GLOBE VALVES

Rev.1

TYPE C09 1

Range NPS: ¼“ ~ 20“

Range Class: 150 ~ 2500

PED 97/23/EC
PED 2014/68/EU

TR TS 10/11, 12/11, 32/11

CERTIFICATE EN 12 569

Operating temperature: **-196 °C ~ 550 °C**

Connection into piping: **Flanged, welded ends, threaded ends, combined execution**

DESCRIPTION

C09 1 valves are controlled shut-off valves. They are designed to stop or allow the flow of the medium by external operation, either manually or via the installed drive. If, upon the customer´s request, they are fitted with a regulating cone, they can be used to regulate the flow of the medium. The medium can flow in one direction only. These valves are designed and manufactured to ensure maximum service life and reliability.

MATERIAL SPECIFICATION

C09 1 valves are made from carbon, alloyed and stainless steels. The material type can be adjusted according to the customer´s request to optimally suit the operating conditions.

APPLICATION

C09 1 valves are mainly suitable for various chemicals and petrochemicals, liquids, gases and steam.

BASIC STANDARDS FOR DESIGN

Basic design
API 602, API 623, ASME B16.34

Face-to-face dimensions
ANSI B16.10

Flange dimensions
ANSI B 16.5

Pressure-temperature rating
ASME B16.34

Dimensions of the welded ends
ANSI B16.25, ASME B16.11

Special
NACE MR-0175

Testing
API 598, EN 12 266 - 1, 2

Top Flange dimensions
EN ISO 5210

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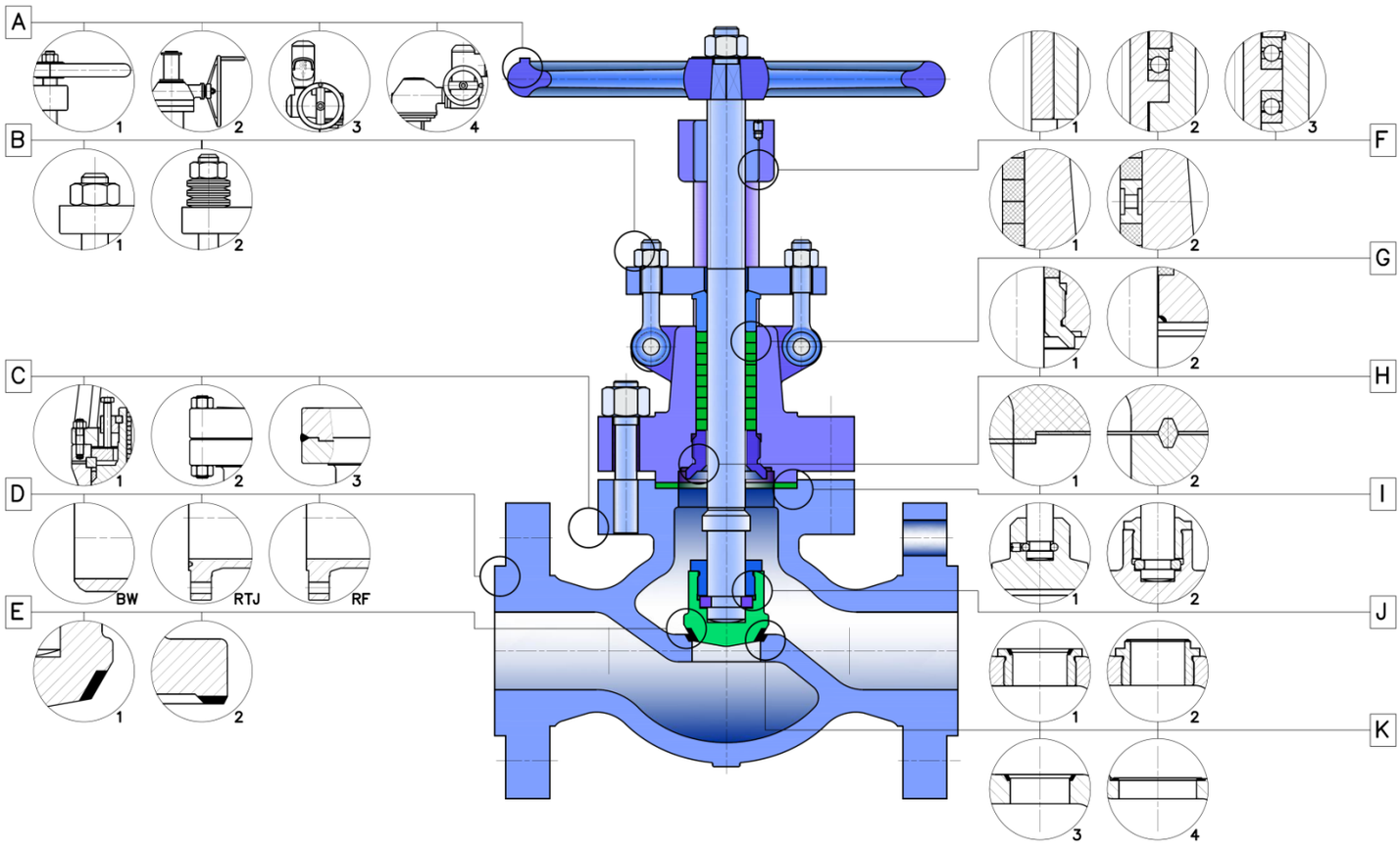
APPLICATION



