



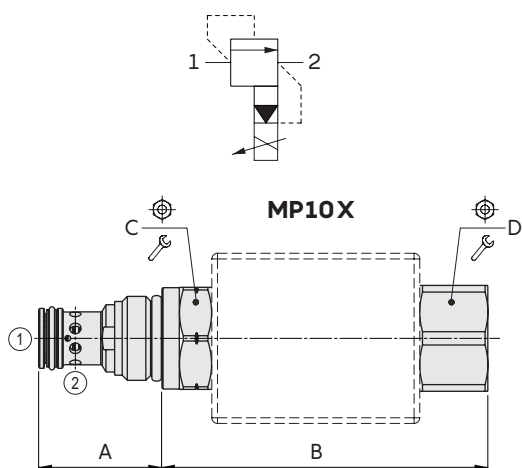
## MP..X type pressure relief valves – 2 way

- Solenoid proportional type, pilot operated
- Spool type
- Increasing pressure with increasing current (N.O)
- Applications for high flow rates (max. 200 l/min – 52.8 US gpm)
- System of purging of air
- From SAE10 to SAE12 cavities

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

|                                            |                                               | MP10X                                                                    | MP12X                                                 |
|--------------------------------------------|-----------------------------------------------|--------------------------------------------------------------------------|-------------------------------------------------------|
| Max. flow                                  |                                               | 120 l/min (31.7 US gpm)                                                  | 200 l/min (52.8 US gpm)                               |
| Max. pressure                              |                                               | 350 bar (5100 psi)                                                       |                                                       |
| Oil leakage                                | at 80% of max. pressure setting               | <150 cm <sup>3</sup> /min (9.15 in <sup>3</sup> /min)                    | <200 cm <sup>3</sup> /min (12.2 in <sup>3</sup> /min) |
| Fluid                                      |                                               | mineral based or synthetic hydraulic fluid with lubricating properties   |                                                       |
| Viscosity                                  |                                               | 10-200 cSt                                                               |                                                       |
| Max level of contamination                 |                                               | 18/16/13 ISO4406                                                         |                                                       |
| Fluid temperature                          | with NBR seals+Polyurethane<br>with FPM seals | from -25°C (-13°F) to 90°C (194°F)<br>from -20°C (-4°F) to 110°C (230°F) |                                                       |
| Environmental temp. for working conditions |                                               | from -20°C (-4°F) to 60°C (140°F)                                        |                                                       |
| Cavity                                     |                                               | SAE 10/2                                                                 | SAE 12/2                                              |
| Coil type*                                 |                                               | BH or BQP19                                                              |                                                       |
| Nominal voltages                           |                                               | 12VDC – 24VDC                                                            |                                                       |
| Power rating                               |                                               | 33 W (BH) – 15 W (BQP19)                                                 |                                                       |
| Max. control current                       |                                               | 12V->1.70 A – 24V->0.85 (BH)<br>12V->1.25 A – 24V->0.63 A (BQP19)        |                                                       |
| Dither frequency                           |                                               | 150-200 Hz                                                               |                                                       |
| Hysteresis                                 |                                               | <5%                                                                      |                                                       |
| Weight                                     |                                               | 0.76 kg (1.67 lb)                                                        | 0.88 kg (1.94 lb)                                     |

NOTE – For different conditions, please contact Walvoil Sales Dpt. – \*For coils further features see from page 201.



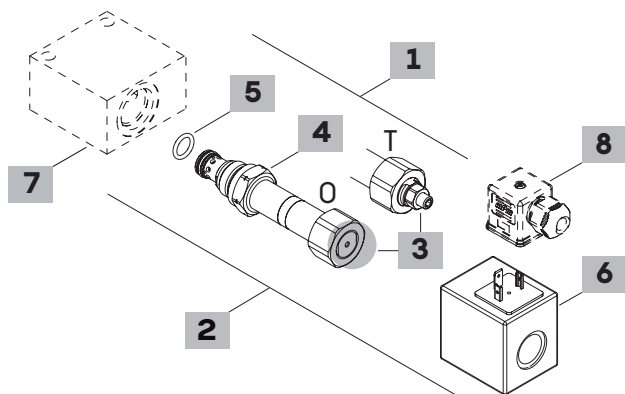
| Valve type | A    |      | B                       |      |         |      | C  |     | D    |     |    |     |
|------------|------|------|-------------------------|------|---------|------|----|-----|------|-----|----|-----|
|            | mm   | in   | N / O without emergency |      | T screw |      |    |     |      |     |    |     |
|            |      |      | mm                      | in   | mm      | in   | Nm | lbf | Nm   | lbf | Nm | lbf |
| MP10X      | 32.6 | 1.28 | 86                      | 3.38 | 104.2   | 4.10 | 27 | 50  | 37   | 28  | 5  | 3.7 |
| MP12X      | 45   | 1.77 | 103                     | 4.05 | 118.3   | 4.66 | 32 | 85  | 62.7 | 28  | 5  | 3.7 |

