

PNEUMATIC CONTROL VALVES PV25 (ANSI)

V25S globe control valves with linear actuators PA series

DESCRIPTION

The PV25 control valves are single seated, two-way body constructed with in-line straight connections. The PA pneumatic actuator is rubber diaphragm and multi-springs. Its action can be DA – direct action (air to close) or RA – reverse action (air to open). The PV25 valves have been designed to assure an accurate control in any process condition. Their wide application ranges allow the use of this valve with the most common process fluids such as water, superheated water, steam, air, gas and other non corrosive fluids.

MAIN FEATURES

Single seated, two way, direct or reverse action valve. Valve top flange permanently attached to the body, removal is unnecessary for replacing the actuator. Metal to metal sealing as standard.

- OPTIONS:**
- Position transmitter 4-20 mA.
 - Pneumatic pilot positioner.
 - Electropneumatic pilot positioner.
 - Air filter regulator.
 - Top-work manual handwheel.
 - Stainless steel construction.
 - Soft sealing and satellite seat and plug.
- USE:**
- Saturated and superheated steam.
 - Hot and superheated water.
 - Air, gases and other noncorrosive fluids.
 - Group 1 fluids (Please consult factory).

AVAILABLE MODELS: PV25S Cast steel.

VALVE SIZES: 1/2" to 6".
CONNECTIONS: Flanged ANSI B16.5 150 lb AND 300 lb.

ACTUATORS: PA205; PA280; PA340; PA435.
ACTUATORS CONNECTIONS: 1/4" NPT-F.
CONTROL SIGNAL: 0,2 – 1 bar; 0,4 – 1,2 bar; 0,4 – 2 bar.

MAX. AIR SUPPLY PRESSURE: 3,5 bar.

AMBIENT TEMP.: -20 °C to +70°C.
BONNET: From -5 °C to +220 °C (standard).
Finned for temperature >220 °C.
STEM SEALING: PTFE/GR V-Rings – up to 220 °C. (Standard bonnet).
Graphite – up to 400 °C (Finned bonnet).
Stainless steel bellows.



- PLUG CHARACT.:** EQP – Equal percentage.
PL – Linear.
PT – On/Off.
- PLUG DESIGN:** Contoured.
V-ported.
Perforated (Low noise, anti-cavitation).
Microflow.
- PORT:** Full port or reduced on request.
- COMPLEMENTARY INFORMATION:** See IS PV10.00 E – Technical information.

HOW TO SELECT: Never size the valve according to the pipe diameter in which it has to be fitted, but according to the required actual flow of steam or water. Refer to valve calculation data sheet or consult the factory.

CE MARKING – GROUP 2 (PED – European Directive)		
ANSI 150 lb	ANSI 300 lb	Category
1/2" to 2" DN 15 to 50	1/2" to 1" DN 15 to 25	SEP
3" to 6" DN 80 to 150	1 1/2" to 4" DN 40 to 100	1 (CE Marked)
/	6" - DN 150	2 (CE Marked)

