

## 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 Grade 1 Type 1 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.

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



### 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.

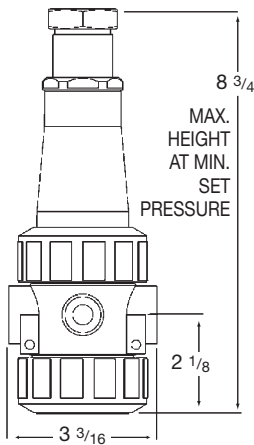
#### PERFORMANCE CURVES:

Flow Capacity vs. Pressure Drop-Off (PSI)

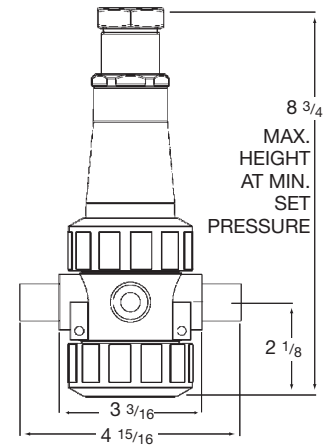
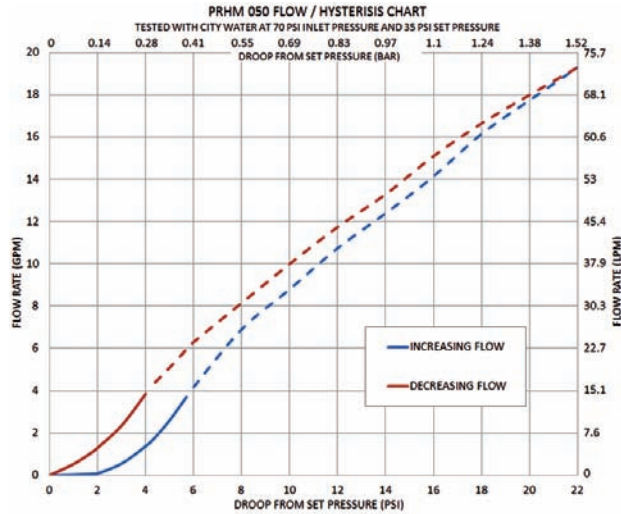
Comparison of Representative Plast-O-Matic Models with Competitors

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

#### 1/2" PRESSURE REGULATOR

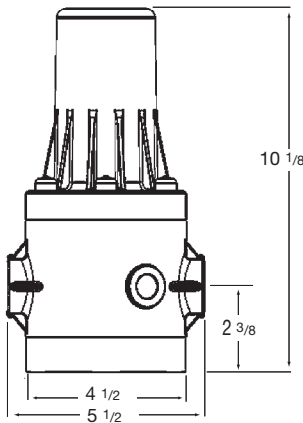


1/2" Socket or Threaded

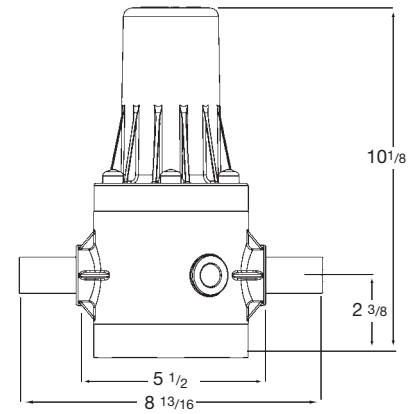
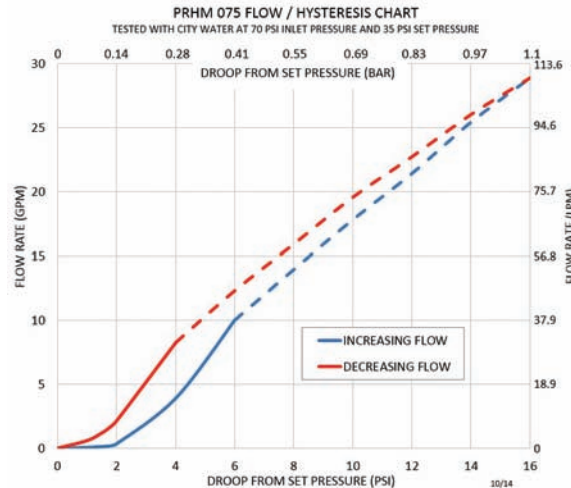


