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Parker-Watts
Pneumatic Division
Richland, Michigan USA
www.parker.com/watts

(5-13-2013)

MINIATURE FRL

	Document Number		Description
☐	1M301	Rev. 3	14F Particulate Filters, Installation & Service
☐	IS-F500X33	Rev. 1	F500X33 Filter, Installation & Service
☐	IS-F504B	Rev. 3	F501, F504, F507 Filter, Installation & Service
☐	IS-F501	Rev. 1	F501 Coalescing Filter, Installation & Service
☐	1C100NM	——	Mini Oil Removal Filter, Installation & Service
☐	1FR110	Rev. 2	B34 Filter / Regulator, Installation & Service
☐	IS-B500X33	Rev. 1	B500X33 Integral Filter / Regulator, Installation & Service
☐	1M301	Rev. 3	04L Mist Lubricator, Installation & Service
☐	IS-L500X33	Rev. 1	L500X33 Miniature Lubricator, Installation & Service
☐	IS-L508	Rev. 1	L508 Lubricator, Installation & Service
☐	1R402F	Rev. 11	15R Economy Regulator, Installation & Service
☐	1R602	Rev. 7	P3A-W Water Regulator, Installation & Service
☐	IS-R24-R25-R45-R46	Rev. 3	R24, R25 Plastic Air and Water Regulator, Installation & Service
☐	IS-R24-R25-R45-R46	Rev. 3	R45, R46 Plastic Air and Water Regulator, Installation & Service
☐	IS-R364R374R384	Rev. 3	R364, R374, R384 Regulator, Installation & Service
☐	Safety Guide	——	PDN Safety Guide

Pneumatic Division
Richland, Michigan 49083
269-629-5000

Installation & Service Instructions: 1M301

Miniature Series Mist Lubricators & Particulate Filters

ISSUED: April, 2013
Supersedes: November, 2003

Doc# 1M301, EN# 130068, Rev. 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 Inlet Pressure:

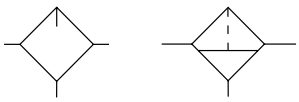
	kPa	PSIG	bar
with Polycarbonate Bowl	1000	150	10.3
with Metal Bowl	1700	250	17.0

NOTE: The maximum recommended pressure drop for a particulate filter is 70 kPa (10 psig, 0.7 bar)

Ambient Temperature Range:

with Polycarbonate Bowl	0°C to 52°C (32°F to 125°F)
with Metal Bowl	0°C to 80°C (32°F to 175°F)

Symbols



Lubricator Particulate Filter

Mist Lubricators (Figure 1)

Description

These mist lubricators are designed to deliver an atomized oil mist to air operated tools, motors, and other pneumatic equipment. Units are equipped with full-view sight glass for visual indication of oil drop rate, needle valve feed adjustment to regulate oil drop rate, and a venturi bypass disc to compensate for changes in air flow demands.

Installation of Lubricator

1. Lubricator should be installed with reasonable accessibility for service whenever possible - repair service kits are available. Keep pipe and tubing lengths to a minimum with inside clean and free of dirt and chips. Pipe joint compounds 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 lubricator so that air flow is in the direction of arrow on body.
3. Installation should be upstream from, and as close as possible, to the device it is to lubricate (valve, cylinder, tool, etc.). Whenever possible, avoid locations that require air-borne oil to move in an upward direction to reach the device to be lubricated.
4. The installation of an individual lubricator for each air consuming device provides best assurances of proper lubrication.
5. In new installations, it is good practice to "wet down" the inside diameter of piping and/hose with oil before making final connections. Although your lubricator delivers oil to the line, pre-coating the inside diameter with oil helps insure that proper amounts of oil are delivered to the point of application.

Operation & Service of Lubricator

⚠ Warning: Before filling, inlet pressure must be eliminated and then de-pressurize system pressure.

1. FILLING - After de-pressurizing system, remove bowl to refill lubricator. Fill bowl to fill line indicated on the bowl with oil of 150 to 200 SSU at 100°F viscosity - same as SAE No. 10 (petroleum based hydraulic oils or spindle oils are good examples). DO NOT USE OILS WITH TACKY ADDITIVES, COMPOUND OILS CONTAINING SOLVENTS, GRAPHITE, SOAPS OR DETERGENTS. (Automotive oils generally contain detergents and are not recommended.
2. Replace the bowl and seat firmly. Excessive torque is not necessary. The lubricator is now ready for setting.
3. OIL DELIVERY ADJUSTMENT - To adjust oil delivery, turn the adjusting needle on top of the lubricator.

Leaner - Clockwise Richer - Counterclockwise

By counting the number of drops per minute in the sight dome, you can adjust lubricator to your required setting.

Generally, one drop per minute downstream for every 10-15 SCFM flow is satisfactory. 25 drops per minute equals one ounce per hour - volume of oil passing through the sight dome.

NOTE: This is a constant density type lubricator which delivers a constant ratio of oil to air flow. Therefore, if air flow increases or decreases, oil delivery will be effected proportionately. ONLY IF DIFFERENT RATIO IS DESIRED SHOULD YOUR ADJUSTMENT KNOB SETTING BE CHANGED AFTER YOUR INITIAL SETTING.

⚠ WARNING

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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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Service Kits - Lubricator

Kit#	Description
PS420	Polycarbonate Bowl with Manual Drain - consists of items: 18 (open bottom), 15, 16, 17 & 32
PS421	Polycarbonate Bowl without Drain - consists of items: 18 (closed bottom) & 15
PS740	Drip Control (Polycarbonate)
PS740N	Drip Control (Nylon)

Parts Identification List - Lubricator

Item#	Description	Item#	Description
1	Knob	11	Spring
2	Drip Control Body	12	Ball, Check
3	Needle	13	Body
4	O-ring	14	Tube
5	Drip Tube	15	O-ring (Body to Bowl)
6	Seal Plate	16	Twist Drain
7	O-ring	17	O-ring (Drain)
8	By-pass Plate	18	Bowl
9	By-pass	32	Twist Drain Knob
10	Ball, Check		

Particulate Filter (Figure 2)

Description

These air line filters are heavy-duty units used to remove airborne impurities from air supply lines by means of centrifugal force and filter element. Units are equipped with vane-type deflectors and drain valves. Deflector plate creates swirling action to the air stream assuring entrainments separation at all flow rates. Filter element with extra large surface assures fine filtration with low pressure drop. Turn manual drain clockwise to open and counterclockwise to close.

Installation of Filter

1. Filter should be installed with reasonable accessibility for service whenever possible - repair service kits are available. Keep pipe and tubing lengths to a minimum with inside clean and free of dirt and chips. Pipe joint compounds 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 unit so that air flow is in the direction of arrow. Installation must be upstream of and close to devices it is to service (valve, cylinder, tool, etc.). Position unit vertically with the bowl drain mechanism at the bottom. Free moisture will thus drain into the sump (“quiet zone”) at the bottom of the bowl.

Operation of the Filter

1. Both free moisture and solids are removed automatically by the filter.
2. Manual drain filters must be drained regularly before the separated moisture and oil reaches the bottom of the element holder. Automatic drain models (pulse drain) will collect and dump liquids automatically. They are actuated when a pressure drop occurs within the filter.
3. The filter element should be removed and replaced when the pressure differential across the filter exceeds 70 kPa (10 psig, 0.7 bar).

Service

⚠ **Caution: SHUT OFF AIR SUPPLY and exhaust the primary and secondary pressure before dis-assembling unit. (Units may be serviced without removing them from the air line.)**

Servicing Filter Element

1. Unscrew threaded bowl and element holder. Then remove filter element, deflector, and gaskets.
2. Clean all internal parts, bowl, and body before re-assembling unit. See Polycarbonate bowl cleaning section.
3. Install deflector, filter element, and gaskets.
4. Attach element holder. Torque from 0.9 to 1.4 Nm (8 to 12 in-lbs).
5. To assist with retaining bowl’s o-ring while installing bowl, lubricate the o-ring (with a mineral based oil or grease). Then place on the bowl.
6. Screw bowl into the body until it is stopped by body; then back off bowl 1/8 turn.
7. Apply pressure to the system and check for leaks. If leaks occur, shut off the air supply, de-pressurize the system and make necessary adjustments to eliminate leakage.

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

Service Kits- Filter

Kit#	Description
PS404	Polycarbonate Bowl with Manual Drain - consists of items: 19, 24, 26 & 27
PS408	Polycarbonate Bowl with Automatic Drain - consists of items: 19, 24, 26, 28, 29, 30 & 31
PS447B	Metal Bowl with Manual Drain - consists of items: 19, 24, 26 & 27
PS451	Metal Bowl with Automatic Drain - consists of items: 19, 24, 26, 28, 29, 30 & 31
PS403	5 Micrometer Element Kit - consists of items: 20, 21 & 24
PS407	5 Micrometer Element Cartridge Kit - consists of items: 20, 21, 22, 23 & 24
PS401	40 Micrometer Element Kit - consists of items: 20, 21 & 24

Parts Identification List - Filter Units

Item#	Description	Item#	Description
19	Bowl	27	Manual Drain (twist style)
20	Gasket	28	O-ring - pulse drain
21	Filter Element	29	Drain (body of pulse drain shown)
22	Filter Holder		
23	Deflector	30	Diaphragm
24	O-ring (body to bowl)	31	Pin
25	Body	32	Twist Drain Knob
26	O-ring (drain to bowl)		

Safety: Transparent Bowls

⚠ 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.

⚠ 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.

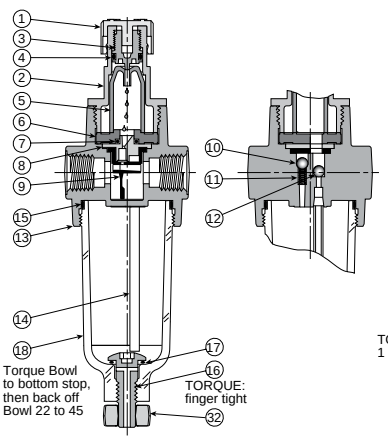


Figure 1: Mist Lubricator

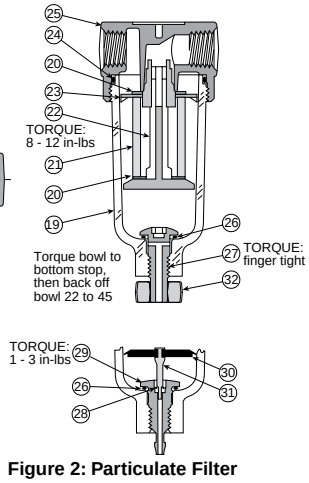


Figure 2: Particulate Filter

Pneumatic Division
Richland, Michigan 49083
269-629-5000

Installation & Service Instructions
IS-F500X33
F500X33 Miniature Filter
ISSUED: August, 2006

Doc. #ISF500X33, ECN #006761, Rev. 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.**
- **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

Polyurethane bowls, sight glass and sight domes on these units may be attacked by certain chemicals. Never use solvents like carbon tetrachloride, trichlorethylene, acetone, ketones, certain alcohols, or paint thinner to clean any parts. These elements can cause crazing or failure of the plastic parts. The polyurethane resin parts are compatible with most hydrocarbon based synthetic lubricants but, before using, check with the manufacturer of the lubricant or oil for compatibility with polyurethane resin.

TO CLEAN POLYURETHANE BOWLS USE MILD SOAP AND WATER ONLY!

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.wattsfluidair.com

Introduction

The Mini Air Filters remove impurities from the air stream two ways — dynamically by centrifugal force, by which the deflector throws out heavier particles and entrained water, and statically through the filter element itself, which filters out the smaller particles. The Mini Miniature filter provides enough filtration for most low volume pneumatic applications. However, in situations where water and/or oil aerosols must also be filtered out, an F501 or F507 coalescing filter should be installed also. Follow these instructions when installing, operating, or servicing the product.

Application Limits

These products are intended for use with compressed air in industrial applications. For other applications, consult factory before use.

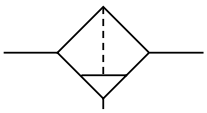
Maximum Recommended Pressure Drop:

	kPa	PSIG	bar
Particulate Filter	70	10	0.7

With Polyurethane Bowl

	kPa	PSIG	bar
Operating Pressure Maximum	1034	150	10.2
Operating Temperature Range		4°C to 52°C (40°F to 125°F)	

ANSI Symbols



Filter w/Manual Drain

Installation

All Mini Air Filters are individually tapped (NPT or BSPP) to allow direct mounting to piping. Before installing, blow out pipe line to remove scale and other foreign matter. This unit has DRYSEAL pipe threads; use pipe compound or tape sparingly to male threads only. Install units in pipe line so that flow is into port stamped "IN" on body. Install as near as possible to equipment serviced.

Maintenance

To maintain maximum filtering efficiency, and to avoid excessive pressure drop, the filter bowl and element must be kept clean. Turn drain valve clockwise, from bottom, to drain any bowl accumulation before it reaches level of lower baffle. To aid in the draining of the bowl, a semi-automatic piston drain (PDK-X33) may be installed to drain bowl accumulation each time flow is initiated through the filter, as well as manually if need be. A visible coating of dirt or condensate on filter element, or an excessive pressure drop, indicates cleaning is necessary.

⚠ CAUTION: FILTER BOWL MUST BE CLEANED WITH HOUSEHOLD SOAP ONLY!

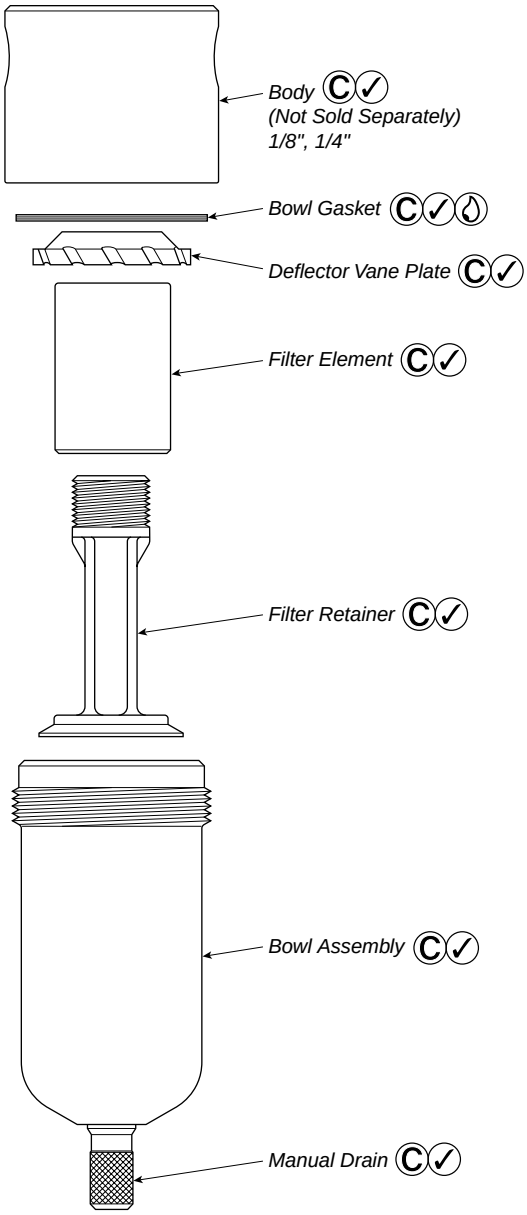
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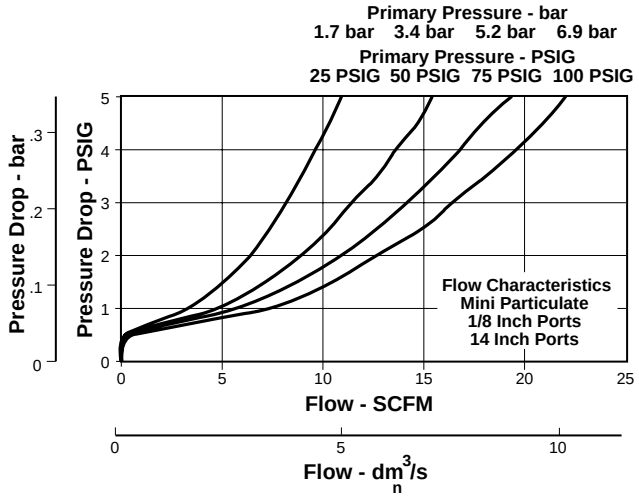
Service Kits / Parts Available

Description	Mini Particulate 1/8" & 1/4"
Bowl Gasket	GSK-504Z101
Filter Element Kits 5 Micron 20 Micron	 EK504VY EK504Y
Bowl Assembly "A" - Polyurethane Bowl, 150 PSI Maximum Pressure	BKF35A
Manual Drain	SA600Y7-1
Deflector (Vane Plate	504Z75
Filter Element Retainer	F504-0491P

Accessories

Description	Part Number
Piston Drain	PDK-X33
Wall Mount Bracket Kit*	—

* X67 Mounting Bracket Option must be ordered with filter from factory, due to pre-drilled holes in filter head.

