



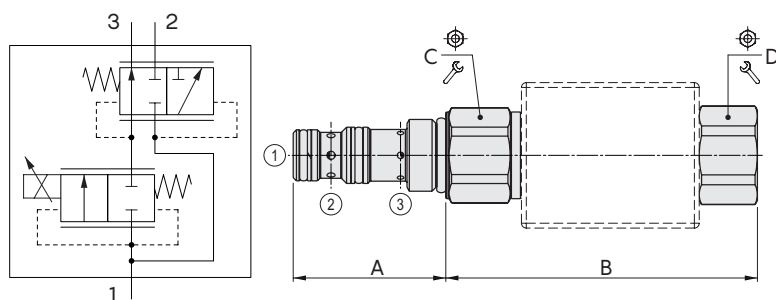
PP..X type
flow control pressure compensated valves – 3 way

- Spool type
- Direct acting through proportional solenoid
- Different types of emergencies available
- With exceeding flow to pressure
- From SAE08 to SAE16 cavities

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

		PP08X	PP10X	PP12X	PP16X
Nominal flow	Q1max= Q3max=	20 l/min (5.2 US gpm) 15 l/min (4 US gpm)	50 l/min (13.2 US gpm) 30 l/min (7.9 US gpm)	90 l/min (23.8 US gpm) 60 l/min (16 US gpm)	150 l/min (39.6 US gpm) 90 l/min (24 US gpm)
Max. pressure		315 bar (4600 psi)			
Oil leakage	at 210 bar (3050 psi)	80 cm³/min (4.9 in³/min)	150 cm³/min (9.2 in³/min)	250 cm³/min (15.3 in³/min)	400 cm³/min (24.4 in³/min)
Fluid	mineral based or sinthetic hydraulic fluid with lubricating properties				
Viscosity	10–200 cSt				
Max level of contamination	18/16/13 ISO4406				
Fluid temperature	with NBR seals+ Polyurethane with FPM seals	from -25°C (-13°F) to 90°C (194°F) from -20°C (-4°F) to 110°C (230°F)			
Environmental temp. for wor- king conditions	from -20°C (-4°F) to 60°C (140°F)				
Cavity	SAE 08/3		SAE 10/3	SAE 12/3	SAE 16/3
Coil type*	BQP19 or BH				
Nominal voltages		12VDC - 24VDC ± 10%			
Power rating		33 W (BH) - 15 W (BQP19)			
Max. control current		12V -> 1.70A - 24V -> 0.85A (BH) 12V -> 1.25A - 24V -> 0.63A (BQP19)			
Dither frequency		150Hz			
Hysteresis		8%			
Weight	0.44 kg (0.97 lb)		0.49 kg (1.08 lb)	0.61 kg (1.34 lb)	1 kg (2.20 lb)