## Ordering codes and description composition

### MP10X/001B



### MP10X/031B



### 1 Cartridges

| TYPE                   | CODE        | DESCRIPTION             |
|------------------------|-------------|-------------------------|
| <b>SAE cavity 10/2</b> |             |                         |
| MP10X/001B             | OMP10002054 | Pressure range <b>1</b> |
| MP10X/002B             | OMP10002055 | Pressure range <b>2</b> |
| MP10X/003B             | OMP10002056 | Pressure range <b>3</b> |
| MP10X/004B             | OMP10002057 | Pressure range <b>4</b> |
| <b>SAE cavity 12/2</b> |             |                         |
| MP12X/001B             | OMP12002031 | Pressure range <b>1</b> |
| MP12X/002B             | OMP12002032 | Pressure range <b>2</b> |
| MP12X/003B             | OMP12002033 | Pressure range <b>3</b> |
| MP12X/004B             | OMP12002034 | Pressure range <b>4</b> |

### 2 Complete cartridges

| TYPE                   | CODE        | DESCRIPTION                     |
|------------------------|-------------|---------------------------------|
| <b>SAE cavity 10/2</b> |             |                                 |
| MP10X/031B             | OMP10002044 | Pressure range <b>1</b> , 12VDC |
| MP10X/032B             | OMP10002045 | Pressure range <b>2</b> , 12VDC |
| MP10X/033B             | OMP10002046 | Pressure range <b>3</b> , 12VDC |
| MP10X/034B             | OMP10002047 | Pressure range <b>4</b> , 12VDC |
| <b>SAE cavity 12/2</b> |             |                                 |
| MP12X/031B             | OMP12002023 | Pressure range <b>1</b> , 12VDC |
| MP12X/032B             | OMP12002024 | Pressure range <b>2</b> , 12VDC |
| MP12X/033B             | OMP12002025 | Pressure range <b>3</b> , 12VDC |
| MP12X/034B             | OMP12002026 | Pressure range <b>4</b> , 12VDC |

### 3 Emergency

| TYPE     | DESCRIPTION      |
|----------|------------------|
| <b>0</b> | Without override |
| <b>T</b> | With screw       |

### 4 Pressure range

| TYPE     | DESCRIPTION                               |
|----------|-------------------------------------------|
| <b>1</b> | Pressure range 10÷120 bar (145÷1740 psi)  |
| <b>2</b> | Pressure range 10÷160 bar (145÷2320 psi)  |
| <b>3</b> | Pressure range 10÷230 bar (145÷3335 psi)  |
| <b>4</b> | Pressure range 10÷350 bar (145÷5100 psi); |

Note: for further pressure range contact Sales Dept

### 5 Seals

| TYPE     | DESCRIPTION                                                    |
|----------|----------------------------------------------------------------|
| <b>B</b> | <b>NBR (Buna)+Polyurethane</b> o-ring seals, std configuration |
| <b>V</b> | <b>FPM (Viton)</b> o-ring seals, contact Sales Dept            |

### 6 Coils

| TYPE                  | CODE        | DESCRIPTION        |
|-----------------------|-------------|--------------------|
| <b>2) BH 12VDC</b>    | 4SLD001200A | 12VDC-ISO4400 coil |
| <b>3) BQP19 12VDC</b> | 4SL5000126A | 12VDC-ISO4400 coil |
| <b>4) BH 24VDC</b>    | 4SLD002400A | 24VDC-ISO4400 coil |
| <b>5) BQP19 24VDC</b> | 4SL5000245A | 24VDC-ISO4400 coil |

For complete coils list see from page 201

### 7 Valve body

| TYPE                 | CODE       | DESCRIPTION                                          |
|----------------------|------------|------------------------------------------------------|
| <b>SAE10/2-G 3/8</b> | 3CC1020C11 | Aluminium body for cavity 10 valve, G 3/8 std thread |
| <b>SAE12/2-G 1/2</b> | 3CC1220D11 | Aluminium body for cavity 12 valve, G 1/2 std thread |

Note: aluminium body can stand up to 210 bar (3050 psi)  
For steel bodies or different threading see from page 208

