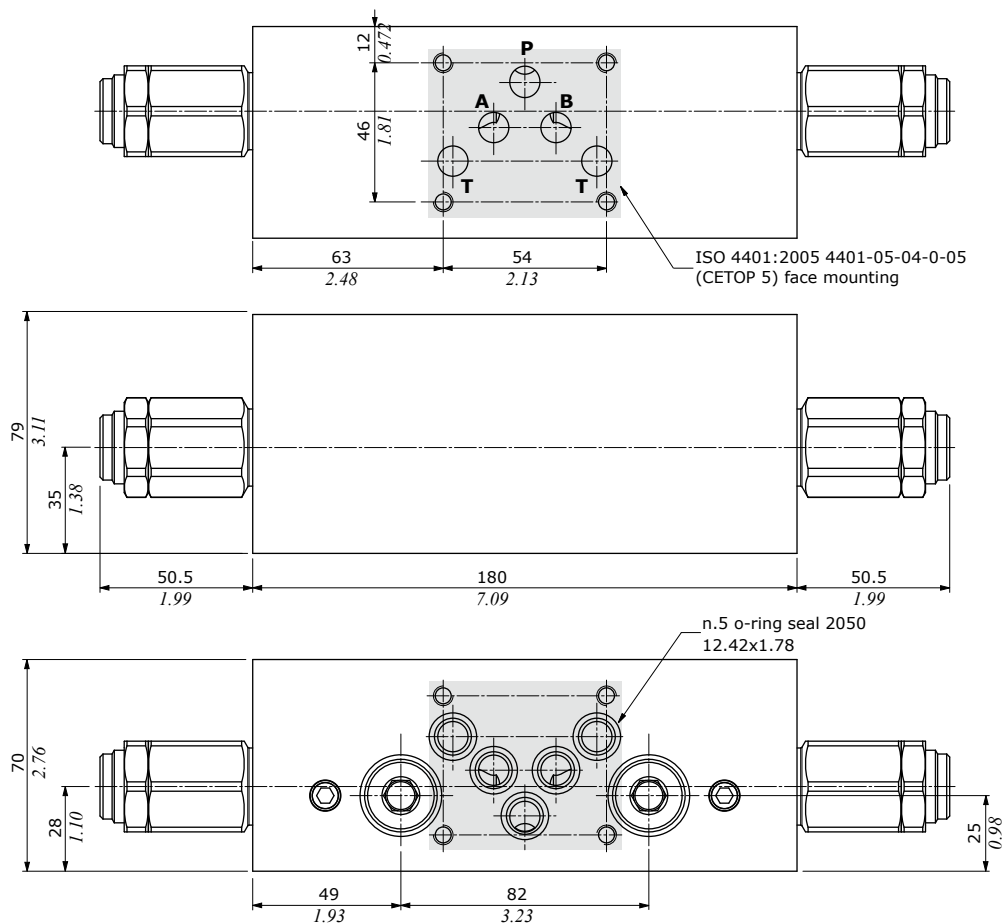


## Dimensions

### VODL/ML 6-38



### VODL/ML 10-12

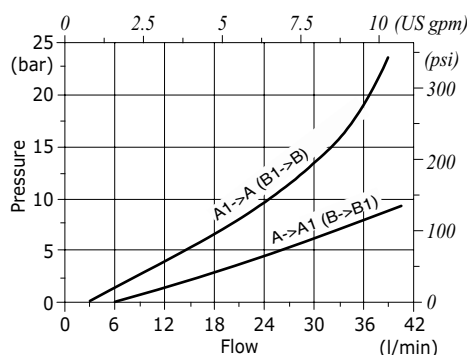


**VODL/ML complete valves**

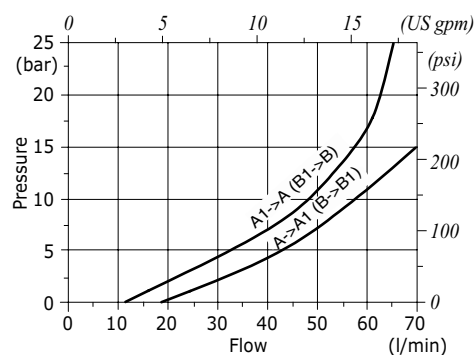
TYPE: **VODL/ML 6-38/TR.S.p4** CODE: 1558021802  
DESCRIPTION: Aluminium body, CETOP 3 flange, pilot ratio 1:4, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VODL/ML 10-12/TR.S.p7** CODE: 1518031802  
DESCRIPTION: Aluminium body, CETOP 5 flange, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
For other configurations and steel body, please contact our Sales Dept.

**Rating diagrams**

**VODL/ML 6-38 pressure drop vs. flow  
from A->A1 (B->B1) and A1->A (B1->B)**



**VODL/ML 10-12 pressure drop vs. flow  
from A->A1 (B->B1) and A1->A (B1->B)**







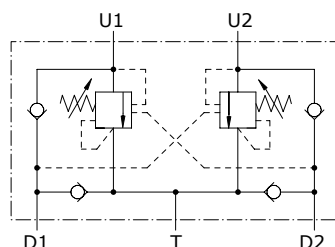
## Type VABAL counterbalance valves

- Cross line, relief valve for motion control
- Load sensitive

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

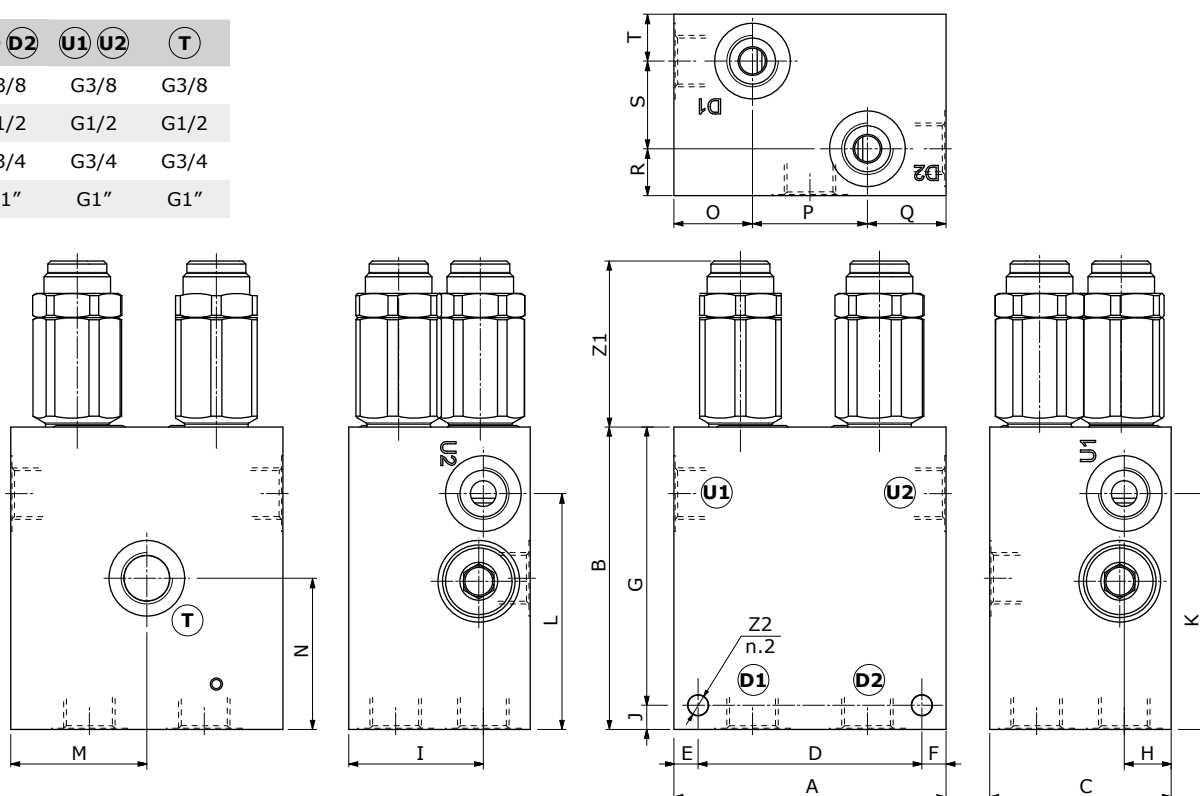
|                                            | VABAL 38                                                                                 | VABAL 12                  | VABAL 34                   | VABAL 100                  |                     |
|--------------------------------------------|------------------------------------------------------------------------------------------|---------------------------|----------------------------|----------------------------|---------------------|
| Nominal flow                               | 35 l/min<br>(9.2 US gpm)                                                                 | 70 l/min<br>(18.5 US gpm) | 100 l/min<br>(26.4 US gpm) | 180 l/min<br>(47.5 US gpm) |                     |
| Max. pressure                              | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi)                   |                           |                            |                            |                     |
| Oil leakage                                | 0.25 cm³/min - 0.015 in³/min. (5 drops) at 210 bar - 3050 psi at 80% of pressure setting |                           |                            |                            |                     |
| Fluid                                      | mineral based oil                                                                        |                           |                            |                            |                     |
| Viscosity                                  | from 10 to 200 cSt                                                                       |                           |                            |                            |                     |
| Max. level of contamination                | 18/16/13 ISO4406                                                                         |                           |                            |                            |                     |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F)                                         |                           |                            |                            |                     |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                                                      |                           |                            |                            |                     |
| Weight                                     | aluminium                                                                                | 2.16 kg (4.76 lb)         | 2.48 kg (5.47 lb)          | 4.47 kg (9.85 lb)          | 9.32 kg (20.55 lb)  |
|                                            | steel                                                                                    | 4.33 kg (9.55 lb)         | 5.14 kg (11.33 lb)         | 9.05 kg (19.95 lb)         | 20.65 kg (45.53 lb) |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



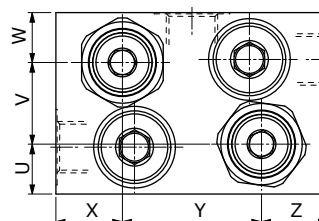
## Dimensions

| Valve type | D1 D2 | U1 U2 | T    |
|------------|-------|-------|------|
| VABAL 38   | G3/8  | G3/8  | G3/8 |
| VABAL 12   | G1/2  | G1/2  | G1/2 |
| VABAL 34   | G3/4  | G3/4  | G3/4 |
| VABAL 100  | G1"   | G1"   | G1"  |



Dimensions are in mm-in

| Valve type | A           | B           | C           | D           | E           | F           | G           | J           | K            |
|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| VODL 38    | 90<br>3.54  | 100<br>3.94 | 60<br>2.36  | 74<br>2.91  | 8<br>0.315  | 8<br>0.315  | 92<br>3.62  | 8<br>0.315  | 78<br>3.07   |
| VODL 12    | 100<br>3.94 | 100<br>3.94 | 70<br>2.76  | 84<br>3.31  | 8<br>0.315  | 8<br>0.315  | 92<br>3.62  | 8<br>0.315  | 78.5<br>3.09 |
| VODL 34    | 120<br>4.72 | 120<br>4.72 | 85<br>3.35  | 100<br>3.94 | 10<br>0.394 | 10<br>0.394 | 110<br>4.33 | 10<br>0.394 | 90<br>3.54   |
| VODL 100   | 160<br>6.30 | 160<br>6.30 | 110<br>4.33 | 136<br>5.35 | 12<br>0.472 | 12<br>0.472 | 148<br>5.83 | 12<br>0.472 | 130<br>5.12  |



| Valve type | H            | I            | L            | M          | N          | O          | P          | Q          | R            | S          | T            | U            | V          | W            | X          | Y          | Z          | Z1           | Z2  |
|------------|--------------|--------------|--------------|------------|------------|------------|------------|------------|--------------|------------|--------------|--------------|------------|--------------|------------|------------|------------|--------------|-----|
| VODL 38    | 15.5<br>0.61 | 44.5<br>1.75 | 78<br>3.07   | 45<br>1.77 | 50<br>1.97 | 26<br>1.02 | 38<br>1.50 | 26<br>1.02 | 15.5<br>0.61 | 29<br>1.14 | 15.5<br>0.61 | 16.5<br>0.65 | 27<br>1.06 | 16.5<br>0.65 | 22<br>0.87 | 46<br>1.81 | 22<br>0.87 | 54.8<br>2.16 | M8  |
| VODL 12    | 17.5<br>0.69 | 52.5<br>2.07 | 78.5<br>3.09 | 50<br>1.97 | 48<br>1.89 | 29<br>1.14 | 42<br>1.14 | 29<br>1.14 | 17.5<br>0.69 | 35<br>1.38 | 17.5<br>0.69 | 18.5<br>0.73 | 33<br>1.30 | 18.5<br>0.73 | 27<br>1.06 | 46<br>1.81 | 27<br>1.06 | 50.2<br>1.98 | M8  |
| VODL 34    | 21<br>0.83   | 64<br>2.52   | 90<br>3.54   | 60<br>2.36 | 55<br>2.17 | 33<br>1.30 | 54<br>2.13 | 33<br>1.30 | 21<br>0.83   | 43<br>1.70 | 21<br>0.83   | 24<br>0.94   | 37<br>1.46 | 24<br>0.94   | 28<br>1.10 | 64<br>2.52 | 28<br>1.10 | 60.8<br>2.39 | M10 |
| VODL 100   | 30<br>1.18   | 80<br>3.15   | 130<br>5.12  | 80<br>3.15 | 84<br>3.31 | 47<br>1.85 | 66<br>2.60 | 47<br>1.85 | 30<br>1.18   | 50<br>1.97 | 30<br>1.18   | 30<br>1.18   | 50<br>1.97 | 30<br>1.18   | 47<br>1.85 | 66<br>2.60 | 47<br>1.85 | 64.7<br>2.54 | M12 |

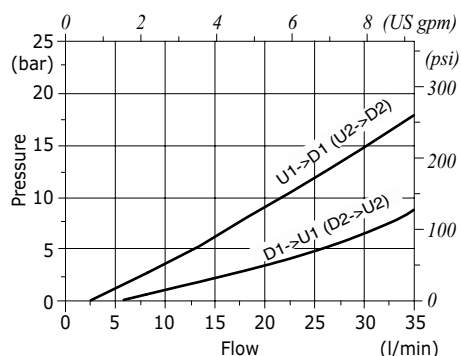
## Ordering codes

### VABAL complete valves

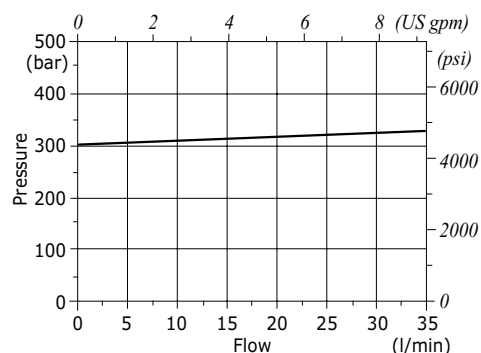
TYPE: **VABAL 38/TR.S.p4** CODE: 1570021102  
 DESCRIPTION: Aluminium body, G3/8 ports, pilot ratio 1:4, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
 TYPE: **VABAL 12/TR.S.p7** CODE: 1570031102  
 DESCRIPTION: Aluminium body, G1/2 ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
 TYPE: **VABAL 34/TR.S.p7** CODE: 1570041102  
 DESCRIPTION: Aluminium body, G3/4 ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
 TYPE: **VABAL 100/TR.S.p7.PG** CODE: 1570051102  
 DESCRIPTION: Aluminium body, G1" ports, pilot ratio 1:7, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
 For other configurations and steel body, please contact our Sales Dept.

**Rating diagrams**

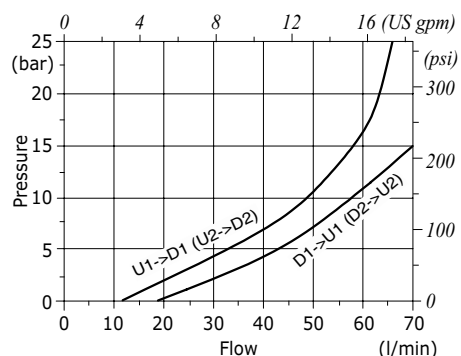
**VABAL 38 pressure drop vs. flow**  
from U1->D1 (U2->D2) and D1->U1 (D2->U2)



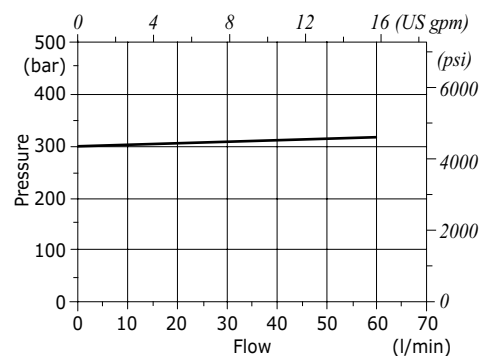
**VABAL 38 pressure setting vs. flow**  
from U1 (U2)->T



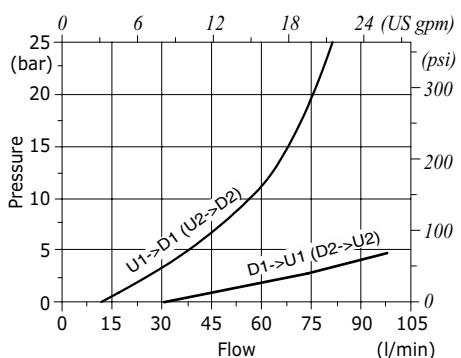
**VABAL 12 pressure drop vs. flow**  
from U1->D1 (U2->D2) and D1->U1 (D2->U2)



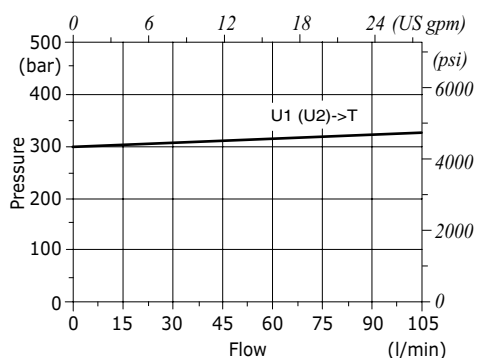
**VABAL 12 pressure setting vs. flow**  
from U1 (U2)->T



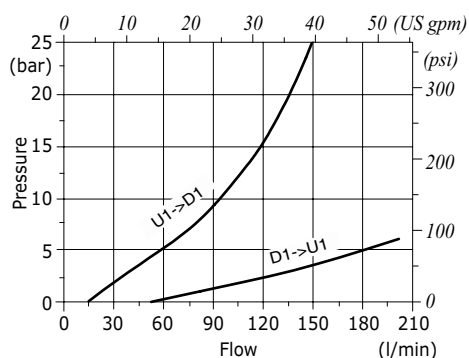
**VABAL 34 pressure drop vs. flow**  
from U1->D1 (U2->D2) and D1->U1 (D2->U2)



**VABAL 34 pressure setting vs. flow**  
from U1 (U2)->T



**VABAL 100 pressure drop vs. flow**  
from U1->D1 and D1->U1







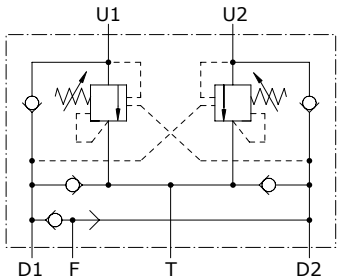
**Type VABAL/SF  
counterbalance valves**

- Cross line, relief valve for motion control
- Load sensitive

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

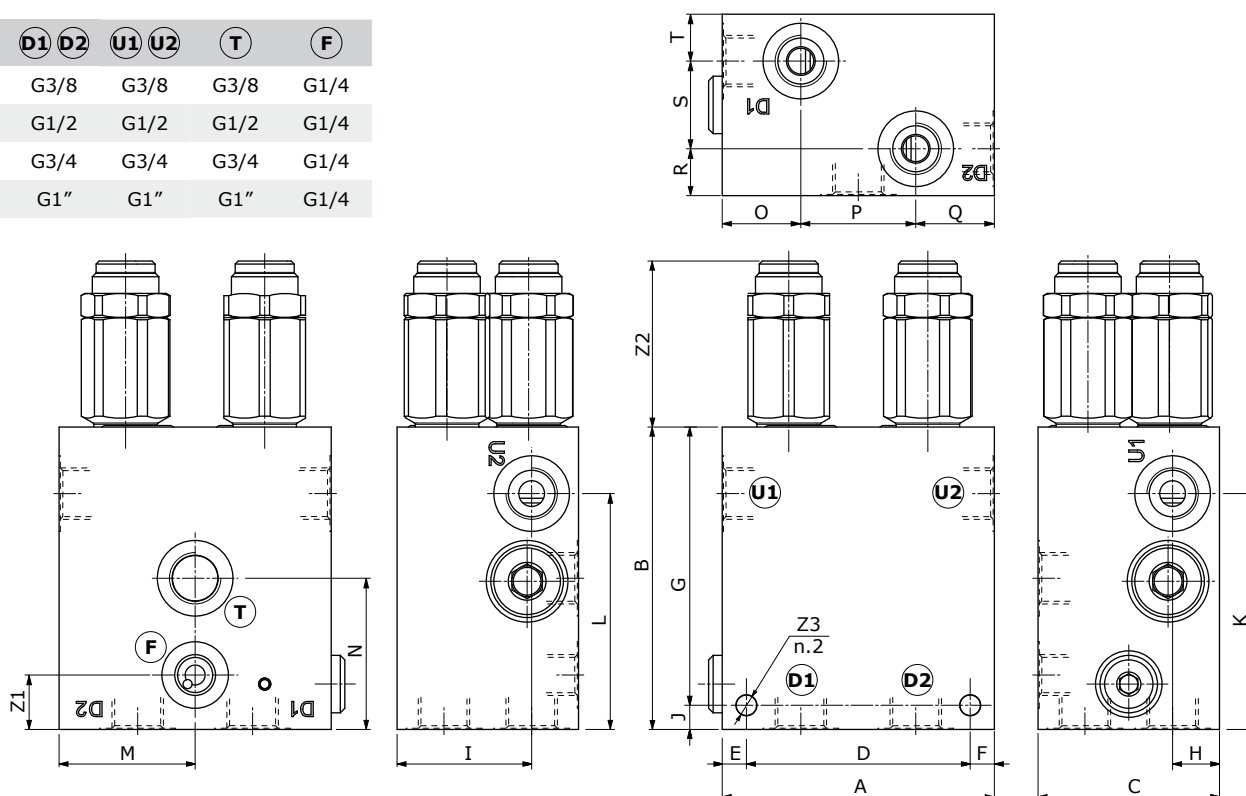
|                                            |           | VABAL/SF 38                                                                              | VABAL/SF 12               | VABAL/SF 34                | VABAL/SF 100               |
|--------------------------------------------|-----------|------------------------------------------------------------------------------------------|---------------------------|----------------------------|----------------------------|
| Nominal flow                               |           | 35 l/min<br>(9.2 US gpm)                                                                 | 70 l/min<br>(18.5 US gpm) | 100 l/min<br>(26.4 US gpm) | 180 l/min<br>(47.6 US gpm) |
| Max. pressure                              |           | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi)                   |                           |                            |                            |
| Oil leakage                                |           | 0.25 cm³/min - 0.015 in³/min. (5 drops) at 210 bar - 3050 psi at 80% of pressure setting |                           |                            |                            |
| Fluid                                      |           | mineral based oil                                                                        |                           |                            |                            |
| Viscosity                                  |           | from 10 to 200 cSt                                                                       |                           |                            |                            |
| Max. level of contamination                |           | 18/16/13 ISO4406                                                                         |                           |                            |                            |
| Fluid temperature                          |           | with NBR seals from -20°C (-4°F) to 80°C (176°F)                                         |                           |                            |                            |
| Environmental temp. for working conditions |           | from -40°C (-40°F) to 100°C (212°F)                                                      |                           |                            |                            |
| Weight                                     | aluminium | 2.73 kg (6.02 lb)                                                                        | 2.50 kg (5.51 lb)         | 4.52 kg (9.96 lb)          | 9.27 kg (20.44 lb)         |
|                                            | steel     | 4.31 kg (9.50 lb)                                                                        | 5.19 kg (11.44 lb)        | 9.03 kg (19.91 lb)         | 20.27 kg (44.69 lb)        |

NOTE - For different conditions, please contact Walvoil Sales Dpt.





| Valve type       | D1 D2 | U1 U2 | T    | F    |
|------------------|-------|-------|------|------|
| <b>VABAL 38</b>  | G3/8  | G3/8  | G3/8 | G1/4 |
| <b>VABAL 12</b>  | G1/2  | G1/2  | G1/2 | G1/4 |
| <b>VABAL 34</b>  | G3/4  | G3/4  | G3/4 | G1/4 |
| <b>VABAL 100</b> | G1"   | G1"   | G1"  | G1/4 |



| Valve type | A    | B    | C    | D    | E     | F     | G    | J     | K    |
|------------|------|------|------|------|-------|-------|------|-------|------|
| VODL 38    | 90   | 100  | 60   | 74   | 8     | 8     | 92   | 8     | 78   |
|            | 3.54 | 3.94 | 2.36 | 2.91 | 0.315 | 0.315 | 3.62 | 0.315 | 3.07 |
| VODL 12    | 100  | 100  | 70   | 84   | 8     | 8     | 92   | 8     | 78.5 |
|            | 3.94 | 3.94 | 2.76 | 3.31 | 0.315 | 0.315 | 3.62 | 0.315 | 3.09 |
| VODL 34    | 120  | 120  | 85   | 100  | 10    | 10    | 110  | 10    | 90   |
|            | 4.72 | 4.72 | 3.35 | 3.94 | 0.394 | 0.394 | 4.33 | 0.394 | 3.54 |
| VODL 100   | 160  | 160  | 110  | 136  | 12    | 12    | 148  | 12    | 130  |
|            | 6.30 | 6.30 | 4.33 | 5.35 | 0.472 | 0.472 | 5.83 | 0.472 | 5.12 |

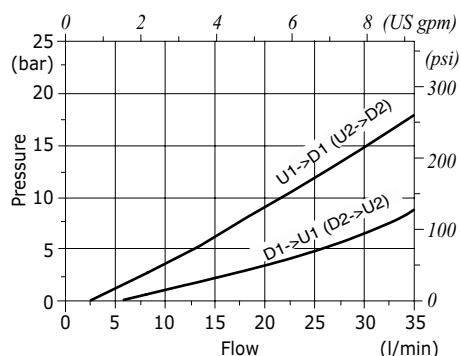
| Valve type | H    | I    | L    | M    | N    | O    | P    | Q    | R    | S    | T    | U    | V    | W    | X    | Y    | Z    | Z1   | Z2   | Z3  |
|------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|
| VODL 38    | 15.5 | 44.5 | 78   | 45   | 50   | 26   | 38   | 26   | 15.5 | 29   | 15.5 | 16.5 | 27   | 16.5 | 22   | 46   | 22   | 18   | 54.8 | M8  |
|            | 0.61 | 1.75 | 3.07 | 1.77 | 1.97 | 1.02 | 1.50 | 1.02 | 0.61 | 1.14 | 0.61 | 0.65 | 1.06 | 0.65 | 0.87 | 1.81 | 0.87 | 0.71 | 2.16 |     |
| VODL 12    | 17.5 | 52.5 | 78.5 | 50   | 48   | 29   | 42   | 29   | 17.5 | 35   | 17.5 | 18.5 | 33   | 18.5 | 27   | 46   | 27   | 18   | 50.2 | M8  |
|            | 0.69 | 2.07 | 3.09 | 1.97 | 1.89 | 1.14 | 1.14 | 1.14 | 0.69 | 1.38 | 0.69 | 0.73 | 1.30 | 0.73 | 1.06 | 1.81 | 1.06 | 0.71 | 1.98 |     |
| VODL 34    | 21   | 64   | 90   | 60   | 55   | 33   | 54   | 33   | 21   | 43   | 21   | 24   | 37   | 24   | 28   | 64   | 28   | 20   | 60.8 | M10 |
|            | 0.83 | 2.52 | 3.54 | 2.36 | 2.17 | 1.30 | 2.13 | 1.30 | 0.83 | 1.70 | 0.83 | 0.94 | 1.46 | 0.94 | 1.10 | 2.52 | 1.10 | 0.79 | 2.39 |     |
| VODL 100   | 30   | 80   | 130  | 80   | 84   | 47   | 66   | 47   | 30   | 50   | 30   | 30   | 50   | 30   | 47   | 66   | 47   | 27   | 64.7 | M12 |
|            | 1.18 | 3.15 | 5.12 | 3.15 | 3.31 | 1.85 | 2.60 | 1.85 | 1.18 | 1.97 | 1.18 | 1.18 | 1.97 | 1.18 | 1.85 | 2.60 | 1.85 | 1.06 | 2.54 |     |

## VABAL/SF complete valves

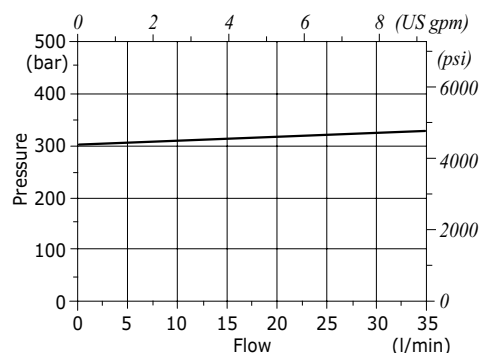
TYPE: **VABAL/SF 38/TR.S.p3** CODE: 1572021103  
DESCRIPTION: Aluminium body, G3/8 ports, pilot ratio 1:3, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VABAL/SF 12/TR.S.p3** CODE: 1572031103  
DESCRIPTION: Aluminium body, G1/2 ports, pilot ratio 1:3, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VABAL/SF 34/TR.S.p3** CODE: 1572041103  
DESCRIPTION: Aluminium body, G3/4 ports, pilot ratio 1:3, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
TYPE: **VABAL/SF 100/TR.S.p3.PG** CODE: 1572051103  
DESCRIPTION: Aluminium body, G1" ports, pilot ratio 1:3, range 50-350 bar (725-5075 psi), std setting 280 bar (4060 psi) @ 5 l/min (1.32 US gpm)  
For other configurations and steel body please contact our Sales Dept.

**Rating diagrams**

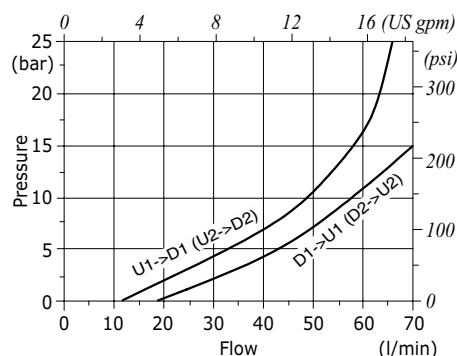
**VABAL 38 pressure drop vs. flow**  
from U1->D1 (U2->D2) and D1->U1 (D2->U2)



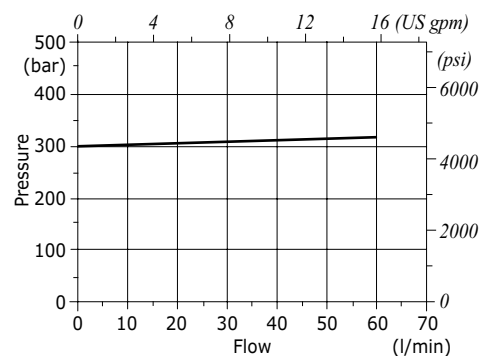
**VABAL 38 pressure setting vs. flow**  
from U1 (U2)->T



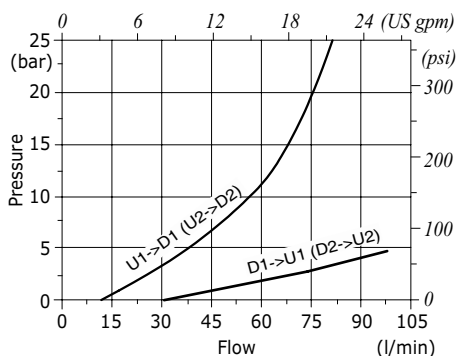
**VABAL 12 pressure drop vs. flow**  
from U1->D1 (U2->D2) and D1->U1 (D2->U2)



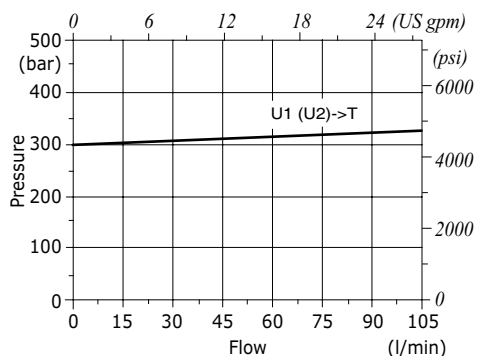
**VABAL 12 pressure setting vs. flow**  
from U1 (U2)->T



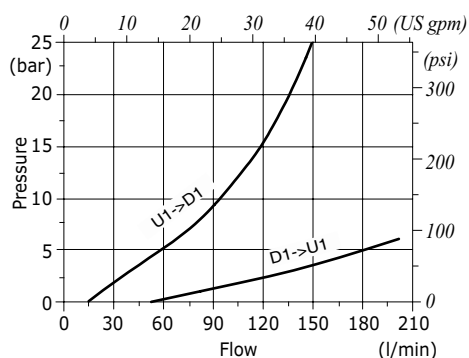
**VABAL 34 pressure drop vs. flow**  
from U1->D1 (U2->D2) and D1->U1 (D2->U2)



**VABAL 34 pressure setting vs. flow**  
from U1 (U2)->T



**VABAL 100 pressure drop vs. flow**  
from U1->D1 and D1->U1







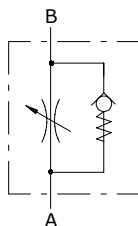
## Type VSRU/C needle valves

- Poppet type
- With check valve

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                                  | VSRU/C 14                                         | VSRU/C 38                 | VSRU/C 12                 | VSRU/C 34                 | VSRU/C 100                  | VSRU/C 114                 | VSRU/C 112                 |                       |
|--------------------------------------------------|---------------------------------------------------|---------------------------|---------------------------|---------------------------|-----------------------------|----------------------------|----------------------------|-----------------------|
| Nominal flow<br>from A to B                      | 30 l/min<br>(7.9 US gpm)                          | 40 l/min<br>(10.6 US gpm) | 50 l/min<br>(13.2 US gpm) | 80 l/min<br>(21.1 US gpm) | 110 l/min<br>(29 US gpm)    | 150 l/min<br>(39.6 US gpm) | 210 l/min<br>(55.5 US gpm) |                       |
| Nominal flow <b>C</b><br>from B to A             | 30 l/min<br>(7.9 US gpm)                          | 50 l/min<br>(13.2 US gpm) | 80 l/min<br>(21.1 US gpm) | 110 l/min<br>(29 US gpm)  | 160 l/min<br>(42.27 US gpm) | 210 l/min<br>(55.5 US gpm) | 280 l/min<br>(74 US gpm)   |                       |
| Nominal flow <b>S</b><br>from B to A             | 12 l/min<br>(3.17 US gpm)                         | 25 l/min<br>(6.6 US gpm)  | 35 l/min<br>(9.25 US gpm) | 50 l/min<br>(13.2 US gpm) | -                           | -                          | -                          |                       |
| Max. pressure                                    | 350 bar<br>(5100 psi)                             | 350 bar<br>(5100 psi)     | 350 bar<br>(5100 psi)     | 300 bar<br>(4350 psi)     | 250 bar<br>(3600 psi)       | 230 bar<br>(3300 psi)      | 230 bar<br>(3300 psi)      |                       |
| Fluid                                            | mineral based oil                                 |                           |                           |                           |                             |                            |                            |                       |
| Viscosity                                        | from 10 to 200 cSt                                |                           |                           |                           |                             |                            |                            |                       |
| Max. level of<br>contamination                   | 18/16/13 ISO4406                                  |                           |                           |                           |                             |                            |                            |                       |
| Fluid temperature                                | with NBR seals: from -20°C (-4°F) to 80°C (176°F) |                           |                           |                           |                             |                            |                            |                       |
| Environmental<br>temp. for working<br>conditions | from -40°C (-40°F) to 100°C (212°F)               |                           |                           |                           |                             |                            |                            |                       |
| Weight                                           | steel                                             | 0.30 kg<br>(0.66 lb)      | 0.48 kg<br>(1.06 lb)      | 0.59 kg<br>(1.3 lb)       | 1.34 kg<br>(2.95 lb)        | 2.15 kg<br>(4.74 lb)       | 3.31 kg<br>(7.3 lb)        | 4.76 kg<br>(10.49 lb) |

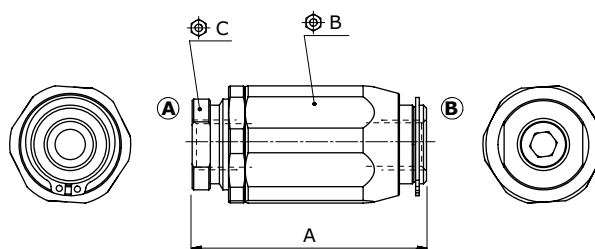
NOTE - For different conditions, please contact Walvoil Sales Dpt.



### Dimensions

Dimensions are in mm-in

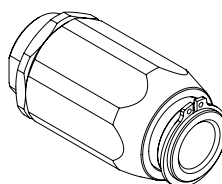
| Valve type        | All ports | A          | ⌀B | ⌀c |
|-------------------|-----------|------------|----|----|
| <b>VSRU/C 14</b>  | G 1/4     | 66-2.6     | 32 | 22 |
| <b>VSRU/C 38</b>  | G 3/8     | 77.5-3.05  | 38 | 26 |
| <b>VSRU/C 12</b>  | G 1/2     | 83-3.27    | 41 | 30 |
| <b>VSRU/C 34</b>  | G 3/4     | 104-4.09   | 55 | 38 |
| <b>VSRU/C 100</b> | G 1"      | 118.5-4.66 | 65 | 46 |
| <b>VSRU/C 114</b> | G 1" 1/4  | 135-5.31   | 80 | 55 |
| <b>VSRU/C 112</b> | G 1" 1/2  | 149.5-5.88 | 90 | 62 |



### Ordering codes and description composition

Port size ——— Opening pressure

**VSRU / C 14 Pa0,5**



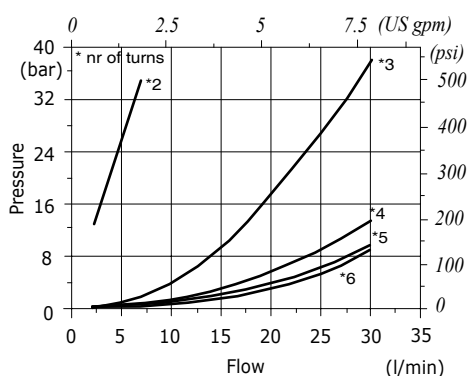
### VSRU/C Complete valves

| TYPE                                                           | CODE       | DESCRIPTION                |
|----------------------------------------------------------------|------------|----------------------------|
| <b><u>Poppet type, opening pressure 0.5 bar (7.25 psi)</u></b> |            |                            |
| <b>VSRU/C 14/Pa0,5</b>                                         | 1603110100 | Steel body, G1/4 ports     |
| <b>VSRU/C 38/Pa0,5</b>                                         | 1603120100 | Steel body, G3/8 ports     |
| <b>VSRU/C 12/Pa0,5</b>                                         | 1603130100 | Steel body, G1/2 ports     |
| <b>VSRU/C 34/Pa0,5</b>                                         | 1603140100 | Steel body, G3/4 ports     |
| <b>VSRU/C 100/Pa0,5</b>                                        | 1603150100 | Steel body, G1 ports       |
| <b>VSRU/C 114/Pa0,5</b>                                        | 1603160100 | Steel body, G 1" 1/4 ports |
| <b>VSRU/C 112/Pa0,5</b>                                        | 1603170100 | Steel body, G 1" 1/2 ports |

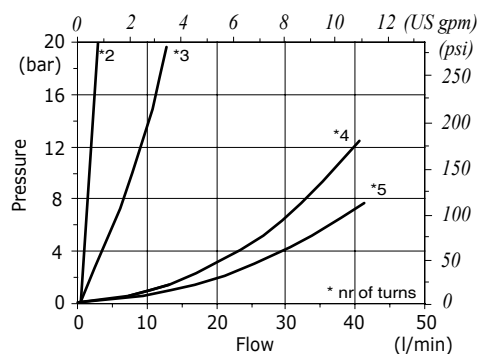
For different configurations or SAE thread please contact our Sales Dpt.

Rating diagrams

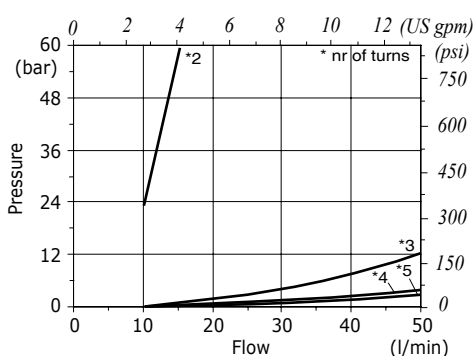
VSRU/C 14 pressure drop vs. flow  
(A→B)



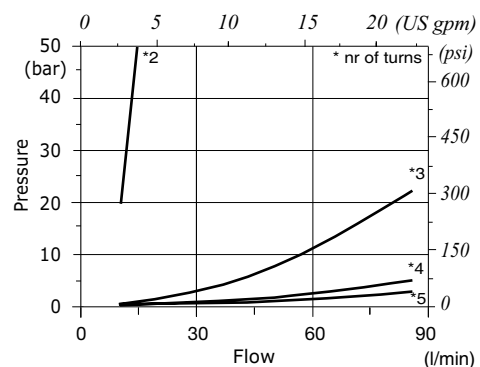
VSRU/C 38 pressure drop vs. flow  
(A→B)



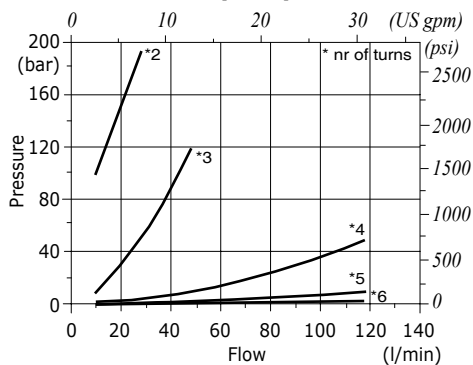
VSRU/C 12 pressure drop vs. flow  
(A→B)



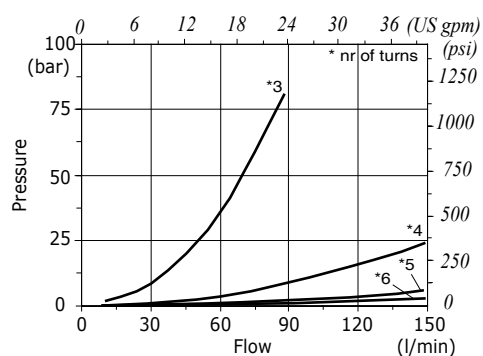
VSRU/C 34 pressure drop vs. flow  
(A→B)



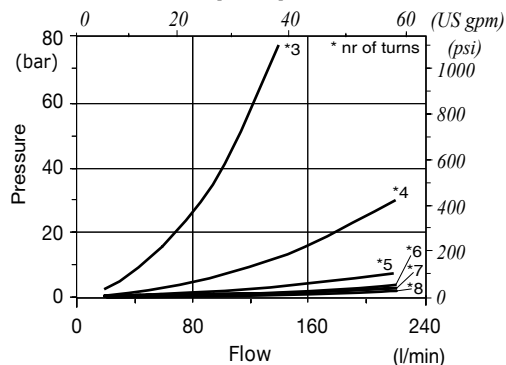
VSRU/C 100 pressure drop vs. flow  
(A→B)



VSRU/C 114 pressure drop vs. flow  
(A→B)

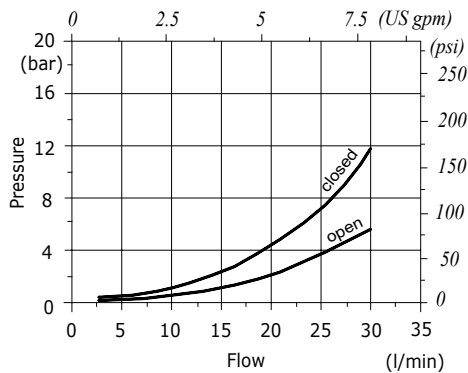


VSRU/C 112 pressure drop vs. flow  
(A→B)

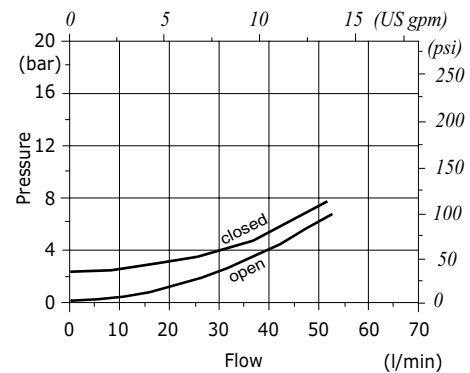


### Rating diagrams

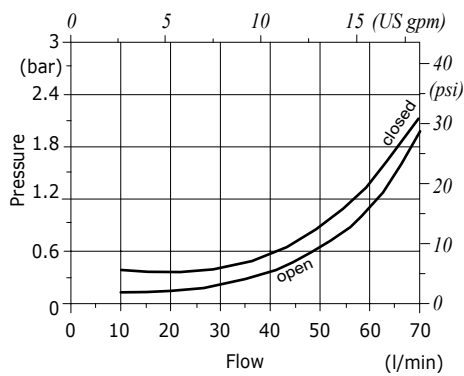
**VSRU/C 14 pressure drop vs. flow  
(B→A)**



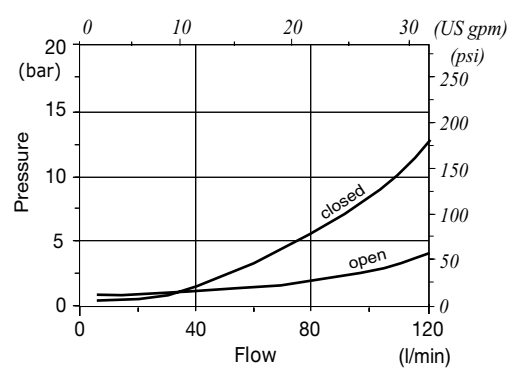
**VSRU/C 38 pressure drop vs. flow  
(B→A)**



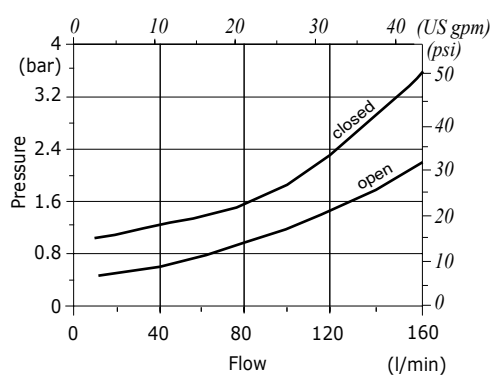
**VSRU/C 12 pressure drop vs. flow  
(B→A)**



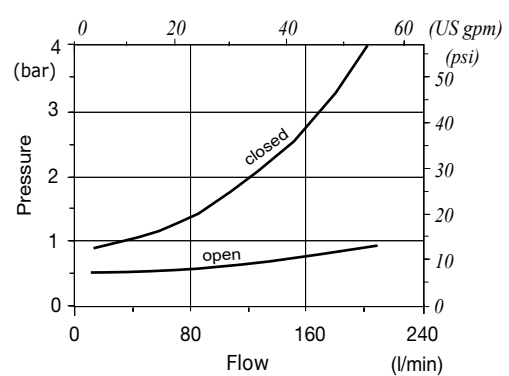
**VSRU/C 34 pressure drop vs. flow  
(B→A)**



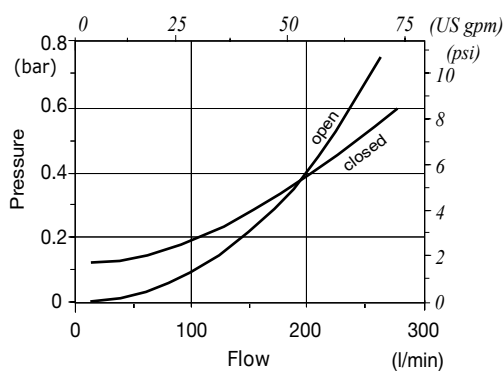
**VSRU/C 100 pressure drop vs. flow  
(B→A)**

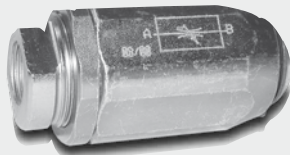


**VSRU/C 114 pressure drop vs. flow  
(B→A)**



**VSRU/C 112 pressure drop vs. flow  
(B→A)**





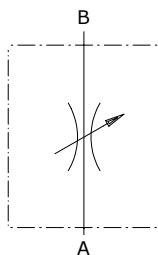
## Type VSRB needle valves

- Bidirectional

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                                     | VSRB 14                                                                | VSRB 38                          | VSRB 12                          | VSRB 34                           | VSRB 100                          |                             |
|-----------------------------------------------------|------------------------------------------------------------------------|----------------------------------|----------------------------------|-----------------------------------|-----------------------------------|-----------------------------|
| Nominal flow from A to B                            | 30 l/min<br><i>(7.9 US gpm)</i>                                        | 45 l/min<br><i>(11.9 US gpm)</i> | 70 l/min<br><i>(18.5 US gpm)</i> | 100 l/min<br><i>(26.4 US gpm)</i> | 150 l/min<br><i>(39.6 US gpm)</i> |                             |
| Max. pressure                                       | 350 bar<br><i>(5100 psi)</i>                                           | 350 bar<br><i>(5100 psi)</i>     | 350 bar<br><i>(5100 psi)</i>     | 300 bar<br><i>(4350 psi)</i>      | 250 bar<br><i>(3600 psi)</i>      |                             |
| Fluid                                               | mineral based oil                                                      |                                  |                                  |                                   |                                   |                             |
| Viscosity                                           | from 10 to 200 cSt                                                     |                                  |                                  |                                   |                                   |                             |
| Max. level of contamination                         | 18/16/13 ISO4406                                                       |                                  |                                  |                                   |                                   |                             |
| Fluid temperature                                   | <i>with NBR seals:</i> from -20°C <i>(-4°F)</i> to 80°C <i>(176°F)</i> |                                  |                                  |                                   |                                   |                             |
| Environmental temperature<br>for working conditions | from -40°C <i>(-40°F)</i> to 100°C <i>(212°F)</i>                      |                                  |                                  |                                   |                                   |                             |
| Weight                                              | <i>steel</i>                                                           | 0.30 kg<br><i>(0.66 lb)</i>      | 0.48 kg<br><i>(1.06 lb)</i>      | 0.59 kg<br><i>(1.3 lb)</i>        | 1.34 kg<br><i>(2.95 lb)</i>       | 2.15 kg<br><i>(4.74 lb)</i> |

NOTE - For different conditions, please contact Walvoil Sales Dpt.

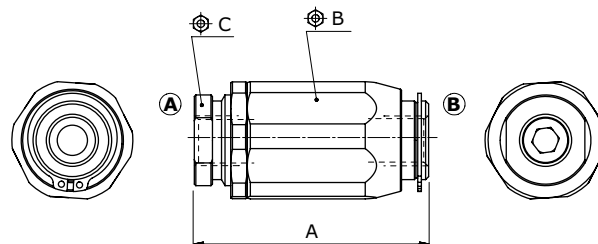




### Dimensions

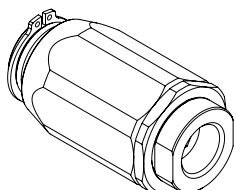
Dimensions are in mm-in

| Valve type      | All ports | A          | ⌀B | ⌀c |
|-----------------|-----------|------------|----|----|
| <b>VSRB 14</b>  | G 1/4     | 66-2.6     | 32 | 22 |
| <b>VSRB 38</b>  | G 3/8     | 77.5-3.05  | 38 | 26 |
| <b>VSRB 12</b>  | G 1/2     | 83-3.27    | 41 | 30 |
| <b>VSRB 34</b>  | G 3/4     | 104-4.09   | 55 | 38 |
| <b>VSRB 100</b> | G 1"      | 118.5-4.66 | 65 | 46 |



### Ordering codes and description composition

Port size  
**VSRB 14**



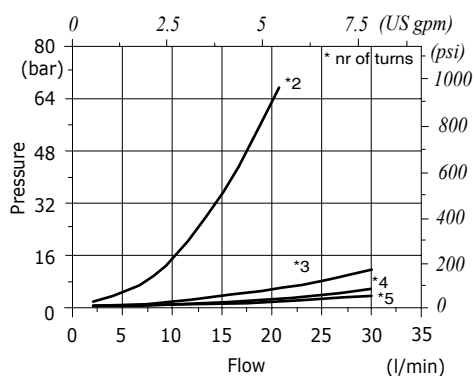
#### VSRB complete valves

| TYPE            | CODE       | DESCRIPTION            |
|-----------------|------------|------------------------|
| <b>VSRB 14</b>  | 1603210100 | Steel body, G1/4 ports |
| <b>VSRB 38</b>  | 1603220100 | Steel body, G3/8 ports |
| <b>VSRB 12</b>  | 1603230100 | Steel body, G1/2 ports |
| <b>VSRB 34</b>  | 1603240100 | Steel body, G3/4 ports |
| <b>VSRB 100</b> | 1603250100 | Steel body, G1 ports   |

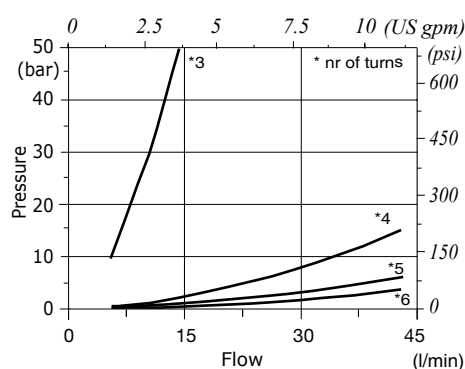
For different configurations or SAE thread please contact our Sales Dpt.

### Rating diagram

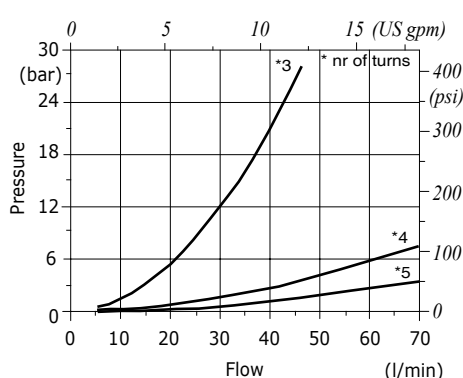
**VSRB 14 pressure drop vs. flow**



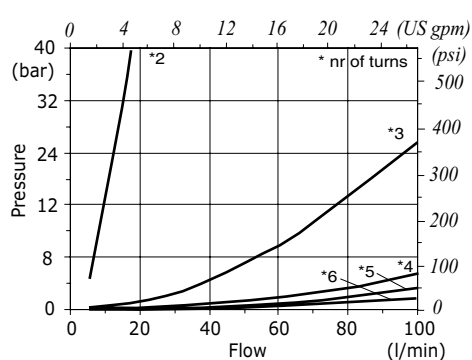
**VSRB 38 pressure drop vs. flow**



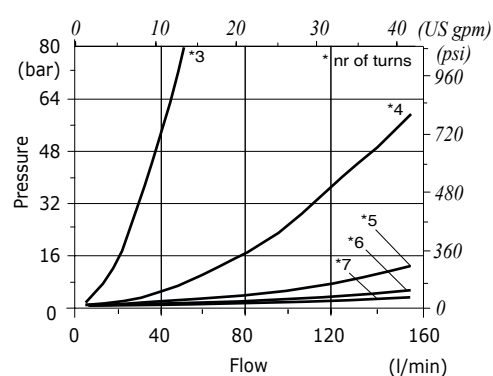
**VSRB 12 pressure drop vs. flow**



**VSRB 34 pressure drop vs. flow**



**VSRB 100 pressure drop vs. flow**





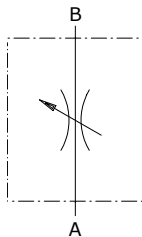
**Type VRFB90  
needle valves**

- Bidirectional

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                                     | VRFB9001                                          | VRFB9002                  | VRFB9003                  | VRFB9004                  | VRFB9005                   |
|-----------------------------------------------------|---------------------------------------------------|---------------------------|---------------------------|---------------------------|----------------------------|
| Nominal flow                                        | 30 l/min<br>(7.9 US gpm)                          | 40 l/min<br>(10.6 US gpm) | 50 l/min<br>(23.8 US gpm) | 80 l/min<br>(21.1 US gpm) | 110 l/min<br>(29.1 US gpm) |
| Max. pressure                                       | 350 bar (5100 psi)                                | 350 bar (5100 psi)        | 350 bar (5100 psi)        | 320 bar (4600 psi)        | 300 bar (4350 psi)         |
| Fluid                                               | mineral based oil                                 |                           |                           |                           |                            |
| Viscosity                                           | from 10 to 200 cSt                                |                           |                           |                           |                            |
| Max. level of contamination                         | 18/16/13 ISO4406                                  |                           |                           |                           |                            |
| Fluid temperature                                   | with NBR seals from -30°C (-22°F) to 80°C (176°F) |                           |                           |                           |                            |
| Environmental temperature<br>for working conditions | from -40°C (-40°F) to 100°C (212°F)               |                           |                           |                           |                            |
| Weight                                              | steel 0.34 kg (0.75 lb)                           | 0.34 kg (0.75 lb)         | 0.43 kg (0.95 lb)         | 1.13 kg (2.49 lb)         | 1 kg (2.2 lb)              |

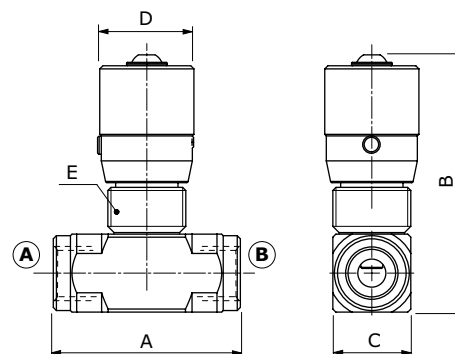
NOTE - For different conditions, please contact Walvoil Sales Dpt.



### Dimensions

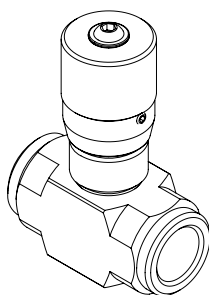
Dimensions are in mm-in

| Valve type | All ports | A         | B          | C         | D         | E       |
|------------|-----------|-----------|------------|-----------|-----------|---------|
| VRFB9001   | G1/4      | 58 - 2.28 | 82 - 3.23  | 25 - 0.98 | 30 - 1.18 | M25X1.5 |
| VRFB9002   | G3/8      | 60 - 2.36 | 82 - 3.23  | 25 - 0.98 | 30 - 1.18 | M25X1.5 |
| VRFB9003   | G1/2      | 64 - 2.52 | 88 - 3.46  | 30 - 1.18 | 30 - 1.18 | M25X1.5 |
| VRFB9004   | G3/4      | 89 - 3.50 | 116 - 4.57 | 40 - 1.57 | 42 - 1.65 | M35X1.5 |
| VRFB9005   | G1        | 89 - 3.50 | 116 - 4.57 | 40 - 1.57 | 42 - 1.65 | M35X1.5 |



### Ordering codes and description composition

VRBF90 01



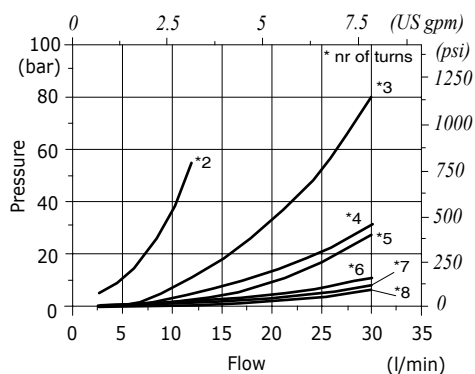
#### VRFB90 complete valves

| TYPE     | CODE       | DESCRIPTION            |
|----------|------------|------------------------|
| VRFB9001 | 1605210100 | Steel body, G1/4 ports |
| VRFB9002 | 1605220100 | Steel body, G3/8 ports |
| VRFB9003 | 1605230100 | Steel body, G1/2 ports |
| VRFB9004 | 1605240100 | Steel body, G3/4 ports |
| VRFB9005 | 1605250100 | Steel body, G1 ports   |

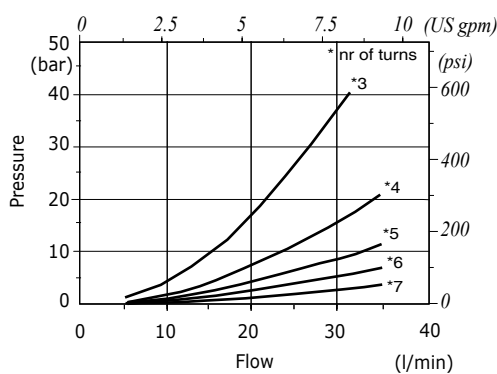
For different configurations or SAE thread please contact our Sales Dpt.

### Rating diagram

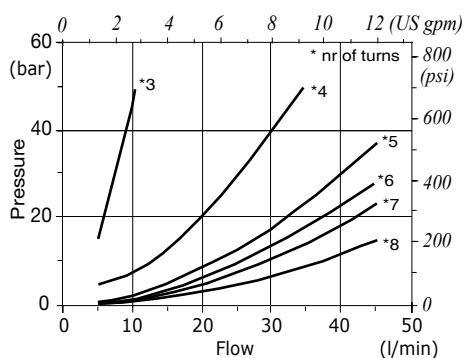
VRFB9001  
pressure drop vs. flow



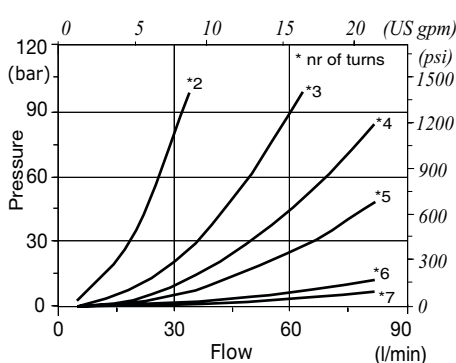
VRFB9002  
pressure drop vs. flow



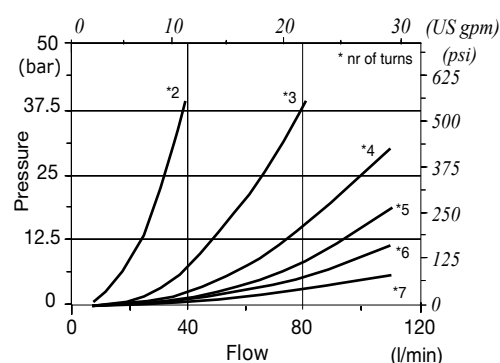
VRFB9003  
pressure drop vs. flow



VRFB9004  
pressure drop vs. flow



VRFB9005  
pressure drop vs. flow





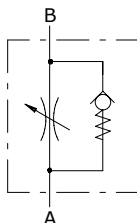
## Type VRFU90 needle valves

- With check valve

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                                     | VRFU9001                                          | VRFU9002                  | VRFU9003                  | VRFU9004                  | VRFU9005                   |
|-----------------------------------------------------|---------------------------------------------------|---------------------------|---------------------------|---------------------------|----------------------------|
| Nominal flow from A to B                            | 30 l/min<br>(7.9 US gpm)                          | 40 l/min<br>(10.6 US gpm) | 50 l/min<br>(23.8 US gpm) | 80 l/min<br>(21.1 US gpm) | 110 l/min<br>(29.1 US gpm) |
| Nominal flow from B to A                            | 35 l/min<br>(9.2 US gpm)                          | 50 l/min<br>(23.8 US gpm) | 90 l/min<br>(23.8 US gpm) | 140 l/min<br>(37 US gpm)  | 180 l/min<br>(47.6 US gpm) |
| Max. pressure                                       | 350 bar (5100 psi)                                | 350 bar (5100 psi)        | 350 bar (5100 psi)        | 320 bar (4600 psi)        | 300 bar (4350 psi)         |
| Fluid                                               | mineral based oil                                 |                           |                           |                           |                            |
| Viscosity                                           | from 10 to 200 cSt                                |                           |                           |                           |                            |
| Max. level of contamination                         | 18/16/13 ISO4406                                  |                           |                           |                           |                            |
| Fluid temperature                                   | with NBR seals from -30°C (-22°F) to 80°C (176°F) |                           |                           |                           |                            |
| Environmental temperature<br>for working conditions | from -40°C (-40°F) to 100°C (212°F)               |                           |                           |                           |                            |
| Weight                                              | steel 0.40 kg (0.88 lb)                           | 0.41 kg (0.9 lb)          | 0.58 kg (1.28 lb)         | 1.39 kg (3.06 lb)         | 1.36 kg (3 lb)             |

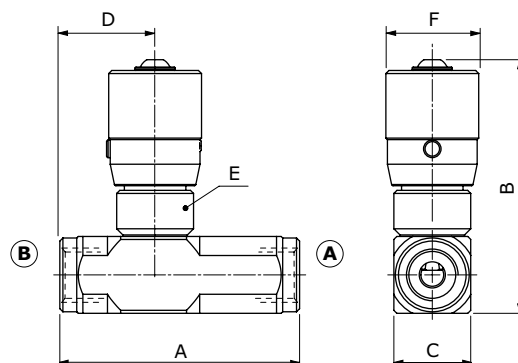
NOTE - For different conditions, please contact Walvoil Sales Dpt.



### Dimensions

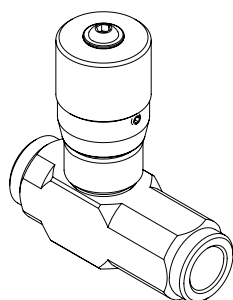
Dimensions are in mm-in

| Valve type      | All ports | A          | B          | C         | D           | E       | F         |
|-----------------|-----------|------------|------------|-----------|-------------|---------|-----------|
| <b>VRFU9001</b> | G1/4      | 75 - 2.95  | 82 - 3.23  | 25 - 0.98 | 29 - 1.14   | M25X1.5 | 30 - 1.18 |
| <b>VRFU9002</b> | G3/8      | 78 - 3.07  | 82 - 3.23  | 25 - 0.98 | 31 - 1.22   | M25X1.5 | 30 - 1.18 |
| <b>VRFU9003</b> | G1/2      | 93 - 3.66  | 88 - 3.46  | 30 - 1.18 | 33.5 - 1.32 | M25X1.5 | 30 - 1.18 |
| <b>VRFU9004</b> | G3/4      | 110 - 4.33 | 116 - 4.57 | 40 - 1.57 | 41.5 - 1.63 | M35X1.5 | 42 - 1.65 |
| <b>VRFU9005</b> | G1        | 135 - 5.31 | 116 - 4.57 | 40 - 1.57 | 44.5 - 1.75 | M35X1.5 | 42 - 1.65 |



### Ordering codes and description composition

VRFU90 01

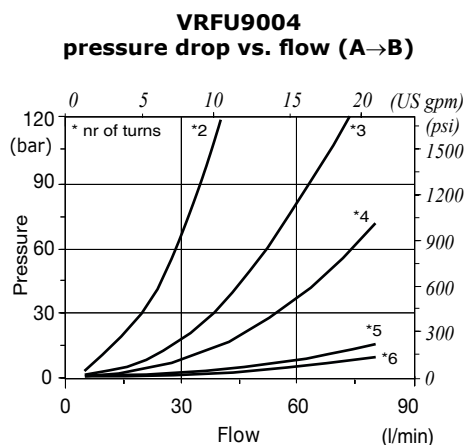
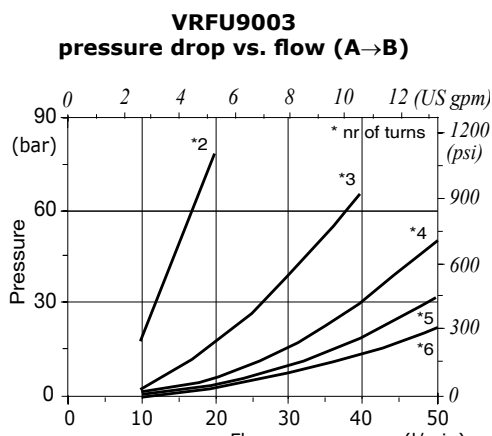
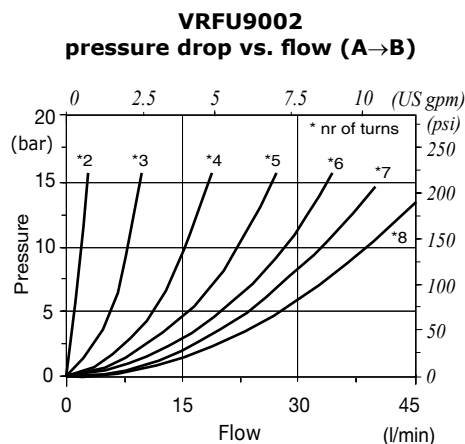
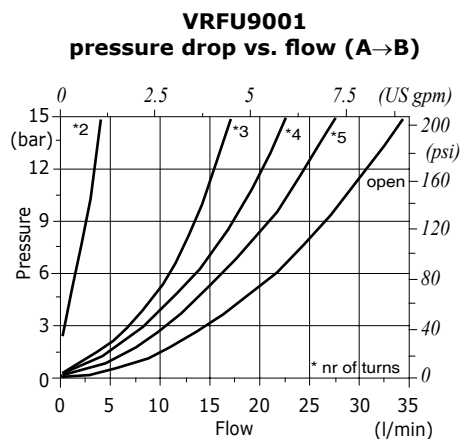


#### VRFU90 complete valves

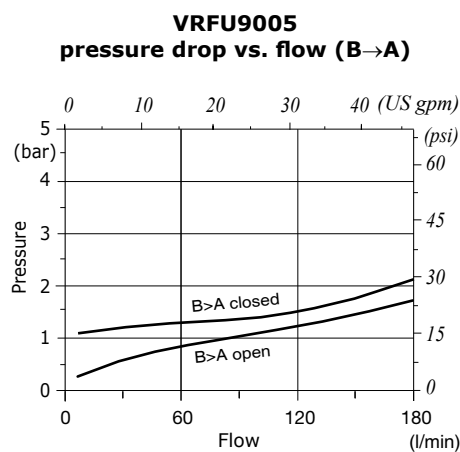
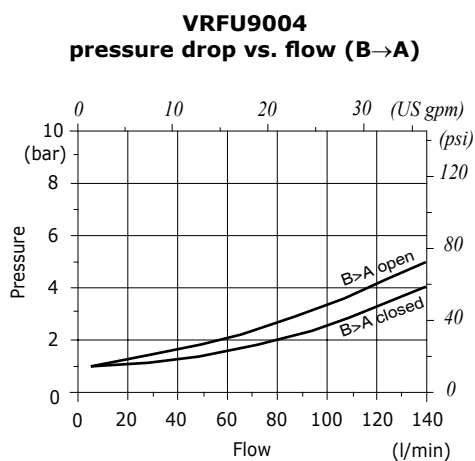
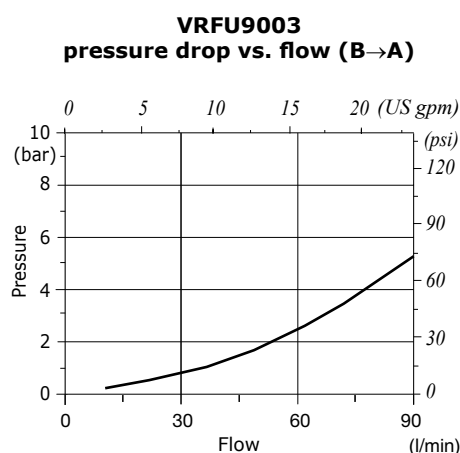
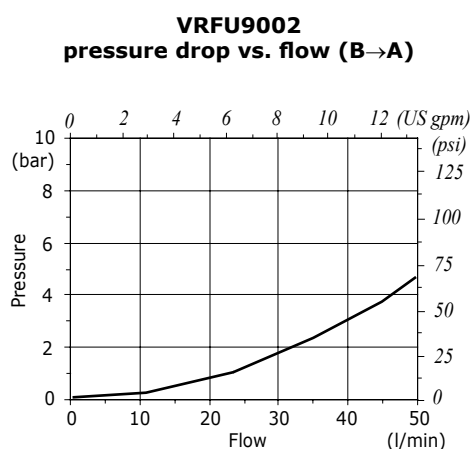
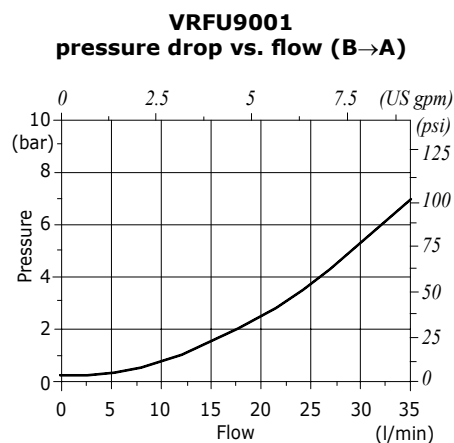
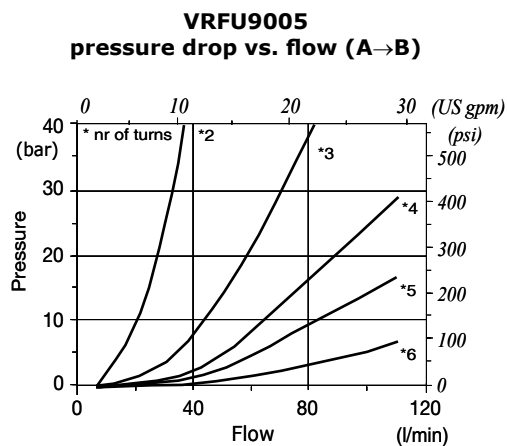
| TYPE            | CODE       | DESCRIPTION                                                 |
|-----------------|------------|-------------------------------------------------------------|
| <b>VRFU9001</b> | 1605110100 | Steel body, G1/4 ports, opening pressure 0.5 bar (7.25 psi) |
| <b>VRFU9002</b> | 1605120100 | Steel body, G3/8 ports, opening pressure 0.5 bar (7.25 psi) |
| <b>VRFU9003</b> | 1605130100 | Steel body, G1/2 ports, opening pressure 0.5 bar (7.25 psi) |
| <b>VRFU9004</b> | 1605140100 | Steel body, G3/4 ports, opening pressure 0.5 bar (7.25 psi) |
| <b>VRFU9005</b> | 1605150100 | Steel body, G1 ports, opening pressure 0.5 bar (7.25 psi)   |

For different configurations or SAE thread please contact our Sales Dpt.

