

Pressure Regulating with PP & PP5 Spring-loaded Pilot

Pressure Pilot	(Standard: 1.0 psig accuracy) (High-accuracy: 0.5 psig accuracy)	PP PP5
Pilot Body Material		Cast Steel
Max Inlet Pressure		300 PSIG
Reduced Outlet Pressure Range		3-200 PSIG
Inlet Pressure Range		15-300 PSIG
(with HD Standard main valve)		
(with HD Low-Pressure (LP) main valve)		5-20 PSIG
Minimum Differential Pressure		10 PSI
(with HD Standard main valve)		
(with HD Low-Pressure (LP) main valve)		3 PSI



Pilot-Operated REGULATORS

Typical Applications

The **PP & PP5 Pressure Pilots** are used with the HD Regulator to control steam pressure in steam mains or for process equipment. Pilot-operated regulators maintain constant downstream pressure even when the inlet pressure to the valve fluctuates or steam usage varies. The PP-Pressure Pilot is adequate for controlling pressure in most industrial applications. For increased accuracy use the PP5 Pilot.

PP-Pressure Pilot (Standard) 1.0 PSIG accuracy

PP5-Pressure Pilot (Special Applications) 0.5 PSIG accuracy

Features

- The **PP**-Pilot can maintain downstream pressure to ± 1 PSIG
- **PP5**-Pilot can maintain downstream pressure to ± 0.5 PSIG
- Choices of three overlapping pressure ranges
- Pilot is easily installed on pilot adapter using four bolts, no tubing connections are required
- Full port strainer and blowdown valve on pilot adapter for protection of pilot from dirt and scale
- Solid floating diaphragm is more failure resistant
- Watson McDaniel's pilots can be used with other manufacturers' regulators

Options

- Pressure pilot can be used with temperature pilot to eliminate the need for two separate regulators
- Solenoid pilot can be added for remote on/off control of regulator

Example: PP-B Pilot at 20-100 PSIG

Reduced Pressure Range PSI	Model Code	Spring Color	Weight lbs
PP-Pressure Pilot (for Standard Industrial Applications) 1.0 PSIG accuracy			
3-25	PP-Y	Yellow	10
20-100	PP-B	Blue	10
80-200	PP-R	Red	10
PP5-Pressure Pilot (Special Applications) 0.5 PSIG accuracy			
1-10	PP5-Y*	Yellow	25
10-25	PP5-B*	Blue	25

* A Spacer (model # BAP-SPACE) is required when using PP5 Pressure Pilots on a 3" & 4" HD Main Valve.

HD Main Valve

with **PP-Pressure Pilot**



Model Code for Main Valve: **HD-17-F150**
(2" HD Series Valve with 150# Flanges)

Model Code for Pilot: **PP-B**
(Pressure Pilot with 20-100 PSIG Range)

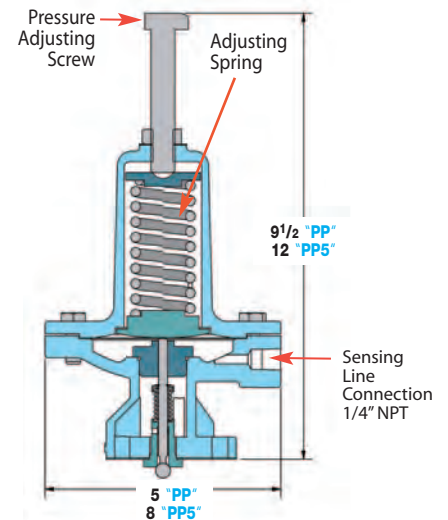
MATERIALS for PP Pressure Pilot

PP Pilot Body	WCB 216 Cast Steel
PP5 Pilot Body	WCB 216 Cast Steel
Head & Seat Gasket	302 SS
Diaphragm	Phosphor Bronze
Head & Seat Assembly	Hardened SST (55 Rc)

