



SAE cavity cartridges



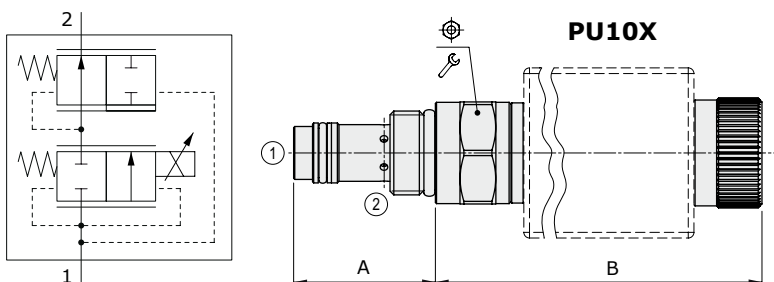
PU..X type flow control pressure compensated valves - 2 ways

- Solenoid proportional type
- From SAE08 to SAE16 cavities

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

		PU08X	PU10X	PU12X	PU16X
Nominal flow		10 l/min (2.6 US gpm)	30 l/min (7.9 US gpm)	50 l/min (13.2 US gpm)	90 l/min (23.8 US gpm)
Max. pressure		315 bar (4600 psi)			
Oil leakage	at 210 bar 3050 psi	80 cm ³ /min (8.9 in ³ /min)	150 cm ³ /min (9.2 in ³ /min)	250 cm ³ /min (15.3 in ³ /min)	400 cm ³ /min (24.4 in ³ /min)
Fluid		mineral based oil			
Viscosity		10-200 cSt			
Max level of contamination		18/16/13 ISO4406			
Fluid temperature	with NBR seals with FPM seals	from -20°C (-4°F) to 80°C (176°F) from -20°C (-4°F) to 100°C (212°F)			
Environmental temp. for working conditions		from -20°C (-4°F) to 50°C (122°F)			
Cavity		SAE 8/2 A	SAE 10/2 A	SAE 12/2 A	SAE 16/2 A
Coil type*		BH or BQP19			
Nominal voltages		12 VDC - 24V DC ± 10%			
Power rating		20.4 W (BH) - 15 W (BQP19)			
Max control current		12 V -> 1.70 A - 24 V -> 0.85 A (BH) 12 V -> 1.25 A - 24 V -> 0.63 A (BQP19)			
Dither frequency		150 Hz			
Hysteresis		8%			
Weight		0.34 kg (0.75 lb)	0.39 kg (0.86 lb)	0.51 kg (1.12 lb)	0.90 kg (1.98 lb)

NOTE - For different conditions, please contact Walvoil Sales Dpt. - For coils further features see from page 190.

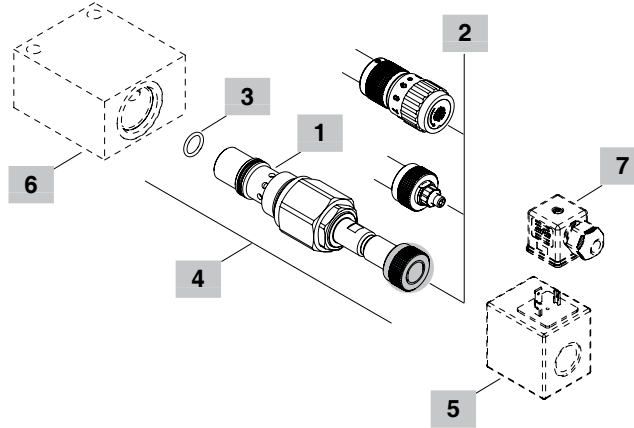
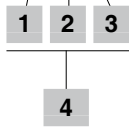


Valve type	A		B		⌀	⌀	Nm	lbft
	mm	in	mm	in				
PU08X/A0N	36.6	1.44	94	3.70	24	30	22	
PU10X/A0N	37.5	1.48	96.4	3.79	27	50	37	
PU12X/A0N	58.5	2.30	97.4	3.83	32	75	55	
PU16X/A0N	68	2.68	121.4	4.78	41	95	70	

For dimensions with different type of emergency see page 197

Ordering codes and description composition

PU08X/A0NB



1 Pressure drop from 1 to 2

TYPE	DESCRIPTION
A	12 bar (170 psi)

2 Emergency

TYPE	DESCRIPTION
N	Without emergency
T	Screw type
V	Handknob

3 Seals

TYPE	DESCRIPTION
B	NBR (Buna) Std configuration without addition
V	For valve with FPM (Viton) o-ring seals, contact Sales Dept.