### Rating diagram



Rating diagram







## Type VPR/2/RL

### flow control pressure compensated valves

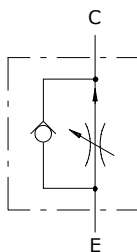
- 2 way
- With reverse free - flow check

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                                     | VPR/2/RL 38                                                            | VPR/2/RL 12            | VPR/2/RL 34            | VPR/2/RL 100            |                     |
|-----------------------------------------------------|------------------------------------------------------------------------|------------------------|------------------------|-------------------------|---------------------|
| Nominal flow <b>“Qc”</b>                            | 30 l/min (7.9 US gpm)                                                  | 50 l/min (13.2 US gpm) | 90 l/min (23.8 US gpm) | 150 l/min (39.6 US gpm) |                     |
| Nominal flow <b>“SB”*</b>                           | 15 l/min (4.0 US gpm)                                                  | 25 l/min (6.6 US gpm)  | 45 l/min (11.9 US gpm) | 75 l/min (19.8 US gpm)  |                     |
| Max. pressure                                       | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                        |                        |                         |                     |
| Fluid                                               | mineral based oil                                                      |                        |                        |                         |                     |
| Viscosity                                           | from 10 to 200 cSt                                                     |                        |                        |                         |                     |
| Max. level of contamination                         | 18/16/13 ISO4406                                                       |                        |                        |                         |                     |
| Fluid temperature                                   | with NBR seals from -20°C (-4°F) to 80°C (176°F)                       |                        |                        |                         |                     |
| Environmental temperature<br>for working conditions | from -40°C (-40°F) to 100°C (212°F)                                    |                        |                        |                         |                     |
| Weight                                              | aluminium                                                              | 1.09 kg (2.40 lb)      | 1.06 kg (2.34 lb)      | 2.15 kg (4.73 lb)       | 5.14 kg (11.33 lb)  |
|                                                     | steel                                                                  | 2.41 kg (5.31 lb)      | 2.43 kg (5.36 lb)      | 4.60 kg (10.14 lb)      | 11.13 kg (24.54 lb) |

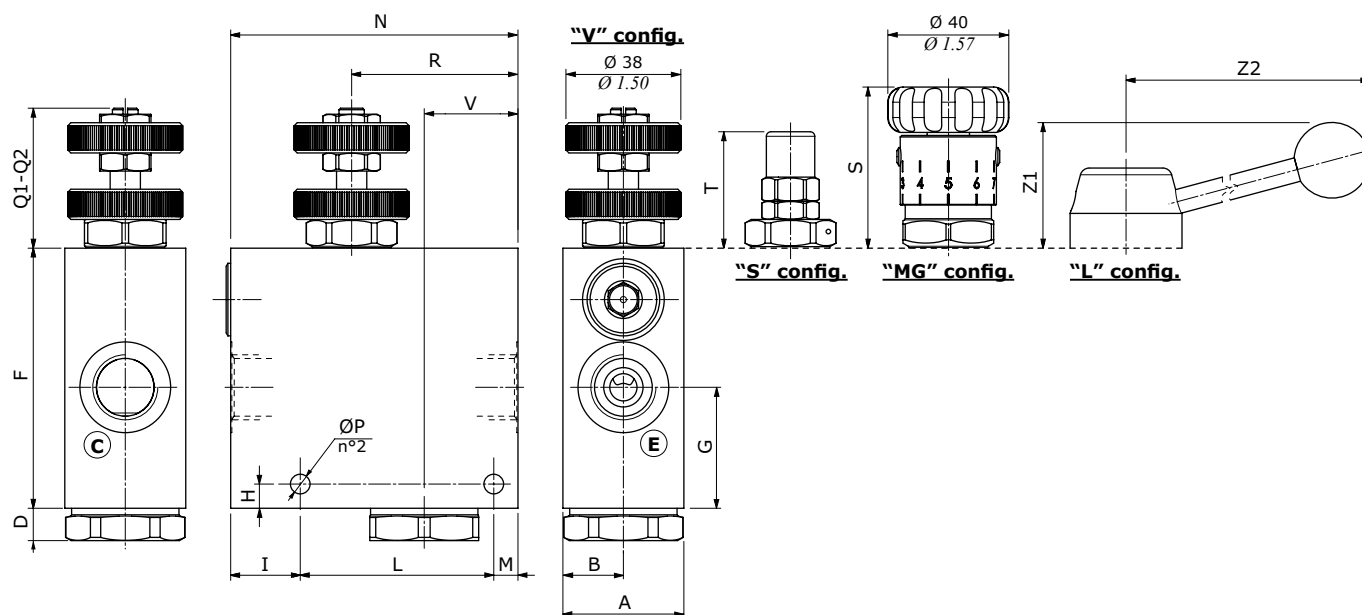
NOTE - For different conditions, please contact Walvoil Sales Dpt.

\*"SB" execution (sensibilized adjustment)





### Dimensions



| Valve type   | All ports | Valve type      | All ports |
|--------------|-----------|-----------------|-----------|
| VPR/2/RL 38  | G3/8      | VPR/2/RL 38/SAE | SAE8      |
| VPR/2/RL 12  | G1/2      | VPR/2/RL 12/SAE | SAE10     |
| VPR/2/RL 34  | G3/4      | VPR/2/RL 34/SAE | SAE12     |
| VPR/2/RL 100 | G1"       |                 |           |

Dimensions are in mm-in

| Valve type      | A    | B    | D    | F    | G    | H    | I    | L    | M    | N    | ØP   | Q1   | Q2*  | R    | S     | T    | V    | Z1   | Z2    |
|-----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|-------|
| VPR/2/RL 38     | 40   | 20   | 11   | 86   | 40   | 8    | 23   | 64   | 8    | 95   | 6.5  | 46.3 | 52.6 | 55   | 53.3  | 38.5 | 23   | 47.6 | 101.3 |
| VPR/2/RL 38/SAE | 1.57 | 0.78 | 0.43 | 3.38 | 1.57 | 0.31 | 0.90 | 2.51 | 0.31 | 3.74 | 0.25 | 1.82 | 2.07 | 2.16 | 2.10  | 1.51 | 0.91 | 1.87 | 3.99  |
| VPR/2/RL 12     | 40   | 20   | 11   | 86   | 40   | 8    | 23   | 64   | 8    | 95   | 6.5  | 46.3 | 53.1 | 55   | 53.3  | 38.5 | 23   | 47.6 | 101.3 |
| VPR/2/RL 12/SAE | 1.57 | 0.78 | 0.43 | 3.38 | 1.57 | 0.31 | 0.90 | 2.51 | 0.31 | 3.74 | 0.25 | 1.82 | 2.09 | 2.16 | 2.10  | 1.51 | 0.91 | 1.87 | 3.99  |
| VPR/2/RL 34     | 50   | 25   | 10.5 | 100  | 47   | 10   | 38   | 84   | 8    | 130  | 8.5  | 41.5 | 50.5 | 72   | 49.50 | 38.5 | 30   | 50.1 | 103.6 |
| VPR/2/RL 34/SAE | 1.97 | 0.98 | 0.41 | 3.94 | 1.85 | 0.39 | 1.50 | 3.31 | 0.31 | 5.12 | 0.33 | 1.73 | 1.99 | 2.83 | 1.95  | 1.51 | 1.18 | 1.97 | 4.08  |
| VPR/2/RL 100    | 70   | 35   | 13.5 | 140  | 58   | 10   | 50   | 100  | 10   | 160  | 10.5 | 52   | -    | 91   | 52.5  | 41.5 | 37   | 50.5 | 107.3 |
|                 | 2.75 | 0.53 | 0.53 | 5.51 | 2.28 | 0.39 | 1.97 | 3.94 | 0.39 | 1.50 | 0.41 | 2.05 |      | 3.58 | 2.06  | 1.63 | 1.46 | 1.99 | 4.22  |

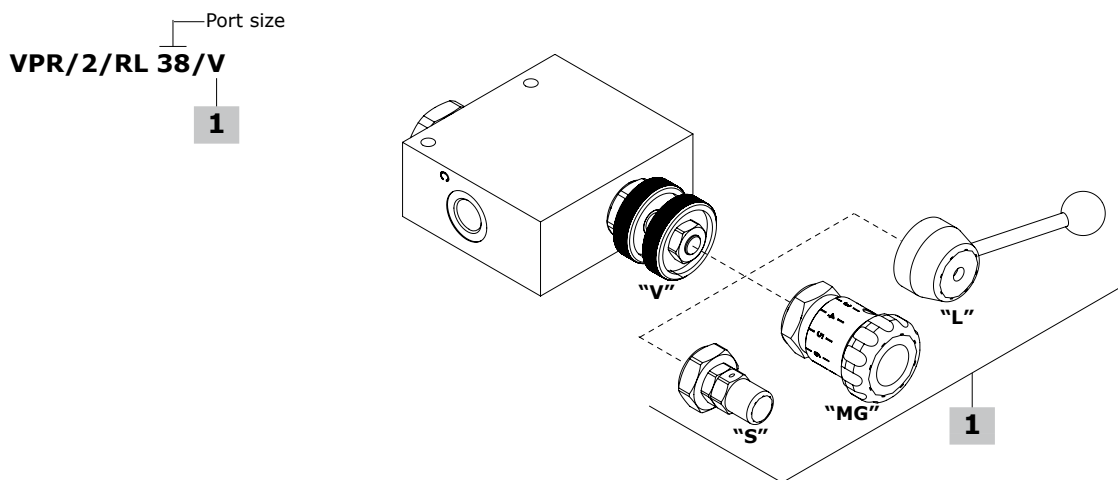
(\*) For "SB" execution (sensibilized adjustment)

## Flow control valves

Flow control pressure compensated valves

VPR/2/RL

### Ordering codes and description composition



#### VPR/2/RL complete valves

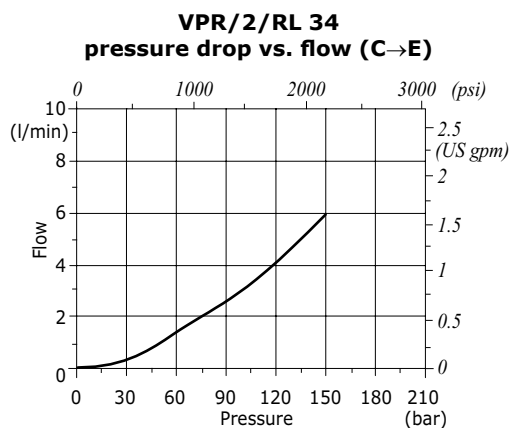
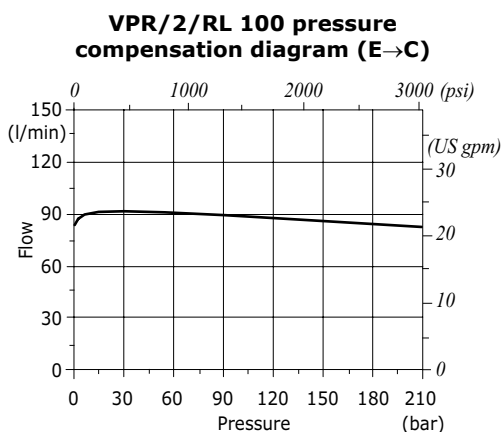
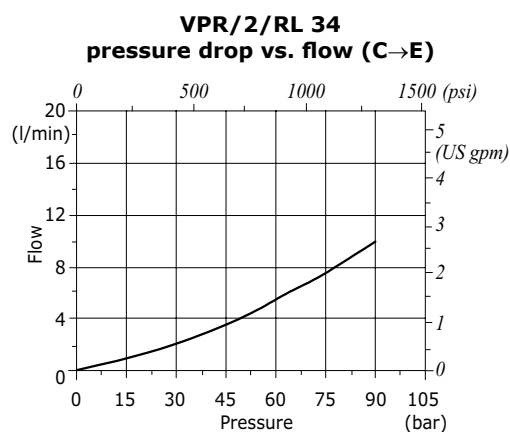
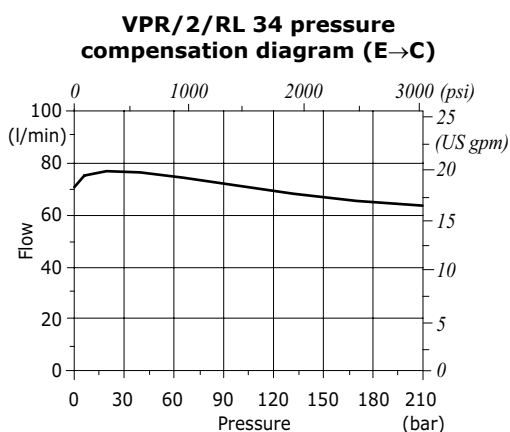
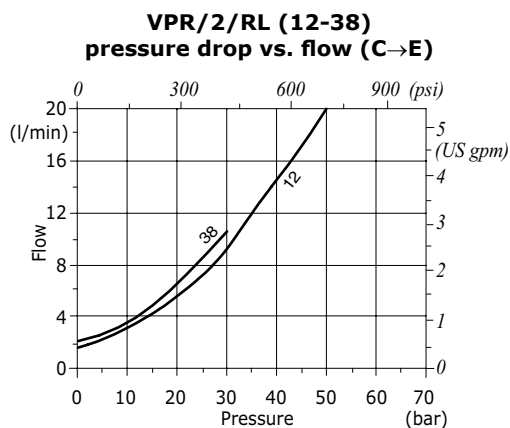
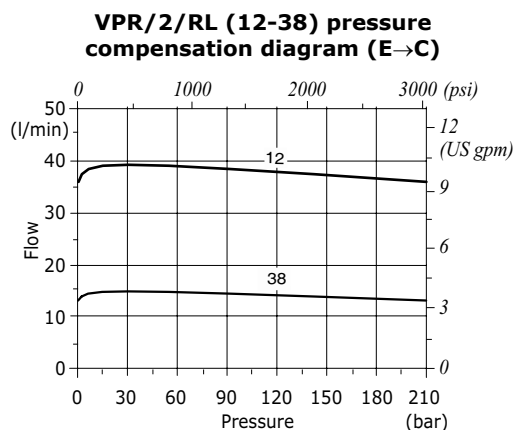
| TYPE                                       | CODE       | DESCRIPTION                 |
|--------------------------------------------|------------|-----------------------------|
| <b>Adjustment kit type "V" (handwheel)</b> |            |                             |
| VPR/2/RL 38/V                              | 1611021100 | Aluminium body, G3/8 ports  |
| VPR/2/RL 12/V                              | 1611031100 | Aluminium body, G1/2 ports  |
| VPR/2/RL 34/V                              | 1611041100 | Aluminium body, G3/4 ports  |
| VPR/2/RL 100/V                             | 1611051100 | Aluminium body, G1" ports   |
| VPR/2/RL 38/V/ac                           | 1611022100 | Steel body, G3/8 ports      |
| VPR/2/RL 12/V/ac                           | 1611032100 | Steel body, G1/2 ports      |
| VPR/2/RL 34/V/ac                           | 1611042100 | Steel body, G3/4 ports      |
| VPR/2/RL 100/V/ac                          | 1611052100 | Steel body, G1" ports       |
| VPR/2/RL 38/V/SAE                          | 1611021200 | Aluminium body, SAE8 ports  |
| VPR/2/RL 12/V/SAE                          | 1611031200 | Aluminium body, SAE10 ports |
| VPR/2/RL 34/V/SAE                          | 1611041200 | Aluminium body, SAE12 ports |
| <b>Adjustment kit type "MG" (handknob)</b> |            |                             |
| VPR/2/RL 38/MG                             | 1611021101 | Aluminium body G3/8 ports   |
| VPR/2/RL 12/MG                             | 1611031101 | Aluminium body G1/2 ports   |
| VPR/2/RL 34/MG                             | 1611041101 | Aluminium body G3/4 ports   |
| VPR/2/RL 100/MG                            | 1611051101 | Aluminium body G1" ports    |
| <b>Adjustment kit type "L" (lever)</b>     |            |                             |
| VPR/2/RL 38/L                              | 1611021102 | Aluminium body G3/8 ports   |
| VPR/2/RL 12/L                              | 1611031102 | Aluminium body G1/2 ports   |
| VPR/2/RL 34/L                              | 1611041102 | Aluminium body G3/4 ports   |
| VPR/2/RL 100/L                             | 1611051102 | Aluminium body G1" ports    |

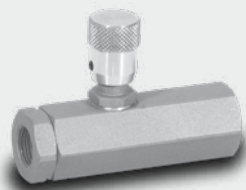
For other steel body configurations, SAE thread and configurations with FPM (Viton) seals, please contact our Sales Dpt.

#### 1 Adjustment kit

| TYPE                          | CODE       | DESCRIPTION                                                        |
|-------------------------------|------------|--------------------------------------------------------------------|
| <b>For VPR/2/RL 38 valve</b>  |            |                                                                    |
| V.SB                          | 5KT6200200 | "V" handwheel type in "SB" configuration (sensibilized adjustment) |
| V                             | 5KT6130200 | "V" handwheel type                                                 |
| MG                            | 5KT6200202 | "MG" handknob type                                                 |
| S                             | 5KT6200211 | "S" screw type                                                     |
| <b>For VPR/2/RL 12 valve</b>  |            |                                                                    |
| V.SB                          | 5KT6130301 | "V" handwheel type in "SB" configuration (sensibilized adjustment) |
| V                             | 5KT6130200 | "V" handwheel type                                                 |
| MG                            | 5KT6200202 | "MG" handknob type                                                 |
| S                             | 5KT6200211 | "S" screw type                                                     |
| <b>For VPR/2/RL 34 valve</b>  |            |                                                                    |
| V                             | 5KT6130401 | "V" handwheel type                                                 |
| MG                            | 5KT6200400 | "MG" handknob type                                                 |
| S                             | 5KT6130404 | "S" screw type                                                     |
| V.SB                          | 5KT6130402 | "V" handwheel type in "SB" configuration (sensibilized adjustment) |
| <b>For VPR/2/RL 100 valve</b> |            |                                                                    |
| V                             | 5KT6340603 | "V" handwheel type                                                 |
| MG                            | 5KT6200605 | "MG" handknob type                                                 |
| S                             | 5KT6200604 | "S" screw type                                                     |

### Rating diagrams





## Type VPR/2/RL/EX

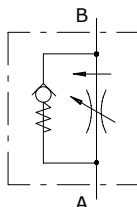
### flow control pressure compensated valves

- With check valve
- Compensated

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                                  | VPR/2/RL/EX 14/V                                 | VPR/2/RL/EX 38/V      | VPR/2/RL/EX 12/V       |
|--------------------------------------------------|--------------------------------------------------|-----------------------|------------------------|
| Nominal flow                                     | 17 l/min (4.5 US gpm)                            | 17 l/min (4.5 US gpm) | 35 l/min (9.2 US gpm)  |
| Nominal flow from B to A                         | 25 l/min (6.6 US gpm)                            | 30 l/min (7.9 US gpm) | 45 l/min (11.9 US gpm) |
| Max. pressure                                    | 300 bar (4350 psi)                               | 300 bar (4350 psi)    | 250 bar (3600 psi)     |
| Fluid                                            | mineral based oil                                |                       |                        |
| Viscosity                                        | from 10 to 200 cSt                               |                       |                        |
| Max. level of contamination                      | 18/16/13 ISO4406                                 |                       |                        |
| Fluid temperature                                | with NBR seals from -20°C (-4°F) to 80°C (176°F) |                       |                        |
| Environmental temperature for working conditions | from -40°C (-40°F) to 100°C (212°F)              |                       |                        |
| Weight                                           | steel 0.52 kg (1.15 lb)                          | 0.50 kg (1.1 lb)      | 0.69 kg (1.52 lb)      |

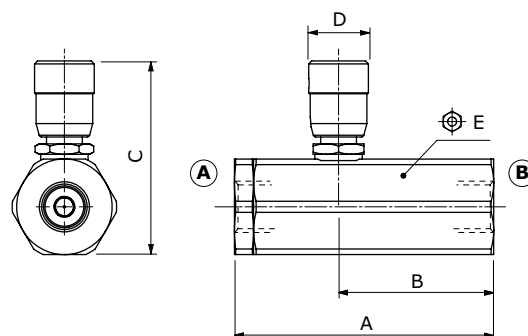
NOTE - For different conditions, please contact Walvoil Sales Dpt.



### Dimensions

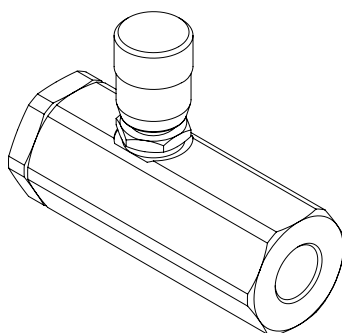
Dimensions are in mm-in

| Valve type       | All ports | A          | B           | C         | D         | E  |
|------------------|-----------|------------|-------------|-----------|-----------|----|
| VPR/2/RL/EX 14/V | G1/4      | 87 - 3.42  | 52.5 - 2.07 | 68 - 2.68 | 20 - 0.79 | 32 |
| VPR/2/RL/EX 38/V | G3/8      | 87 - 3.42  | 52.5 - 2.07 | 68 - 2.68 | 20 - 0.79 | 32 |
| VPR/2/RL/EX 12/V | G1/2      | 107 - 4.21 | 61 - 2.40   | 71 - 2.79 | 20 - 0.79 | 36 |



### Ordering codes and description composition

Port size  
VPR/2/RL/EX 14/V



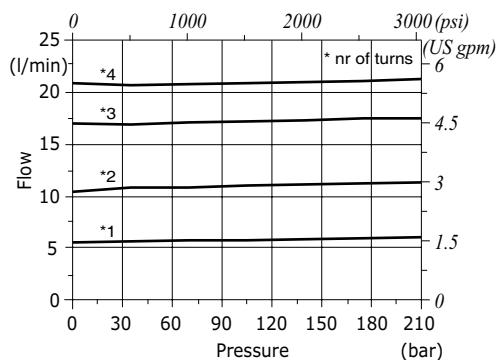
#### VRFU90C complete valves

| TYPE             | CODE       | DESCRIPTION            |
|------------------|------------|------------------------|
| VPR/2/RL/EX 14/V | 1605510100 | Steel body, G1/4 ports |
| VPR/2/RL/EX 38/V | 1605520100 | Steel body, G3/8 ports |
| VPR/2/RL/EX 12/V | 1605530100 | Steel body, G1/2 ports |

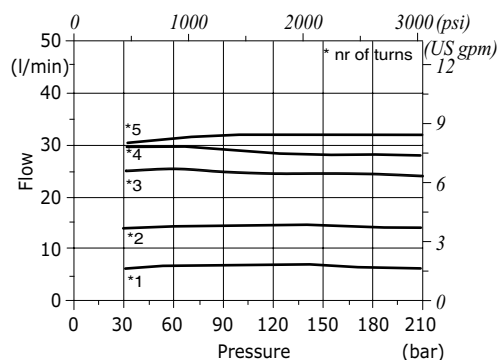
For other steel body configurations or SAE thread please contact our Sales Dpt.

### Rating diagram

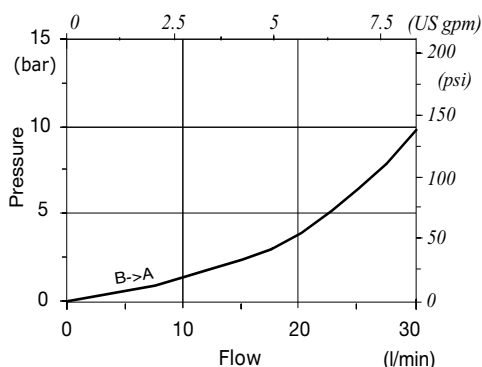
VPR/2/RL/EX 14/V - VPR/2/RL/EX 38/V  
pressure drop vs. flow compensated (A→B)



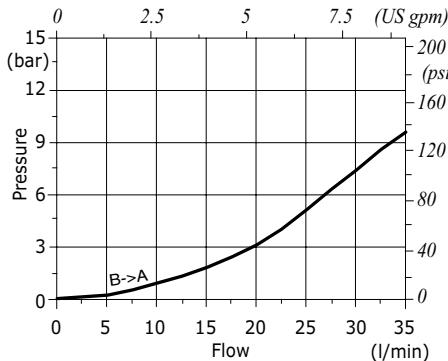
VPR/2/RL/EX 12/V  
pressure drop vs. flow compensated (A→B)



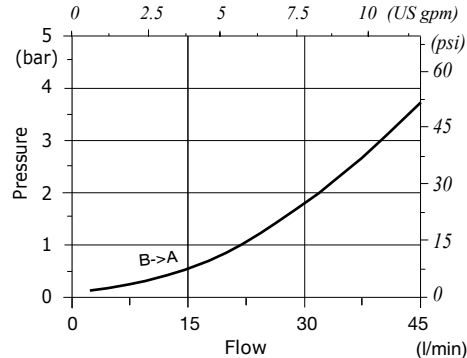
VPR/2/RL/EX 14/V  
pressure drop vs. flow (B→A)



VPR/2/RL/EX 38/V  
pressure drop vs. flow (B→A)



VPR/2/RL/EX 12/V  
pressure drop vs. flow (B→A)





## Type VPR/2/U

### flow control pressure compensated valves

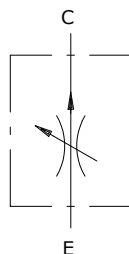
- 2 ways

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

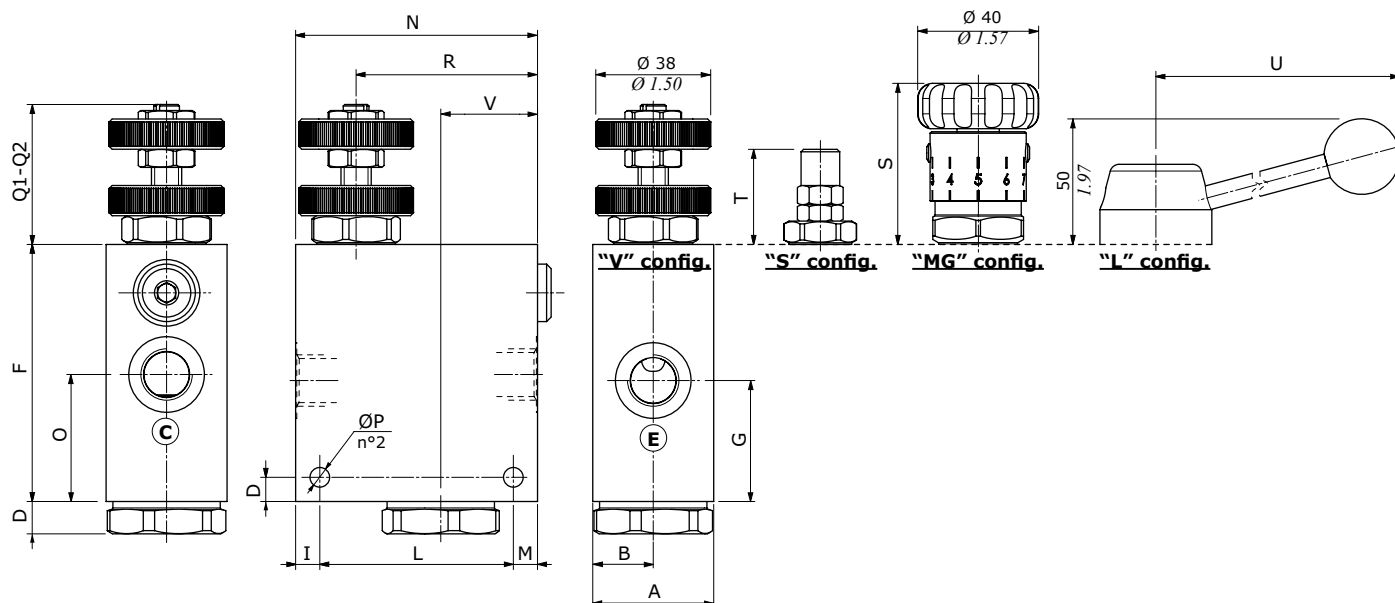
|                                                     | VPR/2/U 38                                                                                            | VPR/2/U 12             | VPR/2/U 34             | VPR/2/U 100             |                    |
|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------|------------------------|------------------------|-------------------------|--------------------|
| Nominal flow “ <b>Qc</b> ”                          | 30 l/min (7.9 US gpm)                                                                                 | 50 l/min (13.2 US gpm) | 90 l/min (23.8 US gpm) | 150 l/min (39.6 US gpm) |                    |
| Nominal flow “ <b>SB</b> ”*                         | 15 l/min (4.0 US gpm)                                                                                 | 25 l/min (6.6 US gpm)  | 45 l/min (11.9 US gpm) | 75 l/min (19.8 US gpm)  |                    |
| Max. pressure                                       | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi)                                |                        |                        |                         |                    |
| Fluid                                               | mineral based oil                                                                                     |                        |                        |                         |                    |
| Viscosity                                           | from 10 to 200 cSt                                                                                    |                        |                        |                         |                    |
| Max. level of contamination                         | 18/16/13 ISO4406                                                                                      |                        |                        |                         |                    |
| Fluid temperature                                   | with NBR seals from -20°C (-4°F) to 80°C (176°F)<br>with FPM seals from -20°C (-4°F) to 100°C (212°F) |                        |                        |                         |                    |
| Environmental temperature<br>for working conditions | from -40°C (-40°F) to 100°C (212°F)                                                                   |                        |                        |                         |                    |
| Weight                                              | aluminium                                                                                             | 0.87 kg (1.91 lb)      | 0.88 kg (1.94 lb)      | 1.74 kg (3.84 lb)       | 3.96 kg (8.73 lb)  |
|                                                     | steel                                                                                                 | 1.92 kg (4.23 lb)      | 1.99 kg (4.39 lb)      | 3.56 kg (7.85 lb)       | 7.80 kg (17.20 lb) |

NOTE - For different conditions, please contact Walvoil Sales Dpt.

\*"SB" execution (sensibilized adjustment)



### Dimensions



| Valve type  | All ports | Valve type     | All ports |
|-------------|-----------|----------------|-----------|
| VPR/2/U 38  | G3/8      | VPR/2/U 38/SAE | SAE8      |
| VPR/2/U 12  | G1/2      | VPR/2/U 12/SAE | SAE10     |
| VPR/2/U 34  | G3/4      |                |           |
| VPR/2/U 100 | G1"       |                |           |

Dimensions are in mm-in

| Valve type     | A    | B    | D    | F    | G    | H     | I     | L    | M     | N    | O    | ØP    | Q1   | Q2*  | R    | S    | T    | U    | V     |
|----------------|------|------|------|------|------|-------|-------|------|-------|------|------|-------|------|------|------|------|------|------|-------|
| VPR/2/U 38     | 40   | 20   | 10.7 | 85   | 40   | 8     | 8     | 64   | 8     | 80   | 40.5 | 6.5   | 46.3 | 52.6 | 60   | 53.3 | 38.5 | 50   | 103.3 |
| VPR/2/U 38/SAE | 1.57 | 0.78 | 0.42 | 3.35 | 1.57 | 0.315 | 0.315 | 2.51 | 0.315 | 3.14 | 1.59 | 0.256 | 1.82 | 2.07 | 2.36 | 2.10 | 1.51 | 1.97 | 3.99  |
| VPR/2/U 12     | 40   | 20   | 10.7 | 85   | 40   | 8     | 8     | 64   | 8     | 80   | 42   | 6.5   | 46.3 | 53.1 | 60   | 53.3 | 38.5 | 50   | 103.3 |
| VPR/2/U 12/SAE | 1.57 | 0.78 | 0.42 | 3.35 | 1.57 | 0.315 | 0.315 | 2.51 | 0.315 | 3.14 | 1.65 | 0.256 | 1.82 | 2.09 | 2.36 | 2.10 | 1.51 | 1.97 | 3.99  |
| VPR/2/U 34     | 50   | 25   | 10.7 | 100  | 44   | 10    | 8     | 84   | 8     | 100  | 44   | 8.5   | 41.5 | 50.5 | 72   | 56.5 | 38.5 | 50   | 103.3 |
|                | 1.97 | 0.98 | 0.42 | 3.94 | 1.73 | 0.39  | 0.315 | 3.31 | 0.315 | 3.94 | 1.73 | 0.335 | 1.73 | 1.99 | 2.83 | 2.22 | 1.51 | 1.97 | 3.99  |
| VPR/2/U 100    | 70   | 35   | 13.5 | 140  | 58   | 10    | 10    | 100  | 10    | 120  | 58   | 10.5  | 52   | -    | 92   | 56.5 | 41.5 | 50   | 107   |
|                | 2.75 | 0.53 | 0.53 | 5.51 | 2.28 | 0.394 | 0.394 | 3.94 | 0.39  | 4.72 | 2.28 | 0.413 | 2.05 | -    | 3.62 | 2.22 | 1.63 | 1.97 | 4.21  |

\*\*"SB" execution (sensibilized adjustment)

## Flow control valves

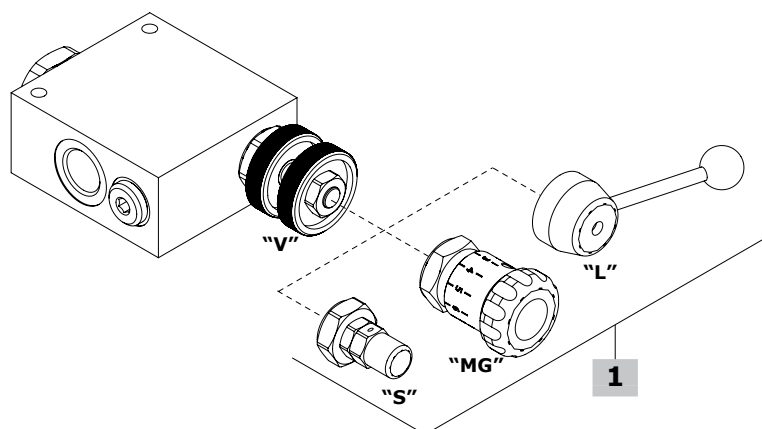
Flow control pressure compensated valves

VPR/2/U

### Ordering codes and description composition

Port size  
VPR/2/U 38/V

1



#### VPR/2/U complete valves

| TYPE                                       | CODE       | DESCRIPTION                 |
|--------------------------------------------|------------|-----------------------------|
| <b>Adjustment kit type "V" (handwheel)</b> |            |                             |
| VPR/2/U 38/V                               | 1613021100 | Aluminium body, 3/8 ports   |
| VPR/2/U 12/V                               | 1613031100 | Aluminium body, 1/2 ports   |
| VPR/2/U 34/V                               | 1613041100 | Aluminium body, 3/4 ports   |
| VPR/2/U 100/V                              | 1613051100 | Aluminium body, 1" ports    |
| VPR/2/U 38/V/ac                            | 1613022100 | Steel body, 3/8 ports       |
| VPR/2/U 12/V/ac                            | 1613032100 | Steel body, 1/2 ports       |
| VPR/2/U 34/V/ac                            | 1613042100 | Steel body, 3/4 ports       |
| VPR/2/U 100/V/ac                           | 1613052100 | Steel body, 1" ports        |
| VPR/2/U 38/V/SAE                           | 1613021200 | Aluminium body, SAE8 ports  |
| VPR/2/U 12/V/SAE                           | 1613031200 | Aluminium body, SAE10 ports |

#### Adjustment kit type "MG" (handknob)

|                     |            |                             |
|---------------------|------------|-----------------------------|
| VPR/2/U 38/MG       | 1613021101 | Aluminium body, 3/8 ports   |
| VPR/2/U 12/MG       | 1613031101 | Aluminium body, 1/2 port    |
| VPR/2/U 34/MG       | 1613041101 | Aluminium body, 3/4 ports   |
| VPR/2/RL 100/MG     | 1613051101 | Aluminium body, 1" ports    |
| VPR/2/U 12/MG/SAE   | 1613031201 | Aluminium body, SAE10 port  |
| VPR/2/RL 100/MG/SAE | 1613051200 | Aluminium body, SAE16 ports |

#### Adjustment kit type "L" (lever)

|               |            |                           |
|---------------|------------|---------------------------|
| VPR/2/U 38/L  | 1613021102 | Aluminium body, 3/8 ports |
| VPR/2/U 12/L  | 1613031102 | Aluminium body, 1/2 ports |
| VPR/2/U 34/L  | 1613041102 | Aluminium body, 3/4 ports |
| VPR/2/U 100/L | 1613051102 | Aluminium body, 1" ports  |

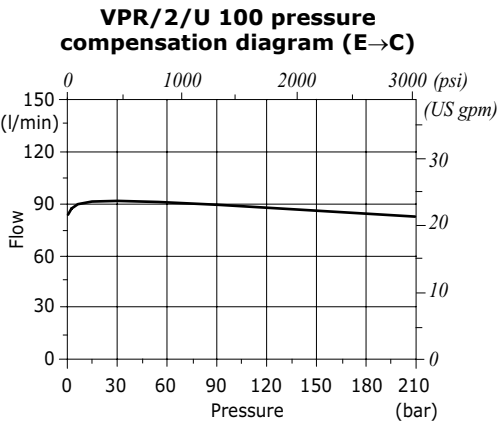
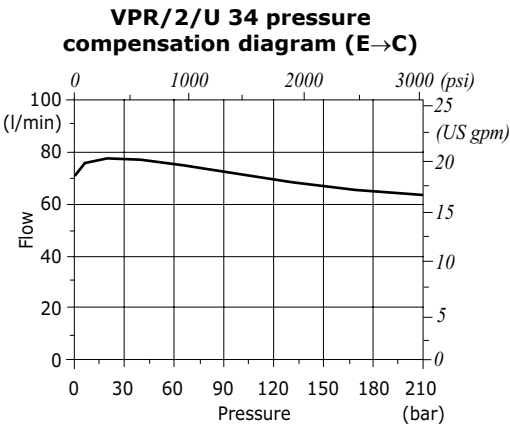
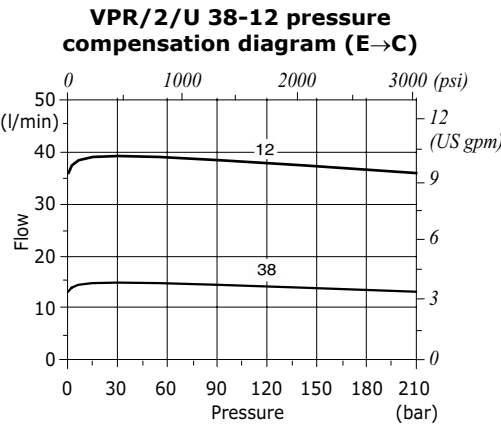
For other steel body configurations, SAE thread and configurations with FPM (Viton) seals, please contact our Sales Dpt.

#### 1 Adjustment kit

| TYPE                          | CODE       | DESCRIPTION                                                        |
|-------------------------------|------------|--------------------------------------------------------------------|
| <b>For VPR/2/RL 38 valve</b>  |            |                                                                    |
| V.SB                          | 5KT6200200 | "V" handwheel type in "SB" configuration (sensibilized adjustment) |
| V                             | 5KT6130200 | "V" handwheel type                                                 |
| MG                            | 5KT6200202 | "MG" handknob type                                                 |
| S                             | 5KT6200211 | "S" screw type                                                     |
| <b>For VPR/2/RL 12 valve</b>  |            |                                                                    |
| V.SB                          | 5KT6130301 | "V" handwheel type in "SB" configuration (sensibilized adjustment) |
| V                             | 5KT6130200 | "V" handwheel type                                                 |
| MG                            | 5KT6200202 | "MG" handknob type                                                 |
| S                             | 5KT6200211 | "S" screw type                                                     |
| <b>For VPR/2/RL 34 valve</b>  |            |                                                                    |
| V                             | 5KT6130401 | "V" handwheel type                                                 |
| MG                            | 5KT6200400 | "MG" handknob type                                                 |
| S                             | 5KT6130404 | "S" screw type                                                     |
| V.SB                          | 5KT6130402 | "V" handwheel type in "SB" configuration (sensibilized adjustment) |
| <b>For VPR/2/RL 100 valve</b> |            |                                                                    |
| V                             | 5KT6340603 | "V" handwheel type                                                 |
| MG                            | 5KT6200605 | "MG" handknob type                                                 |
| S                             | 5KT6200604 | "S" screw type                                                     |



Rating diagrams





## Type VPF/3/EP

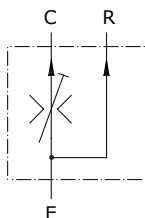
### flow control pressure compensated valves

- 3 ways
- Exceeding flow to pressure
- Whit costant flow in "C"

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

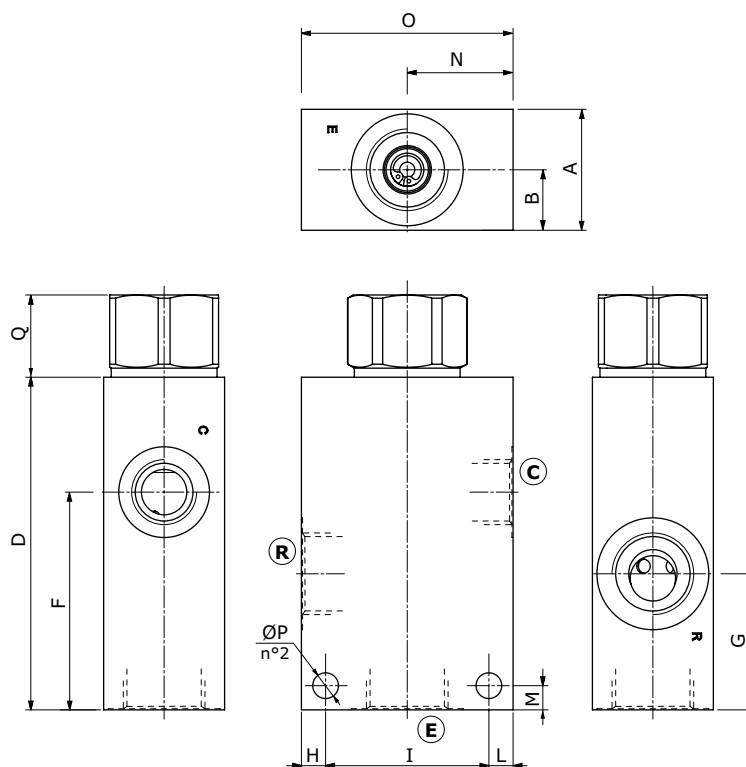
| VPF/3/EP 38                                         |                                                                                                       | VPF/3/EP 12             | VPF/3/EP 34             |                   |
|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------|-------------------------|-------------------------|-------------------|
| Nominal flow                                        | 60 l/min (15.8 US gpm)                                                                                | 100 l/min (26.4 US gpm) | 150 l/min (39.6 US gpm) |                   |
| Max. pressure                                       | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi)                                |                         |                         |                   |
| Fluid                                               | mineral based oil                                                                                     |                         |                         |                   |
| Viscosity                                           | from 10 to 200 cSt                                                                                    |                         |                         |                   |
| Max. level of contamination                         | 18/16/13 ISO4406                                                                                      |                         |                         |                   |
| Fluid temperature                                   | with NBR seals from -20°C (-4°F) to 80°C (176°F)<br>with FPM seals from -20°C (-4°F) to 100°C (212°F) |                         |                         |                   |
| Environmental temperature<br>for working conditions | from -40°C (-40°F) to 100°C (212°F)                                                                   |                         |                         |                   |
| Weight                                              | aluminium                                                                                             | 0.62 kg (1.37 lb)       | 0.85 kg (1.87 lb)       | 1.68 kg (3.70 lb) |
|                                                     | steel                                                                                                 | 1.35 kg (2.98 lb)       | 2.18 kg (4.81 lb)       | 3.71 kg (8.18 lb) |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



### Dimensions

| Valve type  | (E)  | (R)  | (C)  |
|-------------|------|------|------|
| VPF/3/EP 38 | G1/2 | G3/8 | G3/8 |
| VPF/3/EP 12 | G3/4 | G3/4 | G1/2 |
| VPF/3/EP 34 | 1"   | 1"   | G3/4 |

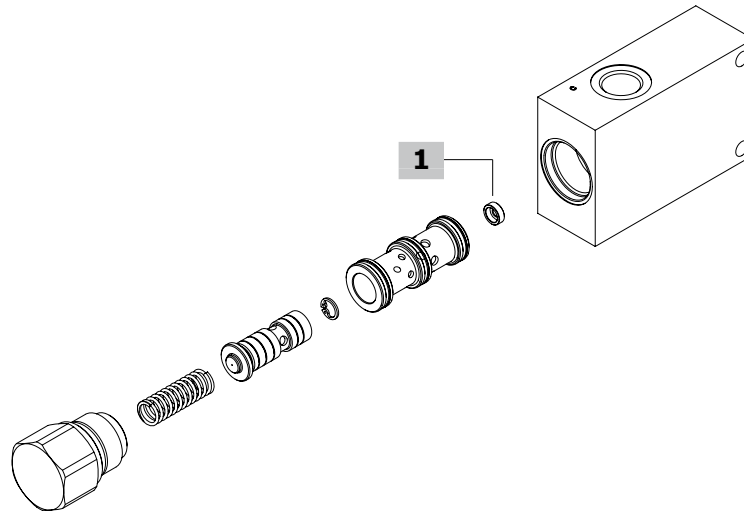


Dimensions are in mm-in

| Valve type  | A    | B    | D    | F    | G    | H     | I    | L     | M     | N    | O    | ØP    | Q     |
|-------------|------|------|------|------|------|-------|------|-------|-------|------|------|-------|-------|
| VPF/3/EP 38 | 35   | 17.5 | 95   | 55   | 35   | 8     | 44   | 8     | 8     | 30   | 60   | 8.5   | 10    |
|             | 1.38 | 0.69 | 3.74 | 2.16 | 1.38 | 0.31  | 1.73 | 0.315 | 0.315 | 1.18 | 2.36 | 0.335 | 0.394 |
| VPF/3/EP 12 | 40   | 20   | 110  | 72   | 45   | 8     | 54   | 8     | 8     | 35   | 70   | 8.5   | 27.2  |
|             | 1.57 | 0.79 | 4.33 | 2.83 | 1.77 | 0.315 | 2.12 | 0.315 | 0.315 | 1.38 | 2.75 | 0.335 | 1.07  |
| VPF/3/EP 34 | 50   | 25   | 120  | 80   | 50   | 10    | 70   | 10    | 10    | 45   | 90   | 10.5  | 24.5  |
|             | 1.97 | 0.98 | 4.72 | 3.14 | 1.97 | 0.39  | 2.75 | 0.394 | 0.394 | 1.77 | 3.54 | 0.413 | 0.96  |

## Ordering codes and description composition

Port size  
**VPF/3/EP 38/Ds1**  
**1**



### VPF/3/EP complete valves

TYPE: **VPF/3/EP 38/Ds1** CODE: 1640021100  
DESCRIPTION: Aluminium body, G3/8 ports, fixed orifice Ø1 mm-0.039 in (Qc 1.2 l/min-0.31 US gpm)

TYPE: **VPF/3/EP 12/Ds2** CODE: 1640031102  
DESCRIPTION: Aluminium body, G1/2 ports, fixed orifice Ø2 mm-0.078 in (Qc 4 l/min-1.05 US gpm)

TYPE: **VPF/3/EP 34/Ds3** CODE: 1640041105  
DESCRIPTION: Aluminium body, G3/4 ports, fixed orifice Ø3 mm-0.12 in (Qc 11 l/min-2.9 US gpm)

TYPE: **VPF/3/EP 38/Ds2,5/ac** CODE: 1640022100  
DESCRIPTION: Steel body, G3/8 ports, fixed orifice Ø2.5 mm-0.14 in (Qc 7.5 l/min-1.98 US gpm)

TYPE: **VPF/3/EP 12/Ds3/ac** CODE: 1640032103  
DESCRIPTION: Steel body, G1/2 ports, fixed orifice Ø3 mm-0.12 in (Qc 11 l/min-2.9 US gpm)

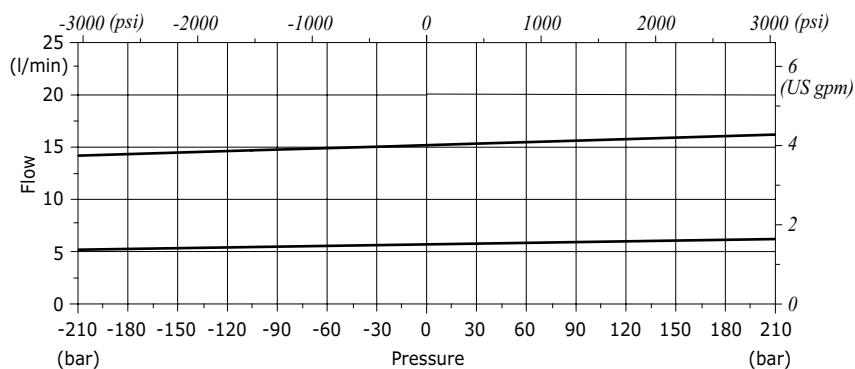
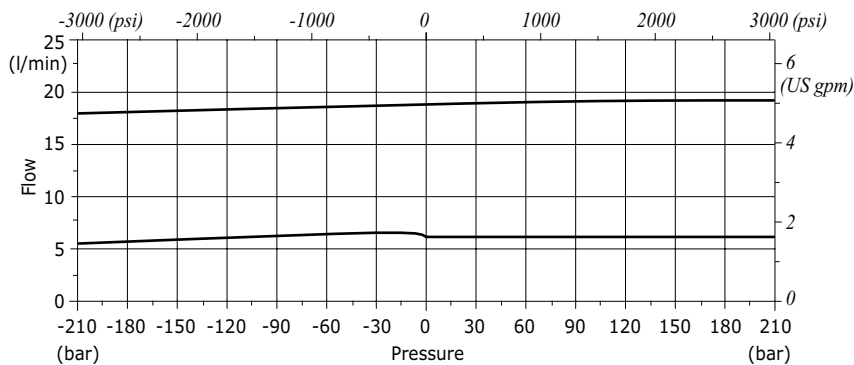
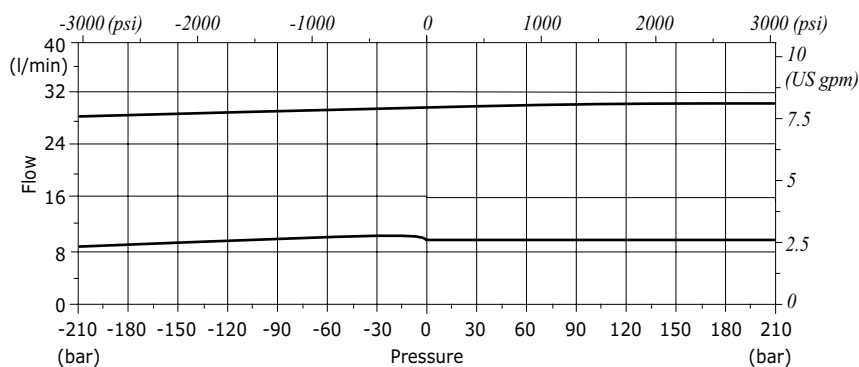
TYPE: **VPF/3/EP 34/Ds4/ac** CODE: 1640042100  
DESCRIPTION: Steel body, G3/4 ports, fixed orifice Ø4 mm-0.16 in (Qc 20.5 l/min-5.41 US gpm)

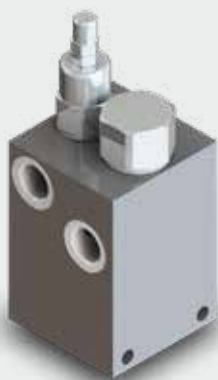
For other steel body configurations, SAE thread and configurations with FPM (Viton) seals, please contact our Sales Dpt.

### 1 Fixed orifice

| TYPE                         | CODE       | DESCRIPTION                                 |
|------------------------------|------------|---------------------------------------------|
| <b>For VPF/3/EP 38 valve</b> |            |                                             |
| <b>Ds1</b>                   | 3DF1091000 | Ø1 mm-0.039 in (Qc 1.2 l/min-0.31 US gpm)   |
| <b>Ds1,5</b>                 | 3DF1091500 | Ø1.5 mm-0.059 in (Qc 2.8 l/min-0.73 US gpm) |
| <b>Ds2</b>                   | 3DF1092000 | Ø2 mm-0.079 in (Qc 5 l/min-1.32 US gpm)     |
| <b>Ds2,5</b>                 | 3DF1092500 | Ø2.5 mm-0.098 in (Qc 7.5 l/min-1.98 US gpm) |
| <b>Ds2,8</b>                 | 3DF1092800 | Ø2.8 mm-0.11 in (Qc 9.5 l/min-2.5 US gpm)   |
| <b>Ds3</b>                   | 3DF1093000 | Ø3 mm-0.12 in (Qc 11 l/min-2.9 US gpm)      |
| <b>Ds3,5</b>                 | 3DF1093500 | Ø3.5 mm-0.14 in (Qc 16 l/min-4.2 US gpm)    |
| <b>Ds3,8</b>                 | 3DF1093800 | Ø3.8 mm-0.15 in (Qc 20 l/min-5.9 US gpm)    |
| <b>Ds4</b>                   | 3DF1094000 | Ø4 mm-0.16 in (Qc 23 l/min-6 US gpm)        |
| <b>For VPF/3/EP 12 valve</b> |            |                                             |
| <b>Ds1</b>                   | 3DF1111000 | Ø1 mm-0.039 in (Qc 1.1 l/min-0.29 US gpm)   |
| <b>Ds1,5</b>                 | 3DF1111500 | Ø1.5 mm-0.059 in (Qc 2.5 l/min-0.66 US gpm) |
| <b>Ds2</b>                   | 3DF1112000 | Ø2 mm-0.079 in (Qc 4 l/min-1.05 US gpm)     |
| <b>Ds2,5</b>                 | 3DF1112500 | Ø2.5 mm-0.098 in (Qc 6.5 l/min-1.72 US gpm) |
| <b>Ds2,8</b>                 | 3DF1112800 | Ø2.8 mm-0.11 in (Qc 8 l/min-2.1 US gpm)     |
| <b>Ds3</b>                   | 3DF1113000 | Ø3 mm-0.12 in (Qc 9.5 l/min-2.5 US gpm)     |
| <b>Ds3,5</b>                 | 3DF1113500 | Ø3.5 mm-0.14 in (Qc 13 l/min-3.43 US gpm)   |
| <b>Ds3,8</b>                 | 3DF1113800 | Ø3.8 mm-0.15 in (Qc 16 l/min-4.22 US gpm)   |
| <b>Ds4</b>                   | 3DF1114000 | Ø4 mm-0.16 in (Qc 18 l/min-4.75 US gpm)     |
| <b>Ds4,5</b>                 | 3DF1114500 | Ø4.5 mm-0.18 in (Qc 25 l/min-6.6 US gpm)    |
| <b>Ds5</b>                   | 3DF1115000 | Ø5 mm-0.2 in (Qc 32 l/min-8.45 US gpm)      |
| <b>Ds5,5</b>                 | 3DF1115000 | Ø5.5 mm-0.22 in (Qc 41 l/min-10.83 US gpm)  |
| <b>For VPF/3/EP 34 valve</b> |            |                                             |
| <b>Ds1</b>                   | 3DF1151000 | Ø1 mm-0.039 in (Qc 1.3 l/min-0.34 US gpm)   |
| <b>Ds1,5</b>                 | 3DF1151500 | Ø1.5 mm-0.059 in (Qc 3 l/min-0.4 US gpm)    |
| <b>Ds2</b>                   | 3DF1152000 | Ø2 mm-0.079 in (Qc 5 l/min-1.32 US gpm)     |
| <b>Ds2,5</b>                 | 3DF1152500 | Ø2.5 mm-0.14 in (Qc 7.5 l/min-1.98 US gpm)  |
| <b>Ds3</b>                   | 3DF1153000 | Ø3 mm-0.15 in (Qc 11 l/min-2.9 US gpm)      |
| <b>Ds3,5</b>                 | 3DF1153500 | Ø3.5 mm-0.15 in (Qc 15 l/min-3.96 US gpm)   |
| <b>Ds4</b>                   | 3DF1154000 | Ø4 mm-0.16 in (Qc 20.5 l/min-5.41 US gpm)   |
| <b>Ds4,5</b>                 | 3DF1154500 | Ø4.5 mm-0.18 in (Qc 26.5 l/min-7 US gpm)    |
| <b>Ds5</b>                   | 3DF1155000 | Ø5 mm-0.2 in (Qc 33 l/min-8.72 US gpm)      |
| <b>Ds5,5</b>                 | 3DF1155500 | Ø5.5 mm-0.22 in (Qc 42 l/min-11.09 US gpm)  |
| <b>Ds6</b>                   | 3DF1156000 | Ø6 mm-0.18 in (Qc 52 l/min-13.74 US gpm)    |
| <b>Ds6,5</b>                 | 3DF1156500 | Ø6.5 mm-0.2 in (Qc 63 l/min-16.64 US gpm)   |
| <b>Ds7</b>                   | 3DF1157000 | Ø7 mm-0.28 in (Qc 77 l/min-20.34 US gpm)    |

## Rating diagrams

**VPF/3/EP 38 compensation diagram in C  
changing the  $\Delta p$  between E and R****VPF/3/EP 12 compensation diagram in C  
changing the  $\Delta p$  between E and R****VPF/3/EP 34 compensation diagram in C  
changing the  $\Delta p$  between E and R**



## Type VPF/3/EP+VMP

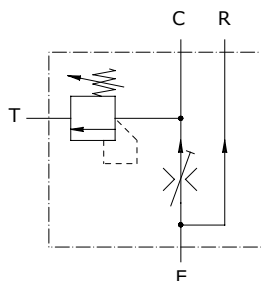
### flow control pressure compensated valves

- 3 ways
- Exceeding flow to pressure
- With constant flow in "C"
- With pressure relief valve

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                                     | VPF/3/EP 38+VMP                                                        | VPF/3/EP 12+VMP         | VPF/3/EP 34+VMP         |                    |
|-----------------------------------------------------|------------------------------------------------------------------------|-------------------------|-------------------------|--------------------|
| Nominal flow                                        | 60 l/min (15.8 US gpm)                                                 | 100 l/min (26.4 US gpm) | 150 l/min (39.6 US gpm) |                    |
| Max. pressure                                       | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                         |                         |                    |
| Fluid                                               | mineral based oil                                                      |                         |                         |                    |
| Viscosity                                           | from 10 to 200 cSt                                                     |                         |                         |                    |
| Max. level of contamination                         | 18/16/13 ISO4406                                                       |                         |                         |                    |
| Fluid temperature                                   | with NBR seals from -20°C (-4°F) to 80°C (176°F)                       |                         |                         |                    |
| Environmental temperature<br>for working conditions | from -40°C (-40°F) to 100°C (212°F)                                    |                         |                         |                    |
| Weight                                              | aluminium                                                              | 1.30 kg (2.87 lb)       | 1.90 kg (4.19 lb)       | 3.15 kg (6.94 lb)  |
|                                                     | steel                                                                  | 2.94 kg (6.48 lb)       | 4.38 kg (9.66 lb)       | 6.92 kg (15.26 lb) |

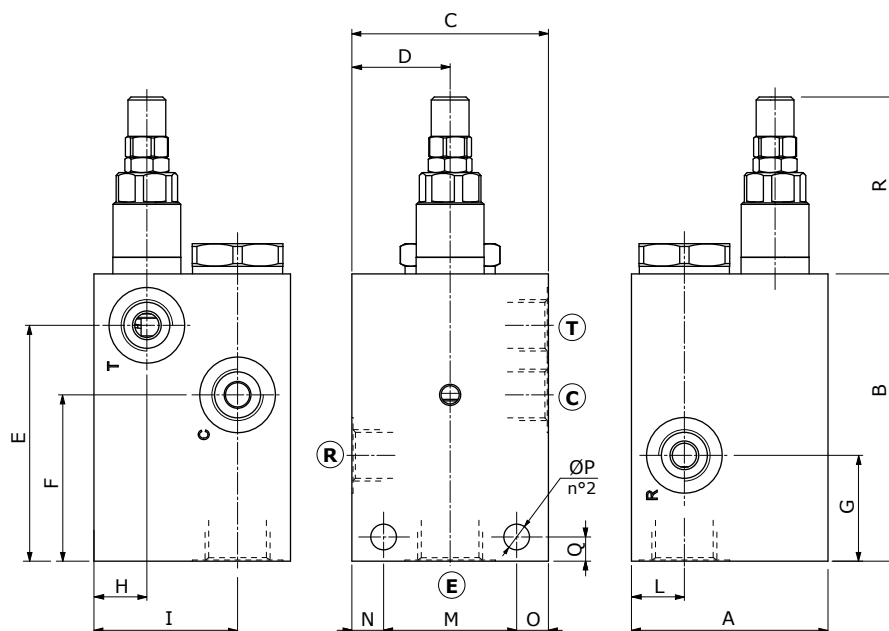
NOTE - For different conditions, please contact Walvoil Sales Dpt.



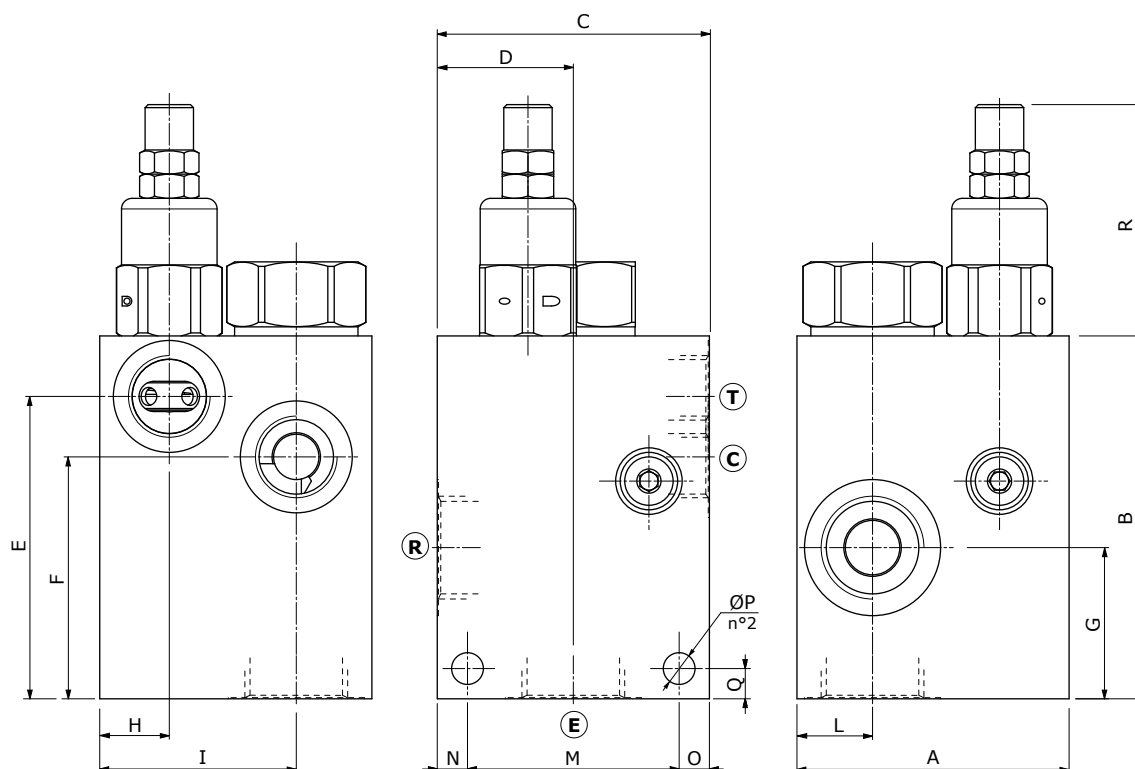
## Dimensions

### VPF/3/EP 38+VMP - VPF/3/EP 12+VMP

| Valve type      | (E)  | (R)  | (C)  | (T)  |
|-----------------|------|------|------|------|
| VPF/3/EP 35+VMP | G1/2 | G3/8 | G3/8 | G3/8 |
| VPF/3/EP 12+VMP | G3/4 | G3/4 | G1/2 | G1/2 |
| VPF/3/EP 34+VMP | G1"  | G1"  | G3/4 | G3/4 |



### VPF/3/EP 34+VMP



Dimensions are in mm-in

| Valve type      | A          | B           | C          | D            | E            | F          | G          | H            | I            | L            | M          | N             | O             | ØP            | Q           | R            |
|-----------------|------------|-------------|------------|--------------|--------------|------------|------------|--------------|--------------|--------------|------------|---------------|---------------|---------------|-------------|--------------|
| VPF/3/EP 38+VMP | 65<br>2.56 | 95<br>3.74  | 65<br>2.56 | 32.5<br>1.28 | 78<br>3.07   | 55<br>2.17 | 35<br>1.38 | 17.5<br>0.69 | 47.5<br>1.87 | 17.5<br>0.69 | 44<br>1.73 | 10.5<br>0.413 | 10.5<br>0.413 | 8.5<br>0.335  | 8<br>0.315  | 58.5<br>2.30 |
| VPF/3/EP 12+VMP | 75<br>2.95 | 110<br>4.33 | 75<br>2.95 | 37.5<br>1.48 | 92.5<br>3.64 | 72<br>2.83 | 45<br>1.77 | 17.5<br>0.69 | 55<br>2.17   | 20<br>0.79   | 54<br>2.13 | 10.5<br>0.413 | 10.5<br>0.413 | 8.5<br>0.335  | 8<br>0.315  | 67<br>2.64   |
| VPF/3/EP 34+VMP | 90<br>3.54 | 120<br>4.72 | 90<br>3.54 | 45<br>1.77   | 100<br>3.94  | 80<br>3.15 | 50<br>1.97 | 23<br>0.91   | 65<br>2.56   | 25<br>0.98   | 70<br>2.76 | 10<br>0.394   | 10<br>0.394   | 10.5<br>0.413 | 10<br>0.394 | 76.5<br>3.01 |

## Flow control valves

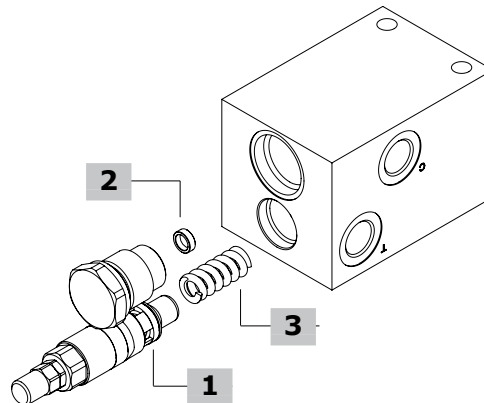
Flow control pressure compensated valves

# VPF/3/EP+VMP

## Ordering codes and description composition

Port size  
**VPF/3/EP 38+VMP/Ds1/5.TS**

**1**   **2**   **3**



### VPF/3/EP complete valves

TYPE: **VPF/3/EP 38+VMP/Ds1/5.TS** CODE: 1642021100  
DESCRIPTION: Aluminium body, G3/8 ports, fixed orifice Ø1 mm-0.039 in (Qc 1.2 l/min-0.31 US gpm), range 50-220 bar (725-3200 psi)

TYPE: **VPF/3/EP 12+VMP/Ds2/10.TS** CODE: 1642031102  
DESCRIPTION: Aluminium body, G1/2 ports, fixed orifice Ø2 mm-0.078 in (Qc 4 l/min-1.05 US gpm), range 50-220 bar (725-3200 psi)

TYPE: **VPF/3/EP 34+VMP/Ds3/20.TS** CODE: 1642041105  
DESCRIPTION: Aluminium body, G3/4 ports, fixed orifice Ø3 mm-0.12 in (Qc 11 l/min-2.9 US gpm), range 50-220 bar (725-3200 psi)

TYPE: **VPF/3/EP 38+VMP/Ds1/5.TS/ac** CODE: 1642022101  
DESCRIPTION: Steel body, 3/8 ports, fixed orifice Ø1 mm-0.039 in (Qc 1.2 l/min-0.31 US gpm), range 50-220 bar (725-3200 psi)

TYPE: **VPF/3/EP 12+VMP/Ds2/10.TS/ac** CODE: 1642032100  
DESCRIPTION: Steel body, 1/2 ports, fixed orifice Ø2 mm-0.078 in (Qc 4 l/min-1.05 US gpm), range 50-220 bar (725-3200 psi)

TYPE: **VPF/3/EP 34+VMP/Ds3/20.TS/ac** CODE: 1642042103  
DESCRIPTION: Steel body, 3/4 ports, fixed orifice Ø3 mm-0.12 in (Qc 11 l/min-2.9 US gpm) range 50-220 bar (725-3200 psi)

For other steel body configurations, SAE thread and configurations with FPM (Viton) seals, please contact our Sales Dpt.

