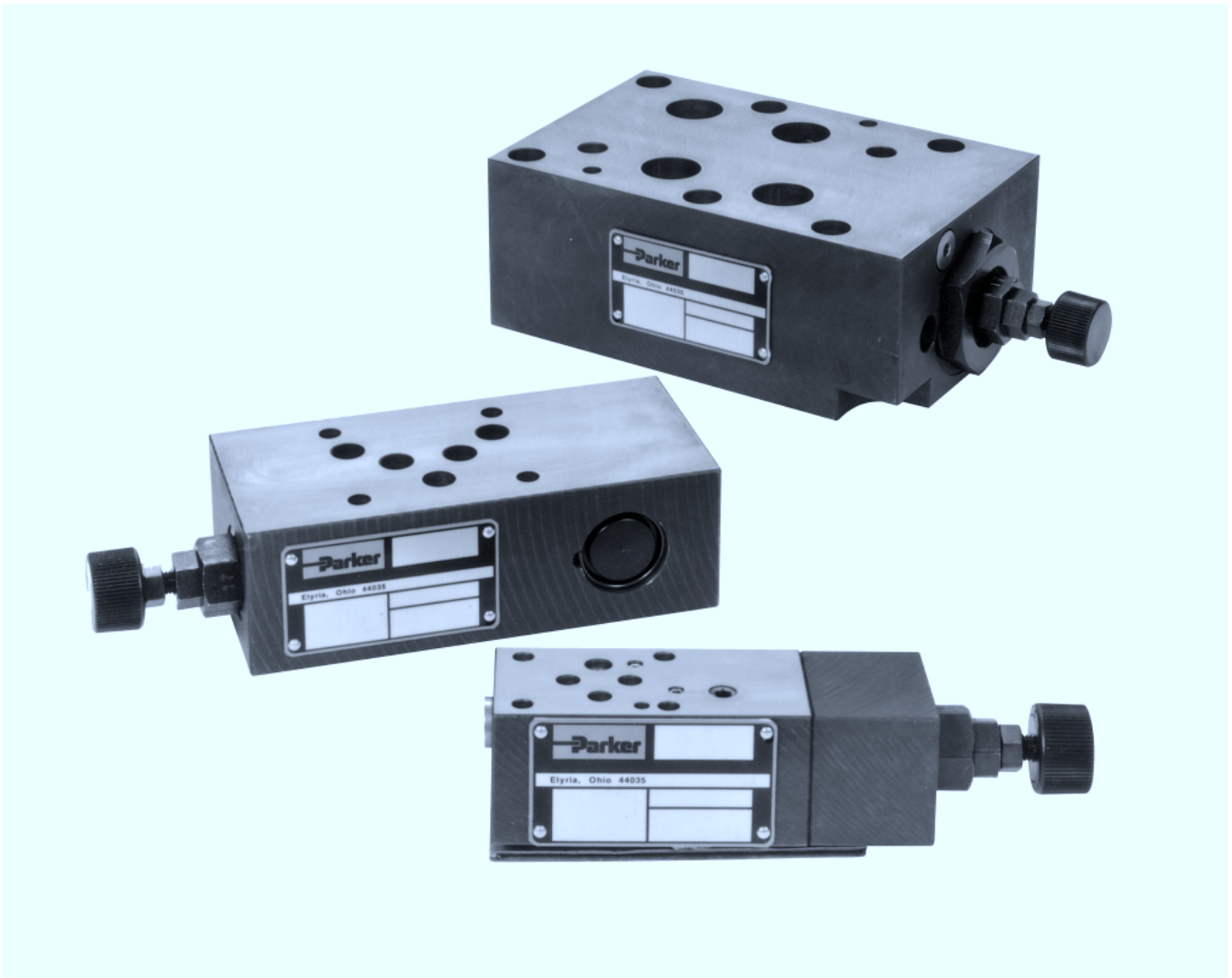




Bulletin 2537-M2/USA Service Bulletin Series PRM

Effective: November 11, 1996





WARNING

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Contents

Series PRM2

Service Parts Information 1
Ordering Information 2

Series PRM3

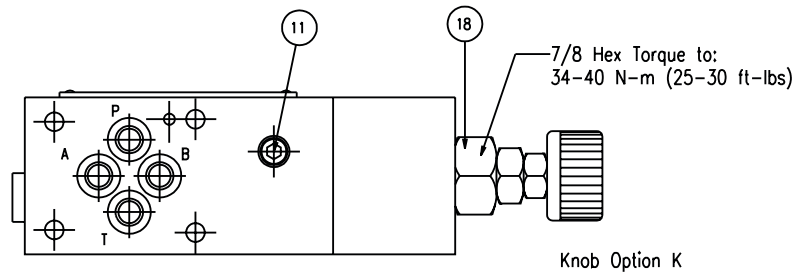
