

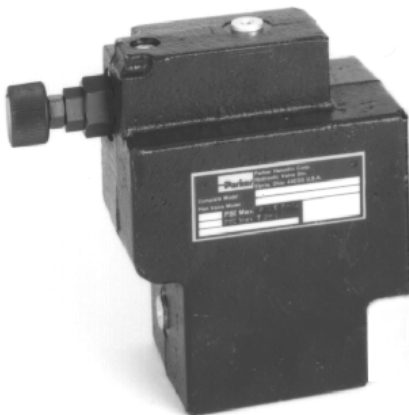


Bulletin 2533-M3/USA
Service Bulletin

Series PR25MA, PR25P, PR25S, PR32P, PR32S

Effective: July 1, 1995

Pilot Operated Pressure Reducing Valves



 **WARNING**

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Series PR25P, PR25S, PR32P, PR32S

Service Parts Information

Inline Mounted Pressure Reducing Valve 1

Ordering Information

Inline Mounted Pressure Reducing Valve 2

Series PR25MA

Service Parts Information

Subplate Mounted Pressure Reducing Valve 3

Ordering Information

Subplate Mounted Pressure Reducing Valve 4

Series PR

Service Parts Information

Universal Pilot Cartridges

Knob Adjustment 5

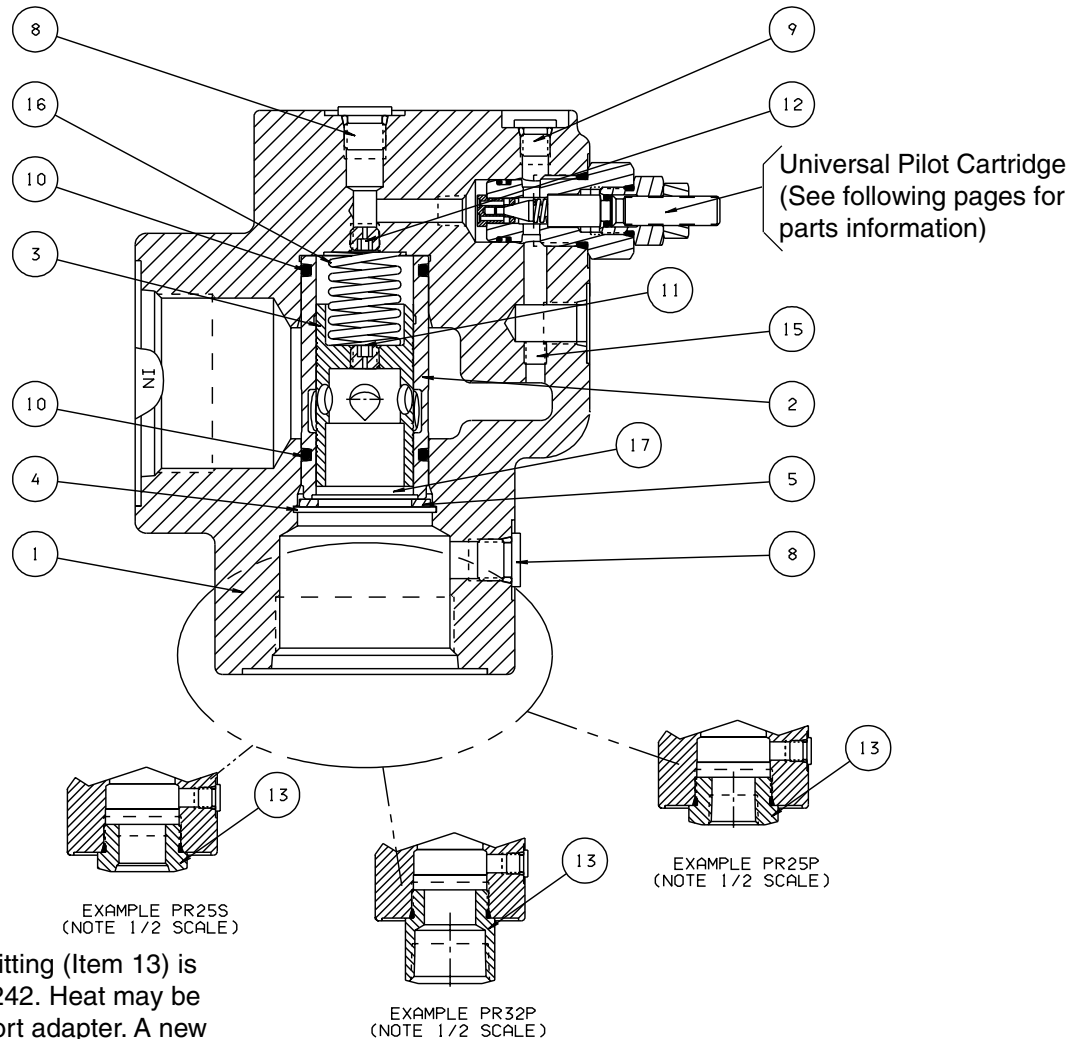
Screw Adjustment 5

Key Lock 6

Operation 6

Trouble-Shooting 7

Inline Mounted

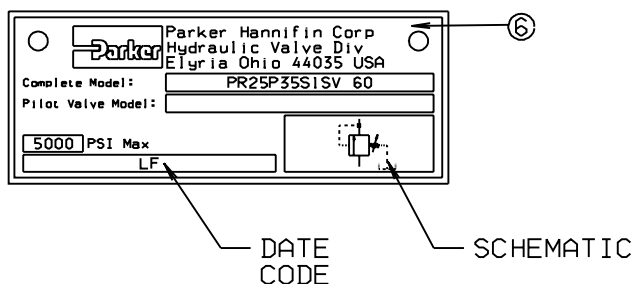


NOTE: Port adapter fitting (Item 13) is secured with Loctite 242. Heat may be required to remove port adapter. A new O-ring (3-920*-9) must be ordered.

