



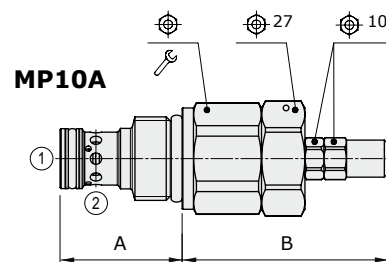
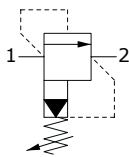
MP..A type pressure relief valves - 2 ways

- Pilot operated
- Spool type
- From SAE10 to SAE12 cavities

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

	MP10A	MP12A
Nominal flow	60 l/min (16 US gpm)	100 l/min (26.4 US gpm)
Max. pressure	350 bar (5100 psi)	
Oil leakage	80% of max. pressure setting	25 cm ³ /min (1.525 in ³ /min)
Fluid	mineral based oil	
Viscosity	10-200 cSt	
Max level of contamination	20/18/14 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 10/2	SAE 12/2
Weight	0.190 kg (0.42 lb)	0.300 kg (0.661 lb)

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

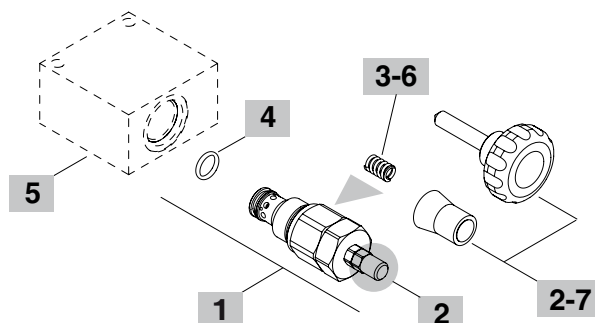
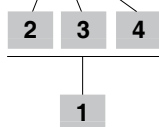


Valve type	A		B		⌀	⌘
	mm	in	mm	in		
MP10A/OS	32.3	1.27	54.5	2.15	27	50 37
MP12A/OS	46	1.81	52.5	2.07	32	80 59

For dimensions with different type of adjustment see page 196

Ordering codes and description composition

MP10A/0S2B



1 Cartridges

TYPE	CODE	DESCRIPTION
SAE cavity 10/2		
MP10A/0S2B	OMP10002015	Pressure range 2
SAE cavity 12/2		
MP12A/0S2B	OMP12002000	Pressure range 2

2 Adjustments

TYPE	DESCRIPTION
S	Screw with cap
V	With handwheel (part code: see point 7)
X	Valve set with antitampering cap (part code: see point 7)

3 Pressure range

TYPE	DESCRIPTION
1	Pressure range 5÷50 bar (72.5÷725 psi)
2	Pressure range 50÷220 bar (725÷3190 psi)
3	Pressure range 150÷350 bar (2175÷5100 psi)

4 Seals

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

5 Valve body

TYPE	CODE	DESCRIPTION
SAE 10/2-G 3/8	3CC1020C11	Aluminium body for cavity 10 valve, G 3/8 std thread
SAE 12/2-G 3/8	3CC1220D11	Aluminium body for cavity 12 valve, G 3/8 std thread

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

6 Springs

TYPE	CODE	DESCRIPTION
1	3ML1081400	Pressure range 1
2	3ML1081401	Pressure range 2
3	3ML1081402	Pressure range 3

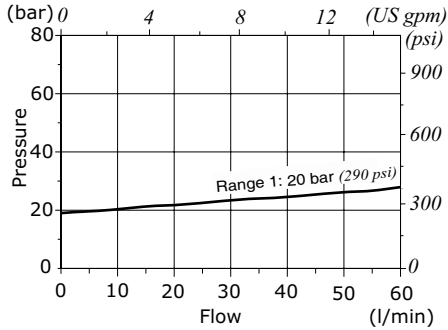
7 Accessories

TYPE	CODE	DESCRIPTION
-	4VL2307007	Handwheel (for MP10A valve)
-	4VL2307001	Handwheel (for MP12A and MP16A valves)
-	4COP116420	Antitampering cap

