

# WILKERSON®

Englewood, CO 80110

Installation & Service Instructions  
83-954-000

1/4" & 3/8"  
B12 Filter / Regulator Series &  
T12 Precision Filter / Regulator

ISSUED: September, 2002

Supersedes: December, 2001

ECN020442, Rev. 3



## WARNING

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

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

## Safety: Polycarbonate Bowls



## CAUTION

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

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

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



## WARNING

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

## Introduction

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

## Application Limits

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

### With Polycarbonate Bowl

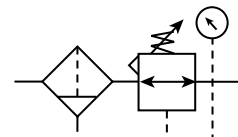
	kPa	PSIG	bar
Operating Pressure Maximum	1034	150	10.3
Operating Temperature Maximum		52°C (125°F)	
Operating Temperature Minimum		0°C (32°F)	

### With Metal Bowl

	kPa	PSIG	bar
Operating Pressure Maximum	1724	250	17.2
Operating Temperature Maximum		80°C (175°F)	
Operating Temperature Minimum		0°C (32°F)	

Note: The maximum recommended pressure drop for a particulate filter is 69 kPa (10 PSIG, 0.7 bar)

## ANSI Symbol



Adjustable Filter / Regulator  
with Manual Drain

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

## Operation

1. Both free moisture and solids are removed automatically by the filter.
2. Manual drain filters must be drained regularly before the separated moisture and oil reaches the bottom of the baffle or end cap.
3. The filter element should be removed and replaced when pressure differential across the filter is 69 kPa (10 psig).
4. Before turning on the air supply, turn the knob counterclockwise until 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.



## WARNING

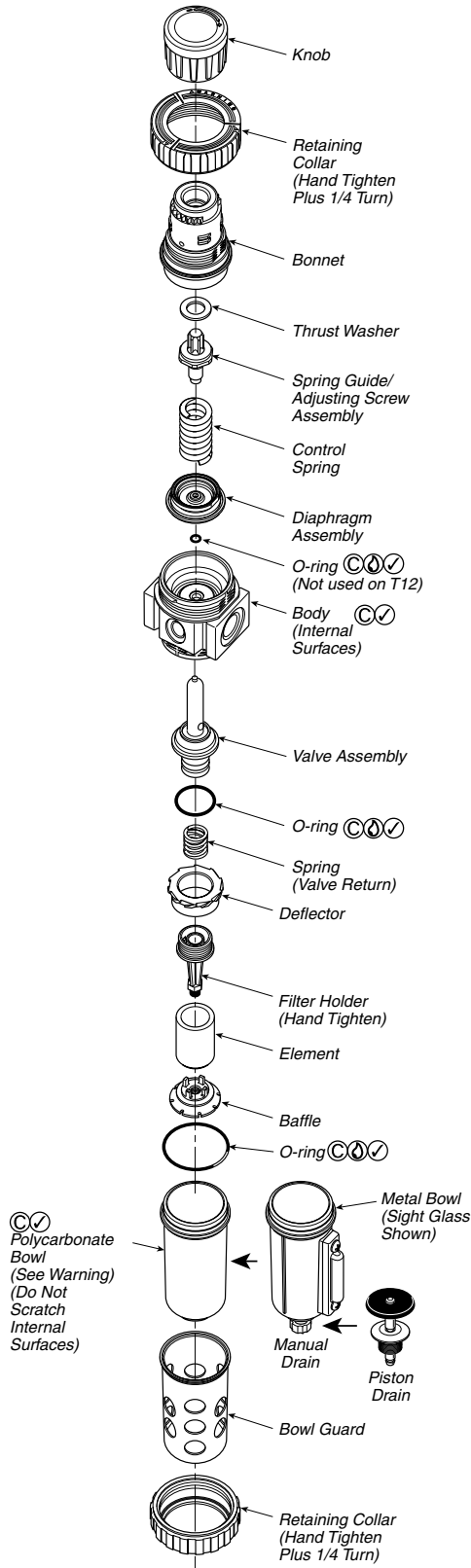
**FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.**

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.**

- 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.



- 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

**⚠ 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.

**Note:** 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 -

- Unscrew the bottom threaded collar and remove bowl.
- Unscrew the baffle and then remove element.
- Clean all internal parts and bowl before reassembling. See polycarbonate bowl cleaning section. **IMPORTANT:** The Filter / Regulator will not operate properly if the deflector is not installed properly. The deflector must be installed between the filter holder and the filter body.
- Install new element.
- Attach baffle and finger tighten firmly.
- Replace bowl seal. Lightly lubricate new seal to assist with retaining it in position.
- Install bowl into body and tighten collar; hand tight, plus 1/4 turn.

### Servicing Regulator -

- 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 two threaded collars.
- Remove diaphragm assembly from bonnet assembly.
- Remove filter stem, filter element, valve assembly, and valve return spring.
- Clean and carefully inspect parts for wear or damage. If replacement is necessary, use parts from service kits. Clean bowl. See polycarbonate bowl cleaning section.
- Lubricate o-ring and vee packing seals with grease found in service kits.
- Install valve return spring, valve assembly, (seat) insert and its o-rings, and filter stem. **IMPORTANT:** The Filter / Regulator will not operate properly if the deflector is not installed properly. The deflector must be installed between the filter holder and filter body.
- Install filter element and firmly tighten baffle onto the filter holder.
- Install diaphragm assembly into bonnet assembly. Assemble bonnet assembly to body and tighten threaded collar hand tight, plus 1/4 turn.
- Install bowl into body and tighten collar; hand tight, plus 1/4 turn.

### Service Kits Available

Description	B12 1/4" & 3/8"	T12 1/4" & 3/8"
5 Micron Element*	GRP-96-344	GRP-96-344
40 Micron Element*	GRP-96-343	GRP-96-343
Bowl Guard Kit	GRP-96-345	GRP-96-345
Non-Relieving Regulator Repair Kit†	RRP-96-307	—
Relieving Regulator Repair Kit†	RRP-96-306	RRP-96-305
Sight Gauge Kit	GRP-96-346	GRP-96-346
<b>Metal Bowl Kits</b>		
Manual Drain	GRP-96-348	GRP-96-348
Piston Drain	GRP-96-353	GRP-96-353
Sight Gauge & Manual Drain	GRP-96-349	GRP-96-349
Sight Gauge & Piston Drain	GRP-96-352	GRP-96-352
<b>Polycarbonate Bowl Kits</b>		
Manual Drain	GRP-96-347	GRP-96-347
Piston Drain	GRP-96-351	GRP-96-351
<b>Drain Kits</b>		
Manual Drain	GRP-96-340	GRP-96-340
Piston Drain	GRP-96-354	GRP-96-354

\* Element kits include body / bowl seal.

† Grease in kits is silicone free.