A - Control

- hand wheel
- gearbox
- electric actuator
- electric actuator with gearbox

B – Gland compression

- in case of valve operation with cyclic changes in pressure or at high pressures and temperatures, gland compression by means of Belleville springs, which ensure a constant pre-stress in packing, is preferred.

C — Bonnet execution

- pressure seal bonnet is used for high pressures, temperatures and valve operation with cyclic changes of pressure
- bonnet bolted to the body
- the bonnet welded to the body

D – Connection to piping

- flanged
- threaded
- welded
- with welded ends according to customer's requirements

E — Disc execution

- with flat smooth sealing surface
- with conical sealing surface

F — Bedding of stem nut

Depending on the control power and method of valve control applied

- the stem nut can be screwed into the bonnet
- combination of sliding and rolling stem nut bedding
- bedding of stem nut between two axial rolling bearings

G - Execution of gland

- standard
- double stem packing with lantern ring – shall be chosen according to working conditions

H – Back-seat execution

- screwed into the bonnet
- integral part of the bonnet

I — Bonnet sealing

- class 150, 300 – by gasket for male – female body/bonnet connection
- class 600, 900 - by RTJ ring
- class 1500, 2500 – by pressure seal bonnet

J - Connection of the disc with stem

- by means of small balls, inserted into the disc
- by means of split ring mounted on the stem and the threaded ring screwed into the disc

K - Seats execution

- the seats are screwed into the body
- the seats are welded on
- the sealing seats' surface is flat or conical, depending on pressure of medium

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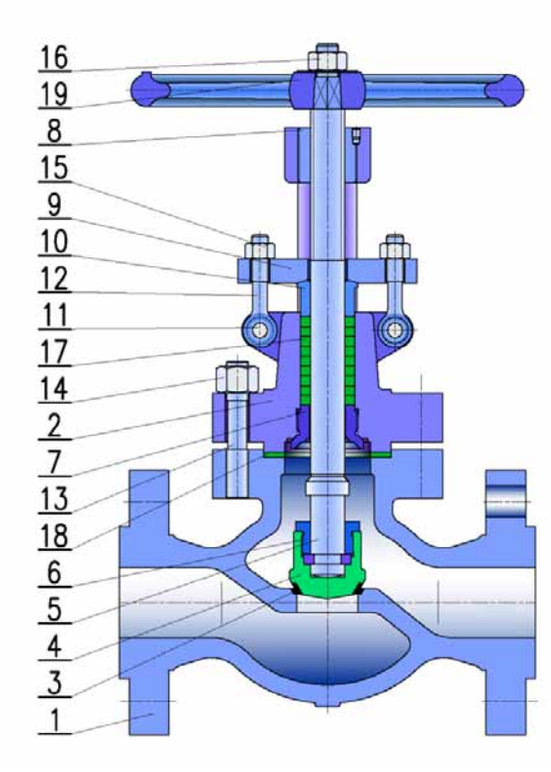
MATERIAL SPECIFICATION - CAST