Rating diagrams

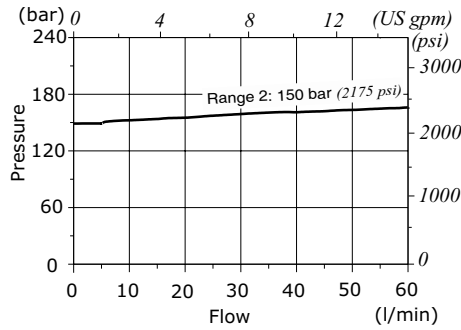
MP10A pressure vs. flow

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



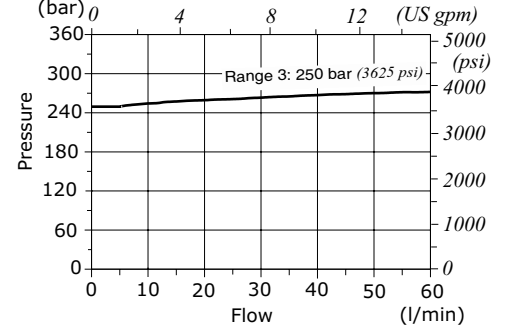
MP10A pressure vs. flow

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



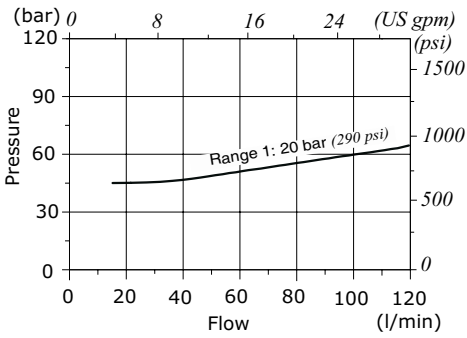
MP10A pressure vs. flow

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



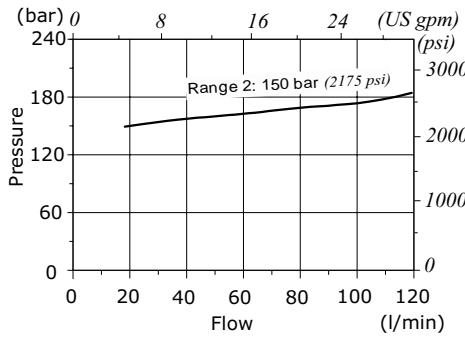
MP12A pressure vs. flow

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



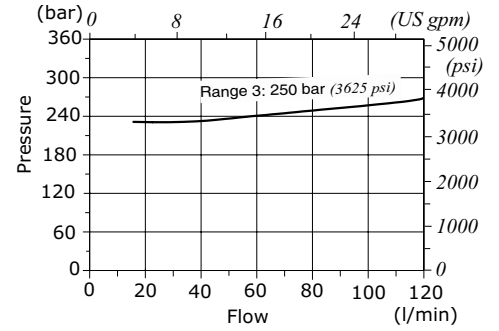
MP12A pressure vs. flow

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



MP12A pressure vs. flow

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





MP16M type pressure relief valve - 2 ways

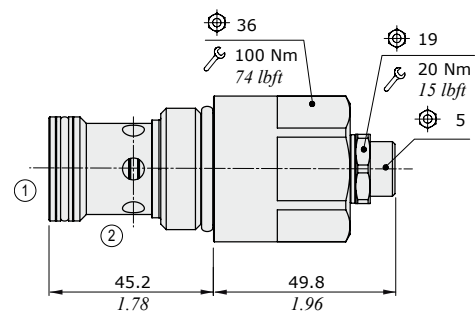
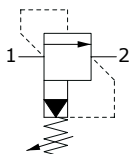
- Pilot operated
- Spool type
- SAE16 cavities

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

MP16M

Nominal flow		400 l/min (105.67 US gpm)
Max. pressure		350 bar (5100 psi)
Oil leakage	80% of max. pressure setting	100 cm ³ /min (6.102 in ³ /min)
Fluid		mineral based oil
Viscosity		12-400 cSt
Max level of contamination		20/18/14 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 16/2
Weight		0.490 kg (1.080 lb)

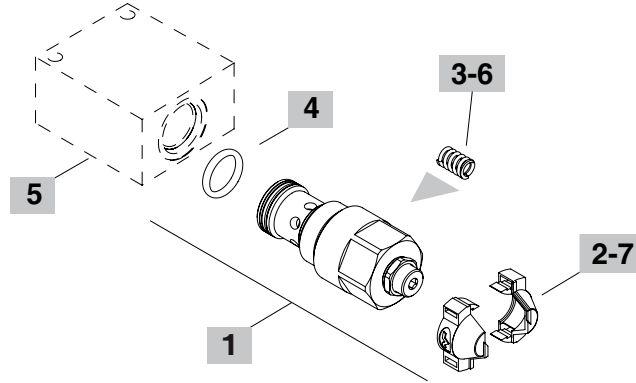
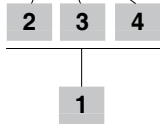
NOTE - For different conditions, please contact Walvoil Sales Dpt.



MP16M type

Ordering codes and description composition

MP16M/OY2B



1 Cartridges			5 Valve body		
TYPE	CODE	DESCRIPTION	TYPE	CODE	DESCRIPTION
SAE cavity 16/2			SAE 16/2-G 1		
MP16M/OY1B	OMP16002017	Pressure range 1	3CC1620F210		Steel body for cavity 16 valve, G 1 std thread
MP16M/OY2B	OMP16002013	Pressure range 2	Note: aluminium body can stand up to 210 bar (3050 psi)		
MP16M/OY3B	OMP16002014	Pressure range 3	For other bodies or different threading see from page 199		

2 Adjustments			6 Springs		
TYPE	DESCRIPTION		TYPE	CODE	DESCRIPTION
Y	With screw		1	3ML1081400	Pressure range 1
X	Valve set with antitampering cap (part code: see point 7)		2	3ML1081401	Pressure range 2
			3	3ML1081402	Pressure range 3

