

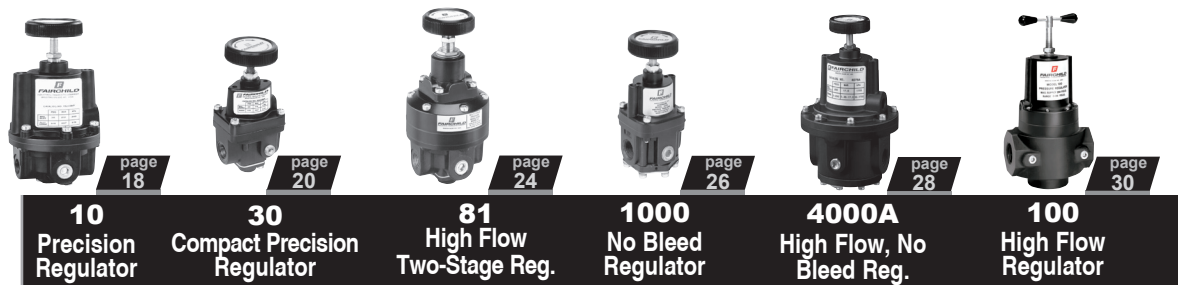
# Pneumatic Pressure Regulators

A pressure regulator reduces an unregulated high input pressure to a regulated lower output pressure. Its primary function is to maintain the regulated output pressure under flowing and non-flowing conditions.

Fairchild manufactures a complete line of precision pneumatic regulators including positive pressure, back pressure and vacuum models. Quality engineering and manufacturing excellence assures that our pressure regulators meet all the requirements of a precision device.

Our large selection of pressure ranges and flow capacities lets you select the models that meet your needs for instrument or general industrial control applications.

## Precision Regulators



	<b>10</b> Precision Regulator	<b>30</b> Compact Precision Regulator	<b>81</b> High Flow Two-Stage Reg.	<b>1000</b> No Bleed Regulator	<b>4000A</b> High Flow, No Bleed Reg.	<b>100</b> High Flow Regulator
<b>Flow Capacity:</b> SCFM (m <sup>3</sup> /HR) Supply =100 psig	40 (68)	40 (68)	50 (85)	50 (85)	150 (255)	1500 (2550)
<b>Exhaust Capacity:</b> SCFM (m <sup>3</sup> /HR) Downstream pressure 5 psig above 20 psig set point	5.5 (9.4)	2.0 (3.4)	5.5 (9.4)	8 (13.6)	40 (65)	44 (75)
<b>Sensitivity:</b> Inch/WC (cm)	0.125 (0.32)	0.25 (0.63)	<0.1 (<0.254)	0.5 (1.27)	0.5 (1.27)	0.5 (1.27)
<b>Supply Pressure Var:</b> PSIG (kPa) For Supply Change:	<0.1 (<0.7) 100 psig	<0.2 (1.4) 100 psig	<0.2 (<1.4) 100 psig	<0.1 (<0.7) 100 psig	<0.1 (<0.7) 100 psig	<0.5 (<3.5) 100 psig
<b>Supply Pressure Max:</b> PSIG (kPa)	500 (3500)	250 (1700)	2 & 5 psig range 100 (700) All other ranges 150 (1000)	250 (1700)	250 (1700)	250 (1700)
<b>Dimensions (Approx):</b> Inches (mm)	Dia. 3 H 6 1/2 (Dia. 76 H 165)	2 1/2 x 1 3/4 x 5 1/4 (57 x 44 x 133)	Dia. 3 H 6 1/4 (Dia. 76 H 159)	2 1/8 x 2 1/8 x 5 (54 x 54 x 127)	Dia. 4 1/2 H 7 7/8 (Dia. 114 H 202)	Dia. 5 1/2 H 11 1/4 (Dia. 133 H 286)
<b>Range PSIG (kPa)</b>	0-2 (0-15), 0-10 (0-70), 0-20 (0-150), 0.5-30 (3-200), 1-60 (10-400), 2-150 (15-1000), 3-200 (20-1500), 5-300 (35-2100), 5-400 (35-2800)	0-2 (0-15), 0-10 (0-70), 0.5-30 (3-200), 1-60 (10-400), 2-100 (15-700)	0-2 (0-14), 0-5 (0-35), 0-20 (0-150), 0.5-60 (3.5-400), 0.5-100 (3.5-700)	0.5-10 (3.5-70), 0.5-30(3.5-200), 1-60 (7-400), 2-150 (15-1000)	0.5-10 (3.5-70), 0.5-30 (3.5-200), 1-60 (7-400), 2-150 (15-1000), 5-250 (35-1700)	0-10 (0-70), 0.5-30 (3-200), 1-60 (10-400), 2-100 (15-700), 2-150 (15-1000)
<b>Pipe Size</b>	1/4", 3/8", 1/2"	1/4", 3/8"	1/4"	1/4", 3/8"	3/8", 1/2", 3/4"	1", 1 1/2"