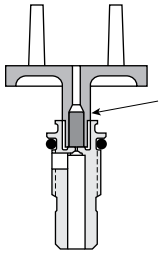


💧 Lightly grease with provided lubricant.

✓ 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.

Piston Drain



Pneumatic Division
Richland, Michigan 49083
269-629-5000

Installation & Service Instructions
IS-F504B

F501, F504, F507 Miniature Filter

ISSUED: March, 2009
Supersedes: August, 2006

Doc. #ISF504, EN #090185, Rev. 3

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⚠ CAUTION

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Introduction

The Miniature air filters remove impurities from the air stream two ways — dynamically by centrifugal force, by which the deflector throws out heavier particles and entrained water, and statically through the filter element itself, which filters out the smaller particles. The F504 Miniature filter provides enough filtration for most low volume pneumatic applications. However, in situations where water and/or oil aerosols must also be filtered out, an F501 or F507 coalescing filter should be installed also. Follow these instructions when installing, operating, or servicing the product.

Application Limits

These products are intended for use with compressed air in industrial applications. For other applications, consult factory before use.

Maximum Recommended Pressure Drop:

	kPa	PSIG	bar
Particulate Filter	70	10	0.7
Coalescing Filter	1 4	2	.14

With Polycarbonate Bowl

	kPa	PSIG	bar
Operating Pressure Maximum	1034	150	10.2
Operating Temperature Range			4°C to 52°C (40°F to 125°F)

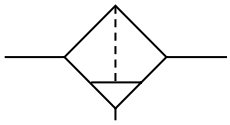
With Metal Bowl

	kPa	PSIG	bar
Operating Pressure Maximum	2068	300	21.0
Operating Temperature Range			4°C to 82°C (40°F to 180°F)

With Metal Bowl with Piston Drain

	kPa	PSIG	bar
Operating Pressure Maximum	1207	175	12.0
Operating Temperature Range			4°C to 52°C (40°F to 125°F)

ANSI Symbols



Filter w/Manual Drain

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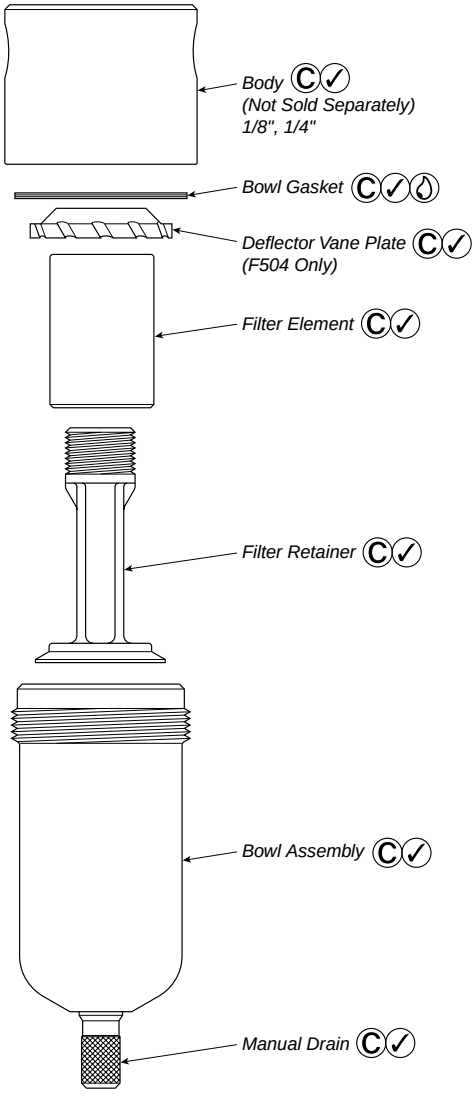
Installation

All Miniature air filters are individually tapped (NPT or BSPP) to allow direct mounting to piping. Before installing, blow out pipe line to remove scale and other foreign matter. This unit has DRYSEAL pipe threads; use pipe compound or tape sparingly to male threads only. Install units in pipe line so that flow is into port stamped "IN" on body. Install as near as possible to equipment serviced.

Maintenance

To maintain maximum filtering efficiency, and to avoid excessive pressure drop, the filter bowl and element must be kept clean. Turn drain valve clockwise, from bottom, to drain any bowl accumulation before it reaches level of lower baffle. To aid in the draining of the bowl, a semi-automatic piston drain (RK504SY) may be installed to drain bowl accumulation each time flow is initiated through the filter, as well as manually if need be. A visible coating of dirt or condensate on filter element, or an excessive pressure drop, indicates cleaning is necessary.

⚠ **CAUTION:** FILTER BOWL MUST BE CLEANED WITH HOUSEHOLD SOAP ONLY!



💧 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.

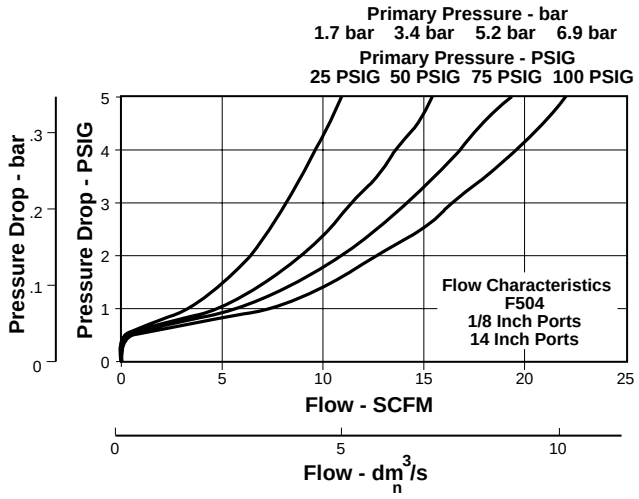
Service Kits / Parts Available

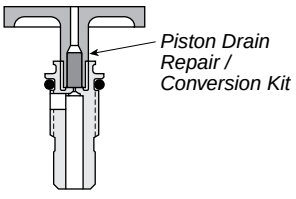
Description	Part Number
Bowl Gasket	GSK-504Z101
Particulate Filter Element Kits 5 Micron 20 Micron	 EK504VY EK504Y
Coalescing Filter Element Kits Grade 6 (H) Grade 10 (0)	 EKF501H EKF507
Bowl Assembly "A" - Polycarbonate Bowl, 150 PSI Maximum Pressure "D" - Zinc Bowl, 300 PSI Max. Pressure	 BK504Y BK505Y
Manual Drain	SA600Y7-1
Deflector (Vane Plate) - F504 Only	504Z75
Filter Element Retainer	F504-0491P

Accessories

Description	Part Number	Bowl Type
Piston Drain	RK504SY	A, D
Wall Mount Bracket Kit*	—	—

* X67 Mounting Bracket Option must be ordered with filter from factory, due to pre-drilled holes in filter head.





Piston Drain

Pneumatic Division
Richland, Michigan 49083
269-629-5000

Installation & Service Instructions
IS-F501

1/8"& 1/4" Coalescing Filters

ISSUED: April, 2008
Supersedes: None

Doc. #ISF501, EN #080247, Rev. 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.**
- **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.**

Safety: Transparent Bowls

⚠ CAUTION

Plastic 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. Plastic bowls should not be exposed to chlorinated hydro-carbons, 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 di-ester types.

Metal bowls are recommended where ambient and/or media conditions are not compatible with plastic 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 PLASTIC 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 the plastic.

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/pneumatics

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.

Maximum Recommended Pressure Drop:

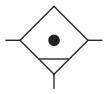
	kPa	PSIG	bar
Coalescing Filter	70	10	0.7

Operating Pressure Maximum	**kPa**	**PSIG**	**bar**
Bowl w/ Twist Drain / No Sight Gauge	2068	300	21.0
Bowl w/ Auto Drain / No Sight Gauge	1210	175	12.1
Bowl w/ Twist Drain and Sight Gauge	1700	250	17.0
Bowl w/ Auto Drain and Sight Gauge	1210	175	12.1

Operating Temperature Range:

Bowl w/ Twist Drain / No Sight Gauge: 4°C to 82°C (40°F to 180°F)
Bowl w/ Auto Drain / No Sight Gauge: 4°C to 66°C (40°F to 150°F)
Bowl w/ Twist Drain and Sight Gauge: 4°C to 66°C (40°F to 150°F)
Bowl w/ Auto Drain and Sight Gauge: 4°C to 66°C (40°F to 150°F)

Symbols



Coalescing Filter w/ Manual Drain

Installation

1. The filter should be installed with reasonable accessibility for service whenever possible – repair service kits are 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. Also, new pipe or hose should be installed between the filter and equipment being protected.
2. The upstream pipe work must be clear of accumulated dirt and liquids.
3. Select a filter location as close as possible to the equipment being protected and upstream of any pressure regulator.
4. A 5 micrometer pre-filter is recommended to protect the high efficiency filter and to prolong the element's life.
5. Install filter so that air flows into port labelled "IN" on body.
6. Install filter vertically with bowl drain mechanism at the bottom. Free moisture will thus drain into the sump "quiet zone" at the bottom of the bowl.

⚠ 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.

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

Operation

1. Both free moisture and solids are removed automatically by the filter.
2. Manual drain filters must be drained regularly before the separated moisture and oil reaches the bottom of the baffle or end cap.
3. The filter element should be removed and replaced when pressure differential across the filter is 69 kPa (10 PSIG).

Service Procedure

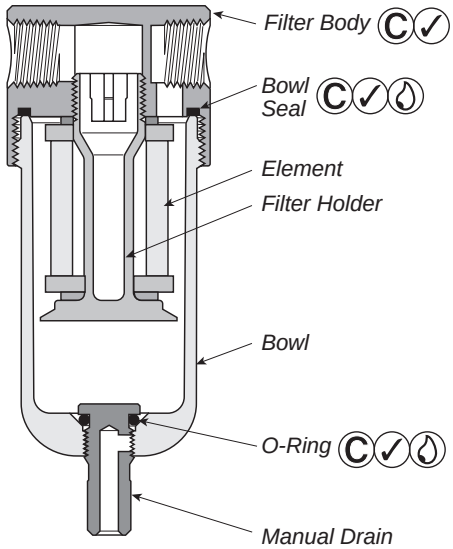
⚠ **Caution: Shut off air supply and exhaust the pressure trapped within the filter bowl before servicing unit.**

⚠ **Caution: Touching or handling the new element section may cause contamination, spotting, or migration of oil.**

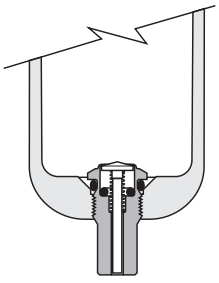
1. Unscrew and remove bowl.
2. Unscrew the filter holder from body and then remove element.
3. Clean all internal parts and bowl before reassembling.
4. The coalescing filter element should be removed and replaced when pressure differential across the filter is 10 PSID. Differential gauges should be used to determine when the maximum recommended pressure differential has been reached.
5. Attach filter holder and finger tighten firmly.
6. Replace bowl seal. Lightly lubricate new seal to assist with retaining it in position.
7. Install bowl into body and tighten; hand tight, plus 1/4 turn.
8. After servicing, apply system pressure and check for air leaks. If leakage occurs, **DO Not Operate** — conduct servicing again.

Service Kits Available

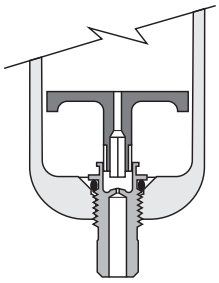
Description	Part Number
Auto Pulse Drain	RK504SY
Element (Grade 6)	EKF501H
Element (Grade 10)	EKF507
Manual Drain	SA600Y7-1
Bowl Seal	GSK-504Z101
Bowl Only Polycarbonate	BK504Y
Bowl Only Metal	BK505Y



F501 Coalescing Filter



Semi-Automatic "Overnight" Drain



Automatic Pulse Drain

Ⓒ Clean with lint-free cloth.

✓ Inspect for nicks, scratches, and surface imperfections. If present, reduced service life is probable and future replacement should be planned.

Lightly grease with provided lubricant.

Pneumatic Division
Richland, Michigan 49083
269-629-5000

Installation & Service Instructions: 1C100NM

Mini Oil Removal Filters

ISSUED: January, 2010
Supersedes: None

Doc.# 1C100NM, EN# 100097

⚠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.**

⚠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

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)

With Metal Bowl

	kPa	PSIG	bar
Operating Pressure Maximum	**1700**	**250**	**17.0**

Operating Temperature Maximum: 80°C (175°F)

With Automatic Drain

	kPa	PSIG	bar
Operating Pressure Maximum	**68**	**10**	**0.68**

Installation

1. The equipment to which the filter is attached should be internally cleaned to remove all traces of accumulated oil and dirt. Also, new pipe or hose should be installed between the filter and equipment being protected.
2. Blow all upstream pipe work clear of accumulated dirt and liquids.
3. Select a filter location as close as possible to the equipment being protected and downstream of any pressure regulator.
4. A 5 micrometer pre-filter is recommended to protect the high efficiency filter and to prolong the element life.
5. Install filter so that air flows in the direction of arrow on cover.
6. Install filter vertically with the bowl drain mechanism at the bottom. Free moisture will thus drain into the sump "quiet-zone" at the bottom of the bowl (automatic drain models are recommended as standard equipment).

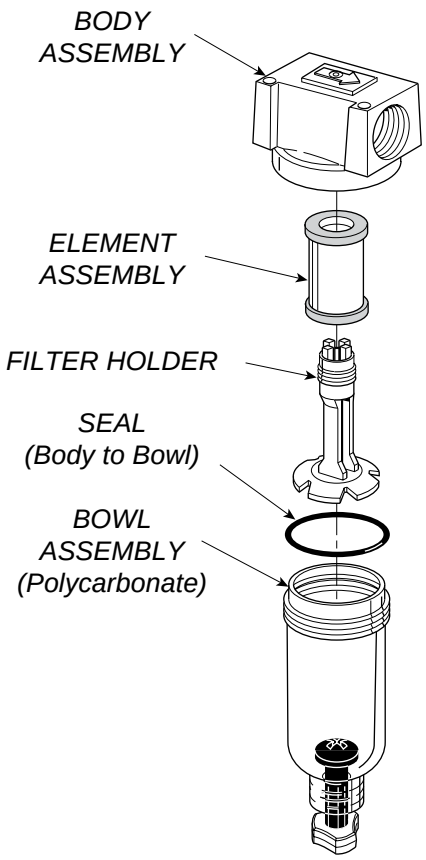
⚠WARNING

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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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Operation

Manual drain filters must be drained regularly before the separated moisture and oil reaches the bottom of the filter element. Automatic drain models will collect and dump the liquids automatically.

Pressure differential gauges should be used to determine when the maximum recommended pressure differential of 10 PSI (0.7 KG/CM^2) has been reached.

DO NOT EXCEED THE RATED RECOMMENDED FLOWS. THE MINIMUM FLOW IS TEN PERCENT OF THE NOMINAL RATING.

Maintenance

Mini

1. Loosen and remove bowl. DO NOT use a pipe wrench on polycarbonate bowl.
2. Unscrew filter holder and used element from filter housing. Discard the used element.
3. Lightly lubricate the new bowl seal included in the kit and replace the old seal. Use only mineral based oils or grease. DO NOT use synthetic oils such as esters, and DO NOT use silicones.
4. Install new element.
   a. Place new element on filter holder
   b. Place nylon washer on top of the element
   c. Place body seal on top of the nylon washer
5. Install new filter element / holder assembly. Hand-tighten only – DO NOT use a wrench.
6. Thread bowl onto body (Torque bowl to bottom of body then back off 1/8 turn).
7. Pressurize and check for leaks.