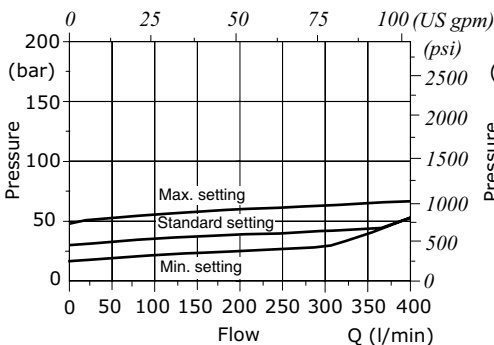
3 Pressure range			7 Accessories		
TYPE	DESCRIPTION		TYPE	CODE	DESCRIPTION
1	Pressure range 15÷50 bar (217.5÷725 psi)		-	4COP126300	Antitampering cap (x2)
2	Pressure range 50÷220 bar (725÷3190 psi)				
3	Pressure range 150÷350 bar (2175÷5100 psi)				

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

Rating diagrams

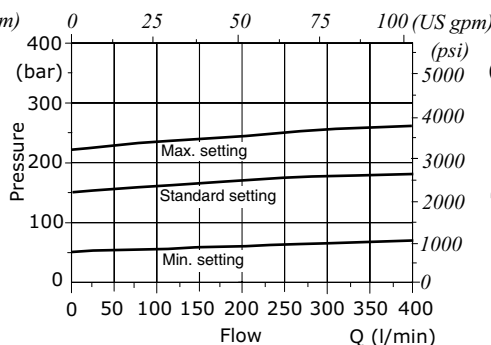
MP16M pressure vs. flow (range 1)

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



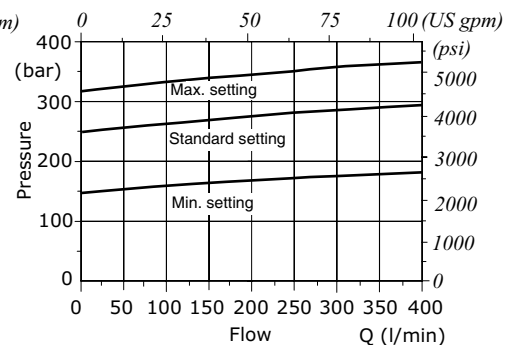
MP16M pressure vs. flow (range 2)

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



MP16M pressure vs. flow (range 3)

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





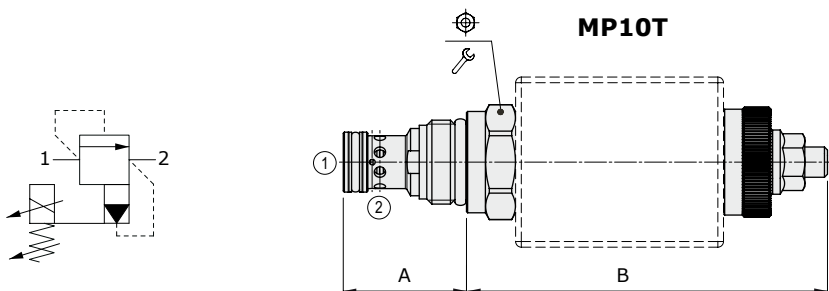
MP..T Type pressure relief valves - 2 ways

- Solenoid proportional type, pilot operated
- Decreasing pressure with increasing current (NC)
- Spool type
- From SAE10 to SAE12 cavities

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

		MP10T	MP12T
Max. flow		60 l/min (16 US gpm)	120 l/min (31.7 US gpm)
Max. pressure		350 bar (5100 psi)	
Oil leakage	at 80% of max. pressure setting	<150 cm ³ /min (9.15 in ³ /min)	<180 cm ³ /min (<10.1 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 -40°C (-40°F) to 100°C (212°F)	
Cavity		SAE 10/2	SAE 12/2
Coil type*		BH or BQP19	
Nominal voltages		12 VDC - 24 VDC	
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		200 Hz	200 Hz
Hysteresis		<5%	
Weight		0.77 kg (1.70 lb)	0.92 kg (2.03 lb)

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



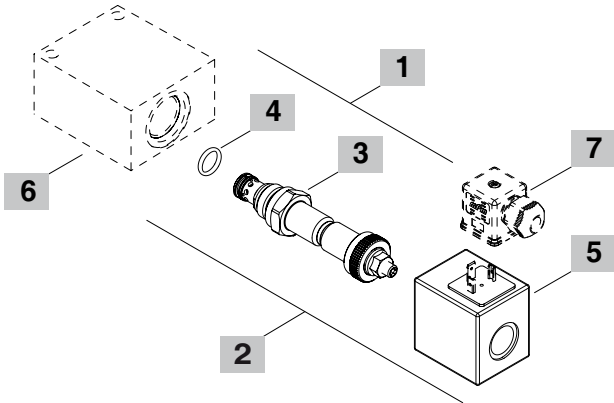
Valve type	A		B		⊕	⌘	Nm	lbft
	mm	in	mm	in				
MP10T	32.6	1.28	96.5	3.80	27	50	37	
MP12T	45	1.81	113	4.45	32	80	59	

