



QUBE FRL

Document Number		Description	
<input type="checkbox"/>	IS-31-51-101	Rev. 1	F31, F51 and F101 Coalescing Filters, Installation & Service
<input type="checkbox"/>	IS-F31	Rev. 2	F31 Coalescing Filter, Installation & Service
<input type="checkbox"/>	IS-F35	Rev. 1	F35 Particulate Filter, Installation & Service
<input type="checkbox"/>	IS-F71	Rev. 5	F71 Coalescing Filter, Installation & Service
<input type="checkbox"/>	IS-F75	Rev. 2	F75 Particulate Filter, Installation & Service
<input type="checkbox"/>	IS-F101	Rev. 2	F101 Coalescing Filter, Installation & Service
<input type="checkbox"/>	IS-F105	Rev. 1	F105 Particulate Filter, Installation & Service
<input type="checkbox"/>	IS-B35	Rev. 3	B35 Integral Filter / Regulator, Installation & Service
<input type="checkbox"/>	IS-B75	Rev. 4	B75 Filter / Regulator, Installation & Service
<input type="checkbox"/>	IS-B105	Rev. 3	B105 Integral Filter / Regulator, Installation & Service
<input type="checkbox"/>	IS-L35	Rev. 1	L35 Lubricator, Installation & Service
<input type="checkbox"/>	IS-L75	Rev. 2	L75 Lubricator, Installation & Service
<input type="checkbox"/>	IS-L105	Rev. 1	L105 Lubricator, Installation & Service
<input type="checkbox"/>	IS-R35	Rev. 3	R35 Regulator, Installation & Service
<input type="checkbox"/>	IS-R75	Rev. 3	R75 Regulator, Installation & Service
<input type="checkbox"/>	IS-R105	Rev. 2	R105 Regulator, Installation & Service
<input type="checkbox"/>	IS-S75-S105	Rev. 1	S75 & S105 Solenoid Quick Dump Valve
<input type="checkbox"/>	IS-SC105	Rev. 1	SC75 & SC105 Soft Start Valve
<input type="checkbox"/>	IS-SSA75-SSA105	Rev. 1	SSA75 & SSA105 Auto Pilot Soft Start Valve
<input type="checkbox"/>	Safety Guide	—	PDN Safety Guide

 **WARNING**

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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.
- 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.

Introduction

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
Coalescing Filter	70	10	0.7

With Polyurethane Bowl with Polypropylene Bowl Guard

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

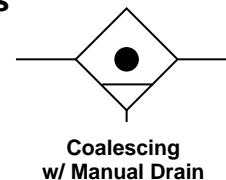
With Metal Bowl

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

With Metal Bowl with Wrap Around Sight Gauge

	kPa	PSIG	bar
Operating Pressure Maximum	1723	250	17
Operating Temperature Range	4°C to 66°C (40°F to 150°F)		

ANSI Symbols



Installation

To protect against premature filter cartridge replacement, blow out scale and other foreign matter from pipe line before installation. It is also recommended that a prefilter be installed, upstream of the coalescing filter, to remove 40 micron and larger size particles from the air line. Install coalescing filter with bowl vertical to pipe line, with proper orientation of flow arrows on body.

Maintenance

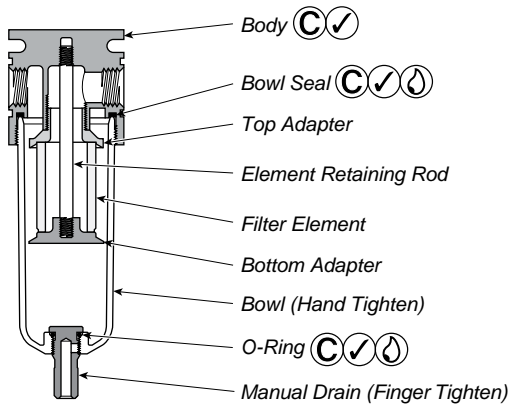
Never let the liquid level in bowl reach the base of filter element. Because of high degree of water and oil removal efficiency, it is recommended that an SA602MD-M4 auto drain be used to automatically drain bowl.

During operation, a dark band will be noticed around the base of the element which is normal. If dark spots are noticed on the upper portion of the foam covering, excessive liquid is being removed from the system and a prefilter should be installed.

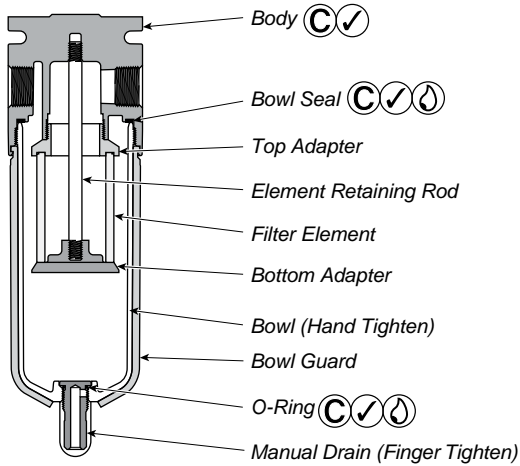
The filter element should be replaced when pressure drop across the filter (within prescribed flow range) exceeds 10 PSI. This occurrence indicates that solid particles, which are trapped in the filter media, have reached a level such that air flow is restricted and efficiency deteriorates.

When replacing the filter element, turn bottom adapter counterclockwise to remove it from retaining rod and remove the old element. Handle the replacement by the ends as much as possible, install it between the top and bottom adapters and hand tighten the assembly. If the retaining rod turns out of the body during disassembly, the replacement element should be installed between the adapters as described above. Ensure the gasket is assembled between the top adapter and the body.

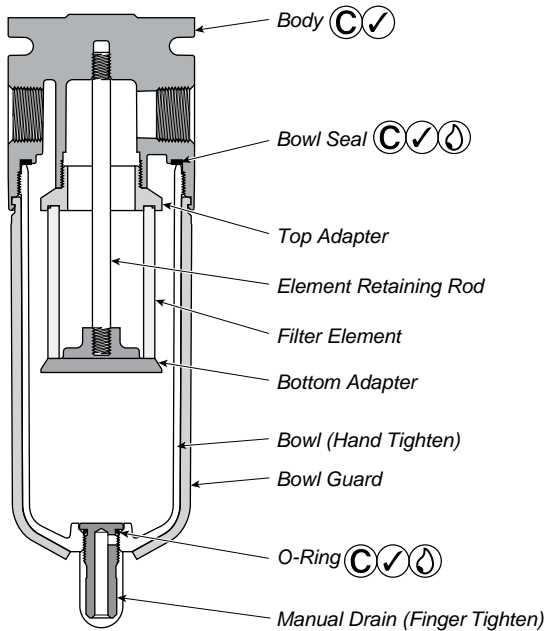
F31 Filter



F51 Filter



F101 Filter



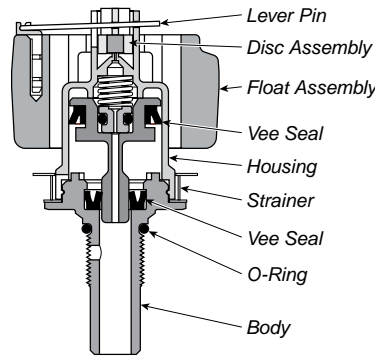
Cleaning

Blow out filter with air hose. **Clean bowl assembly with household soap only.** The auto drain may be flushed out manually by rotating the drain cock clockwise. If additional cleaning is required, remove the auto drain assembly from the filter bowl and clean screen. Disassemble the lever actuation mechanism by snapping lever out of the plastic retainer on Float and remove the Pin. Remove the Disc Assembly and the large Float. Carefully break away the interface fit between the black plastic Housing and the brass Body. Remove the Piston and Spring. Clean all component parts thoroughly with soapy water or alcohol, and clean or replace all seals as necessary. Ensure that the small orifices in the Housing and the Piston are not clogged. Carefully reassemble all parts, positioning them as shown on the reverse side of this instruction sheet.

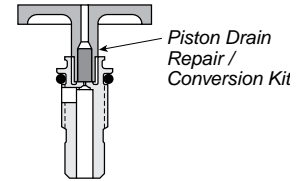
Service Kits / Parts Available

Description	F31	F51	F101
Bowl Replacement Kits*			
Polyurethane w/Polypropylene Bowl Guard, 150 PSI Maximum Pressure	BKF35A	BKF55B	BKF105B
Zinc Bowl, 300 PSI Max. Pressure	BKF35D	BKF55D	BKF105D
Zinc Bowl w/Wraparound Sight Gauge, 250 PSI Maximum Pressure	BKF35W	BKF55W	BKF105W
Element Replacement Kits			
Activated Carbon	EKF31A	EKF51A	EKF101A
Coalescing	EKF31H	EKF51	EKF101
Piston Drain (Optional)	RK504SY	—	—
Repair Kit for All Internal Auto Drains	—	RK602MD/M4	

Auto Drain



Piston Drain



- 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.

WARNING

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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

The F31 coalescing filter is designed to remove oil and water aerosols, and particulate matter larger than 0.01 micron. It is necessary to provide the F31 coalescing filter with pre-filtered air from a particulate / moisture separator such as the F35 filter. The F31 filter element is constructed with a precision matrix of borosilicate microfibers to maximize efficiency and particulate holding capacity. Its relatively large fiber surface area, in conjunction with a small pore size, provides maximum efficiency with minimal pressure drop. 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
Coalescing Filter	70	10	0.7

With Polyurethane Bowl

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

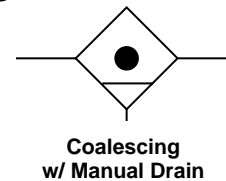
With Metal Bowl

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

With Metal Bowl with Wrap Around Sight Gauge

	kPa	PSIG	bar
Operating Pressure Maximum	1723	250	17
Operating Temperature Range	4°C to 66°C (40°F to 150°F)		

ANSI Symbols




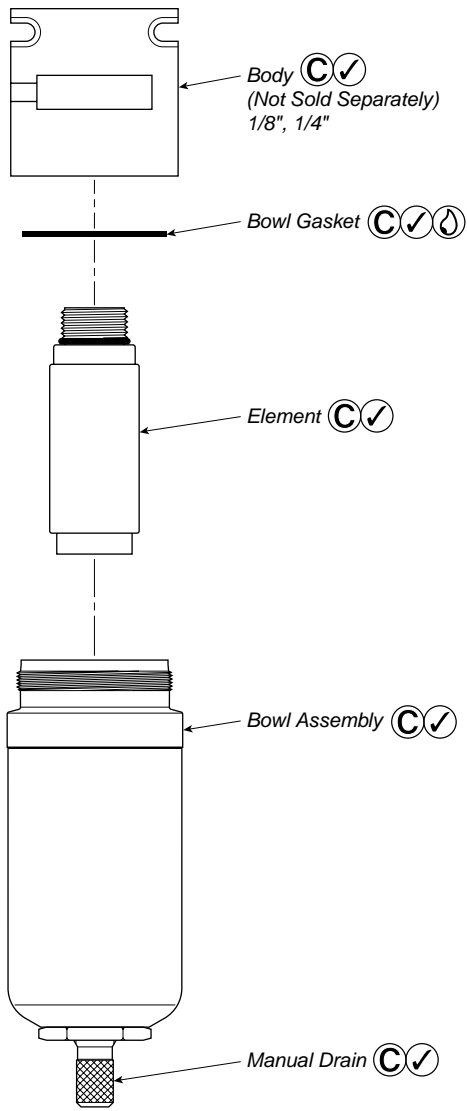
Installation

All FRL components are individually tapped (NPT or BSPP) to allow direct mounting to piping. Also, each component comes equipped with the necessary screws and O-rings to enable connection to other components of the same series without the need for pipe nipples or special adaptors. 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 in direction indicated by arrows on top of body. Install as near as possible to equipment being 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, an internal piston drain (PN RK504SY) may be installed to automatically drain bowl accumulation (when air flow cycles). 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!**

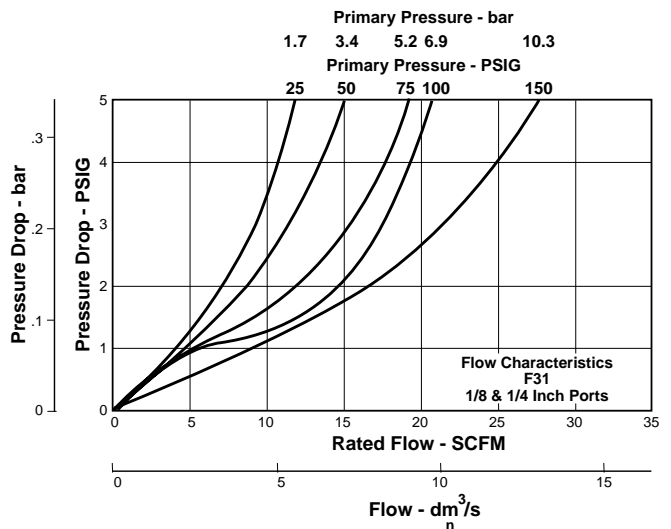


Service Kits / Parts Available

Description	F31, 1/8" & 1/4"
Bowl Gasket	GSK-504Z101
Filter Element Kits Activated Carbon Coalescing	EKF31A EKF31
Bowl Assembly "A" - Polyurethane Bowl, 150 PSI Maximum Pressure "D" - Zinc Bowl, 300 PSI Max. Pressure "W" - Zinc Bowl w/Wraparound Sight Gauge, 250 PSI Maximum Pressure	BKF35A BKF35D BKF35W
Manual Drain	SA600Y7-1

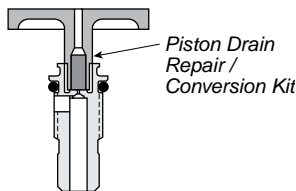
Accessories

Description	Part Number	Bowl Type
Piston Drain	RK504SY	A, D, W
Wall Mount Bracket	SAR35Y57	—



- Ⓛ 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



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 **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, 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!

