

GENERAL LINE FRL

Document Number		Description	
☐	2F400	Rev. 2	35F & 43F Particulate Filters with Variations/Accessories, Installation & Service
☐	2C400	Rev. 2	35F & 43F Coalescing Filters with Variations/Accessories, Installation & Service
☐	IS-F602	Rev. 3	F602 Particulate Filter, Installation & Service
☐	IS-B11-B12	Rev. 2	B11 & B12 General Purpose Integral Filter / Regulators, Installation & Service
☐	IS-L606	Rev. 4	L606 Lubricator, Installation & Service
☐	IS-R119	Rev. 5	R119 Regulators, Installation & Service
☐	IS-R119J	Rev. 2	R119 - J Remote Control Regulators, Installation & Service
☐	IS-L606	Rev. 4	L606 Lubricator, Installation & Service
☐	IS-DD15/30/60	Rev. 3	DD15, DD30, DD60 Desiccant Air Dryer, Installation & Service
☐	Safety Guide	—	PDN Safety Guide

 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 and sight domes, 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 and sight domes 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

Installation

1. Refer to WARNINGS and CAUTIONS.
2. Purge downstream air line of oil.
3. Install the unit with the air flowing in the direction indicated by the arrow on the body and / or the DP2 indicator.

4. The drain line connection is dependent on the type of drain that is selected.

5. Maximum inlet pressure and operating temperature ratings are: units with DP2 150 psig (10,3 bar) 150°F (66°C); units without DP2: 300 psig (20 bar) 150°F (66°C).

Maintenance

1. TO CLEAN OR REPLACE FILTER ELEMENT: Shut off air supply and reduce pressure in the unit to zero, remove the 8 screws from the filterhousing, unscrew the filter support and remove filter element.
 - a. IF THE UNIT HAS A RIGID FILTER ELEMENT: remove and clean periodically by tapping on a hard surface, and blowing off with air blow gun. Torque element support to 8 ±1 FT.-LB. when replacing element. Element should be cleaned/replaced when the DP2 pressure indicator is completely red or when the DP3 reads 7 psi (0,5 bar).
2. When the bowl becomes dirty, clean by wiping with dry, clean cloth.
3. Before placing the unit in service, make sure that the bowl is properly reinstalled, and securely bolted in place using the noted torque specifications.

Repair Kits And Replacement Parts

Filter Element kit (35F)
(includes filter element, o-ring / gasket)..... FRP-95-505

Filter Element Kit (43F)
(includes filter element, o-ring / gasket)..... FRP-95-508

Drain Plate Kits:

Drain Plate 9/16 diameter (use with internal automatic mechanical float drain no. P32KA00DA)..... GRP-95-391

Drain Plate (1/2 NPT) GRP-95-393

Drain Plate (1/2 BSPP)..... GRP-95-395

Bowl O-ring Kit (43F) GRP-95-290

Bowl O-ring Kit (35F) GRP-95-291

Differential Pressure Gauge DP3-01-000

Differential Pressure Indicator (Standard) DP2-01-001

Differential Pressure Removal Cap Kit GRP-95-022

Internal Drains:

Automatic Mechanical Drain

(Fluorocarbon Seals)..... P32KA00DA

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Automatic Electric Drain Valves

Model Number Kit	Port Size NPT	Voltage	Operating Pressure
WDV3-G14BL	1/2"	115 VAC	232 PSIG
WDV3-G24BL	1/2"	230 VAC	232 PSIG
WDV3-G34BL	1/2"	24 VDC	232 PSIG

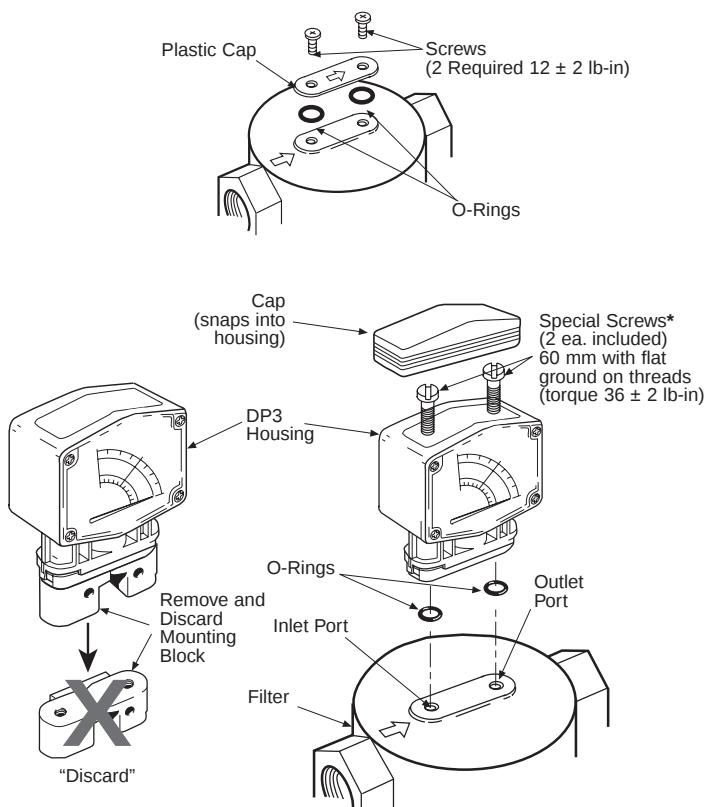
Zero Air Loss Condensation Drain

Model Number Kit	Port Size NPT	Voltage	Operating Pressure
ED3002N115-KL	1 x 3/8, 3/8	115 VAC	232 PSIG
ED3004N115-KL	1 x 1/2, 3/8	115 VAC	232 PSIG
ED3007N115-KL	2 x 1/2, 3/8	115 VAC	232 PSIG
ED3030N115-KL	2 x 1/2, 3/8	115 VAC	232 PSIG
ED3100N115-KL	2 x 1/2, 3/8	115 VAC	232 PSIG

DP3 Differential Pressure Gauge Installation Instructions on 3x / 4x Series Filters

1. Remove and discard the plastic cap, screws and O-rings from top of unit.
2. To install the new DP3 Differential Pressure Gauge, pry the cap out of the housing and separate the mounting block from the DP3 by removing the 2 screws under the cap. Make sure that air flow direction arrows on DP3 match flow arrows (same direction) on filter unit. Make sure O-Rings are properly seated on bottom of DP3, and attach DP3 to filter, using the special 60mm mounting screws (2 required) with flat ground on threads.

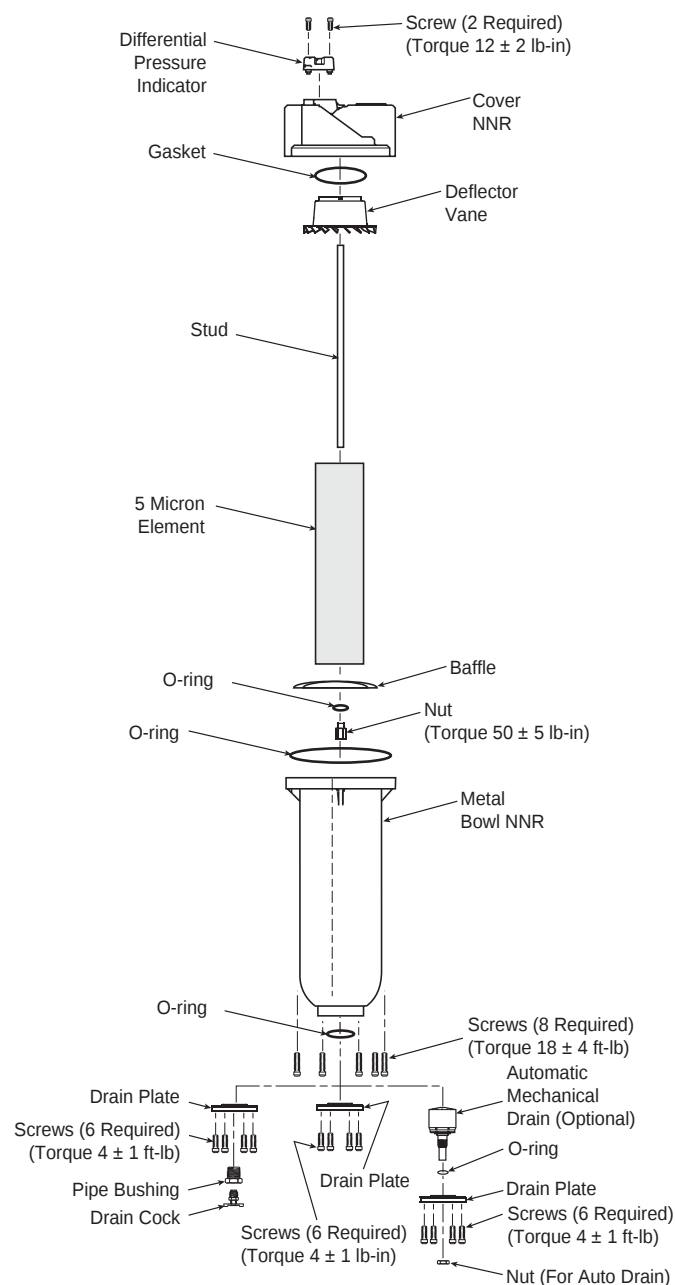
CAUTION! Overtightening the screws may damage the Differential Pressure Gauge.



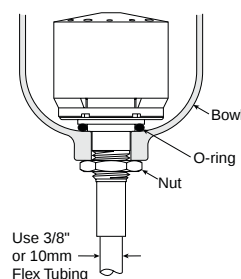
*** CAUTION:** Use special 60 mm (long) screw to mount gauge to filter only.

