

**Pneumatic Division**

Richland, Michigan USA

[www.parker.com/pneumatics](http://www.parker.com/pneumatics)**ACCESSORIES**

Document Number		Description	
<input type="checkbox"/>	<a href="#">2M200D</a>	Rev. 5	05 / 06 / 07 Lockout Valve
<input type="checkbox"/>	<a href="#">2M100D</a>	Rev. 6	05 / 06 / 07 Modular Kits
<input type="checkbox"/>	<a href="#">3FA102</a>	Rev. 1	06P Auto Pilot Soft Start-Installation & Service
<input type="checkbox"/>	<a href="#">2M510</a>	Rev. 2	06S 3/8" Soft Start Valve, Installation & Service
<input type="checkbox"/>	<a href="#">3FA103</a>	Rev. 1	06T 3/8" Solenoid Quick Dump-Installation & Service
<input type="checkbox"/>	<a href="#">3FA102</a>	Rev. 1	07P Auto Pilot Soft Start-Installation & Service
<input type="checkbox"/>	<a href="#">2M510</a>	Rev. 2	07S 1/2" Soft Start Valve, Installation & Service
<input type="checkbox"/>	<a href="#">3FA103</a>	Rev. 1	07T 1/2" Solenoid Quick Dump, Installation & Service
<input type="checkbox"/>	<a href="#">F442</a>	—	F442 Oil, Material Safety Data Sheet
<input type="checkbox"/>	<a href="#">5A100</a>	Rev. B	Global Air Preparation Accessories
<input type="checkbox"/>	<a href="#">P3Y-INC</a>	Rev. 3	Global P3Y Hi-Flow, Installation & Service
<input type="checkbox"/>	<a href="#">2FL101E</a>	Rev. 10	Kits: Pressure Fill, Bowls & Guards, Drains, Sight Gauge, Installation & Service
<input type="checkbox"/>	<a href="#">1M109</a>	Rev. 1	P3A (8A) Mini, Installation & Service
<input type="checkbox"/>	<a href="#">3FA101</a>	Rev. 1	PHS105 Solenoid Quick Dump Valve
<input type="checkbox"/>	<a href="#">3FA101</a>	Rev. 1	PHS75 Solenoid Quick Dump Valve
<input type="checkbox"/>	<a href="#">3FA100</a>	Rev. 1	PHSSA105 Auto Pilot Soft Start Valve
<input type="checkbox"/>	<a href="#">3FA100</a>	Rev. 1	PHSSA75 Auto Pilot Soft Start Valve
<input type="checkbox"/>	<a href="#">FRL-SIF-104</a>	—	Pressure Gauge Consolidation
<input type="checkbox"/>	<a href="#">2FL102</a>	Rev. 2	Threaded Collar
<input type="checkbox"/>	<a href="#">Safety Guide</a>	—	PDN Safety Guide



Visit [www.pdnplu.com](http://www.pdnplu.com) for additional instruction sheets.

**⚠ WARNING**

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- Warnings and specifications on the product should not be covered by paint, etc. If masking is not possible, contact your local representative for replacement labels.

**Introduction**

Follow these instructions when installing, operating, or servicing the product.

**Application Limits**

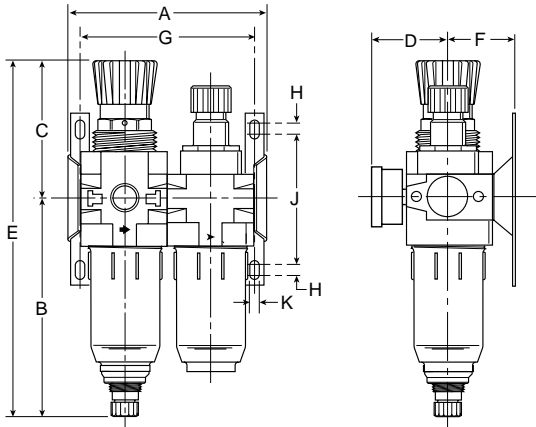
These products are intended for use in general purpose compressed air systems only.

**With Polycarbonate Bowl**

	kPa	PSIG	bar
Operating Pressure Maximum	830	120	8.3
Operating Temperature Maximum:	52°C (125°F)		

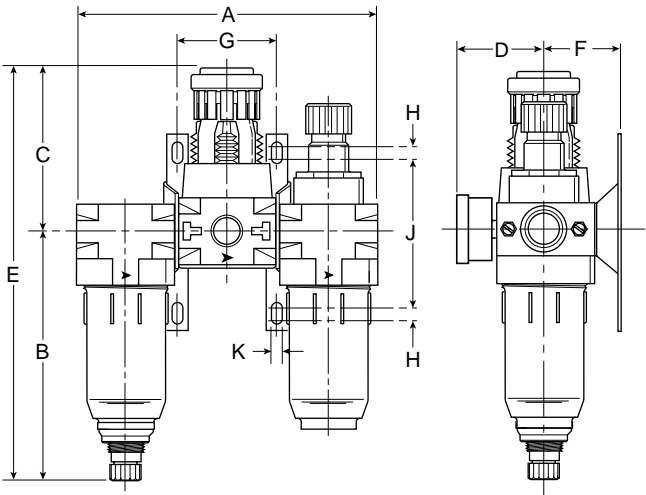
**Two-Unit Combination:**

A	B	"B" with Auto Drain	C	D	E
3.78 96mm	3.98 101mm	3.72 95mm	2.52 64mm	2.06 52mm	6.50 165mm
F	G	H	J	K	
1.22 31mm	1.57 40mm	.20 5mm	1.97 50mm	.20 5mm	



**Three-Unit Combination:**

A	B	"B" with Auto Drain	C	D	E
4.84 123mm	3.98 101mm	3.72 95mm	2.46 63mm	2.06 52mm	6.44 164mm
F	G	H	J	K	
1.22 31mm	1.63 42mm	.20 5mm	1.97 50mm	.20 5mm	



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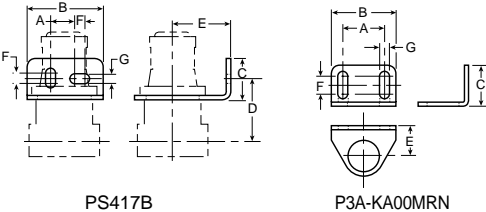
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Wall Mounting Bracket:

KIT	A	B	C	D	E	F	G
PS417B	0.54 14mm	1.80 46mm	1.00 25mm	1.50 38mm	1.35 34mm	0.28 7mm	0.22 6mm
P3A-KA00MRN	1.57 40mm	2.05 52mm	0.98 25mm	1.81 46mm	1.23 31mm	0.47 12mm	0.21 5mm



Installation

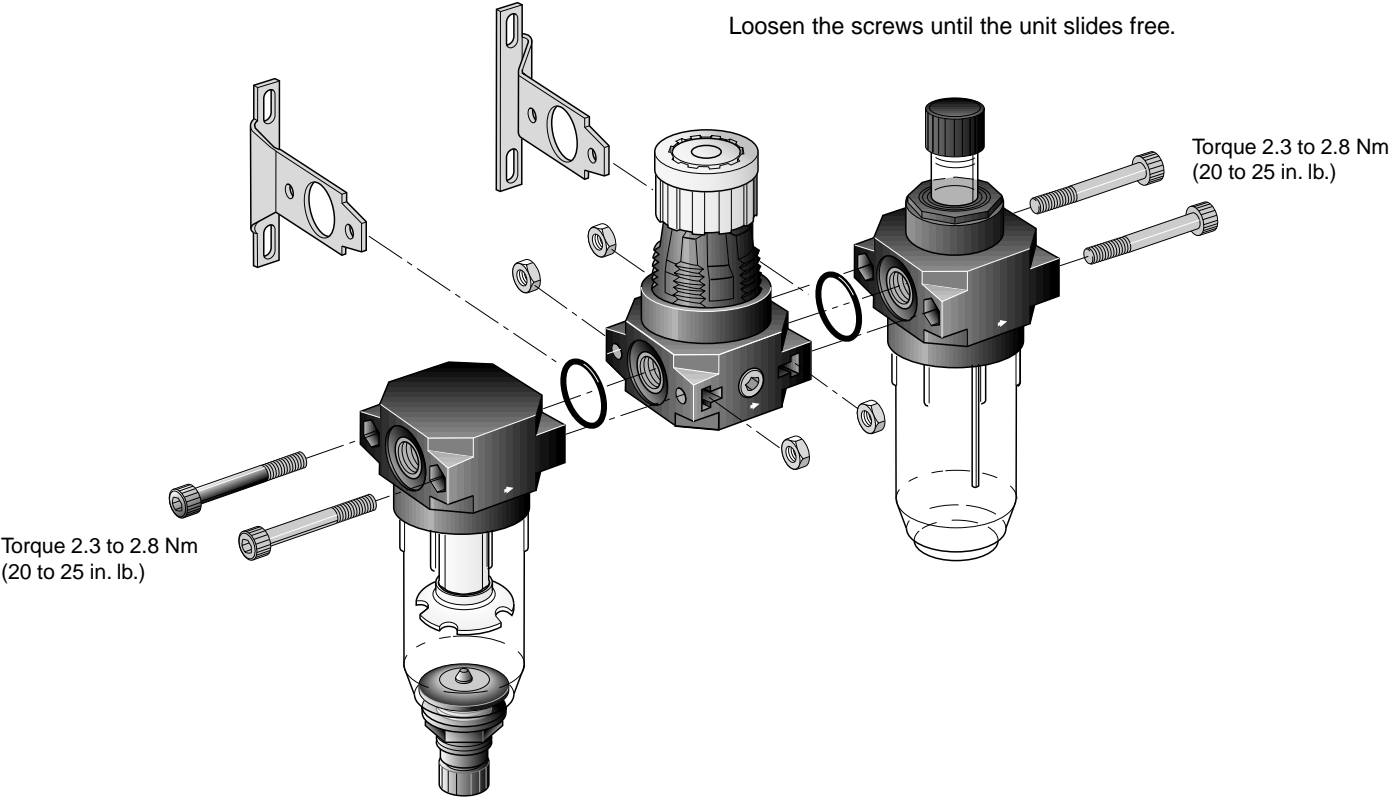
Install wall brackets as shown below. The Filter / Regulator (Not Shown) must be installed with the knob pointing up. Tighten the screws alternating between the two screws to the torque value shown. Check the alignment of each body to verify fit. Pressurize the assembly and check for air leaks. If air leaks are found, depressurize the unit. Loosen the screws and check fit between the bodies. Retighten the screws and check for air leaks.

Removal

Disconnect air supply and depressurize all air lines before removing any modular units.

**WARNING**  
**Loosening the screws may cause the filter, regulator, lubricator, or accessory to dislodge and fall. It is important to take necessary precautions when loosening the screws to prevent the unit from falling and causing injury.**

Loosen the screws until the unit slides free.



To Assemble and/or Wall Mount a . . .				Use for Std. Mounting	Or Use for Wall Mounting
Filter	Regulator	Filter / Regulator	Lubricator	(Qty) Std. Kit	(Qty) Kit & Wall Mount
X					(1) P3A-KA00CWN
	X				(1) PS417B
		X			(1) P3A-KA00MRN
			X		(1) P3A-KA00CWN
X	X			(1) P3A-KA00CDN	(1) P3A-KA00CFN
X			X	(1) P3A-KA00CEN	(1) P3A-KA00CGN
	X		X	(1) P3A-KA00CDN	(1) P3A-KA00CFN
		X	X	(1) P3A-KA00CDN	(1) P3A-KA00CFN
X	X		X	(2) P3A-KA00CDN	(2) P3A-KA00CFN

**Pneumatic Division**  
Richland, Michigan 49083  
269-629-5000

**Installation and Service Instructions:**  
**2FL101E**  
**Bowl Kits, Drain Kits, Bowl Guard Kits, Sight Gauge Kits and Pressure Fill Adapter Kits**  
**ISSUED: September, 2006**  
**Supersedes: March, 2006**  
**Doc.# 2FL101, ECN# 060870, Rev. 10**

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### **CAUTION**

Polycarbonate bowls, being transparent and tough, are ideal for use with Filters and Lubricators. They are suitable for use in normal industrial environments, but should not be located in areas where they could be subjected to direct sunlight, an impact blow, nor temperatures outside of the rated range. As with most plastics, some chemicals can cause damage. Polycarbonate bowls should not be exposed to chlorinated hydrocarbons, ketones, esters and certain alcohols. They should not be used in air systems where compressors are lubricated with fire-resistant fluids such as phosphate ester and diester types.

Metal bowls are recommended where ambient and/or media conditions are not compatible with polycarbonate bowls. Metal bowls resist the action of most such solvents, but should not be used where strong acids or bases are present or in salt laden atmospheres. Consult the factory for specific recommendations where these conditions exist.

**TO CLEAN POLYCARBONATE BOWLS USE MILD SOAP AND WATER ONLY! DO NOT** use cleansing agents such as acetone, benzene, carbon tetrachloride, gasoline, toluene, etc., which are damaging to this plastic.

Bowl guards are recommended for added protection of polycarbonate bowls where chemical attack may occasionally occur.

### **WARNING**

To avoid polycarbonate bowl rupture that can cause personal injury or property damage, do not exceed bowl pressure or temperature ratings. Polycarbonate bowls have a 150 PSIG pressure rating and a maximum temperature rating of 125°F.

### **Safety Guide**

For more complete information on recommended application guidelines, see the Safety Guide section of Pneumatic Division catalogs or you can download the **Pneumatic Division Safety Guide** at: [www.parker.com/safety](http://www.parker.com/safety)

## **Introduction**

Follow these instructions when installing, operating, or servicing the product.

## **Application Limits**

These products are intended for use in general purpose compressed air systems only.

### **With Polycarbonate Bowl**

	kPa	PSIG	bar
Operating Pressure Maximum	1000	150	10.3
Operating Temperature Maximum	52°C (125°F)		
Operating Temperature Minimum	0°C (32°F)		

### **With Metal Bowl**

	kPa	PSIG	bar
Operating Pressure Maximum	1700	250	17.0
Operating Temperature Maximum	80°C (175°F)		
Operating Temperature Minimum	0°C (32°F)		


### **05 / 15 Series With Metal Bowl and Auto Drain**


	kPa	PSIG	bar
Operating Pressure Maximum	1000	150	10.3
Operating Temperature Maximum	80°C (175°F)		
Operating Temperature Minimum	0°C (32°F)		

## **Instructions**

1. Turn off air supply and depressurize the unit before removing any parts.

**Note:** Lubricators with auto fill devices require oil system shut-off and disconnection. Filters with automatic drains require disconnection.

 **CAUTION:** Be certain that pressure is relieved on both sides of any regulator in a system.

 **WARNING:** Conversion or replacement of an old metal bowl with a new plastic bowl will reduce the product

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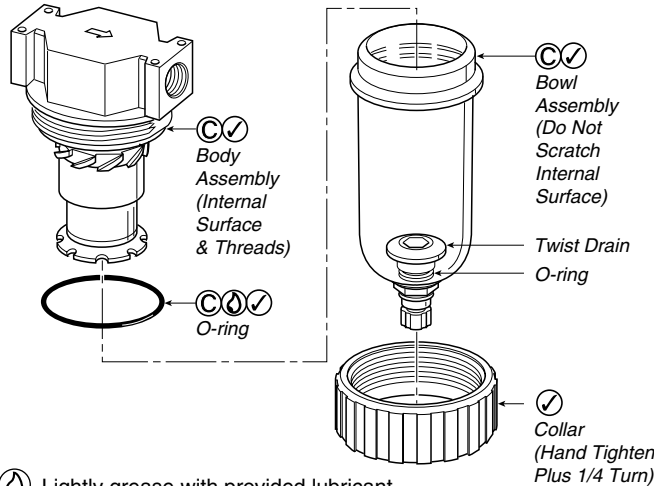
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pressure / temperature rating. Be certain that the circuit and environment does not exceed the lower ratings; and that rating labels elsewhere on the product are replaced with one describing the lower rating. Failure to do so may cause property damage, injury or death.

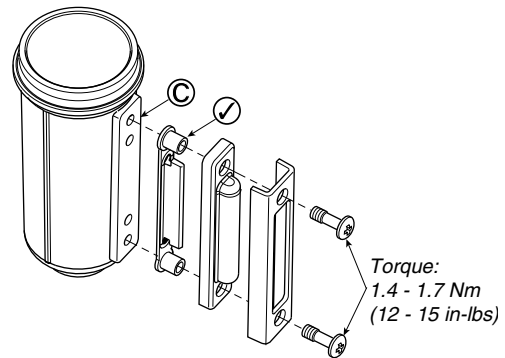
2. After installation or service, apply system pressure and check for air leaks. If leakage occurs, **DO NOT OPERATE** — conduct repairs again.



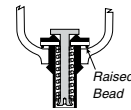
- ① Lightly grease with provided lubricant.
- ✓ Inspect for nicks, scratches, and surface imperfections. If present, reduced service life is probable and future replacement should be planned.
- Ⓒ Clean with lint-free cloth.

