

THREE-WAY GLOBE CONTROL VALVES V303 (EN)

DESCRIPTION

The V303 is a series of single seated, three-way globe control valves designed to ensure accurate control in mixing and diverting process engineering and industrial applications. These valves can be assembled with pneumatic, hydraulic or electric actuators, for modulating and shut-off control tasks.

MAIN FEATURES

Robust construction.
Modular design to meet process requirements.
Mixing and diverting versions.
V-port guided plugs.
Stainless steel trim.

OPTIONS AND

ACCESSORIES: Bonnet extension for high and low temperatures.
Various stem sealing options including bellows sealing.

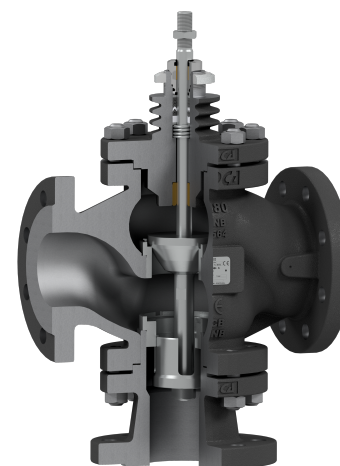
USE: Saturated and superheated steam.
Hot and superheated water.
Thermal oil.
Air, gases and others.

AVAILABLE

MODELS: V303S – carbon steel.
V303i – stainless steel.

SIZES: DN 15 to DN 100.

CONNECTIONS: Flanged EN 1092-1 PN 16 or PN 40.
Standard PN 16 DN 65 flanges are supplied with 4 holes. 8 holes, according to EN 1092-1/-2, on request.



CE MARKING – GROUP 2 (PED – European Directive)

PN 16	PN 40	Category
DN 15 to 50	DN 15 to 32	SEP
DN 65 to 100	DN 40 to 100	1 (CE marked)

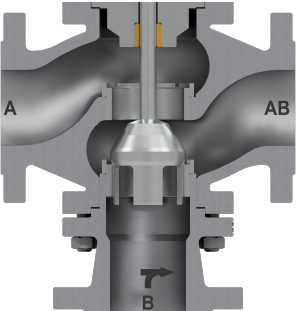
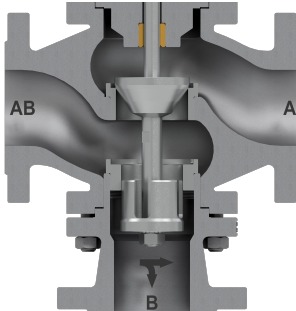
BODY LIMITING CONDITIONS

V303S *				V303i *			
FLANGED PN 16		FLANGED PN 40		FLANGED PN 16		FLANGED PN 40	
ALLOW. PRESSURE	RELATED TEMP.	ALLOW. PRESSURE	RELATED TEMP.	ALLOW. PRESSURE	RELATED TEMP.	ALLOW. PRESSURE	RELATED TEMP.
16 bar	-10 °C / 50 °C	40 bar	-10 °C / 50 °C	16 bar	-10 °C / 50 °C	40 bar	-10 °C / 50 °C
13,3 bar	200 °C	33,3 bar	200 °C	13,4 bar	200 °C	33,7 bar	200 °C
12,1 bar	250 °C	27,6 bar	300 °C	12,7 bar	250 °C	29,7 bar	300 °C
11 bar	300 °C	25,7 bar	350 °C	11,8 bar	300 °C	28,5 bar	350 °C
10,2 bar	350 °C	23,8 bar	400 °C	11,4 bar	350 °C	27,4 bar	400 °C