3. Replace coalescing element when differential pressure reaches the red band.

35F / 43F



Automatic Mechanical Float Drain



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Installation

1. Refer to WARNINGS and CAUTIONS.
2. Purge downstream air line of oil.
3. Install the unit with the air flowing in the direction indicated by the arrow on the body and / or the Differential Pressure Indicator.

4. The drain line connection is dependent on the type of drain that is selected.

5. Maximum inlet pressure and operating temperature ratings are: units with Differential Pressure Indicator, 150 psig (10.3 bar) and 150°F (66°C); units without DP2 Differential Pressure Indicator or with DP3 Differential Pressure Gauge: 250 psig (17.2 bar) 150°F (66°C).

Maintenance

1. The element operates effectively when it is saturated. The element's useful life will end only when the Differential Pressure Indicator is completely red. The element cannot be cleaned or reused and must be replaced at the end of its useful life.
2. When bowl becomes dirty, replace the bowl or clean by wiping with a clean, dry cloth.
3. Before placing the unit in service, make sure that the bowl is securely bolted in place per noted torque specification.

Repair Kits and Replacement Parts

Filter Element Kit (kit includes filter element, element o-ring, and retainer o-ring).

Element Types			
	1 micron	0.01 micron	oil vapor, adsorption
35F	MSP-95-502	MTP-95-502	MXP-95-502
43F	MSP-95-876	MTP-95-562	MXP-95-565

Drain Plate Kits:

Drain Plate 9/16 diameter (use with internal automatic mechanical float drain no. P32KA00DA)..... GRP-95-391
Drain Plate (1/2 NPT) GRP-95-393
Drain Plate (1/2 BSPP) GRP-95-395

Bowl O-ring Kit (43F) GRP-95-290

Bowl O-ring Kit (35F) GRP-95-291

Differential Pressure Gauge DP3-01-000

Differential Pressure Indicator (Standard) DP2-01-001

Differential Pressure Indicator Removal Cap Kit:
(for 250 psig appl.) GRP-95-022

Internal Drains:

Automatic Mechanical Drain:
(Fluorocarbon 1/8 NPT seals w/ stem) P32KA00DA

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Automatic Electric Drain Valves

Model Number Kit	Port Size NPT	Voltage	Operating Pressure
WDV3-G14BL	1/2"	115 VAC	232 PSIG
WDV3-G24BL	1/2"	230 VAC	232 PSIG
WDV3-G34BL	1/2"	24 VDC	232 PSIG

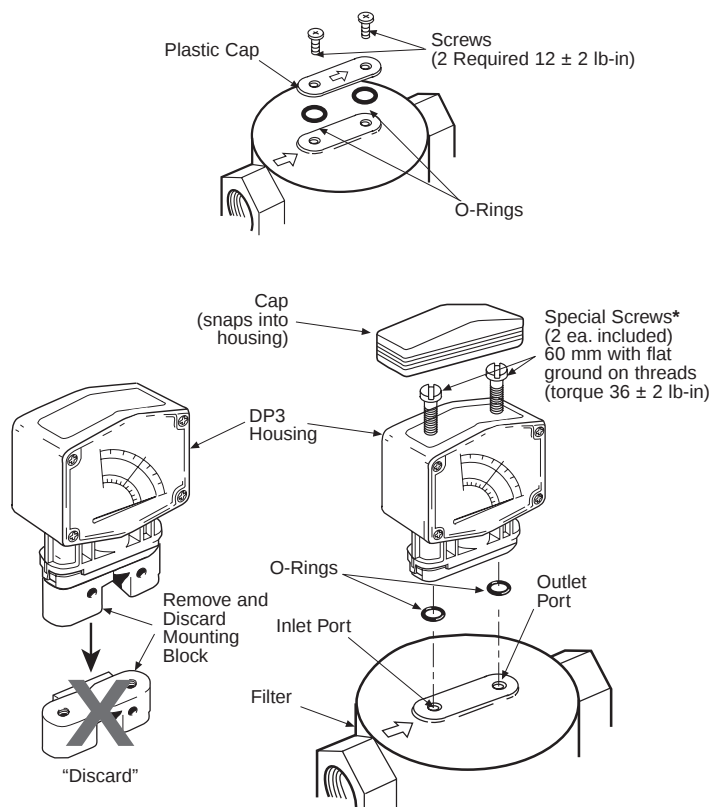
Zero Air Loss Condensation Drain

Model Number Kit	Port Size NPT	Voltage	Operating Pressure
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ED3100N115-KL	2 x 1/2, 3/8	115 VAC	232 PSIG

DP3 Differential Pressure Gauge Installation
Instructions on 3x / 4x Series Filters

1. Remove and discard the plastic cap, screws and O-rings from top of unit.
2. To install the new DP3 Differential Pressure Gauge, pry the cap out of the housing and separate the mounting block from the DP3 by removing the 2 screws under the cap. Make sure that air flow direction arrows on DP3 match flow arrows (same direction) on filter unit. Make sure O-Rings are properly seated on bottom of DP3, and attach DP3 to filter, using the special 60mm mounting screws (2 required) with flat ground on threads.

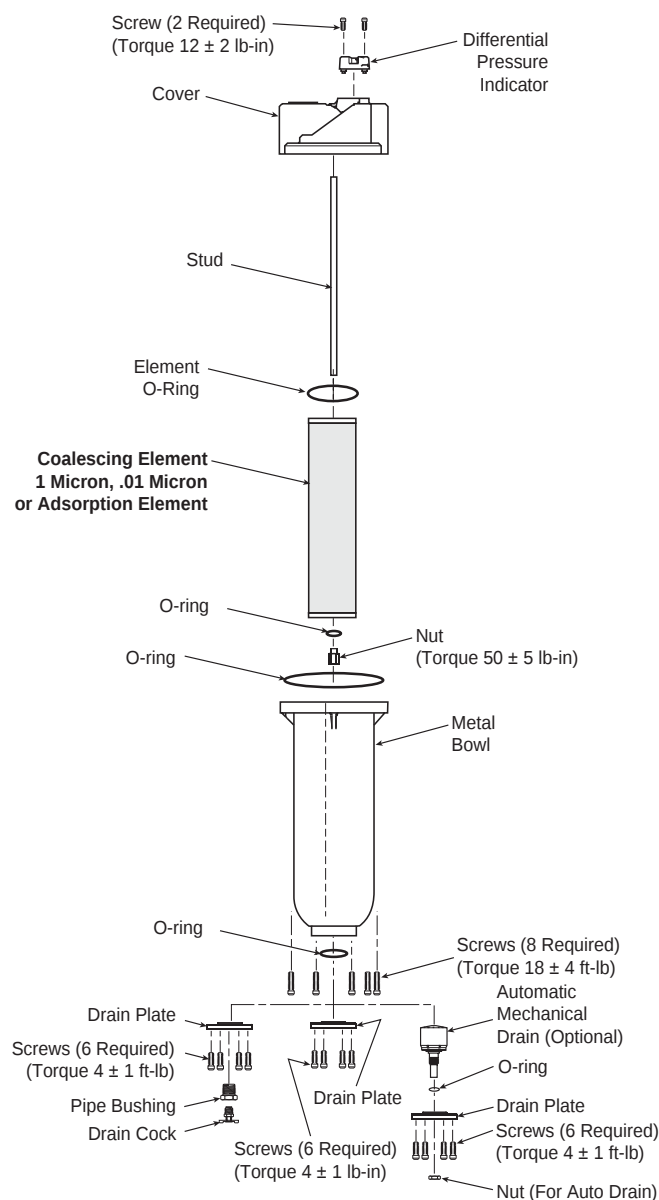
CAUTION! Overtightening the screws may damage the Differential Pressure Gauge.



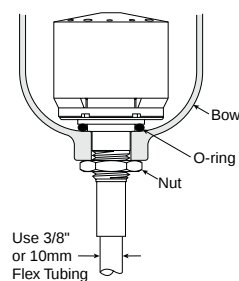
* **CAUTION:** Use special 60 mm (long) screw to mount gauge to filter only.

3. Replace coalescing element when differential pressure reaches the red band.

35F / 43F



Automatic Mechanical Float Drain



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 CAUTION

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Metal bowls are recommended where ambient and/or media conditions are not compatible with polyurethane 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.

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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.

