CAT. No. 5077 E

CAST, STAINLESS, ALLOY STEEL

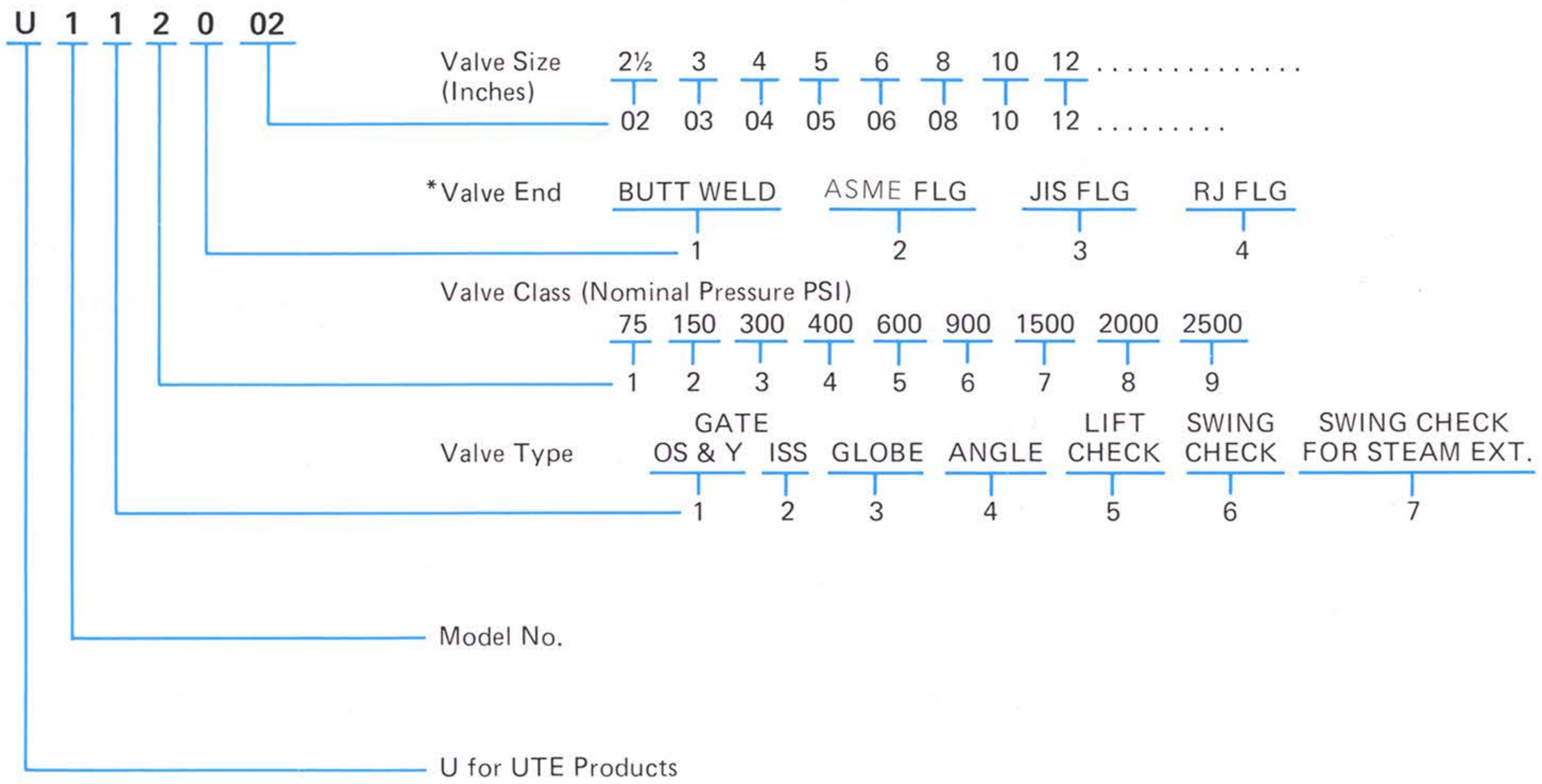
WEDGE GATE
GLOBE
SWING CHECK
VALVE

UTE
VALVE

Nearly eighty years since its founding, UTSUE VALVE CO., LTD. (UTE) has been manufacturing high quality valves while devoting constant attention to research for improvement in design and technology. In recent years we have worked in particular to develop the kind of high pressure/high temperature valves needed in nuclear installations. Plant capabilities include complete quality program which complies with ASME requirements.
UTE will continue its efforts in the future to keep pace with the progress of technology and to meet the demand for high quality, more efficient and more economical products.

1-1. What the Type Numbers Mean

The type numbers used on UTE products are made up of the letter "U" followed by six numerals.
These numerals have the following significance:



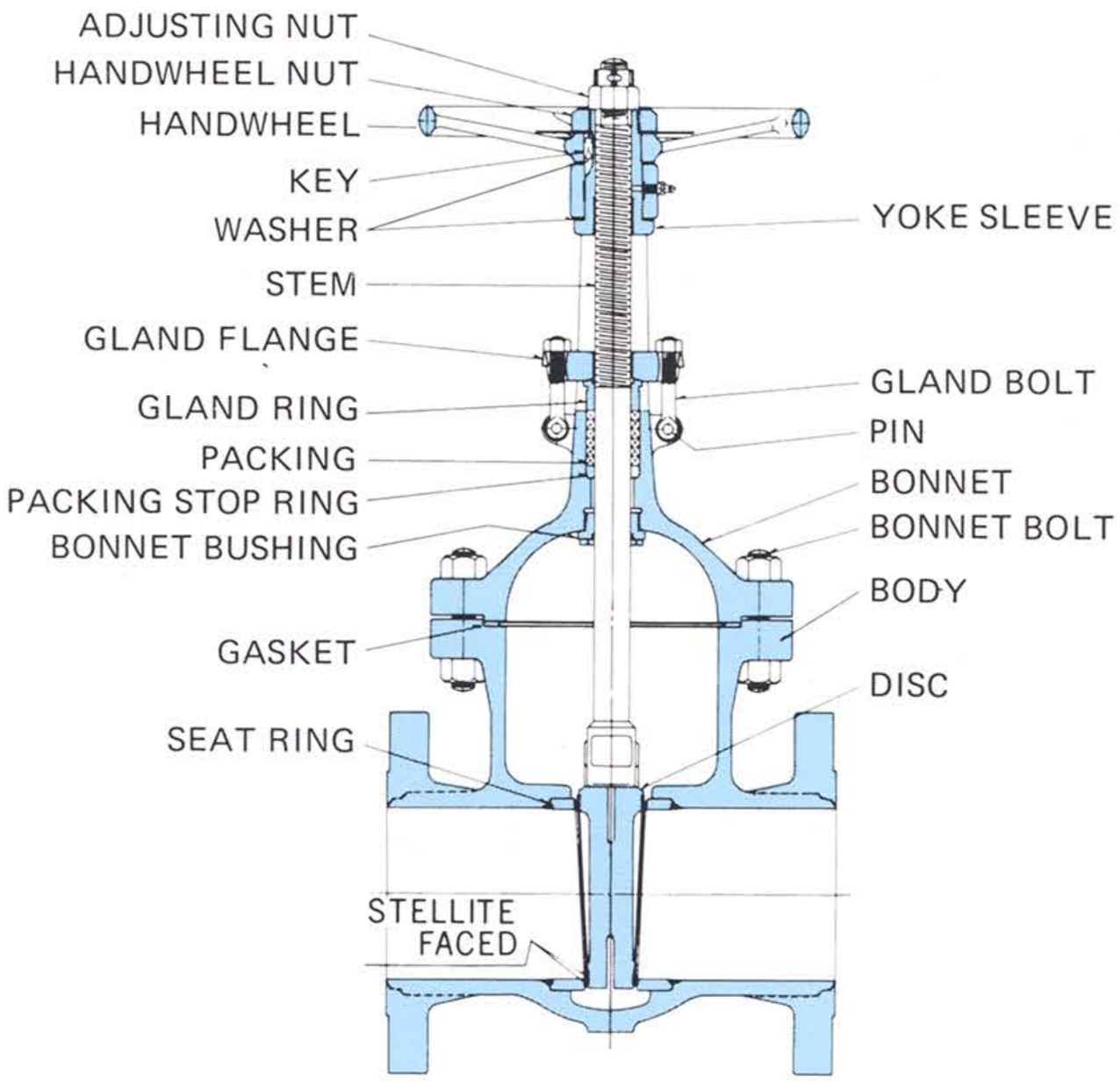
*Note: In the sample type number above and the type numbers in the Table of Dimensions, a zer appears at this point. In practice, this will be replaced by a number indicating which of the four available types of valve end is used.

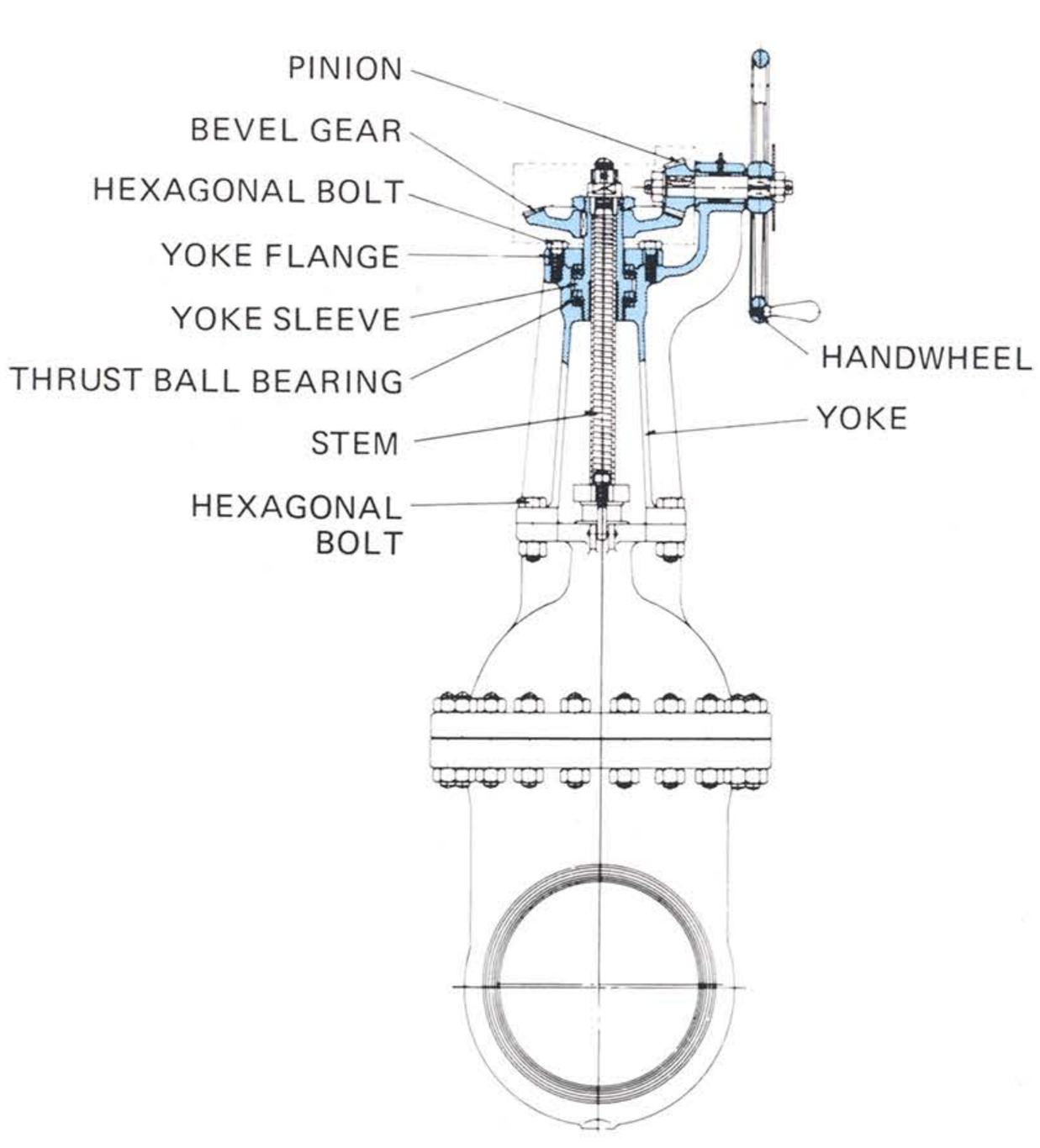
1-2. Materials for Body and Bonnet

Nuclear valves carring the "N" stamp will use the ASME materials that correspond to the materials listed below.

No.	Materials	JIS	ASTM
1	Carbon Steel	G5151 SCPH2	A216 Grade WCB
2	Carbon 1/2 Moly.	G5151 SCPH11	A217 Grade WC1
3	1-1/4Cr-1/2 Moly.	G5151 SCPH21	A217 Grade WC6
4	2-1/4Cr-1 Moly.	G5151 SCPH32	A217 Grade WC9
5	Carbon Steel (Low temp.)	G5152 SCPL1	A352 Grade LCB
6	Carbon 1/2 Moly. (Low temp.)	G5152 SCPL11	A352 Grade LC1
7	Stainless Steel (Type 304)	G5121 SCS13A	A351 Grade CF8
8	Stainless Steel (Type 316)	G5121 SCS14A	A351 Grade CF8M

UTE CAST STEEL GATE VALVE
BOLTED BONNET TYPE



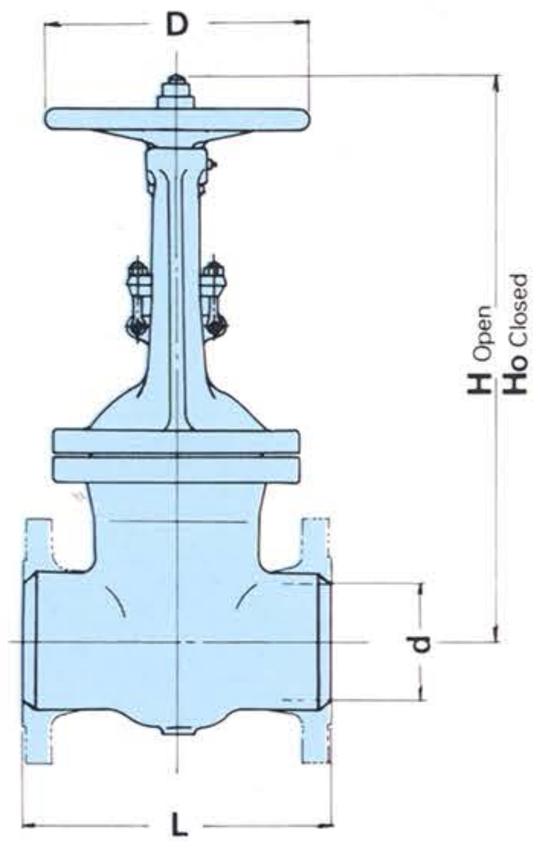


GEARED OPERATION

STANDARD MATERIALS IN USE

NAME OF PART	MATERIAL	
BODY	1, 2, 3, 4, 5, 6 (See Page 1, 1-2)	7, 8 (See Page 1, 1-2)
BONNET		
DISC	Ref. to Note 1	
YOKE	Carbon Cast Steel	
HANDWHEEL	Malleable Iron — Outside Dia 17-3/4 In or Under	
	Cast Iron — Outside Dia 19-3/4 In or Over	
YOKE FLANGE	Carbon Steel	
SEAT RING	Ref. to Note 1	
STEM	Stainless Steel Type 403 or 416	Stainless Steel Type 630
BONNET BUSHING	Stainless Steel Type 416	Austenite Stainless Steel
PACKING STOP RING		
GLAND RING		
YOKE SLEEVE	Stainless Steel Type 416 Dia of the Stem 1-1/4 In or Under	
	High-tension Brass	
GLAND FLANGE	Carbon Steel or Malleable Iron	
BONNET BOLT	Alloy Steel	
GLAND BOLT	Carbon Steel or Stainless Steel	
HEXAGONAL BOLT	Carbon Steel	
PIN	Carbon Steel or Stainless Steel	
KEY	Carbon Steel	
HANDWHEEL NUT		
ADJUSTING NUT		
WASHER	Stainless Steel	
BEVEL GEAR	Carbon Steel	
PINION		
THRUST BALL BEARING	Steel	
PACKING	Graphite with Stainless Wire	
GASKET	Graphite · Stainless Hoop or Graphite Seet	

Note 1
Materials are of higher grade material than those used in valve body. Seat faces are stellited.