VALVE BODY LIMITING CONDITIONS

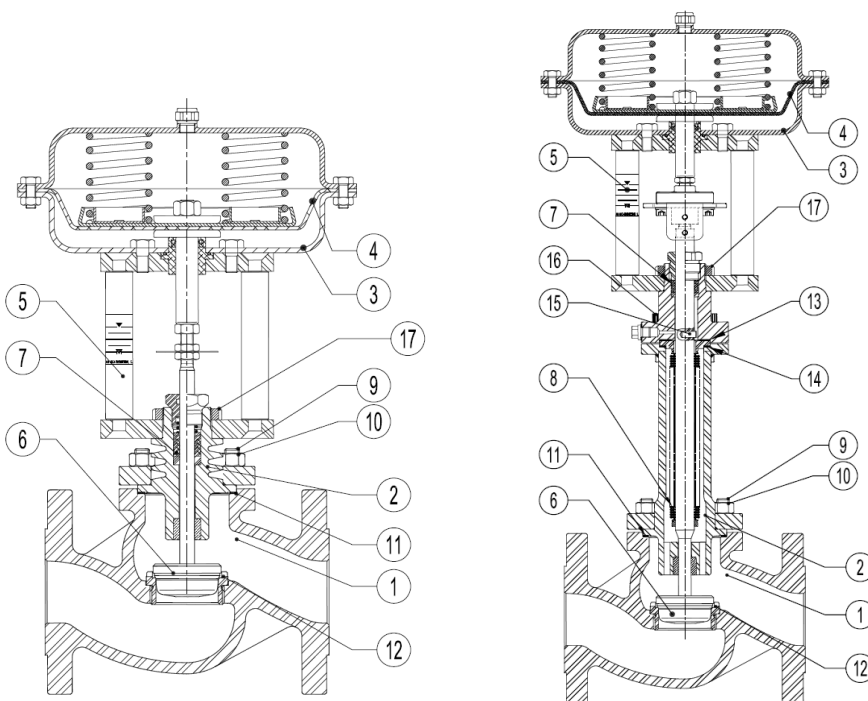
PV25S – ANSI 150 lb		PV25S – ANSI 300 lb	
ALLOWABLE PRESSURES	RELATED TEMPERATURES	ALLOWABLE PRESSURES	RELATED TEMPERATURES
19,3 bar	-10 °C / 50 °C	50 bar	-10 °C / 50 °C
15,8 bar	150 °C	43,9 bar	200 °C
12,1 bar	250 °C	36,9 bar	350 °C
8,4 bar	350 °C	34,6 bar	400 °C

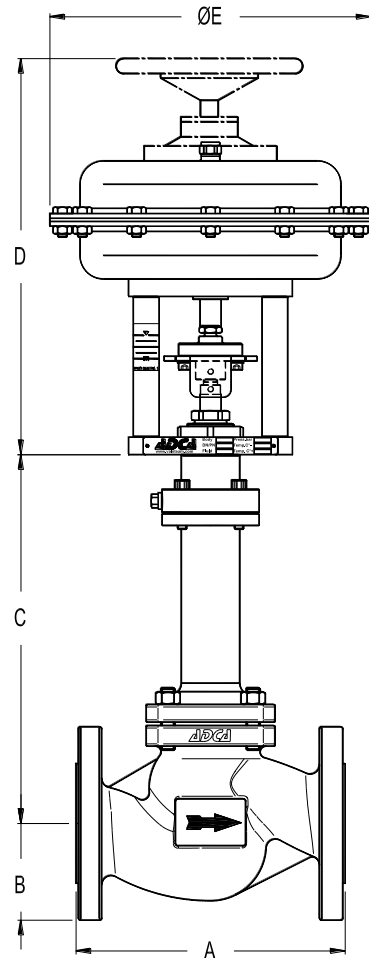
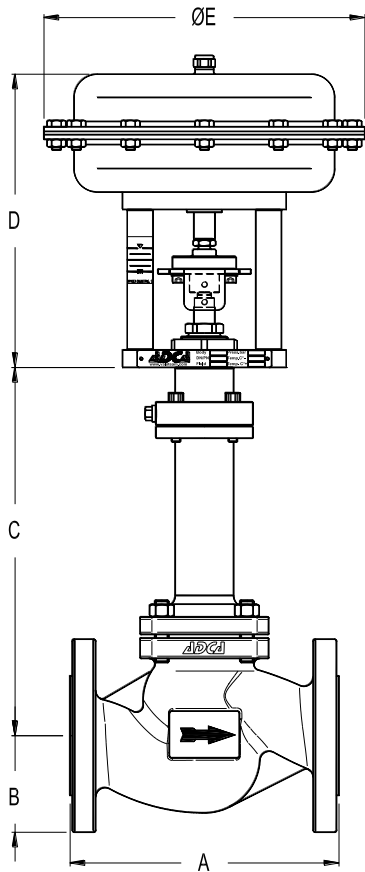
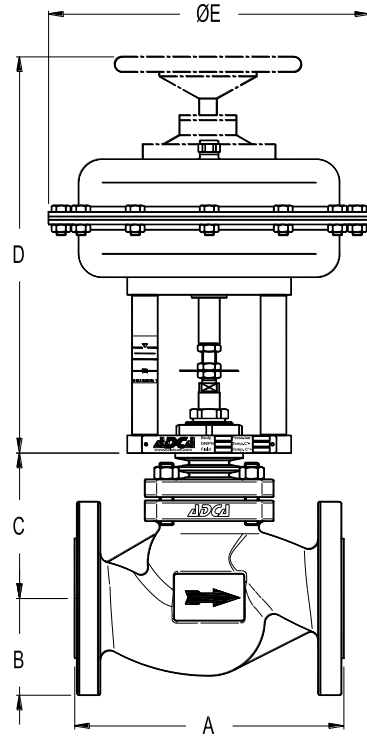
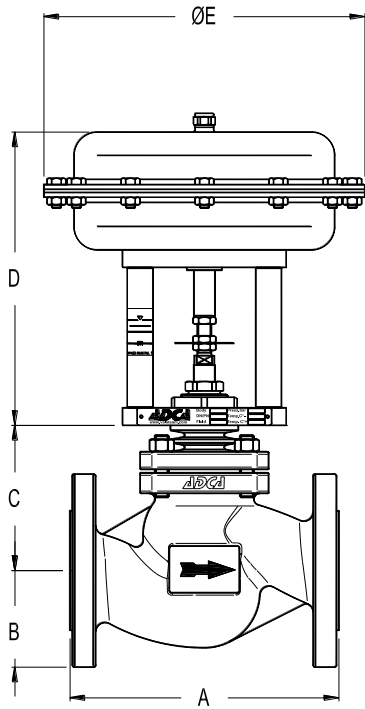
Note: Maximum temperatures limited to the valve packing selected. Valves with soft seal, maximum allowable temperature: 200 °C.