Pos.	Designation	WCB	LCC	LCB	WC6	WC9	C5	C12	CF8 / 304	CF8M / 316
1	Body	A216 WCB	A352 LCC	A352 LCB	A217 WC6	A217 WC9	A217 C5	A217 C12	A351 CF8	A351 CF8M
2	Bonnet	A216 WCB	A352 LCC	A352 LCB	A217 WC6	A217 WC9	A217 C5	A217 C12	A351 CF8	A351 CF8M
3	Seat	A105 + overlay	A352 LF2 + overlay	A352 LF2 + overlay	A182 F5 + overlay	A182 F5 + overlay	A182 F5 + overlay	A182 F5 + overlay	A351 CF8 + overlay	A351 CF8M + overlay
4	Plug	A216 WCB + overlay	A352 LCC + overlay	A352 LCB + overlay	A217 WC6 + overlay	A217 WC9 + overlay	A217 C5 + overlay	A217 C12 + overlay	A351 CF8 + overlay	A351 CF8M + overlay
5	Stem	A182 F6a	A182 F6a	A182 F6a	A182 F6a	A182 F6a	A182 F6a	A182 F6a	A182 F304	A182 F316
6	Screwed bushing	A182 F6a	A182 F6a	A182 F6a	A182 F6a	A182 F6a	A182 F6a	A182 F6a	A351 CF8	A351 CF8M
7	Back seat insert	A182 F6a	A182 F6a	A182 F6a	A182 F6a	A182 F6a	A182 F6a	A182 F6a	A351 CF8	A351 CF8M
8	Stem nut	A439 D2	A439 D2	A439 D2	A439 D2	A439 D2	A439 D2	A439 D2	A439 D2	A439 D2
9	Gland flange	A216 WCB	A352 LCC	A352 LCB	A217 WC6	A217 WC9	A217 C5	A217 C12	A351 CF8	A351 CF8M
10	Stuffing box bushing	A182 F6a	A182 F6a	A182 F6a	A182 F6a	A182 F6a	A182 F6a	A182 F6a	A182 F304	A182 F316
11	Pin	A36	A276 410	A276 410	A276 410	A276 410	A276 410	A276 410	304	316
12	Eye bolt	A193 B7	A320 L7	A320 L7	A193 B16	A193 B16	A193 B16	A193 B16	A193 B8	A193 B8M
13	Bolt	A193 B7	A320 L7	A320 L7	A193 B16	A193 B16	A193 B16	A193 B16	A193 B8	A193 B8M
14	Nut	A194 2H	A194 4	A194 4	A194 B8M	A194 B8M	A194 B8M	A194 B8M	A194 8	A194 8M
15	Nut	A194 2H	A194 4	A194 4	A194 B8M	A194 B8M	A194 B8M	A194 B8M	A194 8	A194 8M
16	Nut	carbon steel	carbon steel	carbon steel	carbon steel	carbon steel	carbon steel	carbon steel	carbon steel	carbon steel
17	Gland packing	graphite	graphite	graphite	graphite	graphite	graphite	graphite	graphite	graphite
18	Bonnet gasket	304 + graphite	304 + graphite	304 + graphite	304 + graphite	304 + graphite	304 + graphite	304 + graphite	304 + graphite	316 + graphite
19	Hand wheel	cast iron	cast iron	cast iron	cast iron	cast iron	cast iron	cast iron	cast iron	cast iron

Pos.	Designation	TRIM No.				
		1	5	8	11	12
4a	Plug surfaces	overlay 13 Cr	overlay Stellite 6	overlay 13 Cr	overlay Monel	overlay 316
3a	Seat surfaces	overlay 13 Cr			Stellite 6	

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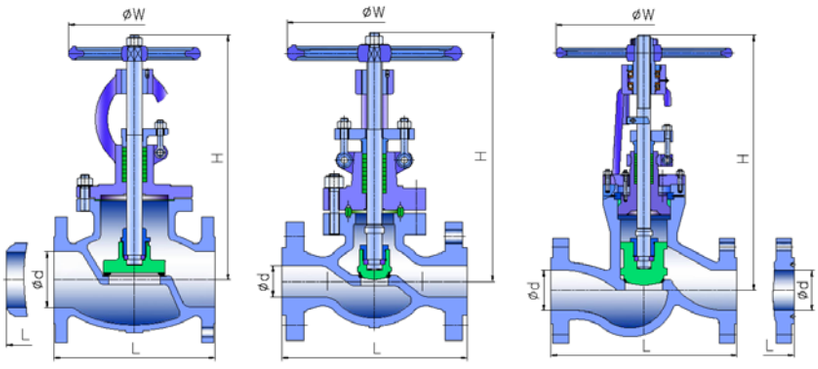
DIMENSIONS - CAST