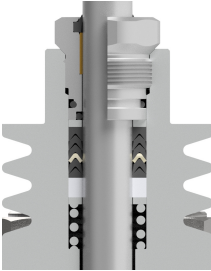
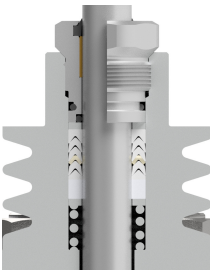
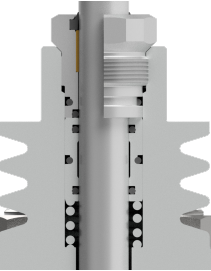
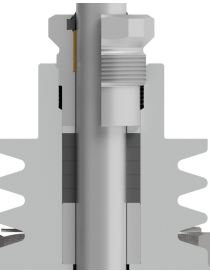
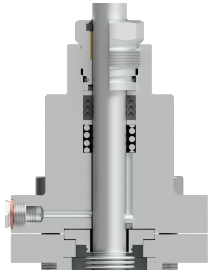
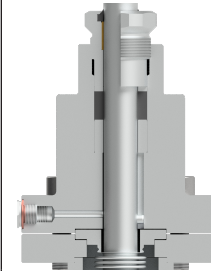
BONNET DESIGN

STANDARD	EXTENDED
 -10 °C to 250 °C	 Above 250 °C

TRIM DESIGN

MIXING	DIVERTING
	

STEM SEALING

PTFE/GR V-RINGS (V1.2)	PTFE V-RINGS (V2.2)	EPDM (EP1)	GRAPHITE (G1)	BELLOWS	
				(BV1)	(BG1)
 -10 °C to 220 °C	 -10 °C to 180 °C	 -10 °C to 150 °C *	 -10 °C to 400 °C	 -60 °C to 220 °C **	 -60 °C to 400 °C **

* Up to 180 °C in steam and hot water applications.

** Maximum operating pressure: 25 bar.

PLUG DESIGN

MIXING



Sealing: Metal to metal
Characteristic: Linear (PL)
Rangeability: 30:1
Leakage: Class IV, acc. to IEC 60534-4

DIVERTING



Sealing: Metal to metal
Characteristic: Linear (PL)
Rangeability: 30:1
Leakage: Class IV, acc. to IEC 60534-4

FLOW RATE COEFFICIENTS – MIXING PLUGS

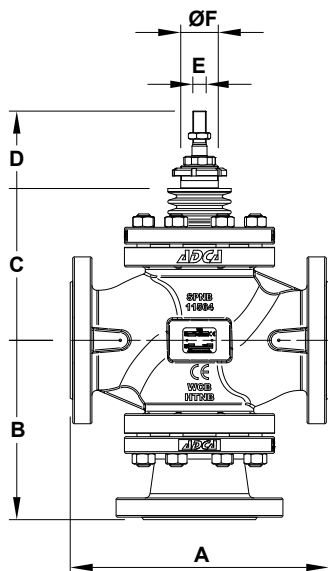
SIZE	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100
Kvs (m³/h)	4	6,3	10	16	25	40	63	100	160
SEAT Ø * (mm)	25	25	25	32	38	48	65	76	96
STROKE (mm)	20						30		

* Upper and lower seats respectively.
 For conversion Kvs = Cv (US) x 0,865.

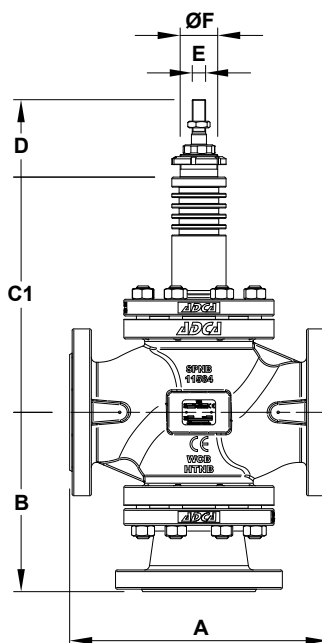
FLOW RATE COEFFICIENTS – DIVERTING PLUGS

SIZE	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100
Kvs * (m³/h)	16 / 10	25 / 16	40 / 25	63 / 40	100 / 63	160 / 100
SEAT Ø * (mm)	32 / 25	38 / 32	48 / 38	65 / 48	76 / 65	96 / 76
STROKE (mm)	20			30		

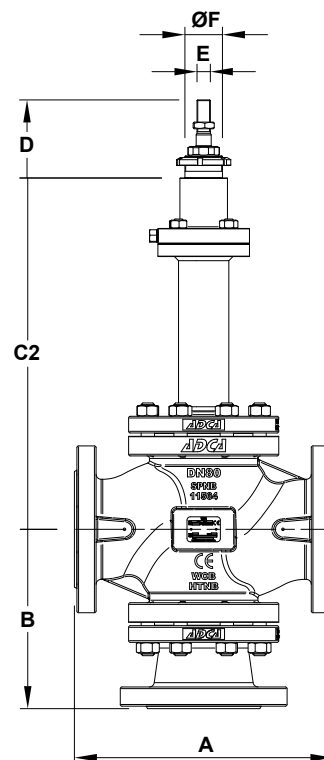
* Upper and lower seats respectively.
 For conversion Kvs = Cv (US) x 0,865.



