

Mooney* FlowMax* HP

High-pressure reducing regulator for natural gas pipelines



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Simple, Proven, and Safe for Our Environment.

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The Mooney FlowMax HP regulator is a high-pressure reducing regulator that offers bubble tight shut-off at all pressure differentials and full capacity at very low differential pressures. This innovative BHGE design compliments the Mooney Flowgrid* regulator and FlowMax regulators. The FlowMax HP regulator maximizes capacity, speed of response, and accuracy while incorporating many of the same original maintenance and performance features for which the Flowgrid regulator is renowned.

Product Features

- Top-entry design for ease of maintenance
- High-Pressure Class 300 & Class 600 body and actuator ratings
- One actuator for all pressure control ranges
- Oversized balanced diaphragm for improved sensitivity
- Full port design for ultra high capacity
- Positive bubble tight shut-off at all pressure differentials
- Control range - 3 to 900 psig (0.21 to 62 bar)
- Full open differential - as low as 3 psig (0.21 bar)
- Quick acting two-path pilot control system
- Lightweight and compact design

Designed for a range of applications

- District regulator
- Monitor, first stage, or second stage regulator
- City gate station
- Industrial service regulator
- Boiler/burner fuel gas regulator
- High pressure/high volume applications



Bubble Tight Shut-Off



Designed for bubble tight shut-off at all pressures and full capacity at very low differential pressures

Pressure Reducing Valve

When the downstream pressure is greater than the set point of the pilot, the pilot is closed, resulting in equal pressure above and below the main diaphragm. With a balanced plug area slightly larger than the seat area, the resulting closing force, along with the force of the main spring, forces the plug against the seat.

With an increase in demand, the outlet pressure will begin to drop and decrease the pressure above the main diaphragm. The drop of the outlet pressure below the pilot set point will cause the pilot to open. As the pilot opens, pressure increases underneath the main diaphragm faster than pressure can bleed through the internal restrictor. The imbalance in pressure on the main diaphragm overcomes the spring force and the additional closing force from the plug, causing the plug to rise off the seat and satisfy the flow demand.

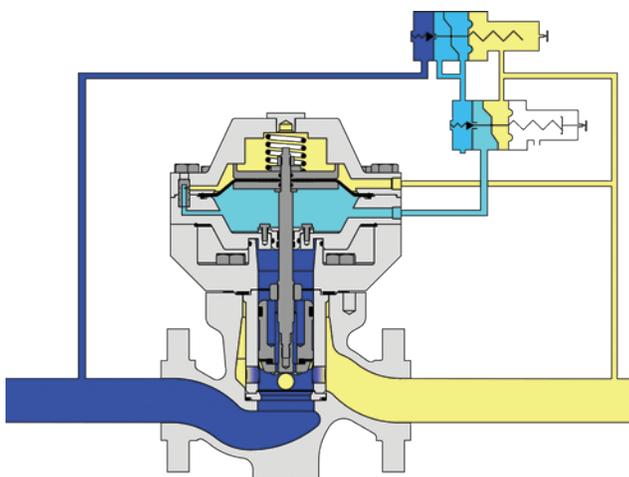
Once the flow demand is satisfied and the downstream pressure begins to increase, the pressure above the main diaphragm and in the pilot sense cavity rises.

This causes the pilot to close. The pressure below the main diaphragm bleeds through the internal restrictor until pressure equalizes above and below the main diaphragm. The forces of the main spring and the over-sized balancing diaphragm then close the plug on the seat.

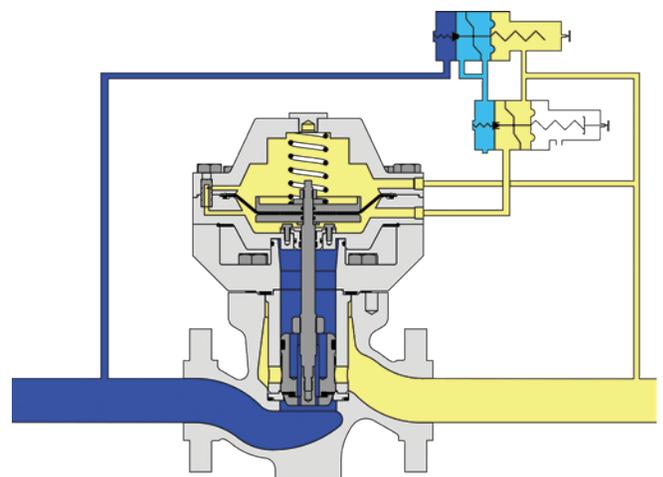
Back Pressure Valve

In a back pressure relief application (BPV) the valve functions to maintain upstream pressure at the pilot set point. The sense line for the control pilot is located upstream of the regulator. The extra sense port on the actuator is plugged for BPV pilot configuration. The action of the pilot is the reverse of a pressure reducing pilot, such that the pilot opens when the upstream pressure increases above its set point. The pilot will close when the upstream pressure is less than its set point.

