



"T", "GG", & "SS" Series Air Control Valves

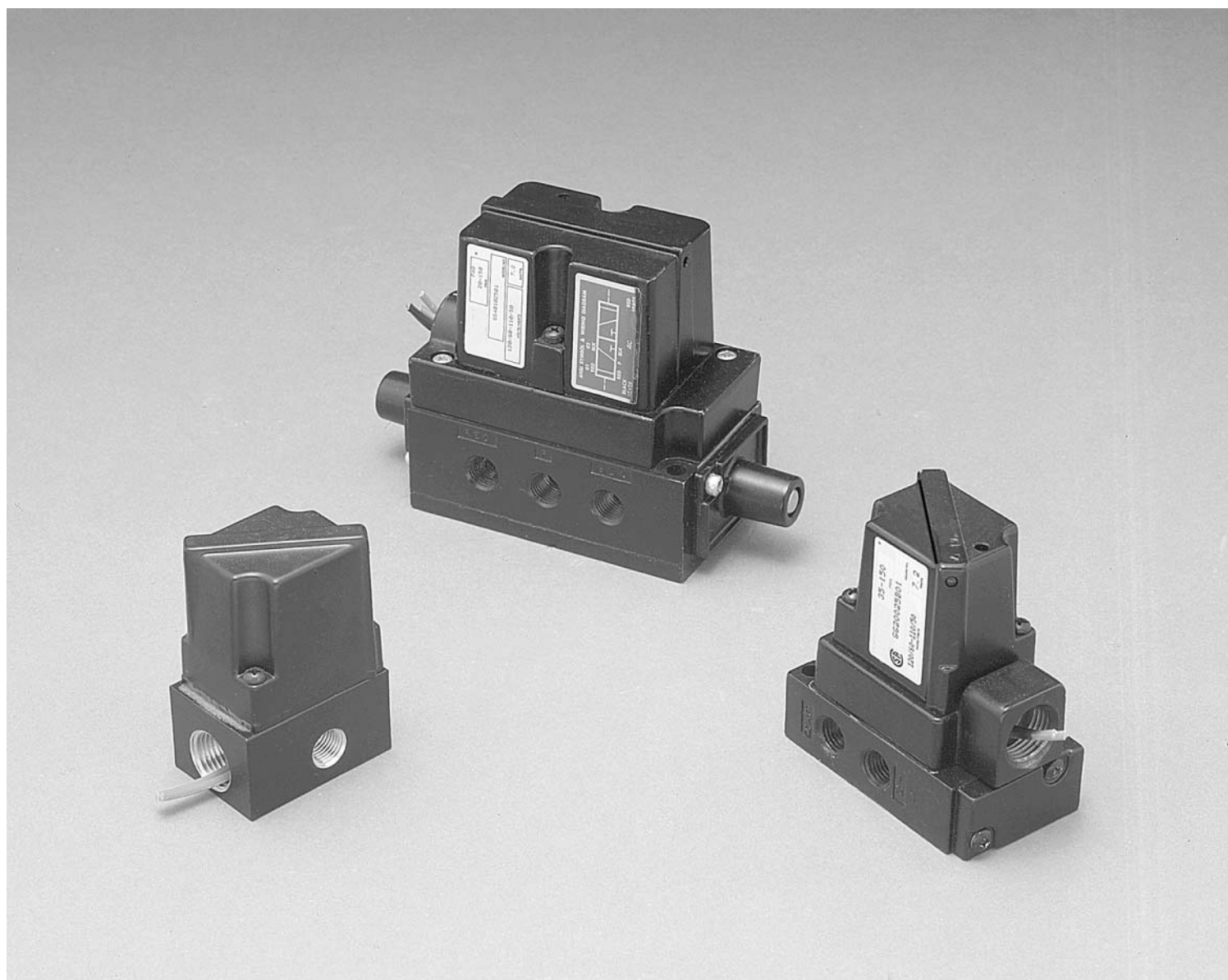
3-Way, 3-Port, 2-Position

4-Way, 4-Port, 2-Position

4-Way, 5-Port, 2 & 3-Position

Catalog 0620-E/USA

May 2005





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“T” Series

Features, Model Number Index	2
Model Selection, Dimensions	3
Cross Reference Information	4

“GG” Series

Basic Valve Features	5
Single Solenoid	6
Historical Model Number Index	6
Model Selection	7
Cross Reference Information	8

“SS” Series

Basic Valve Features	9
Historical Model Number Index	10
Single & Double Solenoid 2-Position	11
Double Solenoid 3-Position	12

Historical “SS” Series

Single & Double Air Operated 2-Position	13
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Historical Dimensions

2-Position (SS1200 / SS1400)	14
------------------------------------	----

Manifold

“SSX” & “SSW”	15
“SSA”	16

Technical Information	17
-----------------------------	----

Dimensions

2-Position	18
3-Position	18

Service Kits / Part Identification	19-23
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Cross Reference Information

“SS” Series	24-30
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Offer of Sale	31
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Description

The T Series Valve is a 2-Position, 2 and 3-Way, single solenoid, direct operated, spring returned, 1/4" side ported valve.

It may be used as normally closed or normally open, also as a selector valve.

Operation

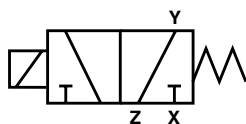
Valve will operate mounted in any position. See mounting dimensions and port locations.

Selection table shows typical piping connections and maximum pressure differentials for each model number. "Maximum Pressure Differential" is the maximum allowable difference between pressures recorded at any two working ports of the valve. The highest pressure that may be connected to any port is 150 PSI.

For 2-Way operation, plugs must be screwed in and sealed bubble tight for valve to work properly.

**Specifications**

- Operating pressure, vacuum to 150 PSI (1035 kPa).
- Operating temperature, 0°F to 140°F (–18°C to 71°C).
- Class B solenoid, dual rated 120V/60Hz., 110V/50Hz., continuous duty 120V/60Hz., 7.2 watts, .26 amp inrush, .14 amp holding. Other voltages available.
- **U.L.** and **CSA** listed.

**Model Number Index**

Basic Series	Operator	Port Size	Lower Orifice Size	Spring	Top Orifice Size	Coil Option	Modification
T	200	25	H	2	F	01	M16
	Operator		Lower Orifice Size		Top Orifice Size		Modification
	200 Standard		D 1/16"		F 3/32"		M16 72" Leads
	210 Manual Override		H 1/8"				M25 72" Leads & Top Seat w/o Shading Coil
Basic Series		Port Size		Spring	Coil Option		
T Not Lighted		25 1/4" NPT		1 0.5 lb.	Suffix	Voltage / Hertz	
TL Lighted				2 1.5 lb.	01	120 / 60	
					02	240 / 60	
					15	48 VDC	
					20	24 / 60	
					21	12 VDC	
					22	24 VDC	
					23	125 VDC	
					34	150 / 60	
					58	250 VDC	
					59	120 / 50	
					63	240 / 50	

Note: Shaded options have been discontinued. Refer to back of Catalog for Cross Reference Information.

Model Selection Information

Service	Maximum Pressure [†] Differential	Minimum Orifice Dia. Between Ports		C _v Capacity Coefficient For Flow Between Ports				Piping Connections			Valve Model Number
		X & Y	Y & Z	X → Y	Y → Z	Z → Y	Y → X	Port X	Port Y	Port Z	
2-Way Normally	150 50	1/16" 1/8"	— —	0.09 0.22	— —	— —	— —	Inlet Inlet	Outlet Outlet	Plugged* Plugged*	T20025D2F01 T20025H2F01
2-Way Normally Open	150	—	3/32"	—	0.16	—	—	Plugged*	Inlet	Outlet	T20025H2F01
3-Way Normally Closed	150 50	1/16" 1/8"	3/32" 3/32"	0.09 0.22	0.16 0.14	— —	— —	Inlet Inlet	Outlet Outlet	Exhaust Exhaust	T20025D2F01 T20025H2F01

[†] "Maximum Pressure Differential" is the maximum allowable difference between pressures recorded at any two working ports of the valve. The highest pressure that may be connected to any port is 150 PSI.

* Plugs must be screwed in and sealed bubble tight for valve to work properly at maximum rated pressure differential.

Model numbers shown are for 120V/60Hz. coil. See Coil Selection Chart for other options.

Solenoid Coil Identification and Specification

Part No.	60 HzAC	50 HzAC	DC
P4615401	120V	110V	—
P4615402	240V	220V	—
P4615421	—	—	12V
P4615422	—	—	24V

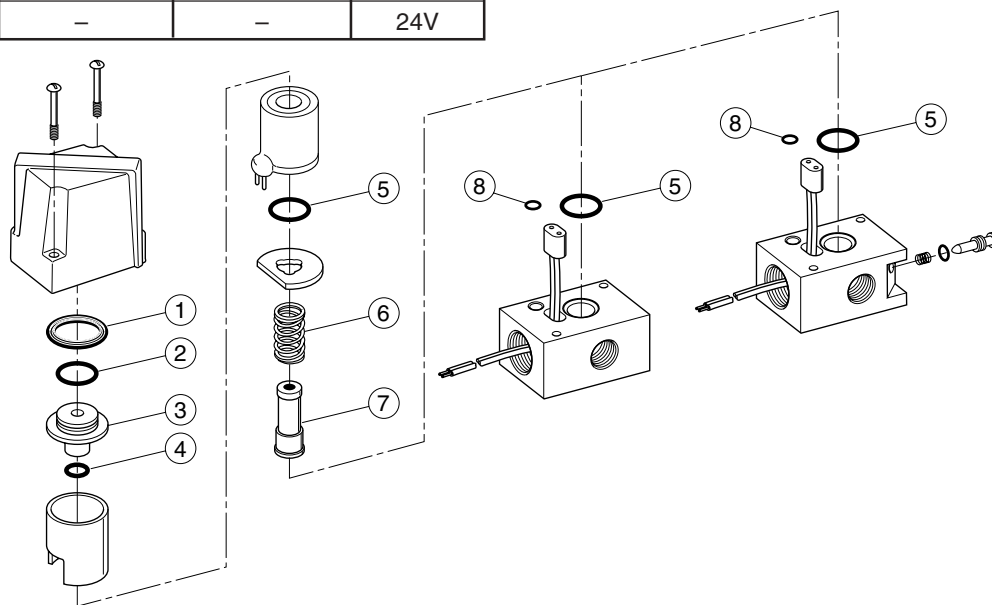
Solenoid Service Kits

D1F/H1F PS5398

Consists of: No's 1 thru 8

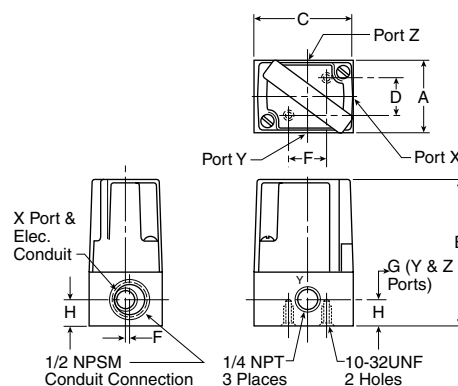
D2F/H2F PS5399

Consists of: No's 1 thru 8



Dimensions – T200

	A	B	C	D	E	F	G	H
inches	1.59	3.31	2.25	.88	.88	.09	.50	.50
mm	40	84	51	22	22	2.4	14	13



