

# spirax sarco®

## Pilot Operated Pressure Regulator 1/2" to 4" 25P

The 25P is a self-actuated pilot-operated pressure regulator. Downstream pressure is fed back through an external sensing line to the pressure pilot, which adjusts the opening of the main valve so as to maintain the set pressure. The main valve can close tight for dead-end shut off when steam is not required.

Model ⇄	25P			
<b>Sizes</b>	1/2" to 2"	2-1/2", 3", 4"	1/2" to 2"	2-1/2", 3", 4"
<b>Connections</b>	NPT	ANSI 125 flgd.	NPT	ANSI 300 flgd.
<b>Construction</b>	Cast Iron		Cast Steel	
<b>Options</b>		ANSI 250 flgd.		ANSI 150 flgd.

### Typical Applications

The 25P is a reliable, accurate regulator to reduce steam from a high supply pressure to the most efficient operating pressure of the equipment, and to protect the equipment from dangerously high pressures.

### Capacities

For selection and sizing data, see TIS 3.030.

### Limiting Operating Conditions

**Max. Operating Pressure (PMO)**  
 NPT: 250 psig (17 barg) @ 450°F (232°C)  
 ANSI 125: 125 psig (8 barg) @ 450°F (232°C)  
 ANSI 250: 250 psig (17 barg) @ 450°F (232°C)  
 ANSI 150: 185 psig (12 barg) @ 450°F (232°C)  
 ANSI 300: 300 psig (20 barg) @ 450°F (232°C)

**Max. Operating Temperature**  
 450°F (232°C)

### Downstream Pressure Ranges

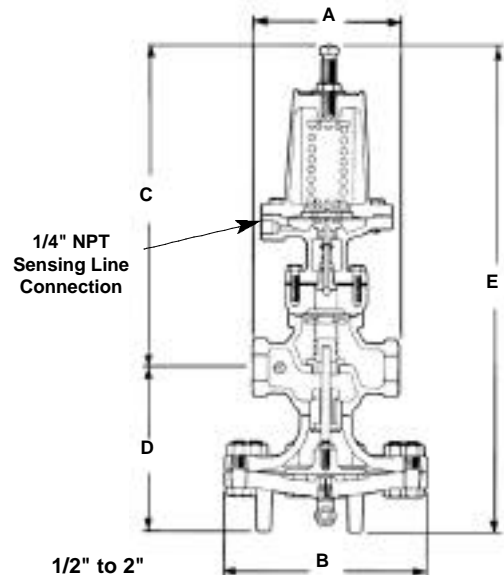
For the following downstream pressures, three color-coded pilot valve springs are available:

**Yellow:** 3 to 30 psi    **Blue:** 20 to 100 psi    **Red:** 80 to 290 psi

### Pressure Shell Design Conditions

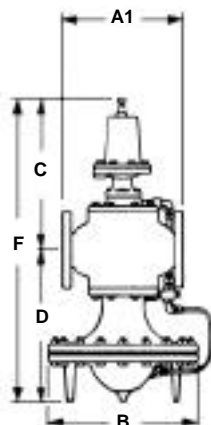
**PMA**  
 Max. allowable pressure  
 Cast Iron: 250 psig/0-450°F    17 barg/0-232°C  
 Cast Steel: 300 psig/0-600°F    21 barg/0-316°C

**TMA**  
 Max. allowable temperature  
 Cast Iron: 450°F/0-250 psig    232°C/0-17 barg  
 Cast Steel: 600°F/0-300 psig    316°C/0-21 barg



### Sample Specification

The pressure regulator shall be of the pilot-actuated diaphragm operated type. The main valve shall be single-seated with hardened stainless steel trim; the regulator body shall be cast iron (cast steel). The pilot shall be bolted directly to the regulator body. The regulator shall be capable of dead-end shut-off.



2-1/2" to 4"

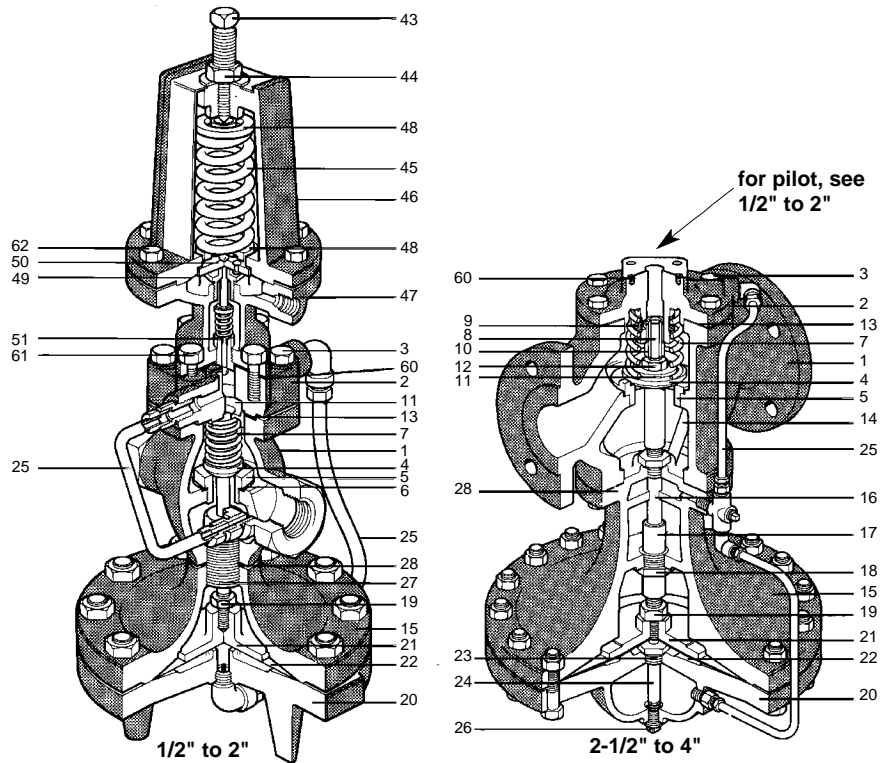
Size	Dimensions (nominal) in inches and millimeters							Weight	
	A	ANSI 125 A1	ANSI 250 ANSI 300 A1	B	C	D	E	Cast Iron	Cast Steel
1/2", 3/4"	5.5 140	—	—	7.6 194	12.2 310	6.2 157	18.4 467	32 lb 14.5 kg	35 lb 15.9 kg
1"	6.0 152	—	—	8.6 219	12.1 308	6.75 171	18.9 479	39 lb 17.7 kg	43 lb 19.5 kg
1-1/4", 1-1/2"	7.25 184	—	—	8.6 219	12.7 322	7.1 179	19.75 502	44 lb 20 kg	48 lb 21.8 kg
2"	8.5 216	—	—	10.6 270	13.3 338	8.2 208	21.5 546	69 lb 31.3 kg	75 lb 34 kg
2-1/2"	—	10.9 276	11.5 292	13.6 346	14.0 356	13.9 354	27.9 710	157 lb 71.2 kg	171 lb 77.6 kg
3"	—	11.75 298	12.5 318	13.6 346	13.9 354	14.4 367	28.4 721	188 lb 85.3 kg	205 lb 93 kg
4"	—	13.9 352	14.5 368	15.6 397	15.25 387	16.1 410	31.4 797	284 lb 129 kg	309 lb 140 kg