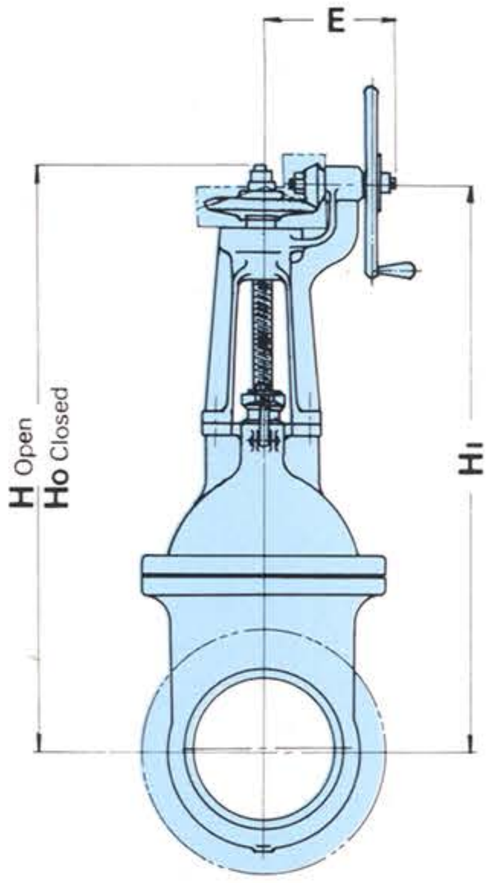


TABLE OF DIMENSION

DIMENSIONS IN INCHES (mm)
WEIGHT IN POUNDS (kg)

150 CLASS

TYPE NO.			U 112002	U 112003	U 112004	U 212005 ~ 212012	U 112014	U 112016	U 112018	U 112020	U 112022	U 112024
VALVE-SIZE			2-1/2	3	4	5 ~ 12	14	16	18	20	22	24
d	BORE		2-1/2 (64)	3 (76)	4 (102)	SEE PAGE 6	3-1/4 (337)	15-1/4 (387)	17-1/4 (438)	19-1/4 (489)	20-7/8 (530)	23-1/4 (591)
L	FACE TO FACE	(FLANGED)	7-1/2 (190)	8 (203)	9 (229)	"	15 (381)	16 (406)	17 (432)	18 (457)	–	20 (508)
	END TO END	(BW ENDS)	9-1/2 (241)	11-1/8 (283)	12 (305)	"	22-1/2 (572)	24 (610)	26 (660)	28 (711)	30 (762)	32 (813)
H	OPEN		16-3/8 (417)	18-1/8 (459)	21-3/8 (543)	EXCO TYPE	67-3/8 (1708)	76 (1924)	88-1/2 (2248)	95 (2408)	105 (2662)	116 (2945)
Ho	CLOSED		13-3/4 (349)	14-7/8 (379)	17-1/4 (439)	"	53-3/8 (1356)	59-7/8 (1520)	70-1/8 (1787)	75 (1905)	85-3/4 (2089)	92 (2334)
H_1	GEARED		–	–	–	"	–	–	–	72-1/4 (1838)	80-1/4 (2037)	86 (2182)
E	GEARED		–	–	–	"	–	–	–	14-1/8 (359)	14-1/8 (359)	14-3/8 (364)
D	HANDWHEEL		7-7/8 (200)	7-7/8 (200)	9-7/8 (250)	"	23-5/8 (600)	23-5/8 (600)	27-9/16 (700)	19-11/16 (500)	19-11/16 (500)	19-11/16 (500)
WEIGHT		FLANGED	59 (27)	73 (33)	99 (45)	"	1056 (480)	1342 (610)	2134 (970)	2596 (1180)	–	3616 (1640)
		BW ENDS	48 (22)	57 (26)	84 (38)	"	990 (450)	1254 (570)	1980 (900)	2530 (1150)	2954 (1340)	3572 (1620)

300 CLASS

TYPE NO.			U 113002	U 113003	U 113004	U 213005 ~ 213012	U 113014	U 113016	U 113018	U 113020	U 113022	U 113024
VALVE-SIZE			2-1/2	3	4	5 ~ 12	14	16	18	20	22	24
d	BORE		2-1/2 (64)	3 (76)	4 (102)	SEE PAGE 6	13-1/4 (337)	15-1/4 (387)	17 (432)	19 (483)	20-7/8 (530)	23 (584)
L	FACE TO FACE	(FLANGED)	9-1/2 (241)	11-1/8 (283)	12 (305)	"	30 (762)	33 (838)	36 (914)	39 (991)	43 (1092)	45 (1143)
	END TO END	(BW ENDS)										
H	OPEN		16-3/8 (417)	18-1/8 (459)	21-3/8 (543)	EXCO TYPE	69-1/2 (1765)	74-1/2 (1893)	83-1/2 (2117)	89 (2262)	98-1/4 (2502)	107-1/2 (2728)
Ho	CLOSED		13-3/4 (349)	14-7/8 (379)	17-1/4 (439)	"	56 (1422)	59-3/8 (1508)	66-1/2 (1687)	70-1/2 (1791)	78-3/8 (1989)	85-3/4 (2165)
H_1	GEARED		–	–	–	"	–	57-1/2 (1459)	64-1/2 (1642)	68 (1730)	75-1/2 (1921)	82-1/2 (2096)
E	GEARED		–	–	–	"	–	13-5/8 (346)	14-5/8 (371)	14-5/8 (371)	17-1/4 (439)	22-3/4 (579)
D	HANDWHEEL		7-7/8 (200)	7-7/8 (200)	9-7/8 (250)	"	27-9/16 (700)	19-11/16 (500)	19-11/16 (500)	19-11/16 (500)	23-5/8 (600)	23-5/8 (600)
WEIGHT		FLANGED	66 (30)	81 (37)	119 (54)	"	1672 (760)	2116 (960)	2877 (1305)	3549 (1610)	3990 (1810)	5106 (2316)
		BW ENDS	48 (22)	57 (26)	84 (38)	"	1365 (620)	1716 (780)	2388 (1080)	2950 (1340)	3461 (1570)	4189 (1900)

400 CLASS

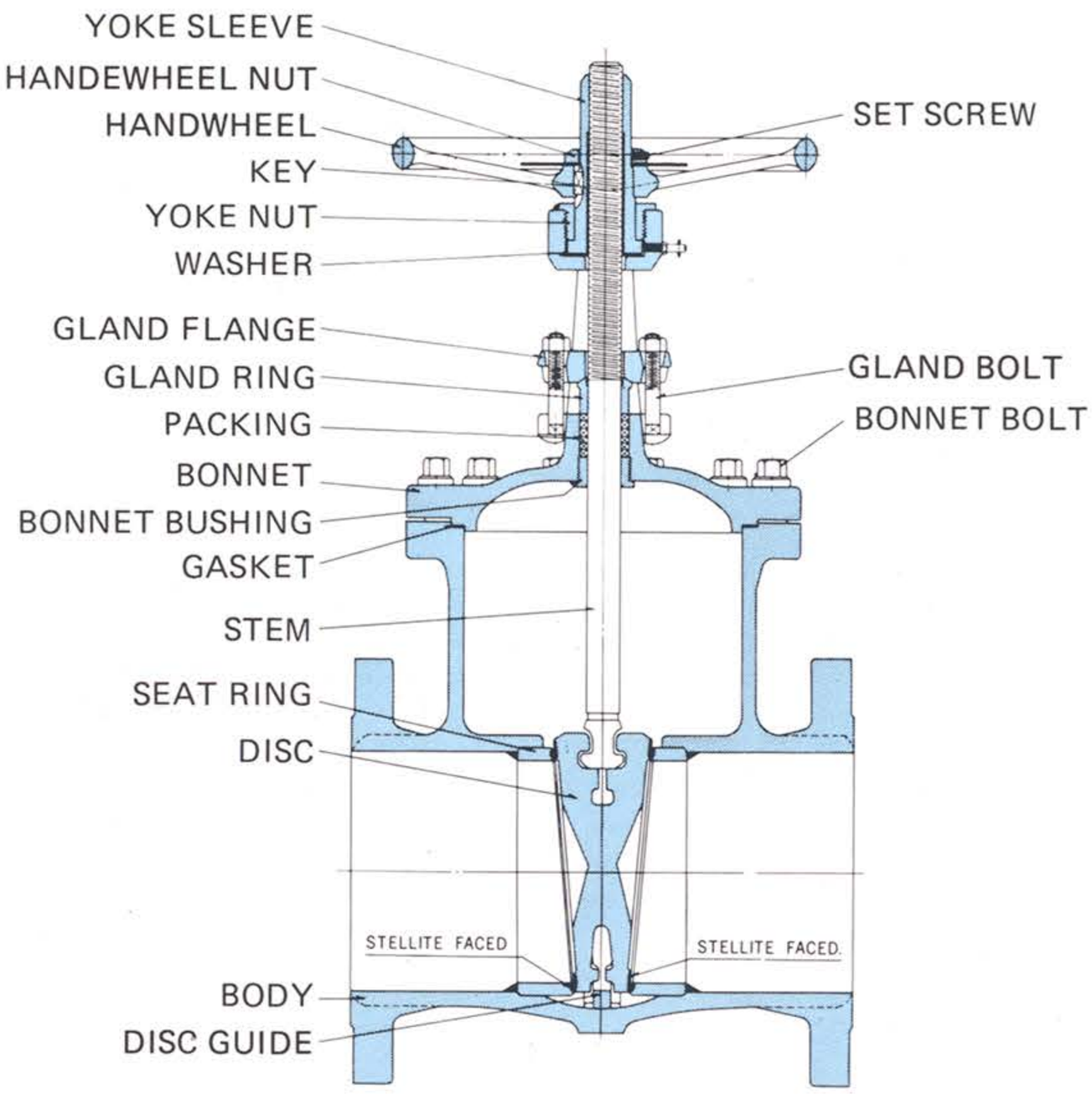
TYPE NO.			U 114002	U 114003	U 114004	U 114005	U 114006	U 114008	U 114010	U 114012	U 114014	U 114016	U 114018	U 114020
VALVE-SIZES			2-1/2	3	4	5	6	8	10	12	14	16	18	20
d	BORE		2-1/2 (64)	3 (76)	4 (102)	5 (127)	6 (152)	8 (203)	10 (254)	12 (305)	13-1/8 (333)	15 (381)	17 (432)	18-7/8 (479)
L	FACE TO FACE	(FLANGED)	13 (330)	14 (356)	16 (406)	18 (457)	19-1/2 (495)	23-1/2 (597)	26-1/2 (673)	30 (762)	32-1/2 (826)	35-1/2 (902)	38-1/2 (978)	41-1/2 (1054)
	END TO END	(BW ENDS)												
H	OPEN		18-3/4 (475)	21-1/8 (538)	26-3/8 (670)	30 (761)	35-1/4 (894)	44-5/8 (1132)	56-7/8 (1443)	67-1/2 (1715)	68-1/2 (1740)	76 (1931)	83-1/2 (2121)	87 (2209)
Ho	CLOSED		15-3/4 (400)	17-5/8 (449)	22 (559)	24-5/8 (624)	28-7/8 (732)	36-3/8 (924)	46-1/4 (1176)	55-1/8 (1401)	55-3/8 (1406)	61 (1552)	66-1/2 (1690)	68-1/2 (1737)
H_1	GEARED		–	–	–	–	–	–	–	–	53-3/8 (1357)	59-3/8 (1507)	63-3/4 (1620)	71-1/2 (1817)
E	GEARED		–	–	–	–	–	–	–	–	13-5/8 (346)	14-5/8 (371)	14-5/8 (371)	17-1/4 (439)
D	HANDWHEEL		7-7/8 (200)	9-7/8 (250)	11-13/16 (300)	11-13/16 (300)	13-3/4 (350)	15-3/4 (400)	19-11/16 (500)	27-9/16 (700)	19-11/16 (500)	19-11/16 (500)	23-5/8 (600)	23-5/8 (600)
WEIGHT		FLANGED	119 (54)	139 (63)	214 (97)	286 (130)	400 (182)	640 (291)	1045 (475)	1610 (730)	1975 (896)	2470 (1122)	3240 (1470)	4255 (1930)
		BW ENDS	93 (42)	103 (47)	160 (73)	220 (100)	308 (140)	500 (228)	845 (384)	1320 (600)	1587 (720)	1980 (900)	2640 (1200)	3528 (1600)

600 CLASS

TYPE NO.			U 115002	U 115003	U 115004	U 115005	U 115006	U 115008	U 115010	U 115012	U 115014	U 115016	U 115018	U 115020
VALVE-SIZE			2-1/2	3	4	5	6	8	10	12	14	16	18	20
d	BORE		2-1/2 (64)	3 (76)	4 (102)	5 (127)	6 (152)	7-7/8 (200)	9-3/4 (248)	11-3/4 (298)	12-7/8 (327)	14-3/4 (375)	16-1/2 (419)	18-1/4 (464)
L	FACE TO FACE	(FLANGED)	13 (330)	14 (356)	17 (432)	20 (508)	22 (559)	26 (660)	31 (787)	33 (838)	35 (889)	39 (991)	43 (1092)	47 (1194)
	END TO END	(BW ENDS)												
H	OPEN		19-1/8 (486)	21-3/4 (553)	28 (710)	32-5/8 (829)	42 (1067)	49-7/8 (1266)	61-1/4 (1557)	68 (1730)	71-1/4 (1809)	78-3/8 (2014)	86-1/2 (2198)	94-3/8 (2397)
Ho	CLOSED		16-3/8 (416)	18 (470)	23-3/4 (602)	27-9/16 (700)	35-7/8 (910)	41-3/4 (1060)	51-1/8 (1299)	56-3/8 (1431)	58-1/2 (1487)	64-3/4 (1644)	70-1/2 (1787)	76-1/2 (1945)
H_1	GEARED		–	–	–	–	–	–	–	53-15/16 (1370)	55-3/4 (1416)	62-3/4 (1592)	67-5/8 (1718)	74 (1879)
E	GEARED		–	–	–	–	–	23-5/8 (600)	–	13 (331)	17-1/4 (439)	22-7/8 (580)	22-7/8 (580)	26-7/8 (684)
D	HANDWHEEL		11-13/16 (300)	11-13/16 (300)	13-3/4 (350)	15-3/4 (400)	19-11/16 (500)	22-1/16 (560)	27-9/16 (700)	23-5/8 (600)	23-5/8 (600)	23-5/8 (600)	23-5/8 (600)	23-5/8 (600)
WEIGHT		FLANGED	132 (60)	172 (78)	286 (130)	440 (200)	683 (310)	990 (450)	1890 (860)	2491 (1130)	2965 (1345)	3788 (1718)	4720 (2142)	5941 (2695)
		BW ENDS	101 (46)	136 (62)	220 (100)	320 (145)	540 (245)	793 (360)	1540 (700)	2094 (950)	2469 (1120)	3086 (1400)	3858 (1750)	4850 (2200)

Note: For data not shown in this table, accurate data will be included on the drawings submitted for approval.