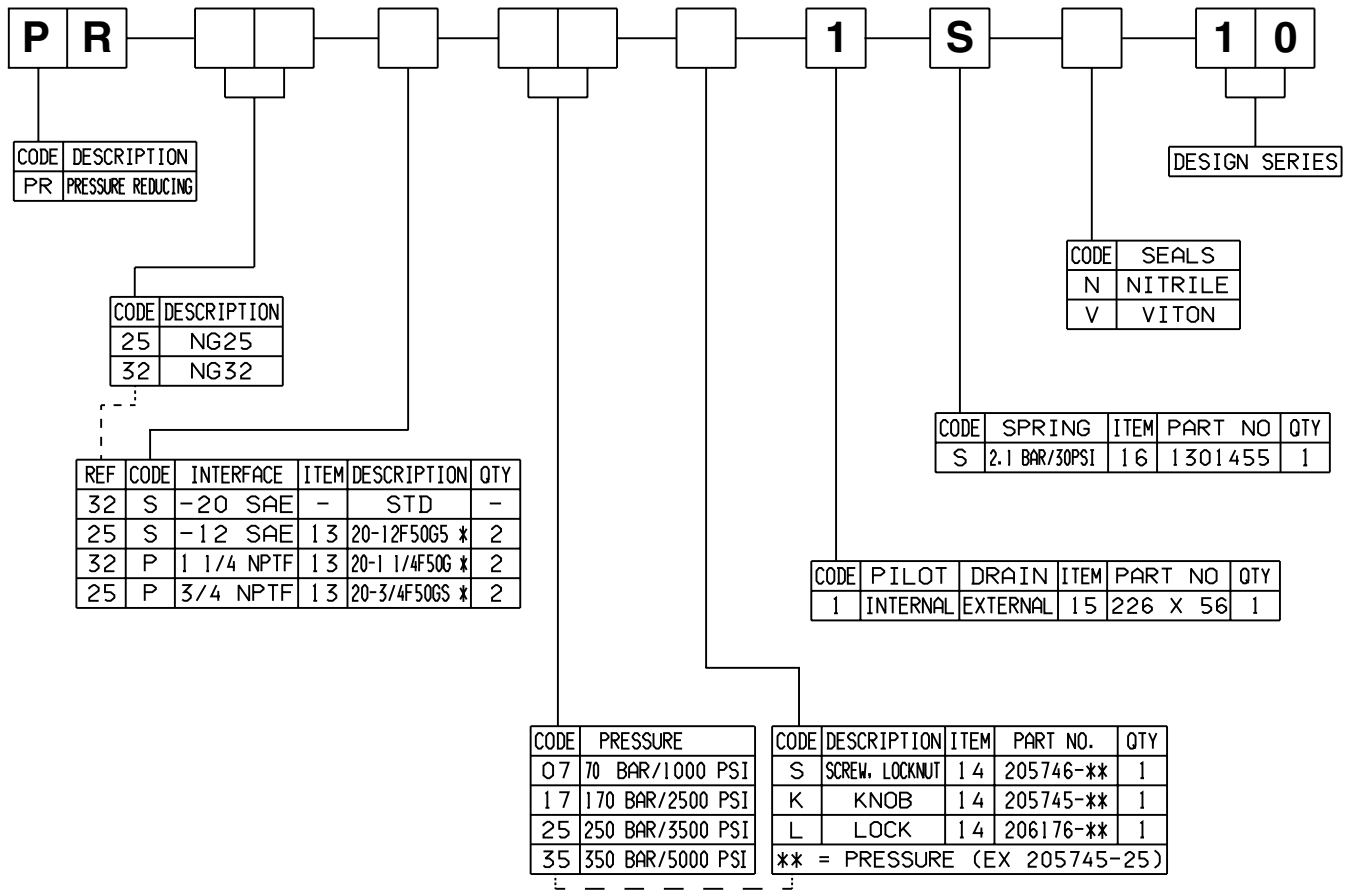
ITEM	PART NO	DESCRIPTION	QTY
1	1301382	BODY	1
2	1301407	CAGE	1
3	1301408	POPPET	1
4	5004004	SNAP RING	1
5	5000665	WASHER	1
6	1301449	NAMEPLATE	1
7	39 X 10	DRIVE SCREW	2
8	4HP50*-S	HEX PLUG	2
9	2HP50*-S	HEX PLUG	1
10	2-122*-9	O-RING	2
11	45033519	Ø0.9 ORIFICE	1
12	45034721	Ø1.1 ORIFICE	1
17	1301409	RETAINER	1

TUBE FITTING TORQUE AND LOCTITE GUIDE			
ITEM	FITTING	TORQUE	LOC-TITE (242)
8	4HP50*-S	135±10 IN.LB. (15±1 N.M.)	NO
9	2HP50*-S	35±10 IN.LB. (3±.5 N.M.)	NO
11	45033519	108±10 IN.LB. (12±1 N.M.)	YES
12	45034721	108±10 IN.LB. (12±1 N.M.)	YES
13	20-12F50G5 *	225±12 FT.LB. (304±16 N.M.)	YES
13	20-1 1/4F50G *	225±12 FT.LB. (304±16 N.M.)	YES
13	20-3/4F50GS *	225±12 FT.LB. (304±16 N.M.)	YES
15	226 X 56	60±6 IN.LB. (7±.7 N.M.)	YES

