THREE-WAY GLOBE CONTROL VALVES
V303

DESCRIPTION

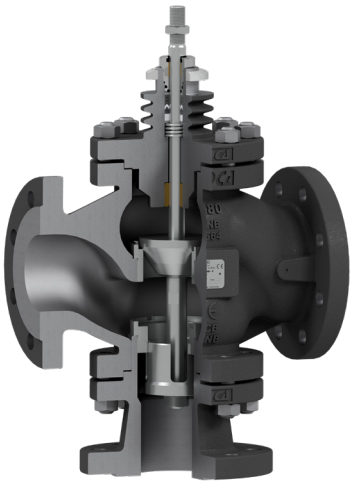
The ADCATrol V303 is a series of single seated, three-way globe control valves designed to ensure accurate control in mixing and diverting process engineering and industrial applications.
These valves can be assembled with pneumatic, hydraulic or electric actuators, for modulating and shut-off control 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.
Flanged ASME B16.5 Class 150 on request (drilled from EN casting).
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)

We reserve the right to change the design and material of this product without notice.

BODY LIMITING CONDITIONS

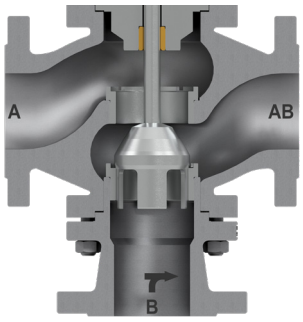
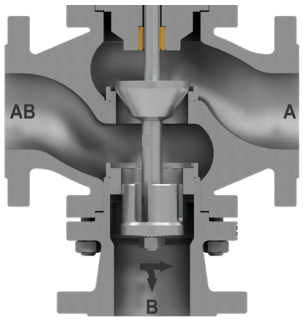
V303S *				V303i *			
FLANGED PN 16		FLANGED PN 40		FLANGED PN 16		FLANGED PN 40	
ALLOWABLE PRESSURE	RELATED TEMPERATURE	ALLOWABLE PRESSURE	RELATED TEMPERATURE	ALLOWABLE PRESSURE	RELATED TEMPERATURE	ALLOWABLE PRESSURE	RELATED TEMPERATURE
16 bar	-10 / 50 ºC	40 bar	-10 / 50 ºC	16 bar	-10 / 50 ºC	40 bar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

* Rating according to EN 1092-1:2018.

BONNET DESIGN

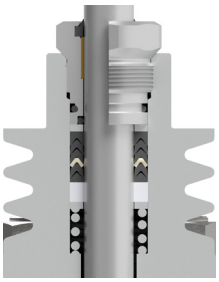
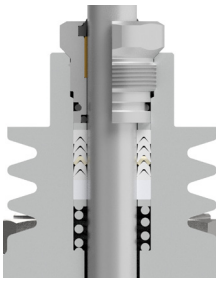
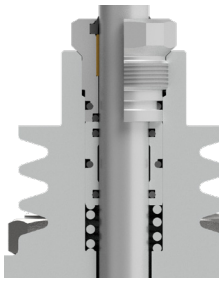
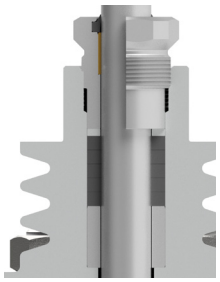
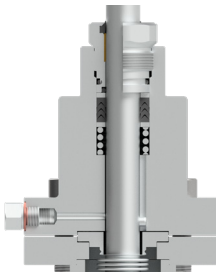
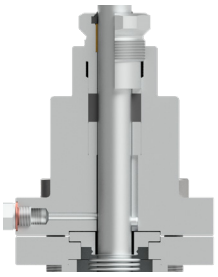
STANDARD	EXTENDED
	
-10 to 250 ºC	Above 250 ºC

TRIM DESIGN

MIXING	DIVERTING
	

We reserve the right to change the design and material of this product without notice.

STEM SEALING

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

* Up to 180 ºC in steam and hot water applications.
** Maximum operating pressure: 25 bar.

