



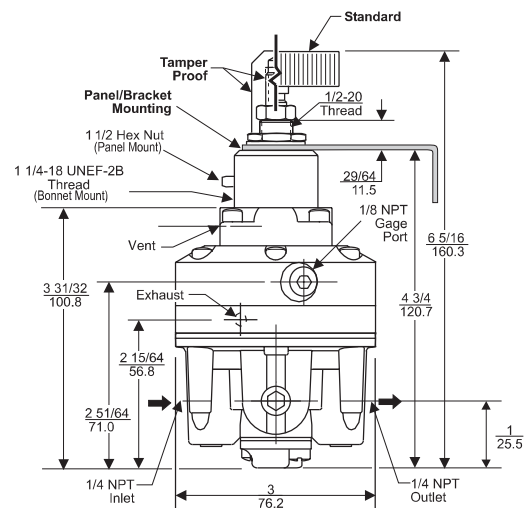
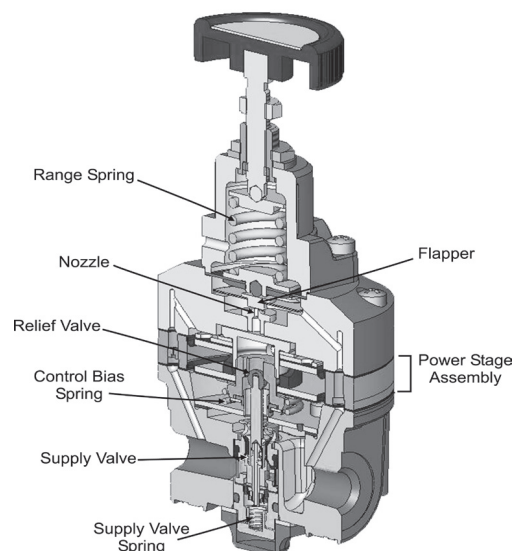
## Features

- Outstanding sensitivity
- Droop or boost virtually eliminated
- Fast response
- Minimal effect for supply pressure change
- High forward flow capacity
- High exhaust capacity
- Small physical size, saves space
- Sapphire orifice
- Permits use in instrumentation and control applications
- Provides constant output pressure over large flow range
- Eliminates output pressure excursions
- Reduces time to exhaust

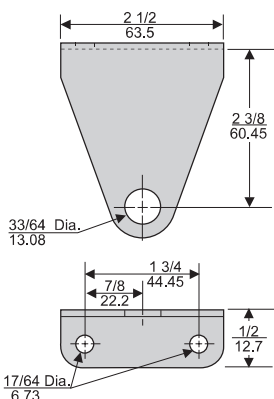
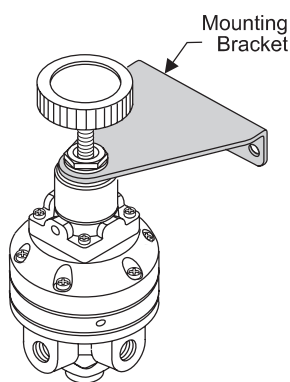
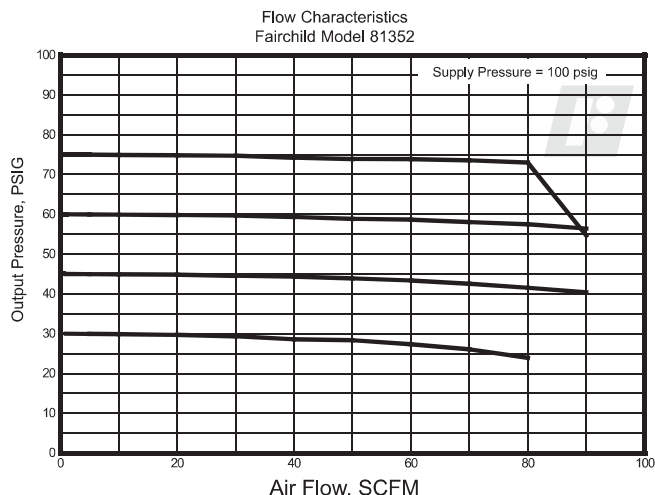
## Operating Principles

This Model 81 is a precision two-stage regulator that combines a pilot control system with a basic force balance system to provide accurate output pressure regulation.

It is recommended for use in both highly sensitive instrumentation and control circuits and in equipment requiring high flow with precise control.



**Technical Information**



Mounting Bracket: 11989

**Model 81 Regulator Kits & Accessories**

Mounting Bracket Kit ..... 11989 (sold separately)

**Catalog Information**

**Catalog Number** 814 -

**Pressure Ranges**

| psig    | [BAR]     | (kPa)          |   |
|---------|-----------|----------------|---|
| 0-2     | [0-0.15]  | (0-15).....    | 1 |
| 0-5     | [0-0.35]  | (0-35).....    | 2 |
| 0-20    | [0-1.5]   | (0-150).....   | 3 |
| 0.5-60  | [0.035-4] | (3.5-400) .... | 4 |
| 0.5-100 | [0.035-7] | (3.5-700) .... | 5 |

**Pipe Size**  
1/4" NPT .....  2

**Options**

Tapped Exhaust .....  E  
 Bonnet Mounting .....  P  
 Tamper Proof .....  T  
 BSPT (Tapered) .....  U

**Service Information**

A service kit is available for the Model 81. Refer to the *Installation, Operation and Maintenance Instructions*, IS-10000081.

**Specifications**

**Flow Capacity (nominal)**  
50 SCFM (85 m<sup>3</sup>/HR) (100 psig, [7.0 BAR], (700 kPa) supply;  
20 psig, [1.5 BAR], (150 kPa) setpoint)

**Exhaust Capacity**  
5.5 SCFM (9.4 m<sup>3</sup>/HR) Downstream pressure 5 psig  
[.35 BAR] (35 kPa) above 20 psig setpoint

**Maximum Supply Pressure**  
2, 5 psig, [.15, .35 BAR], (14, 35 kPa) ranges:  
100 psig, [7.0 BAR], (700 kPa)  
20, 60, 100 psig, [1.5, 4.0, 7.0 BAR], (140, 400, 700 kPa) ranges:  
150 psig, [10.0 BAR], (1000 kPa)

**Minimum Supply Pressure**  
20 psig, [1.5 BAR], (150 kPa)

**Maximum Output Pressure**  
100 psig, [7.0 BAR], (150 kPa)

**Effect of Supply Pressure Variation**  
Less than .2 psig, [.13 BAR], (150 kPa) for 100 psig,  
[7.0 BAR], (700 kPa) change

**Air Consumption**  
Less than 0.1 SCFM (1.7 m<sup>3</sup>/HR)

**Sensitivity**  
Less than 0.1" (.254 cm) Water Column

**Ambient Temperature Limit**  
-40°F to +200°F, (-40°C to 93°C)

**Materials of Construction**  
Body ..... Die Case Aluminum  
Trim . . . Stainless Steel, Brass, Aluminum, and Plated Steel  
Diaphragms ..... Nitrile on Dacron  
Orifice ..... Sapphire