Open (modulating) Position



Closed Position



- Inlet Pressure
- Pilot Supply Pressure
- Loading Pressure
- Outlet Pressure

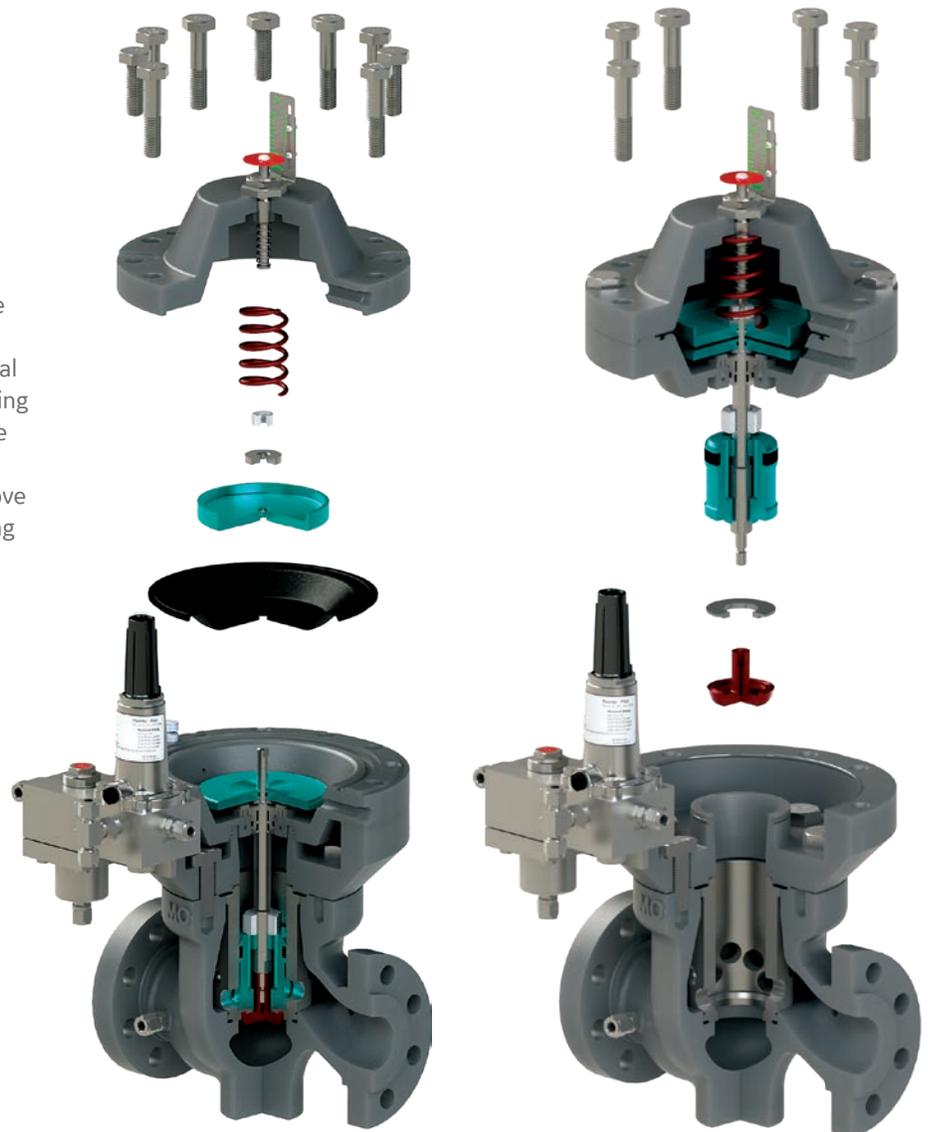
- Inlet Pressure
- Pilot Supply Pressure
- Outlet Pressure

Pilot Ranges

Spring Color	Series 20 Pilot	Outlet Pressure Range	Spring Color	Series 20 Pilot	Outlet Pressure Range
Red	20	3-12 psig (0.21 bar - 0.83 bar)	Black	20H	200-520 psig (14 bar - 35 bar)
Cadmium	20	10-40 psig (0.69 bar - 3 bar)	White / Green	20H	400-900 psig (28 bar - 62 bar)
Blue	20	25-90 psig (2 bar - 6 bar)	Note: Consult factory for required set pressures above 900 psig (62 bar).		
Purple	20	60-200 psig (4 bar - 14 bar)			
Black	20	100-260 psig (7 bar - 18 bar)			
White / Green	20	200-450 psig (14 bar - 31 bar)			

Simple in-line maintenance:

Modular construction allows for simplified in-line maintenance and repair. Diaphragm replacement requires only the removal of the top cover, without disturbing the pressure boundary seals or regulator internals. Internal trim can be accessed and replaced by removing alternate bolts on the actuator and lifting the actuator section off intact. All without the need to remove the pilot assemblies or remove the regulator from the piping, greatly reducing the time to repair and disruption to service.