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

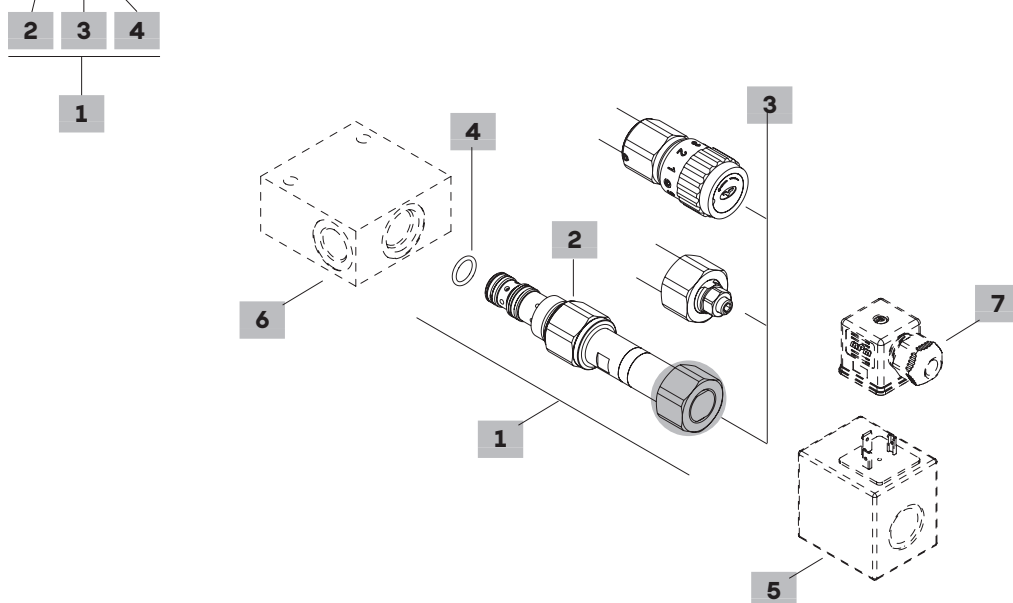


Valve type	A		B		C			D		
			N without emergency							
	mm	in	mm	in	Nm		lbf·ft	Nm		lbf·ft
PP10X	47.2	1.86	96.4	3.80	27	50	37	28	5	3.7

For dimensions with different type of emergency see list page 124

Ordering codes and description composition

PP08X/A0NB



1 Cartridges

TYPE	CODE	DESCRIPTION
SAE cavity 08/3		
PP08X/A0NB	OPP08002014	Without emergency
PP08X/A0TB	OPP08002015	Screw type emergency
PP08X/A0VB	OPP08002016	Handknob emergency
SAE cavity 10/3		
PP10X/A0NB	OPP10002031	Without emergency
PP10X/A0TB	OPP10002033	Screw type emergency
PP10X/A0VB	OPP10002035	Handknob emergency
SAE cavity 12/3		
PP12X/A0NB	OPP12002037	Without emergency
PP12X/A0TB	OPP12002039	Screw type emergency
PP12X/A0VB	OPP12002041	Handknob emergency
SAE cavity 16/3		
PP16X/A0NB	OPP16002013	Without emergency
PP16X/A0TB	OPP16002015	Screw type emergency
PP16X/A0VB	OPP16002014	Handknob emergency

2 Pressure drop from 1 to 3

TYPE	DESCRIPTION
A	12 bar (170 psi)

3 Emergency

TYPE	DESCRIPTION
N	Without emergency
T	Screw type
V	Handknob

4 Seals

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

5 Coils

TYPE	CODE	DESCRIPTION
BH 12VDC	4SLD001200A	12VDC-ISO4400 coil
BQP19 12VDC	4SL5000126A	12VDC-ISO4400 coil

For complete coils list see from page 201

6 Valve body

TYPE	CODE	DESCRIPTION
SAE08/3-G 3/8	3CC0830C11	Aluminium body for cavity 08 valve, G 3/8 std thread
SAE10/3-G 3/8	3CC1030C11	Aluminium body for cavity 10 valve, G 3/8 std thread
SAE12/3-G 1/2	3CC1230D11	Aluminium body for cavity 12 valve, G 1/2 std thread
SAE16/3-G 3/4	3CC1630E11	Aluminium body for cavity 16 valve, G 3/4 std thread

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

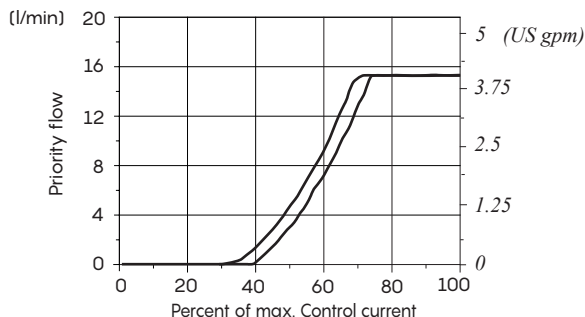
7 Connector

TYPE	CODE	DESCRIPTION
ISO4400	4CN1009995B	Connector

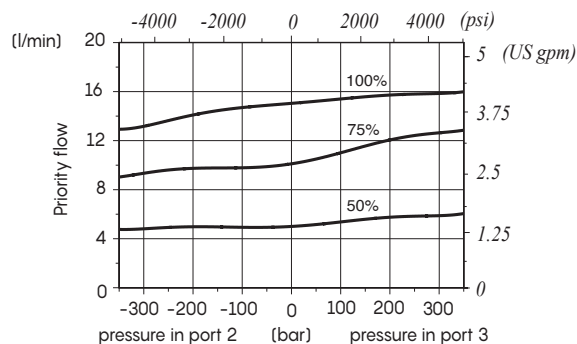
For complete connectors list see from page 201