Ordering codes and description composition

MP10T/001B



MP10T/031B



1 Cartridges

TYPE	CODE	DESCRIPTION
SAE cavity 10/2		
MP10T/031B	OMP10002051	Pressure range 1
MP10T/032B	OMP10002052	Pressure range 2
MP10T/033B	OMP10002053	Pressure range 3
SAE cavity 12/2		
MP12T/031B	OMP12002028	Pressure range 1
MP12T/032B	OMP12002029	Pressure range 2
MP12T/033B	OMP12002030	Pressure range 3
MP12T/034B	OMP12002035	Pressure range 4

2 Complete cartridges

TYPE	CODE	DESCRIPTION
SAE cavity 10/2		
MP10T/031B	OMP10002035	Pressure range 1 , 12VDC
MP10T/032B	OMP10002036	Pressure range 2 , 12VDC
MP10T/033B	OMP10002037	Pressure range 3 , 12VDC
SAE cavity 12/2		
MP12T/031B	OMP12002020	Pressure range 1 , 12VDC
MP12T/032B	OMP12002021	Pressure range 2 , 12VDC
MP12T/033B	OMP12002022	Pressure range 3 , 12VDC
MP12T/034B	OMP12002027	Pressure range 4 , 12VDC

3 Pressure range

TYPE	DESCRIPTION
1	Pressure range 8÷130 bar (116÷1900 psi)
2	Pressure range 8÷180 bar (116÷2600 psi)
3	Pressure range 8÷240 bar (116÷3500 psi)
4	Pressure range 8÷300 bar (116÷4350 psi)

Note: for further pressure range contact Sales Dept.

4 Seals

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

5 Coils

TYPE	CODE	DESCRIPTION
2) BH 12VDC	4SLD001200	12VDC-ISO4400 coil
3) BQP19 12VDC	4SL5000126	12VDC-ISO4400 coil
4) BH 24VDC	4SLD002400	24VDC-ISO4400 coil
5) BQP19 24VDC	4SL5000245	24VDC-ISO4400 coil

For complete coils list see from page 190

6 Valve body

TYPE	CODE	DESCRIPTION
SAE 10/2-G 3/8	3CC1020C11	Aluminium body for cavity 10 valve, G 3/8 std thread
SAE 12/2-G 1/2	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 199

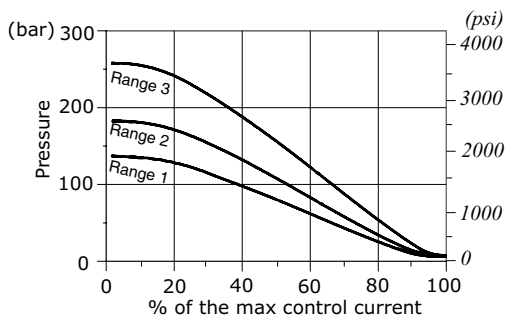
7 Connector

TYPE	CODE	DESCRIPTION
ISO4400	4CN1009995	Connector

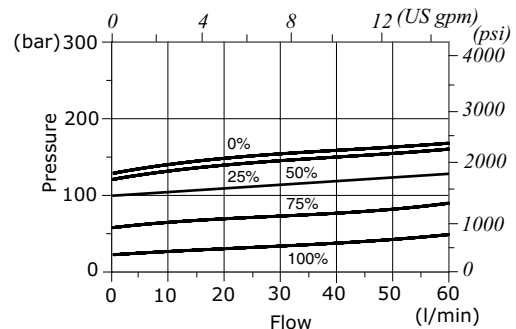
For complete connectors list see from page 190

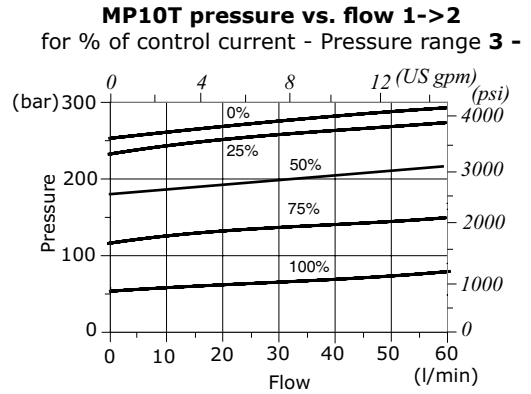
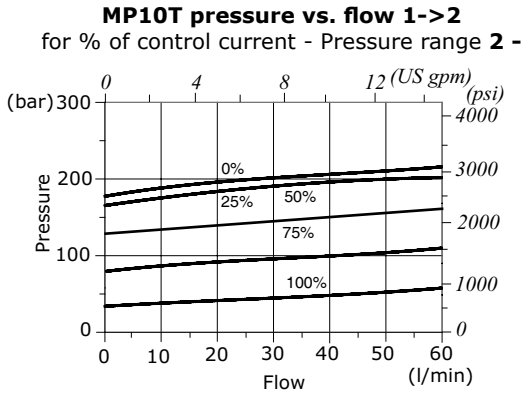
Rating diagrams

MP10T pressure setting vs. % max. control current
at 5 l/min (1.32 US gpm)