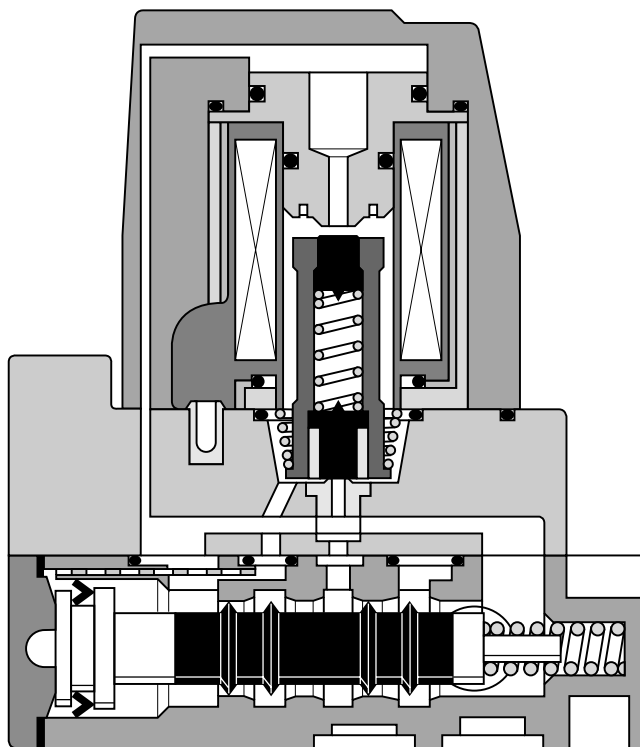
Cross Reference

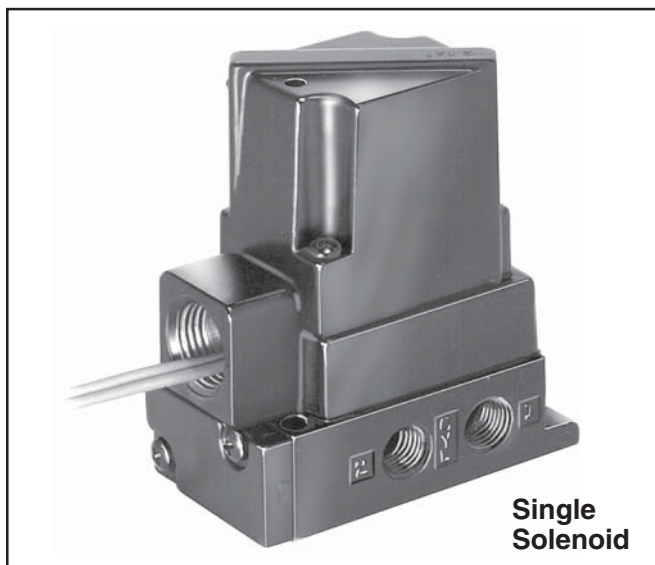
Discontinued T Valve Number	Suggested T Valve Replacement or Kit	Suggested Functional Replacement - Cyclone Series				Notes
		2-Way NC	2-Way NO	3-Way NC	3-Way NO	
T20025D1F01	Coil P4615401 & PS5398 Kit	741140115B				
T20025D1F21	Coil P4615421 & PS5398 Kit	741140122B				
T20025D1F22	Coil P4615422 & PS5398 Kit	741140123B				
T20025D2F01M16	T20025D2F01 18" Leads	741140115B		744130115B		1
T20025D2F15	Coil P4615415 & PS5399 Kit	NO CROSS REFERENCE VOLTAGE IS 48 VDC				4
T20025D2F20	Coil P4615422 & PS5399 Kit	741140113B		744130113B		
T20025D2F21M25	T20025D2F21					
T20025H1F01	Coil P4615401 & PS5398 Kit	741140115B	740120115B		742110115B	
T20025H1F02	Coil P4615402 & PS5398 Kit	741140116B	740120116B		742110116B	
T20025H1F15	Coil P4615415 & PS5398 Kit	NO CROSS REFERENCE VOLTAGE IS 48 VDC				4
T20025H1F20	Coil P4615420 & PS5398 Kit	741140113B	740120113B		742110113B	
T20025H1F21	Coil P4615421 & PS5398 Kit	741140122B	740120122B		742110122B	
T20025H1F22	Coil P4615422 & PS5398 Kit	741140123B	740120123B		742110123B	
T20025H1F23	Coil P4615423 & PS5398 Kit	NO CROSS REFERENCE VOLTAGE IS 125 VDC				4
T21025D1F01	Coil P4615401 & PS5398 Kit	741140115B				2
T21025D2F01	T20025D2F01 no override	741140115B		744130115B		2
T21025D2F02	T20025D2F02 no override	741140116B		744130116B		2
T21025D2F15	Coil P4615415 & PS5399 Kit	NO CROSS REFERENCE VOLTAGE IS 48 VDC				4
T21025D2F20	Coil P4615420 & PS5399 Kit	741140113B		744130113B		2
T21025D2F21	T20025D2F21 no override	741140122B		744130122B		2
T21025D2F22	T20025D2F22 no override	741140123B		744130123B		2
T21025D2F23	Coil P4615423 & PS5398 Kit	NO CROSS REFERENCE VOLTAGE IS 125 VDC				4
T21025H1F01	Coil P4615401 & PS5398 Kit	741140115B	740120115B		742110115B	2
T21025H1F02	Coil P4615402 & PS5398 Kit	741140116B	740120116B		742110116B	2
T21025H1F22M16	Coil P4615422 & PS5398 Kit	741140123B	740120123B		742110123B	1, 2
T21025H2F01	T20025H2F01 no override	741140115B	740120115B	744130115B		
T21025H2F02	T20025H2F02 no override	741140116B	740120116B	744130116B		
T21025H2F22	T20025H2F22 no override	741140123B	740120123B	744130123B		
TL20025D2F01	T20025D2F01 no light	741140115B		744130115B		3
TL20025H1F01M16	Coil P4615401 & PS5398 Kit	741140115B	740120115B		742110115B	1, 3
TL21025D2F01	T20025D2F01 no light/override	741140115B		744130115B		2, 3
TL21025D2F01M16	T20025D2F01 no light/override 18"	741140115B		741130115B		1, 2, 3

Notes

1. The M16 Modification is 72" leads. The valve selected has 19" leads.
2. The T210 valve has a Non-Locking Manual Override. The valve selected has no Override.
3. The TL valve had an Indicator Light. The valve selected has No Light.
4. Use Repair Kits to Service Valve.

- Low power consumption, continuous duty coil. Molded nylon coil protects windings from moisture and corrosion.
- Single piece spool with molded Buna N seals. Provides millions of trouble free cycles.
- Easy to maintain – spool can be removed from valve without disturbing any plumbing or wiring.
- Large internal air passages provide high air flow capacities.
- Compact inline, for easy mounting.
- Porting, 1/4 inch.
- Single solenoid, spring return.
- $C_v = .9$.
- 35 to 150 PSIG (242 to 1035 kPa) operating pressure standard.
- Operating temperature range:
0°F to 140°F (-18°C to 71°C) ambient.

**Single Solenoid Pilot GG-200B**



Application

These valves are used to operate double acting cylinders. They may also be used as 2-Way or 3-Way valves by plugging ports. Valves are actuated by a maintained electrical contact.

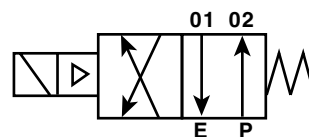
Mounting

These valves are designed for inline mounting.

Operation

De-energized – P to 02 - 01 to E.

Energized/Pressurized – P to 01 - 02 to E.



Model Selection Information

Port Size	Valve	Model Number
1/4" NPTF	Solenoid	GG20025B01

Historical Model Number Index

Basic Series	Indicator Light	Valve Function	Porting	Port Size	Engineering Level	Voltage	Modification																				
GG	—	20	0	25	B	01	—																				
<table><tr><th colspan="2">Indicator Light</th></tr><tr><td>Blank</td><td>w/o Indicator Light</td></tr><tr><td>L</td><td>With Indicator Light (Voltage Suffix 01 & 02 Only)</td></tr></table>								Indicator Light		Blank	w/o Indicator Light	L	With Indicator Light (Voltage Suffix 01 & 02 Only)														
Indicator Light																											
Blank	w/o Indicator Light																										
L	With Indicator Light (Voltage Suffix 01 & 02 Only)																										
<table><tr><th colspan="2">Porting</th></tr><tr><td>0</td><td>Side 1/4" NPT</td></tr><tr><td>2</td><td>Bottom "O" ring</td></tr></table>								Porting		0	Side 1/4" NPT	2	Bottom "O" ring														
Porting																											
0	Side 1/4" NPT																										
2	Bottom "O" ring																										
<table><tr><th colspan="2">Valve Function</th></tr><tr><td>20</td><td>Single Solenoid Operated with Conduit Connection</td></tr></table>								Valve Function		20	Single Solenoid Operated with Conduit Connection																
Valve Function																											
20	Single Solenoid Operated with Conduit Connection																										
<table><tr><th colspan="2">Port Size</th></tr><tr><td>25</td><td>1/4 inch</td></tr></table>								Port Size		25	1/4 inch																
Port Size																											
25	1/4 inch																										
<table><tr><th colspan="2">Engineering Level</th></tr><tr><td>B</td><td>Current</td></tr></table>								Engineering Level		B	Current																
Engineering Level																											
B	Current																										
<table><tr><th colspan="2">Modification</th></tr><tr><td>Blank</td><td>No Modification</td></tr><tr><td>M01</td><td>Non-Locking Manual Override with 72 inch Leads</td></tr><tr><td>M02</td><td>Non-Locking Manual Override</td></tr><tr><td>M03</td><td>Locking Manual Override with 72 inch Leads</td></tr><tr><td>M04</td><td>Knob Type Non-Locking Manual Override</td></tr><tr><td>M05</td><td>Knob Type Locking Manual Override</td></tr><tr><td>M06</td><td>Knob Type Locking Manual Override with 72 inch Leads</td></tr><tr><td>M13</td><td>Locking Manual Override</td></tr><tr><td>M16</td><td>72 inch Leads</td></tr></table>								Modification		Blank	No Modification	M01	Non-Locking Manual Override with 72 inch Leads	M02	Non-Locking Manual Override	M03	Locking Manual Override with 72 inch Leads	M04	Knob Type Non-Locking Manual Override	M05	Knob Type Locking Manual Override	M06	Knob Type Locking Manual Override with 72 inch Leads	M13	Locking Manual Override	M16	72 inch Leads
Modification																											
Blank	No Modification																										
M01	Non-Locking Manual Override with 72 inch Leads																										
M02	Non-Locking Manual Override																										
M03	Locking Manual Override with 72 inch Leads																										
M04	Knob Type Non-Locking Manual Override																										
M05	Knob Type Locking Manual Override																										
M06	Knob Type Locking Manual Override with 72 inch Leads																										
M13	Locking Manual Override																										
M16	72 inch Leads																										

Note: Shaded options have been discontinued. Refer to back of Catalog for Cross Reference Information.

Voltage / Frequency			
Suffix	60Hz.	50Hz.	DC
01	120V	110V	—
02	240V	220V	—
15	—	—	48V
20	24V	22V	—
21	—	—	12V
22	—	—	24V
23	—	—	125V
58	—	—	250V
59	—	120V	—

Voltage Range +10/-15% Nominal

Note: Shaded options have been discontinued. Refer to back of Catalog for Cross Reference Information.

Voltage Range +10/-15% Nominal

Inline – Side Ports 1/4" NPT

GG-200 Single Solenoid Pilot Maintained Contact 2-Position, 4-Way, 4-Ported.

Dimensions:

	inches	mm
A	3.44	87
B	3.88	99
C	.99	25
D	.50	13
E	2.75	70
F	.88	22
G	1.00	25
H	1.95	50
J	.28	7
K	1.44	37
L	3.50	89
M	1.60	41
N	.19	5
P	.70	17
Q	.28	7
Dia.		

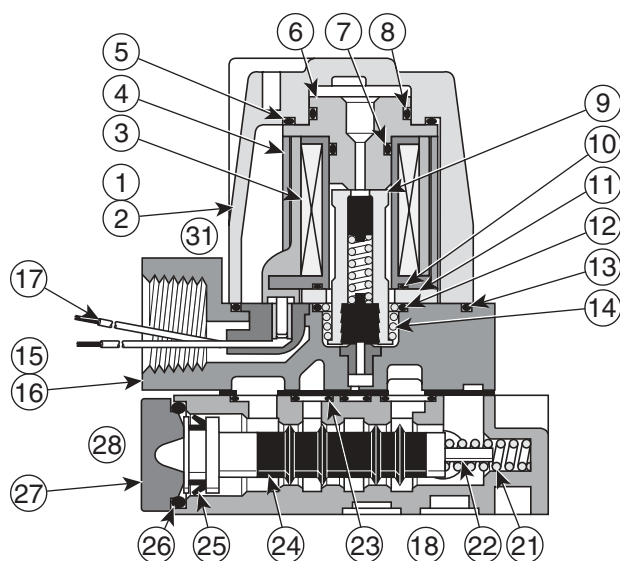
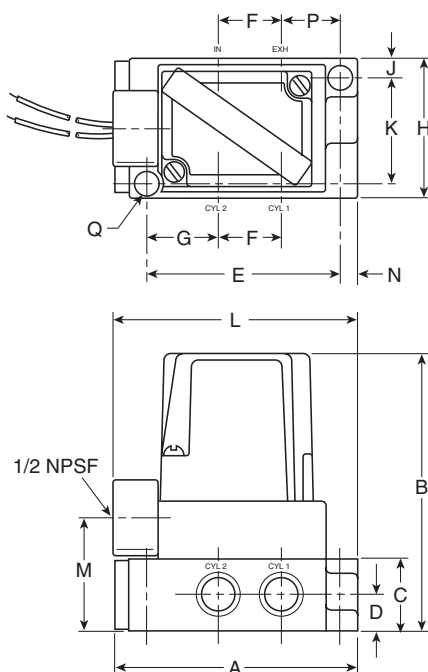


Figure 1: GG Valve Assembly

Service Kits Available

Valve Body Service Kit:

(consists of items #
 21, 22, 24, 25, 26, & 28)

PS5386

Solenoid Service Kit:

(consists of items #
 5, 6, 7, 8, 9, 10, 13, & 14)

PS5387

Note: Two kits are required to service a double solenoid valve.

Manual Override Kits:

Flush Style - Non-Locking
 Knob Style - Locking

PL78668

PL78671

Parts Identification List

Item #	Description
1	Solenoid Assembly
2	Solenoid Cover with captive mounting screws
3	Solenoid Coil
4	Flux Sleeve
5	Compression Gasket
6	Top Seat
7	Small O-ring for top seat
8	Large O-ring for top seat
9	Solenoid Plunger Assembly
10	O-ring for coil
11	Flux Plate
12	O-ring for flux plate
13	Molded Gasket for solenoid cover to conduit adapter
14	Spring for plunger
15	Conduit Adapter Assembly
16	Conduit Body
17	Electrical Leads
18	Mounting Screws - conduit body to valve body (not shown)
19	Valve Body Assembly
20	Valve Body
21	Return Spring
22	Spring Guide Pin
23	Molded Gasket for valve body to conduit body
24	Stem Assembly
25	Lip Seal
26	Molded Gasket for end cap to valve body
27	End Cover
28	Mounting Screws - end cap to valve body (not shown)
29	Solenoid Coil With Indicator Lamp
30	Solenoid Cover With Lens Assembly
31	Cover Mounting Screws (not shown)

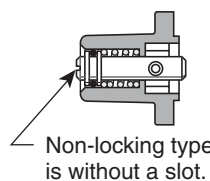


Figure 2:

Flush Style Manual Override

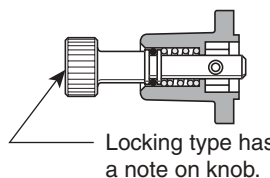


Figure 3:

Knob Style Manual Override

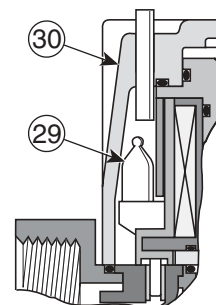


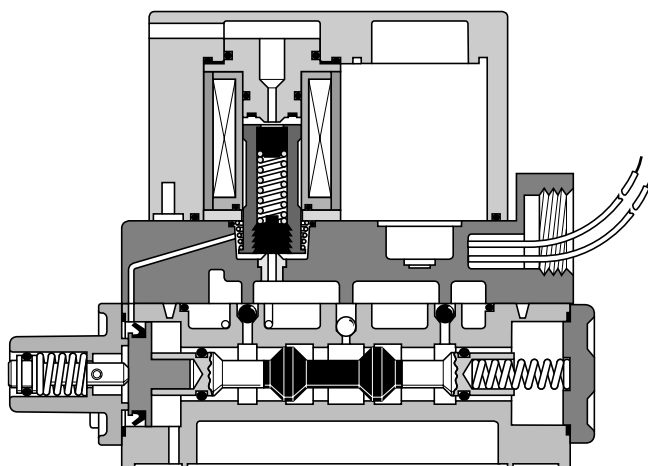
Figure 4:
Indicator Lamp

Obsolete GG Valve	Suggested Replacement	Notes	Alternate GG Valve	Notes
GG20025B01M01	F3E12BGB23A		GG20025B01M02	3
GG20025B01M03	F3E12BHB23A		GG20025B01M13	3
GG20025B01M04	F3E12BJA23A		GG20025B01M02	4
GG20025B01M06	F3E12BGB23A		GG20025B01M05	3
GG20025B01M16	F3E12BGB23A		GG20025B01	3
GG20025B02M01	F3E12BGB87A		GG20025B02M02	3
GG20025B02M03	F3E12BHB87A		GG20025B02M05	3, 5
GG20025B15	NO CROSS VOLTAGE 48VDC	2	N/A	2
GG20025B20	F3E12BGA12A		N/A	2
GG20025B22M01	F3E12BGB19A		GG20025B22M02	3
GG20025B22M04	F3E12BJA19A		GG20025B22M02	4
GG20025B22M16	F3E12BGB19A		GG20025B22	3
GG20025B23	NO CROSS VOLTAGE 125VDC	2	N/A	2
GG20225B01	F3E52BGA23A	1	N/A	2
GG20225B01M01	F3E52BGB23A	1	N/A	2
GG20225B01M02	F3E52BGA23A	1	N/A	2
GG20225B01M03	F3E52BHB23A	1	N/A	2
GG20225B01M05	F3E52BKA23A	1	N/A	2
GG20225B01M06	F3E52BKB23A	1	N/A	2
GG20225B01M16	F3E52BGB23A	1	N/A	2
GG20225B02M05	F3E52BKA87A	1	N/A	2
GG20225B02M05	F3E52BKA87A	1	N/A	2
GG20225B21	F3E52BGA15A	1	N/A	2
GG20225B22	F3E52BGA19A	1	N/A	2
GG20225B22M01	F3E52BGB19A	1	N/A	2
GG20225B22M04	F3E52BJA19A	1	N/A	2
GG20225B22M04	F3E52BJA19A	1	N/A	2
GGL20025B01	F3E12BGA23A		GG20025B01	6
GGL20025B01M01	F3E12BGB12A		GG20025B01M02	3, 6
GGL20025B01M02	F3E12BGA23A		GG20025B01M02	6
GGL20025B01M05	F3E12BJA23A		GG20025B01M05	6
GGL20025B01M13	F3E12BKA23A		GG20025B01M05	6
GGL20025B02	F3E12BGA87A		GG20025B02	6
GGL20225B01M02	F3E52BGA23A	1	N/A	2
GGL20225B01M06	F3E52BKB23A	1	N/A	2

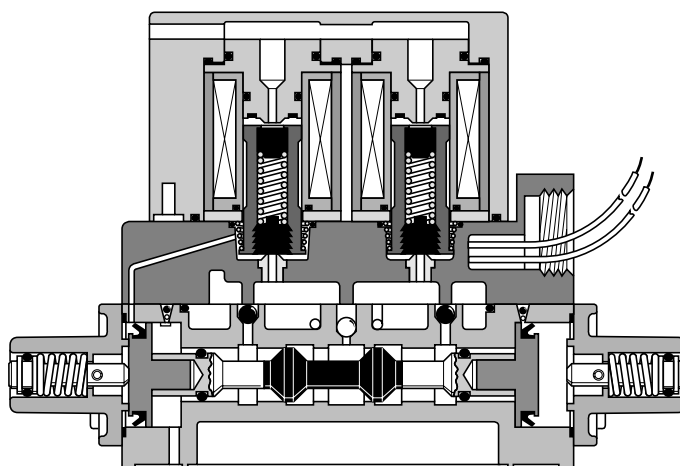
Notes

1. The GG202 Valve is a Bottom Ported Valve for Manifold Mounting. Review of Application is Required. The F3 Valve Selected is a Valve Attached to a Manifold Base.
2. Use Repair Kits to Service the Valve.
3. The GG Valve selected has 18" Leads instead of 72" Leads.
4. Flush type override instead of Knob type.
5. Knob type override instead of Flush type.
6. The same without lights

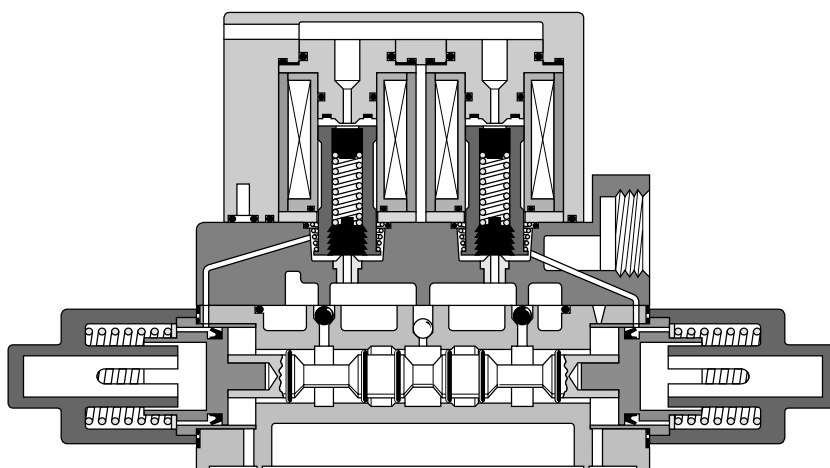
- A Shur-Shift Chamber, with internal pilot supply, delivers positive shifting even during line fluctuations.
- Molded comb-o-seals gives you all the advantages of multiple o-ring sealing with a single gasket.
- The encapsulated Class B coil is a low wattage, quick disconnect type, available in a range of AC and DC voltages.
- Packed spool construction means reduced wear and increased life.
- Inline models are field convertible from single pressure to dual pressure.
- Two mounting styles are available to choose from: Inline base (SS Series) or manifold (SSX or SSW Series), the Add-A-Fold system.



SS2010 Single Solenoid



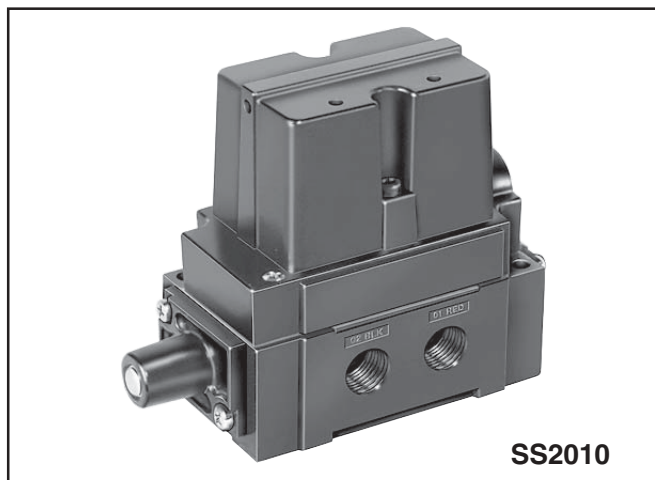
SS4010 Double Solenoid



SS5010 Double Solenoid

Basic Series	Indicator Light	Valve Operator	Options	Functions	Port Size	Voltage / Frequency	Modification																																																				
SS	L	20	0	0	37	01	M1																																																				
Indicator Light LLight Required BlankNo Light		Options 0No Manual Overrides 1Non-Locking Manual Overrides, Flush Type 2†Locking Manual Overrides, Flush Type - Screwdriver Slot 3*72" Electrical Leads, No Overrides 4*72" Electrical Leads, Non-Locking Overrides - Flush Type 5*72" Electrical Leads with Locking Overrides, Flush Type - Screwdriver Slot 6*72" Electrical Leads with Non-Locking Overrides, Knob Type 7Non-Locking Manual Overrides, Knob Type (2-Position Only) 8Locking Manual Overrides, Knob Type (2-Position Only) 9*72" Electrical Leads, Locking Manual Overrides, Knob Type (2-Position Only) * Not available in SSA Series valves. † Not Available with 3-Position "50" & "60".			Port Size 251/4" NPT - SS Series Only 373/8" NPT - SS, SSA, SSX, & SSW 501/2" NPT - SS Series Only	Voltage / Frequency Class "B" Solenoid <table><tr><th>Suffix</th><th>60Hz.</th><th>50Hz.</th><th>DC</th></tr><tr><td>01</td><td>120V</td><td>110V</td><td>—</td></tr><tr><td>02</td><td>240V</td><td>220V</td><td>—</td></tr><tr><td>15</td><td>—</td><td>—</td><td>48V</td></tr><tr><td>20</td><td>24V</td><td>22V</td><td>—</td></tr><tr><td>21</td><td>—</td><td>—</td><td>12V</td></tr><tr><td>22</td><td>—</td><td>—</td><td>24V</td></tr><tr><td>23</td><td>—</td><td>—</td><td>125V</td></tr><tr><td>34</td><td>150V</td><td>—</td><td>—</td></tr><tr><td>54</td><td>10V</td><td>—</td><td>—</td></tr><tr><td>57</td><td>—</td><td>—</td><td>185V</td></tr><tr><td>58</td><td>—</td><td>—</td><td>250V</td></tr><tr><td>59</td><td>—</td><td>120V</td><td>—</td></tr></table>	Suffix	60Hz.	50Hz.	DC	01	120V	110V	—	02	240V	220V	—	15	—	—	48V	20	24V	22V	—	21	—	—	12V	22	—	—	24V	23	—	—	125V	34	150V	—	—	54	10V	—	—	57	—	—	185V	58	—	—	250V	59	—	120V	—	
Suffix	60Hz.	50Hz.	DC																																																								
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21	—	—	12V																																																								
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58	—	—	250V																																																								
59	—	120V	—																																																								
Basic Series SSInline Valve; Side Ports or .34 Dia. Bottom Ports (O-Ring Gaskets); #0, 2, 3, 6 Functions Only; Electrical Leads in Conduit Port SSAValve Only (No Base); .34 Dia. Bottom Ports Only (O-Ring Gaskets); 2-Position - #2 Function Only; 3-Position - #2, 5, 8 Functions Only SSXManifold Valve; End Ports (Cylinder Only); Common Exhaust (Manifolded); #1 & 2 Functions Only; Electrical Leads in Base SSWManifold Valve; End Ports (Cylinder and Exhaust); Individual Exhaust Ports; #1 & 2 Functions Only; Electrical Leads in Base		Valve Operator 12Single Air Pilot, Spring Return, 2-Position 14Double Air Pilot, Detented, 2-Position 15Double Air Pilot, Spring Centered, All Ports Blocked, 3-Position 16Double Air Pilot, Spring Centered, Cylinder Ports Open to Red and Black, 3-Position 20Single Solenoid, Spring Return, 2-Position 40Double Solenoid, Detented, 2-Position 50Double Solenoid, Spring Centered, All Ports Blocked, 3-Position 60Double Solenoid, Spring Centered, Cylinder Ports Open to Red and Black, 3-Position	Functions Single Pressure (Standard) 0Side Ports - SS Series Only 11/4" Bottom Port "P" (SSX & SSW Only) 2SS, SSA: .34 Dia. Bottom Ports (O-Ring Gaskets); SSX, SSW: End Ports Only Dual Pressure (SS & SSA Only) 3Red Port Highest Pressure; Side Porting - SS Series Only 5Red Port Highest Pressure SSA Series Only 6Black Port Highest Pressure; Side Porting - SS Series Only 8Black Port Highest Pressure SSA Series Only	Modification BlankNo Modification (3-Position Only) M1Bottom Ported, External Supply and Electrical Connection to Plug-in Manifold M2Manual Override at Conduit End Only - 4000 Series Only M4Manual Override Opposite Conduit End Only - 4000 Series Only M5Remote Pilot Supply to Conduit Vacuum and Low Pressure Service																																																							

Note: Shaded options have been discontinued. Refer to back of Catalog for Cross Reference Information.



Application

This inline mounted valve is used to operate a double acting cylinder. It is a 4-Way, 2-Position, 5-Ported, single solenoid pilot operated, maintained contact, air and spring return, and can be serviced without disturbing piping or wiring. Recessed non-locking manual override is standard, locking overrides available. They also may be used for 2-Way, 3-Way, and dual pressure service.

Operation

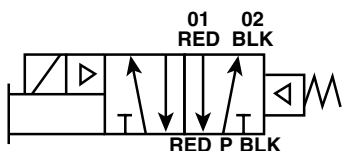
Single Pressure At Inlet Port “P”:

Solenoid de-energized (at rest). Inlet pressure port “P”, connected to outlet cylinder port, “02-BLK”. Outlet cylinder port “01-RED” connected to exhaust port “RED”.

Solenoid energized (actuated). Inlet pressure port “P”, connected to outlet cylinder port “01-RED”. Outlet cylinder port “02-BLK” connected to exhaust port “BLK”.

Dual Pressure At Ports “RED” And “BLK”:

May be used for dual pressure with pressure at ports “RED” and “BLK” with higher pressure at “RED” port. Exhaust at “P” port. (See maintenance bulletin for conversion instruction.)

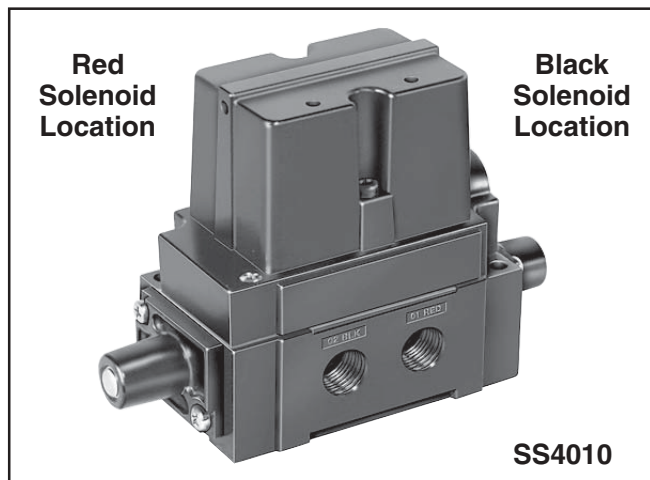


Model Selection Chart

For single pressure applications with internal pilot supply, 120V/60Hz.

