THERMOPLASTIC PRESSURE REGULATOR

Downstream Pressure Settings From 10 To 125 PSI

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

HIGH PERFORMANCE

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", and 3" in PVC, Natural PP and PVDF. 1/4", 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.

USA Engineered USA Made

PLASTOMATIC

PRODUCT DATA

SERIES PRH PRESSURE REGULATOR

OPERATION:

Series PRH pressure regulators prevent downstream pressure form 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 down-stream 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.

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.

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.

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.

USA Engineered USA Made

1384 POMPTON AVENUE, CEDAR GROVE, NJ 07009 USA
TEL 973.256.3000 • FAX 973.256.4745 • WWW.PLASTOMATIC.COM

SERIES PRH PRESSURE REGULATOR

MODEL NUMBER & MAXIMUM FLOW:

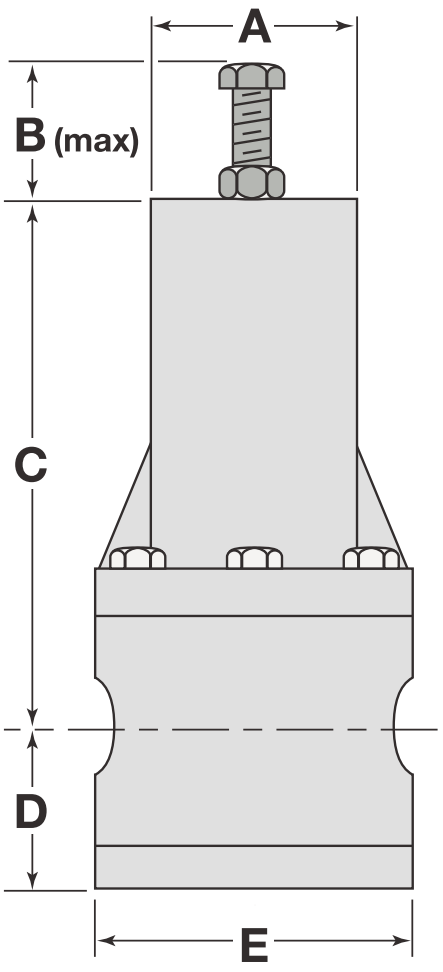
Series "PRH"

Valve Size	Model Numbers EPDM Seals	Model Numbers FKM Seals	Flow Rates GPM*
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

Part numbers shown require body material suffix for completion, for example, PRH025EP-PV. for PVC, use -PV. for CPVC, use -CP. For Natural Polypro, use -PP. For Kynar PVDF, use -PF. For PTFE, use -TF.

** Model not evaluated by WQA.



DIMENSIONS:

Series "PRH" Pressure Regulator Dimensions

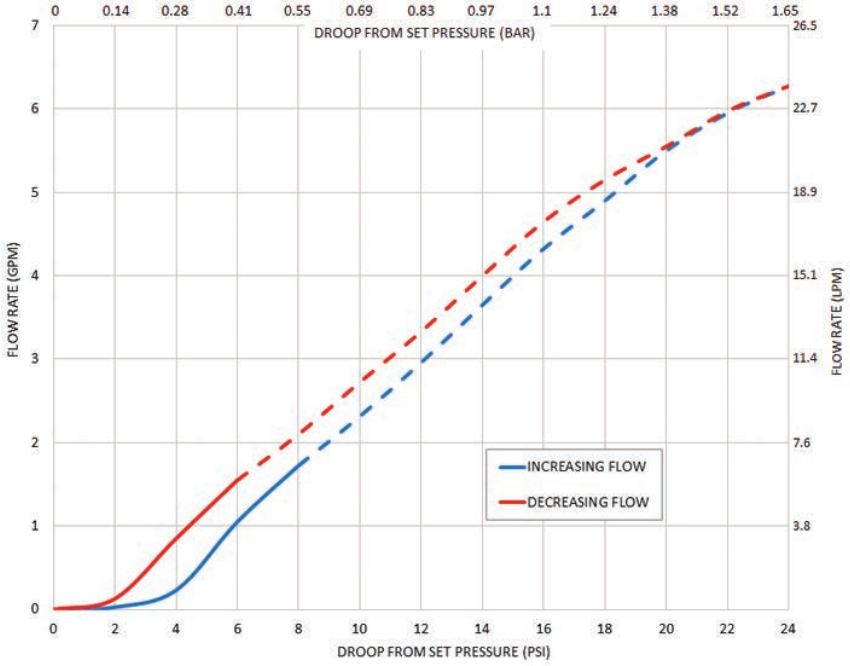
Dim		SIZE NPT or BSP 1/4	1/2	3/4	1	1 1/2	2	3
A	Inch	2	2 1/2	2 7/8	2 7/8	2 3/4	2 3/4	5 1/4
	mm	51	64	73	73	70	70	133
B*	Inch	1 3/8	1 1/16	15/16	15/16	15/16	15/16	5
	mm	35	27	24	24	24	24	102
				B DIMENSION DOES NOT APPLY TO NON-RISING STEM MODELS.				
C	Inch	4 1/4	4	7 1/2	7 1/2	8 1/8	9 3/8	11 5/8
	mm	108	102	195	195	210	239	295
D	Inch	1 1/4	2	2 13/16	2 7/8	3 3/4	4 3/8	6 3/8
	mm	32	51	71	73	83	112	162
E	Inch	2	2 1/2	4 1/2	4 1/2	5	7	8
	mm	51	64	114	114	127	178	203