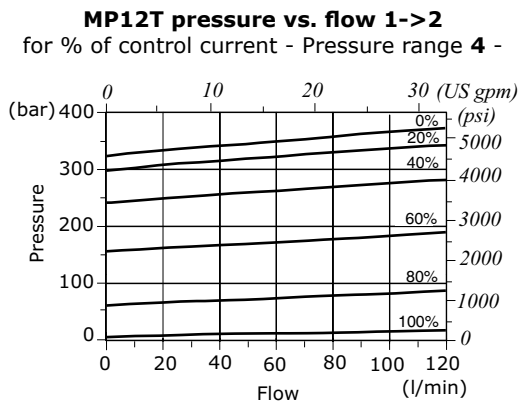
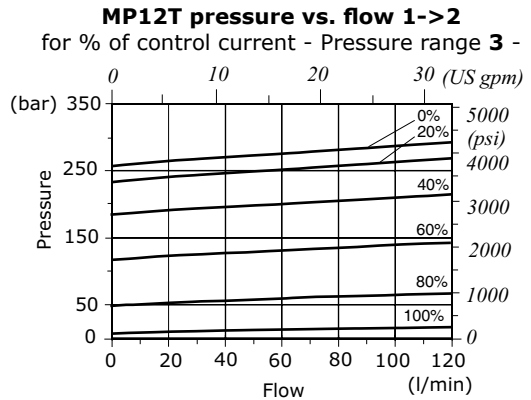
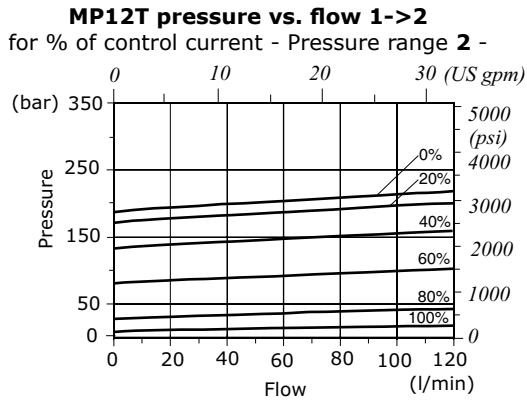
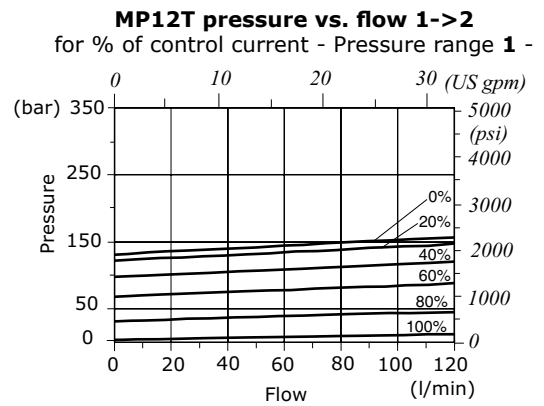
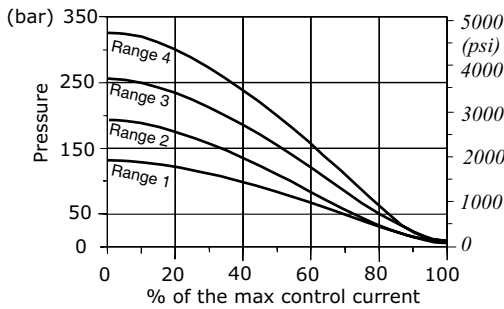


MP10T pressure vs. flow 1->2
for % of control current - Pressure range 1 -





MP12T pressure setting vs. % max. control current
at 10 l/min (2.6 US gpm)





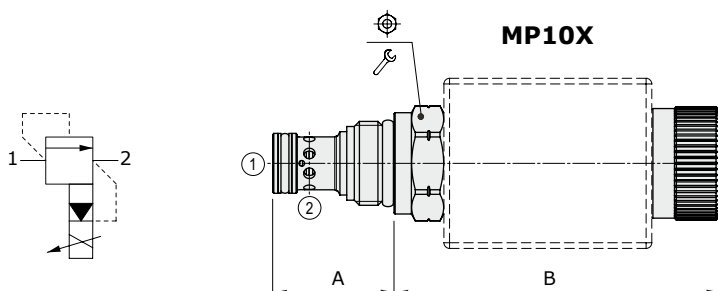
MP..X type pressure relief valves - 2 ways

- Solenoid proportional type, pilot operated
- Increasing pressure with increasing current (NO)
- Spool type
- 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		60 l/min (16 US gpm)	120 l/min (31.7 US gpm)
Max. pressure		350 bar (5100 psi)	
Oil leakage	at 80% of max. pressure setting	<150 cm ³ /min (9.15 in ³ /min)	<180 cm ³ /min (10.1 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 -40°C (-40°F) to 100°C (212°F)	
Cavity		SAE 10/2	SAE 12/2
Coil type*		BH or BQP19	
Nominal voltages		12 VDC - 24 VDC	
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		180 Hz	180 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 190.