Maximum Recommended Pressure Drop:

	kPa	PSIG	bar
Particulate Filter	70	10	0.7

With Polycarbonate Bowl

	kPa	PSIG	bar
Operating Pressure Maximum	1034	150	10
Operating Temperature Range	4°C to 49°C (40°F to 120°F)		

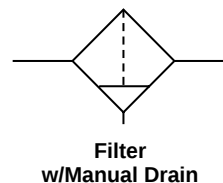
With Aluminum Bowl

	kPa	PSIG	bar
Operating Pressure Maximum	2068	300	21
Operating Temperature Range	4°C to 82°C (40°F to 180°F)		

With Zinc Bowl with Sight Gauge

	kPa	PSIG	bar
Operating Pressure Maximum	1723	250	17.0
Operating Temperature Range	4°C to 66°C (40°F to 150°F)		

ANSI Symbols



Filter
w/Manual Drain

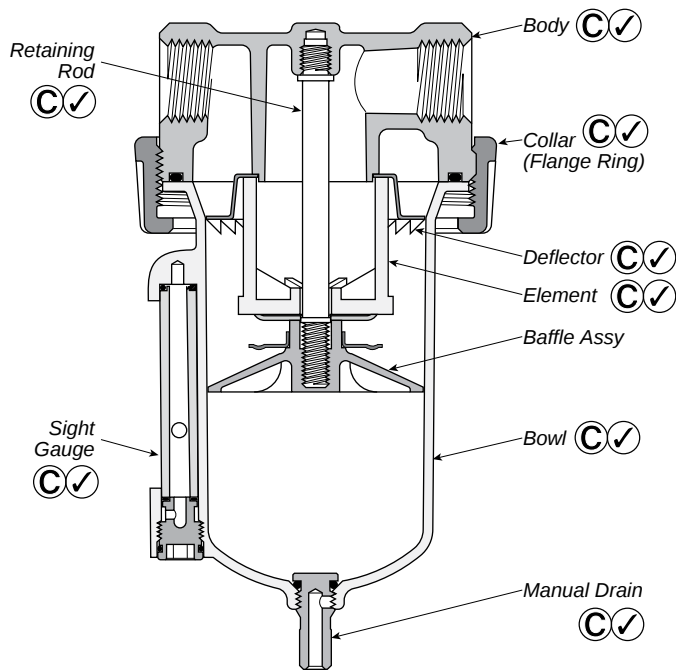
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- ① Lightly grease with provided lubricant.
- ✓ Inspect for nicks, scratches, and surface imperfections. If present, reduced service life is probable and future replacement should be planned.
- Ⓒ Clean with lint-free cloth.

Installation

- 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.
- The upstream pipe work must be clear of accumulated dirt and liquids.
- Select a filter location as close as possible to the equipment being protected and upstream of any pressure regulator.
- Install filter so that air flows in the direction of arrow on body.
- 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.

Operation and Service

- To service the filter, it is not necessary to remove the unit from the airline. Manual drain filters must be drained regularly before the separated moisture and oil reaches the bottom of the lower baffle.
- The particulate Filter Element should be removed and replaced when pressure differential across the filter is 10 PSIG.
- Shut off air supply and depressurize the unit, before servicing.
- Carefully remove Bowl by turning counterclockwise.
- Remove Filter Element, Baffle, and Retainer.
- 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.
- After servicing, apply system pressure and check for air leaks. If leakage occurs, **Do Not Operate** — conduct servicing again.

Kits Available

Description	Product Number	Bowl Type	Port Size
Bowls			
Polycarbonate	BK602Y	B	1/4", 3/8"
Zinc with Sight Gauge	BK605WY	W	1/4", 3/8"
Polycarbonate	BK602A	B	1/2"
Aluminum	BK603A	E	1/2"
Zinc with Sight Gauge	BK605WA	W	1/2"
Aluminum	BK603B	E	3/4" thru 2-1/2"
Zinc with Sight Gauge	BK605WB	W	3/4" thru 2-1/2"
Element Kits			
5 Micron	EK602VY	—	1/4", 3/8"
40 Micron	EK602Y	—	1/4", 3/8"
5 Micron	EK602VA	—	1/2"
40 Micron	EK602A	—	1/2"
5 Micron	EK602VB	—	3/4" thru 1-1/2"
40 Micron	EK602B	—	3/4" thru 1-1/2"
5 Micron Bronze	EK602VB-BR	—	3/4" thru 1-1/2"
40 Micron Bronze	EK602B-BR	—	3/4" thru 1-1/2"
40 Micron	EK602G	—	2", 2-1/2"
Drain Kits			
Manual	SA600Y7-1	All	All Sizes
Piston (Poly Bowl Only)	RK602SY	B	1/4", 3/8"
Piston (Poly Bowl Only)	RK602SA	B	1/2"
External Auto. (8 oz. Poly & Metal)	SA602D	B	1/2"
External Auto. (16 oz. Aluminum)	SA603D	E	1/2"
Internal Auto.	SA602MD	All	1/2"
External Auto. (16 oz. Metal Bowl)	SA602D	W	3/4" thru 2-1/2"
External Auto. (32 oz. Aluminum)	SA603D	E	3/4" thru 2-1/2"
Internal Auto.	SA602MD	All	3/4" thru 2-1/2"
Mounting Bracket Kits			
	SAF602-0571	—	1/4", 3/8"
	SAF602-0572	—	1/2"
(2 per unit required)	SA200AW57	—	3/4"
(2 per unit required)	SA200CW57	—	1"
Repair Kits			
Deflector, Baffle Assy, Retaining Rod	RK602Y	—	1/4", 3/8"
Deflector, Baffle Assy, Retaining Rod	RK602A	—	1/2"
Deflector, Baffle Assy, Retaining Rod	RK602B	—	3/4", 1"
Deflector, Baffle Assy, Retaining Rod	RK602C	—	1-1/4", 1-1/2"
Deflector, Baffle Assy, Retaining Rod	RK602G	—	2", 2-1/2"
External Auto Drain (Short Float 602)	RK602D	—	1/2" thru 2-1/2"
External Auto Drain (Tall Float 603)	RK603D	—	1/2" thru 2-1/2"
Internal Auto Drain	RK602MD	—	1/4" thru 2-1/2"
Metal Bowl with Sight Gauge	RKB605WY	—	1/4", 3/8"
Metal Bowl with Sight Gauge	RKB605WA	—	1/2"

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! WARNING

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

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	kPa	PSIG	bar
Particulate Filter	70	10	0.7

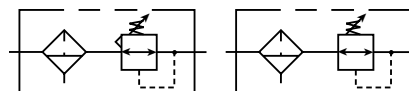
Operating Pressure Maximum

	kPa	PSIG	bar
Metal Bowl	2068	300	21
Metal Bowl with Sight Gauge	1724	250	17
Metal Bowl with Auto Drain	1207	175	12

Operating Temperature Range

Metal Bowl	4°C to 82°C (40°F to 180°F)
Metal Bowl with Sight Gauge	4°C to 66°C (40°F to 150°F)
Metal Bowl with Auto Drain	4°C to 49°C (40°F to 120°F)

Symbols



Filter / Regulator

Installation

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. Always start compound or tape at least one thread back from small end of fitting. Install regulator on pipeline as near as possible to equipment serviced.

Adjustment

Unlock B11 by pushing down knob. Turn knob clockwise to increase the reduced pressure (regulated pressure), and counter-clockwise to lower pressure. On B12, unlock lock nut and turn Tee-handle same as described above. With relieving type regulators, the reduced pressure will follow adjustment of the knob. With non-relieving regulators, adjustment for lower reduced pressure will only be obtained after airflow is created or air is bled off.

When resetting or lowering reducing pressure, always drop below the desired setting and adjust up to setting needed.

! WARNING

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Maintenance/Cleaning

Note: To clean integral filter/regulator, it is not necessary to remove the unit from the airline.

If the air filter element is kept fairly clean, or changed when a noticeable drop in pressure occurs, the regulator should provide long periods of uninterrupted service. Erratic regulator operation, or loss of regulation, is most always due to dirt (rust, pipe tape etc.) in the disc area. To clean, shut off and vent all air line pressure to the unit being cleaned. Before removing spring cage (B11), push down and turn adjusting knob counterclockwise until it stops; with (B12) turn until it comes out of the spring cage. Carefully remove spring cage and bowl. Remove filter element baffle and retainer. Wipe parts clean with soapy water or denatured alcohol. **Caution! Never use solvents like carbon tetrachloride, trichlorethylene, acetone, or paint thinner to clean any parts.** If using compressed air to blow dry, be sure to wear appropriate eye protection. When reassembling, refer to drawing as guide. Be sure stem fits into center area of diaphragm assembly and O-rings on disc are lubricated before installing filter element retainer. Torque spring cage and bowl before using (see illustration).

Service Kits / Parts Available

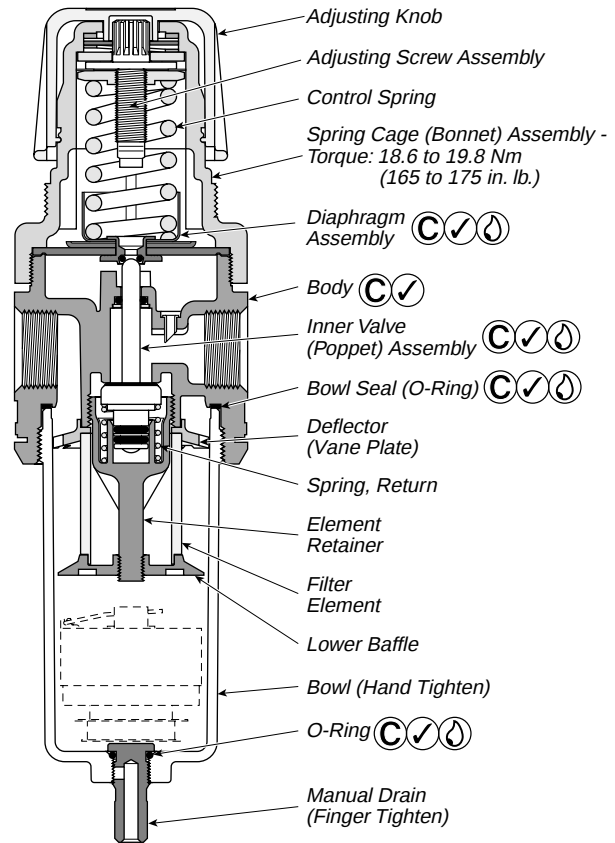
Description	Kit / Part Number
Adjusting Knob (In Kit CKR10Y)	R10Y54
Adjusting Spring (Control)	
“A” Range Spring, 0 – 25 PSI (0 – 1.7 bar)	SPR-387
“B” Range Spring, 0 – 60 PSI (0 – 4.1 bar)	SPR-388
“C” Range Spring, 0 – 125 PSI (0 – 8.5 bar)	SPR-389
“D” Range Spring, 0 – 250 PSI (0 – 17 bar)	SPR-390
Bottom Spring (Return)	SPR 391-1
Bowl O-Ring (In Bowl Replacement Kit)	
Standard	F10Y103-1
Viton	F10Y103-2VT
Bowl Replacement Kit (Bowl Gasket, Bowl, and Manual Drain)	
Zinc Bowl (D)	BKF11Y
Zinc Bowl w/Sight Gauge (W)	BKF11WY
Auto Drain Repair Kit *	RK602MD
(All Seals, Float Assembly, Disc Assembly, and Strainer)	
Filter Element Replacement Kit	
5 Micron	EKF10VY
40 Micron	EKF10Y
Element Retainer	F10Y49
Lower Baffle	F10Y76
Repair Kit (Diaphragm Assembly, Inner Valve, and Bowl O-Ring)	
Relieving *	RKR10Y
Non-Relieving *	RKR10KY
B11 Spring Cage Kit (Adjusting Screw, Spring Cage, Adjusting Knob)	CKR10Y
B12 Spring Cage Kit (Spring Cage, Lock Nut, T-Handle Assembly, Spring Button)	CKR11Y