**Miniature Regulators**

**High Pressure Regulators**

**Low Pressure Regulators**



	<b>70B</b> Sub Miniature Regulator	<b>72</b> Hi-Performance Mini Regulator		<b>HPD</b> High Pressure Regulator	<b>HPP</b> High Pressure Regulator		<b>11</b> Low Pressure Regulator	<b>4100</b> Low Pressure Regulator
Flow Capacity: SCFM (m <sup>3</sup> /HR) Supply =100 psig	2.5 (4.25)	2.5 (4.25)	Flow Capacity: Cv	0.06	0.06	Flow Capacity: SCFM (m <sup>3</sup> /HR) Supply =100 psig	24 (40)	30 (51)
Exhaust Capacity: SCFM (m <sup>3</sup> /HR) Downstream pressure 5 psig above set point	0.28 (0.48)	0.28 (0.48)	Exhaust Capacity: Cv	0.02	0.02	Exhaust Capacity: SCFM (m <sup>3</sup> /HR) Downstream pressure 5 psig above set point	0.5 (0.85)	12 (20.4)
Sensitivity: Inch/WC (cm)	N/A	N/A		N/A	N/A		0.05 (0.13)	0.05 (0.13)
Supply Pressure Var: PSIG (kPa) For Supply Change:	<0.05 (<0.35) 5 psig	<0.025 (<0.35) 5 psig		0.6 (4) 100 psig	0.6 (4) 100 psig		<0.01 (<0.07) 100 psig	<0.01 (<0.07) 100 psig
Supply Pressure Max: PSIG (kPa)	250 (1700)	250 (1700)		6000 (41400)	6000 (41400)		150 (1000)	150 (1000)
Dimensions (Approx): Inches (mm)	Dia. 7/8 H 3 3/16 (Dia. 22 H 81)	Dia. 1 H 3 3/16 (Dia. 22 H 81)		Dia. 2 1/4 H 5 3/8 (Dia. 60 H 137)	Dia. 2 1/4 H 5 3/8 (Dia. 60 H 137)		Dia. 5 1/4 H 6 1/2 (Dia.133 H 165)	Dia. 8 1/2 H 8 5/8 (Dia. 216 H 219)
Range PSIG (kPa)	0-5 (0-35), 0-15 (0-100), 0.5-30 (3-200), 1-60 (10-400), 2-100 (15-700)	0-5 (0-35), 0-15 (0-100), 0.5-30 (3-200), 1-60 (10-400), 2-100 (15-700)		0-25 (0-172), 0-50 (0-344), 1-100 (6.9-689), 2-250 (13-1723), 2-500 (13-3447)	0-1000 (0-6900), 0-2000 (0-13800), 0-3000 (0-20700),		0-2 (0-13.8) 0-4 (0-27.6) 0-6 (0-41.4) 0-12 (0-82.8)	0-0.7 (0-4.8), 0-1.4 (0-9.7), 0-3 (0-21), 0-5 (0-25)
Pipe Size	1/16"	1/16"		1/4"	1/4"		1/4",3/8",1/2"	3/8", 1/2", 3/4"