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 Polyurethane Bowl

	kPa	PSIG	bar
Operating Pressure Maximum	1034	150	10.0
Operating Temperature Range		4.4°C to 48.9°C (40°F to 120°F)	

With Zinc Bowl

	kPa	PSIG	bar
Operating Pressure Maximum	2068	300	21.0
Operating Temperature Range		4.4°C to 82.0°C (40°F to 180°F)	

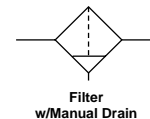
With Zinc Bowl & Wrap Around Sight Gauge

	kPa	PSIG	bar
Operating Pressure Maximum	1723	250	17.0
Operating Temperature Range		4.4°C to 65.60°C (40°F to 150°F)	

Piston Drain Installed

	kPa	PSIG	bar
Operating Pressure Maximum	1207	175	12.0
Operating Temperature Range		4.4°C to 65.60°C (40°F to 150°F)	

ANSI Symbols



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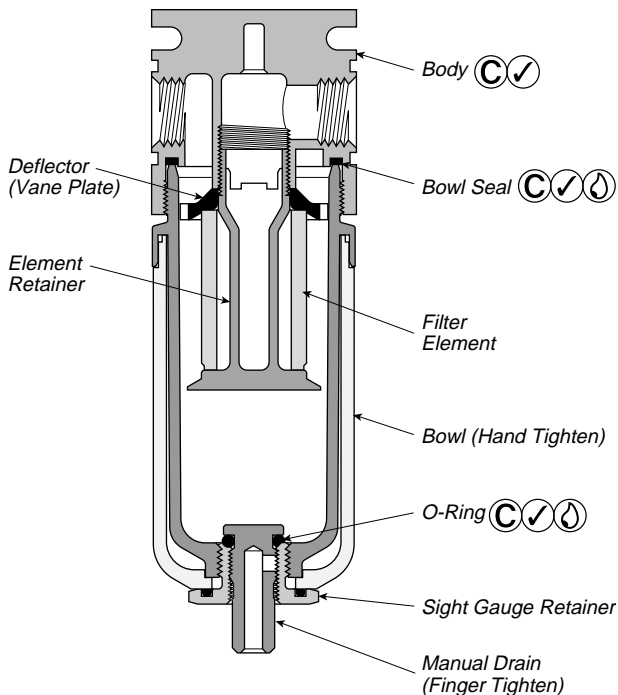
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1. The filter should be installed with reasonable accessibility for service whenever possible – repair service kits are available. Keep pipe or tubing lengths to a minimum with inside clean and free of dirt and chips. Pipe joint compound should be 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. Install filter so that air flows in the direction of arrow on body.
5. 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

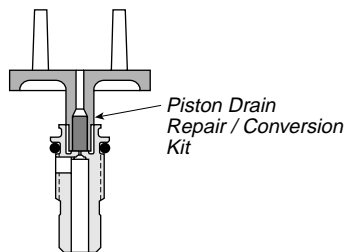
1. To service the filter, it is not necessary to remove the unit from the airline. Manual drain filters must be drained regularly before the separated moisture and oil reaches the bottom of the lower baffle.
2. The particulate Filter Element should be removed and replaced when pressure differential across the filter is 10 PSIG.
3. Shut off air supply and depressurize the unit, before servicing.
4. Carefully remove Bowl by turning counterclockwise.
5. Remove Filter Element Retainer and Deflector.
6. 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.
7. Install new Filter Element onto Retainer. Install Deflector onto retainer and reinstall into Filter Body. Install Bowl hand tight.
8. 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
Bowl*		
Polyurethane	BKF35A	A
Zinc	BKF35D	D
Zinc with Wrap Around Sight Gauge	BKF35W	W
Element Kits		
5 Micron	EK504VY	A, D, W
20 Micron	EK504Y	A, D, W
Repair Kit Deflector, Element Retainer	RKF30	A, D, W
Piston Drain (Optional)	PKF35	A, D, W
Bowl Seal	GSK-504Z101	A, D, W

*Bowl kits include bowl seal.




- Ⓐ 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.

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Introduction

The F71 coalescing filter is designed to remove oil and water aerosols, and particulate matter larger than 0.01 micron. It is necessary to provide the F71 coalescing filter with pre-filtered air from a particulate / moisture separator such as the F75 filter. The F71 filter element is constructed with a precision matrix of borosilicate microfibers to maximize efficiency and particulate holding capacity. Its relatively large fiber surface area, in conjunction with a small pore size, provides maximum efficiency with minimal pressure drop. Follow these instructions when installing, operating, or servicing the product.

Differential Pressure Pop-Up Indicator

This feature allows the user to determine the condition of the element under a flow condition. A fully risen piston indicates (12 PSI differential across the element) the need to change the filter element.

Application Limits

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Maximum Recommended Pressure Drop:

	kPa	PSIG	bar
Coalescing Filter	70	10	0.7

With Polyurethane Bowl with Polyethylene Bowl Guard

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

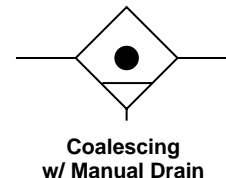
With Metal Bowl

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

With Metal Bowl with Wrap Around Sight Gauge

	kPa	PSIG	bar
Operating Pressure Maximum	1723	250	17
Operating Temperature Range	4°C to 66°C (40°F to 150°F)		

ANSI Symbols




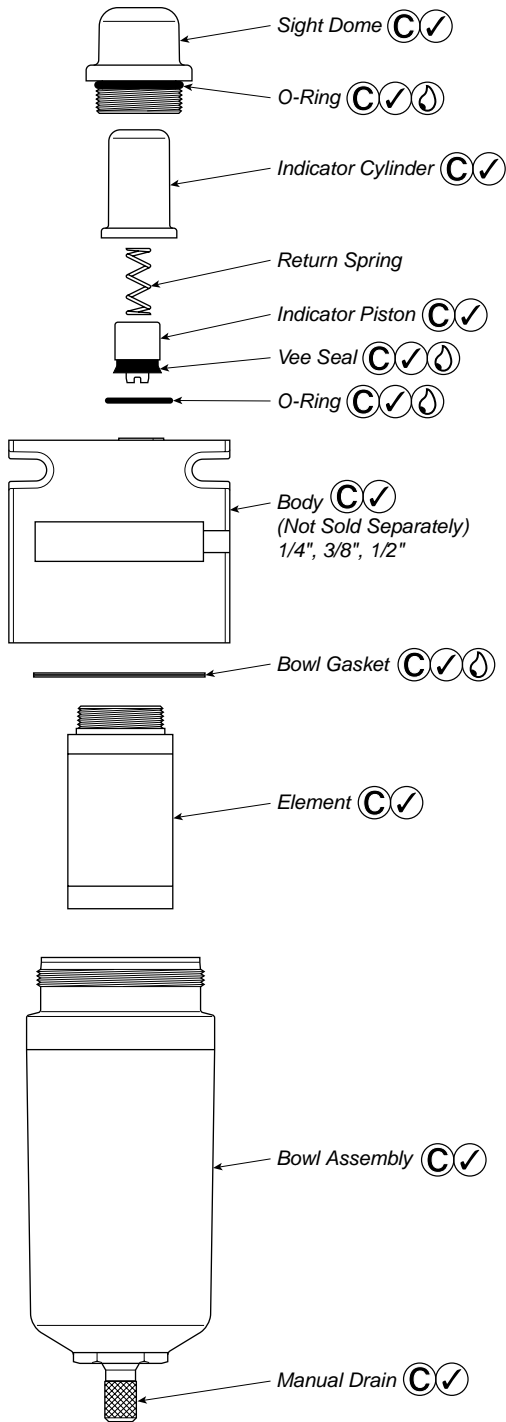
Installation

All FRL components are individually tapped (NPT or BSPP) to allow direct mounting to piping. Also, each component comes equipped with the necessary screws and O-rings to enable connection to other components of the same series without the need for pipe nipples or special adaptors. 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 in direction indicated by arrows on top of body. Install as near as possible to equipment being 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, an internal automatic drain (PN SAF105MD) may be installed to automatically drain bowl accumulation. 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!**



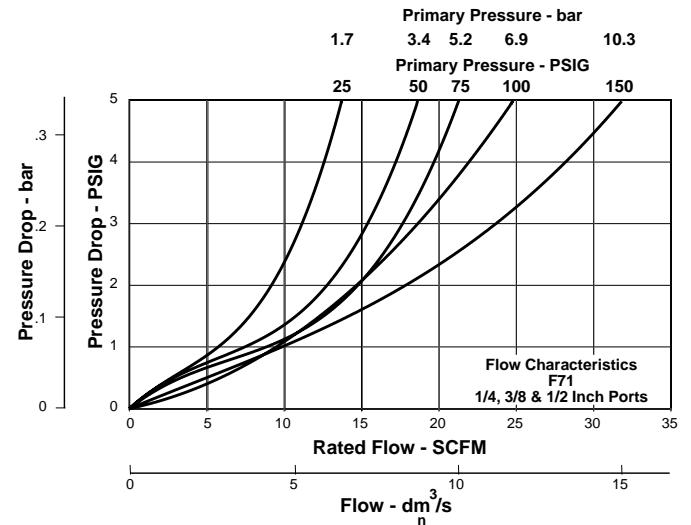
- ① Lightly grease with provided lubricant.
- ✓ Inspect for nicks, scratches, and surface imperfections. If present, reduced service life is probable and future replacement should be planned.
- Ⓢ Clean with lint-free cloth.

Service Kits / Parts Available

Description	F71, 1/4", 3/8", & 1/2"
Bowl Gasket	GSK-F55-1011
Filter Element Kits Activated Carbon Coalescing	EKF71A EKF71
Bowl Assembly "B" - Polyurethane w/Polyethylene Bowl Guard, 150 PSI Maximum Pressure "D" - Zinc Bowl, 300 PSI Max. Pressure "W" - Zinc Bowl w/Wraparound Sight Gauge, 250 PSI Maximum Pressure	BKF55B BKF55D BKF55W
Manual Drain	SA600Y7-1
Pop-Up Repair Kit (Sight Dome, Indicator Cylinder, Vee Seal, Return Spring, Indicator Piston, O-Rings)	RK701P
Repair Kit for All Internal Auto Drains	RK602MD/M4

Accessories

Description	Part Number	Bowl Type
Internal Automatic Drain Plastic ("R" Option, 175 PSI Max. Pressure) Brass ("RX77" Option)	SA602MD SA605MD	B, D B, D
Brass ("R" Option, 175 PSI Max. Pressure)	SAF105MD	W
Wall Mount Bracket	SAR55Y57	—



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⚠ 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/pneumatics

⚠ 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, 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!

Introduction

The F75 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 F75 filter provides enough filtration for most pneumatic applications. However, in situations where water and/or oil aerosols must also be filtered out, an F71 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 with Polyethylene Bowl Guard

	kPa	PSIG	bar
Operating Pressure Maximum	1034	150	10.2
Operating Temperature Range (40°F to 120°F)			4°C to 49°C

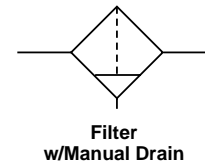
With Metal Bowl

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

With Metal Bowl with Wrap Around 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

ANSI Symbols



Installation

All FRL components are individually tapped (NPT or BSPP) to allow direct mounting to piping. Also, each component comes equipped with the necessary screws and O-rings to enable connection to other components of the same series without the need for pipe nipples or special adaptors. Before installing,

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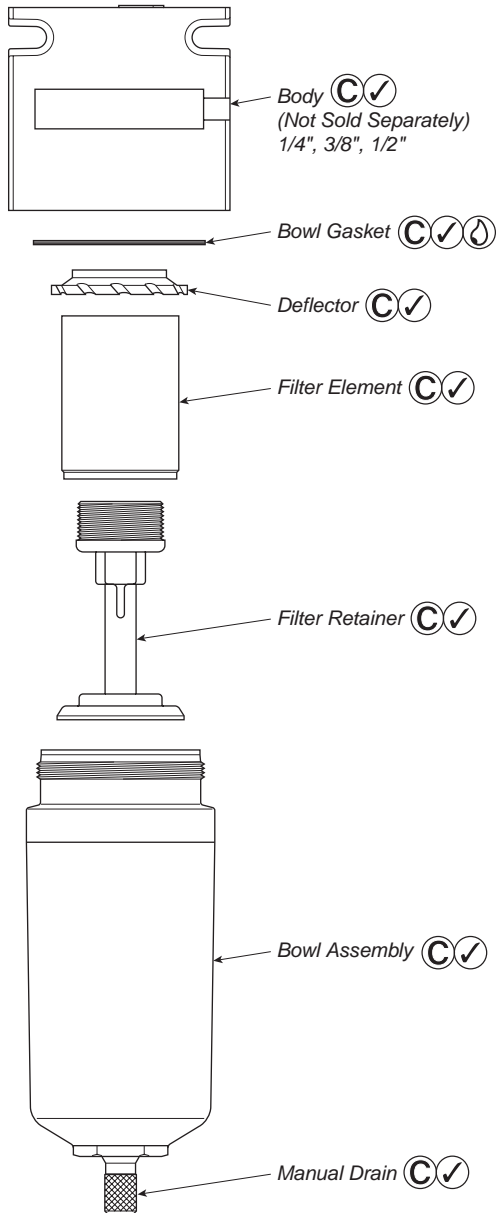
EXTRA COPIES OF THESE INSTRUCTIONS ARE AVAILABLE FOR INCLUSION IN EQUIPMENT / MAINTENANCE MANUALS THAT UTILIZE THESE PRODUCTS. CONTACT YOUR LOCAL REPRESENTATIVE.