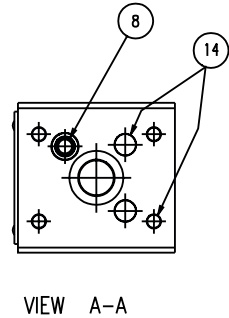
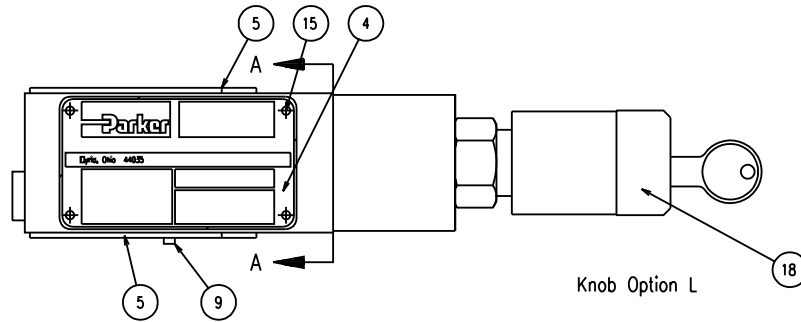
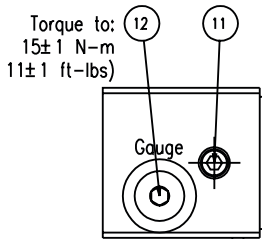
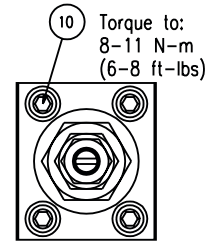
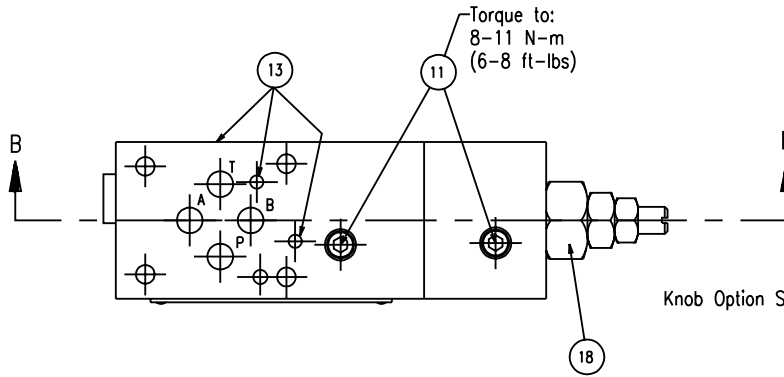
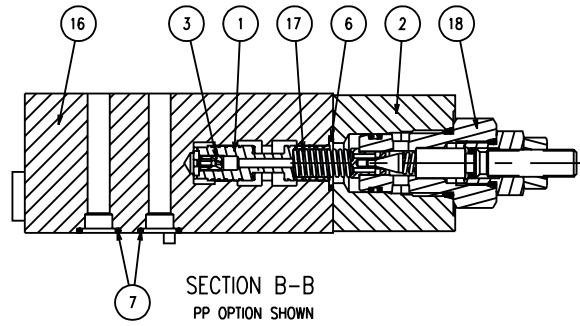
Service Parts Information 3, 4
Ordering Information 5

