

PNEUMATIC CONTROL VALVES PV403

(V403 globe valves series with linear actuators PA or EL series)

DESCRIPTION

The PV403 control valves are three-way valve body for mixing service. 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 V403 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, diathermic oil, steam, air, gas and other non corrosive fluids.

MAIN FEATURES

Mixing or diverting control valve.
Standard packing or bellows sealed stem sealing.

OPTIONS: Soft sealing.
 Position transmitter.
 Pneumatic pilot positioner.
 Air filter regulator.
 Top-work manual handwheel.

USE: Hot and superheated water.
 Diathermic oil.
 Saturated and superheated steam.
 Air, gases and other non-corrosive fluids.

AVAILABLE MODELS: PV403S-EV403S – steel construction.
 PV403I-EV403I – stainless steel.

VALVE SIZES: DN 65 to DN 100.

CONNECTION: Flanged EN 1092-1 PN16 and PN40.

PNEUMATIC ACTUATORS: PA340, PA435.

ACTUATOR CONN: 1/4" NPT-F.

CONTROL SIGNAL: 0,2 – 1bar; 0,4 – 1,2 bar; 0,4 – 2 bar.

ELECTRIC ACT.: Consult catalogue IS EL 20.00 E.



MAX. AIR SUPPLY: 3,5 bar.

AMBIENT TEMP.: -20 °C to 70 °C.

STEM SEALING: PTFE/GR V-Rings – up to 220 °C.
 Graphite – up to 400 °C.
 Bellows sealed.

PLUG TYPE: Linear (PL).

PORT: Full port.

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 the valve calculation data sheet or consult the factory.

CE MARKING – GROUP 2 (PED – European Directive)

PN16 / PN40	Category
DN 65 to DN 100	1 (CE marked)

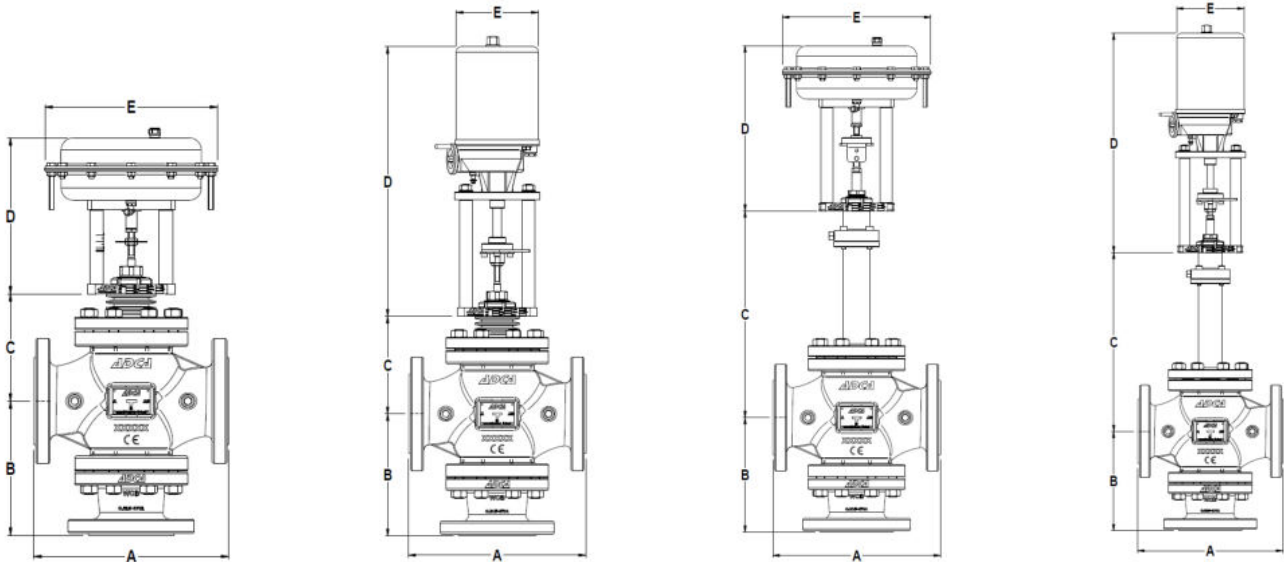
BODY LIMITING CONDITIONS *

V403S – PN16		V403I – PN16		V403S – PN40		V403I – PN40	
ALLOW. PRESSURE	RELATED TEMP.	ALLOW. PRESSURE	RELATED TEMP.	ALLOW. PRESSURE	RELATED TEMP.	ALLOW. PRESSURE	RELATED TEMP.
16 bar	50 °C	16 bar	50 °C	40 bar	50 °C	40 bar	50 °C
13,3 bar	200 °C	12,7 bar	200 °C	33,3 bar	200 °C	31,8 bar	200 °C
12,1 bar	250 °C	12 bar	250 °C	27,6 bar	300 °C	27,6 bar	300 °C
11 bar	300 °C	11 bar	300 °C	25,7 bar	350 °C	26,4 bar	350 °C
10,2 bar	350 °C	10,5 bar	350 °C	23,8 bar	400 °C	25,7 bar	400 °C

* Rating according to EN1092-1:2018; Maximum temperature limited to the valve packing selected. Valves with soft seal: max. allow. temp: 200 °C.