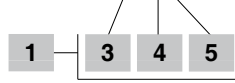


Valve type	A		B		⌀	⌘	Nm	lbft
	mm	in	mm	in				
MP10X/0	32.3	1.27	86	3.39	27	50	37	
MP12X/0	45	1.81	102	4.02	32	80	59	

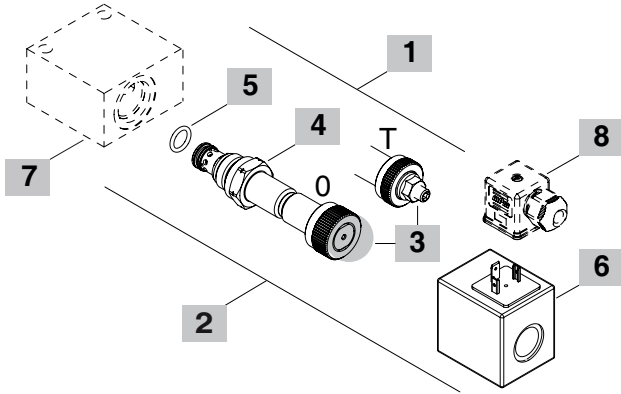
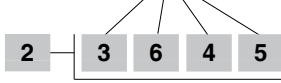
For dimensions with different type of emergency see page 197

Ordering codes and description composition

MP10X/001B



MP10X/031B



1 Cartridges

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

2 Complete cartridges

TYPE	CODE	DESCRIPTION
SAE cavity 10/2		
MP10X/031B	OMP10002044	Pressure range 1, 12VDC
MP10X/032B	OMP10002045	Pressure range 2, 12VDC
MP10X/033B	OMP10002046	Pressure range 3, 12VDC
MP10X/034B	OMP10002047	Pressure range 4, 12VDC

SAE cavity 12/2

MP12X/031B	OMP12002023	Pressure range 1, 12VDC
MP12X/032B	OMP12002024	Pressure range 2, 12VDC
MP12X/033B	OMP12002025	Pressure range 3, 12VDC
MP12X/034B	OMP12002026	Pressure range 4, 12VDC

3 Emergency

TYPE	DESCRIPTION
0	Without override
T	With screw

4 Pressure range

TYPE	DESCRIPTION
1	Pressure range 10÷120 bar (145÷1740 psi)
2	Pressure range 10÷160 bar (145÷2320 psi)
3	Pressure range 10÷230 bar (145÷3335 psi)
4	Pressure range 10÷350 bar (145÷5100 psi)

Note: for further pressure range contact Sales Dept.

5 Seals

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

6 Coils

TYPE	CODE	DESCRIPTION
2) BH 12VDC	4SLD001200	12VDC-ISO4400 coil
3) BQP19 12VDC	4SL5000126	12VDC-ISO4400 coil
4) BH 24VDC	4SLD002400	24VDC-ISO4400 coil
5) BQP19 24VDC	4SL5000245	24VDC-ISO4400 coil

For complete coils list see from page 190

7 Valve body

TYPE	CODE	DESCRIPTION
SAE 10/2-G 3/8	3CC1020C11	Aluminium body for cavity 10 valve, G 3/8 std thread
SAE 12/2-G 1/2	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 199

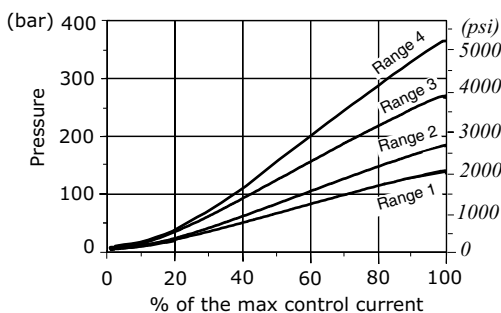
8 Connector

TYPE	CODE	DESCRIPTION
ISO4400	4CN1009995	Connector

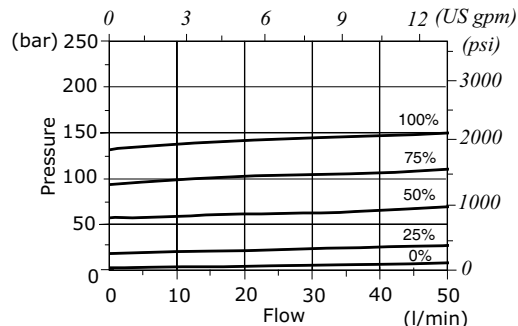
For complete connectors list see from page 190

