

Regulators

Pilot-Operated Regulating Valves

HSP & HSP-SS Series

Pilot-Operated

Cast Steel & Stainless Steel Pressure Regulating Valve

Model	HSP	HSP-SS
Body Material	Carbon Steel	Stainless Steel
Sizes	1", 1 1/2", 2", 3", 4"	
Connections	150#/300# Flange	
PMO Max. Operating Pressure	450 PSIG	
TMO Max. Operating Temperature	650°F	
Pressure/Temp Ratings	150# FLG: 150 PSIG @ 550°F	150 PSIG @ 566°F
	300# FLG: 550 PSIG @ 650°F	450 PSIG @ 600°F

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)

ANSI/FCI 70-3 Class IV Shut-off

PRESSURE-ADJUSTING SPRING RANGES

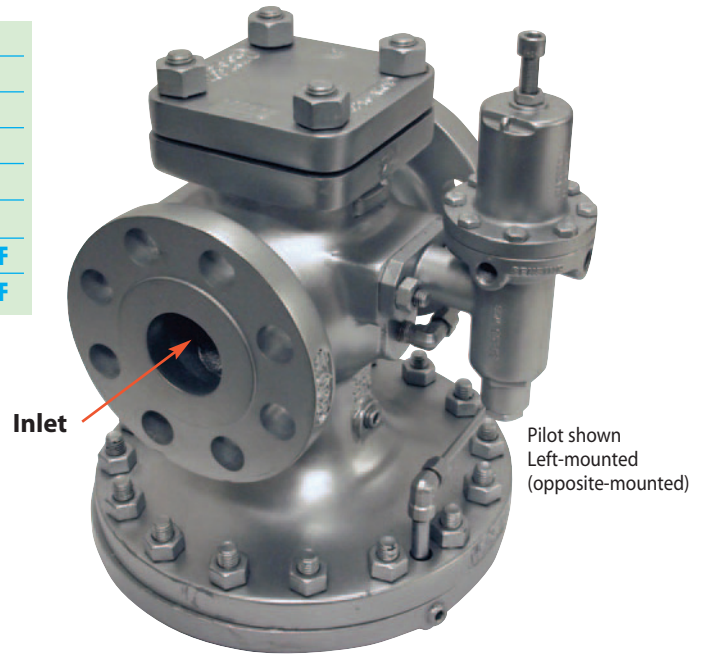
Pressure Ranges	Identifying Colors
10-40 PSIG	yellow
25-100 PSIG	blue
75-300 PSIG	red

Typical Applications

The **HSP & HSP-SS 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 or Stainless 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
- Stainless Steel body for improved corrosion resistance
- New, convenient bolt-on pilot design simplifies installation
- New diaphragm design improves performance and extends life
- Hardened stainless steel trim for extended life
- Full port strainer and blowdown valve on pilot adapter for ultimate protection from dirt and scale
- Maintains downstream pressure to ± 1.0 PSIG
- Choice of three overlapping spring ranges
- Pre-mounted pilot & tubing simplifies installation



HSP and HSP-SS available with other pilots (i.e. temperature, back pressure, etc.); Consult factory.

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 & HSP-SS regulators are field-reversible.