MATERIALS for HD Main Valve

Body	Ductile Iron
Cover	Ductile Iron
Gasket	Grafoil/Garlock
Cover Screws	Steel
Pilot Adapter	Cast Steel
Screen	Stainless Steel
Tubing	Copper
Valve Seat	Hardened SST (55 Rc)
Valve Disc	Hardened SST (55 Rc)
Diaphragm	Phosphor Bronze

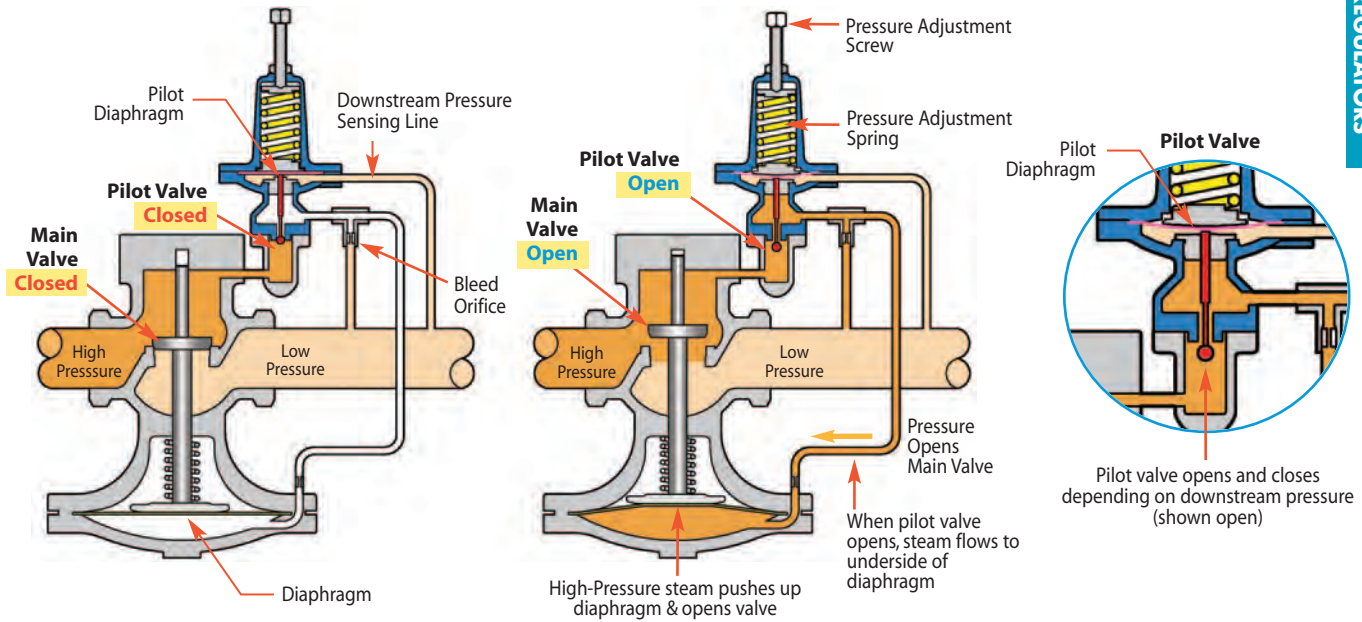
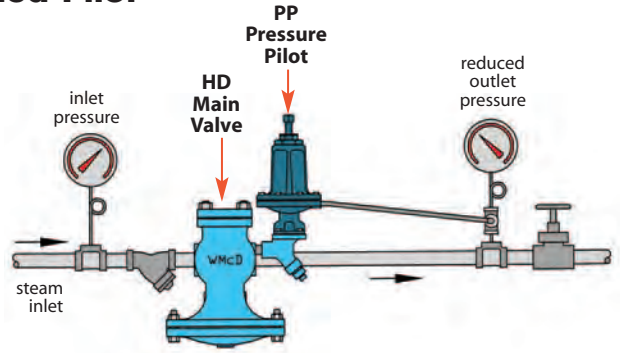
Units: inches