PLUG DESIGN

MIXING	DIVERTING
	
Sealing: Metal to metal **Characteristic:** Linear (PL) **Rangeability:** 30:1 **Leakage:** Class IV, acc. to IEC 60534-4	**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 (m^3/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		

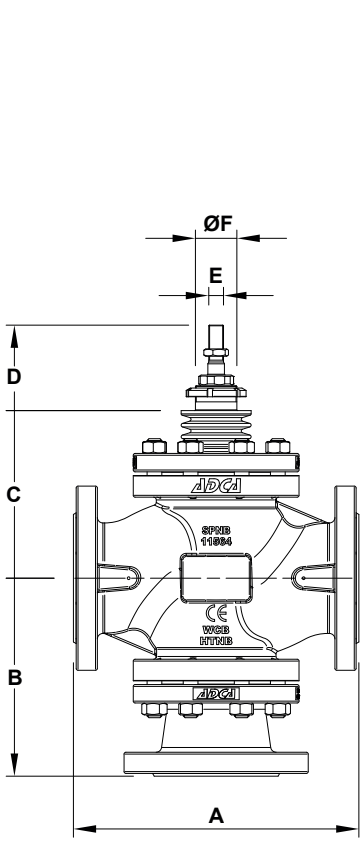
* Upper and lower seats respectively.
For conversion Kvs = Cv (US) x 0,865.

FLOW RATE COEFFICIENTS – DIVERTING PLUGS

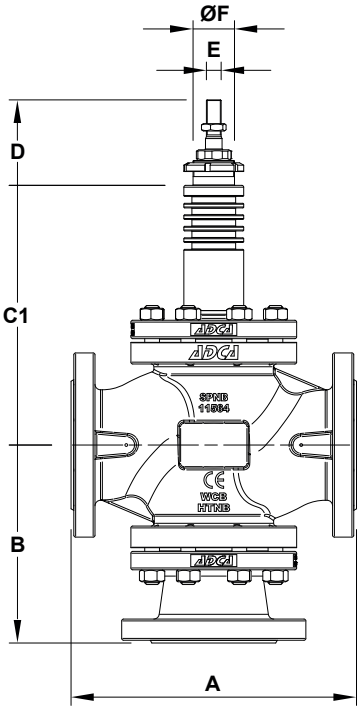
SIZE	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100
Kvs * (m^3/h)	16 / 10	25 / 16	40 / 25	63 / 40	100 / 63	160 / 100
SEAT Ø * (mm)	32 / 25	38 / 32	48 / 38	65 / 48	76 / 65	96 / 76
STROKE (mm)	20			30		

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

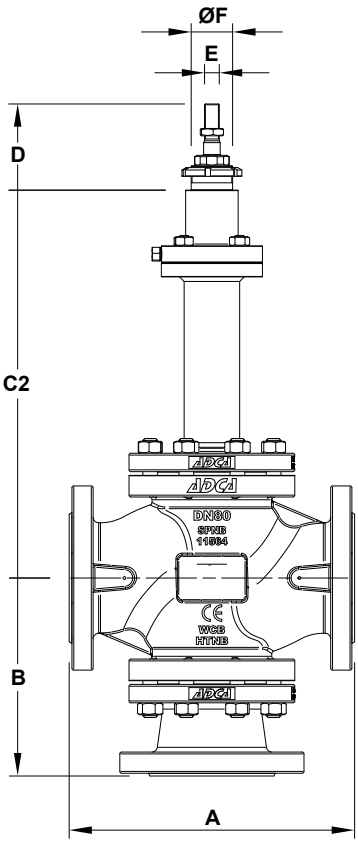
We reserve the right to change the design and material of this product without notice.