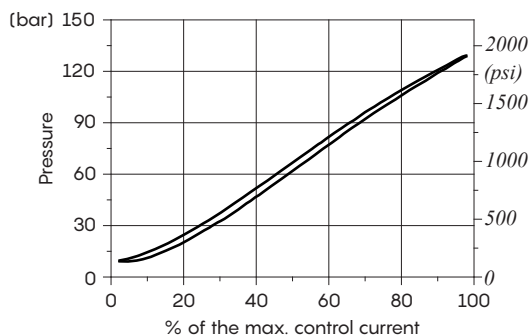
### 8 Connector

| TYPE           | CODE        | DESCRIPTION |
|----------------|-------------|-------------|
| <b>ISO4400</b> | 4CN1009995B | Connector   |

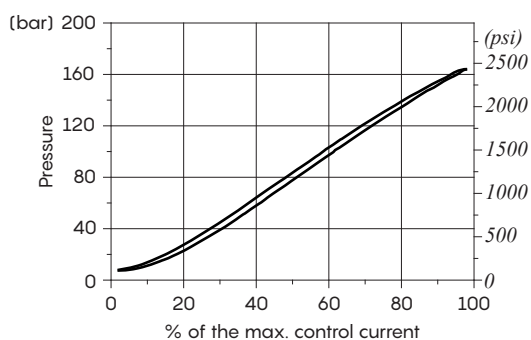
For complete connectors list see from page 201

**Rating diagrams**

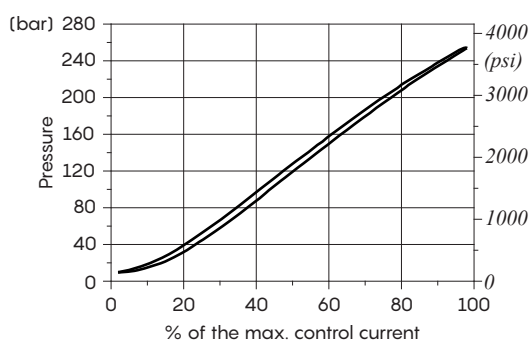
**MP10X pressure setting vs. % max. control current**  
at 5 l/min (1.32 US gpm)



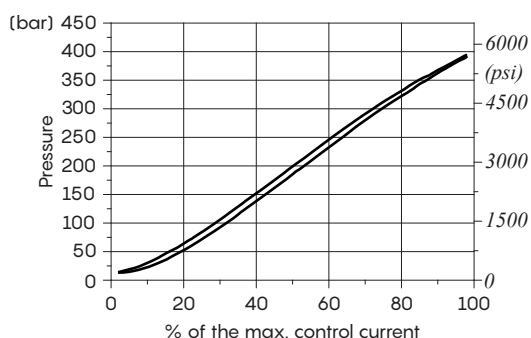
**MP10X pressure setting vs. % max. control current**  
at 5 l/min (1.32 US gpm)



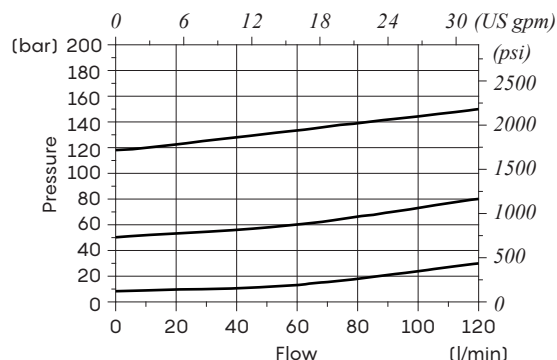
**MP10X pressure setting vs. % max. control current**  
at 5 l/min (1.32 US gpm)



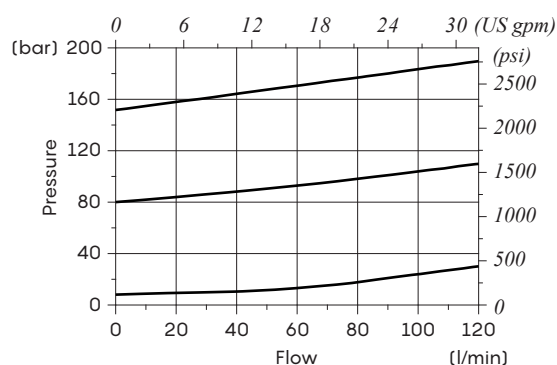
**MP10X pressure setting vs. % max. control current**  
at 5 l/min (1.32 US gpm)