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

SERIES PRH PRESSURE REGULATOR

PRH025 FLOW / HYSTERESIS CHART

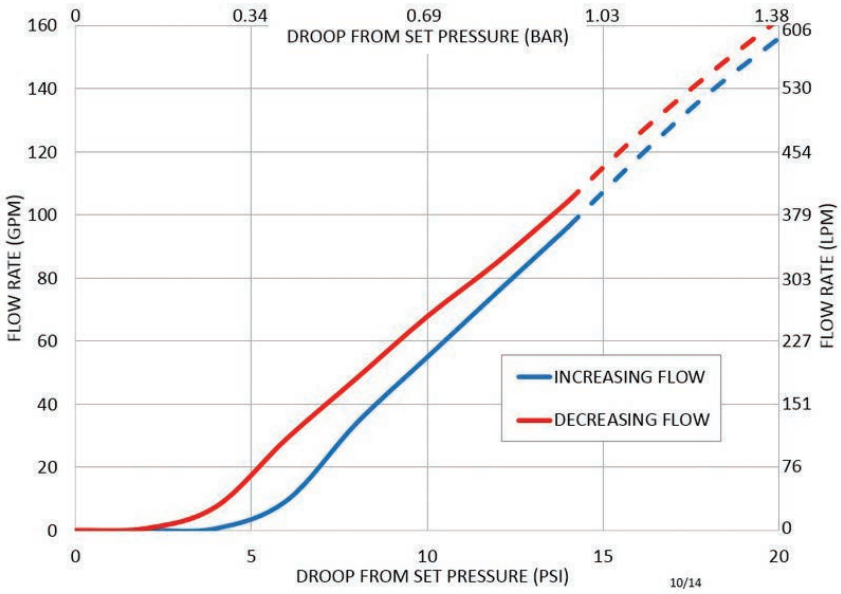
TESTED WITH CITY WATER AT 70 PSI INLET PRESSURE AND 35 PSI SET PRESSURE



For 1/2" - 2" sizes, please refer to Catalog PRHM

PRH300 FLOW / HYSTERESIS CHART

TESTED WITH CITY WATER AT 40 PSI INLET PRESSURE AND 25 PSI SET PRESSURE



10/14

PLASTOMATIC

PRODUCT DATA

THERMOPLASTIC PRESSURE REGULATORS

Designed for Higher Flow Capacities
with Less System Pressure Loss

SUPERIOR FEATURES:

- Converts varying inlet pressure up to 150 PSI, to a stabilized, lower pre-set downstream pressure.
- Protects sensitive downstream tools, instruments, tubing and filters against damage from overpressure/pressure surges; permits the entire system to operate safely and effectively.
- Downstream pressure settings adjustable from 5 to 125 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”.
- For corrosive and ultra-pure liquid applications.
- PRHMG model includes intrinsic Gauge Guard & pressure gauge to assist pressure setting and simplify piping.