Port Size	Valve/Inline Mounted	Model Number
3/8" NPT	Side Ported	SS20103701
1/2" NPT	Side Ported	SS20105001

Port Size	Valve/Add-A-Fold Base	Model Number
	Valve Assembly, Less Base	SSA20123701



Application

This inline mounted valve is used to operate a double acting cylinder. It is a 4-Way, 2-Position, 5-Ported, double solenoid pilot operated, momentary contact, with detents, and can be serviced without disturbing piping or wiring. Recessed non-locking manual override is standard, locking overrides available. They also may be used for 2-Way, 3-Way, and dual pressure service.

Operation

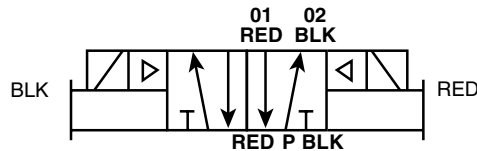
Single Pressure At Inlet Port “P”:

Black solenoid last energized. Inlet pressure port “P”, connected to outlet cylinder port, “02-BLK”. Outlet cylinder port “01-RED” connected to exhaust port “RED”.

Red solenoid last energized. Inlet pressure port “P”, connected to outlet cylinder port “01-RED”. Outlet cylinder port “02-BLK” connected to exhaust port “BLK”.

Dual Pressure At Ports “RED” And “BLK”:

May be used for dual pressure with pressure at ports “RED” and “BLK” with higher pressure at “RED” port. Exhaust at “P” port. (See maintenance bulletin for conversion instruction.)

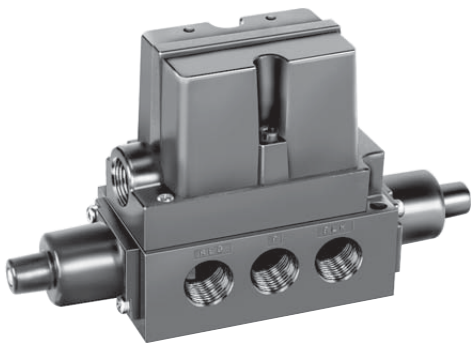


Model Selection Chart

For single pressure applications with internal pilot supply, 120V/60Hz.

Port Size	Valve/Inline Mounted	Model Number
3/8" NPT	Side Ported	SS40103701
1/2" NPT	Side Ported	SS40105001

Port Size	Valve/Add-A-Fold Base	Model Number
	Valve Assembly, Less Base	SSA40123701



SS5010 / SS6010

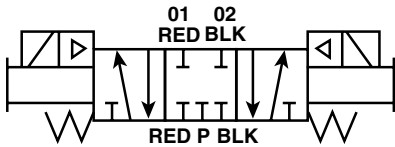
Application

This inline mounted valve is used to operate a double acting cylinder. It is a 4-Way, 3-Position, 5-Ported, double solenoid pilot operated, maintained contact, spring centered, and can be serviced without disturbing piping or wiring. Recessed non-locking manual override is standard, locking overrides available. They also may be used for 2-Way, 3-Way, and dual pressure service.

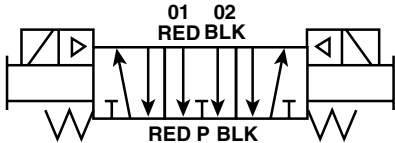
Operation

SS5000 Series: All ports blocked in center position.

SS6000 Series: Pressure port “P” blocked in center position. Cylinder ports “01-RED” and “02-BLK” open to exhaust ports “RED” and “BLK”.



SS5000 Series



SS6000 Series

Model Selection Chart – SS5000 Series

For single pressure applications with internal pilot supply, 120V/60Hz.

Port Size	Valve/Inline Mounted	Model Number
3/8" NPT	Side Ported	SS50103701
1/2" NPT	Side Ported	SS50105001

Port Size	Valve/Add-A-Fold Base	Model Number
	Valve Assembly, Less Base	SSA50123701

Model Selection Chart – SS6000 Series

For single pressure applications with internal pilot supply, 120V/60Hz.

Port Size	Valve/Inline Mounted	Model Number
3/8" NPT	Side Ported	SS60103701
1/2" NPT	Side Ported	SS60105001



Application

This inline mounted valve is used to operate a double acting cylinder. It is a 4-Way, 2-Position, 5-Ported, single remote air operated, maintained signal air and spring return, and can be serviced without disturbing piping or wiring. Recessed non-locking manual override is standard, locking overrides available. They also may be used for 2-Way, 3-Way, and dual pressure service.

Operation

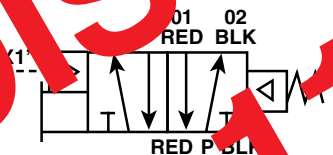
Single Pressure At Inlet Port "P":

Remote pressure to port "X1" must be equal to or greater than pressure at supply port. At rest, inlet pressure port "P", connected to outlet cylinder port, "02-BLK". Outlet cylinder port "01-RED" connected to exhaust port "RED".

When remote pressure is applied to port "X1" (actuated), inlet pressure port "P" connected to outlet cylinder port "01-RED". Outlet cylinder port "02-BLK" connected to exhaust port "RED".

Dual Pressure At Ports "RED" And "BLK":

May be used for dual pressure with pressure at ports "RED" and "BLK" with higher pressure at "RED" port. Exhaust at "P" port. (See maintenance manual for conversion instruction.)



Application

This inline mounted valve is used to operate a double acting cylinder. It is a 4-Way, 2-Position, 5-Ported, double remote air pilot operated, momentary signal, with detents and can be serviced without disturbing piping or wiring. Recessed non-locking manual override is standard, locking overrides available. They also may be used for 2-Way, 3-Way, and dual pressure service.

Operation

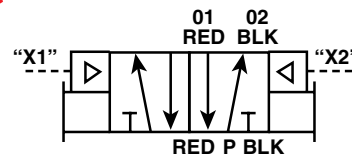
Single Pressure At Inlet Port "P":

Remote pressure at "X2" port, inlet pressure port "P", connected to outlet cylinder port, "02-BLK". Outlet cylinder port "01-RED" connected to exhaust port "RED".

Remote pressure at "X1" port, inlet pressure port "P", connected to outlet cylinder port "01-RED". Outlet cylinder port "02-BLK" connected to exhaust port "RED".

Dual Pressure At Ports "RED" And "BLK":

May be used for dual pressure with pressure at ports "RED" and "BLK" with higher pressure at "RED" port. Exhaust at "P" port. (See maintenance manual for conversion instruction.)



Model Selection Chart

For single pressure application.

Port Size	Valve/Inline Mounted	Model Number
1/4" NPT	Side Ported	SS121025
3/8" NPT	Side Ported	SS121037
1/2" NPT	Side Ported	SS121050

Port Size	Valve/Add-A-Fold Base	Model Number
3/8" End Ports	Valve Assembly, Less Base	SSA121237
3/8" End Ports	Valve W/Add-A-Fold, 2-End Ports, Common Exhaust	SSX121237
3/8" End Ports	Valve W/Add-A-Fold, 4-End Ports, Separate Exhaust	SSW121237

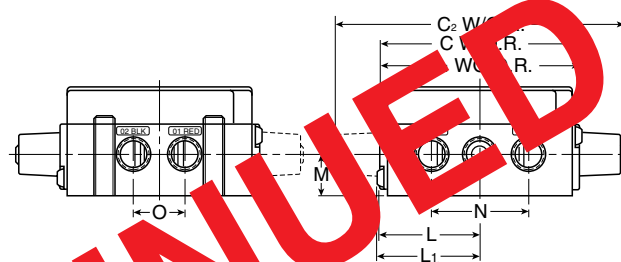
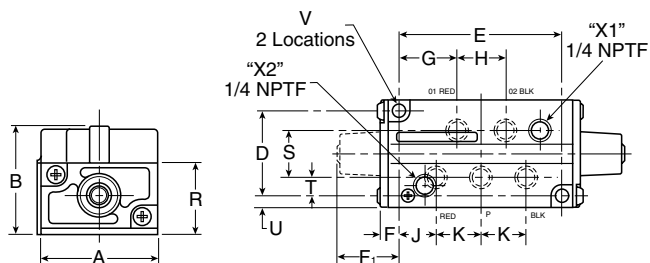
Model Selection Chart

For single pressure application.

Port Size	Valve/Inline Mounted	Model Number
1/4" NPT	Side Ported	SS141025
3/8" NPT	Side Ported	SS141037
1/2" NPT	Side Ported	SS141050

Port Size	Valve/Add-A-Fold Base	Model Number
3/8" End Ports	Valve Assembly, Less Base	SSA141237
3/8" End Ports	Valve W/Add-A-Fold, 2-End Ports, Common Exhaust	SSX141237
3/8" End Ports	Valve W/Add-A-Fold, 4-End Ports, Separate Exhaust	SSW141237

SS1200 / SS1400
Single & Double Air Operated Valves



Dimensions:

	inches	mm
A	2.56	65
B	2.56	65
C	5.80	147
C ₁	4.96	126
C ₂	6.68	170
D	2.00	51
E	3.88	98
F	.53	13
F ₁	1.39	35
G*	1.35	34
H*	1.19	30
J*	.88	22
K*	1.06	27
L	2.47	63

	inches	mm
L ₁	2.55	65
M	.91	23
N 1/4"	2.00	51
N 3/8"	2.13	54
N 1/2"	2.25	57
O 1/4"	1.06	27
O 3/8"	1.19	30
O 1/2"	1.31	33
R	1.69	43
S	1.19	30
T	.41	10
U	.25	6
V	.28	7

* Dimensions are for valves with bottom ports (SSA).

Application

The Parker SA Add-A-Fold system permits assembly of many valves and their Add-A-Fold bases into one manifold system. Each Add-A-Fold assembly requires only one supply connection. Supply and exhaust connections are made by bolting the desired valve to its Add-A-Fold base section. Outlet connections are made to each Add-A-Fold station.

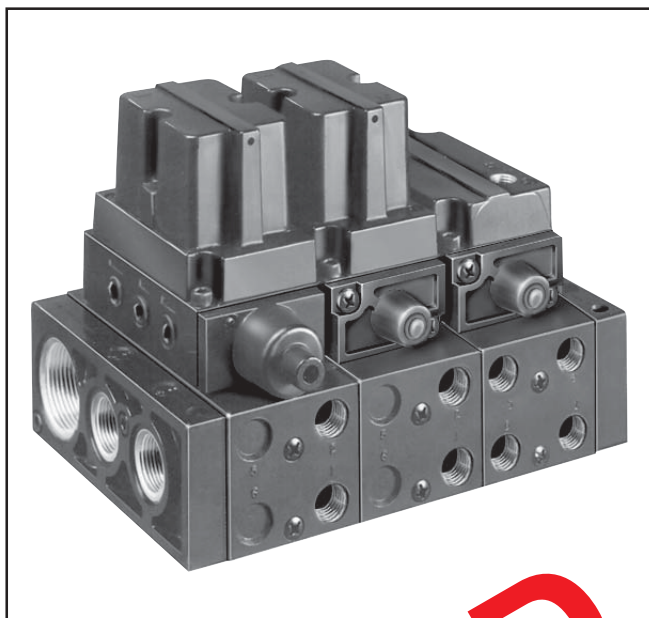
Electrical connections are made to separate valves through a common junction box at one end of the manifold.

Each Add-A-Fold base will accept any SSA Series Valve and gasket:

- Single Solenoid
- Double Solenoid
- Single Air Operated
- Double Air Operated

Features

- Greatly reduces installation costs.
- Reduces piping, wiring and risk of leaks.
- Saves space.
- Creates custom valving arrangements with standard components.
- Improves appearance of pneumatic machines.
- Built-in electrical junction box.



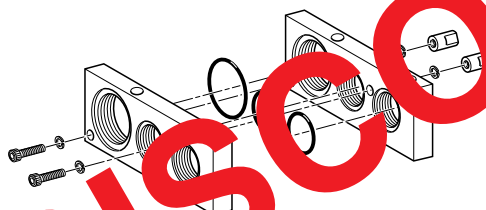
Note: When valves are ordered separately on manifold bases, all necessary assembly and interface hardware is included. Side plate kits must be ordered separately.

Add-A-Fold Side Plate Kit

Each Add-A-Fold Side Plate Kit contains a right and left side plate, (3) o-ring seals, (2) socket head cap screws, (2) lockwashers, and (2) couplings.

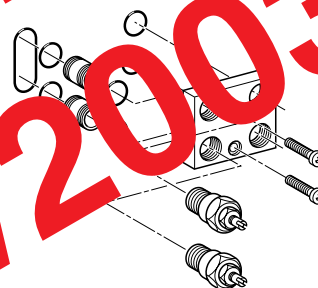
PL3509C Side Plate Kit

(2) Side plates, (3) O-rings, Cap screws, couplings & washers



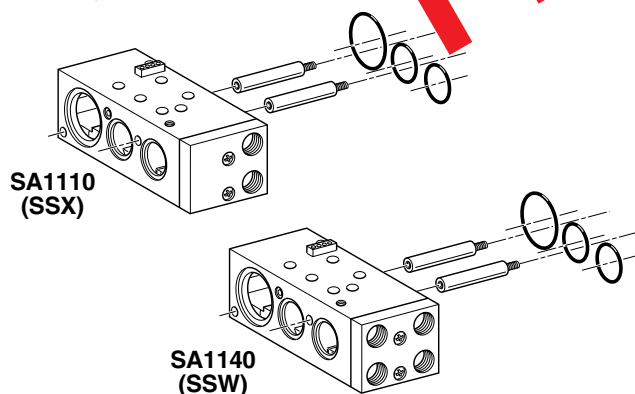
Conversion Kit PL3580

To convert SA110 to a common exhaust base to separate exhaust SA1140 base.



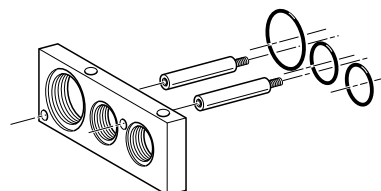
Add-A-Fold Base Kit

Each Add-A-Fold Base Kit contains a manifold base, (3) base to base o-rings, (2) base connecting tie rods.