⚠ **CAUTION: Touching or handling the element section may cause contamination, spotting or migration of oil.**

Automatic drains should be checked to insure they are operating correctly.

Troubleshooting

(If oil aerosol appears downstream from the filter):

1. Examine downstream air lines to determine if they were cleaned out before installation of the filter. Residual oil will contaminate an installation from new pipe work if it is not initially cleaned.
2. Determine if the sealing gasket or o-ring is in place, and that it is not cut or otherwise damaged. (When checking the element, do not touch the element's body. Always handle the element by the bottom end cap.) When reinstalling the element, turn it gently to make sure that it is screwed tightly in place.
3. Check the rate of air being used. The air flow should not exceed the rated capacity of the element, nor be less than 10% of its rated flow.
4. Check the inlet air temperature; this should not exceed 65°C (150°F). Where higher temperatures are used, oil vapor may condense if the air cools downstream of the filter.
5. Check for acid fumes or other harmful gases being drawn into the compressor intake. The element may be attacked by certain chemicals.
6. Determine the type of oil used in the compressor. Some synthetic or high flash point oils are detrimental — contact factory for advice.

Kits Available

Description	Kit No.
Element Assemblies: (Includes Seal) Grade 6	PS473
Polycarbonate Bowl Kit (1) Polycarbonate Bowl with Manual Drain (1) Seal (Body to Bowl)	PS404

Accessories

Description	Kit No.
Polycarbonate Bowl (Automatic Drain)	PS408
Metal Bowl (Manual Drain)	PS447B
Metal Bowl (Automatic Drain)	PS451
Twist Drain Knob	P05117

* Not supplied with units, must be ordered separately.

Pneumatic Division
Richland, Michigan 49083
269-629-5000

Installation & Service Instructions: 1FR110

B34 Miniature Filter / Regulators

ISSUED: February, 2010
Supersedes: May, 2007

Doc.# 1FR110, EN# 100185, Rev. 2

⚠ 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.**

⚠ WARNING

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

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

Safety: Polycarbonate Bowls

⚠ 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 di-ester 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 occur.

⚠ WARNING

To avoid polycarbonate bowl rupture that can cause personal injury or property damage, do not exceed bowl pressure of temperature ratings. Polycarbonate bowls have a 150 PSIG (1030 kPa) pressure rating and a maximum temperature rating of 52°C (125°F).

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.

Maximum Recommended Pressure Drop:

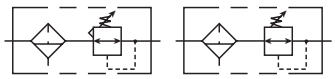
	kPa	PSIG	bar
Particulate Filter	70	10	0.7

Operating Pressure Maximum	**kPa**	**PSIG**	**bar**
Polycarbonate Bowl	1034	150	10.3
Metal Bowl	1724	250	17.2
Piston Drain	1207	175	12.0

Operating Temperature Range

Polycarbonate Bowl	Max. 52°C (125°F)
Metal Bowl	Max. 80°C (175°F)
Piston Drain	Max. 52°C (125°F)

Symbols



Relieving Filter / Regulator Adjustable ***Non-Relieving Filter / Regulator Adjustable***

Installation

1. The Filter / Regulator should be installed with reasonable accessibility for service whenever possible – repair service kits are 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. Also, new pipe or hose should be installed between the Filter / Regulator and equipment being protected.
2. The upstream pipe work must be clear of accumulated dirt and liquids.
3. Select a Filter / Regulator location as close as possible to the equipment being protected.
4. Install Filter / Regulator so that air flows into port labelled "IN" on body.

⚠ WARNING

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5. Install Filter / Regulator vertically with the bowl drain mechanism at the bottom. Free moisture will thus drain into the sump ("quiet zone") at the bottom of the bowl.
6. Gauge ports are located on both sides of the Filter / Regulator body for your convenience. It is necessary to install a gauge or socket pipe plugs into each port during installation.

Operation

1. Both free moisture and solids are removed automatically by the filter.
2. Manual drain filters must be drained regularly before the separated moisture and oil reaches the bottom of the Baffle or End Cap.
3. The Filter Element should be removed and replaced when pressure differential across the filter is 69 kPa (10 PSIG).
4. Before turning on the air supply, disengage the Adjusting Knob by pulling upward. Turn Adjusting Knob counterclockwise until the compression is released from the Pressure Control Spring.
5. Then turn Knob clockwise and adjust regulator to desired downstream pressure. This permits pressure to build up slowly in the downstream line.
6. To decrease regulated pressure settings, always reset from a pressure lower than the final setting required. Example, lowering the secondary pressure from 550 to 410 kPa (80 to 60 PSIG) is best accomplished by dropping the secondary pressure to 350 kPa (50 PSIG), then adjusting upward to 410 kPa (60 PSIG).
7. When desired secondary pressure setting has been reached, push the Knob down to lock this pressure setting.

Service

⚠ **Caution: Disconnect or shut off air supply and exhaust the primary and secondary pressures before servicing unit. Turning the adjusting knob counterclockwise does not vent downstream pressure on non-relieving regulators. Downstream pressure must be vented before servicing regulator.**

⚠ **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 adjust regulator to the desired downstream pressure. Check unit for leaks. If leakage occurs, do not operate - conduct repairs and retest.

Servicing Filter Element - (Refer to Figure 1)

1. Unscrew and remove Bowl.
2. Unscrew the Element Retainer from Body and then remove Element.
3. Clean all internal parts and bowl before reassembling.
4. Install new element. IMPORTANT: The Filter / Regulator will not operate properly if the Deflector is not installed properly. The Deflector must be installed between the Element Retainer and the Filter Body.
5. Attach Element Retainer and finger tighten firmly.
6. Replace Bowl Seal. Lightly lubricate new seal to assist with retaining it in position.
7. Install Bowl into Body and tighten; hand tight, plus 1/4 turn.

Servicing Regulator - (Refer to Figure 1)

1. Disengage the Adjusting Knob by pulling upward. Turn Adjusting Knob counterclockwise until the compression is released from the Pressure Control Spring.
2. Remove the Bonnet and Bowl assemblies by unscrewing the Bonnet and Bowl from the body.
3. Remove Diaphragm Assembly from Bonnet Assembly.
4. Remove Valve Seat, Poppet Assembly, Poppet Return Spring.
5. Clean and carefully inspect parts for wear or damage. Wipe parts, clean with soapy water or denatured alcohol but do not use denatured alcohol on plastic bowl or sight gauge. If using compressed air to blow dry, be sure to wear appropriate eye protection. If replacement is necessary, use parts from service kits. Clean Bowl.
6. Lubricate O-rings with grease found in service kits.
7. Install Poppet Return Spring, Poppet Assembly, and Valve Seat.
8. Install Diaphragm Assembly into Body Assembly. Assemble Bonnet Assembly into Body and tighten per Figure 1.

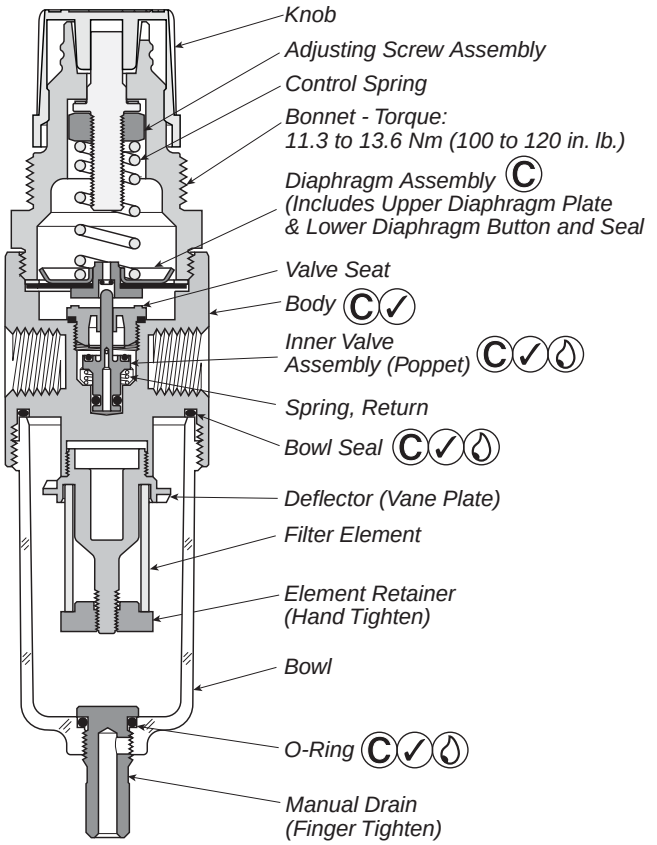


Figure 1

💧 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.

Service / Parts Kits Available

Description	B34 (1/8" & 1/4")
Bowl Kits	
Polycarbonate	BK504Y
Polycarbonate (with Piston Drain)	BK504SY
Zinc	BK505Y
Zinc (with Piston Drain)	BK505SY
Bowl Seal	GSK-504Z101
Filter Element (5 Micron)	FRP-96-729
Filter Element (40 Micron)	FRP-96-294
Gauge, 0 to 60 (0 to 4 bar)	K4515N18060
Gauge, 0 to 160 (0 to 11 bar)	K4515N18160
Mounting Bracket / Nut	SA161X57
Piston Drain (Max. Pressure 150 PSIG)	RK504SY
Panel Mount Nut	R05X51
Regulator Repair Kit (Relieving)	GRP-96-725
Regulator Repair Kit (Non-Relieving)	GRP-96-726
Spring, 0-25 PSIG (0 to 1.7 bar)	GRP-95-111
Spring, 0-60 PSIG (0 to 4 bar)	GRP-96-718
Spring, 0-125 PSIG (0 to 8.6 bar)	GRP-96-717

Pneumatic Division
Richland, Michigan 49083
269-629-5000

Installation & Service Instructions
IS-B500X33

B500X33 Miniature Integral Filter / Regulator Series

ISSUED: August, 2006

Doc. #ISB500X33, ECN #060761, Rev. 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.**
- **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

Polyurethane bowls, sight glass and sight domes on these units may be attacked by certain chemicals. Never use solvents like carbon tetrachloride, trichlorethylene, acetone, ketones, certain alcohols, or paint thinner to clean any parts. These elements can cause crazing or failure of the plastic parts. The polyurethane resin parts are compatible with most hydrocarbon based synthetic lubricants but, before using, check with the manufacturer of the lubricant or oil for compatibility with polyurethane resin.

TO CLEAN POLYURETHANE BOWLS USE MILD SOAP AND WATER ONLY!

⚠ WARNING

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

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.wattsfluidair.com

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.

Maximum Recommended Pressure Drop:

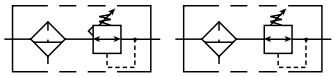
	kPa	PSIG	bar
Particulate Filter	70	10	0.7

Operating Pressure Maximum	kPa	PSIG	bar
Polyurethane Bowl	1034	150	10.3
Piston Drain	1207	175	12.0

Operating Temperature Range

Polyurethane Bowl	Max. 52°C (125°F)
Piston Drain	Max. 65.6°C (150°F)

Symbols



Filter / Regulator

Installation

1. The Filter / Regulator should be installed with reasonable accessibility for service whenever possible – repair service kits are 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. Also, new pipe or hose should be installed between the Filter / Regulator and equipment being protected.
2. The upstream pipe work must be clear of accumulated dirt and liquids.
3. Select a Filter / Regulator location as close as possible to the equipment being protected.
4. Install Filter / Regulator so that air flows into port labelled "IN" on body.
5. Install Filter / Regulator vertically with the bowl drain mechanism at the bottom. Free moisture will thus drain into the sump ("quiet zone") at the bottom of the bowl.
6. Gauge ports are located on both sides of the Filter / Regulator body for your convenience. It is necessary to install a gauge or socket pipe plugs into each port during installation.

Operation

1. Both free moisture and solids are removed automatically by the filter.
2. Manual drain filters must be drained regularly before the separated moisture and oil reaches the bottom of the Baffle or End Cap.

⚠ 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.

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

3. The Filter Element should be removed and replaced when pressure differential across the filter is 69 kPa (10 PSIG).
4. Before turning on the air supply, disengage the Adjusting Knob by pulling upward. Turn Adjusting Knob counterclockwise until the compression is released from the Pressure Control Spring.
5. Then turn Knob clockwise and adjust regulator to desired downstream pressure. This permits pressure to build up slowly in the downstream line.
6. To decrease regulated pressure settings, always reset from a pressure lower than the final setting required. Example, lowering the secondary pressure from 550 to 410 kPa (80 to 60 PSIG) is best accomplished by dropping the secondary pressure to 350 kPa (50 PSIG), then adjusting upward to 410 kPa (60 PSIG).
7. When desired secondary pressure setting has been reached, push the Knob down to lock this pressure setting.

Service

⚠ **Caution: Disconnect or shut off air supply and exhaust the primary and secondary pressures before servicing unit. Turning the adjusting knob counterclockwise does not vent downstream pressure on non-relieving regulators. Downstream pressure must be vented before servicing regulator.**

⚠ **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 adjust regulator to the desired downstream pressure. Check unit for leaks. If leakage occurs, do not operate - conduct repairs and retest.

Servicing Filter Element - (Refer to Figure 1)

1. Unscrew and remove Bowl.
2. Unscrew the Element Retainer from Body and then remove Element.
3. Clean all internal parts and bowl before reassembling.
4. Install new element. IMPORTANT: The Filter / Regulator will not operate properly if the Deflector is not installed properly. The Deflector must be installed between the Element Retainer and the Filter Body.
5. Attach Element Retainer and finger tighten firmly.
6. Replace Bowl Seal. Lightly lubricate new seal to assist with retaining it in position.
7. Install Bowl into Body and tighten; hand tight, plus 1/4 turn.

Servicing Regulator - (Refer to Figure 1)

1. Disengage the Adjusting Knob by pulling upward. Turn Adjusting Knob counterclockwise until the compression is released from the Pressure Control Spring.
2. Remove the Bonnet and Bowl assemblies by unscrewing the Bonnet and Bowl from the body.
3. Remove Diaphragm Assembly from Bonnet Assembly.
4. Remove Element Retainer, Filter Element, Poppet Assembly, Poppet Return Spring.
5. Clean and carefully inspect parts for wear or damage. Wipe parts, clean with soapy water or denatured alcohol **but do not use denatured alcohol on plastic bowl or sight gauge**. If using compressed air to blow dry, be sure to wear appropriate eye protection. If replacement is necessary, use parts from service kits. Clean Bowl.
6. Lubricate O-rings with grease found in service kits.
7. Install Filter Element onto the Element Retainer and firmly tighten.
8. Install Poppet Return Spring, Poppet Assembly, and Element Retainer. IMPORTANT: The Filter / Regulator will not operate properly if the Defector is not installed properly. The Deflector must be installed between the Element Retainer and Filter Body.
9. Install Diaphragm Assembly into Body Assembly. Assemble Bonnet Assembly onto Body and tighten per Figure 1.
10. Install Bowl into Body and tighten, hand tight, plus 1/4 turn.

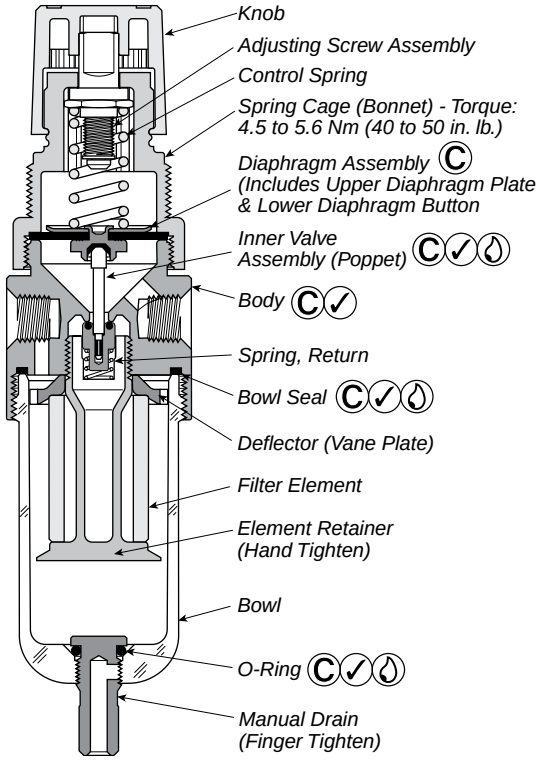


Figure 1

💧 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.