MATERIALS

POS. Nº	DESIGNATION	MATERIAL V25S
1	Valve body	ASTM A216WCB / 1.0619; GP240GH / 1.0619
2	Bonnet	CF8M / 1.4408 **
3	Actuator (Steel)	S235JRG2 / 1.0038
	Actuator (Stainl. st.)	AISI 304 / 1.4301
4	*Diaphragm	NBR 70
5	Yoke (Steel)	C45E / 1.1191
	Yoke (Stainl. St.)	AISI 304 / 1.4301
6	*Valve plug	PTFE/GR; St. steel
7	*Standard packing	PTFE/GR
8	*Metal bellows	AISI 316Ti / 1.4571
9	Studs	34CrNiMo6 / 1.6582
10	Nuts	Steel 8.8
11	Gasket	Stainless steel / Graphite
12	Seat	Stainless steel
13	Gasket	Stainless steel / Graphite
14	Gasket	Stainless steel / Graphite
15	Straight pin	Stainless steel
16	Bolts	Steel 10.9
17	Lock nut	Stainless steel

*Available spare parts.; **Except 6" (DN 150), completely in cast steel.





DIMENSIONS (mm) – VALVE BODY							
SIZE	A	A	B	B	C - BONNET		
	ANSI 300 lb	ANSI 150 lb	ANSI 150 lb	ANSI 300 lb	STANDARD	FINNED	BELLOWS
1/2"	190 a)	184 a)	44,5	47,5	85	150	290
3/4"	194 a)	184 a)	49	58,5	85	150	290
1"	197	184 a)	54	62	90	170	295
1 1/2"	235	* 235	63,5	78	115	195	285
2"	267	* 267	76	82,5	125	215	285
3"	318	* 318	95	105	175	275	392
4"	368	* 368	114,5	127	190	310	400
6"	473	** 480	140	159	210	320	610



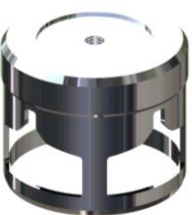
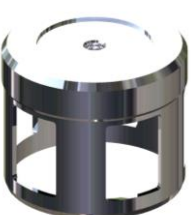
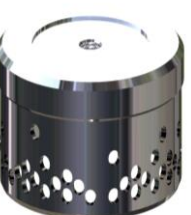
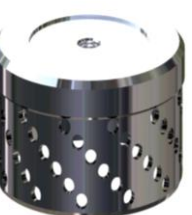
a) Welded-on flanges; * Same length as ANSI 300 lb; ** Same length as EN PN16.