## Kits Available

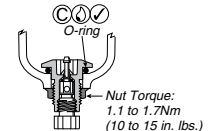
Model	Economy Filter	Economy Lubricator	Compact Filter	Compact Lubricator	Standard Filter	Standard Lubricator
<b>Polycarbonate Bowl Kits</b>						
Auto Drain	—	—	PS722	—	PS822	—
Auto Pulse Drain	PS995	—	—	—	—	—
Push "N" Drain	PS904	—	PS704	—	PS804	—
Twist Drain	PS932	PS917	PS732	PS717	PS832	PS817
Semi Auto Drain	PS992	—	—	—	—	—
Pressure Fill	—	PS919	—	PS719	—	PS819
Remote Fill	—	—	—	PS728	—	PS828
No Drain	—	PS946	—	PS746	—	PS846
<b>Metal Bowl Kits</b>						
Auto Drain	—	—	PS726	—	PS826	—
Auto Pulse Drain	PS997	—	—	—	—	—
Push "N" Drain	PS925	—	PS725	—	PS825	—
Twist Drain	PS934	PS933	PS734	PS733	PS834	PS833
Semi Auto Drain	PS994	—	—	—	—	—
Pressure Fill	—	PS927	—	PS727	—	PS827
Sight Gauge & Auto Drain	PS923	—	PS723	—	PS823P	—
Sight Gauge & Twist Drain	PS935	PS929	PS735	PS729	PS835	PS829
Sight Gauge & Push "N" Drain	PS906	—	PS706	—	PS806	—
Sight Gauge & Semi Auto Drain	PS993	—	—	—	—	—
Sight Gauge & Pressure Fill	—	PS920	—	PS720	—	PS820
<b>Drain Kits</b>						
Auto Pulse Drain	PS998	—	—	—	—	—
Push "N" Drain	PS513	PS513	PS513	PS513	PS513	PS513
Twist Drain	PS512	PS512	PS512	PS512	PS512	PS512
<b>Bowl Guard Kit</b>	PS905	PS905	PS705	PS705	PS805	PS805
<b>Bowl Insert Kit</b>	PS796	PS796	PS796	PS796	PS796	PS796
<b>Pressure Fill Adapter Kit</b>	—	PS916	—	PS716	—	PS716
<b>Sight Gauge Kit</b>	PS914	PS914	PS914	PS914	PS914	PS914



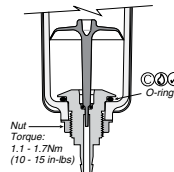
Economy (PS914)



Push-N-Drain (PS513)



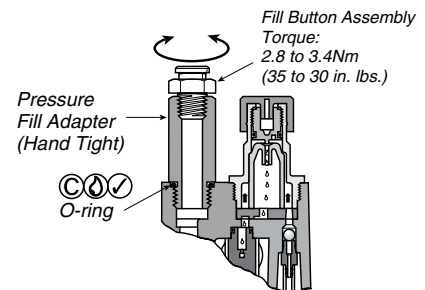
Twist Drain (PS512)



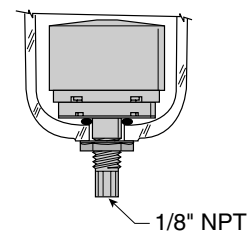
Auto Pulse Drain (PS995, PS997, PS998)



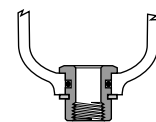
Semi Auto Drain (PS992, PS993, PS994)



Pressure Fill Adapter (PS916, PS716, & PS816)



Auto Drain (PS722, & PS822)



Bowl Insert Kit (PS796)

**Pneumatic Division**  
Richland, Michigan 49083  
269-629-5000

**Installation and Service Instructions:**  
**2FL102**

**Threaded Collar**

**ISSUED: November, 2003**  
**Supersedes: March, 1995**

Doc.# 2FL102, ECN# 030539, Rev. 1

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## **Introduction**

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## **Application Limits**

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### **Regulator (06/07 Collar)**

Maximum Temperature	80°C (175°F)
Minimum Temperature	0°C (32°F)

### **Metal Bowl (06/07 Collar)**

Maximum Temperature	80°C (175°F)
Minimum Temperature	0°C (32°F)

### **Polycarbonate Bowl (06/07 Collar)**

Maximum Temperature	52°C (125°F)
Minimum Temperature	0°C (32°F)

### **Regulators**

Operating Pressure Maximum	kPa	PSIG	bar
06 Plastic Collar	1700	250	17
07 Plastic Collar	Not Used		
07 Metal Collar	Not Used		

### **Lubricators (Metal Bowl)**

Operating Pressure Maximum	kPa	PSIG	bar
06 Plastic Collar	1700	250	17
07 Plastic Collar	Not Used		
07 Metal Collar	1700	250	17

### **Lubricators (Polycarbonate Bowl)**

Operating Pressure Maximum	kPa	PSIG	bar
06 Plastic Collar	1000	150	10.3
07 Plastic Collar	1000	150	10.3
07 Metal Collar	Not Used		

### **Filters (Metal Bowl)**

Operating Pressure Maximum	kPa	PSIG	bar
06 Plastic Collar	1700	250	17
07 Plastic Collar	Not Used		
07 Metal Collar	1700	250	17

### **Filters (Metal Bowl Plastic DPI Retaining Ring)**

Operating Pressure Maximum	kPa	PSIG	bar
06 Plastic Collar	1000	150	10.3
07 Plastic Collar	Not Used		
07 Metal Collar	1000	150	10.3

### **Filters (Metal Bowl Metal DPI Retaining Ring)**

Operating Pressure Maximum	kPa	PSIG	bar
06 Plastic Collar	1700	250	17
07 Plastic Collar	Not Used		
07 Metal Collar	1700	250	17

### **Filters (Polycarbonate Bowl)**

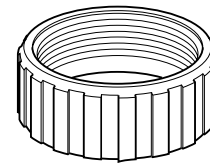
Operating Pressure Maximum	kPa	PSIG	bar
06 Plastic Collar	1000	150	10.3
07 Plastic Collar	1000	150	10.3
07 Metal Collar	Not Used		

## **Service**

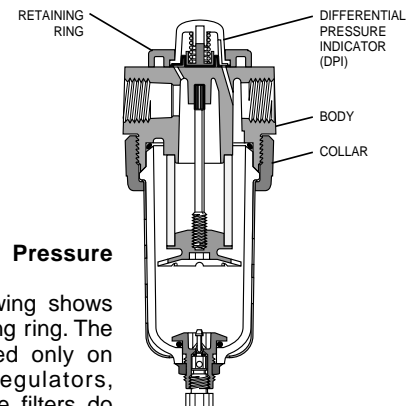
Shut off air supply and depressurize the unit. Loosen and remove the threaded collar. Remove sight gauge when replacing collar used on metal bowl with sight gauge. Install new collar. Secure sight gauge to metal bowl using 1.4 to 1.7 Nm (12 to 15 in. lbs. torque. Tighten 06 filter/lubricator collar 3.2 to 3.6 Nm (28 to 32 in. lbs. torque. Tighten 07 filter/lubricator collar to 5.4 to 5.9 Nm (48 to 52 in. lbs. torque. Tighten 06/07 regulator collar hand tight plus 1/4 turn.

Apply system pressure and check for air leaks. Repeat all steps (including shut off and depressurization) if leaks occur.

## **Threaded Collar**



## **Coalescing Filter**



### **NOTE: DPI (Differential Pressure Indicator)**

The coalescing filter drawing shows the location of DPI retaining ring. The DPI retaining ring is used only on coalescing filters. Regulators, lubricators, and particulate filters do not use a DPI retaining ring.

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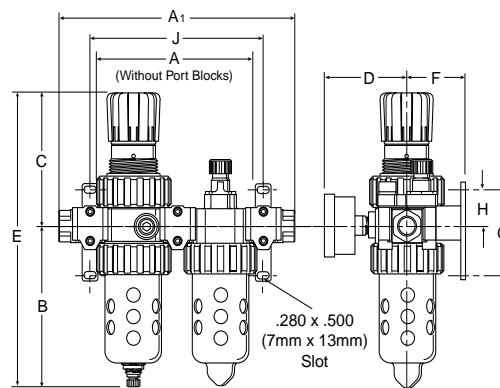
To avoid polycarbonate bowl rupture that can cause personal injury or property damage, do not exceed bowl pressure or temperature ratings. Polycarbonate bowls have a 150 PSIG pressure rating and a maximum temperature rating of 125°F.

## Safety Guide

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## Introduction

Follow these instructions when installing, operating, or servicing the product.



### 05 Series

<b>A</b> 4.33 (110)	<b>A<sub>1</sub></b> 6.38 (162)	<b>B</b> 5.35 (136)	<b>C</b> 3.15 (80)	<b>D</b> 2.05 (52)	<b>E</b> 8.50 (216)
<b>F</b> 1.45 (37)	<b>G</b> 2.60 (66)	<b>H</b> 1.14 (29)	<b>J</b> 4.72 (120)		

### 06 Series

<b>A</b> 6.10 (155)	<b>A<sub>1</sub></b> 9.04 (230)	<b>B</b> 5.69 (145)	<b>C</b> 4.69 (119)	<b>D</b> 3.18 (81)	<b>E</b> 10.38 (264)
<b>F</b> 2.00 (51)	<b>G</b> 3.58 (91)	<b>H</b> 1.40 (36)	<b>J</b> 6.65 (169)		

### 07 Series

<b>A</b> 7.00 (178)	<b>A<sub>1</sub></b> 10.28 (261)	<b>B</b> 6.97 (177)	<b>C</b> 4.79 (122)	<b>D</b> 3.44 (87)	<b>E</b> 11.76 (299)
<b>F</b> 2.18 (55)	<b>G</b> 3.58 (91)	<b>H</b> 1.40 (36)	<b>J</b> 7.51 (191)		

Inches (mm)

- All dimensions nominal.

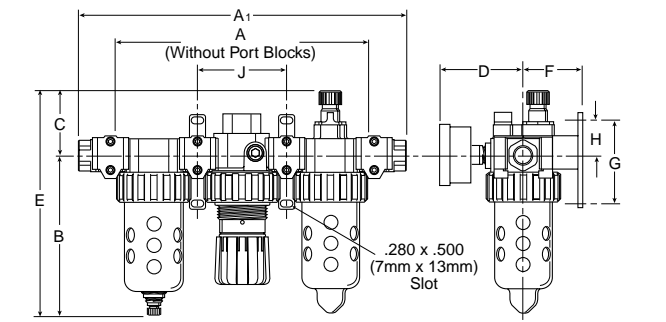
## ⚠ WARNING

**FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.**

This document and other information from The Company, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application, including consequences of any failure and review the information concerning the product or systems in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by The Company and its subsidiaries at any time without notice.

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05 Series					
A 6.70 (170)	A <sub>1</sub> 8.72 (222)	B 5.35 (136)	C 2.24 (57)	D 2.05 (52)	E 7.59 (193)
F 1.45 (37)	G 2.60 (66)	H 1.14 (29)	J 2.35 (600)		
06 Series					
A 9.46 (240)	A <sub>1</sub> 12.39 (315)	B 5.69 (145)	C 2.24 (57)	D 3.18 (81)	E 7.82 (199)
F 2.00 (51)	G 3.58 (91)	H 1.40 (36)	J 3.33 (85)		
07 Series					
A 10.750 (273)	A <sub>1</sub> 14.03 (356)	B 6.97 (177)	C 2.41 (61)	D 3.44 (87)	E 9.27 (235)
F 2.18 (55)	G 3.58 (91)	H 1.40 (36)	J 3.76 (95)		

Inches (mm)  
• All dimensions nominal.

Installation

Attach inner clamp to wall bracket using the screw provided. See Figures 1 & 2 for screw torque values. Mount wall bracket to wall using spacing shown in Figure 3. The wall brackets are designed to use 1/4 inch screws. Attach the port blocks to pipe threads using a small amount of thread sealant. Position the port blocks with two bumps pointing down (06 & 07 Series). The unit will leak if the port blocks are not positioned properly. Assemble each inner and outer clamp with the tube seal and spacer installed as shown. The inner and outer clamp must be installed with proper orientation as shown in Figures 1 & 2. Install the clamp screws with one thread of engagement. Position the filter, regulator, or lubricator with the angled surface of body ears engaged with the angled surface of the inner and outer clamp. The regulator must be installed with knob pointing down. The filter/regulator must be installed with the knob pointing up. Tighten the clamp screws alternating between the two screws per connector until both screws are snug. Check the alignment of each body to verify fit between body and clamp. The bottom flange of the inner and outer clamp must be positioned below the bottom edge of the body. Pressurize the assembly and check for air leaks. If air leaks are found, depressurize the unit. Loosen the outer clamp and check fit between the body and clamps. Retighten the screws and check for air leaks.

Removal

Disconnect air supply and depressurize all air lines before removing any modular units.

**WARNING**  
**Loosening the outer clamp screws may cause the filter, regulator, lubricator, or accessory to dislodge and fall. It is important to take necessary precautions when loosening the outer clamp screws to prevent the unit from falling and causing injury.**

Loosen the outer clamp screws 8-9 turns. It is not necessary to completely remove the screws. Slide the unit down until it disconnects from the clamps. It may be necessary to pull the outer clamp out when removing one of the units from the assembly.

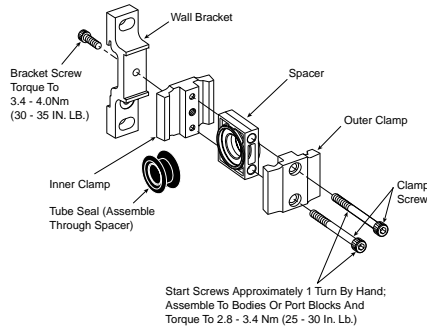


Figure 1 (05 Series)

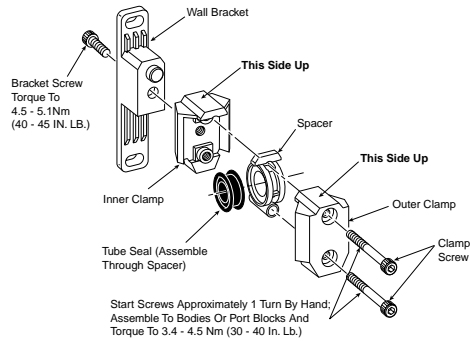


Figure 2 (06-07 Series)

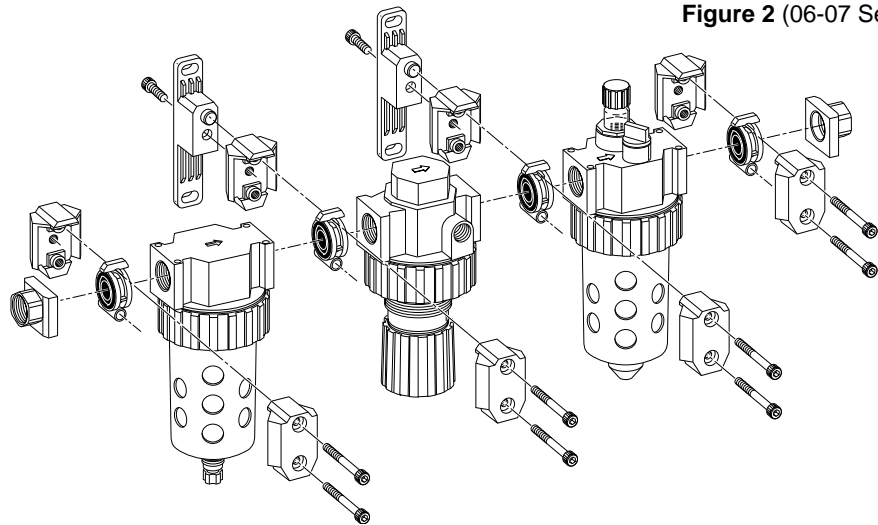


Figure 3 (06-07 Series)



**⚠ WARNING**

To avoid unpredictable system behavior that can cause personal injury and property damage:

- **Disconnect electrical supply (when necessary) before installation, servicing, or conversion.**
- **Disconnect air supply and depressurize all air lines connected to this product before installation, servicing, or conversion.**
- **Operate within the manufacturer's specified pressure, temperature, and other conditions listed in these instructions.**
- **Medium must be moisture-free if ambient temperature is below freezing.**
- **Service according to procedures listed in these instructions.**
- **Installation, service, and conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.**
- **After installation, servicing, or conversion, air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or the product does not operate properly, do not put into use.**
- **Warnings and specifications on the product should not be covered by paint, etc. If masking is not possible, contact your local representative for replacement labels.**

## Installation

1. The valve should be installed with reasonable accessibility for service whenever possible - a repair service kit is available. Keep pipe or tubing lengths to a minimum with inside clean and free of dirt and chips. Pipe joint compound should be used sparingly and applied only to the male pipe - never into the female port. Do not use PTFE tape to seal pipe joints - pieces have a tendency to break off and lodge inside the unit, possibly causing malfunction.
2. Install valve so that air flow is in the direction of arrow. Installation must be upstream from devices it is to service (e.g. lubricator, valve, cylinder, or tool), and mounted closely to these devices. Mounting may be in any position.
3. Installing a filter upstream of the valve (as close to the unit as possible) will provide added protection against rust, pipe scale, and other foreign matter.

## Introduction:

Follow these instructions when installing, operating, or servicing the product.

## Application Limits

These products are intended for use in general purpose compressed air systems only and must not be subjected to conditions outside of the following ratings:

**Maximum Inlet Pressure:** 1720 kPa; 250 PSIG; 17.2 bar

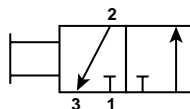
**Ambient Temperature Range:** 0°C to 80°C (32°F to 175°F)

## Symbol

1 - Inlet

2 - Outlet to System

3 - Exhaust



Lockout Valve - 2-Position; 3-Way

**⚠ WARNING**

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## Operation (05)

**⚠ CAUTION: Shackle size of lock must be 7.1mm (9/32 inch) in diameter or smaller.**

**Lockout Operation** - With handle turned across the valve body the inlet port is blocked. Outlet port is open to exhaust. A padlock may be inserted through one of the two holes in the handle.

**Normal Flow Operation** - Turn handle to be in line with the body, to open valve. Inlet port is open to pressurize downstream air line.

## Service Procedures

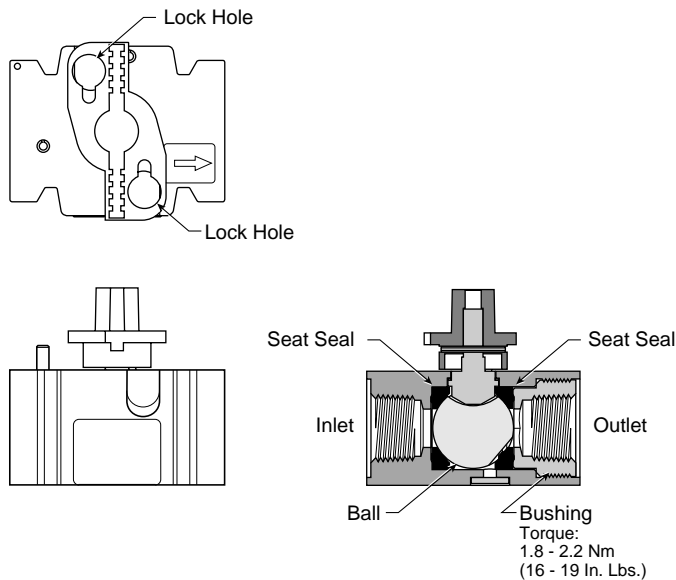
**⚠ CAUTION: Shut off air supply and exhaust the pressure trapped within the valve.**

1. Remove valve from the air system by removing the modular clamps, or unscrewing from the attached pipes.
2. Disassemble valve by removing brass bushing in end of body with 9mm (3/8") hex wrench.
3. Remove two seals and ball. Clean and inspect parts for signs of excessive wear, nicks, scratches, or other damage. If necessary, replace seals and ball (see **Service Kit** section).
4. Assemble in reverse order of the procedure used to disassemble.
5. Attach lockout valve to modular FRL assembly using the modular clamps and their screws. (Attach valve using the port pipe threads if the modular FRL assembly is not part of the air system.) Then test unit for leakage and function.

## Service Kit Available

Seal Kit

PS983



**Valve Shown is in its Lockout  
(Inlet Flow Blocked) Position**

## Operation (06 & 07)

**⚠ CAUTION: Shackle size of lock must be 1/4 inch in diameter or larger. Use of smaller size shackles may allow some air flow to downstream devices.**

**Lockout Operation** - With slide (arrow end) pushed in to contact body, inlet port is blocked. Outlet port is open to exhaust. A padlock insertion hole is exposed for customer use.

