

FORM: 90-413* (Rev. 4-05)

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27 MODULAR SERIES INTEGRAL FILTER / REGULATOR

Installation and Operating Instructions and Parts List

Application:

The 27 Series Integral Filter / Regulator is designed for applications where installation flexibility and a compact size are necessary. Each unit can be converted to a duo system either with clamps, which connect without disturbing existing piping, or with standard nipples.

Features and Benefits:

- Supplied with either 3/8", 1/2" or 3/4" in / out ports and two (2) full flow 1/4" gauge ports.
- Available with either 40 micron or 5 micron filter element.
- Balanced poppet valve design assures superior performance.
- Diaphragm type regulator allows low initial pressure drop while maintaining high sensitivity.
- Nonrising regulation adjustment knob locks in place and maintains desired pressure setting.

Technical Data:

Maximum Supply Pressure:

Plastic Bowl150 PSI
Metal Bowl250 PSI

Maximum Operating Temperature:

Plastic Bowl120° F
Metal Bowl250° F

Pressure Range:

Standard0-125 PSI
Option0-250 PSI
Option0-25 PSI
Option0-60 PSI

Filter Element:

Standard40 micron
Option5 micron

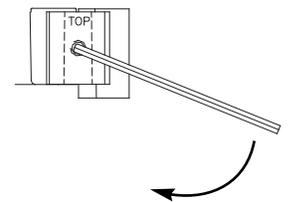
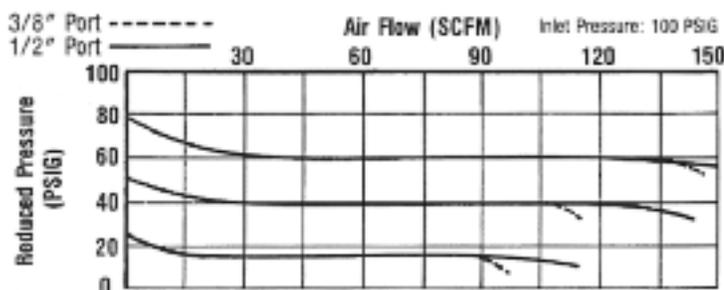
Material:

BodyDie Cast Aluminum
Bowl StandardTransparent Polycarbonate
w/ High Impact Plastic Guard
Bowl OptionDie Cast Zinc
Filter ElementPorous Polypropylene

Dimensions and Weights:

Height10 1/2"
Width2 3/4"
Weight2 lbs.

Integral Filter/Regulator Performance Data



Modular clamp eliminates the need for a hex nipple between units.

Options and Accessories:

Filter Options:

Automatic Drain	.....D
Metal Bowl (without sightglass)	.....M
Metal Bowl (with sightglass)	.....S
Extra Fine Element (5 Micron)	.....X

Regulator Options:

Gauge	.....G
High Pressure Spring (0-250 PSI)	.....H
Extra Low Pressure Spring (0-25 PSI)	.....J
Low Pressure Spring (0-60 PSI)	.....L

*Add a dash followed by the suffix(es) in alphabetical order to the model number.

Accessories:

Mounting Bracket	.....27RBA
Panel Nut	.....27RPA
Automatic Drain	.....8851AD
Metal Bowl	.....27F-41M
Metal Bowl with Sightglass	.....27F41S
Recommended Standard Pressure Gauge	
0-160 PSI (2" Dial)	.....8800-160
Recommended Optional Gauge	
0-300 PSI (2" Dial)	.....8800-300
0-60 PSI (2" Dial)	.....8800-60
Connecting Clamp Kit	
(includes two connecting clamps, two screws one o-ring, and one allen wrench)	.....27MB01
Wall Mount Connecting Kit	
(includes one wall mount connecting clamp, one connecting clamp, two screws, one o-ring, and one allen wrench)	.....27MB02
Distribution Block	.....27DB01

SUFFIX

General Description of Operation:

Pressurized air enters through a curved inlet and deflector vane plate (11), directing the incoming air in a downward whirling pattern. Centrifugal force hurls the large solids and liquid particles outward where they collect on the inner surface of the filter bowl (14.3). The particles spiral down past the retainer baffle (13) and into a quiet chamber. The baffle (13) prevents turbulent air in the upper bowl from re-entering liquid contaminants and carrying them downstream. Then the dry, clean air follows a convoluted path through the filter element (12), where finer solid particles are filtered out.