Valve with standard bonnet



Valve with extended bonnet



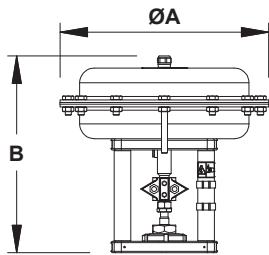
Bellows sealed valve

DIMENSIONS (mm)									
DIMENSION	SIZE								
	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100
A	130	150	160	180	200	230	290	310	350
B	115	120	120	140	140	160	215	225	230
C	104	107	109	113	113	125	177	182	194
C1	169	169	189	193	193	204	276	282	314
C2	295	298	298	302	302	304	416	421	423
D	79						93		
E	M10 x 1						M16 x 1,5		
ØF	M40 x 1,5						M45 x 1,5		

Remarks: Standard PN 16 DN 65 flanges are supplied with 4 holes. 8 holes, according to EN 1092-1/-2, on request.

WEIGHTS (kg)									
	SIZE								
	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100
STANDARD	7,3	8,6	9,4	13,8	17,4	21,3	42,6	51,8	65,6
EXTENDED	8	9,3	10,1	14,7	18,7	22,5	44,6	53,8	67,9
BELLOWS	11,2	12,5	13,2	17,6	21,2	25,1	47,2	56,4	70,1

MAX. PERMISSIBLE ACTUATING THRUSTS (kN)									
	SIZE								
	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100
MAX. THRUST	12						32,5		

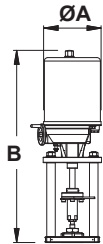


DIMENSIONS – PA SERIES PNEUMATIC ACTUATORS (mm)

DIMENSION	PA10	PA206	PA25	PA281	PA40	PA341	PA436	PA80
ØA	170	209	250	275	300	336	430	405
B	251	236	260	243	325	288	316 / 336 *	505
WEIGHT (kg)	6,3	6,2	10,1	9,6	18,7	14,3	24,4 / 28 *	50,4

* For actuators with spring ranges 1 to 2 bar, 1,5 to 3 bar and 2 to 4 bar.

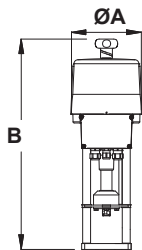
For more information, please consult IS 3.70 and IS 3.70A – PA Linear pneumatic actuators.



DIMENSIONS – EL SERIES ELECTRIC ACTUATORS (mm)

DIMENSION	EL12	EL20	EL45	EL80	EL120
ØA	129	148	148	188	188
B	333	485	485	587	587
WEIGHT (kg)	2,1	8	8	13	13

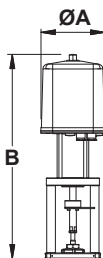
For more information, please consult IS 3.72A – EL Linear electric actuators.



DIMENSIONS – ELS SERIES ELECTRIC ACTUATORS (mm)

DIMENSION	ELS20 / ELS45	ELS80 / ELS100	ELS140	ELS200 / ELS250
ØA	180	180	180	250
B	518	555	630	765
WEIGHT (kg)	4,5	7,2	8	23

For more information, please consult IS 3.73B – ELS Linear electric actuators.

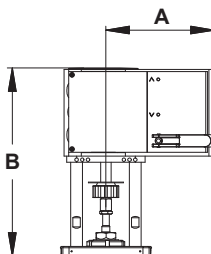


DIMENSIONS – ELR SERIES ELECTRIC ACTUATORS (mm)

DIMENSION	ELR2.1	ELR2.2	ELR2.3
ØA	162	162	162
B	518 / 555 *	536 / 573 *	557 / 593 *
WEIGHT (kg)	8,7	9,3	10

* With PEL electronic positioner.

