

FINE CONTROLS (UK) LTD



Fine Controls have been supplying process controls & instrumentation equipment since 1994, & now serves an ever expanding customer base, both in the UK & globally.

We offer a full range of valve & instrumentation products & services, with our product range representing leading technologies & brands:

Flow: Flow Meters & Transmitters, Flow Switches, Flow Control Valves & Batch Control Systems

Temperature: Temperature Probes & Thermowells, Temperature transmitters, Temperature Regulators & Temperature Displays

Level: Level Transmitters & Switches

Pressure: Pressure Gauges & Transmitters, Precision & High Pressure Regulators & I-P Converters, Volume boosters.

Precision Pneumatics: Pressure Regulators, I-P Converters, Volume Boosters, Vacuum Regulators

Valves: Solenoid & Pneumatic Valves, Control Valves & Positioners, Actuated Ball, Globe or Diaphragm Valves & Isolation Valves

Services: Repair, Calibration, Panel Build, System Design & Commissioning

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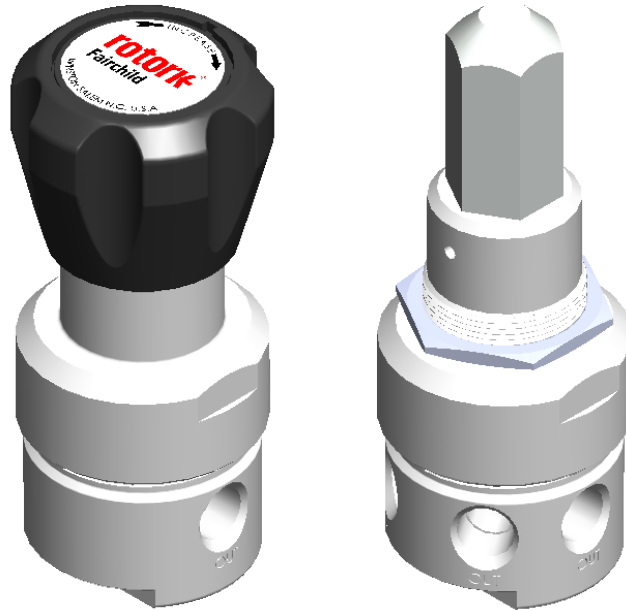
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FAIRCHILD MODEL HPD High Pressure Regulator

Installation, Operation and Maintenance Instructions



Introduction

The Fairchild HPD series pressure regulator is a precision engineered, diaphragm sensing, pressure reducing regulator designed to regulate pressure of speciality gases and liquids. This single stage, low to medium flow capacity pressure regulator will fulfill pressure control requirements in analytical, medical and laboratory instrumentation. The 316 stainless steel construction and engineered polymer seals permit the use of both corrosive and non corrosive media.

Features

- Three polymer seat materials provide media compatibility and supply pressure capability up to 6,000 psig.
- Inconel diaphragm for corrosion resistance and long life.
- Five outlet pressure ranges provide optimum sensitivity
- 20 micron inlet filter
- 0.06 Cv flow coefficient
- Relieving and non relieving designs
- Tamperproof adjustment option

Table 1. Specifications & Limits

Maximum Supply Pressure (Seat Material)	
CPTFE	3500 psig 240 Bar 24 MPa
PEEK	6000 psig 410 Bar 41 MPa
Vespel SP-1	6000 psig 410 Bar 41 MPa
Ambient Temperature Limits	-40° to +200°F -40° to +93°C
Supply Pressure Effect	< 2% of supply pressure change
Connection Sizes	1/4" pipe
Connection Thread	NPTF
Maximum Cv	Supply Valve 0.06 Exhaust Valve 0.02
Weight	2.21 lb 1.002kg

