

**HIGH  
PERFORMANCE**

CATALOG PRH3

## Thermoplastic Pressure Regulator

### Downstream Pressure Settings From 10 To 125 PSI

Designed for Higher Flow Capacities, and ...  
Achieved with Less System Pressure Loss!



#### Superior Features:

- Converts varying inlet pressure up to 150 PSI, to a stabilized, lower pre-set downstream pressure.
- This protects sensitive downstream instruments, tubing and filters against damage from overpressure/pressure surges; permits the entire system to operate safely and effectively.
- Downstream pressure settings adjustable from 10 PSI to 125 PSI; 1 1/2" PTFE and 3" polypro are 5-50 PSI.
- Large surface area of its frictionless rolling diaphragm provides exceptional sensitivity.
- Free movement of the diaphragm on a balanced shaft assures smooth, accurate performance and reliable sealing for millions of cycles.
- Double U-cups prevent leakage along the shaft and eliminates the possibility of "creep."
- **Sizes:** 1/4", 1 1/2", 2" and 3" in PVC, Natural PP and PVDF.  
1/4", 1 1/2" in CPVC.  
1/4", 1/2", 3/4", 1", 1 1/2" in PTFE.
- **New non-rising stem** standard on 3/4", 1", 1 1/2" and 2" body sizes.

#### Materials of Construction and Piping Connections:

The standard connections are female NPT threaded ports. JIS, DIN, socket, flanged and spigot connections are also available. Standard body materials are Geon® PVC, Corzan® CPVC, Natural Polypropylene, PTFE and Kynar® PVDF. Standard seal materials are FKM or EPDM. Some Kynar PVDF components are used in the Natural Polypropylene and PTFE models for strength. Glass-filled polypro non-rising stem spring housing (non wetted) used on PP and PTFE models.

#### Pressure Regulator Selection:

In the selection of a liquid pressure regulator, flow capacity with minimum system pressure loss are critical criteria, but it should be recognized that all similar-size competitive regulators do not provide similar performance levels. The Series PRH regulators provide not only higher set pressures and flow capacities with each model, but these are achieved with less pressure losses than with similar size competitive regulators. These lower pressure drop-offs can be seen on the performance curve chart shown on the next page.



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# SERIES PRH PRESSURE REGULATOR

## Design:

Plast-O-Matic Series PRH Pressure Regulators are designed to handle corrosive and ultra-pure liquids with inlet pressures up to 150 PSI at 75°F. Standard downstream set pressure range is 10 to 125 PSI. The normally-open regulators incorporate a poppet seat at the valve orifice to prevent sticking and affecting the sensing of the downstream line pressure. Also, one piece body construction and dual U-cup shaft seals help to eliminate internal leakage that could cause the set pressure to creep beyond a safe limit. A unique, large-surface, rolling diaphragm seal isolates the spring chamber from downstream pressure sensing liquid. This unique design, in conjunction with a pressure balanced shaft, assures smooth performance and stable control. **CAUTION:** Avoid quick closing valve downstream of a regulator to eliminate "water hammer" shock that can cause breakage.

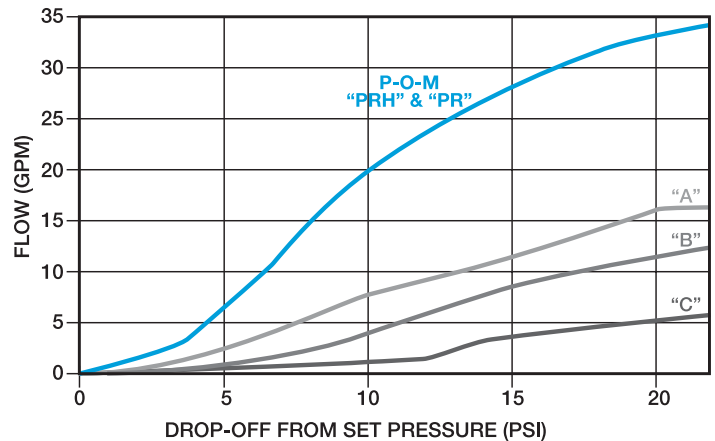
## Operation:

Series PRH pressure regulators prevent downstream pressure from exceeding the desired set pressure. Regulator will remain closed as long as set pressure is maintained. As equipment or valve downstream of regulator begin to open and demand flow, the downstream pressure begins to fall and the regulator begins to open. As valves or equipment downstream open further, the pressure regulator continues to open until the maximum opening is reached. As the process is reversed, downstream pressure begins to increase and the regulator starts closing. When the downstream pressure again reaches set pressure the regulator closes bubble-tight. **IMPORTANT:** It should be noted from the preceding explanation that a pressure regulator does not maintain a specific downstream pressure, but only prevents the downstream pressure from exceeding a set point.

## Typical Performance Curves of Flow vs. Drop Off From Set Pressure:

Drop-off is the difference between the pressure regulator set pressure and the downstream pressure. Performance curves chart at right identifies the high flow capacities and the low pressure drop-off of Plast-O-Matic regulators which result in their greater sensitivity, finer adjustability and superior accuracy as compared to competitive models.

Typical Pressure Regulator Performance Curves  
Flow Capacity vs. Pressure Drop-Off (PSI)  
Comparison of Representative Plast-O-Matic Models  
with Competitors "A", "B", & "C"



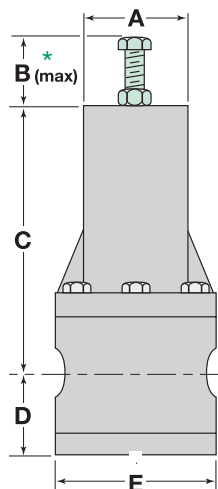
## Dimensions:

### Series "PRH" Pressure Regulator Dimensions

| Dim                  | SIZE NPT or BSP |              |               |              |              |              |               |
|----------------------|-----------------|--------------|---------------|--------------|--------------|--------------|---------------|
|                      | 1/4             | 1/2          | 3/4           | 1            | 1 1/2        | 2            | 3             |
| <b>A</b> Inch<br>mm  | 2<br>51         | 2 1/2<br>64  | 2 7/8<br>73   | 2 7/8<br>73  | 2 3/4<br>70  | 2 3/4<br>70  | 5 1/4<br>133  |
| <b>B*</b> Inch<br>mm | 1 3/8<br>35     | 1 1/16<br>27 | 15/16<br>24   | 15/16<br>24  | 15/16<br>24  | 15/16<br>24  | 5<br>102      |
| <b>C</b> Inch<br>mm  | 4 1/4<br>108    | 4<br>102     | 7 1/2<br>195  | 7 1/2<br>195 | 8 1/8<br>210 | 9 3/8<br>239 | 11 5/8<br>295 |
| <b>D</b> Inch<br>mm  | 1 1/4<br>32     | 2<br>51      | 2 13/16<br>71 | 2 7/8<br>73  | 3 3/4<br>83  | 4 3/8<br>112 | 6 3/8<br>162  |
| <b>E</b> Inch<br>mm  | 2<br>51         | 2 1/2<br>64  | 4 1/2<br>114  | 4 1/2<br>114 | 5<br>127     | 7<br>178     | 8<br>203      |

\*Does not apply to non-rising stem models.

NOTE: STANDARD SPRING HOUSING IS TAPERED ON 3/4" - 2" SIZES. CONSULT FACTORY.



## Model Number & Maximum Flow: Series "PRH"

| Valve Size | Model Numbers |           | Flow Rates GPM* |
|------------|---------------|-----------|-----------------|
|            | EPDM Seals    | FKM Seals |                 |
| 1/4"       | PRH025EP      | PRH025V   | 5               |
| 1/2"       | PRH050EP      | PRH050V   | 10              |
| 3/4"       | PRH075EP      | PRH075V   | 35              |
| 1"         | PRH100EP      | PRH100V   | 50              |
| 1 1/2"     | PRH150EP      | PRH150V   | 70              |
| 2"         | PRH200EP      | PRH200V   | 100             |
| 3"         | PRH300EP      | PRH300V   | 200             |

\*Maximum Recommended

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