Local regulation may restrict the use of this product below the conditions quoted. Limiting conditions refer to standard connections only.  
 In the interests of development and improvement of the product, we reserve the right to change the specification.

TIS 3.015 US 09.02

# Pilot Operated Pressure Regulator

## 1/2" to 4" 25P



### Construction Materials

No.	Part	Material
1	Valve Body	Cast Iron
		Cast Steel
2	Cover	Cast Iron
		Cast Steel
3	Cover Bolts	ASTMA 126 CL B
		ASTMA216 Gr WCB
4	Main Valve Head	ASTMA 126 CL B
		ASTMA216 Gr WCB
5	Main Valve Seat	Steel
		ASTM A449
6	Main Valve Seat Gasket	Stainless Steel
		1-1/2", 25 & 2" 25S
7	Valve Return Spring	AISI 420
		AISI 420F
8	Valve Stem	all other sizes
		AISI 420F
9	Strainer Screen	Stainless Steel 1/2"-2"
		AISI 420F
10	Valve Stem Sleeve	2-1/2" - 4"
		AISI303
11	Spring Guide	Cast Iron 1/2"-2"
		ASTMA 126 CL B
12	Nut	CRS 2-1/2" - 4"
		AISI 1117
13	Cover Gasket	Steel
		ASTMA307
14	Pressure Equalizer Pipe	Graphite
		Stainless Steel
15	Upper Diaphragm Case	AISI 304
		Cast Iron
16	Stem Bushing (2-1/2" - 4" Cast Steel only)	ASTMA 126 CL B
		ASTMA216 Gr WCB
17	Diaphragm Plate Stem	Cast Steel
		ASTMA216 Gr WCB
18	Diaphragm Stem Guide	Stainless Steel
		AISI 304
19	Nut	Stainless Steel
		AISI 304
20	Lower Diaphragm Case	Brass 1/2" - 2"
		ASTMB16
21	Diaphragm Plate	Steel 2-1/2" - 4"
		ASTMA307
22	Main Diaphragm (2 ply)	Cast Iron
		ASTMA 126 CL B
23	Bushing	Cast Steel
		ASTMA216 Gr WCB
24	Tube & Orifice	Brass 1/2" - 2"
		ASTMB124 (377)
25	Tubing Assembly	C.I. 2-1/2" - 4"
		ASTM A126 CLB
26	Plug (Cast Iron)	Phosphor Bronze
		ASTMB103 (511)
27	Connector Stud	CRS
		AISI 1117
28	Body Gasket	Stainless Steel
		AISI 304

No.	Part	Material
27	Connector Stud	Stainless Steel
28	Body Gasket	AISI 303
		1/2" - 2" Copper Clad
		Non-Asbestos Fill
		2-1/2" - 4" Graphite
43	Adjustment Screw	Stainless Steel
44	Jam Nut	AISI 303
45	Pilot Valve Spring	Brass
46	Upper Diaphragm Case	ASTMB16
47	Lower Diaphragm Case	Steel
		AISI 1060
48	Spring Plate	Cast Iron
		ASTMA 126 CL B
49	Diaphragm	Cast Steel
		ASTMA216 Gr WCB
50	Diaphragm PLate	Cast Iron
		ASTMA 126 CL B
51	Pilot Head Spring	Cast Steel
		ASTMA216 Gr WCB
60	Pilot Gasket	Brass
61	Pilot Mounting Screws	Graphite
62	Diaphragm Case Screws	Steel
		ASTM A449
		ASTM A449
		Steel 5/16" - 18 x 1"
		ASTMA449

### Installation

The regulator should be installed in a horizontal line with suitable bypass and isolating valves. A steam trap should be installed upstream to prevent condensate from reaching the regulator. The trap and regulator should both be protected with a strainer. The pressure sensing line should be located in a straight section of the downstream piping at least 10 pipe diameters from the nearest fitting. Complete installation instructions are given in IMI3.000.

### Maintenance

Complete installation and maintenance instructions are given in IMI 3.000, a copy of which is supplied with each regulator. Available spare parts are shown on TIS 3.027 & 3.0271.

TIS 3.015 US 09.02