4 Cartridges

TYPE	CODE	DESCRIPTION
SAE cavity 8/2		
PU08X/A0NB	0PU08002012	Without emergency
PU08X/A0TB	0PU08002013	Screw type emergency
PU08X/A0VB	0PU08002014	Handknob emergency
SAE cavity 10/2		
PU10X/A0NB	0PU10002020	Without emergency
PU10X/A0TB	0PU10002021	Screw type emergency
PU10X/A0VB	0PU10002022	Handknob emergency
SAE cavity 12/2		
PU12X/A0NB	0PU12002007	Without emergency
PU12X/A0TB	0PU12002008	Screw type emergency
PU12X/A0VB	0PU12002009	Handknob emergency
SAE cavity 16/2		
PU16X/A0NB	0PU16002010	Without emergency
PU16X/A0TB	0PU16002011	Screw type emergency
PU16X/A0VB	0PU16002012	Handknob emergency

5 Coils

TYPE	CODE	DESCRIPTION
BQP19 12VDC	4SL5000126	12VDC-ISO4400 coil
BH 12VDC	4SLD001200	12VDC-ISO4400 coil

For complete coils list see from page 190

6 Valve body

TYPE	CODE	DESCRIPTION
SAE 08/2-G 3/8	3CC0820C11	Aluminium body for cavity 8 valve G3/8 std thread
SAE 10/2-G 3/8	3CC1020C11	Aluminium body for cavity 10 valve G3/8 std thread
SAE 12/2-G 1/2	3CC1220D11	Aluminium body for cavity 12 valve G1/2 std thread
SAE 16/2-G 3/4	3CC1620E11	Aluminium body for cavity 16 valve G3/4 std thread

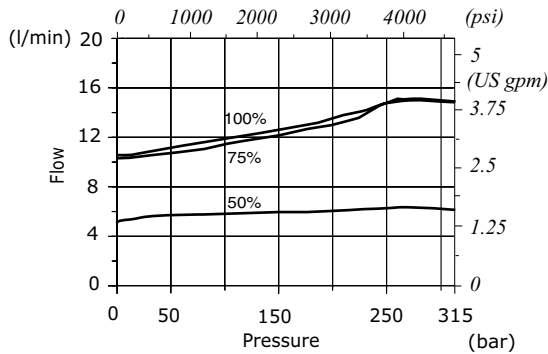
Note: aluminium body can stand up to 210 bar (3050 psi)
For steel bodies or different threading see from page 199

7 Connector

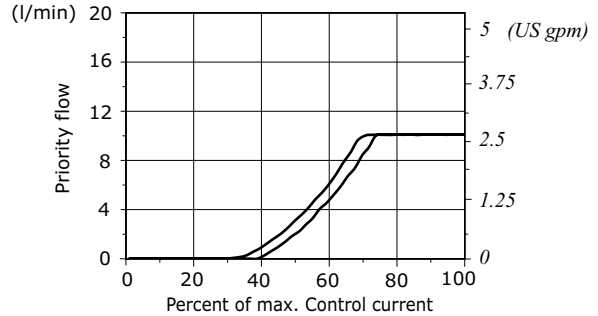
TYPE	CODE	DESCRIPTION
ISO4400	4CN1009995	Connector

For complete connectors list see from page 190

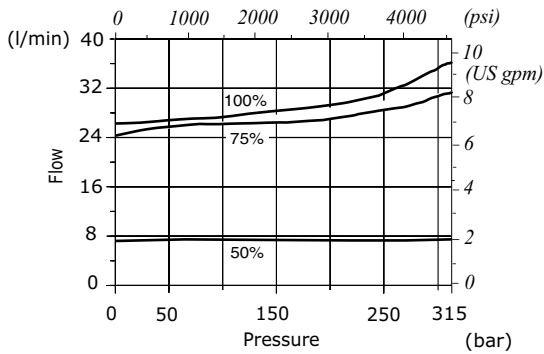
PU08X: pressure compensation diagram 1→2 for % of control current