Rating diagrams

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

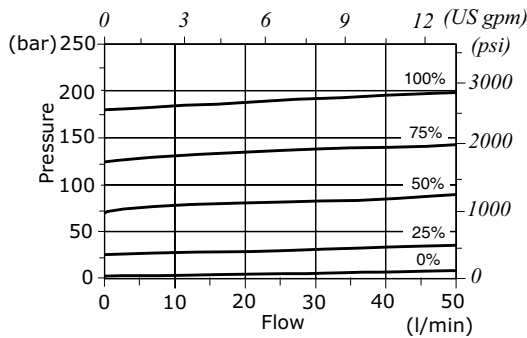


MP10X pressure vs. flow 1->2
for % of control current - Pressure range 1 -



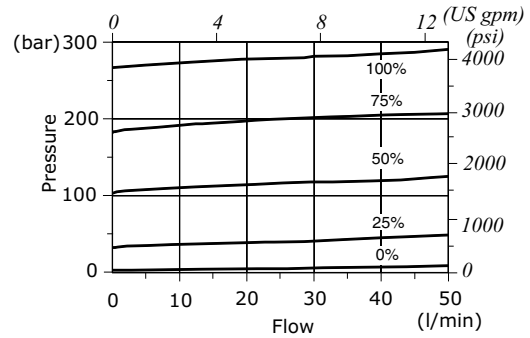
MP10X pressure vs. flow 1->2

for % of control current - Pressure range 2 -



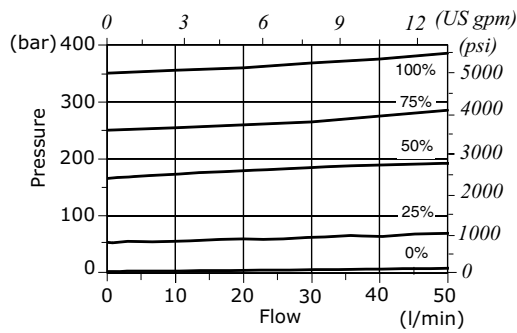
MP10X pressure vs. flow 1->2

for % of control current - Pressure range 3 -



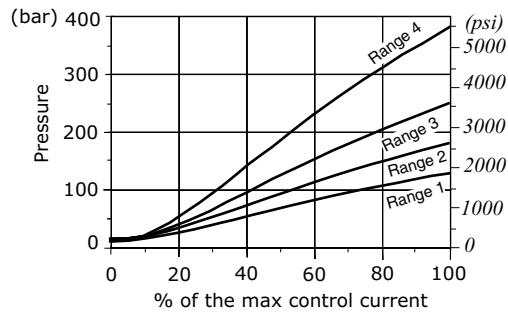
MP10X pressure vs. flow 1->2

for % of control current - Pressure range 4 -



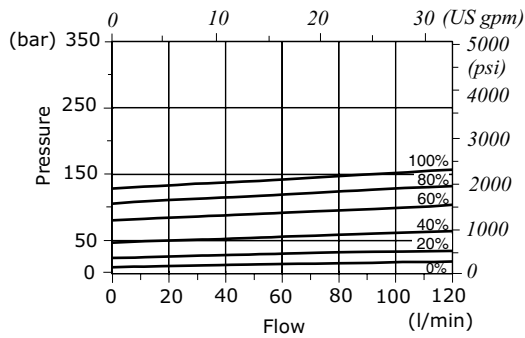
MP12X pressure setting vs. % max. control current

at 10 l/min (2.64 US gpm)