DIMENSIONS (mm)

SIZE	A	B	C - BONNET			
			STANDARD PACKING	WEIGHT (kg)	BELLOWS SEALED	WEIGHT (kg)
DN 65	290	215	172	43	383	45
DN 80	310	215	172	49	388	52
DN 100	350	240	187	65	390	69

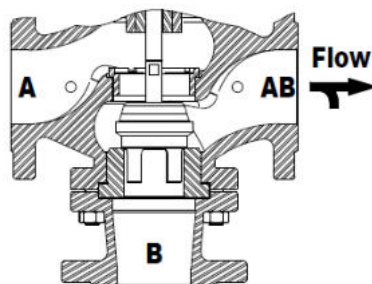


DIMENSIONS – PNEUMATIC ACTUATOR

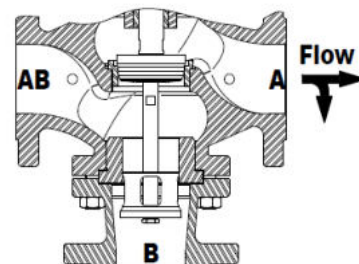
TYPE	E (mm)	D (mm)	WGT. (kg)
PA205	210	235	6
PA280	275	245	10
PA340	335	265	15
PA435	430	295	25

DIMENSIONS – ELECTRIC ACTUATOR

TYPE	E (mm)	D (mm)
EL20	145	458
EL45	145	458
EL80	188	517
EL120	188	517



Mixing valve



Diverting valve

FAILURE POSITION DEPENDING ON VALVE DUTY

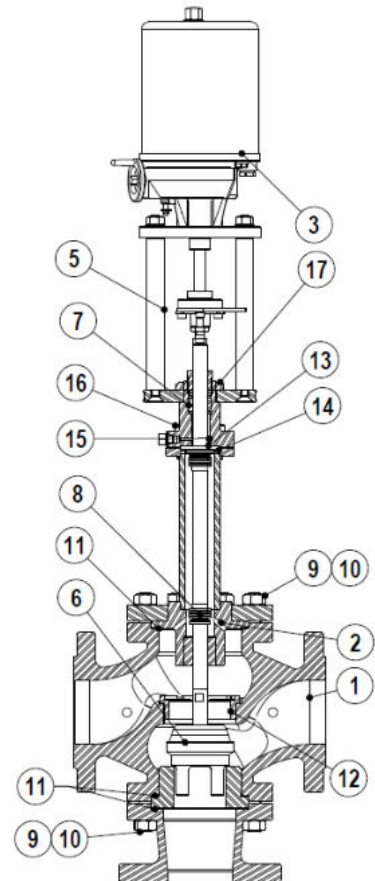
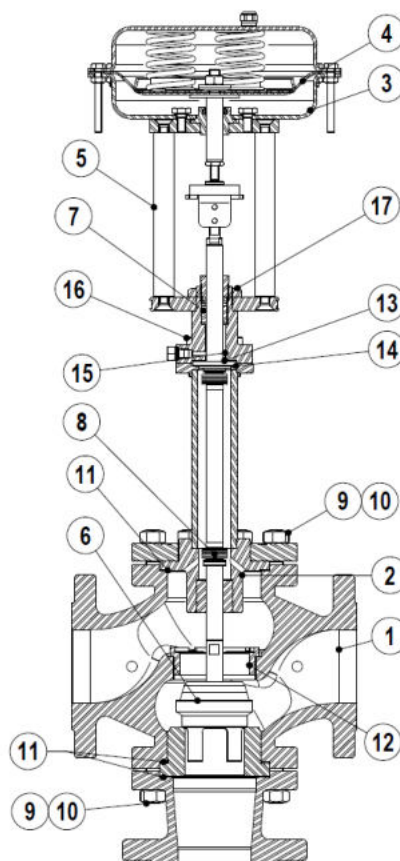
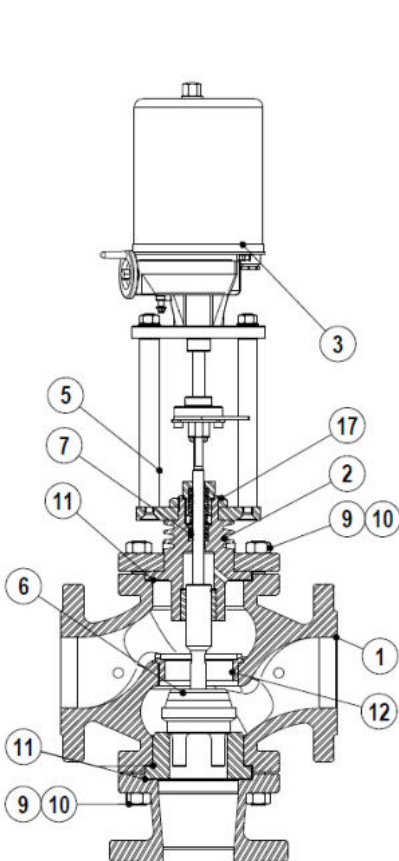
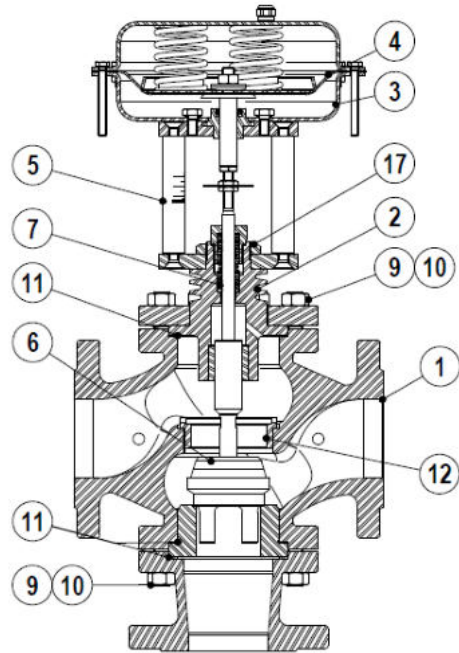
Mixing valve		Diverting valve	
Direct action actuator (a)	Reverse action actuator (b)	Direct action actuator (a)	Reverse action actuator (b)
Port A to AB closes	Port B to AB closes	Port AB to B closes	Port AB to A closes