* Add “X64” at end of Kit Number for Viton version (e.g., RKR10YX64).

Accessories

Gauges	
0 to 60 PSI (0 to 4 bar)	K4520N14060
0 to 160 PSI (0 to 11 bar)	K4520N14160
0 to 300 PSI (0 to 20 bar)	K4520N14300
Mounting Bracket Kit	SAR10Y57
Panel Mount Bracket (In Kit SAR10Y57)	R10Y57
Panel Mount Nut (In Kit SAR10Y57)	
Plastic	R10X51-P
Aluminum	R10X51-A
Drain Kits	
Complete Auto Drain (Standard)	SA602MD
Complete Auto Drain (Viton)	SA602MDX64
Manual Drain Assembly (Standard)	SA600Y7-1
Manual Drain Assembly (Viton)	SA600Y7-1VT
Piston Drain (Complete)	4210

B11

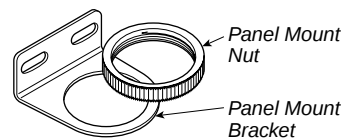
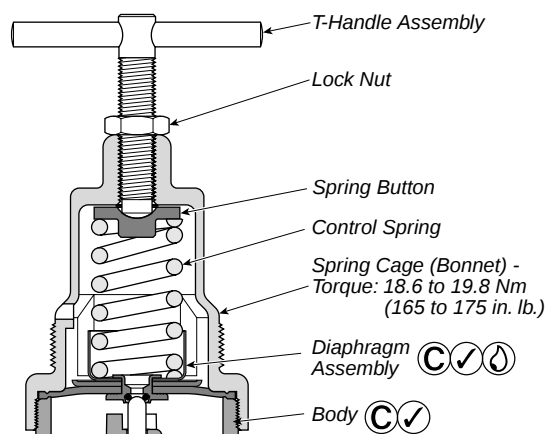


① Lightly grease with provided lubricant.

✓ 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.

B12



SAR10Y57 Panel Mount Bracket Kit



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, 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. Polyurethane 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 polyurethane 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 POLYURETHANE 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 polyurethane bowls where chemical attack may occur.

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.

With Polycarbonate Bowl

	kPa	PSIG	bar
Operating Pressure Maximum	1034	150	10
Operating Temperature Range	40°F to 125°F (4°C to 52°C)		

With Zinc Bowl with Sight Gauge

	kPa	PSIG	bar
Operating Pressure Maximum	1723	250	17.0
Operating Temperature Range	40°F to 150°F (4°C to 66°C)		

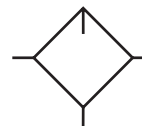
With Aluminum Bowl

	kPa	PSIG	bar
Operating Pressure Maximum	2068	300	21
Operating Temperature Range	40°F to 180°F (4°C to 82°C)		

With Aluminum Bowl with Sight Gauge

	kPa	PSIG	bar
Operating Pressure Maximum	1034	150	10
Operating Temperature Range	40°F to 125°F (4°C to 52°C)		

ANSI Symbols



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L606 Lubricator Installation

IS-L606

1. The lubricator 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 lubricator and equipment being lubricated.
2. The upstream pipe work must be clear of accumulated dirt and liquids.
3. Select a lubricator location as close as possible to the equipment being lubricated and downstream of any pressure regulator.
4. Install lubricator so that air flows in the direction of arrow on body.
5. Install lubricator vertically with bowl drain mechanism (if supplied) at the bottom.

Operation and Service

1. Filling — Lubricators can be filled while under pressure and without shutting down equipment. Slowly remove either fill plug and fill to 1/4" to top of bowl using correct oil. For proper automatic fill operation, the oil inlet pressure to lubricator must be maintained between 10 and 200 PSI above air pressure to lubricator.

Suggested Lubricant: F442

Petroleum based oil of 100 to 200 SSU viscosity at 100°F and an aniline point greater than 200°F. (Mobil DTE24 and Sun Company Sunvis 932 are good examples). Do not use oils with adhesives, compound oils containing solvents, graphite, detergents or synthetic oils.

2. Replace the Fill Plug (by turning clockwise) and seat firmly. Excessive torque is not required. Turn on air supply, if leakage occurs, **DO NOT OPERATE** — conduct repairs again. The lubricator is now ready for setting.

3. Oil Delivery Adjustment — To adjust oil delivery, turn Adjustment Knob on top of the lubricator.

Leaner — Clockwise

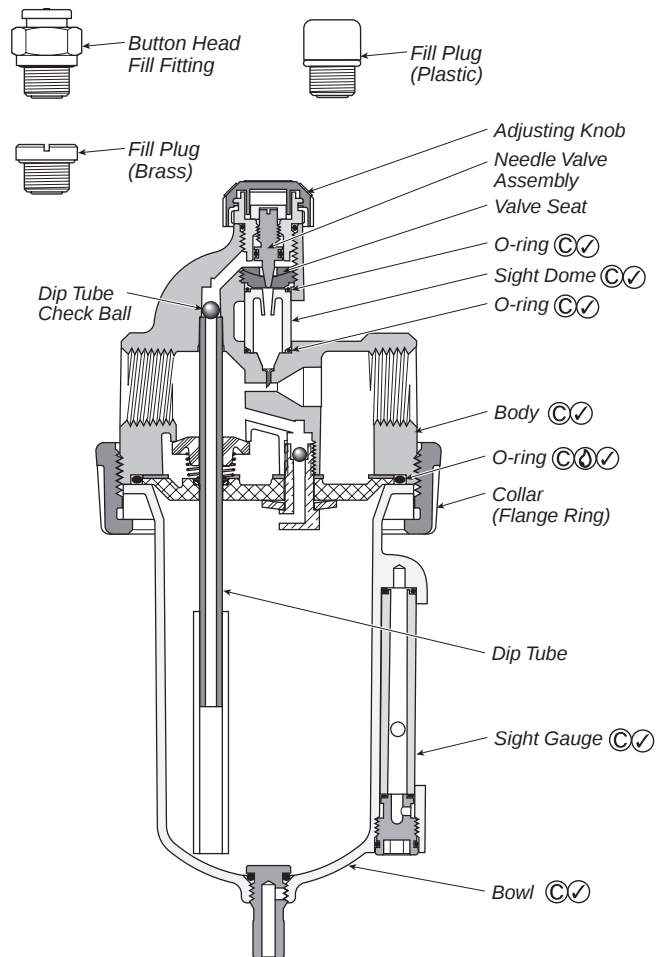
Richer — Counterclockwise

By counting the number of drops per minute in the Sight Dome, you can adjust to your requirements. Generally, one drop per minute downstream for every 10 - 15 SCFM flow is satisfactory. 25 drops per minute equals one (1) 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 air flow. Therefore, if air flow increases or decreases, oil delivery will be adjusted proportionately. ONLY IF A DIFFERENT RATIO IS DESIRED SHOULD YOUR ADJUSTMENT KNOB SETTING BE CHANGED AFTER YOUR INITIAL SETTING.

4. Cleaning — Erratic lubricator operation or loss of lubrication is almost always due to dirt (rust, pipe tape, etc.) in the needle valve or venturi area. To clean, shut off and vent all air line pressure to the unit being cleaned. In most cases cleaning is needed only in the oil metering area. Pull off Adjusting Knob and remove Needle Valve Assembly by turning out large hex nut. Remove Needle Valve Seat and clean removed parts with alcohol making sure hole in seat is clear. With a #57 drill, make sure hole in bottom of sight gauge area is open. Remove Bowl. Clean parts with soapy water or denatured alcohol **but do not use denatured alcohol on plastic bowl, sight dome or sight gauge**. If using compressed air to blow dry, be sure to wear appropriate eye protection.

5. After servicing, apply system pressure and check for air leaks. If leakage occurs, **Do Not Operate** — conduct servicing again.



- ① Lightly grease with provided lubricant.
- ② Inspect for nicks, scratches, and surface imperfections. If present, reduced service life is probable and future replacement should be planned.
- ③ Clean with lint-free cloth.