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 in direction indicated by arrows on faces of 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, an internal automatic drain (PN SAF105MD) may be installed to automatically drain bowl accumulation. 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!



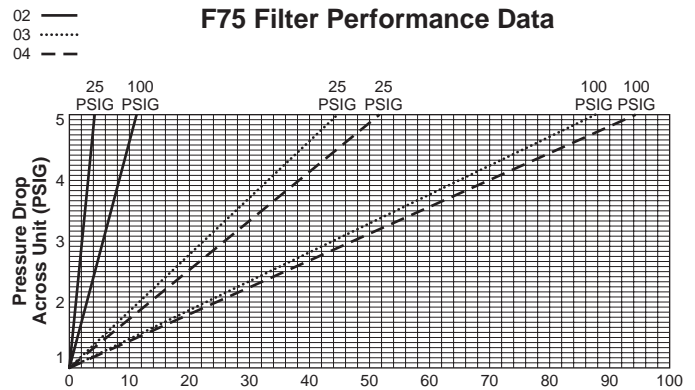
- Lightly grease with provided lubricant.
- Inspect for nicks, scratches, and surface imperfections. If present, reduced service life is probable and future replacement should be planned.
- Clean with lint-free cloth.


Service Kits / Parts Available

Description	F75, 1/4", 3/8", & 1/2"
Bowl Gasket	GSK-F55-1011
Deflector	F55-0751P
Filter Element "G" - 5 μ "J" - 40 μ	EK55G EK55J
Filter Retainer	F55-0491P
Bowl Assembly "B" - Polyurethane w/Polyethylene Bowl Guard, 150 PSI Maximum Pressure "D" - Zinc Bowl, 300 PSI Max. Pressure "W" - Zinc Bowl w/Wraparound Sight Gauge, 250 PSI Maximum Pressure	BKF55B BKF55D BKF55W
Manual Drain	SA600Y7-1
Repair Kit for All Internal Auto Drains	RK602MD/M4

Accessories


Description	Part Number	Bowl Type
Internal Automatic Drain Plastic ("R" Option, 175 PSI Max. Pressure) Brass ("RX77" Option)	SA602MD SA605MD	B, D B, D
Brass ("R" Option, 175 PSI Max. Pressure)	SAF105MD	W
Wall Mount Bracket	SAR55Y57	—



 **WARNING**

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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.
- 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

The F101 coalescing filter is designed to remove oil and water aerosols, and particulate matter larger than 0.01 micron. It is necessary to provide the F101 coalescing filter with pre-filtered air from a particulate / moisture separator such as the F105 filter. The F101 filter element is constructed with a precision matrix of borosilicate microfibers to maximize efficiency and particulate holding capacity. Its relatively large fiber surface area, in conjunction with a small pore size, provides maximum efficiency with minimal pressure drop. Follow these instructions when installing, operating, or servicing the product.

Differential Pressure Pop-Up Indicator

This feature allows the user to determine the condition of the element under a flow condition. A fully risen piston indicates a 12 PSI differential across the element and the need to change the filter element.

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
Coalescing Filter	70	10	0.7

With Polyurethane Bowl with Polypropylene Bowl Guard

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

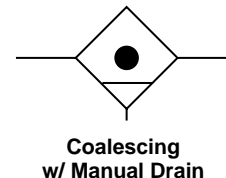
With Metal Bowl

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

With Metal Bowl with Wrap Around Sight Gauge

	kPa	PSIG	bar
Operating Pressure Maximum	1723	250	17
Operating Temperature Range	4°C to 66°C (40°F to 150°F)		

ANSI Symbols




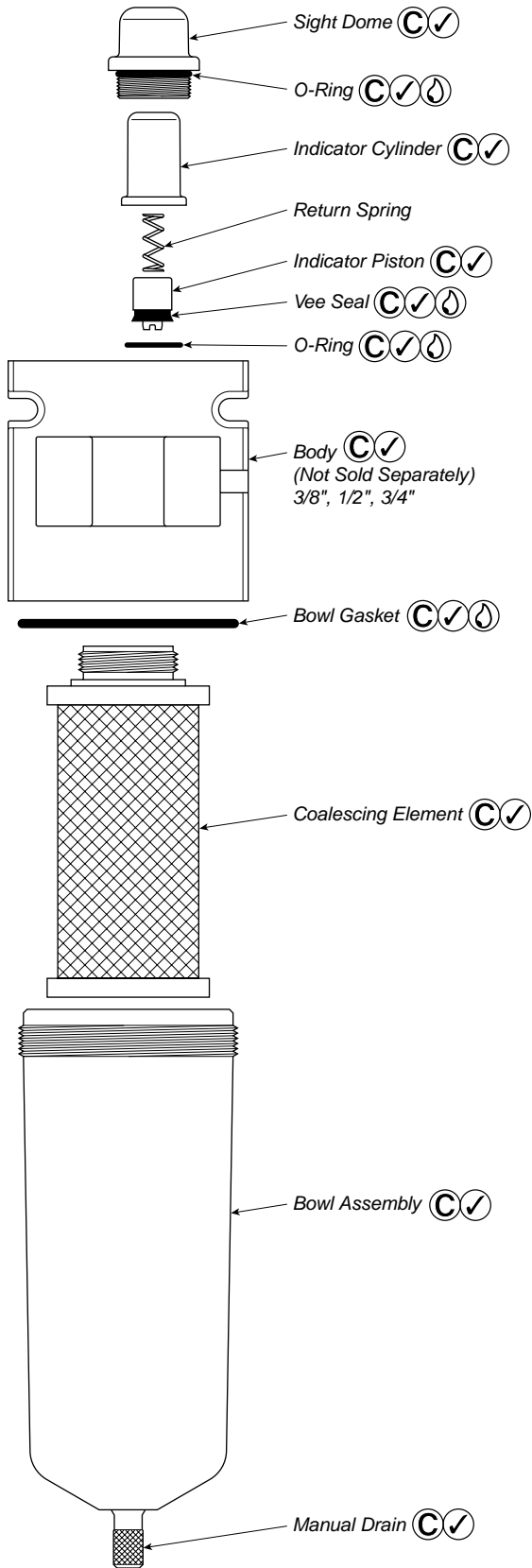
Installation

All FRL components are individually tapped (NPT or BSPP) to allow direct mounting to piping. Also, each component comes equipped with the necessary screws and O-rings to enable connection to other components of the same series without the need for pipe nipples or special adaptors. 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 in direction indicated by arrows on top of body. Install as near as possible to equipment being 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, an internal automatic drain (PN SAF105MD) may be installed to automatically drain bowl accumulation. 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!**



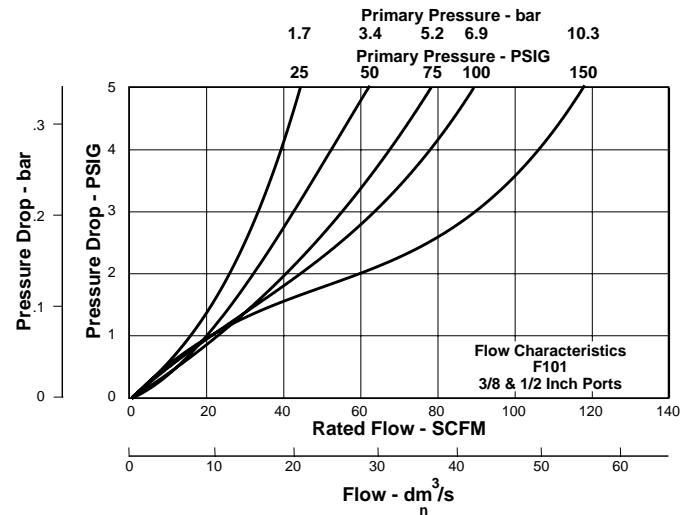
Service Kits / Parts Available

Description	F101, 3/8", 1/2", 3/4"
Bowl Kits*	
"B" - Polyurethane w/Polypropylene Bowl Guard, 150 PSI Maximum Pressure	BKF105B
"D" - Zinc Bowl, 300 PSI Max. Pressure	BKF105D
"W" - Zinc Bowl w/Wraparound Sight Gauge, 250 PSI Maximum Pressure	BKF105W
Bowl Gasket	GSK-F105-1015
Filter Element Kits	
Activated Carbon Coalescing	EKF101A EKF101
Manual Drain	SA600Y7-1
Pop-Up Repair Kit (Sight Dome, Indicator Cylinder, Vee Seal, Return Spring, Indicator Piston, O-Rings)	RK701P
Repair Kit (Deflector, Element, Retainer)	RKF100
Repair Kit for All Internal Auto Drains	RK602MD

*Bowl kits include bowl seal and bowl guard assembly.

Accessories

Description	Part Number	Bowl Type
Internal Automatic Drain		
Plastic ("R" Option, 175 PSI Max. Pressure)	SA602MD	B, D
Brass ("R" Option, 175 PSI Max. Pressure)	SAF105MD	W
Auto Drain Dirt Shield	F700-0071P	—



- ☞ 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.

⚠ WARNING

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 **WARNING**

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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.
- 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, 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!

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 Polyurethane 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)		

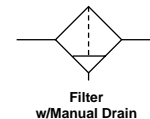
With Zinc Bowl & Wrap Around Sight Gauge

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

Internal Auto Drain Installed

	kPa	PSIG	bar
Operating Pressure Maximum	1207	175	12.0
Operating Temperature Range	4°C to 66°C (40°F to 150°F)		

ANSI Symbols



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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. Install filter so that air flows in the direction of arrow on body.
5. 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.

Maintenance

To maintain maximum filtering efficiency, and to avoid excessive pressure drop, the filter must be kept clean. On standard filters, open drain cock (turn clockwise) periodically and drain off any bowl accumulation before it reaches level of lower baffle. Bowl drainage is automatic in the “Piston Drain” model, however, manual draining can also be done by removing the bowl. A visible coating of dirt or condensate on the filter element surface, or an excessive pressure drop, is an indication that cleaning is necessary.

Cleaning

To clean, it is not necessary to remove filter from the line. Disassembly is simple and does not require tools. Use the drawing on the reverse side of this sheet as a guide. Before disassembly, shut off air supply and depressurize filter. Clean all parts, except plastic bowl, with alcohol and blow out from the inside. Plastic bowls must be cleaned with household soap only.

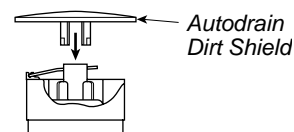
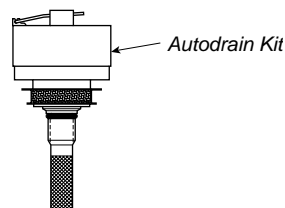
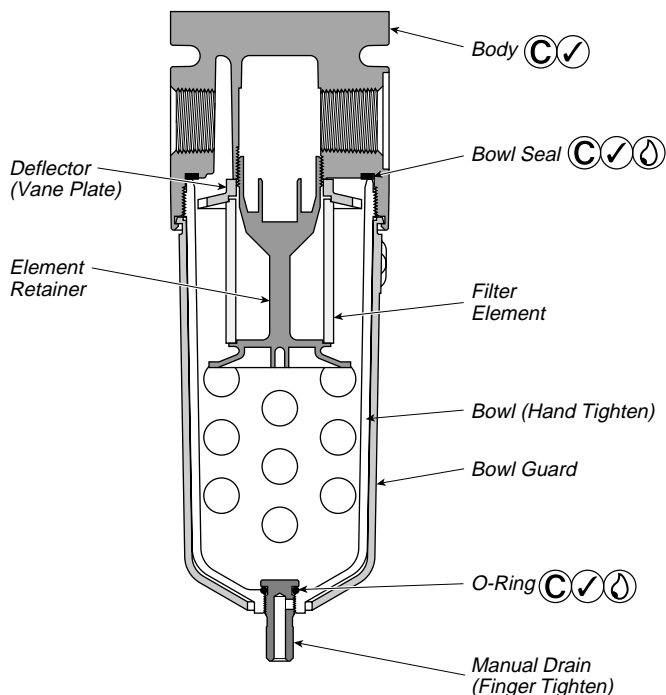
“Auto Drain” Operation

Auto Drain filters are equipped with a float actuated device which automatically ejects liquid contaminants. If supplied in Kit Form, Part No. SA602MD or SAF105MD, the Auto Drain can be installed by simply removing the bowl and then the bowl draincock. Insert the Auto Drain in place of the removed draincock and reassemble the unit in reverse order.