Pressure Pilot

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

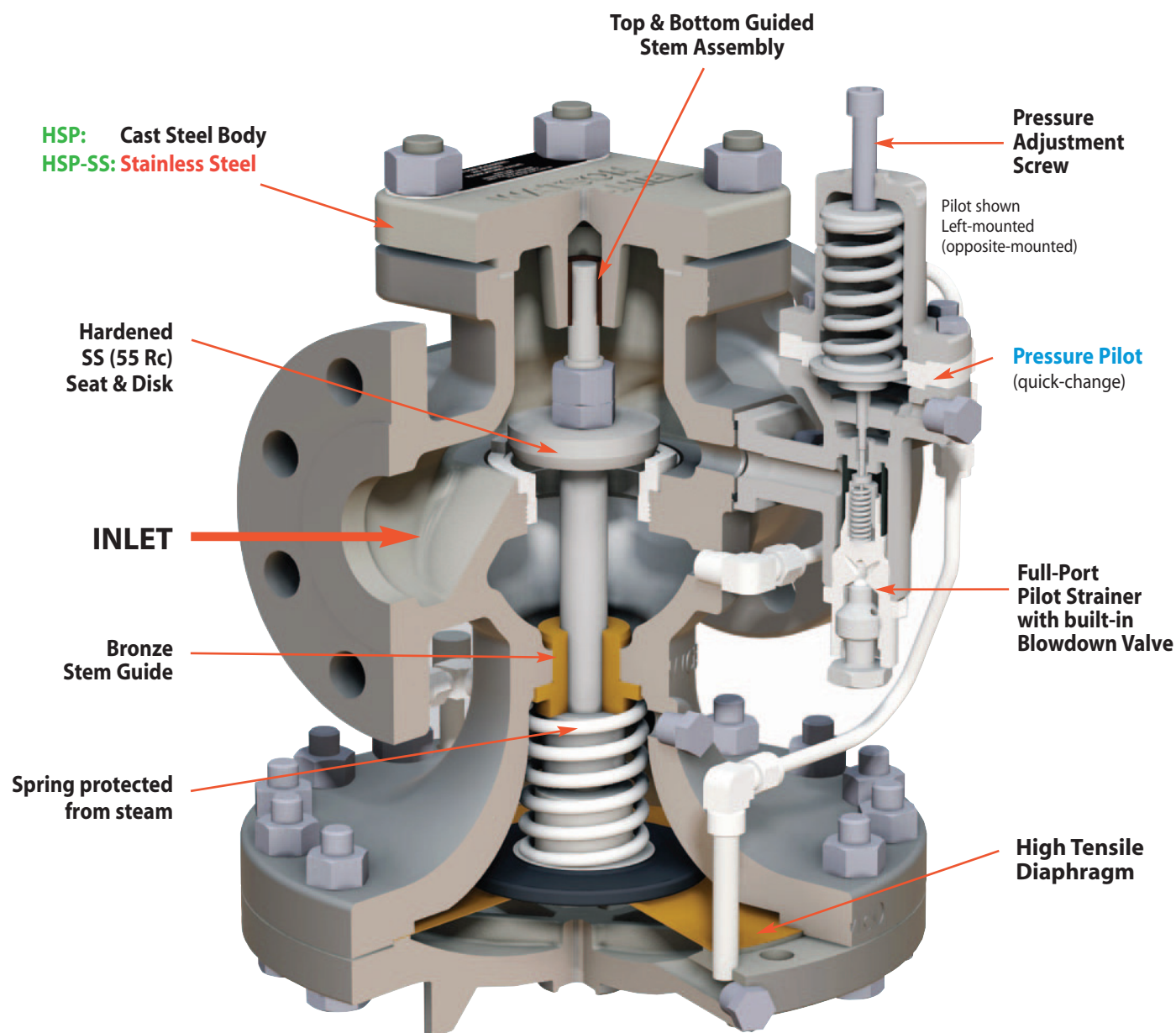
MATERIALS

	HSP	HSP-SS
Body	ASTM A-216 GR WCB	ASTM A-351 CF8M
Cover	ASTM A-216 GR WCB	ASTM A-351 CF8M
Diaphragm Cover	ASTM A-216 GR WCB	ASTM A-351 CF8M
Pilot	ASTM A-216 GR WCB	ASTM A-351 CF8M

Other MATERIALS for both Models

Gaskets	Garlock 3400/grafoil SLS
Seat	Hardened SST (55Rc)
Disc	Hardened SST (55Rc)
Diaphragm	Bronze
Diaphragm for LP Model	EPDM
Mfg. Bolts (HSP)	SA-193 GR B7
Mfg. Bolts (HSP-SS)	SA-193 GR B8M
Spring	302 SS
Stem	416 SS

