

# CONOFLOW AIRPAK® FILTER REGULATORS GFH45/75/76 SERIES

Conoflow's GFH Series Airpak® Filter-Regulators are widely used to provide clean, regulated air pressure to instruments and controls, automatic machinery and other pneumatic devices.

These ruggedly built units are available in either brass or stainless steel construction affording versatility in meeting today's instrument and industrial applications. The brass model has a maximum pressure rating of 300 PSI (2068 kPa) (GFH45). The stainless steel versions are rated at 300 PSI (2068 kPa) and are available in two configurations. The GFH75 provided for corrosive environments has a 316 stainless steel exterior with brass/302-303 stainless steel internals.

The GFH76 is manufactured to meet the requirements of NACE Specifications MR-01-75 (1980 Revision) Sulphide Stress Cracking Resistant Metallic Material for Oil Field Equipment making this unit ideally suited for applications where sour medium is present.

Buna "N" elastomers are standard for the GFH45/75 Series. The GFH76 has viton elastomers. All units incorporate a 35 micron polypropylene filter. Cellulose (10 micron) and stainless steel (40 micron) filters are available. Consult the factory for details. Three regulated pressure ranges of 0-25, 0-60 and 0-125 (0-172, 0-414 and 0-862 kPa) are available with adjustments made by means of a wrench knob. Handwheel adjustment, preset and tamperproof versions are available.

Each unit incorporates four 1/4" NPT connections. The additional porting allows installation of a gauge for monitoring output pressure. Brass, steel and stainless steel case gauges are available.

These Airpaks® are designed for reliability with an absolute minimum of maintenance. The characteristics are a result of Conoflow's high standards of manufacturing and years of experience as a leading producer of pneumatic instrumentation.



**GFH45**



**GFH75/76**

## OPTIONS

### PRESSURE GAUGES

2" Diameter - Steel, Brass or Stainless Steel Case  
Ranges: 0-30, 0-60 and 0-160 PSI (0-207, 0-414 and 0-1103 kPa)

### MOUNTING

Line - All Variations  
Wall - GFH45 (Standard) - (GFH75/76 Optional)  
Flush-back panel mounted (3 hole) (Optional)

### ADJUSTMENT

Knob - Standard  
Handwheel - Optional  
Preset - Factory output setting CAN be field adjusted  
Tamperproof - Factory output setting CANNOT be field adjusted

## DIMENSIONAL DATA - ADVERTISING DRAWINGS:

GFH45: A17-83  
GFH75: A17-84  
GFH76: A17-84

# PRINCIPLES OF OPERATION

The filter-regulators shown in Figures 1 and 2 operate in the same manner. Turning the knob changes the force exerted by the range spring on the diaphragm assembly. In equilibrium, the force exerted by the range spring is balanced by the force from the output pressure acting underneath the diaphragm assembly.

An unbalance between the output pressure and the range spring force causes a corresponding reaction in the diaphragm and nozzle assemblies. If the output pressure rises above the set pressure, the diaphragm seat is lifted from the plug,

venting the excess pressure to atmosphere until equilibrium is reached. If the output pressure drops below the set pressure, the unbalanced force from the range spring acts through the diaphragm assembly unseating the nozzle plug. This allows supply pressure to flow through the nozzle to the downstream port increasing the output pressure. The output pressure increases until it balances the force on the diaphragm assembly by the range spring. At equilibrium, the plug assumes a position which supplies the required flow while maintaining the output pressure at the set pressure.