CLASS 150 – 300 CLASS 600 – 900 CLASS 1500 – 2500



Diameter		CLASS 150							CLASS 300						
		L			d	H	W	(KG)	L			d	H	W	(KG)
NPS	DN	1/RF	1/RTJ	2					1/RF	1/RTJ	2				
2 1/2	65	216	229	216	64	360	250	43	292	308	292	64	420	200	45
3	80	241	254	241	76	390	280	47	318	334	318	76	440	280	58
4	100	292	305	292	102	445	300	70	356	370	356	102	515	350	93
5	125	356	369	356	127	480	350	95	400	416	400	127	580	350	135
6	150	406	419	406	152	520	350	118	445	461	445	152	660	400	162
8	200	495	508	495	203	600	400	170	559	575	559	203	900	550	280
10	250	622	635	622	254	773	450	280	622	638	622	254	950	600	415
12	300	698	711	698	305	880	500	378	711	727	711	305	1030	650	579
14	350	787	800	787	337	980	600	520	838	854	838	337	1150	650	867
16	400	914	927	914	387	1200	650	730	864	880	864	387	1300	460	1040
18	450	978	991	978	438	1300	650	1000	978	994	978	432	1210	610	1420
20	500	1100	1113	1100	489	1400	700	1500	1026	1045	1026	483	1300	700	1960

Diameter		CLASS 600							CLASS 900						
		L			d	H	W	(KG)	L			d	H	W	(KG)
NPS	DN	1/RF	1/RTJ	2					1/RF	1/RTJ	2				
2 1/2	65	330	333	330	64	540	300	61	419	422	419	64	630	350	68
3	80	356	359	356	76	580	350	76	381	384	381	76	665	450	95
4	100	432	435	432	102	670	450	122	457	460	457	102	800	500	160
5	125	508	511	508	127	730	500	210	559	562	559	127	920	550	270
6	150	559	562	559	152	880	500	245	610	613	610	146	1100	600	520
8	200	660	663	660	200	920	650	447	737	740	737	190	1170	700	795
10	250	787	790	787	248	1020	700	692	838	841	838	238	1608	-	1300
12	300	838	841	838	298	1680	-	1050	965	968	965	283	1799	-	1730
14	350	889	892	889	326	1680	-	1250	1029	1039	1029	311	1990	-	2060
16	400	991	994	991	376	1902	-	1590	-	-	-	-	-	-	-

Diameter		CLASS 1500							CLASS 2500						
		L			d	H	W	BEC (KG)	L			d	H	W	BEC (KG)
NPS	DN	1/RF	1/RTJ	2					1/RF	1/RTJ	2				
2 1/2	65	419	422	419	60	660	350	119	508	514	508	50	800	500	210
3	80	470	473	470	70	770	500	188	578	584	578	57	885	550	340
4	100	546	549	546	92	850	550	307	673	683	673	73	1260	600	590
6	150	705	711	705	137	1145	600	986	914	927	914	111	1905	700	880
8	200	832	842	832	178	1345	700	1430	1022	1038	1022	179	2465	-	1290
10	250	991	1001	991	239	1675	-	1675	1270	1292	1270	223	2900	-	1895
12	300	1130	1146	1130	287	1800	-	2020	1422	1444	1422	265	3100	-	2300
14	350	1257	1276	1257	315	1970	-	2800	-	-	-	-	-	-	-

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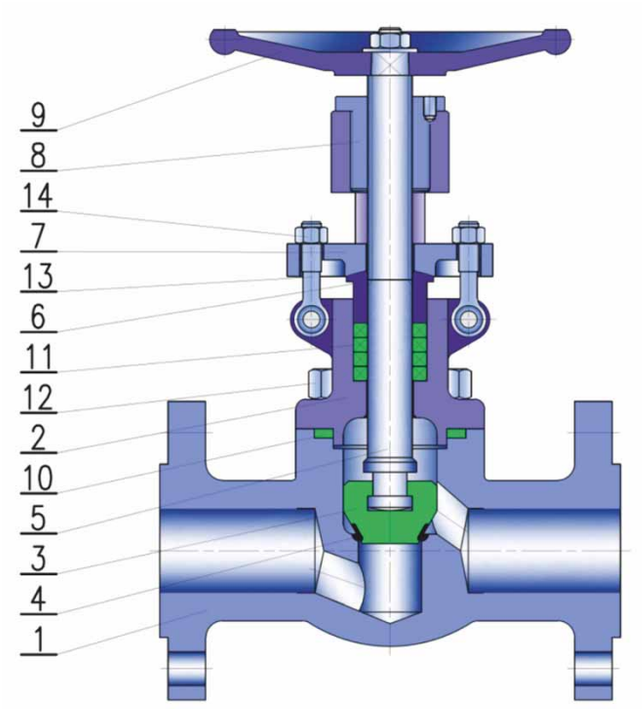
MATERIAL SPECIFICATION - FORGED



