

## “ADCATROL” PNEUMATIC CONTROL VALVES PV40 ( V40 globe valves series with linear actuators PA or EL series )

### DESCRIPTION

The PV40 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 PV40 valves have been designed to assure an accurate control in any process condition. Their wide application ranges allows to use 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:**  
Soft sealing  
Position transmitter  
Pneumatic pilot positioner  
Air filter regulator  
Top-work manual handwheel

**USE:**  
Saturated and superheated steam  
Hot and superheated water  
Diathermic oil  
Air, gases and other no corrosive fluids

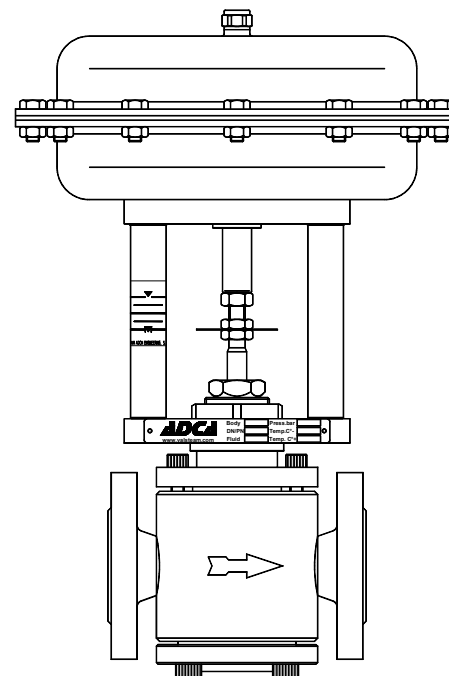
**AVAILABLE MODELS:**  
PV40S-EV40S – steel construction  
PV40I-EV40I – stainless steel

**VALVE SIZES:**  
DN15 to DN50

**CONNECTION:**  
Flanged EN 1092-1 or ANSI  
Threaded connections on request

**PNEUMATIC ACTUATORS:**  
PA-205,PA-280,PA-340,PA-435

**ACTUATOR CONN:** ¼” NPT-F  
**CONTROL SIGNAL:** 0,2 – 1bar ; 0,4 – 1,2 bar ; 0,4 – 2 bar  
**ELECTRIC ACT.:** Consult catalogue IS EL20.00 E



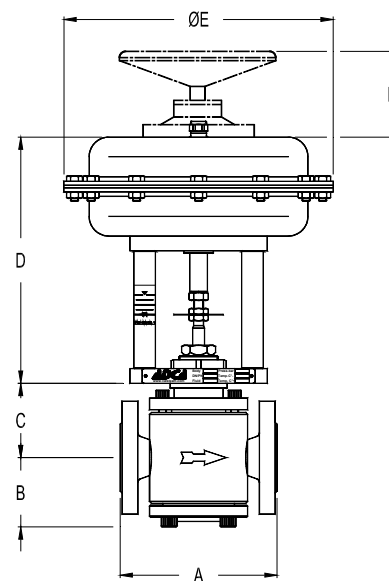
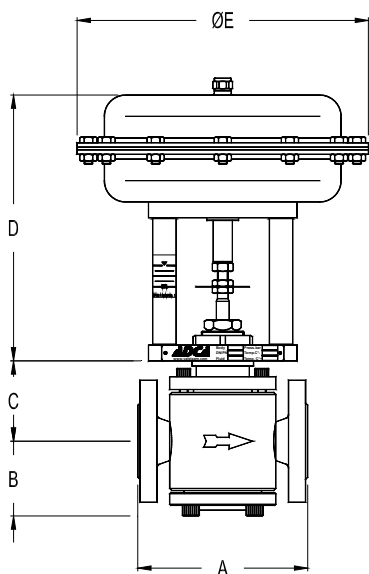
**MAX.AIR SUPPLY:** 3,5 bar  
**AMBIENT TEMPERATURE:** -20°C ....+70°C  
**STEM SEALING:** PTFE/GR V-Rings-220°C (Standard bonnet)  
Graphite – 300°C (Extended bonnet)  
**PLUG TYPES:** Equal percentage (EQP)  
Linear (PL)  
On-Off (ON)  
**PORT:** Full port as standard  
Reduced or microflow on request