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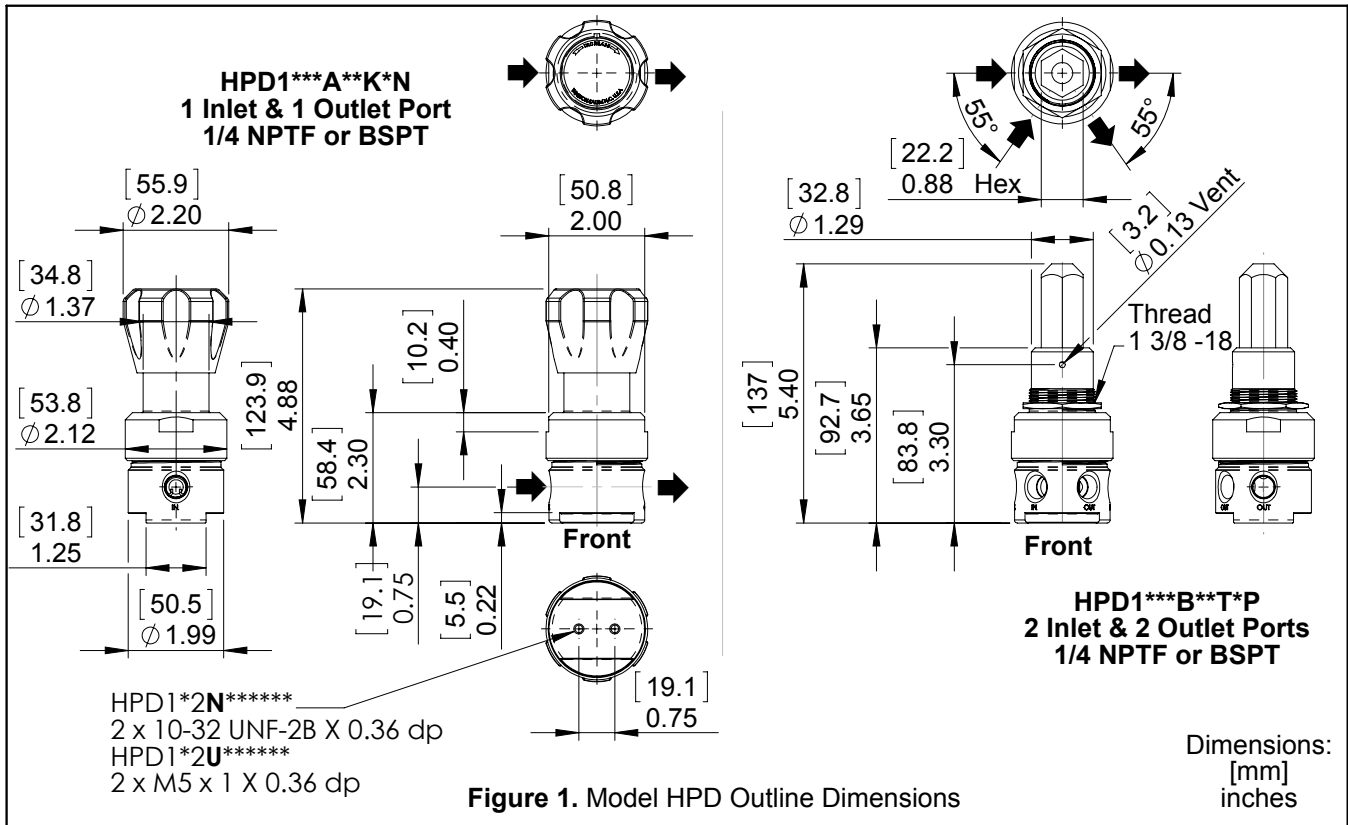


Table 2. Material of Construction

Valve Body & Bonnet	316 Stainless Steel
Supply & Exhaust Valves	316 Stainless Steel
Seats	CPTFE PEEK Vespel SP-1
Diaphragm	Inconel
Seals	PTFE
Springs Supply Valve Range Spring	316 Stainless Steel Music Wire
External Finish	Passivated

Installation

You can mount the pressure regulator in any position without affecting its operation.

Clean all pipe fittings to remove contaminants before installation.

Apply a minimum amount of pipe compound or Teflon thread tape to the male threads of the fitting. Start with the second thread back and work away from the end of the fitting to avoid thread tape or compound from contaminating the pressure regulator.

The Inlet and Outlet are labeled "IN" and "OUT". Tighten all connections securely. Avoid undersized fittings that will limit the flow through the pressure regulator.

For more information, see Figure 1.

CAUTION - Do not rely on the pressure regulator to limit the supply pressure from the downstream piping system. Employ properly sized pressure limiting device to protect the piping system downstream of the pressure regulator from the effects of the supply pressure in the event of a pressure regulator failure.