PL3539B Intermediate Plate Kit

- (1) Side plate
- (3) O-rings
- (2) Long tie rods (cad plated)



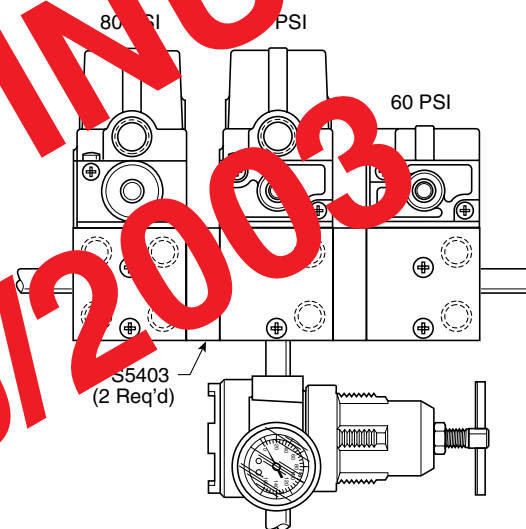
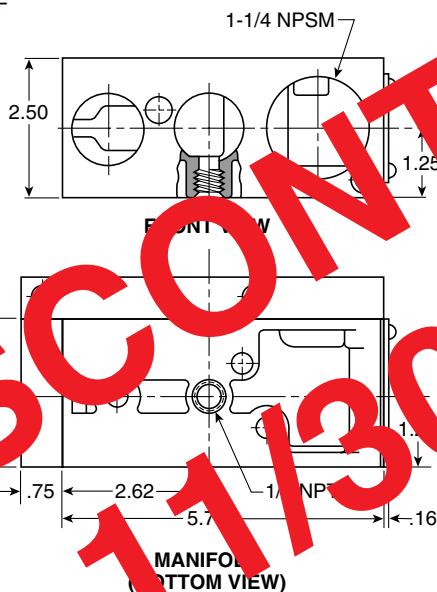
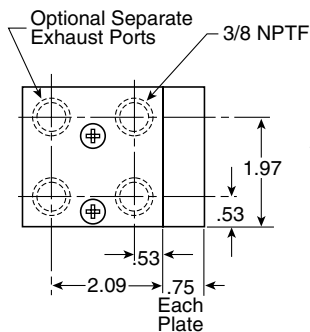
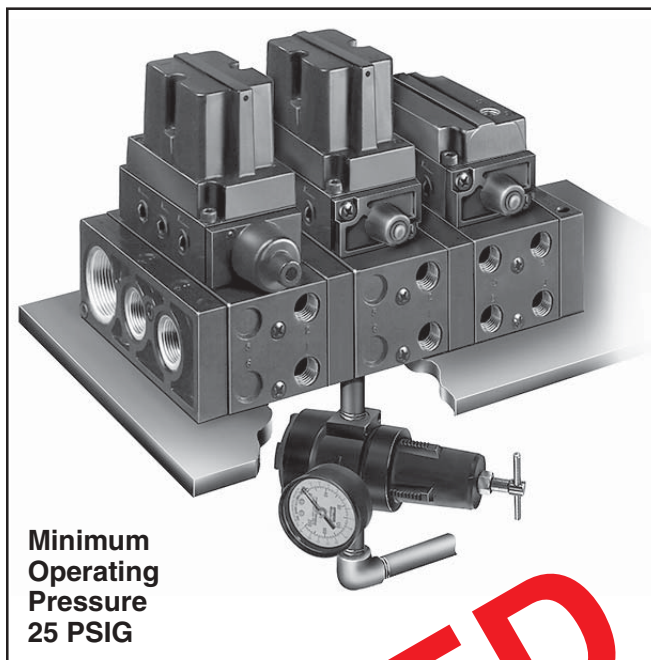
Required for manifold consisting of six (6) or more valves.

Both the SA1110 and SA1140 Add-A-Fold bases are available with bottom porting on the pressure port, enabling you to bring separate pressures into individual stations. This is accomplished by regulating pressure into the isolated base.

This feature now enables the SS Manifold to be worked at individual pressures.

Ordering Information For All SSA Series Valves

	Example
1/4" Bottom ported regulated pressure with common exhaust (SA1150)	SSX20113701
1/4" Bottom ported regulated pressure with separate exhaust (SA1160)	SSW20113701
SA1150 base, same as SA1110 except 1/4" pressure port in bottom of base.	
SA1160 base, same as SA1140 except 1/4" pressure port in bottom of base.	
PS5403—Isolator Plate.	



Three Station Manifold
Each Station With Individual Pressure

SS Series Override Conversion Kits

Convert valves without overrides or change style of overrides with the kits below.

Series SS1200, 1400, 2000, 4000

PL5167B Non-locking manual override

PL5168B Locking manual override

PL5153B Non-locking manual override, knob type

PL5155B Locking manual override, knob type

Series SS1500, 1600, 5000, 6000

PL5185 Locking manual override

PL5178 Non-locking manual override

Operating Pressure

2-Position Single & Double Solenoid Valves:

20 to 150 PSIG (138 to 1035 kPa). Can be modified for use on low pressure or vacuum operation for inline valves only.

3-Position Double Solenoid Valves:

35 to 150 PSIG (242 to 1035 kPa). Can be modified for use on low pressure or vacuum operation for inline valves only.

Temperature

Ambient	Minimum	Maximum
Continuous Duty	0°F (-18°C)	140°F +60°C).
Intermittent Duty	0°F (-18°C)	140°F +60°C).

Electrical Data: 120V/60Hz - 110V/50Hz

7.2 Watts	.26 Amp Inrush	.14 Amp Holding
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Class B (130°C) Coil.

Lubrication

For maximum service life use clean, lubricated air. F442P oil is specially formulated to promote maximum valve life.

2-Position Double Solenoid

Average Fill Time: (Seconds)*

Valve Port Size	12 Cu. In. Test Chamber		100 Cu. In. Test Chamber	
	Fill	Exhaust	Fill	Exhaust
3/8"	.049	.091	.233	.437
1/2"	.026	.052	.172	.307

* With 100 PSI supply, time required to fill from 0-90 PSI and exhaust from 100 PSI to 10 PSI is measured from instant of energizing, or de-energizing 120V/60Hz solenoid. Times shown are average.

3-Position Double Solenoid

Average Fill Time: (Seconds)*

Valve Port Size	12 Cu. In. Test Chamber		100 Cu. In. Test Chamber	
	Fill	Exhaust	Fill	Exhaust
3/8"	.051	.089	.247	.428
1/2"	.038	.058	.176	.322

* With 100 PSI supply, time required to fill from 0-90 PSI and exhaust from 100 PSI to 10 PSI is measured from instant of energizing, or de-energizing 120V/60Hz solenoid. Times shown are average.

Coil Selection

Voltage Range +10/-15% of Nominal

Class B	60Hz.	50Hz.	DC
01	120VAC	110VAC	—
22	—	—	24VDC

2-Position Single Solenoid

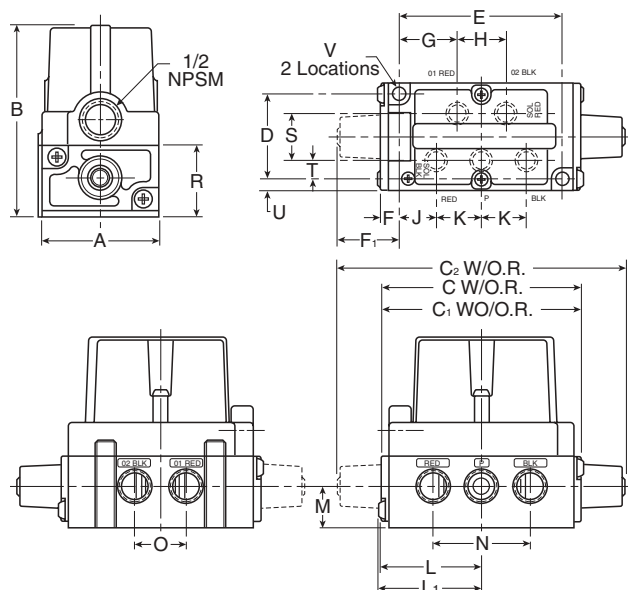
Average Fill Time: (Seconds)*

Valve Port Size	12 Cu. In. Test Chamber		100 Cu. In. Test Chamber	
	Fill	Exhaust	Fill	Exhaust
3/8"	.064	.092	.024	.427
1/2"	.049	.045	.185	.345

* With 100 PSI supply, time required to fill from 0-90 PSI and exhaust from 100 PSI to 10 PSI is measured from instant of energizing, or de-energizing 120V/60Hz solenoid. Times shown are average.

Flow Rating (C_v)

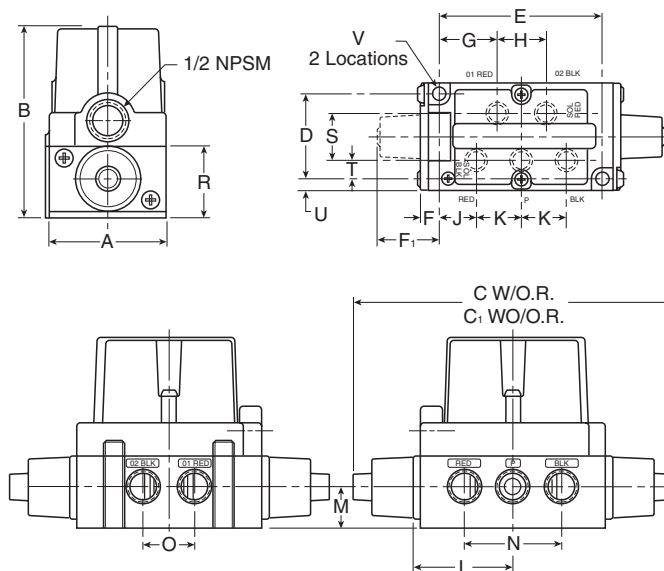
Flow Path	Valve Port Size			
	2-Position		3-Position	
	3/8"	1/2"	3/8"	1/2"
P→02-BLK	1.9	2.2	1.7	2.2
P→01-RED	1.7	2.1	1.6	2.1
02-BLK→BLK	1.6	1.9	1.6	1.9
01-RED→RED	1.4	2.2	1.4	2.0
Avg.	1.7	2.1	1.6	2.0

Dimensions**"SS" Series Valves
2-Position / 3-Position****SS2000/SS4000****Single & Double Solenoid Valves****Dimensions:**

	inches	mm
A	2.56	65
B	4.63	118
C	5.80	147
C₁	4.96	126
C₂	6.69	170
D	2.00	51
E	3.88	98
F	.53	13
F₁	1.39	35
G*	1.35	34
H*	1.19	30
J*	.88	22
K*	1.06	27
L	2.47	63

	inches	mm
L₁	2.55	65
M	.91	23
N 1/4"	2.00	51
N 3/8"	2.13	54
N 1/2"	2.25	57
O 1/4"	1.06	27
O 3/8"	1.19	30
O 1/2"	1.31	33
R	1.69	43
S	1.19	30
T	.41	10
U	.25	6
V	.28	7

* Dimensions are for valves with bottom ports (SSA).

SS5000/SS6000**Double Solenoid Valve****Dimensions:**

	inches	mm
A	2.56	65
B	4.63	118
C	8.20	208
C₁	8.20	208
D	2.00	51
E	3.88	98
F	2.16	55
G*	1.35	34
H*	1.19	30
J*	.88	22
K*	1.06	27
L	2.55	65

	inches	mm
M	.91	23
N 1/4"	2.00	51
N 3/8"	2.13	54
N 1/2"	2.25	57
O 1/4"	1.06	27
O 3/8"	1.19	30
O 1/2"	1.31	33
R	1.69	43
S	1.19	30
T	.41	10
U	.25	6
V	.28	7

* Dimensions are for valves with bottom ports (SSA).

Double Air Operated**"SS" Series Valves
4-Way, 5-Port, 3-Position****Service Kits and Parts Available****Valve Body Service Kit:**

(consists of items # 3, 7, 8, 9, 11, & 12) PS5396

Manual Override Kits:

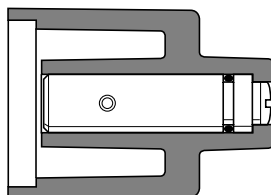
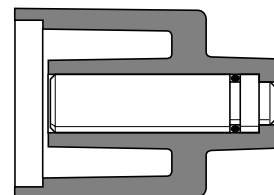
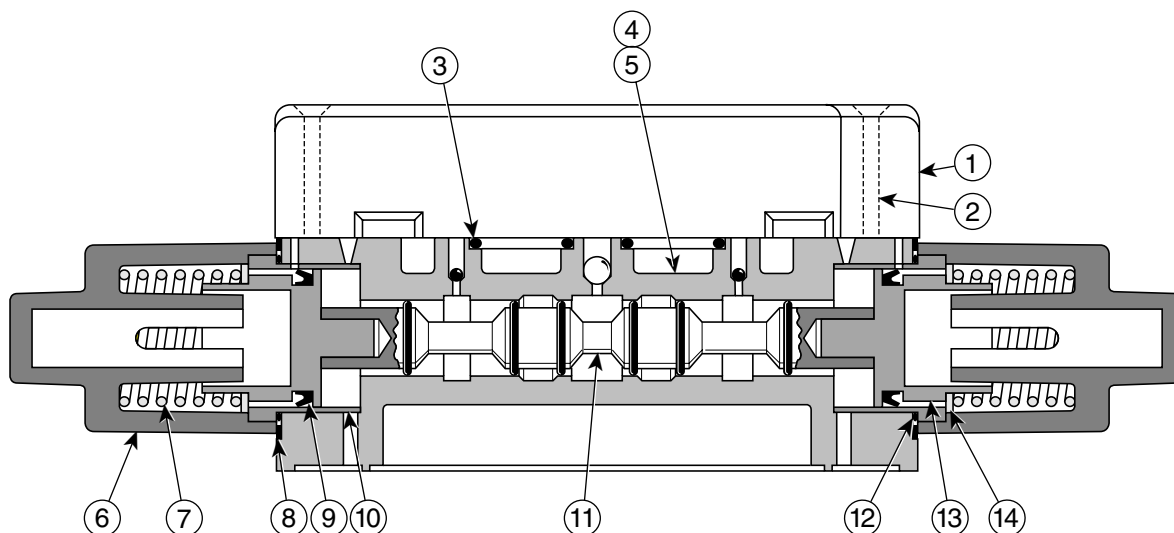
Flush Style - Non-Locking Type PL5178

Flush Style - Locking Type PL5185

Part Identification List

V-250D

Item #	Description
1	External Pilot Cover
2	Screw - body/cover
3	Molded Gasket - valve body to cover
4	Valve Body Assembly
5	Valve Body
6	End Cap
7	Return Spring
8	Seal - cover
9	Lipseal
10	Sleeve
11	Stem
12	O-ring - sleeve
13	Piston
14	Washer
15	Screw - valve body to end cap (not shown)

**Flush Style Manual
Overrides****Locking Type****Non-Locking Type**

Field Conversion from Dual Exhaust to Dual Pressure

Remove the external pilot cover from the base. Determine which port will receive the highest pressure, and then remove the ball directly above that port. Reposition the rubber ball into the center "P" port.