Rating diagrams

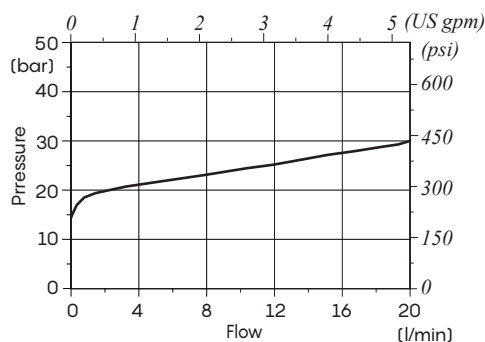
PP08X
flow regulating vs. % max. control current
 Q_{in} = priority flow +30%



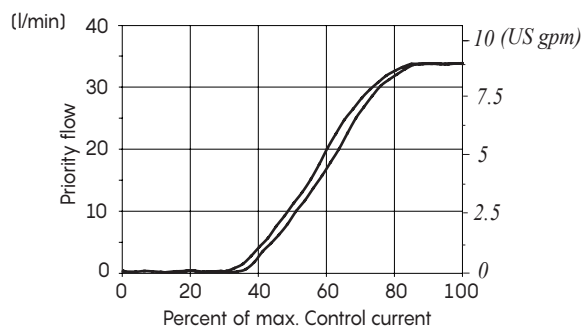
PP08X
pressure compensation diagram 2→3
for % of control current



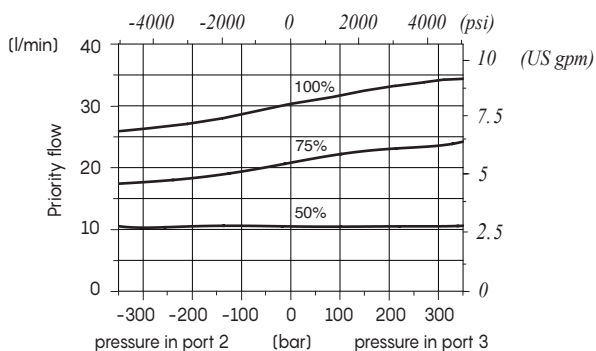
PP08X
pressure drop with de-energized coil
from 1→2



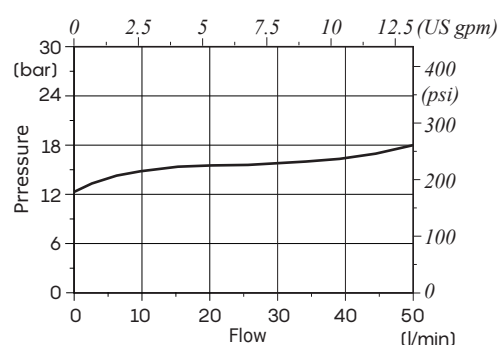
PP10X
flow regulating vs. % max. control current
 Q_{in} = priority flow +5%



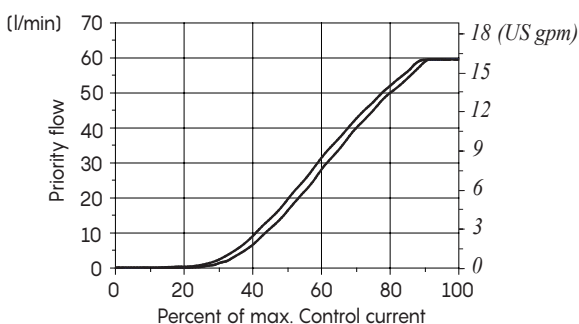
PP10X
pressure compensation diagram 2→3
for % of control current