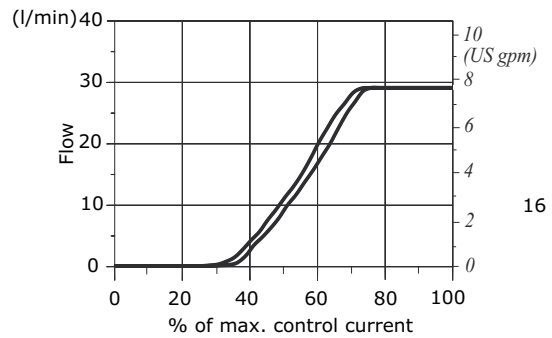
PU08X flow regulating vs. % max. control current



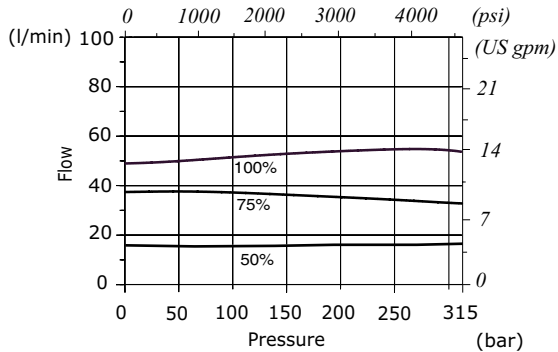
PU10X: pressure compensation diagram 1→2 for % of control current



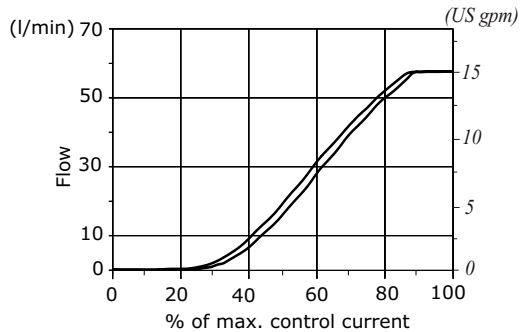
PU10X flow regulating vs. % max. control current



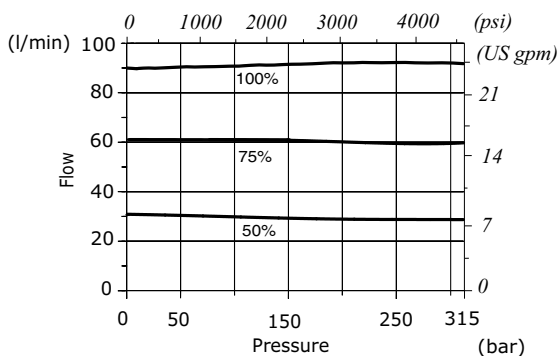
PU12X: pressure compensation diagram 1→2 for % of control current



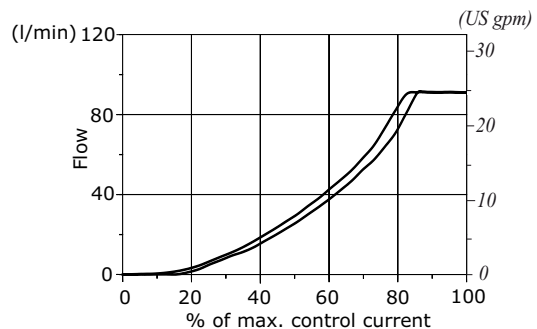
PU12X flow regulating vs. % max. control current



