

## 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.

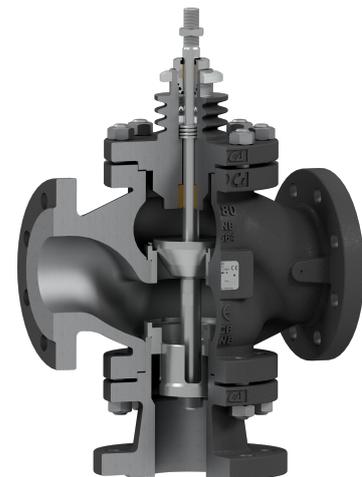
**USE:** Saturated and superheated steam.  
Hot and superheated water.  
Thermal oil.  
Air, gases and others.

### 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)

**BODY LIMITING CONDITIONS**

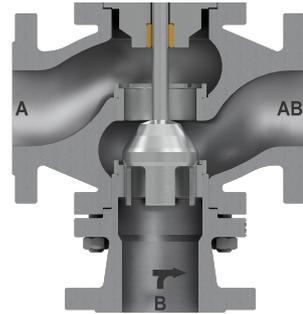
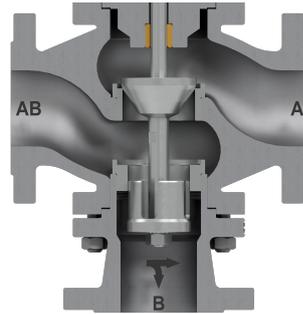
V303S *				V303i *			
FLANGED PN 16		FLANGED PN 40		FLANGED PN 16		FLANGED PN 40	
ALLOWABLE PRESSURE	RELATED TEMPERATURE						
16 bar	-10 / 50 °C	40 bar	-10 / 50 °C	16 bar	-10 / 50 °C	40 bar	-10 / 50 °C
13,3 bar	200 °C	33,3 bar	200 °C	13,4 bar	200 °C	33,7 bar	200 °C
12,1 bar	250 °C	27,6 bar	300 °C	12,7 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

\* Rating according to EN 1092-1:2018.

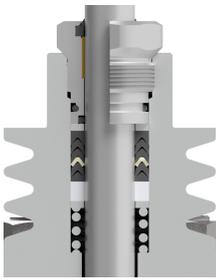
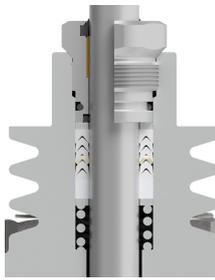
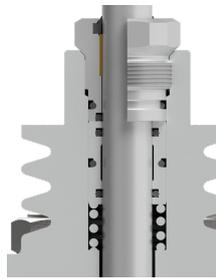
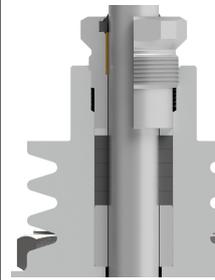
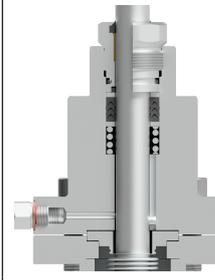
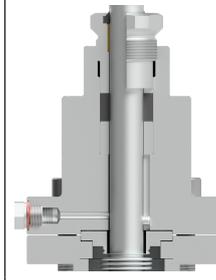
**BONNET DESIGN**

STANDARD	EXTENDED
 -10 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 to 220 °C	-10 to 180 °C	-10 to 150 °C *	-10 to 400 °C	-60 to 220 °C **	-60 to 400 °C **

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

\*\* Maximum operating pressure: 25 bar.

**PLUG DESIGN**

MIXING	DIVERTING
 <p><b>Sealing:</b> Metal to metal <b>Characteristic:</b> Linear (PL) <b>Rangeability:</b> 30:1 <b>Leakage:</b> Class IV, acc. to IEC 60534-4</p>	 <p><b>Sealing:</b> Metal to metal <b>Characteristic:</b> Linear (PL) <b>Rangeability:</b> 30:1 <b>Leakage:</b> Class IV, acc. to IEC 60534-4</p>

**FLOW RATE COEFFICIENTS – MIXING PLUGS**

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

\* Upper and lower seats respectively.