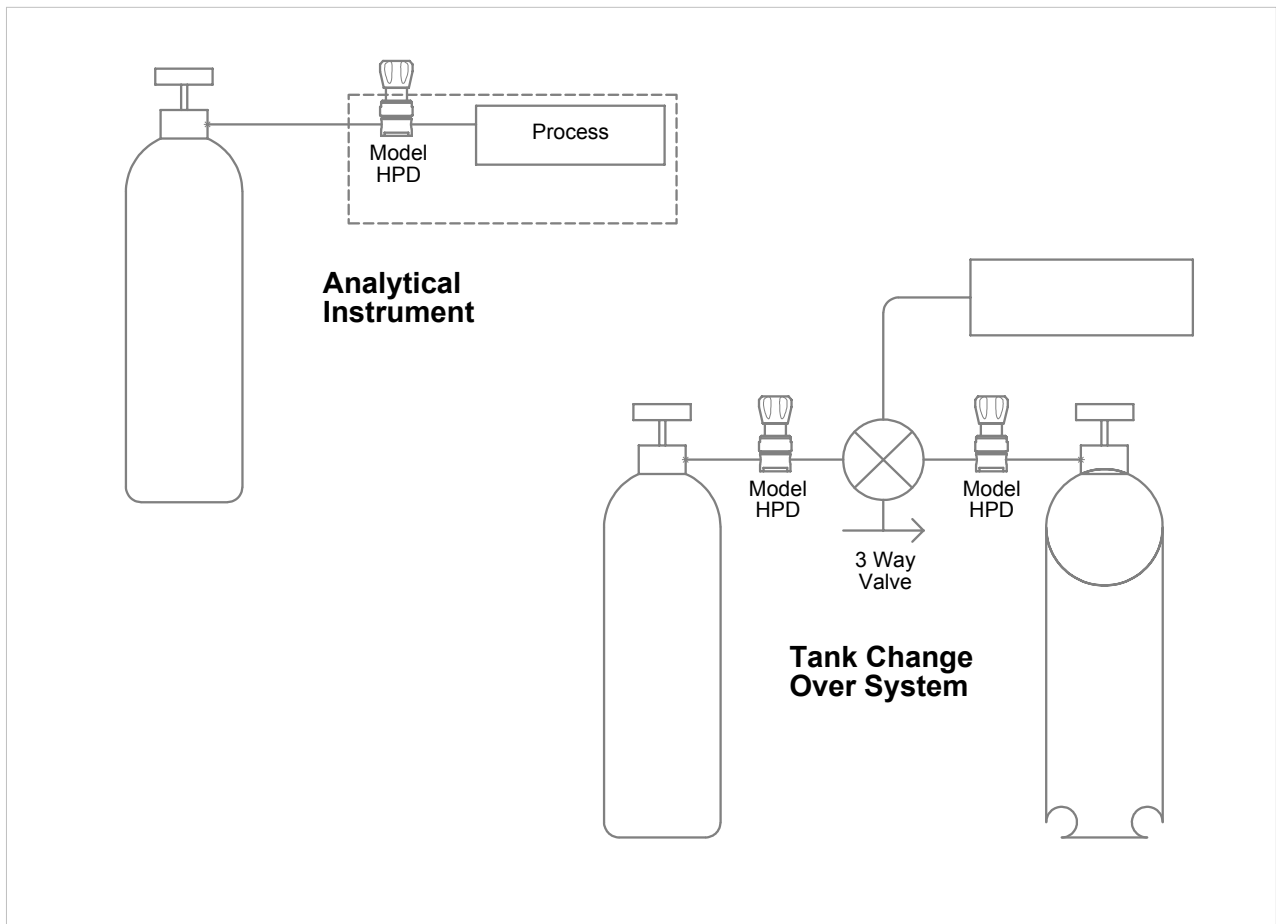
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Panel Mounting

To panel mount the HPD, the knob must first be removed. To remove the knob, first using a small screwdriver, pry up the insert in the top to expose the range screw and jam nut. Remove the jam nut and then unscrew the knob from the range screw. Insert the HPD pressure regulator through the 1 3/8" hole in the panel and fix it in place with the retaining nut. Reinstall the knob on the range screw and fix it in place with the jam nut. Reinstall the knob cover.

Knob adjustment

The knob on the HPD pressure regulator can be adjusted to limit the range of the output pressure. First assure the pressure regulator has the intended operating supply pressure applied to the unit. Remove the cover from the top of the knob and loosen the jam nut on the range screw. Insert a 3/16" hex wrench in the range screw and adjust the pressure regulator to the desired maximum range. (Note, do not set the pressure regulator to more than 110% of the rated range.) Adjust the knob so that it stops against the bonnet. Tighten the jam nut to lock the knob to the range screw. Reinstall the knob cover.



MAINTENANCE

WARNING Shutting off air supply to the pressure regulator and adjacent equipment can create dangerous system conditions.