FLOW RATE COEFFICIENTS (m ³ /h) & VALVE STROKES (mm)										
	SIZES									
	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"
Kvs	3,8	5,1	9,4	–	22,2	40,1	–	89,7	136,7	316,1
Stroke	20	20	20	–	20	20	–	30	30	40 / 50

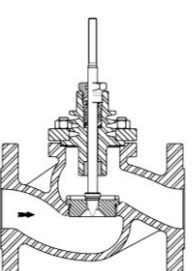
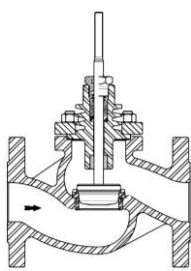
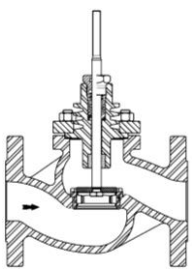
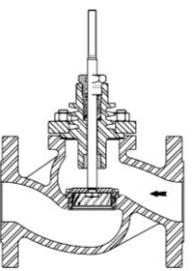
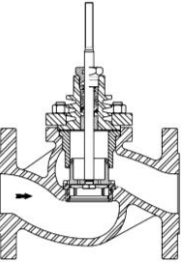
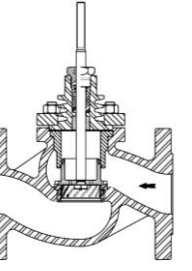
DIMENSIONS – ACTUATOR			
Type	Ø E (mm)	D (mm)	WGT . (kg)
		1/2" to 4" DA / RA	
PA205	210	235	5,7
PA280	275	240	8,8
PA340	335	265	14,3
PA435	430	295	24,5

Perforated plugs have different flow rates, see IS PV 10.00 E – Technical Information.

For conversion Kvs = Cv (US) x 0,855.

PLUG DESIGN					
Microflow Linear PL	Countoured Equal % or Linear EQP – PL	V-Ported Equal Percentage EQP	V-Ported Linear PL	Perforated Equal Percentage EQP	Perforated Linear PL
					

V-Ported and perforated plugs are also available in balanced pressure version.

PLUG DESIGN					
Microflow Linear PL	Countoured Equal % or Linear EQP – PL	V-Ported EQP - PL	V-Ported Perforated EQP - PL	V-Ported Balanced EQP – PL	Perforated Balanced EQP - PL
					

MAX. PERM. PRESSURE DROP (bar) – N.C. (Fluid to open) – Reverse action actuator (air signal to open)								
ACTUATOR	CONTROL SIGNAL	SIZES						
		1/2"	3/4"	1"	1 1/2"	2"	3"	4"
PA205	0,2 ÷ 1 bar	6	6	5	–	–	–	–
	0,4 ÷ 1,2 bar	10	10	7	–	–	–	–
	0,4 ÷ 2 bar	12	12	9	–	–	–	–
PA280	0,2 ÷ 1 bar	28	26	16	6	3,5	–	–
	0,4 ÷ 1,2 bar	40	38	20	10	5	–	–
	0,4 ÷ 2 bar	50	45	25	12	6,5	–	–
PA340A	0,2 ÷ 1 bar	60	60	50	12	10	–	–
	0,4 ÷ 1,2 bar	80	80	60	16	13	–	–
	0,4 ÷ 2 bar	100	100	80	20	18	–	–
PA340B	0,2 ÷ 1 bar	–	–	–	–	–	2,5	1
	0,4 ÷ 1,2 bar	–	–	–	–	–	3,5	1,5
	0,4 ÷ 2 bar	–	–	–	–	–	4	2
PA435A	0,2 ÷ 1 bar	–	–	–	40	25	–	–
	0,4 ÷ 1,2 bar	–	–	–	48	30	–	–
	0,4 ÷ 2 bar	–	–	–	55	45	–	–
PA435B	0,2 ÷ 1 bar	–	–	–	–	–	5	3
	0,4 ÷ 1,2 bar	–	–	–	–	–	7	5
	0,4 ÷ 2 bar	–	–	–	–	–	8	6
	0,4 ÷ 2,4 bar	–	–	–	–	–	15	12

For valve size 6" please consult factory.

The pressure drop values are referred to closed valves. They have been verified by a control signal coming from an electro-pneumatic converter with an enduring minimum signal of 0,2 bar.

The actuator press. drops given with closed valve for the actuator signal 0,4 - 2 bar are also valid for ON-OFF service with air supply at 2,4 bar.

Special spring drops available on request.

The pressure drop values must be used within the body rating limits.

For electric actuator selection please consult catalogue IS EL.20.00 E or our technical department.

If higher differential pressures are required please consult PA45 pneumatic actuators catalogue.