1/2" Spigot

#### 3/4" PRESSURE REGULATOR

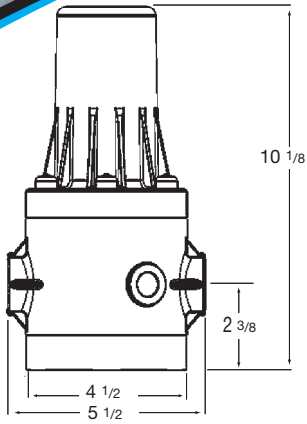


3/4" Socket or Threaded

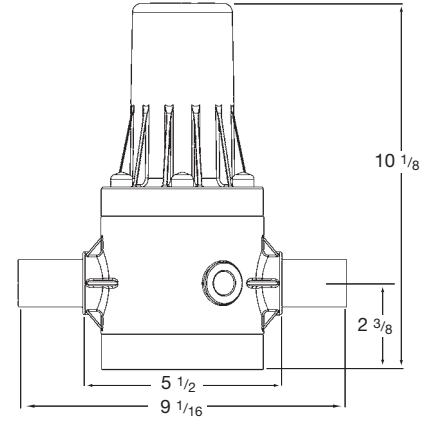
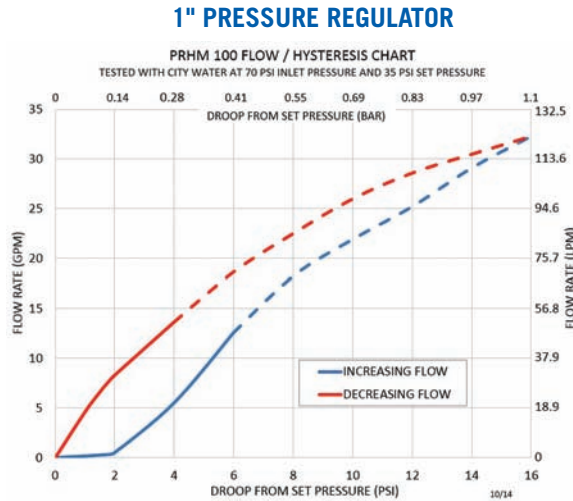


3/4" Spigot

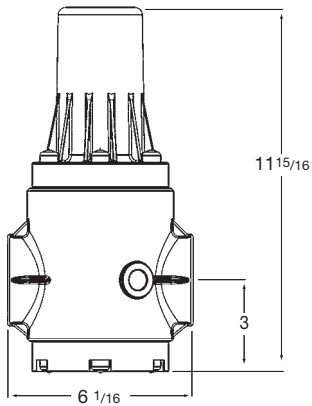




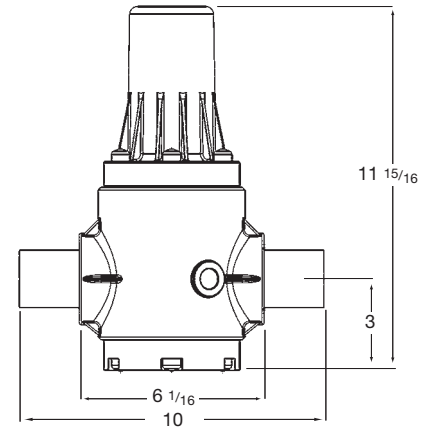
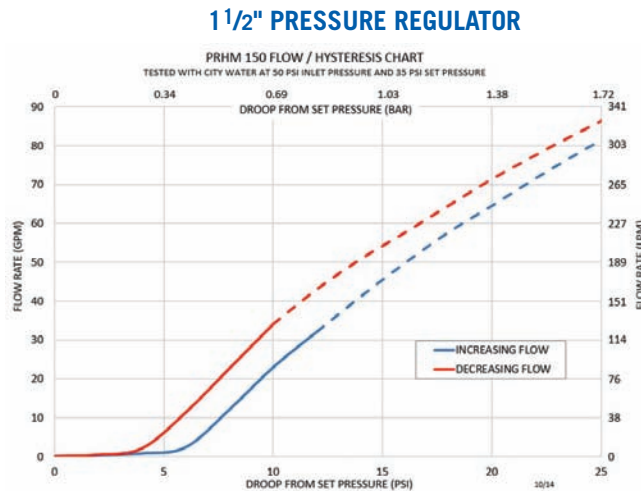
**1" Socket or Threaded**



