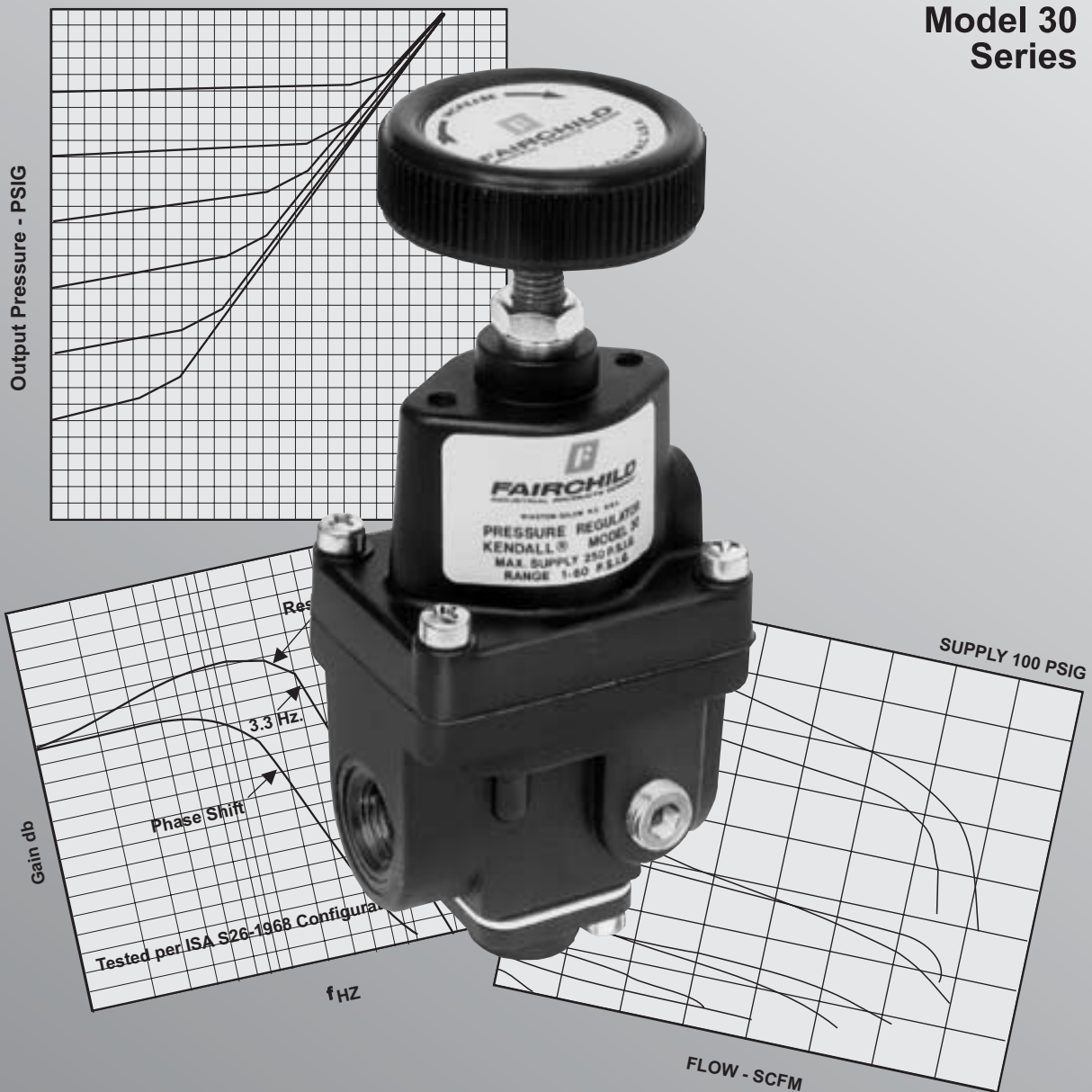


# FAIRCHILD

## MIDGET PRECISION REGULATOR

Model 30  
Series



**FAIRCHILD**  
INDUSTRIAL PRODUCTS COMPANY

## CROSS SECTION

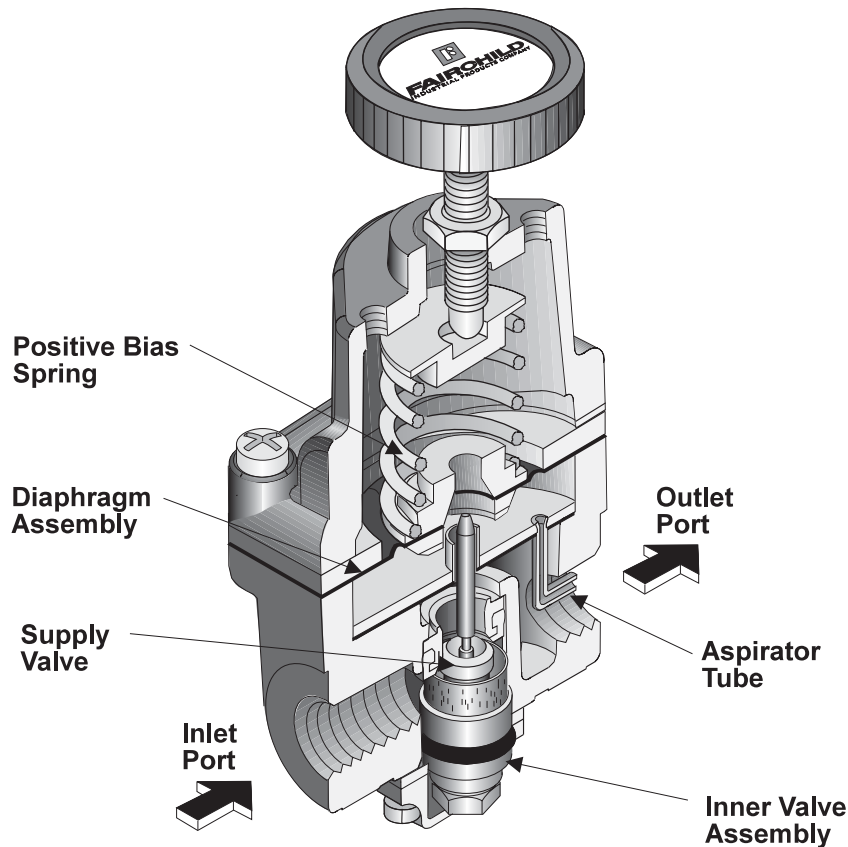


Figure 1. Model 30 Detail Drawing

## GENERAL INFORMATION

The Model 30 Series Midget Precision Regulator is designed for systems that require precision pressure control.

The Model 30 has the following features:

- Control sensitivity of 1/4" water column variation allows use in precision applications.
- A Compensating Diaphragm lets the regulator remain unaffected by supply pressure changes.
- Flow of up to 40 SCFM with 100 psig supply allows use in applications with high flow requirements.
- An Aspirator Tube compensates downstream pressure droop under flow conditions.
- A separate Control Chamber isolates the diaphragm from the main flow to eliminate hunting and buzzing.
- Unit construction lets you service the Model 30 without removing it from the line.
- **Canadian Registration Number (CRN) certification for all territories and provinces.**

## OPERATING PRINCIPALS

The Model 30 Regulator uses the force balance principal to control the movement of the valve assembly which in turn controls the output pressure. When the regulator is adjusted for a specific set point, the downward force of the Positive Bias Spring causes the Diaphragm Assembly to move downward. The Supply Valve opens and allows air to pass to the Outlet Port. As the set point is reached, the downward force exerted by the Positive Bias spring is balanced by the upward force of the downstream pressure acting on the bottom of the Diaphragm Assembly. The resultant force moves the supply Valve upward to reduce the flow of air to the Outlet Port.

Outlet pressure is maintained as a result of balance between forces acting on the top and bottom of the Diaphragm Assembly. For more information, see Figure 1.