PU16X: pressure compensation diagram 1→2 for % of control current



PU16X flow regulating vs. % max. control current





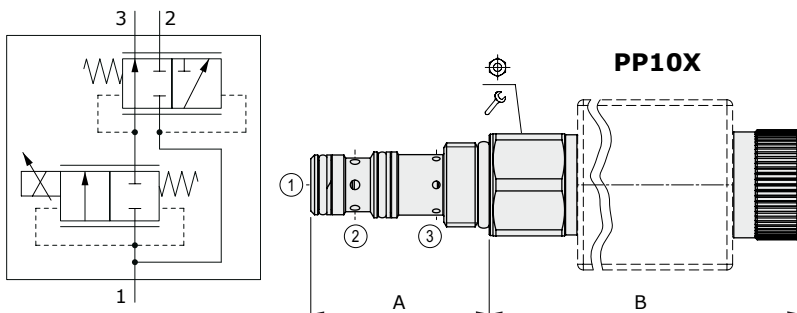
PP..X type flow control pressure compensated valves - 3 ways

- Solenoid proportional type
- 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= 20 l/min (5.2 US gpm) Q3max= 15 l/min (3.9 US gpm)	50 l/min (13.2 US gpm) 30 l/min (8 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 (23.8 US gpm)
Max. pressure	315 bar (4560 psi)			
Oil leakage	at 210 bar (3050 psi) 80 cm ³ /min (4.9 in ³ /min)	150 cm ³ /min (9.2 in ³ /min)	250 cm ³ /min (15.3 in ³ /min)	400 cm ³ /min (24.4 in ³ /min)
Fluid	mineral based oil			
Viscosity	10-200 cSt			
Max level of contamination	18/16/13 ISO4406			
Fluid temperature	with NBR seals with FPM seals	from -20°C (-4°F) to 80°C (176°F) from -20°C (-4°F) to 100°C (212°F)		
Environmental temp. for working conditions	from -20°C (-4°F) to 50°C (122°F)			
Cavity	SAE 8/3	SAE 10/3	SAE 12/3	SAE 16/3
Coil type*	BQP19 or BH			
Nominal voltages	12 VDC - 24 VDC ± 10%			
Power rating	20.4 W (BH) - 15 W (BQP19)			
Max control current	12 V -> 1.70 A - 24 V -> 0.85 A (BH) 12 V -> 1.25 A - 24 V -> 0.63 A (BQP19)			
Dither frequency	150 Hz			
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 190.

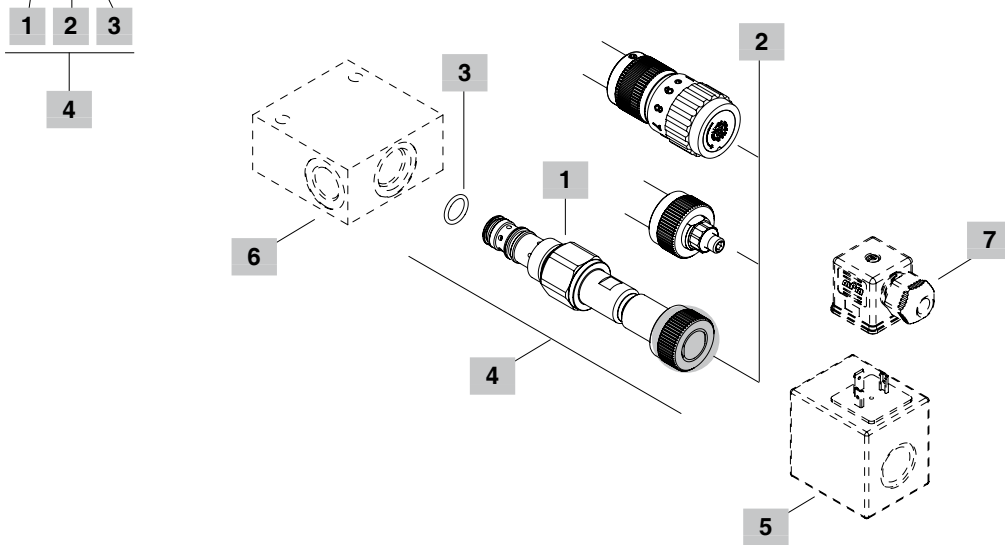


Valve type	A		B		⌀	Nm	lbft
	mm	in	mm	in			
PP08X/A0N	40.8	1.60	94	3.70	24	30	22
PP10X/A0N	47.2	1.86	96.4	3.79	27	50	37
PP12X/A0N	73.5	2.89	97.4	3.83	32	75	55
PP16X/A0N	75.1	2.95	121.4	4.78	41	95	70

For dimensions with different type of emergency see page 197

Ordering codes and description composition

PP08X/A0NB



1 Pressure drop from 1 to 3

TYPE	DESCRIPTION
A	12 bar (170 psi)

2 Emergency

TYPE	DESCRIPTION
N	Without emergency
T	Screw type
V	Handknob

3 Seals

TYPE	DESCRIPTION
B	NBR (Buna) Std configuration without addition
V	For valve with FPM (Viton) o-ring seals, contact Sales Dept.