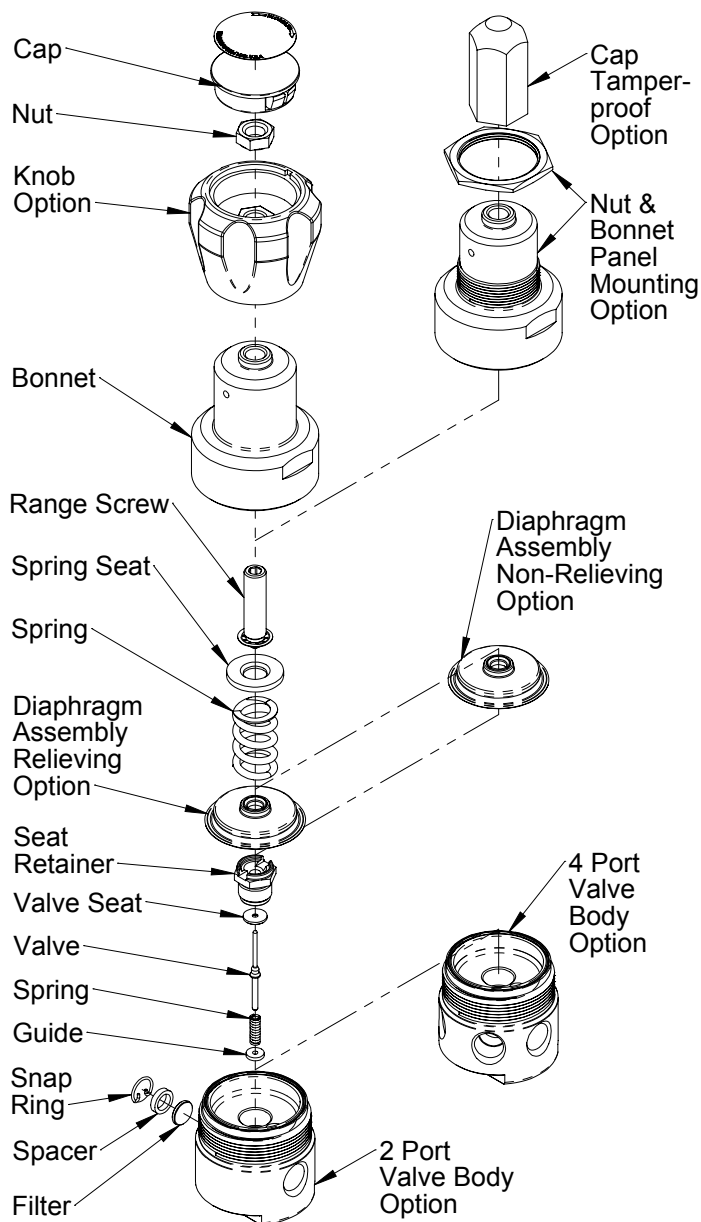
To service the Model HPD, use the following steps:

1. Remove the Knob Cap and remove the Nut holding the Knob in place. Remove the Knob from the Range Screw.
2. Remove the Bonnet from the Valve Body.
3. Remove the Spring Seat, Range Spring and Diaphragm Assembly from the Valve Body.
4. Remove the Seat Retainer from the Valve Body.
5. Remove the Valve, Valve Seat, Spring and Guide from the Valve Body.
6. Wash parts with instrument type cleaning solution, preferable in an ultrasonic cleaner. Rinse and dry parts before reassembly.
7. Reassemble in reverse order.
Torque Seat Retainer to 100 in.lb.
Torque Bonnet to 150 ft.lb.

Trouble Shooting		
Problem	Source	Solution
Leakage	Bonnet	Tighten the Bonnet
High Bleed	<ul style="list-style-type: none"> • Relief Valve • Supply Valve • Supply Seat • Diaphragm Assembly 	<ul style="list-style-type: none"> • Clean all parts including Valve Body. • If damaged, install the service kit.

NOTE: If the standard maintenance procedure does not correct the problem, install the appropriate Service Kit per table below.

Service Kit Part No.	21916-	*	*	*
Pressure Range	PSIG	BAR		
	0-25	0-1.7	3	
	0-50	0-3.5	4	
	1-100	0.07-7.0	5	
	2-250	0.15-17.0	7	
Seat Material	PEEK CTFE Vespel SP-1		P T V	
Relief	Non-Relieving Relieving			N R



LEGAL NOTICE:

The information set forth in the foregoing Installation, Operation and Maintenance Instructions shall not be modified or amended in any respect without prior written consent of Fairchild Industrial Products Company. In addition, the information set forth herein shall be furnished with each product sold incorporating Fairchild's unit as a component thereof.



FAIRCHILD INDUSTRIAL PRODUCTS CO.
REGISTERED TO ISO 9001:2008
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Certified



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