

## HDP

### Pilot-Operated Pressure Regulating Valve

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PILOT-OPERATED  
REGULATING VALVES

## HD Regulating Valve with "P" Pressure Pilot

- Max Inlet Pressure: 300 PSIG
- Reduced Outlet Pressure Range: 3-200 PSIG
- Min Inlet Pressures:
  - 15 PSIG standard main valve
  - 5 PSIG low pressure main valve



### TYPICAL APPLICATIONS

The HD Regulator with the "P" Pressure Pilot is used for reducing steam pressure in piping mains and process applications. Pilot-operated regulators will maintain constant downstream pressure even when the inlet pressure to the regulator fluctuates or steam usage varies.

### FEATURES

- The "P" Pilot can maintain downstream pressure to  $\pm 1$  PSIG
- Optional "P5" pilot can maintain pressure to  $\pm 0.5$  PSIG
- Choices of three overlapping pressure ranges
- Pressure adjusting spring can be changed with regulator in line
- Pilot is easily installed using only four bolts
- Full port strainer and blowdown valve on pilot adapter for ultimate protection from dirt and scale
- Watson McDaniel's pilots can be used with other manufacturers' regulators

### OPTIONS

- Pressure and temperature pilots can be combined on the same regulator
- Solenoid pilot can be added for electrical on/off control of the regulator
- Can be used with solenoid and temperature pilots

### MINIMUM OPERATING PRESSURES

Minimum Inlet Pressure:

15 PSIG (Standard Main Valve)

5 PSIG (Low Pressure Main Valve)

Minimum Differential Pressure:

10 PSI (Standard Main Valve)

3 PSI (Low Pressure Main Valve)

### PRESSURE-ADJUSTING SPRING RANGES "P"

Pressure Ranges	Identifying Colors
3-25 PSIG	yellow
20-100 PSIG	blue
80-200 PSIG	red

### PRESSURE-ADJUSTING SPRING RANGES "P5"

1-10 PSIG	yellow
10-25 PSIG	blue

### MATERIALS

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

## Pilot-Operated Pressure Regulating Valve

### DIMENSIONS HD-Series – inches / pounds

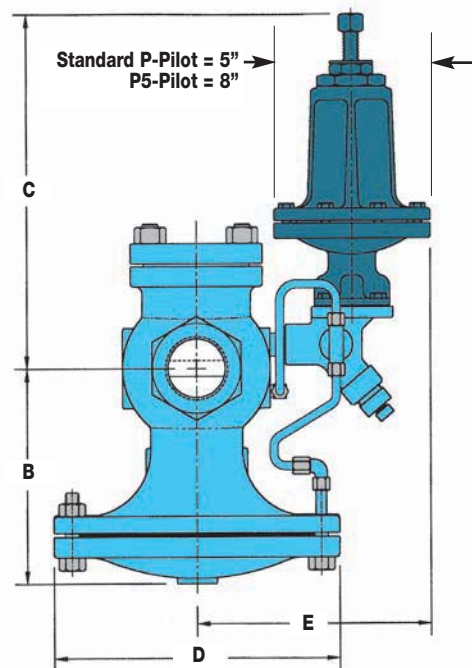
Size	Face-To-Face			B	C*	D	E**	Weight (lbs)	
	NPT	150#	300#					NPT	FLG
1/2"	43/8			5 1/2	11 7/8	6 1/2	7 3/4	18	
3/4"	4 3/8			5 1/2	11 7/8	6 1/2	7 3/4	18	
1"	5 3/8	5 1/2	6	6 1/4	11 7/8	7	7 3/4	23	35
1 1/4"	6 1/2			7 3/8	11 7/8	8 3/4	8 1/4	43	
1 1/2"	7 1/4	6 7/8	7 3/8	7 3/8	11 7/8	8 3/4	8 1/4	43	60
2"	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	10 7/8	11 7/8	14 3/4	10 1/2		235
6"		15 1/8	16	14 1/8	12 1/2	19 3/4	11 3/4		470

#### For P5 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.



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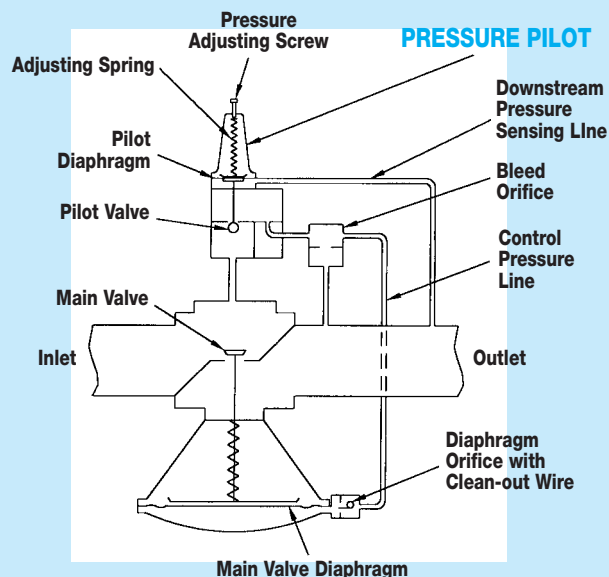
### HOW TO ORDER

#### P or P5 PRESSURE PILOT

Specify: • Reduced pressure range  
(P5 Pilot requires a special adapter block on 3" & 4" valves)

#### REGULATOR BODY

Specify: • HD regulator body  
• Regulator size or capacity and pressures of steam required  
• End connections (threaded, 150/300# flanged)



### HOW IT WORKS

The purpose of the pressure pilot is to control the operation of the pressure regulating valve. A pressure sensing line connects the pressure pilot to the downstream side of the regulator. The pressure in the sensing line is directed under the diaphragm in the pressure pilot. When the pressure in the system reaches the adjusting spring set point it pushes the diaphragm upwards against the force of the adjusting spring and closes the pilot valve. When the pilot valve is shut, steam can no longer pass through to the underside of the regulator diaphragm and the main valve closes. 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.