4 Cartridges

TYPE	CODE	DESCRIPTION
SAE cavity 8/3		
PP08X/A0NB	0PP08002014	Without emergency
PP08X/A0TB	0PP08002015	Screw type emergency
PP08X/A0VB	0PP08002016	Handknob emergency
SAE cavity 10/3		
PP10X/A0NB	0PP10002031	Without emergency
PP10X/A0TB	0PP10002033	Screw type emergency
PP10X/A0VB	0PP10002035	Handknob emergency
SAE cavity 12/3		
PP12X/A0NB	0PP12002037	Without emergency
PP12X/A0TB	0PP12002039	Screw type emergency
PP12X/A0VB	0PP12002041	Handknob emergency
SAE cavity 16/3		
PP16X/A0NB	0PP16002013	Without emergency
PP16X/A0TB	0PP16002015	Screw type emergency
PP16X/A0VB	0PP16002014	Handknob emergency

5 Coils

TYPE	CODE	DESCRIPTION
BQP19 12VDC	4SL5000126	12VDC-ISO4400 coil
BH 12VDC	4SLD001200	12VDC-ISO4400 coil

For complete coils list see from page 190

6 Valve body

TYPE	CODE	DESCRIPTION
SAE 08/3-G 3/8	3CC0830C11	Aluminium body for cavity 8 valve G3/8 std thread
SAE 10/3-G 3/8	3CC1030C11	Aluminium body for cavity 10 valve G3/8 std thread
SAE 12/3-G 1/2	3CC1230D11	Aluminium body for cavity 12 valve G1/2 std thread
SAE 16/3-G 3/4	3CC1630E11	Aluminium body for cavity 16 valve G3/4 std thread

Note: aluminium body can stand up to 210 bar (3050 psi)
For steel bodies or different threading see from page 199

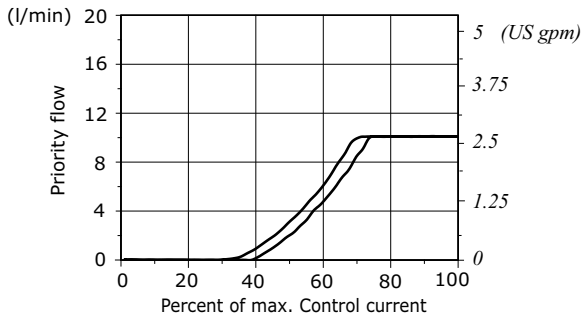
7 Connector

TYPE	CODE	DESCRIPTION
ISO4400	4CN1009995	Connector

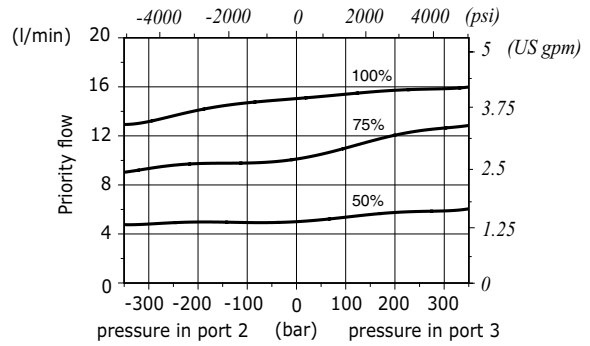
For complete connectors list see from page 190

