

**Cast Steel Pressure** Regulating Valve

Pilot-Operated  
REGULATORS

Model	<b>HSP Series</b>
Sizes	<b>1", 1 1/2", 2", 3", 4"</b>
Connections	<b>150#/300# Flange</b>
Body Material	<b>Cast Steel</b>
PMO Max. Operating Pressure	<b>450 PSIG</b>
TMO Max. Operating Temperature	<b>650°F</b>
PMA Max. Allowable Pressure	<b>550 PSIG @ 650°F</b>
TMA Max. Allowable Temperature	<b>650°F @ 550 PSIG</b>

**OPERATING PRESSURES**

Inlet Pressure Range:  
**15-450 PSIG** (standard Main Valve)  
**5-20 PSIG** (low-pressure Main Valve)

Minimum Differential Pressure:  
**10 PSIG** (standard Main Valve)  
**3 PSIG** (low-pressure Main Valve)

**PRESSURE-ADJUSTING SPRING RANGES**

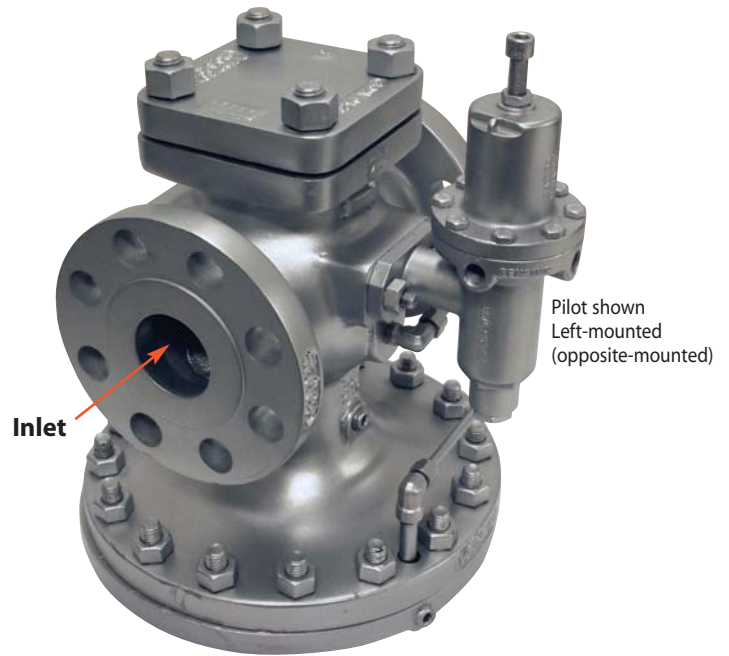
Pressure Ranges	Identifying Colors
<b>10-40 PSIG</b>	yellow
<b>25-100 PSIG</b>	blue
<b>75-300 PSIG</b>	red

**Typical Applications**

The **HSP Series** Main Valve with **integral Pressure Pilot** reduces steam pressure in steam system piping mains and process applications. This pilot-operated regulator is specifically used in applications where the properties and benefits of Cast Steel are desired and/or specified. Using steel as the material of construction for the main valve body extends the pressure-temperature rating of the regulator. A unique two-bolt pilot adapter design and field-reversible tubing offer even greater versatility to this type of regulator, further reducing maintenance downtime. These valves share the same design and proven reliability of the Watson McDaniel HD-Series Regulators, providing extremely accurate control of downstream system pressure even when inlet pressure to the regulator fluctuates or steam usage varies.

**Features**

- Cast Steel body for higher pressure and temperature ratings
- New, convenient bolt-on pilot design simplifies installation
- New diaphragm design improves performance and extends life
- Hardened stainless steel trim for extended life
- Optional Stellite trim available
- Full port strainer and blowdown valve on pilot adapter for ultimate protection from dirt and scale
- Maintains downstream pressure to  $\pm 1.0$  PSIG
- Choice of three overlapping spring ranges
- Pre-mounted pilot & tubing simplifies installation



**Pilot Mounting**

Standard pilot mounting is on the right side of the regulator when looking into the outlet port. For opposite-mounting, specify when ordering. Pilot mounting on HSP regulators are field-reversible.