Kits Available

Description	Product Number	Bowl Type	Port Size
Bowl			
Polycarbonate	BK606Y	B	1/4", 3/8"
Zinc with Sight Gauge	BK605WY	W	1/4", 3/8"
Polycarbonate	BK606A	B	1/2"
Aluminum	BK603A	E	1/2"
Zinc with Sight Gauge	BK605WA	W	1/2"
Aluminum with Sight Gauge	BK606X30A	G	1/2"
Aluminum	BK603B	E	3/4" thru 1-1/2"
Zinc with Sight Gauge	BK605WB	W	3/4" thru 1-1/2"
Aluminum with Sight Gauge	BK606X30B	G	3/4" thru 1-1/2"
Repair Kit			
Dip Tube Replacement Kit	DTK606	All	All Sizes
Needle Valve Assembly	RK606Y	All	All Sizes
Sight Dome Repair Kit	RK606SY	All	All Sizes
Sight Gauge Bowl Repair Kit	RBK605WY	W	1/4", 3/8"
Sight Gauge Bowl Repair Kit	RKB605WA	W	1/2"
Sight Gauge Bowl Repair Kit	RKB606X30A	G	1/2"
Sight Gauge Bowl Repair Kit	RKB606WB	W	3/4" thru 1-1/2"
Sight Gauge Bowl Repair Kit	RKB606X30B	G	3/4" thru 1-1/2"
Button Head Fill Fitting (3/4 Hex.)	SAA606C109-1	—	—
Button Head Fill Fitting (11/16 Hex.)	L606C14	—	—
Fill Plug (Brass)	SA606B4	—	—
Fill Plug (Plastic)	SAP04113	—	—

⚠ WARNING

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

⚠ WARNING

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

Safety Guide

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Introduction

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

Application Limits

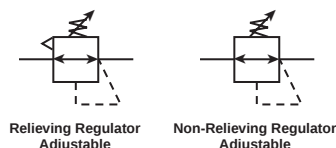
These products are intended for use in general purpose compressed media systems only.

Operating Pressure:

	kPa	PSIG	bar
Maximum Inlet Pressure	2068	300	21.0

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

Symbols



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. 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 turn the T-handle counterclockwise until compression is released from the Control Spring. Then turn on media source and adjust regulator to desired secondary pressure by turning T-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). Tighten the Locking Nut on the T-handle to lock the pressure setting.

Reduced Pressure Spring Ranges

"A" Range = 1 – 25 PSI (1/4", 3/8", 1/2" Only)

"B" Range = 2 – 60 PSI (1/4", 3/8", 1/2" Only)

"C" Range = 2 – 125 PSI (ALL)

"D" Range = 5 – 250 PSI (ALL)

Service

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

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⚠ 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.

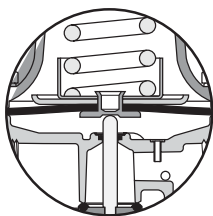
Note: After servicing unit, turn on air supply and adjust regulator to the desired downstream pressure. Check unit for leaks. If leakage occurs, do not operate - conduct repairs and retest.

A. Servicing the Bonnet and Diaphragm Assembly

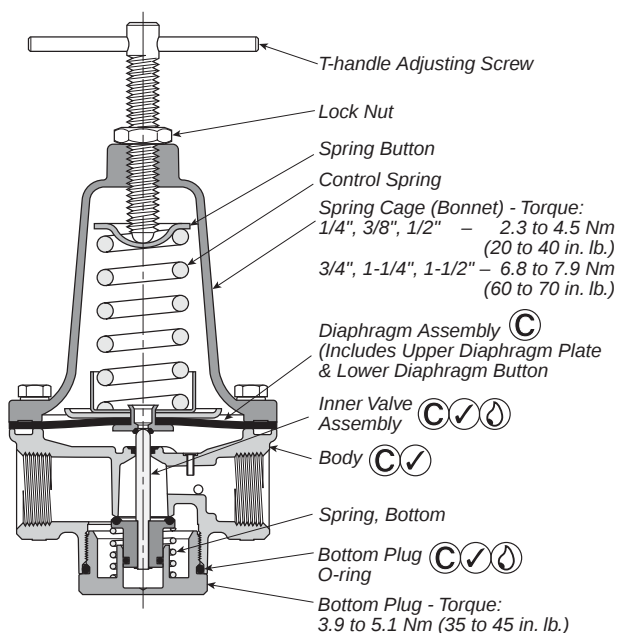
- Turn the T-handle counterclockwise until the compression is released from the Pressure Control Spring.
- Remove Bonnet Mounting Screws, Bonnet Assembly, Pressure Control Spring and Spring Button. Remove Diaphragm Assembly. Next, disassemble, clean, and carefully inspect parts for wear and / or damage. Wipe parts, clean with soapy water or denatured alcohol. If using compressed air to blow dry, be sure to wear appropriate eye protection. If replacement is necessary, use parts from service kits.
- Install Diaphragm Assembly, Pressure Control Spring, Spring Button as shown below. Then, install Bonnet Assembly to Body with Mounting Screws and tighten in an alternating or star pattern to the following torque specifications:
 1/4", 3/8", 1/2" 2.3 to 4.5 Nm (20 to 40 in. lb.)
 3/4", 1-1/4", 1-1/2" 6.8 to 7.9 Nm (60 to 70 in. lb.)

B. Servicing the Poppet Assembly

- Exhaust system media pressure as previously described. Then remove Bottom Plug by unscrewing it from Body. Next, remove Bottom Plug, O-ring, Bottom Spring and Inner Valve Assembly.
- Next, disassemble, clean, and carefully inspect parts for wear and / or damage. If replacement is necessary, use parts from service kits.
- Lubricate O-ring and sliding surfaces using grease supplied with service kit.
- Install parts as shown.



R119 Regulator – Non-Relieving



R119 Regulator – Relieving

- (Ⓢ) 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.
- (C) Clean with lint-free cloth.

- Lubricate Bottom Plug O-ring and install it in o-ring groove on Bottom Plug. Be sure Inner Valve Stem fits into center area of Diaphragm Assembly before installing Bottom Plug. Then screw Bottom Plug into Body until it bottoms out in body. Tighten to 3.5 to 5.1 Nm (35 to 45 in. lb.).
- Turn on media source and adjust to desired secondary pressure as described in the Operation section. 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.

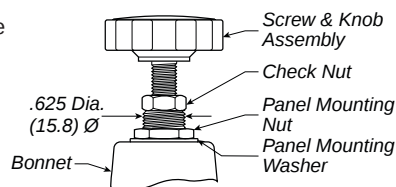
Service Kits Available

Description	Kit Number	Regulator Size
Bottom Plug Only	118Y2	1/4", 3/8"
	118A2	1/2"
	119B2-2	3/4" thru 1-1/2"
Bottom Plug O-ring Only	118Y102	1/4", 3/8"
	118A101	1/2"
	118B101	3/4" thru 1-1/2"
Mounting Bracket Kit	SA15Y57	1/4", 3/8"
	18A57	1/2"
	18B57	3/4" thru 1-1/2"
Panel Mount Conversion Kit	4202	1/4", 3/8"
	4204	1/2"
Knob & Hardware Only	PK16Y	1/4", 3/8", 1/2"
Regulator Repair Kit* (Relieving)	RK119Y	1/4", 3/8"
	RK119A	1/2"
	RK119A250	1/2" ("D" Range)
	RK119B	3/4", 1"
Regulator Repair Kit* (Non-Relieving)	RK119D	1-1/4", 1-1/2"
	RK118Y	1/4", 3/8"
	RK118A	1/2"
	RK118A250	1/2" ("D" Range)
Spring Cage Kit	RK118B	3/4", 1"
	RK118D	1-1/4", 1-1/2"
	RKC119Y	1/4", 3/8"
	TK119A	1/2"
T-handle Kits	TK119B	3/4" thru 1-1/2"
Check Valve Assembly for Reverse Flow Option	SAN263Y116-2	1/4", 3/8", 1/2", 3/4" thru 1-1/2"

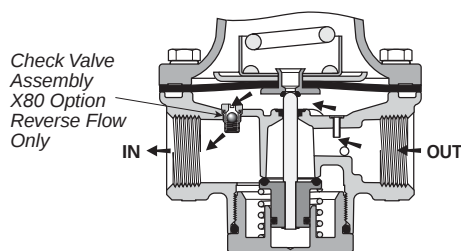
Accessories

Gauges	0 to 60 PSI (0 to 4 bar)	K4520N14060
	0 to 160 PSI (0 to 11 bar)	K4520N14160
	0 to 300 PSI (0 to 20 bar)	K4520N14300

Kits 4202 & 4204 include Bonnet. For Knob & Hardware only, order Kit Number PK16Y



R119 Regulator with Panel Mount Conversion Kit



R119 Regulator with X80 Option Reverse Flow Feature



WARNING

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

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

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

Application Limits

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

Operating Pressure:

	kPa	PSIG	bar
Maximum Inlet Pressure	2068	300	21.0

Ambient Temperature Range:

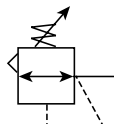
4°C to 49°C
(40°F to 120°F)



WARNING

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

ANSI Symbols



Installation

Installation of the R119-J requires the use of an additional pilot regulator to control the reduced pressure output of the R119-J unit. A typical installation is shown on reverse side, where a Type R119, R10 or R384 regulator is used to furnish the pilot operating supply pressure. With the flexibility provided by this typical installation, the R119-J regulator may be used in a remote and inaccessible location while the pilot regulator can be placed in a convenient location to control operation of the R119-J regulator.

Either a rigid pipe or flexible tubing may be utilized to connect the R119-J unit to the pilot regulator.

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 regulator in pipe line so that air will flow from IN to OUT. Install as near as possible to equipment being supplied.