**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.

VALVE LIM. CONDITIONS V40S		VALVE LIM. CONDITIONS V40I	
PRESSURE/TEMPERATURE		PRESSURE/TEMPERATURE	
40 bar	-10/50°C	40 bar	-10/100°C
33,3 bar	200 °C	33,7 bar	200 °C
30,4	250 °C	31,8 bar	250 °C
27,6	300 °C	29,7 bar	300 °C

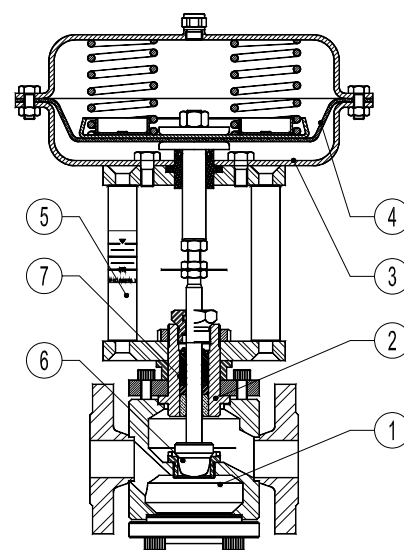
Maximum temperature limited to the valve packing selected  
Valves with soft seat , maximum allowable temperature: 200°C

CE MARKING (PED - European Directive 97/23/EC)	
PN 40	Category
DN15 to DN32	SEP - art. 3, paragraph3
DN40 to DN50	1 (CE Marked)



**DIMENSIONS - VALVE BODY**

DN	A (mm)	B (mm)	C (mm) BONNET		
			STANDARD	FINNED	EXTENDED
15	150	71	75	140	140
20	150	71	75	140	140
25	160	71	75	140	140
32	180	75	83	163	163
40	200	82	96	163	163
50	230	97	100	182	182



**DIMENSIONS - PNEUMATIC ACTUATOR**

Type	ø E (mm)	D (mm)
		DN15-DN50 DA/RA
PA-205	210	235
PA-280	275	240
PA-340	335	265
PA-435	430	295

**MATERIALS**

POS.	DESIGNATION	PV40S - EV40S	PV40I - EV40I
1	Valve Body	S355 J2 G3 / 1.0570	AISI 316 / 1.4401
2	Bonnet	CF8 / 1.4308	CF8 / 1.4308
3	* Actuator (Steel)	S235JRG2 / 1.0038	S235JRG2 / 1.0038
	* Actuator (St. steel)	AISI304 / 1.4301	AISI304 / 1.4301
4	Diaphragm	NBR70	NBR70
5	Yoke (steel)	C45E / 1.1191	C45E / 1.1191
	Yoke (st. steel)	AISI304 / 1.4301	AISI304 / 1.4301
6	Valve plug	St.Steel - PTFE/GR	St.Steel - PTFE/GR
7	Standard packing	PTFE/GR	PTFE/GR

\* Electric actuator : see IS EL20.00 E



**STEAM EQUIPMENT**

**FLOW RATE COEFFICIENTS**

	SIZES					
	DN15	DN20	DN25	DN32	DN40	DN50
<b>Kvs</b>	3,8	5,1	9,4	15,4	22,2	40,1

Kvs in m<sup>3</sup>/h , see data sheet IS PV10.00 E ;  
For conversion Kvs = Cv(US) x 0,855