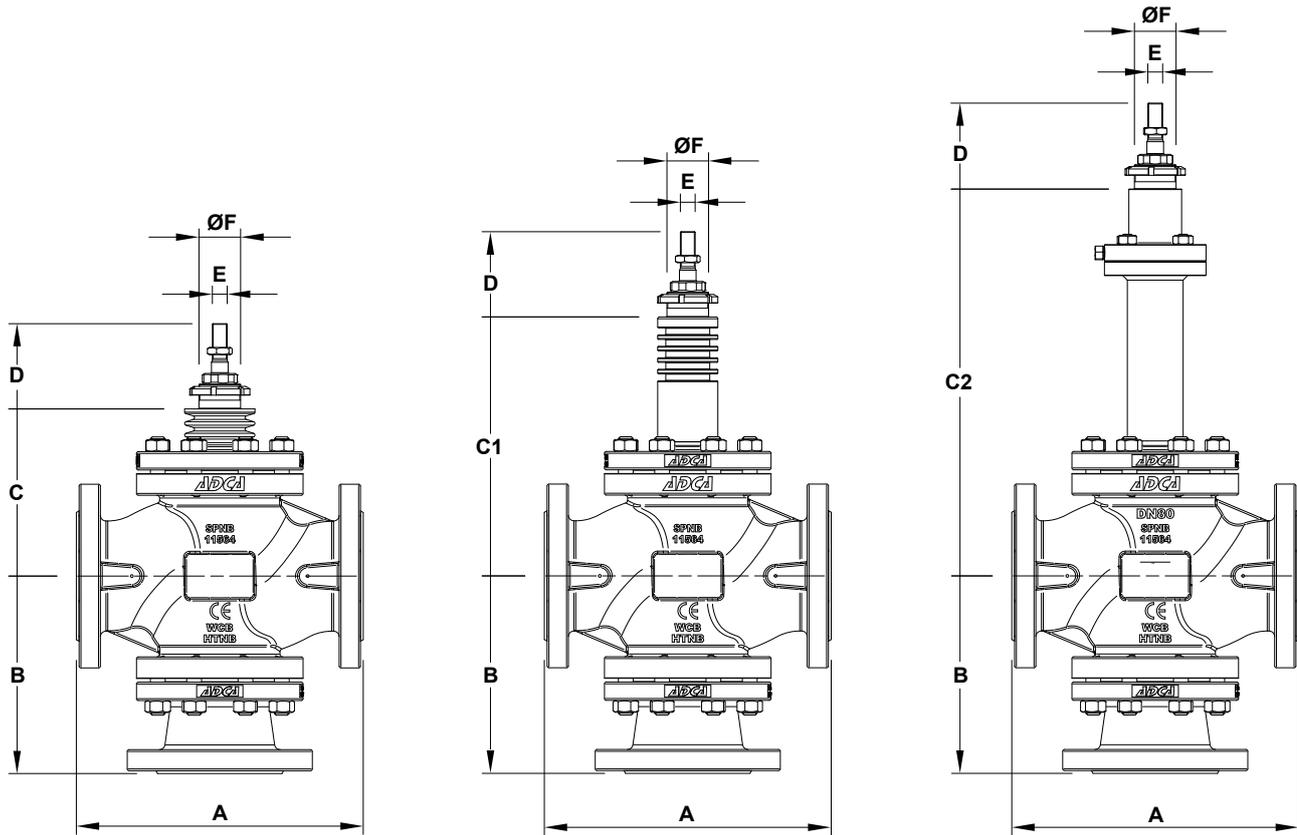
For conversion  $Kvs = Cv (US) \times 0,865$ .

**FLOW RATE COEFFICIENTS – DIVERTING PLUGS**

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

\* Upper and lower seats respectively.

For conversion  $Kvs = Cv (US) \times 0,865$ .