MAX. PERM. PRESSURE DROP (bar) – N.O. (Fluid to open) – Direct action actuator (air signal to close)								
ACTUATOR	CONTROL SIGNAL	SIZES						
		1/2"	3/4"	1"	1 1/2"	2"	3"	4"
PA205	0,2 ÷ 1 bar	16	16	12	–	–	–	–
	0,4 ÷ 2 bar	25	24	16	–	–	–	–
PA280	0,2 ÷ 1 bar	–	–	19	8	4	–	–
	0,4 ÷ 2 bar	–	–	25	16	7	–	–
PA340A	0,2 ÷ 1 bar	–	–	–	16	10	–	–
	0,4 ÷ 2 bar	–	–	–	26	25	–	–
PA340B	0,2 ÷ 1 bar	–	–	–	–	–	3,5	1,5
	0,4 ÷ 2 bar	–	–	–	–	–	7	3
PA435B	0,2 ÷ 1 bar	–	–	–	–	–	5	3
	0,4 ÷ 2 bar	–	–	–	–	–	10	7,5

For valve size 6" please consult.

The actuator pressure drops given with closed valve, are obtained with the following air pressures supply:

Actuator signal 0,2 to 1 bar : air supply 1,2 bar ; Actuator signal 0,4 to 2 bar : air supply 2,4 bar

The actuator press. drops given with closed valve for the actuator signal 0,4- 2 bar are also valid for ON-OFF service with air supply at 2,4 bar.

Special spring drops available on request.

The pressure drop values must be used within the body rating limits.

For electric actuator selection please consult catalogue IS EL.20.00 E or our technical department.

ORDERING CODES V25

VALVE CODES	P	V	.25S	1	1	U	50	.X.
Actuator type (1)								
Pneumatic actuator	P							
Electric actuator	E							
Group designation								
Globe valve, two-way, straight body		V						
Valve model								
ASTM A216 WCB body, stainless steel trim			.25 S					
Stem sealing								
PTFE/GR-V-Rings / Standard bonnet				1				
Virgin PTFE V-Rings / Standard bonnet				2				
Graphite / Standard bonnet				3				
Graphite / Finned bonnet				4				
Bellows				8				
Valve plug								
EQP (equal percentage) – Soft (PTFE-GR)					1			
EQP (equal percentage) – Metal AISI 316 / 1.4401					3			
EQP (equal percentage) – Stellite					4			
PL (linear) – Soft (PTFE/GR)					6			
PL (linear) – Metal AISI 316 / 1.4401					7			
PT (on-off) – Soft (PTFE/GR)					9			
PT (on-off) – Metal AISI 316 / 1.4401					10			
Pipe connection								
Flanged ANSI B16.5 150lb						U		
Flanged ANSI B16.5 300lb						V		
Size								
1/2"							15	
3/4"							20	
...								
Actuator								(1)
Extras (2)								E

ACTUATOR CODES (pneumatic)	P.	5	R	18
Group designation				
Multi-spring, pneumatic linear actuator	P.			
Actuator size				
205		1		
280		3		
340A – From DN 15 to DN 50		5		
340B – From DN 65 to DN 100		6		
435A – From DN 15 to DN 50		7		
435B – From DN 65 to DN 100		8		
Actuator type				
Direct action (air to close)			D	
Reverse action (air to open)			R	
Actuator Construction				
Steel construction (painted) – standard				(2)
Stainless steel construction				I
Control signal				
0,2 – 1 bar (3/15 psi)				15
0,4 – 1,2 bar (6/18 psi)				18
0,4 – 2 bar (6/30 psi)				30
0,4 – 2,4 bar (6/35 psi)				35

→ To be introduced on ".X.", if supplied in combination with the valve.

Example:

V25S valve model, EQP soft plug, PTFE/GR stem sealing, 2" ANSI 150 lb, complete with reverse action actuator signal 0,4 – 1,2 bar, size 340A steel:

Code: PV.25S.11U50.5R18

REMARKS:

- (1) – Indicate actuator type.
- (2) – Omitted if the standard valve is selected.
- (3) – To be used only when a non-standard combination valve is supplied.

ADCATrol control valves are identified by a serial number on a nameplate, located on the actuator yoke. When ordering spares, always use that serial number. If the valve has non-standard extras the serial number has also an E (extras).