**Slow Flow Operation** - Push slide in opposite direction until tab on slide contacts the body. Inlet port will now be open to outlet port, but flow rate will be much slower than that of normal flow operation. This slow fill rate may be increased by punching or drilling out one or both of the blind holes in the slide.

**Normal Flow Operation** - Press tab on slide to disengage the detent and push slide in until flange contacts body to achieve full flow. Inlet port is open to outlet port to pressurize downstream air line.

**Lubrication** - Since these valves are pre-lubricated during assembly, no lubrication is necessary as a general rule.

**Recommended Lubricant** - After 10,000 cycles (or if valve becomes difficult to shift) clean and inspect o-rings and slide (see item 3 in Service Procedure section). Then lubricate o-rings and slide with Texaco Marfak Multi-purpose 2 grease.

## Service Procedures

**⚠ CAUTION: Shut off air supply and exhaust the pressure trapped within the valve.**

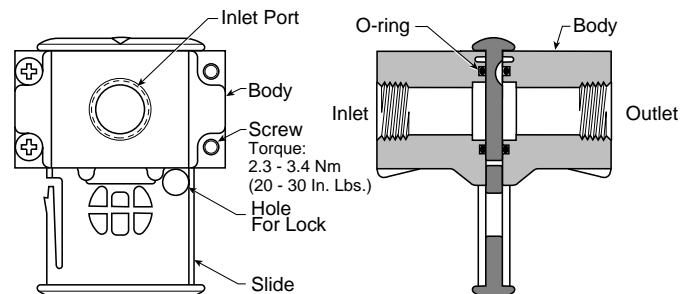
1. Remove valve from the air system by removing the modular clamps, or unscrewing from the attached pipes.
2. Disassemble valve by removing the four screws which secure the two body halves together.
3. Remove slide and o-rings. Clean and inspect parts for signs of excessive wear, nicks, scratches, or other damage. If necessary, replace slide and o-rings (see **Service Kit** section).
4. Lightly lubricate o-rings and slide using the grease supplied with the service kit.
5. Mount slide with the flow direction arrow on top. The arrow on the slide indicates the direction of air flow.
6. Tighten screws until the two body halves are firmly drawn together.
7. Attach lockout valve to modular FRL assembly using the modular clamps and their screws. (Attach valve using the port pipe threads if the modular FRL assembly is not part of the air system.) Then test unit for leakage and function.

If you have questions concerning how to service this unit, contact your local authorized dealer or your customer service representative.

## Service Kit Available

Seal Kit

PS783



**Valve Shown is in its Lockout  
(Inlet Flow Blocked) Position**

## ⚠ WARNING

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- Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
- Disconnect air supply and depressurize all air lines connected to this product before installation, servicing, or conversion.
- Operate within the manufacturer's specified pressure, temperature, and other conditions listed in these instructions.
- Medium must be moisture-free if ambient temperature is below freezing.
- Service according to procedures listed in these instructions.
- Installation, service, and conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
- After installation, servicing, or conversion, air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or the product does not operate properly, do not put into use.
- Warnings and specifications on the product should not be covered by paint, etc. If masking is not possible, contact your local representative for replacement labels.

## ⚠ CAUTION

Do not restrict the inlet of valves having an internal pilot supply. Pressure supply piping must be the same size as the inlet port or larger to insure that the pilot valve receives sufficient pressure supply during high flow conditions.

## ⚠ CAUTION

Do not use synthetic, reconstituted, or oils with an alcohol content or detergent additive.

## Safety Guide

For more complete information on recommended application guidelines, see the Safety Guide section of Pneumatic Division catalogs or you can download the **Pneumatic Division Safety Guide** at: [www.parker.com/safety](http://www.parker.com/safety)

## Introduction

Follow these instructions when installing, operating, or servicing the product.

## Application Limits

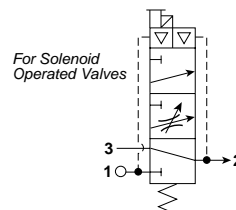
These products are intended for use in general-purpose compressed air systems only.

<b>Operating Pressure:</b>	kPa	PSIG	bar
<b>Maximum Inlet Pressure</b>	1035	150	4.0
<b>Minimum Inlet Pressure</b>	210	30	2.0

**Ambient Temperature Range:** 4°C to 54°C (40°F to 130°F)

**Voltage Range:** Rated Voltage +10%, -15%

## ANSI Symbol



## Installation

The Soft Start valve replaces an ordinary main valve; therefore, it is usually mounted between the air preparation unit and the system. The Soft Start valve is specifically designed to mount directly in line with the 06 / 07 Series PREP-AIR II Modular Air Preparation Units using modular body connectors.

06 or 07 valves should be installed with reasonable accessibility for service whenever possible. Keep pipe or tubing lengths to a minimum with inside clean and free of dirt and chips. Pipe joint compound should be used sparingly and applied only to the male pipe — never into the female port. Do not use PTFE tape to seal pipe joints — pieces have a tendency to break off and lodge inside the unit, possibly causing malfunction. Care should be taken to avoid undue strain on the valve.

Air applied to the valve must be filtered with a 40 micron filter to realize maximum component life.

**Factory Pre-Lubrication** - 06S valves are pre-lubricated at assembly with a petroleum based grease which has a PTFE content. 07S valves are pre-lubricated at assembly with a synthetic based grease.

**⚠ CAUTION:** Do not restrict the inlet of valves having an internal pilot supply. Pressure supply piping must be the same size as the inlet port or larger to insure that the pilot valve receives sufficient pressure supply during high flow conditions.

## ⚠ WARNING

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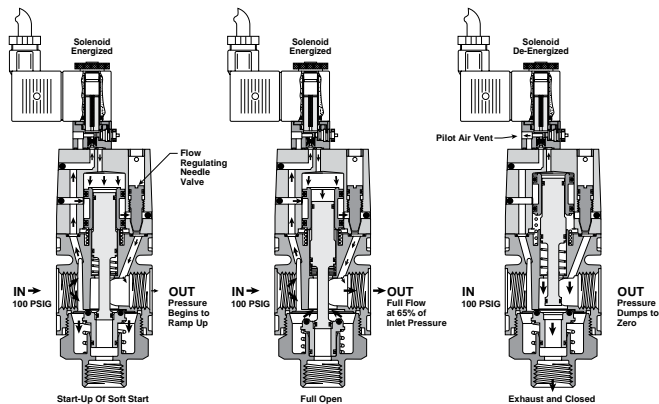
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## Function

The Soft Start valve is a 3-Port valve which supplies air in a controlled reliable manner to pneumatic systems and has the quick exhaust features of a dump valve. This valve replaces conventional main valves.

The Soft Start valve operates much like a standard 3-Way valve. When the valve is installed Port 2 is connected to Port 3 (downstream system is exhausted to atmosphere). When a signal is received at the pilot operator, the connection between Port 2 and 3 is closed. At the same time, supply air from Port 1 is connected to Port 2 through the adjustable throttle, (Adjustment Needle).

When the downstream pressure reaches a specific point, the main poppet opens and permits full air flow through the valve. The table shows the relationship between the inlet pressure and the downstream pressure at which the main valve opens.



Inlet Pressure	Downstream Pressure for Full Flow
75 PSIG	50 PSIG
100 PSIG	55 PSIG
125 PSIG	60 PSIG
150 PSIG	65 PSIG

When the pilot signal is removed, the valve returns to its initial position and the downstream air is dumped rapidly through Port 3.

## Port Connections

1. Connect inlet air supply to Port 1.
2. Connect mufflers (or plumb exhaust) from Port 3.
3. Connect cylinder Port 2 to cylinder or other system devices to be supplied air.
4. Signal Connection - Soft Start valves may be remotely controlled electrically.
  - a. For solenoid pilot operated valves, see the instructions under "WIRING INSTRUCTIONS."

## Wiring Instructions

**⚠ CAUTION:** An interruption of 10 milliseconds or greater to the power supplied to the solenoid of a solenoid operated valve may cause the valve to shift. Provision must be made to prevent power interruption of this duration to avoid unintended, potentially hazardous, consequences.

**NOTE:** In addition to the following instructions, follow all requirements for local and national electrical codes.

Attach an electrical cable with connector (that conforms to the DIN 43650, Form B pattern) to the terminals of the solenoid. Do not attach or remove the connectors until power is off.

## Electrical Connection

Valves with 3-Pin male terminals should have power connected to the parallel terminals. Ground should be connected to the perpendicular terminal. Use only connectors that comply with DIN 43650, Form B (11 mm blade spacing).

## Override Operation

The flush non-locking manual override is located on the body of the solenoid pilot. To operate the override, push in on the override until the solenoid pilot actuates. The solenoid pilot will remain actuated until the override is released. When released, the solenoid pilot de-actuates.

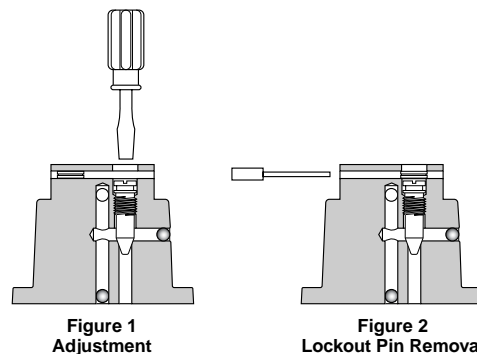
## Adjustment

The filling speed and pressurization of downstream circuit is accomplished by a Needle Valve located in the Cover (See Figure 1). Adjustment is performed using a standard flat blade screwdriver as indicated in Figure 1. Adjustments can be made by performing start-up test and adjusting the Needle Valve from zero to a maximum of 4 turns open until desired equipment speed is reached.

**⚠ Caution:** Do not turn needle valve more than 4 turns out from closed position as it is a pressure circuit and could blow out with force.

The adjustment of the initial airflow rate into the downstream side of the soft-start valve is done with the Needle Valve. Turning Needle Valve counterclockwise will decrease amount of time to fill downstream circuit. Turning Needle Valve clockwise will increase amount of time to fill downstream circuit.

Once the desired start-up speed of the downstream circuit has been reached, the adjustment area can be blocked off to prevent tampering by inserting the Lockout Pin provided in the package. Any further adjustments will require the removal of the Lockout Pin as shown in Figure 2.



## Solenoid Replacement

To replace the solenoid, remove the solenoid nut and pull solenoid off and replace with the correct voltage solenoid. Replace solenoid nut and tighten finger tight. See Figure 3.

Voltage	Coil No.
24VDC	2EV103
110VAC	2EV105

## Service

**⚠ Caution:** Disconnect or shut off air supply and exhaust pressure before servicing unit.

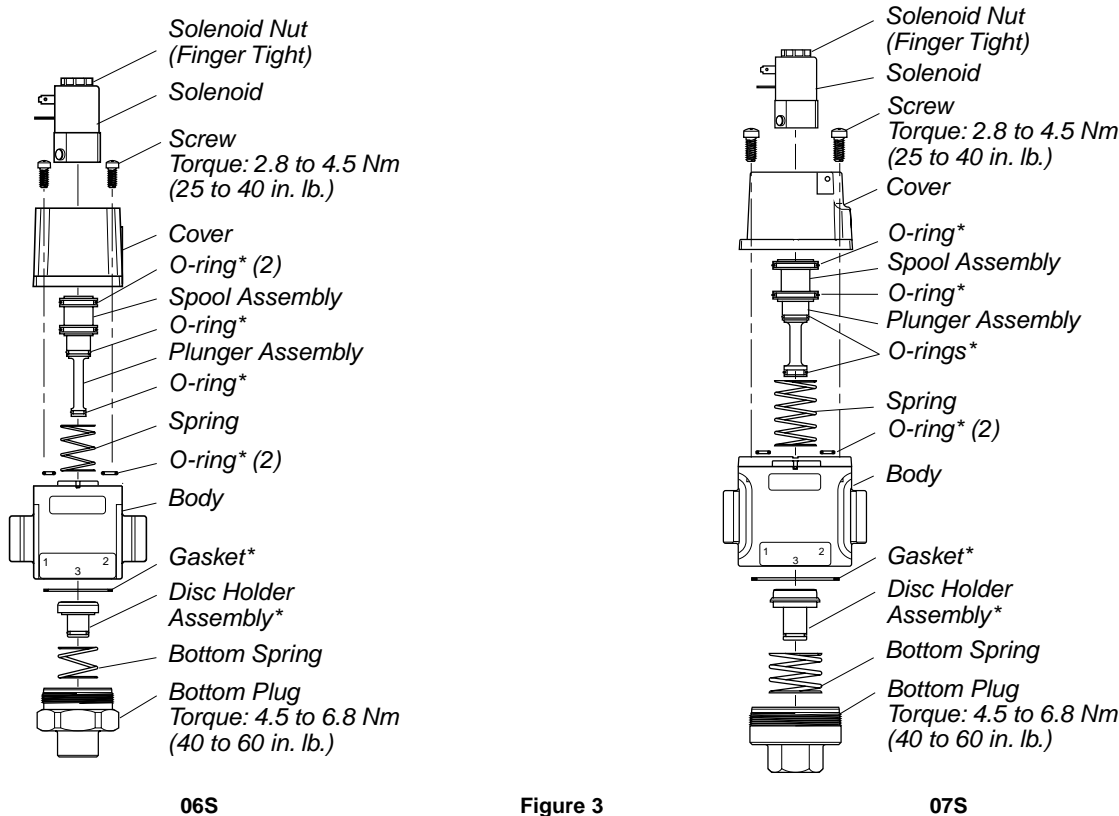
**⚠ Caution:** Grease packets are supplied with kits for lubrication of seals. See Factory Pre-lube on Sheet 1. Do not use silicones.

**Note:** After servicing unit, turn on air supply and check for leaks. If leakage occurs, do not operate – conduct repairs and retest.

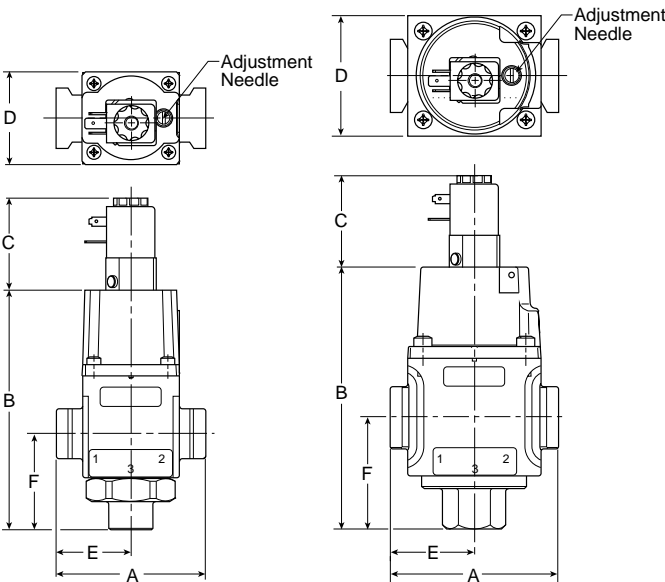
**Note:** Items marked with an \* are included in the service kit.

1. Remove the four Screws that retain the Cover and remove Cover. Next remove Plunger with Seals from Body.
2. Remove Bottom Plug by unscrewing it from the Body. Next remove Bottom Spring, Disc Holder Assembly and Gasket.

3. Clean, and carefully inspect parts for wear and / or damage. If replacement is necessary, use parts from service kit.
4. Lubricate O-rings and U-cup with grease (supplied with kit).
5. Install Gasket into Body. Then install Disc Holder, Bottom Spring and Bottom Plug in to Body. See Figure 3 for torque value.
6. Install Plunger with Seals into the Body. Install two O-rings between Body and Cover (make sure air passages are aligned properly), install four Screws and tighten per Figure 3.



Dimensions

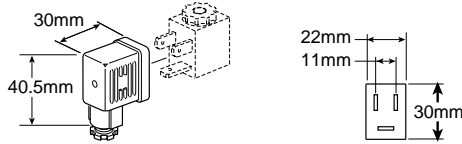


Dimensions:

Model	Port Size	A	B	C	D	E	F
06S	3/8"	3.36 85 mm	5.40 137 mm	2.07 53 mm	2.08 53 mm	1.68 43 mm	2.17 55 mm
07S	1/2"	3.81 96 mm	5.96 151 mm	2.07 53 mm	2.74 70 mm	1.91 48 mm	2.54 65 mm

**Engineering Data:**

Conductors:..... 2 Poles Plus Ground  
 Cable Range  
 (Connector Only):.....6 to 8mm (0.24 to 0.31 Inch)  
 Contact Spacing:..... 11mm

**22mm Rectangular 3-Pin**

Connector	Connector with 6' (2m) Cord	Description
<b>PS2429P</b>	PS2429JP	Unlighted
<b>PS243079P</b>	PS2430J79P*	Light – 24VDC
<b>PS243083P</b>	PS2430J83P*	Light – 120V/60Hz

\* LED with surge suppression.

**Note:** Max ø6.5mm cable size required for connector w/o 6' (2m) cord.  
 IP65 rated when properly installed.

**Accessories**

Kit No.	Description
PS754P	06 Series Modular Body Connectors
PS854P	07 Series Modular Body Connectors
ES50MB	1/2" Exhaust Muffler
ES75MB	3/4" Exhaust Muffler

**Service Kits Available:**

Description	06S	07S
Service Kit	PHRKSC75	PHRKSC105

There may be extra parts in the kit.

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## Introduction

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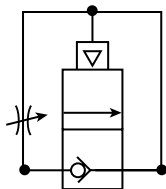
## Application Limits

These products are intended for use in general-purpose compressed air systems only. These units should not be used as shut-off valves, as they do not shut off completely and must always be placed after a shut-off valve.

<b>Operating Pressure:</b>	<b>kPa</b>	<b>PSIG</b>	<b>bar</b>
<b>Maximum Inlet Pressure</b>	1035	150	4.0
<b>Minimum Inlet Pressure</b>	210	30	2.0

**Ambient Temperature Range:** 4°C to 54°C (40°F to 130°F)

## Symbol



## Installation

The Auto-Pilot Soft Start valves should be installed with reasonable accessibility for service and adjusting needle valve with a screwdriver. Keep pipe or tubing lengths to a minimum with inside clean and free of dirt and chips. Pipe joint compound should be used sparingly and applied only to the male pipe –

never into the female port. Do not use PTFE tape to seal pipe joints – pieces have a tendency to break off and lodge inside the unit, possibly causing malfunction. Care should be taken to avoid undue strain on valve.

Air applied to the valve must be filtered with a 40 micron filter to realize maximum component life.