- a) Retracted stem on air failure.
- b) Extended stem on air failure.

MATERIALS

POS. N°	DESIGNATION	MATERIAL
1	Valve body	A216 WCB / 1.0619
2	Bonnet	A351 CF8 / 1.4308
3	Pneum. actuator (steel)	S235JRG2 / 1.0038
	Pneum. actuator (st. steel)	AISI 304 / 1.4301
	Electrical actuator casing	Aluminium
4	* Diaphragm	NBR 70
5	Yoke (steel)	C45E / 1.1191
	Yoke (stainless steel)	AISI 304 / 1.4301
6	* Valve plug	PTFE/GR ; Stainless steel
7	* Standard packing	PTFE/GR
8	* Metal bellows	AISI 316 Ti / 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.



VALVE STROKE (mm)			
	SIZES		
	DN 65	DN 80	DN 100
STROKE	30		

FLOW RATE COEFFICIENTS			
	SIZES		
	DN 65	DN 80	DN 100
Kvs	63	100	160

Kvs in m³/h, see IS PV10.00 E – Technical information;
 For conversion Kvs = Cv (US) x 0,855.

MAX. PERM. PRESSURE DROP (bar) – N.C. (fluid to open) – Reverse action actuator (air signal to open)				
ACTUATOR	CONTROL SIGNAL	SIZES		
		DN 65	DN 80	DN 100
PA340B	0,2 ÷ 1 bar	4	2,5	1
	0,4 ÷ 1,2 bar	5	3,5	1,5
	0,4 ÷ 2 bar	6	4	2
PA435B	0,2 ÷ 1 bar	6	5	3
	0,4 ÷ 1,2 bar	8	7	5
	0,4 ÷ 2 bar	10	8	6

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.

ORDERING CODES V403												
VALVE CODES					P	V	.43S	M	1	6	L	65
Actuator type												
Pneumatic actuator					P							
Electric actuator					E							
Group designation												
Globe valve, three way					V							
Valve model												
Steel body							.43S					
Stainless steel body							.43I					
Flow												
Mixing								M				
Diverting (only available for DN 40 and above)								D				
Stem sealing												
PTFE/GR V-Rings / Standard bonnet									1			
Virgin PTFE V-Rings / Standard bonnet									2			
Graphite / Standard bonnet									3			
Stainless steel bellows									8			
Valve plug												
PL (linear) – Soft (PTFE/GR)										6		
PL (linear) – Metal AISI 316 / 1.4401										7		
Pipe connection												
Flanged EN 1092-1 PN16											L	
Flanged EN 1092-1 PN40											N	
Size												
DN 65												65
DN 80												80
DN 100												100
Actuator												(1)
Extras												
Full description or additional codes have to be added in case of non-standard combination.											E	

ACTUATOR CODES (PNEUMATIC) *					
VALVE CODES		P.	6	D	15
Group designation					
Multi-spring, pneumatic linear actuator		P.			
Actuator size					
340B – From DN 65 to DN 100			6		
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 (6/35 psi)					35

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

Example:

V403S mixing valve model, PL soft plug, PTFE/GR stem sealing, DN 65, complete with reverse action actuator signal 0,4 – 1,2 bar, size 340A steel:

Code: PV.43S.M16L65.6R18

REMARKS:

- (1) – Indicate actuator.
- (2) – Omitted if the standard valve is selected.

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).

* For electric actuator ordering codes, consult our technical department.