CAUTION:

Before attaching the external pilot cover, make sure that the molded gasket is positioned properly in its gasket track.

Service Kits and Parts Available

SS1200 Series Valve Body Service Kit:

(consists of items # 2, 3, 5, 8, 9, 11, & 12) PS5394

SS1400 Series Valve Body Service Kit:

(consists of items # 3, 5, 8, 9, 11, 12, 16, & 17) PS5395

Manual Override Kits:

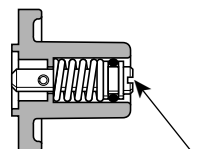
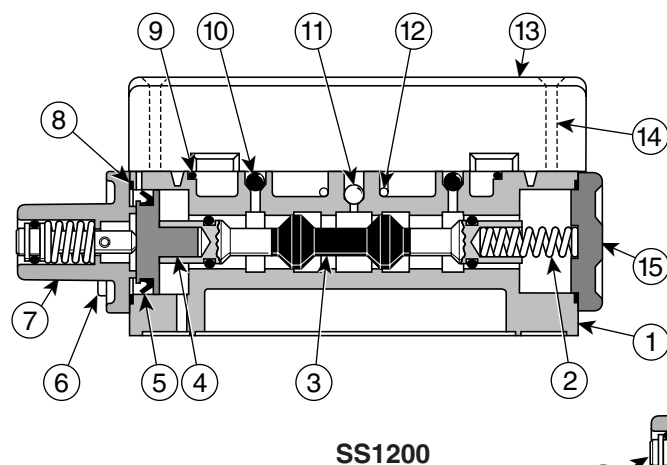
Flush Style - Non-Locking PL5167B
 Flush Style - Locking PL5168B

Part Identification List

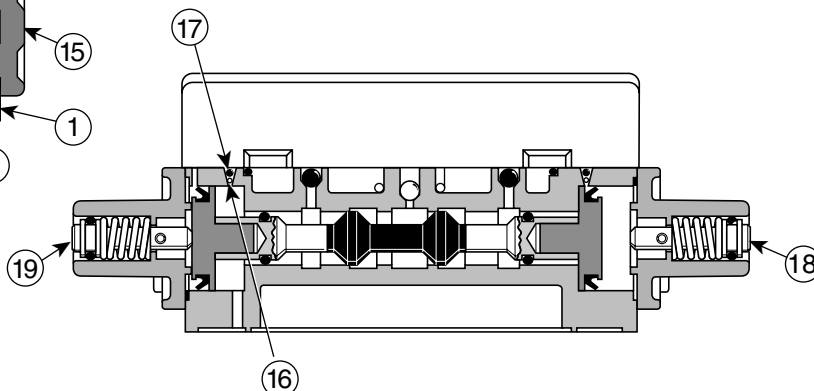
V-251D

Item #	Description
1	Valve Body
2	Return Spring
3	Stem Assembly
4	Piston
5	Lip Seal
6	Mounting Screws - end cap to valve body
7	End Cap Assembly with override
8	Seal for end cap
9	Molded Gasket for valve body to cover
10	Plug - 3/16" Dia. Rubber Ball
11	Polyurethane Check Ball - 1/8" Dia.
12	Wire Clip
13	External Pilot Cover
14	Mounting Screw - cover to valve body
15	End Cap - return spring end
16	Detent Wire
17	Rubber Ball
18	Non-Locking Override
19	Locking Override

Flush Style Manual Override



Locking type has a slot; Non-locking type is without slot.



Field Conversion from Dual Exhaust to Dual Pressure

Valve operation (& model number) is determined by the location of the 1/8" dia. polyurethane check ball and the two 3/16" dia. rubber plugs. Remove the conduit adapter from the base. Determine which port will receive the highest pressure, and then remove the rubber plug directly above that port and replace it with the polyurethane check ball. Reposition the rubber plug into the center "P" port.

CAUTION: Before attaching the conduit adapter, make sure that the molded gasket is positioned properly in its gasket track.

Service Kits and Parts Available

Valve Body Service Kit:

(consists of items # 21, 22, 25, 26, 27, 28, & 31) PS5394

Solenoid Service Kit:

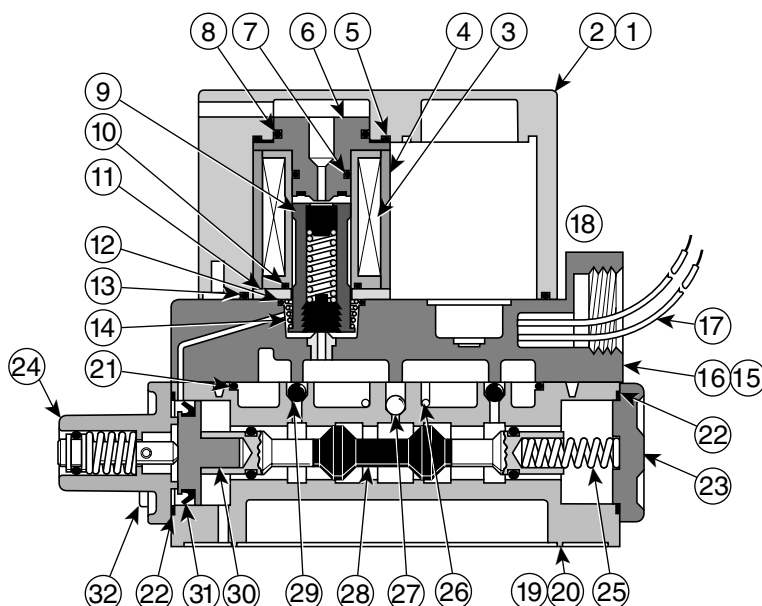
(consists of items # 5, 6, 7, 8, 10, 12, 13, & 14) PS5397

Manual Override Kits:

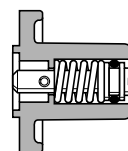
Flush Style - Non-Locking PL5167B
 Flush Style - Locking PL5168B

Part Identification List

Item #	Description
1	Solenoid Assembly
2	Solenoid Cover with captive mounting screws
3	Solenoid Coil
4	Flux Sleeve
5	Compression Gasket
6	Top Seat
7	Small O-ring for top seat
8	Large O-ring for top seat
9	Solenoid Plunger
10	O-ring for coil
11	Flux Plate
12	O-ring for flux plate
13	Seal for solenoid cover to conduit adapter
14	Spring for plunger
15	Conduit Adapter Assembly
16	Conduit Body
17	Leads
18	Mounting Screws (#10-24x1) - conduit body to valve body (not shown)
19	Valve Body Assembly
20	Valve Body
21	Molded Gasket for valve body to conduit body
22	Seal for end cap
23	End Cap - return spring end
24	End Cap Assembly with override - piston end
25	Return Spring
26	Wire Clip
27	Polyurethane Check Ball - 1/8" Dia.
28	Stem Assembly
29	Plug - 3/16" Dia. Rubber Ball
30	Piston
31	Lip Seal
32	Mounting Screws - end cap to valve body



Flush Style Manual Override



Locking type has a slot;
 Non-locking type is without slot.

Field Conversion from Dual Exhaust to Dual Pressure

Valve operation (& model number) is determined by the location of the 1/8" dia. polyurethane check ball and the two 3/16" dia. rubber plugs. Remove the conduit adapter from the base. Determine which port will receive the highest pressure, and then remove the rubber plug directly above that port and replace it with the polyurethane check ball. Reposition the rubber plug into the center "P" port.

CAUTION: Before attaching the conduit adapter, make sure that the molded gasket is positioned properly in its gasket track.

Service Kits and Parts Available

Valve Body Service Kit:

(consists of items # 21, 22, 25, 26, 27, 30, 32, & 33) PS5395

Solenoid Service Kit:

(consists of items # 5, 6, 7, 8, 9, 10, 12, 13, & 14) PS5397

Note: Two kits are required to service a double solenoid valve.

Manual Override Kits:

Flush Style - Non-Locking

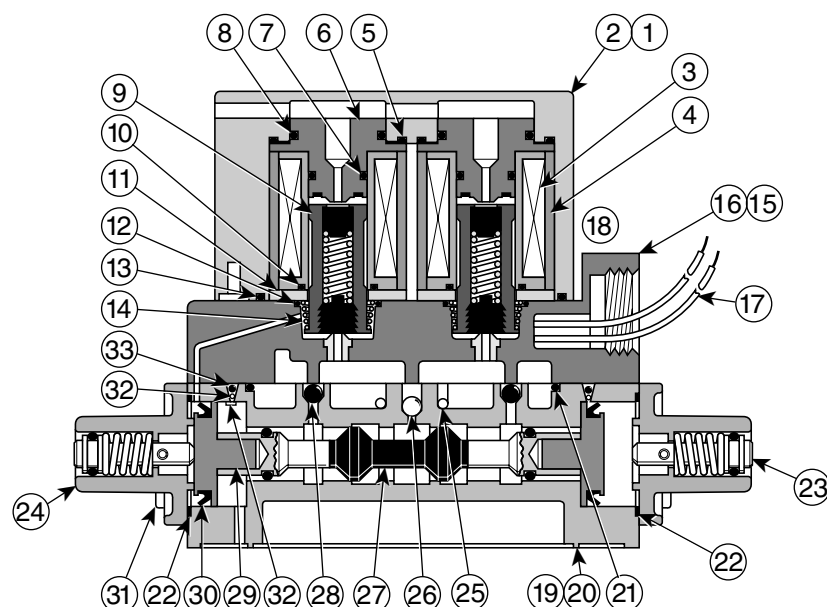
PL5167B

Flush Style - Locking

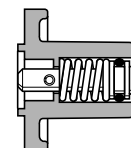
PL5168B

Part Identification List

Item #	Description
1	Solenoid Assembly
2	Solenoid Cover with captive mounting screws
3	Solenoid Coil
4	Flux Sleeve
5	Compression Gasket
6	Top Seat
7	Small O-ring for top seat
8	Large O-ring for top seat
9	Solenoid Plunger
10	O-ring for coil
11	Flux Plate
12	O-ring for flux plate
13	Seal for solenoid cover to conduit adapter
14	Spring for plunger
15	Conduit Adapter Assembly
16	Conduit Body
17	Leads
18	Mounting Screws (#10-24x1) - conduit body to valve body (not shown)
19	Valve Body Assembly
20	Valve Body
21	Molded Gasket for valve body to conduit body
22	Seal for end cap
23	Locking Override
24	End Cap Assembly with non-locking override
25	Wire Clip
26	Polyurethane Check Ball - 1/8" Dia.
27	Stem Assembly
28	Plug - 3/16" Dia. Rubber Ball
29	Piston
30	Lip Seal
31	Mounting Screws - end cap to valve body
32	Detent Wire
33	Rubber Ball



Flush Style Manual Override



Locking type has a slot; —
 Non-locking type is without slot.

Double Solenoid**"SS" Series Valves****4-Way, 5-Port, 3-Position****Service Kits Available****Valve Body Service Kit:**

(consists of items #

21, 23, 24, 25, 27, 28, 29, & 31)

PS5396

Solenoid Service Kit:

(consists of items #

5, 6, 7, 8, 9, 10, 12, 13, & 14)

PS5397

Note: Two kits are required to service a double solenoid valve.**Manual Override Kits:**

Flush Style - Non-Locking

PL5178

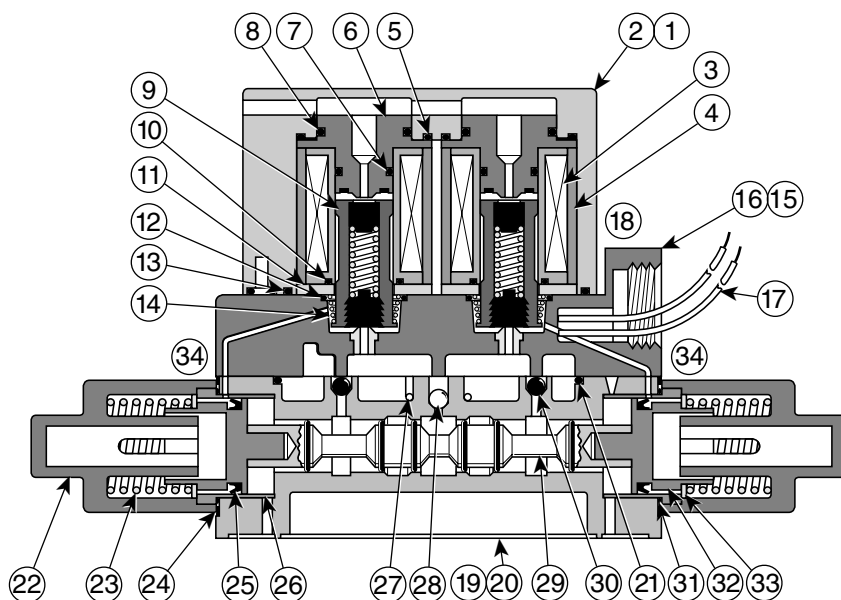
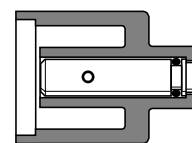
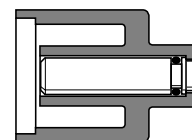
Flush Style - Locking