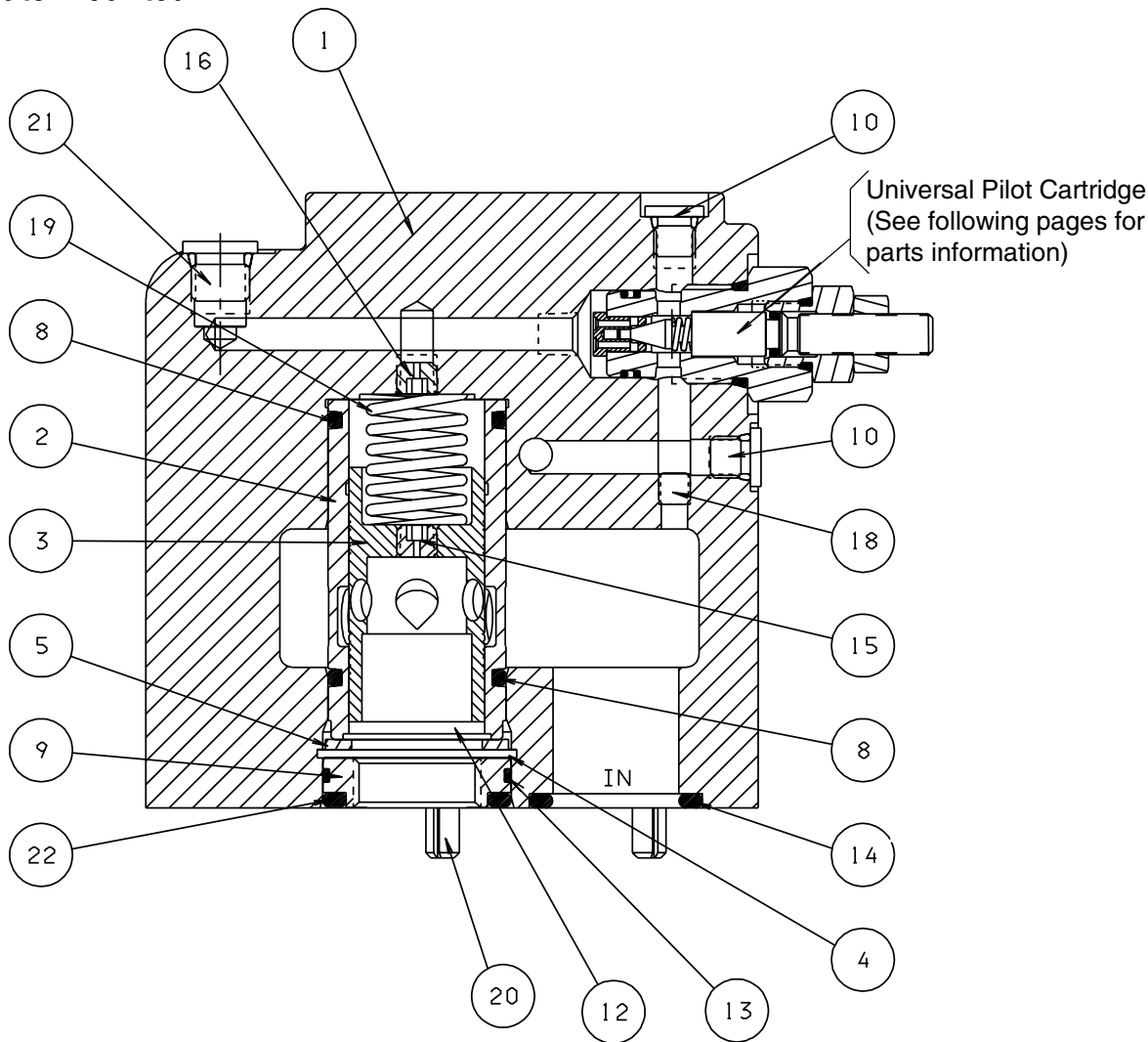
NAMEPLATE EXAMPLE



Inline Mounted



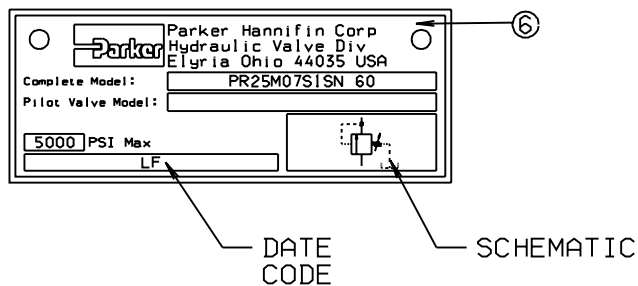
Subplate Mounted



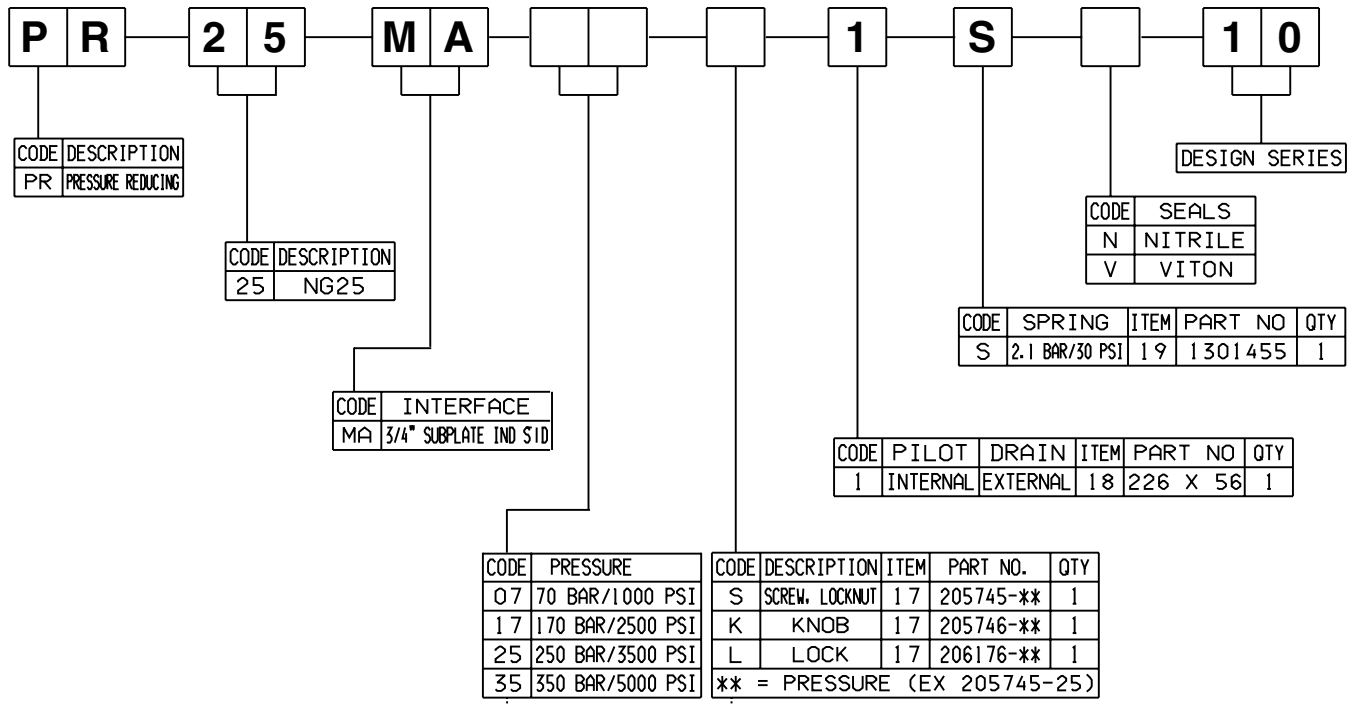
ITEM	PART NO	DESCRIPTION	QTY
1	1301493	BODY	1
2	1301407	CAGE	1
3	1301408	POPPET	1
4	5004004	SNAP RING	1
5	5000665	WASHER	1
6	1301449	NAMEPLATE	1
7	39 X 10	DRIVE SCREW	2
8	2-122*-9	O-RING	2
9	45037736	SPACER	1
10	2HP50*-S	HEX PLUG	3
11	2-012*-9	O-RING	1
12	1301409	RETAINER	1
13	2-027*-9	O-RING	1
14	2-215*-9	O-RING	1
15	45033519	Ø0.9 ORIFICE	1
16	45034721	Ø1.1 ORIFICE	1
20	99 X 125	ROLL PIN	2
21	4HP50*-S	HEX PLUG	1
22	2-217*-9	O-RING	1