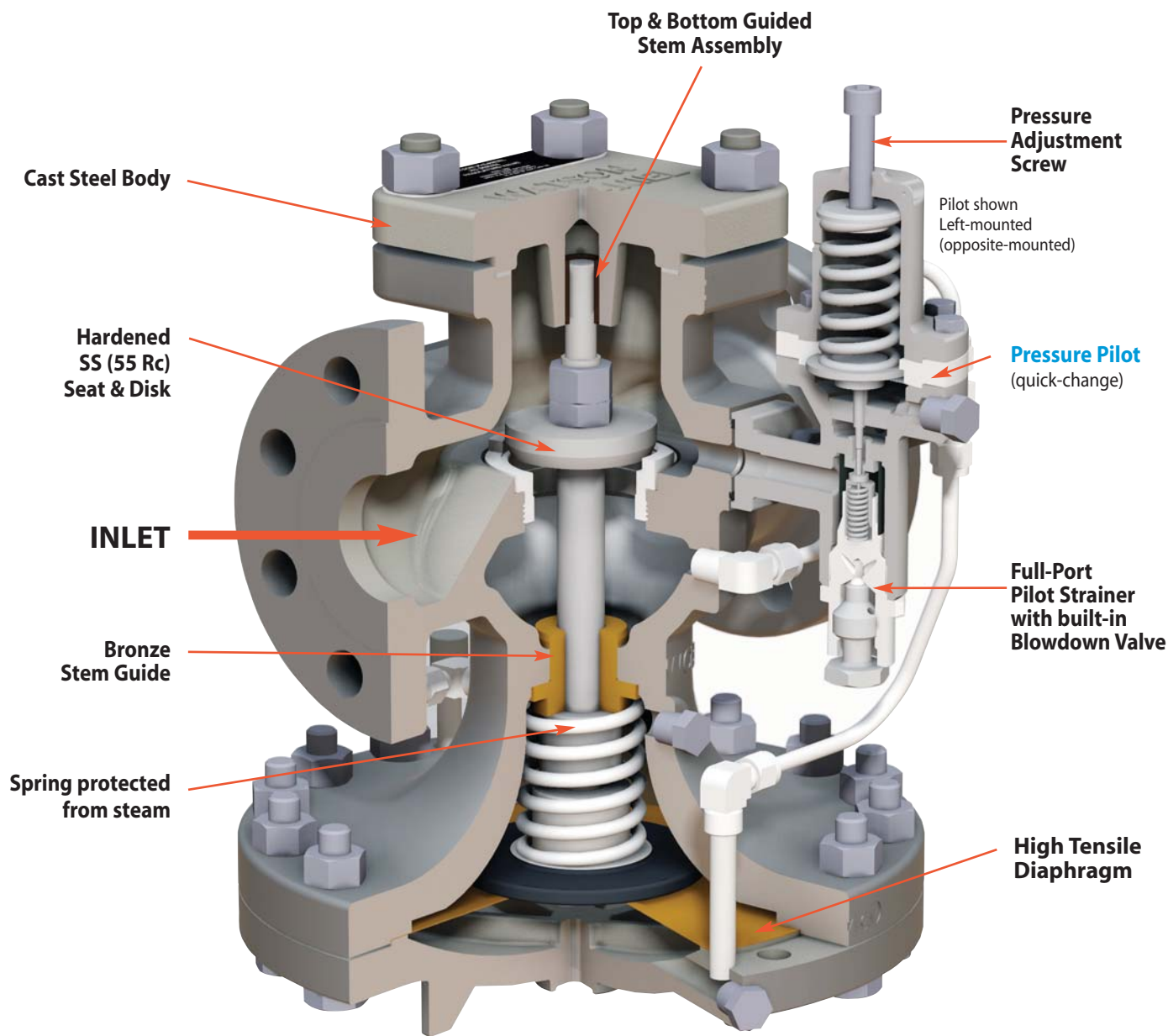
**Pressure Pilot**

The spring-adjusted Pilot is used for general purpose pressure reducing applications.