PL5185

Parts Identification List

V-256CP

Item #	Description
1	Solenoid Assembly
2	Solenoid Cover with captive mounting screws
3	Solenoid Coil
4	Flux Sleeve
5	Compression Gasket
6	Top Seat
7	Small O-ring for top seat
8	Large O-ring for top seat
9	Solenoid Plunger Assembly
10	O-ring for coil
11	Flux Plate
12	O-ring for flux plate
13	Seal for solenoid cover to conduit adapter
14	Spring for plunger assembly
15	Conduit Adapter Assembly
16	Conduit Body
17	Electrical Leads
18	Mounting Screws (#10-24x1) - conduit body to valve body (not shown)
19	Valve Body & End Cap Assemblies
20	Valve Body
21	Molded Gasket for valve body to conduit body
22	End Cover
23	Return Spring
24	Seal for end cap to body
25	Lip Seal
26	Sleeve
27	Wire Clip
28	Polyurethane Check Ball - 1/8" Diameter
29	Stem Assembly
30	Plug - 3/16" Diameter Rubber Ball
31	O-ring - sleeve to body
32	Piston
33	Washer
34	Mounting Screws - end cap to valve body (not shown)

**Figure 1: SS Valve Assembly****Figure 2: Flush Style Manual Override; Locking****Figure 3: Flush Style Manual Override; Non-Locking**

Obsolete SS Valve	Suggested Replacement	Notes	Alternate SS Valve	Notes
SS120037	F5F15000XXA			
SS120050	B7F3000XXA			
SS121025	F5F13000XXA			
SS121037	F5F15000XXA			
SS121050	B7F3000XXA			
SS122050	B7F3000XXA			
SS140025	F5413000XXA			
SS140037	F5415000XXA			
SS140050	B743000XXA			
SS140237	F5465000XXA	3		
SS141025	F5413000XXA			
SS141037	F5415000XXA			
SS141050	B743000XXA			
SS147025	F5413000XXA			
SS151025	F5813000XXA			
SS151037	F5815000XXA			
SS151050	B783000XXA			
SS161025	F5913000XXA			
SS161050	B793000XXA			
SS20002501	F5E13BGA23A		SS20103701 & Bush to 1/4"	12
SS20002522	F5E13BGA19A		SS20103722 & Bush to 1/4"	12
SS20003701	F5E15BGA23A		SS20103701	12
SS20003701M5	F5E15LGA23A			
SS20003720	F5E15BGA12A			
SS20003722	F5E15BGA19A		SS20103722	12
SS20005001	B7E3ADH53A		SS20105001	12
SS20005001SP1	NO CROSS	7		
SS20005021	B7E3ADH45A			
SS20005022	B7E3ADH49A		SS20105022	12
SS20023701	F5E65BGA23A	3	SS20123701	
SS20023702	F5E65BGA87A	3		
SS20102501	F5E13BGA23A		SS20103701 & Bush to 1/4"	
SS20102501M5	F5E13LGA23A			
SS20102502	F5E13BGA87A			
SS20102520	F5E13BGA12A			
SS20102522	F5E13BGA19A		SS20103722 & Bush to 1/4"	

Notes

1. This SS valve is modified for dual pressure application with highest pressure at the “Red” port. The F5 valve requires External Pilot and connect the high pressure to the #5 Port.
2. This SS valve is modified for dual pressure application with highest pressures at the “Black” port. The F5 valve requires External Pilot and connect the highest pressure to the #3 port.
3. This valve is attached to a Manifold Assembly. No direct replacement is available. Review application of valve configuration. Recommended F5 valve listed includes Manifold Base.
4. The M1 Modification was a Special External Pilot Drilling to the body for attaching the valve to a Manifold made by the BW Rogers Company for Firestone and Goodyear tire manufacturing industry. Review of application required for suitable replacement.
5. The M2 Modification was Non-Locking Manual Override on the Conduit End of valve only. SS4000 Series. The F5 or SS valve selected had Non-Locking Manual Overrides on both ends of the valve.
6. The M4 Modification was Non-Locking Manual Override opposite the Conduit End of the valve. SS4000 Series. The F5 or SS valve selected has Non-Locking Manual Overrides on both ends of the valve.
7. Use Repair Kits to Service Valve.
8. Field convert SS valve to Dual Pressure.
9. Selected SS valve has 18" Leads instead of 72" Leads.
10. Selected SS valve has Flush Type Non-Locking Manual Override instead of Knob Type Non-Locking Manual Override.
11. Selected SS valve has Flush Type Locking Manual Override instead of Knob Type Locking Manual Override.
12. Selected SS valve has Flush Type Non-Locking Manual Override instead of No Override.
13. Selected SS valve has No Indicator Light.

Obsolete SS Valve	Suggested Replacement	Notes	Alternate SS Valve	Notes
SS20102523	NO CROSS VOLTAGE 125VDC	7		
SS20103701M5	F5E15LGA23A			
SS20103702	F5E15BGA87A			
SS20103723	NO CROSS VOLTAGE 125VDC	7		
SS20105002	B7E3ADH57A			
SS20105021	B7E3ADH45A			
SS20105023	NO CROSS VOLTAGE 125VDC	7		
SS20105058	NO CROSS VOLTAGE 250VDC	7		
SS20123701M1B		4		
SS20133701	F5E15LGA23A	1	SS20103701	8
SS20163701	F5E15LGA23A	2	SS20103701	8
SS20202501	F5E13BHA23A		SS20203701 & Bush to 1/4"	
SS20202502	F5E13BHA87A			
SS20203702	F5E15BHA87A			
SS20203720	F5E15BHA12A			
SS20205021	B7E3ACH45A			
SS20302501	F5E13BGB23A		SS20103701 & Bush to 1/4"	9
SS20303701	F5E15BGB23A		SS20103701	9
SS20303702	F5E15BGB87A			
SS20362515	NO CROSS VOLTAGE IS 48VDC	7		
SS20402501	F5E13BGB23A		SS20103701 & Bush to 1/4"	9
SS20402523	NO CROSS VOLTAGE 125VDC	7		
SS20402559	NO CROSS VOLTAGE 120/50 VAC	7		
SS20403701	F5E15BGB23A		SS20103701	9
SS20403723	NO CROSS VOLTAGE 125VDC	7		
SS20405001	B7E3ADR53A		SS20105001	9
SS20423722	F5E65BGB23A	3	SS20103722	9
SS20503702	F5E15BHB87A			
SS20505001	B7E3ACR53A		SS20205001	9
SS20603701	F5E15BJB23A		SS20103701	9, 10
SS20703701	F5E15BJA23A		SS20103701	10
SS20705001	B7E3ADH53A		SS20105001	10
SS20802501	F5E13AKA23A		SS20203701 & Bush to 1/4"	11
SS20802522	F5E13AKA19A		SS20203722 & Bush to 1/4"	11
SS20803701	F5E15AKA23A		SS20203701	11
SS20805001	B7E3ACH53A		SS20205001	11

Notes

1. This SS valve is modified for dual pressure application with highest pressure at the "Red" port. The F5 valve requires External Pilot and connect the high pressure to the #5 Port.
2. This SS valve is modified for dual pressure application with highest pressures at the "Black" port. The F5 valve requires External Pilot and connect the highest pressure to the #3 port.
3. This valve is attached to a Manifold Assembly. No direct replacement is available. Review application of valve configuration. Recommended F5 valve listed includes Manifold Base.
4. The M1 Modification was a Special External Pilot Drilling to the body for attaching the valve to a Manifold made by the BW Rogers Company for Firestone and Goodyear tire manufacturing industry. Review of application required for suitable replacement.
5. The M2 Modification was Non-Locking Manual Override on the Conduit End of valve only. SS4000 Series. The F5 or SS valve selected had Non-Locking Manual Overrides on both ends of the valve.
6. The M4 Modification was Non-Locking Manual Override opposite the Conduit End of the valve. SS4000 Series. The F5 or SS valve selected has Non-Locking Manual Overrides on both ends of the valve.
7. Use Repair Kits to Service Valve.
8. Field convert SS valve to Dual Pressure.
9. Selected SS valve has 18" Leads instead of 72" Leads.
10. Selected SS valve has Flush Type Non-Locking Manual Override instead of Knob Type Non-Locking Manual Override.
11. Selected SS valve has Flush Type Locking Manual Override instead of Knob Type Locking Manual Override.
12. Selected SS valve has Flush Type Non-Locking Manual Override instead of No Override.
13. Selected SS valve has No Indicator Light.

Obsolete SS Valve	Suggested Replacement	Notes	Alternate SS Valve	Notes
SS20805021	B7E3ACH45A			
SS20903701M5	F5E15LKB23A			
SS20905001	B7E3ACR53A		SS20205001	9, 11
SS40002501	F5213BGA23A		SS40103701 & Bush to 1/4"	12
SS40002502	F5213BGA87A			
SS40002522	F5213BGA19A		SS40103722 & Bush to 1/4"	12
SS40002523	NO CROSS VOLTAGE 125VDC	7		
SS40003701	F5215BGA23A		SS40103701	12
SS40003702	F5215BGA87A			
SS40003722	F5215BGA19A		SS40103722	12
SS40003723	NO CROSS VOLTAGE 125VDC	7		
SS40005001	B723ADH53A		SS40105001	12
SS40005023	NO CROSS VOLTAGE 125VDC	7		
SS40023701	F5265BGA23A	3	SS40123701	12
SS40023702	F5265BGA87A	3		
SS40102501	F5213BGA23A		SS40103701 & Bush to 1/4"	
SS40102501M2	F5215BGA23A	5	SS40103701 & Bush to 1/4"	5
SS40102501M5	F5213LGA23A			
SS40102502	F5213BGA87A			
SS40102521	F5213BGA15A			
SS40102522	F5213BGA19A		SS40103722 & Bush to 1/4"	
SS40102523	NO CROSS VOLTAGE 125VDC	7		
SS40102523M2	NO CROSS VOLTAGE 125VDC	7		
SS40103701M5	F5215LGA23A			
SS40103702	F5215BGA87A			
SS40103720	F5215BGA12A			
SS40103723	NO CROSS VOLTAGE 125VDC	7		
SS40105002	B723ADH57A			
SS40105023	NO CROSS VOLTAGE 125VDC	7		
SS40123701M1B		4		
SS40132501	F5213LGA23A	1	SS40103701 & Bush to 1/4"	8
SS40135001	B723KDH53A	1	SS40105001	8
SS40202501	F5213BHA23A			
SS40202523	NO CROSS VOLTAGE 125VDC	7		
SS40223701M1B		4		
SS40223722M1B		4		

Notes

1. This SS valve is modified for dual pressure application with highest pressure at the “Red” port. The F5 valve requires External Pilot and connect the high pressure to the #5 Port.
2. This SS valve is modified for dual pressure application with highest pressures at the “Black” port. The F5 valve requires External Pilot and connect the highest pressure to the #3 port.
3. This valve is attached to a Manifold Assembly. No direct replacement is available. Review application of valve configuration. Recommended F5 valve listed includes Manifold Base.
4. The M1 Modification was a Special External Pilot Drilling to the body for attaching the valve to a Manifold made by the BW Rogers Company for Firestone and Goodyear tire manufacturing industry. Review of application required for suitable replacement.
5. The M2 Modification was Non-Locking Manual Override on the Conduit End of valve only. SS4000 Series. The F5 or SS valve selected had Non-Locking Manual Overrides on both ends of the valve.
6. The M4 Modification was Non-Locking Manual Override opposite the Conduit End of the valve. SS4000 Series. The F5 or SS valve selected has Non-Locking Manual Overrides on both ends of the valve.
7. Use Repair Kits to Service Valve.
8. Field convert SS valve to Dual Pressure.
9. Selected SS valve has 18" Leads instead of 72" Leads.
10. Selected SS valve has Flush Type Non-Locking Manual Override instead of Knob Type Non-Locking Manual Override.
11. Selected SS valve has Flush Type Locking Manual Override instead of Knob Type Locking Manual Override.
12. Selected SS valve has Flush Type Non-Locking Manual Override instead of No Override.
13. Selected SS valve has No Indicator Light.

Obsolete SS Valve	Suggested Replacement	Notes	Alternate SS Valve	Notes
SS40302501	F5213BGB23A		SS40103701 & Bush to 1/4"	12
SS40302515	NO CROSS VOLTAGE IS 48VDC	7		
SS40302559	NO CROSS VOLTAGE IS 120V/50HZ	7		
SS40303701	F5215BGB23A		SS40103701	9, 12
SS40303758	NO CROSS VOLTAGE IS 250VDC	7		
SS40362515	NO CROSS VOLTAGE IS 48VDC	7		
SS40402501	F5213BGB23A		SS40103701 & Bush to 1/4"	9
SS40402501M2	F5213BGA23A	5	SS40103701 & Bush to 1/4"	5
SS40402501M4	F5213BGA23A	6	SS40103701 & Bush to 1/4"	6
SS40402522M4	F5213BGA19A	6	SS40103722 & Bush to 1/4"	6
SS40402523	NO CROSS VOLTAGE 125VDC	7		
SS40402523M2	NO CROSS VOLTAGE 125VDC	7		
SS40402523M4	NO CROSS VOLTAGE 125VDC	7		
SS40402559M4	NO CROSS VOLTAGE 120/50 VAC	7		
SS40403701	F5215BGB23A		SS40103701	9
SS40403701M2	F5215BGA23A	5	SS40103701	5, 9
SS40403722	F5215BGB19A		SS40103701	9
SS40403723	NO CROSS VOLTAGE 125VDC	7		
SS40403758	NO CROSS VOLTAGE 250VDC	7		
SS40405001	B723ADR53A		SS40105001	9
SS40405001M2	B723BDA53A	5	SS40105001	5, 9
SS40423759	NO CROSS VOLTAGE IS 120V/50HZ	7		
SS40423759M2	NO CROSS VOLTAGE IS 120V/50HZ	7		
SS40603701	F5215BJB23A		SS40103701	9, 10
SS40703701	F5215BJA23A		SS40103701	10
SS40705001	B723ADH53A		SS40105001	10
SS40705002	B723ADH57A			
SS40805001	B723ACH53A		SS40205001	11
SS50002501	F5513BGA23A		SS50103701 & Bush to 1/4"	12
SS50003701	F5515BGA23A		SS50103701	12
SS50003702	F5515BGA87A			
SS50005001	B753BDH53A		SS50105001	12
SS50023702	F5565BGA87A	3		
SS50023722	F5565BGA19A	3	SS50123722	12
SS50102501	F5513BGA23A		SS50103701 & Bush to 1/4"	
SS50102522	F5513BGA19A		SS50103722 & Bush to 1/4"	

Notes

1. This SS valve is modified for dual pressure application with highest pressure at the "Red" port. The F5 valve requires External Pilot and connect the high pressure to the #5 Port.
2. This SS valve is modified for dual pressure application with highest pressures at the "Black" port. The F5 valve requires External Pilot and connect the highest pressure to the #3 port.
3. This valve is attached to a Manifold Assembly. No direct replacement is available. Review application of valve configuration. Recommended F5 valve listed includes Manifold Base.
4. The M1 Modification was a Special External Pilot Drilling to the body for attaching the valve to a Manifold made by the BW Rogers Company for Firestone and Goodyear tire manufacturing industry. Review of application required for suitable replacement.
5. The M2 Modification was Non-Locking Manual Override on the Conduit End of valve only. SS4000 Series. The F5 or SS valve selected had Non-Locking Manual Overrides on both ends of the valve.
6. The M4 Modification was Non-Locking Manual Override opposite the Conduit End of the valve. SS4000 Series. The F5 or SS valve selected has Non-Locking Manual Overrides on both ends of the valve.
7. Use Repair Kits to Service Valve.
8. Field convert SS valve to Dual Pressure.
9. Selected SS valve has 18" Leads instead of 72" Leads.
10. Selected SS valve has Flush Type Non-Locking Manual Override instead of Knob Type Non-Locking Manual Override.
11. Selected SS valve has Flush Type Locking Manual Override instead of Knob Type Locking Manual Override.
12. Selected SS valve has Flush Type Non-Locking Manual Override instead of No Override.
13. Selected SS valve has No Indicator Light.