MATERIALS OF CONSTRUCTION AND PIPING CONNECTIONS:

Bodies available in Geon PVC, Corzan CPVC, Natural Polypropylene, Kynar PVDF. Some Kynar PVDF components are used in the Natural Polypro models for strength. Seals are FKM (Viton) or EPDM. Custom materials available. Connections in NPT, socket, spigot, flange, flare, sanitary. BSP, JIS and DIN connections available.

OPERATION:

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 valves 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: A pressure regulator does not maintain a specific downstream pressure, but only prevents the downstream pressure from exceeding a set point.

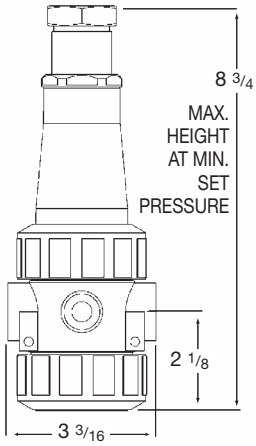
PRESSURE REGULATOR SELECTION:

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. These 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 from the performance curve charts shown on the following pages. Performance curve charts below identify 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.

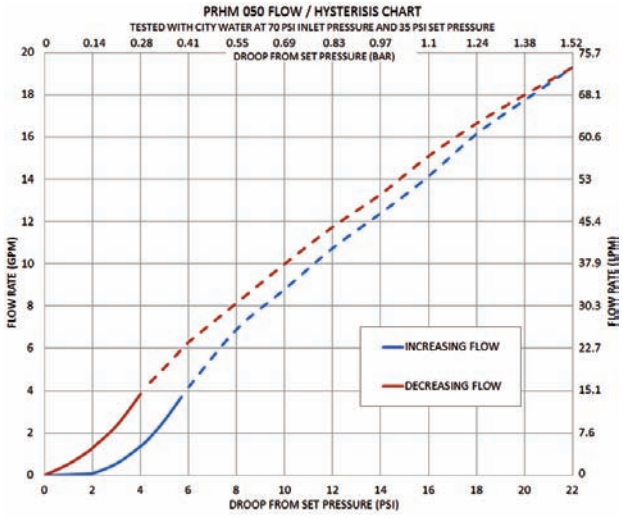
PERFORMANCE CURVES:

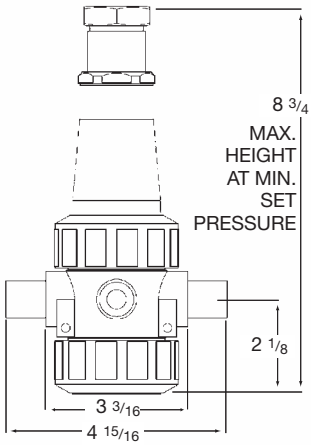
Flow Capacity vs. Pressure Drop-Off (PSI)
Comparison of Representative Plast-O-Matic Models with Competitors
Drop-off is the difference between the pressure regulator set pressure and the downstream pressure at flow.