Kits Available

Description	Product Number	Bowl Type
Bowl*		
Polyurethane	BKF105B	B
Zinc	BKF105D	D
Zinc with Wrap		
Around Sight Gauge	BKF105W	W
Element Kits		
5 Micron	EK100G	B, D, W
40 Micron	EK100J	B, D, W
Repair Kit		
Deflector, Element Retainer	RKF100	B, D, W
Internal Auto Drain (Optional)	SA602MD SAF105MD	B, D W
Internal Auto Drain Repair Kit	RK602MD	B, D, W
Auto Drain Dirt Shield	F700-0071P	B, D, W

*Bowl kits include bowl seal and bowl guard assembly.



- 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.

⚠ WARNING

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

⚠ CAUTION

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.

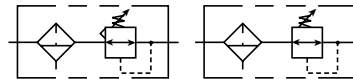
Maximum Recommended Pressure Drop:

	kPa	PSIG	bar
Particulate Filter	70	10	0.7
Operating Pressure Maximum	kPa	PSIG	bar
Polycarbonate Bowl	1034	150	10.0
Metal Bowl	2068	300	21.0
Metal Bowl with Sight Gauge	1724	250	17.0
Metal Bowl with Piston Drain	1207	175	12.0

Operating Temperature Range

Polycarbonate Bowl	4.4°C to 48.9°C (40°F to 120°F)
Metal Bowl	4.4°C to 82.2°C (40°F to 180°F)
Metal Bowl with Sight Gauge	4.4°C to 65.6°C (40°F to 150°F)
Metal Bowl with Piston Drain	4.4°C to 65.6°C (40°F to 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.

⚠ 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.

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.

- Install Filter / Regulator so that air flows in direction of arrow on top of body.
- 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.
- 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

- Both free moisture and solids are removed automatically by the filter.
- Manual drain filters must be drained regularly before the separated moisture and oil reaches the bottom of the Baffle or End Cap.
- The Filter Element should be removed and replaced when pressure differential across the filter is 69 kPa (10 PSIG).
- 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.
- Then turn Knob clockwise and adjust regulator to desired downstream pressure. This permits pressure to build up slowly in the downstream line.
- 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).
- When desired secondary pressure settings have 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)

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

Servicing Regulator - (Refer to Figure 1)

- Disengage the Adjusting Knob by pulling upward. Turn Adjusting Knob counterclockwise until the compression is released from the Pressure Control Spring.
- Remove the Bonnet and Bowl assemblies by unscrewing the Bonnet and Bowl from the Body.
- Remove Piston Assembly from Body.
- Remove Element Retainer, Deflector, Filter Element, Poppet Assembly, Poppet Return Spring.
- 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.

- Lubricate O-rings with grease found in service kits.
- Install Filter Element onto the Filter Retainer, and install Deflector onto Retainer.
- Install Poppet Assembly, Poppet Return Spring, Element Retainer and Element. **IMPORTANT:** The Filter / Regulator will not operate properly if the Deflector is not installed properly.
- Install Piston Assembly into Body Assembly. Assemble Bonnet Assembly onto Body and tighten per Figure 1.
- Install Bowl into Body and tighten, hand tight, plus 1/4 turn.

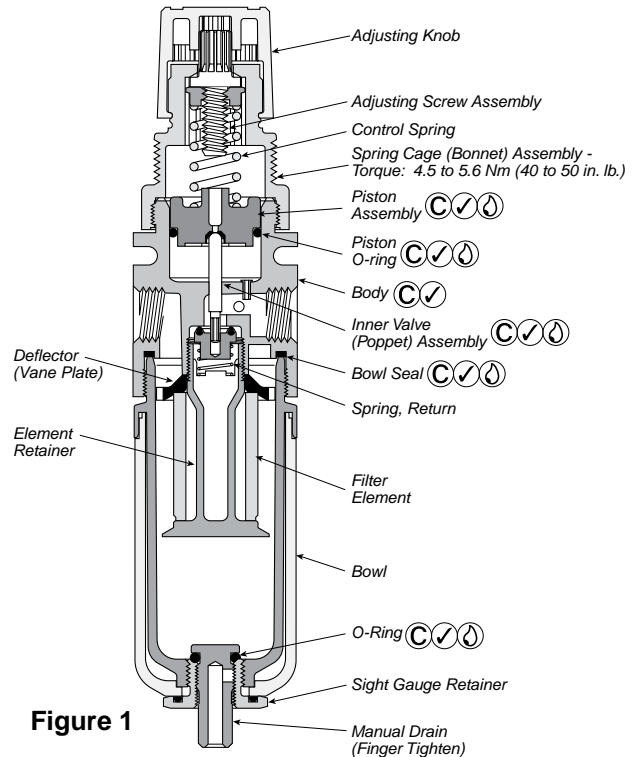


Figure 1

- 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	B35 (1/8" & 1/4")
Bowl Kits (Includes Bowl Seal)	
Polyurethane	BKF35A
Zinc	BKF35D
Zinc (with Sight Gauge)	BKF35W
Cage Kits	CKR35A ("A" Range) CKR35BC ("B & C" Range)
Filter Element (5 Micron)	EK504VY
Filter Element (20 Micron)	EK504Y
Filter Repair Kit (Element & Retainer, Deflector)	RKF30
Gauge, 0 to 60 (0 to 4 bar)	K4515N18060
Gauge, 0 to 160 (0 to 11 bar)	K4515N18160
Mounting Bracket	SAR161X57
Piston Drain (Max. Pressure 175 PSIG)	PKF35
Panel Mount Nut	R05X51
Regulator Repair Kit (Relieving)	RKR30
Regulator Repair Kit (Non-Relieving)	RKR30K
Adjusting Knob	R35-0545P
Return Spring	SPR-445-1
Bowl Seal	GSK-504Z101

⚠ 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/pneumatics

⚠ 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, 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!

Introduction

The **B75 Pressure Regulator** is a specialized control valve which reduces the upstream supply pressure level to a specified constant downstream pressure. Pneumatic equipment that is operated at a higher than recommended pressure levels wastes the energy which generates that pressure, creates a potential safety hazard, and wears prematurely. The B75 is a balanced poppet, diaphragm style regulator available in either relieving (standard) or non-relieving (K suffix after part number) design. The **B75 Integral Filter/Regulator** incorporates the R75 regulator with the filtering capabilities of the F75 Filter removing impurities from the airstream 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 B75 Filter/Regulator provides enough filtration for most pneumatic applications, however, in situations where water and/or oil aerosols must also be filtered out a F71 coalescing filter should be installed also. 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

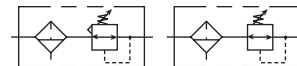
Operating Pressure Maximum

	kPa	PSIG	bar
Polycarbonate Bowl	1034	150	10.0
Metal Bowl	2068	300	21.0
Metal Bowl with Sight Gauge	1724	250	17.0
Metal Bowl with Piston Drain	1207	175	12.0

Operating Temperature Range

Polycarbonate Bowl	4°C to 49°C (40°F to 120°F)
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 Piston Drain	4°C to 66°C (40°F to 150°F)

Symbols



Filter / Regulator

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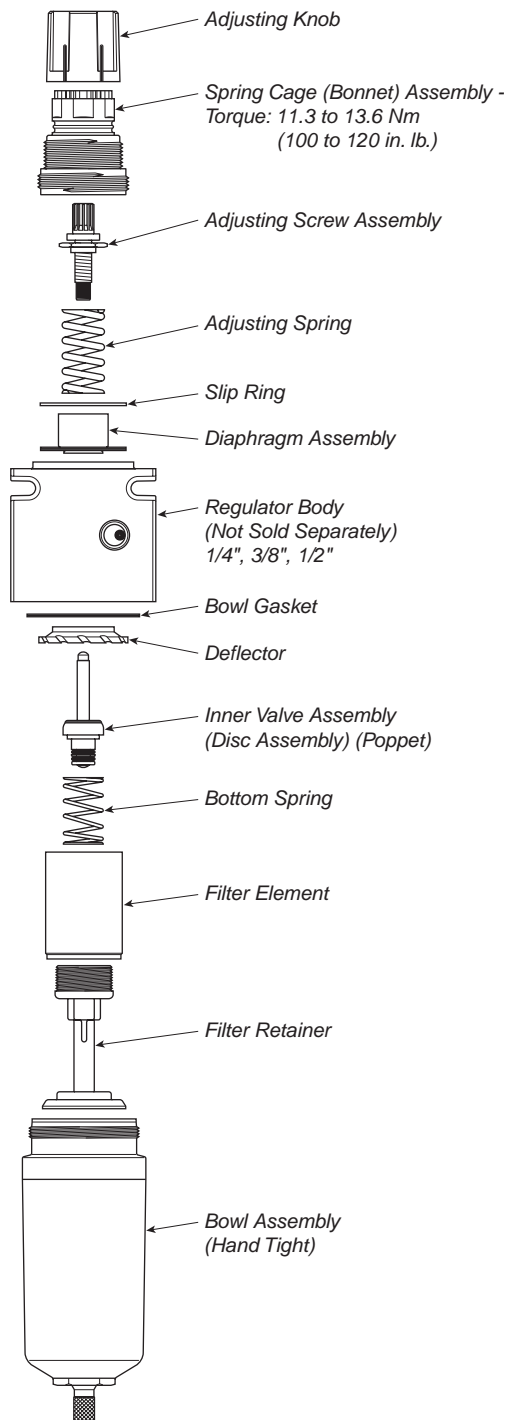
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Installation

All QUBE components are individually tapped (NPT or BSPP) to allow direct mounting to piping. Also, each FRL component comes equipped with the necessary screws and O-rings to enable connection to other QUBE components of the same series without the need for pipe nipples or special adaptors. 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 pipeline so that flow is with the arrows as indicated on the top of the body. Install as near as possible to equipment serviced.

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. With relieving-type regulators, 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 starts.

Maintenance – Cleaning

Note: To clean, it is not necessary to remove regulator from line. Refer to drawing as guide in reassembly. If the air supply is kept clean, the regulator should provide long periods of uninterrupted service. Erratic regulator operation or loss of regulation is most always due to dirt in the disc 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 household soap and blow out body with compressed air. When reassembling make sure the disc is firmly in place and that the disc stem fits into the center hole of the diaphragm assembly. Tighten bowl assembly hand tight.

Service Kits / Parts Available

Description	R75, 1/4", 3/8", & 1/2"
Adjusting Knob (In Kit CKR75)	R35-0545P
Spring Cage (In Kit CKR75)	R75-0151P
Adjusting Screw Assembly (In Kit CKR75)	SAR55-0532
Adjusting Spring "A" Range (0 – 25 PSI) "B" Range (0 – 60 PSI) "C" Range (0 – 125 PSI)	SPR-53 SPR-54 SPR-55
Slip Ring (In Repair Kit)	R55-0081
Diaphragm Assembly Relieving (In Kit RKR75) Non-Relieving (In Kit RKR75K)	SAR75-0201 SAR75-0202
Bowl Gasket (In Bowl Assembly Kit)	GSK-F55-1011
Deflector, Filter Retainer	RKF55
Inner Valve Assembly (In Kit RKR75)	SAR75-0371
Bottom Spring	SPR 391-1
Filter Element "G" - 5 µ "J" - 40 µ	EK55G EK55J
Bowl Assembly "B" - Polyurethane w Polyethylene Bowl Guard, 150 PSI Maximum Pressure "D" - Zinc Bowl, 300 PSI Max. Pressure "W" - Zinc Bowl w/Wraparound Sight Glass, 250 PSI Maximum Pressure	BKF55B BKF55D BKF55W
Repair Kit Relieving Non-Relieving	RKR75 RKR75K
Spring Cage Kit Tamperproof (Not Shown)	CKR75 CKR75T

Accessories

Gauge 0 to 60 PSI (0 to 4 bar) 0 to 160 PSI (0 to 11 bar)	K4515N18060 K4515N18160
Panel Mount Nut * Acetal Plastic Aluminum	R05X51 R05X51-A
Wall Mount Bracket	SAR55Y57
Internal Automatic Drain Plastic ("R" Option, 175 PSI Max. Pressure) Brass Brass (W Bowl Only)	SA602MD SA605MD SAF105MD

* Requires 1-1/4" hole (1-3/16-18 UNEF-2B)

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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.
- 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.

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Product rupture can cause serious injury.
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Safety Guide

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⚠ 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, 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!

Introduction

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

Application Limits

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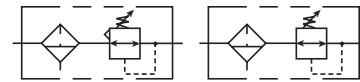
Maximum Recommended Pressure Drop:

	kPa	PSIG	bar
Particulate Filter	70	10	0.7
Operating Pressure Maximum			
Polycarbonate Bowl	1034	150	10.0
Metal Bowl	2068	300	21.0
Metal Bowl with Sight Gauge	1724	250	17.0
Metal Bowl with Piston Drain	1207	175	12.0

Operating Temperature Range

Polycarbonate Bowl	4°C to 49°C (40°F to 120°F)
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 Piston Drain	4°C to 66°C (40°F to 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 in direction of arrow on top of 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.
3. The Filter Element should be removed and replaced when pressure differential across the filter is 69 kPa (10 PSIG).