UTE CAST STEEL GATE VALVE
EXCO TYPE



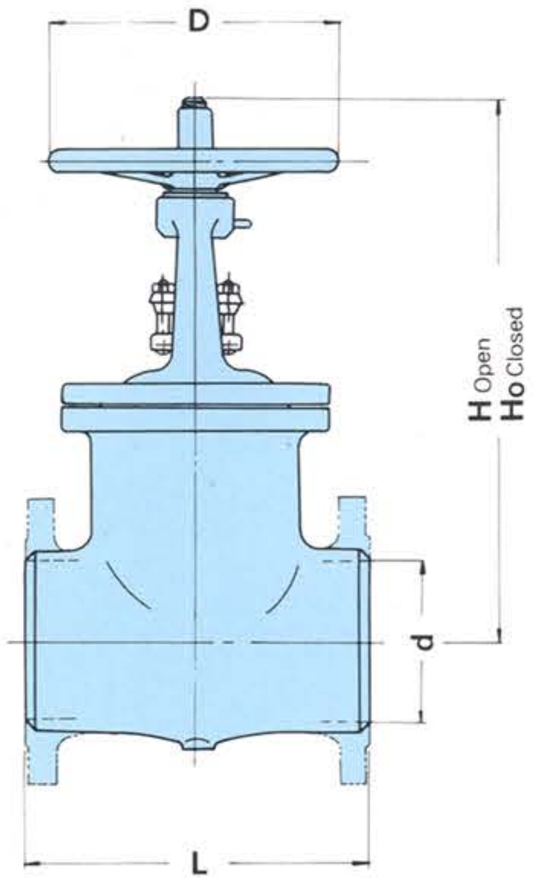
STANDARD MATERIALS IN USE

NAME OF PART	MATERIAL
BODY	1, 2, 3, 4, 5, 6 (See Page 1, 1-2)
BONNET	
DISC	
HANDWHEEL	Malleable Iron
YOKE NUT	
SEAT RING	Ref. to Note 1
STEM	Stainless Steel Type 403 or 416
BONNET BUSH	Stainless Steel Type 416
GLAND RING	
YOKE SLEEVE	
GLAND FLANGE	Malleable Iron
BONNET BOLT	Alloy Steel
GLAND BOLT	Stainless Steel Type 403
KEY	Carbon Steel
HANDWHEEL NUT	Malleable Iron
SET SCREW	Carbon Steel
WASHER	Stainless Steel Type 410
PACKING	Graphite with Stainless Wire
GASKET	Graphite · Stainless Hoop or Graphite Seet
DISC GUIDE	Carbon Steel

Note 1
Materials are of higher grade material than those used in valve body. Seat faces are stellited.

TABLE OF DIMENSION

DIMENSIONS IN INCHES (mm)
WEIGHT IN POUNDS (kg)



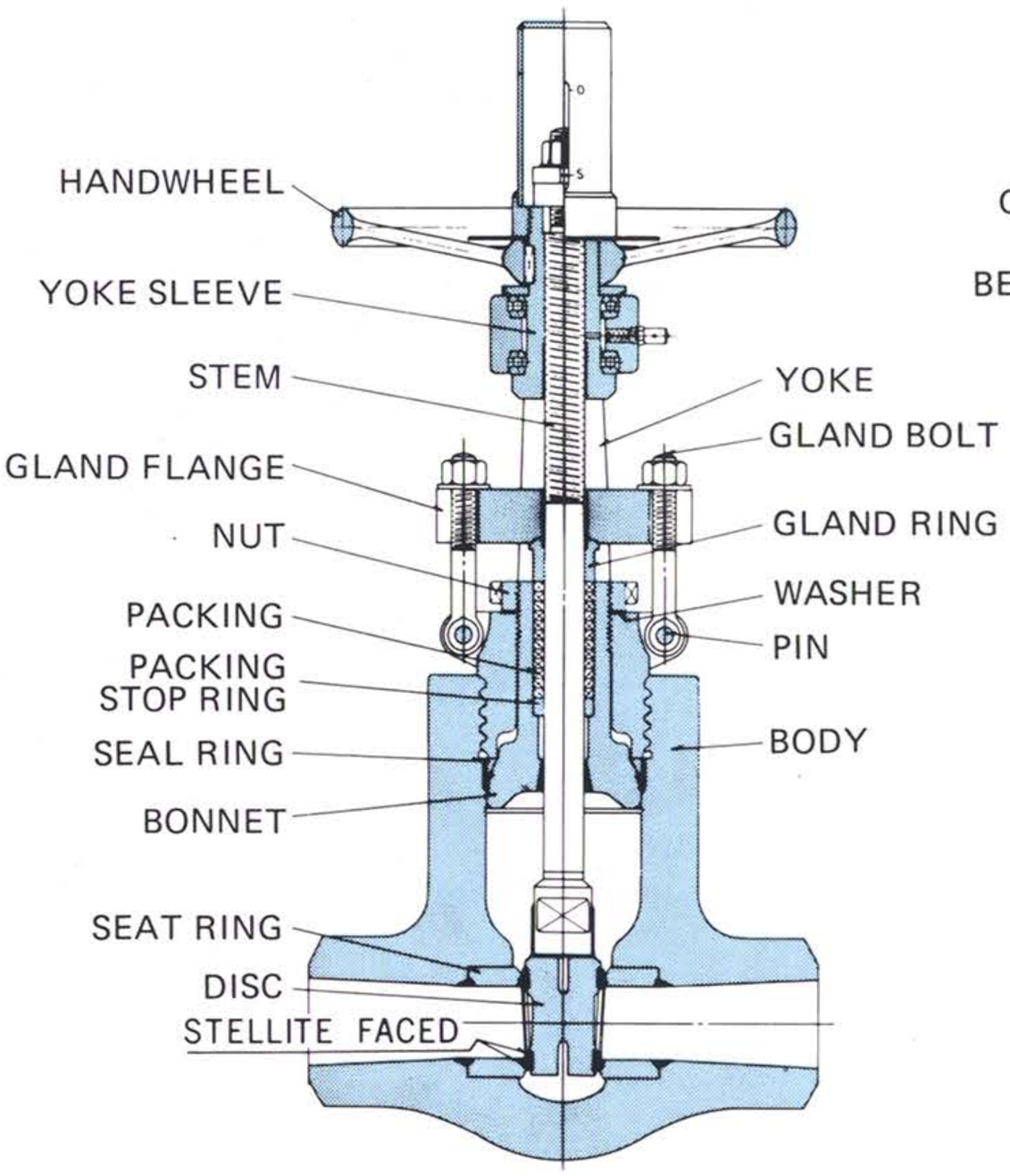
150 CLASS

TYPE NO.		U 212005	U 212006	U 212008	U 212010	U 212012
VALVE-SIZE		5	6	8	10	12
d BORE		5 (127)	6 (152)	8 (203)	10 (254)	12 (305)
L	FACE TO FACE (FLANGED)	10 (254)	10-1/2 (267)	11-1/2 (292)	13 (330)	14 (356)
	END TO END (BW ENDS)	15 (381)	15-7/8 (403)	16-1/2 (419)	18 (457)	19-3/4 (502)
H OPEN		24-7/8 (632)	28-5/16 (719)	34 (862)	41-3/8 (1052)	49-1/8 (1249)
Ho CLOSED		19-7/8 (504)	22-3/8 (567)	26-1/8 (665)	31-5/8 (802)	37-1/2 (951)
D HANDWHEEL		9-7/8 (250)	9-7/8 (250)	11-13/16 (300)	13-3/4 (350)	15-3/4 (400)
WEIGHT	FLANGED	128 (58)	181 (82)	236 (107)	366 (166)	494 (224)
	BW ENDS	103 (48)	156 (71)	200 (91)	320 (145)	439 (199)

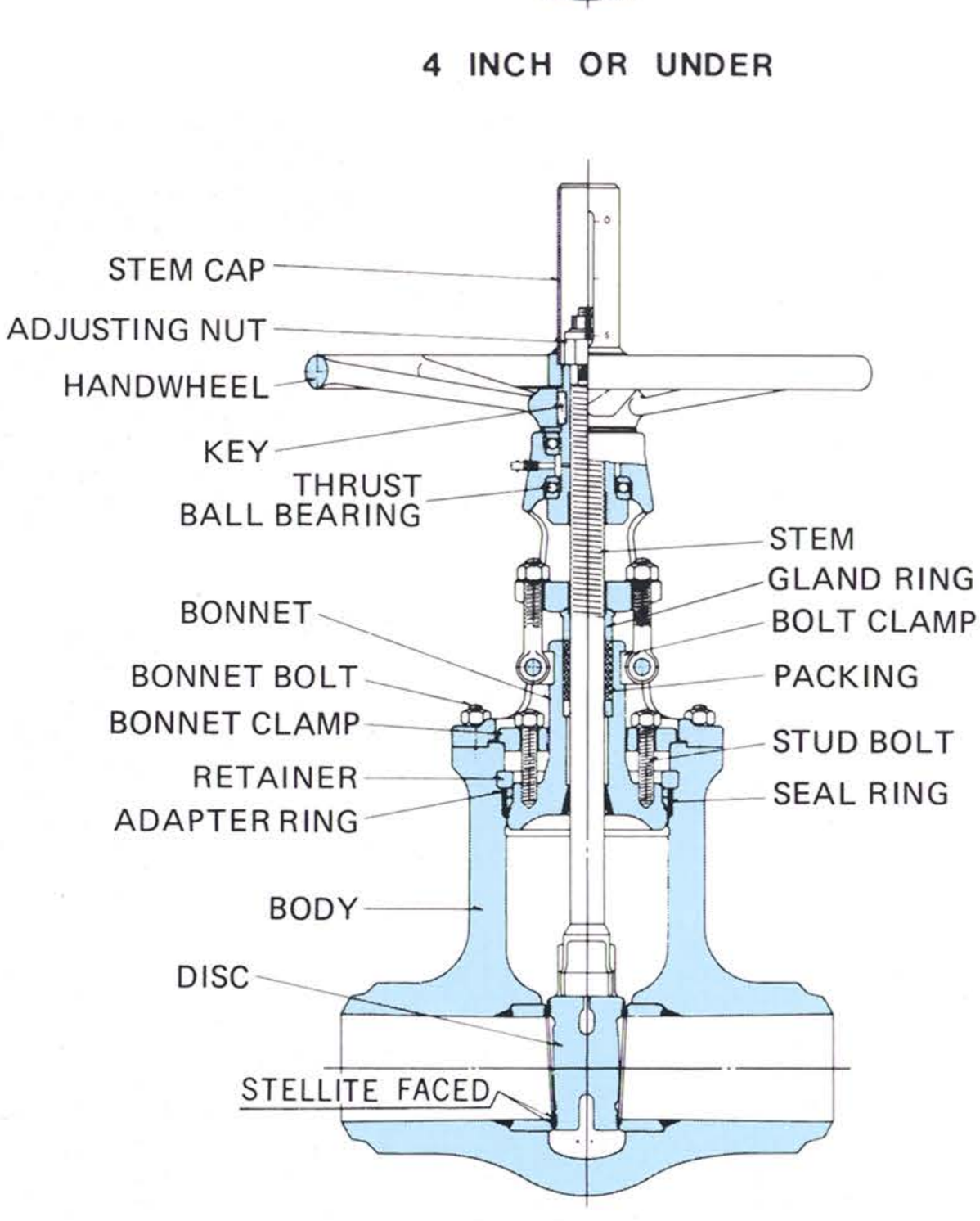
300 CLASS

TYPE NO.		U 213005	U 213006	U 213008	U 213010	U 213012
VALVE-SIZE		5	6	8	10	12
d BORE		5 (127)	6 (152)	8 (203)	10 (254)	12 (305)
L	FACE TO FACE (FLANGED)	15 (381)	15-7/8 (403)	16-1/2 (419)	18 (457)	19-3/4 (502)
	END TO END (BW ENDS)					
H OPEN		24-7/8 (632)	28-5/8 (719)	34-3/8 (873)	42-5/16 (1075)	49-1/2 (1258)
Ho CLOSED		19-7/8 (504)	22-5/16 (567)	26-5/8 (676)	32-1/2 (825)	37-3/4 (960)
D HANDWHEEL		10 (250)	10 (250)	12 (300)	15-3/4 (400)	17-3/4 (450)
WEIGHT	FLANGED	161 (73)	230 (104)	373 (169)	543 (246)	785 (356)
	BW ENDS	108 (49)	159 (72)	262 (119)	395 (179)	562 (255)