1/2" PRESSURE REGULATOR



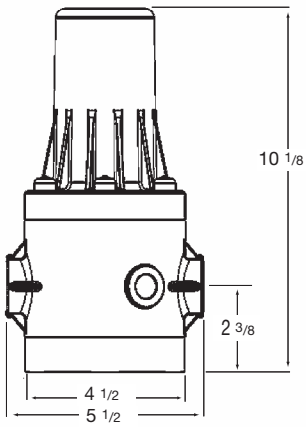
1/2" Socket or Threaded



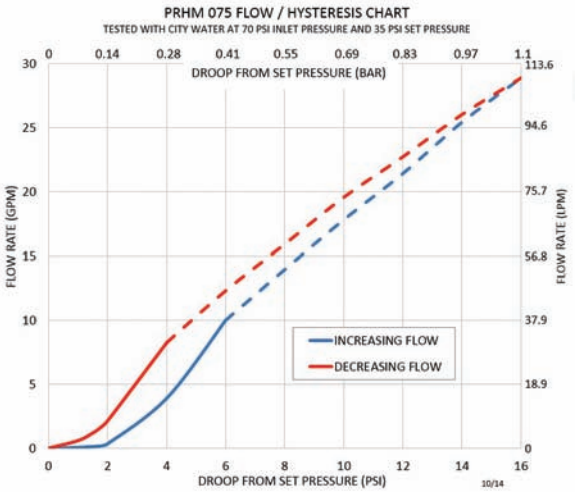


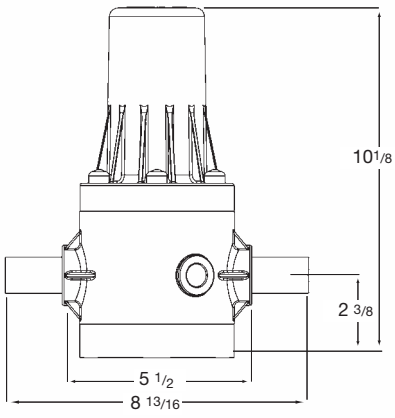
1/2" Spigot

3/4" PRESSURE REGULATOR



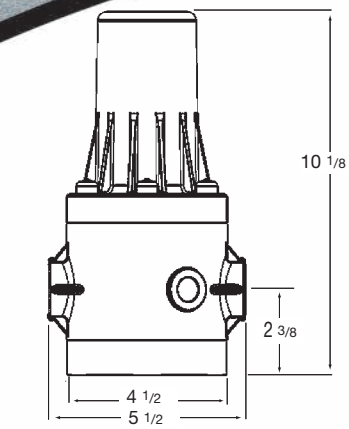
3/4" Socket or Threaded



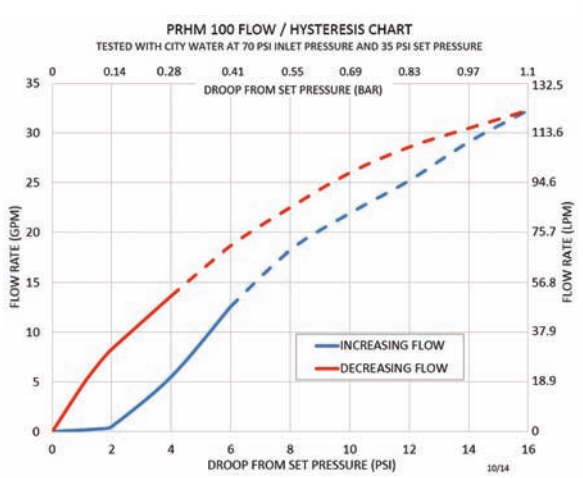


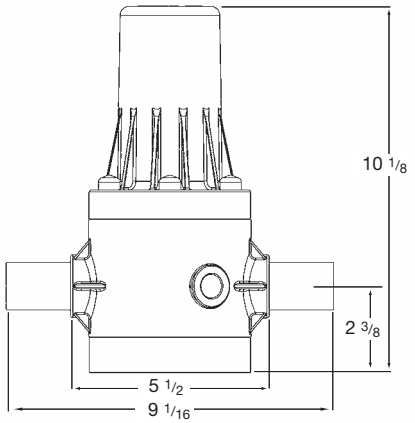
3/4" Spigot

1" PRESSURE REGULATOR



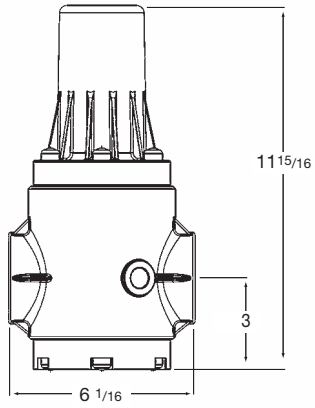
1" Socket or Threaded



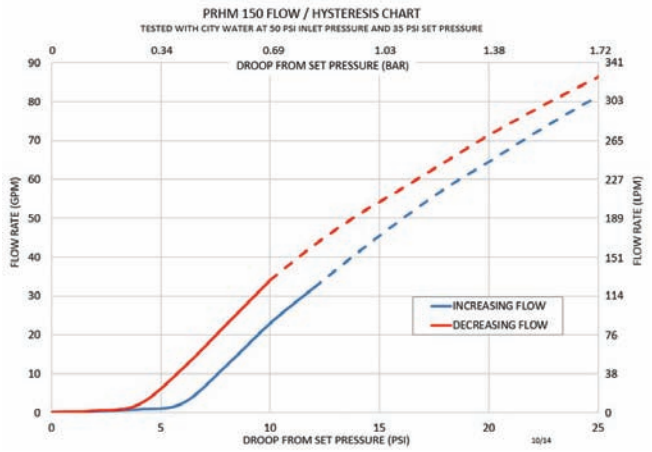


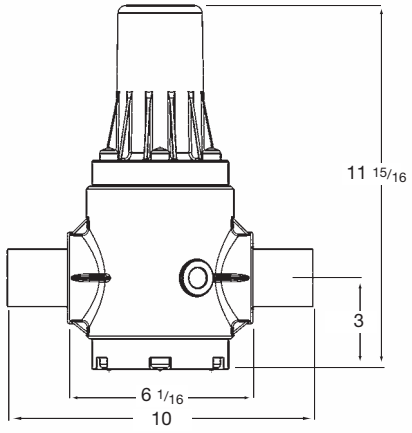
1" Spigot

1 1/2" PRESSURE REGULATOR



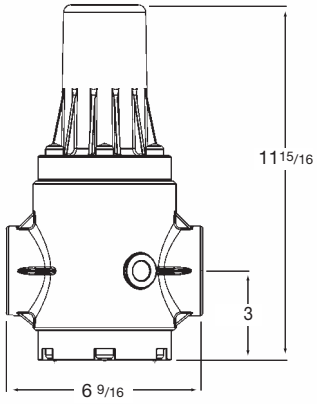
1 1/2" Socket or Threaded



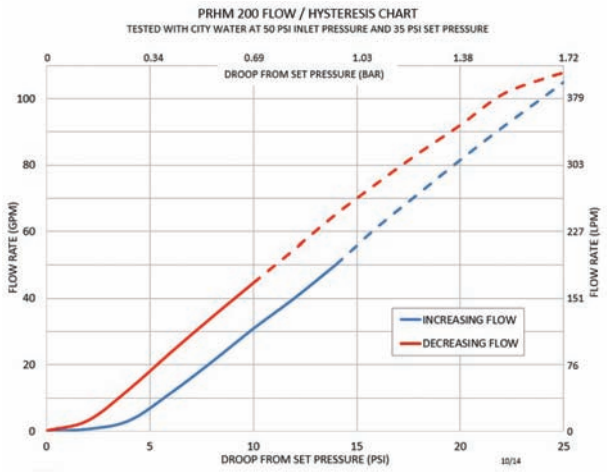