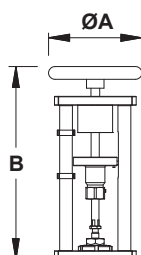
For more information, please consult IS 3.72B – ELR Linear electric actuators fail safe.



DIMENSIONS – AV SERIES ELECTRIC ACTUATORS (mm)

DIMENSION	AVM234S	AVF234S
A	166	166
B	314	314
WEIGHT (kg)	4,1	4,1

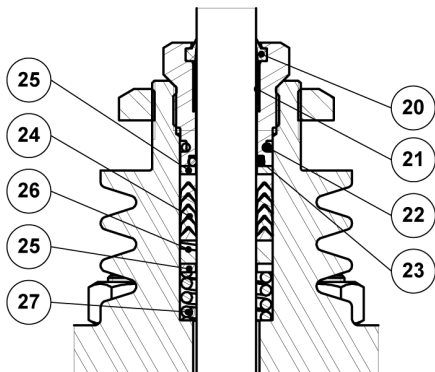
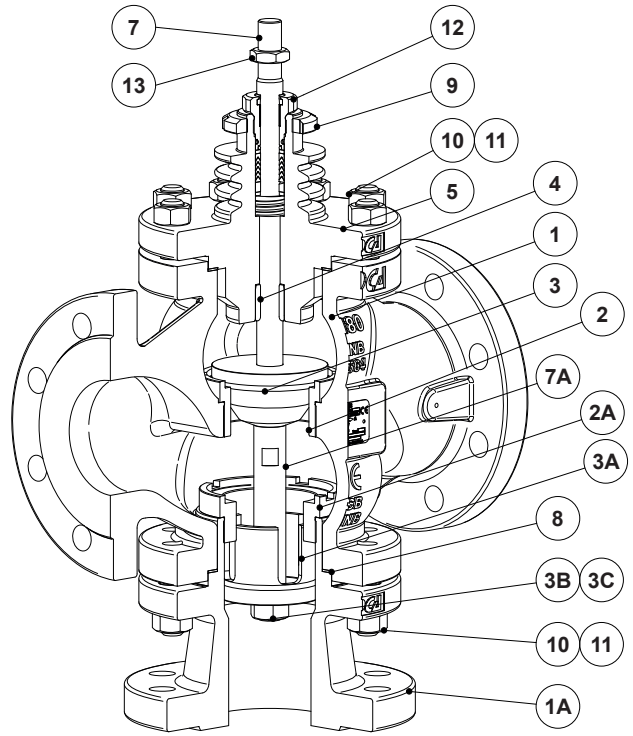
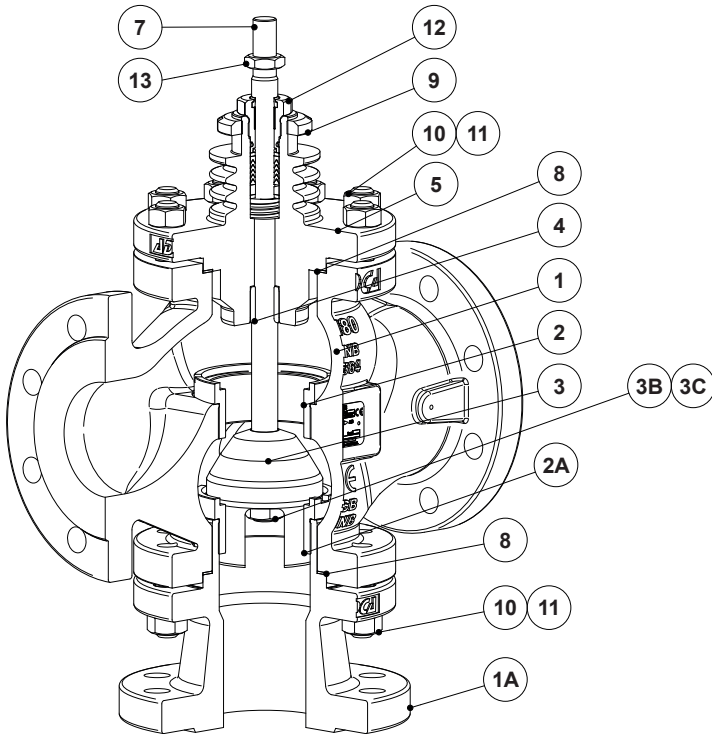
For more information, please consult IS 3.74 – AVM234S-AVF234S Linear electric actuators.