### 3 Pressure setting springs

| TYPE                             | CODE       | DESCRIPTION                               |
|----------------------------------|------------|-------------------------------------------|
| <b>For VPF/3/EP 38+VMP valve</b> |            |                                           |
| <b>TB</b>                        | 3MOL314311 | Setting range 5-40 bar (72.5-580 psi)     |
| <b>TV</b>                        | 3MOL314330 | Setting range 20-80 bar (290-1150 psi)    |
| <b>TS</b>                        | 3MOL315330 | Setting range 50-220 bar (725-3200 psi)   |
| <b>TR</b>                        | 3ML1143600 | Setting range 180-350 bar (2600-5075 psi) |
| <b>For VPF/3/EP 12+VMP valve</b> |            |                                           |
| <b>TB</b>                        | 3MOL316410 | Setting range 5-40 bar (72.5-580 psi)     |
| <b>TV</b>                        | 3ML1154300 | Setting range 20-80 bar (290-1150 psi)    |
| <b>TS</b>                        | 3MOL317420 | Setting range 50-220 bar (725-3200 psi)   |
| <b>TR</b>                        | 3MOL317440 | Setting range 180-350 bar (2600-5075 psi) |
| <b>For VPF/3/EP 34+VMP valve</b> |            |                                           |
| <b>TB</b>                        | 3ML1184300 | Setting range 5-40 bar (72.5-580 psi)     |
| <b>TV</b>                        | 3ML1174500 | Setting range 20-80 bar (290-1150 psi)    |
| <b>TS</b>                        | 3ML1204200 | Setting range 50-220 bar (725-3200 psi)   |
| <b>TR</b>                        | 3ML1214500 | Setting range 180-350 bar (2600-5075 psi) |

### 1 Direct acting pressure relief valves

| TYPE               | CODE       | DESCRIPTION                                                          |
|--------------------|------------|----------------------------------------------------------------------|
| <b>VMP 5/TS.S</b>  | 1100520400 | For VPF/3/EP 38+VMP valve<br>Setting range 50-220 bar (725-3200 psi) |
| <b>VMP 10/TS.S</b> | 1100530400 | For VPF/3/EP 12+VMP valve<br>Setting range 50-220 bar (725-3200 psi) |
| <b>VMP 20/TS.S</b> | 1100540400 | For VPF/3/EP 34+VMP valve<br>Setting range 50-220 bar (725-3200 psi) |

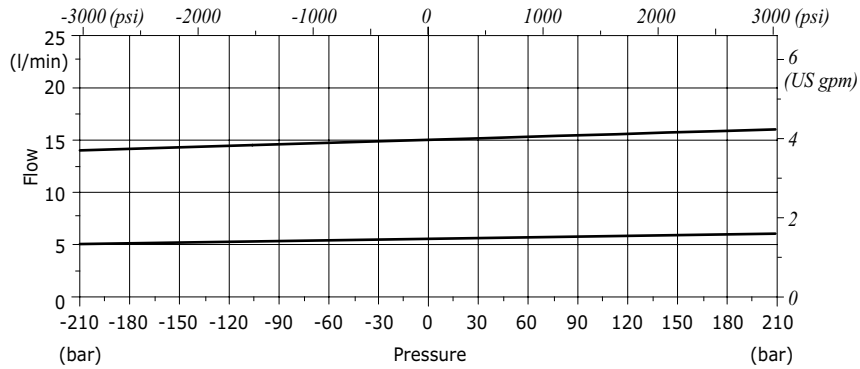
### 2 Fixed orifice

| TYPE                             | CODE       | DESCRIPTION                                |
|----------------------------------|------------|--------------------------------------------|
| <b>For VPF/3/EP 38+VMP valve</b> |            |                                            |
| <b>Ds1</b>                       | 3DF1091000 | Ø1 mm-0.039 in (Qc 1.2 l/1'-0.31 US gpm)   |
| <b>Ds1,5</b>                     | 3DF1091500 | Ø1.5 mm-0.059 in (Qc 2.8 l/1'-0.73 US gpm) |
| <b>Ds2</b>                       | 3DF1092000 | Ø2 mm-0.079 in (Qc 5 l/1'-1.32 US gpm)     |
| <b>Ds2,5</b>                     | 3DF1092500 | Ø2.5 mm-0.098 in (Qc 7.5 l/1'-1.98 US gpm) |
| <b>Ds2,8</b>                     | 3DF1092800 | Ø2.8 mm-0.11 in (Qc 9.5 l/1'-2.5 US gpm)   |
| <b>Ds3</b>                       | 3DF1093000 | Ø3 mm-0.12 in (Qc 11 l/1'-2.9 US gpm)      |
| <b>Ds3,5</b>                     | 3DF1093500 | Ø3.5 mm-0.14 in (Qc 16 l/1'-4.2 US gpm)    |
| <b>Ds3,8</b>                     | 3DF1093800 | Ø3.8 mm-0.15 in (Qc 20 l/1'-5.9 US gpm)    |
| <b>Ds4</b>                       | 3DF1094000 | Ø4 mm-0.16 in (Qc 23 l/1'-6 US gpm)        |
| <b>For VPF/3/EP 12+VMP valve</b> |            |                                            |
| <b>Ds1</b>                       | 3DF1111000 | Ø1 mm-0.039 in (Qc 1.1 l/1'-0.29 US gpm)   |
| <b>Ds1,5</b>                     | 3DF1111500 | Ø1.5 mm-0.059 in (Qc 2.5 l/1'-0.66 US gpm) |
| <b>Ds2</b>                       | 3DF1112000 | Ø2 mm-0.079 in (Qc 4 l/1'-1.05 US gpm)     |
| <b>Ds2,5</b>                     | 3DF1112500 | Ø2.5 mm-0.098 in (Qc 6.5 l/1'-1.72 US gpm) |
| <b>Ds2,8</b>                     | 3DF1112800 | Ø2.8 mm-0.11 in (Qc 8 l/1'-2.1 US gpm)     |
| <b>Ds3</b>                       | 3DF1113000 | Ø3 mm-0.12 in (Qc 9.5 l/1'-2.5 US gpm)     |
| <b>Ds3,5</b>                     | 3DF1113500 | Ø3.5 mm-0.14 in (Qc 13 l/1'-3.43 US gpm)   |
| <b>Ds3,8</b>                     | 3DF1113800 | Ø3.8 mm-0.15 in (Qc 16 l/1'-4.22 US gpm)   |
| <b>Ds4</b>                       | 3DF1114000 | Ø4 mm-0.16 in (Qc 18 l/1'-4.75 US gpm)     |
| <b>Ds4,5</b>                     | 3DF1114500 | Ø4.5 mm-0.18 in (Qc 25 l/1'-6.6 US gpm)    |
| <b>Ds5</b>                       | 3DF1115000 | Ø5 mm-0.2 in (Qc 32 l/1'-8.45 US gpm)      |
| <b>Ds5,5</b>                     | 3DF1115000 | Ø5.5 mm-1.2 in (Qc 41 l/1'-10.83 US gpm)   |
| <b>For VPF/3/EP 34+VMP valve</b> |            |                                            |
| <b>Ds1</b>                       | 3DF1151000 | Ø1 mm-0.039 in (Qc 1.3 l/1'-0.34 US gpm)   |
| <b>Ds1,5</b>                     | 3DF1151500 | Ø1.5 mm-0.059 in (Qc 3 l/1'-0.4 US gpm)    |
| <b>Ds2</b>                       | 3DF1152000 | Ø2 mm-0.079 in (Qc 5 l/1'-1.32 US gpm)     |
| <b>Ds2,5</b>                     | 3DF1152500 | Ø2,5 mm-0.14 in (Qc 7.5 l/1'-1.98 US gpm)  |
| <b>Ds3</b>                       | 3DF1153000 | Ø3 mm-0.15 in (Qc 11 l/1'-2.9 US gpm)      |
| <b>Ds3,5</b>                     | 3DF1153500 | Ø3,5 mm-0.15 in (Qc 15 l/1'-3.96 US gpm)   |
| <b>Ds4</b>                       | 3DF1154000 | Ø4 mm-0.16 in (Qc 20.5 l/1'-5.41 US gpm)   |
| <b>Ds4,5</b>                     | 3DF1154500 | Ø4.5 mm-0.18 in (Qc 26.5 l/1'-7 US gpm)    |
| <b>Ds5</b>                       | 3DF1155000 | Ø5 mm-0.2 in (Qc 33 l/1'-8.72 US gpm)      |
| <b>Ds5,5</b>                     | 3DF1155500 | Ø5.5 mm-1.2 in (Qc 42 l/1'-11.09 US gpm)   |
| <b>Ds6</b>                       | 3DF1156000 | Ø6 mm-0.18 in (Qc 52 l/1'-13.74 US gpm)    |
| <b>Ds6,5</b>                     | 3DF1156500 | Ø6.5 mm-0.2 in (Qc 63 l/1'-16.64 US gpm)   |
| <b>Ds7</b>                       | 3DF1157000 | Ø7 mm-1.2 in (Qc 77 l/1'-20.34 US gpm)     |

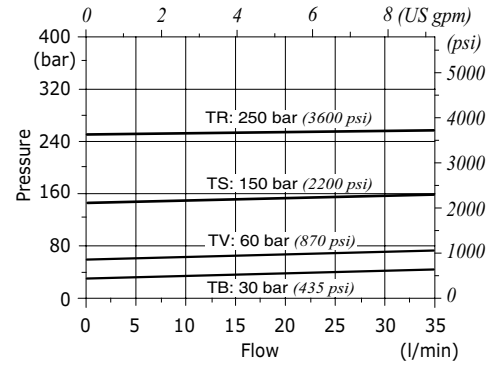


## Rating diagrams

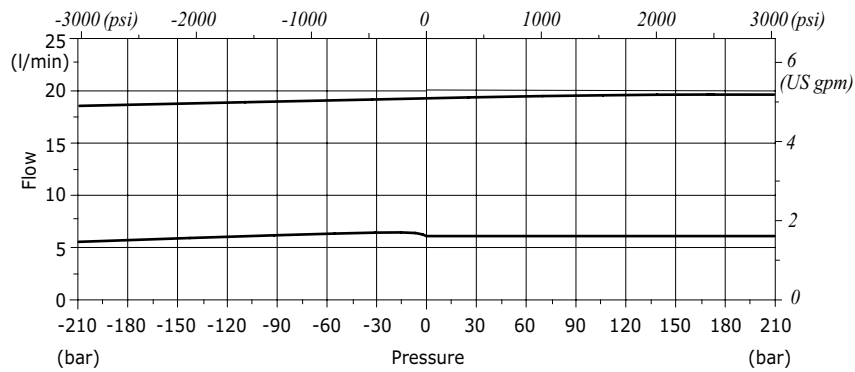
**VPF/3/EP 38+VMP compensation diagram  
in C changing the  $\Delta p$  between E and R**



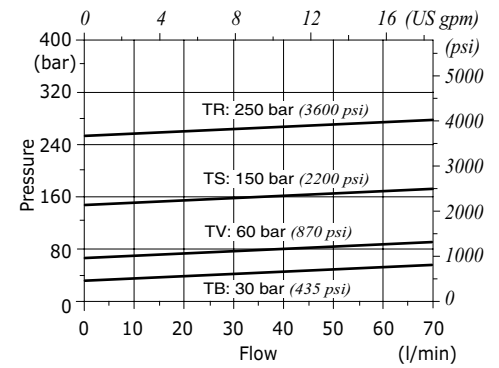
**VPF/3/EP 38+VMP**  
Std. setting at 5 l/min (1.32 US gpm)



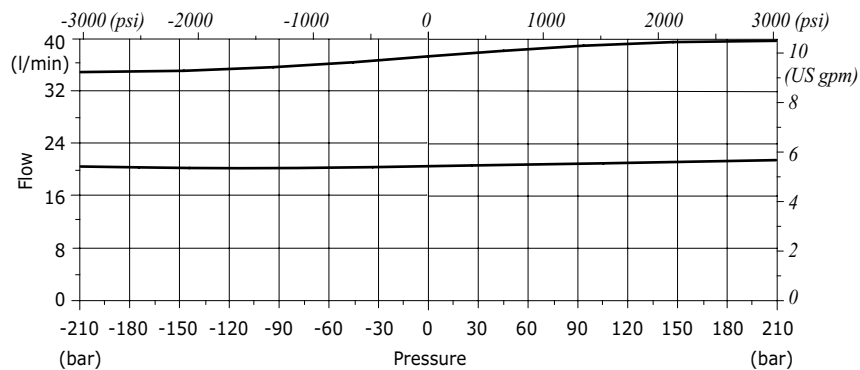
**VPF/3/EP 12+VMP compensation diagram  
in C changing the  $\Delta p$  between E and R**



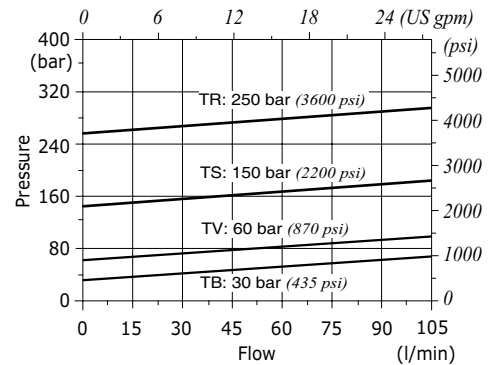
**VPF/3/EP 12+VMP**  
Std. setting at 5 l/min (1.32 US gpm)



**VPF/3/EP 34+VMP compensation diagram  
in C changing the  $\Delta p$  between E and R**



**VPF/3/EP 34+VMP**  
Std. setting at 5 l/min (1.32 US gpm)





## Type VPR/3/ET

### flow control pressure compensated valves

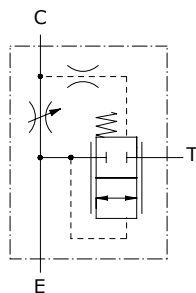
- 3 ways

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                                  |           | VPR/3/ET 38                                                            | VPR/3/ET 12               | VPR/3/ET 34                | VPR/3/ET 100               | VPR/3/ET 114               |
|--------------------------------------------------|-----------|------------------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| Max. inlet flow                                  | Line E    | 50 l/min<br>(13.2 US gpm)                                              | 90 l/min<br>(23.8 US gpm) | 150 l/min<br>(39.6 US gpm) | 240 l/min<br>(63.4 US gpm) | 350 l/min<br>(92.5 US gpm) |
| Max. regulated flow                              | Line C    | 30 l/min<br>(7.9 US gpm)                                               | 50 l/min<br>(13.2 US gpm) | 90 l/min<br>(23.8 US gpm)  | 150 l/min<br>(39.6 US gpm) | 250 l/min<br>(66 US gpm)   |
| Max. regulated flow "SB"                         |           | 15 l/min<br>(4.0 US gpm)                                               | 25 l/min<br>(6.6 US gpm)  | 45 l/min<br>(11.9 US gpm)  | 75 l/min<br>(19.8 US gpm)  | 125 l/min<br>(33 US gpm)   |
| Max. pressure                                    |           | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                           |                            |                            |                            |
| Fluid                                            |           | mineral based oil                                                      |                           |                            |                            |                            |
| Viscosity                                        |           | from 10 to 200 cSt                                                     |                           |                            |                            |                            |
| Max. level of contamination                      |           | 18/16/13 ISO4406                                                       |                           |                            |                            |                            |
| Fluid temperature                                |           | with NBR seals from -20°C (-4°F) to 80°C (176°F)                       |                           |                            |                            |                            |
| Environmental temperature for working conditions |           | from -40°C (-40°F) to 100°C (212°F)                                    |                           |                            |                            |                            |
| Weight                                           | aluminium | 1.07 kg (2.36 lb)                                                      | 1.02 kg (2.25 lb)         | 2.22 kg (4.89 lb)          | 4.06 kg (8.95 lb)          | 4.49 kg (20.94 lb)         |
|                                                  | steel     | 2.48 kg (5.47 lb)                                                      | 2.43 kg (5.36 lb)         | 4.42 kg (9.74 lb)          | 8.49 kg (18.72 lb)         | 9.65 kg (21.27 lb)         |

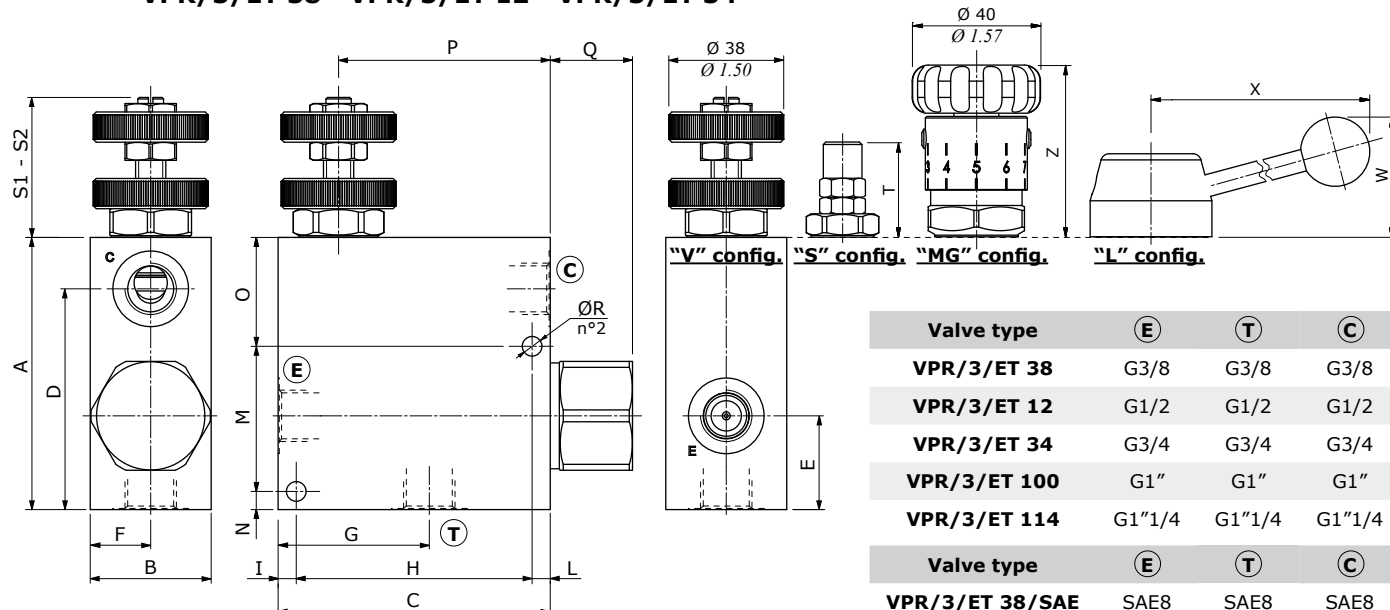
NOTE - For different conditions, please contact Walvoil Sales Dpt.

\*"SB" execution (sensibilized adjustment)



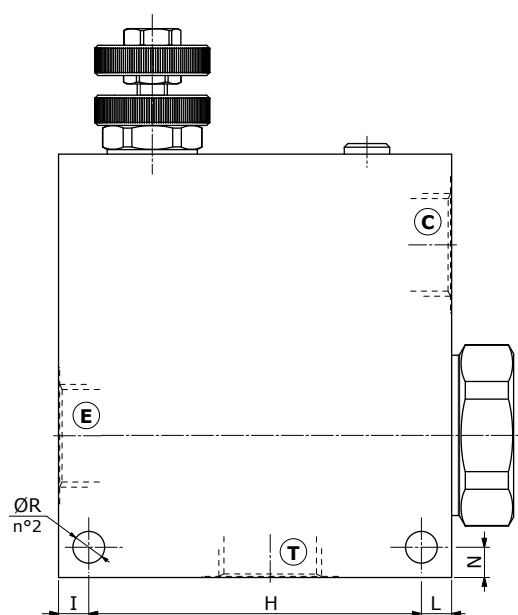
### Dimensions

#### VPR/3/ET 38 - VPR/3/ET 12 - VPR/3/ET 34



| Valve type       | (E)    | (T)    | (C)    |
|------------------|--------|--------|--------|
| VPR/3/ET 38      | G3/8   | G3/8   | G3/8   |
| VPR/3/ET 12      | G1/2   | G1/2   | G1/2   |
| VPR/3/ET 34      | G3/4   | G3/4   | G3/4   |
| VPR/3/ET 100     | G1"    | G1"    | G1"    |
| VPR/3/ET 114     | G1"1/4 | G1"1/4 | G1"1/4 |
| Valve type       | (E)    | (T)    | (C)    |
| VPR/3/ET 38/SAE  | SAE8   | SAE8   | SAE8   |
| VPR/3/ET 12/SAE  | SAE10  | SAE10  | SAE10  |
| VPR/3/ET 34/SAE  | SAE12  | SAE12  | SAE12  |
| VPR/3/ET 100/SAE | SAE16  | SAE16  | SAE16  |
| VPR/3/ET 114/SAE | SAE20  | SAE20  | SAE20  |

#### VPR/3/ET 100 - VPR/3/ET 114



Dimensions are in mm-in

| Valve type       | A        | B                               | C        | D        | E       | F                                 |
|------------------|----------|---------------------------------|----------|----------|---------|-----------------------------------|
| VPR/3/ET 38      | 90-3.54  | 40-1.57                         | 90-3.54  | 73-2.87  | 31-1.22 | 20-0.78                           |
| VPR/3/ET 38/SAE  | 90-3.54  | 40-1.57                         | 90-3.54  | 73-2.87  | 31-1.22 | 20-0.78                           |
| VPR/3/ET 12      | 90-3.54  | 40-1.57                         | 90-3.54  | 73-2.87  | 31-1.22 | 20-0.78                           |
| VPR/3/ET 12/SAE  | 90-3.54  | 40-1.57                         | 90-3.54  | 73-2.87  | 31-1.22 | 20-0.78                           |
| VPR/3/ET 34      | 110-0.31 | 50-1.97                         | 110-4.33 | 85-3.35  | 35-1.38 | 25-0.98                           |
| VPR/3/ET 34/SAE  | 110-0.31 | 50-1.97                         | 110-4.33 | 85-3.35  | 35-1.38 | 25-0.98                           |
| VPR/3/ET 100     | 140-5.51 | Alum: 70-2.75<br>Steel: 65-2.56 | 130-5.11 | 110-4.33 | 47-1.85 | Alum: 35-1.38<br>Steel: 32.5-1.38 |
| VPR/3/ET 100/SAE | 140-5.51 | Alum: 70-2.75<br>Steel: 65-2.56 | 130-5.11 | 110-4.33 | 47-1.85 | Alum: 35-1.38<br>Steel: 32.5-1.38 |
| VPR/3/ET 114     | 165-6.5  | Alum: 70-2.75<br>Steel: 65-2.56 | 130-5.11 | 135-5.31 | 65-2.56 | Alum: 35-1.38<br>Steel: 32.5-1.38 |
| VPR/3/ET 114/SAE | 165-6.5  | Alum: 70-2.75<br>Steel: 65-2.56 | 130-5.11 | 135-5.31 | 65-2.56 | Alum: 35-1.38<br>Steel: 32.5-1.38 |

| Valve type       | G         | H        | I - L   | M         | N        | O         | P       |
|------------------|-----------|----------|---------|-----------|----------|-----------|---------|
| VPR/3/ET 38      | 47.5-1.87 | 78-3.07  | 6-0.24  | 48-1.89   | 6-0.236  | 36-1.42   | 70-2.75 |
| VPR/3/ET 38/SAE  | 47.5-1.87 | 78-3.07  | 6-0.24  | 48-1.89   | 6-0.236  | 36-1.42   | 70-2.75 |
| VPR/3/ET 12      | 47.5-1.87 | 78-3.07  | 6-0.24  | 48-1.89   | 6-0.236  | 36-1.42   | 70-2.75 |
| VPR/3/ET 12/SAE  | 47.5-1.87 | 78-3.07  | 6-0.24  | 48-1.89   | 6-0.236  | 36-1.42   | 70-2.75 |
| VPR/3/ET 34      | 66-2.60   | 94-3.70  | 8-0.31  | 55.5-2.18 | 8-0.315  | 46.5-1.83 | 82-3.23 |
| VPR/3/ET 34/SAE  | 66-2.60   | 94-3.70  | 8-0.31  | 55.5-2.18 | 8-0.315  | 46.5-1.83 | 82-3.23 |
| VPR/3/ET 100     | 70-2.75   | 110-4.33 | 10-0.39 | -         | 10-0.394 | -         | 99-3.90 |
| VPR/3/ET 100/SAE | 70-2.75   | 110-4.33 | 10-0.39 | -         | 10-0.394 | -         | 99-3.90 |
| VPR/3/ET 114     | 35-1.38   | 110-4.33 | 10-0.39 | -         | 10-0.394 | -         | 99-3.90 |
| VPR/3/ET 114/SAE | 35-1.38   | 110-4.33 | 10-0.39 | -         | 10-0.394 | -         | 99-3.90 |

| Valve type       | Q         | ØR        | S1        | S2*       | T         | W         | X          | Z         |
|------------------|-----------|-----------|-----------|-----------|-----------|-----------|------------|-----------|
| VPR/3/ET 38      | 27.2-1.07 | 6.5-0.25  | 46.3-1.82 | 52.6-2.07 | 38.5-1.51 | 47.6-1.87 | 101.3-3.99 | 53.3-2.10 |
| VPR/3/ET 38/SAE  | 27.2-1.07 | 6.5-0.25  | 46.3-1.82 | 52.6-2.07 | 38.5-1.51 | 47.6-1.87 | 101.3-3.99 | 53.3-2.10 |
| VPR/3/ET 12      | 27.2-1.07 | 6.5-0.25  | 46.3-1.82 | 53.1-2.09 | 38.5-1.51 | 47.6-1.87 | 101.3-3.99 | 53.3-2.10 |
| VPR/3/ET 12/SAE  | 27.2-1.07 | 6.5-0.25  | 46.3-1.82 | 53.1-2.09 | 38.5-1.51 | 47.6-1.87 | 101.3-3.99 | 53.3-2.10 |
| VPR/3/ET 34      | 34.5-1.36 | 8.5-0.33  | 41.5-1.73 | 50.5-1.99 | 38.5-1.51 | 50.1-1.97 | 103.6-4.08 | 56.5-2.22 |
| VPR/3/ET 34/SAE  | 34.5-1.36 | 8.5-0.33  | 41.5-1.73 | 50.5-1.99 | 38.5-1.51 | 50.1-1.97 | 103.6-4.08 | 56.5-2.22 |
| VPR/3/ET 100     | 20.5-0.81 | 10.5-0.41 | 41.5-1.73 | 50.5-1.99 | 38.5-1.51 | 50.1-1.97 | 103.6-4.08 | 56.5-2.22 |
| VPR/3/ET 100/SAE | 20.5-0.81 | 10.5-0.41 | 41.5-1.73 | 50.5-1.99 | 38.5-1.51 | 50.1-1.97 | 103.6-4.08 | 56.5-2.22 |
| VPR/3/ET 114     | 20.5-0.81 | 10.5-0.41 | 52-2.05   | -         | 41.5-1.63 | 50.5-1.99 | 107.3-4.22 | 56.5-2.22 |
| VPR/3/ET 114/SAE | 20.5-0.81 | 10.5-0.41 | 52-2.05   | -         | 41.5-1.63 | 50.5-1.99 | 107.3-4.22 | 56.5-2.22 |

## Flow control valves

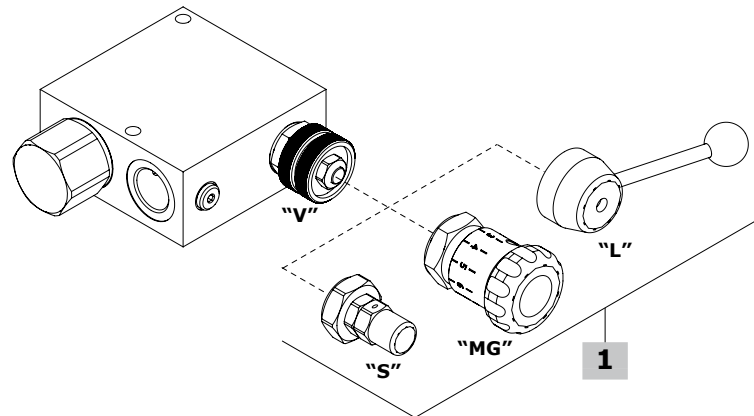
Flow control pressure compensated valves

VPR/3/ET

### Ordering codes and description composition

Port size  
VPR/3/ET 38/V

1



#### VPR/3/ET complete valves

##### Adjustment kit type "V" (handwheel)

| TYPE               | CODE       | DESCRIPTION                  |
|--------------------|------------|------------------------------|
| VPR/3/ET 38/V      | 1620021100 | Aluminium body, 3/8 ports    |
| VPR/3/ET 12/V      | 1620031100 | Aluminium body, 1/2 ports    |
| VPR/3/ET 34/V      | 1620041100 | Aluminium body, 3/4 ports    |
| VPR/3/ET 100/V     | 1620051100 | Aluminium body, 1" ports     |
| VPR/3/ET 114/V     | 1620061100 | Aluminium body, 1" 1/4 ports |
| VPR/3/ET 38/V/ac   | 1620022100 | Steel body, 3/8 ports        |
| VPR/3/ET 12/V/ac   | 1620032100 | Steel body, 1/2 ports        |
| VPR/3/ET 34/V/ac   | 1620042100 | Steel body, 3/4 ports        |
| VPR/3/ET 100/V/ac  | 1620052101 | Steel body, 1" ports         |
| VPR/3/ET 114/V/ac  | 1620062101 | Steel body, 1" 1/4 ports     |
| VPR/3/ET 38/V/SAE  | 1620021200 | Aluminium body, SAE8 ports   |
| VPR/3/ET 12/V/SAE  | 1620031200 | Aluminium body, SAE10 ports  |
| VPR/3/ET 34/V/SAE  | 1620041200 | Aluminium body, SAE12 ports  |
| VPR/3/ET 100/V/SAE | 1620051200 | Aluminium body, SAE16 ports  |
| VPR/3/ET 114/V/SAE | 1620061200 | Aluminium body, SAE20 ports  |

##### Adjustment kit type "MG" (handknob)

|                 |            |                              |
|-----------------|------------|------------------------------|
| VPR/3/ET 38/MG  | 1620021101 | Aluminium body, 3/8 ports    |
| VPR/3/ET 12/MG  | 1620031101 | Aluminium body, 1/2 ports    |
| VPR/3/ET 34/MG  | 1620041101 | Aluminium body, 3/4 ports    |
| VPR/3/ET 100/MG | 1620051101 | Aluminium body, 1" ports     |
| VPR/3/ET 114/MG | 1620061101 | Aluminium body, 1" 1/4 ports |

##### Adjustment kit type "L" (lever)

|                   |            |                              |
|-------------------|------------|------------------------------|
| VPR/3/ET 38/L     | 1620021102 | Aluminium body, 3/8 ports    |
| VPR/3/ET 12/L     | 1620031102 | Aluminium body, 1/2 ports    |
| VPR/3/ET 34/L     | 1620041102 | Aluminium body, 3/4 ports    |
| VPR/3/ET 100/L    | 1620051102 | Aluminium body, 1" ports     |
| VPR/3/ET 114/L    | 1620061102 | Aluminium body, 1" 1/4 ports |
| VPR/3/ET 38/L/SAE | 1620021201 | Aluminium body, SAE8 ports   |
| VPR/3/ET 34/L/SAE | 1620042200 | Aluminium body, SAE12 ports  |

For other steel body configurations, SAE thread and configurations with FPM (Viton) seals, please contact our Sales Dpt.

#### 1 Adjustment kit

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

##### For VPR/3/ET 38 valve

|      |            |                                                                    |
|------|------------|--------------------------------------------------------------------|
| V.SB | 5KT6200200 | "V" handwheel type in "SB" configuration (sensibilized adjustment) |
| V    | 5KT6130200 | "V" handwheel type                                                 |
| MG   | 5KT6200202 | "MG" handknob type                                                 |
| S    | 5KT6200211 | "S" screw type                                                     |

##### For VPR/3/ET 12 valve

|      |            |                                                                    |
|------|------------|--------------------------------------------------------------------|
| V.SB | 5KT6130301 | "V" handwheel type in "SB" configuration (sensibilized adjustment) |
| V    | 5KT6130200 | "V" handwheel type                                                 |
| MG   | 5KT6200202 | "MG" handknob type                                                 |
| S    | 5KT6200211 | "S" screw type                                                     |

##### For VPR/3/ET 34 and VPR/2/ET 100 valves

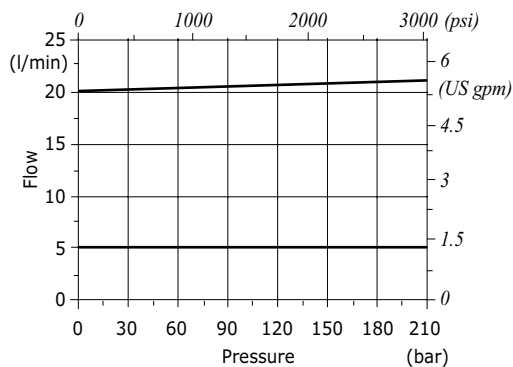
|      |            |                                                                    |
|------|------------|--------------------------------------------------------------------|
| V    | 5KT6130401 | "V" handwheel type                                                 |
| MG   | 5KT6200400 | "MG" handknob type                                                 |
| S    | 5KT6130404 | "S" screw type                                                     |
| V.SB | 5KT6130402 | "V" handwheel type in "SB" configuration (sensibilized adjustment) |

##### For VPR/3/ET 114 valve

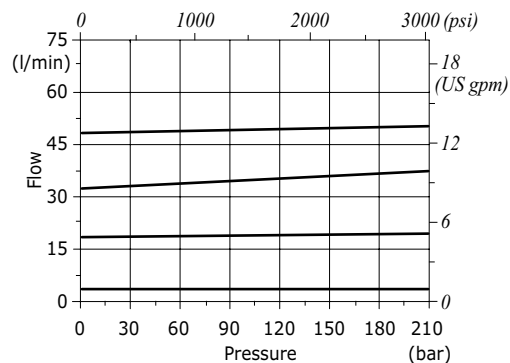
|    |            |                    |
|----|------------|--------------------|
| V  | 5KT6340603 | "V" handwheel type |
| MG | 5KT6200605 | "MG" handknob type |
| S  | 5KT6200604 | "S" screw type     |

### Rating diagrams

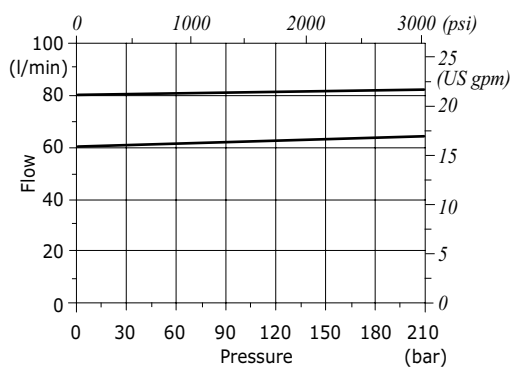
**VPR/3/ET 38 compensation diagram E-> C**



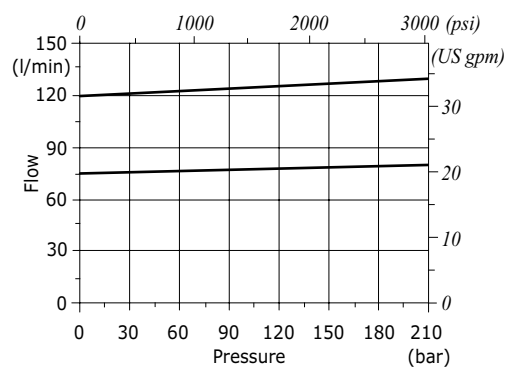
**VPR/3/ET 12 compensation diagram E-> C**



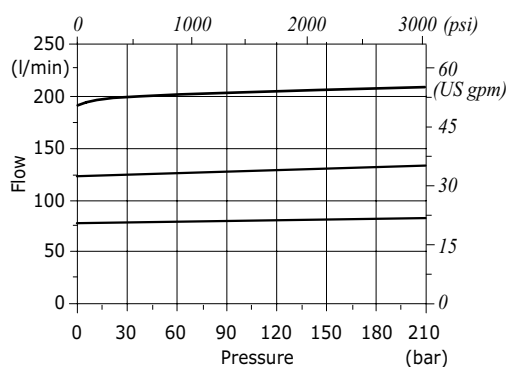
**VPR/3/ET 34 compensation diagram E-> C**



**VPR/3/ET 100 compensation diagram E-> C**



**VPR/3/ET 114 compensation diagram E-> C**





## Type VPR/3/ET/RL flow control pressure compensated valves

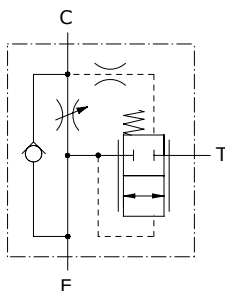
- 3 ways
- With reverse free - flow check

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

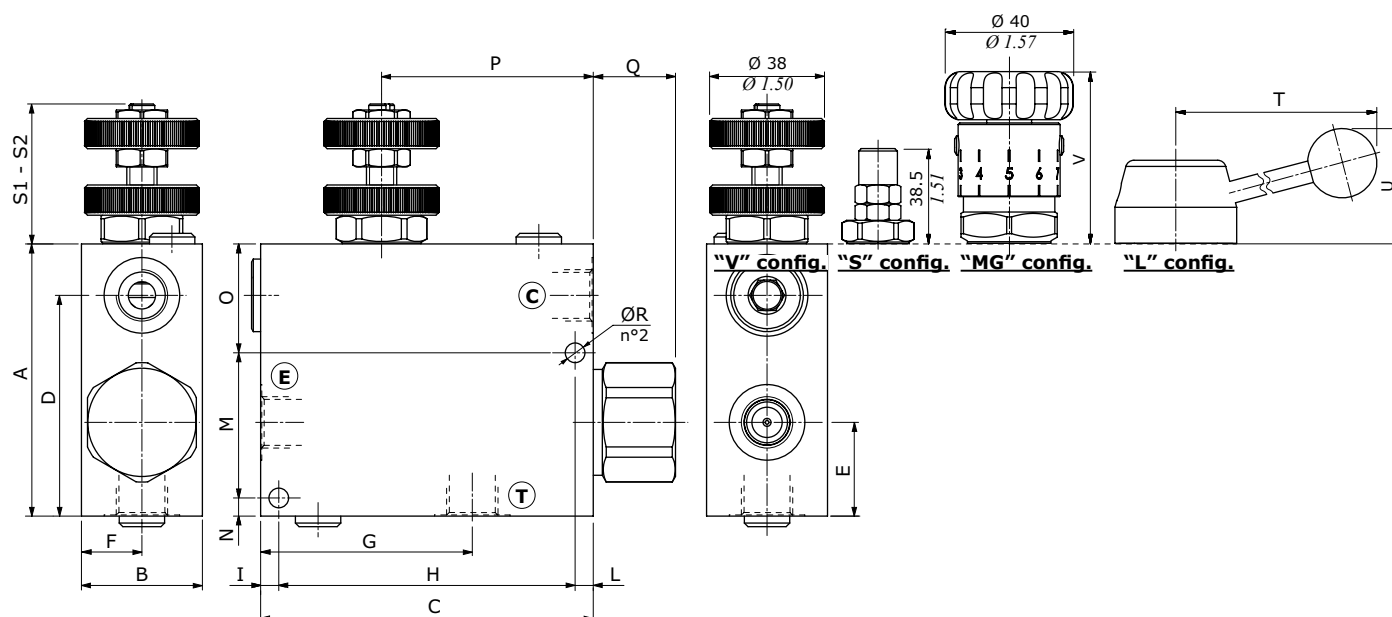
|                                                  |           | VPR/3/ET/RL 38                                                         | VPR/3/ET/RL 12         | VPR/3/ET/RL 34          |
|--------------------------------------------------|-----------|------------------------------------------------------------------------|------------------------|-------------------------|
| Max. inlet flow                                  | Line E    | 50 l/min (13.2 US gpm)                                                 | 90 l/min (23.8 US gpm) | 150 l/min (39.6 US gpm) |
| Max. regulated flow                              | Line C    | 30 l/min (7.9 US gpm)                                                  | 50 l/min (13.2 US gpm) | 90 l/min (23.8 US gpm)  |
| Max. regulated flow "SB"                         |           | 15 l/min (4.0 US gpm)                                                  | 25 l/min (6.6 US gpm)  | 45 l/min (11.9 US gpm)  |
| Max. pressure                                    |           | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                        |                         |
| Fluid                                            |           | mineral based oil                                                      |                        |                         |
| Viscosity                                        |           | from 10 to 200 cSt                                                     |                        |                         |
| Max. level of contamination                      |           | 18/16/13 ISO4406                                                       |                        |                         |
| Fluid temperature                                |           | with NBR seals from -20°C (-4°F) to 80°C (176°F)                       |                        |                         |
| Environmental temperature for working conditions |           | from -40°C (-40°F) to 100°C (212°F)                                    |                        |                         |
| Weight                                           | aluminium | 1.30 kg (2.86 lb)                                                      | 1.25 kg (2.75 lb)      | 2.75 kg (6.06 lb)       |
|                                                  | steel     | 2.86 kg (6.3 lb)                                                       | 2.72 kg (6 lb)         | 5.95 kg (13.12 lb)      |

NOTE - For different conditions, please contact Walvoil Sales Dpt.

\*"SB" execution (sensibilized adjustment)



## Dimensions



| Valve type            | (E)  | (T)  | (C)  |
|-----------------------|------|------|------|
| <b>VPR/3/ET/RL 38</b> | G3/8 | G3/8 | G3/8 |
| <b>VPR/3/ET/RL 12</b> | G1/2 | G1/2 | G1/2 |
| <b>VPR/3/ET/RL 34</b> | G3/4 | G3/4 | G3/4 |

Dimensions are in mm-*in*

| Valve type     | A        | B       | C        | D       | E       | F       | G       | H        | I - L   | M         | N       | O         | P         |
|----------------|----------|---------|----------|---------|---------|---------|---------|----------|---------|-----------|---------|-----------|-----------|
| VPR/3/ET/RL 38 | 90-3.54  | 40-1.57 | 110-0.43 | 17-0.24 | 31-1.22 | 20-0.78 | 70-2.75 | 98-3.86  | 6-0.236 | 48-1.89   | 6-0.236 | 36-0.24   | 70-2.75   |
| VPR/3/ET/RL 12 | 90-3.54  | 40-1.57 | 110-0.43 | 17-0.24 | 31-1.22 | 20-0.78 | 70-2.75 | 98-3.86  | 6-0.236 | 48-1.89   | 6-0.236 | 36-0.24   | 70-2.75   |
| VPR/3/ET/RL 34 | 120-4.72 | 50-1.97 | 138-5.43 | 25-0.98 | 35-1.38 | 25-0.98 | 94-3.7  | 122-4.80 | 8-0.315 | 55.5-2.18 | 8-0.315 | 56.5-0.24 | 81.5-3.21 |

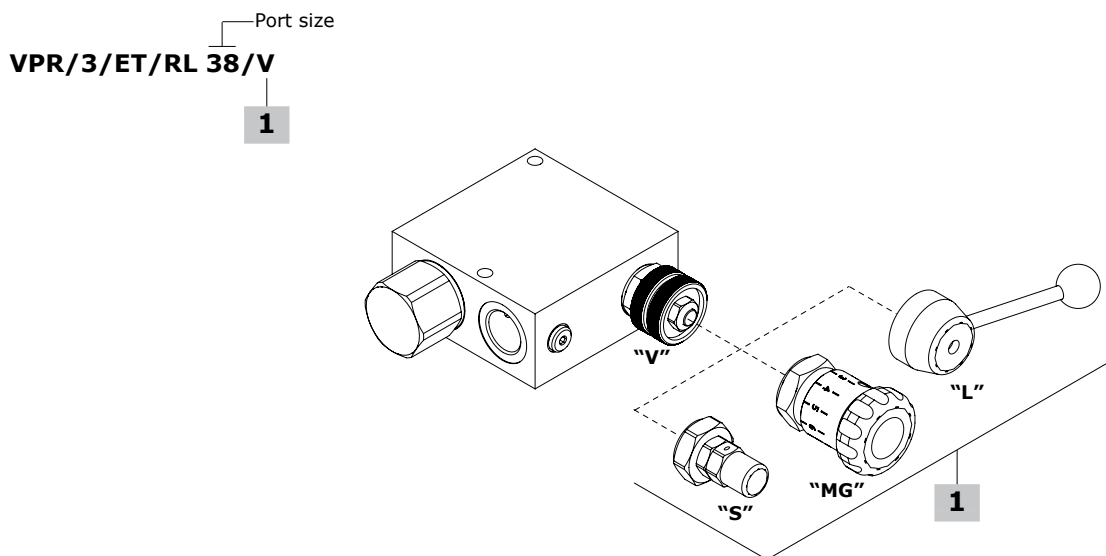
| Valve type     | Q         | ØR        | S1        | S2*       | T          | U         | V         |
|----------------|-----------|-----------|-----------|-----------|------------|-----------|-----------|
| VPR/3/ET/RL 38 | 27.2-1.07 | 6.5-0.256 | 46.3-1.82 | 52.6-2.07 | 101.3-3.99 | 47.6-1.87 | 53.3-2.10 |
| VPR/3/ET/RL 12 | 27.2-1.07 | 6.5-0.256 | 46.3-1.82 | 53.1-2.09 | 101.3-3.99 | 47.6-1.87 | 53.3-2.10 |
| VPR/3/ET/RL 34 | 34.5-1.36 | 8.5-0.335 | 41.5-1.73 | 50.5-1.99 | 103.6-4.08 | 50.1-1.97 | 56.5-2.22 |

## Flow control valves

Flow control pressure compensated valves

VPR/3/ET/RL

### Ordering codes and description composition



#### VPR/3/ET/RL complete valves

| TYPE                                       | CODE       | DESCRIPTION               |
|--------------------------------------------|------------|---------------------------|
| <b>Adjustment kit type "V" (handwheel)</b> |            |                           |
| VPR/3/ET/RL 38/V                           | 1621021100 | Aluminium body, 3/8 ports |
| VPR/3/ET/RL 12/V                           | 1621031100 | Aluminium body, 1/2 ports |
| VPR/3/ET/RL 34/V                           | 1621041100 | Aluminium body, 3/4 ports |
| VPR/3/ET/RL 38/V/ac                        | 1621022100 | Steel body, 3/8 ports     |
| VPR/3/ET/RL 12/V/ac                        | 1621032101 | Steel bod , 1/2 ports     |
| VPR/3/ET/RL 34/V/ac                        | 1621042100 | Steel body, 3/4 ports     |
| <b>Adjustment kit type "MG" (handknob)</b> |            |                           |
| VPR/3/ET/RL 38/MG                          | 1621021101 | Aluminium body, 3/8 ports |
| VPR/3/ET/RL 12/MG                          | 1621031101 | Aluminium body, 1/2 ports |
| VPR/3/ET/RL 34/MG                          | 1621041101 | Aluminium body, 3/4 ports |
| <b>Adjustment kit type "L" (lever)</b>     |            |                           |
| VPR/3/ET/RL 38/L                           | 1621021102 | Aluminium body, 3/8 ports |
| VPR/3/ET/RL 12/L                           | 1621031102 | Aluminium body, 1/2 ports |
| VPR/3/ET/RL 34/L                           | 1621041102 | Aluminium body, 3/4 ports |

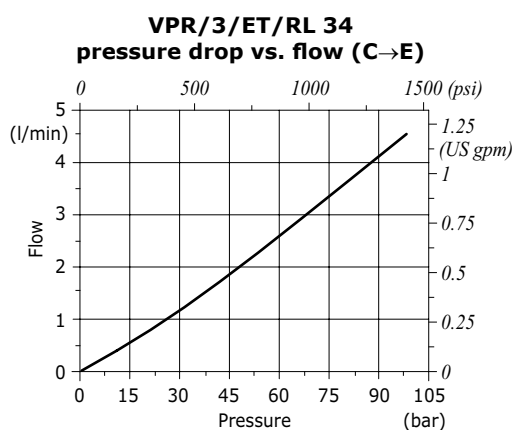
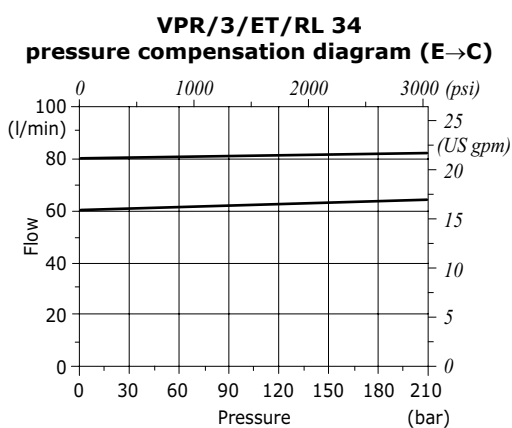
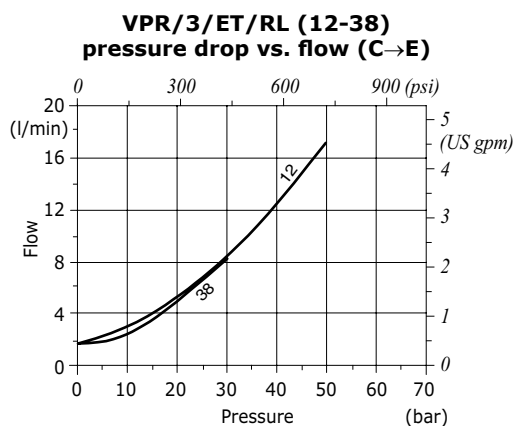
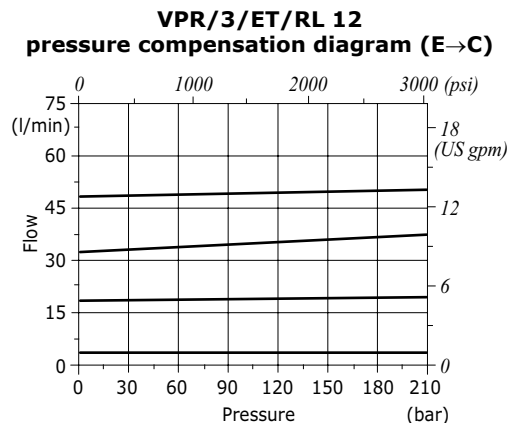
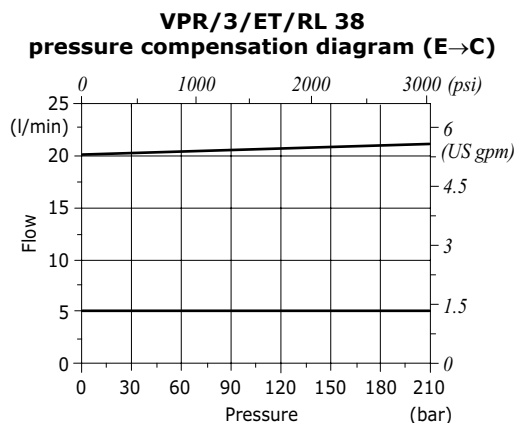
For other steel body configurations, SAE thread and configurations with FPM (Viton) seals, please contact our Sales Dpt.

#### 1 Adjustment kit

| TYPE                         | CODE       | DESCRIPTION                                                        |
|------------------------------|------------|--------------------------------------------------------------------|
| <b>For VPR/3/ET 38 valve</b> |            |                                                                    |
| V.SB                         | 5KT6200200 | "V" handwheel type in "SB" configuration (sensibilized adjustment) |
| V                            | 5KT6130200 | "V" handwheel type                                                 |
| MG                           | 5KT6200202 | "MG" handknob type                                                 |
| S                            | 5KT6200211 | "S" screw type                                                     |
| <b>For VPR/3/ET 12 valve</b> |            |                                                                    |
| V.SB                         | 5KT6130301 | "V" handwheel type in "SB" configuration (sensibilized adjustment) |
| V                            | 5KT6130200 | "V" handwheel type                                                 |
| MG                           | 5KT6200202 | "MG" handknob type                                                 |
| S                            | 5KT6200211 | "S" screw type                                                     |
| <b>For VPR/3/ET 34 valve</b> |            |                                                                    |
| V                            | 5KT6130401 | "V" handwheel type                                                 |
| MG                           | 5KT6200400 | "MG" handknob type                                                 |
| S                            | 5KT6130404 | "S" screw type                                                     |
| V.SB                         | 5KT6130402 | "V" handwheel type in "SB" configuration (sensibilized adjustment) |



### Rating diagrams





## Type VPR/3/ET/VMP flow control pressure compensated valves

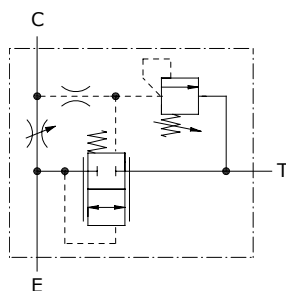
- 3 ways
- With pressure relief valve

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                                  |           | VPR/3/ET/<br>VMP 38                                                    | VPR/3/ET/<br>VMP 12       | VPR/3/ET/<br>VMP 34        | VPR/3/ET/<br>VMP 100       | VPR/3/ET/<br>VMP 114       |
|--------------------------------------------------|-----------|------------------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| Max. inlet flow                                  | Line E    | 50 l/min<br>(13.2 US gpm)                                              | 90 l/min<br>(23.8 US gpm) | 150 l/min<br>(39.6 US gpm) | 240 l/min<br>(63.4 US gpm) | 350 l/min<br>(92.5 US gpm) |
| Max. regulated flow                              | Line C    | 30 l/min<br>(7.9 US gpm)                                               | 50 l/min<br>(13.2 US gpm) | 90 l/min<br>(23.8 US gpm)  | 150 l/min<br>(40 US gpm)   | 250 l/min<br>(66 US gpm)   |
| Max. regulated flow "SB"                         |           | 15 l/min<br>(4.0 US gpm)                                               | 25 l/min<br>(6.6 US gpm)  | 45 l/min<br>(11.9 US gpm)  | 75 l/min<br>(19.8 US gpm)  | 125 l/min<br>(33 US gpm)   |
| Max. pressure                                    |           | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                           |                            |                            |                            |
| Fluid                                            |           | mineral based oil                                                      |                           |                            |                            |                            |
| Viscosity                                        |           | from 10 to 200 cSt                                                     |                           |                            |                            |                            |
| Max. level of contamination                      |           | 18/16/13 ISO4406                                                       |                           |                            |                            |                            |
| Fluid temperature                                |           | with NBR seals from -20°C (-4°F) to 80°C (176°F)                       |                           |                            |                            |                            |
| Environmental temperature for working conditions |           | from -40°C (-40°F) to 100°C (212°F)                                    |                           |                            |                            |                            |
| Weight                                           | aluminium | 1.10 kg (2.42 lb)                                                      | 1.20 kg (2.64 lb)         | 2.10 kg (4.62 lb)          | 4.10 kg (9.04 lb)          | 4.66 kg (10.27 lb)         |
|                                                  | steel     | 2.31 kg (5.09 lb)                                                      | 2.42 kg (5.33 lb)         | 4.37 kg (9.63 lb)          | 8.27 kg (18.23 lb)         | 9.43 kg (20.79 lb)         |

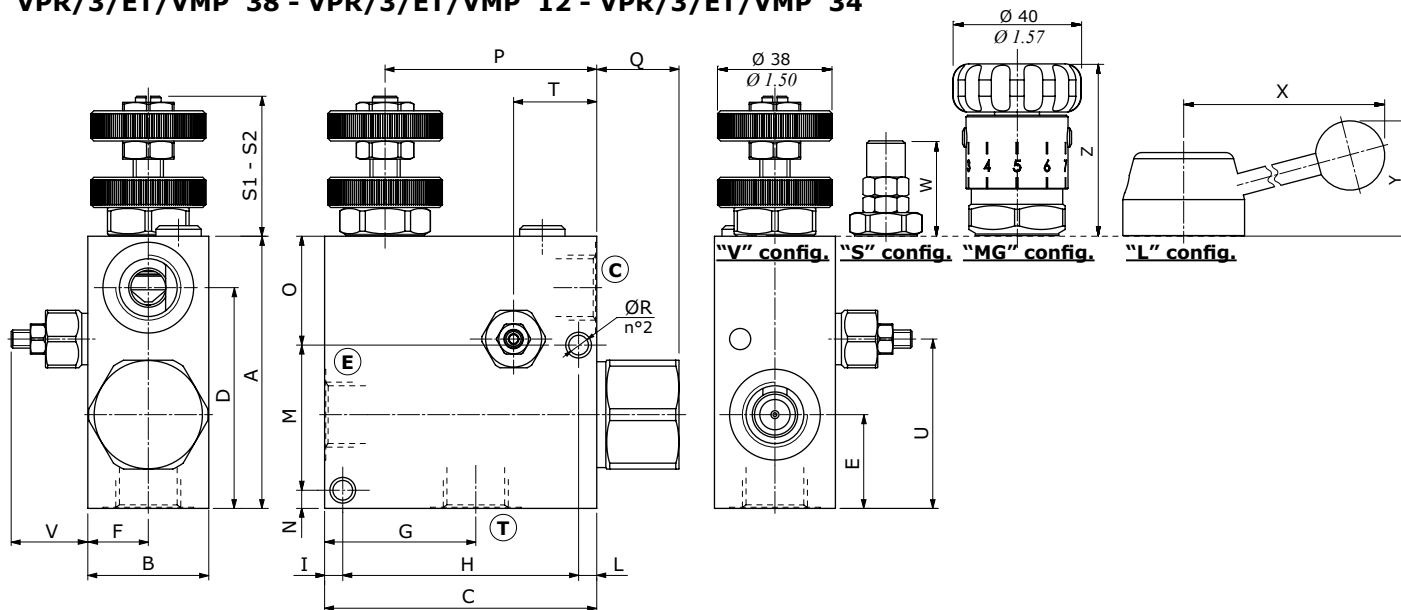
NOTE - For different conditions, please contact Walvoil Sales Dpt.

\*"SB" execution (sensitized adjustment)



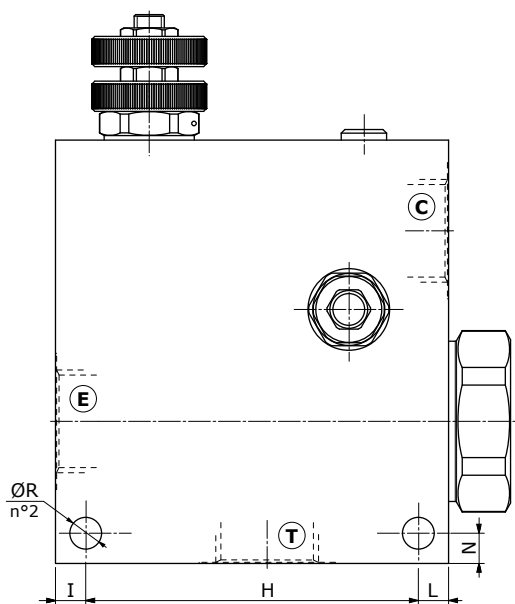
### Dimensions

#### VPR/3/ET/VMP 38 - VPR/3/ET/VMP 12 - VPR/3/ET/VMP 34



Dimensions are in mm-in

#### VPR/3/ET/VMP 100 VPR/3/ET/VMP 114



| Valve type       | E      | T      | C      |
|------------------|--------|--------|--------|
| VPR/3/ET/VMP 38  | G3/8   | G3/8   | G3/8   |
| VPR/3/ET/VMP 12  | G1/2   | G1/2   | G1/2   |
| VPR/3/ET/VMP 34  | G3/4   | G3/4   | G3/4   |
| VPR/3/ET/VMP 100 | G1"    | G1"    | G1"    |
| VPR/3/ET/VMP 114 | G1"1/4 | G1"1/4 | G1"1/4 |

| Valve type          | E     | T     | C     |
|---------------------|-------|-------|-------|
| VPR/3/ET/VMP 38/SAE | SAE8  | SAE8  | SAE8  |
| VPR/3/ET/VMP 12/SAE | SAE10 | SAE10 | SAE10 |
| VPR/3/ET/VMP 34/SAE | SAE12 | SAE12 | SAE12 |

| Valve type          | A        | B                             | C        | D        | E       | G       |
|---------------------|----------|-------------------------------|----------|----------|---------|---------|
| VPR/3/ET/VMP 38     | 90-3.54  | 40-1.57                       | 90-3.54  | 73-2.87  | 31-1.22 | 50-1.97 |
| VPR/3/ET/VMP 38/SAE | 90-3.54  | 40-1.57                       | 90-3.54  | 73-2.87  | 31-1.22 | 50-1.97 |
| VPR/3/ET/VMP 12     | 90-3.54  | 40-1.57                       | 90-3.54  | 73-2.87  | 31-1.22 | 50-1.97 |
| VPR/3/ET/VMP 12/SAE | 90-3.54  | 40-1.57                       | 90-3.54  | 73-2.87  | 31-1.22 | 50-1.97 |
| VPR/3/ET/VMP 34     | 110-0.31 | 50-1.97                       | 110-4.33 | 85-3.35  | 35-1.38 | 66-2.60 |
| VPR/3/ET/VMP 34/SAE | 110-0.31 | 50-1.97                       | 110-4.33 | 85-3.35  | 35-1.38 | 66-2.60 |
| VPR/3/ET/VMP 100    | 140-5.51 | 65-2.56                       | 130-5.11 | 110-4.33 | 47-1.85 | 70-2.75 |
| VPR/3/ET/VMP 114    | 165-6.5  | Alum:70-2.75<br>Steel:65-2.56 | 130-5.11 | 135-5.31 | 65-2.56 | 70-2.75 |

| Valve type          | F                               | H        | I-L      | M         | N        | O         |
|---------------------|---------------------------------|----------|----------|-----------|----------|-----------|
| VPR/3/ET/VMP 38     | 20-0.78                         | 78-3.07  | 6-0.236  | 48-1.89   | 6-0.236  | 36-1.42   |
| VPR/3/ET/VMP 38/SAE | 20-0.78                         | 78-3.07  | 6-0.236  | 48-1.89   | 6-0.236  | 36-1.42   |
| VPR/3/ET/VMP 12     | 20-0.78                         | 78-3.07  | 6-0.236  | 48-1.89   | 6-0.236  | 36-1.42   |
| VPR/3/ET/VMP 12/SAE | 20-0.78                         | 78-3.07  | 6-0.236  | 48-1.89   | 6-0.236  | 36-1.42   |
| VPR/3/ET/VMP 34     | 25-0.98                         | 94-3.70  | 8-0.31   | 55.5-2.18 | 8-0.31   | 46.5-1.83 |
| VPR/3/ET/VMP 34/SAE | 25-0.98                         | 94-3.70  | 8-0.31   | 55.5-2.18 | 8-0.31   | 46.5-1.83 |
| VPR/3/ET/VMP 100    | 32.5-1.28                       | 110-4.33 | 10-0.394 | -         | 10-0.394 | -         |
| VPR/3/ET/VMP 114    | Alum:35-1.38<br>Steel:32.5-1.28 | 110-4.33 | 10-0.394 | -         | 10-0.394 | -         |

| Valve type          | P       | Q         | ØR         | S1        | S2        | T         |
|---------------------|---------|-----------|------------|-----------|-----------|-----------|
| VPR/3/ET/VMP 38     | 70-2.75 | 27.2-1.07 | 6.5-0.256  | 46.3-1.82 | 52.6-2.07 | 27.5-1.08 |
| VPR/3/ET/VMP 38/SAE | 70-2.75 | 27.2-1.07 | 6.5-0.256  | 46.3-1.82 | 52.6-2.07 | 27.5-1.08 |
| VPR/3/ET/VMP 12     | 70-2.75 | 27.2-1.07 | 6.5-0.256  | 46.3-1.82 | 53.1-2.09 | 27.5-1.08 |
| VPR/3/ET/VMP 12/SAE | 70-2.75 | 27.2-1.07 | 6.5-0.256  | 46.3-1.82 | 53.1-2.09 | 27.5-1.08 |
| VPR/3/ET/VMP 34     | 82-3.23 | 34.5-1.36 | 8.5-0.335  | 41.5-1.73 | 50.5-1.99 | 44-1.73   |
| VPR/3/ET/VMP 34/SAE | 82-3.23 | 34.5-1.36 | 8.5-0.335  | 41.5-1.73 | 50.5-1.99 | 44-1.73   |
| VPR/3/ET/VMP 100    | 99-3.90 | 20.5-0.81 | 10.5-0.413 | 41.5-1.73 | 50.5-1.99 | 33-0.12   |
| VPR/3/ET/VMP 114    | 99-3.90 | 20.5-0.81 | 10.5-0.413 | 52-2.05   | -         | 33-0.12   |

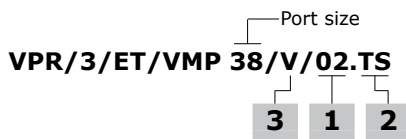
| Valve type          | U         | V         | W         | X          | Y         | Z         |
|---------------------|-----------|-----------|-----------|------------|-----------|-----------|
| VPR/3/ET/VMP 38     | 56-2.20   | 27.2-1.07 | 38.5-1.51 | 101.3-3.99 | 47.6-1.87 | 53.3-2.10 |
| VPR/3/ET/VMP 38/SAE | 56-2.20   | 27.2-1.07 | 38.5-1.51 | 101.3-3.99 | 47.6-1.87 | 53.3-2.10 |
| VPR/3/ET/VMP 12     | 56-2.20   | 27.2-1.07 | 38.5-1.51 | 101.3-3.99 | 47.6-1.87 | 53.3-2.10 |
| VPR/3/ET/VMP 12/SAE | 56-2.20   | 27.2-1.07 | 38.5-1.51 | 101.3-3.99 | 47.6-1.87 | 53.3-2.10 |
| VPR/3/ET/VMP 34     | 63.5-2.50 | 27.2-1.07 | 38.5-1.51 | 103.6-4.08 | 50.1-1.97 | 56.5-2.22 |
| VPR/3/ET/VMP 34/SAE | 63.5-2.50 | 27.2-1.07 | 38.5-1.51 | 103.6-4.08 | 50.1-1.97 | 56.5-2.22 |
| VPR/3/ET/VMP 100    | 84-3.31   | 53-2.09   | 38.5-1.51 | 103.6-4.08 | 50.1-1.97 | 56.5-2.22 |
| VPR/3/ET/VMP 114    | 98-3.86   | 43-1.69   | 41.5-1.73 | 107.3-4.22 | 50.5-1.99 | 56.5-2.22 |

## Flow control valves

Flow control pressure compensated valves

## VPR/3/ET/VMP

### Ordering codes and description composition



#### VPR/3/ET/VMP complete valves

##### Adjustment kit type "V" (handwheel)

|                                                                               |                  |
|-------------------------------------------------------------------------------|------------------|
| TYPE: <b>VPR/3/ET/VMP 38/V/02.TS</b>                                          | CODE: 1623021100 |
| DESCRIPTION: alum. body, 3/8 ports, setting range 50-220 bar (725-3200 psi)   |                  |
| TYPE: <b>VPR/3/ET/VMP 12/V/02.TS</b>                                          | CODE: 1623031100 |
| DESCRIPTION: alum. body, 1/2 ports, setting range 50-220 bar (725-3200 psi)   |                  |
| TYPE: <b>VPR/3/ET/VMP 34/V/02.TS</b>                                          | CODE: 1623041100 |
| DESCRIPTION: alum. body, 3/4 ports, setting range 50-220 bar (725-3200 psi)   |                  |
| TYPE: <b>VPR/3/ET/VMP 100/V/02.TS</b>                                         | CODE: 1623051103 |
| DESCRIPTION: alum. body, 1" ports, setting range 50-200 bar (725-2900 psi)    |                  |
| TYPE: <b>VPR/3/ET/VMP 114/V/02.TS</b>                                         | CODE: 1623061100 |
| DESCRIPTION: alum. body, 1 1/4 ports, setting range 50-200 bar (725-2900 psi) |                  |
| TYPE: <b>VPR/3/ET/VMP 38/V/02.TS/ac</b>                                       | CODE: 1623022100 |
| DESCRIPTION: steel body, 3/8 ports, setting range 50-220 bar (725-3200 psi)   |                  |
| TYPE: <b>VPR/3/ET/VMP 12/V/02.TS/ac</b>                                       | CODE: 1623032100 |
| DESCRIPTION: steel body, 1/2 ports, setting range 50-200 bar (725-2900 psi)   |                  |
| TYPE: <b>VPR/3/ET/VMP 34/V/03.TS/ac</b>                                       | CODE: 1623042102 |
| DESCRIPTION: steel body, 3/4 ports, setting range 50-200 bar (725-2900 psi)   |                  |
| TYPE: <b>VPR/3/ET/VMP 100/V/03.TS/ac</b>                                      | CODE: 1623052104 |
| DESCRIPTION: steel body, 1" ports, setting range 50-200 bar (725-2900 psi)    |                  |
| TYPE: <b>VPR/3/ET/VMP 114/V/03.TS/ac</b>                                      | CODE: 1623062100 |
| DESCRIPTION: steel body, 1 1/4 ports, setting range 50-200 bar (725-2900 psi) |                  |
| TYPE: <b>VPR/3/ET/VMP 38/V/02.TS/SAE</b>                                      | CODE: 1623021200 |
| DESCRIPTION: alum. body, SAE8 ports, setting range 50-220 bar (725-3200 psi)  |                  |
| TYPE: <b>VPR/3/ET/VMP 12/V/02.TS/SAE</b>                                      | CODE: 1623031200 |
| DESCRIPTION: alum. body, SAE10 ports, setting range 50-220 bar (725-3200 psi) |                  |
| TYPE: <b>VPR/3/ET/VMP 34/V/02.TS/SAE</b>                                      | CODE: 1623041200 |
| DESCRIPTION: alum. body, SAE12 ports, setting range 50-220 bar (725-3200 psi) |                  |

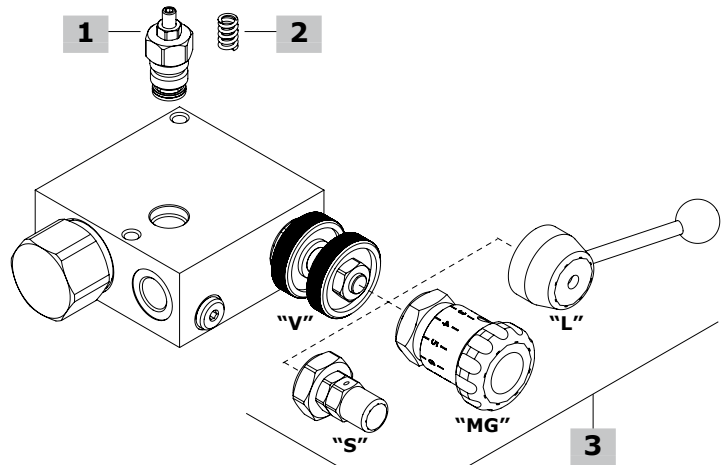
##### Adjustment kit type "MG" (handknob)

|                                                                               |                   |
|-------------------------------------------------------------------------------|-------------------|
| TYPE: <b>VPR/3/ET/VMP 38/MG/02.TS</b>                                         | CODE: 16230211001 |
| DESCRIPTION: alum. body, 3/8 ports, setting range 50-220 bar (725-3200 psi)   |                   |
| TYPE: <b>VPR/3/ET/VMP 12/MG/02.TS</b>                                         | CODE: 1623031101  |
| DESCRIPTION: alum. body, 1/2 ports, setting range 50-220 bar (725-3200 psi)   |                   |
| TYPE: <b>VPR/3/ET/VMP 34/MG/02.TS</b>                                         | CODE: 1623041101  |
| DESCRIPTION: alum. body, 3/4 ports, setting range 50-220 bar (725-3200 psi)   |                   |
| TYPE: <b>VPR/3/ET/VMP 100/MG/02.TS</b>                                        | CODE: 1623051101  |
| DESCRIPTION: alum. body, 1" ports, setting range 50-200 bar (725-2900 psi)    |                   |
| TYPE: <b>VPR/3/ET/VMP 114/MG/02.TS</b>                                        | CODE: 1623061101  |
| DESCRIPTION: alum. body, 1 1/4 ports, setting range 50-200 bar (725-2900 psi) |                   |
| TYPE: <b>VPR/3/ET/VMP 12/MG/02.TS/SAE</b>                                     | CODE: 1623031201  |
| DESCRIPTION: alum. body, SAE10 ports, setting range 50-220 bar (725-3200 psi) |                   |

##### Adjustment kit type "L" (lever)

|                                                                               |                  |
|-------------------------------------------------------------------------------|------------------|
| TYPE: <b>VPR/3/ET/VMP 38/L/02.TS</b>                                          | CODE: 1623021102 |
| DESCRIPTION: alum. body, 3/8 ports, setting range 50-220 bar (725-3200 psi)   |                  |
| TYPE: <b>VPR/3/ET/VMP 12/L/02.TS</b>                                          | CODE: 1623031102 |
| DESCRIPTION: alum. body, 1/2 ports, setting range 50-220 bar (725-3200 psi)   |                  |
| TYPE: <b>VPR/3/ET/VMP 34/L/02.TS</b>                                          | CODE: 1623041102 |
| DESCRIPTION: alum. body, 3/4 ports, setting range 50-220 bar (725-3200 psi)   |                  |
| TYPE: <b>VPR/3/ET/VMP 100/L/02.TS</b>                                         | CODE: 1623051102 |
| DESCRIPTION: alum. body, 1" ports, setting range 50-200 bar (725-2900 psi)    |                  |
| TYPE: <b>VPR/3/ET/VMP 114/L/02.TS</b>                                         | CODE: 1623061102 |
| DESCRIPTION: alum. body, 1 1/4 ports, setting range 50-200 bar (725-2900 psi) |                  |
| TYPE: <b>VPR/3/ET/VMP 38/L/02.TS/SAE</b>                                      | CODE: 1623021202 |
| DESCRIPTION: alum. body, SAE8 ports, setting range 50-220 bar (725-3200 psi)  |                  |

For other steel body configurations, SAE thread and configurations with FPM (Viton) seals, please contact our Sales Dpt.



#### 1 Pressure relief valve

| TYPE                                                               | CODE        | DESCRIPTION                                                      |
|--------------------------------------------------------------------|-------------|------------------------------------------------------------------|
| <b>For VPR/3/ET/VMP 38 and 12 + VPR/3/ET/VMP 34 aluminium body</b> |             |                                                                  |
| <b>VMP 02/TS.S</b>                                                 | 1100000101  | Direct acting cartridge, setting range 50-220 bar (725-3200 psi) |
| <b>For VPR/3/ET/VMP 34 steel body + VPR/3/ET/VMP 100 and 114</b>   |             |                                                                  |
| <b>MC08A/0S2B</b>                                                  | 0MC08002000 | Direct acting cartridge, setting range 50-200 bar (725-2900 psi) |

#### 2 Pressure setting springs

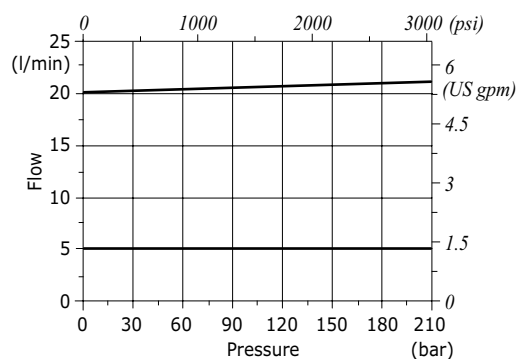
| TYPE                                                               | CODE       | DESCRIPTION                               |
|--------------------------------------------------------------------|------------|-------------------------------------------|
| <b>For VPR/3/ET/VMP 38 and 12 + VPR/3/ET/VMP 34 aluminium body</b> |            |                                           |
| <b>TV</b>                                                          | 3ML1081400 | Setting range 5-80 bar (72.5-1150 psi)    |
| <b>TS</b>                                                          | 3ML1081401 | Setting range 50-220 bar (725-3200 psi)   |
| <b>TR</b>                                                          | 3ML1081402 | Setting range 180-350 bar (2600-5100 psi) |
| <b>For VPR/3/ET/VMP 34 steel body + VPR/3/ET/VMP 100 and 114</b>   |            |                                           |
| <b>TV</b>                                                          | 3ML1092500 | Setting range 5-50 bar (72.5-725 psi)     |
| <b>TS</b>                                                          | 3ML1092501 | Setting range 50-200 bar (725-2900 psi)   |
| <b>TR</b>                                                          | 3ML1092502 | Setting range 150-350 bar (2600-5100 psi) |

#### 3 Adjustment kit

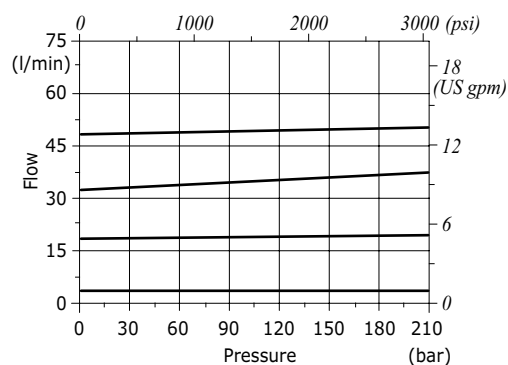
| TYPE                                                   | CODE       | DESCRIPTION                                                      |
|--------------------------------------------------------|------------|------------------------------------------------------------------|
| <b>For VPR/3/ET/VMP 38 valve</b>                       |            |                                                                  |
| <b>V.SB</b>                                            | 5KT6200200 | "V" handwheel type in "SB" configuration (sensitized adjustment) |
| <b>V</b>                                               | 5KT6130200 | "V" handwheel type                                               |
| <b>MG</b>                                              | 5KT6200202 | "MG" handknob type                                               |
| <b>S</b>                                               | 5KT6200211 | "S" screw type                                                   |
| <b>For VPR/3/ET/VMP 12 valve</b>                       |            |                                                                  |
| <b>V.SB</b>                                            | 5KT6130301 | "V" handwheel type in "SB" configuration (sensitized adjustment) |
| <b>V</b>                                               | 5KT6130200 | "V" handwheel type                                               |
| <b>MG</b>                                              | 5KT6200202 | "MG" handknob type                                               |
| <b>S</b>                                               | 5KT6200211 | "S" screw type                                                   |
| <b>For VPR/3/ET/VMP 34 and VPR/2/ET/VMP 100 valves</b> |            |                                                                  |
| <b>V</b>                                               | 5KT6130401 | "V" handwheel type                                               |
| <b>MG</b>                                              | 5KT6200400 | "MG" handknob type                                               |
| <b>S</b>                                               | 5KT6130404 | "S" screw type                                                   |
| <b>V.SB</b>                                            | 5KT6130402 | "V" handwheel type in "SB" configuration (sensitized adjustment) |
| <b>For VPR/3/ET/VMP 114 valve</b>                      |            |                                                                  |
| <b>V</b>                                               | 5KT6340603 | "V" handwheel type                                               |
| <b>MG</b>                                              | 5KT6200605 | "MG" handknob type                                               |
| <b>S</b>                                               | 5KT6200604 | "S" screw type                                                   |

### Rating diagrams

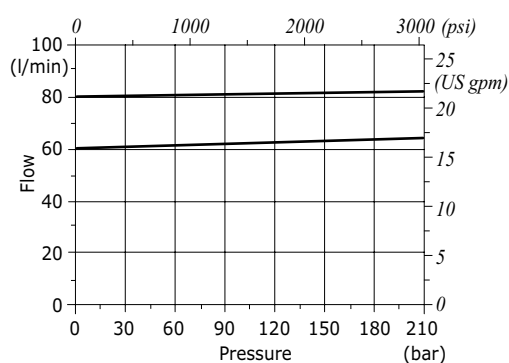
**VPR/3/ET/VMP 38 pressure compensation diagram (E→C)**



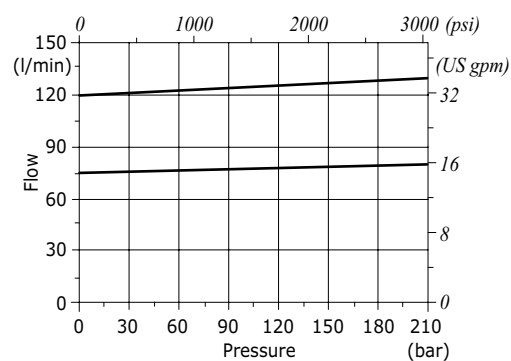
**VPR/3/ET/VMP 12 pressure compensation diagram (E→C)**



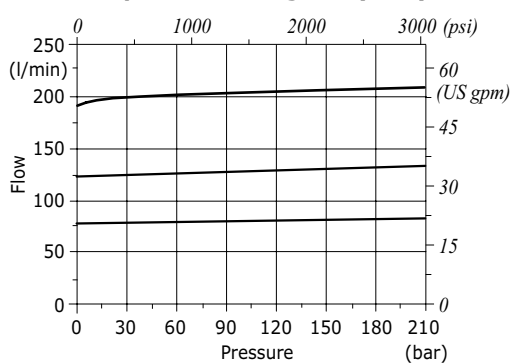
**VPR/3/ET/VMP 34 pressure compensation diagram (E→C)**



**VPR/3/ET/VMP 100 pressure compensation diagram (E→C)**



**VPR/3/ET/VMP 114 pressure compensation diagram (E→C)**





## Type VPR/3/ET/RL/VMP flow control pressure compensated valves

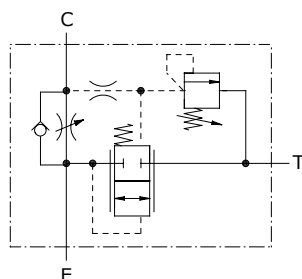
- 3 ways
- With reverse free - flow check
- With pressure relief valve

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

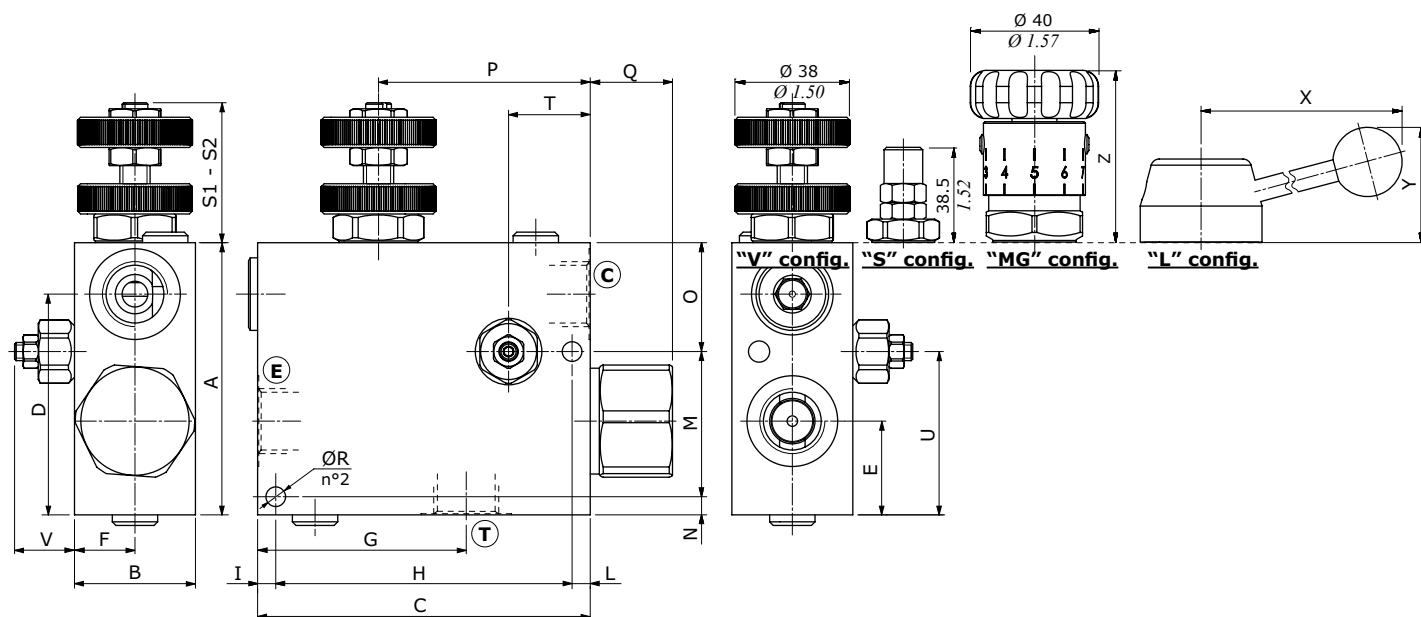
|                                                  |           | VPR/3/ET/RL/VMP 38                                                     | VPR/3/ET/RL/VMP 12     | VPR/3/ET/RL/VMP 34      |
|--------------------------------------------------|-----------|------------------------------------------------------------------------|------------------------|-------------------------|
| Max. inlet flow                                  | Line C    | 50 l/min (13.2 US gpm)                                                 | 90 l/min (23.8 US gpm) | 150 l/min (39.6 US gpm) |
| Max. regulated flow                              | Line E    | 30 l/min (7.9 US gpm)                                                  | 50 l/min (13.2 US gpm) | 90 l/min (23.8 US gpm)  |
| Max. regulated flow <b>"SB"</b> *                |           | 15 l/min (4.0 US gpm)                                                  | 25 l/min (6.6 US gpm)  | 45 l/min (11.9 US gpm)  |
| Max. pressure                                    |           | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                        |                         |
| Fluid                                            |           | mineral based oil                                                      |                        |                         |
| Viscosity                                        |           | from 10 to 200 cSt                                                     |                        |                         |
| Max. level of contamination                      |           | 18/16/13 ISO4406                                                       |                        |                         |
| Fluid temperature                                |           | with NBR seals from -20°C (-4°F) to 80°C (176°F)                       |                        |                         |
| Environmental temperature for working conditions |           | from -40°C (-40°F) to 100°C (212°F)                                    |                        |                         |
| Weight                                           | aluminium | 1.30 kg (2.86 lb)                                                      | 1.25 kg (2.75 lb)      | 2.83 kg (6.24 lb)       |
|                                                  | steel     | 2.78 kg (6.13 lb)                                                      | 2.68 kg (5.9 lb)       | 6 kg (13,22 lb)         |

NOTE - For different conditions, please contact Walvoil Sales Dpt.