Service / Parts Kits Available

Description	B548 (1/8" & 1/4")
Bowl Kit Polyurethane	 BKF35A
Bowl Seal	GSK-504Z101
Cage Kit Standard "T" Option	 CKR364Y CKR364T
Filter Element (5 Micron)	EK504VY
Filter Element (20 Micron)	EK504Y
Gauge, 0 to 60 (0 to 4 bar)	K4515N18060
Gauge, 0 to 160 (0 to 11 bar)	K4515N18160
Mounting Bracket	SA161X57
Piston Drain	PDK-X33
Panel Mount Nut	R05X51
Regulator Repair Kit (Relieving)	RK549Y
Regulator Repair Kit (Non-Relieving)	RK548Y
Spring, 0-25 PSIG (0 to 1.7 bar)	SPR-375-1
Spring, 0-60 PSIG (0 to 4 bar)	SPR-376
Spring, 0-125 PSIG (0 to 8.6 bar)	SPR-377
Deflector (Vane Plate)	504Z75
Return Spring	SPR-80
Element Retainer	F504-0491P

Pneumatic Division
Richland, Michigan 49083
269-629-5000

Installation & Service Instructions
IS-L500X33

L500X33 Miniature Lubricator

ISSUED: August, 2006

Doc. #ISL500X33, ECN #060761, Rev. 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.**
- **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

Polyurethane bowls, sight glass and sight domes on these units may be attacked by certain chemicals. Never use solvents like carbon tetrachloride, trichlorethylene, acetone, ketones, certain alcohols, or paint thinner to clean any parts. These elements can cause crazing or failure of the plastic parts. The polyurethane resin parts are compatible with most hydrocarbon based synthetic lubricants but, before using, check with the manufacturer of the lubricant or oil for compatibility with polyurethane resin.

TO CLEAN POLYURETHANE BOWLS USE MILD SOAP AND WATER ONLY!

Safety Guide

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Introduction

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

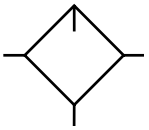
Application Limits

These products are intended for use in general purpose compressed air systems only. For other applications, consult factory before use.

With Polyurethane Bowl

	kPa	PSIG	bar
Operating Pressure Maximum	1034	150	10.0
Operating Temperature Range		4°C to 52°C (40°F to 125°F)	

ANSI Symbols



Installation

Mini Lubricators are individually tapped (NPT) to allow direct mounting to piping. Before installing, blow out pipe line to remove scale and other foreign matter. This unit has DRYSEAL pipe threads; use pipe compound or tape sparingly to male threads only. Install units in pipe line so that flow is into port stamped "IN" on body. Install as near as possible to equipment serviced.

Lubricant

For average conditions, the use of high quality SAE #10 (S.U.V. 150-200 SEC @ 100°F) oil is recommended. Other lubricants, as specified by the maker of the equipment to be lubricated, may be used if not heavier than SAE #40 (S.U.V. 800 SEC @100°F).

Filling

L508 Lubricators may be filled only under no pressure. To fill the lubricator, the air supply must be shut off and the remaining pressure in the system bled down to zero pressure. A long spout oil can must be used. Slowly remove fill plug and insert tip of spout to bottom of fill port recess. Fill to within 1/2" of top of bowl using correct oil.

⚠ 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.

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Adjustment

The adjustment knob is factory set so that, when turned fully clockwise, no oil is delivered to the venturi for atomization, and equipment is not being lubricated. To initially adjust oil drip rate, turn on the air, start flow and set knob to obtain the desired drip rate, which is visible through the sight dome. After system reaches normal operating temperature, fine tune the drip rate as needed. As a start, one to two drops per minute is suggested, correct lubrication being a matter of experience and demand. Clockwise rotation of knob decreases oil feed rate. To check lubrication, hold a thumbnail or mirror near the equipment exhaust. A heavy film indicates over-lubrication and the drip rate should be reduced by turning knob to a lower setting. After final setting has been achieved, the knob may be removed to make the adjustment mechanism tamper resistant.

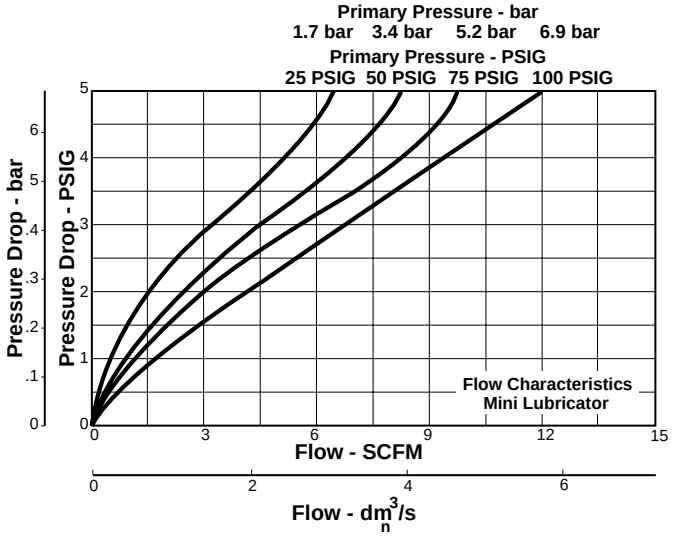
Cycling Applicator

If the lubricator is to be used in a cycling application, the conditions must be as follows:

The lubricator must stay pressurized during on AND off cycles. On cycle time must be at least 15 seconds, and the flow rate during each cycle must be at least 2 SCFM.

Maintenance - Cleaning

If both air and oil are kept clean, and the oil level never allowed below end of tube in the bowl, the lubricator should provide long periods of unattended service. Cessation of oil dripping through the sight dome, irrespective of knob adjustment, is an indication that cleaning is necessary. To clean, it is not necessary to remove lubricator from the line. Depressurize and disassemble using the drawing as a guide. In most instances, cleaning is needed only in the oil metering area. Pull off adjusting knob, unscrew sight dome assembly, remove inner drip spout and clean with household soap. PLASTIC BOWLS AND SIGHT DOME MUST BE CLEANED WITH HOUSEHOLD SOAP ONLY.

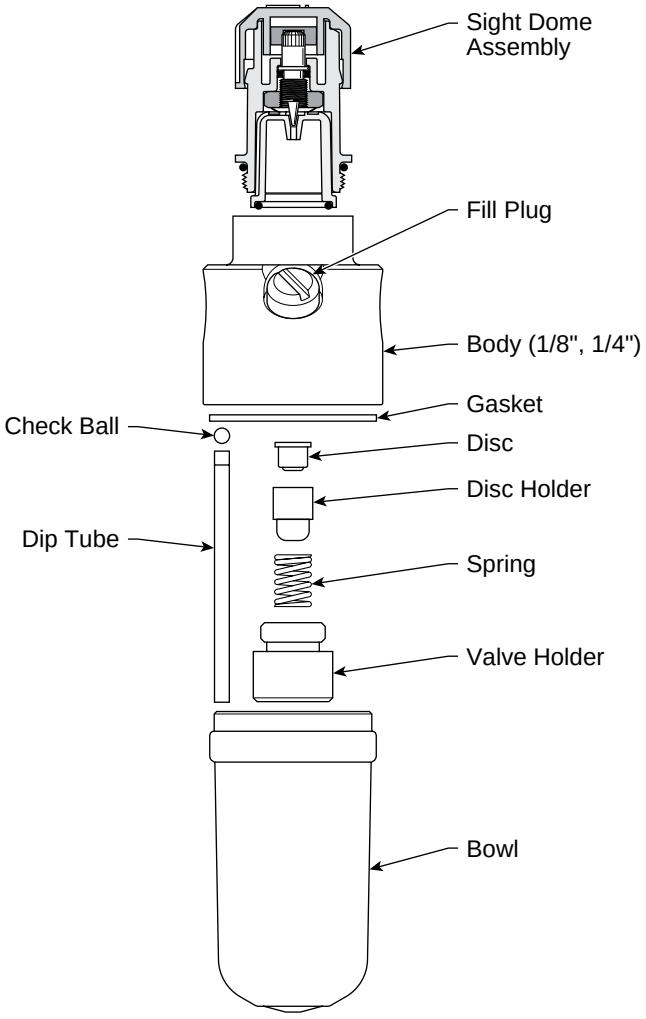


Service Kits / Parts Available

Product Description	Number
Bowl Replacement Kit* Polyurethane	BKL35A
Sight Dome Assembly (Includes Knob, Sight Dome, Needle Valve, Hex Nut, Spring Washer, Drip Spout, O-Rings)	RKL100
Fill Plug	SA508Y4
Gasket	GSK-504Z101
Check Ball	506Y106
Disc	508Z37
Disc Holder	508Y47-1
Spring	SPR-330
Dip Tube	L05Y74-1
Valve Holder	508Y30-1
Mounting Bracket Kit†	—

* Bowl kits include bowl seal.

† "X67" Mounting Bracket option must be ordered with lubricator from factory due to pre-drilled holes in lubricator head.



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.

Pneumatic Division
Richland, Michigan 49083
269-629-5000

Installation & Service Instructions
IS-L508

L508 Miniature Lubricator

ISSUED: September, 2005

Doc. #ISL508, ECN #050388, Rev. 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.**
- **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

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 di-ester 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 occur.

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. For other applications, consult factory before use.

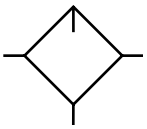
With Plastic Bowl

	kPa	PSIG	bar
Operating Pressure Maximum	1034	150	10.0
Operating Temperature Range		4°C to 49°C (40°F to 120°F)	

With Zinc Bowl

	kPa	PSIG	bar
Operating Pressure Maximum	2068	300	21.0
Operating Temperature Range		4°C to 82°C (40°F to 180°F)	

ANSI Symbols



Installation

L508 Lubricators are individually tapped (NPT) to allow direct mounting to piping. Before installing, blow out pipe line to remove scale and other foreign matter. This unit has DRYSEAL pipe threads; use pipe compound or tape sparingly to male threads only. Install units in pipe line so that flow is into port stamped "IN" on body. Install as near as possible to equipment serviced.

Lubricant

For average conditions, the use of high quality SAE #10 (S.U.V. 150-200 SEC @ 100°F) oil is recommended. Other lubricants, as specified by the maker of the equipment to be lubricated, may be used if not heavier than SAE #40 (S.U.V. 800 SEC @100°F).

⚠WARNING

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Filling

L508 Lubricators may be filled only under no pressure. To fill the lubricator, the air supply must be shut off and the remaining pressure in the system bled down to zero pressure. A long spout oil can must be used. Slowly remove fill plug and insert tip of spout to bottom of fill port recess. Fill to within 1/2" of top of bowl using correct oil.

Adjustment

The adjustment knob is factory set so that, when turned fully clockwise, no oil is delivered to the venturi for atomization, and equipment is not being lubricated. To initially adjust oil drip rate, turn on the air, start flow and set knob to obtain the desired drip rate, which is visible through the sight dome. After system reaches normal operating temperature, fine tune the drip rate as needed. As a start, one to two drops per minute is suggested, correct lubrication being a matter of experience and demand. Clockwise rotation of knob decreases oil feed rate. To check lubrication, hold a thumbnail or mirror near the equipment exhaust. A heavy film indicates over-lubrication and the drip rate should be reduced by turning knob to a lower setting. After final setting has been achieved, the knob may be removed to make the adjustment mechanism tamper resistant.

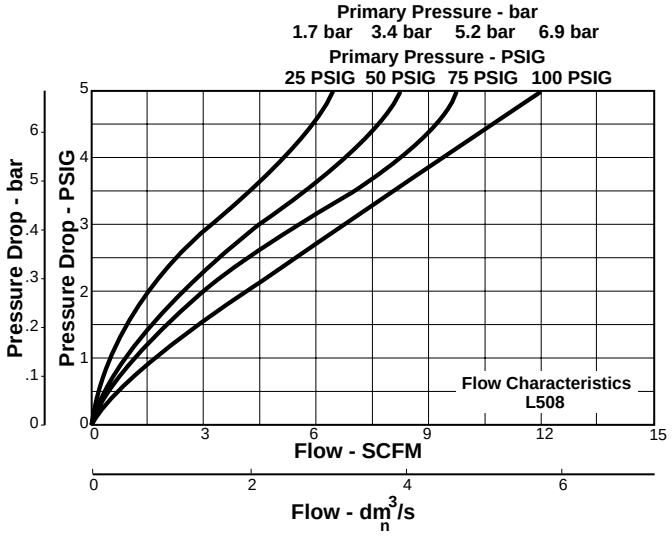
Cycling Applicator

If the lubricator is to be used in a cycling application, the conditions must be as follows:

The lubricator must stay pressurized during on AND off cycles. On cycle time must be at least 15 seconds, and the flow rate during each cycle must be at least 2 SCFM.

Maintenance - Cleaning

If both air and oil are kept clean, and the oil level never allowed below end of tube in the bowl, the lubricator should provide long periods of unattended service. Cessation of oil dripping through the sight dome, irrespective of knob adjustment, is an indication that cleaning is necessary. To clean, it is not necessary to remove lubricator from the line. Depressurize and disassemble using the drawing as a guide. In most instances, cleaning is needed only in the oil metering area. Pull off adjusting knob, unscrew sight dome assembly, remove inner drip spout and clean with household soap. PLASTIC BOWLS AND SIGHT DOME MUST BE CLEANED WITH HOUSEHOLD SOAP ONLY.

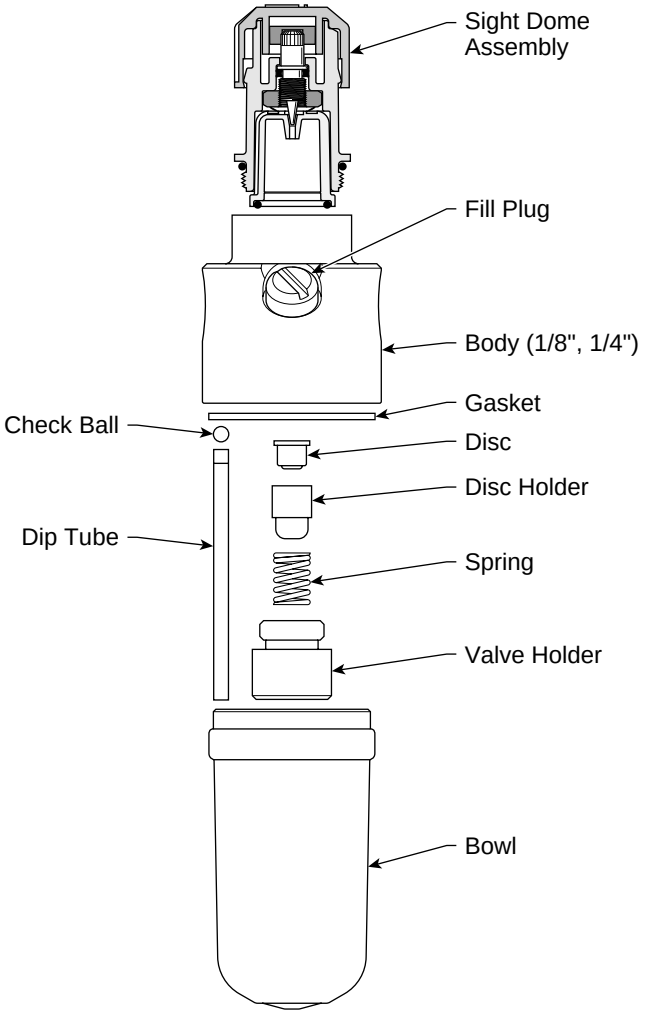


Service Kits / Parts Available

Description	Product Number	Bowl Type
Bowl Replacement Kit* Plastic Zinc	 BK508Y BK509Y	 B D
Sight Dome Assembly (Includes Knob, Sight Dome, Needle Valve, Hex Nut, Spring Washer, Drip Spout, O-Rings)	RKL100	—
Fill Plug	SA508Y4	—
Gasket	GSK-504Z101	—
Check Ball	506Y106	—
Disc	508Z37	—
Disc Holder	508Y47-1	—
Spring	SPR-330	—
Dip Tube	L05Y74-1	—
Valve Holder	508Y30-1	—
Mounting Bracket Kit†	—	—

* Bowl kits include bowl seal.