TUBE FITTING TORQUE AND LOC-TITE GUIDE			
ITEM	FITTING	TORQUE	LOC-TITE (242)
10	2HP50*-S	35±10 IN.LB. (3±.5 N.M.)	NO
15	45033519	108±10 IN.LB. (12±1 N.M.)	YES
16	45034721	108±10 IN.LB. (12±1 N.M.)	YES
18	226 X 56	60±6 IN.LB. (7±.7 N.M.)	YES

NAMEPLATE EXAMPLE

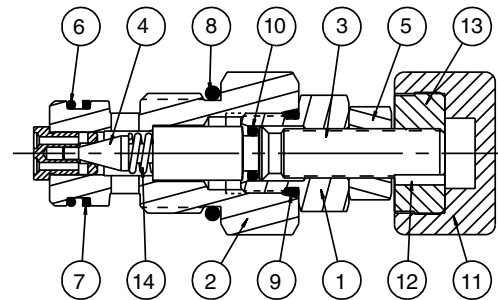
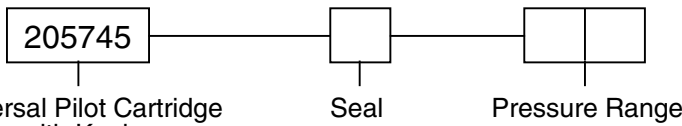


Subplate Mounted



Bolt Kits
 BK156 (3/8"-16x4")
 Torque 25 ft.-lbs.

**Universal Pilot Cartridges
Knob Adjustment**



ITEM	PART NO.	DESCRIPTION	QTY.
1	700460	END PLUG	1
2	002193	PILOT HOUSING (S.A.)	1
3	058514	ADJUSTING SCREW	1
4	703007	DART	1
5	058540	HEX JAM NUT	1
6	2-014Δ-7	O-RING	1
7	8-014Δ-9	PARBAK RING	1
8	3-908Δ-9	O-RING	1
9	3-905Δ-9	O-RING	1
10	2-009Δ-9	O-RING	1
11	058538	KNOB	1
12	117 X 2	DOWEL PIN	1
13	058511	HANDLE NUT	1

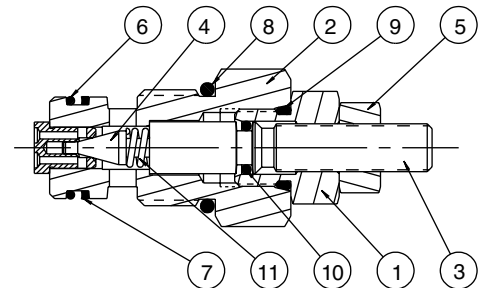
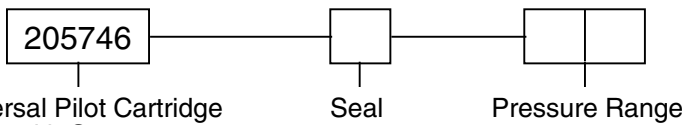
CODE	MATERIAL
N	NITRILE
V	VITON

CODE	PRESSURE RANGE	ITEM	PART NO.	DESCRIPTION	QTY.
07	10-70 BAR (150-1000 PSI)	14	678884	SPRING	1
17	10-175 BAR (150-2500 PSI)	14	678885	SPRING	1
25	10-250 BAR (150-3500 PSI)	14	679935	SPRING	1
35	10-345 BAR (150-5000 PSI)	14	700465	SPRING	1

Δ refers to material.
Use N for nitrile, V for Viton.

205745 can be made from 205746 (below) with the addition of Items 11, 12 and 13.