**ACTUATOR STROKE IN mm**

	SIZES					
	DN15	DN20	DN25	DN32	DN40	DN50
<b>Stroke</b>	20	20	20	20	20	20

**MAX. PERM.PRESS.DROP IN bar - N.C.(fluid to open) -Reverse action actuator (air signal to open)**

ACTUATOR	CONTROL SIGNAL	SIZES								
		DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80	DN100
PA-205	0,2 ÷ 1 bar	6	6	5	—	—	—	—	—	—
	0,4 ÷ 1,2 bar	10	10	7	—	—	—	—	—	—
	0,4 ÷ 2 bar	12	12	9	—	—	—	—	—	—
PA-280	0,2 ÷ 1 bar	28	26	16	8	6	3,5	—	—	—
	0,4 ÷ 1,2 bar	40	38	20	12	10	5	—	—	—
	0,4 ÷ 2 bar	50	45	25	16	12	6,5	—	—	—
PA-340A	0,2 ÷ 1 bar	60	60	50	20	12	10	—	—	—
	0,4 ÷ 1,2 bar	80	80	60	30	16	13	—	—	—
	0,4 ÷ 2 bar	100	100	80	40	20	18	—	—	—
PA435A	0,2 ÷ 1 bar	—	—	—	—	40	25	—	—	—
	0,4 ÷ 1,2 bar	—	—	—	—	48	30	—	—	—
	0,4 ÷ 2 bar	—	—	—	—	55	45	—	—	—

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 2,5 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.

**MAX. PERM.PRESS.DROP IN bar - N.O.(fluid to open) -Direct action actuator (air signal to close)**

ACTUATOR	CONTROL SIGNAL	SIZES								
		DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80	DN100
PA-205	0,2 ÷ 1 bar	16	16	12	5	—	—	—	—	—
	0,4 ÷ 2 bar	25	24	16	7,5	—	—	—	—	—
PA-280	0,2 ÷ 1 bar	—	—	19	10	8	4	—	—	—
	0,4 ÷ 2 bar	—	—	25	20	16	7	—	—	—
PA-340A	0,2 ÷ 1 bar	—	—	—	17	16	10	—	—	—
	0,4 ÷ 2 bar	—	—	—	28	26	25	—	—	—

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 2,5 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 2,5 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 V40

VALVE CODES	V	40	S	.X.
<b>Actuator Type (1)</b>				
Pneumatic Actuator	P			
Electric Actuator	E			
<b>Group Designation</b>				
Globe valve, two way, straight body	V			
<b>Valve Model</b>				
PN40 steel body		.40	S	
PN40 stainlesssteel body		.40	I	
<b>Stem Sealing</b>				
PTFE/GR-V-Rings / Standard bonnet				1
Virgin PTFE V-Rings / Standard bonnet				2
Graphite / Standard bonnet				3
Graphite / Finned bonnet				4
<b>Valve Plug</b>				
EQP (equal percentage) - Soft (PTFE-GR)				1
EQP (equal percentage) - Metal AISI316 / 1.4401				3
EQP (equal percentage) - Stellite				4
PL (linear) - Soft (PTFE/GR)				6
PL (linear) - Metal AISI316 / 1.4401				7
PT (on-off) - Soft (PTFE/GR)				9
<b>Pipe Connection</b>				
Threaded BSP ISO 7/1 Rp				A
Flanged EN1092-1 PN40				N
Flanged ANSI B16.5 300#				V
<b>Size</b>				
DN15				15
DN20				20
...				
<b>Actuator</b>				(1)
<b>Extras (3)</b>				E

#### ACTUATOR CODES ( pneumatic )

ACTUATOR CODES ( pneumatic )	P.			
<b>Group Designation</b>				
Multi-spring , pneumatic linear actuator	P.			
<b>Actuator Size</b>				
205		1		
280		3		
340 A - From DN15 to DN50		5		
435 A - From DN15 to DN50		7		
<b>Actuator</b>				
Direct Action		D		
Reverse Action		R		
<b>Actuator Construction</b>				
Steel construction (painted) - standard			(2)	
Stainless steel construction			I	
<b>Control Signal</b>				
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

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

Example:

V40S valve model EQP soft plug, PTFE/GR stem sealing DN50 complete with reverse action actuator signal 0,4-1,2bar, size340A steel.

Code: PV.40S.11N50.5R18

REMARKS:

- (1)- Indicate actuator type.
- (2)- Omitted if the standard actuator 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.

Always order spares by using that serial number. If the valve has non-standard extras the serial number has also an E (extras).