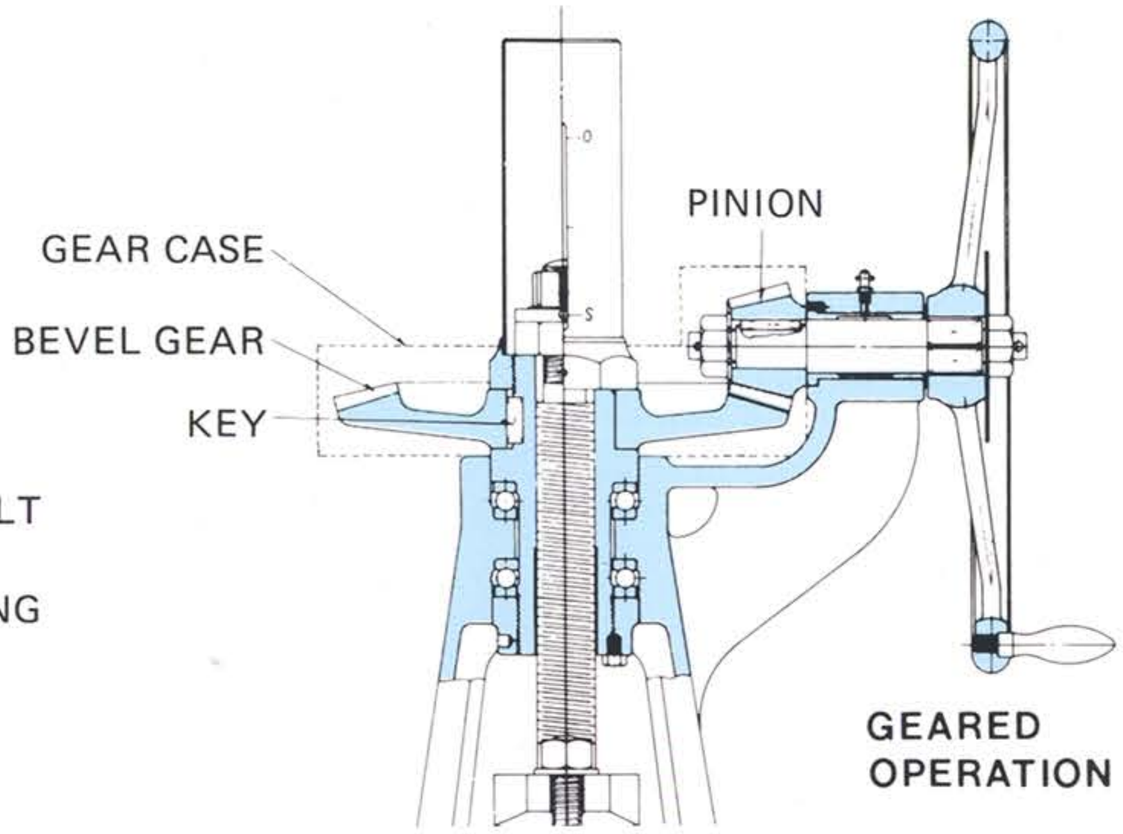
UTE CAST STEEL GATE VALVE
PRESSURE SEAL BONNET TYPE



4 INCH OR UNDER



5 INCH OR OVER



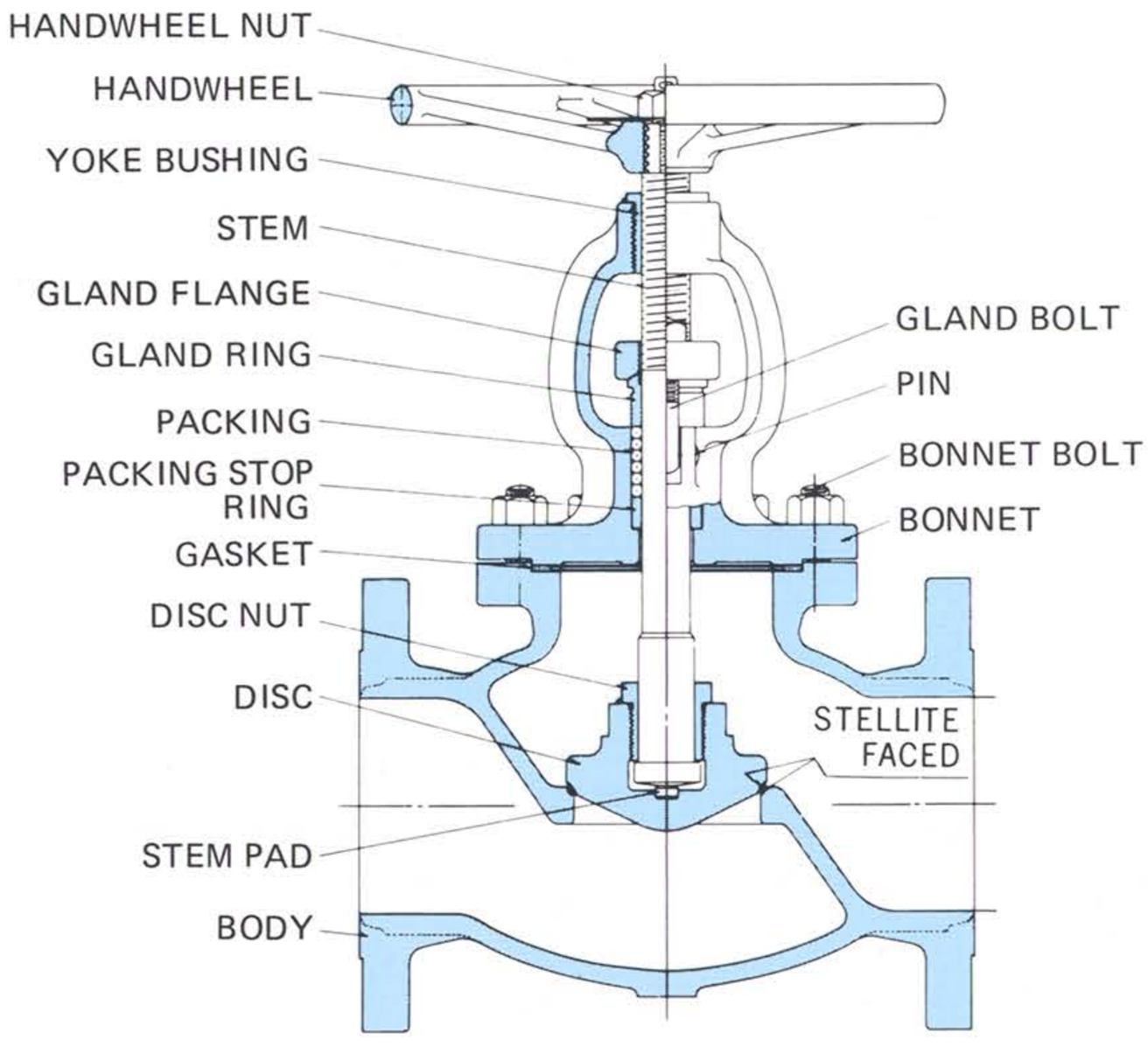
GEARED OPERATION

STANDARD MATERIALS IN USE

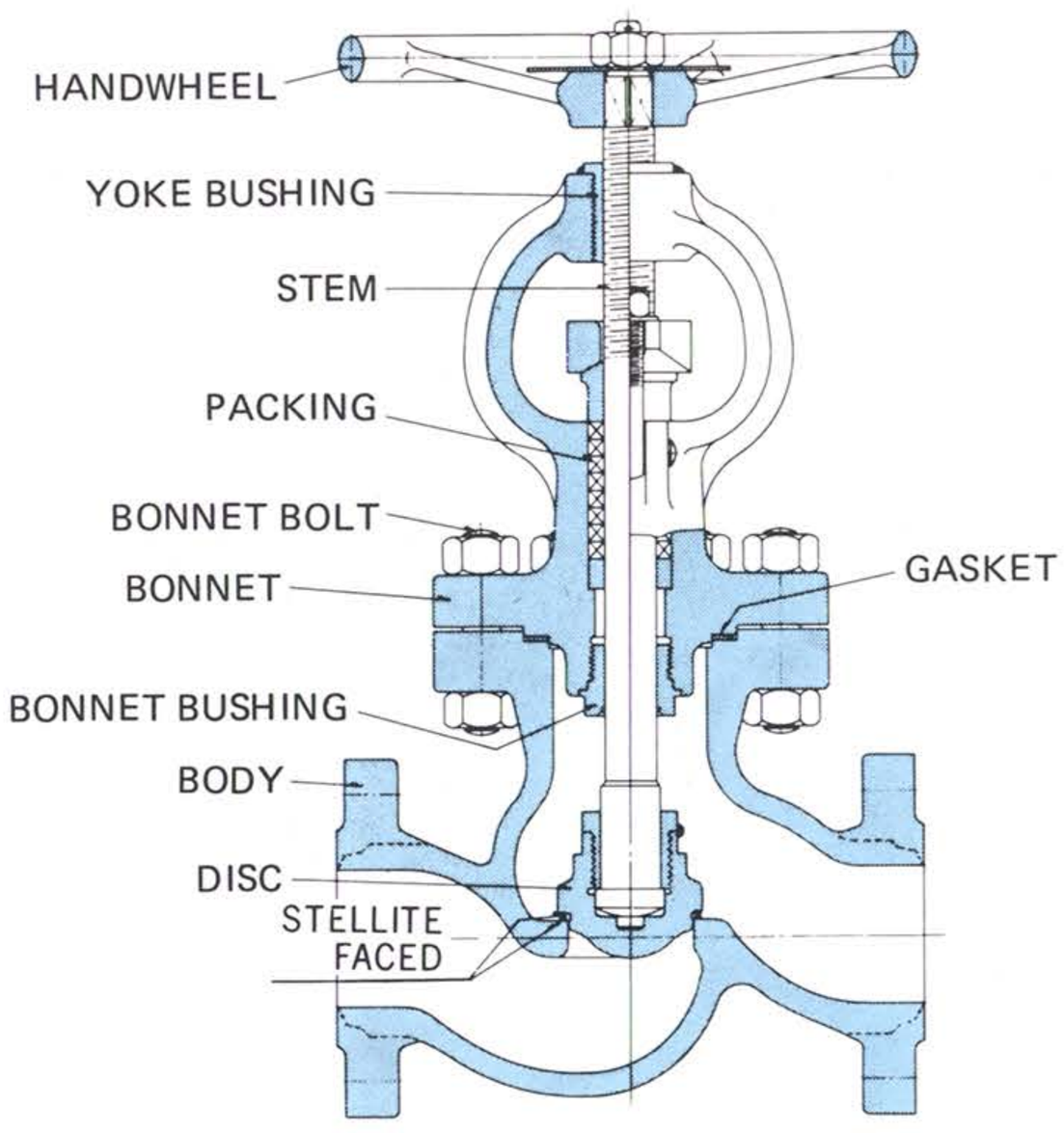
NAME OF PART	MATERIAL	
BODY	1, 2, 3, 4, 5, 6 (See Page 1, 1-2)	7, 8 (See Page 1, 1-2)
BONNET (Ref. to Note 3)		
DISC	Ref. to Note 1	
YOKE	Carbon Cast Steel	
HANDWHEEL	Malleable Iron — Outside Dia 17-3/4 In or Under	
	Cast Iron — Outside Dia 19-1/2 In or Over	
SEAT RING	Ref. to Note 1	
STEM	Stainless Steel Type 403	Stainless Steel Type 630
PACKING STOP RING	Stainless Steel Type 416	Austenite Stainless Steel
GLAND RING		
YOKE SLEEVE	High-tension Brass	
GLAND FLANGE	Carbon Steel	
BONNET BOLT	Alloy Steel (Ref. to Note 2)	
GLAND BOLT	Alloy Steel	
KEY	Carbon Steel	
ADJUSTING NUT		
BEVEL GEAR		
PINION		
THRUST BALL BEARING	Steel	
PACKING	Graphite with Stainless Wire	
SEAL RING	Soft Steel (Ref. to Note 2)	
STEM CAP	Carbon Steel	
WASHER	Stainless Steel	
PIN	Alloy Steel	
GEAR CASE	Carbon Steel	
RETAINER	Stainless Steel Type 403	
BONNET CLAMP	Carbon Steel	
BOLT CLAMP		
STUD BOLT	Alloy Steel	
ADAPTER RING	Stainless Steel Type 403	
NUT	Carbon Steel	

Note 1
Materials are of higher grade material than those used in valve body. Seat faces are stellited.
Note 2
Materials will be used which will meet or exceed the service conditions.
Note 3
Bonnet is of better forged material than used in valve body.

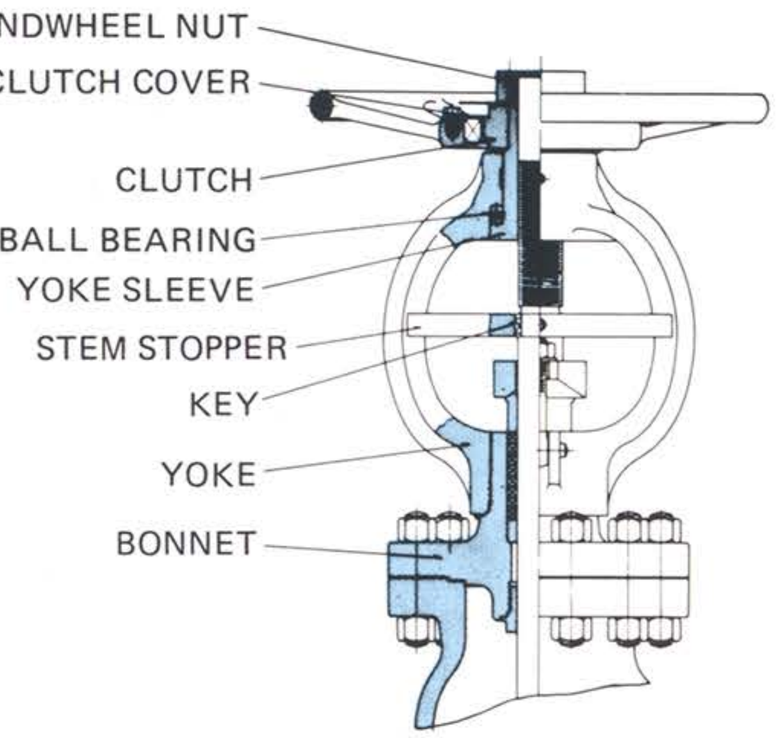
UTE CAST STEEL GLOBE VALVE
BOLTED BONNET TYPE



CLASS 150~400



CLASS 600·900
3 INCH OR UNDER

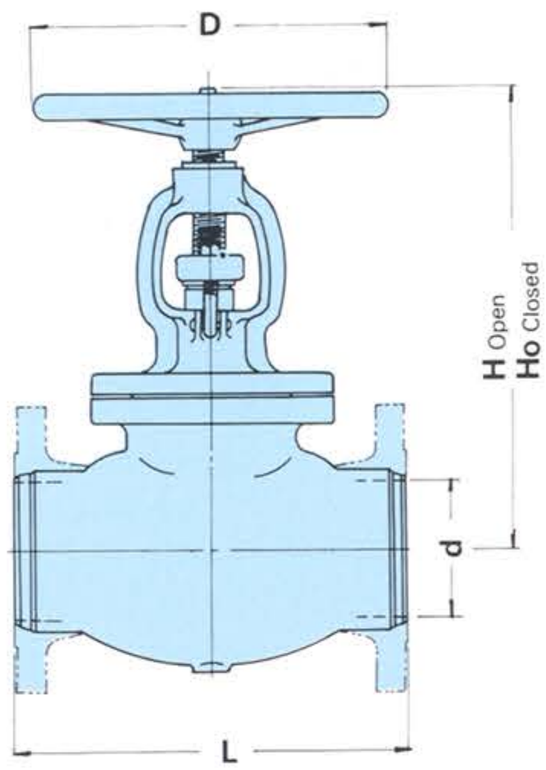


CLASS 600·900
4 INCH OR OVER

STANDARD MATERIALS IN USE

NAME OF PART	MATERIAL	
BODY BONNET	1, 2, 3, 4, 5, 6 (See Page 1, 1-2)	7, 8 (See Page 1, 1-2)
DISC	Ref. to Note 1	
YOKE	Carbon Cast Steel	
HANDWHEEL	Malleable Iron — Outside Dia 17-3/4 In or Under	
	Cast Iron — Outside Dia 19-3/4 In or Over	
STEM	Stainless Steel Type 403 or 416	Stainless Steel Type 630
DISC NUT BONNET BUSHING PACKING STOP RING GLAND RING	Stainless Steel Type 416	Austenite Stainless Steel
YOKE BUSHING (SLEEVE)	Stainless Steel Type 416 Dia of the stem 1-1/4 In or Under	
	High-tension Brass	
GLAND FLANGE	Carbon Steel or Malleable Iron	
BONNET BOLT	Alloy Steel (Ref. to Note 2)	
GLAND BOLT	Carbon Steel or Stainless Steel	
STEM PAD	Alloy Steel	
STEM STOPPER	Carbon Steel	
PIN	Carbon Steel or Stainless Steel	
HANDWHEEL NUT CLUTCH CLUTCH COVER KEY	Carbon Steel	
THRUST BALL BEARING	Steel	
PACKING	Graphite with Stainless Wire	
GASKET	Graphite · Stainless Hoop	

Note 1
Materials are of higher grade material than those used in valve body. Seat faces are stellited.
Note 2
Materials will be used which will meet or exceed the service conditions.