**MATERIALS for HSP Regulator**

Body	<b>ASTM A-216 GR WCB</b>
Cover	ASTM A-216 GR WCB
Diaphragm Cover	ASTM A-216 GR WCB
Pilot	ASTM A-216 GR WCB
Gaskets	Garlock 3400/grafoil SLS
Seat	420F SS (optional Stellite seat, consult factory)
Disc	420F SS
Diaphragm	Bronze
Diaphragm for LP Model	EPDM
Mfg. Bolts	SA-193 GR B7
Spring	302 SS
Stem	416 SS

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Pressure Regulator shown with Left-mounted Pilot  
(right-mounted is standard)

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Model includes HSP Main Valve with Pressure Pilot

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Size/Connection	Model Code	Pressure Pilot Range (PSI)	Weight lbs
1"	150# FLG	HSP-14-F150-Y	10-40
		HSP-14-F150-B	25-100
		HSP-14-F150-R	75-300
	300# FLG	HSP-14-F300-Y	10-40
		HSP-14-F300-B	25-100
		HSP-14-F300-R	75-300
1 1/2"	150# FLG	HSP-16-F150-Y	10-40
		HSP-16-F150-B	25-100
		HSP-16-F150-R	75-300
	300# FLG	HSP-16-F300-Y	10-40
		HSP-16-F300-B	25-100
		HSP-16-F300-R	75-300
2"	150# FLG	HSP-17-F150-Y	10-40
		HSP-17-F150-B	25-100
		HSP-17-F150-R	75-300
	300# FLG	HSP-17-F300-Y	10-40
		HSP-17-F300-B	25-100
		HSP-17-F300-R	75-300
3"	150# FLG	HSP-19-F150-Y	10-40
		HSP-19-F150-B	25-100
		HSP-19-F150-R	75-300
	300# FLG	HSP-19-F300-Y	10-40
		HSP-19-F300-B	25-100
		HSP-19-F300-R	75-300
4"	150# FLG	HSP-20-F150-Y	10-40
		HSP-20-F150-B	25-100
		HSP-20-F150-R	75-300
	300# FLG	HSP-20-F300-Y	10-40
		HSP-20-F300-B	25-100
		HSP-20-F300-R	75-300