† "X67" Mounting Bracket option must be ordered with lubricator from factory due to pre-drilled holes in lubricator head.



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.

Pneumatic Division
Richland, Michigan 49083
269-629-5000

Installation & Service Instructions: 1R402F

Economy Regulators 1/4" Ports

ISSUED: July, 2008
Supersedes: March, 2008
Doc.# 1R402, EN# 080525, Rev. 11

⚠ 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.**

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

⚠ WARNING

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

Introduction

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

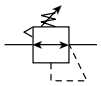
Application Limits

These products are intended for use in general purpose compressed air systems only. Compliance with the rated pressure and temperature is necessary.

Maximum Operating (Inlet) Pressure:	**kPa**	**PSIG**	**bar**
Mini Regulator (Plastic Body)	827	120	8.32
Economy Regulator (Metal Body)	1720	250	17.2

Ambient Temperature Range: 0°C to 52°C (32°F to 125°F)

Symbol



Economy Regulator
Relieving

Installation

1. This unit should be installed with reasonable accessibility for service whenever possible - repair service kits are available. Keep pipe and tubing lengths to a minimum with inside clean and free of dirt and chips. Pipe joint compounds 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 unit so that air flow is in the direction of arrow. Installation must be upstream of and close to devices it is to service (valve, cylinder, tool etc.) Mounting of Regulators may be in any position.
3. Gauge ports are located on both sides of the regulator body for your convenience. It is necessary to install a gauge or pipe plug into each port during installation.
4. To protect Regulator units against rust, pipe scale, and other foreign matter, install a filter on the upstream (high pressure) side as close to the regulator as possible.

⚠ **Caution: For proper assembly of units having plastic bodies, fittings must be installed hand-tight and then tightened by wrench 1/2 turn. To prevent leakage past threads, apply thread sealant to fitting. Prestolok fittings are recommended. Use of hard pipe is <u>not</u> recommended.**

EXCESSIVE TURNING OF FITTINGS BY WRENCH MAY RESULT IN PERMANENT DAMAGE AND RENDER THE REGULATOR INOPERABLE.

Operation of Regulator

1. Before turning on air supply, turn adjusting handle counterclockwise until compression is released from control spring. Then turn on air supply and adjust regulator to desired secondary pressure by turning adjusting handle clockwise. This permits pressure to build up slowly, preventing any unexpected operation of the valve, cylinders, tools, etc., attached to the line. Adjustment to desired secondary pressure can be made only with primary pressure applied to the regulator.
2. To decrease regulator pressure setting, always reset from a pressure lower than the final setting desired. For example, lowering the secondary pressure from 550 to 410 kPa (80 to 60 PSIG) is best accomplished by dropping the secondary pressure to 350 kPa (50 PSIG), then adjusting upward to 410 kPa (60 PSIG).

Service

⚠ **Caution: SHUT OFF AIR SUPPLY and exhaust the primary and secondary pressure before disassembling unit. (Units may be serviced without removing them from the air line.)**

Servicing Regulator:

Note: See Figure 1 to aid with this procedure.

1. Unlock the adjusting knob by pulling upward (with the unit in an upright position.) Then turn adjusting knob counterclockwise until compression of the control spring has been removed.
2. Remove the bonnet from body. Then remove o-ring (3), piston, lip seal (5), and control spring (8) to service the bonnet subassembly. Unscrew seat (4) to service the poppet (13), return spring (1), and / or poppet seal (2), o-rings (16 & 18), and washer (17).
3. Clean old grease from unit and inspect seals for sign of wear (nicks, cuts, and scratches). Repair kits are available which contain the parts which are typically replaced.

⚠ 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.

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

4. Apply a light film of grease to all seals and sliding surfaces using the grease packet supplied with repair kit.

Note: Refer to Figure 1 to determine the correct position and orientation of the various parts during assembly.

5. Gently and firmly press vent seal into piston using a blunt instrument.
6. Install lip seal onto piston with the lips of the seal facing away from the support flange. Then insert control spring and piston assembly into bonnet.
7. Place balancing o-ring (18) and washer (17) into body's bore. Then insert poppet return spring and poppet assembly, followed by seat o-ring (16) and seat.
8. Tighten seat from 0.6 to 0.8 Nm (5 to 7 in-lbs). Tighten bonnet onto body from 5.6 to 7.3 Nm (50 to 65 in-lbs) of torque.
9. Make sure that the control spring is still uncompressed before turning on the air supply. Turn on air supply, then slowly adjust the knob clockwise to increase downstream pressure until the desired pressure has been reached.
10. To decrease regulator pressure setting, always reset from a pressure lower than the final setting desired. For example, lowering the secondary pressure from 550 to 410 kPa (80 to 60 PSIG) is best accomplished by dropping the secondary pressure to 350 kPa (50 PSIG), then adjusting upward to 410 kPa (60 PSIG).
11. When the desired secondary pressure setting has been reached, push the adjusting knob down to lock it.
12. Check for leaks. If leaks occur, shut off the air supply, exhaust system air pressure, and make necessary adjustments to eliminate leakage.

Parts Identification List

Item#	Description
1	Poppet Return Spring
2	O-ring - body to bonnet
3	Seat
4	Lip Seal - piston to bonnet
5	Piston (relieving shown)
6	Control Spring
7	Knob
8	Hex Nut
9	Adjusting Screw
10	Bonnet Assembly
11	Poppet (Mini Regulator) and Poppet Assembly (Economy Regulator)
12	Body
13	Vent Seal - poppet assembly to piston (relieving units) (Economy Regulator)
14	O-ring - seat to body (Economy Regulator)

Service Kits Available

The following service kits contain the appropriate seals and parts necessary for ordinary field service.

Description	Economy Regulator
Bonnet Assembly	L01369
Mounting Bracket Kit* (plastic ring)	PS417B
Mounting Bracket Kit* (aluminum ring)	PS466
Panel Mount Nuts* Plastic Metal	 P78652 P01531
Piston Kit - Non-Relieving	PS422
Piston Kit - Relieving	PS423
Poppet Kit - Unbalanced	PS454
Tamperproof Kit	P01265

*Tighten panel mount nut 2.8 to 3.4 Nm (25 to 30 in-lbs) of torque.

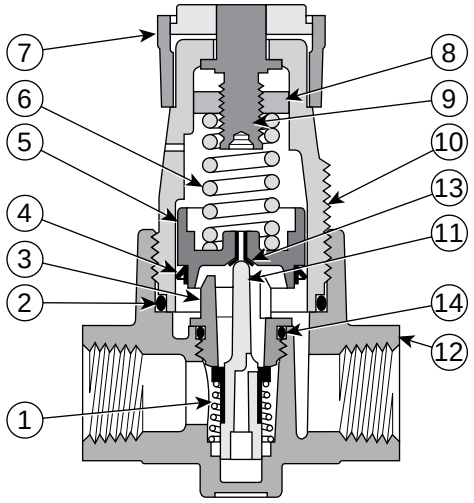


FIGURE 1: Economy Regulator -
(Balanced, Relieving Unit Shown)

Pneumatic Division
Richland, Michigan 49083
269-629-5000

Installation & Service Instructions
1R602
Miniature Filter / Regulator,
Miniature Regulators
1/8" and 1/4" Ports
ISSUED: July, 2008
Supersedes: March, 2008
Doc.# 1R602, EN# 080525, Rev. 7

⚠ 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.**

⚠ 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.

⚠ 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

Introduction

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

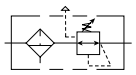
Application Limits

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

Maximum Operating (Inlet) Pressure:	**kPa**	**PSIG**	**bar**
Miniature Filter / Regulator (with Plastic Bowl)	1030	150	10.3
Miniature Filter / Regulator (with Metal Bowl)	1720	250	17.2
Miniature Regulator (Metal Body)	2000	300	20.0

Ambient Temperature Range: 0°C to 52°C (32°F to 125°F)

Symbols



Miniature Filter / Regulator
Manual Drain Filter
(Relieving)



Miniature Regulators
(Relieving)

Installation

1. This unit should be installed with reasonable accessibility for service whenever possible - repair service kits are available. Keep pipe and tubing lengths to a minimum with inside clean and free of dirt and chips. Pipe joint compounds 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 unit so that air flow is in the direction of arrow. Installation must be upstream of and close to devices it is to service (valve, cylinder, tool etc.). Mounting of regulators may be in any position; mounting of filter/regulators must be vertical as shown in figure.
3. Gauge ports are located on both sides of the regulator body for your convenience. It is necessary to install a gauge or pipe plug into each port during installation.
4. To protect regulator units against rust, pipe scale, and other foreign matter, install a filter on the upstream (high pressure) side as close to the regulator as possible.

Operation of Regulator

1. Before turning on air supply, turn adjusting handle counterclockwise until compression is released from control spring. Then turn on air supply and adjust regulator to desired secondary pressure by turning adjusting handle clockwise. This permits pressure to build up slowly, preventing any unexpected operation of the valve, cylinders, tools, etc., attached to the line. Adjustment to desired secondary pressure can be made only with primary pressure applied to the regulator.
2. To decrease regulator pressure setting, always reset from a pressure lower than the final setting desired. For example, lowering the secondary pressure from 550 to 410 kPa (80 to 60 PSIG) is best accomplished by dropping the secondary pressure to 350 kPa (50 PSIG), then adjusting upward to 410 kPa (60 PSIG).

Operation of Filter / Regulator

1. Both free moisture and solids are removed automatically by the Filter / Regulator.
2. Manual drain filters must be drained regularly before the separated moisture and oil reaches the bottom of the element holder. Automatic drain models (pulse drain) will collect and dump liquids automatically. They are actuated when a pressure drop occurs within the filter.
3. The filter element should be removed and replaced when the pressure differential across the filter is excessive.

Service

⚠ **Caution: SHUT OFF AIR SUPPLY and exhaust the primary and secondary pressure before disassembling unit. (Units may be serviced without removing them from the air line.)**

⚠ 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.

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Servicing Regulator:

Note: See Figure 1, 2, & 3 to aid with this procedure.

1. Unlock the adjusting knob by pulling upward (with the unit in an upright position.) Then turn adjusting knob counterclockwise until compression of the control spring has been removed.
2. Remove the bonnet from body. Then remove o-ring (7), piston, lip seal (9), and control spring to service the bonnet subassembly. Unscrew seat (8) to service the poppet (17), return spring (5), and /or poppet seal (6).

Note: On filter / regulator units, the poppet assembly & poppet return spring may be accessed by removing filter element.

3. Clean old grease from unit and inspect seals for sign of wear (nicks, cuts, and scratches). Repair kits are available which contain the parts which are typically replaced.
4. Apply a light film of grease to all seals and sliding surfaces using the grease packet supplied with repair kit.

Note: Refer to Figures to determine the correct position and orientation of the various parts during assembly.

5. Install lip seal onto piston with the lips of the seal facing away from the support flange. Then insert control spring and piston assembly into bonnet.
6. Place poppet return spring and poppet assembly into bore, followed by poppet seal and seat.
7. Tighten seat to body from 0.9 to 1.1 Nm (8 to 10 in-lbs) of torque. Tighten bonnet onto body from 5.6 to 7.3 Nm (50 to 65 in-lbs) of torque.
8. Make sure that the control spring is still uncompressed before turning on the air supply. Turn on air supply, then slowly adjust the knob clockwise to increase downstream pressure until the desired pressure has been reached.
9. To decrease regulator pressure setting, always reset from a pressure lower than the final setting desired. For example, lowering the secondary pressure from 550 to 410 kPa (80 to 60 PSIG) is best accomplished by dropping the secondary pressure to 350 kPa (50 PSIG), then adjusting upward to 410 kPa (60 PSIG).
10. When the desired secondary pressure setting has been reached, push the adjusting knob down to lock it.
11. Check for leaks. If leaks occur, shut off the air supply, exhaust system air pressure, and make necessary adjustments to eliminate leakage.

Servicing Filter Element:

Note: See Figure 1 to aid with this procedure.

1. Unscrew threaded bowl and element holder. Then remove filter element, deflector, and gaskets.
2. Clean all internal parts, bowl, and body before re-assembling unit. See Polycarbonate bowl cleaning section.
3. Install deflector, filter element, and gaskets.
4. Attach element holder. Torque 0.9 to 1.4 Nm (8 to 12 in-lbs).
5. To assist with retaining bowl's o-ring while installing bowl, lubricate the o-ring (with a mineral based oil or grease). Then place it on the bowl.
6. Screw bowl into body until it is stopped by body; then back off bowl 1/8 turn.
7. Apply pressure to the system and check for leaks. If leaks occur, shut off the air supply, de-pressurize the system and make necessary adjustments to eliminate leakage.

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

Parts Identification List

Item# Description

1 Bowl (Miniature Filter Regulator)
2 Filter Element (Miniature Filter Regulator)
3 Deflector (Miniature Filter Regulator)
4 O-ring (Miniature Filter Regulator) - bowl to body
5 Poppet Return Spring
6 Poppet Seal
7 O-ring - body to bonnet
8 Seat
9 Lip Seal - piston to bonnet
10 O-ring - piston to poppet (Miniature Regulator & Filter / Regulator relieving units)
11 Piston (relieving shown)
12 Control Spring
13 Knob
14 Hex Nut
15 Adjusting Screw
16 Bonnet
17 Poppet (Miniature Regulator & Filter / Regulator)
18 Body
19 Gasket (Miniature Filter Regulator) - deflector to body
20 Gasket (Miniature Filter Regulator) - element holder to filter element
21 Element Holder (Miniature Filter Regulator)
22 O-ring (14E) - body to drain
23 Twist Drain (Miniature Filter Regulator)
24 Twist Drain Knob

Service Kits Available

The following service kits contain the appropriate seals and parts necessary for ordinary field service.

Description	Miniature Filter / Regulator	Miniature Regulator
Adsorber	PS452	PS452
5 Micron Element Kit	PS403	N/A
40 Micron Element Kit	PS401	N/A
Metal Bowl w/Manual Drain	PS447B	N/A
Metal Bowl w/Automatic Drain	PS451B	N/A
Mounting Bracket Kit* (plastic ring)	PS417B	PS417B
Mounting Bracket Kit* (aluminum ring)	PS466	PS466
Panel Mount Nut - Metal*	P01531	P01531
Piston & Poppet Kit - Unbal. Rel.	PS426	PS426
Piston & Poppet Kit - Unbal. Non-Rel	PS428	PS428
Polycarbonate Bowl w/Manual Drain	PS404	N/A
Polycarbonate Bowl w/Automatic Drain	PS408B	N/A
Springs: 1-30 PSIG Range 1-60 PSIG Range 2-125 PSIG Range 1-15 PSIG Range	P01175 P01174 P01173 P01176	P01175 P01174 P01173 P01176
Twist Drain Knob	P05117	

*Tighten panel mount nut 2.8 to 3.4 Nm (25 to 30 in-lbs) of torque.