Valve with standard bonnet



Valve with extended bonnet



Bellows sealed valve

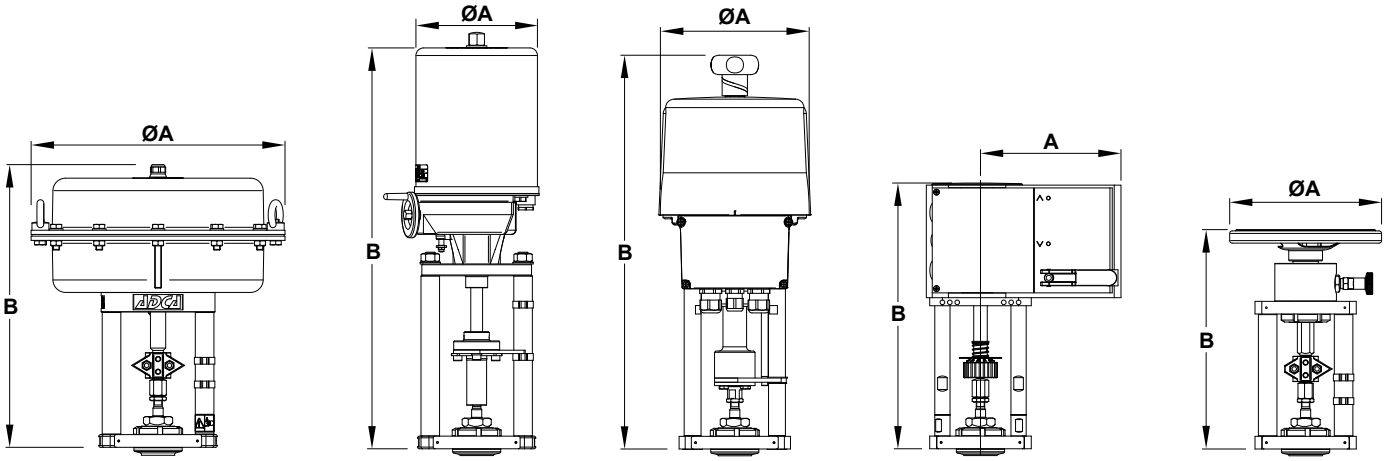
DIMENSIONS (mm)									
DIMENSION	SIZE								
	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100
A	130	150	160	180	200	230	290	310	350
B	115	120	120	140	140	160	215	225	230
C	104	107	109	113	113	125	177	182	194
C1	169	169	189	193	193	204	276	282	314
C2	295	298	298	302	302	304	416	421	423
D	79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

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PA *EL* *ELS* *AV* *MAH*

DIMENSIONS – PA SERIES PNEUMATIC ACTUATORS (mm)				
DIMENSION	**PA10**	**PA25**	**PA40**	**PA80**
ØA	170	250	300	405
B	251	260	325	505
WEIGHT (kg)	6,3	10,1	18,7	50,4

For more information, please consult IS PA.010 – PA Linear pneumatic actuators.

DIMENSIONS – EL SERIES ELECTRIC ACTUATORS (mm)					
DIMENSION	**EL12**	**EL20**	**EL45**	**EL80**	**EL120**
ØA	129	148	148	188	188
B	315	474	474	572	572
WEIGHT (kg)	2,1	8	8	13	13

For more information, please consult IS EL.012 – EL Linear electric actuators.

DIMENSIONS – ELS SERIES ELECTRIC ACTUATORS (mm)							
DIMENSION	**ELS20**	**ELS45**	**ELS80**	**ELS100**	**ELS140**	**ELS200**	**ELS250**
ØA	180	180	180	180	180	250	250
B	503	503	540	540	615	720	720
WEIGHT (kg)	4,5	4,5	7,2	7,2	8	23	23

For more information, please consult IS ELS.020 – ELS Linear electric actuators.

DIMENSIONS – AV SERIES ELECTRIC ACTUATORS (mm)		
DIMENSION	**AVM234S**	**AVF234S**
A	166	166
B	314	314
WEIGHT (kg)	4,1	4,1