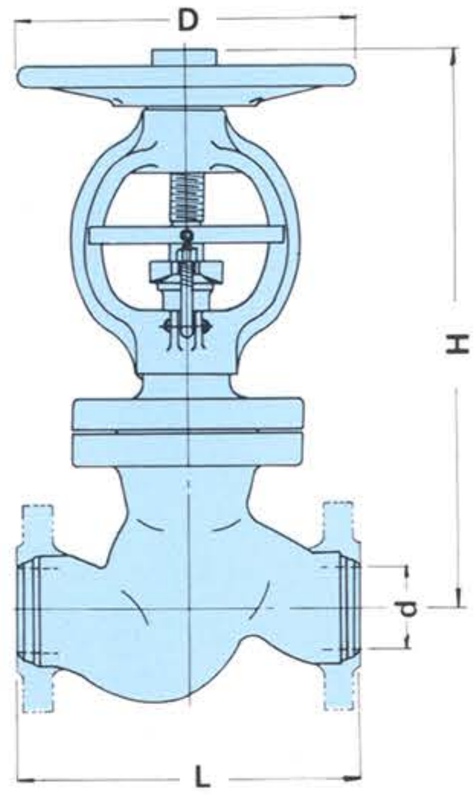


TABLE OF DIMENSION

DIMENSIONS IN INCHES (mm)
WEIGHT IN POUNDS (kg)

150 CLASS

TYPE NO.		U 132002	U 132003	U 132004	U 132005	U 132006	U 132008	U 132010	U 132012	U 132014
VALVE-SIZE		2-1/2	3	4	5	6	8	10	12	14
d BORE		2-1/2 (64)	3 (76)	4 (102)	5 (127)	6 (152)	8 (203)	10 (254)	12 (305)	13-1/2 (337)
L FACE TO FACE END TO END		8-1/2 (216)	9-1/2 (241)	11-1/2 (292)	14 (356)	16 (406)	19-1/2 (495)	24-1/2 (622)	27-1/2 (698)	31 (787)
H OPEN		13-3/8 (341)	13-5/8 (346)	15-1/2 (393)	18-7/8 (478)	21-1/4 (539)	23-5/8 (600)	29-5/8 (753)	34-1/4 (871)	40-1/4 (1021)
Ho CLOSED		12-3/8 (315)	12-1/2 (317)	14 (355)	17-1/8 (435)	19-3/16 (488)	21-1/8 (536)	26-3/16 (665)	30-5/8 (777)	35-1/2 (901)
D HANDWHEEL		7-7/8 (200)	8-7/8 (225)	9-7/8 (250)	11-13/16 (300)	13-3/4 (350)	15-3/4 (400)	15-3/4 (400)	19-11/16 (500)	22-1/16 (560)
WEIGHT	FLANGED	55 (25)	70 (32)	103 (47)	149 (68)	209 (95)	319 (145)	670 (305)	890 (404)	1365 (620)
	BW ENDS	44 (20)	53 (24)	77 (35)	127 (58)	176 (80)	264 (120)	590 (268)	770 (350)	1210 (550)

300 CLASS

TYPE NO.		U 133002	U 133003	U 133004	U 133005	U 133006	U 133008	U 133010	U 133012	U 133014
VALVE-SIZE		2-1/2	3	4	5	6	8	10	12	14
d BORE		2-1/2 (64)	3 (76)	4 (102)	5 (127)	6 (152)	8 (203)	10 (254)	12 (305)	13-3/16 (335)
L FACE TO FACE END TO END		11-1/2 (292)	12-1/2 (318)	14 (356)	15-3/4 (400)	17-1/2 (444)	22 (559)	24-1/2 (622)	28 (711)	31 (787)
H OPEN		13-3/8 (341)	13-5/8 (346)	15-1/2 (393)	21 (533)	22-7/8 (580)	26-1/2 (673)	35-3/8 (898)	37-3/4 (959)	44-1/8 (1120)
Ho CLOSED		12-3/8 (315)	12-1/2 (317)	14 (355)	19-1/4 (490)	20-13/16 (529)	24 (609)	32-1/16 (817)	34-1/16 (865)	40 (1016)
D HANDWHEEL		7-7/8 (200)	8-7/8 (225)	9-7/8 (250)	13-3/4 (350)	17-3/4 (450)	19-11/16 (500)	22-1/16 (560)	24-13/16 (630)	24-13/16 (630)
WEIGHT	FLANGED	66 (30)	77 (35)	123 (56)	211 (96)	264 (120)	480 (218)	924 (420)	1210 (550)	1694 (770)
	BW ENDS	48 (22)	53 (24)	88 (40)	152 (67)	198 (90)	370 (168)	770 (350)	990 (450)	1380 (630)

400 CLASS

TYPE NO.		U 134002	U 134003	U 134004	U 134005	U 134006	U 134008	U 134010	U 134012
VALVE-SIZE		2-1/2	3	4	5	6	8	10	12
d BORE		2-1/2 (64)	3 (76)	4 (102)	5 (127)	6 (152)	8 (203)	10 (254)	11-1/2 (292)
L FACE TO FACE, END TO END		13 (330)	14 (356)	16 (406)	18 (457)	19-1/2 (495)	23-1/2 (597)	26-1/2 (673)	30 (762)
H OPEN		16-1/4 (412)	17 (431)	19-3/8 (492)	23-1/2 (598)	25-1/2 (649)	26-1/2 (673)	35-3/8 (898)	49-1/2 (1257)
Ho CLOSED		15 (380)	15-5/8 (396)	17-11/16 (449)	21-1/2 (546)	23 (584)	24 (609)	32-1/16 (817)	46 (1168)
D HANDWHEEL		9-7/8 (250)	11-13/16 (300)	13-3/4 (350)	15-3/4 (400)	17-3/4 (450)	19-11/16 (500)	22-1/16 (560)	24-13/16 (630)
WEIGHT	FLANGED	103 (47)	143 (65)	236 (107)	290 (132)	422 (192)	681 (310)	1005 (456)	1584 (720)
	BW ENDS	77 (35)	108 (49)	183 (83)	224 (102)	330 (150)	540 (247)	803 (365)	1294 (588)

600 CLASS

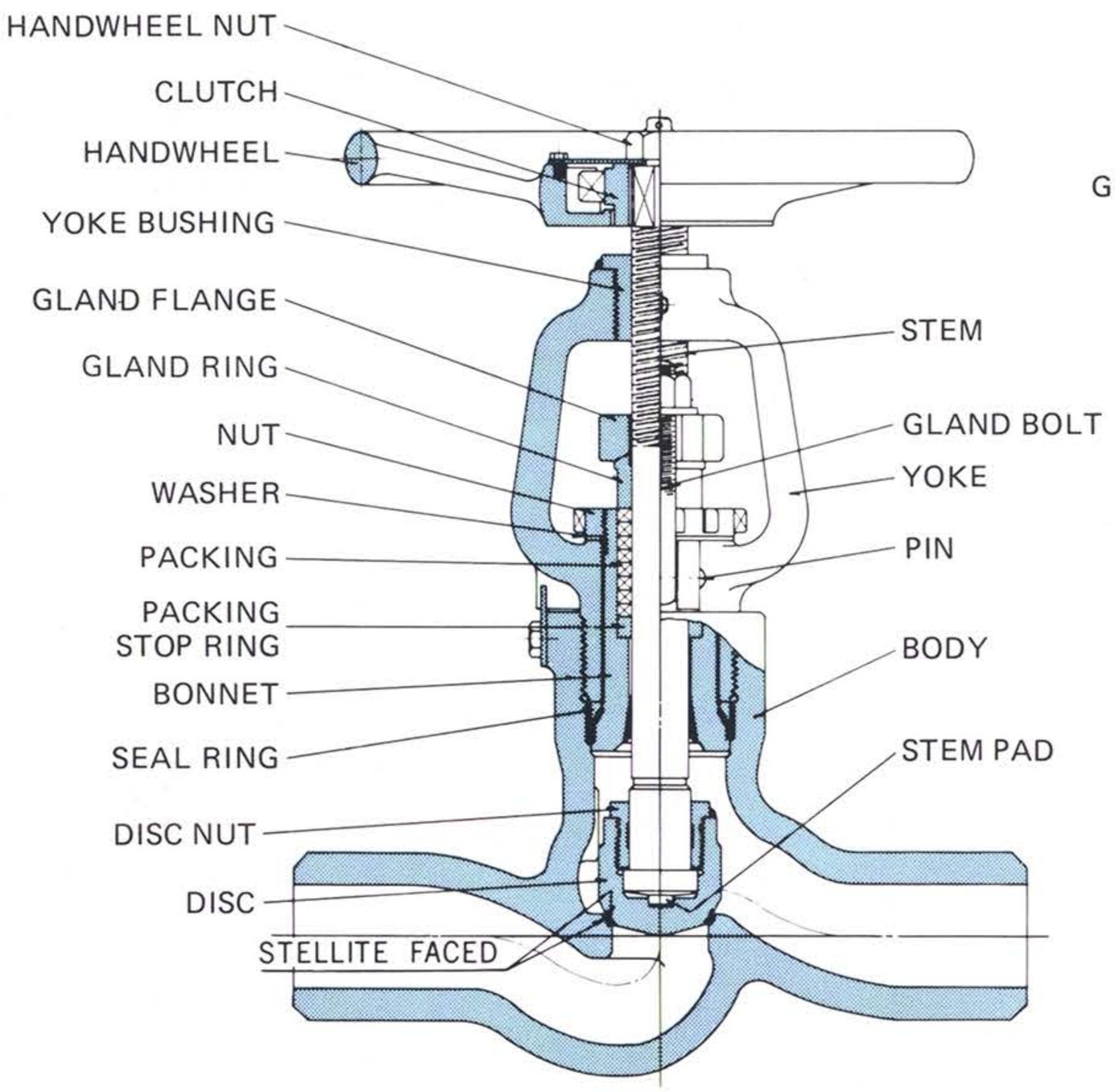
TYPE NO.		U 135002	U 135003	U 135004	U 135005	U 135006	U 135008	U 135010	U 135012
VALVE-SIZE		2-1/2	3	4	5	6	8	10	12
d BORE		2-1/2 (64)	3 (76)	4 (102)	5 (127)	6 (152)	7-7/8 (200)	9-5/8 (245)	11-7/16 (290)
L FACE TO FACE END TO END		13 (330)	14 (356)	17 (432)	20 (508)	22(559)	26 (660)	31 (787)	33 (838)
H OPEN		21-1/8 (536)	22-1/2 (571)	26 (660)	30-5/8 (779)	34-3/4 (882)	39-1/8 (995)	41-3/4 (1060)	54-1/2 (1383)
Ho CLOSED		(499)	(530)	–	–	–	–	–	–
D HANDWHEEL		11-13/16 (300)	13-3/4 (350)	15-3/4 (400)	19-11/16 (500)	22-1/16 (560)	24-13/16 (630)	28 (710)	30 (760)
WEIGHT	FLANGED	163 (74)	204 (93)	352 (160)	550 (250)	693 (315)	1240 (564)	1973 (895)	2790 (1265)
	BW ENDS	132 (60)	167 (76)	286 (130)	429 (195)	550 (250)	1045 (475)	1599 (725)	2337 (1060)

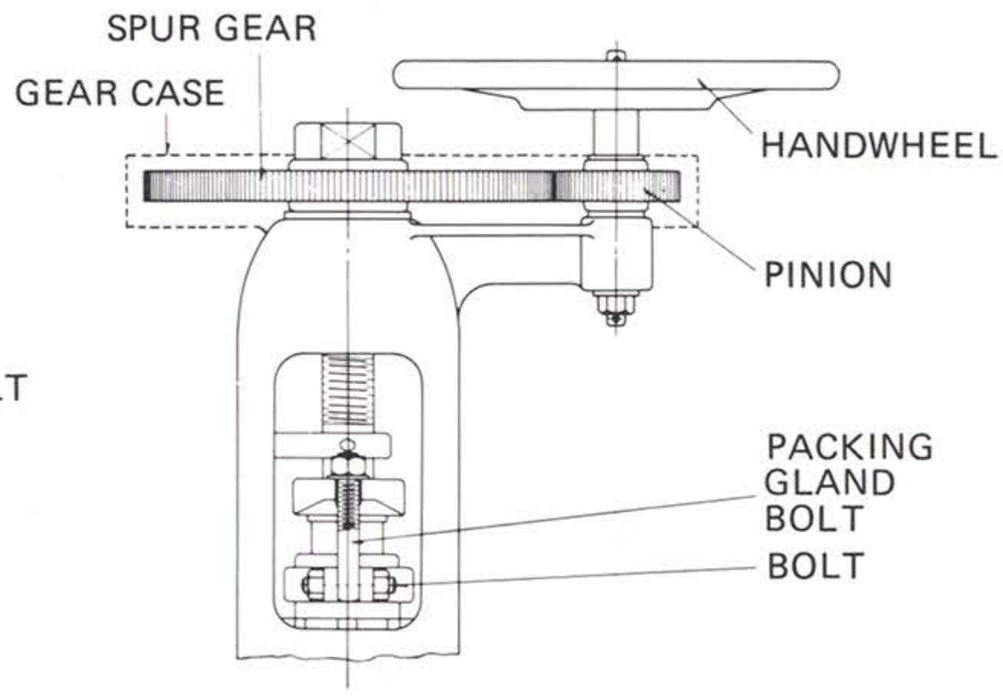
900 CLASS

TYPE NO.	U 136102	U 136103	U 136104	U 136105	U 136106	U 136108	U 136110
VALVE-SIZE	2-1/2	3	4	5	6	8	10
d BORE	2-1/2 (62)	3 (73)	3-7/8 (97)	4-3/4 (120)	5-5/8 (143)	7-1/2 (190)	9-1/2 (240)
L FACE TO FACE END TO END	16-1/2 (419)	15 (381)	18 (457)	22 (559)	24 (610)	29 (737)	33 (838)
H OPEN	22-3/8 (569)	23-3/4 (604)	27-7/8 (708)	30-3/4 (780)	35 (890)	48-13/16 (1240)	65 (1651)
Ho CLOSED	20-7/8 (530)	22-1/8 (562)	–	–	–	–	–
D HANDWHEEL	12-5/8 (320)	14-1/8 (360)	17-3/4 (450)	22-1/16 (560)	24-13/16 (630)	28-3/8 (720)	30 (760)
WEIGHT (BW ENDS)	165 (75)	231 (105)	363 (165)	571 (260)	725 (330)	1521 (690)	2867 (1300)

Note: For data not shown in this table, accurate data will be included on the drawings submitted for approval.