FlowMax HP Specifications

Body Size	2" (DN 50)	3" (DN 80)	4" (DN 100)	6" (DN 150)
End Connection	ASME CL 300 RF ASME CL 600 RF			
Body Material	Steel	Steel	Steel	Steel
Maximum Inlet Pressure ⁽¹⁾				
CL 300 RF ⁽¹⁾	740 psig (51 bar)			
CL 600 RF ⁽¹⁾	1480 psig (102 bar)			
Maximum Outlet Pressure ^{(1) (2)}				
Maximum Outlet Pressure ^{(1) (2)}	900 psig (62 bar)			
Maximum Operating Differential ⁽¹⁾	800 psi (55 bar)			
Minimum Differential (fully open)	3 psig (0.21 bar)	4 psig (0.28 bar)	4 psig (0.28 bar)	4 psig (0.28 bar)
Maximum Casing Pressure ⁽¹⁾				
CL 300 RF ⁽¹⁾	740 psig (51 bar)			
CL 600 RF ⁽¹⁾	1480 psig (102 bar)			
Outlet Pressures				
Series 20 Pilot	3-900 psig (0.21-62 bar)	3-900 psig (0.21-62 bar)	3-900 psig (0.21-62 bar)	3-900 psig (0.21-62 bar)
Temperature	-20°F to 150°F (-29°C to 66°C)			
Emergency Temperature	-40°F to 175°F (-40°C to 79°C)			
100% Capacity				
Cg	2331	5091	7833	14195
C1	37	37	37	37
Cv	63	138	212	384
Face to Face Dimensions				
CL 300 RF	10.50 (267 mm)	12.50 (318 mm)	14.50 (368 mm)	18.62 (473 mm)
CL 600 RF	11.25 (286 mm)	13.25 (337 mm)	15.50 (394 mm)	20.00 (508 mm)
Weight				
CL 300 RF	160 lbs (73 kg)	190 lbs (86 kg)	350 lbs (159 kg)	640 lbs (290 kg)
CL 600 RF	160 lbs (73 kg)	190 lbs (86 kg)	350 lbs (159 kg)	640 lbs (290 kg)

1) Do not exceed the pressure and temperature limits for the pressure class and body material as defined in ASME B16.34.

2) Consult factory for outlet pressures above 900 psig (62 bar).

DIRECT SALES OFFICE LOCATIONS

AUSTRALIA

Brisbane
 Phone: +61-7-3001-4319
 Fax: +61-7-3001-4399

Perth
 Phone: +61-8-6595-7018
 Fax: +61-8-6595-7299

Melbourne
 Phone: +61-3-8807-6002
 Fax: +61-3-8807-6577

BELGIUM
 Phone: +32-2-344-0970
 Fax: +32-2-344-1123

BRAZIL
 Phone: +55-19-2104-6900

CHINA
 Phone: +86-10-5738-8888
 Fax: +86-10-5918-9707

FRANCE
 Courbevoie
 Phone: +33-1-4904-9000
 Fax: +33-1-4904-9010

GERMANY
 Ratingen
 Phone: +49-2102-108-0
 Fax: +49-2102-108-111

INDIA
 Mumbai
 Phone: +91-22-8354790
 Fax: +91-22-8354791

New Delhi
 Phone: +91-11-2-6164175
 Fax: +91-11-5-1659635

ITALY
 Phone: +39-081-7892-111
 Fax: +39-081-7892-208

JAPAN
 Tokyo
 Phone: +81-03-6871-9008
 Fax: +81-03-6890-4620

KOREA
 Phone: +82-2-2274-0748
 Fax: +82-2-2274-0794

MALAYSIA
 Phone: +60-3-2161-0322
 Fax: +60-3-2163-6312

MEXICO
 Phone: +52-55-3640-5060

THE NETHERLANDS
 Phone: +31-15-3808666

RUSSIA
 Veliky Novgorod
 Phone: +7-8162-55-7898
 Fax: +7-8162-55-7921

Moscow
 Phone: +7 495-585-1276
 Fax: +7 495-585-1279

SAUDI ARABIA
 Phone: +966-3-341-0278
 Fax: +966-3-341-7624

SINGAPORE
 Phone: +65-6861-6100
 Fax: +65-6861-7172

SOUTH AFRICA
 Phone: +27-11-452-1550
 Fax: +27-11-452-6542

SOUTH & CENTRAL
 AMERICA AND THE CARIBBEAN
 Phone: +55-12-2134-1201
 Fax: +55-12-2134-1238

SPAIN
 Phone: +34-93-652-6430
 Fax: +34-93-652-6444

UNITED ARAB EMIRATES
 Phone: +971-4-8991-777
 Fax: +971-4-8991-778

UNITED KINGDOM
 Bracknell
 Phone: +44-1344-460-500
 Fax: +44-1344-460-537

UNITED STATES
 Jacksonville, Florida
 Phone: +1-904-570-3409

Deer Park, Texas
 Phone: +1-281-884-1000
 Fax: +1-281-884-1010

Houston, Texas
 Phone: +1-281-671-1640
 Fax: +1-281-671-1735

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