\***"SB"** execution (sensibilized adjustment)



### Dimensions



| Valve type         | Ⓔ    | Ⓓ    | Ⓒ    |
|--------------------|------|------|------|
| VPR/3/ET/RL/VMP 38 | G3/8 | G3/8 | G3/8 |
| VPR/3/ET/RL/VMP 12 | G1/2 | G1/2 | G1/2 |
| VPR/3/ET/RL/VMP 34 | G3/4 | G3/4 | G3/4 |

Dimensions are in mm-in

| Valve type         | A        | B       | C        | D       | E       | F       | G       | H        | I - L   | M         | N       | O         |
|--------------------|----------|---------|----------|---------|---------|---------|---------|----------|---------|-----------|---------|-----------|
| VPR/3/ET/RL/VMP 38 | 90-3.54  | 40-1.57 | 110-4.33 | 73-2.87 | 31-1.22 | 20-0.78 | 70-2.75 | 98-3.86  | 6-0.236 | 48-1.89   | 6-0.24  | 36-1.42   |
| VPR/3/ET/RL/VMP 12 | 90-3.54  | 40-1.57 | 110-4.33 | 73-2.87 | 31-1.22 | 20-0.78 | 69-2.72 | 98-3.86  | 6-0.236 | 48-1.89   | 6-0.24  | 36-1.42   |
| VPR/3/ET/RL/VMP 34 | 120-4.72 | 50-1.97 | 138-5.43 | 95-3.74 | 35-1.38 | 25-0.98 | 94-3.70 | 122-4.80 | 8-0.315 | 55.5-2.18 | 8-0.315 | 56.5-2.22 |

| Valve type         | P         | Q         | ØR       | S1        | S2        | U       | V         | X          | Y         | Z         |
|--------------------|-----------|-----------|----------|-----------|-----------|---------|-----------|------------|-----------|-----------|
| VPR/3/ET/RL/VMP 38 | 70-2.76   | 27.2-1.07 | 6.5-0.25 | 46.3-1.82 | 52.6-2.07 | 54-2.13 | 29.5-1.16 | 101.3-3.99 | 47.6-1.87 | 53.3-2.10 |
| VPR/3/ET/RL/VMP 12 | 70-2.76   | 27.2-1.07 | 6.5-0.25 | 46.3-1.82 | 53.1-2.09 | 54-2.13 | 29.5-1.16 | 101.3-3.99 | 47.6-1.87 | 53.3-2.10 |
| VPR/3/ET/RL/VMP 34 | 81.5-3.21 | 34.5-1.36 | 8.5-0.33 | 41.5-1.73 | 50.5-1.99 | 65-2.56 | 29.5-1.16 | 103.6-4.08 | 50.1-1.97 | 56.5-2.22 |

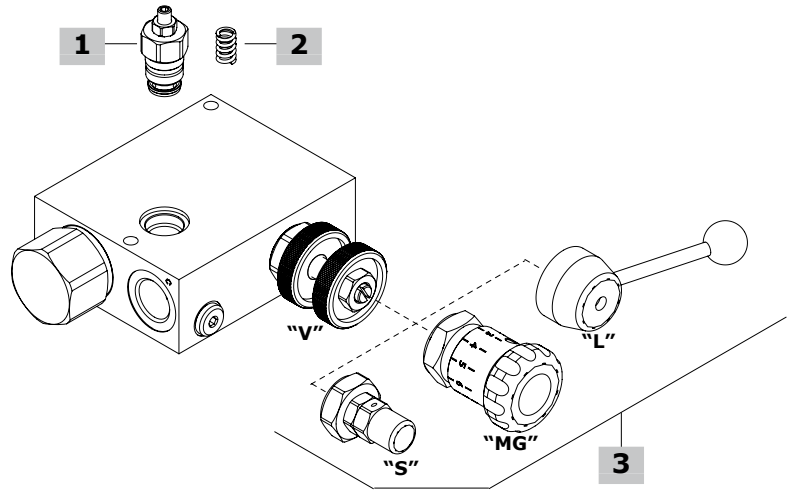
## Flow control valves

Flow control pressure compensated valves

VPR/3/ET/RL/VMP

## Ordering codes and description composition

Port size  
VPR/3/ET/RL/VMP 38/V/02.TS  
3 1 2



### VPR/3/ET/RL/VMP complete valves

#### Adjustment kit type "V" (handwheel)

TYPE: VPR/3/ET/RL/VMP 38/V/02.TS CODE: 1623221101

DESCRIPTION: alum. body, 3/8 ports, setting range 50-220 bar (725-3200 psi)

TYPE: VPR/3/ET/RL/VMP 12/V/02.TS CODE: 1623231101

DESCRIPTION: alum. body, 1/2 ports, setting range 50-220 bar (725-3200 psi)

TYPE: VPR/3/ET/RL/VMP 34/V/02.TS CODE: 1623241101

DESCRIPTION: alum. body, 3/4 ports, setting range 50-220 bar (725-3200 psi)

TYPE: VPR/3/ET/RL/VMP 38/V/02.TS/ac CODE: 1623222100

DESCRIPTION: steel body, 3/8 ports, setting range 50-220 bar (725-3200 psi)

TYPE: VPR/3/ET/RL/VMP 12/V/02.TS/ac CODE: 1623232100

DESCRIPTION: steel body, 1/2 ports, setting range 50-220 bar (725-3200 psi)

TYPE: VPR/3/ET/RL/VMP 34/V/02.TS/ac CODE: 1623242100

DESCRIPTION: steel body, 3/4 ports, setting range 50-220 bar (725-3200 psi)

#### Adjustment kit type "MG" (handknob)

TYPE: VPR/3/ET/RL/VMP 38/MG/02.TS CODE: 1623221103

DESCRIPTION: alum. body, 3/8 ports, setting range 50-220 bar (725-3200 psi)

TYPE: VPR/3/ET/RL/VMP 12/MG/02.TS CODE: 1623231103

DESCRIPTION: alum. body, 1/2 ports, setting range 50-220 bar (725-3200 psi)

TYPE: VPR/3/ET/RL/VMP 34/MG/02.TS CODE: 1623241102

DESCRIPTION: alum. body, 3/4 ports, setting range 50-220 bar (725-3200 psi)

#### Adjustment kit type "L" (lever)

TYPE: VPR/3/ET/RL/VMP 38/L/02.TS CODE: 1623221104

DESCRIPTION: alum. body, 3/8 ports, setting range 50-220 bar (725-3200 psi)

TYPE: VPR/3/ET/RL/VMP 12/L/02.TS CODE: 1623231100

DESCRIPTION: alum. body, 1/2 ports, setting range 50-220 bar (725-3200 psi)

TYPE: VPR/3/ET/RL/VMP 34/L/02.TS CODE: 1623241100

DESCRIPTION: alum. body, 3/4 ports, setting range 50-220 bar (725-3200 psi)

For other steel body configurations, SAE thread and configurations with FPM (Viton) seals, please contact our Sales Dpt.

### 1 Pressure relief valve

| TYPE        | CODE       | DESCRIPTION                                                      |
|-------------|------------|------------------------------------------------------------------|
| VMP 02/TS.S | 1100000101 | Direct acting cartridge, setting range 50-220 bar (725-3200 psi) |

### 2 Pressure setting springs

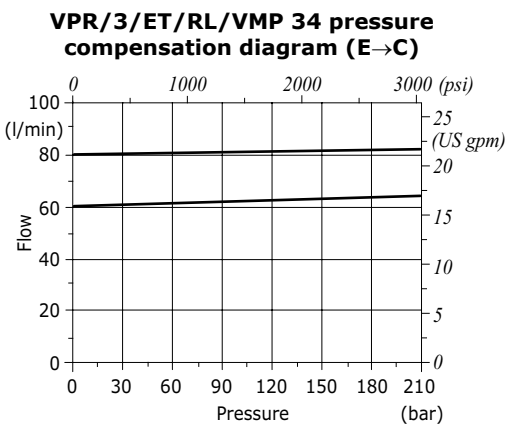
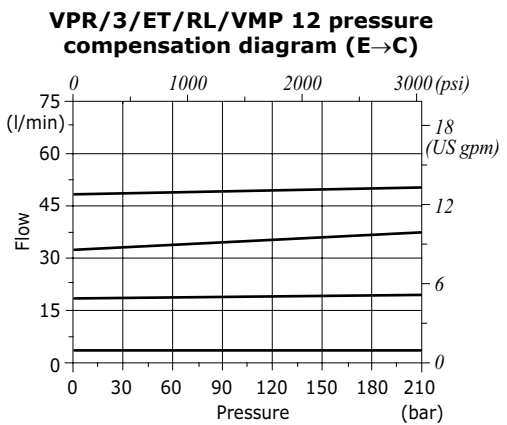
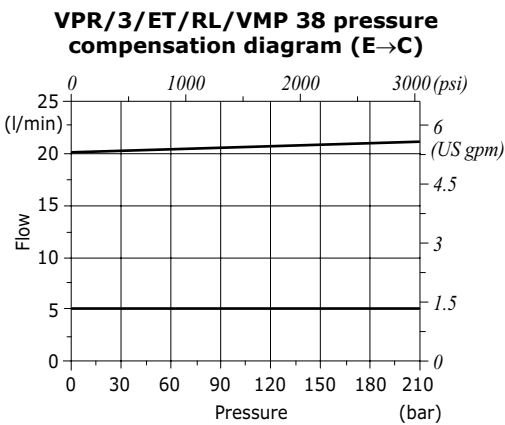
| TYPE | CODE       | DESCRIPTION                               |
|------|------------|-------------------------------------------|
| TV   | 3ML1081400 | Setting range 5-80 bar (72.5-1150 psi)    |
| TS   | 3ML1081401 | Setting range 50-220 bar (725-3200 psi)   |
| TR   | 3ML1081402 | Setting range 180-350 bar (2600-5100 psi) |

### 3 Adjustment kit

| TYPE                                | CODE       | DESCRIPTION                                                      |
|-------------------------------------|------------|------------------------------------------------------------------|
| <b>For VPR/3/ET/RL/VMP 38 valve</b> |            |                                                                  |
| V.SB                                | 5KT6200200 | "V" handwheel type in "SB" configuration (sensitized adjustment) |
| V                                   | 5KT6130200 | "V" handwheel type                                               |
| MG                                  | 5KT6200202 | "MG" handknob type                                               |
| S                                   | 5KT6200211 | "S" screw type                                                   |
| <b>For VPR/3/ET/RL/VMP 12 valve</b> |            |                                                                  |
| V.SB                                | 5KT6130301 | "V" handwheel type in "SB" configuration (sensitized adjustment) |
| V                                   | 5KT6130200 | "V" handwheel type                                               |
| MG                                  | 5KT6200202 | "MG" handknob type                                               |
| S                                   | 5KT6200211 | "S" screw type                                                   |
| <b>For VPR/3/ET/RL/VMP 34</b>       |            |                                                                  |
| V                                   | 5KT6130401 | "V" handwheel type                                               |
| MG                                  | 5KT6200400 | "MG" handknob type                                               |
| S                                   | 5KT6130404 | "S" screw type                                                   |
| V.SB                                | 5KT6130402 | "V" handwheel type in "SB" configuration (sensitized adjustment) |



Rating diagrams





## Type VPR/3/ET/VMP+VE flow control pressure compensated valves

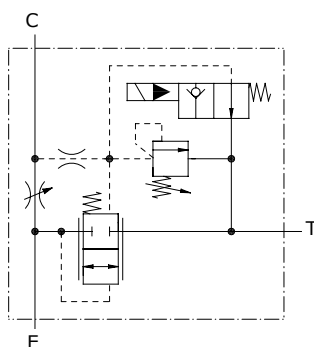
- 3 ways
- Electric venting
- With pressure relief valve

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                                  |           | VPR/3/ET 38<br>+VMP+VE                                                 | VPR/3/ET 12<br>+VMP+VE    | VPR/3/ET 34<br>+VMP+VE     | VPR/3/ET 100<br>+VMP+VE    |
|--------------------------------------------------|-----------|------------------------------------------------------------------------|---------------------------|----------------------------|----------------------------|
| Max. inlet flow                                  | Line E    | 50 l/min<br>(13.2 US gpm)                                              | 90 l/min<br>(23.8 US gpm) | 150 l/min<br>(39.6 US gpm) | 240 l/min<br>(63.4 US gpm) |
| Max. regulated flow                              | Line C    | 30 l/min<br>(7.9 US gpm)                                               | 50 l/min<br>(13.2 US gpm) | 90 l/min<br>(23.8 US gpm)  | 150 l/min<br>(39.6 US gpm) |
| Max. regulated flow "SB"                         |           | 15 l/min<br>(4.0 US gpm)                                               | 25 l/min<br>(6.6 US gpm)  | 45 l/min<br>(11.9 US gpm)  | 75 l/min<br>(19.8 US gpm)  |
| Max. pressure                                    |           | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                           |                            |                            |
| Fluid                                            |           | mineral based oil                                                      |                           |                            |                            |
| Viscosity                                        |           | from 10 to 200 cSt                                                     |                           |                            |                            |
| Max. level of contamination                      |           | 18/16/13 ISO4406                                                       |                           |                            |                            |
| Fluid temperature                                |           | with NBR seals from -20°C (-4°F) to 80°C (176°F)                       |                           |                            |                            |
| Environmental temperature for working conditions |           | from -40°C (-40°F) to 100°C (212°F)                                    |                           |                            |                            |
| Weight                                           | aluminium | 1.45 kg (3.19 lb)                                                      | 1.45 kg (3.19 lb)         | 2.61 kg (5.75 lb)          | 5.70 kg (12.56 lb)         |
|                                                  | steel     | 3.08 kg (6.79 lb)                                                      | 3.08 kg (6.79 lb)         | 5.54 kg (12.21 lb)         | 12.21 kg (26.92 lb)        |

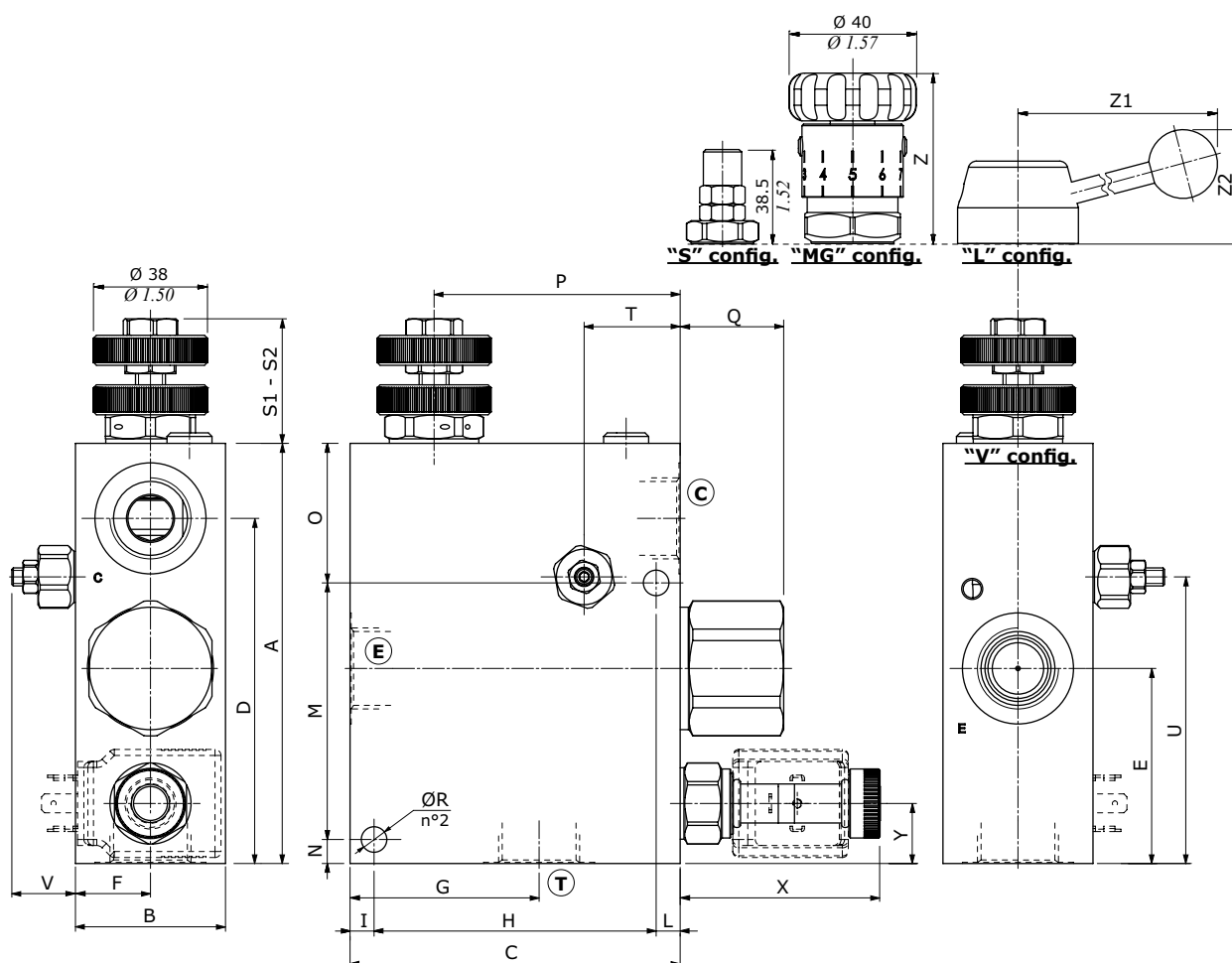
NOTE - For different conditions, please contact Walvoil Sales Dpt.

\*"SB" execution (sensitized adjustment)



### Dimensions

#### VPR/3/ET 38+VMP+VE - VPR/3/ET 12+VMP+VE - VPR/3/ET 34+VMP+VE



| Valve type          | Ⓔ    | Ⓓ    | Ⓒ    |
|---------------------|------|------|------|
| VPR/3/ET 38+VMP+VE  | G3/8 | G3/8 | G3/8 |
| VPR/3/ET 12+VMP+VE  | G1/2 | G1/2 | G1/2 |
| VPR/3/ET 34+VMP+VE  | G3/4 | G3/4 | G3/4 |
| VPR/3/ET 100+VMP+VE | G1"  | G1"  | G1"  |

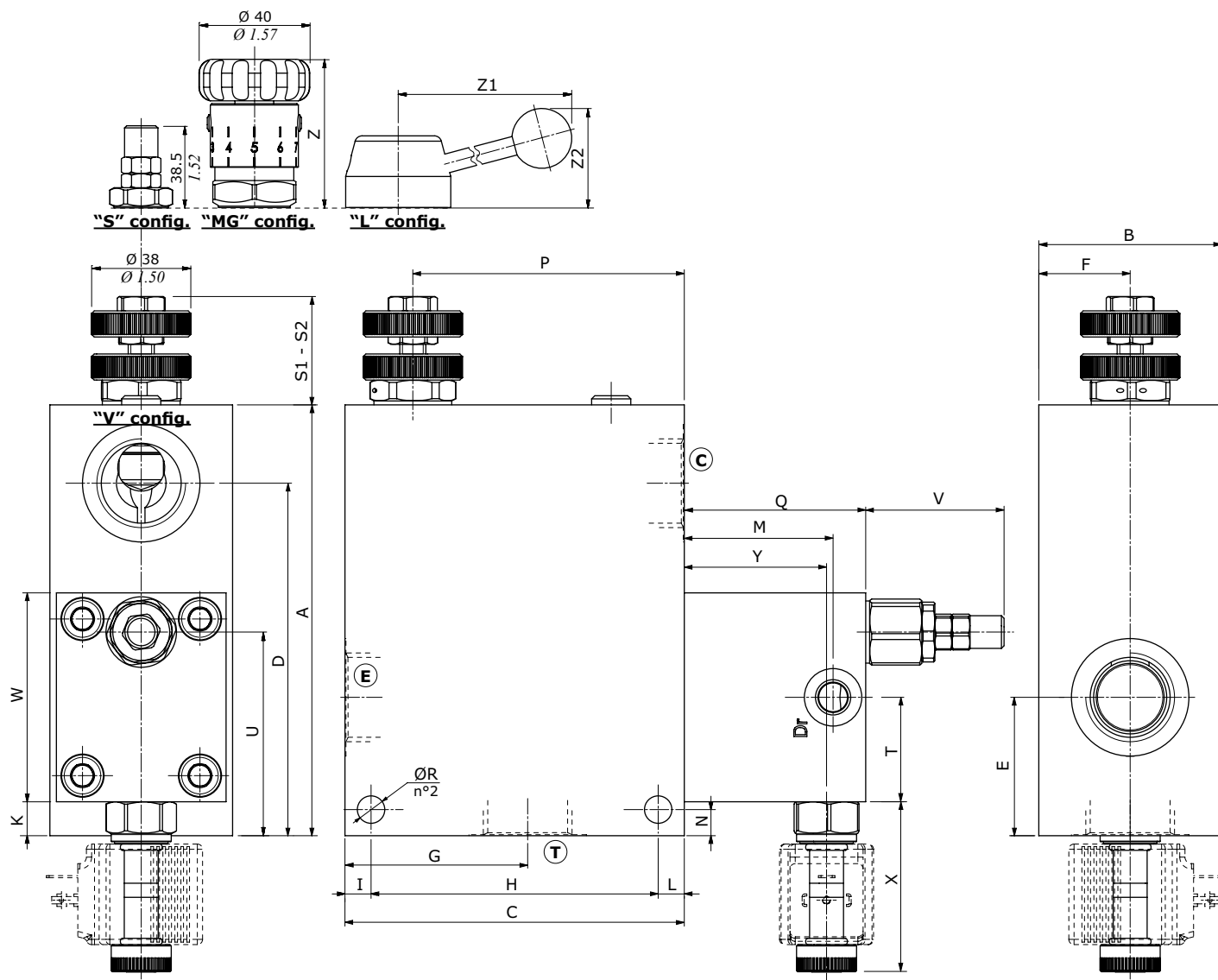
Dimensions are in mm-in

| Valve type          | A        | B       | C        | D        | E       | F       | G       | H        | I - L    | K       | M         | N        | P        |
|---------------------|----------|---------|----------|----------|---------|---------|---------|----------|----------|---------|-----------|----------|----------|
| VPR/3/ET 38+VMP+VE  | 120-4.72 | 40-1.57 | 90-3.54  | 103-4.05 | 61-2.40 | 20-0.78 | 50-1.97 | 78-3.07  | 6-0.236  | -       | 78-3.07   | 6-0.236  | 70-2.75  |
| VPR/3/ET 12+VMP+VE  | 120-4.72 | 40-1.57 | 90-3.54  | 103-4.05 | 61-2.40 | 20-0.78 | 50-1.97 | 78-3.07  | 6-0.236  | -       | 78-3.07   | 6-0.236  | 70-2.75  |
| VPR/3/ET 34+VMP+VE  | 140-5.51 | 50-1.97 | 110-4.33 | 115-4.53 | 65-2.56 | 25-0.98 | 66-0.31 | 94-3.7   | 8-0.315  | -       | 85.5-3.37 | 8-0.315  | 82-3.23  |
| VPR/3/ET 100+VMP+VE | 165-6.50 | 70-2.75 | 130-5.12 | 135-5.31 | 53-2.08 | 35-1.38 | 70-2.75 | 110-4.33 | 10-0.394 | 13-0.51 | 57-2.24   | 10-0.394 | 104-4.09 |

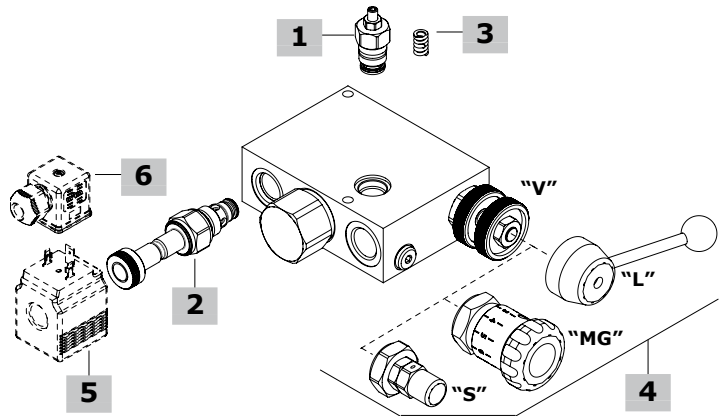
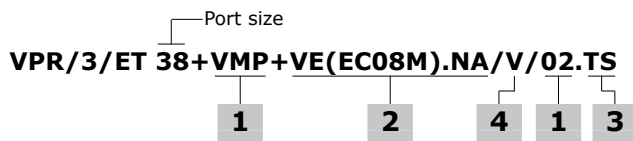
  

| Valve type          | Q         | ØR         | S1        | S2        | T       | U         | V       | W       | X (NA)    | Y         | Z         | Z1         | Z2        |
|---------------------|-----------|------------|-----------|-----------|---------|-----------|---------|---------|-----------|-----------|-----------|------------|-----------|
| VPR/3/ET 38+VMP+VE  | 27.2-1.07 | 6.5-0.25   | 46.3-1.82 | 52.6-2.07 | 27-1.06 | 84-3.31   | 25-0.98 | -       | 66.7-2.63 | 20-0.79   | 53.3-2.10 | 101.3-3.99 | 47.6-1.87 |
| VPR/3/ET 12+VMP+VE  | 27.2-1.07 | 6.5-0.25   | 46.3-1.82 | 53.1-2.09 | 27-1.06 | 84-3.31   | 25-0.98 | -       | 66.7-2.63 | 21.5-0.85 | 53.3-2.10 | 101.3-3.99 | 47.6-1.87 |
| VPR/3/ET 34+VMP+VE  | 34.5-1.36 | 8.5-0.33   | 41.5-1.73 | 50.5-1.99 | 32-1.26 | 95.5-3.76 | 25-0.98 | -       | 66.7-2.63 | 20-0.79   | 56.5-2.22 | 103.6-4.08 | 50.1-1.97 |
| VPR/3/ET 100+VMP+VE | 69.5-2.74 | 10.5-0.413 | 41.5-1.73 | 50.5-1.99 | 40-1.57 | 78-3.07   | 53-2.09 | 80-3.15 | 65.2-2.57 | 54.5-2.15 | 56.5-2.22 |            |           |

**VPR/3/ET 100+VMP+VE**



### Ordering codes and description composition



#### VPR/3/ET/VMP+VE complete valves

##### Adjustment kit type "V" (handwheel)

##### Configuration with normally open (NA) solenoid valve

TYPE: **VPR/3/ET 38+VMP+VE(EC08M).NA/V/02.TS** CODE: 1624021100

DESCRIPTION: alum. body, 3/8 ports, setting range 50-220 bar (725-3200 psi)

TYPE: **VPR/3/ET 12+VMP+VE(EC08M).NA/V/02.TS** CODE: 1624031100

DESCRIPTION: alum. body, 1/2 ports, setting range 50-220 bar (725-3200 psi)

TYPE: **VPR/3/ET 34+VMP+VE(EC08M).NA/V/02.TS** CODE: 1624041100

DESCRIPTION: alum. body, 3/4 ports, setting range 50-220 bar (725-3200 psi)

TYPE: **VPR/3/ET 100+VMP+VE(EC08M).NA/V/03.TS** CODE: 1624051100

DESCRIPTION: alum. body, 1" ports, setting range 50-200 bar (725-2900 psi)

TYPE: **VPR/3/ET 38+VMP+VE(EC08M).NA/V/02.TS/ac** CODE: 1624022101

DESCRIPTION: steel body, 3/8 ports, setting range 50-220 bar (725-3200 psi)

TYPE: **VPR/3/ET 12+VMP+VE(EC08M).NA/V/02.TS/ac** CODE: 1624032102

DESCRIPTION: steel body, 1/2 ports, setting range 50-220 bar (725-3200 psi)

TYPE: **VPR/3/ET 34+VMP+VE(EC08M).NA/V/02.TS/ac** CODE: 1624042100

DESCRIPTION: steel body, 3/4 ports, setting range 50-220 bar (725-3200 psi)

TYPE: **VPR/3/ET 100+VMP+VE(EC08M).NA/V/03.TS/ac** CODE: 1624052101

DESCRIPTION: steel body, 1" ports, setting range 50-200 bar (725-2900 psi)

##### Configuration with normally closed (NC) solenoid valve

TYPE: **VPR/3/ET 38+VMP+VE(EC08M).NC/V/02.TS** CODE: 1624021103

DESCRIPTION: alum. body, 3/8 ports, setting range 50-220 bar (725-3200 psi)

TYPE: **VPR/3/ET 12+VMP+VE(EC08M).NC/V/02.TS** CODE: 1624031103

DESCRIPTION: alum. body, 1/2 ports, setting range 50-220 bar (725-3200 psi)

TYPE: **VPR/3/ET 34+VMP+VE(EC08M).NC/V/02.TS** CODE: 1624041103

DESCRIPTION: alum. body, 3/4 ports, setting range 50-220 bar (725-3200 psi)

TYPE: **VPR/3/ET 100+VMP+VE(EC08M).NC/V/03.TS** CODE: 1624051103

DESCRIPTION: alum. body, 1" ports, setting range 50-200 bar (725-2900 psi)

##### Adjustment kit type "MG" (handknob)

##### Configuration with normally open (NA) solenoid valve

TYPE: **VPR/3/ET 38+VMP+VE(EC08M).NA/MG/02.TS** CODE: 1624021101

DESCRIPTION: alum. body, 3/8 ports, setting range 50-220 bar (725-3200 psi)

TYPE: **VPR/3/ET 12+VMP+VE(EC08M).NA/MG/02.TS** CODE: 1624031101

DESCRIPTION: alum. body, 1/2 ports, setting range 50-220 bar (725-3200 psi)

TYPE: **VPR/3/ET 34+VMP+VE(EC08M).NA/MG/02.TS** CODE: 1624041101

DESCRIPTION: alum. body, 3/4 ports, setting range 50-220 bar (725-3200 psi)

TYPE: **VPR/3/ET 100+VMP+VE(EC08M).NA/MG/03.TS** CODE: 1624051101

DESCRIPTION: alum. body, 1" ports, setting range 50-200 bar (725-2900 psi)

##### Configuration with normally closed (NC) solenoid valve

TYPE: **VPR/3/ET 38+VMP+VE(EC08M).NC/MG/02.TS** CODE: 1624021104

DESCRIPTION: alum. body, 3/8 ports, setting range 50-220 bar (725-3200 psi)

TYPE: **VPR/3/ET 12+VMP+VE(EC08M).NC/MG/02.TS** CODE: 1624031104

DESCRIPTION: alum. body, 1/2 ports, setting range 50-220 bar (725-3200 psi)

TYPE: **VPR/3/ET 34+VMP+VE(EC08M).NC/MG/02.TS** CODE: 1624041104

DESCRIPTION: alum. body, 3/4 ports, setting range 50-220 bar (725-3200 psi)

TYPE: **VPR/3/ET 100+VMP+VE(EC08M).NC/MG/03.TS** CODE: 1624051104

DESCRIPTION: alum. body, 1" ports, setting range 50-200 bar (725-2900 psi)

#### VPR/3/ET/VMP+VE complete valves

##### Adjustment kit type "L" (lever)

##### Configuration with electric valve normally open (NA)

TYPE: **VPR/3/ET 38+VMP+VE(EC08M).NA/L/02.TS** CODE: 1624021102

DESCRIPTION: alum. body, 3/8 ports, setting range 50-220 bar (725-3200 psi)

TYPE: **VPR/3/ET 12+VMP+VE(EC08M).NA/L/02.TS** CODE: 1624031102

DESCRIPTION: alum. body, 1/2 ports, setting range 50-220 bar (725-3200 psi)

TYPE: **VPR/3/ET 34+VMP+VE(EC08M).NA/L/02.TS** CODE: 1624041102

DESCRIPTION: alum. body, 3/4 ports, setting range 50-220 bar (725-3200 psi)

TYPE: **VPR/3/ET 100+VMP+VE(EC08M).NA/L/03.TS** CODE: 1624051102

DESCRIPTION: alum. body, 1" ports, setting range 50-200 bar (725-2900 psi)

##### Configuration with electric valve normally closed (NC)

TYPE: **VPR/3/ET 38+VMP+VE(EC08M).NC/L/02.TS** CODE: 1624021105

DESCRIPTION: alum. body, 3/8 ports, setting range 50-220 bar (725-3200 psi)

TYPE: **VPR/3/ET 12+VMP+VE(EC08M).NC/L/02.TS** CODE: 1624031105

DESCRIPTION: alum. body, 1/2 ports, setting range 50-220 bar (725-3200 psi)

TYPE: **VPR/3/ET 34+VMP+VE(EC08M).NC/L/02.TS** CODE: 1624041105

DESCRIPTION: alum. body, 3/4 ports, setting range 50-220 bar (725-3200 psi)

TYPE: **VPR/3/ET 100+VMP+VE(EC08M).NC/L/03.TS** CODE: 1624051105

DESCRIPTION: alum. body, 1" ports, setting range 50-200 bar (725-2900 psi)

For other steel body configurations, SAE thread and configurations with FPM (Viton) seals, please contact our Sales Dpt.

#### 1 Pressure relief valve

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

##### For VPR/3/ET 38-12-34+VMP+VE valves

|                    |            |                                                                  |
|--------------------|------------|------------------------------------------------------------------|
| <b>VMP 02/TS.S</b> | 1100000101 | Direct acting cartridge, setting range 50-220 bar (725-3200 psi) |
|--------------------|------------|------------------------------------------------------------------|

##### For VPR/3/ET 100+VMP+VE valve

|                   |             |                                                                  |
|-------------------|-------------|------------------------------------------------------------------|
| <b>MC08A/0S2B</b> | 0MC08002000 | Direct acting cartridge, setting range 50-200 bar (725-2900 psi) |
|-------------------|-------------|------------------------------------------------------------------|

#### 2 Solenoid valve

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

|                   |             |                                  |
|-------------------|-------------|----------------------------------|
| <b>EC08M/10NB</b> | 0EC08002031 | Normally open (NA) configuration |
|-------------------|-------------|----------------------------------|

|                   |             |                                     |
|-------------------|-------------|-------------------------------------|
| <b>EC08M/20NB</b> | 0EC08002032 | Normally closed (NC) configuration) |
|-------------------|-------------|-------------------------------------|

#### 3 Pressure setting springs

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

##### For VPR/3/ET 38-12-34+VMP+VE valves

|           |            |                                        |
|-----------|------------|----------------------------------------|
| <b>TV</b> | 3ML1081400 | Setting range 5-80 bar (72.5-1150 psi) |
|-----------|------------|----------------------------------------|

|           |            |                                         |
|-----------|------------|-----------------------------------------|
| <b>TS</b> | 3ML1081401 | Setting range 50-220 bar (725-3200 psi) |
|-----------|------------|-----------------------------------------|

|           |            |                                           |
|-----------|------------|-------------------------------------------|
| <b>TR</b> | 3ML1081402 | Setting range 180-350 bar (2600-5100 psi) |
|-----------|------------|-------------------------------------------|

##### For VPR/3/ET 100+VMP+VE valve

|           |            |                                       |
|-----------|------------|---------------------------------------|
| <b>TV</b> | 3ML1092500 | Setting range 5-50 bar (72.5-725 psi) |
|-----------|------------|---------------------------------------|

|           |            |                                         |
|-----------|------------|-----------------------------------------|
| <b>TS</b> | 3ML1092501 | Setting range 50-200 bar (725-2900 psi) |
|-----------|------------|-----------------------------------------|

|           |            |                                           |
|-----------|------------|-------------------------------------------|
| <b>TR</b> | 3ML1092502 | Setting range 150-350 bar (2200-5100 psi) |
|-----------|------------|-------------------------------------------|

## Flow control valves

Flow control pressure compensated valves

**VPR/3/ET/VMP+VE**

## Ordering codes and description composition

### 4 Adjustment kit

TYPE CODE DESCRIPTION

#### For VPR/3/ET 38+VMP+VE valve

**V.SB** 5KT6200200 "V" handwheel type in "SB" configuration (sensibilized adjustment)

**V** 5KT6130200 "V" handwheel type

**MG** 5KT6200202 "MG" handknob type

**S** 5KT6200211 "S" screw type

#### For VPR/3/ET 12+VMP+VE valves

**V.SB** 5KT6130301 "V" handwheel type in "SB" configuration (sensibilized adjustment)

**V** 5KT6130200 "V" handwheel type

**MG** 5KT6200202 "MG" handknob type

**S** 5KT6200211 "S" screw type

#### For VPR/3/ET 34-100+VMP+VE valve

**V** 5KT6130401 "V" handwheel type

**MG** 5KT6200400 "MG" handknob type

**S** 5KT6130404 "S" screw type

**V.SB** 5KT6130402 "V" handwheel type in "SB" configuration (sensibilized adjustment)

### 5 Coils

TYPE CODE DESCRIPTION

**BER 12VDC** 4SLE001200A 12VDC-ISO4400 coil for EC08M

For complete coils list see from page 433

### 6 Connector

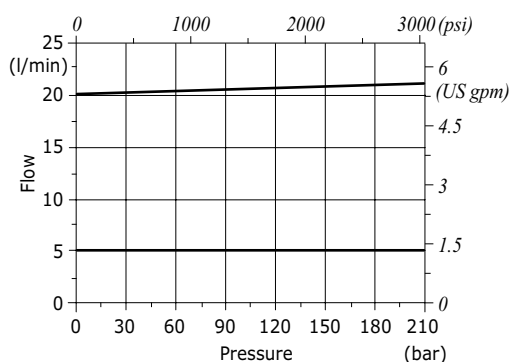
TYPE CODE DESCRIPTION

**ISO4400** 4CN1009995 Connector

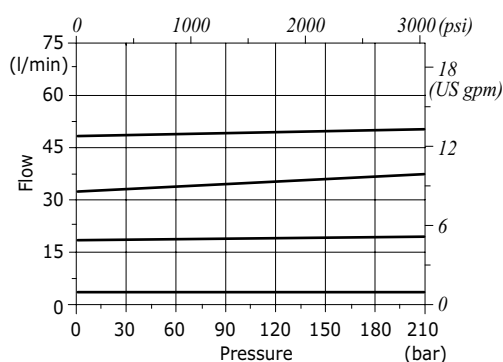
For complete connectors list see from page 433

## Rating diagrams

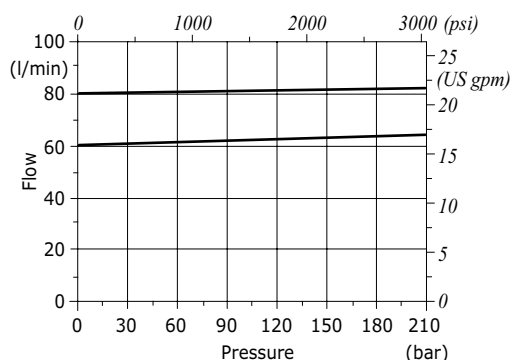
**VPR/3/ET 38+VMP+VE pressure compensation diagram (E→C)**



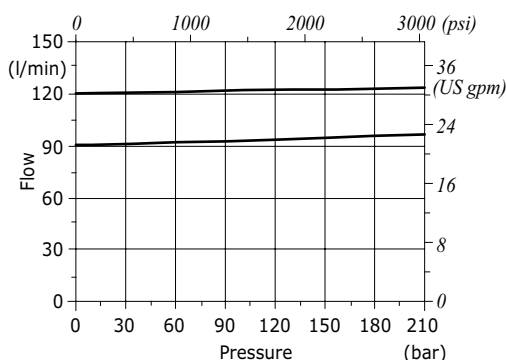
**VPR/3/ET 12+VMP+VE pressure compensation diagram (E→C)**



**VPR/3/ET 34+VMP+VE pressure compensation diagram (E→C)**



**VPR/3/ET 100+VMP+VE pressure compensation diagram (E→C)**







## Type VPR/3/EP

### flow control pressure compensated valves

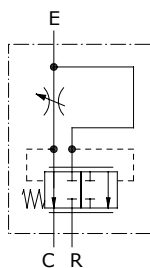
- 3 ways
- Exceeding flow to pressure

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                            |           | VPR/3/EP 38                                                            | VPR/3/EP 12               | VPR/3/EP 34                | VPR/3/EP 100               | VPR/3/EP 114               |
|--------------------------------------------|-----------|------------------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| Max. inlet flow                            | Line E    | 50 l/min<br>(13.2 US gpm)                                              | 90 l/min<br>(23.8 US gpm) | 150 l/min<br>(39.6 US gpm) | 240 l/min<br>(63.4 US gpm) | 450 l/min<br>(119 US gpm)  |
| Max. regulated flow                        | Line C    | 30 l/min<br>(7.9 US gpm)                                               | 50 l/min<br>(13.2 US gpm) | 90 l/min<br>(23.8 US gpm)  | 150 l/min<br>(39.6 US gpm) | 250 l/min<br>(66.0 US gpm) |
| Max. regulated flow <b>"SB"</b> *          |           | 15 l/min<br>(4.0 US gpm)                                               | 25 l/min<br>(6.6 US gpm)  | 45 l/min<br>(11.9 US gpm)  | 75 l/min<br>(19.8 US gpm)  | 125 l/min<br>(33.0 US gpm) |
| Max. pressure                              |           | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                           |                            |                            |                            |
| Fluid                                      |           | mineral based oil                                                      |                           |                            |                            |                            |
| Viscosity                                  |           | from 10 to 200 cSt                                                     |                           |                            |                            |                            |
| Max. level of contamination                |           | 18/16/13 ISO4406                                                       |                           |                            |                            |                            |
| Fluid temperature                          |           | with NBR seals from -20°C (-4°F) to 80°C (176°F)                       |                           |                            |                            |                            |
| Environmental temp. for working conditions |           | from -40°C (-40°F) to 100°C (212°F)                                    |                           |                            |                            |                            |
| Weight                                     | aluminium | 1.26 kg (2.78 lb)                                                      | 1.22 kg (2.69 lb)         | 2.49 kg (5.49 lb)          | 4.90 kg (10.80 lb)         | 5.19 kg (11.44 lb)         |
|                                            | steel     | 2.76 kg (6.08 lb)                                                      | 2.79 kg (6.15 lb)         | 4.85 kg (10.69 lb)         | 9.73 kg (21.45 lb)         | 16.20 kg (35.71 lb)        |

NOTE - For different conditions, please contact Walvoil Sales Dpt.

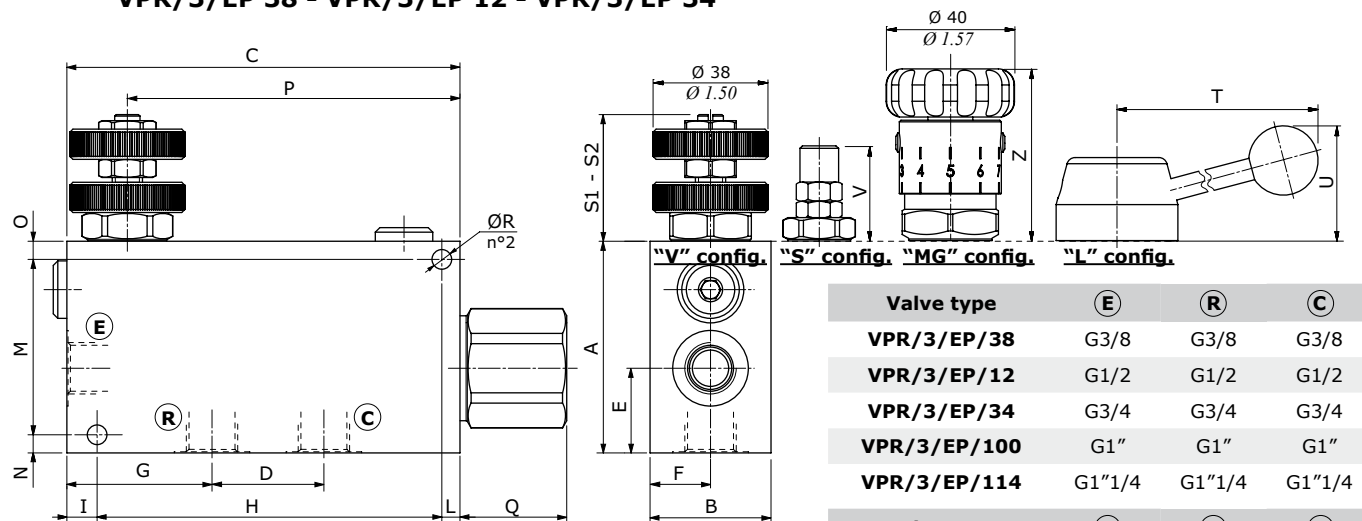
\***"SB"** execution (sensibilized adjustment)



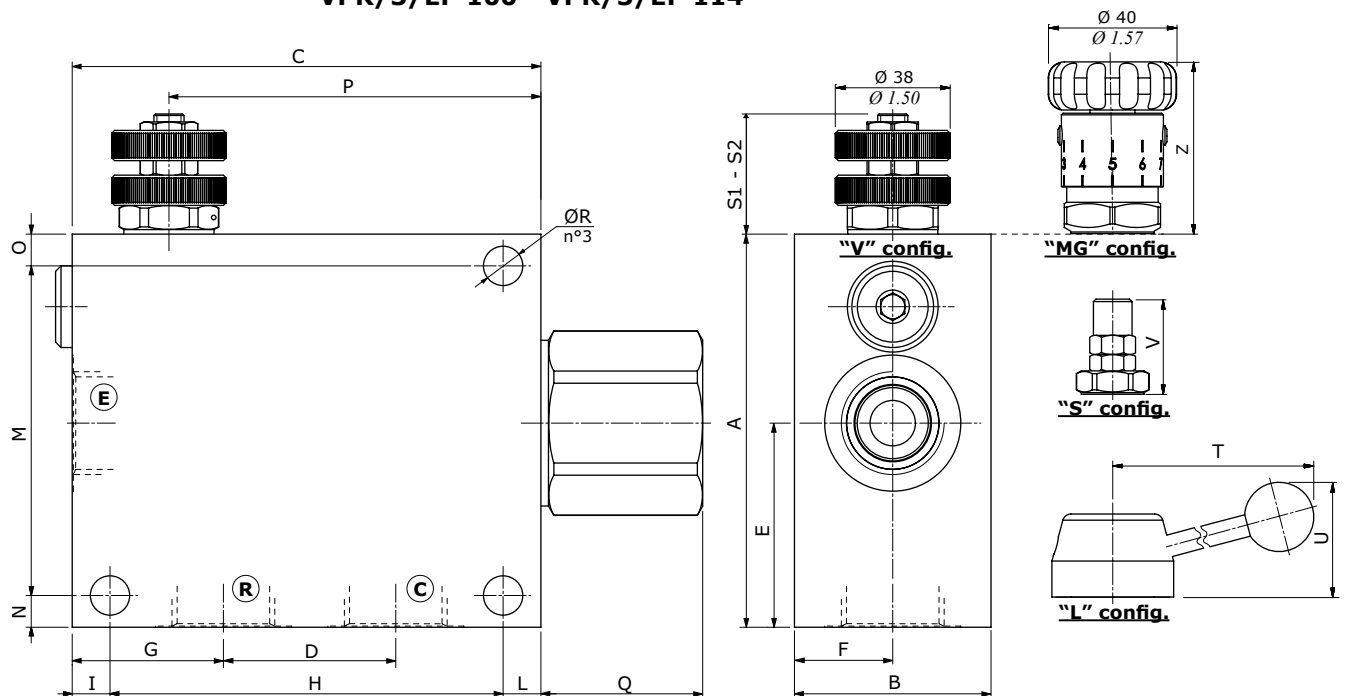


### Dimensions

#### VPR/3/EP 38 - VPR/3/EP 12 - VPR/3/EP 34



#### VPR/3/EP 100 - VPR/3/EP 114



## Flow control valves

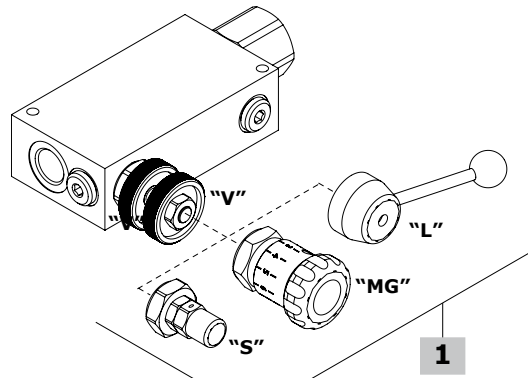
Flow control pressure compensated valves

VPR/3/EP

### Ordering codes and description composition

Port size  
VPR/3/EP 38/V

1



#### VPR/3/EP complete valves

| TYPE                                       | CODE       | DESCRIPTION                 |
|--------------------------------------------|------------|-----------------------------|
| <b>Adjustment kit type "V" (handwheel)</b> |            |                             |
| VPR/3/EP 38/V                              | 1630021100 | Aluminium body, 3/8 ports   |
| VPR/3/EP 12/V                              | 1630031100 | Aluminium body, 1/2 ports   |
| VPR/3/EP 34/V                              | 1630041100 | Aluminium body, 3/4 ports   |
| VPR/3/EP 100/V                             | 1630051100 | Aluminium body, 1" ports    |
| VPR/3/EP 114/V                             | 1630061100 | Aluminium body, 1 1/4 ports |
| VPR/3/EP 38/V/ac                           | 1630022100 | Steel body, 3/8 ports       |
| VPR/3/EP 12/V/ac                           | 1630032100 | Steel body, 1/2 ports       |
| VPR/3/EP 34/V/ac                           | 1630042100 | Steel body, 3/4 ports       |
| VPR/3/EP 100/V/ac                          | 1630052100 | Steel body, 1" ports        |
| VPR/3/EP 114/V/ac                          | 1630062100 | Steel body, 1 1/4 ports     |
| VPR/3/EP 38/V/SAE                          | 1630021200 | Aluminium body, SAE8 ports  |
| VPR/3/EP 12/V/SAE                          | 1630031200 | Aluminium body, SAE10 ports |
| VPR/3/EP 34/V/SAE                          | 1630041200 | Aluminium body, SAE12 ports |
| VPR/3/EP 100/V/SAE                         | 1630051200 | Aluminium body, SAE16 ports |
| VPR/3/EP 114/V/SAE                         | 1630061200 | Aluminium body, SAE20 ports |
| VPR/3/EP 34/V/SAE/ac                       | 1630042200 | Steel body, SAE12 ports     |
| VPR/3/EP 100/V/SAE/ac                      | 1630052200 | Steel body, SAE16 ports     |
| <b>Adjustment kit type "MG" (handknob)</b> |            |                             |
| VPR/3/EP 38/MG                             | 1630021101 | Aluminium body, 3/8 ports   |
| VPR/3/EP 12/MG                             | 1630031101 | Aluminium body, 1/2 ports   |
| VPR/3/EP 34/MG                             | 1630041101 | Aluminium body, 3/4 ports   |
| VPR/3/EP 100/MG                            | 1630051101 | Aluminium body, 1" ports    |
| VPR/3/EP 114/MG                            | 1630061101 | Aluminium body, 1 1/4 ports |
| <b>Adjustment kit type "L" (lever)</b>     |            |                             |
| VPR/3/EP 38/L                              | 1630021102 | Aluminium body, 3/8 ports   |
| VPR/3/EP 12/L                              | 1630031102 | Aluminium body, 1/2 ports   |
| VPR/3/EP 34/L                              | 1630041102 | Aluminium body, 3/4 ports   |
| VPR/3/EP 100/L                             | 1630051102 | Aluminium body, 1" ports    |
| VPR/3/EP 114/L                             | 1630061102 | Aluminium body, 1 1/4 ports |

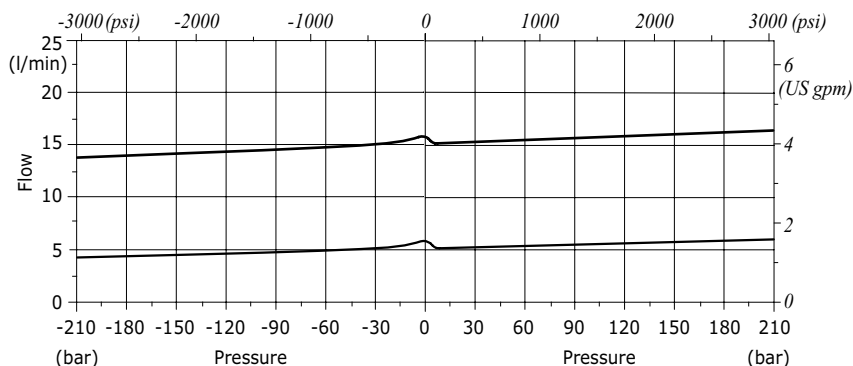
For other steel body configurations, SAE thread and configurations with FPM (Viton) seals, please contact our Sales Dpt.

#### 1 Adjustment kit

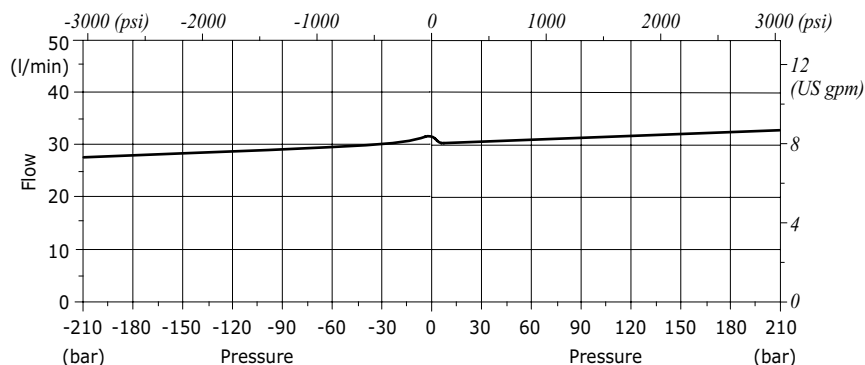
| TYPE                              | CODE       | DESCRIPTION                                                      |
|-----------------------------------|------------|------------------------------------------------------------------|
| <b>For VPR/3/EP 38 valve</b>      |            |                                                                  |
| V.SB                              | 5KT6200200 | "V" handwheel type in "SB" configuration (sensitized adjustment) |
| V                                 | 5KT6130200 | "V" handwheel type                                               |
| MG                                | 5KT6200202 | "MG" handknob type                                               |
| S                                 | 5KT6200211 | "S" screw type                                                   |
| <b>For VPR/3/EP 12 valve</b>      |            |                                                                  |
| V.SB                              | 5KT6130301 | "V" handwheel type in "SB" configuration (sensitized adjustment) |
| V                                 | 5KT6130200 | "V" handwheel type                                               |
| MG                                | 5KT6200202 | "MG" handknob type                                               |
| S                                 | 5KT6200211 | "S" screw type                                                   |
| <b>For VPR/3/EP 34-100 valves</b> |            |                                                                  |
| V                                 | 5KT6130401 | "V" handwheel type                                               |
| MG                                | 5KT6200400 | "MG" handknob type                                               |
| S                                 | 5KT6130404 | "S" screw type                                                   |
| V.SB                              | 5KT6130402 | "V" handwheel type in "SB" configuration (sensitized adjustment) |
| <b>For VPR/3/EP 114 valves</b>    |            |                                                                  |
| V                                 | 5KT6340603 | "V" handwheel type                                               |
| MG                                | 5KT6200605 | "MG" handknob type                                               |
| S                                 | 5KT6200604 | "S" screw type                                                   |

### Rating diagrams

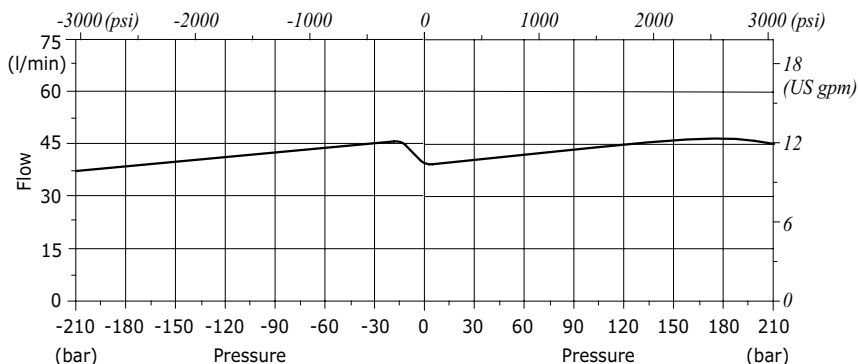
**VPR/3/EP 38 compensation diagram in C  
changing the  $\Delta p$  between E and R**



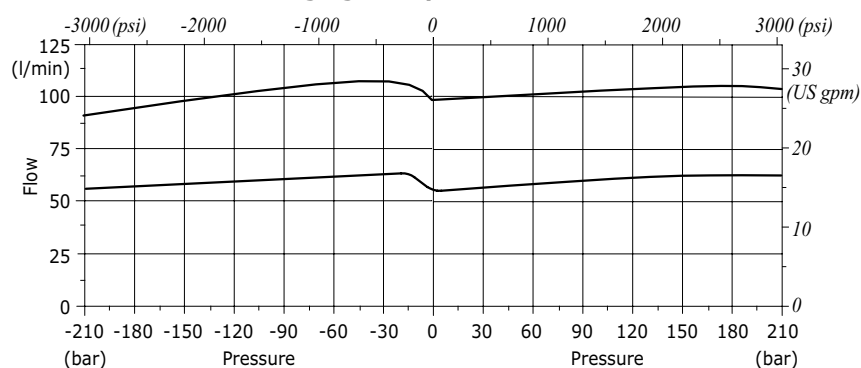
**VPR/3/EP 12 compensation diagram in C  
changing the  $\Delta p$  between E and R**



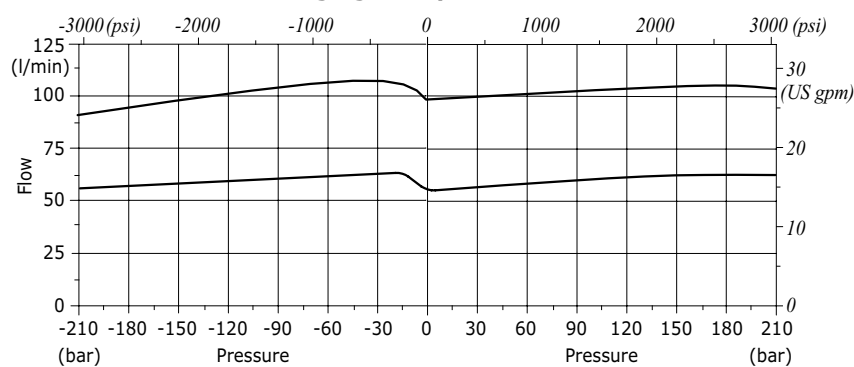
**VPR/3/EP 34 compensation diagram in C  
changing the  $\Delta p$  between E and R**



**VPR/3/EP 100 compensation diagram in C changing the  $\Delta p$  between E and R**



**VPR/3/EP 114 compensation diagram in C changing the  $\Delta p$  between E and R**







## Type VPR/3/EP+VMP+VE flow control pressure compensated valves

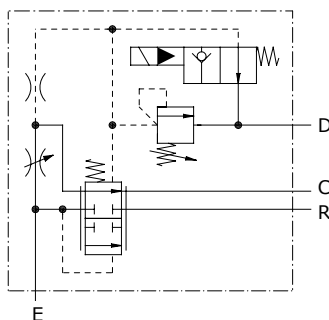
- 3 ways
- Exceeding flow to pressure
- Electric venting
- With pressure relief valve

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                                  |                                                                        | VPR/3/EP 38               | VPR/3/EP 12               | VPR/3/EP 34                | VPR/3/EP 100               | VPR/3/EP 114              |
|--------------------------------------------------|------------------------------------------------------------------------|---------------------------|---------------------------|----------------------------|----------------------------|---------------------------|
| Max. inlet flow                                  | Line E                                                                 | 50 l/min<br>(13.2 US gpm) | 90 l/min<br>(23.8 US gpm) | 150 l/min<br>(39.6 US gpm) | 240 l/min<br>(63.4 US gpm) | 450 l/min<br>(119 US gpm) |
| Max. regulated flow                              | Line C                                                                 | 30 l/min<br>(7.9 US gpm)  | 50 l/min<br>(13.2 US gpm) | 90 l/min<br>(23.8 US gpm)  | 150 l/min<br>(39.6 US gpm) | 250 l/min<br>(66 US gpm)  |
| Max. regulated flow "SB"                         |                                                                        | 15 l/min<br>(4.0 US gpm)  | 25 l/min<br>(6.6 US gpm)  | 45 l/min<br>(11.9 US gpm)  | 75 l/min<br>(18.1 US gpm)  | 125 l/min<br>(33 US gpm)  |
| Max. pressure                                    | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                           |                           |                            |                            |                           |
| Fluid                                            | mineral based oil                                                      |                           |                           |                            |                            |                           |
| Viscosity                                        | from 10 to 200 cSt                                                     |                           |                           |                            |                            |                           |
| Max. level of contamination                      | 18/16/13 ISO4406                                                       |                           |                           |                            |                            |                           |
| Fluid temperature                                | with NBR seals from -20°C (-4°F) to 80°C (176°F)                       |                           |                           |                            |                            |                           |
| Environmental temperature for working conditions | from -40°C (-40°F) to 100°C (212°F)                                    |                           |                           |                            |                            |                           |
| Weight                                           | aluminium                                                              | 2.12 kg (4.67 lb)         | 2.10 kg (4.63 lb)         | 3.47 kg (7.65 lb)          | 5.49 kg (12.10 lb)         | 7.45 kg (16.42 lb)        |
|                                                  | steel                                                                  | 4.19 kg (6.28 lb)         | 4.13 kg (6.17 lb)         | 7.03 kg (10.91 lb)         | 11.26 kg (24.83 lb)        | 18.20 kg (40.12 lb)       |

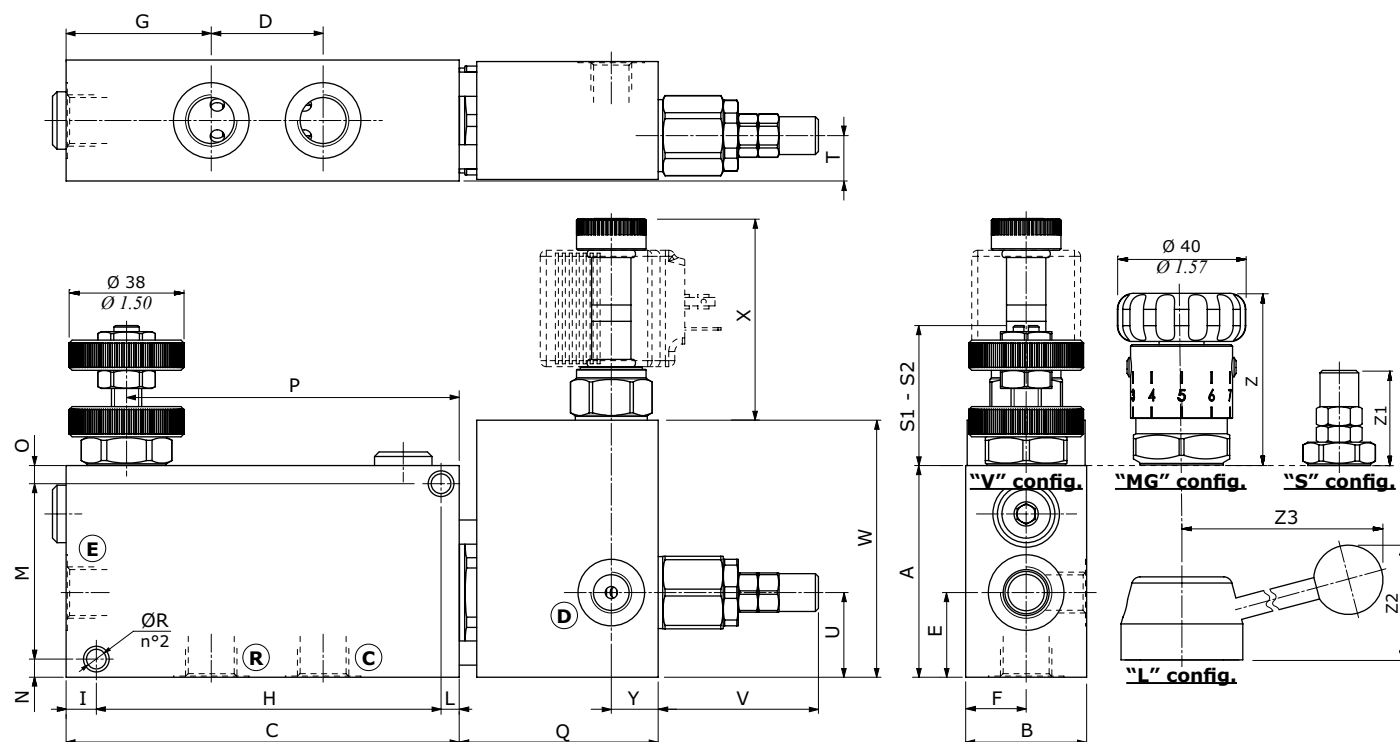
NOTE - For different conditions, please contact Walvoil Sales Dpt.