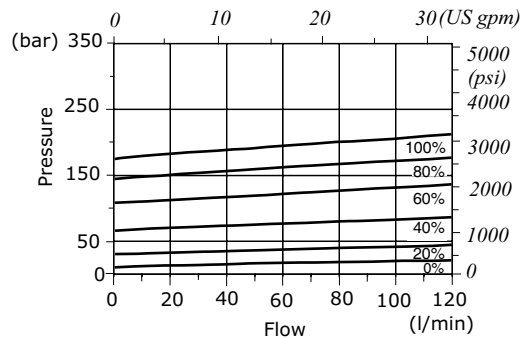
MP12X pressure vs. flow 1->2

for % of control current - Pressure range 1 -



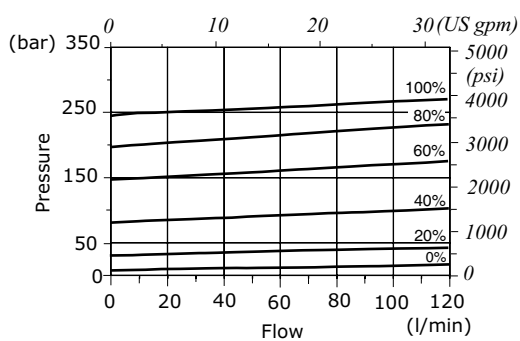
MP12X pressure vs. flow 1->2

for % of control current - Pressure range 2 -



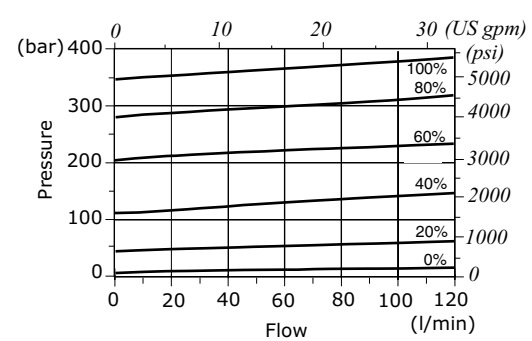
MP12X pressure vs. flow 1->2

for % of control current - Pressure range 3 -



MP12X pressure vs. flow 1->2

for % of control current - Pressure range 4 -





MP16Y type pressure relief valve - 2 ways

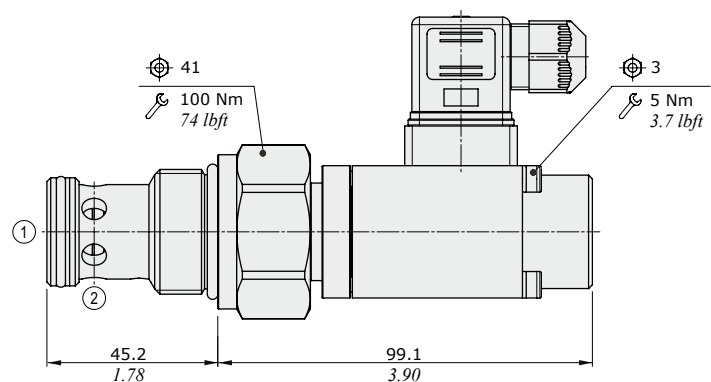
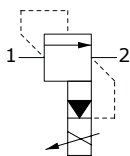
- Solenoid proportional type, pilot operated
- Increasing pressure with increasing current (NO)
- Spool type

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

MP16Y

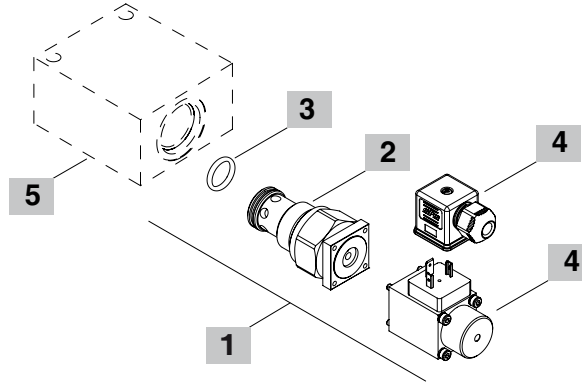
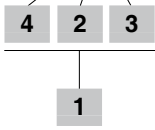
Nominal flow		5 l/min (1.32 US gpm)
Max. flow		150 l/min (40 US gpm)
Max. pressure		Line 1=350 bar (5100 psi); Line 2=210 bar (3045 psi)
Oil leakage	80% of max. pressure setting	200 cm ³ /min (12.20 in ³ /min)
Fluid		mineral based oil
Viscosity		10-200 cSt
Max level of contamination		18/16/13 ISO4406
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 -40°C (-40°F) to 100°C (212°F)
Cavity		SAE 16/2
Coil type*		MP35
Nominal voltages		12 VDC - 24VDC
Power rating		11.2 W (12 VDC) - 11.4 W (24 VDC)
Max control current		12 V -> 1.25 A - 24 V -> 0.68 A
Dither frequency		150 Hz
Hysteresis		≤4%
Weight		0.96 kg (2.11 lb)

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



Ordering codes and description composition

MP16Y/021B



1 Cartridges

TYPE	CODE	DESCRIPTION
MP16Y/021B	OMP16002007	Pressure range 1 , 12VDC
MP16Y/022B	OMP16002002	Pressure range 2 , 12VDC
MP16Y/023B	OMP16002009	Pressure range 3 , 12VDC
MP16Y/024B	OMP16002011	Pressure range 4 , 12VDC

2 Pressure range

TYPE	DESCRIPTION
1	Pressure range 10÷100 bar (145÷1450 psi)
2	Pressure range 50÷200 bar (725÷2900 psi)
3	Pressure range 80÷350 bar (1160÷5100 psi)
4	Pressure range 5÷40 bar (72.5÷580 psi)

3 Seals

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

4 Coils and connectors

TYPE	CODE	DESCRIPTION
2) MP35 12VDC	5SL4000120	12VDC-ISO4400 coil
ISO4400	4CN1009995	Connector
4) MP35 24VDC	4SL4000240	24VDC-ISO4400 coil
ISO4400	4CN1009995	Connector

For complete coils and connectors list see from page 190

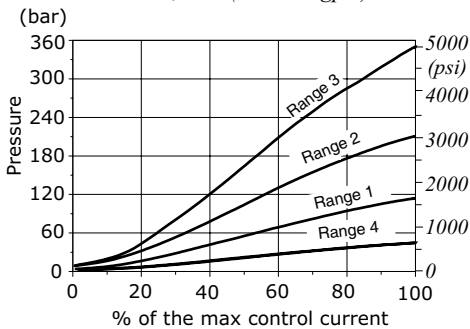
5 Valve body

TYPE	CODE	DESCRIPTION
SAE 16/2-G 3/4	3CC1620E11	Aluminium body for cavity 16 valve, G 3/4 std thread

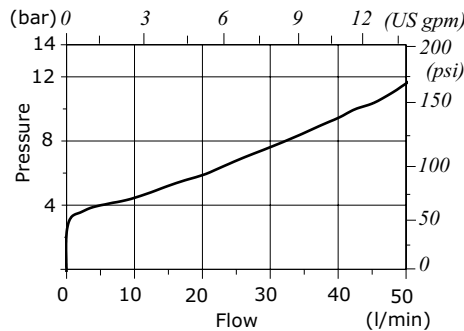
Note: aluminium body can stand up to 210 bar (3050 psi)
For steel bodies or different threading see from page 199

Rating diagrams

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



Pressure vs. flow 1->2
with de-energized coil



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