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- 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.
- Then turn Knob clockwise and adjust regulator to desired downstream pressure. This permits pressure to build up slowly in the downstream line.
- 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).
- When desired secondary pressure settings have 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)

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

Servicing Regulator - (Refer to Figure 1)

- Disengage the Adjusting Knob by pulling upward. Turn Adjusting Knob counterclockwise until the compression is released from the Pressure Control Spring.
- Remove the Bonnet and Bowl assemblies by unscrewing the Bonnet and Bowl from the Body.
- Remove Diaphragm Assembly and Slip Ring from Body.
- Remove Element Retainer, Deflector, Filter Element, Poppet Assembly, Poppet Return Spring.
- 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.
- Lubricate O-rings with grease found in service kits.
- Install Filter Element onto the Filter Retainer, and install Deflector onto Retainer.
- Install Poppet Assembly, Poppet Return Spring, Element Retainer and Element. **IMPORTANT:** The Filter / Regulator will not operate properly if the Deflector is not installed properly.
- Install Diaphragm Assembly and Slip Ring into Body Assembly. Assemble Bonnet Assembly onto Body and tighten per Figure 1.
- Install Bowl into Body and tighten, hand tight, plus 1/4 turn.

Combination Unit Assembly

To assemble units in combination, use AK105 Combination Assembly Kit. Liberally apply grease to the o-ring and insert into the o-ring groove on the filter "outlet" face or the lubricator "inlet" face. Regulator may be mounted in either up or down position, but not sideways. Insert assembly screws in through slots in the body of the filter or lubricator and into tapped holes on regulator mounting face. Position parts with mounting slots aligned, and tighten screws slightly more than hand tight. Units are easily disassembled

in reverse order of above procedure. End plates and diverter block may be assembled in the same manner as described above, with the o-ring in the appropriate groove and the screws through the slots. Note: To assemble F/L (filter/lubricator) combinations, AK105FL (Combination Assembly Kit) must be used, using the joining block in the same position as the regulator.

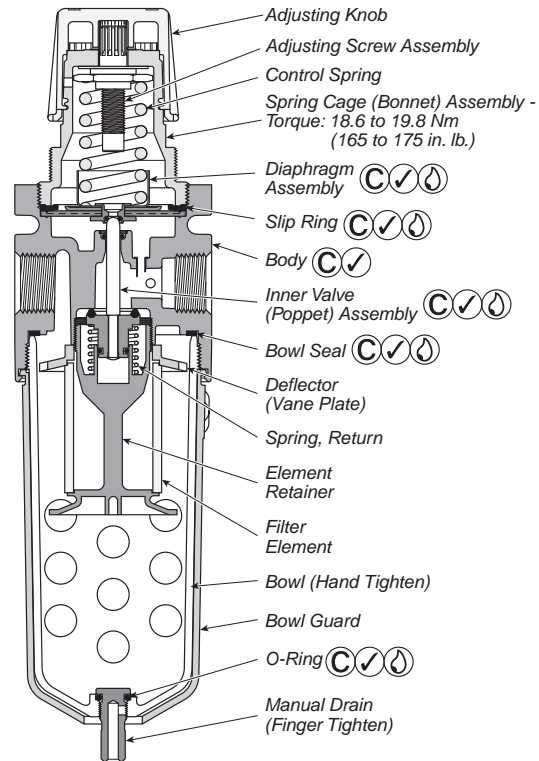


Figure 1

- 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	B105 (3/8", 1/2", & 3/4")	Bowl Type
Bowl Kits*		
Polyurethane	BKF105B	B
Zinc	BKF105D	D
Zinc (with Sight Gauge)	BKF105W	W
Cage Kits	CKR105	—
Combination Assembly Kit	AK105	B, D, W
F/L Combination Assembly Kit	AK105FL	B, D, W
Filter Element (5 Micron)	EK100G	B, D, W
Filter Element (40 Micron)	EK100J	B, D, W
Filter Repair Kit (Deflector, Element Retainer)	RKF100	B, D, W
Gauge, 0 to 60 (0 to 4 bar)	K4520N14060	B, D, W
Gauge, 0 to 160 (0 to 11 bar)	K4520N14160	B, D, W
Gauge, 0 to 300 (0 to 21 bar)	K4520N14300	B, D, W
Panel Mount Bracket / Nut	SAR10Y57	B, D, W
Panel Mount Nut	R10X51-P	B, D, W
Wall Mount Bracket	SAR10Y57	—
Internal Auto Drain (Max. Pressure 175 PSIG)	SA602MD SAF105MD	B, D W
Regulator Repair Kit (Relieving)	RKR105	B, D, W
Regulator Repair Kit (Non-Relieving)	RKR105K	B, D, W
Adjusting Knob	R105-0542P	B, D, W
Return Spring	SPR-100	B, D, W

*Bowl kits include bowl seal and bowl guard assembly.

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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.
- 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.

With Polyurethane Bowl

	kPa	PSIG	bar
Operating Pressure Maximum	1034	150	10
Operating Temperature Range	4.4°C to 48.9°C (40°F to 120°F)		

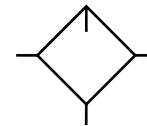
With Zinc Bowl

	kPa	PSIG	bar
Operating Pressure Maximum	2068	300	21
Operating Temperature Range	4.4°C to 82.0°C (40°F to 180°F)		

With Zinc Bowl & Wrap Around Sight Gauge

	kPa	PSIG	bar
Operating Pressure Maximum	1723	250	17.0
Operating Temperature Range	4.4°C to 65.60°C (40°F to 150°F)		

ANSI Symbols



 **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, 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.

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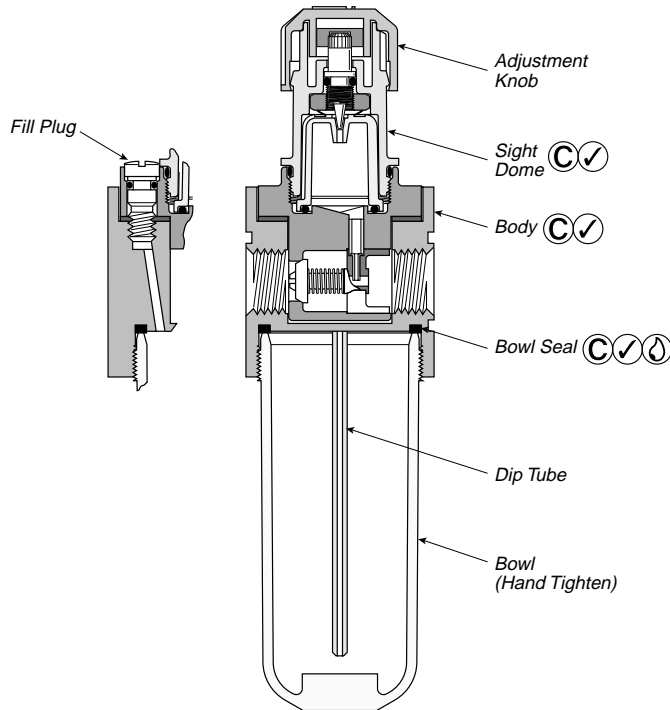
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Introduction

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.



- Ⓐ 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

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 filter and equipment being protected.
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 protected and upstream 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 at the bottom.

Operation and Service

1. Filling — The inlet pressure of the lubricator must be turned off and depressurized before the Fill Plug is removed. Turn counterclockwise to remove. Fill to within 1/4" from top of bowl or to top of the sight glass on the bowl.

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 Sight Dome Assembly. Make sure hole in Body Seat and Drip Spout is clear. 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.

Kits Available

Description	Product Number	Bowl Type
Bowl		
Polyurethane	BKL35A	A
Zinc	BKF35D	D
Zinc with Wrap		
Around Sight Gauge	BKL35W	W
Repair Kit		
Tamper-resistant	RKL100	A, D, W
Sight Dome Repair Kit		
Adjusting Knob	L100-0726P	—
Dip Tube	L30-0741	—
Bowl Seal	GSK-504Z101	A, D, W

⚠ 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/pneumatics

⚠ 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, 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!

Introduction

The L75 is a variable-displacement, oil fog type lubricator. The L75 is designed to atomize lubricant into the air stream directly before point of use. The rate of lubrication is automatically proportioned to air flow, eliminating re-adjustment. 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.

With Polyurethane Bowl

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

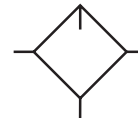
With Zinc Bowl

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

With Zinc Bowl & Wrap Around Sight Gauge

	kPa	PSIG	bar
Operating Pressure Maximum	1723	250	17
Operating Temperature Range		4°C to 66°C (40°F to 150°F)	

ANSI Symbols



Installation

All FRL components are individually tapped (NPT or BSPP) to allow direct mounting to piping. Also, each component comes equipped with the necessary screws and O-rings to enable connection to other components of the same series without the need for pipe nipples or special adaptors. 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 in direction indicated by arrows on faces of 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).

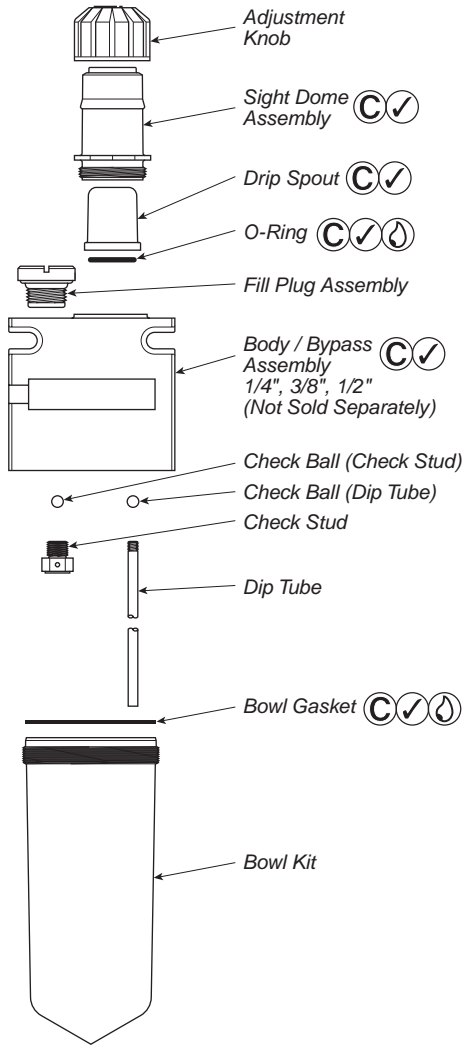
⚠ WARNING

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.



- 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.

Filling

Lubricators may be filled either under no pressure or under pressure - without shutting down equipment. To fill through the fill port, a long spout oil can must be used. Slowly remove fill plug and insert tip of spout to bottom of fill port recess or oil blow back will occur. Fill to within 1/2" of top of bowl using correct oil. These lubricators may also be fitted with Button Head Fill Fittings (SAA606C109-1) to aid in refilling through the use of a bucket pump.

Lubricator 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 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 thumbnail or a 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 Applications

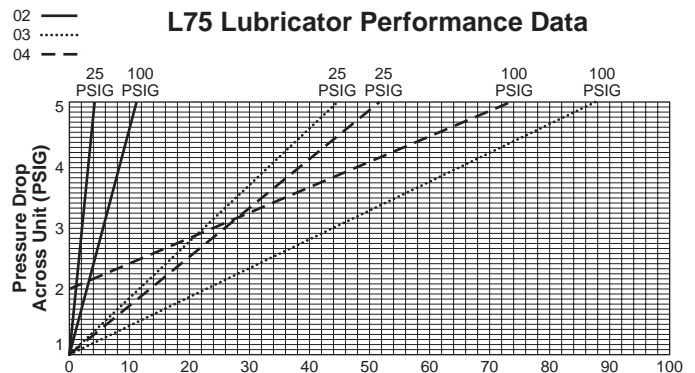
If the lubricator is to be used in a cycling application, the conditions must be as follows:

- 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 on cycle must be at least 4 SCFM.

Service Kits / Parts Available

Description	Product Number	Bowl Type
Bowl Kit* Polyurethane with Polyethylene Bowl Guard Zinc Zinc with Wrap Around Sight Gauge	BKL55B BKL55D BKL55W	B D W
Bowl Gasket	GSK-F55-1011	B, D, W
Sight Dome Repair Kit Includes: Adjusting Knob Sight Dome Assembly Drip Spout O-Ring	RKL100/20SA-2/M1	B, D, W — — —
Fill Plug Assembly	SA606B4	—
Button Head Fill Fitting	SAA606C109-1	—
Wall Mount Bracket	SAR55Y57	—
Check Ball (Check Stud)	604Y106	—
Check Stud	L55-0761P	—
Dip Tube	L75-0741	—
Check Ball (Dip Tube)	506Y106	—

*For "X9" bowl with manual drain option, replace "L" with "F" (e.g., BKF55B).