\*"SB" execution (sensibilized adjustment)



### Dimensions

#### VPR/3/EP 38+VMP+VE - VPR/3/EP 12+VMP+VE - VPR/3/EP 34+VMP+VE



| Valve type          | Ⓔ      | Ⓓ      | Ⓒ      | Ⓓ    |
|---------------------|--------|--------|--------|------|
| VPR/3/EP 38+VMP+VE  | G3/8   | G3/8   | G3/8   | G1/4 |
| VPR/3/EP 12+VMP+VE  | G1/2   | G1/2   | G1/2   | G1/4 |
| VPR/3/EP 34+VMP+VE  | G3/4   | G3/4   | G3/4   | G1/4 |
| VPR/3/EP 100+VMP+VE | G1"    | G1"    | G1"    | G1/4 |
| VPR/3/EP 114+VMP+VE | G1"1/4 | G1"1/4 | G1"1/4 | G1/4 |

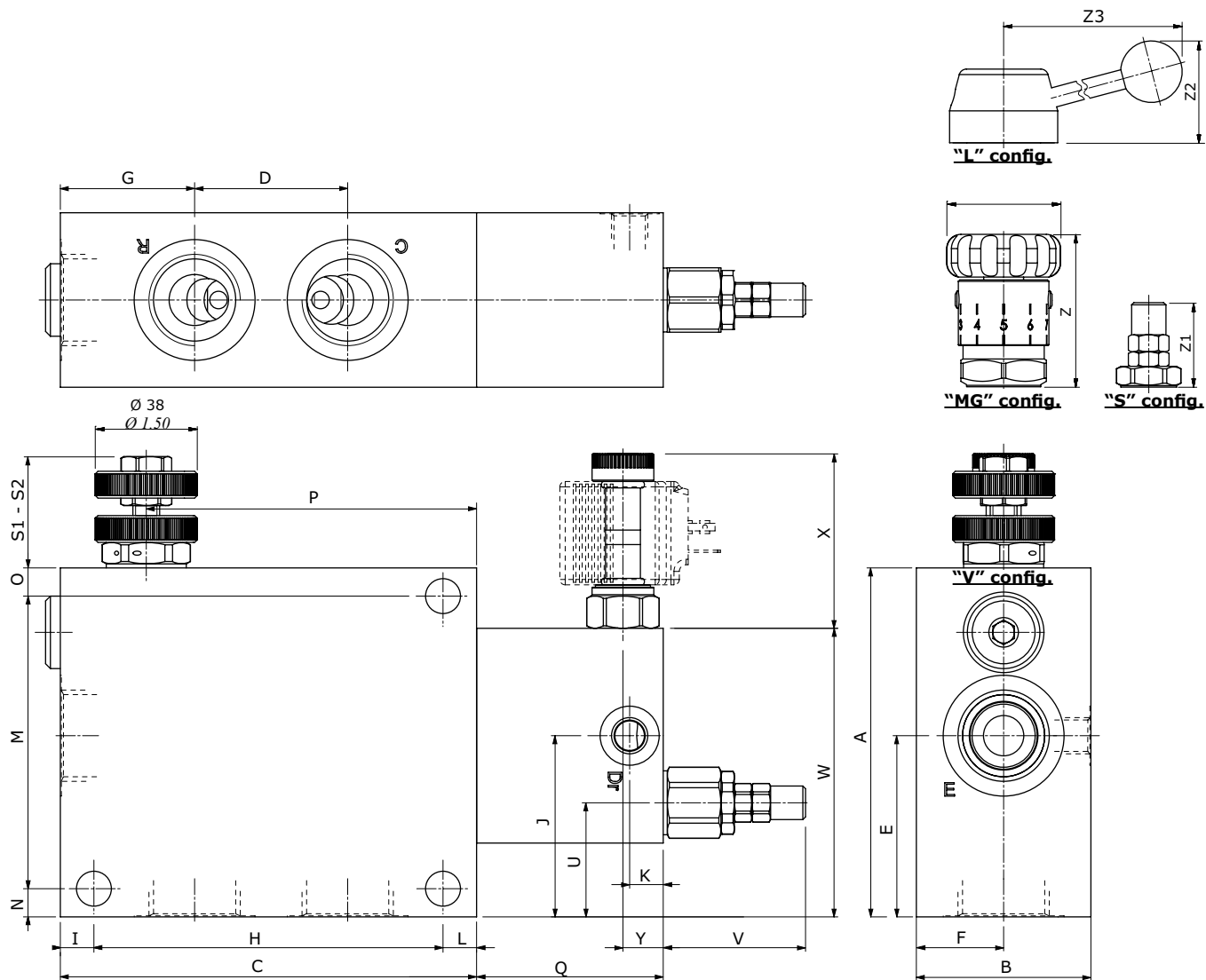
Dimensions are in mm-in

| Valve type          | A           | B                             | C           | D          | E            | F                               | G          | H           | I            | L            | K            | J            | M           | N             |
|---------------------|-------------|-------------------------------|-------------|------------|--------------|---------------------------------|------------|-------------|--------------|--------------|--------------|--------------|-------------|---------------|
| VPR/3/EP 38+VMP+VE  | 70<br>2.76  | 40<br>1.57                    | 130<br>5.12 | 37<br>1.46 | 28<br>1.10   | 20<br>0.79                      | 48<br>1.89 | 114<br>4.49 | 10<br>0.394  | 6<br>0.236   | -            | -            | 58<br>2.28  | 6<br>0.236    |
| VPR/3/EP 12+VMP+VE  | 70<br>2.76  | 40<br>1.57                    | 130<br>5.12 | 37<br>1.46 | 28<br>1.10   | 20<br>0.79                      | 48<br>1.89 | 114<br>4.49 | 10<br>0.394  | 6<br>0.236   | -            | -            | 58<br>2.28  | 6<br>0.236    |
| VPR/3/EP 34+VMP+VE  | 90<br>3.54  | 50<br>1.97                    | 155<br>6.10 | 44<br>1.73 | 35<br>1.38   | 25<br>0.98                      | 57<br>2.24 | 135<br>5.31 | 10<br>0.394  | 10<br>0.394  | 15<br>0.59   | 35<br>1.38   | 74<br>2.91  | 8<br>0.315    |
| VPR/3/EP 100+VMP+VE | 130<br>5.12 | Alum:70-2.76<br>Steel:65-2.56 | 155<br>6.10 | 57<br>2.24 | 67.5<br>2.66 | Alum:35-1.38<br>Steel:32.5-1.28 | 50<br>1.97 | 130<br>5.12 | 12.5<br>0.49 | 12.5<br>0.49 | 12.5<br>0.49 | 67.5<br>2.66 | 109<br>4.29 | 10.5<br>0.413 |
| VPR/3/EP 114+VMP+VE | 160<br>6.30 | 75<br>2.95                    | 184<br>7.24 | 70<br>2.76 | 83<br>3.27   | 37.5<br>1.48                    | 60<br>2.36 | 159<br>6.26 | 12.5<br>0.49 | 12.5<br>0.49 | 15<br>0.59   | 83<br>3.27   | 135<br>5.31 | 12.5<br>0.49  |

| Valve type          | O             | P           | Q            | ØR           | S1           | S2           | T            | U            | V          | W             | X(NA)        | Y            | Z            | Z1           | Z2           | Z3            |
|---------------------|---------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|------------|---------------|--------------|--------------|--------------|--------------|--------------|---------------|
| VPR/3/EP 38+VMP+VE  | 6<br>0.236    | 110<br>4.33 | 65.8<br>2.59 | 6.5<br>0.256 | 46.3<br>1.82 | 52.6<br>2.07 | 15<br>0.59   | 28<br>1.10   | 53<br>2.09 | 85<br>3.35    | 66.7<br>2.63 | 15.5<br>0.61 | 53.3<br>2.10 | 38.5<br>1.52 | 47.5<br>1.87 | 101.3<br>3.99 |
| VPR/3/EP 12+VMP+VE  | 6<br>0.236    | 110<br>4.33 | 65.8<br>2.59 | 6.5<br>0.256 | 46.3<br>1.82 | 53.1<br>2.09 | 14.5<br>0.59 | 28<br>1.10   | 53<br>2.09 | 85<br>3.35    | 66.7<br>2.63 | 15.5<br>0.61 | 53.3<br>2.10 | 38.5<br>1.52 | 47.5<br>1.87 | 101.3<br>3.99 |
| VPR/3/EP 34+VMP+VE  | 8<br>0.315    | 130<br>5.12 | 76.8<br>3.02 | 8.5<br>0.335 | 41.5<br>1.63 | 50.5<br>1.99 | -            | 35<br>1.38   | 53<br>2.09 | 90<br>3.54    | 66.7<br>2.63 | 16<br>0.63   | 49.5<br>1.95 | 38.5<br>1.52 | 50.1<br>1.97 | 103.6<br>4.08 |
| VPR/3/EP 100+VMP+VE | 10.5<br>0.413 | 123<br>4.84 | 69.5<br>2.74 | 13<br>0.51   | 41.5<br>1.63 | 50.5<br>1.99 | -            | 42.5<br>1.67 | 53<br>2.09 | 107.5<br>4.23 | 62.5<br>2.46 | 15<br>0.59   | 49.5<br>1.95 | 38.5<br>1.52 | 50.1<br>1.97 | 103.6<br>4.08 |
| VPR/3/EP 114+VMP+VE | 12.5<br>0.49  | 151<br>5.94 | 80<br>3.15   | 12.5<br>0.49 | 52<br>2.05   | xxx-<br>xxx  | -            | 58<br>2.28   | 53<br>2.09 | 123<br>4.84   | 66.7<br>2.63 | 15<br>0.59   | 52.5<br>2.06 | 41.5<br>1.63 | 50.5<br>1.99 | 107.3<br>4.22 |

**Dimensions**

**VPR/3/EP 100+VMP+VE - VPR/3/EP 114+VMP+VE**





### Ordering codes and description composition

#### VPR/3/EP 38+VMP+VE complete valves

Pressure relief valve setting range is 50-200 bar (725-2900 psi)

##### Adjustment kit type "V" (handwheel)

##### Configuration with normally open (NA) solenoid valve

TYPE: **VPR/3/EP 38+VMP+VE(EC08M).NA/V/03.TS** CODE: 1634021100

DESCRIPTION: aluminium body, 3/8 ports

TYPE: **VPR/3/EP 12+VMP+VE(EC08M).NA/V/03.TS** CODE: 1634031100

DESCRIPTION: aluminium body, 1/2 ports

TYPE: **VPR/3/EP 34+VMP+VE(EC08M).NA/V/03.TS** CODE: 1634041100

DESCRIPTION: aluminium body, 3/4 ports

TYPE: **VPR/3/EP 100+VMP+VE(EC08M).NA/V/03.TS** CODE: 1634051100

DESCRIPTION: aluminium body, 1" ports

TYPE: **VPR/3/EP 114+VMP+VE(EC08M).NA/V/03.TS** CODE: 1634061100

DESCRIPTION: aluminium body, 1 1/4 ports

TYPE: **VPR/3/EP 38+VMP+VE(EC08M).NA/V/03.TS/ac** CODE: 1634022100

DESCRIPTION: steel body, 3/8 ports

TYPE: **VPR/3/EP 12+VMP+VE(EC08M).NA/V/03.TS/ac** CODE: 1634032100

DESCRIPTION: steel body, 1/2 ports

TYPE: **VPR/3/EP 34+VMP+VE(EC08M).NA/V/03.TS/ac** CODE: 1634042100

DESCRIPTION: steel body, 3/4 ports

TYPE: **VPR/3/EP 100+VMP+VE(EC08M).NA/V/03.TS/ac** CODE: 1634052100

DESCRIPTION: steel body, 1" ports

TYPE: **VPR/3/EP 114+VMP+VE(EC08M).NA/V/03.TS/ac** CODE: 1634062100

DESCRIPTION: steel body, 1 1/4 ports

##### Configuration with normally closed (NC) solenoid valve

TYPE: **VPR/3/EP 38+VMP+VE(EC08M).NC/V/03.TS** CODE: 1634021103

DESCRIPTION: aluminium body, 3/8 ports

TYPE: **VPR/3/EP 12+VMP+VE(EC08M).NC/V/03.TS** CODE: 1634031103

DESCRIPTION: aluminium body, 1/2 ports

TYPE: **VPR/3/EP 34+VMP+VE(EC08M).NC/V/03.TS** CODE: 1634041103

DESCRIPTION: aluminium body, 3/4 ports

TYPE: **VPR/3/EP 100+VMP+VE(EC08M).NC/V/03.TS** CODE: 1634051103

DESCRIPTION: aluminium body, 1" ports

TYPE: **VPR/3/EP 114+VMP+VE(EC08M).NC/V/03.TS** CODE: 1634061103

DESCRIPTION: aluminium body, 1 1/4 ports

##### Adjustment kit type "MG" (handknob)

##### Configuration with normally open (NA) solenoid valve

TYPE: **VPR/3/EP 38+VMP+VE(EC08M).NA/MG/03.TS** CODE: 1634021101

DESCRIPTION: aluminium body, 3/8 ports

TYPE: **VPR/3/EP 12+VMP+VE(EC08M).NA/MG/03.TS** CODE: 1634031101

DESCRIPTION: aluminium body, 1/2 ports

TYPE: **VPR/3/EP 34+VMP+VE(EC08M).NA/MG/03.TS** CODE: 1634041101

DESCRIPTION: aluminium body, 3/4 ports

TYPE: **VPR/3/EP 100+VMP+VE(EC08M).NA/MG/03.TS** CODE: 1634051101

DESCRIPTION: aluminium body, 1" ports

TYPE: **VPR/3/EP 114+VMP+VE(EC08M).NA/MG/03.TS** CODE: 1634061101

DESCRIPTION: aluminium body, 1 1/4 ports

##### Configuration with normally closed (NC) solenoid valve

TYPE: **VPR/3/EP 38+VMP+VE(EC08M).NC/MG/03.TS** CODE: 1634021104

DESCRIPTION: aluminium body, 3/8 ports

TYPE: **VPR/3/EP 12+VMP+VE(EC08M).NC/MG/03.TS** CODE: 1634031104

DESCRIPTION: aluminium body, 1/2 ports

TYPE: **VPR/3/EP 34+VMP+VE(EC08M).NC/MG/03.TS** CODE: 1634041104

DESCRIPTION: aluminium body, 3/4 ports

TYPE: **VPR/3/EP 100+VMP+VE(EC08M).NC/MG/03.TS** CODE: 1634051104

DESCRIPTION: aluminium body, 1" ports

TYPE: **VPR/3/EP 114+VMP+VE(EC08M).NC/MG/03.TS** CODE: 1634061104

DESCRIPTION: aluminium body, 1 1/4 ports

##### Adjustment kit type "L" (lever)

##### Configuration with electric valve normally open (NA)

TYPE: **VPR/3/EP 38+VMP+VE(EC08M).NA/L/03.TS** CODE: 1634021102

DESCRIPTION: aluminium body, 3/8 ports

TYPE: **VPR/3/EP 12+VMP+VE(EC08M).NA/L/03.TS** CODE: 1634031102

DESCRIPTION: aluminium body, 1/2 ports

TYPE: **VPR/3/EP 34+VMP+VE(EC08M).NA/L/03.TS** CODE: 1634041102

DESCRIPTION: aluminium body, 3/4 ports

TYPE: **VPR/3/EP 100+VMP+VE(EC08M).NA/L/03.TS** CODE: 1634051102

DESCRIPTION: aluminium body, 1" ports

TYPE: **VPR/3/EP 114+VMP+VE(EC08M).NA/L/03.TS** CODE: 1634061102

DESCRIPTION: aluminium body, 1 1/4 ports

##### Configuration with electric valve normally closed (NC)

TYPE: **VPR/3/EP 38+VMP+VE(EC08M).NC/L/03.TS** CODE: 1634021105

DESCRIPTION: aluminium body, 3/8 ports

TYPE: **VPR/3/EP 12+VMP+VE(EC08M).NC/L/03.TS** CODE: 1634031105

DESCRIPTION: aluminium body, 1/2 ports

TYPE: **VPR/3/EP 34+VMP+VE(EC08M).NC/L/03.TS** CODE: 1634041105

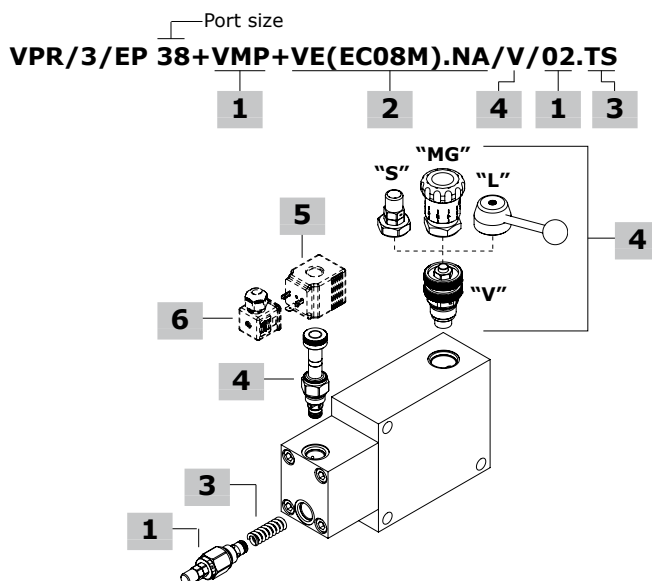
DESCRIPTION: aluminium body, 3/4 ports

TYPE: **VPR/3/EP 100+VMP+VE(EC08M).NC/L/03.TS** CODE: 1634051105

DESCRIPTION: aluminium body, 1" ports

TYPE: **VPR/3/EP 114+VMP+VE(EC08M).NC/L/03.TS** CODE: 1634061105

DESCRIPTION: aluminium body, 1 1/4 ports



#### 1 Pressure relief valve

| TYPE              | CODE        | DESCRIPTION                                                      |
|-------------------|-------------|------------------------------------------------------------------|
| <b>MC08A/0S2B</b> | 0MC08002000 | Direct acting cartridge, setting range 50-200 bar (725-2900 psi) |

#### 2 Solenoid valve

| TYPE              | CODE        | DESCRIPTION                        |
|-------------------|-------------|------------------------------------|
| <b>EC08M/10NB</b> | 0EC08002031 | Normally open (NA) configuration   |
| <b>EC08M/20NB</b> | 0EC08002032 | Normally closed (NC) configuration |

#### 3 Pressure setting springs

| TYPE      | CODE       | DESCRIPTION                               |
|-----------|------------|-------------------------------------------|
| <b>TV</b> | 3ML1092500 | Setting range 5-50 bar (72.5-725 psi)     |
| <b>TS</b> | 3ML1092501 | Setting range 50-200 bar (725-2900 psi)   |
| <b>TR</b> | 3ML1092502 | Setting range 150-350 bar (2200-5100 psi) |

#### 4 Adjustment kit

| TYPE                                     | CODE       | DESCRIPTION                                                        |
|------------------------------------------|------------|--------------------------------------------------------------------|
| <b>For VPR/3/EP 38+VMP+VE valve</b>      |            |                                                                    |
| <b>V.SB</b>                              | 5KT6200200 | "V" handwheel type in "SB" configuration (sensibilized adjustment) |
| <b>V</b>                                 | 5KT6130200 | "V" handwheel type                                                 |
| <b>MG</b>                                | 5KT6200202 | "MG" handknob type                                                 |
| <b>S</b>                                 | 5KT6200211 | "S" screw type                                                     |
| <b>For VPR/3/EP 12+VMP+VE valve</b>      |            |                                                                    |
| <b>V.SB</b>                              | 5KT6130301 | "V" handwheel type in "SB" configuration (sensibilized adjustment) |
| <b>V</b>                                 | 5KT6130200 | "V" handwheel type                                                 |
| <b>MG</b>                                | 5KT6200202 | "MG" handknob type                                                 |
| <b>S</b>                                 | 5KT6200211 | "S" screw type                                                     |
| <b>For VPR/3/EP 34-100+VMP+VE valves</b> |            |                                                                    |
| <b>V</b>                                 | 5KT6130401 | "V" handwheel type                                                 |
| <b>MG</b>                                | 5KT6200400 | "MG" handknob type                                                 |
| <b>S</b>                                 | 5KT6130404 | "S" screw type                                                     |
| <b>V.SB</b>                              | 5KT6130402 | "V" handwheel type in "SB" configuration (sensibilized adjustment) |
| <b>For VPR/3/EP 114+VMP+VE valve</b>     |            |                                                                    |
| <b>V</b>                                 | 5KT6340603 | "V" handwheel type                                                 |
| <b>MG</b>                                | 5KT6200605 | "MG" handknob type                                                 |
| <b>S</b>                                 | 5KT6200604 | "S" screw type                                                     |

#### 5 Coils

| TYPE             | CODE        | DESCRIPTION                  |
|------------------|-------------|------------------------------|
| <b>BER 12VDC</b> | 4SLE001200A | 12VDC-ISO4400 coil for EC08M |

For complete coils list see from page 433

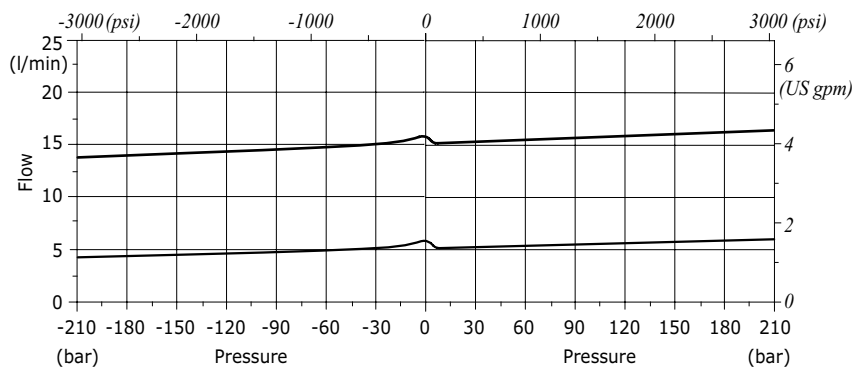
#### 6 Connector

| TYPE           | CODE       | DESCRIPTION |
|----------------|------------|-------------|
| <b>ISO4400</b> | 4CN1009995 | Connector   |

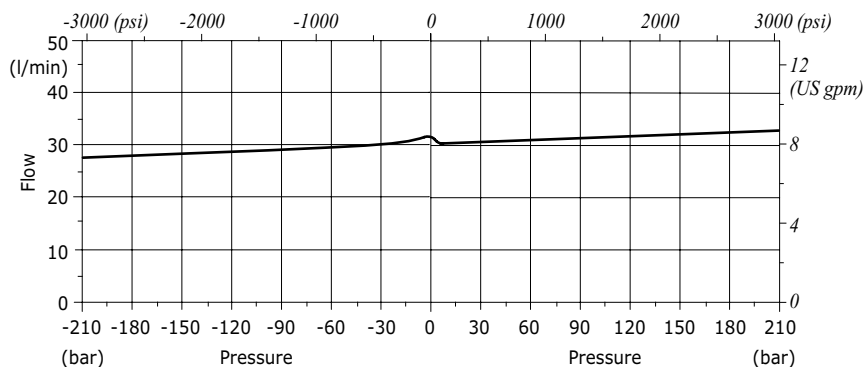
For complete connectors list see from page 433

For other steel body configurations, SAE thread and configurations with FPM (Viton) seals, please contact our Sales Dept.

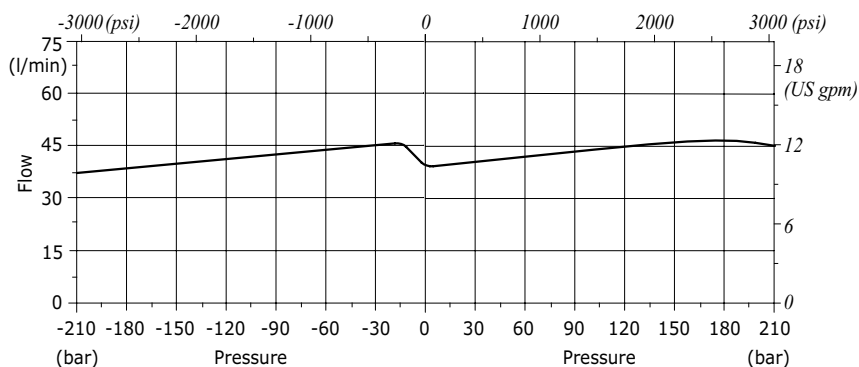
**VPR/3/EP 38+VMP+VE compensation diagram in C  
changing the  $\Delta p$  between E and R**



**VPR/3/EP 12+VMP+VE compensation diagram in C  
changing the  $\Delta p$  between E and R**

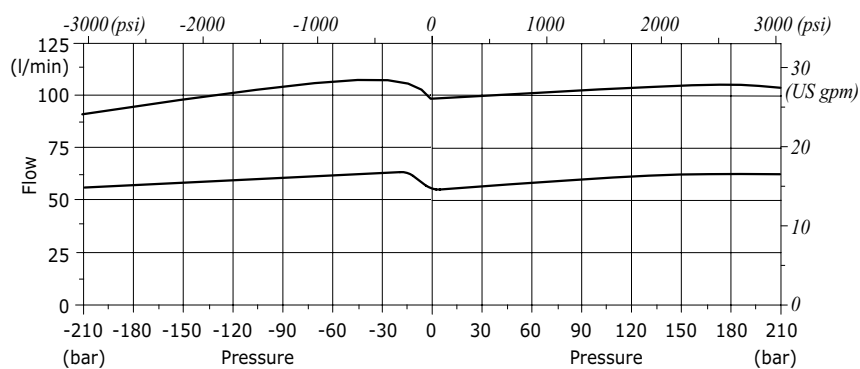


**VPR/3/EP 34+VMP+VE compensation diagram in C  
changing the  $\Delta p$  between E and R**

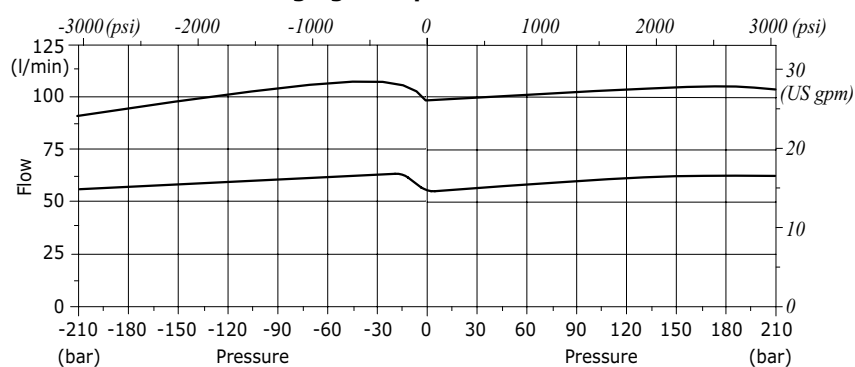


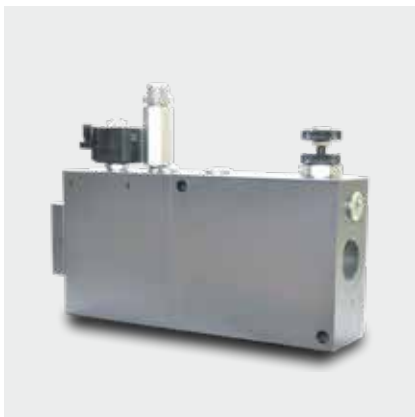
### Rating diagrams

**VPR/3/EP 100/VMP+VE compensation diagram in C**  
changing the  $\Delta p$  between E and R



**VPR/3/EP 114/VMP+VE compensation diagram in C**  
changing the  $\Delta p$  between E and R





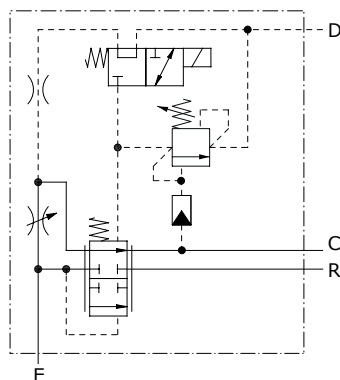
## Type VPR/3/EP/VMP+VE/LPD flow control pressure compensated valves

- 3 ways
- Exceeding flow to pressure
- Electric venting
- With pressure relief valve
- Low pressure drop
- Steel body

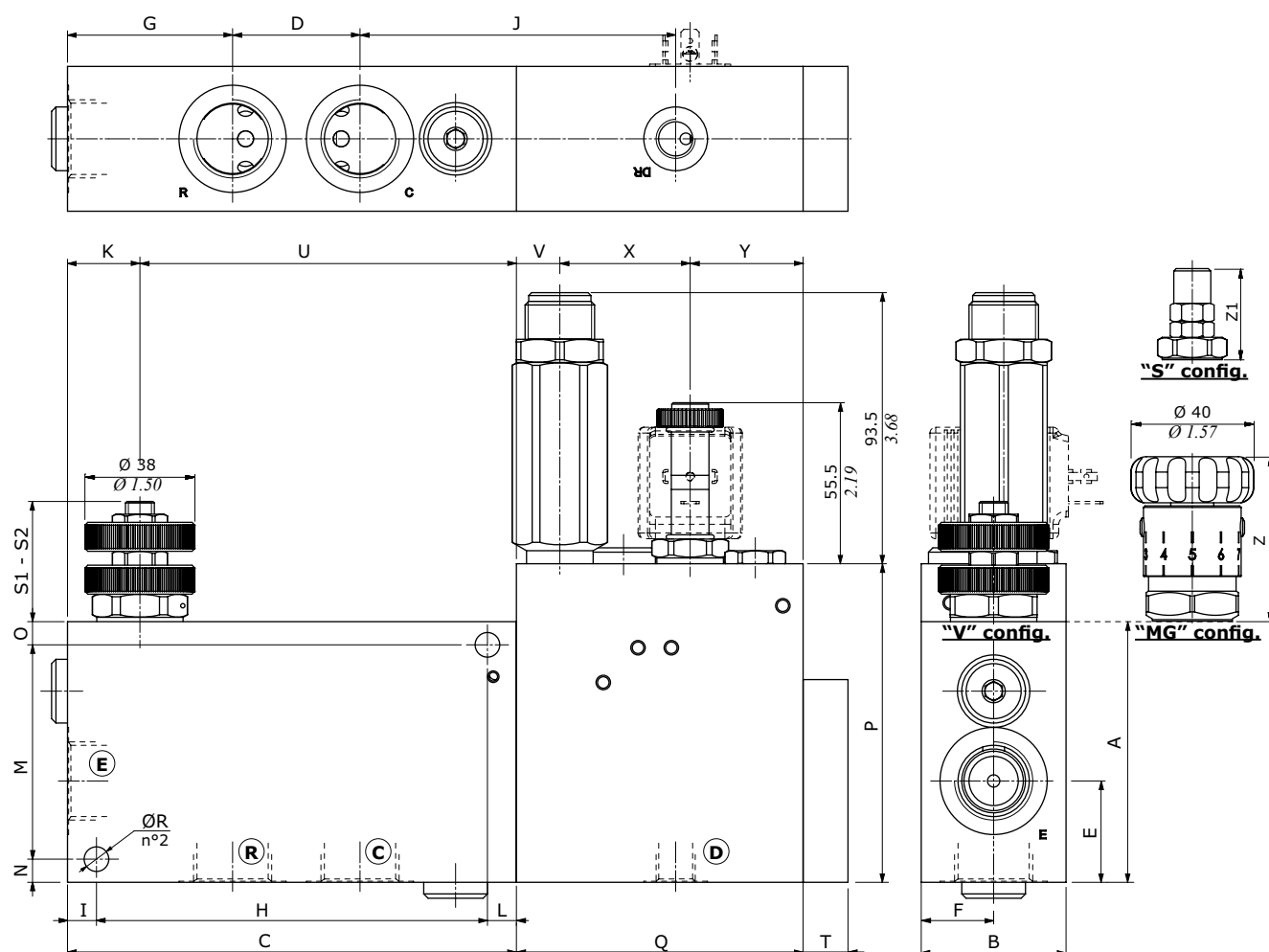
Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                                  |        | VPR/3/EP 34/VMP+VE/LPD                           | VPR/3/EP 100/VMP+VE/LPD | VPR/3/EP 114/VMP+VE/LPD |
|--------------------------------------------------|--------|--------------------------------------------------|-------------------------|-------------------------|
| Max. inlet flow                                  | Line E | 150 l/min (39.6 US gpm)                          | 240 l/min (63.4 US gpm) | 450 l/min (119 US gpm)  |
| Max. regulated flow                              | Line C | 90 l/min (24 US gpm)                             | 150 l/min (39.6 US gpm) | 250 l/min (66 US gpm)   |
| Max. pressure                                    |        | 350 bar (5100 psi)                               |                         |                         |
| Fluid                                            |        | mineral based oil                                |                         |                         |
| Viscosity                                        |        | from 10 to 200 cSt                               |                         |                         |
| Max. level of contamination                      |        | 18/16/13 ISO4406                                 |                         |                         |
| Fluid temperature                                |        | with NBR seals from -20°C (-4°F) to 80°C (176°F) |                         |                         |
| Environmental temperature for working conditions |        | from -40°C (-40°F) to 100°C (212°F)              |                         |                         |
| Weight                                           | steel  | 9.15 kg (20.17 lb)                               | 19 kg (41.89 lb)        | 28 kg (61.73 lb)        |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



## Dimensions



| Valve type              | (E)    | (R)    | (C)    | (D)  |
|-------------------------|--------|--------|--------|------|
| VPR/3/EP 34/VMP+VE/LPD  | G3/4   | G3/4   | G3/4   | G1/4 |
| VPR/3/EP 100/VMP+VE/LPD | G1"    | G1"    | G1"    | G1/4 |
| VPR/3/EP 114/VMP+VE/LPD | G1"1/4 | G1"1/4 | G1"1/4 | G1/4 |

Dimensions are in mm-in

| Valve type              | A           | B          | C           | D          | E            | F            | G          | H           | I            | L            | K          | J             | M           | N             |
|-------------------------|-------------|------------|-------------|------------|--------------|--------------|------------|-------------|--------------|--------------|------------|---------------|-------------|---------------|
| VPR/3/EP 34/VMP+VE/LPD  | 90<br>3.54  | 50<br>1.97 | 155<br>6.10 | 44<br>1.73 | 35<br>1.38   | 25<br>0.98   | 57<br>2.24 | 135<br>5.31 | 10<br>0.394  | 10<br>0.394  | 25<br>0.98 | 109<br>4.29   | 74<br>2.91  | 8<br>0.315    |
| VPR/3/EP 100/VMP+VE/LPD | 130<br>5.12 | 65<br>2.56 | 155<br>6.10 | 57<br>2.24 | 67.5<br>2.66 | 32.5<br>1.28 | 50<br>1.97 | 130<br>5.12 | 12.5<br>0.49 | 12.5<br>0.49 | 32<br>1.26 | 121.5<br>4.78 | 109<br>4.29 | 10.5<br>0.413 |
| VPR/3/EP 114/VMP+VE/LPD | 160<br>6.30 | 75<br>2.95 | 184<br>7.24 | 70<br>2.76 | 83<br>3.27   | 37.5<br>1.48 | 60<br>2.36 | 159<br>6.26 | 12.5<br>0.49 | 12.5<br>0.49 | 35<br>1.38 | 147.5<br>5.81 | 135<br>5.31 | 12.5<br>0.49  |

| Valve type              | O             | P             | Q           | ØR           | S1 | S2 | T            | U           | V          | X            | Y            | Z            | Z1           |
|-------------------------|---------------|---------------|-------------|--------------|----|----|--------------|-------------|------------|--------------|--------------|--------------|--------------|
| VPR/3/EP 34/VMP+VE/LPD  | 8<br>0.315    | 110<br>4.33   | 99<br>3.90  | 8.5<br>0.335 | -  | -  | 15.5<br>0.61 | 130<br>5.12 | 15<br>0.59 | 54<br>2.13   | 39<br>1.54   | 56.5<br>2.22 | 38.5<br>1.52 |
| VPR/3/EP 100/VMP+VE/LPD | 10.5<br>0.413 | 147.5<br>5.81 | 113<br>4.45 | 12.5<br>0.49 | -  | -  | 17.5<br>0.69 | 123<br>4.84 | 38<br>1.50 | 35.5<br>1.40 | 39.5<br>1.56 | 56.5<br>2.22 | 38.5<br>1.52 |
| VPR/3/EP 114/VMP+VE/LPD | 12.5<br>0.49  | 160<br>6.30   | 144<br>5.67 | 12.5<br>0.49 | -  | -  | 17.5<br>0.69 | 149<br>5.87 | 49<br>1.93 | 41<br>1.61   | 54<br>2.13   | 56.5<br>2.22 | 41.5<br>1.63 |

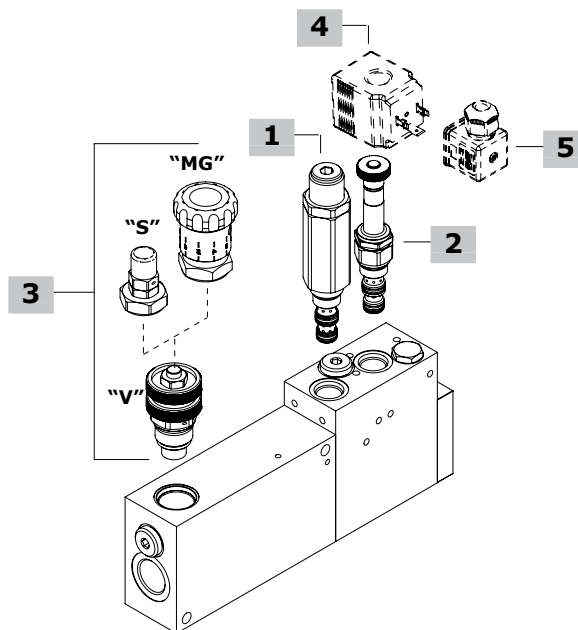
## Flow control valves

Flow control pressure compensated valves

VPR/3/EP/VMP+VE/LPD

### Ordering codes and description composition

Port size  
**VPR/3/EP 34/VMP+VE.NA/LPD/V/VDS.TS/ac**  
 1 2 3 1 1



#### VPR/3/EP/VMP+VE/LPD complete valves

*Standard setting 160 bar at 5 l/min (2320 psi at 1.32 US gpm)*

##### Adjustment kit type "V" (handwheel)

TYPE: **VPR/3/EP 34/VMP+VE.NA/LPD/V/VDS.TS/ac**

CODE: 1635042103

DESCRIPTION: steel body, G3/4 ports, setting range 150-300 bar (2175-4350 psi)

TYPE: **VPR/3/EP 100/VMP+VE.NA/LPD/V/VDS.TS/ac**

CODE: 1635052103

DESCRIPTION: steel body, G1" ports, setting range 150-300 bar (2175-4350 psi)

TYPE: **VPR/3/EP 114/VMP+VE.NA/LPD/V/VDS.TS/ac**

CODE: 1635062102

DESCRIPTION: steel body, G1 1/4 ports, setting range 150-300 bar (2175-4350 psi)

For other steel body configurations, SAE thread and configurations with FPM (Viton) seals please contact our Sales Dpt.

#### 1 Pressure relief valve

TYPE: **VDS/3/2 x VPR/3/EP....LPD/TS** CODE: 1208010400

DESCRIPTION: direct type valve, setting range 150-300 bar (2175-4350 psi), standard setting 160 bar at 5 l/min (2320 psi at 1.32 US gpm)

#### 2 Solenoid valve

| TYPE              | CODE        | DESCRIPTION                      |
|-------------------|-------------|----------------------------------|
| <b>MC08A/0S2B</b> | 0EJ08002051 | Normally open (NA) configuration |

#### 3 Adjustment kit

| TYPE                                     | CODE       | DESCRIPTION        |
|------------------------------------------|------------|--------------------|
| <b>For VPR/3/EP 34-100+VMP+VE valves</b> |            |                    |
| <b>V</b>                                 | 5KT6130401 | "V" handwheel type |
| <b>MG</b>                                | 5KT6200400 | "MG" handknob type |
| <b>S</b>                                 | 5KT6130404 | "S" screw type     |
| <b>For VPR/3/EP 114+VMP+VE valve</b>     |            |                    |
| <b>V</b>                                 | 5KT6340603 | "V" handwheel type |
| <b>MG</b>                                | 5KT6200605 | "MG" handknob type |
| <b>S</b>                                 | 5KT6200604 | "S" screw type     |

#### 4 Coils

| TYPE             | CODE        | DESCRIPTION        |
|------------------|-------------|--------------------|
| <b>BER 12VDC</b> | 4SLE001200A | 12VDC-ISO4400 coil |

For complete coils list see from page 433

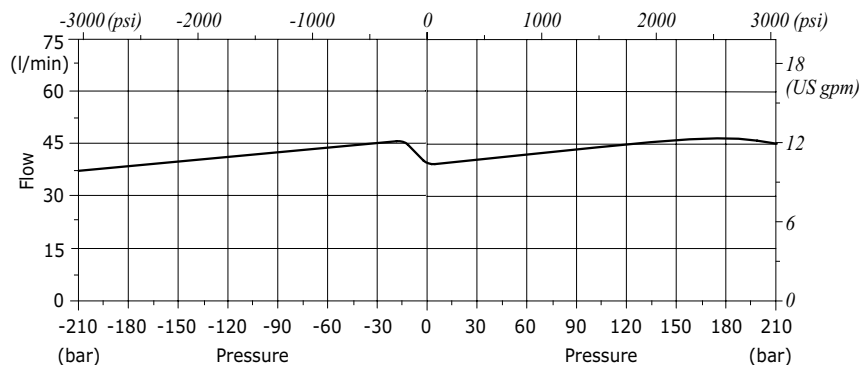
#### 5 Connector

| TYPE           | CODE       | DESCRIPTION |
|----------------|------------|-------------|
| <b>ISO4400</b> | 4CN1009995 | Connector   |

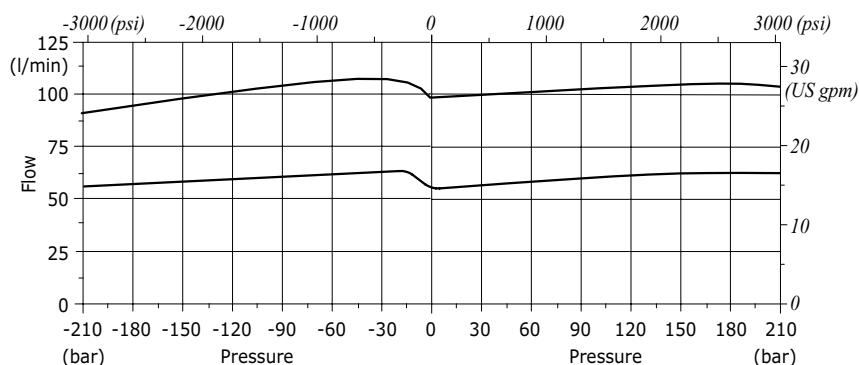
For complete connectors list see from page 433

## Rating diagrams

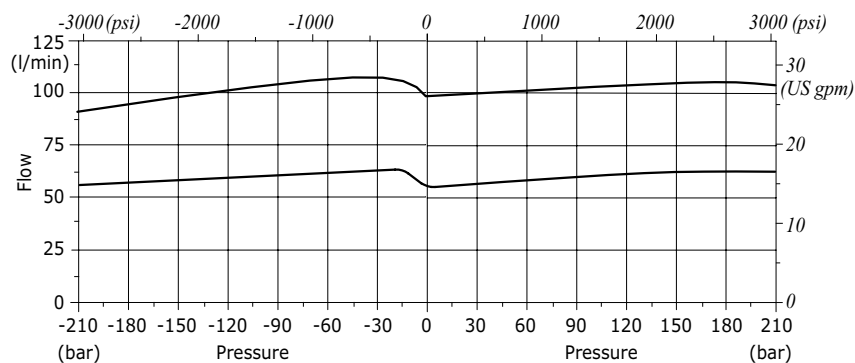
**VPR/3/EP 34/VMP+VE/LPD compensation diagram  
in C changing the  $\Delta p$  between E and R**



**VPR/3/EP 100/VMP+VE/LPD compensation diagram  
in C changing the  $\Delta p$  between E and R**



**VPR/3/EP 114/VMP+VE/LPD compensation diagram  
in C changing the  $\Delta p$  between E and R**





## Type VDR

### flow control pressure compensated valves

- Cartridge compensated
- With steel housing M-F or F-F
- Flow regulator adjustable type

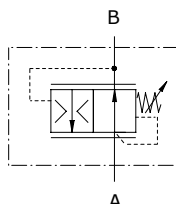
Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                            | VDR 14                                           | VDR 38                 | VDR 12                 | VDR 34                  |
|--------------------------------------------|--------------------------------------------------|------------------------|------------------------|-------------------------|
| Nominal flow from A to B                   | 25 l/min (6.6 US gpm)                            | 50 l/min (13.2 US gpm) | 90 l/min (23.8 US gpm) | 220 l/min (58.1 US gpm) |
| Nominal flow from B to A                   | 10 l/min (2.6 US gpm)                            | 25 l/min (6.6 US gpm)  | 67 l/min (17.7 US gpm) | 150 l/min (39.6 US gpm) |
| Max. pressure                              | 300 bar (4350 psi)                               |                        |                        |                         |
| Fluid                                      | mineral based oil                                |                        |                        |                         |
| Viscosity                                  | from 10 to 200 cSt                               |                        |                        |                         |
| Max. level of contamination                | 18/16/13 ISO4406                                 |                        |                        |                         |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F) |                        |                        |                         |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)              |                        |                        |                         |
| Weight                                     | steel 0.012 kg (0.026 lb)                        | 0.022 kg (0.048 lb)    | 0.036 kg (0.079 lb)    | 0.069 kg (0.152 lb)     |

**NOTES** - They can be supplied preset at the required flow, to be mentioned in the order.

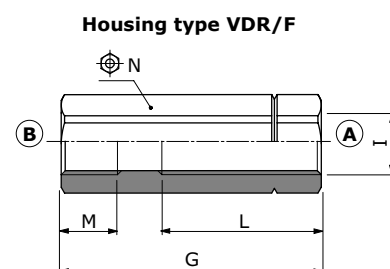
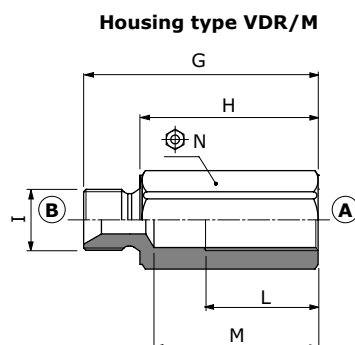
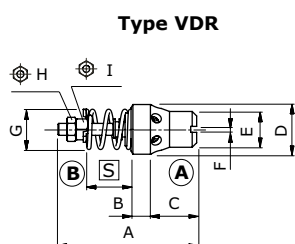
Tolerance on nominal flow rate =  $\pm 7\%$ @50 bar.

For different conditions, please contact Walvoil Sales Dpt.





### Dimension



Dimensions are in mm-in

| Valve type    | A          | B           | C            | D     | E            | F         | G            | H   | I   | S<br>min-max            |
|---------------|------------|-------------|--------------|-------|--------------|-----------|--------------|-----|-----|-------------------------|
| <b>VDR 14</b> | 39<br>1.53 | 8<br>0.31   | 11.5<br>0.45 | G 1/4 | 10<br>0.39   | -         | 10<br>0.39   | 5.5 | 5.5 | 6-10.5<br>0.236-0.413   |
| <b>VDR 38</b> | 45<br>1.77 | 6<br>0.24   | 16<br>0.63   | G 3/8 | 11.5<br>0.45 | 2<br>0.08 | 13.5<br>0.53 | 6   | 7   | 10.5-15.5<br>0.413-0.61 |
| <b>VDR 12</b> | 50<br>1.97 | 7<br>0.27   | 17<br>0.67   | G 1/2 | 16<br>0.63   | 2<br>0.08 | 18<br>0.71   | 6   | 7   | 13-19<br>0.511-0.748    |
| <b>VDR 34</b> | 60<br>2.36 | 9.5<br>0.37 | 21.5<br>0.55 | G 3/4 | 20<br>0.79   | 2<br>0.08 | 23<br>0.9    | 6   | 7   | 14-20.5<br>0.551-0.807  |

Dimensions are in mm-in

| Housing type | G           | H          | I     | L            | M            | N  |
|--------------|-------------|------------|-------|--------------|--------------|----|
| <b>14</b>    | 78<br>3.07  | 66<br>2.6  | G 1/4 | 41<br>1.61   | 61<br>2.40   | 19 |
| <b>38</b>    | 82<br>3.23  | 70<br>2.75 | G 3/8 | 41<br>1.61   | 63<br>2.48   | 22 |
| <b>12</b>    | 100<br>3.94 | 86<br>3.38 | G 1/2 | 45<br>1.77   | 79<br>3.11   | 27 |
| <b>34</b>    | 112<br>4.41 | 96<br>3.78 | G 3/4 | 55<br>2.16   | 86<br>3.39   | 32 |
| <b>14</b>    | 66<br>2.6   | -          | G 1/4 | 34<br>1.34   | 12.5<br>0.49 | 19 |
| <b>38</b>    | 70<br>2.75  | -          | G 3/8 | 37<br>1.45   | 14<br>0.55   | 22 |
| <b>12</b>    | 80<br>3.15  | -          | G 1/2 | 38.5<br>1.52 | 15<br>0.59   | 27 |
| <b>34</b>    | 100<br>3.94 | -          | G 3/4 | 54<br>2.12   | 16.5<br>0.65 | 32 |

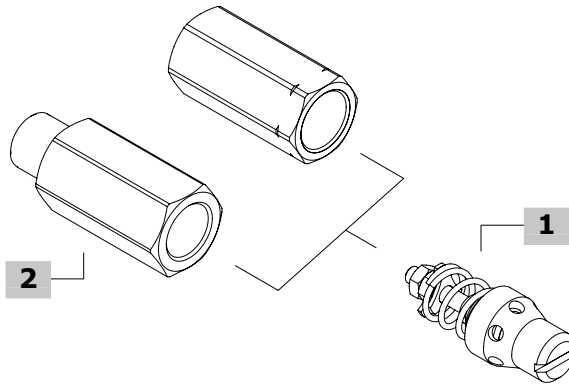
## Flow control valves

Flow control pressure compensated valves

**VDR**

## Ordering codes and description composition

VDR / F 14 - 5  
 2 1  
 Port size  
 Flow setting range



| Type | Flow setting range       |                         |                        |                          |
|------|--------------------------|-------------------------|------------------------|--------------------------|
|      | VDR 14                   | VDR 38                  | VDR 12                 | VDR 34                   |
|      | l/min<br>US gpm          | l/min<br>US gpm         | l/min<br>US gpm        | l/min<br>US gpm          |
| 1    | 1 - 1.6<br>0.26 - 0.42   | 2.5 - 4<br>0.66 - 1.06  | 16 - 21<br>4.2 - 5.6   | 37 - 50<br>9.8 - 13.2    |
| 2    | 1.6 - 2.5<br>0.42 - 0.66 | 4 - 6.3<br>1.06 - 1.66  | 21 - 28<br>5.5 - 7.4   | 50 - 67<br>13.2 - 17.7   |
| 3    | 2.5 - 4<br>0.66 - 1.06   | 6.3 - 10<br>1.66 - 2.64 | 28 - 37<br>7.4 - 9.8   | 67 - 90<br>17.7 - 23.8   |
| 4    | 4 - 6.3<br>1.06 - 1.66   | 10 - 16<br>2.64 - 4.2   | 37 - 50<br>9.8 - 13.2  | 90 - 120<br>23.8 - 31.7  |
| 5    | 6.3 - 10<br>1.66 - 2.64  | 16 - 25<br>4.2 - 6.6    | 50 - 67<br>13.2 - 17.7 | 120 - 150<br>31.7 - 39.6 |

NOTE - l/min @ 50 bar (720 psi)

### VDR complete valves

Chartridge with steel housing

| TYPE              | CODE       | DESCRIPTION                            |
|-------------------|------------|----------------------------------------|
| <b>VDR/F 14-1</b> | 1661110100 | Female-female G1/4 ports, range type 1 |
| <b>VDR/F 38-2</b> | 1661120100 | Female-female G3/8 ports, range type 2 |
| <b>VDR/F 12-2</b> | 1661130100 | Female-female G1/2 ports, range type 2 |
| <b>VDR/F 34-3</b> | 1661140100 | Female-female G3/4 ports, range type 3 |
| <b>VDR/M 14-1</b> | 1661210100 | Male-female G1/4 ports, range type 1   |
| <b>VDR/M 38-2</b> | 1661220100 | Male-female G3/8 ports, range type 2   |
| <b>VDR/M 12-2</b> | 1661230100 | Male-female G1/2 ports, range type 2   |
| <b>VDR/M 34-3</b> | 1661240100 | Male-female G3/4 ports, range type 3   |

For different configurations or SAE thread please contact our Sales Dpt.

### 2 Housing

M-F (male-female) or F-F (female-female) steel housing

| TYPE        | CODE     | DESCR.    | TYPE        | CODE     | DESCR.    |
|-------------|----------|-----------|-------------|----------|-----------|
| <b>MF14</b> | CMFVRD01 | G1/4, M-F | <b>MF03</b> | CMFVRD03 | G1/2, M-F |
| <b>FF14</b> | CFFVRD01 | G1/4, F-F | <b>FF03</b> | CFFVRD03 | G1/2, F-F |
| <b>MF02</b> | CMFVRD02 | G3/8, M-F | <b>MF04</b> | CMFVRD04 | G3/4, M-F |
| <b>FF02</b> | CFFVRD02 | G3/8, F-F | <b>FF04</b> | CFFVRD04 | G3/4, F-F |

For different configurations or SAE thread please contact our Sales Dpt.

### 1 Valve

Nominal regulated flow tolerance  $\pm 10\%$  with setting pressure  $\Delta p = 50$  bar (720 psi).

TYPE CODE DESCRIPTION

#### With G1/4 ports

|                 |            |                                              |
|-----------------|------------|----------------------------------------------|
| <b>VDR 14-1</b> | 1661010100 | Range type 1; setting 1.2 l/min (0.32 USgpm) |
| <b>VDR 14-2</b> | 1661010101 | Range type 2; setting 1.9 l/min (0.50 USgpm) |
| <b>VDR 14-3</b> | 1661010102 | Range type 3; setting 3.1 l/min (0.82 USgpm) |
| <b>VDR 14-4</b> | 1661010103 | Range type 4; setting 4.9 l/min (1.29 USgpm) |
| <b>VDR 14-5</b> | 1661010104 | Range type 5; setting 8.6 l/min (2.27 USgpm) |

#### With G3/8 ports

|                 |            |                                              |
|-----------------|------------|----------------------------------------------|
| <b>VDR 38-1</b> | 1661020100 | Range type 1; setting 3.5 l/min (0.92 USgpm) |
| <b>VDR 38-2</b> | 1661020101 | Range type 2; setting 5.5 l/min (1.45 USgpm) |
| <b>VDR 38-3</b> | 1661020102 | Range type 3; setting 8 l/min (2.11 USgpm)   |
| <b>VDR 38-4</b> | 1661020103 | Range type 4; setting 13 l/min (3.43 USgpm)  |
| <b>VDR 38-5</b> | 1661020104 | Range type 5; setting 20 l/min (5.28 USgpm)  |

#### With G1/2 ports

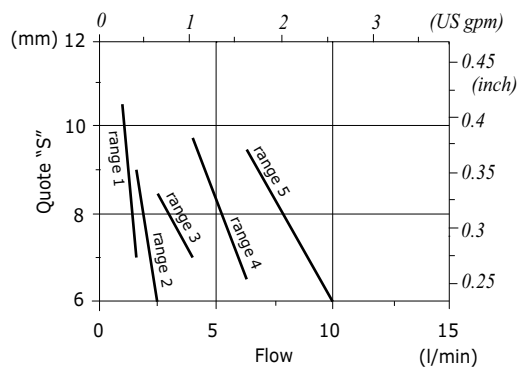
|                 |            |                                              |
|-----------------|------------|----------------------------------------------|
| <b>VDR 12-1</b> | 1661030100 | Range type 1; setting 19 l/min (5.02 USgpm)  |
| <b>VDR 12-2</b> | 1661030101 | Range type 2; setting 25 l/min (6.60 USgpm)  |
| <b>VDR 12-3</b> | 1661030102 | Range type 3; setting 30 l/min (7.92 USgpm)  |
| <b>VDR 12-4</b> | 1661030103 | Range type 4; setting 43 l/min (11.36 USgpm) |
| <b>VDR 12-5</b> | 1661030104 | Range type 5; setting 58 l/min (15.32 USgpm) |

#### With G3/4 ports

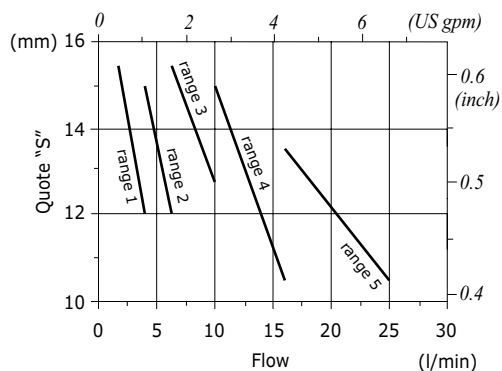
|                 |            |                                               |
|-----------------|------------|-----------------------------------------------|
| <b>VDR 34-1</b> | 1661040100 | Range type 1; setting 42 l/min (11.09 USgpm)  |
| <b>VDR 34-2</b> | 1661040101 | Range type 2; setting 61 l/min (16.11 USgpm)  |
| <b>VDR 34-3</b> | 1661040102 | Range type 3; setting 81 l/min (21.40 USgpm)  |
| <b>VDR 34-4</b> | 1661040103 | Range type 4; setting 107 l/min (28.27 USgpm) |
| <b>VDR 34-5</b> | 1661040104 | Range type 5; setting 144 l/min (38.04 USgpm) |

### Rating diagrams

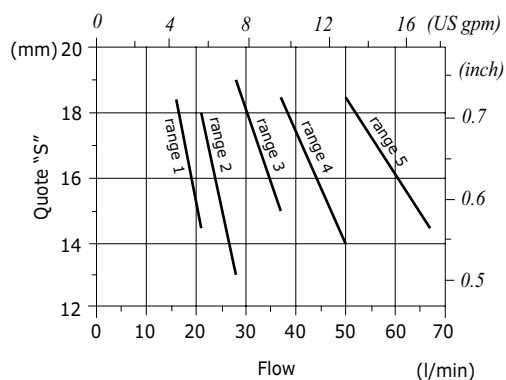
**VDR 14 pressure  
flow setting range**



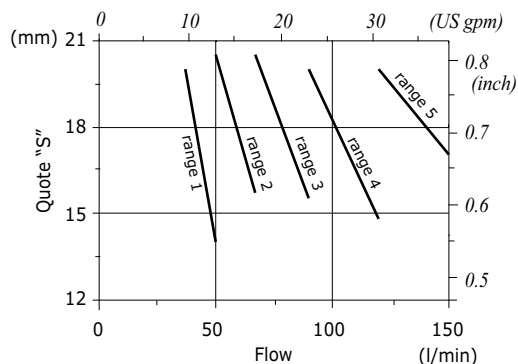
**VDR 38 pressure  
flow setting range**



**VDR 12 pressure  
flow setting range**



**VDR 34 pressure  
flow setting range**





## Type VDR/CO

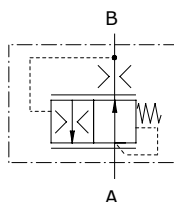
### flow control pressure compensated valves

- Cartridge compensated
- With steel housing M-F or F-F
- Flow regulator fixed type

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

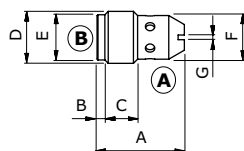
|                                                  | VDR/CO 14                                        | VDR/CO 38             | VDR/CO 12              |
|--------------------------------------------------|--------------------------------------------------|-----------------------|------------------------|
| Nominal flow from A to B                         | 15 l/min (3.96 US gpm)                           | 25 l/min (6.6 US gpm) | 60 l/min (15.9 US gpm) |
| Nominal flow from B to A                         | 10 l/min (2.6 US gpm)                            | 16 l/min (4.2 US gpm) | 45 l/min (11.9 US gpm) |
| Max. pressure                                    | 350 bar (5100 psi)                               |                       |                        |
| Fluid                                            | mineral based oil                                |                       |                        |
| Viscosity                                        | from 10 to 200 cSt                               |                       |                        |
| Max. level of contamination                      | 18/16/13 ISO4406                                 |                       |                        |
| Fluid temperature                                | with NBR seals from -20°C (-4°F) to 80°C (176°F) |                       |                        |
| Environmental temperature for working conditions | from -40°C (-40°F) to 100°C (212°F)              |                       |                        |
| Weight                                           | steel 0.01 kg (0.022 lb)                         | 0.026 kg (0.057 lb)   | 0.05 kg (0.11 lb)      |

NOTE - For different conditions, please contact Walvoil Sales Dpt.

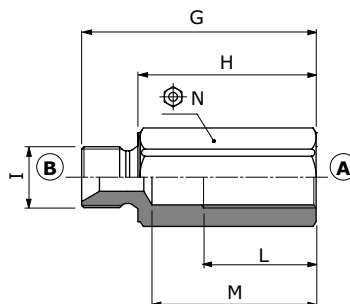


### Dimension

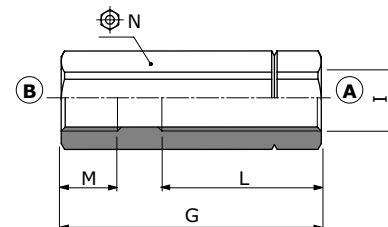
Type VDR/CO



Housing type VDR/CO/M



Housing type VDR/CO/F



Dimensions are in mm-in

| Valve type       | A          | B           | C            | D     | E            | F            | G           |
|------------------|------------|-------------|--------------|-------|--------------|--------------|-------------|
| <b>VDR/CO 14</b> | 23<br>0.9  | 1.5<br>0.06 | 7<br>0.27    | G 1/4 | -            | 10.5<br>0.41 | 1.5<br>0.06 |
| <b>VDR/CO 38</b> | 28<br>1.1  | 2.5<br>0.1  | 10.5<br>0.41 | G 3/8 | 14.5<br>0.57 | 14<br>0.55   | 1.5<br>0.06 |
| <b>VDR/CO 12</b> | 36<br>1.42 | 5<br>0.2    | 12<br>0.47   | G 1/2 | 18<br>0.71   | 17<br>0.67   | 2<br>0.08   |

Dimensions are in mm-in

| Housing type | G          | H          | I     | L          | M            | N  |
|--------------|------------|------------|-------|------------|--------------|----|
| <b>14</b>    | 62<br>2.44 | 50<br>1.97 | G 1/4 | 42<br>1.65 | 45<br>1.77   | 19 |
| <b>MF 38</b> | 82<br>3.23 | 70<br>2.75 | G 3/8 | 41<br>1.61 | 63<br>2.48   | 22 |
| <b>12</b>    | 80<br>3.15 | 66<br>2.60 | G 1/2 | 50<br>1.97 | 57<br>2.32   | 27 |
| <b>14*</b>   | 50<br>1.97 | -          | G 1/4 | 21<br>0.83 | 12.5<br>0.49 | 19 |
| <b>FF 38</b> | 70<br>2.75 | -          | G 3/8 | 37<br>1.46 | 14<br>0.55   | 22 |
| <b>12</b>    | 80<br>3.15 | -          | G 1/2 | 50<br>1.97 | 16<br>0.63   | 27 |

NOTE - (\*) valve to be inserted in the reverse direction.

## Flow control valves

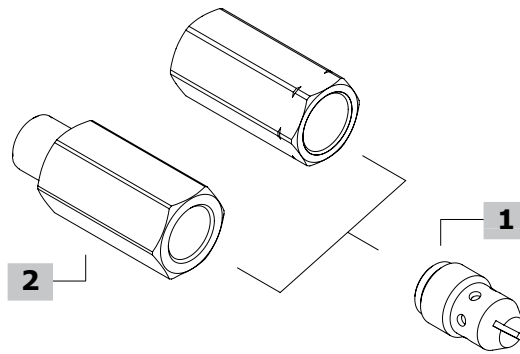
Flow control pressure compensated valves

**VDR/CO**

### Ordering codes and description composition

VDR/CO / F **14** - **2** l/min

Port size: **14**  
Nominal flow: **2**



#### VDR/CO complete valves

Chartridge with steel housing

| TYPE                  | CODE       | DESCRIPTION                                           |
|-----------------------|------------|-------------------------------------------------------|
| <b>VDR/CO/F 14-2</b>  | 1661610100 | Female-female G1/4 ports, range 2 l/min - 0.53 US gpm |
| <b>VDR/CO/F 38-2</b>  | 1661620100 | Female-female G3/8 ports, range 2 l/min - 0.53 US gpm |
| <b>VDR/CO/F 12-12</b> | 1661630100 | Female-female G1/2 ports, range 12 l/min - 3.2 US gpm |
| <b>VDR/CO/M 14-2</b>  | 1661710100 | Male-female G1/4 ports, range 2 l/min - 0.53 US gpm   |
| <b>VDR/CO/M 38-2</b>  | 1661720100 | Male-female G3/8 ports, range 2 l/min - 0.53 US gpm   |
| <b>VDR/CO/M 12-12</b> | 1661730100 | Male-female G1/2 ports, range 12 l/min - 3.2 US gpm   |

For different configurations or SAE thread please contact our Sales Dpt.

#### 2 Housing

M-F (male-female) or F-F (female-female) steel housing

| TYPE        | CODE          | DESCR.    | TYPE        | CODE     | DESCR.    |
|-------------|---------------|-----------|-------------|----------|-----------|
| <b>MF14</b> | CMFVSC01      | G1/4, M-F | <b>MF03</b> | CMFVSC03 | G1/2, M-F |
| <b>FF14</b> | CFFVUBA-VSC01 | G1/4, F-F | <b>FF03</b> | CFFVSC03 | G1/2, F-F |
| <b>MF02</b> | CMFVSC02      | G3/8, M-F |             |          |           |
| <b>FF02</b> | CFFVSC02      | G3/8, F-F |             |          |           |

For different configurations or SAE thread please contact our Sales Dpt.

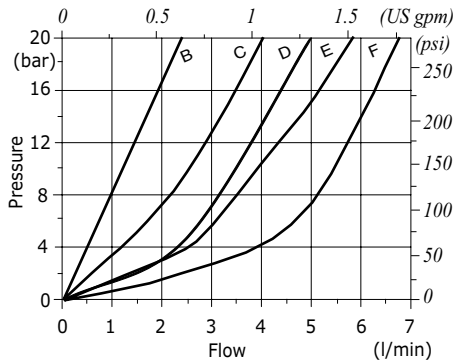
#### 1 Valve

| TYPE                   | CODE       | DESCRIPTION                         |
|------------------------|------------|-------------------------------------|
| <b>With G1/4 ports</b> |            |                                     |
| <b>VDR/CO 14-1</b>     | 1661510100 | Nominal flow 1 l/min - 0.26 US gpm  |
| <b>VDR/CO 14-2</b>     | 1661510101 | Nominal flow 2 l/min - 0.53 US gpm  |
| <b>VDR/CO 14-3</b>     | 1661510102 | Nominal flow 3 l/min - 0.79 US gpm  |
| <b>VDR/CO 14-4</b>     | 1661510103 | Nominal flow 4 l/min - 1.06 US gpm  |
| <b>VDR/CO 14-5</b>     | 1661510104 | Nominal flow 5 l/min - 1.32 US gpm  |
| <b>VDR/CO 14-6</b>     | 1661510105 | Nominal flow 6 l/min - 1.58 US gpm  |
| <b>VDR/CO 14-7</b>     | 1661510106 | Nominal flow 7 l/min - 1.85 US gpm  |
| <b>VDR/CO 14-8</b>     | 1661510107 | Nominal flow 8 l/min - 2.11 US gpm  |
| <b>VDR/CO 14-9</b>     | 1661510108 | Nominal flow 9 l/min - 2.38 US gpm  |
| <b>VDR/CO 14-10</b>    | 1661510109 | Nominal flow 10 l/min - 2.64 US gpm |
| <b>With G3/8 ports</b> |            |                                     |
| <b>VDR/CO 38-2</b>     | 1661520100 | Nominal flow 2 l/min - 0.53 US gpm  |
| <b>VDR/CO 38-4</b>     | 1661520101 | Nominal flow 4 l/min - 1.06 US gpm  |
| <b>VDR/CO 38-6</b>     | 1661520102 | Nominal flow 6 l/min - 1.58 US gpm  |
| <b>VDR/CO 38-8</b>     | 1661520103 | Nominal flow 8 l/min - 2.11 US gpm  |
| <b>VDR/CO 38-10</b>    | 1661520104 | Nominal flow 10 l/min - 2.64 US gpm |
| <b>VDR/CO 38-12</b>    | 1661520105 | Nominal flow 12 l/min - 3.2 US gpm  |
| <b>VDR/CO 38-14</b>    | 1661520106 | Nominal flow 14 l/min - 3.7 US gpm  |
| <b>VDR/CO 38-16</b>    | 1661520107 | Nominal flow 16 l/min - 4.2 US gpm  |
| <b>With G1/2 ports</b> |            |                                     |
| <b>VDR/CO 12-12</b>    | 1661530100 | Nominal flow 12 l/min - 3.2 US gpm  |
| <b>VDR/CO 12-16</b>    | 1661530101 | Nominal flow 16 l/min - 4.2 US gpm  |
| <b>VDR/CO 12-20</b>    | 1661530102 | Nominal flow 20 l/min - 5.3 US gpm  |
| <b>VDR/CO 12-25</b>    | 1661530103 | Nominal flow 25 l/min - 6.6 US gpm  |
| <b>VDR/CO 12-30</b>    | 1661530104 | Nominal flow 30 l/min - 7.9 US gpm  |
| <b>VDR/CO 12-35</b>    | 1661530105 | Nominal flow 35 l/min - 9.3 US gpm  |
| <b>VDR/CO 12-40</b>    | 1661530106 | Nominal flow 40 l/min - 10.6 US gpm |
| <b>VDR/CO 12-45</b>    | 1661530107 | Nominal flow 45 l/min - 11.9 US gpm |

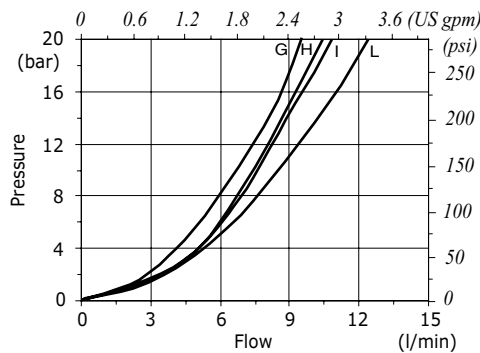
NOTE - Nominal flow  $\pm 10\%$  @ 100 bar - 1440 psi

### Rating diagrams

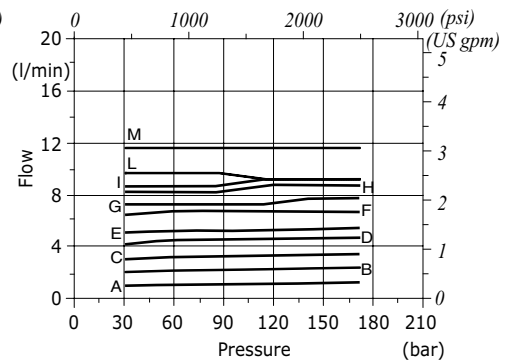
**VDR/CO 14 pressure drop vs. flow  
(A→B)  
B-C-D-E-F nominal flow**



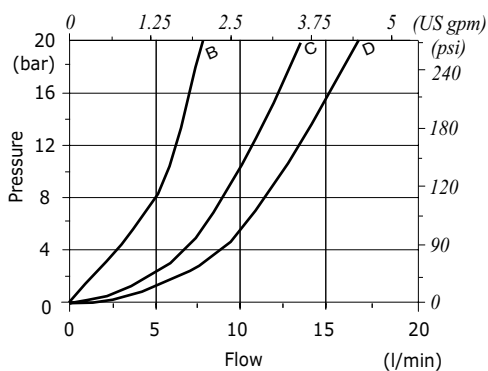
**VDR/CO 14 pressure drop vs. flow  
(A→B)  
G-H-I-L nominal flow**



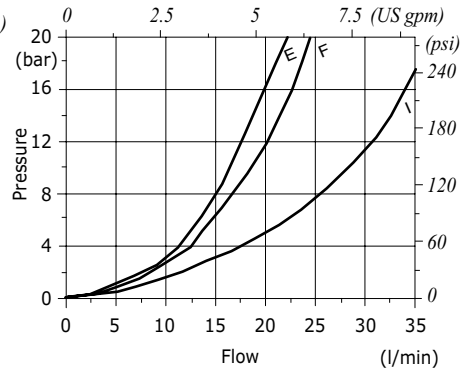
**VDR/CO 14 pressure drop vs. flow  
(B→A)  
compensation diagram**



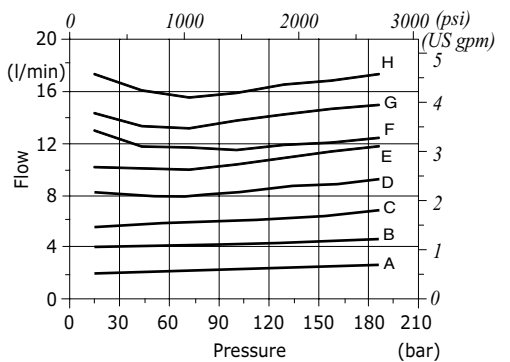
**VDR/CO 38 pressure drop vs. flow  
(A→B)  
B-C-D nominal flow**



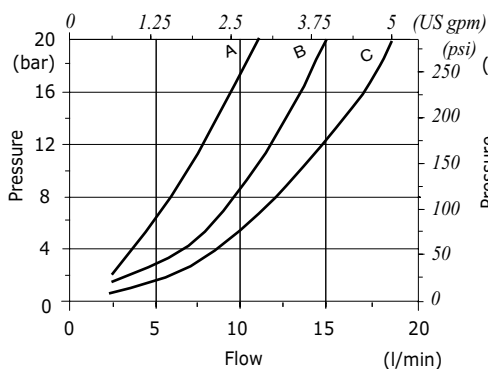
**VDR/CO 38 pressure drop vs. flow  
(A→B)  
E-F-I nominal flow**



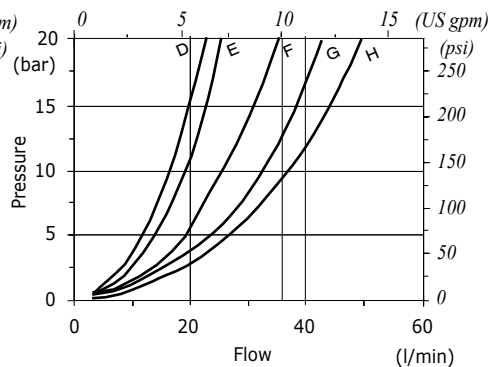
**VDR/CO 38 pressure drop vs. flow  
(B→A)  
compensation diagram**



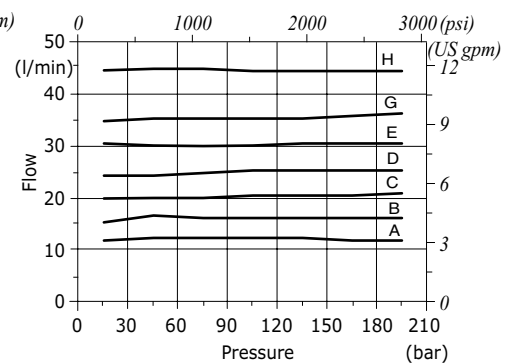
**VDR/CO 12 pressure drop vs. flow  
(A→B)  
A-B-C-D nominal flow**



**VDR/CO 12 pressure drop vs. flow  
(A→B)  
E-F-I nominal flow**



**VDR/CO 12 pressure drop vs. flow  
(B→A)  
compensation diagram**





## Type VSCOR.... flow control pressure compensated valves

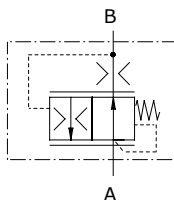
- Pop-in cartridge compensated
- Flow regulator fixed type

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

### VSCOR01..

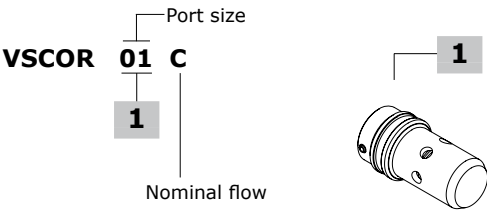
|                                                     |                                                  |
|-----------------------------------------------------|--------------------------------------------------|
| Nominal flow from A to B                            | 15 l/min (4.0 US gpm)                            |
| Nominal flow from B to A                            | 10 l/min (2.6 US gpm)                            |
| Max. pressure                                       | 350 bar (5100 psi)                               |
| Fluid                                               | mineral based oil                                |
| Viscosity                                           | from 10 to 200 cSt                               |
| Max. level of contamination                         | 18/16/13 ISO4406                                 |
| Fluid temperature                                   | with NBR seals from -20°C (-4°F) to 80°C (176°F) |
| Environmental temperature<br>for working conditions | from -40°C (-40°F) to 100°C (212°F)              |
| Weight                                              | steel 0.014 kg (0.03 lb)                         |

NOTE - For different conditions, please contact Walvoil Sales Dpt.





Ordering codes and description composition



| Nominal flow |                |
|--------------|----------------|
| Type         | VSCOR 01       |
|              | l/min - US gpm |
| A            | 1 - 0.26       |
| B            | 2 - 0.53       |
| C            | 3 - 0.79       |
| D            | 4 - 1.06       |
| E            | 5 - 1.32       |
| F            | 6 - 1.58       |
| G            | 7 - 1.85       |
| H            | 8 - 2.11       |
| I            | 9 - 2.38       |
| L            | 10 - 2.64      |

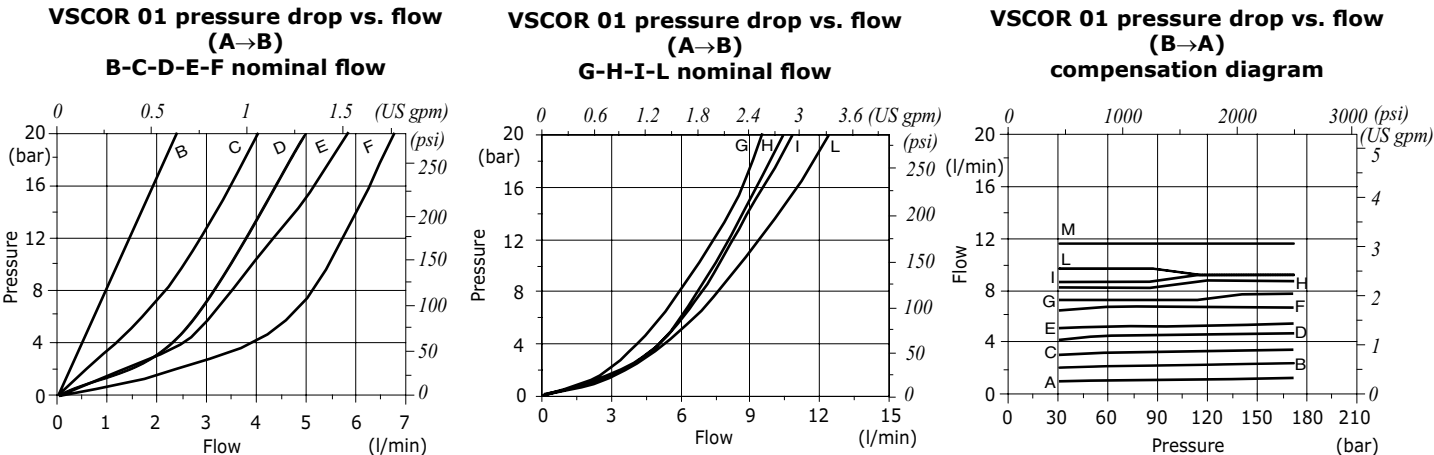
Complete valves

| TYPE                                 | CODE       | DESCRIPTION         |
|--------------------------------------|------------|---------------------|
| <b>With 01 port 12.7 mm (0.5 in)</b> |            |                     |
| <b>VSCOR01A</b>                      | 1662010100 | Nominal flow type A |
| <b>VSCOR01B</b>                      | 1662010101 | Nominal flow type B |
| <b>VSCOR01C</b>                      | 1662010102 | Nominal flow type C |

For different configurations or SAE thread please contact our Sales Dpt.