Series PRM6

Service Parts Information 6
Ordering Information 7

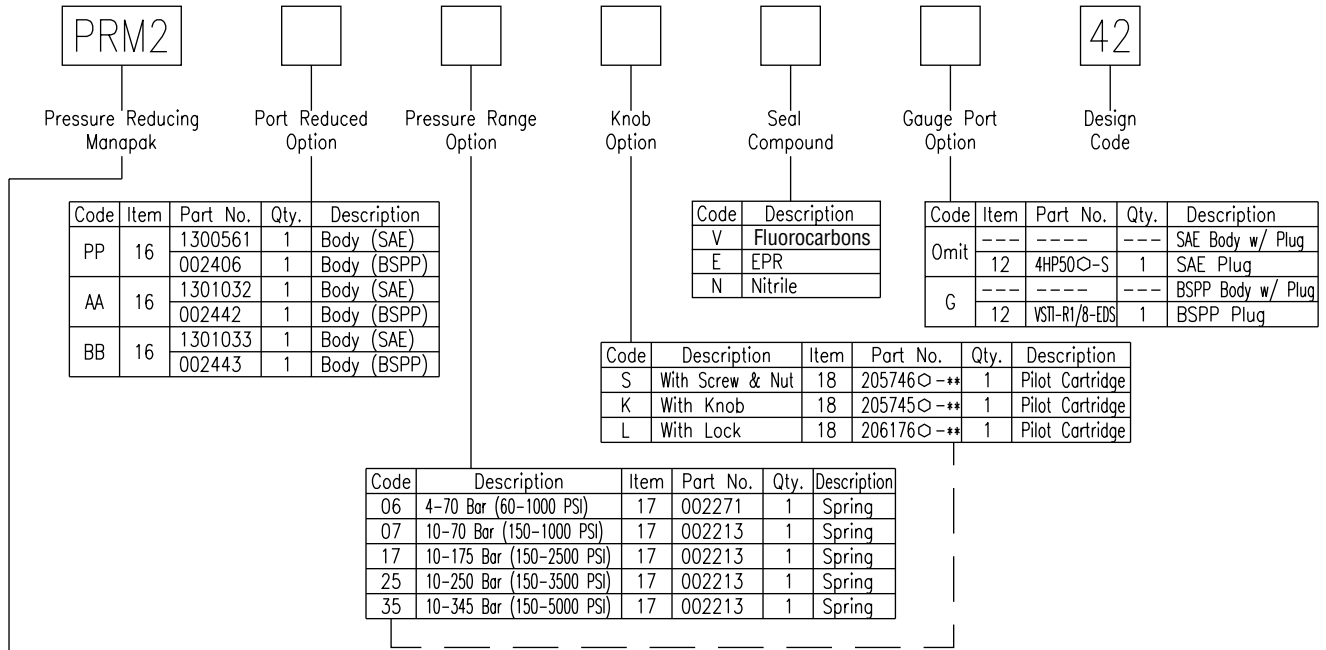
Operation 8

Trouble-Shooting 8



Ordering Information

**Manapak Pressure Reducing Valves
Series PRM2**



Code	Item	Part No.	Qty.	Description
PP	16	1300561	1	Body (SAE)
		002406	1	Body (BSPP)
AA	16	1301032	1	Body (SAE)
		002442	1	Body (BSPP)
BB	16	1301033	1	Body (SAE)
		002443	1	Body (BSPP)

Code	Description
V	Fluorocarbons
E	EPR
N	Nitrile

Code	Item	Part No.	Qty.	Description
Omit	12	4HP50○-S	1	SAE Body w/ Plug
		---	---	---
G	12	VSI-R1/8-EDS	1	BSPP Plug
		---	---	---

Code	Description	Item	Part No.	Qty.	Description
S	With Screw & Nut	18	205746○-**	1	Pilot Cartridge
K	With Knob	18	205745○-**	1	Pilot Cartridge
L	With Lock	18	206176○-**	1	Pilot Cartridge

Code	Description	Item	Part No.	Qty.	Description
06	4-70 Bar (60-1000 PSI)	17	002271	1	Spring
07	10-70 Bar (150-1000 PSI)	17	002213	1	Spring
17	10-175 Bar (150-2500 PSI)	17	002213	1	Spring
25	10-250 Bar (150-3500 PSI)	17	002213	1	Spring
35	10-345 Bar (150-5000 PSI)	17	002213	1	Spring

Item	Part No.	Quantities			Description
		PP	AA	BB	
1	002217	1	1	1	Spool
2	002409	1	1	1	Pilot Body
3	001299	1	1	1	Orifice
4	1300448	1	1	1	Nameplate
5	697628	2	2	2	Shipping Plate
6	2-014○-7	1	1	1	O-Ring
7	2-012○-9	4	4	4	O-Ring
8	2-008○-7	1	1	1	O-Ring
9	99X37	1	1	1	Roll Pin
10	210X105	4	4	4	Socket Head Screw
11	102X1	4	3	4	Pipe Plug
13	1300538-40	3	0	5	Koenig Plug
14	1300538-63	2	2	2	Koenig Plug
15	1301066	4	4	4	Stick Screw

○ Denotes Seal Compound.