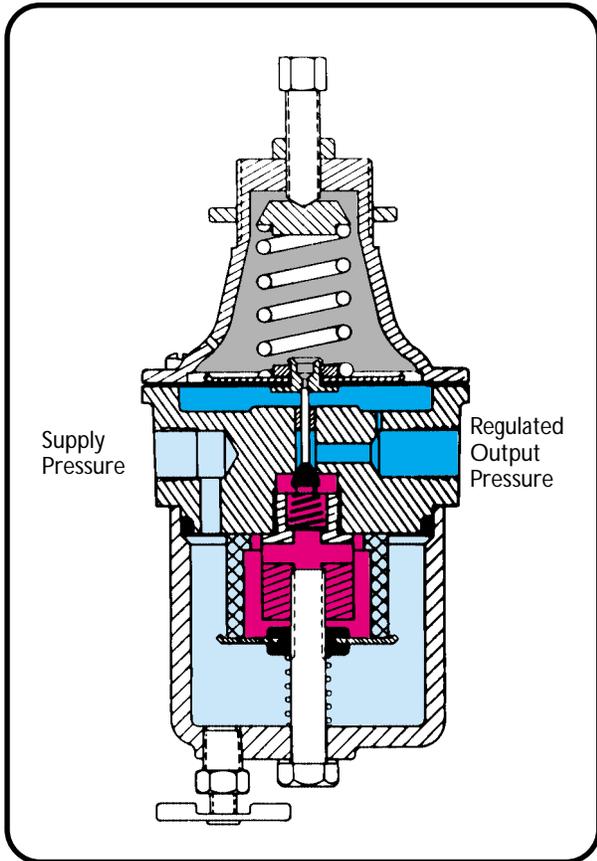


Figure 1: GFH45, Relief-No Bleed/Soft Seat Nozzle.

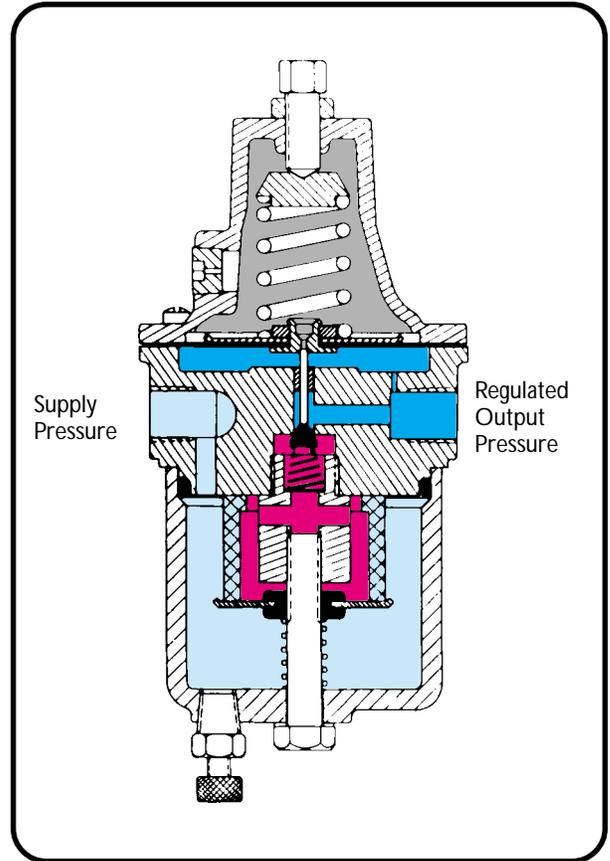


Figure 2: GFH75/76, Relief-No Bleed/Soft Seat Nozzle.

- Supply Pressure
- Filtered Air
- Regulated Output Pressure
- Exhaust

## Flow Graph

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Consult the Factory  
for Flow Performance  
on This Regulator