 **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.

With Polyurethane Bowl

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

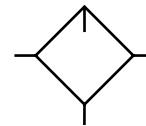
With Zinc Bowl

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

With Zinc Bowl & Wrap Around 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



 **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, 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!

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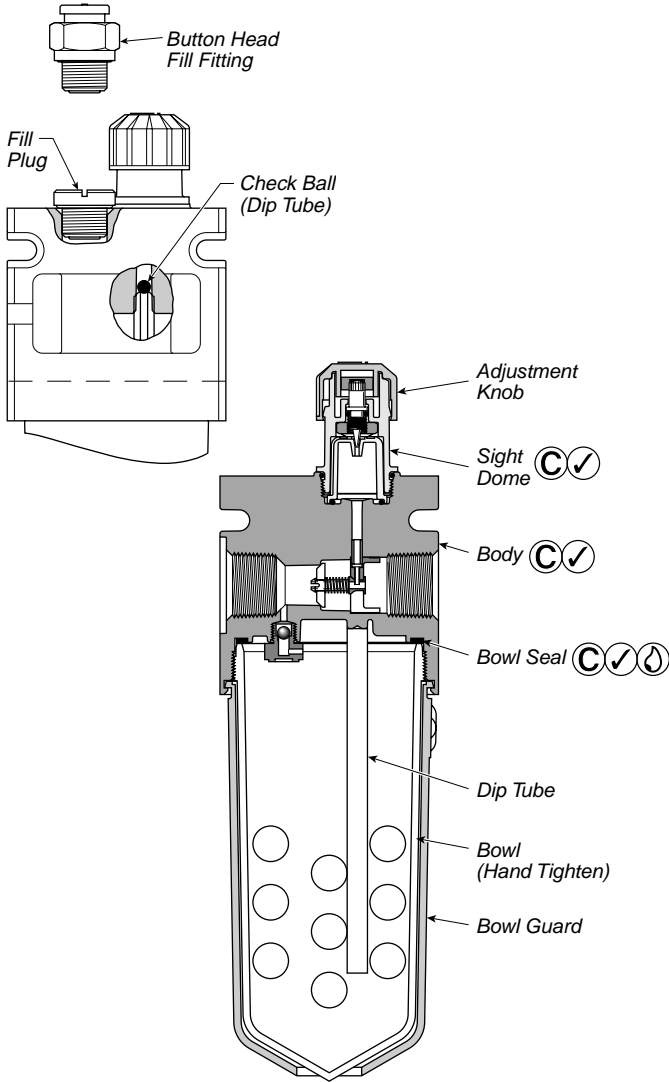
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Introduction

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.



- ④ 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

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 filter and equipment being protected.
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 protected and upstream 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 at the bottom (if so equipped).

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

Lubricators may be filled under pressure, and without shutting down equipment. To fill through the fill port, a long spout oil can must be used. Slowly remove fill plug and tip of spout to bottom of fill port recess or oil blow back will occur. Fill to within 1/4" of top of bowl using correct oil. Lubricators may also be filled by depressurizing the system, or slowly removing the fill plug and then removing the bowl. After bowl has been filled, replace and ensure it has been returned to a locking position before repressurizing the system.

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 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. 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 thumbnail or a 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.

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 on reverse 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.**

Kits Available

Description	Product Number	Bowl Type
Bowl*		
Polyurethane	BKL105B	B
Zinc	BKL105D	D
Zinc with Wrap Around Sight Gauge	BKL105W	W
Bowl Seal (In Bowl Kits)	GSK-F105-1015	—
Repair Kit		
Tamper-resistant	RKL100	B, D, W
Sight Dome Repair Kit		
Adjusting Knob	L100-0726P	—
Button Head Fill Fitting	SAA606C109-1	—
Fill Plug	SA606B4	—
Check Ball (Dip Tube)	606X106	—

*Bowl kits include bowl seal and bowl guard assembly.

⚠ WARNING

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- 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

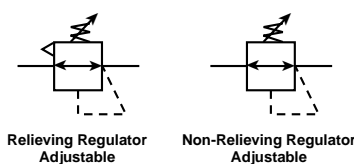
These products are intended for use in general purpose compressed media systems only.

Operating Pressure:

	kPa	PSIG	bar
Maximum Inlet Pressure	2068	300	21.0

Ambient Temperature Range: 4.4°C to 48.9°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, 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 to 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 = 0 – 25 PSI
- "B" Range = 0 – 60 PSI
- "C" Range = 0 – 125 PSI

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Service

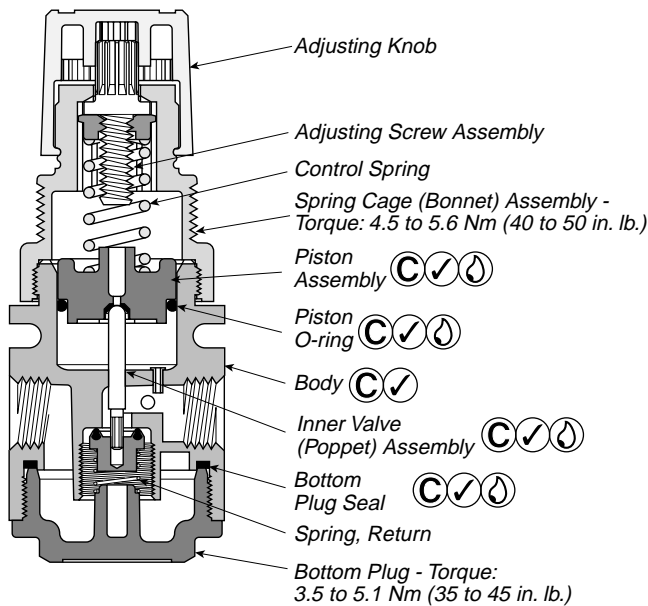
⚠ Caution: Disconnect or shut off air supply and exhaust the primary and secondary pressures before servicing unit. Turning the Adjusting Knob counterclockwise does not vent downstream pressure on non-relieving regulators. Downstream pressure must be vented before servicing regulator.

⚠ 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.

A. Servicing the Bonnet and Piston 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. 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.
3. Lubricate Piston O-ring with grease (supplied with kits).
4. Install Piston and Pressure Control Spring into Body. Then install Bonnet Assembly to Body and tighten to 4.5 to 5.6 Nm (40 to 50 in. lb.).



- Ⓐ** 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.

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 Seal, 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 Seal and install it in o-ring groove in body. Be sure Disc Stem fits into center area of Piston Assembly before installing Bottom Plug. Install Return Spring, 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.).
6. 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.

Service Kits / Parts Available

Description	R35, 1/8" & 1/4"
Regulator Repair Kit (Relieving)	RKR30
Regulator Repair Kit (Non-Relieving)	RKR30K
Spring Cage Kit (A Range)	CKR35A
Spring Cage Kit (B & C Range)	CKR35BC
Adjusting Knob	R35-0545P
Return Spring	SPR-445-1
Bottom Plug	R35-0021P
Bottom Plug Seal	GSK-504Z101


Accessories

Mounting Bracket / Nut	SA161X57
Panel Mount Nut	R05X51
Gauges	
0 to 60 PSI (0 to 4 bar)	K4515N18060
0 to 160 PSI (0 to 11 bar)	K4515N18160

 **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

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Introduction

The **QUBE R75 Pressure Regulator** is a specialized control valve which reduces the upstream supply pressure level to a specified constant downstream pressure. Pneumatic equipment that is operated at a higher than recommended pressure levels wastes the energy which generates that pressure, creates a potential safety hazard, and wears prematurely. The QUBE R75 is a balanced poppet, diaphragm style regulator available in either relieving (standard) or non-relieving (K suffix after part number) design. It is recommended that a QUBE F75 or similar filter be installed upstream of the R75 regulator to ensure contaminant free air. Follow these instructions when installing, operating, or servicing the product.

Application Limits

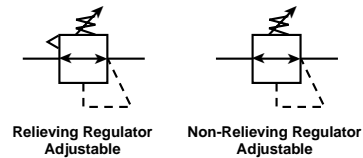
These products are intended for use in general purpose compressed media systems only.

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



Installation

All QUBE components are individually tapped (NPT or BSPP) to allow direct mounting to piping. Also, each QUBE F&L component comes equipped with the necessary screws and O-rings to enable connection to other QUBE components of the same series without the need for pipe nipples or special adaptors. 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 pipeline so that flow is with the arrow as indicated on top face of body. Install as near as possible to equipment serviced.


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. With relieving-type regulators 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 starts.

Maintenance – Cleaning

Note: To clean, it is not necessary to remove regulator from line. Refer to drawing as guide in reassembly. If the air supply is kept clean, the regulator should provide long periods of uninterrupted service. Erratic regulator operation or loss of regulation is most always due to dirt in the disc 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 household soap and blow out body with compressed air. When reassembling make sure the disc is firmly in place and that the disc stem fits into the center hole of the diaphragm assembly. Tighten bottom plug more than hand tight (40 to 50 inch pounds torque).

Note: This regulator is designed for use with compressed air in industrial applications. For other applications consult factory before use.

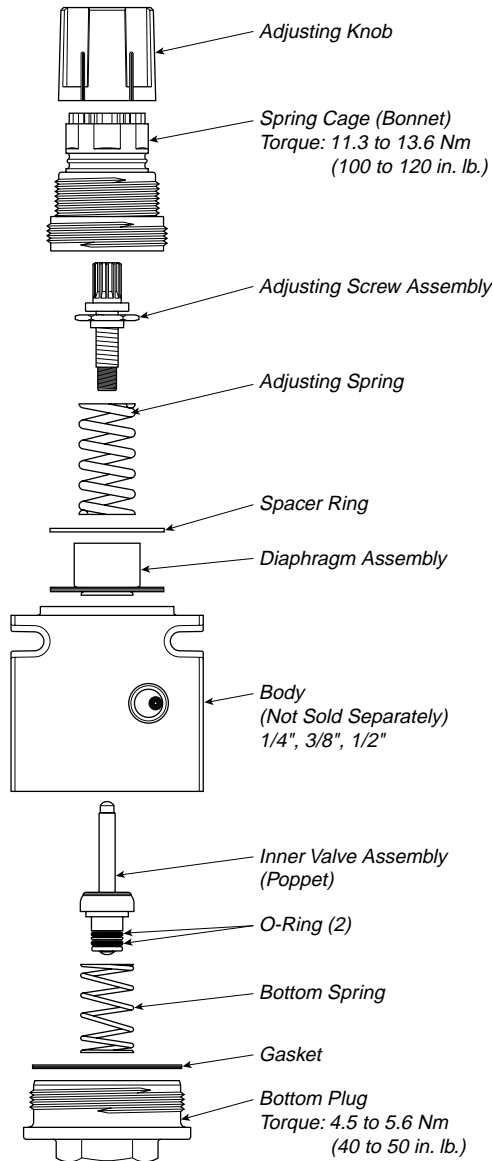
 **WARNING**

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Service Kits / Parts Available

Description	R75, 1/4", 3/8", & 1/2"
Adjusting Knob (in Kit CKR75)	R35-0545P
Spring Cage (in Kit CKR75)	R75-0151P
Spring Cage Kit	CKR75
Tamperproof (Not Shown)	CKR75T
Adjusting Screw Assembly (in Kit CKR75)	SAR55-0532
Adjusting Spring	
"A" Range (0 – 25 PSI)	SPR-53
"B" Range (0 – 60 PSI)	SPR-54
"C" Range (0 – 125 PSI)	SPR-55
Spacer Ring (in Repair Kit)	R55-0081
Diaphragm Assembly	
Relieving (in Kit RKR75)	SAR75-0201
Non-Relieving (in Kit RKR75K)	SAR75-0202
Inner Valve Assembly (in Repair Kit)	SAR75-0371
O-Ring (2 each) (in Repair Kit Only)	604Y101
Bottom Spring	SPR 391-1
Gasket (in Kit BPK75)	GSK-F55-1011
Bottom Plug (in Kit BPK75)	R55-0021P
Repair Kit	
Relieving	RKR75
Non-Relieving	RKR75K

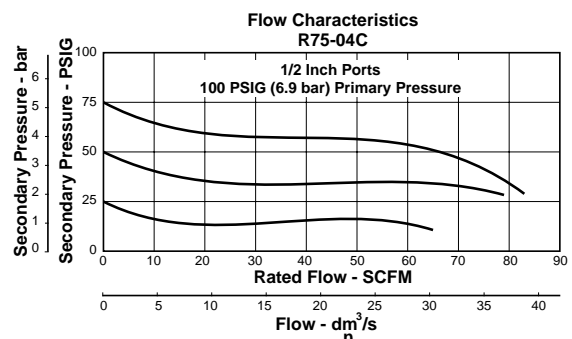
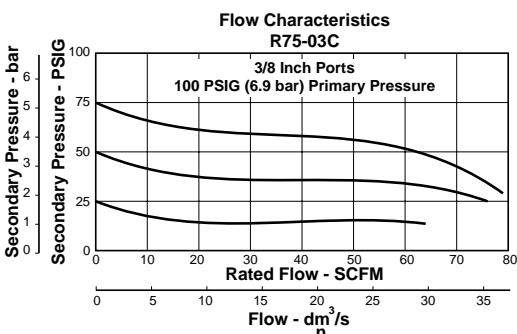
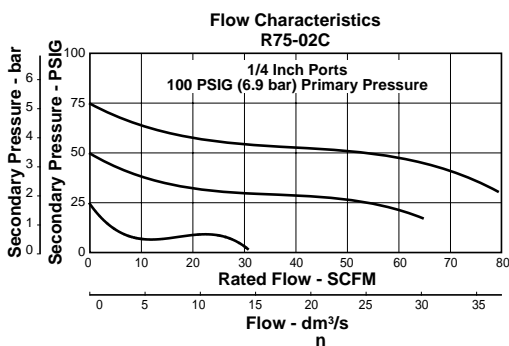
Accessories

Gauge:	
0 to 60 PSI (0 to 4 bar)	K4515N18060
0 to 160 PSI (0 to 11 bar)	K4515N18160
Panel Mount Nut: "P" *	
Acetal Plastic	R05X51
Aluminum	R05X51-A
Wall Mount Bracket	SAR55Y57

* Requires 1-1/4" hole (1-3/16-18 UNEF-2B)

Standard Features

- Push/Pull Locking Adjustment Knob.
- Reduced Pressure Ranges Available:
 - "A": = 0 – 25 PSI
 - "B": = 0 – 60 PSI
 - "C": = 0 – 125 PSI
- Supply Pressure: 300 PSIG (21 bar) Maximum
- Temperature Range: 4°C to 49°C (40°F to 120°F)
- Body Material: Zinc
- Diaphragm Material: Buna-N
 - Relieving (standard) or
 - Non-Relieving ("K" suffix on part number)
- Innervalue: Brass w/Buna-N O-Rings
- Bottom Plug and Spring Cage: Glass Filled Acetal
- Weight: = 0.65 lbs. per unit
18.7 lbs. per 24-unit master pack



⚠ 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.