Valve with standard bonnet

Valve with extended bonnet

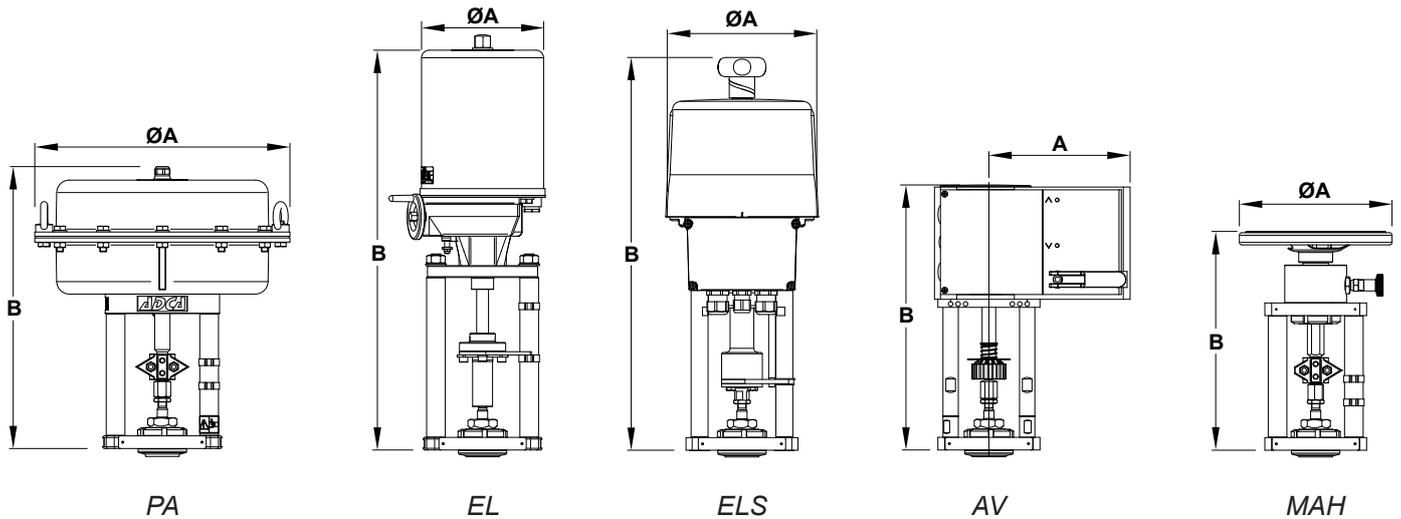
Bellows sealed valve

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	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.

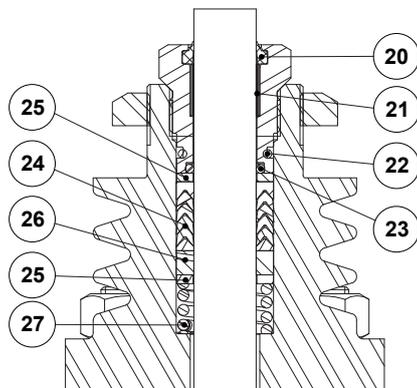
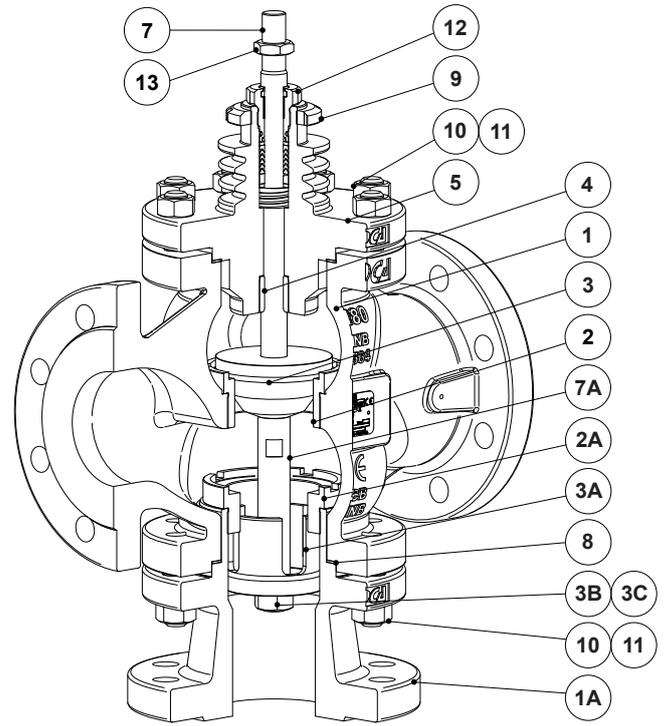
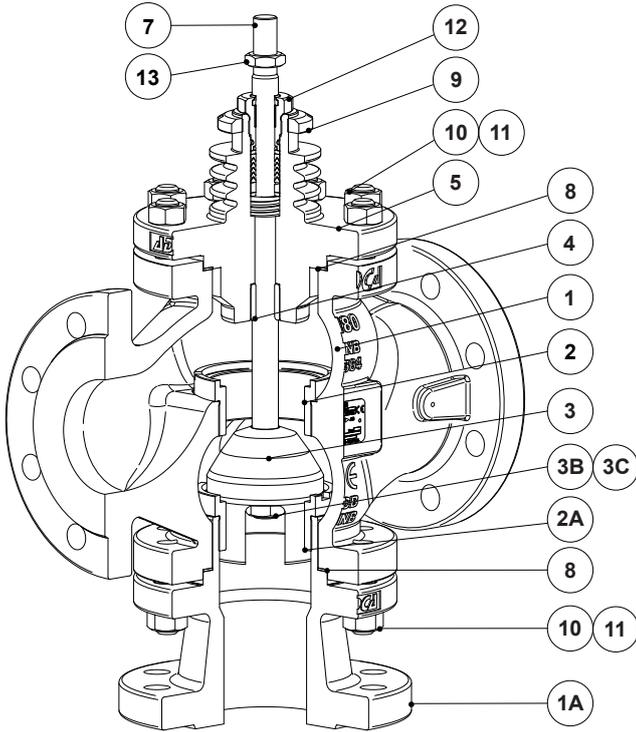
DIMENSIONS – AV SERIES ELECTRIC ACTUATORS (mm)		
DIMENSION	AVM234S	AVF234S
A	166	166
B	314	314
WEIGHT (kg)	4,1	4,1