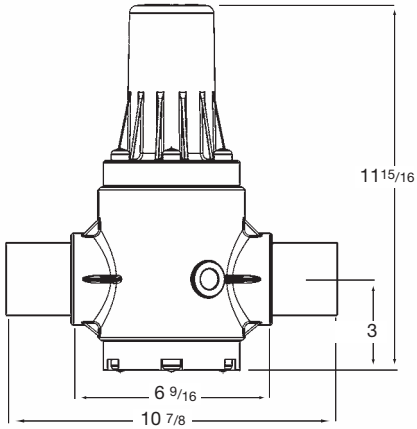
1 1/2" Spigot

2" PRESSURE REGULATOR



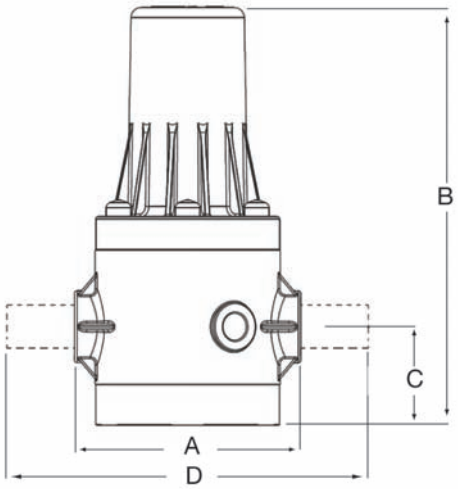
2" Socket or Threaded





2" Spigot

The drop-off is the difference between the pressure regulator set pressure and the downstream pressure at flow.



COMPLETE DIMENSIONS & METRIC SIZES

Valve Size			A		B		C		D	
NPT	DIN	JIS	in	mm	in	mm	in	mm	in	mm
1/2"	20	22	3.19	80.96	8.75	222.25	2.13	53.98	4.94	125.41
3/4"	25	26	5.50	139.70	10.12	255	2.38	60.33	8.81	223.84
1″	32	32	5.50	139.70	10.12	255	2.38	60.33	9.06	230.1
1 1/2"	50	48	6.06	153.99	11.94	303.21	3	76.20	10	254.00
2″	63	60	6.56	166.69	11.94	303.21	3	76.2	10.88	276.23

Above, the 1/2″ body style.