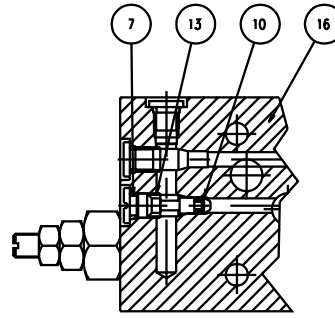
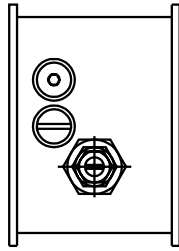
Bolt Kits				
Manapak & Valve Combination	Bolt Kit	Description	Qty./Kit	Torque in-lbs.
D1V* Valve (Non-explosion proof)	BK209	10-24 X 1.25	4	50
1 Manapak & D1V* Valve	BK243	10-24 X 2.88	4	50
2 Manapak & D1V* Valve	BK225	10-24 X 4.38	4	50
3 Manapak & D1V* Valve	BK244	10-24 X 6.00	4	50
4 Manapak & D1V* Valve	BK245	10-24 X 7.50	4	50

Note: Bolt kits must be ordered separately.

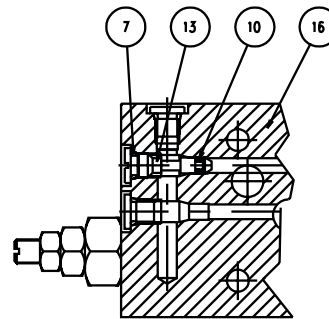
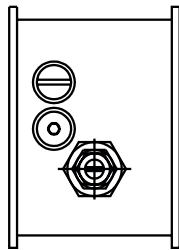
Metric Bolt Kits				
Manapak & Valve Combination	Bolt Kit	Description	Qty./Kit	Torque NM
D1V* Valve (Non-explosion proof)	BK375	M5-0.8 X 30	4	5.7
1 Manapak & D1V* Valve	BK400	M5-0.8 X 70	4	5.7
2 Manapak & D1V* Valve	BK405	M5-0.8 X 110	4	5.7
3 Manapak & D1V* Valve	BK429	M5-0.8 X 150	4	5.7
4 Manapak & D1V* Valve	TK400	M5-0.8 X 205	4	5.7

Note: Bolt kits must be ordered separately.

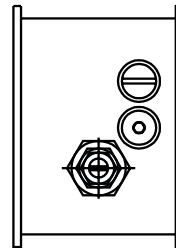
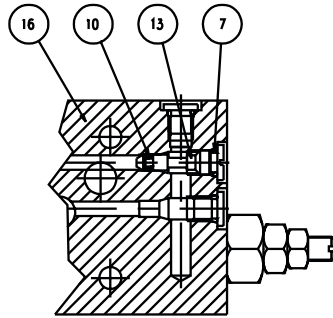
P PORT REDUCED
FOR PA OPTION



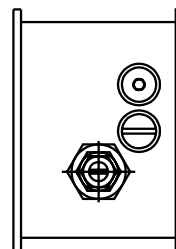
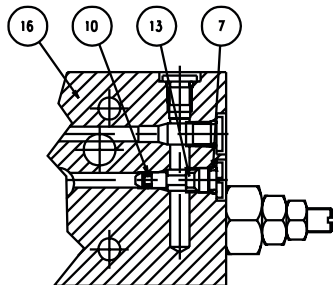
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FOR AP OPTION