**Pilot Ranges**

Code	Color	PSIG
Y	Yellow	10-40
B	Blue	25-100
R	Red	75-300

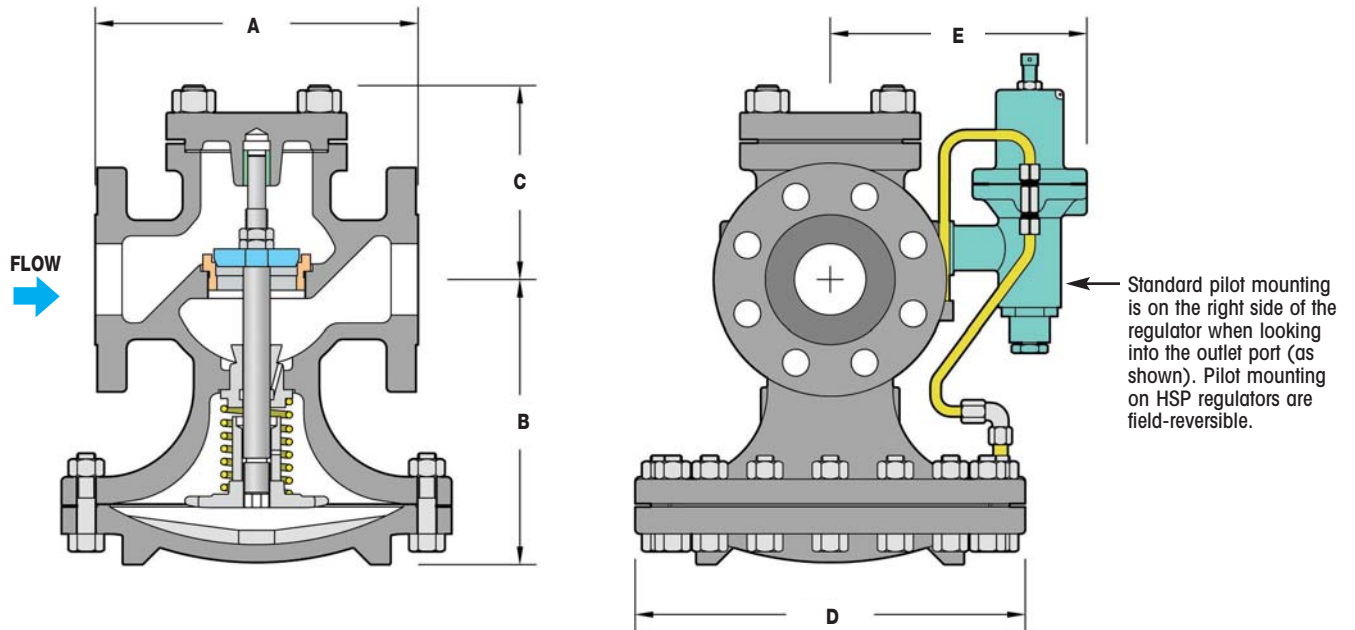
**Model Configuration Chart**

Models	Code	Size	Code	Connection	Code	Pressure Range (PSIG)	Code	Options (Suffix)	
HSP	Full Port	14	1"	F150	150# Flanged	Y	10-40 (yellow)	SSXT	Stainless Steel External Tubing
HSPR	Reduced Port	16	1 1/2"	F300	300# Flanged	B	25-100 (blue)	ST	Stellite Trim
		17	2"			R	75-300 (red)	LP	Low Pressure Main Valve Spring
		19	3"					SSD	SS Diaphragm
		20	4"						

**Example Model Codes:**

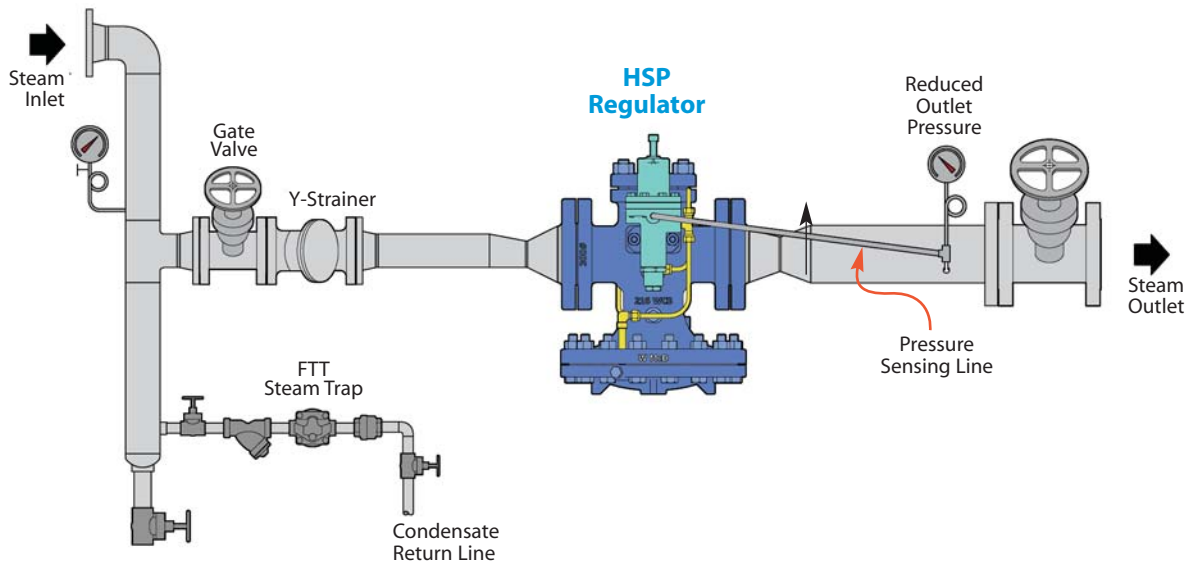
- 1) **HSP-17-F150-Y** (HSP Full port valve, 2" 150# Flg, 10-40 PSIG, with no options)
- 2) **HSPR-17-F300-B-ST** (HSP Reduced port valve, 2" 300# Flg, 25-100 PSIG, with Stellite Trim)

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DIMENSIONS HSP Series – inches								
Size	(A) Face-To-Face		B	C	D	E	Weight (lbs)	
	150#	300#					150#	300#
1"	5 1/2	6	6 1/4	3 1/2	7	6 3/8	40	45
1 1/2"	6 7/8	7 3/8	7 3/8	4 7/8	8 3/4	7 1/16	55	60
2"	8 1/2	9	8 1/4	5 3/8	10 7/8	7 3/16	75	85
3"	10	10 3/4	8 7/8	6 3/4	13 1/4	8 3/16	130	145
4"	11 7/8	12 1/2	10 7/8	7 1/2	14 3/4	9 5/16	215	235



**Pressure Reducing Station for Steam Application**