## SPECIFICATIONS

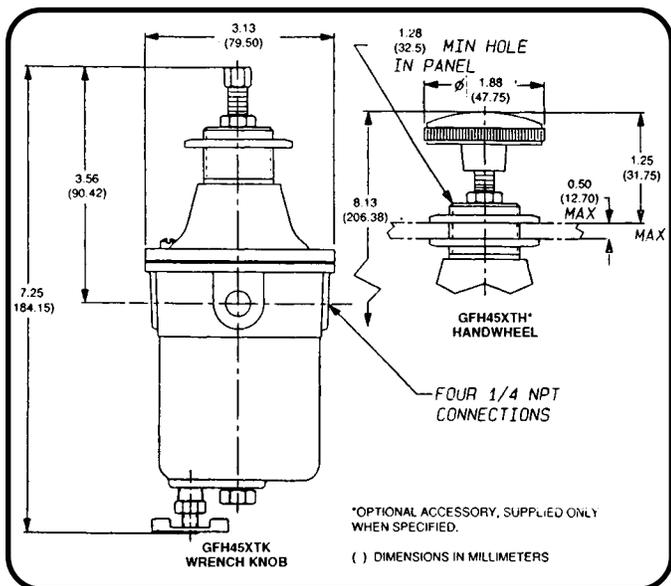
|   |   |
|---|---|
| <b>OPERATING CHARACTERISTICS</b>                                      | GFH45, GFH75 AND GFH76                                |
| Maximum Supply Pressure   | 300 PSI (2068 kPa)                                    |
| Connections   | 1/4" NPT  |
| Regulated Output Pressure Ranges                                      | 0-25, 0-60 and 0-125 PSI (0-172, 0-414 and 0-862 kPa) |
| Flow Capacity [100 PSI (690 kPa) Supply] - See Formula                | 20 SCFM (0.566 m3/min)                                |
| Sensitivity   | 0.02 PSI (0.14 kPa)                                   |
| Supply Pressure Effect for 25 PSI (172 kPa) Change in Supply Pressure | 0.30 PSI (2.07 kPa)                                   |
| Ambient Temperature Range   | -20°F to +150°F (-29°C to +66°C)                      |
| Filter Rating (See Note 1)  | 35 Micron - Polypropylene                             |
| Approximate Shipping Weight   | 3.4 lbs. (1.54 Kg-cm)                                 |

## MATERIALS OF CONSTRUCTION

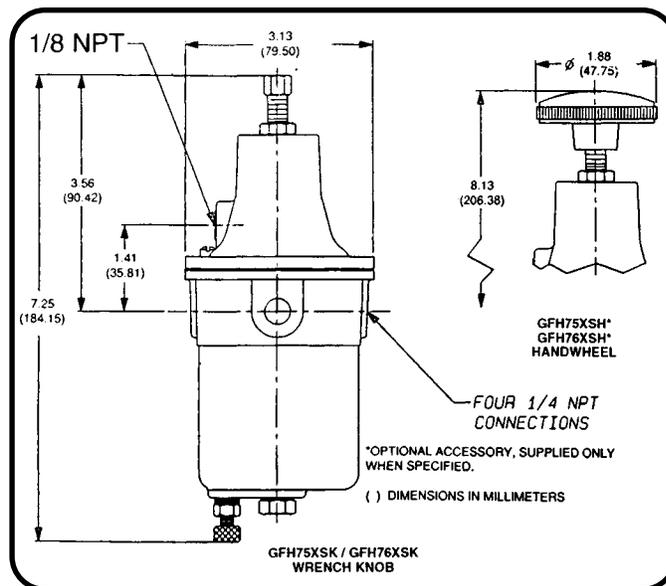
|                    | GFH45 (See Note 3)    | GFH75                                   | GFH76 (See Note 2)                      |
|--------------------|-----------------------|---|---|
| Body               | Brass                 | 316 Stainless Steel                     | 316 Stainless Steel                     |
| Bonnet             | Brass                 | 316 Stainless Steel                     | 316 Stainless Steel                     |
| Diaphragm Assembly | Buna "N"              | Buna "N"                                | Viton/Nomex                             |
| Nozzle             | Brass w/Buna "N" Seat | Brass w/Buna "N" Seat                   | 316 Stainless Steel w/Viton Seat        |
| Range Spring       | Steel Cadmium Plated  | Steel Zinc Plated                       | Inconel                                 |
| Bowl and Draincock | Brass/Brass           | 316 Stainless Steel/316 Stainless Steel | 316 Stainless Steel/316 Stainless Steel |

### NOTES:

- Optional 10 micron (Cellulose) or 40 micron (Stainless Steel) filters are available.
- All metallic components of the GFH76 meet NACE Specification MR-01-75 (1980 Revision) Material Requirements of Sulphide Stress Cracking Resistant Metallic Material for Oil Field Equipment.
- When the GFH45 Regulator is supplied with a Viton elastomer option, the diaphragm assembly, o-ring and nozzle will be Viton and the grommet will be Neoprene.