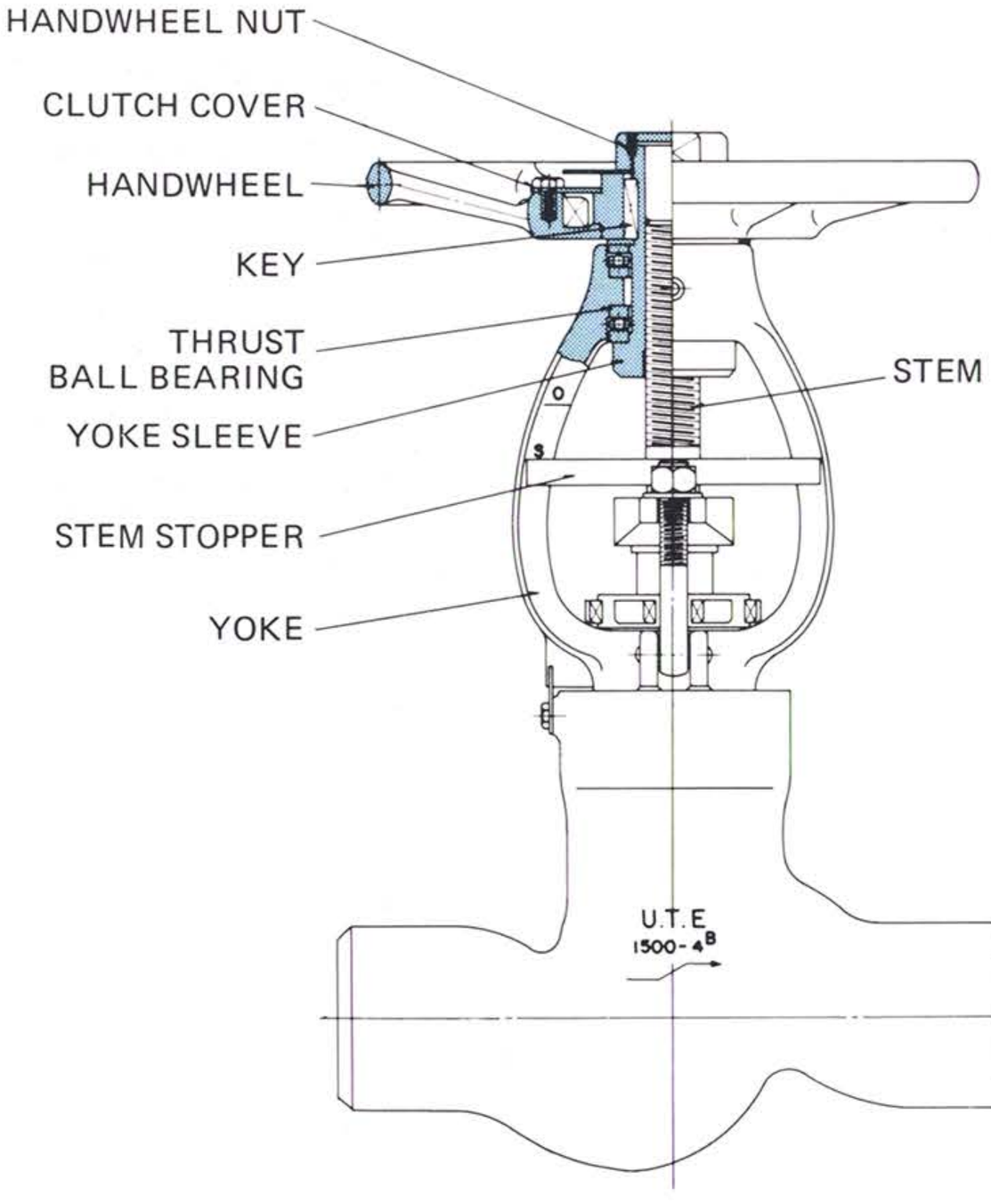
UTE CAST STEEL GLOBE VALVE
PRESSURE SEAL BONNET TYPE



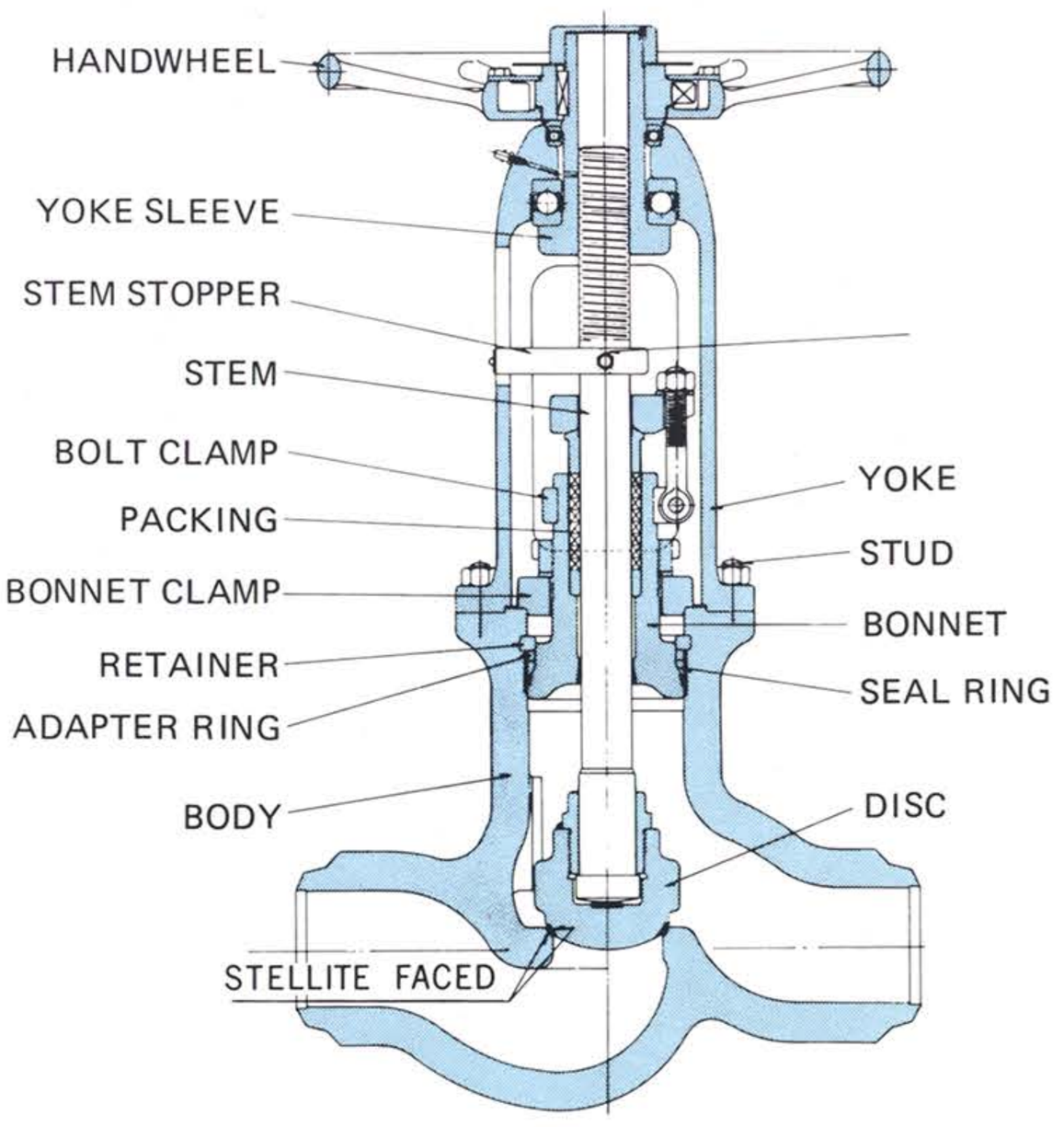


GEARED OPERATION

2 1/2 INCH & 3 INCH



4 INCH & 5 INCH



6 INCH OR OVER

STANDARD MATERIALS IN USE

NAME OF PART	MATERIAL	
BODY	1, 2, 3, 4, 5, 6 (See Page 1, 1-2)	7, 8 (See Page 1, 1-2)
BONNET (Ref. to Note 3)		
DISC	Ref. to Note 1	
YOKE	Carbon Cast Steel	
HANDWHEEL		
STEM	Stainless Steel Type 403 or 416	Stainless Steel Type 630
DISC NUT	Stainless Steel Type 416	Austenite Stainless Steel
PACKING STOP RING		
GLAND RING		
YOKE BUSHING (SLEEVE)	High-tension Brass	
GLAND FLANGE	Carbon Steel	
STUD	Alloy Steel	
PACKING GLAND BOLT		
STEM PAD		
STEM STOPPER	Carbon Steel	
PIN	Alloy Steel	

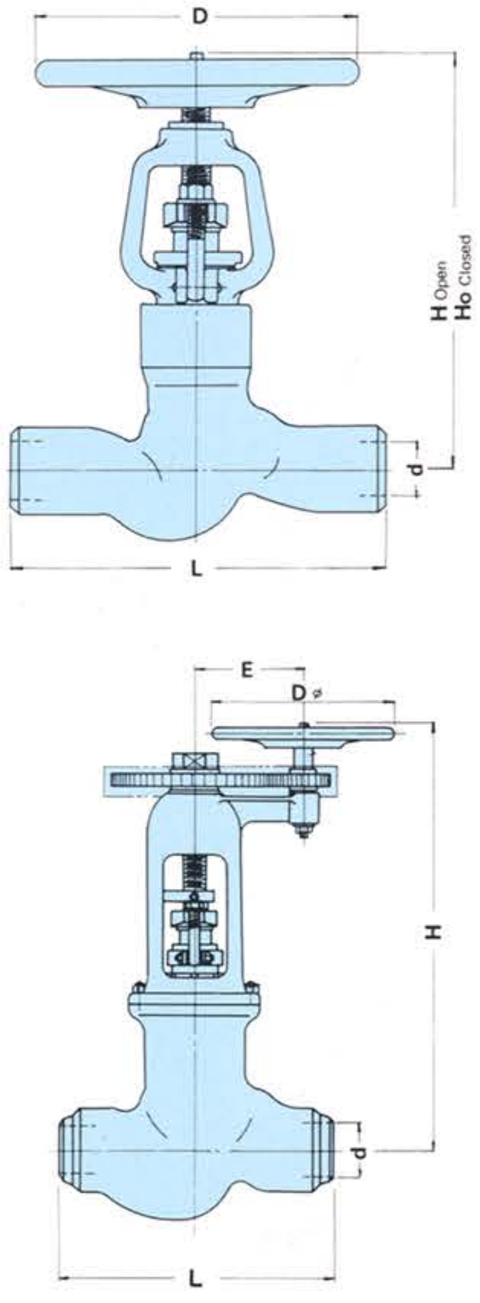
NAME OF PART	MATERIAL
KEY	Carbon Steel
HANDWHEEL NUT	
CLUTCH	
CLUTCH COVER	
WASHER	Stainless Steel
SPUR GEAR	Carbon Steel
PINION	
THRUST BALL BEARING	Steel
PACKING	Graphite with Stainless Wire
SEAL RING	Soft Steel
GEAR CASE	Carbon Steel
RETAINER	Stainless Steel Type 403
BONNET CLAMP	Carbon Steel
BOLT CLAMP	
ADAPTER RING	Stainless Steel Type 403
NUT	Carbon Steel

Note 1
Materials are of higher grade material than those used in valve body. Seat faces are stellited.

Note 2
Materials will be used which will meet or exceed the service conditions.

Note 3
Bonnet is of better forged material than used in valve body.

TABLE OF DIMENSION



DIMENSIONS IN INCHES (mm)
WEIGHT IN POUNDS (kg)

1500 CLASS

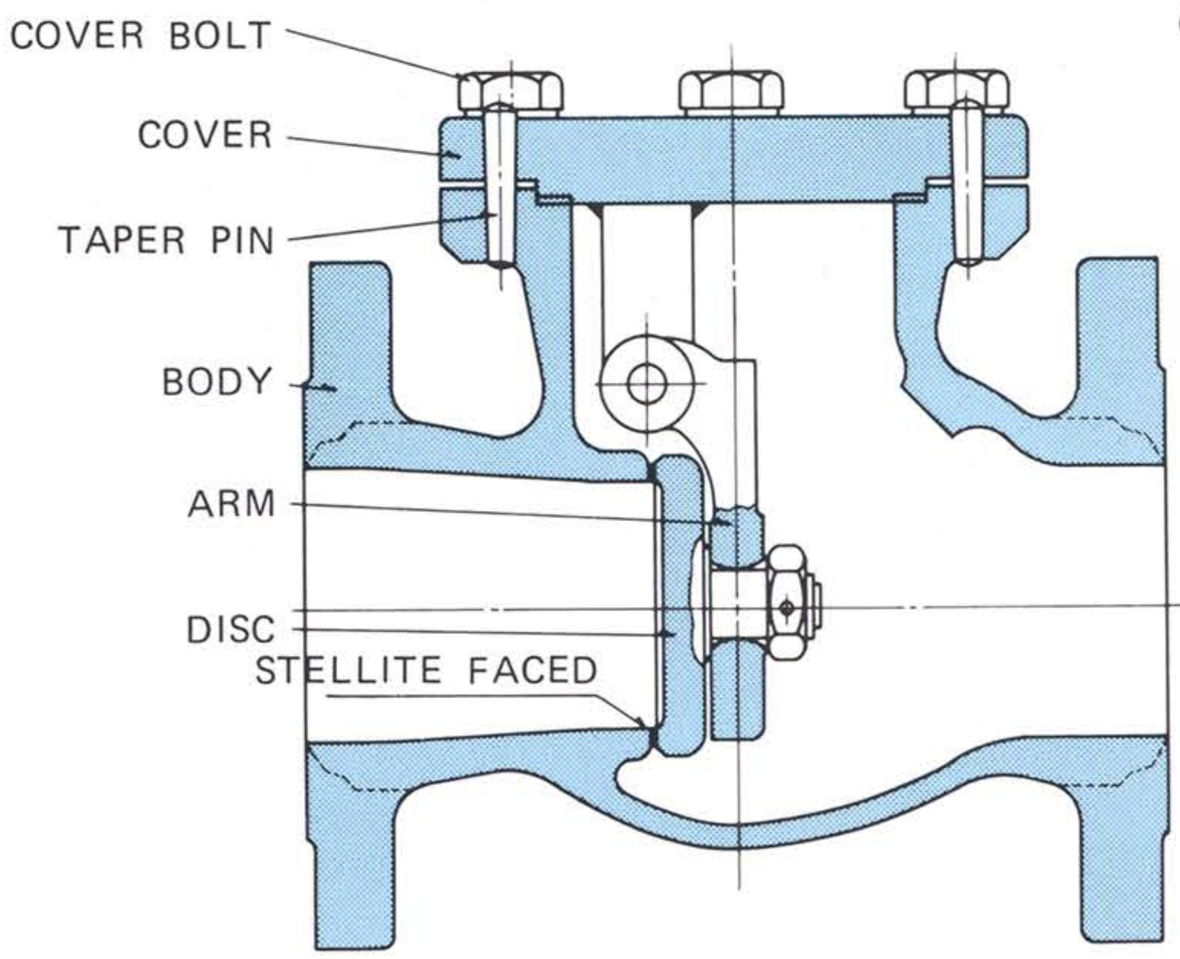
TYPE NO.	U 137102	U 137103	U 137104	U 137105	U 137106	U 137108
VALVE-SIZE	2-1/2	3	4	5	6	8
d BORE	2-1/4 (57)	2-5/8 (66)	3-7/16 (87)	4-1/4 (108)	5 (128)	6-7/8 (175)
L END TO END	16-1/2 (419)	18-1/2 (470)	21-1/2 (546)	26-1/2 (673)	27-3/4 (705)	32-3/4 (832)
H OPEN	19-1/2 (497)	23-3/8 (594)	27-1/2 (699)	33-1/2 (851)	38-3/4 (984)	49-1/4 (1251)
Ho CLOSED	18-1/8 (461)	21-3/4 (554)	–	–	–	–
E GEARED	–	–	–	–	–	10-3/8 (264)
D HANDWHEEL	15-3/4 (400)	17-3/4 (450)	19-11/16 (500)	22-1/16 (560)	24-13/16 (630)	22-1/16 (560)
WEIGHT	143 (65)	209 (95)	341 (155)	528 (240)	880 (400)	1410 (640)