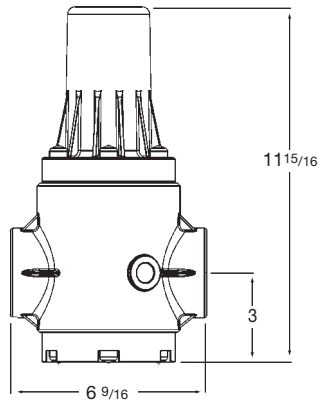
**1" Spigot**



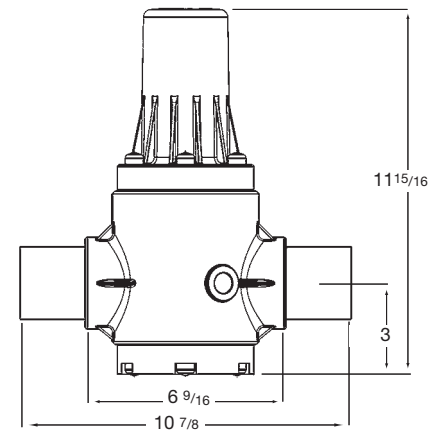
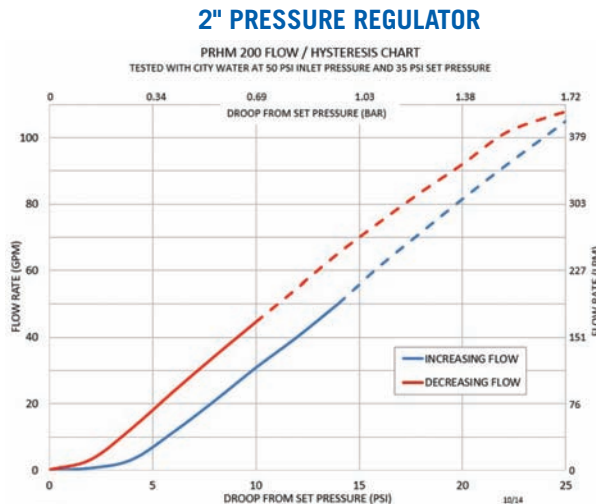
**1 1/2" Socket or Threaded**



**1 1/2" Spigot**



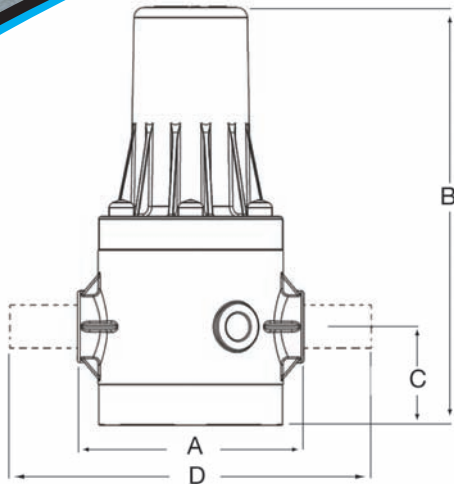
**2" Socket or Threaded**



**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

\*\*Dimension "D" is for IPS spigots. For metric spigot dimensions, consult factory.

### SERIES "PRHM" MODEL NUMBER

Maximum Flow:

NPT	Valve Size		Flow Rates GPM*	Threaded	Sockets	IPS Spigots	Metric Spigots**
	DIN	JIS					
1/2"	20	22	10	PRHM050V-PV	PRHM050VS-PV	PRHM050VSP3-PV	PRHM20VSP1-PV
3/4"	25	26	35	PRHM075V-PV	PRHM075VS-PV	PRHM075VSP3-PV	PRHM25VSP1-PV
1"	32	32	50	PRHM100V-PV	PRHM100VS-PV	PRHM100VSP3-PV	PRHM32VSP1-PV
1 1/2"	50	48	70	PRHM150V-PV	PRHM150VS-PV	PRHM150VSP3-PV	PRHM50VSP1-PV
2"	63	60	100	PRHM200V-PV	PRHM200VS-PV	PRHM200VSP3-PV	PRHM63VSP1-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" **example:** PRHM050EPS-PV. For CPVC body, change suffix "PV" to "CP" **example:** PRHM050VS-CP. For natural polypropylene, use "PP", for Kynar PVDF use "PF".

\*\*Metric spigot part numbers shown for Asahi spigots. For GF spigots, change "SP1" to "SP2" **example:** PRHM25VSP2-PV.

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.



Above, the 1/2" body style.