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:

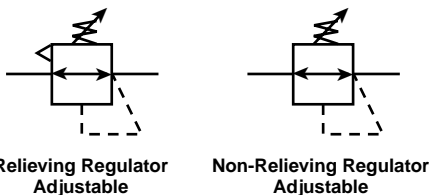
	kPa	PSIG	bar
Maximum Inlet Pressure	2068	300	21.0

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.

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.

Reduced Pressure Adjustment

1. To adjust reduced pressure settings, pull knob out and turn knob clockwise to increase pressure setting, or counter clockwise to lower setting. With relieving-type regulators, 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 starts.
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 lock screw in center of knob to lock the pressure setting.

Reduced Pressure Spring Ranges

- "A" Range = 0 – 25 PSI
- "B" Range = 0 – 60 PSI
- "C" Range = 0 – 125 PSI
- "D" Range = 0 – 250 PSI

⚠ WARNING

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Service

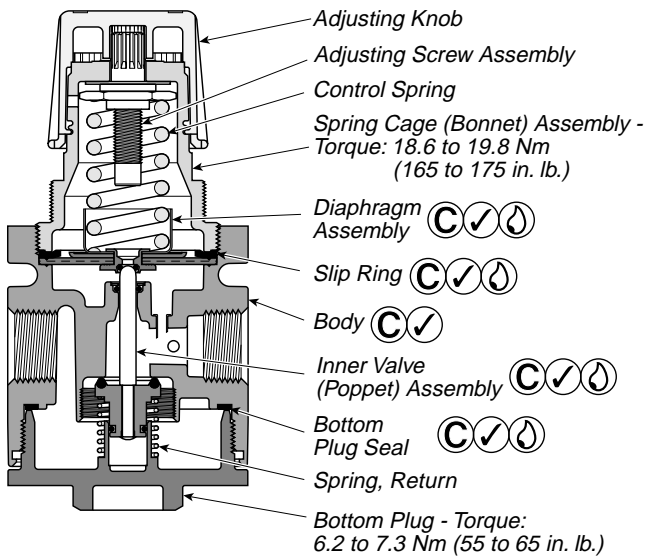
⚠ Caution: Disconnect or shut off air supply and exhaust the primary and secondary pressures before servicing unit. Turning the Adjusting Knob counterclockwise does not vent downstream pressure on non-relieving regulators. Downstream pressure must be vented before servicing regulator.

⚠ 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.

Cleaning

Erratic regulator operation or loss of regulation is most always due to dirt in the disc area. To clean, shut off and depressurize air line, and disassemble the regulator. Refer to drawing on reverse as a guide to disassembly and subsequent reassembly. Clean parts with household soap and blow out body with compressed air. When reassembling, make sure the disc assembly is firmly in place, and that the disc stem fits into center hole of diaphragm assembly. Tighten bottom plug more than hand tight (6.2 to 7.3 Nm / 55 to 65 in. lb.).



- 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.

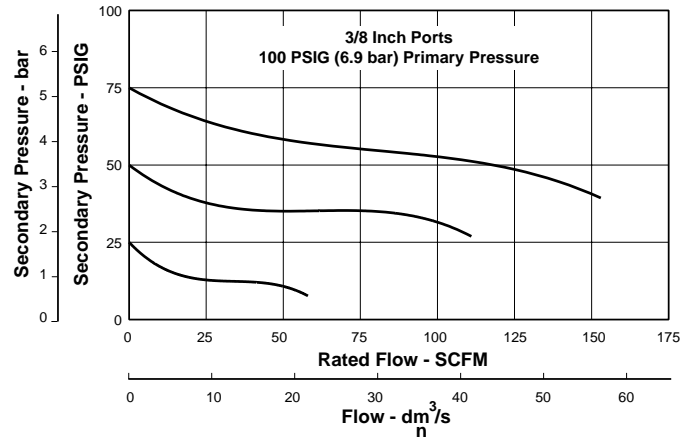
Service Kits / Parts Available

Description	R105, 3/8", 1/2", & 3/4"
Regulator Repair Kit (Relieving)	RKR105
Regulator Repair Kit (Non-Relieving)	RKR105K
Spring Cage Kit	CKR105
Adjusting Knob	R105-0542P
Slip Ring	R105-0081P
Return Spring	SPR-100
Bottom Plug	R105-0022/BK
Bottom Plug Seal	GSK-F105-1015

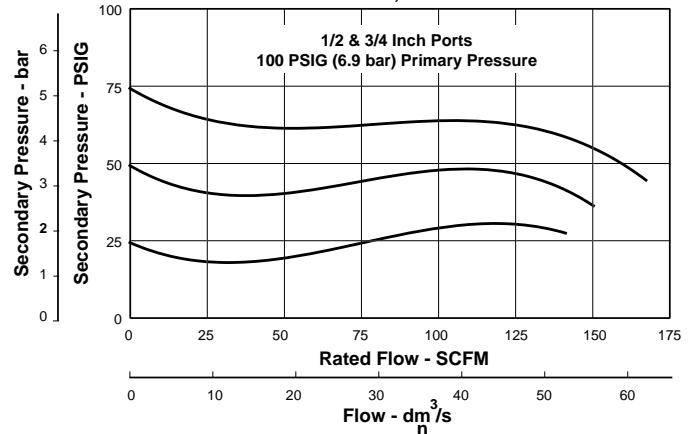
Accessories

Panel Mount Bracket / Nut	SAR10Y57
Panel Mount Nut	R10X51
Wall Mount Bracket	SAR105Y57
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 21 bar)	K4520N14300

Flow Characteristics R105-03C



Flow Characteristics R105-04C, R105-06C



! 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.

Introduction

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Application Limits

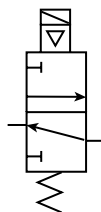
These products are intended for use in general-purpose compressed air systems only.

Operating Pressure:	kPa	PSIG	bar
Maximum Inlet Pressure	1035	150	10.0
Minimum Inlet Pressure	210	30	2.0

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

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

Symbol



Installation

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

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

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

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

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

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

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

Accessories

<u>Kit No.</u>	<u>Description</u>
Metal Mufflers	
ES50MB 1/2"	Exhaust Muffler - S75
ES75MB 3/4"	Exhaust Muffler - S105
Plastic Mufflers	
M60-04 1/2"	Exhaust Muffler - S75
M60-06 3/4"	Exhaust Muffler - S105

Function

The Solenoid Quick Exhaust valve is a 3-Port normally closed 3-Way, 2-Position directional control valve, which supplies downstream pressure when the solenoid is energized. Upon de-energizing of the solenoid, the inlet air is blocked and the downstream air is exhausted. The bottom (exhaust) port is tapped 1/2" NPTF on the S75 and 3/4" NPTF on the S105 so that the exhaust may be piped away or fitted with a muffler.

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Wiring Instructions

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

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

Electrical Connection

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

Override Operation

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

Solenoid Replacement

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

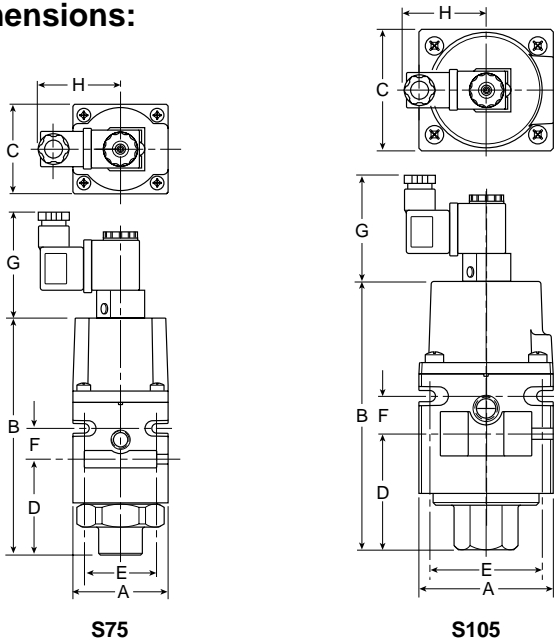
Voltage	Coil No.
24VDC	2EV103
24VAC	2EV102
110VAC	2EV105

Service

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

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

Dimensions:



Model	Port Size	A	B	C	D	E	F	G	H
S75	3/8"	2.19 (56)	4.72 (120)	2.06 (52)	1.50 (38)	1.66 (42)	.72 (18)	2.56 (65)	1.90 (48)
S105	1/2"	3.03 (77)	5.25 (133)	2.75 (70)	1.84 (47)	2.53 (64)	.84 (21)	2.56 (65)	1.90 (48)

Inches (mm)

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

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

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

Service Kits Available:

Description	S75	S105
Service Kit	RKS75	RKS105

There may be extra parts in the kit.

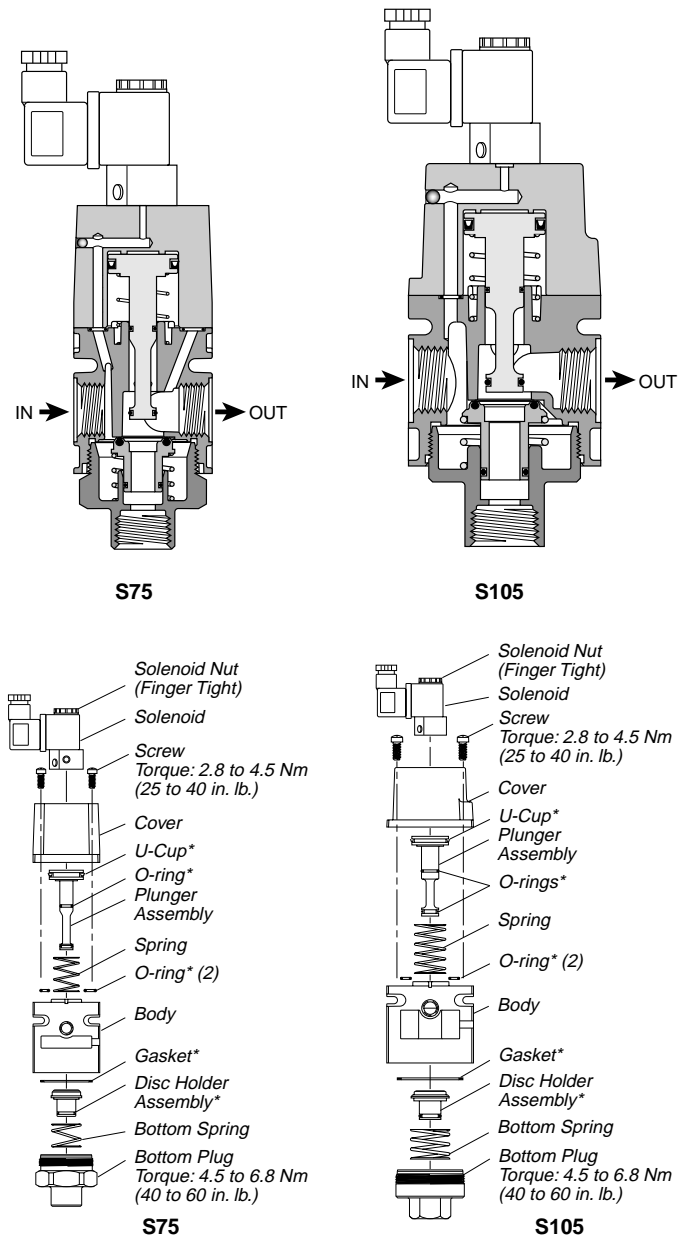


Figure 1

Pneumatic Division
 Richland, Michigan 49083
 269-629-5000

Installation & Service Instructions:
IS-SC105

SC75 & SC105 Soft Start Valve

ISSUED: September, 2008
Supersedes: April, 1999

Doc.# ISSC105, EN# 080510, 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.

⚠ CAUTION

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

⚠ CAUTION

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

Safety Guide

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

Introduction

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

Application Limits

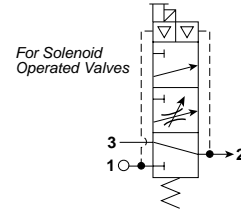
These products are intended for use in general-purpose compressed air systems only.

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

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

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

ANSI Symbol



Installation

The Soft Start valve replaces an ordinary main valve; therefore, it is usually mounted between the air preparation unit and the system. The Soft Start valve is specifically designed to mount directly in line with the SC75 / SC105 Series Qube Modular Air Preparation Units.

SC75 or SC105 valves should be installed with reasonable accessibility for service whenever possible. Keep pipe or tubing lengths to a minimum with inside clean and free of dirt and chips. Pipe joint compound should be used sparingly and applied only to the male pipe — never into the female port. Do not use PTFE tape to seal pipe joints — pieces have a tendency to break off and lodge inside the unit, possibly causing malfunction. Care should be taken to avoid undue strain on the valve.

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

Factory Pre-Lubrication - SC75 valves are pre-lubricated at assembly with a petroleum based grease which has a PTFE content. SC105 valves are pre-lubricated at assembly with a synthetic based grease.