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

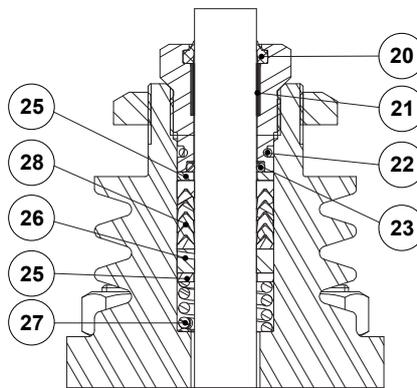
DIMENSIONS – MAH SERIES MANUAL OPERATED ACTUATORS (mm)	
DIMENSION	MAH180
ØA	180
B	260
WEIGHT (kg)	4,8

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

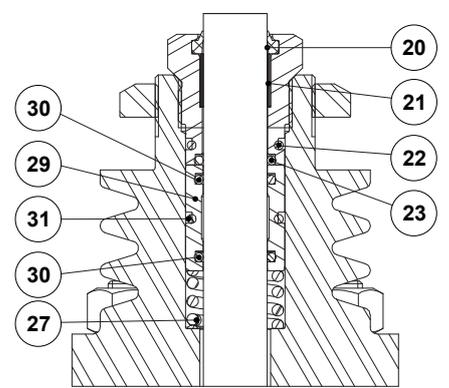
### MATERIALS



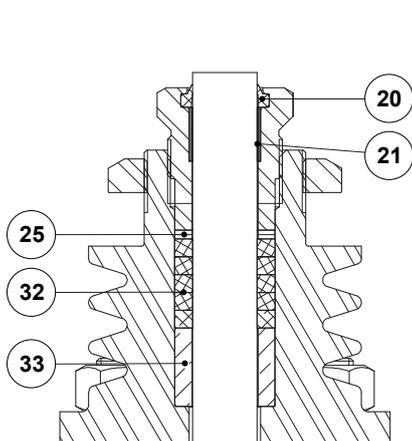
PTFE/GR V-Rings (V1.2)



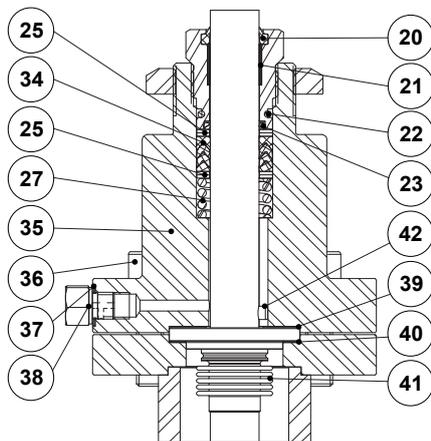
PTFE V-Rings (V2.2)



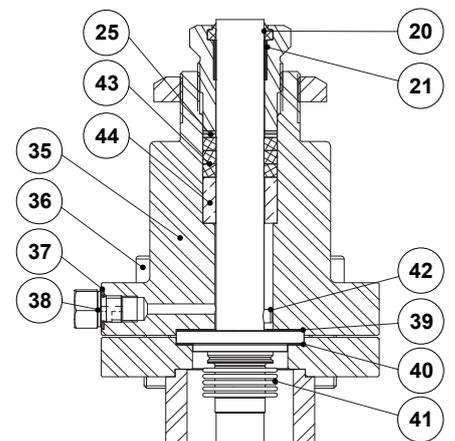
EPDM (EP1)



Graphite (G1)



Bellows sealing (BV1)



Bellows sealing (BG1)

**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 °C) on request.

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 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.