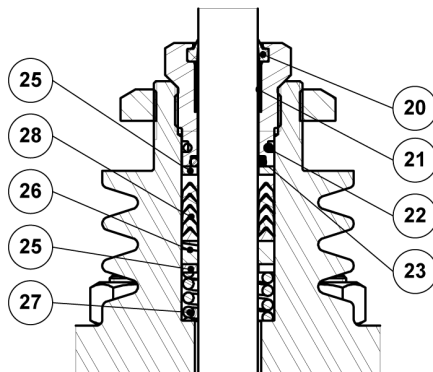
DIMENSIONS – MANUAL OPERATION HANDWHEEL (mm)

DIMENSION	MAH
ØA	160
B	331
WEIGHT (kg)	5,6

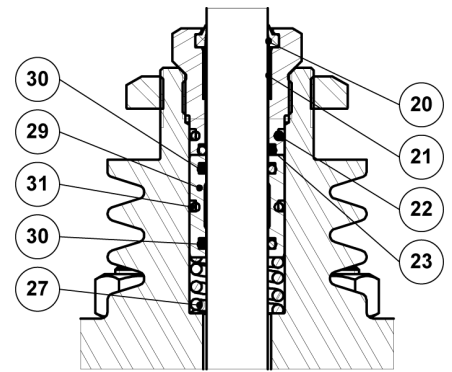
MATERIALS



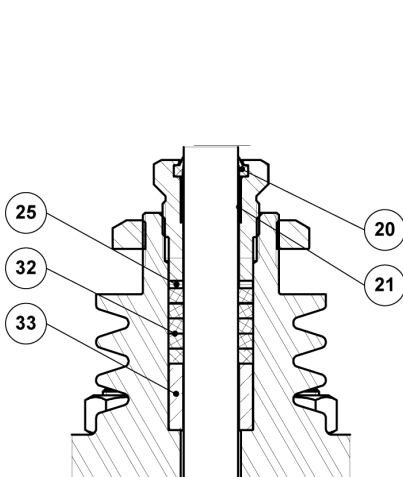
PTFE/GR V-Rings (V1.2)



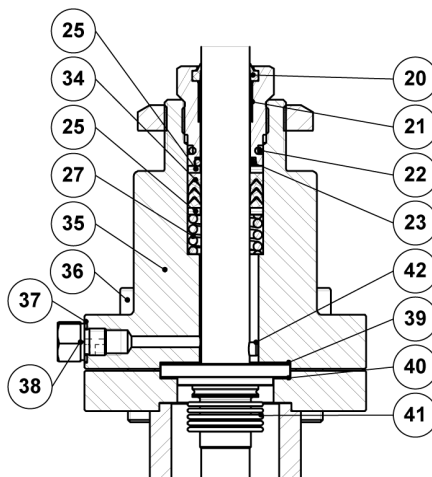
PTFE V-Rings (V2.2)



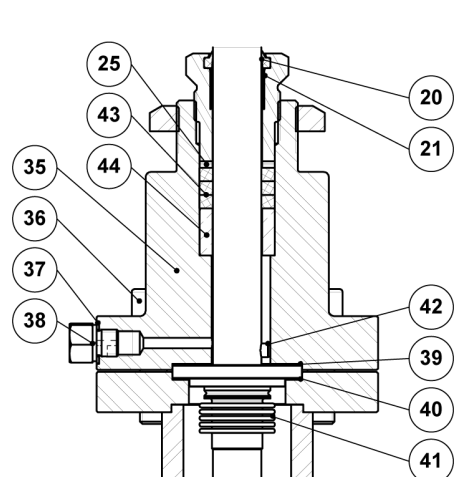
EPDM (EP1)



Graphite (G1)



Bellows sealing (BV1)



Bellows sealing (BG1)