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

⚠ WARNING

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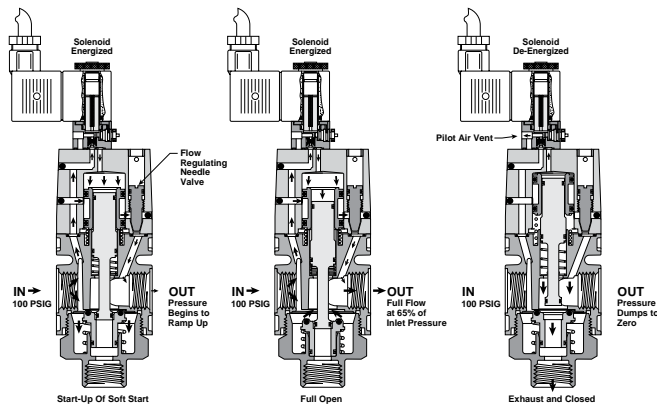
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Function

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

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

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



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

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

Port Connections

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

Wiring Instructions

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

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

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

Electrical Connection

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

Override Operation

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

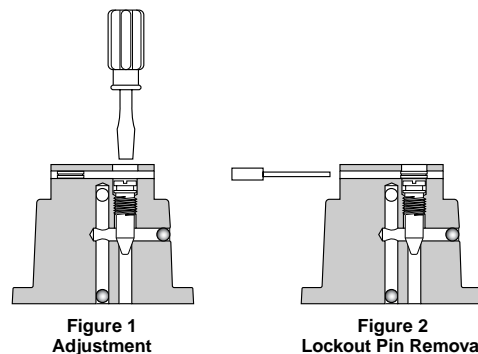
Adjustment

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

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

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

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



Solenoid Replacement

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

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

Service

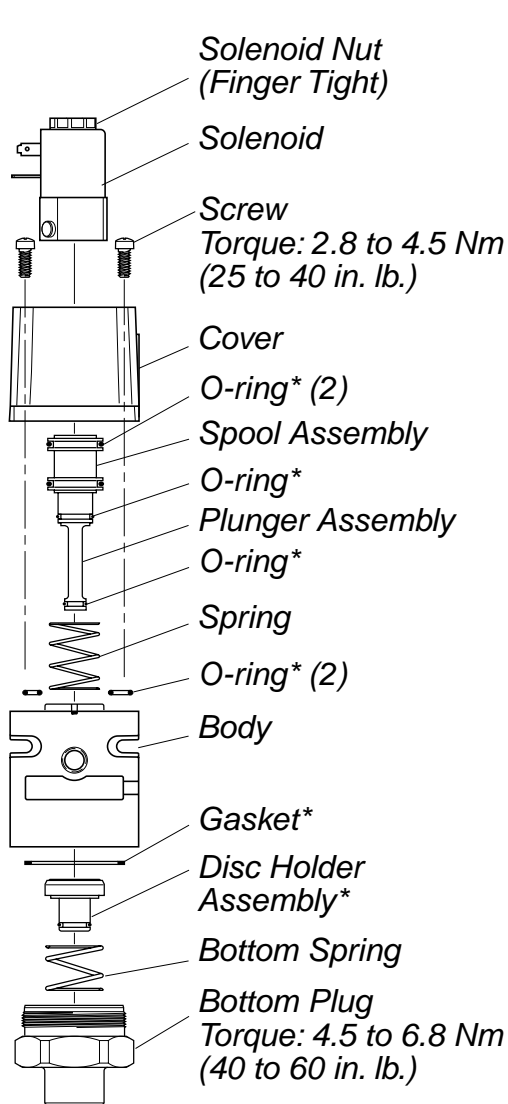
⚠ Caution: Disconnect or shut off air supply and exhaust pressure before servicing unit.

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

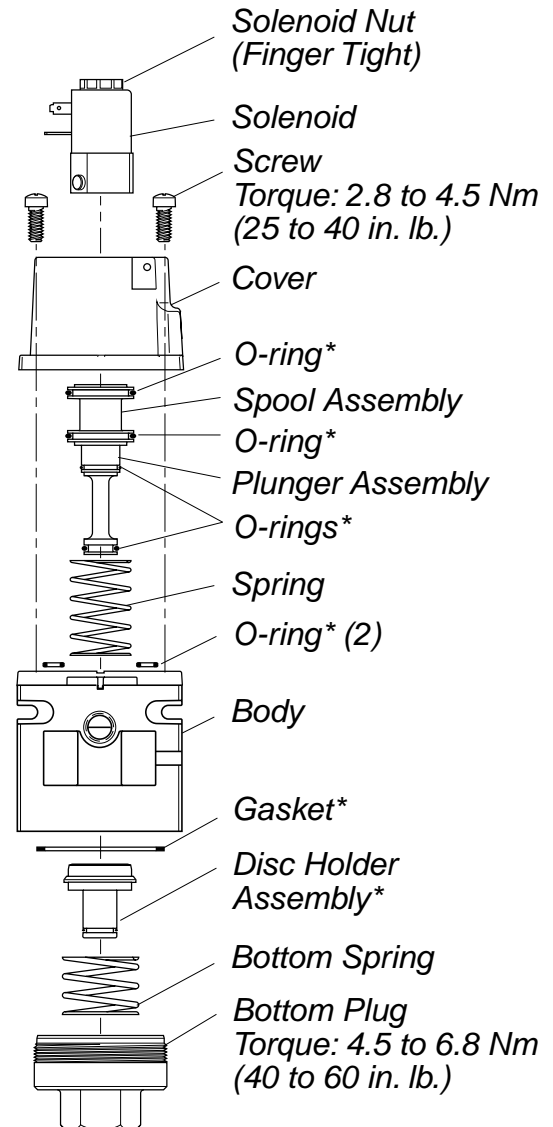
Note: After servicing unit, turn on air supply and check for leaks. If leakage occurs, do not operate – conduct repairs and retest.

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

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



SC75



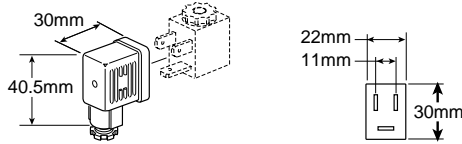
SC105

Figure 3

Engineering Data:

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

22mm Rectangular 3-Pin



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

* LED with surge suppression.

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

QUBE SC75 & SC105 Series Kits & Accessories

Coil Kits –

24VDC / 48VAC Coil 2EV103
 12VDC / 24VAC Coil 2EV102
 120 VAC Coil 2EV105

Seal Repair Kits –

SC75 Series RKSC75
 SC105 Series RKSC105

Exhaust Mufflers

SC75 (1/2" Exhaust) M60-04
 SC105 (3/4" Exhaust) M60-06

Specifications

Exhaust Ports –

SC75 1/2 Inch NPT or BSPP
 SC105 3/4 Inch NPT or BSPP

Gauge Ports –

SC75 (2) 1/8 Inch NPT or BSPP
 SC105 (2) 1/4 Inch NPT or BSPP

Inlet & Outlet Port Threads –

SC75 3/8 & 1/2 Inch NPTF or BSPP
 SC105 1/2 & 3/4 Inch NPTF or BSPP

Pressure & Temperature Ratings –

Solenoid 60 to 145 PSIG (4.1 to 10.0 bar)
 32°F to 140°F (0°C to 60°C)

Weight –

SC75 3.25 lb. (1.47 kg)
 SC105 5.5 lb. (2.49 kg)

Materials of Construction

Body Zinc
 Bottom Plug Brass
 Seals Nitrile
 Springs Stainless Steel
 Internal Components Brass / Aluminum
 Top Cover Aluminum

⚠ 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.

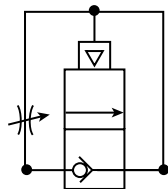
Application Limits

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

Operating Pressure:	kPa	PSIG	bar
Maximum Inlet Pressure	1035	150	10.0
Minimum Inlet Pressure	210	30	2.0

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

Symbol



Installation

The Auto-Pilot Soft Start valves should be installed with reasonable accessibility for service and adjusting needle valve with a screwdriver. Keep pipe or tubing lengths to a minimum with inside clean and free of dirt and chips. Pipe joint compound should be used sparingly and applied only to the male pipe – never into the female port. Do not use PTFE tape to seal pipe joints – pieces have a tendency to break off and lodge inside the unit, possibly causing malfunction. Care should be taken to avoid undue strain on valve. Air applied to the valve must be filtered with a 40 micron filter to realize maximum component life.

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

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

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

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

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

Function

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

⚠ WARNING

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.

Adjustment

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

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

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

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

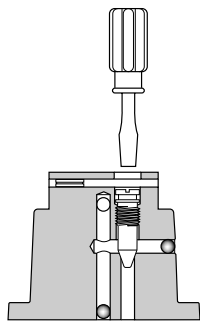


Figure 1 Adjustment

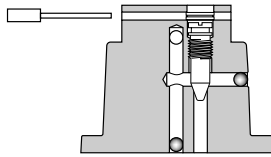
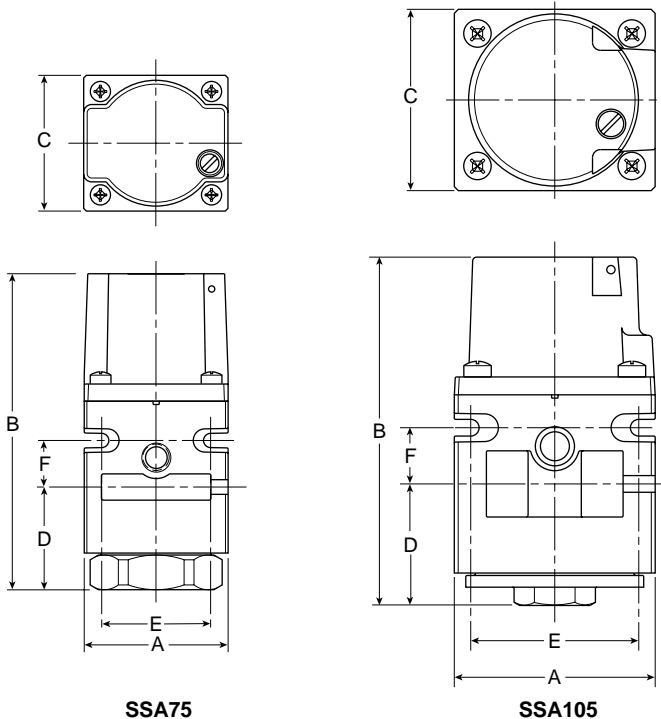


Figure 2 Lockout Pin Removal

Dimensions:



Model	Port Size	A	B	C	D	E	F
SSA75	3/8"	2.19 (56)	4.72 (120)	2.06 (52)	1.50 (38)	1.66 (42)	.72 (18)
SSA105	1/2"	3.03 (77)	5.25 (133)	2.75 (70)	1.84 (47)	2.53 (64)	.84 (21)

Inches (mm)

Service

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

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

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

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

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

Service Kits Available:

Description	SSA75	SSA105
Service Kit	RKSS75	RKSS105

There may be extra parts in the kit.

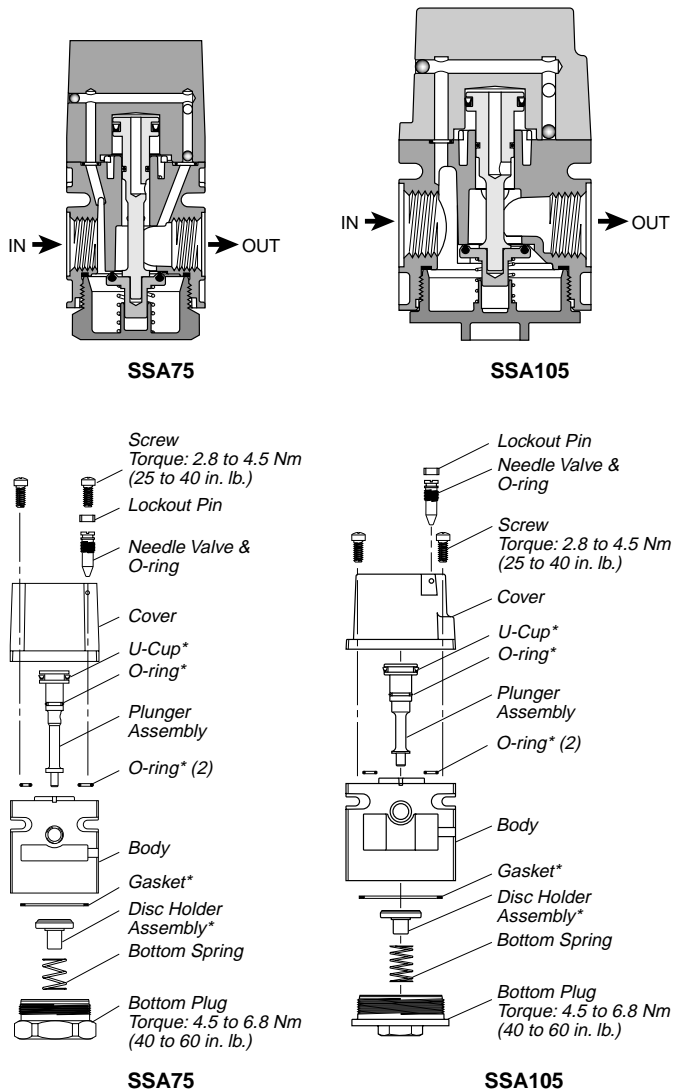


Figure 3



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.