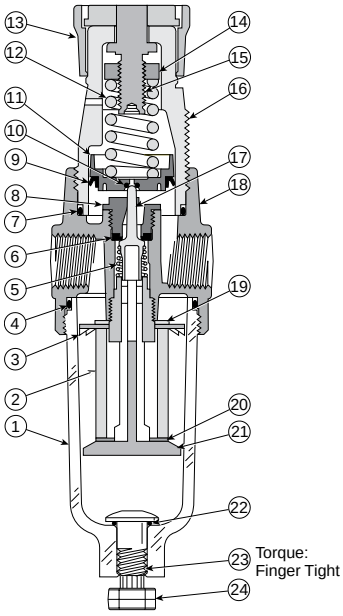


FIGURE 1: Miniature Filter / Regulator - Un-balanced, Relieving

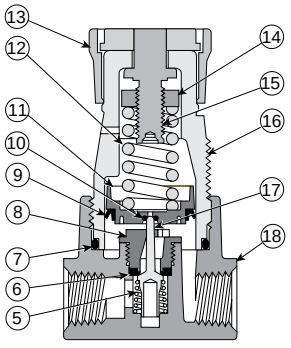


FIGURE 2: Miniature Regulator - Un-balanced, Relieving Unit Shown

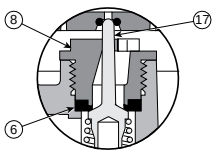


FIGURE 3: Detail of Poppet Seal

Pneumatic Division
Richland, Michigan 49083
269-629-5000

Instructions d'installation et d'entretien 1R602 (French)
Filtre-régulateur miniature, régulateurs miniatures avec des orifices de 1/8 in et 1/4 in
PUBLICATION: Juillet, 2008
Remplace: Mars, 2008
Doc.# 1R602, ECN# 080525, Rev. 7

⚠ AVERTISSEMENT

Afin d'éviter un fonctionnement imprévu du système pouvant occasionner des blessures aux personnes et des dommages matériels :

- **Débrancher l'alimentation électrique (si nécessaire) avant toute installation, entretien ou conversion.**
- **Débrancher l'alimentation en air et dépressuriser toutes les canalisations d'air connectées à cet appareil avant installation, entretien ou conversion.**
- **Utiliser l'appareil conformément aux normes de pression, température, et autres conditions spécifiées par le fabricant dans ces instructions.**
- **Le médium doit être exempt d'humidité si la température descend en dessous de 0°C.**
- **L'entretien doit se faire conformément aux procédures décrites ici.**
- **L'installation, l'entretien, et la conversion de ces appareils doivent être effectués par des personnels qualifiés, au fait des techniques pneumatiques.**
- **Après installation, entretien, ou conversion, les alimentations en air et en électricité (si nécessaire) seront connectées et l'appareil testé pour vérifier son fonctionnement correct et l'absence de fuites. Si l'appareil présente une fuite audible ou ne fonctionne pas correctement, ne pas l'utiliser.**
- **Les inscriptions concernant les avertissements et spécifications sur l'appareil ne devront pas être recouvertes de peinture, etc. Si le masquage est impossible, contactez votre représentant local pour des étiquettes de remplacement.**

SECURITE – Cuves transparentes

⚠ ATTENTION:

Les bols en polycarbonates, étant durs et transparents, sont idéaux pour l'utilisation dans les filtres et lubrificateurs. Ils conviennent aux environnements industriels normaux, mais ne devront pas être placés dans des endroits où ils pourraient être soumis à une exposition à la lumière directe du soleil, aux chocs, ou aux températures en-dehors de la plage normale d'utilisation. Ce plastique est, comme tout autre, susceptible d'être endommagé par l'action de certains produits chimiques. Les bols en polycarbonate ne doivent pas être exposés aux hydrocarbures chlorés, cétones, éthers, et certains alcools. Ils ne doivent pas être utilisés dans des systèmes pneumatiques dont les compresseurs sont lubrifiés par des fluides résistant au feu, tels que les esters et diesters de phosphate.

Les bols métalliques sont recommandés quand les conditions ambiantes et/ou celles du médium 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 dans une atmosphère salée. Si de telles conditions existent, contactez le fabricant pour des recommandations spécifiques.

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

⚠ AVERTISSEMENT

Une rupture de l'appareil peut occasionner des blessures graves.
Ne pas utiliser ce régulateur pour du gaz en bouteille.
Ne pas dépasser la norme de pression primaire maximum.

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

Introduction

Suivre ces instructions pendant l'installation, l'utilisation ou l'entretien du produit.

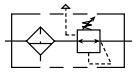
Limites d'utilisation

Ces produits sont construits pour utilisation uniquement dans les systèmes d'air comprimé pour service général.

Pression d'admission maximale de fonctionnement	**kPa**	**psi**	**bar**
Filtre-régulateur miniature (avec cuve en plastique)	1030	150	10,3
Filtre-régulateur miniature (avec cuve métallique)	1720	250	17,2
Régulateur miniature (corps métallique)	2000	300	20,0

Plage de température ambiante 0 °C à 52 °C (32 °F à 125 °F)

Symboles



Filtre-régulateur miniature
Filtre à purge manuelle
(décharge)



Régulateurs miniatures
(décharge)

Installation

1. Il faut installer cet appareil dans un endroit raisonnablement accessible pour faciliter l'entretien. Un kit de réparation est offert. Les tuyaux et tubes doivent être aussi courts que possible et ils doivent être propres et sans saleté ni copeaux à l'intérieur. Il faut utiliser modérément la pâte à joint et l'appliquer uniquement sur le tuyau, jamais dans l'orifice. Il ne faut pas utiliser de ruban de PTFE pour assurer l'étanchéité des connexions de tuyaux. Les pièces ont tendance à se fracturer et se loger à l'intérieur de l'appareil, ce qui peut causer un mauvais fonctionnement.
2. Installer l'appareil pour que l'air circule dans la direction de la flèche. L'installation doit être en amont et aussi proche que possible de l'appareil qu'il faut protéger (vanne, vérin, outil, etc.). Le régulateur peut être monté dans n'importe quelle position. Le filtre-régulateur doit être monté verticalement, comme montré sur l'illustration.
3. Pour être plus pratique, un orifice de manomètre se trouve de chaque côté du corps du régulateur. Pendant l'installation, il est nécessaire d'installer un manomètre ou un bouchon de tuyau dans chaque orifice.
4. Pour protéger le régulateur de la rouille, la calamine et autres matières étrangères, installer un filtre en amont du régulateur, aussi proche que possible de celui-ci.

Utilisation du régulateur

1. Avant de mettre le système sous pression, tourner la poignée de réglage dans le sens inverse des aiguilles d'une montre jusqu'à l'élimination de toute la compression du ressort de commande de pression. Mettre le système sous pression et tourner la poignée dans le sens des aiguilles d'une montre pour régler le régulateur à la pression secondaire désirée. Ceci permet à la pression de monter lentement, évitant le fonctionnement inattendu de la vanne, des vérins, des outils, etc. montés sur la conduite. Il n'est possible de faire le réglage de la pression secondaire que si le régulateur est soumis à la pression primaire.
2. Pour réduire la pression du système, il faut toujours faire le réglage à partir d'une pression plus basse que la valeur désirée. Par exemple, pour abaisser la pression secondaire de 5,5 à 4,1 bar (550 à 410 kPa ; 80 à 60 psi), il est préférable de faire tomber la pression secondaire à 3,5 bar (350 kPa ; 50 psi) et de la régler, en montant à 4,1 bar (410 kPa ; 60 psi).

Utilisation du filtre et régulateur

1. L'humidité libre et les solides sont éliminés automatiquement par le filtre et régulateur.
2. Il faut purger régulièrement les filtres à purge manuelle avant que la condensation et l'huile condensée atteignent le bas du support d'élément. Les modèles à purge automatique (purge à impulsions) captent et évacuent automatiquement les liquides. Ils sont actionnés par une chute de pression dans le filtre.

⚠ AVERTISSEMENT

LA DEFAILLANCE, LE CHOIX ERRONE OU L'USAGE NON CONFORME DES PRODUITS ET/OU SYSTEMES ICI DECRITS, OU PRODUITS Y AFFERANT, PEUVENT ENTRAINER LA MORT, DES BLESSURES AUX PERSONNES ET DES DOMMAGES MATERIELS.

Ce document et autres informations de « The Company », ses filiales et distributeurs autorisés offre des options complémentaires d'utilisation du produit et/ou système pour des utilisateurs ayant l'expertise technique requise. Il est important que vous analysiez tous les aspects de l'usage prévu, y compris les conséquences de toute défaillance, et que vous passiez en revue les informations concernant les produits et systèmes dans le catalogue actuel des produits. En raison de la diversité des conditions de fonctionnement et d'utilisation de ces produits ou systèmes, l'utilisateur, et lui seul, selon ses propres analyses et tests, porte la responsabilité du choix final des produits et systèmes. Il est aussi de sa responsabilité pleine et entière de s'assurer que les produits soient utilisés conformément aux normes de sécurité et avertissements d'usage.

Les produits décrits ici, y compris, mais non exclusivement, les caractéristiques des produits, spécifications, aspects, disponibilité et prix, sont susceptibles de modification à tout moment et sans préavis par « The Company » et ses filiales.

DES EXEMPLAIRES SUPPLEMENTAIRES DE CES INSTRUCTIONS SONT DISPONIBLES POUR ACCOMPAGNER LES APPAREILS/MANUELS D' ENTRETIEN CORRESPONDANT A CES PRODUITS. CONTACTEZ VOTRE REPRESENTANT LOCAL.

3. Il faut remplacer l'élément filtrant quand la différence de pression dans le filtre est excessive.

Entretien

⚠ **ATTENTION – COUPER L'ALIMENTATION D'AIR et évacuer la pression primaire et secondaire avant de démonter l'appareil. Il est possible de réparer ces appareils sans les déposer de la conduite d'air.**

Intervention sur le régulateur

Remarque : Consulter les figures 1, 2 et 3 pour aider avec cette procédure.

1. Lever le bouton de réglage pour le débloquer (quand l'appareil est en position verticale). Tourner ensuite le bouton de réglage dans le sens inverse des aiguilles d'une montre jusqu'à l'élimination de toute la compression du ressort de commande.
2. Déposer le chapeau du corps. Déposer ensuite le joint torique (7), le piston, le joint à lèvre (9) et le ressort de commande pour réparer le sous-ensemble du chapeau. Dévisser le siège (8) pour atteindre le clapet (17), le ressort de rappel (5) et le siège du clapet (6).

Remarque : Sur les filtres-régulateurs, il est possible de déposer l'élément filtrant pour obtenir accès au clapet et au ressort de rappel du clapet.

3. Nettoyer l'ancienne graisse et vérifier s'il y a des signes d'usure sur les joints (entailles, coupures ou rayures). Des kits de réparation contenant les pièces typiquement remplacées sont offerts.
4. Appliquer une pellicule de graisse sur tous les joints et surfaces coulissantes, en utilisant le paquet de graisse fourni avec le kit de réparation.

Remarque : Pendant le remontage, consulter les illustrations pour déterminer la position et l'orientation des diverses pièces.

5. Installer le joint à lèvres sur le piston, les lèvres du joint à l'opposé de la bride de support. Insérer ensuite le ressort de commande et le piston dans le chapeau.
6. Mettre le ressort de rappel du clapet et le clapet dans l'alésage, puis le joint du clapet et le siège.
7. Serrer le siège dans le corps à un couple de 0,9 à 1,1 Nm (8 à 10 in-lb). Serrer le chapeau sur le corps à un couple de 5,6 à 7,3 Nm (50 à 65 in-lb).
8. Avant de mettre le système sous pression, vérifier que le ressort de commande n'est pas comprimé. Mettre le système sous pression et tourner le bouton dans le sens des aiguilles d'une montre pour faire monter la pression en aval jusqu'à la pression désirée.
9. Pour réduire la pression du système, il faut toujours faire le réglage à partir d'une pression plus basse que la valeur désirée. Par exemple, pour abaisser la pression secondaire de 5,5 à 4,1 bar (550 à 410 kPa ; 80 à 60 psi), il est préférable de faire tomber la pression secondaire à 3,5 bar (350 kPa ; 50 psi) et de la régler, en montant à 4,1 bar (410 kPa ; 60 psi).
10. Quand la pression secondaire désirée est atteinte, enfoncer le bouton de réglage pour le verrouiller.
11. Vérifier qu'il n'y a pas de fuites. S'il y a des fuites, couper l'alimentation d'air, faire tomber la pression du système et faire les réglages nécessaires pour éliminer les fuites.

Intervention sur l'élément filtrant

Remarque : Consulter la figure 1 pour aider avec cette procédure.

1. Dévisser la cuve filetée et le support d'élément. Déposer ensuite l'élément filtrant, le déflecteur et les joints.
2. Nettoyer toutes les pièces internes, la cuve et le corps avant de remonter l'appareil. Consulter la section de nettoyage de la cuve en polycarbonate.
3. Installer le déflecteur, l'élément filtrant et les joints.
4. Monter le support d'élément. Serrer à un couple de 0,9 à 1,4 Nm (8 à 12 in-lb).
5. Lubrifier le joint torique avec de l'huile minérale ou de la graisse pour faciliter l'installation du joint torique du dispositif de retenue pendant l'installation de la cuve. Le placer ensuite sur la cuve.
6. Visser la cuve à fond sur le corps et reculer la cuve d'un huitième de tour.
7. Mettre le système sous pression et vérifier qu'il n'y a pas de fuites. S'il y a des fuites, couper l'alimentation d'air, faire tomber la pression du système et faire les réglages nécessaires pour éliminer les fuites.

En cas de question sur l'intervention de l'appareil, contacter le distributeur local agrée ou le représentant technique.

Liste d'identification des pièces

N° de référence	Description
1	Cuve (filtre et régulateur miniature)
2	Elément filtrant (filtre-régulateur miniature)
3	Déflecteur (filtre-régulateur miniature)
4	Joint torique (filtre-régulateur miniature), entre la cuve et le corps
5	Ressort de rappel du clapet
6	Joint du clapet
7	Joint torique, entre le corps et le chapeau
8	Siège
9	Joint à lèvre, entre le piston et le chapeau
10	Joint torique, entre le piston et le clapet (dispositif d'évacuation du régulateur miniature et du filtre-régulateur)
11	Piston (avec évacuation montré)
12	Ressort de commande
13	Bouton
14	Ecrou six pans
15	Vis de réglage
16	Chapeau
17	Clapet (régulateur miniature et filtre-régulateur)
18	Corps
19	Joint (filtre-régulateur miniature), entre le déflecteur et le corps
20	Joint (filtre-régulateur miniature), entre le support d'élément et l'élément filtrant
21	Elément filtrant (filtre-régulateur miniature)
22	Joint torique (14E), entre le corps et la purge
23	Purge tournant (filtre-régulateur miniature)
24	Tordre le Bouton d'Egout

Kits d'intervention offerts

Les kit de réparation suivants contiennent les joints appropriés et les pièces nécessaires pour les réparations ordinaires sur place.

Description	Filtre-régulateur	Régulateur miniature
Elément absorbant	PS452	PS452
Kit d'élément de 5 microns	PS403	N/A
Kit d'élément de 40 microns	PS401	N/A
Cuve métallique avec purge manuelle	PS447B	N/A
Cuve métallique avec purge automatique	PS451B	N/A
Kit de patte de montage* (bague en plastique)	PS417B	PS417B
Kit de patte de montage* (bague en aluminium)	PS466	PS466
Ecrou métallique de montage sur le panneau*	P01531	P01531
Kit de piston et clapet, évacuation sans équilibre	PS426	PS426
Kit de piston et clapet, sans évacuation sans équilibre	PS428	PS428
Cuve en polycarbonate avec purge manuelle	PS404	N/A
Cuve en polycarbonate avec purge automatique	PS408B	N/A
Ressorts: Plage de 1 à 2,1 bar (1 à 30 psi)	P01175	P01175
Plage de 1 à 4,1 bar (1 à 60 psi)	P01174	P01174
Plage de 2 à 8,6 bar (2 à 125 psi)	P01173	P01173
Plage de 1 à 1,0 bar (1 à 15 psi)	P01176	P01176
Tordre le Bouton d'Egout	P05117	

*Serrer l'écrou de montage du panneau à un couple de 2,8 à 3,4 Nm (25 à 30 po/lb).