POS.	DESIGNATION	A350 LF2	A105	A182 F5	A182 F9	A182 F304	A182 F316
1	Body	A350 LF2	A105	A182 F5	A182 F9	A182 F304	A182 F316
2	Bonnet	A350 LF2	A105	A182 F5	A182 F9	A182 F304	A182 F316
3	Disc	A350 LF2 + overlay	A105 + overlay	A182 F5 + overlay	A182 F9 + overlay	A182 F304 + overlay	A182 F316 + overlay
4	Seat	A350 LF2 + overlay	A105 + overlay	A182 F5 + overlay	A182 F9 + overlay	A182 F304 + overlay	A182 F316 + overlay
5	Stem	A182 F6a	A182 F6a	A182 F6a	A182 F6a	A276 F304	A276 F316
6	Stuffing box bushing	A182 F6a	A182 F6a	A182 F6a	A182 F6a	A182 F304	A182 F316
7	Gland flange	A350 LF2	A105	A182 F5	A182 F9	A182 F304	A182 F316
8	Stem nut	bronze, A439 D2					
9	Hand wheel	cast iron					
10	Bonnet gasket	graphite, 304 + graphite, 316 + graphite					
11	Gland packing	graphite					
12	Bolt	A320 L7	A193 B7	A193 B16	A193 B16	A193 B8	A193 B8M
13	Bolt	A320 L7	A193 B7	A193 B16	A193 B16	A193 B8	A193 B8M
14	Nut	A194 4	A194 2H	A194 2H	A194 2H	A194 8	A194 8M

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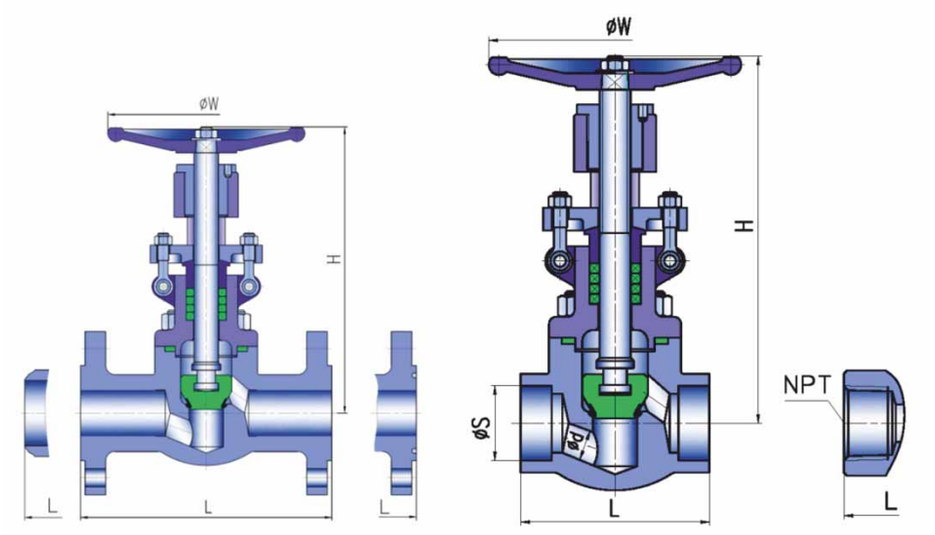
DIMENSIONS - FORGED