**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

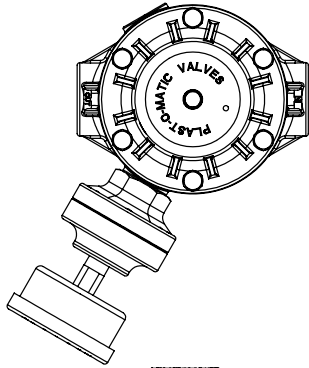
3/4" & 1" - PVC OR CPVC

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

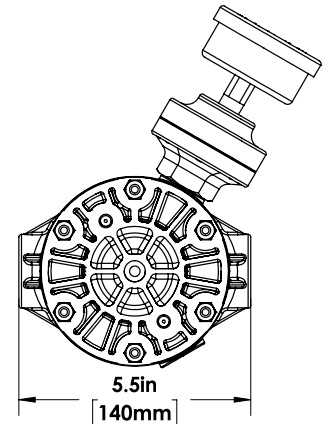
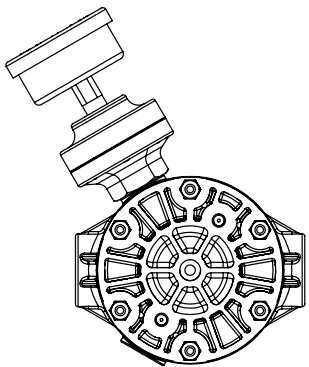
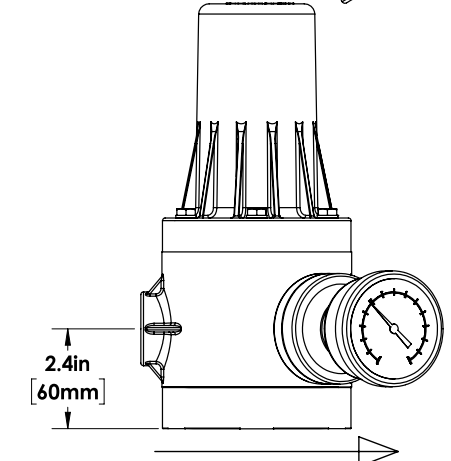
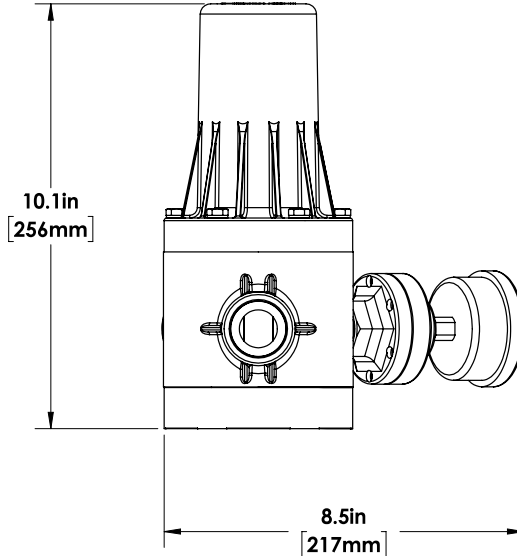
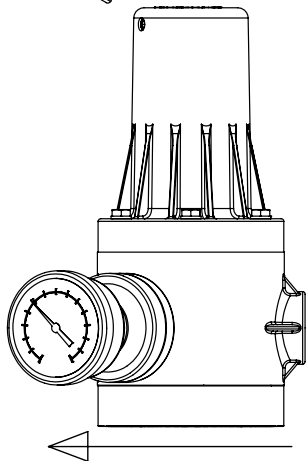
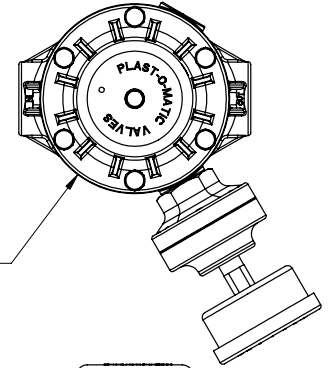
Isolation diaphragm is EPDM or FKM to match the regulator. Instrument side of EPDM filled with deionized water, instrument side of FKM filled with mineral oil. Gauge indicates downstream pressure.

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	SEAL MATERIAL	CONNECTIONS		BODY MATERIAL		GAUGE ORIENTATION/ FLOW DIRECTION		GAUGE MOUNT	GAUGE PRESSURE RANGE
	075 - 3/4" 100 - 1"	EP - EPDM V - FKM	S - SOCKET T - NPT FL - FLANGE SP1 - ASAHI SPIGOTS SP2 - GF SPIGOTS SP3 - IPS SPIGOTS (SPIGOTS IN PVC ONLY)		PV - PVC CP - CPVC		LR - LEFT TO RIGHT RL - RIGHT TO LEFT		C - CENTER BACK (SHOWN ABOVE) L - LOWER (GAUGE FACE UP OR DOWN)	015 - 0-15 PSI 030 - 0-30 PSI 060 - 0-60 PSI 100 - 0-100 PSI 160 - 0-160 PSI 200 - 0-200 PSI