NOTE - l/min @ 50 bar - 720 psi

Dimension





## Type VDFR

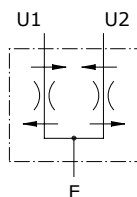
### flow control pressure compensated valves

- Flow divider combiners

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                            |                 | <b>VDFR<br/>38-12</b>                                                                                                     | <b>VDFR<br/>38-24</b> | <b>VDFR<br/>38-40</b> | <b>VDFR<br/>12-12</b> | <b>VDFR<br/>12-24</b> | <b>VDFR<br/>12-40</b> | <b>VDFR<br/>34-65</b> | <b>VDFR<br/>34-90</b> | <b>VDFR<br/>100-150</b> | <b>VDFR<br/>114-250</b>               |
|--------------------------------------------|-----------------|---------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-------------------------|---------------------------------------|
| Nominal flow                               | l/min<br>US gpm | 4÷12<br>1.1÷3.2                                                                                                           | 12÷24<br>3.2÷6.3      | 24÷38<br>6.3÷10.04    | 6.5÷12<br>1.71÷3.2    | 13÷23<br>3.43÷6.07    | 24÷40<br>6.3÷10.6     | 34÷65<br>8.98÷17.17   | 40÷90<br>10.6÷23.8    | 90÷150<br>23.8÷39.6     | 200÷250<br>52.8÷66                    |
| Max. pressure                              |                 | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi)                                                    |                       |                       |                       |                       |                       |                       |                       |                         | Steel body<br>= 350 bar<br>(5100 psi) |
| Maximum division error                     |                 | ± 5% of the oil flow in U1 or U2 and 120 bar (1750 psi) pressure difference between U1 and U2.<br>(Division rate 50%÷50%) |                       |                       |                       |                       |                       |                       |                       |                         |                                       |
| Fluid                                      |                 | mineral based oil                                                                                                         |                       |                       |                       |                       |                       |                       |                       |                         |                                       |
| Viscosity                                  |                 | from 10 to 200 cSt                                                                                                        |                       |                       |                       |                       |                       |                       |                       |                         |                                       |
| Max. level of contamination                |                 | 18/16/13 ISO4406                                                                                                          |                       |                       |                       |                       |                       |                       |                       |                         |                                       |
| Fluid temperature                          |                 | with NBR seals from -20°C (-4°F) to 80°C (176°F)                                                                          |                       |                       |                       |                       |                       |                       |                       |                         |                                       |
| Environmental temp. for working conditions |                 | from -40°C (-40°F) to 100°C (212°F)                                                                                       |                       |                       |                       |                       |                       |                       |                       |                         |                                       |
| Weight                                     | alum.           | 0.82 kg<br>(1.81 lb)                                                                                                      | 0.82 kg<br>(1.81 lb)  | 0.87 kg<br>(1.92 lb)  | 0.83 kg<br>(1.83 lb)  | 0.83 kg<br>(1.83 lb)  | 0.82 kg<br>(1.81 lb)  | 0.92 kg<br>(2.03 lb)  | 2.16 kg<br>(4.76 lb)  | 2.09 kg<br>(4.61 lb)    | -                                     |
|                                            | steel           | 1.98 kg<br>(4.37 lb)                                                                                                      | 1.98 kg<br>(4.37 lb)  | -                     | -                     | -                     | 1.97 kg<br>(4.34 lb)  | -                     | 4.42 kg<br>(9.74 lb)  | 4.29 kg<br>(9.46 lb)    | 6.58 kg<br>(14.51 lb)                 |

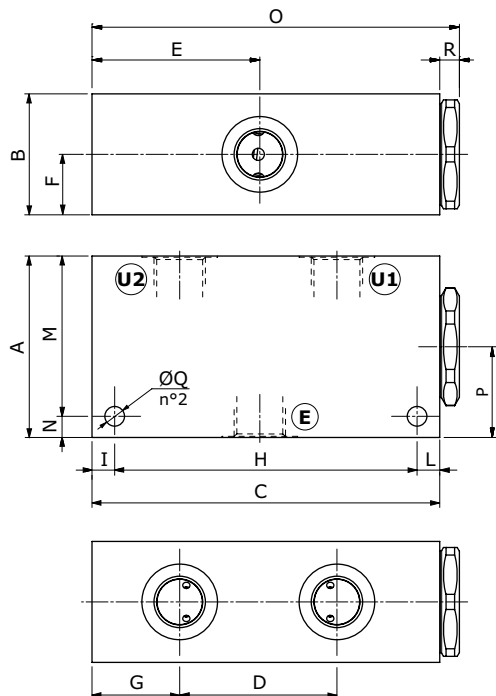
NOTE - For different conditions, please contact Walvoil Sales Dpt.



### Dimensions

#### VDFR 38-12 - VDFR 38-24 - VDFR 12-40

These valves are supplied, as standard, without mounting holes.  
Configurations with mounting holes (see dimension Q) are on request.



| Valve type | E    | U1 - U2 | Valve type   | E      | U1 - U2 |
|------------|------|---------|--------------|--------|---------|
| VDFR 38-12 | G3/8 | G3/8    | VDFR 12-40   | G1/2   | G3/8    |
| VDFR 38-24 | G3/8 | G3/8    | VDFR 34-65   | G3/4   | G1/2    |
| VDFR 38-40 | G3/8 | G3/8    | VDFR 34-90   | G3/4   | G1/2    |
| VDFR 12-12 | G1/2 | G3/8    | VDFR 100-150 | G1"    | G3/4    |
| VDFR 12-24 | G1/2 | G3/8    | VDFR 114-250 | G1"1/4 | G1"     |

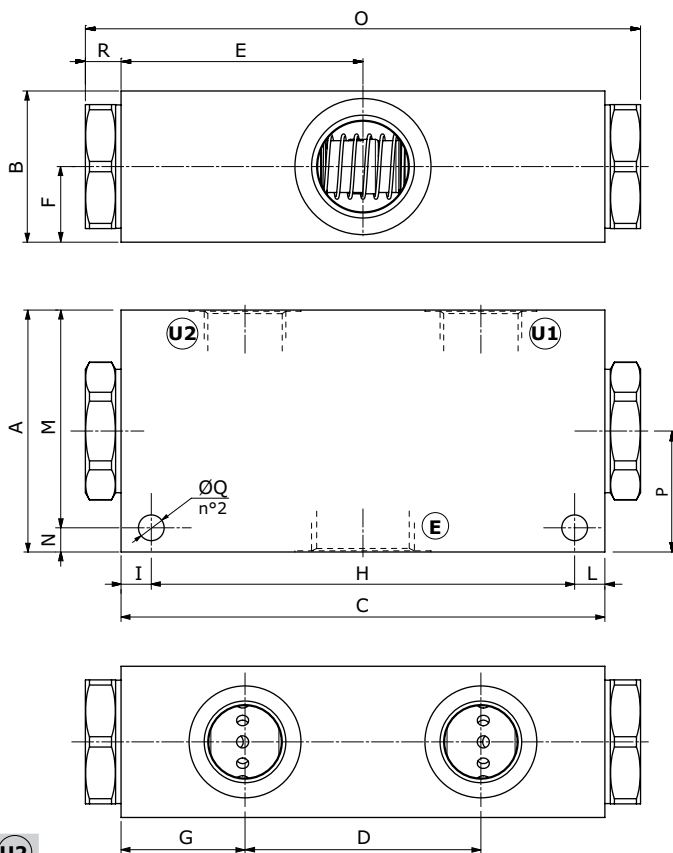
  

| Valve type       | E     | U1 - U2 |
|------------------|-------|---------|
| VDFR 38-12/SAE   | SAE8  | SAE8    |
| VDFR 38-24/SAE   | SAE8  | SAE8    |
| VDFR 12-40/SAE   | SAE10 | SAE8    |
| VDFR 34-90/SAE   | SAE12 | SAE10   |
| VDFR 100-150/SAE | SAE16 | SAE12   |

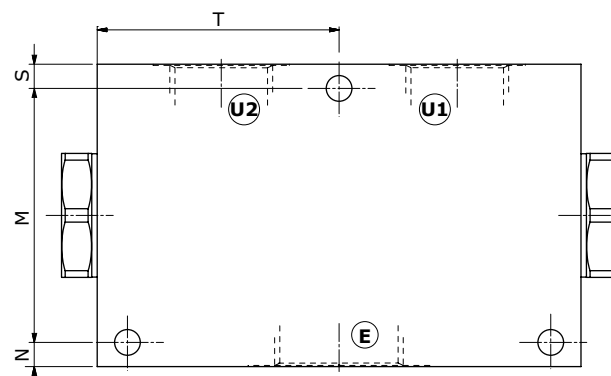
Dimensions are in mm-in

| Valve type       | A    | B    | C    | D    | E    | F    | G    | H    | I     | L     | M    | N     | O     | P    | ØQ    | R     | S     | T    |
|------------------|------|------|------|------|------|------|------|------|-------|-------|------|-------|-------|------|-------|-------|-------|------|
| VDFR 38-12       | 60   | 40   | 115  | 52   | 55.5 | 20   | 29   | 100  | 7.5   | 7.5   | 53   | 7     | 121.5 | 30   | 6.5   | 6.5   | -     | -    |
| VDFR 38-12/SAE   | 2.36 | 1.57 | 4.53 | 2.05 | 2.19 | 0.79 | 1.14 | 3.94 | 0.295 | 0.295 | 2.09 | 0.276 | 4.78  | 1.18 | 0.256 | 0.256 | -     | -    |
| VDFR 38-24/38-40 | 60   | 40   | 115  | 52   | 55.5 | 20   | 29   | 100  | 7.5   | 7.5   | 53   | 7     | 121.5 | 30   | 6.5   | 6.5   | -     | -    |
| VDFR 38-24/SAE   | 2.36 | 1.57 | 4.53 | 2.05 | 2.19 | 0.79 | 1.14 | 3.94 | 0.295 | 0.295 | 2.09 | 0.276 | 4.78  | 1.18 | 0.256 | 0.256 | -     | -    |
| VDFR 12-12/12-24 | 60   | 40   | 115  | 52   | 55.5 | 20   | 29   | 100  | 7.5   | 7.5   | 53   | 7     | 121.5 | 30   | 6.5   | 6.5   | -     | -    |
| VDFR 12-40/SAE   | 2.36 | 1.57 | 4.53 | 2.05 | 2.19 | 0.79 | 1.14 | 3.94 | 0.295 | 0.295 | 2.09 | 0.276 | 4.78  | 1.18 | 0.256 | 0.256 | -     | -    |
| VDFR 34-65/34-90 | 80   | 50   | 160  | 78   | 80   | 25   | 41   | 140  | 10    | 10    | 72   | 8     | 183.6 | 40   | 8.5   | 11.8  | -     | -    |
| VDFR 34-90/SAE   | 3.15 | 1.97 | 6.30 | 3.07 | 3.15 | 0.98 | 1.61 | 5.51 | 0.394 | 0.394 | 2.83 | 0.315 | 7.23  | 1.57 | 0.335 | 0.46  | -     | -    |
| VDFR 100-150     | 80   | 50   | 160  | 78   | 80   | 25   | 41   | 140  | 10    | 10    | 72   | 8     | 183.6 | 40   | 8.5   | 11.8  | -     | -    |
| VDFR 100-150/SAE | 3.15 | 1.97 | 6.30 | 3.07 | 3.15 | 0.98 | 1.61 | 5.51 | 0.394 | 0.394 | 2.83 | 0.315 | 7.23  | 1.57 | 0.335 | 0.46  | -     | -    |
| VDFR 114-250     | 100  | 60   | 160  | 78   | 80   | 30   | 41   | 140  | 10    | 10    | 84   | 8     | 183.6 | 50   | 8.5   | 11.8  | 8     | 80   |
|                  | 3.94 | 2.36 | 6.30 | 3.07 | 3.15 | 1.18 | 1.61 | 5.51 | 0.394 | 0.394 | 3.31 | 0.315 | 7.23  | 1.97 | 0.335 | 0.46  | 0.315 | 3.15 |

#### VDFR 34-65 - VDFR 34-90 - VDFR 100-150



#### VDFR 114-250



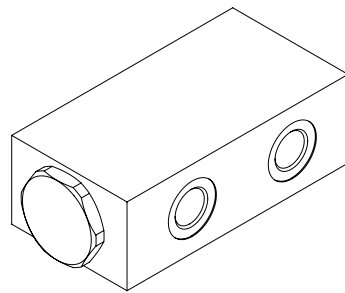
## Flow control valves

Flow control pressure compensated valves

**VD FR**

## Ordering codes and description composition

Port size  
**VD FR 38-12**



### VD FR complete valves

#### 50%-50% Divide ratio

| TYPE                  | CODE       | DESCRIPTION                |
|-----------------------|------------|----------------------------|
| <b>VD FR 38-12</b>    | 1650021100 | Aluminium body, G3/8 ports |
| <b>VD FR 38-24</b>    | 1650021101 | Aluminium body, G3/8 ports |
| <b>VD FR 38-40</b>    | 1650021137 | Aluminium body, G3/8 ports |
| <b>VD FR 12-12</b>    | 1650031119 | Aluminium body, G1/2 ports |
| <b>VD FR 12-24</b>    | 1650031120 | Aluminium body, G1/2 ports |
| <b>VD FR 12-40</b>    | 1650031100 | Aluminium body, G1/2 ports |
| <b>VD FR 34-65</b>    | 1650041107 | Aluminium body, G3/4 ports |
| <b>VD FR 34-90</b>    | 1650041100 | Aluminium body, G3/4 ports |
| <b>VD FR 100-150</b>  | 1650051100 | Aluminium body, G1" ports  |
| <b>VD FR 38-12/ac</b> | 1650022100 | Steel body, G3/8 ports     |
| <b>VD FR 38-24/ac</b> | 1650022101 | Steel body, G3/8 ports     |

### VD FR complete valves (continue)

#### 50%-50% Divide ratio

| TYPE                        | CODE       | DESCRIPTION                 |
|-----------------------------|------------|-----------------------------|
| <b>VD FR 12-40/ac</b>       | 1650032100 | Steel body, G1/2 ports      |
| <b>VD FR 34-90/ac</b>       | 1650042101 | Steel body, G3/4 ports      |
| <b>VD FR 100-150/ac</b>     | 1650052100 | Steel body, G1" ports       |
| <b>VD FR 114-250/ac</b>     | 1650062100 | Steel body, G1 1/4 ports    |
| <b>VD FR 38-12/SAE</b>      | 1650021202 | Aluminium body, SAE8 ports  |
| <b>VD FR 38-24/SAE</b>      | 1650021203 | Aluminium body, SAE8 ports  |
| <b>VD FR 12-40/SAE</b>      | 1650031201 | Aluminium body, SAE10 ports |
| <b>VD FR 34-90/SAE</b>      | 1650041200 | Aluminium body, SAE12 ports |
| <b>VD FR 34-90/SAE/ac</b>   | 1650042200 | Steel body, SAE12 ports     |
| <b>VD FR 100-150/SAE/ac</b> | 1650052200 | Steel body, SAE16 ports     |

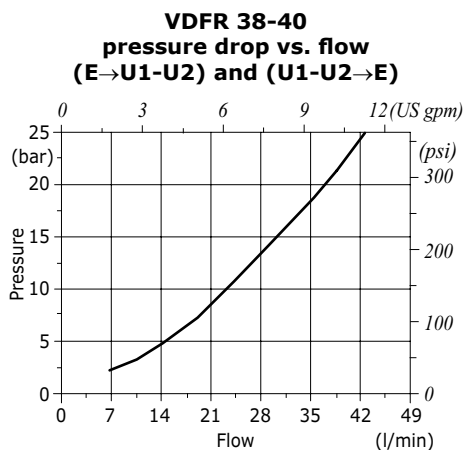
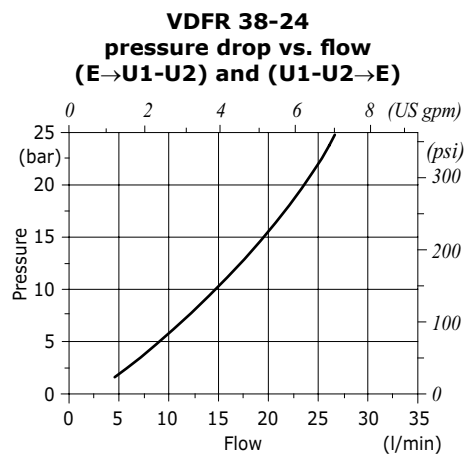
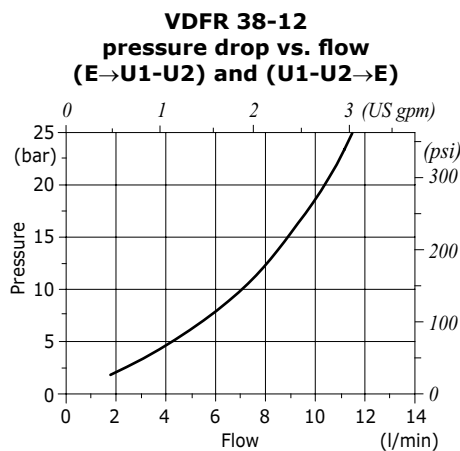
Note: special divide ratios 33%÷66% - 30%÷70% - 20%÷80% - 25%÷75% - 40%÷60% for VD FR 38-12, 38-24, 12-40 and 34-90. 33%÷66%-40%÷60% for VD FR 100-150

For VD FR 114-250 please contact our Sales Dept.

Mounting holes on request (standard on VD FR 34-90 - VD FR 100-150 and VD FR 114-250)

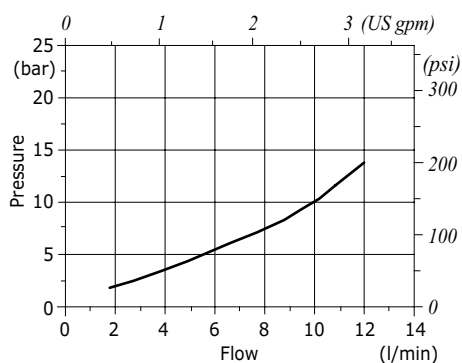
For other steel body configurations, SAE thread and configurations with FPM (Viton) seals, please contact our Sales Dept.

## Rating diagrams

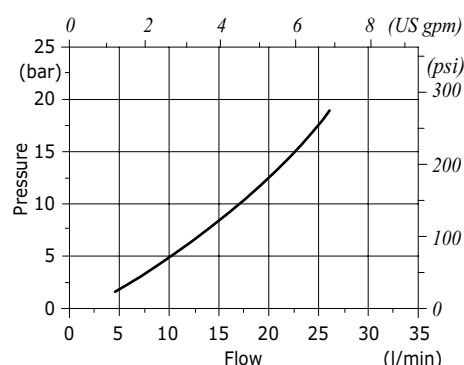


### Rating diagrams

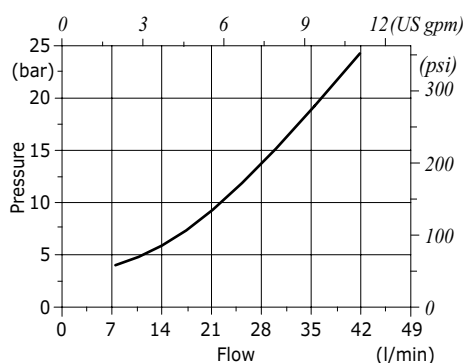
**VDFR 12-12**  
pressure drop vs. flow  
(E→U1-U2) and (U1-U2→E)



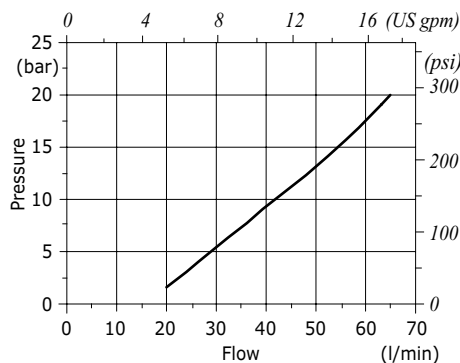
**VDFR 12-24**  
pressure drop vs. flow  
(E→U1-U2) and (U1-U2→E)



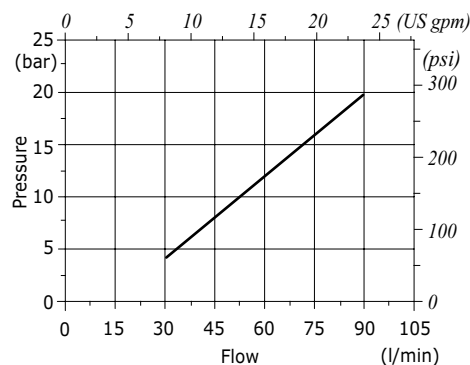
**VDFR 12-40**  
pressure drop vs. flow  
(E→U1-U2) and (U1-U2→E)



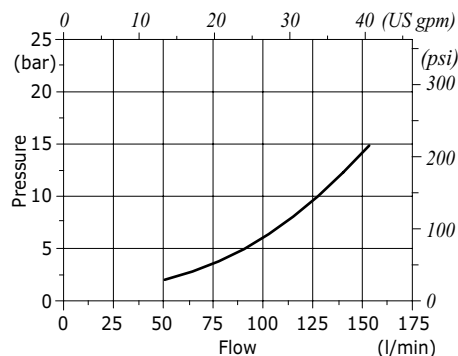
**VDFR 34-65**  
pressure drop vs. flow  
(E→U1-U2) and (U1-U2→E)



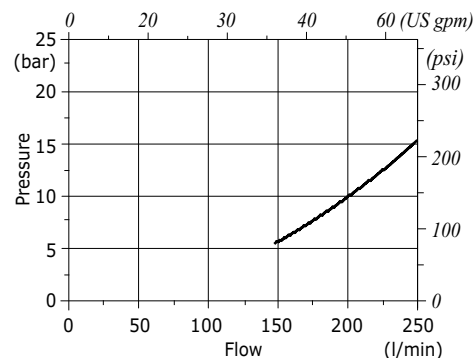
**VDFR 34-90**  
pressure drop vs. flow  
(E→U1-U2) and (U1-U2→E)

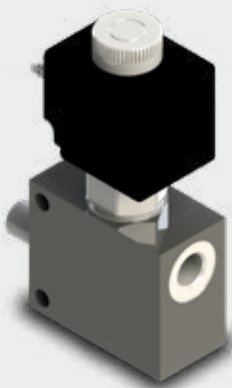


**VDFR 100-150**  
pressure drop vs. flow  
(E→U1-U2) and (U1-U2→E)



**VDFR 114-250**  
pressure drop vs. flow  
(E→U1-U2) and (U1-U2→E)





**Type VE/B**  
**directional solenoid valves**

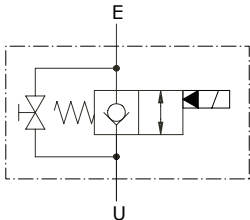
- Two way
- With emergency
- Pilot operated

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

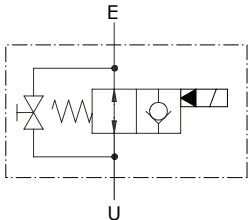
|                                            | VE/B 14                                                                | VE/B 38                   | VE/B 12                   | VE/B 34                   | VE/B 100                   |                   |
|--------------------------------------------|------------------------------------------------------------------------|---------------------------|---------------------------|---------------------------|----------------------------|-------------------|
| Nominal flow                               | 20 l/min<br>(5.3 US gpm)                                               | 40 l/min<br>(10.6 US gpm) | 60 l/min<br>(15.8 US gpm) | 75 l/min<br>(19.8 US gpm) | 160 l/min<br>(42.3 US gpm) |                   |
| Max. pressure                              | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                           |                           |                           |                            |                   |
| Oil leakage                                | 0.25 cm³/min - 0.015 in³/min. (2 drops) at 210 bar - 3050 psi          |                           |                           |                           |                            |                   |
| Fluid                                      | mineral based oil                                                      |                           |                           |                           |                            |                   |
| Viscosity                                  | from 10 to 200 cSt                                                     |                           |                           |                           |                            |                   |
| Max. level of contamination                | 18/16/13 ISO4406                                                       |                           |                           |                           |                            |                   |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F)                       |                           |                           |                           |                            |                   |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                                    |                           |                           |                           |                            |                   |
| Weight                                     | aluminium                                                              | 0.39 kg (0.86 lb)         | 0.39 kg (0.86 lb)         | 1.10 kg (2.43 lb)         | 1.08 kg (2.38 lb)          | 1.58 kg (3.48 lb) |
|                                            | steel                                                                  | 0.77 kg (1.70 lb)         | 0.74 kg (1.63 lb)         | 1.93 kg (4.25 lb)         | 1.85 kg (4.08 lb)          | 2.90 kg (6.39 lb) |

NOTE - For different conditions, please contact Walvoil Sales Dpt.

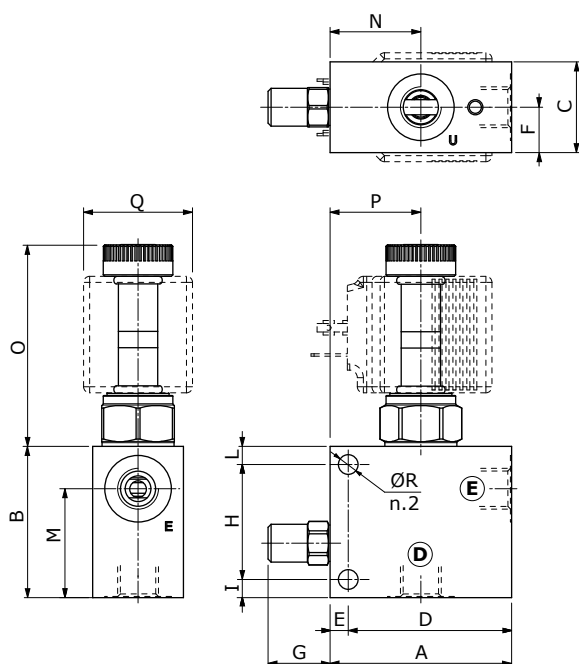
**Normally closed configuration (NC)**



**Normally open configuration (NA)**



## Dimensions



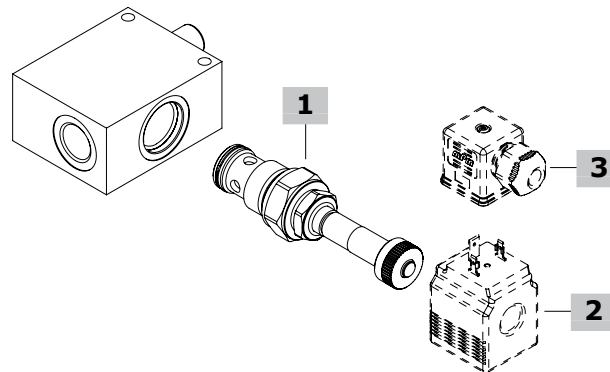
| Valve type | U    | E    |
|------------|------|------|
| VE/B 14    | G1/4 | G1/4 |
| VE/B 38    | G3/8 | G3/8 |
| VE/B 12    | G1/2 | G1/2 |
| VE/B 34    | G3/4 | G3/4 |
| VE/B 100   | G1"  | G1"  |

Dimensions are in mm-in

| Valve type | A    | B    | C    | D    | E     | F    | G    | H    | I     | L     | M    | N    | O    |      | P    | Q    | ØR    |
|------------|------|------|------|------|-------|------|------|------|-------|-------|------|------|------|------|------|------|-------|
|            |      |      |      |      |       |      |      |      |       |       |      |      | (NA) | (NC) |      |      |       |
| VE/B 14    | 60   | 50   | 30   | 54   | 6     | 15   | 20   | 38   | 6     | 6     | 36   | 30   | 66.7 | 62.8 | 30   | 36   | 6.5   |
|            | 2.36 | 1.97 | 1.18 | 2.13 | 0.236 | 0.59 | 0.79 | 1.50 | 0.236 | 0.236 | 1.42 | 1.18 | 2.63 | 2.47 | 1.18 | 1.42 | 0.256 |
| VE/B 38    | 60   | 50   | 30   | 54   | 6     | 15   | 20   | 38   | 6     | 6     | 36   | 30   | 66.7 | 62.8 | 30   | 36   | 6.5   |
|            | 2.36 | 1.97 | 1.18 | 2.13 | 0.236 | 0.59 | 0.79 | 1.50 | 0.236 | 0.236 | 1.42 | 1.18 | 2.63 | 2.47 | 1.18 | 1.42 | 0.256 |
| VE/B 12    | 80   | 65   | 40   | 74   | 6     | 20   | 23   | 53   | 6     | 6     | 43   | 40   | 86.4 | 81   | 40   | 36.5 | 6.5   |
|            | 3.15 | 2.56 | 1.57 | 2.91 | 0.236 | 0.79 | 0.91 | 2.09 | 0.236 | 0.236 | 1.69 | 1.57 | 3.40 | 3.19 | 1.57 | 1.44 | 0.256 |
| VE/B 34    | 80   | 65   | 40   | 74   | 6     | 20   | 23   | 53   | 6     | 6     | 43   | 40   | 86.4 | 81   | 40   | 36.5 | 6.5   |
|            | 3.15 | 2.56 | 1.57 | 2.91 | 0.236 | 0.79 | 0.91 | 2.09 | 0.236 | 0.236 | 1.69 | 1.57 | 3.40 | 3.19 | 1.57 | 1.44 | 0.256 |
| VE/B 100   | 90   | 80   | 50   | 82.5 | 7.5   | 25   | 23   | 65   | 7.5   | 7.5   | 49   | 43   | 79.4 | 74.2 | 43   | 36.5 | 8.5   |
|            | 3.54 | 3.15 | 1.97 | 3.25 | 0.295 | 0.98 | 0.91 | 2.56 | 0.295 | 0.295 | 1.93 | 1.69 | 3.13 | 2.92 | 1.69 | 1.44 | 0.335 |

## Ordering codes and description composition

Port size  
**VE/B 14/NA**  
**1**

**VE/B complete valves**

| TYPE                                                     | CODE       | DESCRIPTION                |
|----------------------------------------------------------|------------|----------------------------|
| <b>(NA) normally open solenoid valve configuration</b>   |            |                            |
| <b>VE/B 14/NA/EC08M</b>                                  | 1720011101 | Aluminium body, G1/4 ports |
| <b>VE/B 38/NA/EC08M</b>                                  | 1720021106 | Aluminium body, G3/8 ports |
| <b>VE/B 12/NA</b>                                        | 1720031112 | Aluminium body, G1/2 ports |
| <b>VE/B 34/NA</b>                                        | 1720041114 | Aluminium body, G3/4 ports |
| <b>VE/B 100/NA</b>                                       | 1720051108 | Aluminium body, G1" ports  |
| <b>VE/B 14/NA/ac</b>                                     | 1720012101 | Steel body, G1/4 ports     |
| <b>VE/B 38/NA/ac</b>                                     | 1720022101 | Steel body, G3/8 ports     |
| <b>VE/B 12/NA/ac</b>                                     | 1720032104 | Steel body, G1/2 ports     |
| <b>VE/B 34/NA/ac</b>                                     | 1720042105 | Steel body, G3/4 ports     |
| <b>VE/B 100/NA/ac</b>                                    | 1720052109 | Steel body, G1" ports      |
| <b>(NC) normally closed solenoid valve configuration</b> |            |                            |
| <b>VE/B 14/NC/EC08M</b>                                  | 1720011100 | Aluminium body, G1/4 ports |
| <b>VE/B 38/NC/EC08M</b>                                  | 1720021105 | Aluminium body, G3/8 ports |
| <b>VE/B 12/NC</b>                                        | 1720031111 | Aluminium body, G1/2 ports |
| <b>VE/B 34/NC</b>                                        | 1720041113 | Aluminium body, G3/4 ports |
| <b>VE/B 100/NC</b>                                       | 1720051107 | Aluminium body, G1" ports  |
| <b>VE/B 14/NC/ac</b>                                     | 1720012100 | Steel body, G1/4 ports     |
| <b>VE/B 38/NC/ac</b>                                     | 1720022102 | Steel body, G3/8 ports     |
| <b>VE/B 12/NC/ac</b>                                     | 1720032103 | Steel body, G1/2 ports     |
| <b>VE/B 34/NC/ac</b>                                     | 1720042104 | Steel body, G3/4 ports     |
| <b>VE/B 100/NC/ac</b>                                    | 1720052108 | Steel body, G1" ports      |

For other steel body configurations, SAE thread, other port sizes and configurations with FPM (Viton) seals, please contact our Sales Dpt.

**1 Solenoid valve**

| TYPE                              | CODE        | DESCRIPTION                                        |
|-----------------------------------|-------------|----------------------------------------------------|
| <b>(NA) normally open valve</b>   |             |                                                    |
| <b>EC08M/10NB</b>                 | 0EC08002031 | For VE/B 14 and VE/B 38 valves, BER coils required |
| <b>EC10M/10NB</b>                 | 0EC10002012 | For VE/B 12 and VE/B 34 valves, BER coils required |
| <b>EC16M/10NB</b>                 | 0EC16002020 | For VE/B 100 valve, BER coils required             |
| <b>(NC) normally closed valve</b> |             |                                                    |
| <b>EC08M/20NB</b>                 | 0EC08002032 | For VE/B 14 and VE/B 38 valves, BER coils required |
| <b>EC10M/20NB</b>                 | 0EC10002013 | For VE/B 12 and VE/B 34 valves, BER coils required |
| <b>EC16M/20NB</b>                 | 0EC16002021 | For VE/B 100 valve, BER coils required             |

**2 Coils**

| TYPE             | CODE        | DESCRIPTION        |
|------------------|-------------|--------------------|
| <b>BER 12VDC</b> | 4SLE001200A | 12VDC-ISO4400 coil |

For complete coils list see from page 433

**3 Connector**

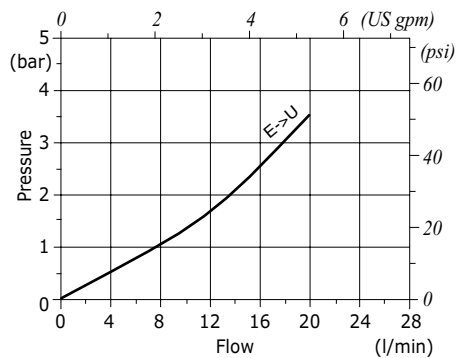
| TYPE           | CODE       | DESCRIPTION |
|----------------|------------|-------------|
| <b>ISO4400</b> | 4CN1009995 | Connector   |

For complete connectors list see from page 433

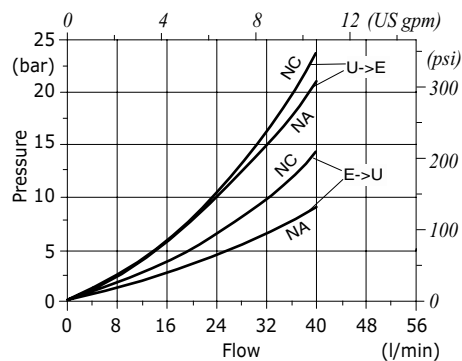


Rating diagrams

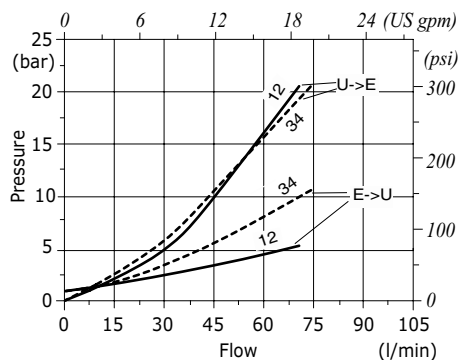
**VE/B 14 pressure drop vs. flow from E→U**



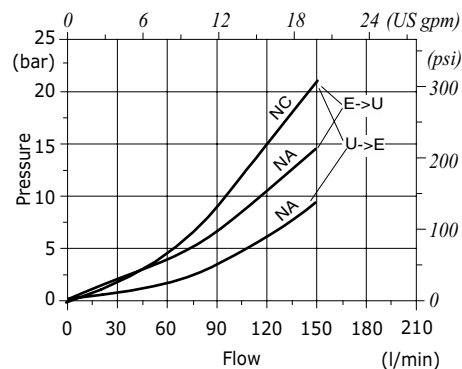
**VE/B 38 pressure drop vs. flow from E→U and U→E**



**VE/B 12-34 pressure drop vs. flow from E→U and U→E**



**VE/B 100 pressure drop vs. flow from E→U and U→E**





**Type VE/B/RO**  
**directional solenoid valves**

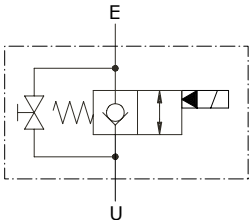
- Two way
- With emergency
- Pilot operated
- Bolt mounting

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

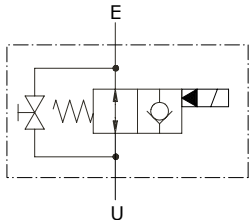
| VE/B/RO 14                                 |                                                               | VE/B/RO 38                                                             |                   |
|--------------------------------------------|---------------------------------------------------------------|------------------------------------------------------------------------|-------------------|
| Nominal flow                               | 20 l/min<br>(5.3 US gpm)                                      | 40 l/min<br>(10.6 US gpm)                                              |                   |
| Max. pressure                              | Aluminium and steel body: 210 bar (3050 psi)                  | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                   |
| Oil leakage                                | 0.25 cm³/min - 0.015 in³/min. - 2 drops at 210 bar - 3050 psi |                                                                        |                   |
| Fluid                                      | mineral based oil                                             |                                                                        |                   |
| Viscosity                                  | from 10 to 200 cSt                                            |                                                                        |                   |
| Max. level of contamination                | 18/16/13 ISO4406                                              |                                                                        |                   |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F)              |                                                                        |                   |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                           |                                                                        |                   |
| Weight                                     | aluminium                                                     | 0.41 kg (0.90 lb)                                                      | 0.45 kg (0.99 lb) |
|                                            | steel                                                         | 0.99 kg (2.18 lb)                                                      | 1.06 kg (2.34 lb) |

NOTE - For different conditions, please contact Walvoil Sales Dpt.

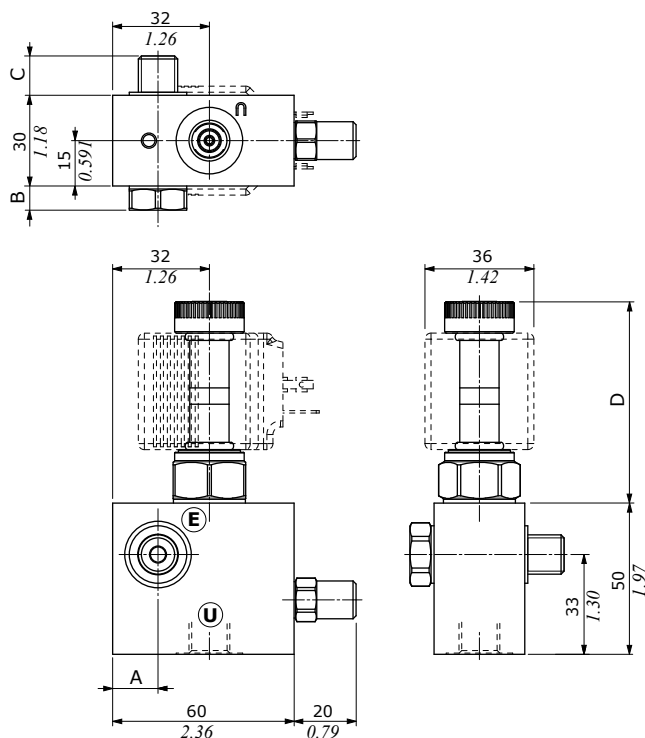
**Normally closed configuration (NC)**



**Normally open configuration (NA)**



## Dimensions

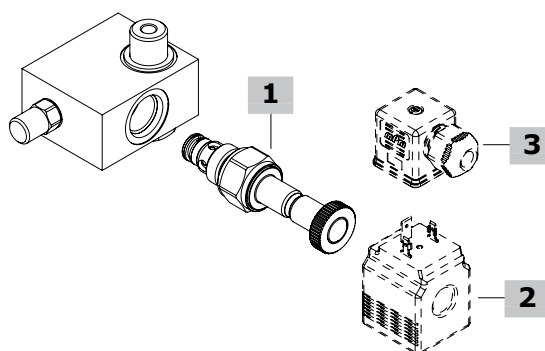


| Valve type | U<br>female | E<br>male |
|------------|-------------|-----------|
| VE/B 14    | G1/4        | G1/4      |
| VE/B 38    | G3/8        | G3/8      |

| Valve type | A           | B          | C           | D<br>(NA) (NC) |              |
|------------|-------------|------------|-------------|----------------|--------------|
| VE/B/RO 14 | 15<br>0.591 | 8<br>0.315 | 13<br>0.512 | 66.7<br>2.63   | 62.8<br>2.47 |
| VE/B/RO 38 | 14<br>0.551 | 9<br>0.354 | 14<br>0.551 | 66.7<br>2.63   | 62.8<br>2.47 |

## Ordering codes and description composition

Port size  
**VE/B/RO 14/NA**  
**1**



### VE/B/RO complete valves

| TYPE                                                     | CODE       | DESCRIPTION               |
|----------------------------------------------------------|------------|---------------------------|
| <b>(NA) normally open solenoid valve configuration</b>   |            |                           |
| VE/B/RO 14/NA/EC08M                                      | 1722011101 | Aluminium body, 1/4 ports |
| VE/B/RO 38/NA/EC08M                                      | 1722011103 | Aluminium body, 3/8 ports |
| <b>(NC) normally closed solenoid valve configuration</b> |            |                           |
| VE/B/RO 14/NC/EC08M                                      | 1722011100 | Aluminium body, 1/4 ports |
| VE/B/RO 38/NC/EC08M                                      | 1722021103 | Aluminium body, 3/8 ports |

For other steel body configurations, SAE thread, other port sizes and configurations with FPM (Viton) seals, please contact our Sales Dpt.

### 1 Solenoid valve

| TYPE       | CODE        | DESCRIPTION                                              |
|------------|-------------|----------------------------------------------------------|
| EC08M/10NB | 0EC08002031 | (NA) normally open configuration<br>BER coils required   |
| EC08M/20NB | 0EC08002032 | (NC) normally closed configuration<br>BER coils required |

### 2 Coils

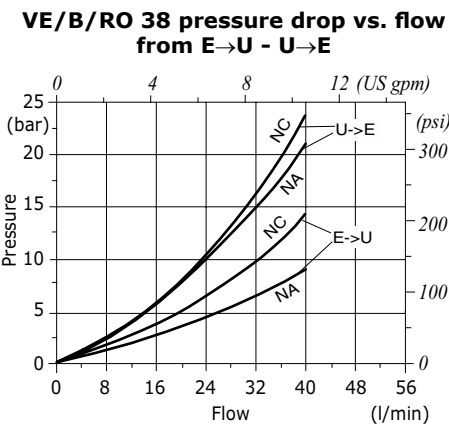
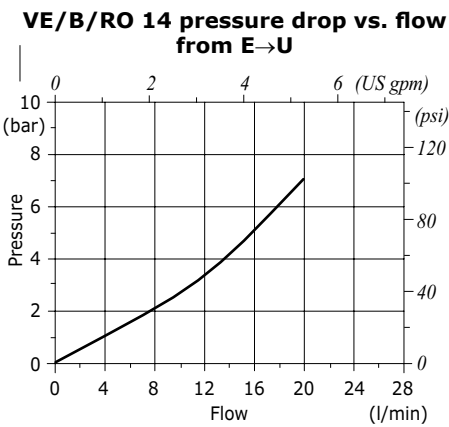
| TYPE      | CODE        | DESCRIPTION        |
|-----------|-------------|--------------------|
| BER 12VDC | 4SLE001200A | 12VDC-ISO4400 coil |

For complete coils list see from page 433

### 3 Connector

| TYPE    | CODE       | DESCRIPTION |
|---------|------------|-------------|
| ISO4400 | 4CN1009995 | Connector   |

For complete connectors list see from page 433







## Type VE/B/VMP/VUI/SR directional solenoid valves

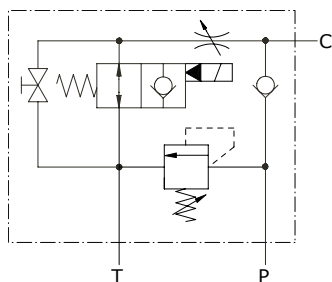
- Single acting cylinder

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

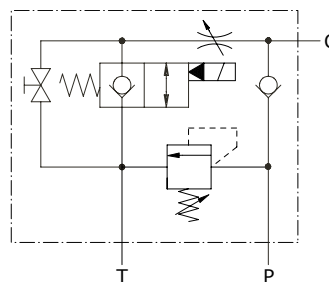
|                                               | VE/B/VMP/<br>VUI/SR 14                                                               | VE/B/VMP/<br>VUI/SR 38          | VE/B/VMP/<br>VUI/SR 12           | VE/B/VMP/<br>VUI/SR 34           | VE/B/VMP/<br>VUI/SR 100           |                            |
|-----------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------|----------------------------------|----------------------------------|-----------------------------------|----------------------------|
| Nominal flow                                  | 20 l/min<br><i>(5.3 US gpm)</i>                                                      | 35 l/min<br><i>(9.2 US gpm)</i> | 65 l/min<br><i>(17.2 US gpm)</i> | 70 l/min<br><i>(18.5 US gpm)</i> | 150 l/min<br><i>(39.6 US gpm)</i> |                            |
| Max. pressure                                 | Aluminium body = 210 bar <i>(3050 psi)</i><br>Steel body = 350 bar <i>(5100 psi)</i> |                                 |                                  |                                  |                                   |                            |
| Oil leakage                                   | 0.25 cm³/min. - <i>0.015 in³/min.</i> (5 drops) at 210 bar - <i>3050 psi</i>         |                                 |                                  |                                  |                                   |                            |
| Fluid                                         | mineral based oil                                                                    |                                 |                                  |                                  |                                   |                            |
| Viscosity                                     | from 10 to 200 cSt                                                                   |                                 |                                  |                                  |                                   |                            |
| Max. level of contamination                   | 18/16/13 ISO4406                                                                     |                                 |                                  |                                  |                                   |                            |
| Fluid temperature                             | <i>with NBR seals</i> from -20°C <i>(-4°F)</i> to 80°C <i>(176°F)</i>                |                                 |                                  |                                  |                                   |                            |
| Environmental temp.<br>for working conditions | from -40°C <i>(-40°F)</i> to 100°C <i>(212°F)</i>                                    |                                 |                                  |                                  |                                   |                            |
| Weight                                        | <i>aluminium</i>                                                                     | 1.32 kg <i>(2.91 lb)</i>        | 1.32 kg <i>(2.91 lb)</i>         | 3.01 kg <i>(6.64 lb)</i>         | 3.01 kg <i>(6.64 lb)</i>          | 5.00 kg <i>(11.02 lb)</i>  |
|                                               | <i>steel</i>                                                                         | 2.65 kg <i>(5.84 lb)</i>        | 2.65 kg <i>(5.84 lb)</i>         | 3.19 kg <i>(7.03 lb)</i>         | 3.19 kg <i>(7.03 lb)</i>          | 10.03 kg <i>(22.11 lb)</i> |

NOTE - For different conditions, please contact Walvoil Sales Dpt.

**Normally open  
configuration (NA)**

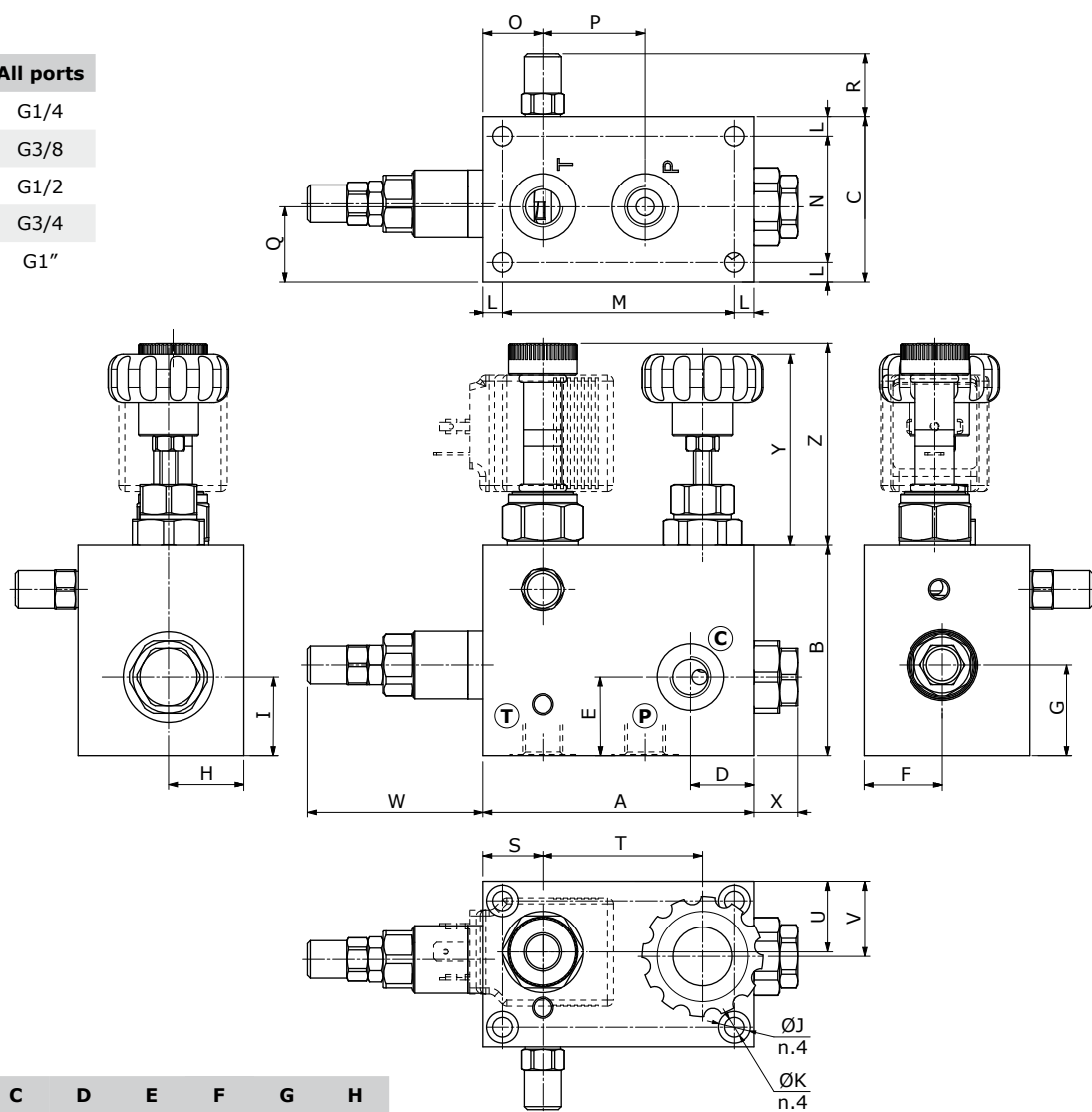


**Normally closed  
configuration (NC)**



## Dimensions

| Valve type          | All ports |
|---------------------|-----------|
| VE/B/VMP/VUI/SR 14  | G1/4      |
| VE/B/VMP/VUI/SR 38  | G3/8      |
| VE/B/VMP/VUI/SR 12  | G1/2      |
| VE/B/VMP/VUI/SR 34  | G3/4      |
| VE/B/VMP/VUI/SR 100 | G1"       |

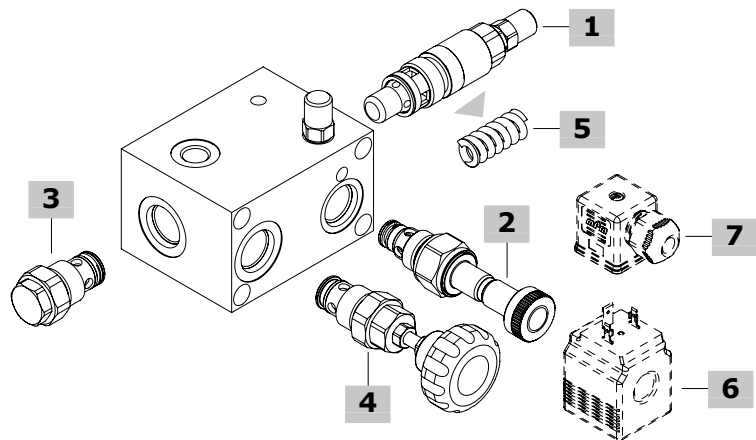
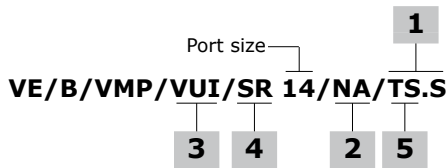


Dimensions are in mm-in

| Valve type          | A           | B           | C          | D          | E            | F          | G            | H          |
|---------------------|-------------|-------------|------------|------------|--------------|------------|--------------|------------|
| VE/B/VMP/VUI/SR 14  | 90<br>3.54  | 70<br>2.76  | 55<br>2.17 | 21<br>0.83 | 26<br>1.02   | 26<br>1.02 | 30<br>1.18   | 25<br>0.98 |
| VE/B/VMP/VUI/SR 38  | 90<br>3.54  | 70<br>2.76  | 55<br>2.17 | 22<br>0.87 | 26<br>1.02   | 26<br>1.02 | 30<br>1.18   | 25<br>0.98 |
| VE/B/VMP/VUI/SR 12  | 115<br>4.53 | 100<br>3.94 | 70<br>2.76 | 28<br>1.10 | 38.5<br>1.53 | 32<br>1.26 | 38.5<br>1.53 | 32<br>1.26 |
| VE/B/VMP/VUI/SR 34  | 115<br>4.53 | 100<br>3.94 | 70<br>2.76 | 30<br>1.18 | 38.5<br>1.53 | 32<br>1.26 | 38.5<br>1.53 | 32<br>1.26 |
| VE/B/VMP/VUI/SR 100 | 150<br>5.91 | 120<br>4.72 | 80<br>3.15 | 37<br>1.46 | 45<br>1.77   | 36<br>1.42 | 45<br>1.77   | 36<br>1.42 |

| Valve type          | I            | J             | K             | L            | M           | N          | O          | P          | Q          | R            | S          | T          | U            | V          | W            | X             | Y            | Z<br>(NA) (NC)            |
|---------------------|--------------|---------------|---------------|--------------|-------------|------------|------------|------------|------------|--------------|------------|------------|--------------|------------|--------------|---------------|--------------|---------------------------|
| VE/B/VMP/VUI/SR 14  | 26<br>1.02   | 10.5<br>0.413 | 6.5<br>0.256  | 6.5<br>0.256 | 77<br>3.03  | 42<br>1.65 | 20<br>0.79 | 34<br>1.34 | 25<br>0.98 | 20.8<br>0.82 | 20<br>0.79 | 53<br>2.09 | 23.5<br>0.93 | 25<br>0.98 | 58<br>2.28   | 14.5<br>0.571 | 63<br>2.48   | 66.7<br>2.63 62.8<br>2.47 |
| VE/B/VMP/VUI/SR 38  | 26<br>1.02   | 10.5<br>0.413 | 6.5<br>0.256  | 6.5<br>0.256 | 77<br>3.03  | 42<br>1.65 | 20<br>0.79 | 34<br>1.34 | 25<br>0.98 | 20.8<br>0.82 | 20<br>0.79 | 53<br>2.09 | 23.5<br>0.93 | 25<br>0.98 | 58<br>2.28   | 14.5<br>0.571 | 63<br>2.48   | 66.7<br>2.63 62.8<br>2.47 |
| VE/B/VMP/VUI/SR 12  | 38.5<br>1.53 | 13.5<br>0.531 | 8.5<br>0.335  | 8.5<br>0.335 | 98<br>3.86  | 53<br>2.09 | 29<br>1.14 | 37<br>1.46 | 29<br>1.14 | 23.8<br>0.94 | 29<br>1.14 | 61<br>2.40 | 29<br>1.14   | 29<br>1.14 | 56.5<br>2.22 | 11<br>0.433   | 72.5<br>2.85 | 86.4<br>3.40 81<br>3.19   |
| VE/B/VMP/VUI/SR 34  | 38.5<br>1.53 | 13.5<br>0.531 | 8.5<br>0.335  | 8.5<br>0.335 | 98<br>3.86  | 53<br>2.09 | 29<br>1.14 | 41<br>1.61 | 29<br>1.14 | 23.5<br>0.93 | 29<br>1.14 | 61<br>2.40 | 29<br>1.14   | 29<br>1.14 | 56.5<br>2.22 | 11<br>0.433   | 72.5<br>2.85 | 86.4<br>3.40 81<br>3.19   |
| VE/B/VMP/VUI/SR 100 | 45<br>1.77   | 16.5<br>0.65  | 10.5<br>0.413 | 10<br>0.394  | 130<br>5.12 | 60<br>2.36 | 27<br>1.06 | 60<br>2.36 | 36<br>1.42 | 23.5<br>0.93 | 27<br>1.06 | 91<br>3.58 | 36<br>1.42   | 36<br>1.42 | 71<br>2.80   | 16.5<br>0.65  | 83<br>3.27   | 79.4<br>3.13 74.2<br>2.92 |

## Ordering codes and description composition



## VE/B/VMP/VUI/SR complete valves

Aluminium body and VMP direct type valve configuration  
 Standard setting 160 bar at 5 l/min (2320 psi at 1.32 US gpm)  
 Setting range: 50-220 bar (725-3200 psi)

| TYPE                                                     | CODE       | DESCRIPTION |
|----------------------------------------------------------|------------|-------------|
| <b>(NA) normally open solenoid valve configuration</b>   |            |             |
| VE/B/VMP/VUI/SR 14/NA/TS.S                               | 1900511101 | G1/4 ports  |
| VE/B/VMP/VUI/SR 38/NA/TS.S                               | 1900521103 | G3/8 ports  |
| VE/B/VMP/VUI/SR 12/NA/TS.S                               | 1900531110 | G1/2 ports  |
| VE/B/VMP/VUI/SR 34/NA/TS.S                               | 1900541106 | G3/4 ports  |
| VE/B/VMP/VUI/SR 100/NA/TS.S                              | 1900551110 | G1" ports   |
| <b>(NC) normally closed solenoid valve configuration</b> |            |             |
| VE/B/VMP/VUI/SR 14/NC/TS.S                               | 1900511100 | G1/4 ports  |
| VE/B/VMP/VUI/SR 38/NC/TS.S                               | 1900521102 | G3/8 ports  |
| VE/B/VMP/VUI/SR 12/NC/TS.S                               | 1900531109 | G1/2 ports  |
| VE/B/VMP/VUI/SR 34/NC/TS.S                               | 1900541105 | G3/4 ports  |
| VE/B/VMP/VUI/SR 100/NC/TS.S                              | 1900551109 | G1" ports   |
| VE/B/VMP/VUI/SR 38/NC/TS.S/SAE                           | 1900521200 | SAE8 ports  |
| VE/B/VMP/VUI/SR 12/NC/TS.S/SAE                           | 1900531200 | SAE10 ports |

For other steel body configurations, SAE thread, other port sizes and configurations with FPM (Viton) seals, please contact our Sales Dpt.

## 1 Pressure relief valve

| TYPE                                        | CODE       | DESCRIPTION                             |
|---------------------------------------------|------------|-----------------------------------------|
| <b>For VE/B/VMP/VUI/SR 14 and 38 valves</b> |            |                                         |
| VMP 5/TS.S                                  | 1100520400 | Setting range 50-220 bar (725-3200 psi) |
| <b>For VE/B/VMP/VUI/SR 12 and 34 valves</b> |            |                                         |
| VMP 10/TS.S                                 | 1100530400 | Setting range 50-220 bar (725-3200 psi) |
| <b>For VE/B/VMP/VUI/SR 100 valve</b>        |            |                                         |
| VMP 20/TS.S                                 | 1100540400 | Setting range 50-220 bar (725-3200 psi) |

## 2 Solenoid valve

| TYPE                                                            | CODE        | DESCRIPTION                        |
|-----------------------------------------------------------------|-------------|------------------------------------|
| <b>For VE/B/VMP/VUI/SR 14 and 38 valves: BER coils required</b> |             |                                    |
| EC08M/10NB                                                      | 0EC08002031 | (NA) normally open configuration   |
| EC08M/20NB                                                      | 0EC08002032 | (NC) normally closed configuration |
| <b>For VE/B/VMP/VUI/SR 12 and 34 valves: BER coils required</b> |             |                                    |
| EC10M/10NB                                                      | 0EC10002012 | (NA) normally open configuration   |
| EC10M/20NB                                                      | 0EC10002013 | (NC) normally closed configuration |
| <b>For VE/B/VMP/VUI/SR 100 valve: BER coils required</b>        |             |                                    |
| EC16M/10NB                                                      | 0EC16002020 | (NA) normally open configuration   |
| EC16M/20NB                                                      | 0EC16002021 | (NC) normally closed configuration |

## 3 Check valve

| TYPE                                        | CODE       | DESCRIPTION                         |
|---------------------------------------------|------------|-------------------------------------|
| <b>For VE/B/VMP/VUI/SR 14 and 38 valves</b> |            |                                     |
| VUI 38/Pa0,5                                | 1300020400 | Opening pressure 0.5 bar (7.25 psi) |
| <b>For VE/B/VMP/VUI/SR 12 and 34 valves</b> |            |                                     |
| VUI 12/Pa0,5                                | 1300030400 | Opening pressure 0.5 bar (7.25 psi) |
| <b>For VE/B/VMP/VUI/SR 100 valve</b>        |            |                                     |
| VUI 34/Pa0,5 pasmag                         | 1300020400 | Opening pressure 0.5 bar (7.25 psi) |

## 4 Needle valve

| TYPE                                        | CODE       | DESCRIPTION        |
|---------------------------------------------|------------|--------------------|
| <b>For VE/B/VMP/VUI/SR 14 and 38 valves</b> |            |                    |
| VUI/SR 38/V                                 | 1305020400 | Handknob actuation |
| <b>For VE/B/VMP/VUI/SR 12 and 34 valves</b> |            |                    |
| VUI/SR 12/V                                 | 1305030400 | Handknob actuation |
| <b>For VE/B/VMP/VUI/SR 100 valve</b>        |            |                    |
| VUI/SR 34/V                                 | 1305040400 | Handknob actuation |

## 5 Pressure setting springs

| TYPE                                        | CODE       | DESCRIPTION                               |
|---------------------------------------------|------------|-------------------------------------------|
| <b>For VE/B/VMP/VUI/SR 14 and 38 valves</b> |            |                                           |
| TB                                          | 3MOL314311 | Setting range 5-40 bar (72.5-580 psi)     |
| TV                                          | 3MOL314330 | Setting range 20-80 bar (290-1150 psi)    |
| TS                                          | 3MOL315330 | Setting range 50-220 bar (725-3200 psi)   |
| TR                                          | 3ML1143600 | Setting range 180-350 bar (2600-5075 psi) |
| <b>For VE/B/VMP/VUI/SR 12 and 34 valves</b> |            |                                           |
| TB                                          | 3MOL316410 | Setting range 5-40 bar (72.5-580 psi)     |
| TV                                          | 3ML1154300 | Setting range 20-80 bar (290-1150 psi)    |
| TS                                          | 3MOL317420 | Setting range 50-220 bar (725-3200 psi)   |
| TR                                          | 3MOL317440 | Setting range 180-350 bar (2600-5075 psi) |
| <b>For VE/B/VMP/VUI/SR 100 valve</b>        |            |                                           |
| TB                                          | 3ML1184300 | Setting range 5-40 bar (72.5-580 psi)     |
| TV                                          | 3ML1174500 | Setting range 20-80 bar (290-1150 psi)    |
| TS                                          | 3ML1204200 | Setting range 50-220 bar (725-3200 psi)   |
| TR                                          | 3ML1214500 | Setting range 180-350 bar (2600-5075 psi) |

## 6 Coils

| TYPE                                      | CODE        | DESCRIPTION                               |
|-------------------------------------------|-------------|-------------------------------------------|
| BER 12VDC                                 | 4SLE001200A | 12VDC-ISO4400 for EC08M                   |
| BT 12VDC                                  | 4SL3000120  | 12VDC-ISO4400 for VSE/P/2 and VSE/P/2-150 |
| For complete coils list see from page 433 |             |                                           |

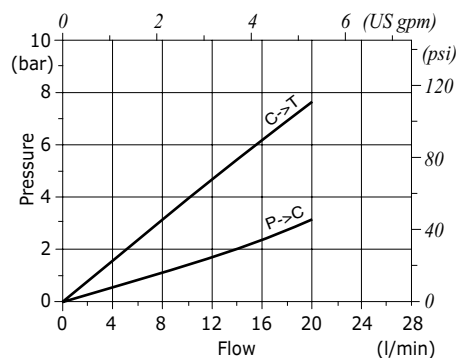
## 7 Connector

| TYPE                                           | CODE       | DESCRIPTION |
|------------------------------------------------|------------|-------------|
| ISO4400                                        | 4CN1009995 | Connector   |
| For complete connectors list see from page 433 |            |             |

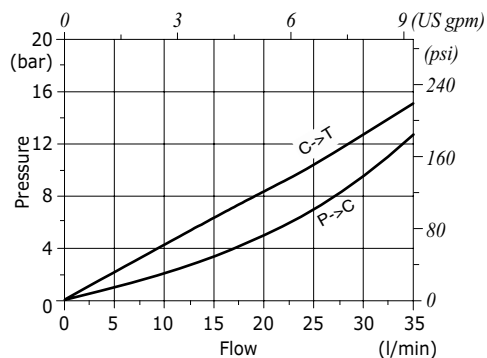


## Rating diagrams

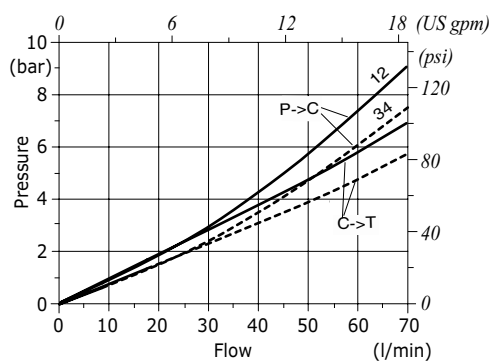
**VE/B/VMP/VUI/SR 14 pressure drop vs. flow from P→C - C→T**



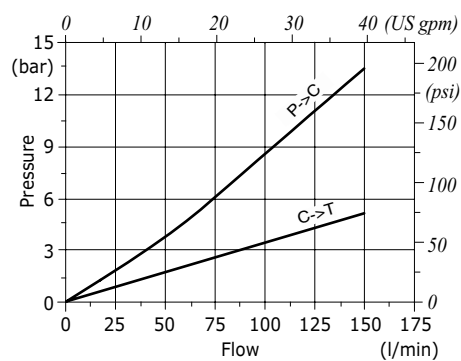
**VE/B/VMP/VUI/SR 38 pressure drop vs. flow from P→C - C→T**



**VE/B/VMP/VUI/SR (12-34) pressure drop vs. flow from P→C - C→T**



**VE/B/VMP/VUI/SR 100 pressure drop vs. flow from P→C - C→T**





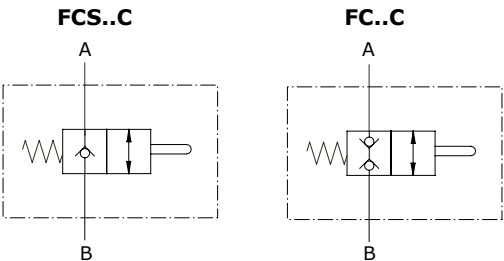
**Type FCS..C / FC..C**  
**End stroke valves**

- Normally closed
- FC..C double lock

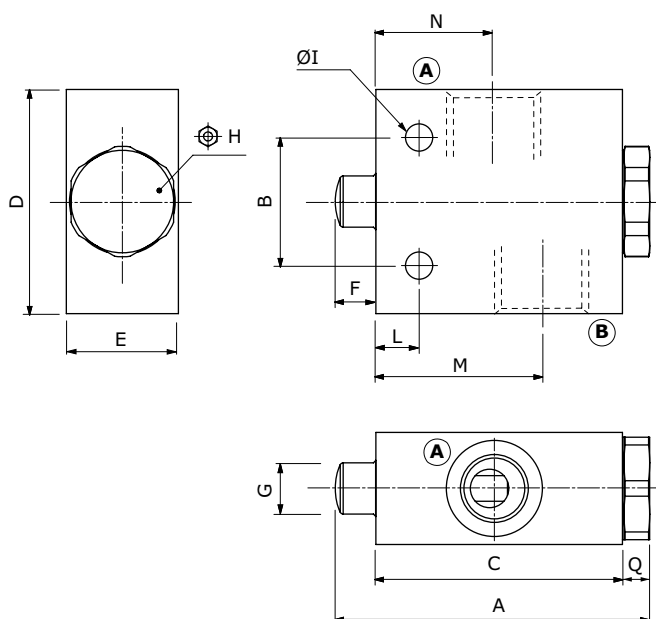
Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                                     | FCS02C                                           |                   | FCS03C                    | FC02C                    | FC03C                     |
|-----------------------------------------------------|--------------------------------------------------|-------------------|---------------------------|--------------------------|---------------------------|
| Max. flow                                           | 30 l/min<br>(7.9 US gpm)                         |                   | 60 l/min<br>(15.9 US gpm) | 30 l/min<br>(7.9 US gpm) | 60 l/min<br>(15.9 US gpm) |
| Max. pressure                                       | 300 bar (4350 psi)                               |                   |                           |                          |                           |
| Fluid                                               | mineral based oil                                |                   |                           |                          |                           |
| Max. stroke                                         | 10 mm (0.39 in)                                  |                   | 12 mm (0.47 in)           | 10 mm (0.39 in)          | 12 mm (0.47 in)           |
| Spring force                                        | 20 N (4.5 lbf)                                   |                   |                           | 80 N (18 lbf)            |                           |
| Viscosity                                           | from 10 to 200 cSt                               |                   |                           |                          |                           |
| Max. level of contamination                         | 18/16/13 ISO4406                                 |                   |                           |                          |                           |
| Fluid temperature                                   | with NBR seals from -20°C (-4°F) to 80°C (176°F) |                   |                           |                          |                           |
| Environmental temperature<br>for working conditions | from -40°C (-40°F) to 100°C (212°F)              |                   |                           |                          |                           |
| Weight                                              | steel                                            | 0.79 kg (1.74 lb) | 1.28 kg (2.82 lb)         | 0.79 kg (1.74 lb)        | 1.30 kg (2.87 lb)         |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



## Dimensions



| Valve type    | (A) (B) |
|---------------|---------|
| <b>FCS02C</b> | G3/8    |
| <b>FCS03C</b> | G1/2    |

Dimensions are in mm-in

| Valve type    | A            | B          | C          | D          | E          | F            | G          | ØH | ØI           | L            | M          | N          | Q           |
|---------------|--------------|------------|------------|------------|------------|--------------|------------|----|--------------|--------------|------------|------------|-------------|
| <b>FCS02C</b> | 83.7<br>3.30 | 35<br>1.38 | 65<br>2.56 | 60<br>2.36 | 30<br>1.18 | 13.2<br>0.52 | 8<br>0.31  | 27 | 8.5<br>0.33  | 13.5<br>0.53 | 43<br>1.69 | 30<br>1.18 | 5.5<br>0.22 |
| <b>FCS03C</b> | 98.3<br>3.87 | 40<br>1.57 | 77<br>3.03 | 70<br>2.76 | 35<br>1.38 | 12.8<br>0.50 | 12<br>0.47 | 32 | 10.5<br>0.41 | 13.5<br>0.53 | 51<br>2.01 | 37<br>1.46 | 8.5<br>0.33 |

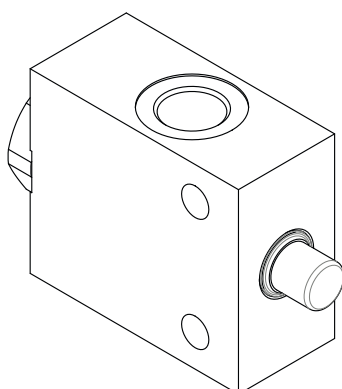
| Valve type   | (A) (B) |
|--------------|---------|
| <b>FC02C</b> | G3/8    |
| <b>FC03C</b> | G1/2    |

Dimensions are in mm-in

| Valve type   | A            | B          | C          | D          | E          | F            | G          | ØH | ØI          | L            | M          | N          | Q           |
|--------------|--------------|------------|------------|------------|------------|--------------|------------|----|-------------|--------------|------------|------------|-------------|
| <b>FC02C</b> | 86.2<br>3.39 | 35<br>1.38 | 65<br>2.56 | 55<br>2.17 | 30<br>1.18 | 13.2<br>0.52 | 12<br>0.47 | 27 | 8.5<br>0.33 | 13.5<br>0.53 | 43<br>1.69 | 30<br>1.18 | 8<br>0.31   |
| <b>FC03C</b> | 98.6<br>3.88 | 40<br>1.57 | 77<br>3.03 | 70<br>2.76 | 35<br>1.38 | 13<br>0.51   | 16<br>0.63 | 32 | 8.5<br>0.33 | 13.5<br>0.53 | 51<br>2.01 | 37<br>1.46 | 8.5<br>0.33 |

## Ordering codes and description composition

Port size  
**FC 03 C**



### FC-C complete valves

| TYPE          | CODE       | DESCRIPTION            |
|---------------|------------|------------------------|
| <b>FCS02C</b> | 1419622101 | Steel body, G3/8 ports |
| <b>FCS03C</b> | 1419632101 | Steel body, G1/2 ports |
| <b>FC02C</b>  | 1419722100 | Steel body, G3/8 ports |
| <b>FC03C</b>  | 1419732100 | Steel body, G1/2 ports |

For SAE thread, please contact our Sales Dpt.