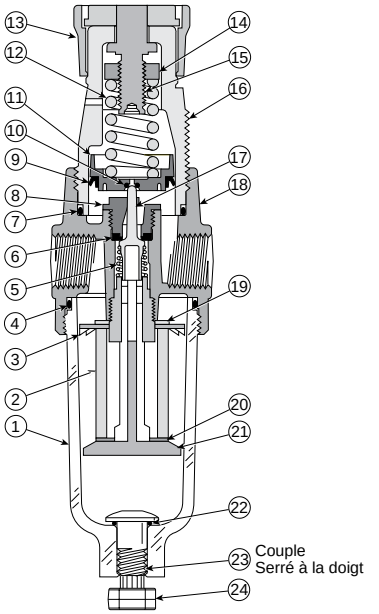


FIGURE 1 – Filtre et régulateur miniature, sans équilibre, avec évacuation

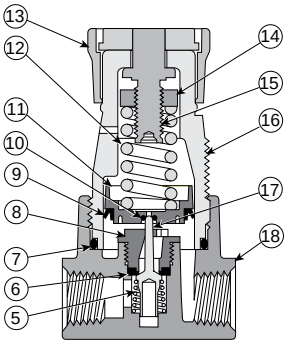


FIGURE 2 – Régulateur miniature, sans équilibre, avec dispositif d'évacuation montré

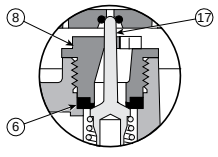


FIGURE 3 – Détail du joint de clapet

Pneumatic Division
Richland, Michigan 49083
269-629-5000

Instrucciones para instalación y servicio
1R602 (Spanish)
Filtros / reguladores en miniatura,
reguladores en miniatura
puertos de 1/8 y 1/4 de pulgada
EMITIDO: Julio, 2008
Sustituye a: Marzo, 2008
Doc.# 1R602, ECN# 080525, Rev. 7

⚠ ADVERTENCIA

Para evitar un comportamiento impredecible del sistema que pueda ocasionar lesiones personales y daños a la propiedad:

- **Antes de instalar, reparar o convertir, desconecte el suministro eléctrico (cuando sea necesario).**
- **Antes de instalar, reparar o convertir, desconecte el suministro de aire y despresurice todas las líneas de aire que están conectadas a este producto.**
- **Haga funcionar dentro de la presión, temperatura y demás condiciones especificadas por el fabricante y que se incluyen en estas instrucciones.**
- **El medio debe estar libre de humedad si la temperatura ambiente se encuentra por debajo del punto de congelación.**
- **Repare de acuerdo con los procedimientos que se incluyen en estas instrucciones.**
- **La instalación, reparación y conversión de estos productos debe ser realizada por personal competente que entienda la manera en que se deben aplicar los productos neumáticos.**
- **Después de la instalación, reparación y conversión, se debe conectar los suministros eléctricos y de aire (cuando sea necesario), y el producto se debe poner a prueba para determinar que funciona correctamente y no tiene pérdidas. Si se detecta una pérdida audible, o si el producto no funciona correctamente, no lo ponga en funcionamiento.**
- **Las advertencias y especificaciones que aparecen en el producto no deben estar cubiertas por pintura, etc. Si no resulta posible colocarlo con cinta adhesiva, póngase en contacto con su representante local para obtener etiquetas de repuesto.**

La Seguridad: Las Tazas Transparentes

⚠ PRECAUCIÓN:

Las tazas de policarbonato, al ser transparentes y resistentes, son ideales para usar con Filtros y Lubricadores. Son aptas para usar en ambientes industriales normales, pero no se deben ubicar en zonas en donde queden expuestas a luz solar directa, un golpe de impacto, o una temperatura por fuera de su clasificación. Al igual que con la mayoría de los plásticos, ciertos productos químicos pueden ocasionar daños. No se debe exponer las tazas de policarbonatos a los hidrocarburos clorinados, las cetonas, los ésteres y ciertos alcoholes. No se los debe usar en sistemas de aire en donde se lubrica los compresores de aire usando fluidos resistentes al fuego tal como los tipos de ester fosfato y di-ester.

Se recomienda el uso de tazas de metal cuando las condiciones ambientales y del medio no son compatibles con las tazas de policarbonato. Las tazas de metal son resistentes a la acción de la mayoría de esos solventes, pero no deben usarse cuando existe la presencia de ácidos o bases fuertes, ni en atmósferas cargadas de sal. Consulte con la fábrica por recomendaciones específicas para cuando existen estas condiciones.

PARA LIMPIAR LAS TAZAS DE POLICARBONATO, UTILICE SOLAMENTE UN JABÓN SUAVE Y AGUA. NO use agentes de limpieza tales como la acetona, el benceno, el tetracloruro de carbono, la gasolina o el tolueno, etc., que pueden dañar este plástico.

⚠ ADVERTENCIA

La ruptura del producto puede ocasionar lesiones graves.
No conecte el regulador al gas embotellado.
No exceda la clasificación de presión primaria máxima.

Guía sobre la seguridad

Para obtener información más completa acerca de los lineamientos recomendados acerca del uso, vea la sección Guía sobre la seguridad en los catálogos de la división neumática o puede bajar la Guía sobre la Seguridad de la División Neumática (Pneumatic Division Safety Guide) en www.parker.com/safety

Introducción

Observe las siguientes instrucciones al instalar, operar o dar servicio al producto.

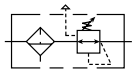
Límites de aplicación

Estos productos han sido diseñados para usarse solamente en sistemas de aire comprimido para propósitos generales.

Máxima presión (de entrada) para funcionamiento	**kPa**	**PSIG**	**barras**
Filtro / regulador en miniatura (con tazón plástico)	1030	150	10,3
Filtro / regulador en miniatura (con tazón de metal)	1720	250	17,2
Regulador en miniatura (cuerpo de metal)	2000	300	20,0

Rango de temperatura ambiental: 0°C a 52°C (32°F a 125°F)

Símbolos



Filtro / regulador en miniatura
Filtro con drenaje manual
(con descarga)



Reguladores en miniatura
(con descarga)

Instalación

1. Siempre que sea posible, al instalar estas unidades se les debe colocar en lugares de fácil acceso, para poder darles servicio. Hay disponibles juegos de servicio para reparación. Se deben usar tuberías o conductos tan cortos como sea posible, manteniendo su interior limpio y sin desechos o astillas. Los compuestos para unir tuberías deben usarse moderadamente y se les debe aplicar a las tuberías macho solamente, nunca a los puertos hembra. No use cinta PTFE para sellar las junturas de tuberías ya que algunas veces pedazos de cinta tienden a separarse y fijarse dentro de las unidades provocando posiblemente mal funcionamiento.
2. Instale las unidades de manera que el flujo de aire ocurra en la dirección de las flechas. La instalación se debe hacer flujo arriba y cerca de los dispositivos que han de servir (válvulas, cilindros, herramientas, etc.). Los reguladores pueden montarse en cualquier posición; los filtros / reguladores deben montarse verticalmente tal y como se muestra en la figura.
3. Para su conveniencia, hay puertos para medidores en ambos lados de los cuerpos de los reguladores. Al hacer la instalación, es necesario colocar un medidor o un tapón de casquillo en cada uno de esos puertos.
4. Instale filtros en el lado flujo arriba (alta presión) tan cerca a los reguladores como sea posible para protegerlos contra el moho, las escamas de las tuberías y otros materiales extraños.

Funcionamiento de los reguladores

1. Antes de activar el suministro de aire, gire la manija para ajuste en contra de las agujas del reloj hasta liberar la compresión del muelle para control. Luego active el suministro de aire y ajuste el regulador a la presión secundaria deseada girando la manija en el sentido de las agujas del reloj. Con esto se permite que la presión se acumule lentamente, evitando todo funcionamiento inesperado de las válvulas, cilindros, herramientas, etc. unidas a la línea. Sólo se puede ajustar la presión secundaria deseada cuando hay presión principal aplicada al regulador.
2. Para disminuir la graduación de la presión del regulador, comience siempre con una presión menor que la graduación final deseada. Por ejemplo, para reducir la presión secundaria de 550 a 410 kPa (80 a 60 psig) lo mejor es reducir la presión secundaria a 350 kPa (50 psig), y luego aumentarla a 410 kPa (60 psig).

Funcionamiento de los filtros / reguladores

1. Los filtros / reguladores eliminan automáticamente tanto la humedad libre como los sólidos.
2. Se deben drenar regularmente los filtros con drenaje manual antes de que la humedad y el aceite desalojados lleguen a la parte baja del soporte

⚠ ADVERTENCIA

EL FALLO O LA SELECCIÓN INCORRECTA O EL USO INCORRECTO DE LOS PRODUCTOS Y/O SISTEMAS AQUÍ DESCRITOS U OTROS ARTÍCULOS RELACIONADOS PUEDE RESULTAR EN MUERTE, LESIONES PERSONALES Y DAÑO A LA PROPIEDAD.

Este documento y demás información de la compañía, sus subsidiarias y distribuidores autorizados ofrecen opciones de productos y sistemas para mayor investigación por parte de los usuarios que cuentan con conocimientos técnicos. Es importante que analice todos los aspectos de su aplicación, incluyendo las consecuencias de cualquier fallo y que revise la información concerniente al producto o los sistemas que se encuentran en el catálogo actual de productos. Debido a la variedad de condiciones de funcionamiento y aplicaciones para estos productos o sistemas, el usuario, mediante su propio análisis y pruebas, es únicamente responsable por la selección final de los productos y sistemas, y por garantizar que se cumpla con todos los requisitos de funcionamiento, seguridad y advertencia de la aplicación.

Los productos aquí descritos, incluyendo pero sin limitarse, a las características del producto, las especificaciones, los diseños, la disponibilidad y los precios, están sujetos a cambios por parte de la compañía y de sus subsidiarias en cualquier momento sin aviso.

SE PUEDE OBTENER COPIAS ADICIONALES DE ESTAS INSTRUCCIONES PARA INCLUIR CON EL EQUIPO / LOS MANUALES DE MANTENIMIENTO QUE UTILIZAN ESTOS PRODUCTOS. COMUNIQUESE CON SU REPRESENTANTE LOCAL.

del elemento. Los modelos con drenaje automático (drenaje por pulsos) recolectan y desechan los líquidos automáticamente. Se activan cuando hay una caída de presión dentro del filtro.

3. Se deben quitar y reemplazar los elementos de los filtros cuando la presión diferencial a través de ellos sea excesiva.

Servicio

⚠ **PRECAUCIÓN: Antes de desarmar la unidad, DESACTIVE EL SUMINISTRO DE AIRE y elimine la presión principal y secundaria. (Se puede dar servicio a las unidades sin quitarlas de la línea.)**

Cómo dar servicio a los reguladores:

Nota: Para auxiliarse en este procedimiento, vea las figuras 1, 2 y 3.

1. Destrabe la perilla de ajuste tirando de ella hacia arriba (con la unidad en posición vertical). Luego gire la perilla para ajuste en el sentido contrario a las agujas del reloj, hasta eliminar la compresión del muelle de control.
2. Quite el bonete del cuerpo. Después quite el aro tórico (7), el pistón, el sello con labios (9) y el muelle para control para dar servicio al bonete. Desenrosque el asiento (8) para dar servicio al obturador (17), el muelle para retorno (5) y/o el sello del obturador (6).

Nota: En las unidades de filtros / reguladores, se puede obtener acceso al conjunto de obturador y al muelle para retorno del obturador quitando los elementos de los filtros.

3. Quite la grasa vieja de la unidad y verifique que los sellos no estén desgastados (mellados, cortados o rayados). Se encuentran disponibles juegos para reparación que contienen las piezas de repuesto más comúnmente utilizadas.
4. Coloque una película ligera de grasa en los sellos y las superficies deslizantes usando el paquete de grasa que se suministra con el juego para reparación.

Nota: Vea las figuras para averiguar la posición y orientación correctas de las piezas durante el ensamblaje.

5. Coloque el sello con labios en el pistón con los labios del sello hacia afuera del borde para soporte. Luego introduzca en el bonete el conjunto de muelle para control y pistón.
6. Coloque en el hueco el conjunto de muelle para retorno del obturador y el obturador, seguido del sello y el asiento del obturador.
7. Apriete el asiento al cuerpo con una torsión de 0,9 a 1,1 Nm (8 a 10 libras pulgada). Apriete el bonete al cuerpo con una torsión de 5,6 a 7,3 Nm (50 a 65 libras pulgada).
8. Antes de activar el suministro de aire asegúrese de que el muelle para control está todavía sin compresión. Active el suministro de aire, luego gire lentamente la perilla en el sentido de las agujas del reloj para aumentar la presión flujo abajo hasta alcanzar la deseada.
9. Para disminuir la graduación de la presión del regulador, comience siempre con una presión menor que la graduación final deseada. Por ejemplo, para reducir la presión secundaria de 550 a 410 kPa (80 a 60 psig) lo mejor es reducir la presión secundaria a 350 kPa (50 psig), y luego aumentarla a 410 kPa (60 psig).
10. Al alcanzar la presión secundaria deseada, presione la perilla para ajuste hacia abajo para fijarla.
11. Verifique que no hay fugas. Si las hay, desactive el suministro de aire, saque la presión de aire del sistema y haga los ajustes necesarios para eliminarlas.

Cómo dar servicio al elemento del filtro:

Nota: Para auxiliarse en este procedimiento, vea la Figura 1.

1. Desenrosque el tazón y el soporte del elemento. Después saque el elemento del filtro, el desviador y los empaques.
2. Antes de ensamblar de nuevo la unidad, limpie las piezas internas y el cuerpo. Vea la sección acerca de la limpieza de los tazones de policarbonato.
3. Coloque el desviador, el elemento del filtro y los empaques.
4. Coloque el soporte del elemento. Aplique una torsión de 0,9 a 1,4 Nm (8 a 12 libras pulgada).
5. Lubrique el aro tórico (con aceite o grasa de base mineral) para ayudar a retener el aro tórico del tazón durante el ensamblaje. Luego colóquelo en el tazón.
6. Enrosque el tazón en el cuerpo hasta que haga contacto con él; luego regréselo 1/8 de revolución.
7. Presurice el sistema y verifique que no tenga fugas. Si las hay, desactive el suministro de aire, saque la presión del sistema y haga los ajustes necesarios para eliminarlas.

Si tiene alguna pregunta acerca de cómo dar servicio a esta unidad, póngase en contacto con el concesionario autorizado de su localidad o con el representante de servicio al cliente.

Lista para Identificación de Piezas

Artículo #	Descripción
1	Tazón (filtro regulador en miniatura)
2	Elemento de filtro (filtro regulador en miniatura)
3	Desviador (filtro regulador en miniatura)
4	Aro tórico (filtro regulador en miniatura) - tazón a cuerpo
5	Muelle para retorno del obturador
6	Sello del obturador
7	Aro tórico - cuerpo a bonete
8	Asiento
9	Sello con labios - pistón a bonete
10	Aro tórico - pistón a obturador (unidades con descarga, reguladores en miniatura y filtros reguladores en miniatura)
11	Pistón (se muestra uno con descarga)
12	Muelle para control
13	Perilla
14	Tuerca hexagonal
15	Tornillo para ajuste
16	Bonete
17	Obturador (regulador y filtro regulador en miniatura)
18	Cuerpo
19	Empaque (filtro regulador en miniatura) - desviador a cuerpo
20	Empaque (filtro regulador en miniatura) - soporte del elemento a elemento del filtro
21	Soporte del elemento (filtro regulador en miniatura)
22	Aro tórico (14E) - cuerpo a drenaje
23	Drenaje de giro (filtro regulador en miniatura)
24	Tuerza la Perilla del Desaguadero

Juegos para servicio disponibles.

Los siguientes juegos para servicio contienen los sellos apropiados y las piezas necesarias para dar servicio corriente en el campo.

Description	Filtros / reguladores en miniatura	Reguladores en miniatura
Extractor	PS452	PS452
Juego de elemento de 5 micrones	PS403	N/A
Juego de elemento de 40 micrones	PS401	N/A
Tazón de metal con drenaje manual	PS447B	N/A
Tazón de metal con drenaje automático	PS451B	N/A
Juego de soporte para montaje* (anillo plástico)	PS417B	PS417B
Juego de soporte para montaje* (anillo de aluminio)	PS466	PS466
Tuerca para montaje en tablero, de metal*	P01531	P01531
Juego de pistón y obturador, sin balance, con descarga.	PS426	PS426
Juego de pistón y obturador, sin balance, sin descarga	PS428	PS428
Tazón de policarbonato con drenaje manual	PS404	N/A
Tazón de policarbonato con drenaje automático	PS408B	N/A
Muelles: Rango de 1 a 30 PSIG Rango de 1 a 60 PSIG Rango de 2 a 125 PSIG Rango de 1 a 15 PSIG	P01175 P01174 P01173 P01176	P01175 P01174 P01173 P01176
Tuerza la Perilla del Desaguadero	P05117	

*Apriete la tuerca de soporte del tablero de 2.8 a 3.4 Nm (Newtons por metro) (25 a 30 pulgadas por libra [63.5 cm. a 76.2 cm. por Kg.]) del par de torsión.