Connections R and L are normally for gauge use, but may be used for outlet purposes in certain applications. To ensure trouble-free performance, a filter (Type F602) should be installed upstream of the regulator.

Adjustment

Since the reduced or regulated pressure is controlled by the pilot regulator, an increase in pilot pressure into the R119-J unit will produce a corresponding increase in the regulated pressure from the R119-J regulator. All R119-J series regulators (excluding models with X71 option) are of the constant bleed design. The system pressure is internally "bled-off" permitting adjustment for lower reduced pressure settings without the necessity of waiting for the flow to start.

NOTE: A small internal constant bleed device permits accurate fine point setting capability. This constant air bleed may be audible and is a perfectly normal characteristic of the regulator.

Maintenance

If the main supply or pilot air supply are kept clean, the regulator should provide long periods of uninterrupted service. Erratic regulator operation, or loss of regulation, is most always due to dirt accumulating in the disc area. To remedy, clean the regulator as outlined below.

Cleaning

Depressurize, remove bottom plug, spring and disc. Clean parts with alcohol, wipe off seat and blow out body with compressed air. Reassemble parts as a unit and screw into regulator (disc bottom O-ring must be relubed prior to assembly). Before tightening bottom plug, make sure disc is in center hole in body.

See reverse side for Service Kits / Parts Available.



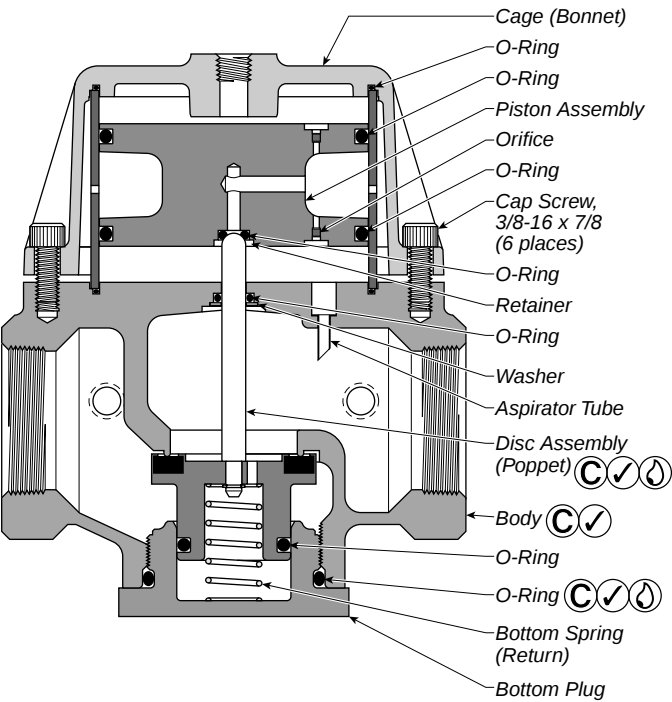
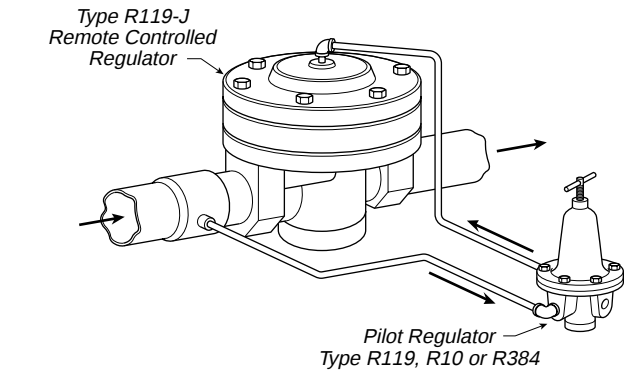
WARNING

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

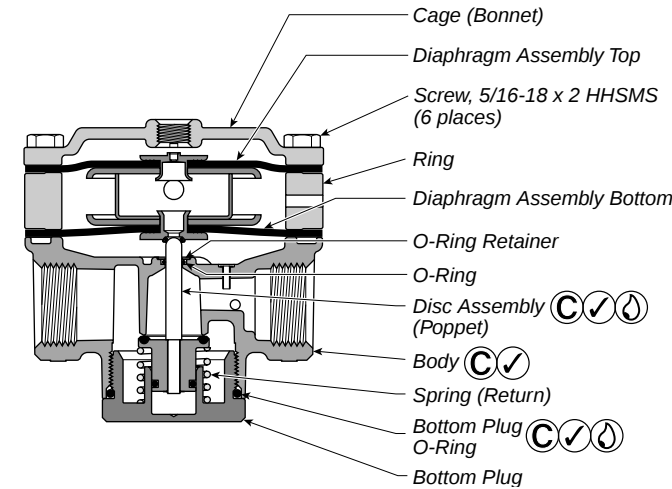
This document and other information from The Company, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application, including consequences of any failure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

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

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- 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.



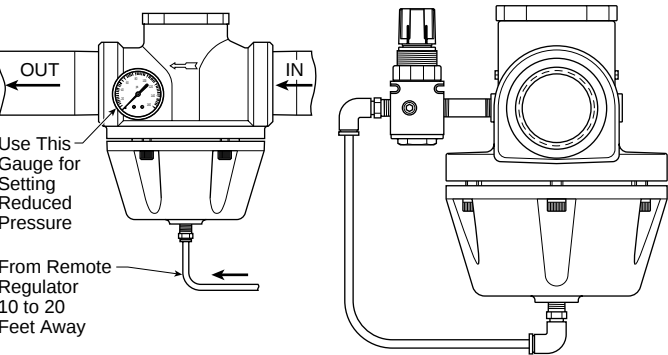
Service Kits / Parts Available

Description	Kit Number	Regulator Size
Regulator Repair Kit (Relieving) Includes: Diaphragm Assembly Top, Diaphragm Assembly Bottom, Disc Assembly, Bottom Plug Gasket	RK119X20Y RK119X20A RK119X20B RK119X20D	1/4", 3/8" 1/2" 3/4", 1" 1-1/4", 1-1/2"
Regulator Repair Kit (Non-Relieving) Includes: Diaphragm Assembly Top, Diaphragm Assembly Bottom, Disc Assembly, Bottom Plug Gasket	RK118X20Y RK118X20A RK118X20B RK118X20D	1/4", 3/8" 1/2" 3/4", 1" 1-1/4", 1-1/2"
2-1/2" Regulator Repair Kit Includes: Piston O-Rings, Cylinder O-Rings, Disc Assembly, Strainer, Bottom Plug Gasket	RK119G	2-1/2"

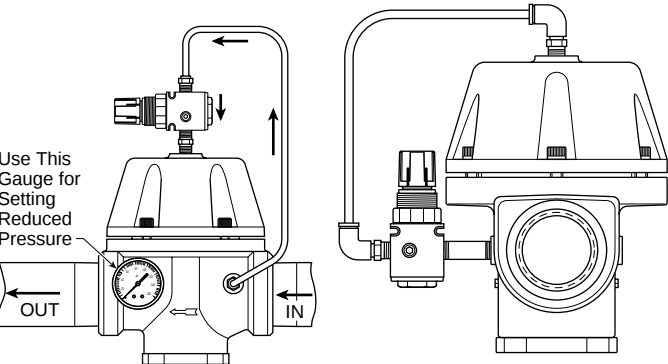
Accessories

Gauges 0 to 60 PSI (0 to 4 bar) 0 to 160 PSI (0 to 11 bar) 0 to 300 PSI (0 to 20 bar)	K4520N14060 K4520N14160 K4520N14300
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Suggested Installation or Mounting for the 2" and 2-1/2" R119-16 and 20J



1. The top two are the best way of mounting for all applications.
2. For best results at low pressure, mount inverted as shown above.
3. Use a precision regulator, R216, R230, or R210 for low pressure.





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, 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. Polyurethane 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 polyurethane 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 POLYURETHANE 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 polyurethane bowls where chemical attack may occur.

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.

With Polycarbonate Bowl

	kPa	PSIG	bar
Operating Pressure Maximum	1034	150	10
Operating Temperature Range	40°F to 125°F (4°C to 52°C)		

With Zinc Bowl with Sight Gauge

	kPa	PSIG	bar
Operating Pressure Maximum	1723	250	17.0
Operating Temperature Range	40°F to 150°F (4°C to 66°C)		

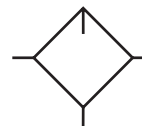
With Aluminum Bowl

	kPa	PSIG	bar
Operating Pressure Maximum	2068	300	21
Operating Temperature Range	40°F to 180°F (4°C to 82°C)		

With Aluminum Bowl with Sight Gauge

	kPa	PSIG	bar
Operating Pressure Maximum	1034	150	10
Operating Temperature Range	40°F to 125°F (4°C to 52°C)		

ANSI Symbols



WARNING

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L606 Lubricator Installation

IS-L606

1. The lubricator 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 lubricator and equipment being lubricated.
2. The upstream pipe work must be clear of accumulated dirt and liquids.
3. Select a lubricator location as close as possible to the equipment being lubricated and downstream of any pressure regulator.
4. Install lubricator so that air flows in the direction of arrow on body.
5. Install lubricator vertically with bowl drain mechanism (if supplied) at the bottom.

Operation and Service

1. Filling — Lubricators can be filled while under pressure and without shutting down equipment. Slowly remove either fill plug and fill to 1/4" to top of bowl using correct oil. For proper automatic fill operation, the oil inlet pressure to lubricator must be maintained between 10 and 200 PSI above air pressure to lubricator.