**Life Expectancy** - Normal multi-million cycle life expectancy of these valves is based on the use of properly filtered and lubricated air at room temperature. These valves are also designed to operate under non-lubricated conditions and will yield millions of maintenance free cycles.

**Factory Pre-Lubrication** - Valves are pre-lubricated at assembly with a petroleum based grease which has a lithium content.

**In-Service Lubrication** - In-service lubrication is not required; however, if lubrication is to be used, F442 oil is recommended. This oil is specially formulated to provide peak performance and maximum service life from all air operated equipment. Otherwise, use an air line lubricant (compatible with Nitrile & Polyurethane seals) which will readily atomize and be of the medium aniline type. Aniline point range must be between 180° and 220°F. Viscosity at 100°F: 140 - 170 SUS.

**⚠ CAUTION: Do not use synthetic, reconstituted, or oils with an alcohol content or detergent additive.**

**⚠ CAUTION: Do not restrict the inlet of valves having an internal pilot supply. Pressure supply piping must be the same size as the inlet port or larger to insure that the pilot valve receives sufficient pressure supply during high flow conditions.**

## Function

When pressure is supplied to the inlet port, gradual filling of the downstream system occurs through the adjustable needle valve. Upon reaching 70% of the supply pressure, the valve switches from metered flow to full flow. The ramp up time to reach 70% of supply pressure is adjustable via the needle valve in the cover (See Figure 1).

**⚠ WARNING**

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This document and other information from The Company, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application, including consequences of any failure and review the information concerning the product or systems in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

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## Adjustment

The filling speed and pressurization of downstream circuit is accomplished by a Needle Valve located in the Cover (See Figure 1). Adjustment is performed using a standard flat blade screwdriver as indicated in Figure 1. Adjustments can be made by performing start-up test and adjusting the Needle Valve from zero to a maximum of 4 turns open until desired equipment speed is reached.

**⚠ Caution: Do not turn needle valve more than 4 turns out from closed position as it is a pressure circuit and could blow out with force.**

The adjustment of the initial airflow rate into the downstream side of the soft-start valve is done with the Needle Valve. Turning Needle Valve counterclockwise will decrease amount of time to fill downstream circuit. Turning Needle Valve clockwise will increase amount of time to fill downstream circuit.

Once the desired start-up speed of the downstream circuit has been reached, the adjustment area can be blocked off to prevent tampering by inserting the Lockout Pin provided in the package. Any further adjustments will require the removal of the Lockout Pin as shown in Figure 2.

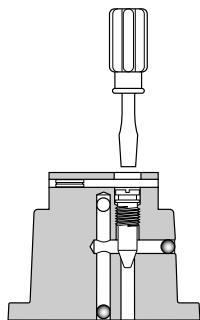


Figure 1  
Adjustment

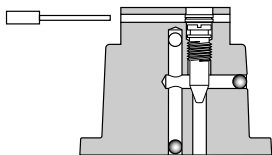
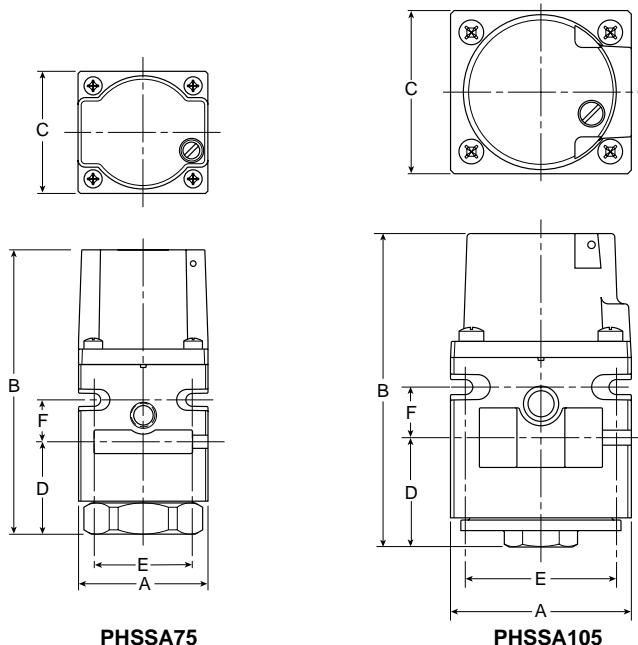


Figure 2  
Lockout Pin Removal

## Dimensions:



Model	Port Size	A	B	C	D	E	F
PHSSA75	3/8"	2.19 (56)	4.72 (120)	2.06 (52)	1.50 (38)	1.66 (42)	.72 (18)
PHSSA105	1/2"	3.03 (77)	5.25 (133)	2.75 (70)	1.84 (47)	2.53 (64)	.84 (21)

Inches (mm)

## Service

**⚠ Caution: Disconnect or shut off air supply and exhaust pressure before servicing unit.**

**⚠ Caution: Grease packets are supplied with kits for lubrication of seals. Use only mineral based grease or oils. Do not use synthetic oils such as esters. Do not use silicones.**

**Note:** After servicing unit, turn on air supply and check for leaks. If leakage occurs, do not operate – conduct repairs and retest.

**Note :** Items marked with an \* are included in the service kit.

1. Remove the four Screws that retain the Cover and remove Cover. Next remove Plunger with Seals from Body.
2. Remove Bottom Plug by unscrewing it from the Body. Next remove Bottom Spring, Disc Holder Assembly and Gasket.
3. Clean, and carefully inspect parts for wear and / or damage. If replacement is necessary, use parts from service kit.
4. Lubricate O-rings and U-cup with grease (supplied with kit).
5. Install Gasket into Body. Then install Disc Holder, Bottom Spring and Bottom Plug in to Body. See Figure 3 for torque value.
6. Install Plunger with Seals into the Body. Install two O-rings between Body and Cover (make sure air passages are aligned properly), install four Screws and tighten per Figure 3.

## Service Kits Available:

Description	PHSSA75	PHSSA105
Service Kit	PHRKSS75	PHRKSS105

There may be extra parts in the kit.

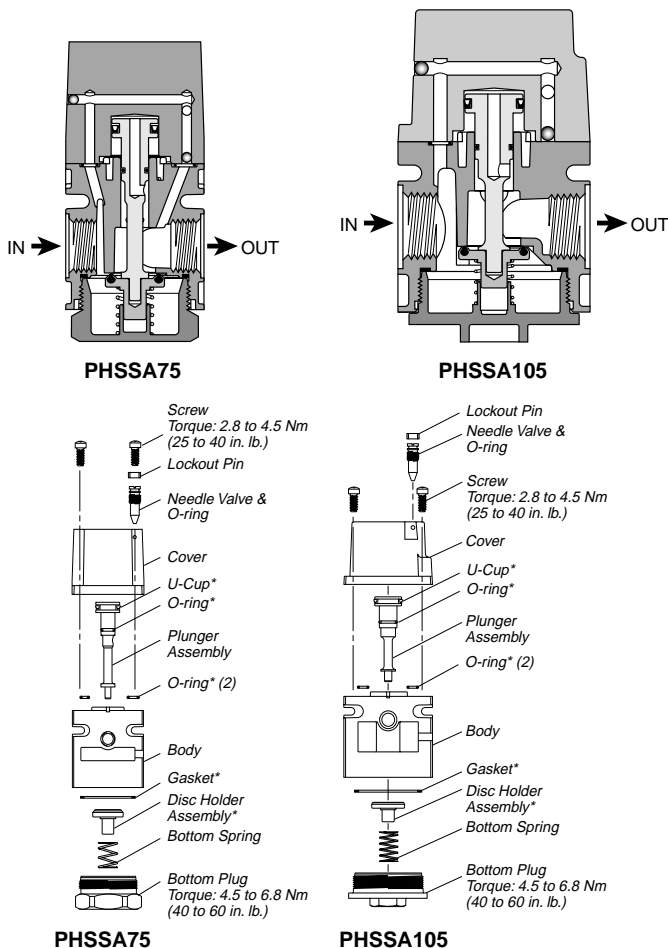


Figure 3



## **WARNING**

To avoid unpredictable system behavior that can cause personal injury and property damage:

- Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
- Disconnect air supply and depressurize all air lines connected to this product before installation, servicing, or conversion.
- Operate within the manufacturer's specified pressure, temperature, and other conditions listed in these instructions.
- Medium must be moisture-free if ambient temperature is below freezing.
- Service according to procedures listed in these instructions.
- Installation, service, and conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
- After installation, servicing, or conversion, air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or the product does not operate properly, do not put into use.
- Warnings and specifications on the product should not be covered by paint, etc. If masking is not possible, contact your local representative for replacement labels.

## Introduction

Follow these instructions when installing, operating, or servicing the product.

## Application Limits

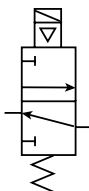
These products are intended for use in general-purpose compressed air systems only.

Operating Pressure:	kPa	PSIG	bar
Maximum Inlet Pressure	1035	150	4.0
Minimum Inlet Pressure	210	30	2.0

**Ambient Temperature Range:** 4°C to 54°C (40°F to 130°F)

**Voltage Range:** Rated Voltage +10%, -15%

## Symbol



## Installation

The Solenoid Quick Exhaust valves should be installed with reasonable accessibility for service. Keep pipe or tubing lengths to a minimum with inside clean and free of dirt and chips. Pipe joint compound should be used sparingly and applied only to the male pipe – never into the female port. Do not use PTFE tape to seal pipe joints – pieces have a tendency to break off and lodge inside the unit, possibly causing malfunction. Care should be taken to avoid undue strain on valve.


Air applied to the valve must be filtered with a 40 micron filter to realize maximum component life.

**Life Expectancy** - Normal multi-million cycle life expectancy of these valves is based on the use of properly filtered and lubricated air at room temperature. These valves are also designed to operate under non-lubricated conditions and will yield millions of maintenance free cycles.

**Factory Pre-Lubrication** - Valves are pre-lubricated at assembly with a petroleum based grease which has a lithium content.

**In-Service Lubrication** - In-service lubrication is not required; however, if lubrication is to be used, F442 oil is recommended. This oil is specially formulated to provide peak performance and maximum service life from all air operated equipment. Otherwise, use an air line lubricant (compatible with Nitrile & Polyurethane seals) which will readily atomize and be of the medium aniline type. Aniline point range must be between 180° and 220°F. Viscosity at 100°F: 140 - 170 SUS.

 **CAUTION: Do not use synthetic, reconstituted, or oils with an alcohol content or detergent additive.**

 **CAUTION: Do not restrict the inlet of valves having an internal pilot supply. Pressure supply piping must be the same size as the inlet port or larger to insure that the pilot valve receives sufficient pressure supply during high flow conditions.**

## Accessories

Kit No.	Description
<b>Metal Mufflers</b>	
ES50MB 1/2"	Exhaust Muffler - PHS75
ES75MB 3/4"	Exhaust Muffler - PHS105
<b>Plastic Mufflers</b>	
ASN-15 1/2"	Exhaust Muffler - PHS75

## Function

The Solenoid Quick Exhaust valve is a 3-Port normally closed 3-Way, 2-Position directional control valve, which supplies downstream pressure when the solenoid is energized. Upon de-energizing of the solenoid, the inlet air is blocked and the downstream air is exhausted. The bottom (exhaust) port is tapped 1/2" NPTF on the PHS75 and 3/4" NPTF on the PHS105 so that the exhaust may be piped away of fitted with a muffler.

## **WARNING**

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## Wiring Instructions

**⚠ CAUTION:** An interruption of 10 milliseconds or greater to the power supplied to the solenoid of a solenoid operated valve may cause the valve to shift. Provision must be made to prevent power interruption of this duration to avoid unintended, potentially hazardous, consequences.

**NOTE:** In addition to the following instructions, follow all requirements for local and national electrical codes.

## Electrical Connection

Valves with 3-Pin male terminals should have power connected to the parallel terminals. Ground should be connected to the perpendicular terminal.

## Override Operation

The flush non-locking manual override is located on the body of the solenoid pilot. To operate the override, place a small screwdriver in the slot of the override and turn approximately 45° in either direction until the solenoid pilot actuates. The solenoid pilot will remain actuated until the override is released. When released, the solenoid pilot de-actuates.

## Solenoid Replacement

To replace the solenoid, remove the solenoid nut and pull solenoid off and replace with the correct voltage solenoid. Replace solenoid nut and tighten finger tight. See Figure 1.

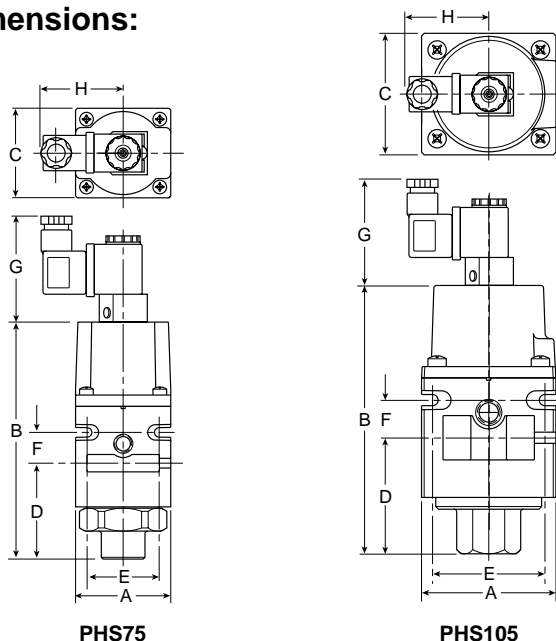
Voltage	Coil No.
24VDC	2EV103
24VAC	2EV102
110VAC	2EV105

## Service

**⚠ Caution:** Disconnect or shut off air and electrical supply and exhaust pressure before servicing unit.

**⚠ Caution:** Grease packets are supplied with kits for lubrication of seals. Use only mineral based grease or oils. Do not use synthetic oils such as esters. Do not use silicones.

## Dimensions:



Model	Port Size	A	B	C	D	E	F	G	H
PHS75	3/8"	2.19 (56)	4.72 (120)	2.06 (52)	1.50 (38)	1.66 (42)	.72 (18)	2.56 (65)	1.90 (48)
PHS105	1/2"	3.03 (77)	5.25 (133)	2.75 (70)	1.84 (47)	2.53 (64)	.84 (21)	2.56 (65)	1.90 (48)

Inches (mm)

Note: After servicing unit, turn on air and electrical supply and check for leaks. If leakage occurs, do not operate – conduct repairs and retest.

Note : Items marked with an \* are included in the service kit.

1. Remove the four Screws that retain the Cover and remove Cover. Next remove Plunger with Seals and Spring from Body.
2. Remove Bottom Plug by unscrewing it from the Body. Next remove Bottom Spring, Disc Holder Assembly and Gasket.
3. Clean, and carefully inspect parts for wear and / or damage. If replacement is necessary, use parts from service kit.
4. Lubricate O-rings and U-cup with grease (supplied with kit).
5. Install Gasket into Body. Then install Disc Holder, Bottom Spring and Bottom Plug into Body. See Figure 1 for torque value.
6. Install Plunger with Seals into the Body. Install two O-rings between Body and Cover (make sure air passages are aligned properly), install four Screws and tighten per Figure 1.

## Service Kits Available:

Description	PHS75	PHS105
Service Kit	PHRKS75	PHRKS105

There may be extra parts in the kit.

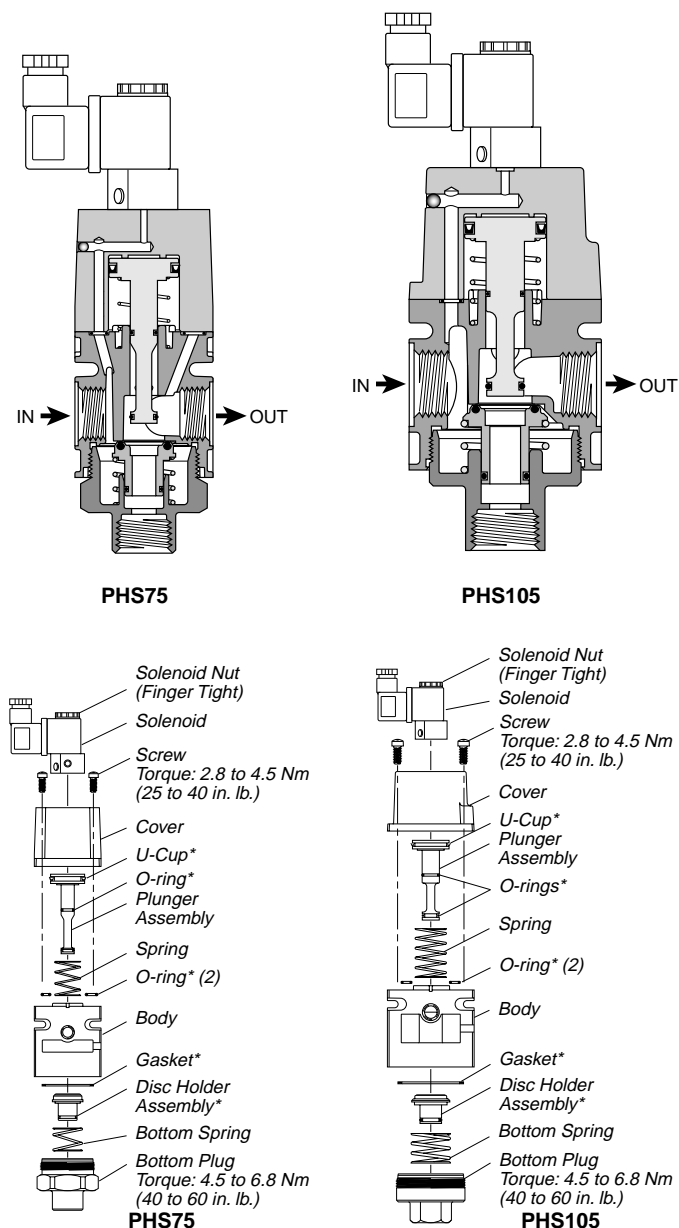


Figure 1

## **WARNING**

To avoid unpredictable system behavior that can cause personal injury and property damage:

- Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
- Disconnect air supply and depressurize all air lines connected to this product before installation, servicing, or conversion.
- Operate within the manufacturer's specified pressure, temperature, and other conditions listed in these instructions.
- Medium must be moisture-free if ambient temperature is below freezing.
- Service according to procedures listed in these instructions.
- Installation, service, and conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
- After installation, servicing, or conversion, air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or the product does not operate properly, do not put into use.
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## **Introduction**

Follow these instructions when installing, operating, or servicing the product.

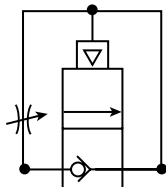
## **Application Limits**

These products are intended for use in general-purpose compressed air systems only. These units should not be used as shut-off valves, as they do not shut off completely and must always be placed after a shut-off valve.