SERIES "PRHM"MODEL NUMBER

Maximum Flow:

Valve Size			Flow Rates	Threaded	Sockets	IPS Spigots	Metric Spigots
NPT	DIN	JIS	GPM*				
1/2"	20	22	10	PRHM050V-PV	PRHM050VS-PV	PRHM050VSP-PV	PRHM20VSP-PV
3/4"	25	26	35	PRHM075V-PV	PRHM075VS-PV	PRHM075VSP-PV	PRHM25VSP-PV
1"	32	32	50	PRHM100V-PV	PRHM100VS-PV	PRHM100VSP-PV	PRHM32VSP-PV
1 1/2"	50	48	70	PRHM150V-PV	PRHM150VS-PV	PRHM150VSP-PV	PRHM50VSP-PV
2"	63	60	100	PRHM200V-PV	PRHM200VS-PV	PRHM200VSP-PV	PRHM63VSP-PV

* Note: The generally accepted safe velocity in plastic piping is five feet (5'/1.5m) per second. These maximum flow rates exceed that velocity.

Part numbers shown are PVC body, FKM (Viton) seals. For EPDM seals, change "V" to "EP", for example, PRHM050EPS-PV. For CPVC body, change suffix "PV" to "CP", for example, PRHM050VS-CP. For natural polypropylene, use "PP", for Kynar PVDF use "PF".
For optional sanitary connections, change connection code to "SC" example: PRHM075VSC-PP.
For flange connections, change connection code to "FL" example: PRHM075VFL-PP.
For flare connections, change connection code to "FR" example: PRHM075VFR-PP.
For 1/4" and 3" Pressure Regulators, also PTFE Body Regulators, consult catalog PRH.

NOTE: All data for these curves was collected from actual flow tests at Plast-O-Matic Valves, Inc., Cedar Grove, NJ. or manufacturer's published performance data. The measuring equipment used was the same for all regulators tested, and the relative results between different models are considered to be an accurate portrayal of the data.

CAUTION: Avoid quick closing valve downstream of a regulator to eliminate "water hammer" shock that can cause breakage.

Photos are representative. Appearance may vary due to size/materials.

INTRINSIC GAUGE GUARD OPTION

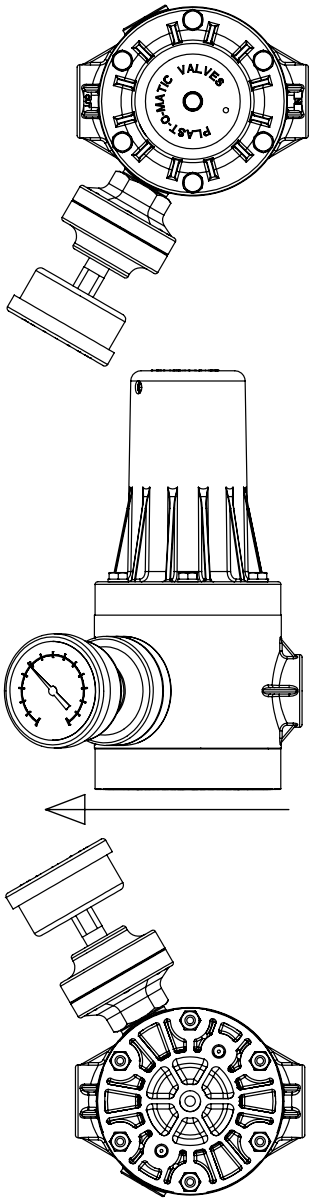
¾" & 1" - PVC OR CPVC

Gauge Guard barrier seal protects instrument from corrosion and clogging while maintaining high accuracy. Design features non-wetted steel reinforced gauge hub.