Obsolete SS Valve	Suggested Replacement	Notes	Alternate SS Valve	Notes
SS50103701M5	F5515LGA23A			
SS50103702	F5515BGA87A			
SS50103721	F5515BGA15A			
SS50105001M5	B753KDH53A			
SS50105002	B753BDH57A			
SS50105021	B753BDH45A			
SS50105023	NO CROSS VOLTAGE 125VDC	7		
SS50105058	NO CROSS VOLTAGE 250VDC	7		
SS50123702M1B		4		
SS50133701	F5513LGA23A	1	SS50103701	8
SS50202501	F5513BHA23A		SS50203701 & Bush to 1/4"	
SS50403701	F5515BGB23A		SS50103701	9
SS50405001	B753ADR53A		SS50105001	9
SS50502501	F5513BHB23A		SS50203701 & Bush to 1/4"	9
SS50505001	B753ACR53A		SS50205001	9
SS60002501	F5613BGA23A		SS60103701 & Bush to 1/4"	12
SS60002501M5	F5613LGA23A			
SS60002522	F5613BGA19A		SS60103722 & Bush to 1/4"	
SS60003701	F5615BGA23A		SS60103701	12
SS60005001	B763ADH53A		SS60105001	12
SS60005022	B763ADH49A		SS60105001	12
SS60032501	F5613LGA23A	1	SS60103701 & Bush to 1/4"	8
SS60102501	F5613BGA23A		SS60103701 & Bush to 1/4"	
SS60102521	F5613BGA15A			
SS60102522	F5613BGA19A		SS60103722 & Bush to 1/4"	
SS60103701M5	F5613LGA23A			
SS60103702	F5615BGA87A			
SS60105023	NO CROSS VOLTAGE 125VDC	7		
SS60123701	F5665BGA23A	3		
SS60135001	B763KDH53A	1	SS60105001	8
SS60405001	B763ADR53A		SS60105001	9
SS60405023	NO CROSS VOLTAGE 125VDC	7		
SSA120237	F5F65000XXA	3		
SSA141237	F5465000XXA	3		
SSA20023701	F5E65BGA23A	3	SSA20123701	12
SSA20023759	NO CROSS VOLTAGE IS 120V/50HZ	7		

Notes

1. This SS valve is modified for dual pressure application with highest pressure at the "Red" port. The F5 valve requires External Pilot and connect the high pressure to the #5 Port.
2. This SS valve is modified for dual pressure application with highest pressures at the "Black" port. The F5 valve requires External Pilot and connect the highest pressure to the #3 port.
3. This valve is attached to a Manifold Assembly. No direct replacement is available. Review application of valve configuration. Recommended F5 valve listed includes Manifold Base.
4. The M1 Modification was a Special External Pilot Drilling to the body for attaching the valve to a Manifold made by the BW Rogers Company for Firestone and Goodyear tire manufacturing industry. Review of application required for suitable replacement.
5. The M2 Modification was Non-Locking Manual Override on the Conduit End of valve only. SS4000 Series. The F5 or SS valve selected had Non-Locking Manual Overrides on both ends of the valve.
6. The M4 Modification was Non-Locking Manual Override opposite the Conduit End of the valve. SS4000 Series. The F5 or SS valve selected has Non-Locking Manual Overrides on both ends of the valve.
7. Use Repair Kits to Service Valve.
8. Field convert SS valve to Dual Pressure.
9. Selected SS valve has 18" Leads instead of 72" Leads.
10. Selected SS valve has Flush Type Non-Locking Manual Override instead of Knob Type Non-Locking Manual Override.
11. Selected SS valve has Flush Type Locking Manual Override instead of Knob Type Locking Manual Override.
12. Selected SS valve has Flush Type Non-Locking Manual Override instead of No Override.
13. Selected SS valve has No Indicator Light.

Obsolete SS Valve	Suggested Replacement	Notes	Alternate SS Valve	Notes
SSA20123701M1B		4		
SSA20123702	F5E65BGA87A	3		
SSA20123721	F5E65BGA15A	3		
SSA20223701M1B		4		
SSA20823701	F5E65BKA23A	3	SSA20223701	11
SSA40023701	F5265BGA23A	3	SSA40123701	12
SSA40023702	F5265BGA87A	3		
SSA40023759	NO CROSS VOLTAGE IS 120V/50HZ	7		
SSA40123701M1B		4		
SSA40123701M2	F5265BGA23A	3, 5	SSA40123701	5
SSA40123702	F5265BGA87A	3		
SSA40153701	F5265BKB23A	3	SSA40123701	8
SSA40223702	F5265BHA87A	3		
SSA40823701	F5265BKA23A	3	SSA40223701	11
SSA50023701	F5565BGA23A	3	SSA50123701	12
SSA50123702	F5565BGA87A	3		
SSA60123701	F5665BGA23A	3		
SSA60123701M1B		4		
SSA60123702	F5665BGA23A	3		
SSA60123722	F5665BGA19A	3		
SSA60223701	F5665BHA23A	3		
SSA60223702	F5665BHA87A	3		
SSA60233701	F5665LHA23A	1, 3		
SSL20102501	F5E13BGA23A		SS20103701 & Bush to 1/4"	13
SSL20103701	F5E15BGA23A		SS20103701	13
SSL20105001	B7E3ADH53A		SS20105001	13
SSL20105002	B7E3ADH57A			
SSL20203701	F5E15BHA23A		SS20203701	13
SSL20205001	B7E3ACH53A		SS20205001	13
SSL20803701	F5E15BKA23A		SS20203701	11, 13
SSL40102501	F5213BGA23A		SS40103701 & Bush to 1/4"	13
SSL40103701	F5215BGA23A		SS40103701	13
SSL40105001	B723BDH53A		SS40105001	13
SSL40133701	F5215LGA23A		SS40103701	8, 13
SSL40802501	F5215LKA23A	NOTE	SS40203701 & Bush to 1/4"	11, 13
SSL50103701	F5515BGA23A		SS50103701	13

Notes

1. This SS valve is modified for dual pressure application with highest pressure at the "Red" port. The F5 valve requires External Pilot and connect the high pressure to the #5 Port.
2. This SS valve is modified for dual pressure application with highest pressures at the "Black" port. The F5 valve requires External Pilot and connect the highest pressure to the #3 port.
3. This valve is attached to a Manifold Assembly. No direct replacement is available. Review application of valve configuration. Recommended F5 valve listed includes Manifold Base.
4. The M1 Modification was a Special External Pilot Drilling to the body for attaching the valve to a Manifold made by the BW Rogers Company for Firestone and Goodyear tire manufacturing industry. Review of application required for suitable replacement.
5. The M2 Modification was Non-Locking Manual Override on the Conduit End of valve only. SS4000 Series. The F5 or SS valve selected had Non-Locking Manual Overrides on both ends of the valve.
6. The M4 Modification was Non-Locking Manual Override opposite the Conduit End of the valve. SS4000 Series. The F5 or SS valve selected has Non-Locking Manual Overrides on both ends of the valve.
7. Use Repair Kits to Service Valve.
8. Field convert SS valve to Dual Pressure.
9. Selected SS valve has 18" Leads instead of 72" Leads.
10. Selected SS valve has Flush Type Non-Locking Manual Override instead of Knob Type Non-Locking Manual Override.
11. Selected SS valve has Flush Type Locking Manual Override instead of Knob Type Locking Manual Override.
12. Selected SS valve has Flush Type Non-Locking Manual Override instead of No Override.
13. Selected SS valve has No Indicator Light.

Obsolete SS Valve	Suggested Replacement	Notes	Alternate SS Valve	Notes
SSL50105001	B753ADH53A		SS50105001	13
SSL50205001	B753ACH53A		SS50205001	13
SSL60102501	F5613BGA23A		SS60103701 & Bush to 1/4"	13
SSL60103701	F5615BGA23A		SS60103701	13
SSL60103702	F6515BGA87A			
SSL60205001	B763ACH53A		SS60205001	13
SSWL20123701	F5265BGA23A	3		
SSWL50123701	F5565BGA23A	3		
SSW121237	F5F65000XXA	3		
SSW20123701	F5E65BGA23A	3		
SSW20123722	F5E65BGA19A	3		
SSW20223701	F5E65BHA23A	3		
SSW40123701	F5265BGA23A	3		
SSW40123722	F5265BGA19A	3		
SSW50123701	F5565BGA23A	3		
SSW60123701	F5665BGA23A	3		
SSXL20123701	F5E65BGA23A	3		
SSXL20223701	F5E65BHA23A	3		
SSXL20823701	F5E65BKA23A	3		
SSXL40123701	F5265BGA23A	3		
SSXL60123701	F5665BGA23A	3		
SSX141237	F5465000XXA	3		
SSX20123701	F5E65BGA23A	3		
SSX20123702	F5E65BGA87A	3		
SSX20123722	F5E65BGA19A	3		
SSX20223701	F5E65BHA23A	3		
SSX40123701	F5265BGA23A	3		
SSX40123702	F5265BGA87A	3		
SSX50123701	F5565BGA23A	3		
SSX50123702	F5565BGA87A	3		
SSX50123720	F5565BGA12A	3		
SSX50123722	F5565BGA19A	3		
SSX60123701	F5665BGA23A	3		

Notes

1. This SS valve is modified for dual pressure application with highest pressure at the “Red” port. The F5 valve requires External Pilot and connect the high pressure to the #5 Port.
2. This SS valve is modified for dual pressure application with highest pressures at the “Black” port. The F5 valve requires External Pilot and connect the highest pressure to the #3 port.
3. This valve is attached to a Manifold Assembly. No direct replacement is available. Review application of valve configuration. Recommended F5 valve listed includes Manifold Base.
4. The M1 Modification was a Special External Pilot Drilling to the body for attaching the valve to a Manifold made by the BW Rogers Company for Firestone and Goodyear tire manufacturing industry. Review of application required for suitable replacement.
5. The M2 Modification was Non-Locking Manual Override on the Conduit End of valve only. SS4000 Series. The F5 or SS valve selected had Non-Locking Manual Overrides on both ends of the valve.
6. The M4 Modification was Non-Locking Manual Override opposite the Conduit End of the valve. SS4000 Series. The F5 or SS valve selected has Non-Locking Manual Overrides on both ends of the valve.
7. Use Repair Kits to Service Valve.
8. Field convert SS valve to Dual Pressure.
9. Selected SS valve has 18" Leads instead of 72" Leads.
10. Selected SS valve has Flush Type Non-Locking Manual Override instead of Knob Type Non-Locking Manual Override.
11. Selected SS valve has Flush Type Locking Manual Override instead of Knob Type Locking Manual Override.
12. Selected SS valve has Flush Type Non-Locking Manual Override instead of No Override.
13. Selected SS valve has No Indicator Light.

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7. Special Tooling: A tooling charge may be imposed for any special tooling, including without limitations, dies, fixtures, molds and patterns, acquired to manufacture items sold pursuant to this contract. Such special tooling shall be and remain Seller's property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the items sold hereunder, even if such apparatus has been specially converted or adapted for such manufacture and notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller shall have the right to alter,

discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.

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9. Taxes: Unless otherwise indicated on the face hereof, all prices and charges are exclusive of excise, sales, use, property, occupational or like taxes which may be imposed by any taxing authority upon the manufacture, sale or delivery of the items sold hereunder. If any such taxes must be paid by Seller or if Seller is liable for the collection of such tax, the amount thereof shall be in addition to the amounts for the items sold. Buyer agrees to pay all such taxes or to reimburse Seller therefore upon receipt of its invoice. If Buyer claims exemption from any sales, use or other tax imposed by any taxing authority, Buyer shall save Seller harmless from and against any such tax, together with any interest or penalties thereon which may be assessed if the items are held to be taxable.

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11. Force Majeure: Seller does not assume the risk of and shall not be liable for delay or failure to perform any of Seller's obligations by reason of circumstances beyond the reasonable control of Seller (hereinafter "Events of Force Majeure"). Events of Force Majeure shall include without limitation, accidents, acts of God, strikes or labor disputes, acts, laws, rules or regulations of any government or government agency, fires, floods, delays or failures in delivery of carriers or suppliers, shortages of materials and any other cause beyond Seller's control.

12. Entire Agreement/Governing Law: The terms and conditions set forth herein, together with any amendments, modifications and any different terms or conditions expressly accepted by Seller in writing, shall constitute the entire Agreement concerning the items sold, and there are no oral or other representations or agreements which pertain thereto. This Agreement shall be governed in all respects by the law of the State of Ohio. No actions arising out of sale of the items sold hereunder or this Agreement may be brought by either party more than two (2) years after the cause of action accrues.



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