

REGULATOR/PILOT COMBINATIONS

HDP

Pilot-Operated Pressure Regulating Valve

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HD Regulating Valve with "P" Pressure Pilot

- **Reduced Outlet Pressure Range: 3-200 PSIG**
- **Inlet Pressure Max: 300 PSIG**
Inlet Pressure Min: 15 PSIG

The HD-Series is the upgraded model for the D-Series Regulator. HD & D internal components and pilots are interchangeable.



REGULATORS

TYPICAL APPLICATIONS

The HD or D 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 ± 1 PSIG
- Optional "P5" pilot can maintain pressure to ± 0.5 PSIG
- Choices of three overlapping pressure ranges
- Pressure adjusting spring can be changed with regulator in-line
- Pilot is installed using four bolts
- Full port strainer and blow-down valve on pilot adapter to eliminate failure caused by contaminated steam systems
- Watson McDaniel's pilots can be used with other manufacturer's 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

PRESSURE-ADJUSTING SPRING RANGES "P"

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

PRESSURE-ADJUSTING SPRING RANGES "P5"

1-10 PSIG	gold
10-25 PSIG	blue

MATERIALS

	D-SERIES	HD-SERIES
Body	Cast Iron	Ductile Iron
Cover	Cast Iron	Ductile Iron
Gasket	Garlock 3400	Garlock 3400
Cover Screws	Steel	Steel
Pilot Adapter	Cast Iron	Ductile Iron
Screen	Stainless Steel	Stainless Steel
Tubing	Copper	Copper
Valve Seat	Hardened SST (55Rc)	Hardened SST (55Rc)
Valve Disc	Hardened SST (55Rc)	Hardened SST (55Rc)
Diaphragm	Phosphor Bronze	Phosphor Bronze

RECOMMENDED PRESSURE

Differential Pressure: 10 PSIG minimum
Minimum Inlet Pressure: 15 PSIG*

*Minimum Inlet Pressure for Temperature Regulator: 5 PSIG

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DIMENSIONS D-Series – inches / pounds

Size	Face-To-Face							Weight (lbs)	
	NPT	125#	250#	B	C*	D	E**	NPT	FLG
1/2"	5 1/8			5 1/8	11	5 7/8	7	18	
3/4"	5 1/2			5 1/2	11	6 1/2	7 1/4	21	
1"	6 1/8			6 1/8	11	7	7 1/2	25	
1 1/4"	8 1/2			7	11 7/8	8 3/4	8	45	
1 1/2"	9 1/2			7 1/8	11 7/8	8 3/4	8 1/2	55	
2"	9 3/4	9 1/2	9 5/8	7 1/8	11 7/8	10 7/8	9	90	105
2 1/2"		10	10 5/8	8 3/4	11 7/8	11 3/4	9 1/2		135
3"		11	11 3/4	9 1/8	11 7/8	13 1/4	10		180

DIMENSIONS HD-Series – inches / pounds

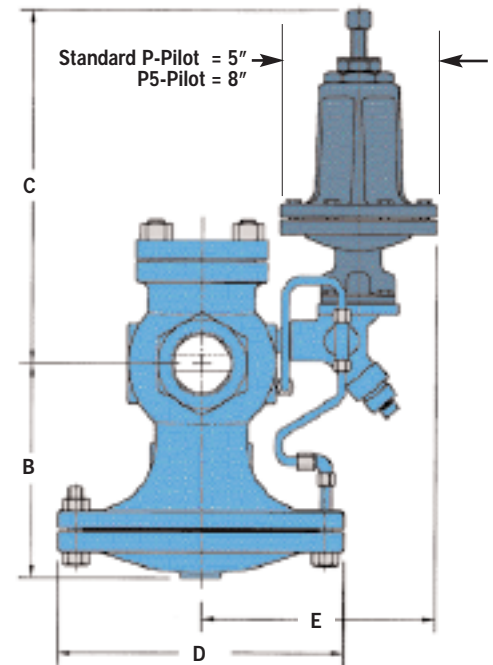
Size	Face-To-Face							Weight (lbs)	
	NPT	150#	300#	B	C*	D	E**	NPT	FLG
1/2"	4 3/8			5 1/2	11 7/8	6 1/2	7 3/4	18	
3/4"	4 3/8			5 1/2	11 7/8	6 1/2	7 3/4	18	
1"	5 3/8	5 1/2	6	6 1/4	11 7/8	7	7 3/4	23	35
1 1/4"	7 1/4			7 3/8	11 7/8	8 3/4	8 1/4	43	
1 1/2"	7 1/4	6 7/8	7 3/8	7 3/8	11 7/8	8 3/4	8 1/4	43	60
2"	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.



REGULATORS

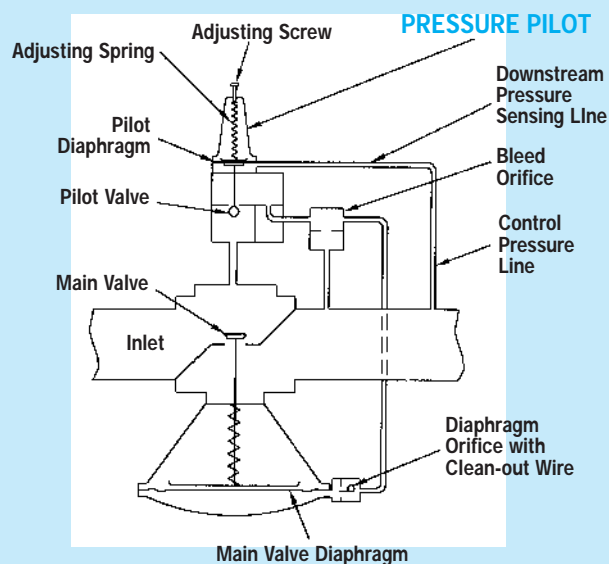
HOW TO ORDER

P or P5 PRESSURE PILOT

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

REGULATOR BODY

Specify: • HD or D regulator body.
• Regulator size or capacity and pressures of steam required.
• End connections (threaded, 125/150/250/300# flanged).



HOW IT WORKS

The purpose of the pressure pilot is to control the operation of the pressure regulating valve. A sensing line used to detect pressure 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 adjusted 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 valve main closes. When the steam pressure falls below its set point, the pilot valve opens allowing steam to lift the main diaphragm and open up the regulating valve.