PP08X
flow regulating vs. % max. control current

Q_{in} = priority flow + 30%

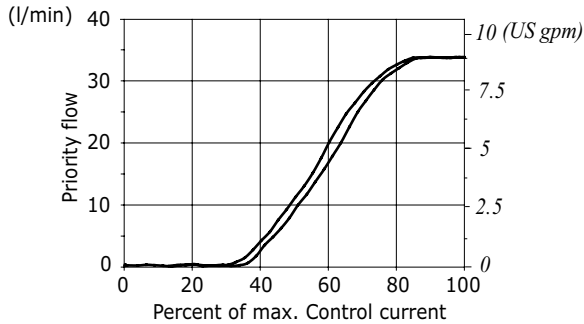


PP08X
pressure compensation diagram 2→3
for % of control current

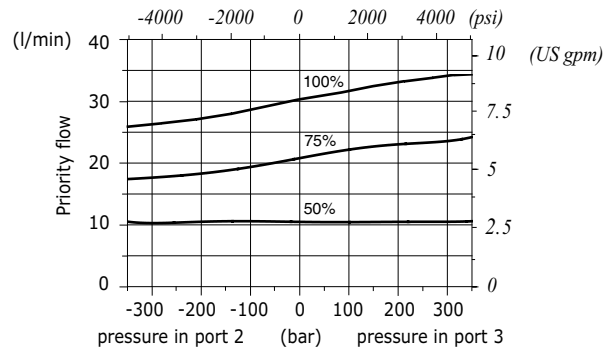


PP10X
flow regulating vs. % max. control current

Q_{in} = priority flow + 5%

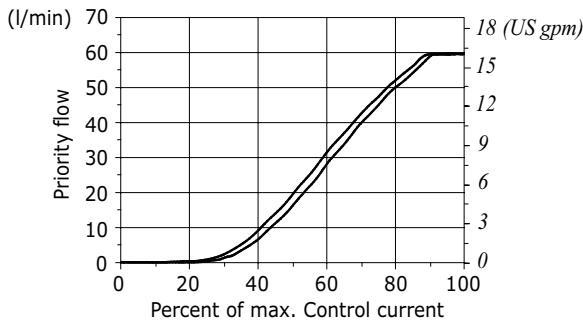


PP10X
pressure compensation diagram 2→3
for % of control current

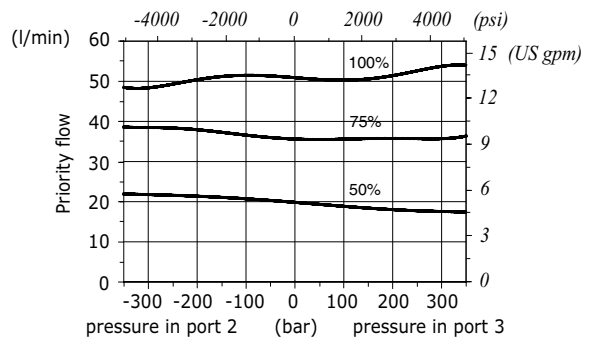


PP12X
flow regulating vs. % max. control current

Q_{in} = priority flow + 15%

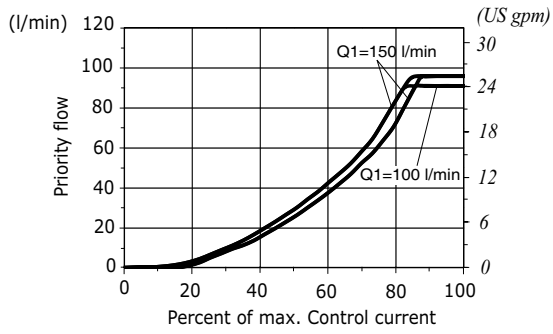


PP12X
pressure compensation diagram 2→3
for % of control current

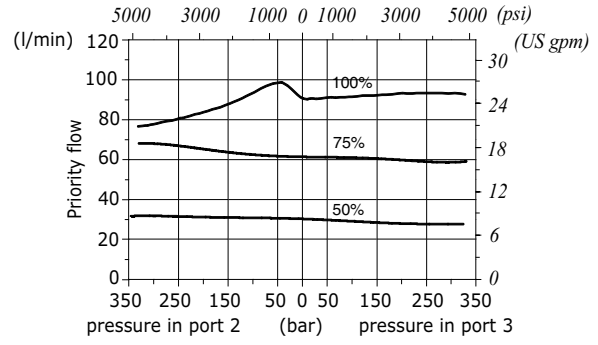


Rating diagrams

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



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



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