## OUTLINE DIMENSIONS

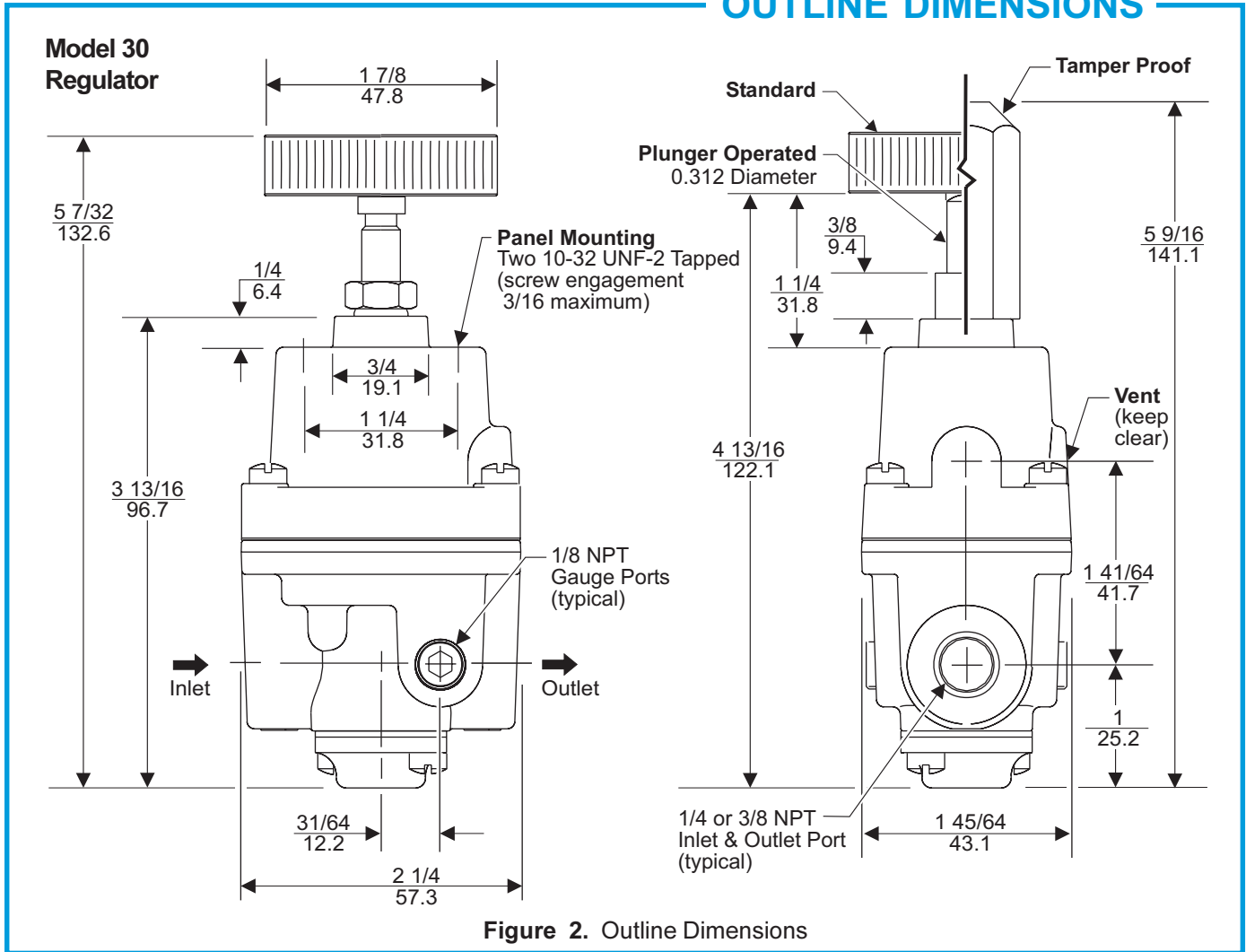


Figure 2. Outline Dimensions

## SPECIFICATIONS

### FUNCTIONAL SPECIFICATIONS

<b>Supply Pressure</b>	250 psig, [17.0 BAR] (1700 kPa) Maximum
<b>Flow Capacity (SCFM)</b>	40 (68 m <sup>3</sup> /HR) @ 100 psig, [7.0 BAR], (700 kPa) supply & 20 psig, [1.5 BAR], (150 kPa) setpoint.
<b>Exhaust Capacity (SCFM)</b>	2.0 (3.4 m <sup>3</sup> /HR) where downstream pressure is 5 psig, [.35 BAR], (35 kPa) above 20 psig, [1.5 BAR], (150 kPa) setpt.
<b>Ambient Temperature</b>	-40°F to +200°F (-40°C to +93°C)

### PERFORMANCE SPECIFICATIONS

<b>Sensitivity</b>	1/4" (.63 cm) Water Column.
<b>Supply Pressure Effect</b>	Less than 0.2 psig, [.014 BAR], (1.4 kPa) for 100 psig, [7.0 BAR], (700 kPa) change in supply pressure.
<b>Materials of Construction</b>	Body and Housing ..... Aluminum Trim ..... Brass Diaphragms ..... Nitrile on Dacron