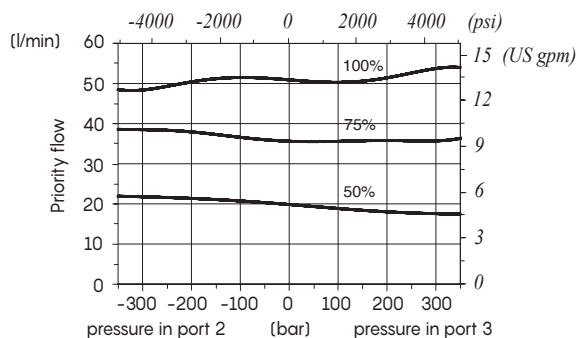
PP10X
pressure drop with de-energized coil
from 1→2



PP12X
flow regulating vs. % max. control current
 Q_{in} = priority flow +15%

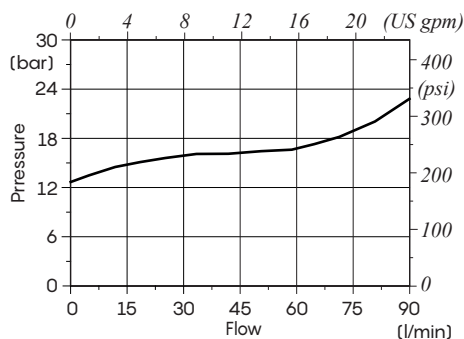


PP12X
pressure compensation diagram 2→3
for % of control current

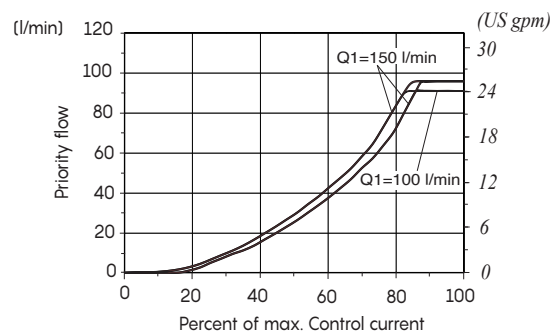


Rating diagrams

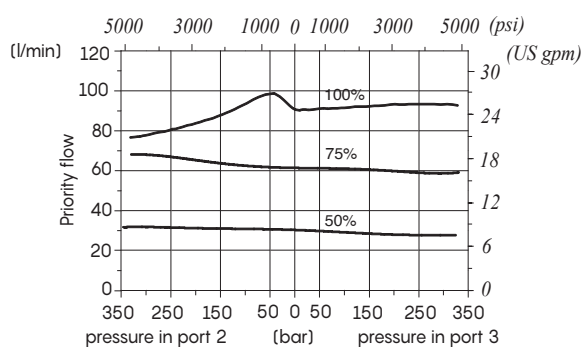
PP12X
pressure drop with de-energized coil
from 1→2



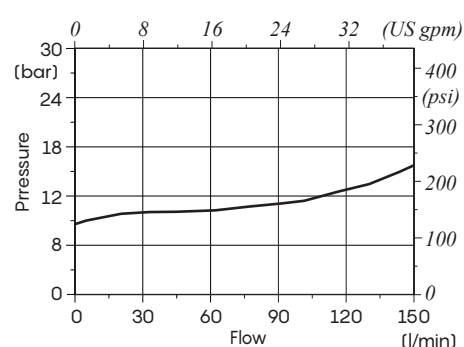
PP16X
flow regulating vs. % max. control current
 Q_{in} = priority flow +10%



PP16X
pressure compensation diagram 2→3
for % of control current - $Q_1=100$ l/min



PP16X
pressure drop with de-energized coil
from 1→2



Types and dimensions

Valve type	A		N		B		V		C		D	
	mm	in	mm	in	mm	in	mm	in	Nm	lbft	Nm	lbft
PP08X	40.8	1.60	93.9	3.70	107.9	4.25	141.9	5.59	24	30	22	5
PP10X	47.2	1.86	96.4	3.80	110.4	4.35	144.1	5.67	27	50	37	5
PP12X	73.5	2.89	97.4	3.83	111.4	4.39	145.4	5.72	32	80	59	5
PP16X	75	2.95	121.4	4.78	135.4	5.33	168.9	6.65	41	100	74	5