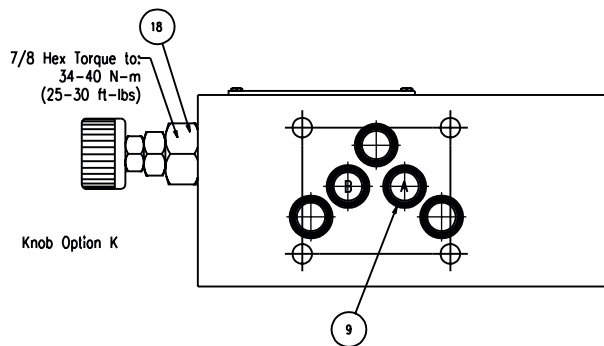
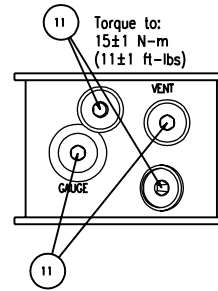
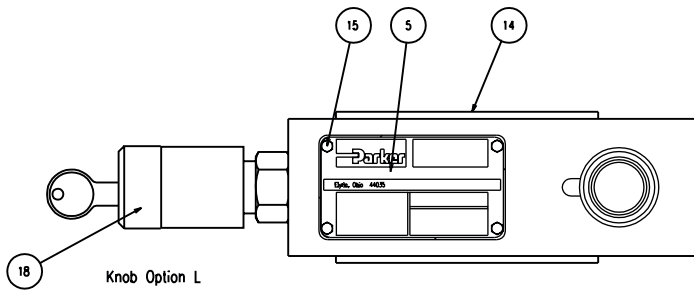
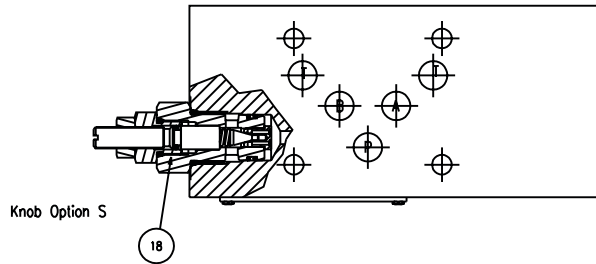
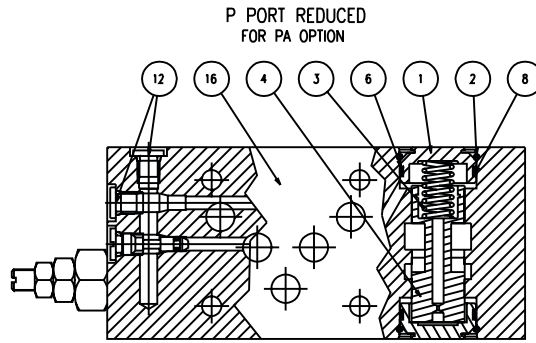