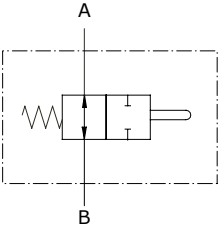
**Type FC..A**  
**End stroke valves**

- Normally open

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

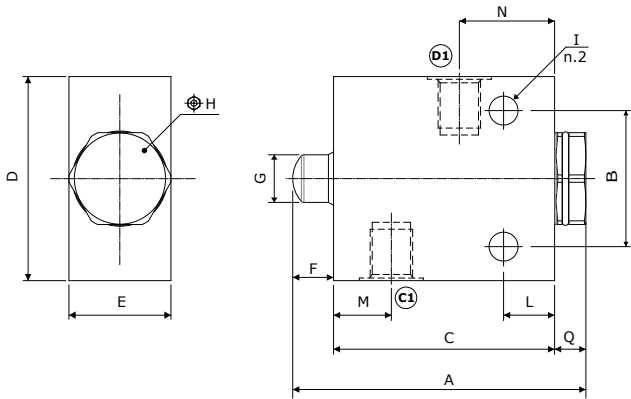
|                                                  | FC02A                                              | FC03A                  |
|--------------------------------------------------|----------------------------------------------------|------------------------|
| Max. flow                                        | 30 l/min (7.9 US gpm)                              | 60 l/min (15.9 US gpm) |
| Max. pressure                                    | 300 bar (4350 psi)                                 |                        |
| Fluid                                            | mineral based oil                                  |                        |
| Max. stroke                                      | 7 mm (0.27 in)                                     | 7 mm (0.27 in)         |
| Spring force                                     | 100 N (22.48 lbf)                                  |                        |
| Viscosity                                        | from 10 to 200 cSt                                 |                        |
| Max. level of contamination                      | 18/16/13 ISO4406                                   |                        |
| Fluid temperature                                | with NBR seals from -30°C (-22°F) to 100°C (212°F) |                        |
| Environmental temperature for working conditions | from -40°C (-40°F) to 100°C (212°F)                |                        |
| Weight                                           | steel 0.75 kg (1.65 lb)                            | 0.77 kg (1.70 lb)      |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



Dimensions

FC02A - FC03A



| Valve type | A    | B |
|------------|------|---|
| FC02A      | G3/8 |   |
| FC03A      | G1/2 |   |

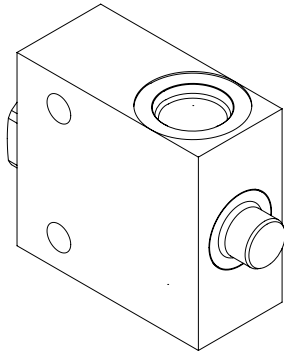
Dimensions are in mm-*in*

| Valve type | A    | B    | C    | D    | E    | F    | G    | H  | I    | L    | M    | N   | Q    |
|------------|------|------|------|------|------|------|------|----|------|------|------|-----|------|
| FC02A      | 86,2 | 40   | 65   | 60   | 30   | 12   | 14   | 27 | 8.5  | 15   | 17   | 28  | 9,2  |
|            | 3.39 | 1.57 | 2.56 | 2.36 | 1.18 | 0.47 | 0.55 |    | 0.33 | 0.59 | 0.67 | 1.1 | 0.36 |
| FC03A      | 86,2 | 40   | 65   | 60   | 30   | 12   | 14   | 27 | 8.5  | 15   | 17   | 28  | 9,2  |
|            | 3.39 | 1.57 | 2.56 | 2.36 | 1.18 | 0.47 | 0.55 |    | 0.33 | 0.59 | 0.67 | 1.1 | 0.36 |

Ordering codes and description composition

FC 03 A

Port size



| FC..A Complete valves                         |            |                        |
|-----------------------------------------------|------------|------------------------|
| TYPE                                          | CODE       | DESCRIPTION            |
| FC02A                                         | 1419822101 | Steel body, G3/8 ports |
| FC03A                                         | 1419832100 | Steel body, G1/2 ports |
| For SAE thread, please contact our Sales Dpt. |            |                        |



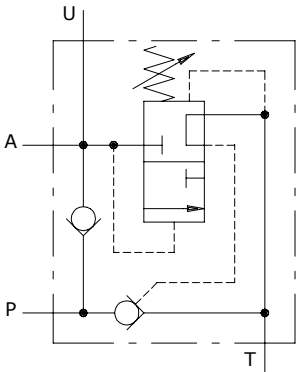
**Type VDA**  
**unloader valves**

- Single acting
- Built-in check

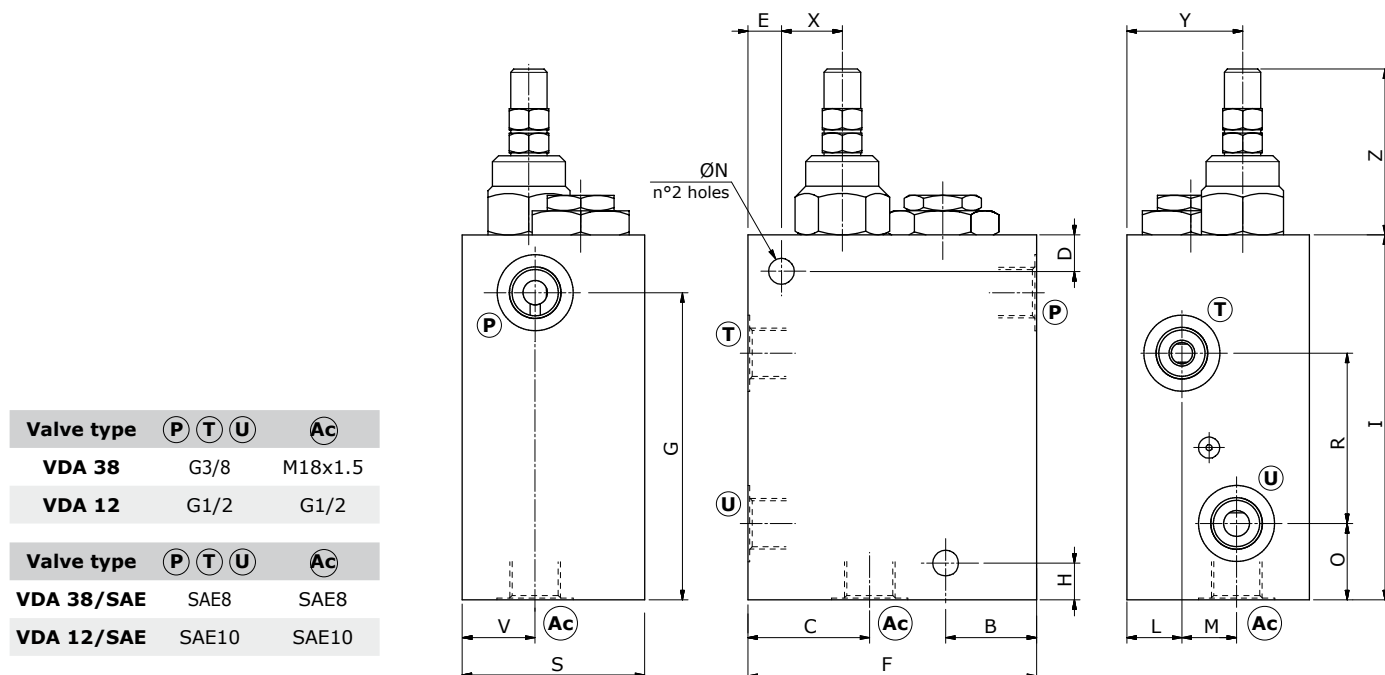
Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

| VDA 38                                     |                                                                        | VDA 12                 | VDA 34                  |                    |
|--------------------------------------------|------------------------------------------------------------------------|------------------------|-------------------------|--------------------|
| Nominal flow                               | 25 l/min (6.6 US gpm)                                                  | 50 l/min (13.2 US gpm) | 100 l/min (26.4 US gpm) |                    |
| Max. pressure                              | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                        |                         |                    |
| Fluid                                      | mineral based oil                                                      |                        |                         |                    |
| Viscosity                                  | from 10 to 200 cSt                                                     |                        |                         |                    |
| Max. level of contamination                | 18/16/13 ISO4406                                                       |                        |                         |                    |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F)                       |                        |                         |                    |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                                    |                        |                         |                    |
| Weight                                     | aluminium                                                              | 2.15 kg (4.73 lb)      | 2.35 kg (5.18 lb)       | 3.24 kg (7.14 lb)  |
|                                            | steel                                                                  | 5.05 kg (12.13 lb)     | 5.57 kg (12.28 lb)      | 8.10 kg (17.86 lb) |

NOTE - For different conditions, please contact Walvoil Sales Dpt.

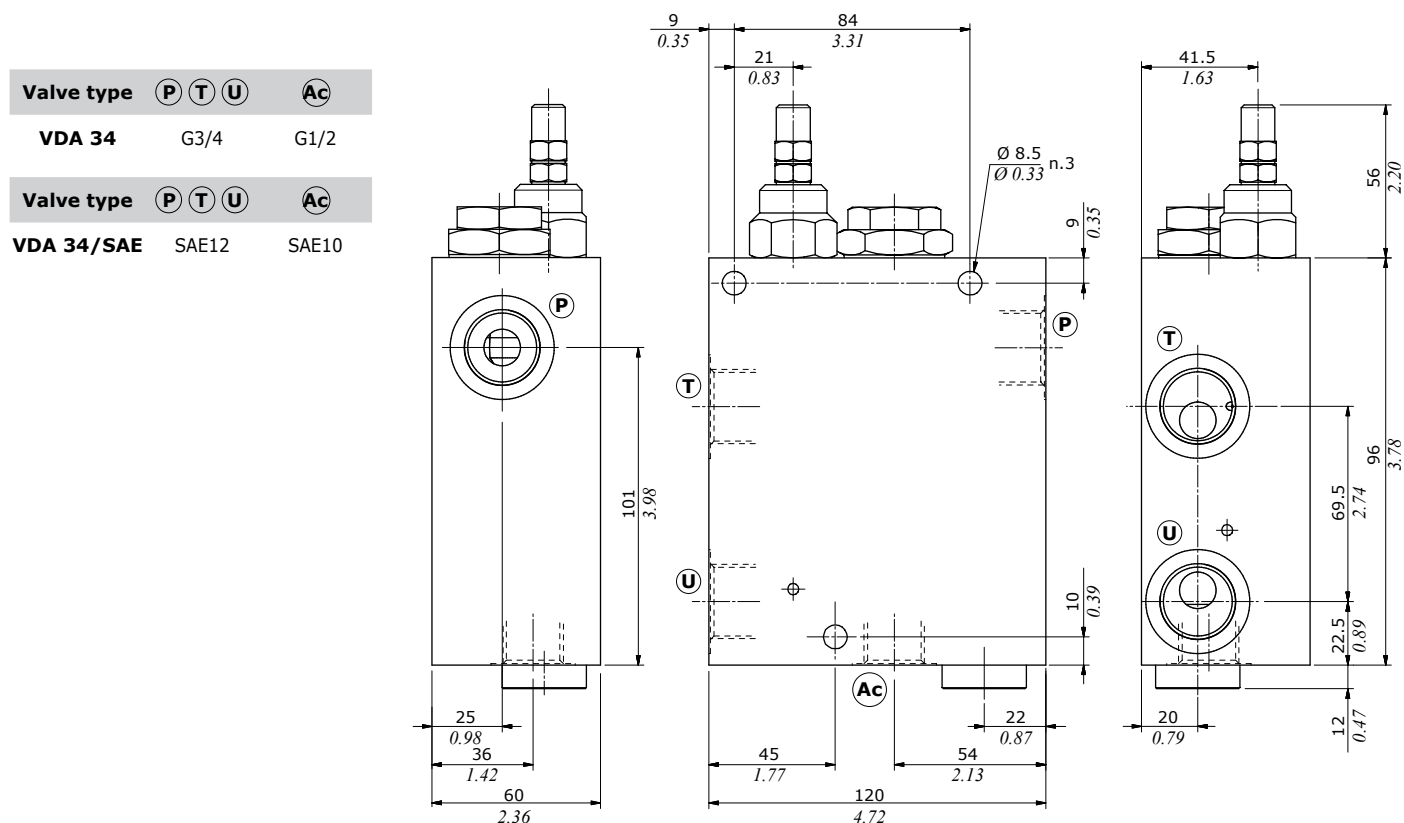


## Dimensions



Dimensions are in mm-in

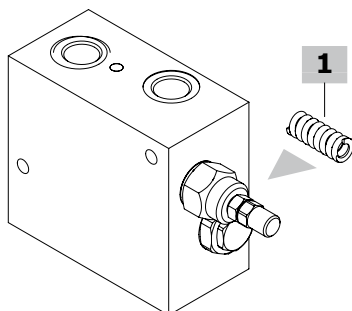
| Valve type | B       | C       | D       | E       | F        | G        | H       | I        | L       | M       | ØN       | O       | R       | S       | V       | X       | Y       | Z       |
|------------|---------|---------|---------|---------|----------|----------|---------|----------|---------|---------|----------|---------|---------|---------|---------|---------|---------|---------|
| VDA 38     | 30-1.18 | 40-1.57 | 12-0.47 | 11-0.43 | 95-3.74  | 101-3.98 | 12-0.47 | 120-4.72 | 18-0.71 | 18-0.71 | 8.5-0.33 | 25-0.98 | 56-2.20 | 60-2.36 | 24-0.94 | 20-0.79 | 38-1.50 | 56-2.20 |
| VDA 38/SAE |         |         |         |         |          |          |         |          |         |         |          |         |         |         |         |         |         |         |
| VDA 12     | 42-1.65 | 42-1.65 | 13-0.51 | 12-0.47 | 108-4.25 | 101-3.98 | 11-0.43 | 120-4.72 | 19-0.75 | 11-0.43 | 8.5-0.33 | 25-0.98 | 56-2.20 | 60-2.36 | 23-0.91 | 22-0.87 | 38-1.50 | 56-2.20 |
| VDA 12/SAE |         |         |         |         |          |          |         |          |         |         |          |         |         |         |         |         |         |         |



## Ordering codes and description composition

Port size  
**VDA 38/TR.S.VRR**

**1**



### VDA complete valves

Single type valve configuration

Standard setting 200 bar at 5 l/min (2900 psi at 1.32 US gpm)

Standard differential pressure 15%

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

#### **Configuration with G3/8 standard thread**

|                        |            |                                                           |
|------------------------|------------|-----------------------------------------------------------|
| <b>VDA 38/TR.S.VRR</b> | 1210021101 | Aluminium body, setting range 100-250 bar (1450-3600 psi) |
|------------------------|------------|-----------------------------------------------------------|

|                           |            |                                  |
|---------------------------|------------|----------------------------------|
| <b>VDA 38/DR/TR.S.VRR</b> | 1210021113 | As previous one, with Drain port |
|---------------------------|------------|----------------------------------|

|                           |            |                                                       |
|---------------------------|------------|-------------------------------------------------------|
| <b>VDA 38/TR.S.VRR/ac</b> | 1210022101 | Steel body, setting range 100-250 bar (1450-3600 psi) |
|---------------------------|------------|-------------------------------------------------------|

#### **Configuration with G1/2 standard thread**

|                        |            |                                                           |
|------------------------|------------|-----------------------------------------------------------|
| <b>VDA 12/TR.S.VRR</b> | 1210031101 | Aluminium body, setting range 100-250 bar (1450-3600 psi) |
|------------------------|------------|-----------------------------------------------------------|

|                           |            |                                  |
|---------------------------|------------|----------------------------------|
| <b>VDA 12/DR/TR.S.VRR</b> | 1210031104 | As previous one, with Drain port |
|---------------------------|------------|----------------------------------|

|                           |            |                                                       |
|---------------------------|------------|-------------------------------------------------------|
| <b>VDA 12/TR.S.VRR/ac</b> | 1210032101 | Steel body, setting range 100-250 bar (1450-3600 psi) |
|---------------------------|------------|-------------------------------------------------------|

#### **Configuration with G3/4 standard thread**

|                        |            |                                                           |
|------------------------|------------|-----------------------------------------------------------|
| <b>VDA 34/TR.S.VRR</b> | 1210041101 | Aluminium body, setting range 100-250 bar (1450-3600 psi) |
|------------------------|------------|-----------------------------------------------------------|

|                           |            |                                  |
|---------------------------|------------|----------------------------------|
| <b>VDA 34/DR/TR.S.VRR</b> | 1210041108 | As previous one, with Drain port |
|---------------------------|------------|----------------------------------|

|                           |            |                                                       |
|---------------------------|------------|-------------------------------------------------------|
| <b>VDA 34/TR.S.VRR/ac</b> | 1210042100 | Steel body, setting range 100-250 bar (1450-3600 psi) |
|---------------------------|------------|-------------------------------------------------------|

#### **Configuration with SAE8 standard thread**

|                            |            |                                                           |
|----------------------------|------------|-----------------------------------------------------------|
| <b>VDA 38/TR.S.VRR/SAE</b> | 1210021200 | Aluminium body, setting range 100-250 bar (1450-3600 psi) |
|----------------------------|------------|-----------------------------------------------------------|

#### **Configuration with SAE10 standard thread**

|                            |            |                                                           |
|----------------------------|------------|-----------------------------------------------------------|
| <b>VDA 12/TR.S.VRR/SAE</b> | 1210031200 | Aluminium body, setting range 100-250 bar (1450-3600 psi) |
|----------------------------|------------|-----------------------------------------------------------|

|                               |            |                                                       |
|-------------------------------|------------|-------------------------------------------------------|
| <b>VDA 12/TR.S.VRR/ac/SAE</b> | 1210032102 | Steel body, setting range 100-250 bar (1450-3600 psi) |
|-------------------------------|------------|-------------------------------------------------------|

#### **Configuration with SAE12 standard thread**

|                            |            |                                                           |
|----------------------------|------------|-----------------------------------------------------------|
| <b>VDA 34/TR.S.VRR/SAE</b> | 1210041200 | Aluminium body, setting range 100-250 bar (1450-3600 psi) |
|----------------------------|------------|-----------------------------------------------------------|

|                               |            |                                                       |
|-------------------------------|------------|-------------------------------------------------------|
| <b>VDA 34/TR.S.VRR/ac/SAE</b> | 1210042200 | Steel body, setting range 100-250 bar (1450-3600 psi) |
|-------------------------------|------------|-------------------------------------------------------|

For other steel body configurations, SAE thread and configurations with FPM (Viton) seals, contact our Sales Dpt.

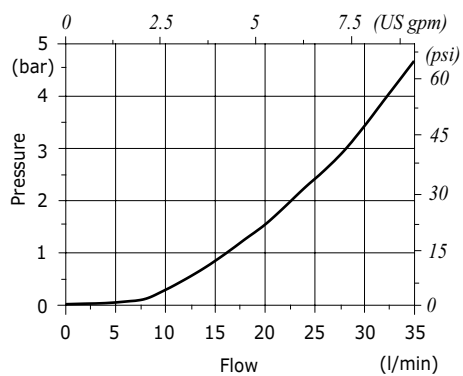
### **1 Pressure setting springs**

| TYPE      | CODE       | DESCRIPTION                               |
|-----------|------------|-------------------------------------------|
| <b>TV</b> | 3ML1164000 | Setting range 5-110 bar (72.5-1600 psi)   |
| <b>TR</b> | 3ML1164001 | Setting range 100-250 bar (1450-3600 psi) |

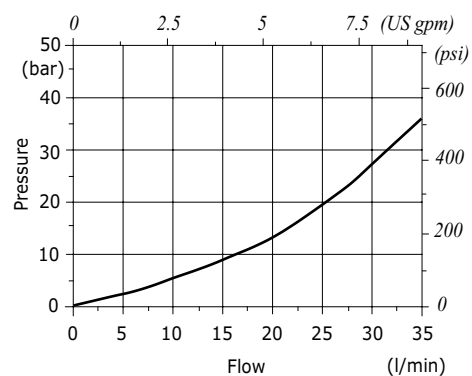


## Rating diagrams

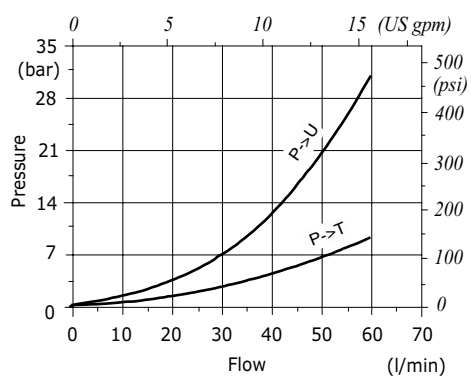
**VDA 38 P→T pressure drop vs. flow**



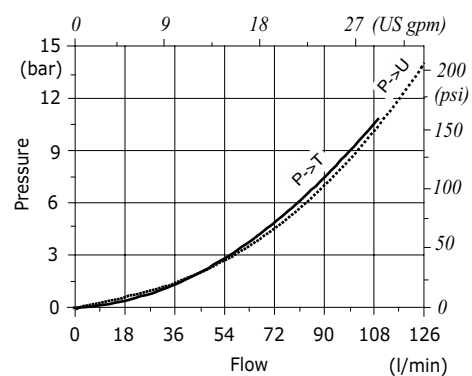
**VDA 38 P→U pressure drop vs. flow**



**VDA 12 and VDA 12/DR pressure drop vs. flow**



**VDA 34 pressure drop vs. flow**





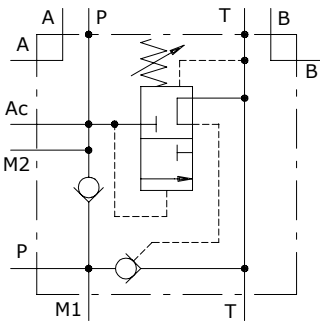
**Type VDA/FL**  
**unloader valves**

- Face mounting cetop 3 (6-38) or cetop 5 (10-12)
- Built-in check

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                            | VDA/FL 38                                                              | VDA/FL 12              |
|--------------------------------------------|------------------------------------------------------------------------|------------------------|
| Nominal flow                               | 25 l/min (6.6 US gpm)                                                  | 50 l/min (13.2 US gpm) |
| Max. pressure                              | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                        |
| Fluid                                      | mineral based oil                                                      |                        |
| Viscosity                                  | from 10 to 200 cSt                                                     |                        |
| Max. level of contamination                | 18/16/13 ISO4406                                                       |                        |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F)                       |                        |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)                                    |                        |
| Weight                                     | aluminium                                                              | 2.43 kg (5.35 lb)      |
|                                            | steel                                                                  | 6 kg (13.23 lb)        |
|                                            |                                                                        | 2.80 kg (6.17 lb)      |
|                                            |                                                                        | 7.05 kg (15.54 lb)     |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



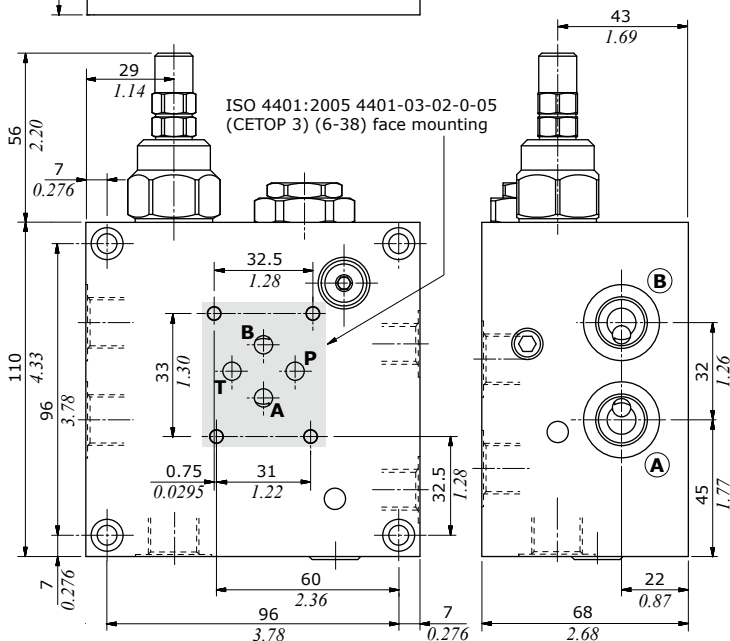
Technical drawing showing two views of a mechanical component, likely a valve or actuator. The drawing includes dimensions in millimeters (mm) and inches (in).

**Top View (Left):**

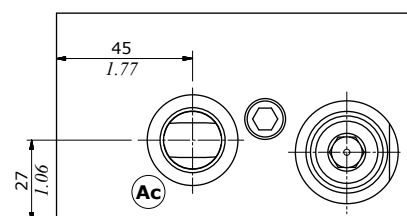
- Overall width: 110 mm (4.33 in)
- Overall height: 36 mm (1.42 in)
- Distance from left edge to center of port P: 25 mm (0.98 in)
- Distance from center of port P to center of port T: 35 mm (1.38 in)
- Distance from bottom edge to center of port P: 29 mm (1.14 in)
- Port P is located at the bottom left.
- Port T is located at the top right.
- Port S is located at the bottom center.
- Port N is located at the top center.
- Port Ø6.5 N°4 is located at the top right.

**Bottom View (Right):**

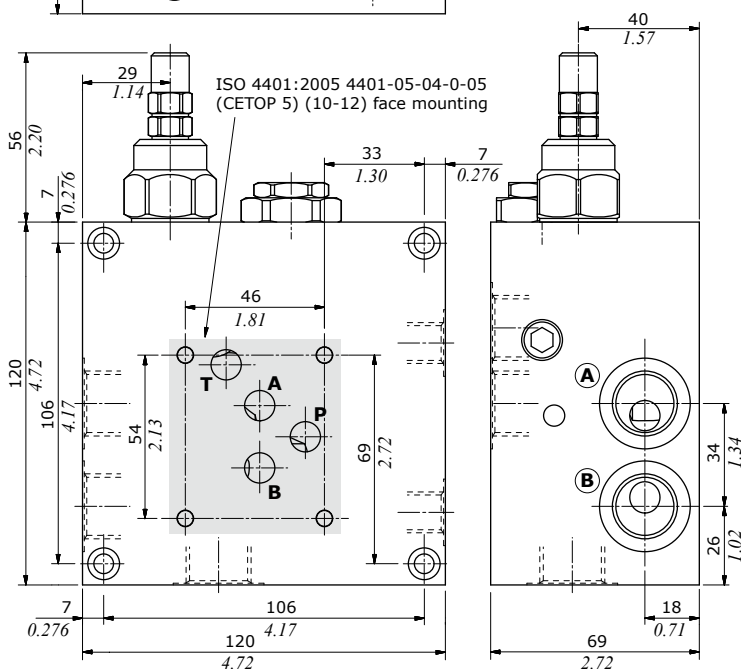
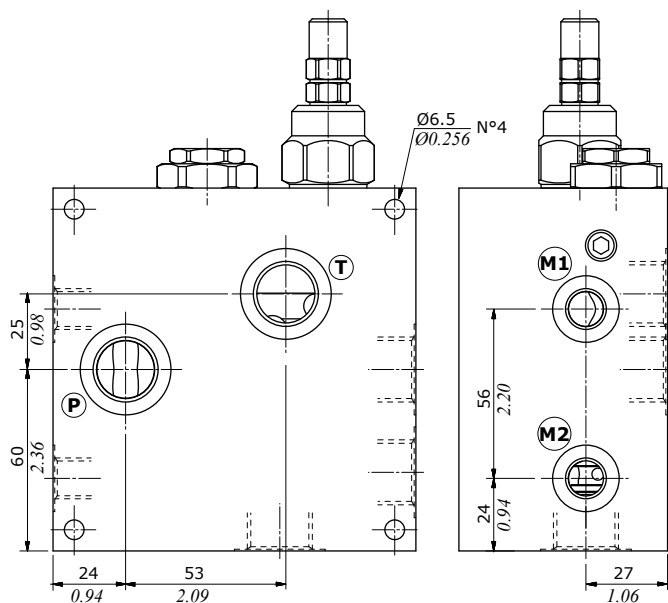
- Overall width: 40 mm (1.57 in)
- Overall height: 48 mm (1.89 in)
- Distance from left edge to center of port M1: 4 mm (0.157 in)
- Distance from center of port M1 to center of port M2: 34 mm (1.34 in)
- Distance from bottom edge to center of port M1: 22 mm (0.87 in)
- Port M1 is located at the top right.
- Port M2 is located at the bottom right.
- Port Ø6.5 N°4 is located at the top center.



| Valve type          | A-B  | P-T  | M1   | M2   | Ac   |
|---------------------|------|------|------|------|------|
| <b>VDA/FL 6-38</b>  | G3/8 | G3/8 | G1/4 | G1/4 | G3/8 |
| <b>VDA/FL 10-12</b> | G1/2 | G1/2 | G1/4 | G1/4 | G1/2 |

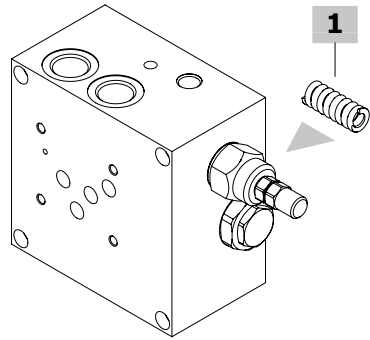


**VDA/FL 6-38**



Ordering codes and description composition

Port size  
**VDA/FL 6-38/TR.S.VRR**  
**1**



VDA/FL complete valves

*Standard setting 200 bar (2900 psi) at 5 l/min (1.32 US gpm)*

*Standard differential pressure 15%*

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

**Configuration with G3/8 standard thread**

|                             |            |                                                      |
|-----------------------------|------------|------------------------------------------------------|
| <b>VDA/FL 6-38/TR.S.VRR</b> | 1214021101 | Aluminium body, range<br>100-250 bar (1450-3600 psi) |
|-----------------------------|------------|------------------------------------------------------|

|                                |            |                             |
|--------------------------------|------------|-----------------------------|
| <b>VDA/FL 6-38/TR.S.VRR/ac</b> | 1214022100 | Steel body, as previous one |
|--------------------------------|------------|-----------------------------|

**Configuration with G1/2 standard thread**

|                              |            |                                                      |
|------------------------------|------------|------------------------------------------------------|
| <b>VDA/FL 10-12/TR.S.VRR</b> | 1214031101 | Aluminium body, range<br>100-250 bar (1450-3600 psi) |
|------------------------------|------------|------------------------------------------------------|

|                                 |            |                             |
|---------------------------------|------------|-----------------------------|
| <b>VDA/FL 10-12/TR.S.VRR/ac</b> | 1214032100 | Steel body, as previous one |
|---------------------------------|------------|-----------------------------|

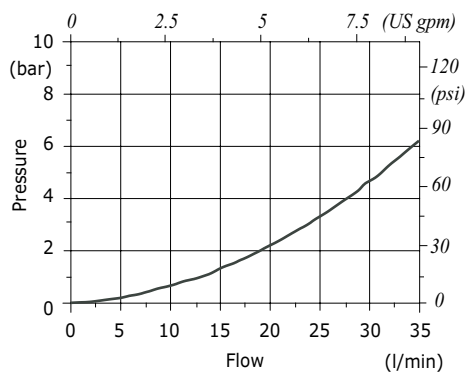
For other steel body configurations, SAE thread and configurations with FPM (Viton) seals, contact our Sales Dpt.

**1 Pressure setting springs**

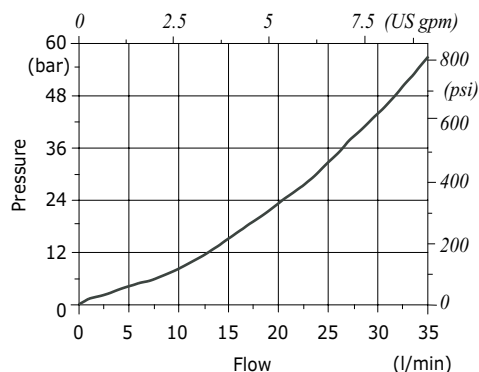
| TYPE      | CODE       | DESCRIPTION                               |
|-----------|------------|-------------------------------------------|
| <b>TV</b> | 3ML1164000 | Setting range 5-110 bar (72.5-1600 psi)   |
| <b>TR</b> | 3ML1164001 | Setting range 100-250 bar (1450-3600 psi) |

## Rating diagrams

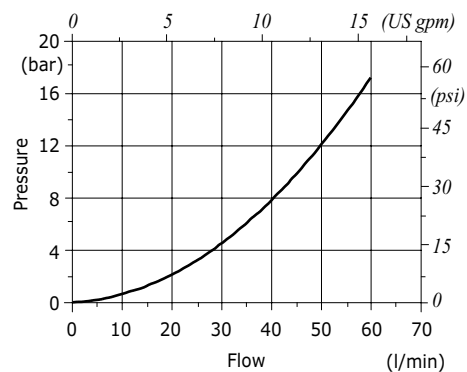
**VDA/FL 6-38 P→T pressure drop vs. flow**



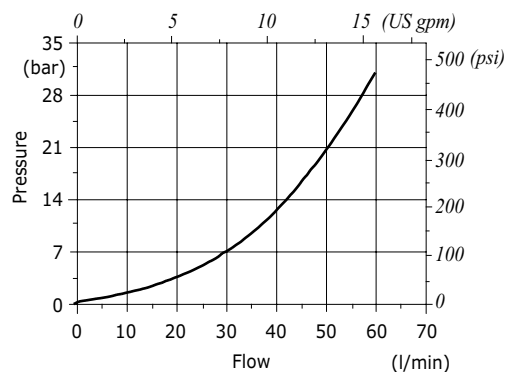
**VDA/FL 6-38 P→P cetop pressure drop vs. flow**



**VDA/FL 10-12 P→T pressure drop vs. flow**



**VDA/FL 10-12 P→P cetop pressure drop vs. flow**





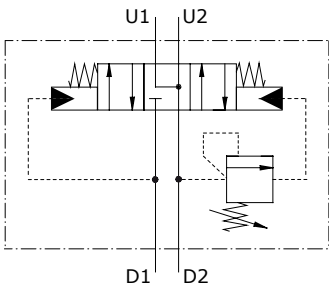
**Type VRCL/KD**  
**regenerative valves**

- Regenerative

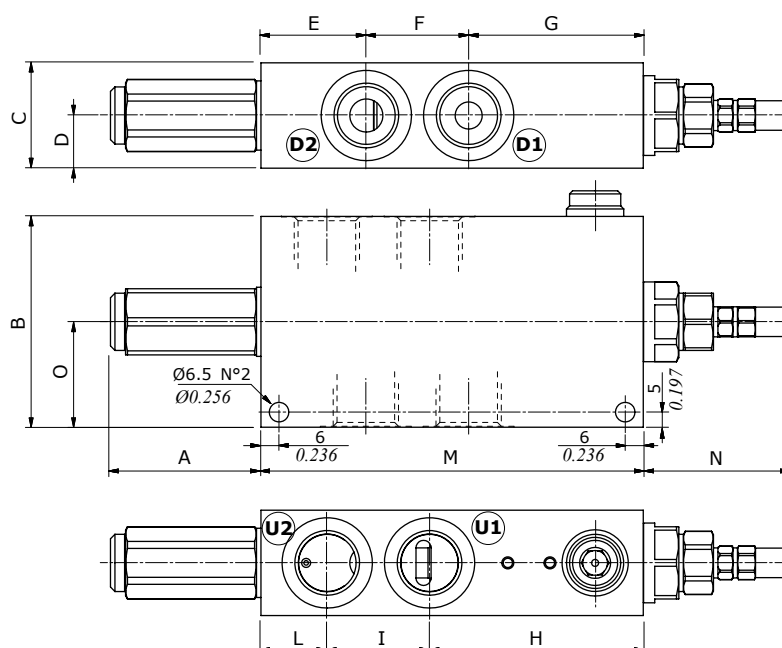
Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                            | VRCL/KD 38                                       | VRCL/KD 12             | VRCL/KD 34             | VRCL/KD 100             |
|--------------------------------------------|--------------------------------------------------|------------------------|------------------------|-------------------------|
| Nominal flow                               | 30 l/min (7.9 US gpm)                            | 50 l/min (13.2 US gpm) | 90 l/min (23.8 US gpm) | 150 l/min (39.6 US gpm) |
| Max. pressure                              | 350 bar (5100 psi)                               |                        |                        |                         |
| Fluid                                      | mineral based oil                                |                        |                        |                         |
| Viscosity                                  | from 10 to 200 cSt                               |                        |                        |                         |
| Max. level of contamination                | 18/16/13 ISO4406                                 |                        |                        |                         |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F) |                        |                        |                         |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)              |                        |                        |                         |
| Weight                                     | steel 3.65 kg (8.05 lb)                          | 3.55 kg (7.83 lb)      | 5.50 kg (12.12 lb)     | 10.12 kg (22.31 lb)     |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



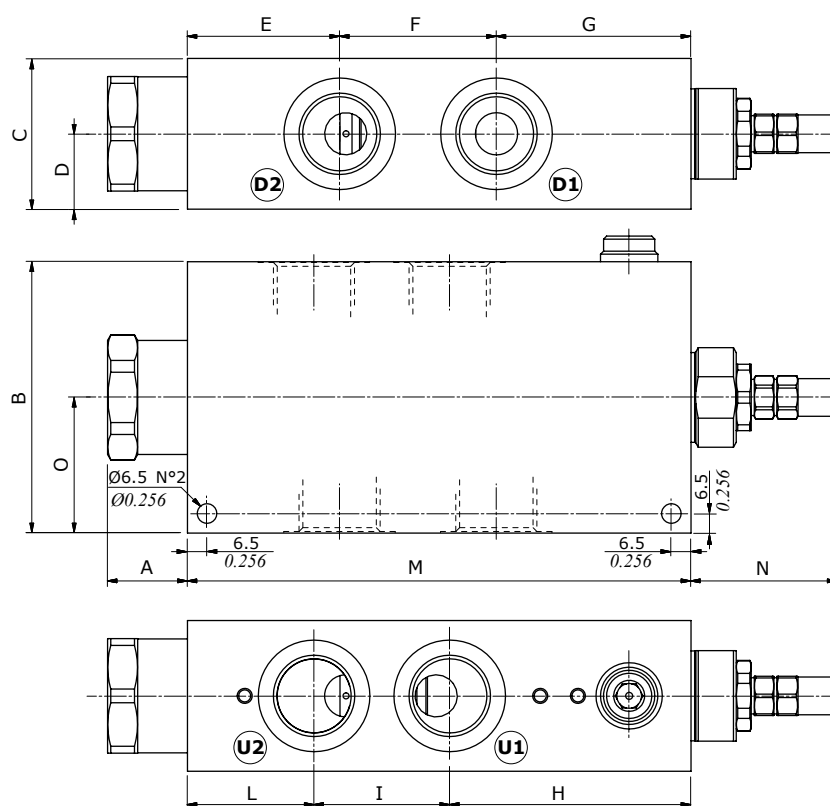
## Dimensions



| Valve type | All ports |
|------------|-----------|
| VRCL/KD 38 | G3/8      |
| VRCL/KD 12 | G1/2      |

Dimensions are in mm-in

| Valve Type | A       | B       | C       | D         | E       | F       | G       | H       | I       | L       | M     | N         | O       |
|------------|---------|---------|---------|-----------|---------|---------|---------|---------|---------|---------|-------|-----------|---------|
| VRCL/KD 38 | 50-1.97 | 70-2.75 | 35-1.38 | 17.5-0.69 | 35-1.38 | 34-1.34 | 58-2.28 | 71-2.79 | 34-1.34 | 22-0.87 | 127-5 | 48.5-1.91 | 35-1.38 |
| VRCL/KD 12 | 50-1.97 | 70-2.75 | 35-1.38 | 17.5-0.69 | 35-1.38 | 34-1.34 | 58-2.28 | 71-2.79 | 34-1.34 | 22-0.87 | 127-5 | 48.5-1.91 | 35-1.38 |



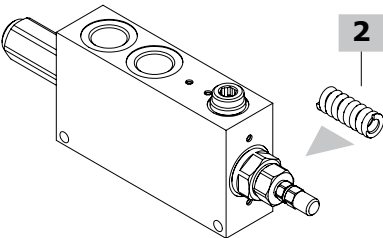
| Valve type  | All ports |
|-------------|-----------|
| VRCL/KD 34  | G3/4      |
| VRCL/KD 100 | G1"       |

Dimensions are in mm-in

| Valve Type  | A       | B        | C       | D       | E         | F       | G         | H          | I       | L         | M        | N         | O       |
|-------------|---------|----------|---------|---------|-----------|---------|-----------|------------|---------|-----------|----------|-----------|---------|
| VRCL/KD 34  | 27-1.06 | 90-3.54  | 50-1.97 | 25-0.98 | 50.5-1.99 | 52-2.05 | 64.5-2.54 | 80-3.15    | 45-1.77 | 42-1.65   | 167-6.57 | 48.5-1.91 | 45-1.77 |
| VRCL/KD 100 | 26-1.02 | 100-3.94 | 60-2.36 | 30-1.18 | 77-3.03   | 68-2.68 | 90-3.54   | 111.5-4.39 | 57-2.24 | 66.5-2.62 | 235-9.25 | 43-1.69   | 50-1.97 |

Ordering codes and description composition

Port size  
**VRCL/KD 38/TS.S**  
**1**



**VRCL/KD complete valves**

*Cast iron body, standard setting 100 bar (1450 psi) at 10 l/min  
(2.64 US gpm)*

| TYPE                       | CODE       | DESCRIPTION                                               |
|----------------------------|------------|-----------------------------------------------------------|
| <b>VRCL/KD 38/TS.S/gh</b>  | 1245023103 | G3/8 port thread, setting range 50-220 bar (725-3200 psi) |
| <b>VRCL/KD 12/TS.S/gh</b>  | 1245033108 | G1/2 port thread, setting range 50-220 bar (725-3200 psi) |
| <b>VRCL/KD 34/TS.S/gh</b>  | 1245043107 | G3/4 port thread, setting range 50-220 bar (725-3200 psi) |
| <b>VRCL/KD 100/TS.S/gh</b> | 1245053104 | G1" port thread, setting range 50-220 bar (725-3200 psi)  |

For other configurations, SAE threads and configurations with FPM (Viton) seals, please contact our Sales Dpt.

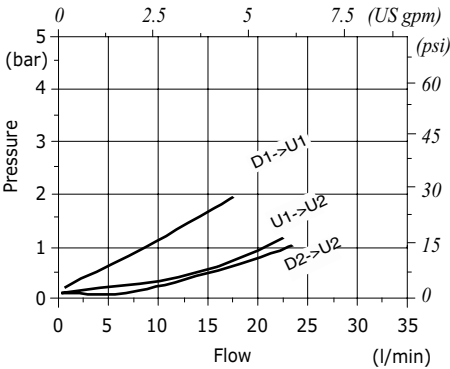
**1 Pressure setting springs**

| TYPE                                         | CODE       | DESCRIPTION                               |
|----------------------------------------------|------------|-------------------------------------------|
| <b>For VRCL/KD 38 and VRCL/KD 12 valves</b>  |            |                                           |
| <b>TB</b>                                    | 3ML1081400 | Setting range 5-80 bar (72.5-725 psi)     |
| <b>TS</b>                                    | 3ML1081401 | Setting range 50-220 bar (725-3200 psi)   |
| <b>TR</b>                                    | 3ML1081402 | Setting range 180-350 bar (2600-5100 psi) |
| <b>For VRCL/KD 34 and VRCL/KD 100 valves</b> |            |                                           |
| <b>TV</b>                                    | 3ML1092500 | Setting range 5-50 bar (72.5-1150 psi)    |
| <b>TS</b>                                    | 3ML1092501 | Setting range 20-220 bar (290-3200 psi)   |
| <b>TR</b>                                    | 3ML1092502 | Setting range 180-350 bar (2600-5100 psi) |

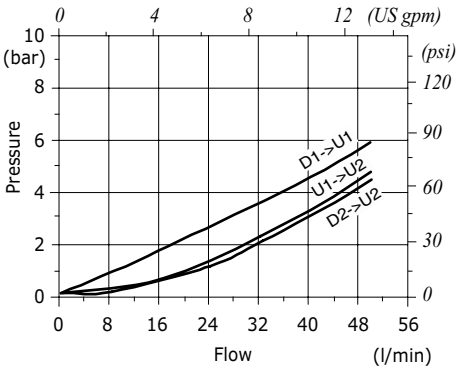


Rating diagrams

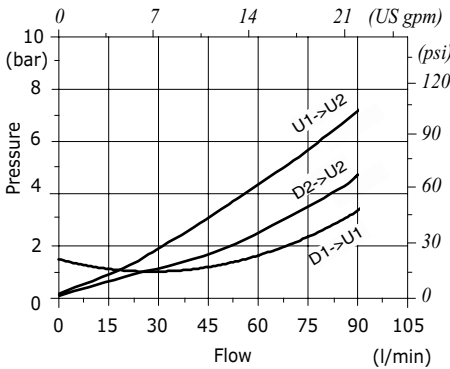
VRCL/KD 38 pressure drop vs. flow



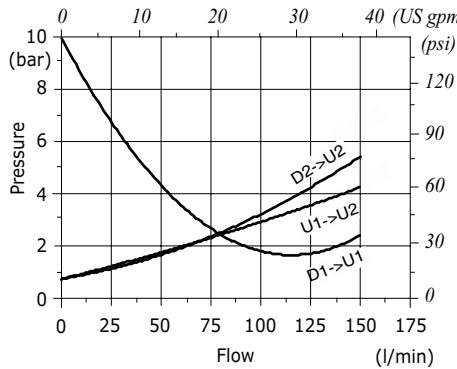
VRCL/KD 12 pressure drop vs. flow



VRCL/KD 34 pressure drop vs. flow



VRCL/KD 100 pressure drop vs. flow





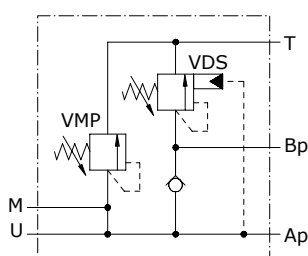
## Type VEP two pump "high-low" unloading valves

- Single acting
- "High-low pressure"

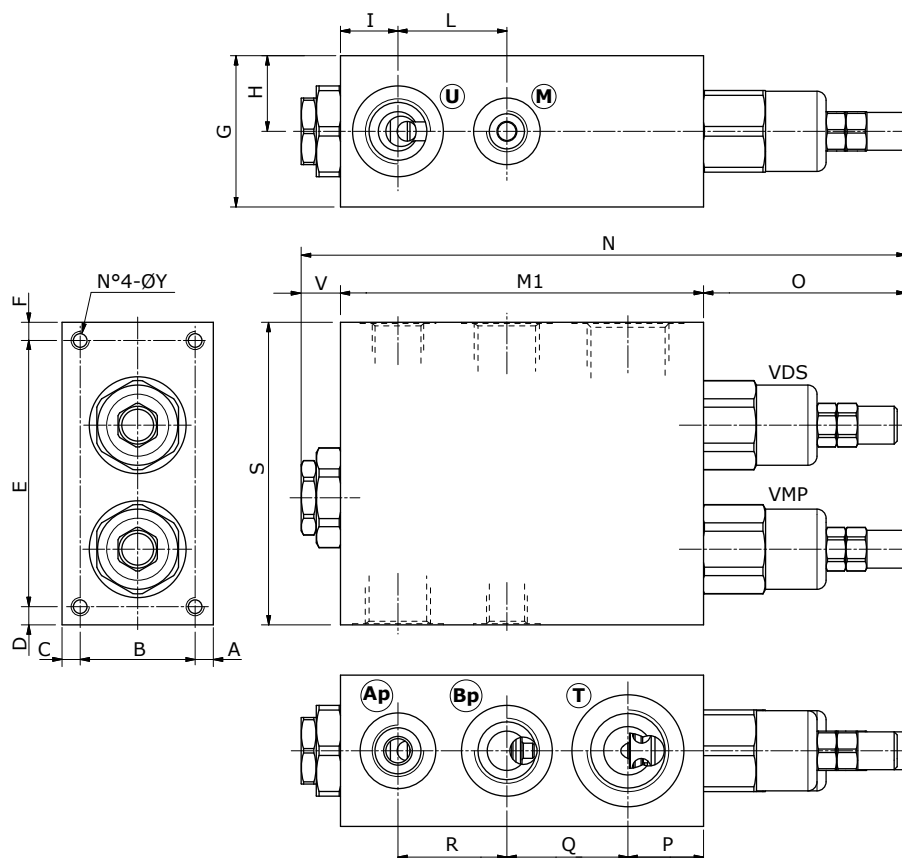
Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

| Line                                       |                                      | VEP 38                                                                 | VEP 12                    | VEP 34                     | VEP 100                    | VEP 114                    |
|--------------------------------------------|--------------------------------------|------------------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| Nominal flow                               | <b>Ap</b> (high pressure inlet port) | 10 l/min<br>(2.6 US gpm)                                               | 20 l/min<br>(5.3 US gpm)  | 30 l/min<br>(7.9 US gpm)   | 50 l/min<br>(13.2 US gpm)  | 80 l/min<br>(21.1 US gpm)  |
|                                            | <b>Bp</b> (low pressure inlet port)  | 25 l/min<br>(6.6 US gpm)                                               | 45 l/min<br>(11.9 US gpm) | 80 l/min<br>(21.1 US gpm)  | 150 l/min<br>(39.6 US gpm) | 200 l/min<br>(52.8 US gpm) |
|                                            | <b>U</b> (work port)                 | 30 l/min<br>(7.9 US gpm)                                               | 55 l/min<br>(14.5 US gpm) | 100 l/min<br>(26.4 US gpm) | 180 l/min<br>(47.6 US gpm) | 250 l/min<br>(66 US gpm)   |
| Max. pressure                              |                                      | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                           |                            |                            |                            |
| Fluid                                      |                                      | mineral based oil                                                      |                           |                            |                            |                            |
| Viscosity                                  |                                      | from 10 to 200 cSt                                                     |                           |                            |                            |                            |
| Max. level of contamination                |                                      | 18/16/13 ISO4406                                                       |                           |                            |                            |                            |
| Fluid temperature                          |                                      | with NBR seals from -20°C (-4°F) to 80°C (176°F)                       |                           |                            |                            |                            |
| Environmental temp. for working conditions |                                      | from -40°C (-40°F) to 100°C (212°F)                                    |                           |                            |                            |                            |
| Weight                                     | aluminium                            | 1.20 kg<br>(2.64 lb)                                                   | 2.05 kg<br>(4.52 lb)      | 3.70 kg<br>(8.16 lb)       | 5.92 kg<br>(13.05 lb)      | 11.67 kg<br>(25.72 lb)     |
|                                            | steel                                | 2.63 kg<br>(5.80 lb)                                                   | 4.50 kg<br>(9.92 lb)      | 9.37 kg<br>(20.66 lb)      | 14.48 kg<br>(31.92 lb)     | 19.50 kg<br>(42.99 lb)     |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



## Dimensions



| Valve type     | U      | M    | T      | Ap   | Bp     |
|----------------|--------|------|--------|------|--------|
| <b>VEP 38</b>  | G3/8   | G1/4 | G1/2   | G1/4 | G3/8   |
| <b>VEP 12</b>  | G1/2   | G1/4 | G3/4   | G3/8 | G1/2   |
| <b>VEP 34</b>  | G3/4   | G1/4 | G1"    | G1/2 | G3/4   |
| <b>VEP 100</b> | G1"    | G1/4 | G1"1/4 | G3/4 | G1"    |
| <b>VEP 114</b> | G1"1/4 | G1/4 | G1"1/2 | G3/4 | G1"1/4 |

| Valve type         | U     | M    | T     | Ap    | Bp    |
|--------------------|-------|------|-------|-------|-------|
| <b>VEP 38/SAE</b>  | SAE8  | SAE6 | SAE10 | SAE6  | SAE8  |
| <b>VEP 12/SAE</b>  | SAE10 | SAE6 | SAE12 | SAE8  | SAE10 |
| <b>VEP 34/SAE</b>  | SAE12 | SAE6 | SAE16 | SAE10 | SAE12 |
| <b>VEP 100/SAE</b> | SAE16 | SAE6 | SAE20 | SAE12 | SAE16 |
| <b>VEP 114/SAE</b> | SAE20 | SAE6 | SAE24 | SAE12 | SAE20 |

Dimensions are in mm-in

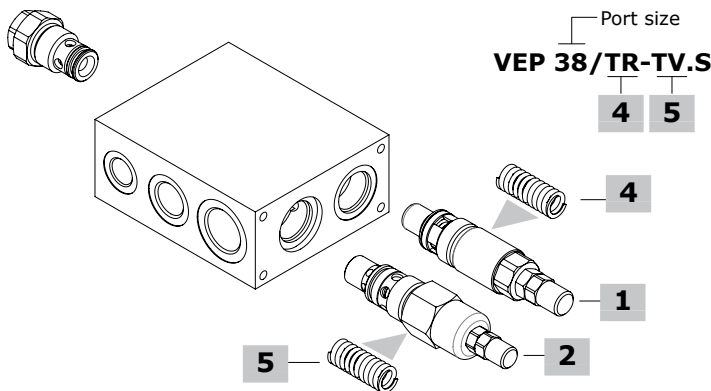
| Valve type         | A    | B    | C    | D    | E    | F    | G    | H    | I    | L    | M1   | N     | O    | ØY | P    | Q    | R    | S    | V    |
|--------------------|------|------|------|------|------|------|------|------|------|------|------|-------|------|----|------|------|------|------|------|
| <b>VEP 38</b>      | 6    | 28   | 6    | 6    | 78   | 6    | 40   | 20   | 17   | 28   | 98   | 168.5 | 60   | M6 | 20   | 33   | 29   | 90   | 10.5 |
| <b>VEP 38/SAE</b>  | 0.24 | 1.10 | 0.24 | 0.24 | 3.07 | 0.24 | 1.57 | 0.79 | 0.67 | 1.10 | 3.85 | 6.63  | 2.36 |    | 0.79 | 1.30 | 1.14 | 3.54 | 0.41 |
| <b>VEP 12</b>      | 6    | 38   | 6    | 6    | 88   | 6    | 50   | 25   | 19   | 36   | 120  | 200   | 67   | M6 | 25   | 40   | 36   | 100  | 13   |
| <b>VEP 12/SAE</b>  | 0.24 | 1.50 | 0.24 | 0.24 | 3.46 | 0.24 | 1.97 | 0.98 | 0.75 | 1.42 | 4.72 | 7.87  | 2.64 |    | 0.98 | 1.57 | 1.42 | 3.94 | 0.51 |
| <b>VEP 34</b>      | 8    | 44   | 8    | 8    | 114  | 8    | 60   | 30   | 30   | 40   | 150  | 243   | 76.5 | M8 | 28   | 52   | 40   | 130  | 16.5 |
| <b>VEP 34/SAE</b>  | 0.31 | 1.73 | 0.31 | 0.31 | 4.49 | 0.31 | 2.36 | 1.18 | 1.18 | 1.57 | 5.90 | 9.57  | 3.01 |    | 1.10 | 2.05 | 1.57 | 5.11 | 0.65 |
| <b>VEP 100</b>     | 10   | 50   | 10   | 10   | 130  | 10   | 70   | 35   | 30   | 70   | 180  | 285   | 88.5 | M6 | 32   | 60   | 58   | 150  | 16.5 |
| <b>VEP 100/SAE</b> | 0.39 | 1.97 | 0.39 | 0.39 | 5.11 | 0.39 | 2.75 | 1.38 | 1.18 | 2.75 | 7.09 | 11.22 | 3.48 |    | 1.26 | 2.36 | 2.28 | 5.90 | 0.65 |
| <b>VEP 114</b>     | 10   | 60   | 10   | 10   | 160  | 10   | 80   | 40   | 40   | 80   | 200  | 304   | 88.5 | M8 | 35   | 70   | 60   | 180  | 15.5 |
| <b>VEP 114/SAE</b> | 0.39 | 2.36 | 0.39 | 0.39 | 6.3  | 0.39 | 3.15 | 1.57 | 1.57 | 3.15 | 7.87 | 11.97 | 3.48 |    | 1.38 | 2.75 | 2.34 | 7.09 | 0.61 |

## Logic valves

Two pump "hi-low" unloading-valves

VEP

## Ordering codes and description composition



### VEP complete valves

#### Single type valve configuration

High pressure (Ap): range 180-350 bar (2600-5075 psi) and standard setting 280 bar (4060 psi) at 5 l/min (1.32 US gpm); Low Pressure (Bp): see below

TYPE CODE DESCRIPTION

#### Configuration with G3/8 standard thread

**VEP 38/TR-TV.S** 1220021101 Aluminium body  
Bp: range 20-80 bar (290-1160 psi) - Standard setting 60 bar (870 psi) at 5l/min (1.32 US gpm)

**VEP 38/TR-TV.S/ac** 1220022102 Steel body, as previous one

#### Configuration with G1/2 standard thread

**VEP 12/TR-TV.S** 1220031101 Aluminium body  
Bp: range 5-80 bar (72.5-1160 psi) - Standard setting 40 bar (580 psi) at 5l/min (1.32 US gpm)

**VEP 12/TR-TV.S/ac** 1220032100 Steel body, as previous one

#### Configuration with G3/4 standard thread

**VEP 34/TR-TV.S** 1220041101 Aluminium body  
Bp: range 10-80 bar (145-1160 psi) - Standard setting 50 bar (725 psi) at 5 l/min (1.32 US gpm)

**VEP 34/TR-TV.S/ac** 1220042100 Steel body, as previous one

#### Configuration with G1" standard thread

**VEP 100/TR-TV.S** 1220051101 Aluminium body  
Bp: range 20-80 bar (290-1160 psi) - Standard setting 60 bar (870 psi) at 5l/min (1.32 US gpm)

**VEP 100/TR-TV.S/ac** 1220052101 Steel body, as previous one

#### Configuration with G1"1/4 standard thread

**VEP 114/TR-TV.S** 1220061101 Aluminium body  
Bp: range 20-80 bar (290-1160 psi) - Standard setting 60 bar (870 psi) at 5l/min (1.32 US gpm)

**VEP 114/TR-TV.S/ac** 1220062100 Steel body, as previous one

#### Configuration with SAE8 standard thread

**VEP 38/TR-TV.S/SAE** 1220021200 Aluminium body  
Bp: range 20-80 bar (290-1160 psi) - Standard setting 60 bar (870 psi) at 5l/min (1.32 US gpm)

#### Configuration with SAE10 standard thread

**VEP 12/TR-TV.S/SAE** 1220031101 Aluminium body  
Bp: range 5-80 bar (72.5-1160 psi) - Standard setting 40 bar (580 psi) at 5l/min (1.32 US gpm)

#### Configuration with SAE12 standard thread

**VEP 34/TR-TV.S/SAE** 1220041200 Aluminium body  
Bp: range 10-80 bar (145-1160 psi) - Standard setting 50 bar (725 psi) at 5 l/min (1.32 US gpm)

#### Configuration with SAE16 standard thread

**VEP 100/TR-TV.S/SAE** 1220051200 Aluminium body  
Bp: range 20-80 bar (290-1160 psi) - Standard setting 60 bar (870 psi) at 5l/min (1.32 US gpm)

### VEP complete valves (continue)

TYPE CODE DESCRIPTION

#### Configuration with SAE20 standard thread

**VEP 114/TR-TV.S/SAE** 1220061200 Aluminium body  
Bp: range 20-80 bar (290-1160 psi) - Standard setting 60 bar (870 psi) at 5l/min (1.32 US gpm)

For other steel body configurations, other port sizes and configurations with FPM (Viton) seals, contact our Sales Dpt.

### 1 Direct acting pressure relief valve

Standard setting 160 bar at 5 l/min (2320 psi at 1.32 US gpm)

TYPE CODE DESCRIPTION

#### For G3/8 and SAE8 ports configuration

**VMP 5/TR.S** 1100520401 Setting range 50-220 bar (725-3200 psi) (Ap)

#### For G1/2, G3/4, SAE10 and SAE12 ports configuration

**VMP 10/TR.S** 1100530401 Setting range 50-220 bar (725-3200 psi) (Ap)

#### For G1", G1"1/4, SAE16 and SAE20 ports configuration

**VMP 20/TR.S** 1100540403 Setting range 50-220 bar (725-3200 psi) (Ap)

### 2 Sequence valve

Setting range 20-80 bar (290-1150 psi) (Lp)

Standard setting 50 bar at 5 l/min (725 psi at 1.32 US gpm)

TYPE CODE DESCRIPTION

**VDS/VEP 38/TV.S** 1205020400 For G3/8 - SAE8 port configuration

**VDS/VEP 12/TV.S** 1205030400 For G1/2 - SAE10 port configuration

**VDS/VEP 34/TV.S** 1205040405 For G3/4 - SAE12 port configuration

**VDS/VEP 100/TV.S** 1205050400 For G1" - SAE16 port configuration

**VDS/VEP 114/TV.S** 1205060400 For G1"1/4 - SAE20 port configuration

### 3 Check valve

Opening pressure 0.5 bar (7.25 psi)

TYPE CODE DESCRIPTION

**VUI 38/Pa0,5** 1300020400 For G3/8 - SAE8 port configuration

**VUI 12/Pa0,5 pass.magg** 1300030401 For G1/2 - SAE10 port configuration

**VUI 34/Pa0,5 pass.magg** 1300040401 For G3/4, G1", SAE12, SAE16 port config.

**VUI 100/Pa0,5 pass.magg** 1300050401 For G1"1/4, SAE20 port configuration

### 4 Pressure setting springs

TYPE CODE DESCRIPTION

#### For VMP 5 valve on VEP 38 complete valve (Ap)

**TS** 3MOL315330 Setting range 50-220 bar (725-3200 psi)

**TR** 3ML1143600 Setting range 180-350 bar (2600-5100 psi)

#### For VMP 10 valve on VEP 12 and VEP 34 complete valves (Ap)

**TS** 3MOL317420 Setting range 50-220 bar (725-3200 psi)

**TR** 3MOL317440 Setting range 180-350 bar (2600-5100 psi)

#### For VMP 20 valve on VEP 100 and 114 complete valves (Ap)

**TS** 3ML1204200 Setting range 50-220 bar (725-3200 psi)

**TR** 3ML1214500 Setting range 180-350 bar (2600-5100 psi)

### 5 Pressure setting springs

TYPE CODE DESCRIPTION

#### For VDS/VEP 38 valve on VEP 38 complete valve (Bp)

**TB** 3MOL314311 Setting range 5-40 bar (72.5-580 psi)

**TV** 3MOL314330 Setting range 20-80 bar (290-1150 psi)

#### For VDS/VEP 12 valve on VEP 12 complete valve (Bp)

**TV** 3MOL317420 Setting range 5-80 bar (72.5-1150 psi)

#### For VDS/VEP 34 valve on VEP 34 complete valve (Bp)

**TB** 3ML1174500 Setting range 10-50 bar (145-725 psi)

**TV** 3ML1204200 Setting range 10-80 bar (145-1150 psi)

#### For VDS/VEP 100 valve on VEP 100 complete valve (Bp)

**TB** 3MOL314311 Setting range 5-40 bar (72.5-580 psi)

**TV** 3MOL314330 Setting range 20-80 bar (290-1150 psi)

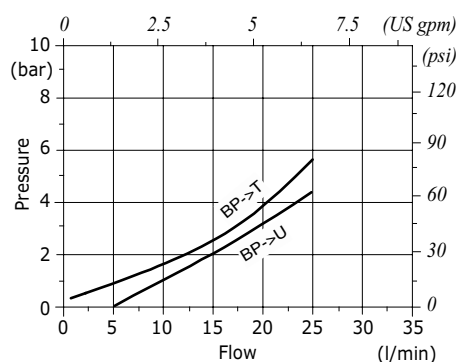
#### For VDS/VEP 114 valve on VEP 114 complete valve (Bp)

**TB** 3MOL314311 Setting range 5-40 bar (72.5-580 psi)

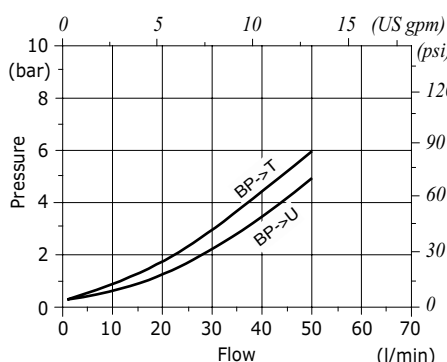
**TV** 3MOL314330 Setting range 20-80 bar (290-1150 psi)

## Rating diagrams

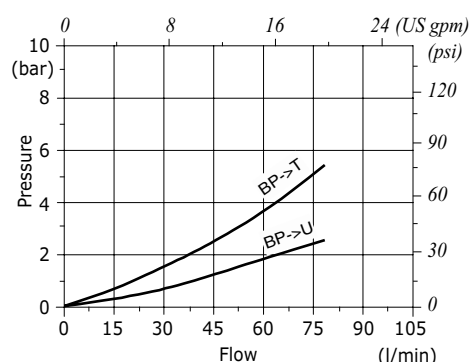
**VEP 38 pressure drop vs. flow**  
from Bp→T and Bp→U



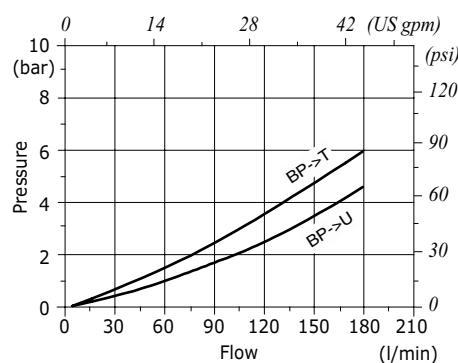
**VEP 12 pressure drop vs. flow**  
from BP→T and BP→U



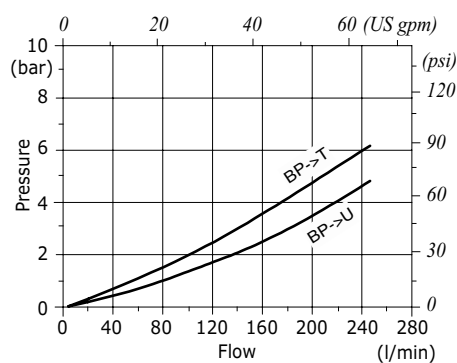
**VEP 34 pressure drop vs. flow**  
from Bp→T and Bp→U



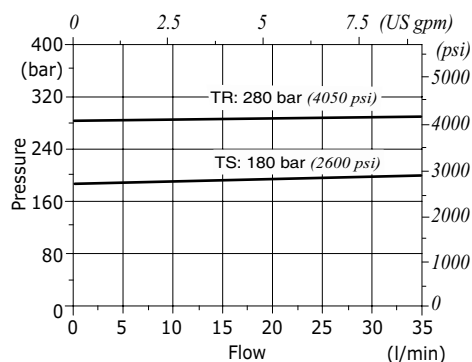
**VEP 100 pressure drop vs. flow**  
from Bp→T and Bp→U



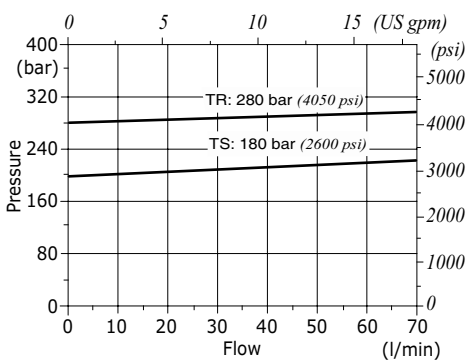
**VEP 114 pressure drop vs. flow**  
from Bp→T and Bp→U



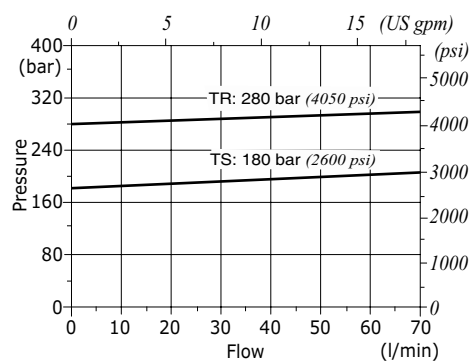
**VEP 38: VMP setting example**  
at 5 l/min (1.32 US gpm)



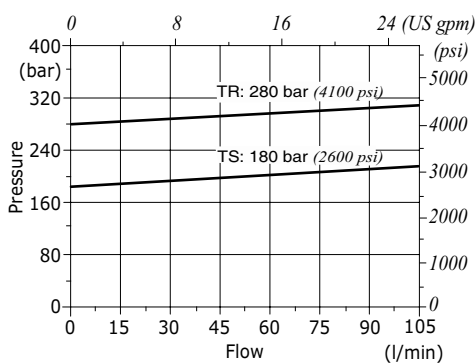
**VEP 12: VMP setting example**  
at 5 l/min (1.32 US gpm)



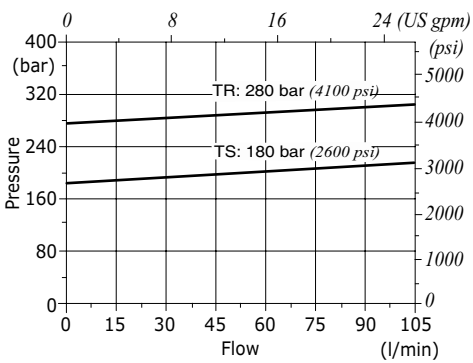
**VEP 34: VMP setting example**  
at 5 l/min (1.32 US gpm)



**VEP 100: VMP setting example**  
at 5 l/min (1.32 US gpm)



**VEP 114: VMP setting example**  
at 5 l/min (1.32 US gpm)





## Type VEP/FC

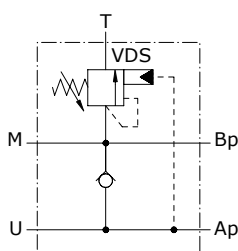
### two pump "high-low" unloading valves

- Single acting
- Flanged solution

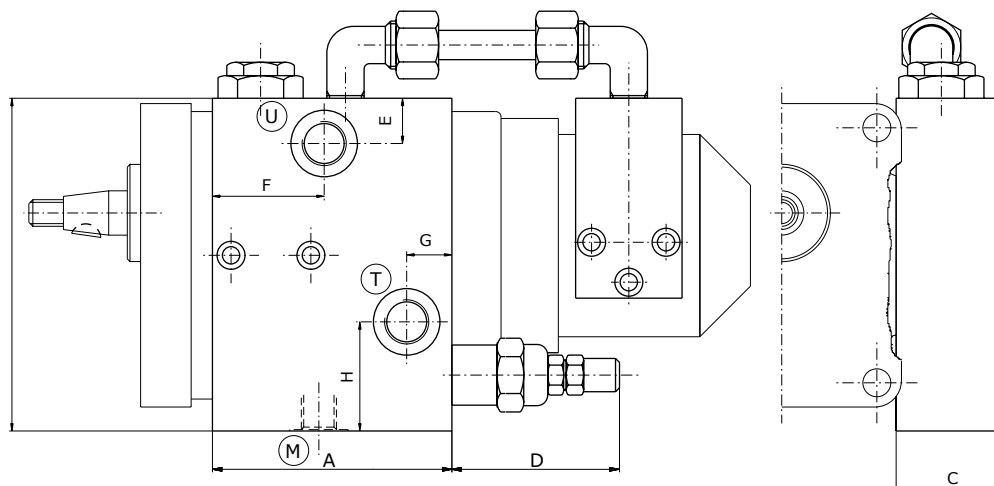
Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

| Line                                       |                                      | VEP/FC 38                                                                                             | VEP/FC 12                 | VEP/FC 34                  | VEP/FC 100                 |
|--------------------------------------------|--------------------------------------|-------------------------------------------------------------------------------------------------------|---------------------------|----------------------------|----------------------------|
| Nominal flow                               | <b>Ap</b> (high pressure inlet port) | 10 l/min<br>(2.6 US gpm)                                                                              | 20 l/min<br>(5.3 US gpm)  | 30 l/min<br>(7.9 US gpm)   | 50 l/min<br>(13.2 US gpm)  |
|                                            | <b>Bp</b> (low pressure inlet port)  | 25 l/min<br>(6.6 US gpm)                                                                              | 45 l/min<br>(11.9 US gpm) | 80 l/min<br>(21.1 US gpm)  | 150 l/min<br>(39.6 US gpm) |
|                                            | <b>U</b> (work port)                 | 30 l/min<br>(7.9 US gpm)                                                                              | 55 l/min<br>(14.5 US gpm) | 100 l/min<br>(26.4 US gpm) | 180 l/min<br>(47.6 US gpm) |
| Max. pressure                              |                                      | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi)                                |                           |                            |                            |
| Fluid                                      |                                      | mineral based oil                                                                                     |                           |                            |                            |
| Viscosity                                  |                                      | from 10 to 200 cSt                                                                                    |                           |                            |                            |
| Max. level of contamination                |                                      | 18/16/13 ISO4406                                                                                      |                           |                            |                            |
| Fluid temperature                          |                                      | with NBR seals from -20°C (-4°F) to 80°C (176°F)<br>with FPM seals from -20°C (-4°F) to 100°C (212°F) |                           |                            |                            |
| Environmental temp. for working conditions |                                      | from -40°C (-40°F) to 100°C (212°F)                                                                   |                           |                            |                            |
| Weight                                     | aluminium                            | 1.36 kg (3.05 lb)                                                                                     | 2.50 kg (5.51 lb)         | 3.50 kg (7.72 lb)          | 6.21 kg (13.69 lb)         |
|                                            | steel                                | 2.48 kg (5.47 lb)                                                                                     | 4.22 kg (9.30 lb)         | 7.91 kg (17.44 lb)         | -                          |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



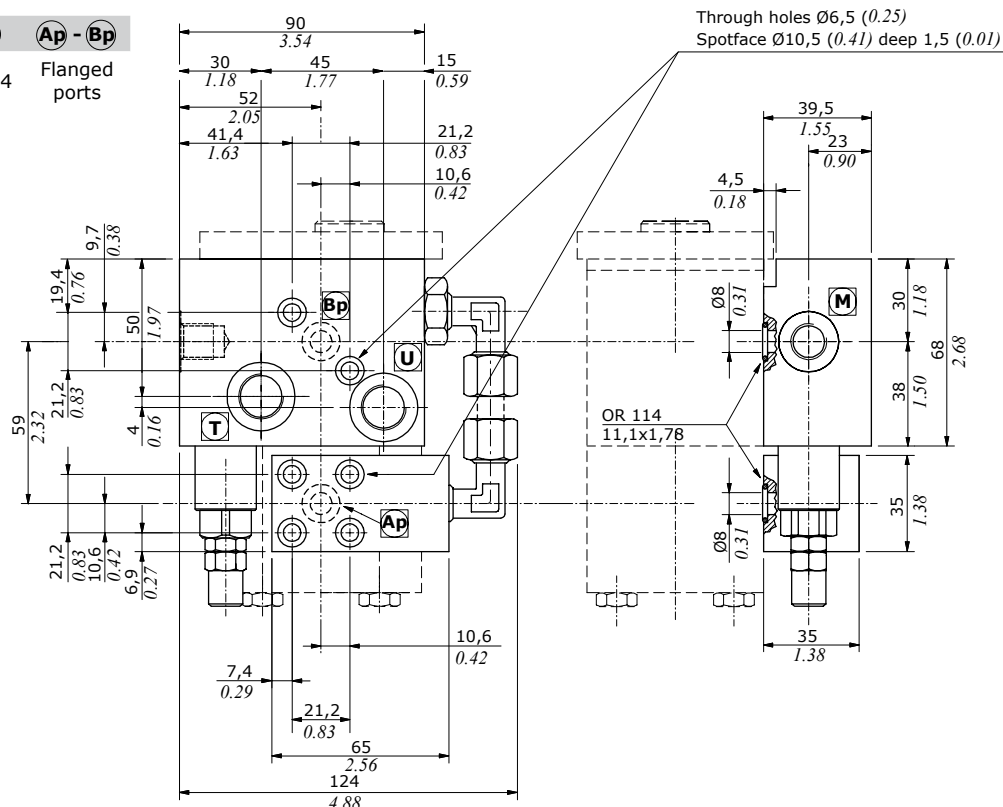
| Valve type          | (M)  | (T-U) |
|---------------------|------|-------|
| VEP/FC 38 Gr 1+1    | G1/4 | G3/8  |
| VEP/FC 12 Gr 2+1    | G1/4 | G1/2  |
| VEP/FC 12 Gr 2+2    | G1/4 | G1/2  |
| VEP/FC 34 Gr 3+1    | G1/4 | G3/4  |
| VEP/FC 34 Gr 3+1    | G1/4 | G3/4  |
| VEP/FC 34 Gr 3+2    | G1/4 | G3/4  |
| VEP/FC 50 Gr 3+3    | G1/4 | G1"   |
| VEP/FC 100 Gr 3,5+3 | G1/4 | G1"   |



Dimensions are in mm-in

| Valve type          | A           | B           | C          | D          | E          | F          | G          | H          | Ap         | Bp          |
|---------------------|-------------|-------------|------------|------------|------------|------------|------------|------------|------------|-------------|
| VEP/FC 38 Gr 1+1    | 80<br>3.15  | 90<br>3.54  | 40<br>1.57 | 60<br>2.36 | 15<br>0.59 | 46<br>1.81 | 18<br>0.7  | 30<br>1.18 | 10<br>0.39 | 25<br>0.98  |
| VEP/FC 12 Gr 2+1    | 90<br>3.54  | 125<br>4.92 | 40<br>1.57 | 65<br>2.56 | 17<br>0.67 | 43<br>1.69 | 17<br>0.67 | 41<br>1.61 | 15<br>0.59 | 45<br>1.77  |
| VEP/FC 12 Gr 2+2    | 90<br>3.54  | 125<br>4.92 | 40<br>1.57 | 65<br>2.56 | 17<br>0.67 | 43<br>1.69 | 17<br>0.67 | 41<br>1.61 | 25<br>0.98 | 45<br>1.77  |
| VEP/FC 34 Gr 3+1    | 120<br>4.72 | 130<br>5.11 | 60<br>2.36 | 72<br>2.83 | 30<br>1.18 | 64<br>2.52 | 22<br>0.86 | 51<br>2    | 20<br>0.79 | 80<br>3.15  |
| VEP/FC 34 Gr 3+1    | 120<br>4.72 | 130<br>5.11 | 60<br>2.36 | 72<br>2.83 | 30<br>1.18 | 64<br>2.52 | 22<br>0.86 | 51<br>2    | 35<br>1.38 | 80<br>3.15  |
| VEP/FC 34 Gr 3+2    | 120<br>4.72 | 130<br>5.11 | 60<br>2.36 | 72<br>2.83 | 30<br>1.18 | 64<br>2.52 | 22<br>0.86 | 51<br>2    | 45<br>1.77 | 80<br>3.15  |
| VEP/FC 50 Gr 3+3    | 140<br>5.51 | 160<br>6.3  | 75<br>2.95 | 90<br>3.54 | 31<br>1.22 | 84<br>3.3  | 32<br>1.26 | 66<br>2.6  | 60<br>2.36 | 120<br>4.72 |
| VEP/FC 100 Gr 3,5+3 | 140<br>5.51 | 160<br>6.3  | 75<br>2.95 | 90<br>3.54 | 31<br>1.22 | 84<br>3.3  | 32<br>1.26 | 66<br>2.6  | 80<br>3.15 | 150<br>5.9  |

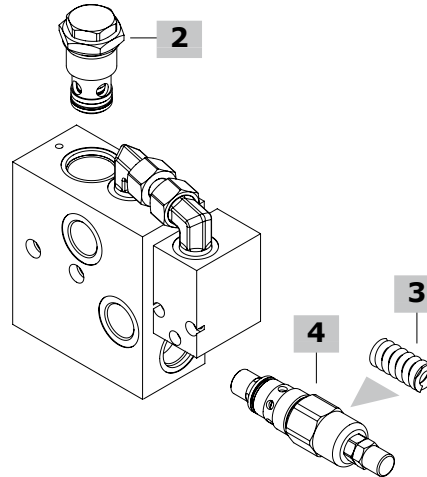
| Valve type           | (U)  | (T)  | (M)  | (Ap - Bp)     |
|----------------------|------|------|------|---------------|
| VEP/FC 38 Gr 1+1 PLP | G3/8 | G3/8 | G1/4 | Flanged ports |



**Ordering codes and description composition**

Port size  
**VEP/FC 38/Gr1+1/TV.S**

**3**


**VEP/FC complete valves**

*Single type valve configuration; standard setting is referred to 5 l/min (1.32 US gpm)*

**Configuration with G3/8 standard thread**

TYPE: **VEP/FC 38/Gr1+1/TV.S** CODE: 1222021100  
DESCRIPTION: Aluminium body, range 20-80 bar (290-1160 psi), standard setting 60 bar (870 psi)

TYPE: **VEP/FC 38/Gr1+1/TV.S/ac** CODE: 1222022100  
DESCRIPTION: Steel body, as previous one

TYPE: **VEP/FC 38/Gr1+1/PLP/TV.S** CODE: 1222021107  
DESCRIPTION: Aluminium body, range 20-80 bar (290-1160 psi), standard setting 60 bar (870 psi), with "PLP" special flange

**Configuration with G1/2 standard thread**

TYPE: **VEP/FC 12/Gr2+1/TV.S** CODE: 1222031100  
DESCRIPTION: Aluminium body, range 5-80 bar (72.5-1160 psi), standard setting 40 bar (580 psi)

TYPE: **VEP/FC 12/Gr2+1/TV.S/ac** CODE: 1222032105  
DESCRIPTION: Steel body, as previous one

TYPE: **VEP/FC 12/Gr2+2/TV.S** CODE: 1222031101  
DESCRIPTION: Aluminium body, range 5-80 bar (72.5-1160 psi), standard setting 40 bar (580 psi)

TYPE: **VEP/FC 12/Gr2+2/TV.S/ac** CODE: 1222032100  
DESCRIPTION: Steel body, as previous one

**Configuration with G3/4 standard thread**

TYPE: **VEP/FC 34/Gr3+1/TV.S** CODE: 1222041100  
DESCRIPTION: Aluminium body, range 10-50 bar (145-725 psi), standard setting 50 bar (725 psi)

TYPE: **VEP/FC 34/Gr3+2/TV.S** CODE: 1222041101  
DESCRIPTION: Aluminium body, range 10-80 bar (145-1160 psi), standard setting 50 bar (725 psi)

TYPE: **VEP/FC 34/Gr3+2/TV.S/ac** CODE: 1222042101  
DESCRIPTION: Steel body, as previous one

TYPE: **VEP/FC 34/Gr3+3/TV.S** CODE: 1222041102  
DESCRIPTION: Aluminium body, range 10-80 bar (145-1160 psi), standard setting 50 bar (725 psi)

**Configuration with G 1" standard thread**

TYPE: **VEP/FC 100/Gr3,5+3/TV.S** CODE: 1222051100  
DESCRIPTION: Aluminium body, range 20-80 bar (290-1160 psi), standard setting 60 bar (870 psi)

For not listed steel body configurations, different flanging, SAE thread, or configurations with FPM (Viton) seals, please contact our Sales Dpt.