<b>Operating Pressure:</b>	kPa	PSIG	bar
<b>Maximum Inlet Pressure</b>	2068	300	20.7
<b>Minimum Inlet Pressure</b>	210	30	2.0

**Ambient Temperature Range:** 4°C to 54°C (40°F to 130°F)

## **Symbol**




## **Installation**

The Auto-Pilot Soft Start valves should be installed with reasonable accessibility for service and adjusting needle valve with a screwdriver. Keep pipe or tubing lengths to a minimum with inside clean and free of dirt and chips. Pipe joint compound should be used sparingly and applied only to the male pipe – never into the female port. Do not use PTFE tape to seal pipe joints – pieces have a tendency to break off and lodge inside

the unit, possibly causing malfunction. Care should be taken to avoid undue strain on valve.

Air applied to the valve must be filtered with a 40 micron filter to realize maximum component life.

**Factory Pre-Lubrication** - Valves are pre-lubricated at assembly with a petroleum based grease which has PTFE content.

 **CAUTION:** Do not restrict the inlet of valves having an internal pilot supply. Pressure supply piping must be the same size as the inlet port or larger to insure that the pilot valve receives sufficient pressure supply during high flow conditions.

## **Accessories**

### Kit No.                      Description

#### **Modular Body Connectors**

PS754	06 Modular Body Connector
PS854	07 Modular Body Connector

## **Function**

When pressure is supplied to the inlet port, gradual filling of the downstream system occurs through the adjustable needle valve. Upon reaching 60% of the supply pressure, the valve switches from metered flow to full flow. The ramp up time to reach 60% of supply pressure is adjustable via the needle valve in the cover (See Figure 1).

## **Port Connections**

1. Connect air supply to Port 1.
2. Connect cylinder Port 2 to cylinder or other system devices to be supplied air.

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## Adjustment

The filling speed and pressurization of downstream circuit is accomplished by a Needle Valve located in the Cover (See Figure 1). Adjustment is performed using a standard flat blade screwdriver as indicated in Figure 1. Adjustments can be made by performing start-up test and adjusting the Needle Valve from zero to a maximum of 4 turns open until desired equipment speed is reached.

**⚠ Caution: Do not turn needle valve more than 4 turns out from closed position as it is a pressure circuit and could blow out with force.**

The adjustment of the initial airflow rate into the downstream side of the soft-start valve is done with the Needle Valve. Turning Needle Valve counterclockwise will decrease amount of time to fill downstream circuit. Turning Needle Valve clockwise will increase amount of time to fill downstream circuit.

Once the desired start-up speed of the downstream circuit has been reached, the adjustment area can be blocked off to prevent tampering by inserting the Lockout Pin provided in the package. Any further adjustments will require the removal of the Lockout Pin as shown in Figure 2.

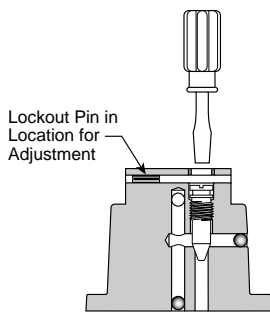


Figure 1  
Adjustment

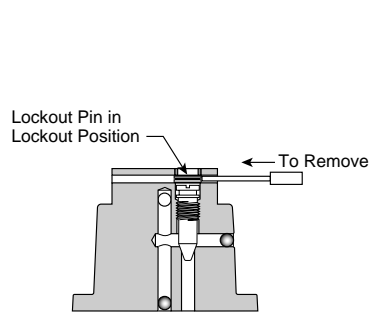
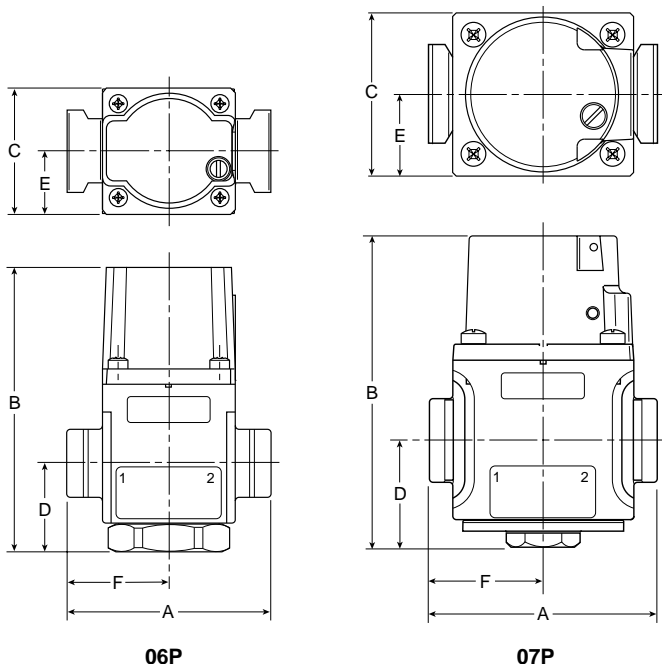


Figure 2  
Lockout Pin Removal

## Dimensions:



Model	Port Size	A	B	C	D	E	F
06P	3/8"	3.36 (85,4)	4.70 (119)	2.08 (52,8)	1.48 (37,5)	1.04 (26,4)	1.68 (42,7)
07P	1/2"	3.81 (96,8)	5.21 (132,3)	2.74 (69,5)	1.80 (45,8)	1.37 (34,8)	1.91 (48,4)

Inches (mm)

## Service

**⚠ Caution: Disconnect or shut off air supply and exhaust pressure before servicing unit.**

**⚠ Caution: Grease packets are supplied with kits for lubrication of seals. Use only mineral based grease. Do not use synthetic oils such as esters. Do not use silicones.**

**Note:** After servicing unit, turn on air supply and check for leaks. If leakage occurs, do not operate – conduct repairs and retest.

**Note:** Items marked with an \* are included in the service kit.

1. Remove the four Screws that retain the Cover and remove Cover. Next remove Plunger with Seals from Body.
2. Remove Bottom Plug by unscrewing it from the Body. Next remove Bottom Spring, Disc Holder Assembly and Gasket.
3. Clean, and carefully inspect parts for wear and / or damage. If replacement is necessary, use parts from service kit.
4. Lubricate O-rings and U-cup with grease (supplied with kit).
5. Install Gasket into Body. Then install Disc Holder, Bottom Spring and Bottom Plug in to Body. See Figure 3 for torque value.
6. Install Plunger with Seals into the Body. Install two O-rings between Body and Cover (make sure air passages are aligned properly), install four Screws and tighten per Figure 3.

## Service Kits Available:

Description	06P	07P
Service Kit	PHRKSS75	PHRKSS105

There may be extra parts in the kit.

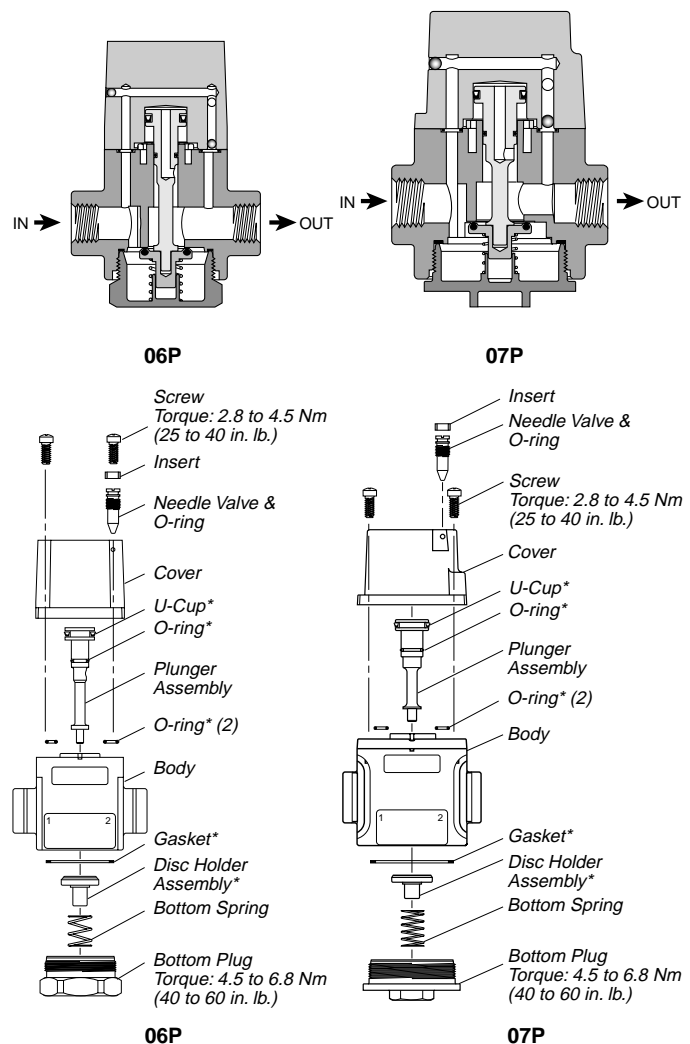


Figure 3

**⚠ WARNING**

To avoid unpredictable system behavior that can cause personal injury and property damage:

- Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
- Disconnect air supply and depressurize all air lines connected to this product before installation, servicing, or conversion.
- Operate within the manufacturer's specified pressure, temperature, and other conditions listed in these instructions.
- Medium must be moisture-free if ambient temperature is below freezing.
- Service according to procedures listed in these instructions.
- Installation, service, and conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
- After installation, servicing, or conversion, air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or the product does not operate properly, do not put into use.
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## Introduction

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## Application Limits

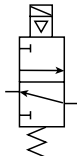
These products are intended for use in general-purpose compressed air systems only.

Operating Pressure:	kPa	PSIG	bar
Maximum Inlet Pressure	1035	150	4.0
Minimum Inlet Pressure	210	30	2.0

**Ambient Temperature Range:** 4°C to 54°C (40°F to 130°F)

**Voltage Range:** Rated Voltage +10%, -15%

## Symbol



## Installation

The Solenoid Quick Exhaust valves should be installed with reasonable accessibility for service. Keep pipe or tubing lengths to a minimum with inside clean and free of dirt and chips. Pipe joint compound should be used sparingly and applied only to the male pipe – never into the female port. Do not use PTFE tape to seal pipe joints – pieces have a tendency to break off and lodge inside the unit, possibly causing malfunction. Care should be taken to avoid undue strain on valve.

Air applied to the valve must be filtered with a 40 micron filter to realize maximum component life.

**Factory Pre-Lubrication** - Valves are pre-lubricated at assembly with a petroleum based grease which has PTFE content.

**⚠ CAUTION:** Do not restrict the inlet of valves having an internal pilot supply. Pressure supply piping must be the same size as the inlet port or larger to insure that the pilot valve receives sufficient pressure supply during high flow conditions.

## Accessories

<u>Kit No.</u>	<u>Description</u>
<b>Metal Mufflers</b>	
ES50MB	1/2" Exhaust Muffler - 06T
ES75MB	3/4" Exhaust Muffler - 07T
<b>Plastic Mufflers</b>	
ASN-15	1/2" Exhaust Muffler - 06T
<b>Modular Body Connectors</b>	
PS754	06 Modular Body Connector
PS854	07 Modular Body Connector

## Function

The Solenoid Quick Exhaust valve is a 3-Port normally closed 3-Way, 2-Position directional control valve, which supplies downstream pressure when the solenoid is energized. Upon de-energizing of the solenoid, the inlet air is blocked and the downstream air is exhausted. The bottom (exhaust) port is tapped 1/2" NPTF on the 06T and 3/4" NPTF on the 07T so that the exhaust may be piped away or fitted with a muffler.

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## Wiring Instructions

**⚠ CAUTION:** An interruption of 10 milliseconds or greater to the power supplied to the solenoid of a solenoid operated valve may cause the valve to shift. Provision must be made to prevent power interruption of this duration to avoid unintended, potentially hazardous, consequences.

**NOTE:** In addition to the following instructions, follow all requirements for local and national electrical codes.

## Electrical Connection

Valves with 3-Pin male terminals should have power connected to the parallel terminals. Ground should be connected to the perpendicular terminal.

## Override Operation

The flush non-locking manual override is located on the body of the solenoid pilot. To operate the override, push in the override until the solenoid pilot actuates. The solenoid pilot will remain actuated until the override is released. When released, the solenoid pilot de-actuates.

## Solenoid Replacement

To replace the solenoid, remove the solenoid nut and pull solenoid off and replace with the correct voltage solenoid. Replace solenoid nut and tighten finger tight. See Figure 1.

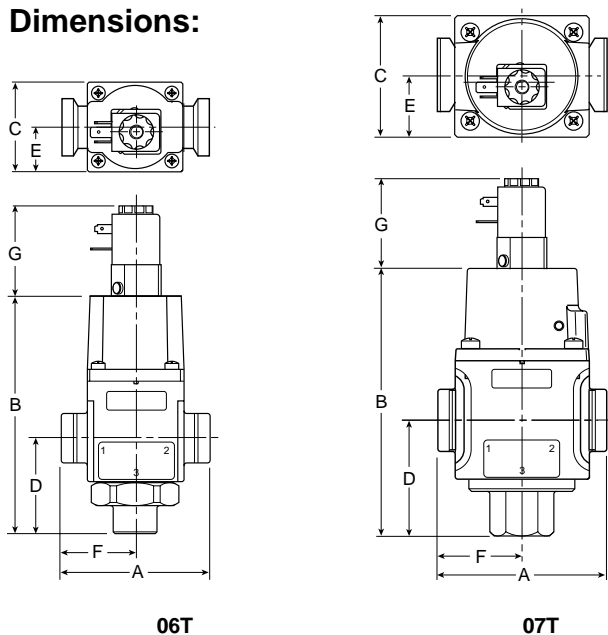
Voltage	Coil No.
24VDC	2EV103
110VAC	2EV105

## Service

**⚠ Caution:** Disconnect or shut off air and electrical supply and exhaust pressure before servicing unit.

**⚠ Caution:** Grease packets are supplied with kits for lubrication of seals. Use only mineral based grease or oils. Do not use synthetic oils such as esters. Do not use silicones.

## Dimensions:



Model	Port Size	A	B	C	D	E	F	G
06T	3/8"	3.36 (85,4)	5.41 (137)	2.08 (52,8)	2.18 (55,4)	1.04 (26,4)	1.68 (42,7)	2.07 (52,5)
07T	1/2"	3.81 (96,8)	5.96 (151)	2.74 (69,5)	2.55 (64,8)	1.37 (34,8)	1.91 (48,4)	2.07 (52,7)

Inches (mm)

Note: After servicing unit, turn on air and electrical supply and check for leaks. If leakage occurs, do not operate – conduct repairs and retest.

Note: Items marked with an \* are included in the service kit.

1. Remove the four Screws that retain the Cover and remove Cover. Next remove Plunger with Seals and Spring from Body.
2. Remove Bottom Plug by unscrewing it from the Body. Next remove Bottom Spring, Disc Holder Assembly and Gasket.
3. Clean, and carefully inspect parts for wear and / or damage. If replacement is necessary, use parts from service kit.
4. Lubricate O-rings and U-cup with grease (supplied with kit).
5. Install Gasket into Body. Then install Disc Holder, Bottom Spring and Bottom Plug into Body. See Figure 1 for torque value.
6. Install Plunger with Seals into the Body. Install two O-rings between Body and Cover (make sure air passages are aligned properly), install four Screws and tighten per Figure 1.

## Service Kits Available:

Description	06T	07T
Service Kit	PHRKS75	PHRKS105

There may be extra parts in the kit.

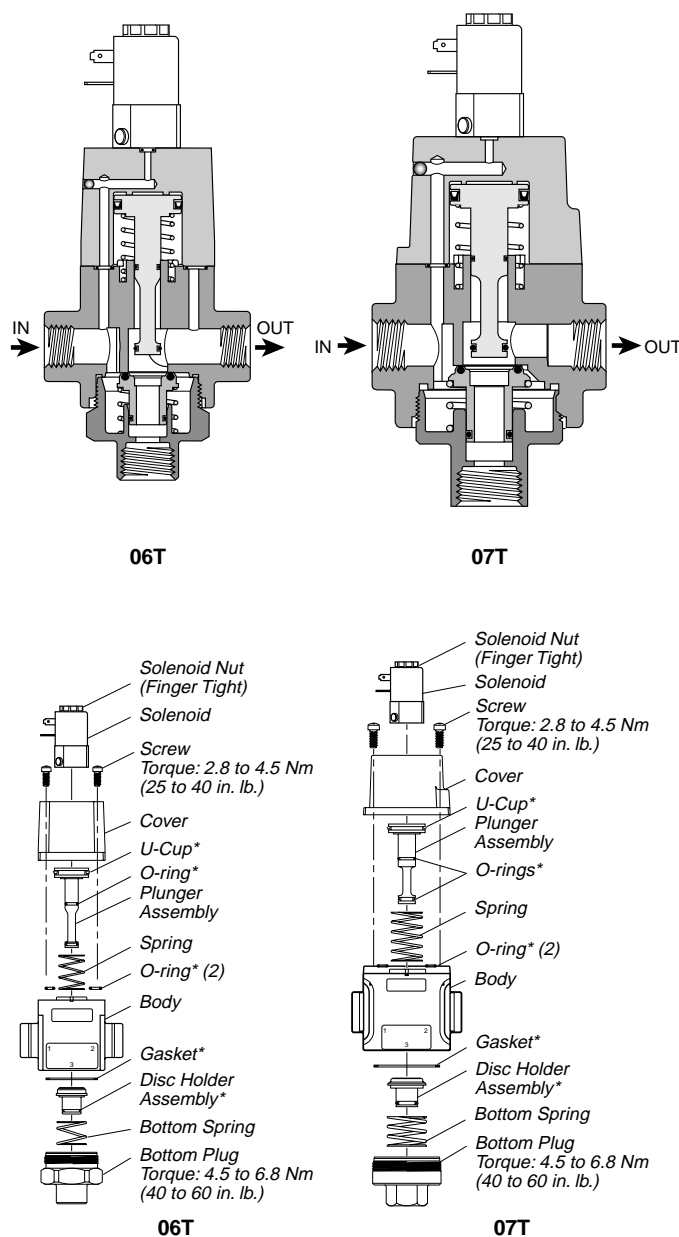


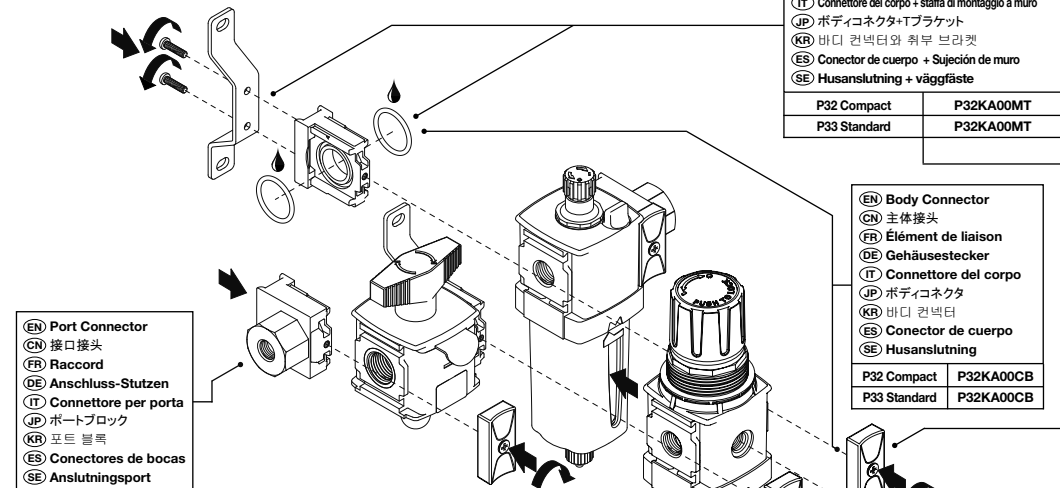
Figure 1

(EN) Product Connection + Mounting  
(CN) 产品接头+安装  
(FR) Raccordement + Montage du produit