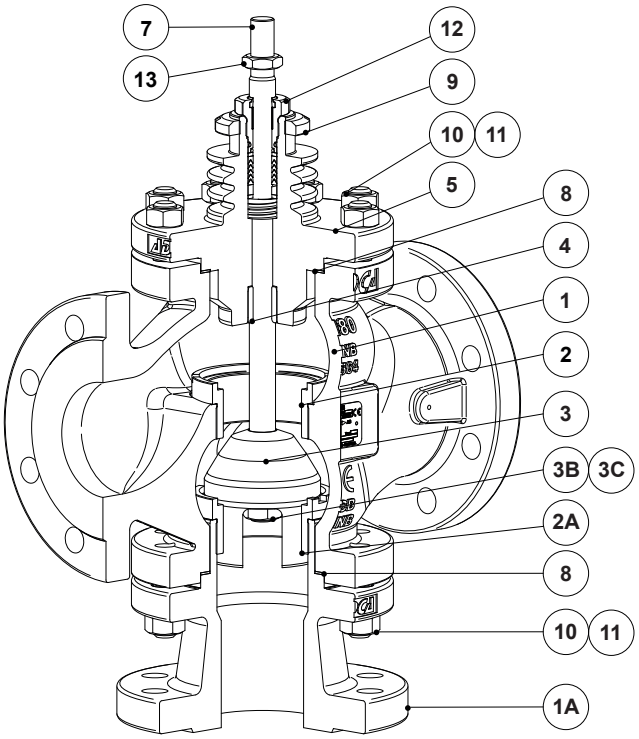
For more information, please consult IS AVM.010 – AVM234S-AVF234S Linear electric actuators.

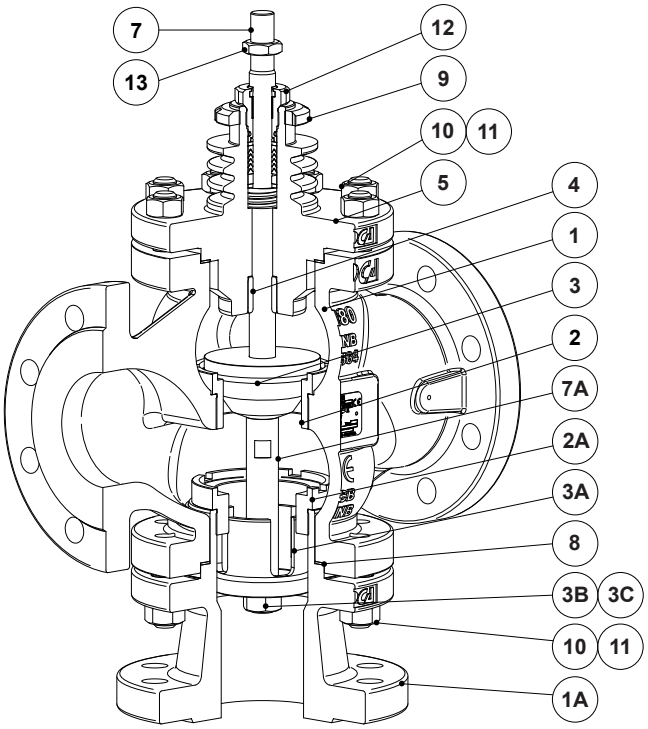
DIMENSIONS – MAH SERIES MANUAL OPERATED ACTUATORS (mm)	
DIMENSION	**MAH180**
ØA	180
B	260
WEIGHT (kg)	4,8

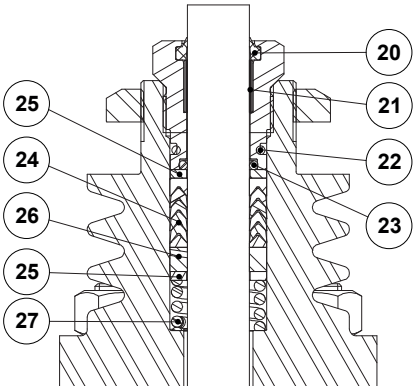
For more information, please consult IS MAH.010 – MAH Manual operated linear actuators.

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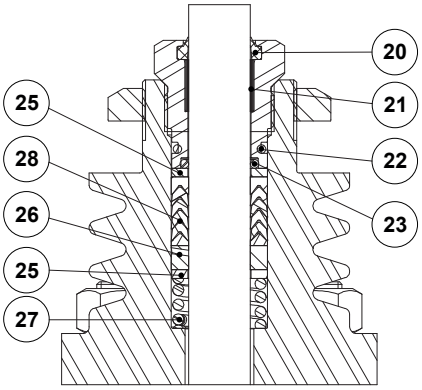
MATERIALS