## TYPICAL APPLICATION

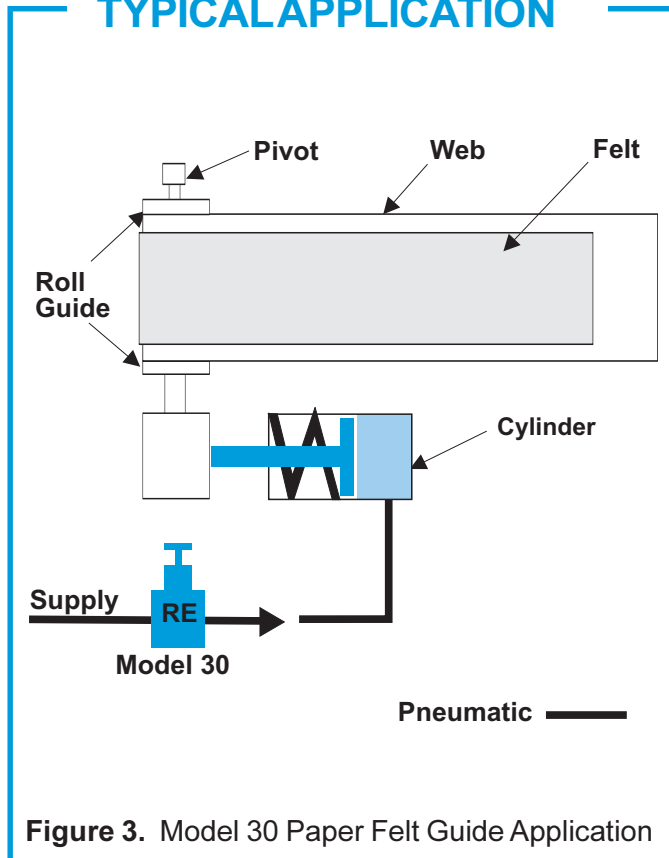


Figure 3. Model 30 Paper Felt Guide Application

The Model 30 Midget Precision Regulator precisely controls the position of a paper machine felt guide. The felt travels on the roll guide that attaches to a pivot at the opposite end. The air supply connects to the Model 30 inlet port and the range screw is adjusted for a specific pressure input to the air cylinder.

The air cylinder piston attaches to a rod that exerts pressure against the roll guide axle. As the roll guide axle turns around the pivot, the web moves along the roll guide toward one side or the other as the air cylinder rod extends or retracts. The regulator range screw is adjusted to make precise corrections. For more information, see Figure 3.

## INSTALLATION

For installation instructions, see the *Fairchild Model 30 Midget Precision Regulator Installation, Operation and Maintenance Instructions, IS-10000030*.

## ORDERING INFORMATION

**Catalog Number** 3 0 2

**Pressure Range**

<b>psig</b>	<b>[BAR]</b>	<b>(kPa)</b>	
0-2	[0-0.1]	(0-15)	(1)
0-10	[0-0.7]	(0-70)	(2)
.5-30	[.03-2]	(3-200)	(3)
1-60	[0.1-4]	(10-400)	(4)
2-100	[0.1-7]	(15-700)	(5)

**Pipe Size**

1/4" NPT	(2)
3/8" NPT	(3)

**Options** \_\_\_\_\_

### Compatibility

	T	L	R	N	B	S	A	J	U	H
Tamper Proof (T)	-	Y	N	Y	Y	N	Y	Y	Y	Y
Low Flow (L)	Y	-	Y	N	N	Y	Y	Y	Y	Y
Plunger Operated <sup>1</sup> (R)	N	Y	-	Y	Y	Y	Y	Y	Y	Y
Non-Relieving (N)	Y	N	Y	-	N	Y	Y	Y	Y	Y
Low Bleed (B)	Y	N	Y	N	-	Y	Y	Y	Y	Y
Screwdriver Adjust (S)	N	Y	N	Y	Y	-	Y	Y	Y	Y
Silicone Elastomers <sup>2</sup> (A)	Y	Y	Y	Y	Y	Y	-	N	Y	Y
* (Viton) Elastomers (J)	Y	Y	Y	Y	Y	Y	N	-	Y	Y
BSPT (Tapered) (U)	Y	Y	Y	Y	Y	Y	Y	Y	-	N
BSPB (Parallel) <sup>3</sup> (H)	Y	Y	Y	Y	Y	Y	Y	Y	N	-

<sup>1</sup> Refer to Table 1. for Push Rod Travel and Thrust.

<sup>2</sup> Maximum Supply Pressure - 75 psig, [5.0 BAR], (500 kPa)

<sup>3</sup> BSPB Threads in Inlet & Outlet Ports Only. Others BSPT.

\* Fluorocarbon (Viton)

Table 1. Plunger Operated Regulator

Range	Push Rod Travel (inches)	Push Rod Thrust (lbs.)
0-2 psig	.244 ± 10%	3.2 ± 10%
0-10 psig	.344 ± 10%	15.7 ± 10%
0-30 psig	.333 ± 10%	47.0 ± 10%
0-60 psig	.395 ± 10%	94.0 ± 10%
0-100 psig	.354 ± 10%	157.0 ± 10%

ISO 9001:2000  
Certified



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