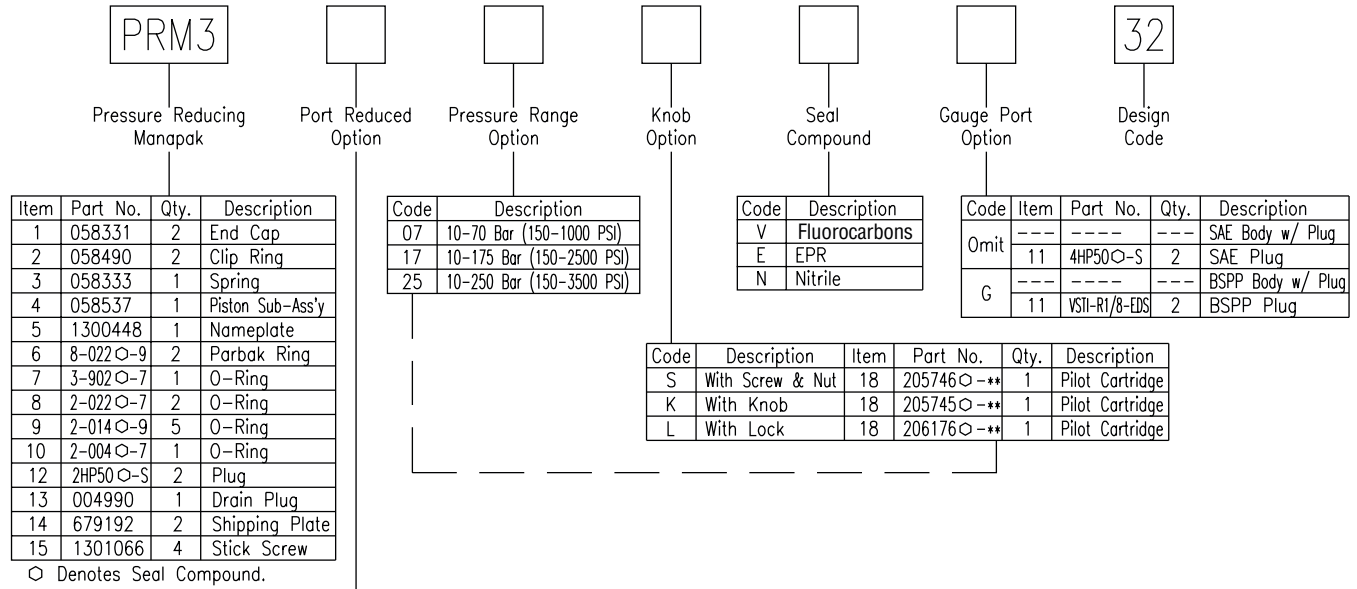
B PORT REDUCED
FOR BP OPTION



P PORT REDUCED
FOR PB OPTION







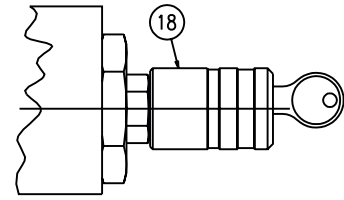
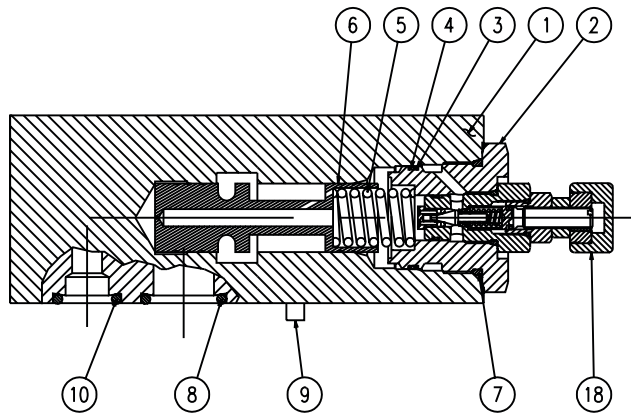
Code	Item	Part No.	Qty.	Description
PA	16	004985	1	Body (SAE)
		1301047	1	Body (BSPP)
AP	16	004985	1	Body (SAE)
		1301047	1	Body (BSPP)
PB	16	004995	1	Body (SAE)
		1301048	1	Body (BSPP)
BP	16	004995	1	Body (SAE)
		1301048	1	Body (BSPP)

Bolt Kits					
Manapak/ Valve Combination	D3W	D3 Manaplug w/ Extension	Bolt length Inch (mm)	D3DW & D31WV	Bolt length (mm)
D3 (Non-explosion proof)	*BK226	*BK80	2.25" (57.2)	BK98	1.625" (41.275)
1 Manapak +D3	*BK61	*BK91	4.25" (108.0)	*BK141	3.5" (88.9)
2 Manapak +D3	*BK62	*BK94	6.25" (158.8)	*BK142	5.5" (139.7)
3 Manapak +D3	*BK63	*BK95	8.25" (209.6)	*BK33	7.5" (190.5)

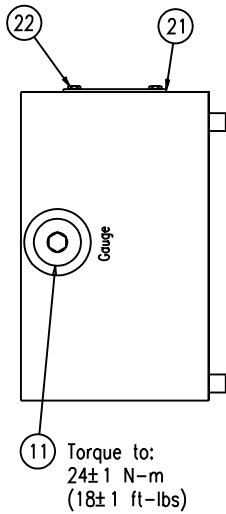
-Bolt kits are ordered separately.
 -All bolts for the D3 are 1/4-20 and grade 8.
 -Torque for all D3 bolts: 12 ft-lbs. (16.3).
 -Size 3 Manapaks are 2.0" (50.0) thick.
 *-For 3000 PSI applications only.

Metric Bolt Kits					
Manapak/Valve Combination	D3W	D3 Manaplug w/ Extension	Bolt length MM	D3DW & D31WV	Bolt length MM
D3 (Non-explosion proof)	*BK310	*BKM80	55	BKM98	40
1 Manapak +D3	*BK311	*BKM91	105	*BKM141	90
2 Manapak +D3	*BK312	*BKM94	169	*BKM142	140
3 Manapak +D3	*BK313	*BKM95	219	*BKM33	190

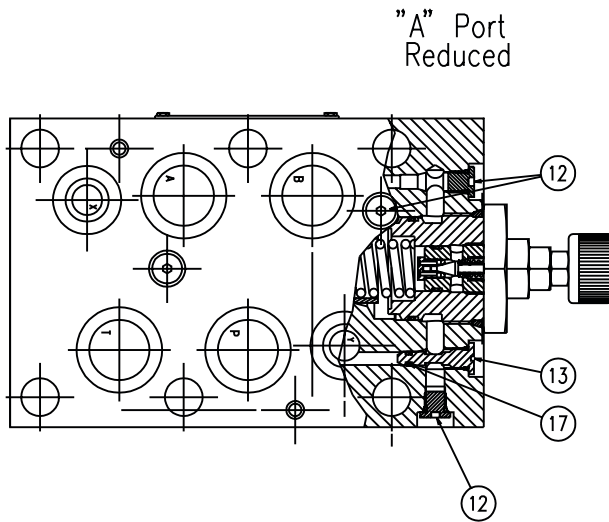
-Bolt kits are ordered separately.
 -All bolts are M6-1 and grade 12.9.
 -Torque for all D3 bolts: 16.3 NM.
 -Size 3 Manapaks are 50.0 thick.
 *-For 3000 PSI applications only.