For Certified Dimensional Drawing, refer to A17-83 (GFH45)



For Certified Dimensional Drawing, refer to A17-84 (GFH75/76)

# CONTROL ENGINEERING DATA

Control Engineering Data is intended to provide a single source from which one can determine, in detail, the full scope of the product line. In addition to materials of construction, diaphragm selection and filtering capabilities, it also provides all necessary data, regarding adjustment options and range selections. Control Engineering Data also provides a means of communicating, by way of a code number, which is fully descriptive of the product selection.

**NOTE: 1. Catalog numbers as received must contain twelve (12) characters.**

|                            |   |
|----------------------------|---|
| 1-5<br>Models              | GFH45 = Airpak® - Filter, Regulator Combination (Replaces GFH20) (Brass Construction - Soft Seat Nozzle - Buna "N")<br>GFH75 = Airpak® - Filter, Regulator Combination (Stainless Steel Construction - External Corrosion - Soft Seat Nozzle - Buna "N")<br>GFH76 = Airpak® - Filter, Regulator Combination (Stainless Steel Construction - Soft Seat Nozzle - Viton)<br>Conforms to NACE MR-01-75 Rev. 1980                        |
| 6<br>Filter Options        | A = Filter - Cellulose (10 Micron)<br>B = Filter - Stainless Steel (40 Micron - Cleaned for Oxygen Service)<br>C = Filter - Stainless Steel (40 Micron)<br>X = Filter - Polypropylene (35 Micron) (Standard)<br><b>NOTE: For non-standard filter adders, refer to price list CP-5000</b>  |
| 7<br>Bonnet Type           | F = Tapped Bonnet for Flush-Back Panel Mounting<br>S = Plain Bonnet (Standard for GFH75 and GFH76 Series)<br>T = Threaded Bonnet (Standard for GFH45)<br><b>NOTE: For non-standard bonnet adders, refer to price list CP-5000</b>   |
| 8<br>Adjustment Selections | C = Tamperproof (Factory Output Setting CANNOT be Field Adjusted) (See Notes 1 and 2)<br>H = Handwheel<br>K = Knob (Wrench Style) (Standard)<br>P = Preset (Factory output setting CAN be field adjusted) (See Notes 1 and 2)<br><b>NOTES: 1. When option "P" or "C" is specified, refer to price list CP-5000 for price adder.<br/>                 2. Customer must specify desired output setting, supply pressure and flow.</b> |
| 9<br>Diaphragm Selections  | E = Buna "N" (w/Relief, No Bleed) (Standard for Models GFH45 and GFH75)<br>F = Viton on Nomex (No Bleed, No Relief)<br>J = Viton on Nomex (w/Relief, No Bleed) (Standard for Models GFH76)<br>M = Buna "N" (No Bleed, No Relief)<br><b>NOTE: 1. For non-standard diaphragm price adders, refer to price list CP-5000.</b>   |
| 10<br>Gauge Selections     | A = Gauge (Brass Case)<br>G = Gauge (Steel Case)<br>S = Gauge (Stainless Steel Case)<br>X = Absence of Specification - No Gauge (Standard)<br><b>NOTES: 1. The gauge will be shown as a separate line item on the order acknowledgment. The letter will be removed from the catalog number, unless otherwise specified.<br/>                 2. All gauges are supplied with brass bourdon tubes.</b>                               |
| 11<br>Filter Bowl Options  | 1 = Standard  |
| 12<br>Range Selections     | C = 0-25 PSI (0-172 kPa)<br>F = 0-60 PSI (0-414kPa)<br>G = 0-125 PSI (0-862 kPa)  |