Suggested Lubricant: F442

Petroleum based oil of 100 to 200 SSU viscosity at 100°F and an aniline point greater than 200°F. (Mobil DTE24 and Sun Company Sunvis 932 are good examples). Do not use oils with adhesives, compound oils containing solvents, graphite, detergents or synthetic oils.

2. Replace the Fill Plug (by turning clockwise) and seat firmly. Excessive torque is not required. Turn on air supply, if leakage occurs, **DO NOT OPERATE** — conduct repairs again. The lubricator is now ready for setting.

3. Oil Delivery Adjustment — To adjust oil delivery, turn Adjustment Knob on top of the lubricator.

Leaner — Clockwise

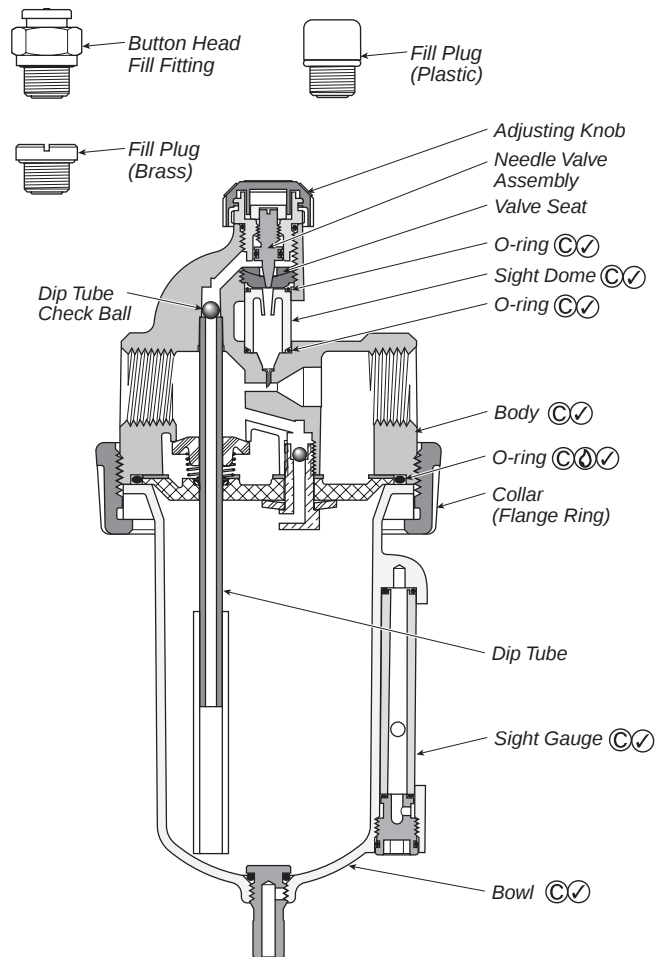
Richer — Counterclockwise

By counting the number of drops per minute in the Sight Dome, you can adjust to your requirements. Generally, one drop per minute downstream for every 10 - 15 SCFM flow is satisfactory. 25 drops per minute equals one (1) 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 air flow. Therefore, if air flow increases or decreases, oil delivery will be adjusted proportionately. ONLY IF A DIFFERENT RATIO IS DESIRED SHOULD YOUR ADJUSTMENT KNOB SETTING BE CHANGED AFTER YOUR INITIAL SETTING.

4. Cleaning — Erratic lubricator operation or loss of lubrication is almost always due to dirt (rust, pipe tape, etc.) in the needle valve or venturi area. To clean, shut off and vent all air line pressure to the unit being cleaned. In most cases cleaning is needed only in the oil metering area. Pull off Adjusting Knob and remove Needle Valve Assembly by turning out large hex nut. Remove Needle Valve Seat and clean removed parts with alcohol making sure hole in seat is clear. With a #57 drill, make sure hole in bottom of sight gauge area is open. Remove Bowl. Clean parts with soapy water or denatured alcohol **but do not use denatured alcohol on plastic bowl, sight dome or sight gauge**. If using compressed air to blow dry, be sure to wear appropriate eye protection.

5. After servicing, apply system pressure and check for air leaks. If leakage occurs, **Do Not Operate** — conduct servicing again.



- ① Lightly grease with provided lubricant.
- ② Inspect for nicks, scratches, and surface imperfections. If present, reduced service life is probable and future replacement should be planned.
- ③ Clean with lint-free cloth.

Kits Available

Description	Product Number	Bowl Type	Port Size
Bowl			
Polycarbonate	BK606Y	B	1/4", 3/8"
Zinc with Sight Gauge	BK605WY	W	1/4", 3/8"
Polycarbonate	BK606A	B	1/2"
Aluminum	BK603A	E	1/2"
Zinc with Sight Gauge	BK605WA	W	1/2"
Aluminum with Sight Gauge	BK606X30A	G	1/2"
Aluminum	BK603B	E	3/4" thru 1-1/2"
Zinc with Sight Gauge	BK605WB	W	3/4" thru 1-1/2"
Aluminum with Sight Gauge	BK606X30B	G	3/4" thru 1-1/2"
Repair Kit			
Dip Tube Replacement Kit	DTK606	All	All Sizes
Needle Valve Assembly	RK606Y	All	All Sizes
Sight Dome Repair Kit	RK606SY	All	All Sizes
Sight Gauge Bowl Repair Kit	RBK605WY	W	1/4", 3/8"
Sight Gauge Bowl Repair Kit	RKB605WA	W	1/2"
Sight Gauge Bowl Repair Kit	RKB606X30A	G	1/2"
Sight Gauge Bowl Repair Kit	RKB606WB	W	3/4" thru 1-1/2"
Sight Gauge Bowl Repair Kit	RKB606X30B	G	3/4" thru 1-1/2"
Button Head Fill Fitting (3/4 Hex.)	SAA606C109-1	—	—
Button Head Fill Fitting (11/16 Hex.)	L606C14	—	—
Fill Plug (Brass)	SA606B4	—	—
Fill Plug (Plastic)	SAP04113	—	—

⚠ 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.wattsfluidair.com

Introduction

Desiccant dryers are a convenient and cost effective means of ensuring your sensitive pneumatic applications are never exposed to damaging moisture. Compact in size, and no external power sources required, desiccant dryers can be used almost anywhere.

When air is compressed, the temperature of the air is increased, as is its capacity to hold moisture. As the hot, moist air travels downstream through the lines, it cools, allowing the moisture to condense. Aftercoolers, filters, drain traps, and drip legs are effective for removing liquid condensate. However, a desiccant dryer is designed to remove residual water vapor and aerosols with a very absorbent bed of silica gel beads (desiccant).

The desiccant dryer is designed so that, as air enters the unit and passes through the desiccant, any moisture is absorbed into the pores of the desiccant reducing the moisture content (dew point) of the outlet air. When the desiccant reaches its level of saturation (if using indicating desiccant the color will change from blue to pink), the dew point of the outlet air will begin to rise. At that point, the desiccant should be replaced or regenerated by heating in a drying oven to a temperature above 212°F, but not over 350°F. 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.

Operating Pressure:

	kPa	PSIG	bar
Maximum Inlet Pressure	2068	300	21.0

Operating Temperature:

Maximum Operating Temperature 82°C (180°F)

Optimum Operating Temperature Below 37.8°C (100°F)

Installation

To ensure maximum drying efficiency, always install a moisture separator / particulate style filter (F602) and a coalescing filter (F701) upstream of the desiccant dryer. This will increase the life of the desiccant and prevent oil contamination. Some applications may require the installation of a 5 micron or smaller (F702 - 0.9 micron) particulate filter downstream of the desiccant dryer to catch any residual desiccant dust. All desiccant dryers 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 as near as possible to the equipment being serviced. Install in pipeline so that flow is with the arrows as indicated on faces of dryer body.

Maintenance

1. **IMPORTANT: Depressurize dryer before servicing!**
2. Unscrew the metal collar holding the dryer bowl to the head, and remove bowl and collar.
3. Dump old desiccant out of bowl.
4. If the pressure drop across the dryer has become unacceptable, the bronze element in bottom of bowl may have become clogged. If this happens, blow air through the flow tube by placing a blow gun at the top of the tube. If element replacement is needed, disassemble flow tube from bowl by removing the end cap and bottom nut from the bottom of the bowl, replace element and reassemble tube in bowl.
5. Refill bowl with new or regenerated desiccant. Model DD15 holds 2-1/2 lb. of desiccant, model DD30 holds 5 lb. of desiccant and model DD60 holds 10 lb. of desiccant. To regenerate Silica Gel desiccant, bake desiccant for 4 hours at 275°F.
6. Reassemble bowl to head, making sure that the O-Ring in the head is in place.