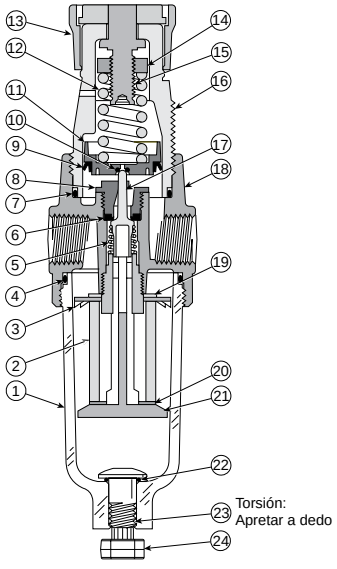


FIGURA 1: Filtro / regulador en miniatura - sin balance, con descarga

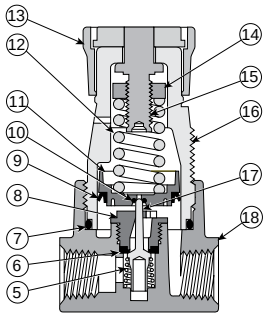


FIGURA 2: Regulador en miniatura - se muestra unidad sin balance, con descarga

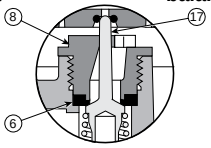


FIGURA 3: Detalle del sello del obturador

Pneumatic Division
Richland, Michigan 49083
269-629-5000

Installation and Service Instructions
IS-R24/R25/R45/R46
R24, R25, R45 and R46 Series
Plastic Air and Water Regulators
ISSUED: January, 2008
Supersedes: September, 2006
Doc. #ISR25R45, ECN #070797, Rev. 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.**

⚠ WARNING

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

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.wattsfluidair.com

Introduction

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

Application Limits

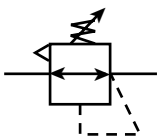
These products are intended for use in general purpose compressed media systems only.

Operating Pressure:

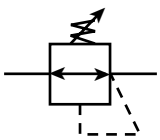
	kPa	PSIG	bar
Maximum Inlet Pressure	1034	150	10.3

Ambient Temperature Range: 4°C to 52°C (40°F to 125°F)

Symbols



Relieving Regulator Adjustable



Non-Relieving Regulator Adjustable

Installation

Before installing, blow out pipe line to remove all foreign matter. This unit has DRYSEAL pipe threads; use pipe compound or tape sparingly to male threads only. Install regulator in pipe line so that water will flow in direction of arrow stamped on body, install as near as possible to equipment serviced.

⚠ CAUTION: DO NOT OVERTIGHTEN FITTINGS.
60 lbs-in (6.8Nm) Maximum - R45 & R46
40 lbs-in (4.5Nm) Maximum - R24 & R25

Reduced Pressure Adjustment

To adjust reduced pressure settings, pull knob out and turn knob clockwise to increase pressure setting and counter-clockwise to lower setting. Push knob in to lock adjustment. For best adjustment, set pressure on the rise by turning knob clockwise. With relieving type regulators (air use only), the reduced pressure follows adjustment of the screw. With non-relieving regulators, adjustment for lower reduced pressure will not be obtained until the reduced pressure system is "bled-off", or until air flow (or water flow) starts.

Maintenance – Cleaning

Note: To clean, it is not necessary to remove regulator from line. Refer to drawing as guide in reassembly. If the supply is kept the regulator should provide long periods of uninterrupted service. Erratic regulator operation or loss of regulation is most always due to dirt in the poppet area. To clean, shut off air line pressure and disassemble the regulator. Refer to drawing as a guide to disassembly and subsequent reassembly. Clean parts with mild soap and water or denatured alcohol and blow out body with compressed air. When reassembling, make sure the seat if firmly in place. For R24, R25, tighten spring cage slightly more than hand tight (60 - 70 inch pounds torque). For R45 and R46, tighten spring cage to 150 inch pounds torque.

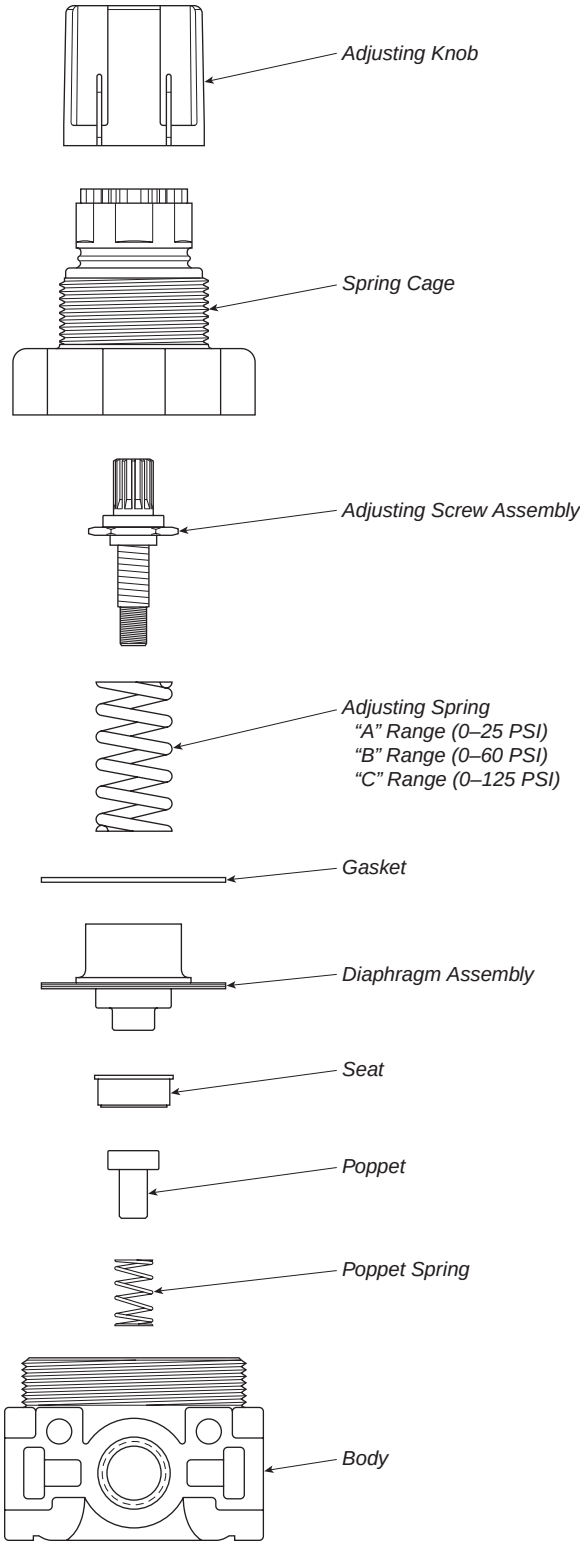
⚠ WARNING

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.

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

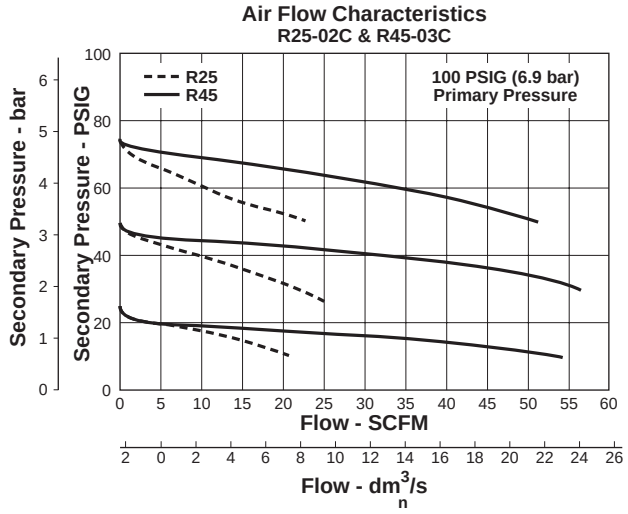


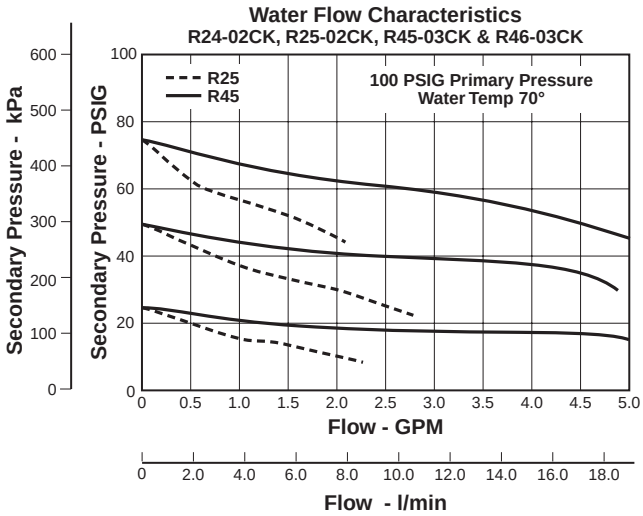
Service Kits / Parts Available

Description	R24	R25	R45	R46
Non-Relieving Repair Kit	RKR24KY	RKR25KY	RKR45KY	RKR46KY
Relieving Repair Kit	N/A	RKR25Y	RKR45Y	N/A
Spring Cage Repair Kit	CKR366Y	CKR364Y	CKR45Y	CKR45Y
Adjusting Knob	R35-0545P			

Accessories

Panel Mount Bracket and Nut	SA161X57
Panel Mount Nut	R05X51





Pneumatic Division
Richland, Michigan 49083
269-629-5000

Installation and Service Instructions: IS-R364R374R384

R364, R374, & R384, 1/8" & 1/4" Miniature Regulators

ISSUED: September, 2006
Supersedes: September, 2005

Doc. #ISR3647484, ECN #060928, Rev.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 media source and depressurize all media 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, media 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.**

⚠ WARNING

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

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.wattsfluidair.com

Introduction

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

Application Limits

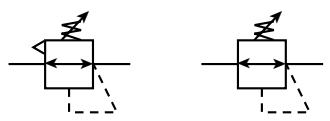
These products are intended for use in general purpose compressed media systems only.

Operating Pressure:

	kPa	PSIG	bar
Maximum Inlet Pressure	2068	300	21.0

Ambient Temperature Range: 4°C to 49°C (40°F to 120°F)

Symbols



Relieving Regulator Adjustable **Non-Relieving Regulator Adjustable**

Installation

1. The regulator should be installed with reasonable accessibility for service whenever possible - repair service kits are available. Keep pipe and 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 unit, possibly causing malfunction.
2. Install regulator so that media flow is in the direction of arrow (on R384's), and into port labelled "IN". Installation must be upstream (high pressure) side and as close to the devices it is to service (valve, cylinder, tool, etc.). Mounting may be in any position.
3. Gauge ports are located on both sides of the regulator body for your convenience. It is necessary to install a gauge or pipe plugs into each port during installation.
4. For protection against rust, pipe scale, and other foreign matter, install a filter on the upstream (high pressure) side as close to the regulator as possible.

Operation

1. Before turning on the media source, disengage the Adjusting Knob by pulling upward. Turn the Adjusting Knob counterclockwise until compression is released from the Control Spring. Then turn on media source and adjust regulator to desired secondary pressure by turning Adjusting Knob clockwise. This permits pressure to build up slowly, preventing any unexpected operation of the valve, cylinders, tools, etc., attached to the line. Adjustment to desired secondary pressure can be made only with primary pressure applied to the regulator.
2. To decrease regulator pressure setting, always reset from a pressure lower than the final setting desired. For example, lowering the secondary pressure from 550 to 410 kPa (80 to 60 PSIG) is best accomplished by dropping the secondary pressure to 350 kPa (50 PSIG), then adjusting upward to 410 kPa (60 PSIG).

   Push the Adjusting Knob down to lock the pressure setting.

Reduced Pressure Spring Ranges

"A" Range = 1 – 25 PSI
"B" Range = 2 – 60 PSI
"C" Range = 2 – 125 PSI

⚠ 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.

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

Service

⚠ **CAUTION:**
SHUT OFF MEDIA SOURCE and exhaust the primary and secondary pressure before disassembling regulator unit. (Turning the Knob counterclockwise reduces regulator's setting, but does not vent downstream pressure on non-relieving regulators.)

⚠ **CAUTION:**
Lubricate parts with a mineral based oil / grease or silicone grease. DO NOT use synthetic oils / greases such as esters.

A. Servicing the Bonnet and Diaphragm assembly-

1. Disengage the Adjusting Knob by pulling upward. Turn Adjusting Knob counterclockwise until the compression is released from the Pressure Control Spring.
2. Unscrew the threaded Bonnet Assembly. Next, disassemble, clean, and carefully inspect parts for wear and / or damage. If replacement is necessary, use parts from service kits.
3. Lubricate O-ring and Lip Seals with grease (supplied with kits).
4. Install Diaphragm Assembly into Body. Then install Bonnet Assembly to Body and tighten to 4.5 to 5.6 Nm (40 to 50 in. lb.).

B. Servicing the Poppet Assembly-

1. Exhaust system media pressure as previously described. Then remove Bottom Plug by unscrewing it from Body. Next, remove Bottom Plug O-ring, Poppet Return Spring and Poppet Assembly.
2. Next, disassemble, clean, and carefully inspect parts for wear and / or damage. If replacement is necessary, use parts from service kits.
3. Lubricate O-ring and sliding surfaces using grease supplied with service kit.
4. Install parts as shown.
5. Lubricate Bottom Plug O-ring and install it in o-ring groove on Bottom Plug. Then screw Bottom Plug into Body until the plug bottoms out in body. Tighten to 3.5 to 5.1 Nm (35 to 45 in. lb.).
6. Turn on media source and adjust to desired secondary pressure as described in the **Operation** section.

Turn on media pressure and check regulator for leakage. If leakage occurs, DO NOT OPERATE — conduct repairs again.

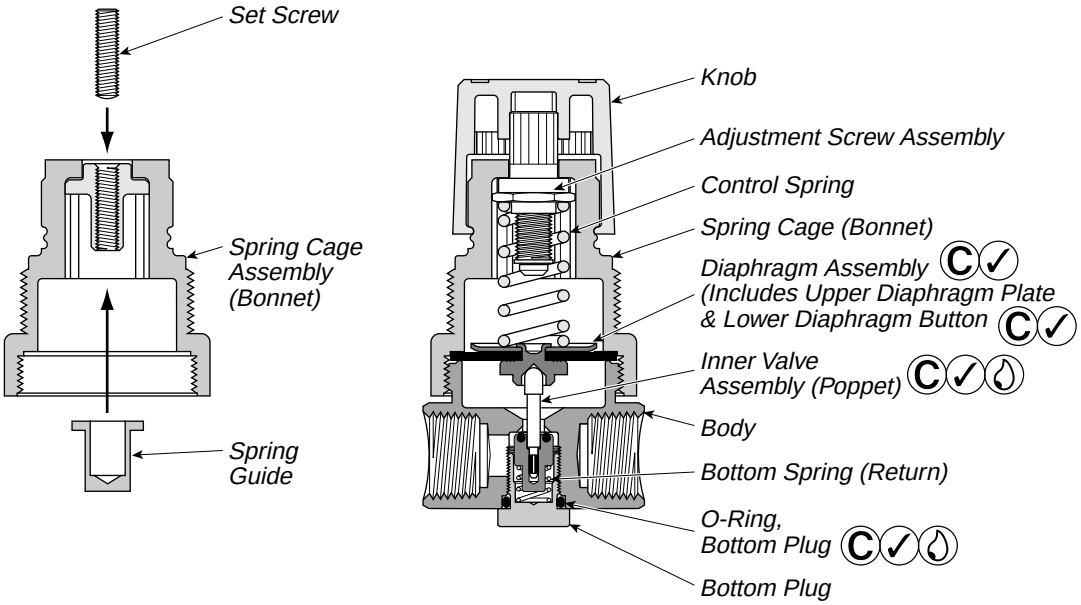
If you have questions concerning how to service this unit, contact your local authorized dealer or your customer service representative.

Service Kits Available

	R364, R374, & R384, 1/8" & 1/4"
Regulator Repair Kit (Relieving)	RKR164Y
Regulator Repair Kit (Non-Relieving)	RKR163Y
Regulator Repair Kit * (Relieving) X64 Option	RKR164X64
Regulator Repair Kit * (Non-Relieving) X64 Option	RKR164KX64
Spring Cage & Knob Assembly	CKR364Y
"T" Option Cage Kit	CKR364T
Panel Mount Nut	R05X51
Mounting Bracket / Nut	SA161X57
Knob Only	R35-0545P

* For all other "X" options and "Z" models contact factory for kits or replacement parts.

"T" Option



R364, R374, & R384 Miniature Regulator (Non-Relieving Shown)

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.

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 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, 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, keytones, 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.

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.

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.