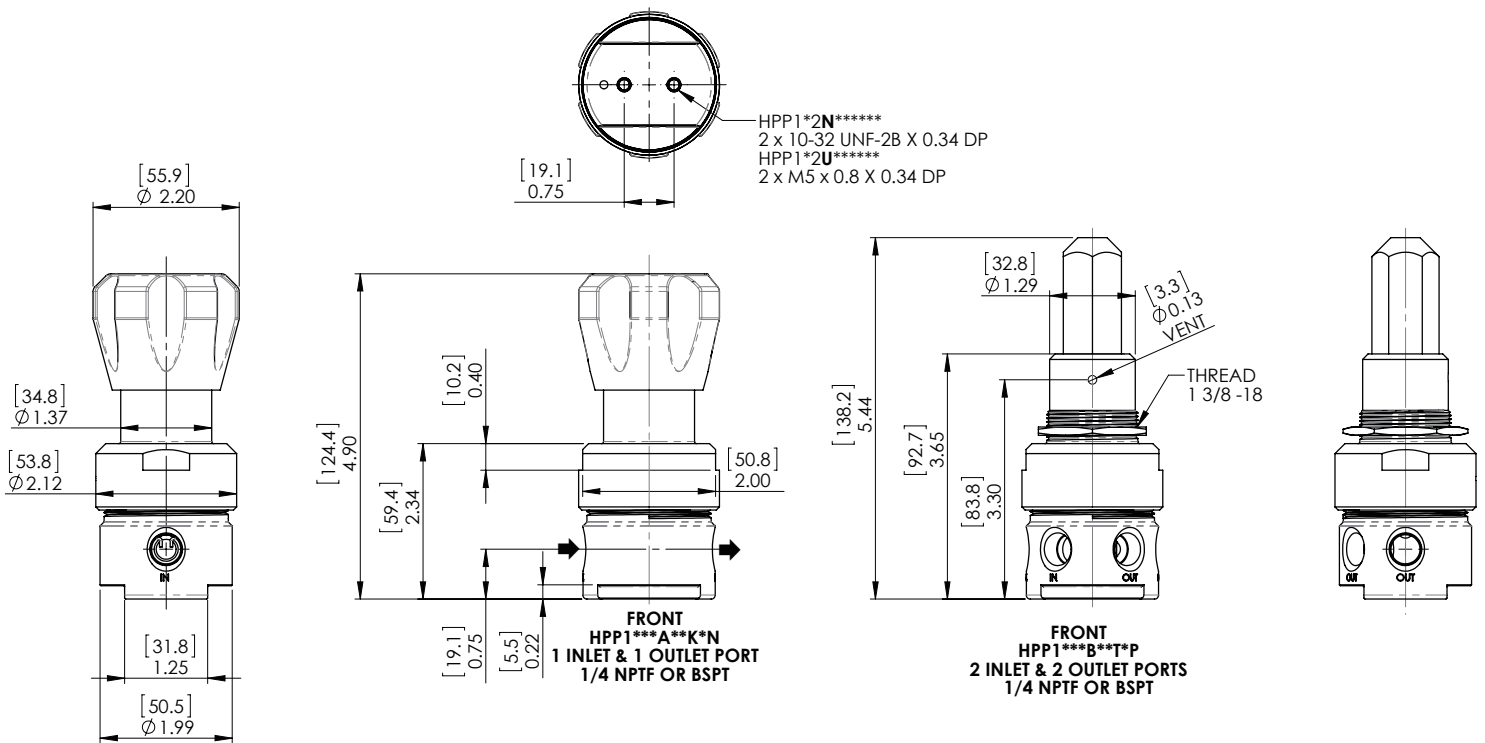


### Features

- Three seat material choices for a wide range of chemical compatibility, (PEEK, CTFE, and Vespel).
- High maximum supply pressure of 6000 PSIG to allow more through put of gas.
- Tamper Proof option available.
- Ambient Temperature range of -40°F to +500°F, depending on seat material.
- Panel Mounting option available.