Pressure Regulating with PP & PP5 Spring-loaded Pilot

Reducing Pressure

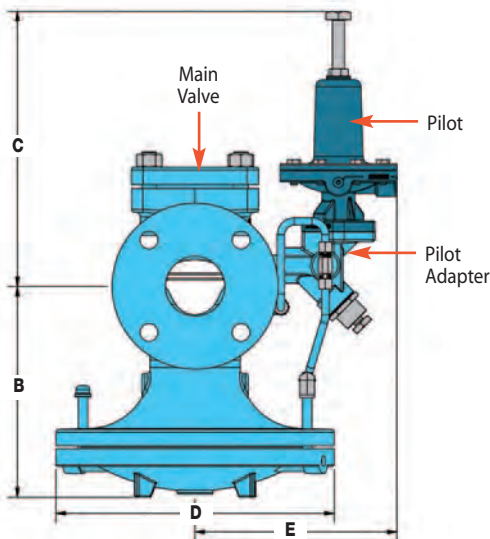
The PP-Pilot and the PP5-Pilot are both spring-adjusted pressure pilots. The PP-Pilot is used on typical general-purpose pressure reducing applications. The PP5-Pilot is used when higher accuracy is required and is capable of maintaining a control pressure window of less than 1 PSI.



Pilot-Operated REGULATORS

How it Works

The Pressure Pilot controls the operation of the HD Regulator. The sensing line connects the pressure pilot to the downstream side of the regulator. Pressure in the sensing line applies an upward force to the pilot diaphragm to compress the adjustment spring. When system pressure equals set point, the diaphragm moves upwards against the force of the adjusting spring, closing pilot valve. When the pilot valve is shut, steam cannot pass thru to the underside of the regulator diaphragm, closing the regulator. When the steam pressure falls below its set point, the pilot valve opens allowing steam to lift the main valve diaphragm which opens up the regulating valve.



DIMENSIONS HD-Series – inches									
Size	Face-To-Face							Weight (lbs)	
	NPT	150#	300#	B	C*	D	E**	NPT	FLG
1/2"	4 ³ / ₈	-	-	5 ⁵ / ₈	11 ⁷ / ₈	6 ³ / ₄	7 ³ / ₄	18	-
3/4"	4 ³ / ₈	-	-	5 ⁵ / ₈	11 ⁷ / ₈	6 ³ / ₄	7 ³ / ₄	18	-
1"	5 ³ / ₈	5 ¹ / ₂	6	6 ¹ / ₄	11 ⁷ / ₈	7 ¹ / ₈	7 ³ / ₄	23	35
1 ¹ / ₄ "	6 ¹ / ₂	-	-	7 ³ / ₈	11 ⁷ / ₈	8 ⁷ / ₈	8 ¹ / ₄	43	-
1 ¹ / ₂ "	7 ¹ / ₄	6 ⁷ / ₈	7 ³ / ₈	7 ³ / ₈	11 ⁷ / ₈	8 ⁷ / ₈	8 ¹ / ₄	43	60
2"	7 ¹ / ₂	8 ¹ / ₂	9	8 ¹ / ₄	11 ⁷ / ₈	10 ⁷ / ₈	8 ¹ / ₂	65	85
2 ¹ / ₂ "	-	9 ³ / ₈	10	9	11 ⁷ / ₈	11 ³ / ₄	8 ¹ / ₂	-	105
3"	-	10	10 ³ / ₄	8 ⁷ / ₈	11 ⁷ / ₈	13 ¹ / ₄	9 ¹ / ₂	-	145
4"	-	11 ⁷ / ₈	12 ¹ / ₂	11	11 ⁷ / ₈	14 ³ / ₄	10 ¹ / ₂	-	235
6"	-	15 ¹ / ₈	16	14 ¹ / ₂	12 ¹ / ₂	19 ³ / ₄	11 ³ / ₄	-	470

For PP5 Pilot: * For sizes 1/2" to 1 1/2" add 2 1/2" to "C" dimension;
For sizes 2" to 6" add 5" to "C" dimension.
** Add 1 1/2" to "E" dimension for all sizes.