High pressure, filtered air flows through the annular orifice around the poppet valve (9) toward the outlet. Downstream pressure is directed to the bottom of the diaphragm (5). As downstream pressure increases, the diaphragm (5) is forced upward, compressing the adjustment spring (3). When the diaphragm moves, the bottom spring (10) pushes the poppet valve (9) upward to throttle the annular orifice. If downstream pressure exhausts, the mechanical sequence reverses and the poppet valve (9) opens the annular orifice until the set pressure is reached again. The poppet valve (9) normally blocks the relieving orifice in the center of the diaphragm (5). High excessive pressure lifts the diaphragm (5) off the poppet valve (9) and air bleeds through the orifice and out the bonnet (2) vent until the system returns to set pressure.

Cleaning and Maintenance:

Filter – It is necessary to keep the filter clean in order to sustain peak filtering efficiency and avoid excessive pressure drop. A coating of dirt or condensation build-up on the filter element or a pressure drop of 10 PSI or more indicates that cleaning is required.

Removal of the filter from the line for cleaning is not necessary. Disassembly requires no tools and the parts drawing on this page can be used as a guide. Air supply must be shut off and the filter must be depressurized prior to disassembly. The filter element should be replaced and all other parts should be cleaned with nothing stronger than household detergent. Before reassembly, the body should be blown out to remove any remaining debris.

To drain off any accumulations in the bowl, the draincock is opened by turning it in a clockwise direction. This should be done before the collected fluid reaches the lower baffle.

The bowl guard is removed by depressing the release tab with the thumb, while turning the guard counterclockwise and pulling downward. The guard will become disengaged when the clasps clear the locking points on the body. The bowl then can be removed by turning it counterclockwise until it is completely unscrewed and free of the body.

Regulator – A clean supply of air to the regulator will assure long periods of uninterrupted service. Dirt in the poppet valve assembly will lead to erratic operation or loss of regulation. When cleaning becomes necessary, the air line should be shut off and depressurized. The regulator should be disassembled using the parts drawing on this page as a guide. All assembly parts should be cleaned with a mild household detergent and the regulator body should be blown out with compressed air.

For proper reassembly, the poppet valve assembly must be firmly in place and the poppet stem must fit into the center hole of the diaphragm assembly. The bonnet assembly should be tightened slightly more than hand tight (approximately 40 foot pounds torque.)

Regulator Pressure Adjustment:

Turning the adjusting knob in a clockwise direction will increase the pressure setting and counterclockwise will decrease the pressure setting.

The downstream pressure should always be adjusted to approximately 10 PSI above the required working pressure, even in the event of pressure fluctuations. It is advisable to adjust the setting under constant pressure conditions (unit not operating), as a changing flow rate affects the set valve.

To avoid readjustment after making a change in pressure setting, we recommend approaching the required setting from a lower pressure. When adjusting from a higher to a lower setting, reduce the pressure to a point below what is required, then adjust upward to the desired pressure setting.

Components:

Item No.	Description	Part No.	Item No.	Description	Part No.
1	Adjusting Knob	27R-12A	8	Bowl Gasket	27F-16
2	Bonnet/Adj. Screw As'ly	27R-14A	9	Poppet Valve Assembly	27R-18
3A	Adj. Spring (0-125 psi)	27R-15	10	Bottom Spring	27R-19
3B	Adj. Spring (0-250 psi)	27R-15H	11	Deflector Vane Plate	27F-11
3C	Adj. Spring (0-60 psi)	27R-15L	12A	40 Micron Element	27F-12
3D	Adj. Spring (0-25 psi)	27R-15J	12B	5 Micron Element	27F-12X
4	Spacer Ring-Diaphragm	27R-16	13	Retainer Baffle	27F-13
5	Diaphragm Assembly	27R-17	14	Polybowl & Draincock	27F-41L
6	1/8 Pipe PLug	PI004S	14.1	Draincock O-Ring	26F-17
7A	3/8 NPT Body	27FC3-1	14.2	Brass Draincock	26F-18
7B	1/2 NPT Body	27FC4-1	14.3	Polycarbonate Bowl	27F-40L
7C	3/4 NPT Body	1421-7	15	Plastic Bowl Guard	27F-50

Rebuilding Kit

Filter Bowl Repair Kit
(includes items 8, 14, and 15)27FK01
Regulator Repair Kit
(includes items 4, 5, 9, 11, and 10)27RK01

We reserve the right to make engineering changes in design or materials without notification.