Cast Steel & Stainless Steel Pressure Regulating Valve



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

Cast Steel & Stainless Steel Pressure Regulating Valve

Model includes HSP Main Valve with Pressure Pilot

Size/Connection		Model Code HSP	Model Code HSP-SS	Pressure Pilot Range (PSI)	Weight lbs
1"	150# FLG	HSP-14-F150-Y	HSP-SS-14-F150-Y	10-40	36
		HSP-14-F150-B	HSP-SS-14-F150-B	25-100	
		HSP-14-F150-R	HSP-SS-14-F150-R	75-300	
	300# FLG	HSP-14-F300-Y	HSP-SS-14-F300-Y	10-40	38
		HSP-14-F300-B	HSP-SS-14-F300-B	25-100	
		HSP-14-F300-R	HSP-SS-14-F300-R	75-300	
1 1/2"	150# FLG	HSP-16-F150-Y	HSP-SS-16-F150-Y	10-40	60
		HSP-16-F150-B	HSP-SS-16-F150-B	25-100	
		HSP-16-F150-R	HSP-SS-16-F150-R	75-300	
	300# FLG	HSP-16-F300-Y	HSP-SS-16-F300-Y	10-40	64
		HSP-16-F300-B	HSP-SS-16-F300-B	25-100	
		HSP-16-F300-R	HSP-SS-16-F300-R	75-300	
2"	150# FLG	HSP-17-F150-Y	HSP-SS-17-F150-Y	10-40	87
		HSP-17-F150-B	HSP-SS-17-F150-B	25-100	
		HSP-17-F150-R	HSP-SS-17-F150-R	75-300	
	300# FLG	HSP-17-F300-Y	HSP-SS-17-F300-Y	10-40	90
		HSP-17-F300-B	HSP-SS-17-F300-B	25-100	
		HSP-17-F300-R	HSP-SS-17-F300-R	75-300	
3"	150# FLG	HSP-19-F150-Y	HSP-SS-19-F150-Y	10-40	170
		HSP-19-F150-B	HSP-SS-19-F150-B	25-100	
		HSP-19-F150-R	HSP-SS-19-F150-R	75-300	
	300# FLG	HSP-19-F300-Y	HSP-SS-19-F300-Y	10-40	175
		HSP-19-F300-B	HSP-SS-19-F300-B	25-100	
		HSP-19-F300-R	HSP-SS-19-F300-R	75-300	
4"	150# FLG	HSP-20-F150-Y	Consult Factory	C.F.	255
		HSP-20-F150-B	Consult Factory	C.F.	
		HSP-20-F150-R	Consult Factory	C.F.	
	300# FLG	HSP-20-F300-Y	Consult Factory	C.F.	265
		HSP-20-F300-B	Consult Factory	C.F.	
		HSP-20-F300-R	Consult Factory	C.F.	



Pilot Ranges

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

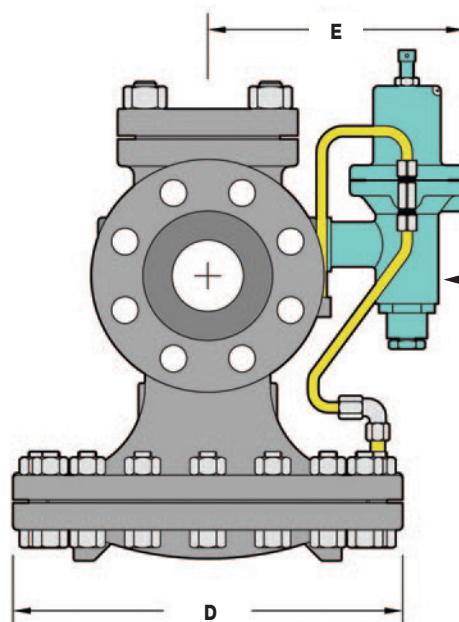
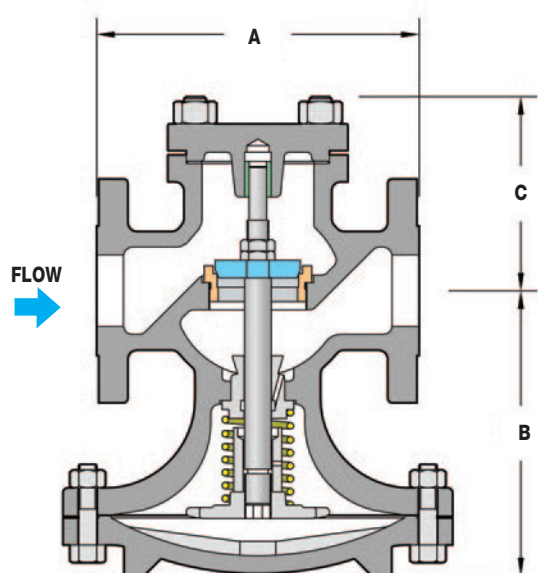
Model Configuration Chart