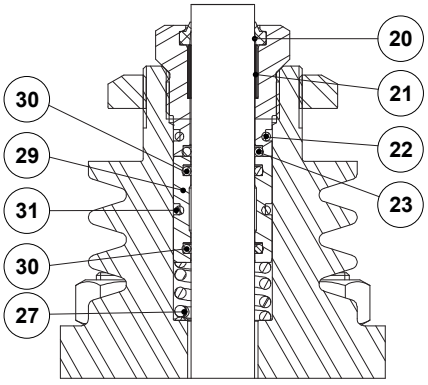




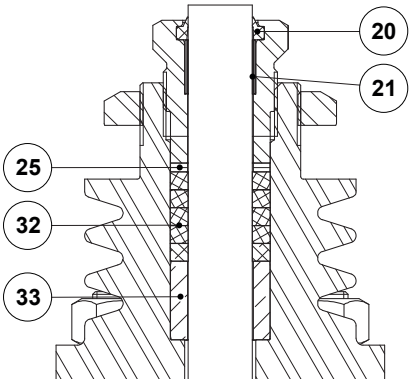
PTFE/GR V-Rings (V1.2)



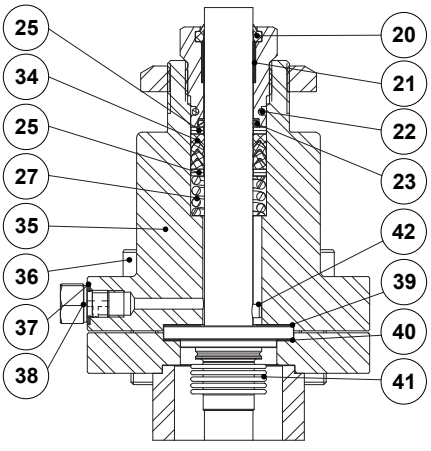
PTFE V-Rings (V2.2)



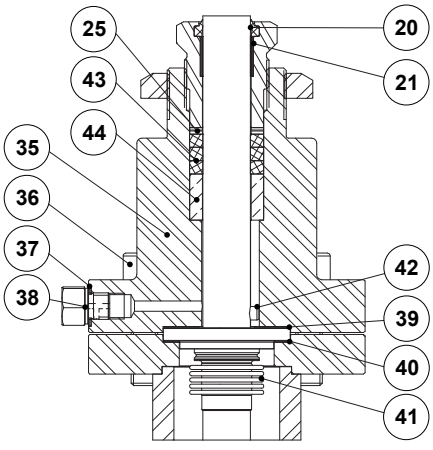
EPDM (EP1)



Graphite (G1)



Bellows sealing (BV1)



Bellows sealing (BG1)

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MATERIALS		
POS. No.	**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	Nut (V16/2G and V16/2S)	EN 10269 steel
	Nut (V16/2i)	Stainless steel A2-70
11	Stud (V16/2G and V16/2S)	EN 10269 steel
	Stud (V16/2i)	Stainless steel A2-70
12	* Packing nut	AISI 303 / 1.4305
13	Lock nut	AISI 304 / 4.4301
20	* Scraper ring	FPM; NBR
21	* Plain bearing	Bronze / PTFE
22	* O-ring	EPDM
23	* O-ring	FPM
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	Bolt or stud and nut (V16/2G and V16/2S)	EN 10269 steel
	Bolt or stud and nut (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.
** Can be produced in PEEK (Tmax. 250 ºC) on request.

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ORDERING CODES V303 (a)												
VALVE MODEL	**V3**	**1**	**S**	**S**	**M**	**1**	**2**	**1**	**L**	**L**	**015**	
V303 – 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 **(b)**					**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 CONNECTIONS												
Flanged EN 1092-1 PN 16										**L**		
Flanged EN 1092-1 PN 40										**N**		
Flanged ASME B16.5 Class 150										**U**		
SIZE												
DN 15											**015**	
DN 20											**020**	
...												
SPECIAL CONSTRUCTION / ADDITIONAL OPTIONS												
A full description must to be provided and validated in case of a non-standard construction												**E**

(a) Codification for valve only. For actuator codes, refer to the appropriate information sheet.
(b) May also be used for diverting service in sizes up to DN 25. If required for this purpose, please indicate it when ordering so the valve can be supplied with the appropriate flow direction marking.

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