⚠ WARNING

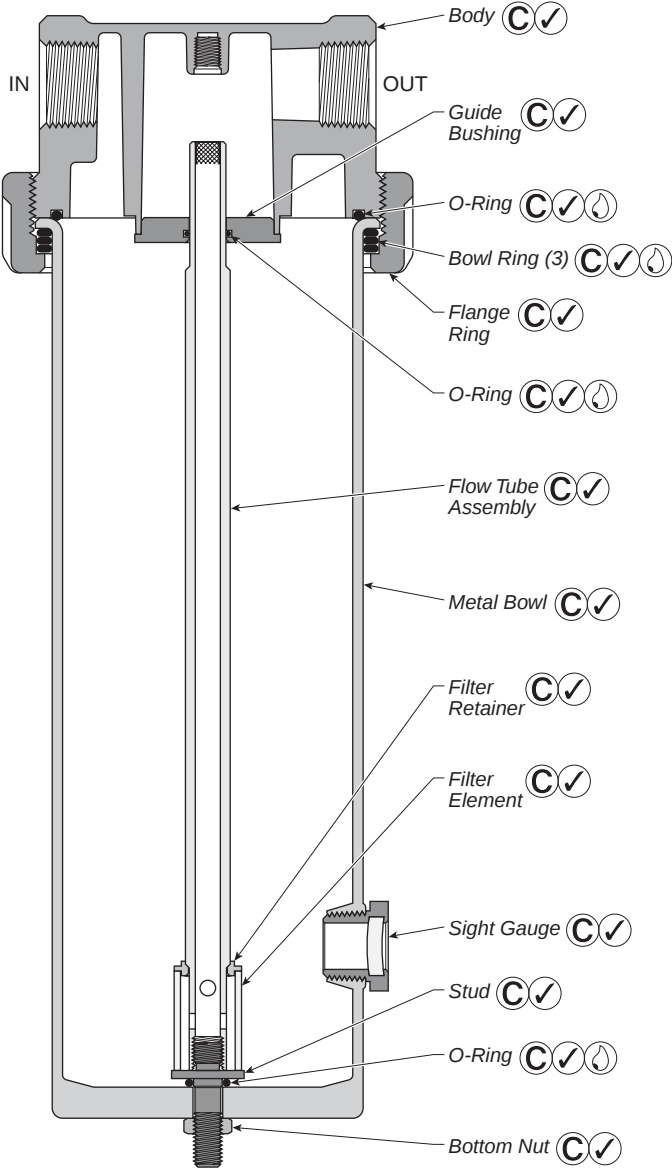
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DD15



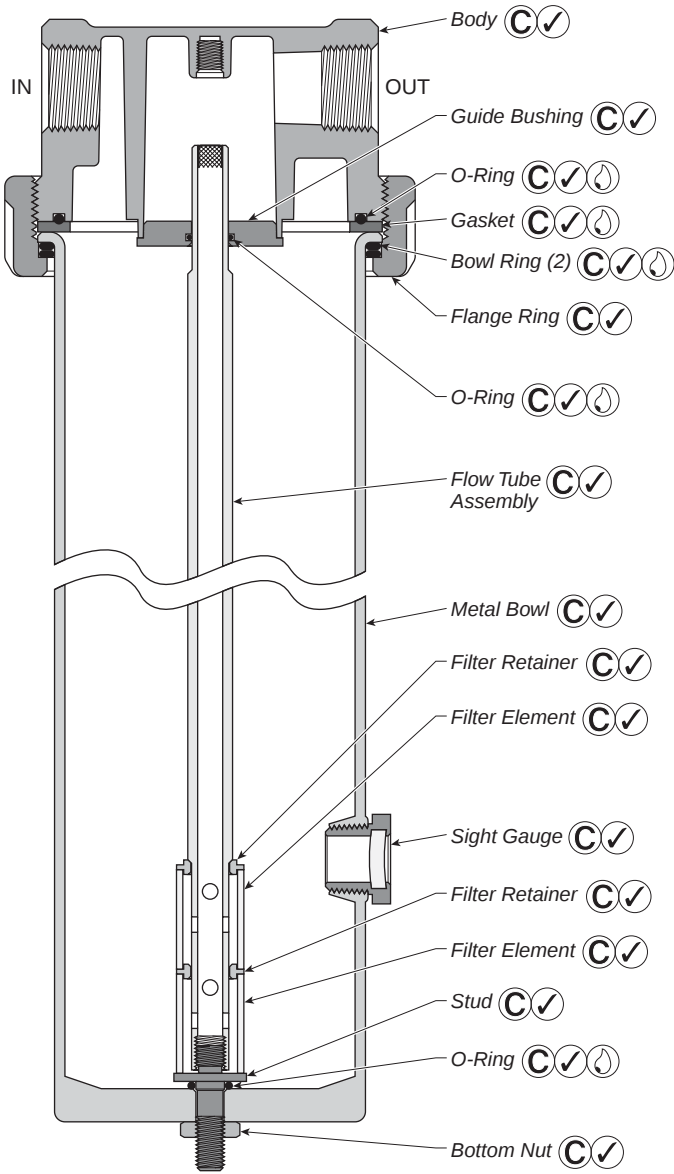
- 💧 Lightly grease with provided lubricant.
- ✓ Inspect for nicks, scratches, and surface imperfections. If present, reduced service life is probable and future replacement should be planned.
- C Clean with lint-free cloth.

Service Kits / Parts Available

Description	Part Number
Desiccant - Silica Gel 100% Indicating – 6 x .88 lb. Bags 24 x .88 lb. Bags	SGM100-1 SGM100-4
Flow Tube Repair Kit (Tube, Filter Element(s), Adaptor)	RKDD15-02-06
Mounting Brackets (Pair of Pipe Mounted Brackets) 1/4 Inch Pipe Size 1 Inch Pipe Size	SA200YW57 SA200CW57
Spring Check Valve for Inlet (250 PSIG max.) (Maximizes Life of Desiccant) 1/4 Inch NPT 3/8 Inch NPT 1/2 Inch NPT 3/4 Inch NPT	003393001 003393002 003393003 003393004

Service Kits / Parts Available

DD30



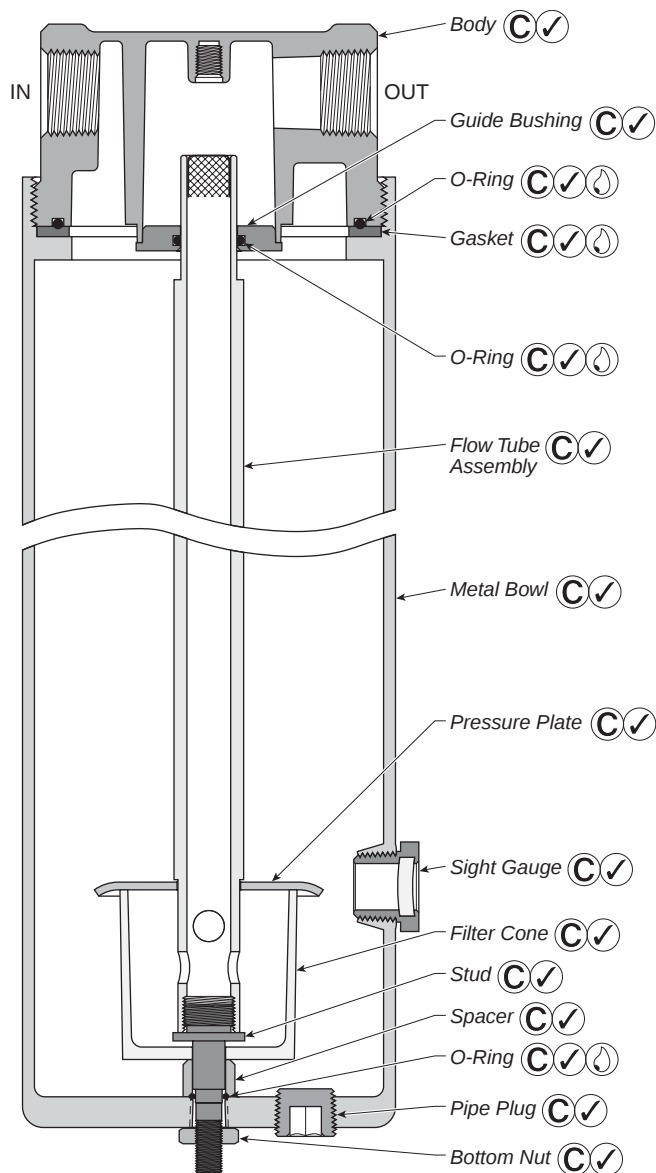
Description	Part Number
Desiccant - Silica Gel 100% Indicating – 6 x .88 lb. Bags 24 x .88 lb. Bags	SGM100-1 SGM100-4
Flow Tube Repair Kit (Tube, Filter Element(s), Adaptor)	RKDD30-03-08
Mounting Brackets (Pair of Pipe Mounted Brackets) 1/4 Inch Pipe Size 1 Inch Pipe Size	SA200YW57 SA200CW57
Spring Check Valve for Inlet (250 PSIG max.) (Maximizes Life of Desiccant) 1/4 Inch NPT 3/8 Inch NPT 1/2 Inch NPT 3/4 Inch NPT	003393001 003393002 003393003 003393004

- 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 Kits / Parts Available

Description	Part Number
Desiccant - Silica Gel 100% Indicating – 6 x .88 lb. Bags 24 x .88 lb. Bags	SGM100-1 SGM100-4
Flow Tube Repair Kit (Tube, Filter Element(s), Adaptor)	RKDD60-03-08
Spring Check Valve for Inlet (250 PSIG max.) (Maximizes Life of Desiccant)	003393001 003393002 003393003 003393004

DD60



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, ketones, esters or certain alcohols.
 - Do not use polycarbonate bowls or sight glasses in air systems where compressors are lubricated with fire resistant fluids such as phosphate ester and di-ester lubricants.

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

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

3. PRODUCT ASSEMBLY AND INSTALLATION INSTRUCTIONS

- 3.1. Component Inspection:** Prior to assembly or installation a careful examination of the valves, FRLs or vacuum products must be performed. All components must be checked for correct style, size, and catalog number. DO NOT use any component that displays any signs of nonconformance.
- 3.2. Installation Instructions:** Parker published Installation Instructions must be followed for installation of Parker valves, FRLs and vacuum components. These instructions are provided with every Parker valve or FRL sold, or by calling 1-800-CPARKER, or at www.parker.com.
- 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.