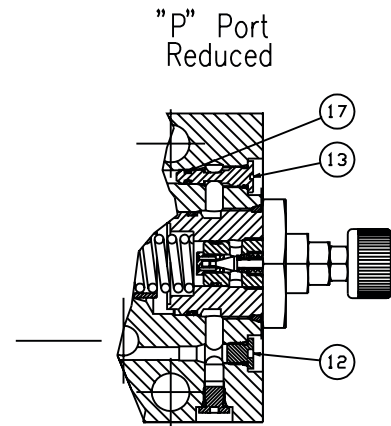
Knob Option L



11 Torque to:
24±1 N-m
(18±1 ft-lbs)

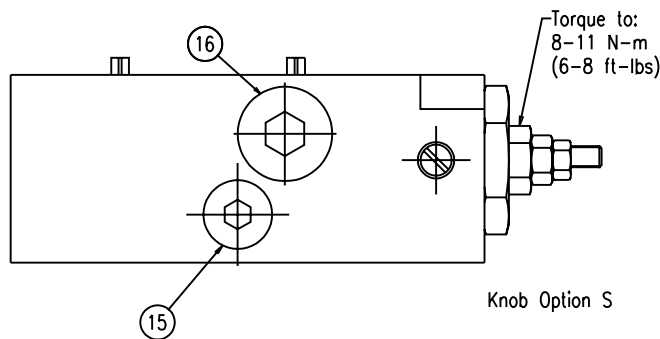


"A" Port
Reduced



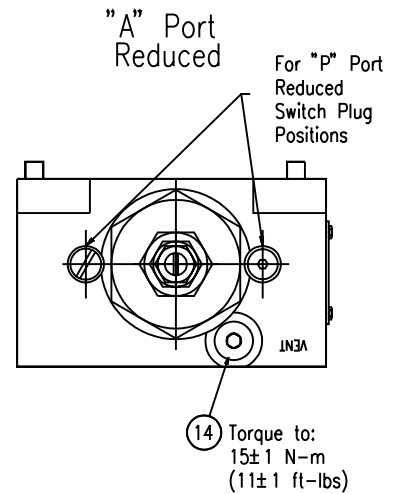
"P" Port
Reduced

Knob Option K



Torque to:
8-11 N-m
(6-8 ft-lbs)