**Universal Pilot Cartridges
Screw Adjustment**



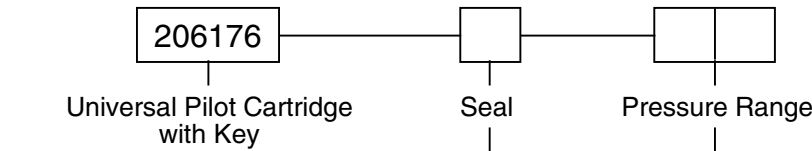
ITEM	PART NO.	DESCRIPTION	QTY.
1	700460	END PLUG	1
2	002193	PILOT HOUSING (S.A.)	1
3	058514	ADJUSTING SCREW	1
4	703007	DART	1
5	058540	HEX JAM NUT	1
6	2-014Δ-7	O-RING	1
7	8-014Δ-9	PARBAK RING	1
8	3-908Δ-9	O-RING	1
9	3-905Δ-9	O-RING	1
10	2-009Δ-9	O-RING	1

CODE	MATERIAL
N	NITRILE
V	VITON

CODE	PRESSURE RANGE	ITEM	PART NO.	DESCRIPTION	QTY.
07	10-70 BAR (150-1000 PSI)	11	678884	SPRING	1
17	10-175 BAR (150-2500 PSI)	11	678885	SPRING	1
25	10-250 BAR (150-3500 PSI)	11	679935	SPRING	1
35	10-345 BAR (150-5000 PSI)	11	700465	SPRING	1

Δ refers to material.
Use N for nitrile, V for Viton.

**Universal Pilot Cartridges
Key Lock**

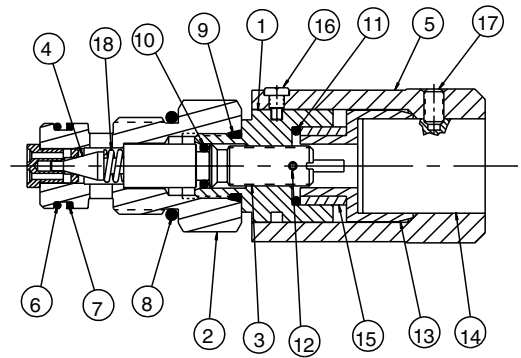


ITEM	PART NO.	DESCRIPTION	QTY.
1	700473	END PLUG	1
2	002193	PILOT HOUSING (S.A.)	1
3	700470	ADJUSTING SCREW	1
4	703007	DART	1
5	700469	SET COLLAR	1
6	2-014Δ-7	O-RING	1
7	8-014Δ-9	PARBAK RING	1
8	3-908Δ-9	O-RING	1
9	3-905Δ-9	O-RING	1
10	2-009Δ-9	O-RING	1
11	3-906N-7	O-RING	1
12	007186	DOWEL PIN	1
13	700472	COUPLING	1
14	007831	LOCK W/KEY	1
15	700471	SLEEVE	1
16	007832	SCREW	1
17	007833	SET SCREW	1

CODE	MATERIAL
N	NITRILE
V	VITON

CODE	PRESSURE RANGE	ITEM	PART NO.	DESCRIPTION	QTY.
07	10-70 BAR (150-1000 PSI)	18	678884	SPRING	1
17	10-175 BAR (150-2500 PSI)	18	678885	SPRING	1
25	10-250 BAR (150-3500 PSI)	18	679935	SPRING	1
35	10-345 BAR (150-5000 PSI)	18	700465	SPRING	1

206176 can be made from 205746 with the addition of Items 1, 3, and 12 through 17. Delete 058514 and 700460 from 205746.



Δ refers to material.
Use N for nitrile, V for Viton.

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.

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 created 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.
Secondary pressure exceeds desired setting	<i>Main spool sticking</i>	Remove main spool, clean and reassemble.
	<i>Blocked Pilot drain line</i>	Check and clean drain line as required.
	<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.



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