2500 CLASS

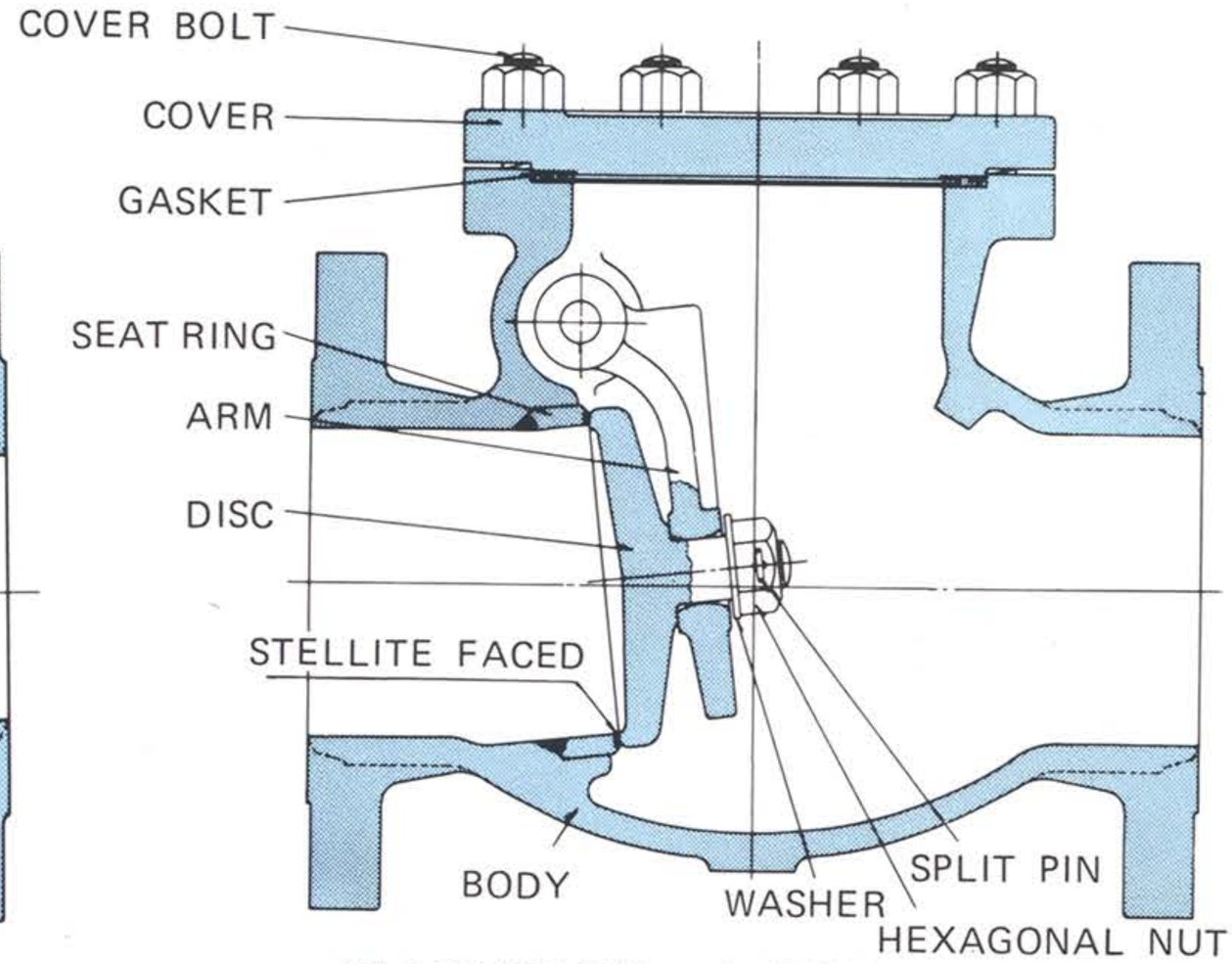
TYPE NO.	U 139102	U 139103	U 139104	U 139105	U 139106	U 139108
VALVE-SIZE	2-1/2	3	4	5	6	8
d BORE	1-3/4 (45)	2-1/4 (58)	3-1/8 (80)	4 (103)	4-7/8 (124)	5-7/8 (150)
L END TO END	20 (508)	22-3/4 (578)	26-1/2 (673)	31-1/4 (794)	36 (914)	35 (890)
H OPEN	20-5/8 (524)	23-5/8 (599)	30-1/2 (775)	35-3/8 (900)	45-1/4 (1150)	51-1/4 (1300)
Ho CLOSED	19-3/8 (492)	22 (559)	–	–	–	–
E GEARED	–	–	–	–	10-3/8 (264)	14-1/4 (360)
D HANDWHEEL	15-3/4 (400)	17-3/4 (450)	22-1/16 (560)	24-13/16 (630)	22-1/16 (560)	24-13/16 (630)
WEIGHT	180 (82)	260 (118)	508 (230)	880 (400)	1430 (650)	1100

Note: For data not shown in this table, accurate data will be included on the drawings submitted for approval.

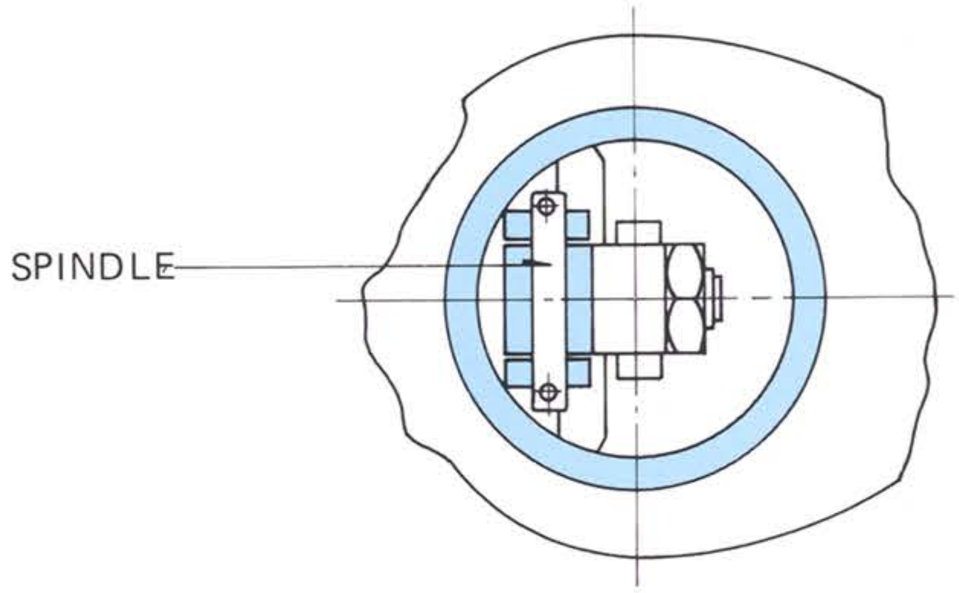
UTE CAST STEEL SWING CHECK VALVE
BOLTED COVER TYPE

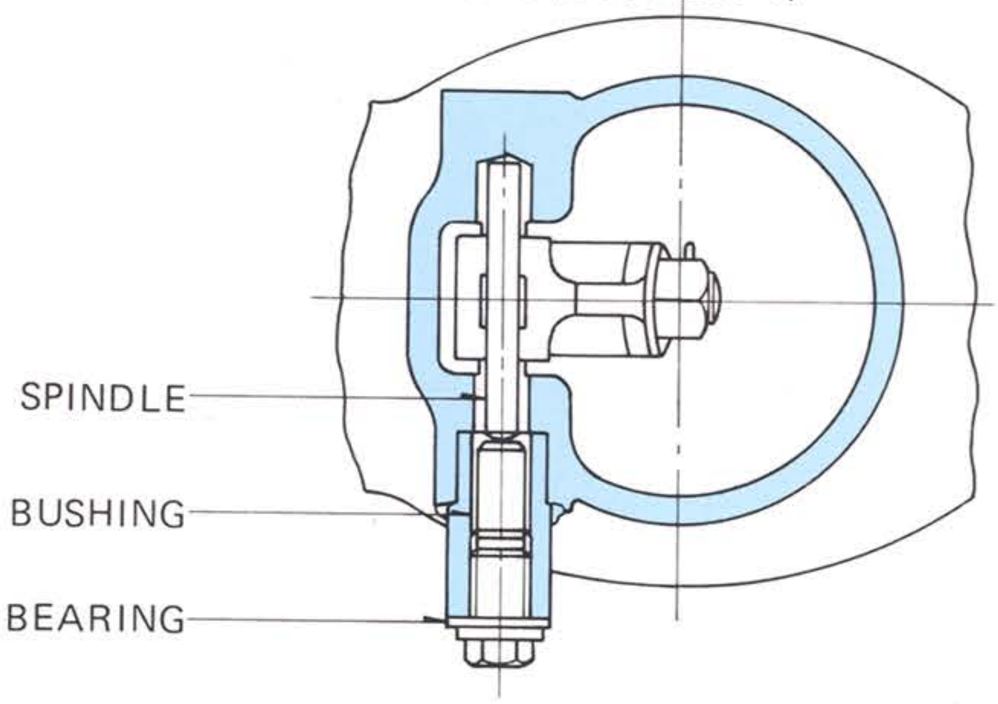


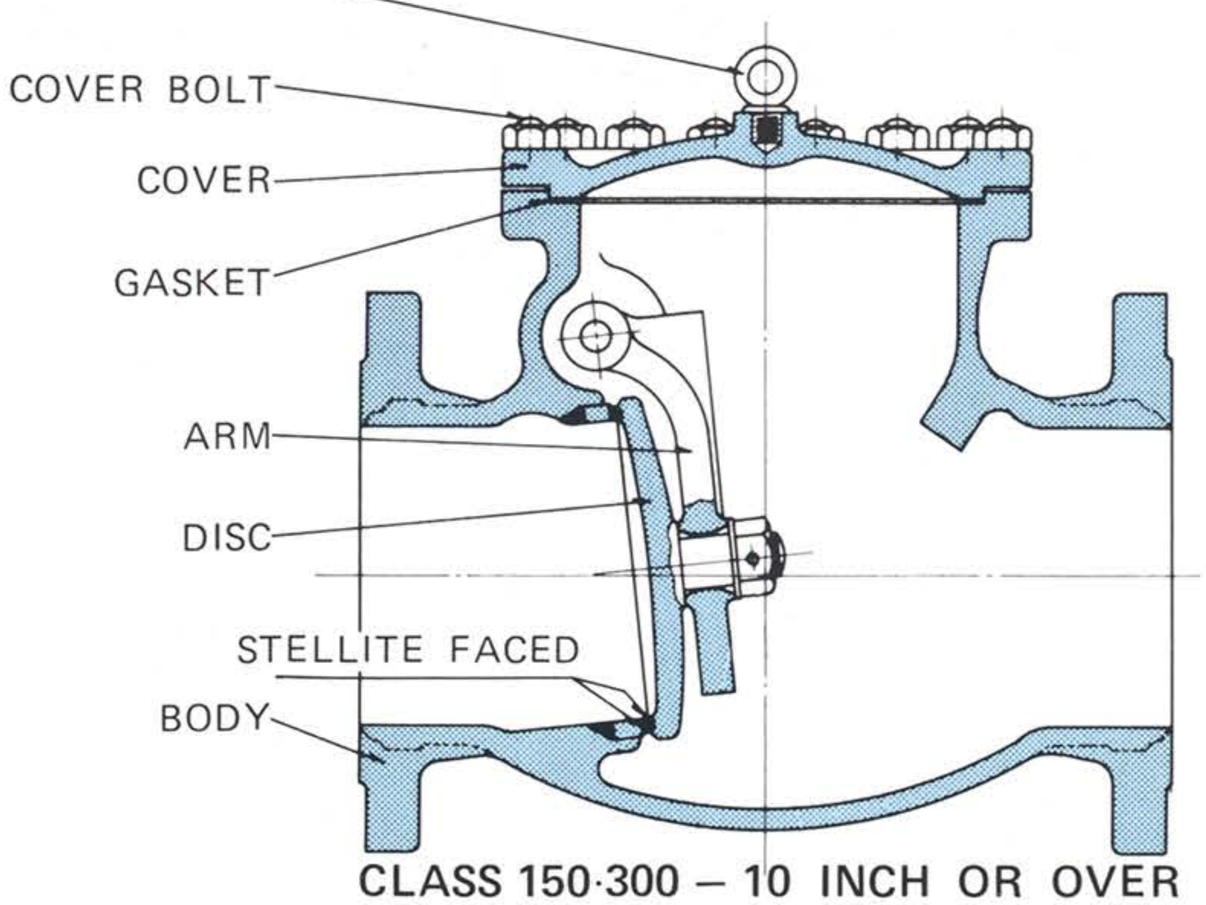
CLASS 150·300 – 4 INCH OR UNDER



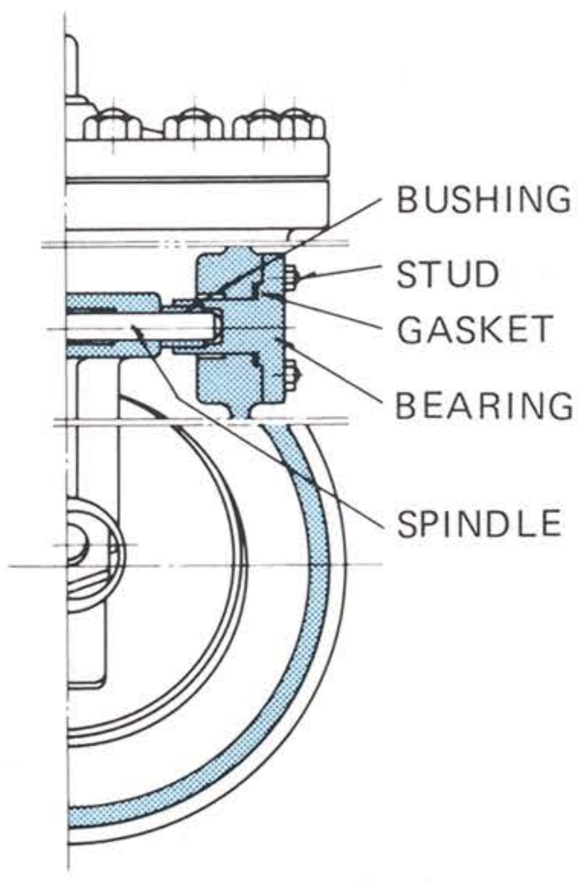
CLASS 400·600 – 6 INCH OR UNDER
CLASS 150·300 – 5, 6 & 8 INCH
TYPE U2600 (See Note 4)