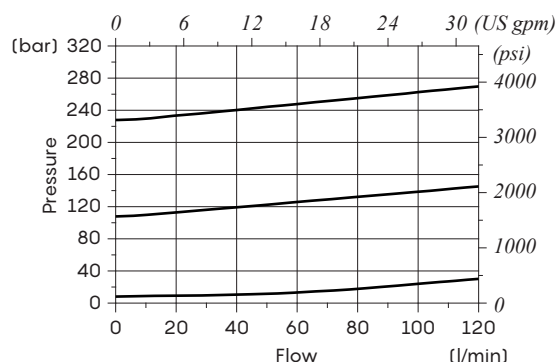
**MP10X pressure vs. flow 1->2**  
for % of control current - Pressure range 1



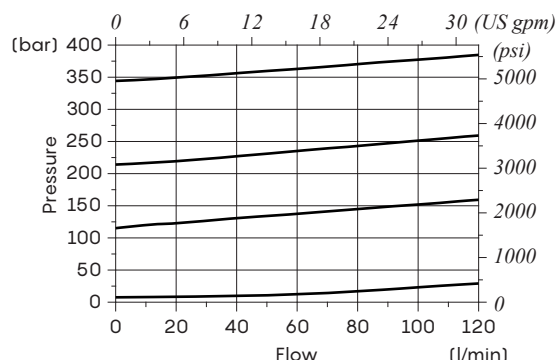
**MP10X pressure vs. flow 1->2**  
for % of control current - Pressure range 2



**MP10X pressure vs. flow 1->2**  
for % of control current - Pressure range 3

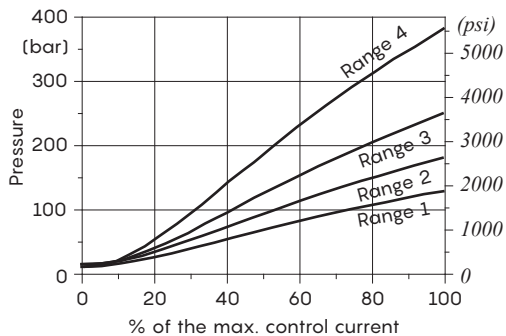


**MP10X pressure vs. flow 1->2**  
for % of control current - Pressure range 4

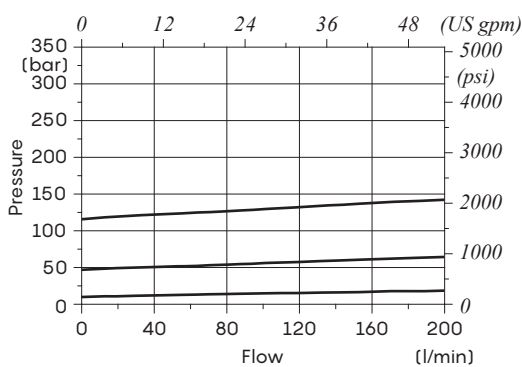


Rating diagrams

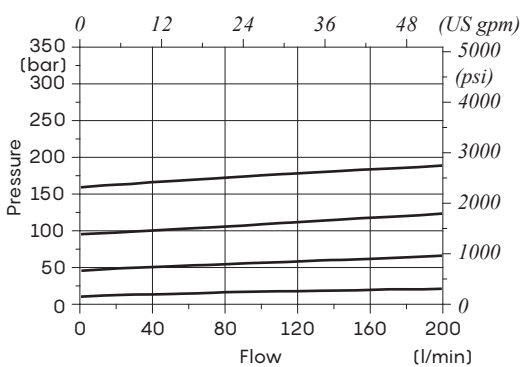
MP12X pressure setting vs. % max. control current  
at 10 l/min (2.64 US gpm)



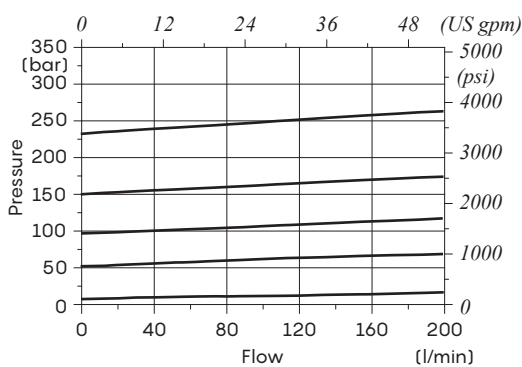
MP12X pressure vs. flow 1->2  
for % of control current - Pressure range 1



MP12X pressure setting vs. flow 1->2  
for % of control current - Pressure range 2



MP12X pressure vs. flow 1->2  
for % of control current - Pressure range 3



MP12X pressure vs. flow 1->2  
for % of control current - Pressure range 4