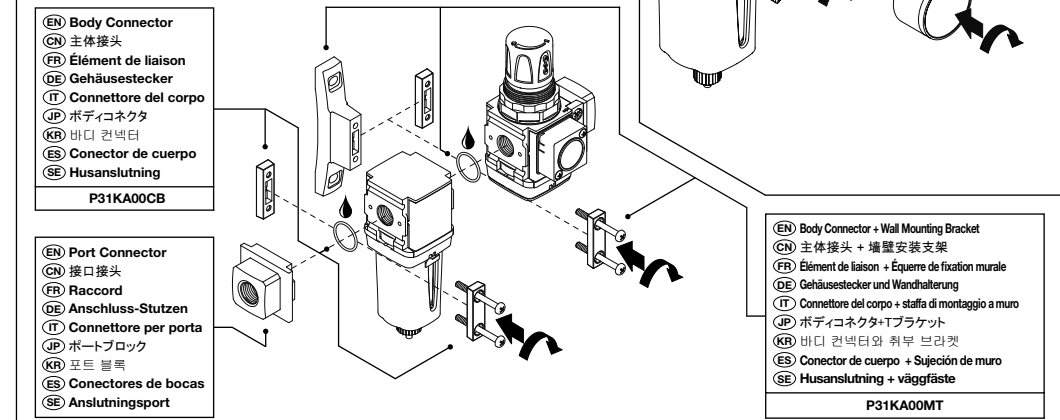
(DE) Produktanschluss und -einbau  
(IT) Collegamento e montaggio del prodotto  
(JP) コンビネーション組立及び取り付け

(KR) 제품의 조합과 취부  
(ES) Montaje y conexión del producto  
(SE) Montering och inkoppling

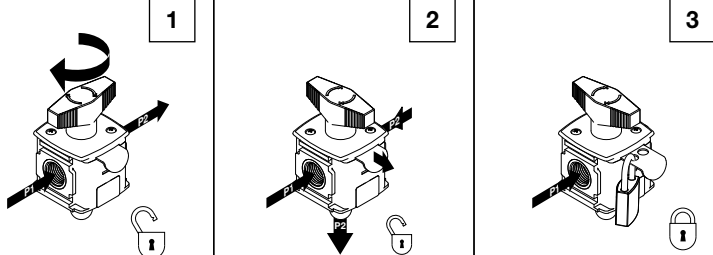
## P32 Compact + P33 Standard



## P31 Mini



(EN) Ball Valve  
(CN) 球阀  
(FR) Vanne à boisseau  
(DE) Kugelventil  
(IT) Valvola a sfera  
(JP) ボールバルブ式ロックアウトバルブ  
(KR) 볼 밸브  
(ES) Válvula de bola  
(SE) Kulventil



5A100

Rev. B

EN130810

## WARNING

To avoid unpredictable system behaviour that can cause personal injury and proper damage:

- Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
- Disconnect air supply and depressurize all air lines connected to this product before installation, servicing or conversion.
- Operate within the manufacturer's specified pressure, temperature, and other conditions listed in these instructions.
- Medium must be moisture-free if ambient temperature is below freezing.
- Service according to procedures listed in these instructions.
- Installation, service and conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
- After installation, servicing or conversion, air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present or the product does not operate properly, do not put into use.
- Warning and specifications on the product should not be covered by paint, etc. If masking is not possible, contact your local representative for replacement labels.

## WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from the Company, its subsidiaries and authorised distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application, including consequences of any failure and review the information concerning the product or systems in the current product catalogue. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by The Company and its subsidiaries at any time without notice.

## CAUTION

Polycarbonate bowls, being transparent and tough, are ideal for use with Filters and Lubricators. They are suitable for use in normal industrial environments, but should not be located in areas where they could be subjected to direct sunlight, an impact blow, nor temperatures outside of the rated range. As with most plastics, some chemicals can cause damage. Polycarbonate bowls should not be exposed to chlorinated hydrocarbons, ketones, esters and certain alcohols. They should not be used in air systems where compressors are lubricated with fire-resistant fluids such as phosphate ester and diester types.

Metal bowls are recommended where ambient and/or media conditions are not compatible with polycarbonate bowls. Metal bowls resist the action of most such solvents, but should not be used where strong acids or bases are present or in salt laden atmospheres. Consult the factory for specific recommendations where these conditions exist.

TO CLEAN POLYCARBONATE BOWLS USE MILD SOAP AND WATER ONLY! DO NOT use cleansing agents such as acetone, benzene, carbon tetrachloride, gasoline, toluene, etc., which are damaging to this plastic.

## Safety Guide

For more complete information on recommended application guidelines, see the Safety Guide section of Pneumatic Division catalogues or you can download the Pneumatic Division Safety Guide at: [www.parker.com/safety](http://www.parker.com/safety)

## WARNING

To avoid polycarbonate bowl rupture that can cause personal injury or property damage, do not exceed bowl pressure or temperature ratings. Polycarbonate bowls have a 150 PSIG (10 bar) pressure rating and a maximum temperature rating of 125°F (52°C).

EXTRA COPIES OF THESE INSTRUCTIONS ARE AVAILABLE FOR INCLUSION IN EQUIPMENT / MAINTENANCE MANUALS THAT UTILIZE THESE PRODUCTS. CONTACT YOUR LOCAL REPRESENTATIVE.

# Global Air Preparation Accessories

## 警告

为避免不可预测的系统运作而导致人身伤害和资产损害:

- 安装, 维修和改动前必须断开电源供应;
- 安装, 维修和改动前必须断开电源供应, 释放连接该产品的管路压力;
- 必须在厂商所指定的压力, 温度和其他使用说明书中注明的环境条件下操作使用;
- 在环境温度低于零下时介质必须是无油的;
- 根据使用说明书中厂商推荐的程序保养;
- 必须由气动专业人士来安装, 维护和改动产品;
- 安装, 维修, 改动后, 气源和电气需要连接, 并测试产品功能及是否有泄露。如果有可听见的泄漏声或操作不确, 不可投入使用;
- 产品上的警示和规范不能被油漆等覆盖。如果标签不清晰, 请联系相关负责人更换标签。

## 警告

错误或者不正确地选择和使用 错误或者不正确地选择和产品信息有可能会造成死亡, 人身伤害和财产损失。

这个文件和另外的信息来自公司总部, 它是给分销商补充和授权产品或者系统的选项, 是给用户调查研究用的技术资料。分析你的所有应用, 包括任何一旦 发生错误的后果并在现有的产品目录中阅读相关产品或系统信息, 对于您来说 都是非常必要的。由于操作环境和产品或系统的使用是多样性的, 用户通过 自己的分析和测试, 对最终产品和系统选择负有绝对责任, 并确保所有产 品的性能, 安全和应用时需要注意的问题都已满足。

这里提到的产品, 包括无限制性, 产品特性, 说明书, 设计, 实用性 和 价格可由公司总部及其下属公司在没有通知的情况下改变。

## 注意

碳酸聚酯水杯是透明坚固的, 是过滤器和油雾器的理想选择。适合一般工业环境应用, 但是不适用于那些阳光直射, 冲击和户外高温大的场合。因为含有大量塑料, 某些化学物质会损坏水杯。碳酸聚酯水杯不能暴露于碳化物, 酮, 酯和某些酒精。此类水杯不能应用于被防火型液体, 如, 碳酸盐和酯类润滑油过的空压机的气动系统中。

在那些不适合碳酸聚酯水杯的环境中, 推荐使用金属水杯。金属水杯能抵抗大多数溶剂, 但是不能用在强酸, 含盐的场所。对于特殊场合请咨询工厂。

碳, 汽油, 甲苯等清洁剂, 这会直接损害塑料。

## 安全指南

更多完整的推荐应用指导信息, 请见气动样本中的安全指南部分或者可以在 气动部门安全指南网站上下载资料: [www.parker.com/safety](http://www.parker.com/safety)

## 警告

为了避免碳酸聚酯水杯破裂而导致的人身和财产损失, 不能使用超过水杯的压力和温度范围。碳酸聚酯水杯最高承受 150 PSIG (10bar) 压力和最高 125°F (52°C) 的温度

如需多份涉及这些产品维修/操作指南的使用说明书。请联系当地办事处。

## MISE EN GARDE

Afin de prévenir tout comportement imprévisible du système pouvant entraîner des accidents et des dommages matériels :

- Débrancher l'alimentation électrique (s'il y a lieu) avant de procéder à l'installation, à l'entretien ou à la transformation.
- Débrancher l'alimentation en air et mettre hors pression toutes les conduites d'air de ce produit avant de procéder à l'installation, à l'entretien ou à la transformation.
- Faire fonctionner dans les conditions de pression, de température et autres qui sont indiquées dans ces instructions.
- Si la température ambiante est inférieure au point de congélation, le fluide doit être exempt d'humidité.
- Effectuer l'entretien conformément aux procédures qui sont indiquées dans ces instructions.
- L'installation, l'entretien et la transformation de ces produits doivent être effectués par des personnes familiarisées avec les produits pneumatiques.
- Après l'installation, l'entretien ou la transformation, rétablir l'alimentation électrique ainsi que l'alimentation en air (s'il y a lieu) et tester le produit afin de s'assurer qu'il fonctionne bien et qu'il n'y a pas de fuites. Si une fuite s'entend ou si le produit ne fonctionne pas correctement, ne pas le mettre en service.
- Les mises en garde et les indications portées sur le produit ne doivent pas être recouvertes par de la peinture, etc. Si le masquage n'est pas possible, contacter le représentant local pour obtenir des étiquettes de remplacement.
- Les mises en garde et les indications portées sur le produit ne doivent pas être recouvertes par de la peinture, etc. Si le masquage n'est pas possible, contacter le représentant local pour obtenir des étiquettes de remplacement.

## MISE EN GARDE

LA NON OBSERVATION D'INSTRUCTIONS OU LA SÉLECTION IMPROPRE OU L'USAGE INAPPROPRIÉ DES PRODUITS ET/OU DES SYSTÈMES DÉCRITS AUX PRÉSENTES, OU ARTICLES CONNEXES, PEUVENT ENTRAÎNER LA MORT, DES PRÉJUDICES CORPORELS ET/OU DES DOMMAGES MATÉRIELS.

Le présent document et toute autre information provenant de la Société, de ses filiales et distributeurs agréés se réfèrent à des produits et/ou des systèmes pouvant faire l'objet de tests et de contrôles de la part d'utilisateurs compétents, possédant une expertise technique. Il est important que vous analysiez tous les aspects de votre application, notamment les conséquences d'une défaillance, et étudiez les informations concernant le produit ou les systèmes qui figurent dans le catalogue actuel. Compte tenu de la variété des conditions d'utilisation et des applications inhérentes à ces produits et/ou systèmes, l'utilisateur est, par le biais de ses propres analyses et tests, seul responsable de la sélection finale des produits et/ou systèmes et s'engage à ce que son application réponde à tous les critères relatifs aux performances, à la sécurité et aux mises en garde.

Les produits décrits aux présentes, y compris sans limitation, les caractéristiques, les spécifications, les conceptions, la disponibilité et les prix, peuvent faire l'objet de modifications par la Société et ses filiales, à tout moment et sans préavis.

## ATTENTION

Durs et transparents, les bols en polycarbonates sont parfaitement indiqués pour l'utilisation dans les filtres et les lubrificateurs. Ils sont compatibles avec les milieux industriels normaux mais ne doivent pas être placés dans des lieux où ils pourraient être exposés à la lumière directe du soleil, à des chocs ou à des températures situées en dehors de leur plage d'utilisation nominale. Comme la plupart des plastiques, cette matière peut être endommagée par certains produits chimiques. Les bols en polycarbonate ne doivent pas être exposés aux hydrocarbures chlorés, aux cétones, aux éthers et à certains alcools. Ils ne doivent pas être utilisés dans des systèmes pneumatiques dont les compresseurs sont lubrifiés par des fluides résistants au feu tels que les esters et diesters de phosphate.

Les bols métalliques sont recommandés lorsque le milieu et/ou le fluide sont incompatibles avec les bols en polycarbonates. Les bols métalliques sont résistants à la plupart de ces solvants mais ne doivent pas être utilisés en milieu fortement acide ou basique, ou en atmosphère saline. Si de telles conditions prévalent, adressez-vous au fabricant afin d'obtenir des recommandations spécifiques.

NETTOYER LES BOLS EN POLYCARBONATE UNIQUEMENT À L'EAU ET AU SAVON DOUX ! NE PAS utiliser d'agents nettoyants tels que l'acétone, le benzène, le tétrahydrofur de carbone, l'essence, le toluène, etc., qui endommageraient ce plastique.

## Guide de sécurité

Pour obtenir de plus amples informations sur les directives à appliquer recommandées, prière de vous reporter à la section Guide de sécurité des catalogues de la Pneumatic Division ou de télécharger le Guide de sécurité de la Pneumatic Division sur le site : [www.parker.com/safety](http://www.parker.com/safety)

## MISE EN GARDE

Pour éviter que le bol de polycarbonate se rompe et provoque des préjudices corporels ou des dommages matériels, ne pas dépasser les limites maximales de pression et de température, à savoir 150 PSIG (10 bar) et 125 °F (52°C).

DES EXEMPLAIRES DE CES INSTRUCTIONS SONT DISPONIBLES POUR INSERTION DANS LE MATÉRIEL. OÙ LES MANUELS D'ENTRETIEN QUI UTILISENT CES PRODUITS. VEUILLEZ CONTACTER VOTRE REPRÉSENTANT LOCAL.



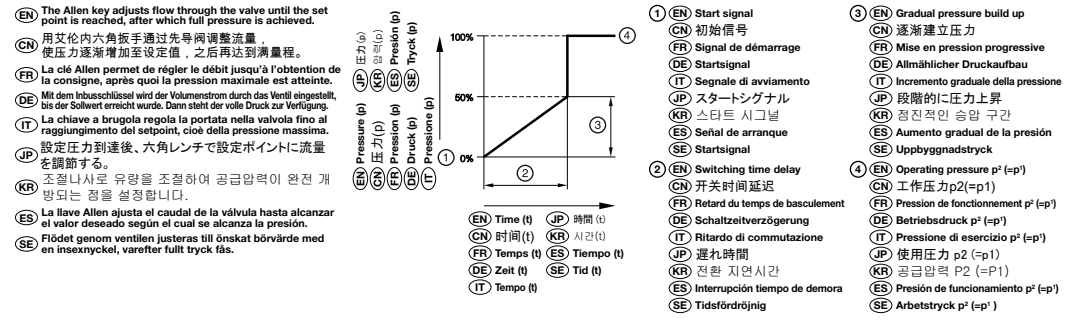
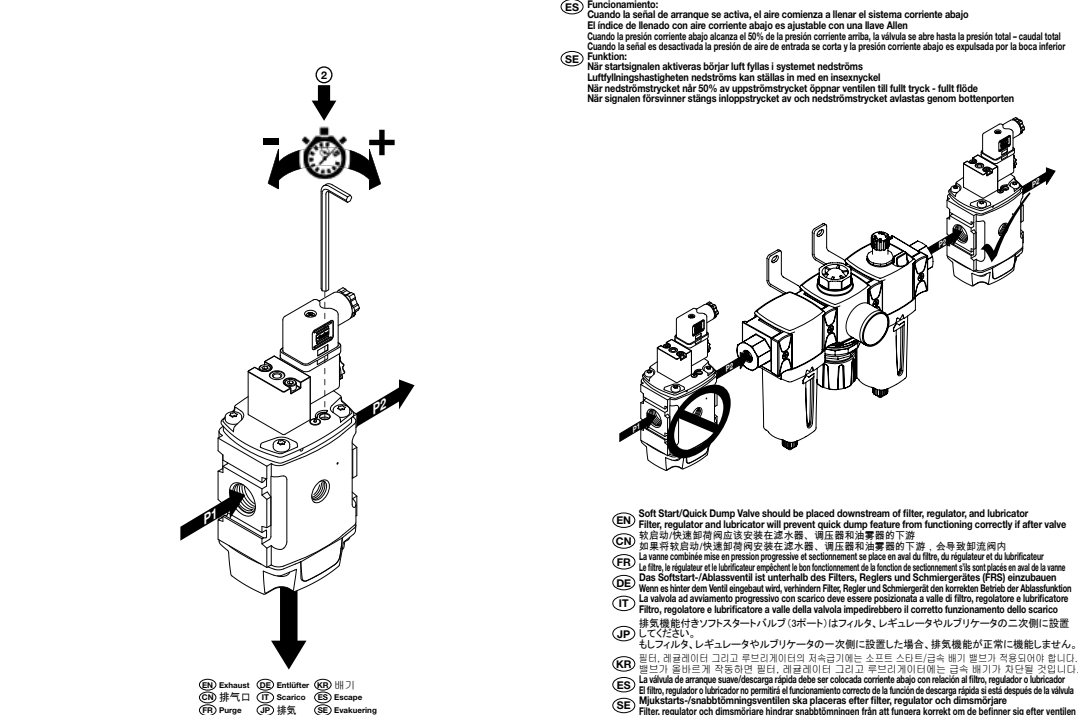






EN Soft Start/Quick Dump Valve - Solenoid Operated DE Softstart-/Ablussventil – Magnetsteuerung KR 솔레노이드 작동 - 소프트 스타트 / 급속 배기 밸브  
CN 软启动/快速卸荷阀 - 电磁线圈控制 IT Valvola ad avviamento progressivo con scarico a solenoide ES Válvula de arranque suave / Descarga rápida - Operada por solenoide  
FR Électrovanne combinée mise en pression progressive et sectionnement JP ソフトスタートバルブ (排気機能付き3ポート) - ソレノイド式 SE Mjukstarts-/snabbtömningsventil - magnetventilsstyrd