Diameter		CLASS 150										CLASS 300									
NPS	DN	L					d	S	H	W	BEC (KG)	L					d	S	H	W	BEC (KG)
		1/RF	1/RTJ	2	3	4					H.W.	1/RF	1/RTJ	2	3	4					H.W.
1/4	6	108	-	108	79	79	3,2	14,2	153	100	2,2	152	-	152	79	79	3,2	14,2	153	100	2,2
3/8	10	108	-	108	79	79	5,9	17,6	153	100	2,2	152	-	152	79	79	5,9	17,6	153	100	2,2
1/2	15	108	119	108	79	79	9,5	21,8	158	100	2,2	152	164	152	79	79	9,5	21,8	158	100	2,2
3/4	20	117	130	117	92	92	12,7	27,1	163	100	3	178	190	178	92	92	12,7	27,1	163	100	3
1	25	127	140	127	111	111	17,5	33,8	193	125	4	203	216	203	111	111	17,5	33,8	193	125	4
1 1/2	40	165	178	165	120	120	28,6	48,7	250	160	7	229	241	229	120	120	28,6	48,7	250	160	7
2	50	203	190	216	140	140	36,5	61,1	291	180	11	267	283	267	140	140	36,5	61,1	291	180	11

Diameter		CLASS 600										CLASS 800									
NPS	DN	L					d	S	H	W	BEC (KG)	L					d	S	H	W	BEC (KG)
		1/RF	1/RTJ	2	3	4					H.W.	1/RF	1/RTJ	2	3	4					H.W.
1/4	6	165	-	165	79	79	3,2	14,2	153	100	2,2	-	-	-	79	79	3,2	14,2	153	100	2,2
3/8	10	165	-	165	79	79	5,9	17,6	153	100	2,2	-	-	-	79	79	5,9	17,6	153	100	2,2
1/2	15	165	165	165	79	79	9,5	21,8	158	100	2,2	-	-	-	79	79	9,5	21,8	158	100	2,2
3/4	20	190	190	190	92	92	12,7	27,1	163	100	3	-	-	-	92	92	12,7	27,1	163	100	3
1	25	216	216	216	111	111	17,5	33,8	193	125	4	-	-	-	111	111	17,5	33,8	193	125	4
1 1/2	40	241	241	241	120	120	28,6	48,7	250	180	7	-	-	-	120	120	28,6	48,7	250	180	7

Diameter		CLASS 900,1500										CLASS 2500									
NPS	DN	L					d	S	H	W	BEC (KG)	L					d	S	H	W	BEC (KG)
		1/RF	1/RTJ	2	3	4					H.W.	1/RF	1/RTJ	2	3	4					H.W.
1/4	6	165	-	165	111	111	3,2	14,2	207	100	2,2	-	-	-	150	150	3,2	14,2	304	138	10
3/8	10	165	-	165	111	111	5,9	17,6	207	100	2,2	-	-	-	150	150	5,9	17,6	304	138	10
1/2	15	165	165	165	111	111	9,5	21,8	207	100	2,2	-	-	-	150	150	9,5	21,8	304	138	10
3/4	20	190	190	190	130	130	12,7	27,1	240	100	3,8	-	-	-	150	150	12,7	27,1	304	138	10
1	25	216	216	216	152	152	17,5	33,8	258	125	4,2	-	-	-	210	210	17,5	33,8	362	138	22
1 1/2	40	241	241	241	220	220	28,6	48,7	337	290	13,2	-	-	-	230	230	28,6	48,7	436	234	38
2	50	292	295	292	235	235	36,5	61,1	354	337	16,8	-	-	-	230	230	36,5	61,1	436	234	38

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TYPE DESIGNATION

C09 1 AC/D E M_1 Class/S

A BODY DESIGN

1	Direct
S	Angular

C CONNECTION INTO PIPE

1	Flanged
2	Welded ends
3	Threaded
4	Socket welding
8	Combined

D FLANGE FACING

ANSI B 16.5

PFF	Flat sealing face
RF	Raised face
LTF	Large tongue
STF	Small tongue
LGF	Large groove
SGF	Small groove
LMF	Large male
SMF	Small male
LFF	Large female
SFF	Small female
RTJ	Ring joint face

E CONTROL

1	Hand wheel
2	Gearbox + hand wheel
3	Electric actuators
4	Gearbox + electric actuators
5	Pneumatic actuators
9	Without control

M_1 BODY MATERIAL

0	Stainless steel
2	Cast alloy steel
3	Forged alloy steel
4	Forged carbon steel
5	Cast carbon steel
LT	Carbon steel for low temperatures

S SPECIAL EXECUTION

As	Antistatic execution
R	Control plug