MATERIALS

POS. N°	DESIGNATION	MATERIAL
1	Valve body (V303S)	A216 WCB / 1.0619
	Valve body (V303i)	A351 CF8M / 1.4408
1A	Bottom flange (V303S)	A216 WCB / 1.0619
	Bottom flange (V303i)	A351 CF8M / 1.4408
2	* Upper seat	AISI 316L / 1.4404
2A	* Lower Seat	AISI 316L / 1.4404
3	* Valve plug	AISI 316L / 1.4404
3A	* Valve plug	AISI 316L / 1.4404
3B	* Washer	Stainless steel A2
3C	* Nut	Stainless steel A2-70
4	Lower stem guide	Bronze CB1
5	Bonnet (V16/2G and V16/2S)	A351 CF8M / 1.4408; A216 WCB / 1.0619
	Bonnet (V16/2i)	A351 CF8M / 1.4408
7	* Stem	AISI 316L / 1.4404
7A	* Stem extension	AISI 316L / 1.4404
8	* Gasket	Stainless steel / Graphite
9	Lock nut	A351 CF8 / 1.4308
10	Nuts (V16/2G and V16/2S)	EN 10269 steel
	Nuts (V16/2i)	Stainless steel A2-70
11	Studs (V16/2G and V16/2S)	EN 10269 steel
	Studs (V16/2i)	Stainless steel A2-70
12	* Packing nut	AISI 303 / 1.4305
13	Lock nut	AISI 304 / 4.4301
20	* Scraper ring	Viton; NBR
21	* Plain bearing	Bronze / PTFE
22	* O-ring	EPDM
23	* O-ring	Viton
24	* Chevron packing set	PTFE; Graphite filled PTFE
25	Washer	AISI 304 / 1.4301
26	* Stem guide	Stainless steel filled PTFE
27	* Spring	AISI 302 / 1.4310
28	* Chevron packing set	PTFE
29	O-ring guide	AISI 304 / 1.4301
30	* O-ring	EPDM
31	* O-ring	EPDM
32	* Packing set	Expanded graphite
33	Packing spacer	AISI 304 / 1.4301
34	* Safety packing set	Graphite filled PTFE
35	Bellows bonnet (V16/2G and V16/2S)	A105 / 1.0432; AISI 316 / 1.4401
	Bellows bonnet (V16/2i)	AISI 316 / 1.4401
36	Bolts or studs and nuts (V16/2G and V16/2S)	EN 10269 steel
	Bolts or studs and nuts (V16/2i)	Stainless steel A2-70
37	Gasket	Copper
38	Compression fitting	AISI 316 / 1.4401
39	* Gasket	Stainless steel / Graphite
40	* Gasket	Stainless steel / Graphite
41	* Metal bellows	AISI 316Ti / 1.4571
42	* Locking pin	AISI 303 / 1.4305
43	* Safety packing set	Expanded graphite
44	Packing spacer	AISI 304 / 1.4301

* Available spare parts.

ORDERING CODES V303 a)														
Valve model	V3	1	S	S	M	1	1	1	L	L	015			
Globe control valve, three-way	V3													
Valve series														
Series 1		1												
Body material														
A216 WCB / 1.0619 carbon steel			S											
A351 CF8M / 1.4408 stainless steel			I											
Bonnet design														
Standard				S										
Extended				E										
Trim design														
Mixing					M									
Diverting (only available for size DN32 and above)					D									
Stem sealing														
PTFE/GR V-Rings (V1.2)						1								
Virgin PTFE V-Rings (V2.2)						2								
Graphite (G1)						3								
EPDM (EP1)						4								
Stainless steel bellows with PTFE/GR safety packing (BV1)						8								
Stainless steel bellows with graphite safety packing (BG1)						9								
Plug design														
V-port guided							2							
Valve sealing														
Metal to metal (class IV)								1						
Characteristic														
Linear (PL)									L					
Pipe connection														
Flanged EN 1092-1 PN 16										L				
Flanged EN 1092-1 PN 40										N				
Size														
DN 15											015			
DN 20											020			
...														
Special valves / Extras														
Full description or additional codes have to be added in case of a non-standard combination													E	

a) Codification for valve only. For actuator codes, refer to the appropriate information sheet.