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

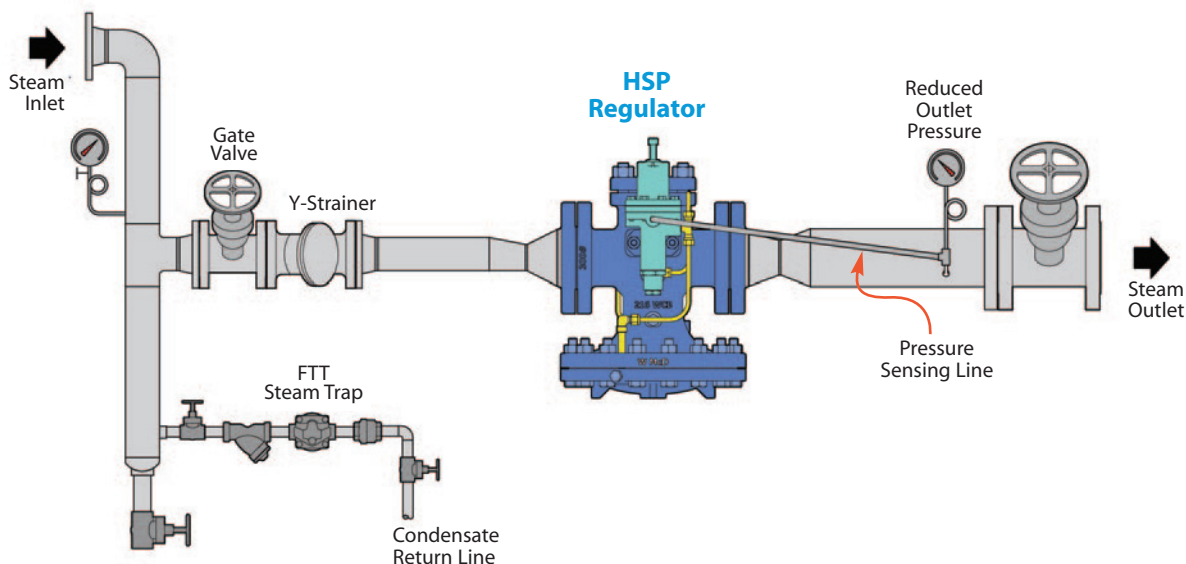
Cast Steel & Stainless Steel Pressure Regulating Valve



Standard pilot mounting is on the right side of the regulator when looking into the outlet port (as shown). Pilot mounting on HSP regulators are field-reversible.

**Pilot-Operated
REGULATORS**

DIMENSIONS HSP Series – inches								
Size	(A) Face-To-Face		B	C	D	E	Weight (lbs)	
	150#	300#					150#	300#
1"	5½	6	6¼	3½	7	6¾	40	45
1½"	6⅞	7⅜	7⅞	4⅞	8¾	7⅞	55	60
2"	8½	9	8¼	5⅜	10⅞	7¾	75	85
3"	10	10¾	8⅞	6¾	13¼	8¾	130	145
4"	11⅞	12½	10⅞	7½	14¾	9⅞	215	235



Pressure Reducing Station for Steam Application