EN Combined soft start and quick dump function in one valve  
3/2 solenoid valve with soft start function  
Valve opens to full pressure - full flow when downstream pressure reaches 50% of upstream pressure  
Adjustable downstream fill rate  
CN 集成软启动和快速卸荷功能在一个阀内  
3/2电磁阀具有软启动功能  
当下游压力达到上游压力的50%时, 阀开启到满压力时的全流量  
系统下游填充速率可调节  
FR Deux fonctions réunies dans une même vanne : mise en pression progressive et sectionnement  
Electrovanne 3/2 avec fonction de mise en pression progressive  
La vanne s'ouvre à pleine pression / plein débit lorsque la pression en aval atteint 50 % de la pression en amont  
Débit d'alimentation du circuit en aval réglable  
DE Kombination aus Softstart und Ablassfunktion in einem Ventil  
3/2 Magnetventil mit Softstart-Funktion  
Das Ventil öffnet sich für den Volumenstrom mit vollem Druck, sobald der Förderdruck 50% des Vorsteuerdrucks erreicht  
Volumenstrom einstellbar  
IT Combina le funzioni di avviamento progressivo e scarico in un'unica valvola  
Valvola a solenoide 3/2 con funzione di avviamento progressivo  
La valvola si apre a piena pressione/portata quando la pressione a valle raggiunge il 50% della pressione a monte  
Portata di riempimento a valle regolabile  
排気機能付きソフトスタートバルブ (3ポート)  
二次圧が一次圧の50%になった際、バルブが最大圧力/流量で解放  
KR 소프트 스타트와 급속 배기 기능이 조합  
소프트 스타트 기능의 3/2 솔레노이드 밸브  
저속급기 압력이 고속급기의 50%에 이르면 최대 압력과 유량으로 밸브가 개방  
조절 가능한 저속급기 충전률  
ES Combina las funciones de arranque suave y descarga rápida en una sola válvula  
Válvula solenoide 3/2 con función de arranque suave  
La válvula se abre a presión total-caudal total cuando la presión corriente abajo alcanza el 50% de la presión de la corriente arriba  
Índice de llenado corriente abajo ajustable  
Mjukstarts- och snabbtömningsfunktion i en enda ventil  
3/2-vägsventil med mjukstartsfunktion  
Ventilen öppnar till fulltrycksföde när nedströmstrycket når 50% av uppströmstrycket  
Ställbar fyllningshastighet nedströms



EN Quick Dump Valve - Solenoid Operated DE Ablassventil – Magnetsteuerung KR 솔레노이드 작동 - 급속 배기 밸브  
CN 快速卸荷阀 - 电磁线圈 CN Valvola con scarico a solenoide ES Válvula de descarga rápida - Operada por solenoide  
FR Électrovanne de sectionnement JP リモートオペレート排気バルブ - ソレノイド式 SE Mjukstarts-/snabbtömningsventil - magnetventilsstyrd

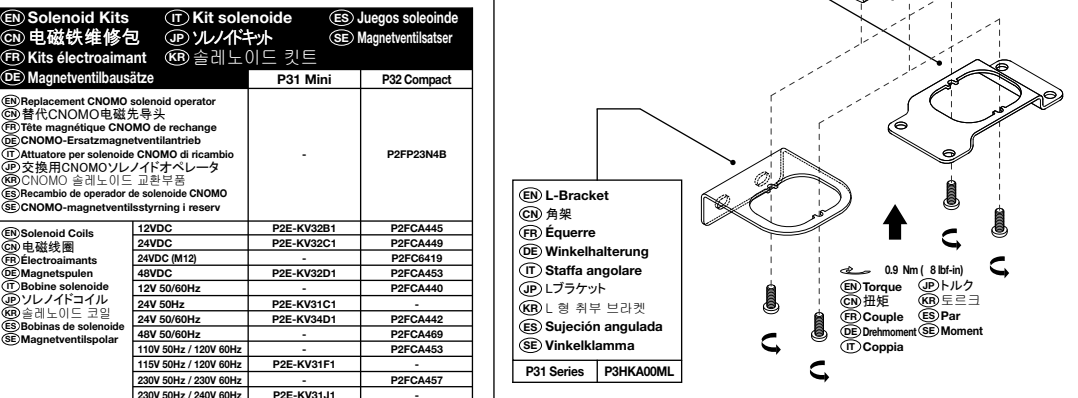
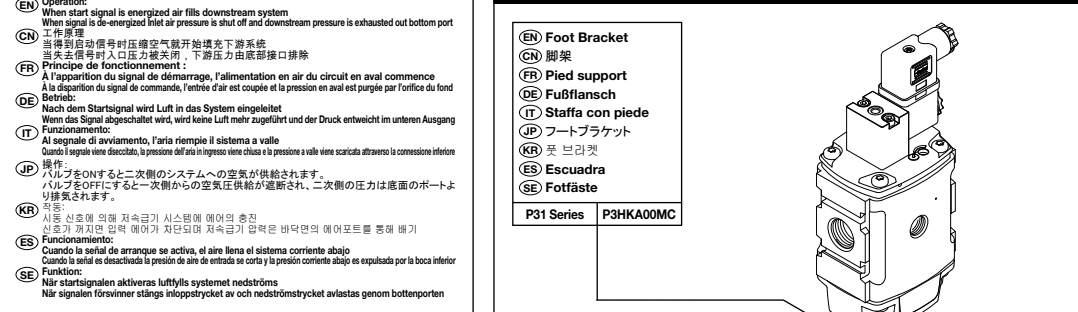
EN 3/2 solenoid valve  
Instantly energizes system downstream of FRL  
Dumps pressure from system downstream of FRL  
CN 3/2电磁阀  
给三联件的下游系统快速建立压力  
卸除压力来至于三联件的下游系统  
FR Electrovanne 3/2  
Met en marche instantanément le circuit en aval des FRL  
Purge la pression en aval des FRL  
DE 3/2 Magnetventil  
Das System wird unterhalb von FRS sofort aktiviert  
Der Druck wird unterhalb von FRS aus dem System abgelassen  
IT Valvola a solenoide 3/2  
Eccita istantaneamente il sistema a valle dei FRL  
Scarica la pressione del sistema a valle dei FRL  
パイロクオアレート排気バルブ(3ポートがリリジョン電磁弁)  
FRLの二次側の空気圧システムを即座に稼働することが可能です。  
FRLの二次側の空気圧システムを急速に排気します。  
KR 3/2 솔레노이드 밸브  
즉시 FRL 저속급기 시스템의 가동  
FRL 저속급기 시스템에서 압력 배기  
ES Válvula solenoide 3/2  
Activa instantáneamente sistemas corriente abajo del FRL  
Descarga presiones del sistema corriente abajo del FRL  
SE 3/2-vägs magnetventil  
Direktaktivering av system efter FRL  
Avlastar trycket i system efter FRL



EN Quick Dump Valve should be placed downstream of filter, regulator, and lubricator  
Filter, regulator and lubricator will prevent quick dump feature from functioning correctly if after valve  
CN 快速卸荷阀应该安装在过滤器、调压阀和油雾器的下游  
如果将软启动快速卸荷阀安装在过滤器、调压阀和油雾器的上游, 会导致卸荷流失去作用  
FR Le filtre, le régulateur et le lubrificateur empêchent le bon fonctionnement de la fonction de sectionnement s'ils sont placés en aval de la vanne  
Das Ablassventil ist unterhalb des Filters, Reglers und Schmiergerätes (FRS) einzubauen  
Wenn es hinter dem Ventil eingebaut wird, verhindern Filter, Regler und Schmiergerät den korrekten Betrieb der Ablassfunktion  
IT La valvola con scarico deve essere posizionata a valle di filtro, regolatore e lubrificatore  
Filtro, regolatore e lubrificatore a valle della valvola impedirebbero il corretto funzionamento dello scarico  
パイロクオアレート排気バルブはフィルタ、レギュレータやブリケータの二次側に設置して使います。  
もしフィルタ、レギュレータやブリケータの一次側に設置した場合、排気機能が正常に機能しません。  
KR 필터, 레귤레이터 그리고 루브리케이터의 저속급기에는 소프트 스타트/급속 배기 밸브가 적용되어야 합니다.  
밸브가 유량저가 작동할 때만, 레귤레이터 그리고 루브리케이터에는 급속 배기가 적용되어야 합니다.  
ES El filtro, regulador o lubricador no permitirá el funcionamiento correcto de la función de descarga rápida si está después de la válvula  
Snabbtömningsventilen ska placeras efter filter, regulator och dimmörjare  
Filter, regulator och dimmörjare hindrar snabbtömnningen från att fungera korrekt om de befinner sig efter ventilen

EN Individual Product Brackets  
CN 单个产品支架  
FR Éléments de fixation pour produits isolés  
DE Spezielle Produkthalterungen  
IT Staffe separate

JP 単体用ブラケット  
KR 유니트 개별 취부 브라켓  
ES Sujeciones producto individual  
SE Separata klammor



F442001 TAB  
REV. E  
OCT. 2016

**TECHNICAL DATA**  
**F442 OIL**  
**SUNVIS 932, REGAL R&O 32, UNION 76 TURBINE OIL 32**

**Manufacturer**

Sun Company, Inc.  
Ten Penn Center  
1801 Market Street  
Philadelphia, PA 19103-1699  
Phone: (215) 339-2000

Texaco, Inc.  
Equilon Enterprises, LLC  
PO Box 4453  
Houston, TX 77210-4453

Union 76  
76 Lubricants Company  
A Division of TOSCO Corp.  
PO Box 25376  
Santa Ana, CA 92799-5376

**Emergency Phone Numbers**

Sun Company: 1-800-964-8861  
Chemtrec: 1-800-424-9300

Texaco: 1-877-276-7283  
Chemtel: 1-877-276-7285

Union 76: 1-800-762-0942  
Chemtrack: 1-800-424-9300

			TYPICAL TEST RESULTS		
TEST		ASTM TEST METHOD	SUNVIS 932	REGAL R&O 32	UNION 76 TURBINE OIL 32
VISCOSITY	@ 40°C, cSt	D445	32	32	32
	@ 100°C, cSt	D445	5.4	5.4	5.42
	@ 100°F, SUS	D2161	164	165	155
	@ 210°F, SUS	D2161	44.0	44.0	44.4
VISCOSITY INDEX		D2270	100	104	103
FLASH POINT, °C (F)		D92	225 (440)	199 (390)	216 (420)
POUR POINT, °C (F)		D97	-33 (-30)	-32 (-25)	-30 (-22)
COLOR		D1500	1.0 (Colorless)	Light Pale	ASTM L0.5

**TECHNICAL DATA**

**F442 OIL**  
**SUNVIS 932, REGAL R&O 32, UNION 76 TURBINE OIL 32**

The following tabulation is for internal use only and is for distinguishing packaging variations.

<b>PART NUMBER</b>	<b>DESCRIPTION</b>
F442001	OIL/SINGLE QUART - SUNVIS NO. 932 OR EQUIVALENT
F442002	OIL/SINGLE GALLON - SUNVIS NO. 932 OR EQUIVALENT
F442003(*)	OIL/CASE OF 12 QUARTS - SUNVIS NO. 932 OR EQUIVALENT
F442005(*)	OIL/CASE OF 4 GALLONS - SUNVIS NO. 932 OR EQUIVALENT (1 GALLON BOTTLES)

(\*) THIS DIGIT IS NOT REQUIRED FOR DECODING DESCRIPTIONS.



**Pneumatic Division**  
Richland, Michigan 49083

**FRL-SIF-104**

**Pressure Gauge Consolidation**

**ISSUED: March, 2006**

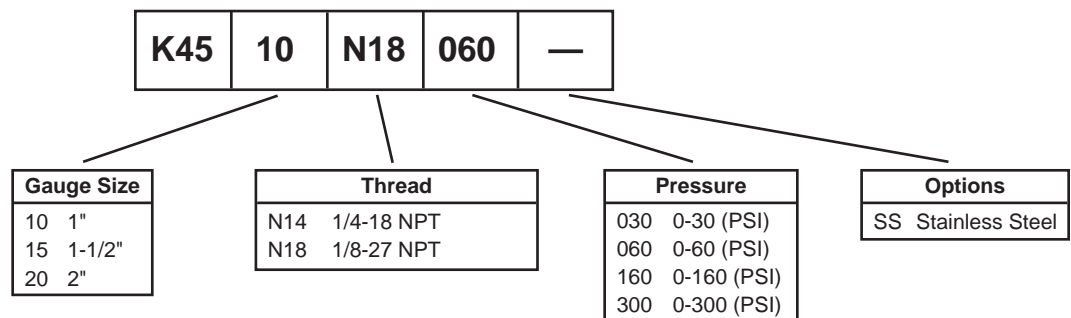
**Supersedes: None**

## Description of Gauges

Pressure gauge model numbers:

All new gauges will have a white dial face. The PSI scale is black, and the bar scale is red.

## Ordering Information



## Cross Reference

Obsolete Part Number	Replacement Gauge	Size	Thread Type	Range
035600400	K4520N14060	2	1/4-18 NPT	0-60
035600410	K4520N14160	2	1/4-18 NPT	0-160
035600420	K4520N14300	2	1/4-18 NPT	0-300
054300059	K4515N18060	1 1/2	1/8-27 NPT	0-60
274Y160SS	K4515N14160SS	1 1/2	1/4-18 NPT	0-160
275Y160SS	K4520N14160SS	2	1/4-18 NPT	0-160
H03258	Obsolete			
H03269A	Obsolete			
H03269B	Obsolete			
H03272	K4515N18030	1 1/2	1/8-27 NPT	0-30
H03273	K4515N18060	1 1/2	1/8-27 NPT	0-60
H03274	K4515N18160	1 1/2	1/8-27 NPT	0-160
HP77413	K4515N18160	1 1/2	1/8-27 NPT	0-160
P03364	Obsolete			
P5301506	K4510N18060	1	1/8-27 NPT	0-60
P5301507	K4510N18160	1	1/8-27 NPT	0-160
P5301509	Obsolete			
P530154	K4515N18060	1 1/2	1/8-27 NPT	0-60
P530155	Obsolete			
P530156	K4515N18030	1 1/2	1/8-27 NPT	0-30
P77413	K4515N18160	1 1/2	1/8-27 NPT	0-160
P781641	K4520N14060	2	1/4-18 NPT	0-60
P781642	K4520N14160	2	1/4-18 NPT	0-160
P781643	K4520N14300	2	1/4-18 NPT	0-300
P781644	K4520N14160	2	1/4-18 NPT	0-160

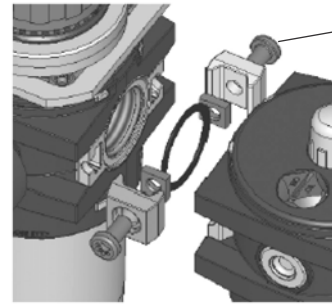


## Fixation - Mounting - Befestigung - Fijacion - Fissaggio



- UK** Disconnect air & electrical supplies before attempting repair or maintenance See ISO4414 for safety requirements covering the installation and use of pneumatic equipment.
- FR** Débrancher les connexions pneumatiques et électriques avant réparation ou maintenance. Voir ISO4414 pour les règles de sécurité des installations et utilisation des équipements pneumatiques.
- DE** Bei Reparatur - oder Wartungsarbeiten sind alle pneumatischen und elektrischen Versorgungsleitungen zuvor vom Zylinder zu trennen. Siehe ISO4414 bzw. DIN 24 558 bezüglich Sicherheits-Anforderungen für den Bereich Installation und Gebrauch von Pneumatik-Komponenten.
- SE** Koppla ifrån luft och elektriska anslutningar innan reparation- eller underhållsarbete påbörjas. Se ISO4414 för säkerhetsbestämmelser täckande installation och användande av pneumatisk utrustning.
- ES** Desconectar las conexiones neumáticas y eléctricas antes de efectuar cualquier reparación o mantenimiento. Ver ISO4414 para reglas de seguridad de las instalaciones y utilización de equipos neumáticos.
- IT** Prima di eseguire interventi di manutenzione verificare che sia l'alimentazione elettrica che pneumatica siano disattivate. Attenersi alla normativa ISO4414 che regola l'installazione e l'uso di componenti pneumatici.

Coupling Kit  
Kupplungssatz



P3YKA00CB

## Association - Combination - Verbindung - Asociacion - Assemblaggio



### WARNING

To avoid unpredictable system behavior that can cause personal injury and proper damage:

- Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
- Disconnect air supply and depressurize all air lines connected to this product before installation, servicing or conversion.
- Operate within the manufacturer's specified pressure, temperature, and other conditions listed in these instructions.
- Medium must be moisture-free if ambient temperature is below freezing.
- Service according to procedures listed in these instructions.
- Installation, service and conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
- After installation, servicing or conversion, air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present or the product does not operate properly, do not put into use.
- Warning and specifications on the product should not be covered by paint, etc. If masking is not possible, contact your local representative for replacement labels.



### WARNING

Product rupture can cause serious injury.  
Do not connect regulator to bottled gas.  
Do not exceed maximum primary pressure rating.



### WARNING

**FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.**

This document and other information from the Company, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application, including consequences of any failure and review the information concerning the product or systems in the current product catalogue. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by The Company and its subsidiaries at any time without notice.