Knob Option S



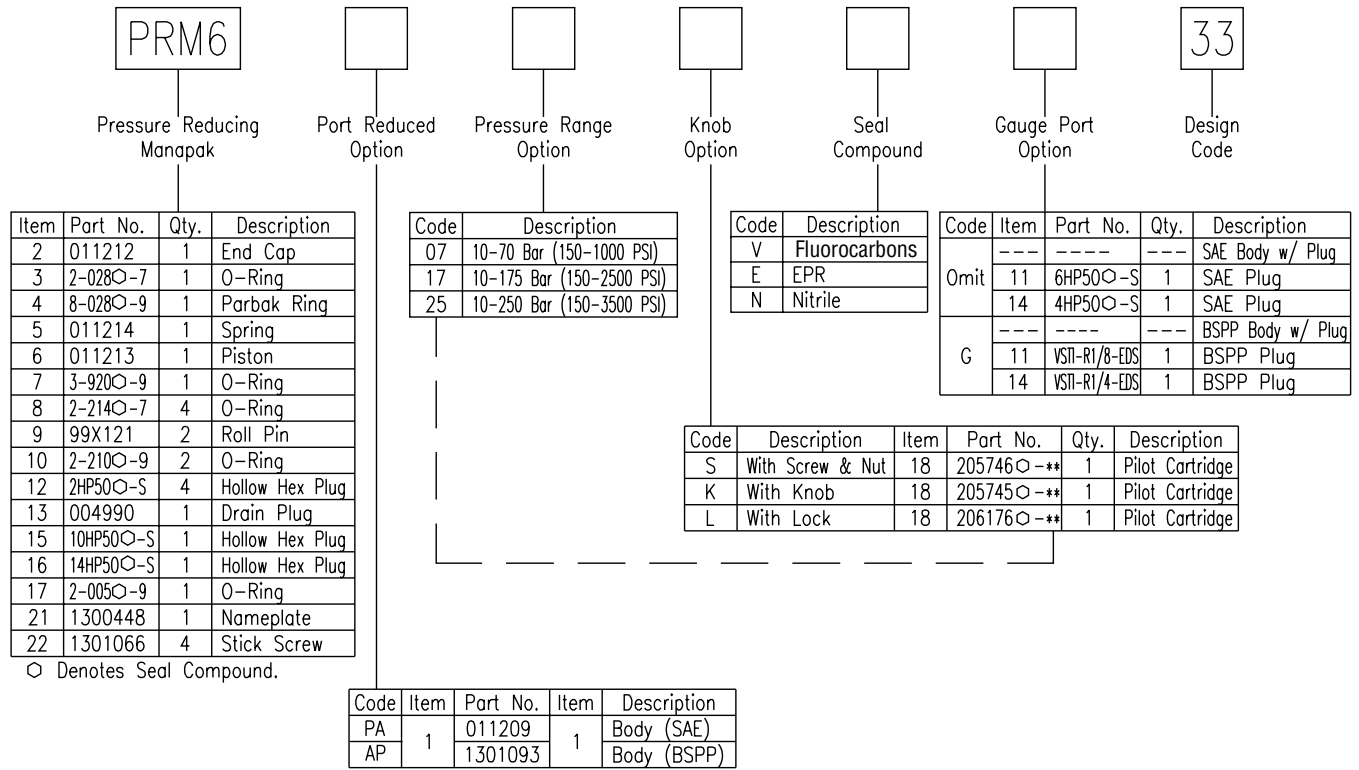
"A" Port
Reduced

For "P" Port
Reduced
Switch Plug
Positions

14 Torque to:
15±1 N-m
(11±1 ft-lbs)

Ordering Information

**Manapak Pressure Reducing Valves
Series PRM6**



Bolt Kits					
Manapak & Valve Combination	Part Number	Description	Qty./Kit	Torque to:	
D6W Valve	BK120	1/2-13 UNC X 2.50	6	80 ft-lbs.	
1 Manapak & D6W Valve	BK121	1/2-13 UNC X 5.25	6	80 ft-lbs.	
2 Manapak & D6W Valve	BK122	1/2-13 UNC X 8	6	80 ft-lbs.	
3 Manapak & D6W Valve	BK123	1/2-13 UNC X 10.75	6	80 ft-lbs.	
4 Manapak & D6W Valve	BK124	1/2-13 UNC X 13.50	6	80 ft-lbs.	

Note: Bolt kits must be ordered separately.

Operation

A pilot operated pressure reducing valve is a normally open valve designed to accept a high pressure at its inlet port and to meter flow to the outlet port to maintain a pressure determined by the pilot adjustment. In the event that the inlet flow is not high enough to achieve the desired pressure at the outlet, the spool will be held in the fully open position by the bias spring. For proper function the pilot drain must be connected directly to tank in a pilot operated pressure reducing valve application. Any pressure in the tank line is communicated to the back side of the pilot dart and this is additive to the valve set point.

The pressure level at the outlet port is communicated through the control orifice in the spool to the pilot dart. When the outlet pressure (reduced pressure) reaches the setting of the pilot head, the pilot dart opens resulting in a pilot flow through the control orifice. The pilot flow creates a pressure drop across the spool which in turn allows the spool to stroke compressing the bias spring. As the spool strokes against the bias spring the flow from the inlet port to the outlet port is metered to maintain the pressure at the outlet port equal to the pilot dart settings.

Symptom	Cause	Solution
Secondary Pressure will not reach desired level	<i>Excess load flow</i>	Correct source of excess flow.
	<i>Inlet pressure low</i>	Check main system relief and/or pump compensator setting.
	<i>Pilot dart will not seat</i>	Remove pilot cartridge, disassemble, clean and reassemble.
	<i>Blocked control orifice</i>	Remove and clean control orifices (2) as required.
	<i>Main spool sticking</i>	Remove main spool, clean and reassemble.
Secondary pressure exceeds desired setting	<i>Blocked Pilot drain line</i>	Check and clean drain line as required.
	<i>Main spool sticking</i>	Remove main spool clean and reassemble.
	<i>Pilot incorrectly adjusted</i>	Install pressure gage and readjust.
	<i>Main poppet stuck</i>	Check for free operation through discharge port.



Parker Hannifin Corporation

Hydraulic Valve Division
520 Ternes Avenue
Elyria, Ohio 44035 USA
Tel: (216) 366-5200
Fax: (216) 366-5253



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