**1 Sequence valve**

*Setting range 20-80 bar (290-1150 psi) (Lp)*

*Standard setting 160 bar at 5 l/min (2320 psi at 1.32 US gpm)*

| TYPE                    | CODE       | DESCRIPTION                 |
|-------------------------|------------|-----------------------------|
| <b>VDS/VEP 38/TV.S</b>  | 1205020400 | For G3/8 port configuration |
| <b>VDS/VEP 12/TV.S</b>  | 1205030400 | For G1/2 port configuration |
| <b>VDS/VEP 34/TV.S</b>  | 1205040405 | For G3/4 port configuration |
| <b>VDS/VEP 100/TV.S</b> | 1205050400 | For G1" port configuration  |

**2 Check valve**

*Opening pressure 0.5 bar (7.25 psi)*

| TYPE                          | CODE       | DESCRIPTION                         |
|-------------------------------|------------|-------------------------------------|
| <b>VUI 38/Pa0,5</b>           | 1300020400 | For G3/8 port configuration         |
| <b>VUI 12/Pa0,5 pass.magg</b> | 1300030401 | For G1/2 port configuration         |
| <b>VUI 34/Pa0,5 pass.magg</b> | 1300040401 | For G3/4 and G1" port configuration |

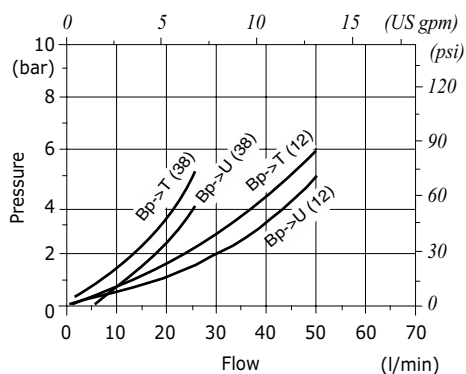
**3 Pressure setting springs**

| TYPE                                                      | CODE       | DESCRIPTION                            |
|-----------------------------------------------------------|------------|----------------------------------------|
| <b>For VDS/VEP 38 valve on VEP/FC 38 complete valve</b>   |            |                                        |
| <b>TB</b>                                                 | 3MOL314311 | Setting range 5-40 bar (72.5-580 psi)  |
| <b>TV</b>                                                 | 3MOL314330 | Setting range 20-80 bar (290-1150 psi) |
| <b>For VDS/VEP 12 valve on VEP/FC 12 complete valve</b>   |            |                                        |
| <b>TV</b>                                                 | 3MOL317420 | Setting range 5-80 bar (72.5-1150 psi) |
| <b>For VDS/VEP 34 valve on VEP/FC 34 complete valve</b>   |            |                                        |
| <b>TB</b>                                                 | 3ML1174500 | Setting range 10-50 bar (145-725 psi)  |
| <b>TV</b>                                                 | 3ML1204200 | Setting range 10-80 bar (145-1150 psi) |
| <b>For VDS/VEP 100 valve on VEP/FC 100 complete valve</b> |            |                                        |
| <b>TB</b>                                                 | 3MOL314311 | Setting range 5-40 bar (72.5-580 psi)  |
| <b>TV</b>                                                 | 3MOL314330 | Setting range 20-80 bar (290-1150 psi) |

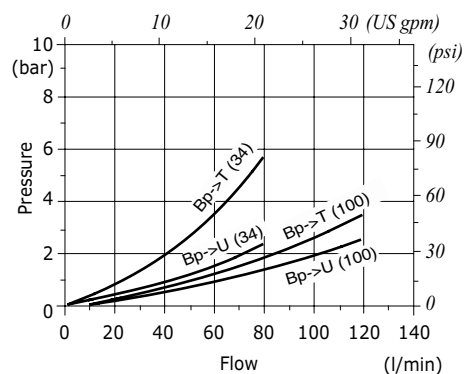


## Rating diagrams

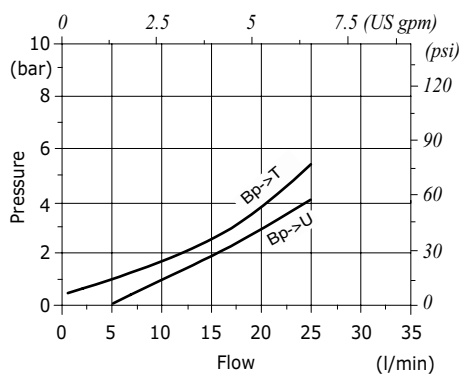
**VEP/FC 38-12 pressure drop vs. flow  
from Bp→T and Bp→U**



**VEP/FC 34-100 pressure drop vs. flow  
from Bp→T and Bp→U**



**VEP/FC 38 PLP pressure drop vs. flow  
from Bp→T and Bp→U**





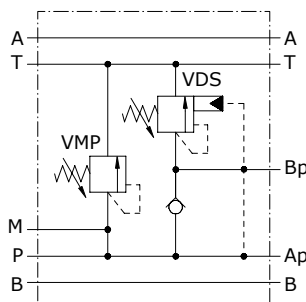
## Type VEP/FL two pump "high-low" unloading valves

- Cetop 3 (6-38) - 5 (10-12) - 7 (16-34 and 16-100) flanging
- Flange assembling according to ISO 4401:2005 (CETOP)

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

| Line                                       |                                      | VEP/FL 6-38                                                            | VEP/FL 10-12              | VEP/FL 16-34               | VEP/FL 16-100              |
|--------------------------------------------|--------------------------------------|------------------------------------------------------------------------|---------------------------|----------------------------|----------------------------|
| Nominal flow                               | <b>Ap</b> (high pressure inlet port) | 10 l/min<br>(2.6 US gpm)                                               | 20 l/min<br>(5.3 US gpm)  | 30 l/min<br>(7.9 US gpm)   | 30 l/min<br>(7.9 US gpm)   |
|                                            | <b>Bp</b> (low pressure inlet port)  | 25 l/min<br>(6.6 US gpm)                                               | 45 l/min<br>(11.9 US gpm) | 80 l/min<br>(21.1 US gpm)  | 80 l/min<br>(21.1 US gpm)  |
|                                            | <b>U</b> (work port)                 | 30 l/min<br>(7.9 US gpm)                                               | 55 l/min<br>(14.5 US gpm) | 100 l/min<br>(26.4 US gpm) | 100 l/min<br>(26.4 US gpm) |
| Max. pressure                              |                                      | Aluminium body = 210 bar (3050 psi)<br>Steel body = 350 bar (5100 psi) |                           |                            |                            |
| Fluid                                      |                                      | mineral based oil                                                      |                           |                            |                            |
| Viscosity                                  |                                      | from 10 to 200 cSt                                                     |                           |                            |                            |
| Max. level of contamination                |                                      | 18/16/13 ISO4406                                                       |                           |                            |                            |
| Fluid temperature                          |                                      | with NBR seals from -20°C (-4°F) to 80°C (176°F)                       |                           |                            |                            |
| Environmental temp. for working conditions |                                      | from -40°C (-40°F) to 100°C (212°F)                                    |                           |                            |                            |
| Weight                                     | aluminium                            | 1.56 kg (3.44 lb)                                                      | 3.01 kg (6.63 lb)         | 7.05 kg (15.54 lb)         | 6.32 kg (13.93 lb)         |
|                                            | steel                                | 3.58 kg (7.89 lb)                                                      | 6.65 kg (14.66 lb)        | 17.58 kg (38.76 lb)        | 14.97 kg (33.00 lb)        |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



## Dimensions

Dimensions are in mm-in

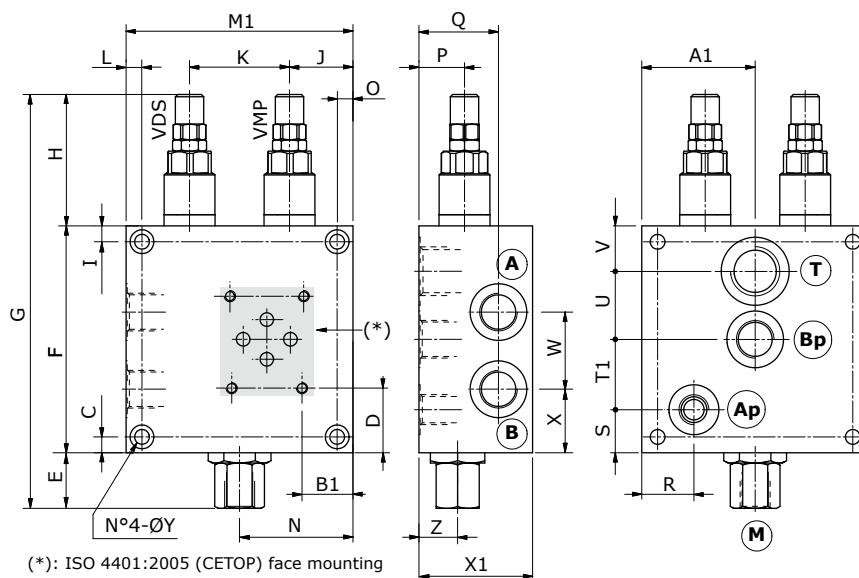
| Valve type          | A1         | B1            | ØY          | C         | D            | E            |
|---------------------|------------|---------------|-------------|-----------|--------------|--------------|
| <b>VEP/FL 6-38</b>  | 50<br>1.97 | 21.75<br>0.86 | 6,5<br>0.25 | 7<br>0.27 | 28.5<br>1.12 | 26.5<br>1.04 |
| <b>VEP/FL 10-12</b> | 60<br>2.36 | 37<br>1.46    | 6.5<br>0.25 | 7<br>0.27 | 30<br>1.18   | 33<br>1.30   |

| Valve type          | F           | G             | H          | I         | L         | M1          |
|---------------------|-------------|---------------|------------|-----------|-----------|-------------|
| <b>VEP/FL 6-38</b>  | 100<br>3.94 | 184.5<br>7.26 | 58<br>2.28 | 7<br>0.27 | 7<br>0.27 | 100<br>3.94 |
| <b>VEP/FL 10-12</b> | 120<br>4.72 | 219<br>8.62   | 66<br>2.60 | 7<br>0.27 | 7<br>0.27 | 120<br>4.72 |

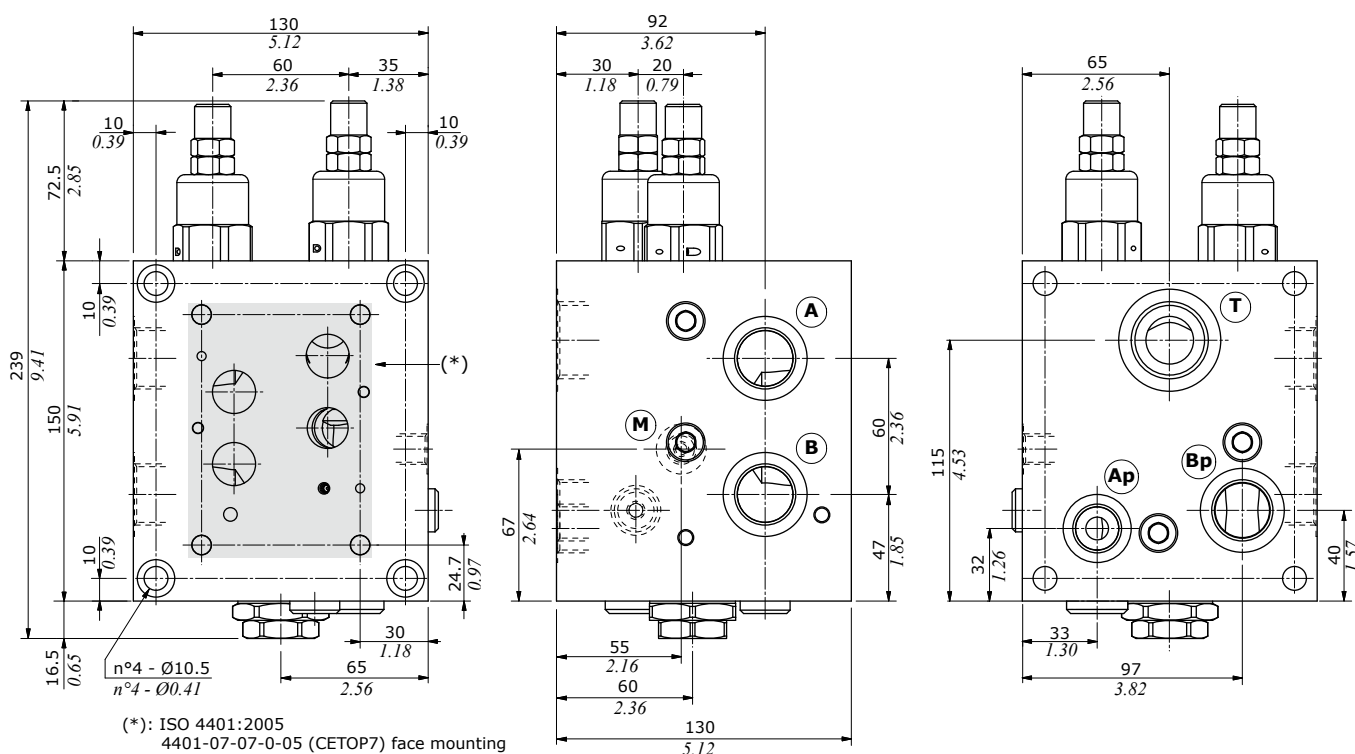
| Valve type          | N          | O         | P          | Q          | R          | S          |
|---------------------|------------|-----------|------------|------------|------------|------------|
| <b>VEP/FL 6-38</b>  | 50<br>1.97 | 7<br>0.27 | 20<br>0.79 | 35<br>1.38 | 23<br>0.91 | 19<br>0.75 |
| <b>VEP/FL 10-12</b> | 60<br>2.36 | 7<br>0.27 | 25<br>0.98 | 46<br>1.81 | 28<br>1.10 | 22<br>0.87 |

| Valve type          | T1         | U          | V          | W          | X          | X1         | Z          |
|---------------------|------------|------------|------------|------------|------------|------------|------------|
| <b>VEP/FL 6-38</b>  | 31<br>1.22 | 30<br>1.18 | 20<br>0.79 | 34<br>1.34 | 28<br>1.10 | 50<br>1.97 | 17<br>0.67 |
| <b>VEP/FL 10-12</b> | 27<br>1.06 | 44<br>1.73 | 27<br>1.06 | 38<br>1.50 | 35<br>1.38 | 69<br>2.71 | 69<br>2.71 |

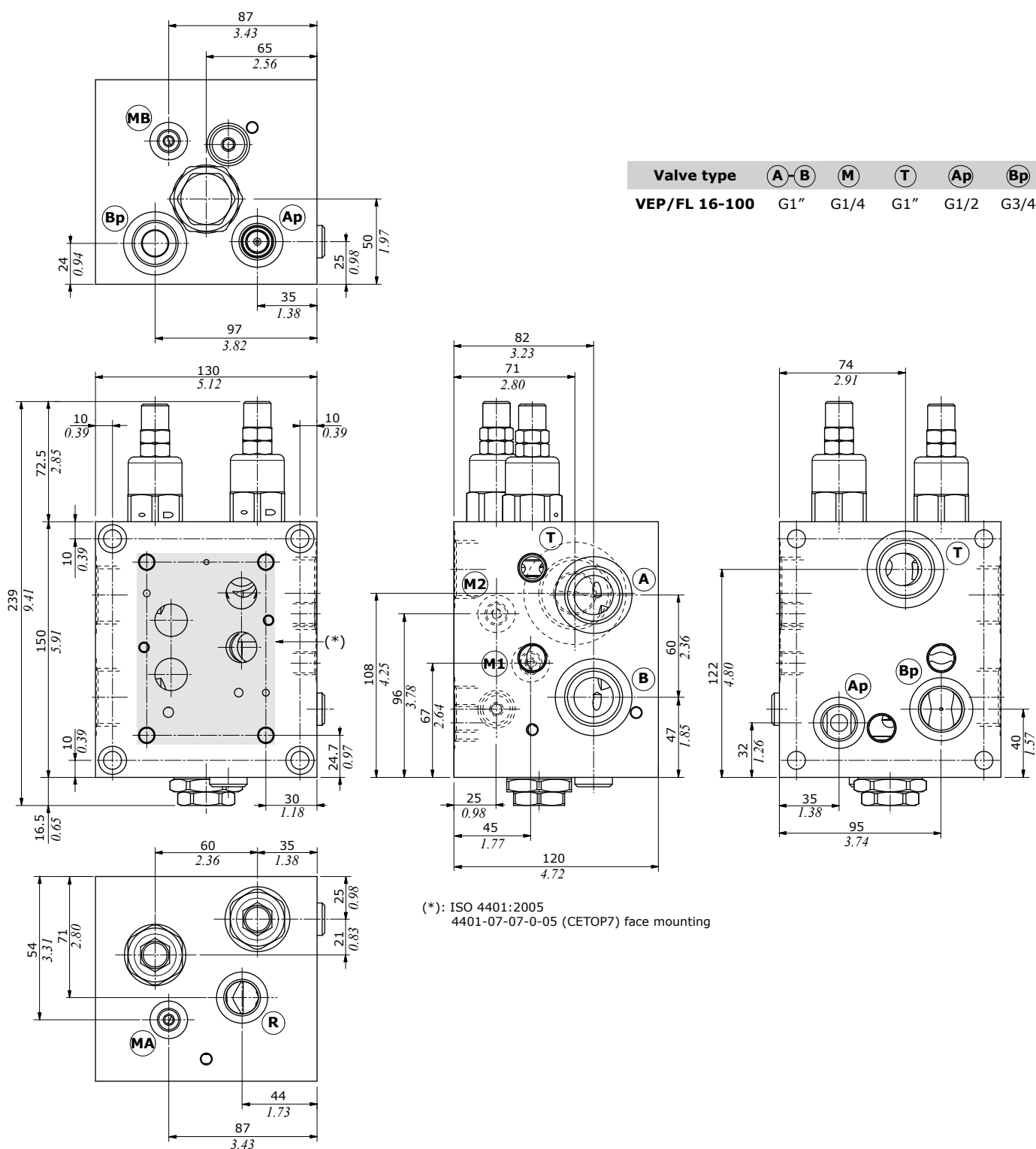
| Valve type          | A-B  | M    | T    | Ap   | Bp   |
|---------------------|------|------|------|------|------|
| <b>VEP/FL 6-38</b>  | G3/8 | G1/4 | G1/2 | G1/4 | G3/8 |
| <b>VEP/FL 10-12</b> | G1/2 | G1/4 | G3/4 | G3/8 | G1/2 |



| Valve type          | A-B  | M    | T   | Ap   | Bp   |
|---------------------|------|------|-----|------|------|
| <b>VEP/FL 16-34</b> | G3/4 | G1/4 | G1" | G1/2 | G3/4 |



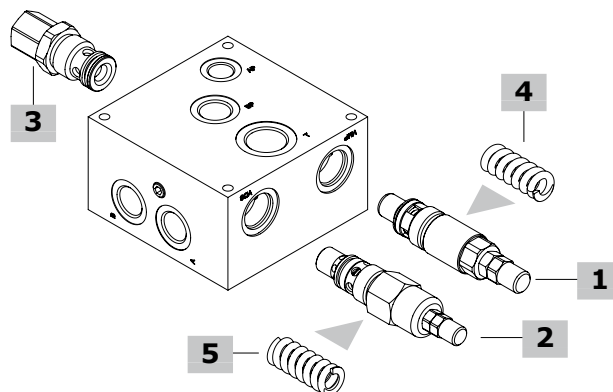
**Dimensions**



## Ordering codes and description composition

Port size  
VEP/FL 6-38/TR-TV.S

4 5



## VEP/FL complete valves

Single type valve configuration

High pressure (Ap): range 180-350 bar (2600-5075 psi) and standard setting 280 bar (4060 psi) at 5 l/min (1.32 US gpm); Low Pressure (Bp): see below

**Configuration with G3/8 standard thread**

TYPE: **VEP/FL 6-38/TR-TV.S** CODE: 1224021101

DESCRIPTION: Aluminium body, Bp: range 20-80 bar (290-1160 psi), Standard setting 60 bar (870 psi) at 5l/min (1.32 US gpm)

TYPE: **VEP/FL 6-38/TR-TV.S/ac** CODE: 1224022100

DESCRIPTION: Steel body, as previous one

**Configuration with G1/2 standard thread**

TYPE: **VEP/FL 10-12/TR-TV.S** CODE: 1224031101

DESCRIPTION: Aluminium body, Bp: range 5-80 bar (72.5-1160 psi), standard setting 40 bar (870 psi) at 5l/min (1.32 US gpm)

TYPE: **VEP/FL 10-12/TR-TV.S/ac** CODE: 1224032100

DESCRIPTION: Steel body, as previous one

**Configuration with G3/4 standard thread**

TYPE: **VEP/FL 16-34/TR-TV.S** CODE: 1224041101

DESCRIPTION: Aluminium body, Bp: range 10-80 bar (145-1160 psi), standard setting 50 bar (725 psi) at 5 l/min (1.32 US gpm)

TYPE: **VEP/FL 16-34/TR-TV.S/ac** CODE: 1224042101

DESCRIPTION: Steel body, as previous one

**Configuration with G1" standard thread**

TYPE: **VEP/FL 16-100/TR-TV.S** CODE: 1224041151

DESCRIPTION: Aluminium body, Bp: range 10-50 bar (290-1160 psi), standard setting 30 bar (870 psi) at 5l/min (1.32 US gpm)

TYPE: **VEP/FL 16-100/TR-TV.S/ac** CODE: 1224042150

DESCRIPTION: Steel body, as previous one

For other steel body configurations, SAE threads and configurations with FPM (Viton) seals, please contact our Sales Dpt.

## 1 Direct acting pressure relief valve

Standard setting 160 bar at 5 l/min (2320 psi at 1.32 US gpm)

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

**For G3/8 port configuration valve**

|                   |            |                                              |
|-------------------|------------|----------------------------------------------|
| <b>VMP 5/TR.S</b> | 1100520401 | Setting range 50-220 bar (725-3200 psi) (Ap) |
|-------------------|------------|----------------------------------------------|

**For VEP 10-12 and VEP 16-34 valves**

|                    |            |                                              |
|--------------------|------------|----------------------------------------------|
| <b>VMP 10/TR.S</b> | 1100530401 | Setting range 50-220 bar (725-3200 psi) (Ap) |
|--------------------|------------|----------------------------------------------|

**For VEP 16-100 valve**

|                    |            |                                              |
|--------------------|------------|----------------------------------------------|
| <b>VMP 20/TR.S</b> | 1100540403 | Setting range 50-220 bar (725-3200 psi) (Ap) |
|--------------------|------------|----------------------------------------------|

## 2 Sequence valve

Sequence cartridge setting range 20-80 bar (290-1150 psi) (Lp)

Standard setting 160 bar at 5 l/min (2320 psi at 1.32 US gpm)

| TYPE                   | CODE       | DESCRIPTION                 |
|------------------------|------------|-----------------------------|
| <b>VDS/VEP 38/TV.S</b> | 1205020400 | For G3/8 port configuration |
| <b>VDS/VEP 12/TV.S</b> | 1205030400 | For G1/2 port configuration |
| <b>VDS/VEP 34/TV.S</b> | 1205040405 | For G3/4 port configuration |
| <b>VDS/VEP 34/TB.S</b> | 1205040401 | For G1" port configuration  |

## 3 Check valves

Opening pressure 0.5 bar

| TYPE                              | CODE       | DESCRIPTION                         |
|-----------------------------------|------------|-------------------------------------|
| <b>VUI 38/Pa0,5.man</b>           | 1300020413 | For G3/8 port configuration         |
| <b>VUI 12/Pa0,5 pass.magg.man</b> | 1300030402 | For G1/2 port configuration         |
| <b>VUI 34/Pa0,5 pass.magg</b>     | 1300040401 | For G3/4 and G1" port configuration |

## 4 Pressure relief valve setting springs

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

**For VMP 5 valve on VEP/FL 6-38 complete valve (Ap)**

|           |            |                                           |
|-----------|------------|-------------------------------------------|
| <b>TS</b> | 3MOL315330 | Setting range 50-220 bar (725-3200 psi)   |
| <b>TR</b> | 3ML1143600 | Setting range 180-350 bar (2600-5100 psi) |

**For VMP 10 valve on VEP/FL 10-12 complete valve (Ap)**

|           |            |                                           |
|-----------|------------|-------------------------------------------|
| <b>TS</b> | 3MOL317420 | Setting range 50-220 bar (725-3200 psi)   |
| <b>TR</b> | 3MOL317440 | Setting range 180-350 bar (2600-5100 psi) |

**For VMP 20 valve on VEP/FL 16-34 and 16-100 complete valves (Ap)**

|           |            |                                           |
|-----------|------------|-------------------------------------------|
| <b>TS</b> | 3ML1204200 | Setting range 50-220 bar (725-3200 psi)   |
| <b>TR</b> | 3ML1214500 | Setting range 180-350 bar (2600-5100 psi) |

## 5 Sequence valve setting springs

| TYPE | CODE | DESCRIPTION |
|------|------|-------------|
|------|------|-------------|

**For VDS/VEP 38 valve on VEP/FL 6-38 complete valve (Bp)**

|           |            |                                        |
|-----------|------------|----------------------------------------|
| <b>TB</b> | 3MOL314311 | Setting range 5-40 bar (72.5-580 psi)  |
| <b>TV</b> | 3MOL314330 | Setting range 20-80 bar (290-1150 psi) |

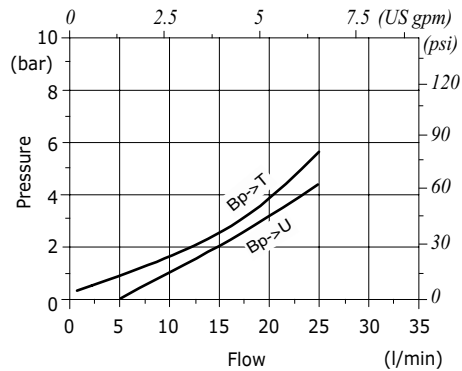
**For VDS/VEP 12 valve on VEP/FL 10-12 complete valve (Bp)**

|           |            |                                        |
|-----------|------------|----------------------------------------|
| <b>TV</b> | 3MOL317420 | Setting range 5-80 bar (72.5-1150 psi) |
|-----------|------------|----------------------------------------|

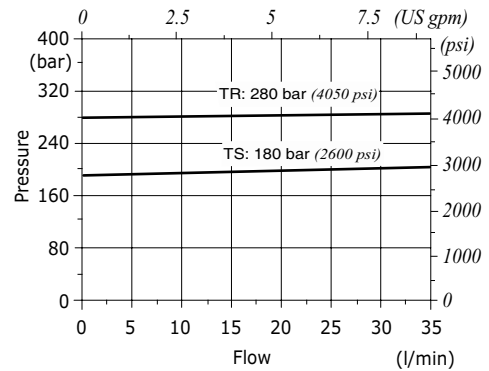
**For VDS/VEP 34 valve on VEP/FL 16-34 and 16-100 complete valves (Bp)**

|           |            |                                        |
|-----------|------------|----------------------------------------|
| <b>TB</b> | 3ML1174500 | Setting range 10-50 bar (145-725 psi)  |
| <b>TV</b> | 3ML1204200 | Setting range 10-80 bar (145-1150 psi) |

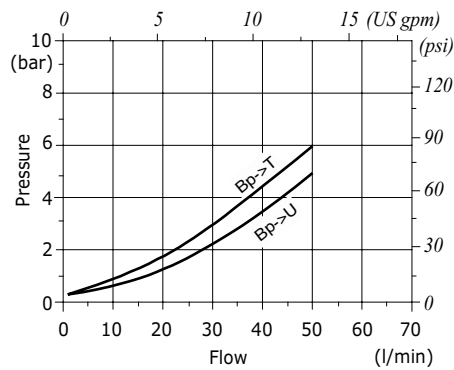
**VEP/FL 6-38 pressure drop vs. flow  
from Bp→T and Bp→U**



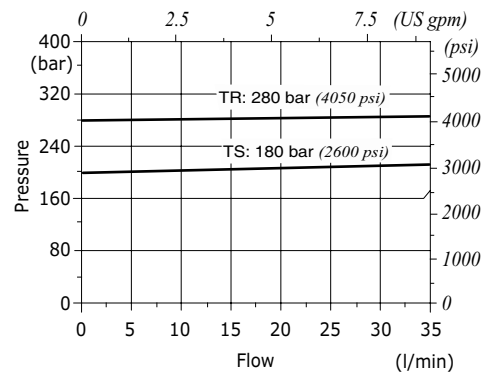
**VEP/FL 6-38: VMP setting example  
at 5 l/min (1.32 US gpm)**



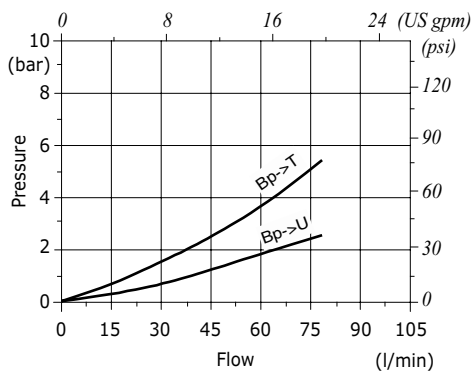
**VEP/FL 10-12 pressure drop vs. flow  
from Bp→T and Bp→U**



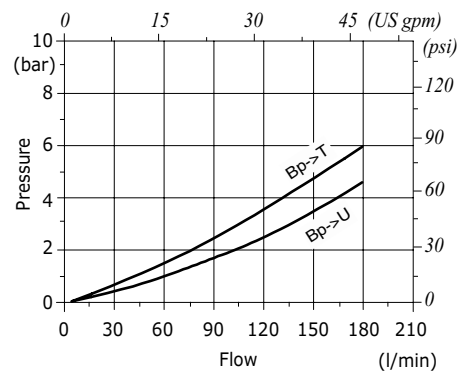
**VEP/FL 10-12: VMP setting example  
at 5 l/min (1.32 US gpm)**



**VEP/FL 16-34 pressure drop vs. flow  
from Bp→T and Bp→U**



**VEP/FL 100 pressure drop vs. flow  
from Bp→T and Bp→U**







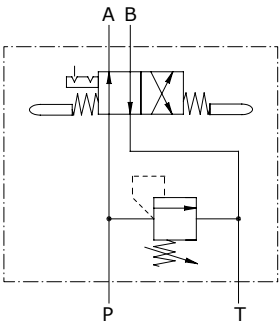
## Type SD../IAM automatic reversing valves

- Mechanical control
- Cast iron body

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

|                                            | SD4/IAM 38-12                                    | SD11/IAM 12            |
|--------------------------------------------|--------------------------------------------------|------------------------|
| Nominal flow                               | 35 l/min (9.2 US gpm)                            | 65 l/min (17.2 US gpm) |
| Max. pressure                              | 210 bar (3050 psi)                               |                        |
| Fluid                                      | mineral based oil                                |                        |
| Viscosity                                  | from 10 to 200 cSt                               |                        |
| Max. level of contamination                | 18/16/13 ISO4406                                 |                        |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F) |                        |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)              |                        |
| Weight                                     | cast iron 2.45 kg (5.40 lb)                      | 6.16 kg (13.58 lb)     |

NOTE - For different conditions, please contact Walvoil Sales Dpt.





| Valve type | All ports |
|------------|-----------|
| SD4/IAM 38 | G3/8      |
| SD4/IAM 12 | G1/2      |



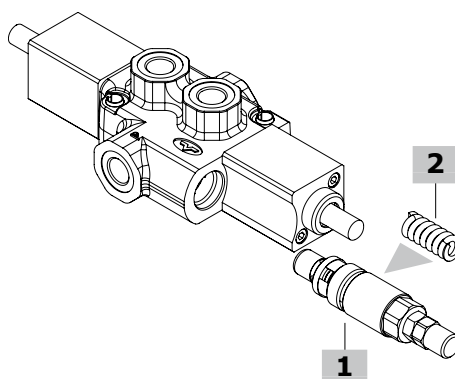
## Ordering codes and description composition

Port size

**SD4/IAM 38/VMP 5.TS.S/gh**

2

1



### SD../IAM complete valves

#### Configuration with G3/8 ports

TYPE: **SD4/IAM 38/VMP 5.TS.S/gh** CODE: 1910023102  
DESCRIPTION: With pressure relief valve, range 50-220 bar (725-3200 psi), std. setting 160 bar @ 5 l/min (2320 psi @ 1.32 US gpm)  
TYPE: **SD4/IAM/SV 38/gh** CODE: 1910023103  
DESCRIPTION: Without pressure relief valve

#### Configuration with G1/2 ports

TYPE: **SD4/IAM 12/VMP 5.TS.S/gh** CODE: 1910023152  
DESCRIPTION: With pressure relief valve, range 50-220 bar (725-3200 psi) std. setting 160 bar @ 5 l/min (2320 psi @ 1.32 US gpm)  
TYPE: **SD11/IAM 12/VMP 10.TS.S/gh** CODE: 1910033102  
DESCRIPTION: With pressure relief valve, range 50-220 bar (725-3200 psi) std. setting 160 bar @ 5 l/min (2320 psi @ 1.32 US gpm)  
TYPE: **SD4/IAM/SV 12/gh** CODE: 1910023153  
DESCRIPTION: Without pressure relief valve  
TYPE: **SD11/IAM/SV 12/gh** CODE: 1910033103  
DESCRIPTION: Without pressure relief valve  
For different port threads configuration, SAE thread and configurations with FPM (Viton) seals, please contact our Sales Dpt.

### 1 Pressure relief valves

| TYPE               | CODE       | DESCRIPTION                                     |
|--------------------|------------|-------------------------------------------------|
| <b>VMP 5/TS.S</b>  | 1100520400 | For SD4 valve, range 50-220 bar (725-3200 psi)  |
| <b>VMP 10/TS.S</b> | 1100530400 | For SD11 valve, range 50-220 bar (725-3200 psi) |

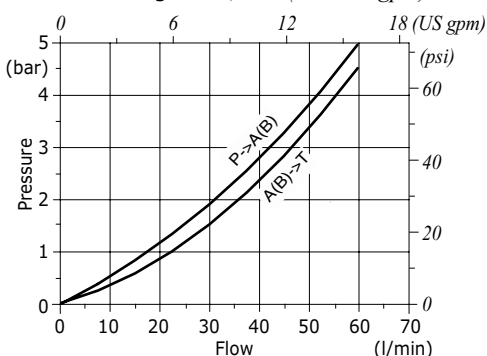
### 2 Pressure setting spring

| TYPE                    | CODE       | DESCRIPTION                             |
|-------------------------|------------|-----------------------------------------|
| <b>For VMP 5 valve</b>  |            |                                         |
| <b>TB</b>               | 3MOL314311 | Setting range 5-40 bar (72.5-580 psi)   |
| <b>TV</b>               | 3MOL314330 | Setting range 20-80 bar (290-1160 psi)  |
| <b>TS</b>               | 3MOL315330 | Setting range 50-220 bar (725-3200 psi) |
| <b>For VMP 10 valve</b> |            |                                         |
| <b>TB</b>               | 3MOL316410 | Setting range 5-40 bar (72.5-580 psi)   |
| <b>TV</b>               | 3ML1154300 | Setting range 20-80 bar (290-1160 psi)  |
| <b>TS</b>               | 3MOL317420 | Setting range 50-220 bar (725-3200 psi) |

## Rating diagrams

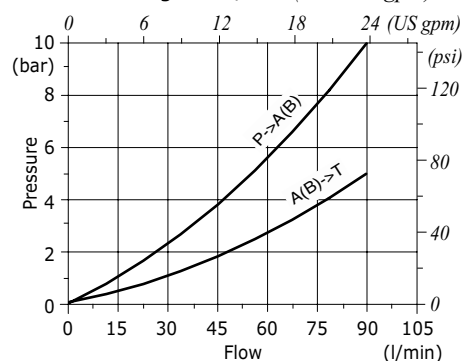
### SD4/IAM 38 pressure drop vs. flow

Std. setting at 5 l/min (1.32 US gpm)



### SD11/IAM 12 pressure drop vs. flow

Std. setting at 5 l/min (1.32 US gpm)







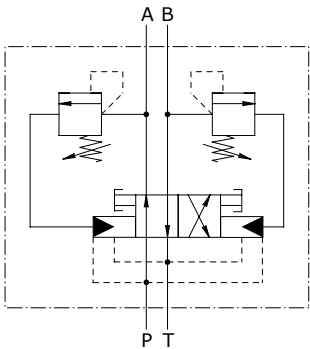
**Type VIA/AP**  
**automatic reversing valves**

- Face mounting cetop 3 (6-38) or cetop 5 (10-12)
- Cast iron body

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

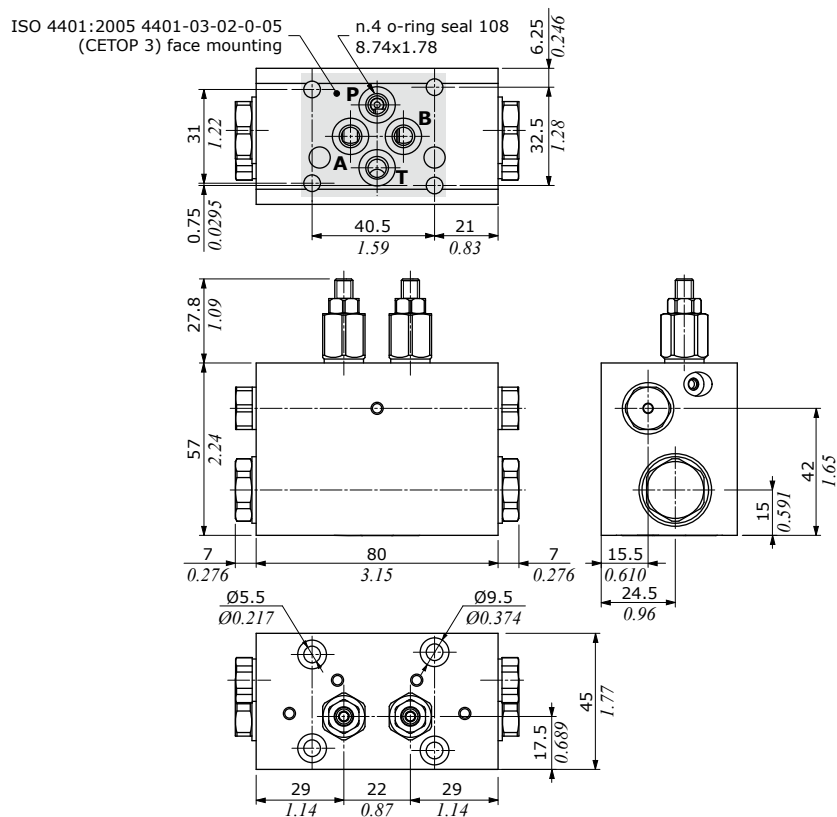
|                                            | VIA/AP 6-38           | VIA/AP 10-12                                     |
|--------------------------------------------|-----------------------|--------------------------------------------------|
| Nominal flow                               | 30 l/min (7.9 US gpm) | 60 l/min (15.9 US gpm)                           |
| Min. flow                                  |                       | 4 l/min (1.06 US gpm)                            |
| Max. pressure                              |                       | 210 bar (3050 psi)                               |
| Max. reversing frequency                   |                       | 30/min                                           |
| Fluid                                      |                       | mineral based oil                                |
| Viscosity                                  |                       | from 10 to 200 cSt                               |
| Max. level of contamination                |                       | 18/16/13 ISO4406                                 |
| Fluid temperature                          |                       | with NBR seals from -20°C (-4°F) to 80°C (176°F) |
| Environmental temp. for working conditions |                       | from -40°C (-40°F) to 100°C (212°F)              |
| Weight                                     | cast iron             |                                                  |
|                                            | 1.45 kg (3.20 lb)     | 2.31 kg (5.09 lb)                                |

NOTE - For different conditions, please contact Walvoil Sales Dpt.

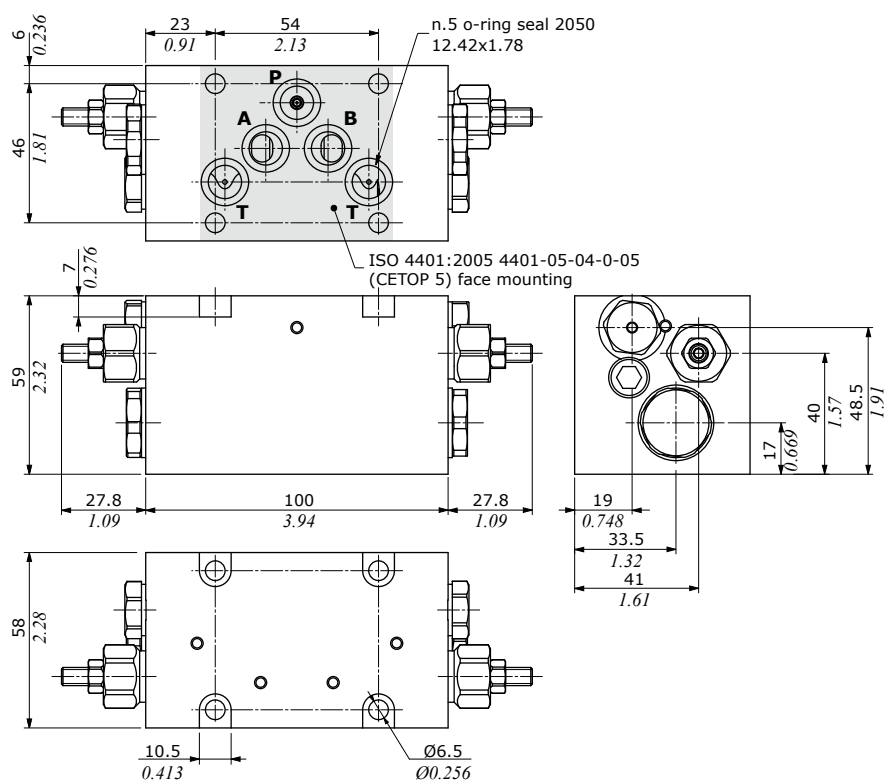


## Dimensions

### VIA/AP 6-38

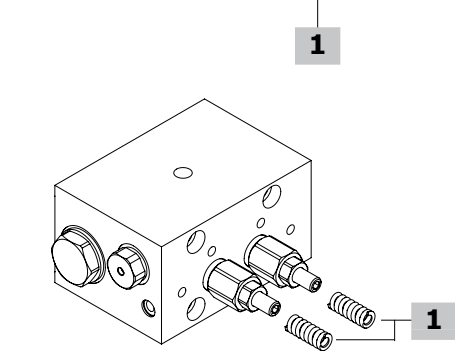


### VIA/AP 10-12

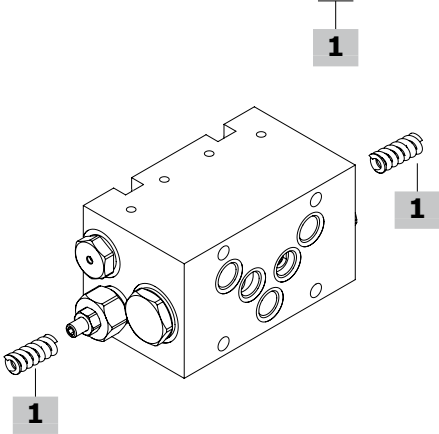


Ordering codes and description composition

VIA/AP 6-38/VMP01/TS.S/gh



VIA/AP 10-12/VMP02/TS.S/gh



VIA/AP complete valves

*VMP direct type valve configuration; range 50-220 bar (725-3200 psi), standard setting 150 bar @ 3 l/min (2175 psi @ 0.79 US gpm)*

TYPE: **VIA/AP 6-38/VMP01/TS.S/gh** CODE: 1915023101

DESCRIPTION: Cast iron body,, CETOP 3 flange

TYPE: **VIA/AP 10-12/VMP02/TS.S/gh** CODE: 1915033101

DESCRIPTION: Cast iron body, CETOP 5 flange

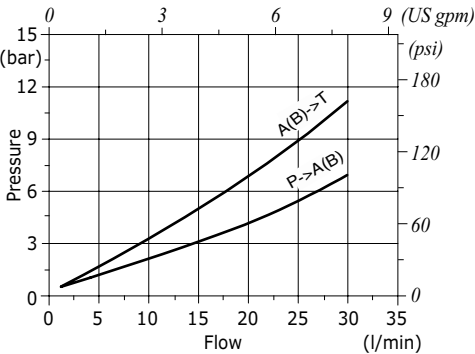
For configurations with FPM (Viton) seals and SAE threads, please contact our Sales Dpt.

1 Pressure setting spring

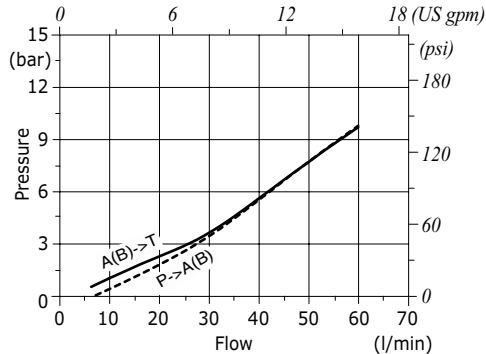
| TYPE                          | CODE       | DESCRIPTION                             |
|-------------------------------|------------|-----------------------------------------|
| <b>For VIA/AP 6-38 valve</b>  |            |                                         |
| <b>TV</b>                     | 3ML1061900 | Setting range 50-80 bar (72.5-1160 psi) |
| <b>TS</b>                     | 3ML1071900 | Setting range 50-220 bar (725-3200 psi) |
| <b>For VIA/AP 10-12 valve</b> |            |                                         |
| <b>TV</b>                     | 3ML1081400 | Setting range 50-80 bar (72.5-1160 psi) |
| <b>TS</b>                     | 3ML1081401 | Setting range 50-220 bar (725-3200 psi) |

Rating diagrams

VIA/AP 6-38 pressure drop vs. flow



VIA/AP 10-12 pressure drop vs. flow







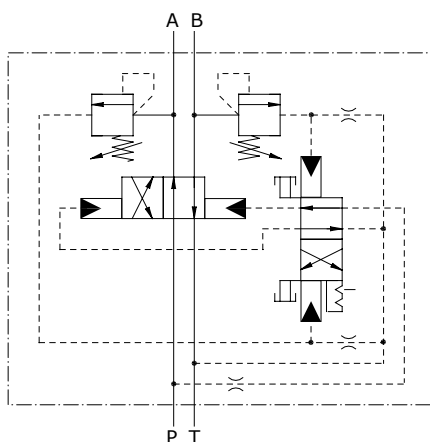
## Type VIA/AP 12/L/CMEB automatic reversing valves

- Mechanical and hydraulic control
- Cast iron body

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

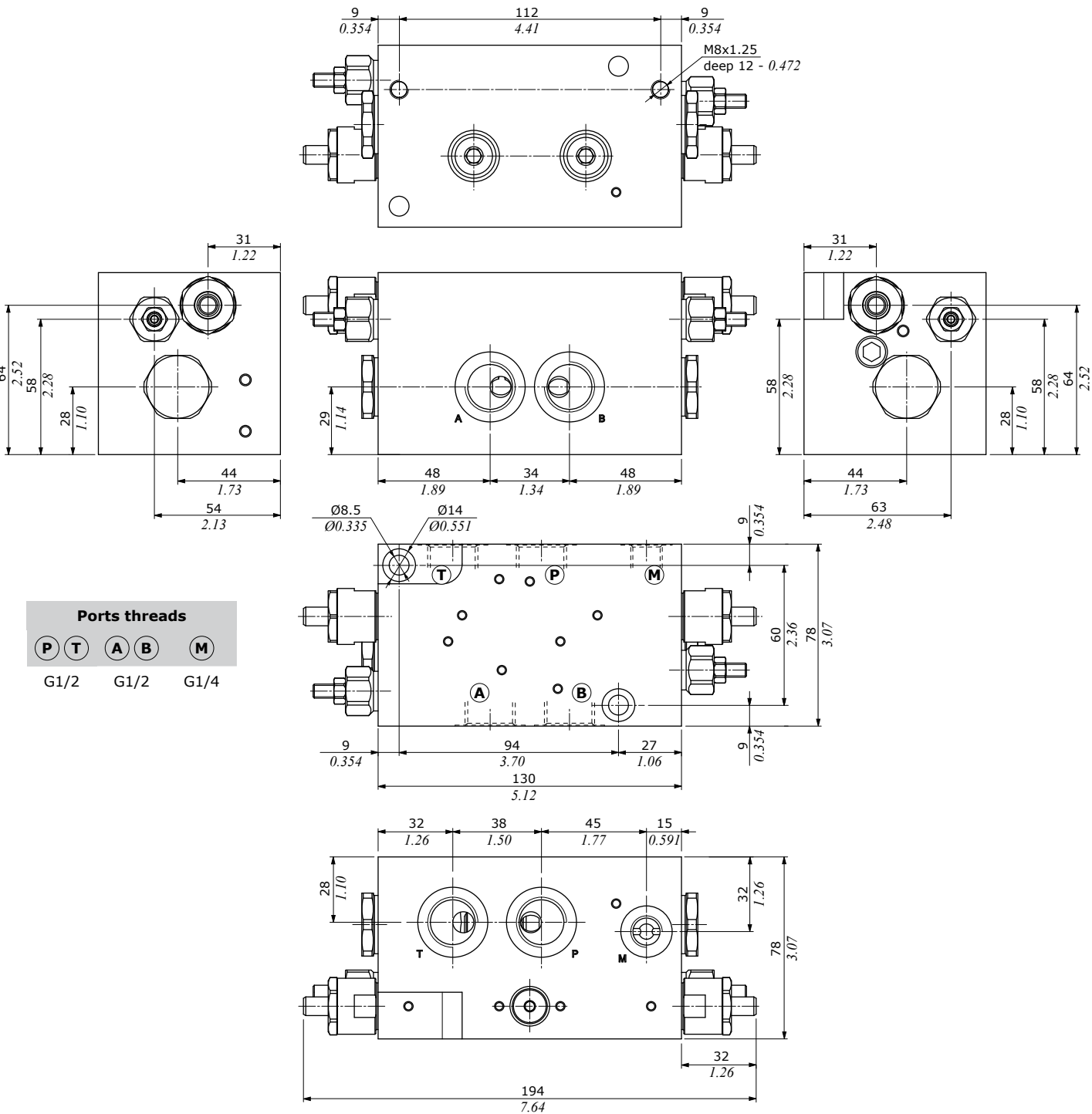
| VIA/AP 12/L/CMEB                           |                                                  |
|--------------------------------------------|--------------------------------------------------|
| Nominal flow                               | 60 l/min (15.9 US gpm)                           |
| Min. flow                                  | 4 l/min (1.06 US gpm)                            |
| Max. pressure                              | 210 bar (3050 psi)                               |
| Max. reversing frequency                   | 30/min                                           |
| Fluid                                      | mineral based oil                                |
| Viscosity                                  | from 10 to 200 cSt                               |
| Max. level of contamination                | 18/16/13 ISO4406                                 |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F) |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)              |
| Weight                                     | cast iron 5.2 kg (11.46 lb)                      |

NOTE - For different conditions, please contact Walvoil Sales Dpt.



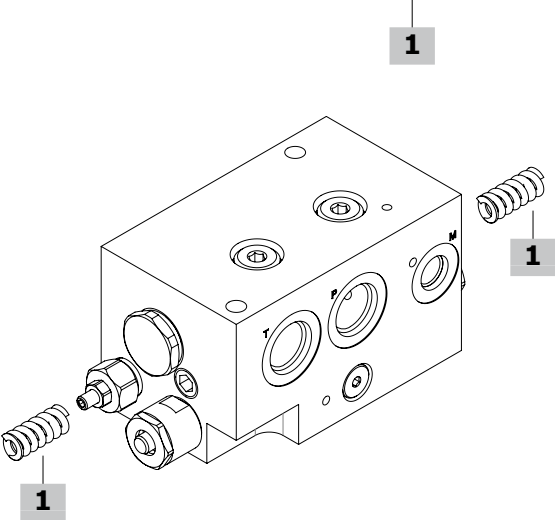


Dimensions



Ordering codes and description composition

Port size  
**VIA/AP 12/L/CMEB/VMP02/TS.S/gh**



Complete valves

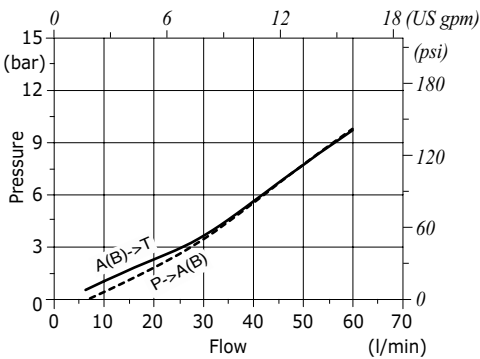
TYPE: **VIA/AP 12/L/CMEB/VMP02/TS.S/gh** CODE: 1915033904  
 DESCRIPTION: Cast iron body, G1/2 ports, with direct type pressure relief valves, range 50-220 bar (725-3200 psi), standard setting 150 bar at 3 l/min (2175 psi at 0.79 US gpm)  
 For different port threads configuration, SAE thread and configurations with FPM (Viton) seals, please contact our Sales Dpt.

1 Pressure setting spring

| TYPE      | CODE       | DESCRIPTION                             |
|-----------|------------|-----------------------------------------|
| <b>TV</b> | 3ML1081400 | Setting range 5-80 bar (72.5-1160 psi)  |
| <b>TS</b> | 3ML1081401 | Setting range 50-220 bar (725-3200 psi) |

Rating diagrams

Pressure drop vs. flow







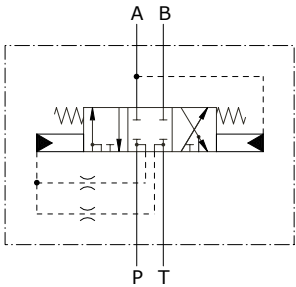
**Type VIA/DSL**  
**automatic reversing valves**

- Face mounting cetop 5
- Cast iron body

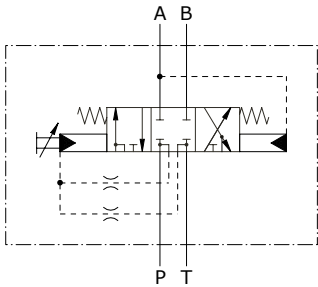
Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C (104°F) temperature.

| VIA/DSL 10-12                              |                                                  |                                                        |
|--------------------------------------------|--------------------------------------------------|--------------------------------------------------------|
| Nominal flow                               | 60 l/min (15.9 US gpm)                           |                                                        |
| Min. flow                                  | 10 l/min (2.6 US gpm)                            |                                                        |
| Max. pressure                              | 210 bar (3050 psi)                               |                                                        |
| Max. reversing frequency                   | 30/min                                           |                                                        |
| Fluid                                      | mineral based oil                                |                                                        |
| Viscosity                                  | from 10 to 200 cSt                               |                                                        |
| Max level of contamination                 | 18/16/13 ISO4406                                 |                                                        |
| Fluid temperature                          | with NBR seals from -20°C (-4°F) to 80°C (176°F) |                                                        |
| Environmental temp. for working conditions | from -40°C (-40°F) to 100°C (212°F)              |                                                        |
| Weight                                     | cast iron                                        | 2.2 kg (4.85 lb)                                       |
|                                            |                                                  | with stroke limiter configuration:<br>2.3 kg (5.07 lb) |

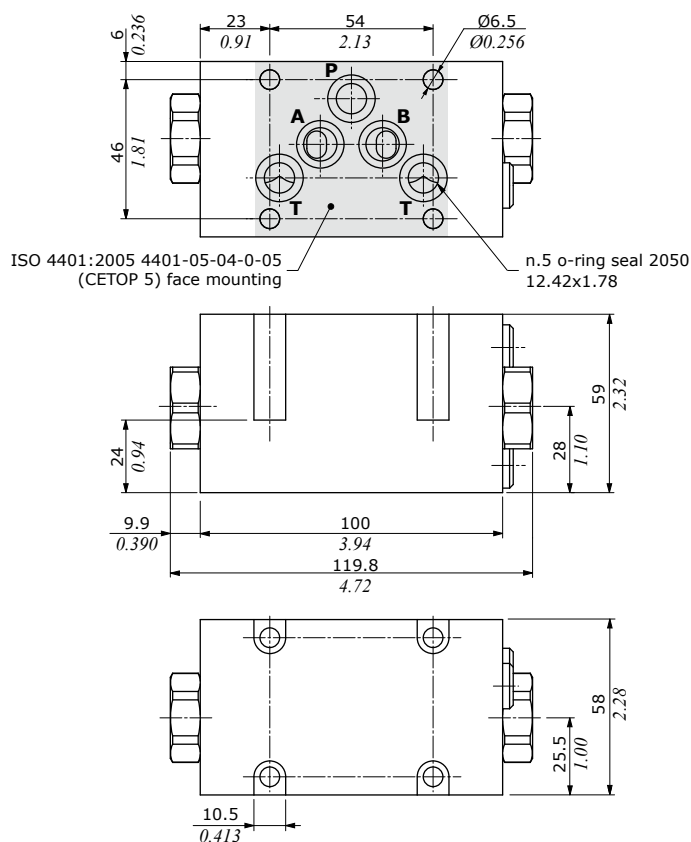
NOTE - For different conditions, please contact Walvoil Sales Dpt.



With stroke limiter

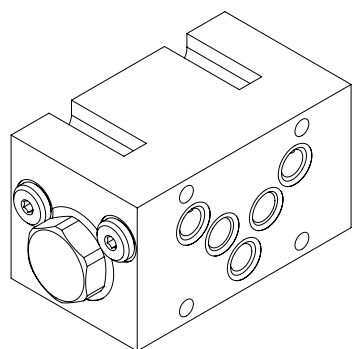


## Dimensions



## Ordering codes and description composition

### VIA/DSL 10-12/gh



#### Complete valves

TYPE: **VIA/DSL 10-12/gh**

CODE: 1915033903

DESCRIPTION: Cast iron body, CETOP 5 flange

TYPE: **VIA/DSL 10-12/gh pass.magg. con fine corsa**

CODE: 1915033910

DESCRIPTION: cast iron body, increased spool, with stroke limiter  
For configurations with FPM (Viton) seals and SAE threads, please contact our Sales Dpt.

## Types and ordering codes

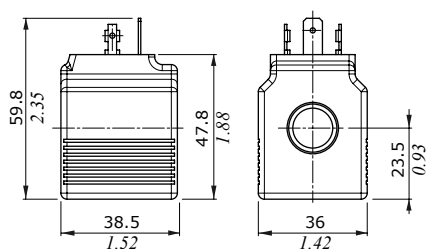
| Coil type         | Voltage | Connectors                                                              |                                                                                                                                                        |                                                            |                            |                            |                              |
|-------------------|---------|-------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|----------------------------|----------------------------|------------------------------|
|                   |         | ISO4400                                                                 | Deutsch DT                                                                                                                                             | AMP JPT                                                    | Packard Weatherpack        | Packard Metri-pack         | Flying leads (without conn.) |
| BER               | 10 VDC  | 4SLE001000A                                                             | -                                                                                                                                                      | -                                                          | -                          | -                          | -                            |
|                   | 12 VDC  | 4SLE001200A<br>4SLE001217A <sup>(3)</sup>                               | 4SLE001201A <sup>(5)</sup><br>4SLE001209A <sup>(3-5)</sup><br>4SLE001202A <sup>(6)</sup><br>4SLE001216B <sup>(3-6)</sup><br>4SLE001206A <sup>(2)</sup> | 4SLE001203A <sup>(5)</sup><br>4SLE001211A <sup>(3-5)</sup> | 4SLE001210A <sup>(2)</sup> | 4SLE001214A <sup>(2)</sup> | 4SLE001207A                  |
|                   | 14 VDC  | -                                                                       | 4SLE001400A <sup>(6)</sup><br>4SLE001401A <sup>(3-6)</sup><br>4SLE001402A <sup>(3-5)</sup>                                                             | 4SLE001403A <sup>(3-5)</sup>                               | -                          | -                          | -                            |
|                   | 24 VDC  | 4SLE002400A<br>4SLE002408A <sup>(3)</sup><br>4SLE302400A <sup>(1)</sup> | 4SLE002401A <sup>(5)</sup><br>4SLE002407A <sup>(3-5)</sup><br>4SLE002402A <sup>(6)</sup>                                                               | 4SLE002403A <sup>(5)</sup>                                 | -                          | -                          | 4SLE002404A                  |
|                   | 28 VDC  | -                                                                       | 4SLE002802A <sup>(6)</sup>                                                                                                                             | 4SLE002800A <sup>(5)</sup>                                 | -                          | -                          | -                            |
|                   | 48 VDC  | 4SLE004800A<br>4SLE304800A <sup>(1)</sup>                               | -                                                                                                                                                      | -                                                          | -                          | -                          | -                            |
|                   | 110VDC  | 4SLE011000A<br>4SLE311000A <sup>(1)</sup>                               | -                                                                                                                                                      | -                                                          | -                          | -                          | -                            |
|                   | 220 VDC | 4SLE022000A<br>4SLE322000A <sup>(1)</sup>                               | -                                                                                                                                                      | -                                                          | -                          | -                          | -                            |
|                   | 220 VDC | 4SLE022000A<br>4SLE322000A <sup>(1)</sup>                               | -                                                                                                                                                      | -                                                          | -                          | -                          | -                            |
| BT                | 10 VDC  | 4SL3000100                                                              |                                                                                                                                                        |                                                            |                            |                            |                              |
|                   | 12 VDC  | 4SL3000120<br>4SL3000126 <sup>(4)</sup>                                 | 4SL3000130 <sup>(6)</sup><br>4SL3000134 <sup>(3-6)</sup><br>4SL3000128 <sup>(2)</sup>                                                                  | 4SL3000122 <sup>(5)</sup><br>4SL3001200 <sup>(3-5)</sup>   | 4SL3000124 <sup>(2)</sup>  | 4SL3000127 <sup>(2)</sup>  | 4SL300012C                   |
|                   | 24 VDC  | 4SL3000240<br>4SL3030240 <sup>(1)</sup>                                 | 4SL3000249 <sup>(6)</sup><br>4SL300024C <sup>(3-6)</sup>                                                                                               | 4SL3000248 <sup>(5)</sup>                                  | -                          | -                          | 4SL3000246                   |
|                   | 26 VDC  | 4SL3000260                                                              | -                                                                                                                                                      | -                                                          | -                          | -                          | -                            |
|                   | 48 VDC  | 4SL3000480<br>4SL3030480 <sup>(1)</sup>                                 | -                                                                                                                                                      | -                                                          | -                          | -                          | -                            |
|                   | 110 VDC | 4SL3001100<br>4SL3031100 <sup>(1)</sup>                                 | -                                                                                                                                                      | -                                                          | -                          | -                          | -                            |
|                   | 220 VDC | 4SL3002200<br>4SL3032200 <sup>(1)</sup>                                 | -                                                                                                                                                      | -                                                          | -                          | -                          | -                            |
| Mating connectors |         |                                                                         |                                                                                                                                                        |                                                            |                            |                            |                              |
| Standard          |         | 4CN1009995                                                              | 5CON140031                                                                                                                                             | 5CON003                                                    | 5CON001                    | 5CON017                    |                              |
| With rectifier    | 24VDC   | 4CN3010240                                                              | -                                                                                                                                                      | -                                                          | -                          | -                          |                              |
|                   | 48VDC   | 4CN3010480                                                              | -                                                                                                                                                      | -                                                          | -                          | -                          |                              |
|                   | 110VDC  | 4CN3011100                                                              | -                                                                                                                                                      | -                                                          | -                          | -                          |                              |
|                   | 220VDC  | 4CN3012200                                                              | -                                                                                                                                                      | -                                                          | -                          | -                          |                              |

NOTES: <sup>(1)</sup> supply with AC and use only with rectifier connector - <sup>(2)</sup> with flying leads - <sup>(3)</sup> with bidirectional diode - <sup>(4)</sup> with unidirectional diode  
<sup>(5)</sup> integrated perpendicular type - <sup>(6)</sup> integrated parallel type

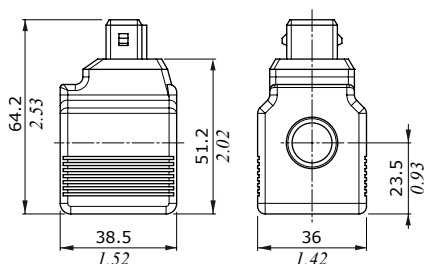
## Dimensional data and features

## BER type

ISO4400 connector

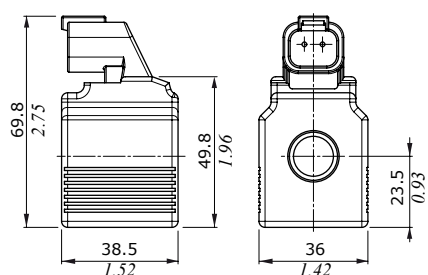
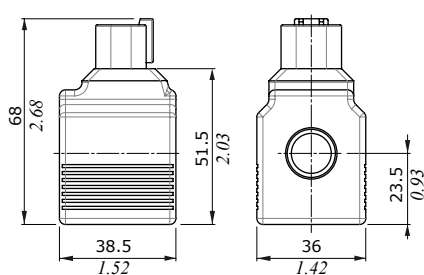


AMP JPT connector

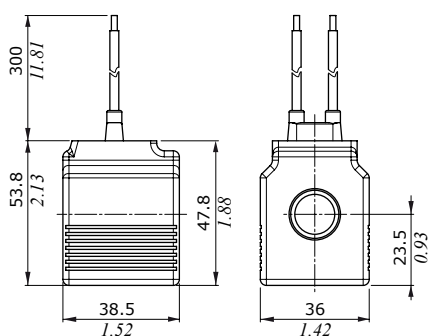
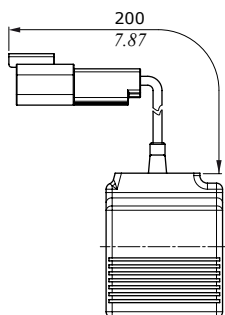
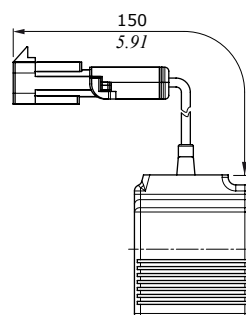
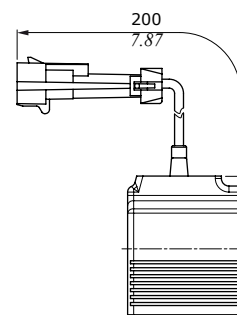


## Features

|                           |                               |
|---------------------------|-------------------------------|
| Nominal voltage tolerance | : ±10%                        |
| Power rating              | : 19.2 W - 12/24 VDC          |
|                           | 48 RAC                        |
|                           | : 19.1 W - 28 VDC             |
|                           | : 19 W - 10/14/48/110/220 VDC |
|                           | 24/110/220 RAC                |
| Max. operating current    | : 1.90 A - 10 VDC             |
|                           | : 1.60 A - 12 VDC             |
|                           | : 1.36 A - 14 VDC             |
|                           | : 0.80 A - 24 VDC             |
|                           | : 0.68 A - 28 VDC             |
|                           | : 0.40 A - 48 VDC             |
|                           | : 0.17 A - 110 VDC            |
|                           | : 0.09 A - 220 VDC            |
|                           | : 0.89 A - 24 RAC             |
|                           | : 0.45 A - 48 RAC             |
|                           | : 0.19 A - 110 RAC            |
|                           | : 0.09 A - 220 RAC            |
| Coil insulation           | : Class H (180°C - 356°F)     |
| Weather protection        | : IP65 - ISO4400              |
|                           | : IP69K - Deutsch DT          |
|                           | : IP65 - AMP JPT              |
|                           | : IP67 - Weatherpack          |
|                           | : IP67 - Metri-pack           |
| Insertion                 | : 100%                        |

DEUTSCH DT04 connector  
(parallel type)DEUTSCH DT04 connector  
(perpendicular type)

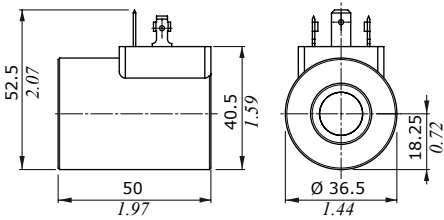
## Flying leads

Flying leads with  
DEUTSCH DT04 connectorFlying leads with PACKARD  
WEATHER-PACK connectorFlying leads with PACKARD  
METRI-PACK connector

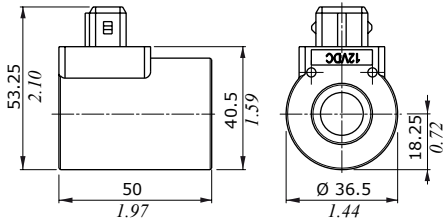
Dimensional data and features

BT type

ISO4400 connector



AMP JPT connector



Features

- Nominal voltage tolerance :  $\pm 10\%$   
Power rating . . . . . : 19 W - 10 VDC  
: 21 W - 12/24/26 VDC  
: 20.3 W - 48 VDC  
: 17.3 W - 110 VDC  
: 17.7 W - 220 VDC  
: 19.9 W - 24 RAC  
: 20.7 W - 48 RAC  
: 20 W - 110 / 220 RAC

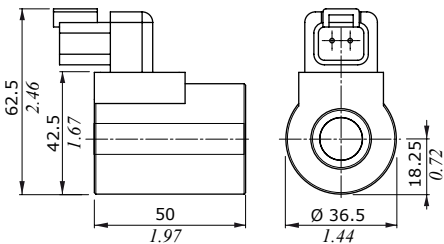
- Max. operating current . . : 1.9 A - 10 VDC  
: 1.77 A - 12 VDC  
: 0.89 A - 24VDC  
: 0.84 A - 26 VDC  
: 0.43 A - 48 VDC  
: 0.16 A - 110 VDC  
: 0.08 A - 220 VDC  
: 0.93 A - 24 RAC  
: 0.47 A - 48 RAC  
: 0.18 A - 110 RAC  
: 0.09 A - 220 RAC

Coil insulation . . . . . : Class F (155°C - 311°F)

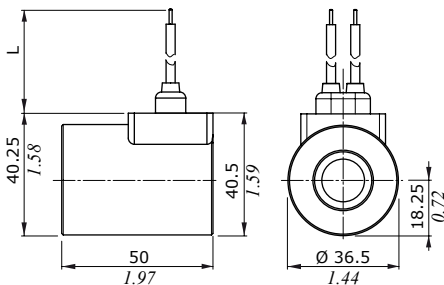
- Weather protection . . . . : IP65 - ISO4400  
: IP69K - Deutsch DT  
: IP65 - AMP JPT  
: IP67 - Weatherpack  
: IP67 - Metri-pack

Insertion . . . . . : 100%

DEUTSCH DT04 connector

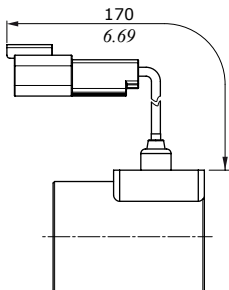


Flying leads

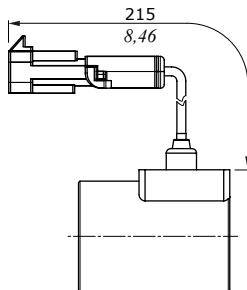


| Coil type | Dimension L |      |
|-----------|-------------|------|
|           | (mm)        | (in) |
| 12VDC     | 247         | 9.72 |
| 24VDC     | 607         | 23.9 |

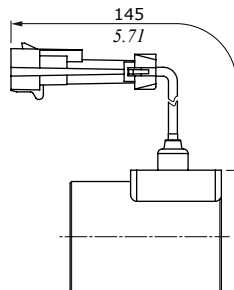
Flying leads with DEUTSCH DT04 connector



Flying leads with PACKARD WEATHER-PACK connector



Flying leads with PACKARD METRI-PACK connector













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