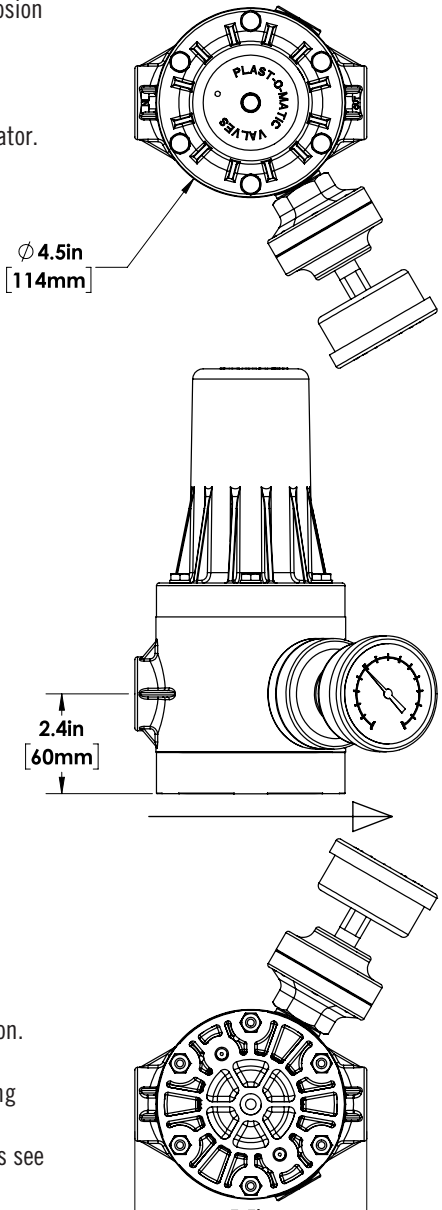
Isolation diaphragm is EPDM or FKM to match the regulator. Instrument side of EPDM filled with deionized water, instrument side of FKM filled with mineral oil. Gauge indicates downstream pressure.

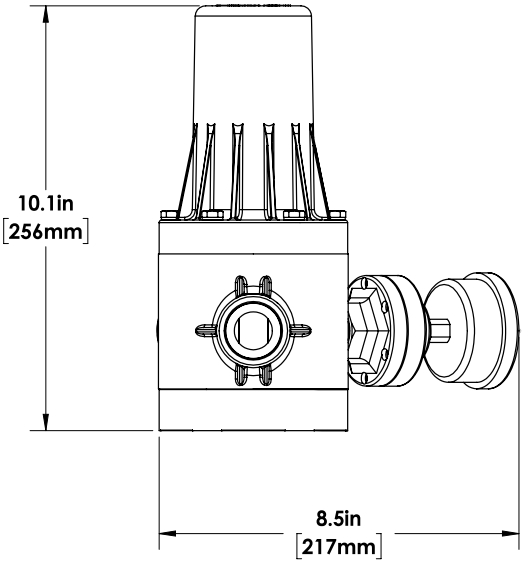
PRHMG simplifies piping by eliminating the need for a separate tee, gauge, and instrument isolator.

RL Version
Right to Left Flow



LR Version
Left to Right Flow





Options:

- Choice of right or left flow orientation must be specified to position the gauge in a visible position.
- Center back mount gauge shown. Gauge may be specified as bottom mount if the regulator is being installed significantly above or below eye level.
- 0-160 PSI gauge is standard; for alternate ranges see below.
- For gauges on both sides, consult factory.

PRHMG 075 EP S - PV - LR - C 160

- SERIES PREFIX
- PIPE SIZE: 075 – ¾", 100 – 1"
- SEAL MATERIAL: EP – EPDM, V – FKM
- CONNECTIONS: S – SOCKET, T – NPT, FL – FLANGE, SP1 – ASAHI SPIGOTS, SP2 – GF SPIGOTS, SP3 – IPS SPIGOTS (SPIGOTS IN PVC ONLY)
- BODY MATERIAL: PV – PVC, CP – CPVC
- GAUGE ORIENTATION/ FLOW DIRECTION: LR – LEFT TO RIGHT, RL – RIGHT TO LEFT
- GAUGE MOUNT: C – CENTER BACK (SHOWN ABOVE), L – LOWER (GAUGE FACE UP OR DOWN)
- GAUGE PRESSURE RANGE: 015 – 0-15 PSI, 030 – 0-30 PSI, 060 – 0-60 PSI, 100 – 0-100 PSI, 160 – 0-160 PSI, 200 – 0-200 PSI