### Operating Principles

When the regulator is adjusted for a specific set point, the downward force of the Range Spring moves the Piston Assembly downward. The Supply Valve opens and allows air to pass to the Outlet Port. As the set point is reached, the downward force of the range spring is balanced by the force of the downstream pressure acting on the piston, causing the supply valve to close.



Technical Information

Specifications

Supply Valve Cv 0.06

Exhaust Valve Cv 0.02

Maximum Supply Pressure

6000 psig, [414 BAR], (41400 kPa)

\*Consult seat material chart for maximum pressure

Supply Pressure Effect

<2 psig change for 100 psig change in supply pressure

Ambient Temperature

-40°F to +500°F, (-40°C to 260°C)

\*Consult seat material chart for maximum temperature

Materials of Construction

Body and Housing.....Alloy 316L Stainless Steel

Valve.....316L Stainless Steel

Seal.....Viton A

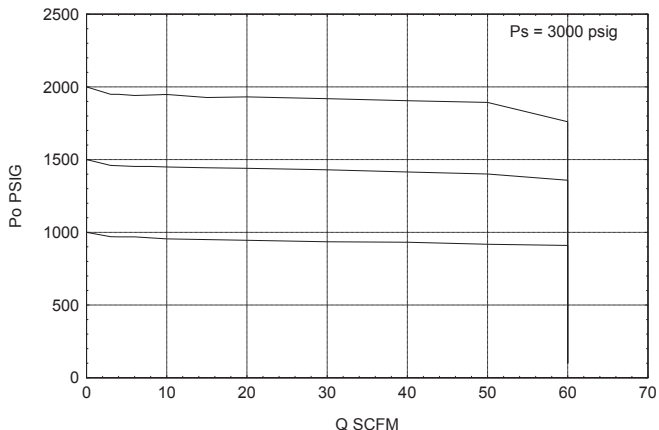
Installation

Refer to the *Fairchild Model HPP Installation, Operation and Maintenance Instructions*, IS-10000HPP.

Gauges

See Page 169 for High Pressure Gauges

FLOW CHARACTERISTICS  
ROTORK FAIRCHILD HPP142NASTKRN



Ordering Information

Catalog Number HPP 1 [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

Pressure Ranges:

0-1000 psi..... 2  
 0-2000 psi..... 4  
 0-3000 psi..... 5

Inlet/Outlet Port Size:

1/4" ..... 2

Port Thread:

NPTF ..... N  
 BSPT ..... U

Port Configuration

2 Port (1 Inlet, 1 Outlet) ..... A  
 4 Port (2 Inlets, 2 Outlets) ..... B

Body Material

316 Stainless Steel..... S

Seat Material

PEEK ..... P  
 CTFE ..... T  
 Vespel ..... V

Actuator

Knob ..... K  
 Tamper Proof ..... T

Relief

Relieving ..... R  
 Non Relieving\* ..... N

Mounting

None ..... N  
 Panel ..... P

\*Bubble Tight Shutoff in Most Conditions

SEAT MATERIAL	MAXIMUM TEMPERATURE*	@	MAXIMUM INLET PRESSURE
CTFE	175°F (80°C)	@	3500 PSIG (241 BAR)
PEEK	500°F (260°C)	@	3500 PSIG (241 BAR)
PEEK	175°F (80°C)	@	6000 PSIG (414 BAR)
VESPEL	500°F (260°C)	@	3500 PSIG (241 BAR)
VESPEL	175°F (80°C)	@	6000 PSIG (414 BAR)

\*Temperatures in excess of 175°F (80°C) require a tamper-proof option