## Réglage - Adjustment - Steuerung - Regulacion - Regolazione

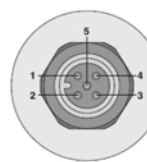
### Service kits

Diaphragm kit - relieving type = P3YKA00RR

Diaphragm kit - non-relieving type = P3YKA00RN



Connector M12 x 1



**Pin 1:**  
Power supply  
Plus +24 V DC  $\pm 10\%$   
0.15 A  
Residual ripple 10%

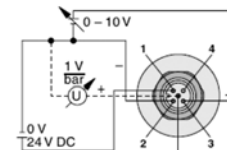
**Pin 2:**  
Power supply 0 V  
Reference and mass capacity  
for set value and actual value

**Pin 3:**  
Set value output  
0-10 V

**Pin 4:**  
0 V target signal  
(connected on board  
with pin 2 as standard)

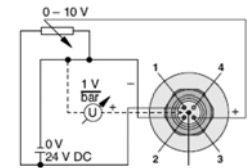
**Pin 5:**  
Analog actual value output  
0-10 V  
Tolerance  $\pm 0.15$  V

Analog voltage

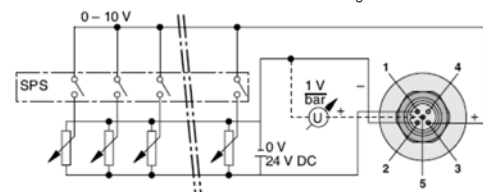


PLC in connection with several potentiometers

With a single potentiometer

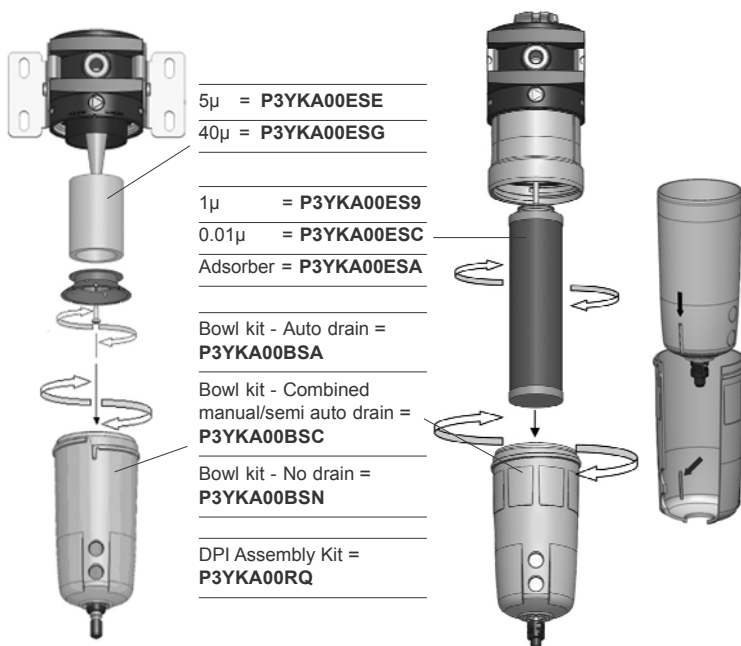


The resistance of the potentiometer should range between 500  $\Omega$  and 100  $\Omega$

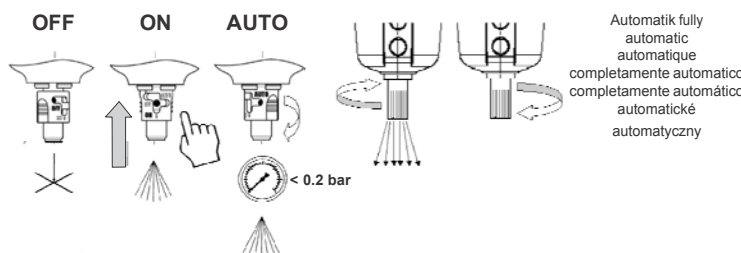


The total resistance of the potentiometer series should not be less than 500  $\Omega$

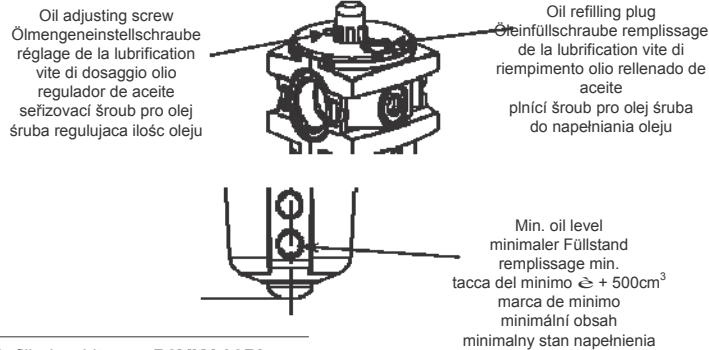
## Filter Maintenance - Maintenance du filtre - Wartung - Mantenimiento - Manutenzione



## Condensate drainage / Purge / Kondensatentleerung / Svuotamento condensati / Vaciado del condensado / odpouštění kondenzátu / spust kondensatu



## Lubricator Adjustment - Réglage du lubrificateur - Steuerung Regulacion - Regolazione



Refill plug kit = **P3YKA00PL**

Oil VG32 1L = **P3YKA00PPBB**

## Recommended Lubricants / Lubrifiants recommandés / Empfohlene Ölsorten / Lubrificantii consigliati / Lubricantes recomendados / Rekomenderade oljor för dimsmörjare

### Lubrication of airlines

Oil Company	ISO Grade	Grade	ISO Grade	Grade
Gulf	Harmony 38AW	15	Harmony 43AW	32
Shell (UK) Oil	Tellus 22	22	Tellus 37	37
Burmah Castrol	Hyspin AWS15	15	Hyspin AWS32	32
Edgar Vaughan	KSO 5L	10	Hydrodrive HP100	32
Esso Petroleum	NUTO 1115	15	NUTO H32	32
B.P.	HLP 22	22	HLP 32	32
Mobile Oil Company	Velocite No.6	10	DTE Oil - Light	32
Shell	Cassida Fluid HF*	32		
Klüberoil	4UH1*	32		

\* For food industry applications : approved oil USDA-H1

Do not use oils with additives, compounds oils containing solvents, graphite, detergents.  
The use of synthetic oils and antifreeze with a Glycol concentration of 100% can be used.

## Combined Soft Start & Dump Valve / Soft Start Valve / Vannes de mise en pression progressive et de purge / Sanftanlauf + Abschalt-Ventile / Mjukstartventiler / Válvulas de arranque progresivo / Valvole Avviamento Progressivo

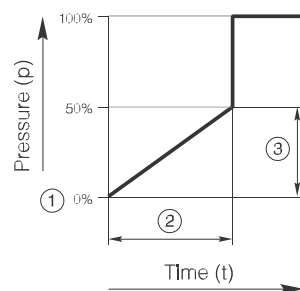
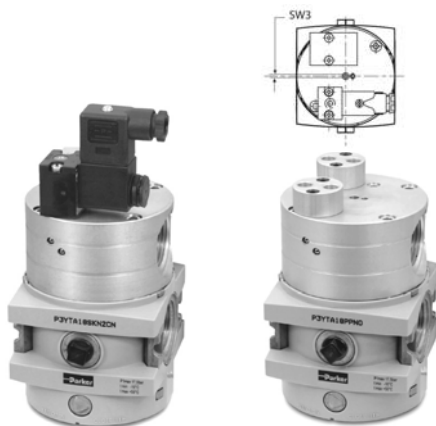
The allen key adjusts flow through the valve until the set point is reached, after which full pressure is achieved.

Le débit est réglable par la clé Allen, jusqu'à la valeur consigne qui déclenche le plein passage

Mjukstartsflödet kan justeras med insexnyckel. Vid uppnått omställningstryck öppnar sedan ventilen för fullt flöde.

Utilizar la Llave Allen para regular el caudal de la válvula hasta lograr la presión tarada - de esta forma se proporciona el flujo máximo de aire.

La chiave Allen regola il flusso attraverso la valvola fino al raggiungimento del valore impostato, quindi viene inserita la pressione totale.

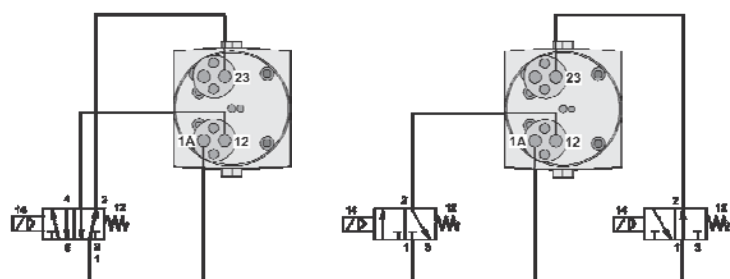


Soft start is 50% pressure dependant on P1

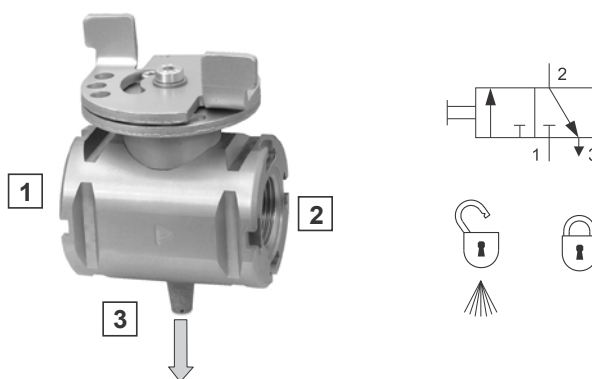
- Start signal  
Démarrage  
Start-Signal  
Startsignal  
Señal de arranque  
Segnale di start
- Switching time delay  
Signal temporisé  
Schaltzeit-Verzögerung  
Omställningstid  
Tiempo de arranque  
Ritardo commutazione
- Gradual pressure build up  
Mise en pression progressive  
Allmählicher Druckaufbau  
Uppbyggnadstryck  
Aumento gradual de la presión  
Incremento graduale della pressione
- Operating pressure  $p^2 (=p^1)$   
Pression de fonctionnement  $p^2 (=p^1)$   
Betriebsdruck  $p^2 (=p^1)$   
Arbetsstryck  $p^2 (=p^1)$   
Presión de funcionamiento  $p^2 (=p^1)$   
Pressione di esercizio  $p^2 (=p^1)$

Combined start/stop function

Combined start/stop function with acknowledgement



## Ball Valve





**Pneumatic Division**  
Richland, Michigan 49083  
269-629-5000

**PDNSG-1**

**Pneumatic Division Safety Guide**

**ISSUED: August 1, 2006**

**Supersedes: June 1, 2006**

## **Safety Guide For Selecting And Using Pneumatic Division Products And Related Accessories**

### **WARNING:**

**FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF PNEUMATIC DIVISION PRODUCTS, ASSEMBLIES OR RELATED ITEMS ("PRODUCTS") CAN CAUSE DEATH, PERSONAL INJURY, AND PROPERTY DAMAGE. POSSIBLE CONSEQUENCES OF FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THESE PRODUCTS INCLUDE BUT ARE NOT LIMITED TO:**

- Unintended or mistimed cycling or motion of machine members or failure to cycle
- Work pieces or component parts being thrown off at high speeds.
- Failure of a device to function properly for example, failure to clamp or unclamp an associated item or device.
- Explosion
- Suddenly moving or falling objects.
- Release of toxic or otherwise injurious liquids or gasses.

Before selecting or using any of these Products, it is important that you read and follow the instructions below.

### **1. GENERAL INSTRUCTIONS**

- 1.1. Scope:** This safety guide is designed to cover general guidelines on the installation, use, and maintenance of Pneumatic Division Valves, FRLs (Filters, Pressure Regulators, and Lubricators), Vacuum products and related accessory components.
- 1.2. Fail-Safe:** Valves, FRLs, Vacuum products and their related components can and do fail without warning for many reasons. Design all systems and equipment in a fail-safe mode, so that failure of associated valves, FRLs or Vacuum products will not endanger persons or property.
- 1.3. Relevant International Standards:** For a good guide to the application of a broad spectrum of pneumatic fluid power devices see: ISO 4414:1998, Pneumatic Fluid Power – General Rules Relating to Systems. See [www.iso.org](http://www.iso.org) for ordering information.
- 1.4. Distribution:** Provide a copy of this safety guide to each person that is responsible for selection, installation, or use of Valves, FRLs or Vacuum products. Do not select, or use Parker valves, FRLs or vacuum products without thoroughly reading and understanding this safety guide as well as the specific Parker publications for the products considered or selected.
- 1.5. User Responsibility:** Due to the wide variety of operating conditions and applications for valves, FRLs, and vacuum products Parker and its distributors do not represent or warrant that any particular valve, FRL or vacuum product is suitable for any specific end use system. This safety guide does not analyze all technical parameters that must be considered in selecting a product. The user, through its own analysis and testing, is solely responsible for:
  - Making the final selection of the appropriate valve, FRL, Vacuum component, or accessory.
  - Assuring that all user's performance, endurance, maintenance, safety, and warning requirements are met and that the application presents no health or safety hazards.
  - Complying with all existing warning labels and / or providing all appropriate health and safety warnings on the equipment on which the valves, FRLs or Vacuum products are used; and,
  - Assuring compliance with all applicable government and industry standards.
- 1.6. Safety Devices:** Safety devices should not be removed, or defeated.
- 1.7. Warning Labels:** Warning labels should not be removed, painted over or otherwise obscured.
- 1.8. Additional Questions:** Call the appropriate Parker technical service department if you have any questions or require any additional information. See the Parker publication for the product being considered or used, or call 1-800-CPARKER, or go to [www.parker.com](http://www.parker.com), for telephone numbers of the appropriate technical service department.

### **2. PRODUCT SELECTION INSTRUCTIONS**

- 2.1. Flow Rate:** The flow rate requirements of a system are frequently the primary consideration when designing any pneumatic system. System components need to be able to provide adequate flow and pressure for the desired application.
- 2.2. Pressure Rating:** Never exceed the rated pressure of a product. Consult product labeling, Pneumatic Division catalogs or the instruction sheets supplied for maximum pressure ratings.
- 2.3. Temperature Rating:** Never exceed the temperature rating of a product. Excessive heat can shorten the life expectancy of a product and result in complete product failure.
- 2.4. Environment:** Many environmental conditions can affect the integrity and suitability of a product for a given application. Pneumatic Division products are designed for use in general purpose industrial applications. If these products are to be used in unusual circumstances such as direct sunlight and/or corrosive or caustic environments, such use can shorten the useful life and lead to premature failure of a product.
- 2.5. Lubrication and Compressor Carryover:** Some modern synthetic oils can and will attack nitrile seals. If there is any possibility of synthetic oils or greases migrating into the pneumatic components check for compatibility with the seal materials used. Consult the factory or product literature for materials of construction.
- 2.6. Polycarbonate Bowls and Sight Glasses:** To avoid potential polycarbonate bowl failures:
  - Do not locate polycarbonate bowls or sight glasses in areas where they could be subject to direct sunlight, impact blow, or temperatures outside of the rated range.
  - Do not expose or clean polycarbonate bowls with detergents, chlorinated hydro-carbons, ketones, esters or certain alcohols.
  - Do not use polycarbonate bowls or sight glasses in air systems where compressors are lubricated with fire resistant fluids such as phosphate ester and di-ester lubricants.



**2.7. Chemical Compatibility:** For more information on plastic component chemical compatibility see Pneumatic Division technical bulletins Tec-3, Tec-4, and Tec-5

- 2.8. Product Rupture:** Product rupture can cause death, serious personal injury, and property damage.
- Do not connect pressure regulators or other Pneumatic Division products to bottled gas cylinders.
  - Do not exceed the maximum primary pressure rating of any pressure regulator or any system component.
  - Consult product labeling or product literature for pressure rating limitations.

### 3. PRODUCT ASSEMBLY AND INSTALLATION INSTRUCTIONS

- 3.1. Component Inspection:** Prior to assembly or installation a careful examination of the valves, FRLs or vacuum products must be performed. All components must be checked for correct style, size, and catalog number. DO NOT use any component that displays any signs of nonconformance.
- 3.2. Installation Instructions:** Parker published Installation Instructions must be followed for installation of Parker valves, FRLs and vacuum components. These instructions are provided with every Parker valve or FRL sold, or by calling 1-800-CPARKER, or at [www.parker.com](http://www.parker.com).
- 3.3. Air Supply:** The air supply or control medium supplied to Valves, FRLs and Vacuum components must be moisture-free if ambient temperature can drop below freezing

### 4. VALVE AND FRL MAINTENANCE AND REPLACEMENT INSTRUCTIONS

- 4.1. Maintenance:** Even with proper selection and installation, valve, FRL and vacuum products service life may be significantly reduced without a continuing maintenance program. The severity of the application, risk potential from a component failure, and experience with any known failures in the application or in similar applications should determine the frequency of inspections and the servicing or replacement of Pneumatic Division products so that products are replaced before any failure occurs. A maintenance program must be established and followed by the user and, at minimum, must include instructions 4.2 through 4.10.
- 4.2. Installation and Service Instructions:** Before attempting to service or replace any worn or damaged parts consult the appropriate Service Bulletin for the valve or FRL in question for the appropriate practices to service the unit in question. These Service and Installation Instructions are provided with every Parker valve and FRL sold, or are available by calling 1-800-CPARKER, or by accessing the Parker web site at [www.parker.com](http://www.parker.com).
- 4.3. Lockout / Tagout Procedures:** Be sure to follow all required lockout and tagout procedures when servicing equipment. For more information see: OSHA Standard – 29 CFR, Part 1910.147, Appendix A, The Control of Hazardous Energy – (Lockout / Tagout)
- 4.4. Visual Inspection:** Any of the following conditions requires immediate system shut down and replacement of worn or damaged components:
- Air leakage: Look and listen to see if there are any signs of visual damage to any of the components in the system. Leakage is an indication of worn or damaged components.
  - Damaged or degraded components: Look to see if there are any visible signs of wear or component degradation.
  - Kinked, crushed, or damaged hoses. Kinked hoses can result in restricted air flow and lead to unpredictable system behavior.
  - Any observed improper system or component function: Immediately shut down the system and correct malfunction.
  - Excessive dirt build-up: Dirt and clutter can mask potentially hazardous situations.

**Caution: Leak detection solutions should be rinsed off after use.**

- 4.5. Routine Maintenance Issues:**
- Remove excessive dirt, grime and clutter from work areas.
  - Make sure all required guards and shields are in place.
- 4.6. Functional Test:** Before initiating automatic operation, operate the system manually to make sure all required functions operate properly and safely.
- 4.7. Service or Replacement Intervals:** It is the user's responsibility to establish appropriate service intervals. Valves, FRLs and vacuum products contain components that age, harden, wear, and otherwise deteriorate over time. Environmental conditions can significantly accelerate this process. Valves, FRLs and vacuum components need to be serviced or replaced on routine intervals. Service intervals need to be established based on:
- Previous performance experiences.
  - Government and / or industrial standards.
  - When failures could result in unacceptable down time, equipment damage or personal injury risk.
- 4.8. Servicing or Replacing of any Worn or Damaged Parts:** To avoid unpredictable system behavior that can cause death, personal injury and property damage:
- Follow all government, state and local safety and servicing practices prior to service including but not limited to all OSHA Lockout Tagout procedures (OSHA Standard – 29 CFR, Part 1910.147, Appendix A, The Control of Hazardous Energy – Lockout / Tagout).
  - Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
  - Disconnect air supply and depressurize all air lines connected to system and Pneumatic Division products before installation, service, or conversion.
  - Installation, servicing, and / or conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
  - After installation, servicing, or conversions air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or if the product does not operate properly, do not put product or system into use.
  - Warnings and specifications on the product should not be covered or painted over. If masking is not possible, contact your local representative for replacement labels.
- 4.9. Putting Serviced System Back into Operation:** Follow the guidelines above and all relevant Installation and Maintenance Instructions supplied with the valve FRL or vacuum component to insure proper function of the system.