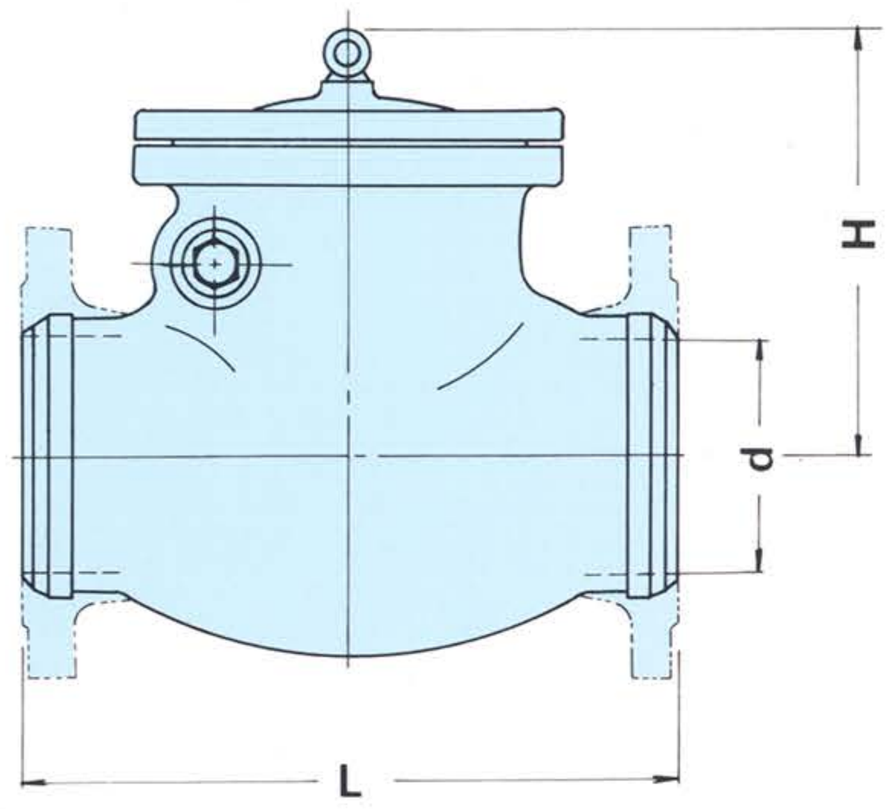


CLASS 150·300 – 10 INCH OR OVER
CLASS 400·600 – 8 INCH OR OVER



STANDARD MATERIALS IN USE

NAME OF PART	MATERIAL	
BODY	1, 2, 3, 4, 5, 6 (See Page 1, 1-2)	7, 8 (See Page 1, 1-2)
COVER		
ARM		
BEARING		
DISC	Ref. to Note 1	
SEAT RING		
SPINDLE	Stainless Steel Type 403 or 416	Stainless Steel Type 630
BUSHING	Stainless Steel Type 416	Austenite Stainless Steel
COVER BOLT	Alloy Steel (Ref. to Note 2)	
STUD		
EYE-BOLT	Carbon Steel	
TAPER PIN		
WASHER	Carbon Steel or Stainless Steel	
SPLIT PIN	Stainless Steel	
HEXAGONAL NUT	Carbon Steel or Alloy Steel	Austenite Stainless Steel
GASKET	Graphite · Stainless Hoop or Graphite Seet	



Note 1 Materials are of higher grade material than those used in valve body. Seat faces are stellited.

Note 2 Materials will be used which will meet or exceed the service conditions.

Note 3: Type U1600 stands for spindle arrangement fixed by the bearings from the both sides.

Note 4: Type U2600 stands for spindle arrangement fixed by the bearing from one side i.e. one end of spindle is blind.

TABLE OF DIMENSION

DIMENSIONS IN INCHES (mm)
WEIGHT IN POUNDS (kg)

150 CLASS

TYPE NO.		U 162002	U 162003	U 162004	U 262005	U 262006	U 262008	U 162010	U 162012	U 162014
VALVE-SIZE		2-1/2	3	4	5	6	8	10	12	14
d BORE		2-1/2 (64)	3 (76)	4 (102)	5 (127)	6 (152)	8 (203)	10 (254)	12 (305)	13-1/4 (337)
L FACE TO FACE, END TO END		8-1/2 (216)	9-1/2 (241)	11-1/2 (292)	13 (330)	14 (356)	19-1/2 (495)	24-1/2 (622)	27-1/2 (698)	31 (787)
H CENTER TO TOP		5-5/8 (143)	5-7/8 (148)	6-1/2 (165)	8-3/8 (212)	9-3/8 (239)	10-3/4 (274)	17-1/8 (437)	18 (457)	23-5/8 (600)
WEIGHT	FLANGED	44 (20)	55 (25)	79 (36)	121 (55)	187 (85)	308 (140)	517 (235)	726 (330)	1080 (490)
	BW ENDS	33 (15)	37 (17)	53 (24)	97 (44)	154 (70)	253 (115)	440 (200)	603 (274)	925 (420)

300 CLASS

TYPE NO.		U 163002	U 163003	U 163004	U 263005	U 263006	U 263008	U 163010	U 163012	U 163014
VALVE-SIZE		2-1/2	3	4	5	6	8	10	12	14
d BORE		2-1/2 (64)	3 (76)	4 (102)	5 (127)	6 (152)	8 (203)	10 (254)	12 (305)	14 (337)
L FACE TO FACE, END TO END		11-1/2 (292)	12-1/2 (318)	14 (356)	15-3/4 (400)	17-1/2 (444)	21 (533)	24-1/2 (622)	28 (711)	31 (787)
H CENTER TO TOP		5-5/8 (143)	5-7/8 (148)	6-1/2 (165)	8-7/8 (226)	10-1/8 (256)	12 (305)	17-7/8 (455)	19-5/8 (498)	23-5/8 (600)
WEIGHT	FLANGED	53 (24)	66 (30)	99 (45)	191 (87)	253 (115)	473 (215)	760 (345)	1080 (490)	1250 (570)
	BW ENDS	37 (17)	42 (19)	57 (26)	132 (60)	187 (85)	363 (165)	594 (270)	858 (390)	945 (430)

400 CLASS

TYPE NO.		U 264002	U 264003	U 264004	U 264005	U 264006	U 264008	U 164010	U 164012	U 164014
VALVE-SIZE		2-1/2	3	4	5	6	8	10	12	14
d BORE		2-1/2 (64)	3 (76)	4 (102)	5 (127)	6 (152)	8 (203)	10 (254)	12 (305)	13-1/8 (333)
L FACE TO FACE, END TO END		13-1/2 (330)	14-1/2 (356)	16 (406)	18 (457)	19-1/2 (495)	23-1/2 (597)	26-1/2 (673)	30 (762)	35 (889)
H CENTER TO TOP		5-7/8 (151)	6-7/8 (176)	7-3/8 (188)	8-7/8 (226)	10-1/8 (256)	12 (305)	17-7/8 (455)	24-9/16(624)	26-7/8 (682)
WEIGHT	FLANGED	81 (37)	103 (47)	150 (68)	209 (95)	306 (139)	521 (237)	816 (371)	1300 (590)	1852 (840)
	BW ENDS	55 (25)	68 (31)	97 (44)	143 (65)	213 (97)	383 (174)	616 (280)	992 (450)	1433 (650)

600 CLASS

TYPE NO.		U 265002	U 265003	U 265004	U 265005	U 265006	U 165008	U 165010	U 165012
VALVE-SIZE		2-1/2	3	4	5	6	8	10	12
d BORE		2-1/2 (64)	3 (76)	4 (102)	5 (127)	6 (152)	7-7/8 (200)	9-3/4 (248)	11-3/4 (299)
L FACE TO FACE, END TO END		13 (330)	14 (356)	17 (432)	20 (508)	22 (559)	26 (660)	31 (787)	33 (838)
H CENTER TO TOP		8-1/2 (215)	8-5/8 (220)	11 (280)	12-1/4 (312)	13-7/8 (354)	18-3/4 (477)	26-3/8 (671)	24-9/16 (624)
WEIGHT	FLANGED	115 (52)	154 (70)	273 (124)	419 (190)	539 (245)	902 (410)	1450 (660)	1698 (770)
	BW ENDS	84 (38)	117 (53)	203 (94)	297 (135)	396 (180)	704 (320)	1100 (500)	1213 (550)

Note: For data not shown in this table, accurate data will be included on the drawings submitted for approval.

WHEN YOU ORDER

When You Order

To efficiently process an order (or an inquiry), please let us know the following particulars.

1. UTE type No., or type of valve
2. Quantity
3. Service pressure and temperature
4. End connections
5. Material of major parts

It is also highly desirable, when other than standard conditions exist, that a full description of the working conditions be supplied; nature of fluid to be handled, and whether any unusual conditions of corrosion, shock or abrasion are likely to be present.

Guarantee

UTE guarantees its products for one year from date of shipment against defects in material and workmanship if the products are used as recommended and in accordance with the approved installation and operating practice. Prompt written notice of defects is required. UTE shall not be liable for damage resulting from improper storage, improper handling, or improper installation.

Terms and Condition of Sales

Quotations shall be made by UTE's head office or the local agents. All quotations, contracts, agreements and orders are subject to confirmation and approval of UTE head office.

Prices are subject to increase, without notice, in case of taxes, duties and tariffs levied on sales transactions. Also prices are subject to increase in case the production costs should substantially rise up to delivery date.

Delivery schedules are based upon conditions in effect at time of quotation. UTE assumes no responsibility for delays in delivery resulting from strikes, work stoppage, inability to obtain materials, fuels or transportation, government edict or any other cause unavoidable or beyond its control.

Orders are not subject to cancellation, change in specifications, shipping schedule, or conditions originally agreed upon without reimbursement for all consequential losses suffered or incurred by UTE.

Dies, tools and patterns necessary to manufacture the valves quoted upon shall not be the property of valve purchaser.

DESIGN:
UTE reserves the right to make entire or partial design change without notice.

UTSUE VALVE CO., LTD.

Head Office & Plant 2-1 Kitamura, Taishoku, Osaka 551-0032, Japan.
TEL (06)6552-3162 FAX (06)6551-3245
URL : http://www.utsue-valve.co.jp
E-MAIL : ute_eigyo@utsue-valve.co.jp
Office & Works : Tokyo / Hitachi / Takahama / Kashiwazaki-kariwa

JI-AISBD

CAT. No.1696E

UTE

EXCO®-F

FORGED STEEL

GATE
GLOBE
CHECK
VALVES

Contents

KES
KES・環境マネジメントシステム・スタンダード
ステップ2登録

UTSUE VALVE CO., LTD. recognizes that preserving the earth environment is one of the most important subjects of human community and endeavors with its every organization to decrease environmental burden.

NPO KES ENVIRONMENTAL ORGANIZATION

Quick look at Utsue Valve

Utsue Valve (UTE) has, over the years, manufactured and sold more than 3 million small-sized forged-steel valves. We have customers all around the world, in the power generation, oil refinery and petrochemical industries, and more. Already, our EXCO-F Series (newly developed production started in 1978) is well-distributed and highly acclaimed amongst users for its reliability and cost-performance. This is one example of how we have continued to brush up our technical know-how. Both in name and virtue, we can honestly recommend products of the EXCO-F Series over similar products sold both in and outside of Japan. With our larger sizes of cast steel valves, we hope to have your further trust and patronage.

History

Aug.	1931	Founded.
Oct.	1939	Placed under the Navy supervision.
Dec.	1943	Reorganized as Nihon Valve Industry Co., Ltd.
Jan.	1944	Placed under Naval Ministry and Munitions Ministry.
Nov.	1951	Certified as an authorized manufacturer under JIS (Japan Industrial Standard).
May	1954	Renamed as Utsue Valve Co., Ltd.
Feb.	1961	Designated model factory under enterprise restructuring program.
Feb.	1964	Concluded a technical assistance agreement with Manning, Maxwell & Moore Inc., USA (now Dresser Industries Corp.).
Jan.	1969	Certified as an authorized manufacturer by API (American Petroleum Institute); products receive the API mark.
Aug.	1972	Approved as a facility for testing of high pressure gas equipment.
Nov.	1972	High temperature, high pressure large die-forged valve (CDF valve) developed in cooperation with THE JAPAN STEEL WORKS, LTD.
Aug.	1976	Certified as an authorized manufacturer by ASME (American Society of Mechanical Engineers); products receive ASME's 'N' stamp.
Jan.	1978	Successfully concluded the technical assistance agreement with Dresser Industries Corp. Started production and sales of EXCO-F Series compact forged steel valves.
Oct.	1982	Awarded Class 1 Certificate for industrial safety by Labor Standards Bureau, Ministry of Labor (1.5 million combined work hours without an accident).
Dec.	1982	Welding method at factory authorized by MITI (Ministry of International Trade and Industry).
Apr.	1988	Certified as a General Construction Business (Tube Work) Enterprize By Osaka Prefecture.
Jun.	1992	Awarded Class 4 Certificate for industrial safety by Labor Standards Bureau, Ministry of Labor (5.1 million combined work hours without an accident).
Jul.	1995	Conferred Safety Promotion Award by Ministry of Labor.

Areas of business

Manufacture, sales (domestic & import/export) and service of high-temperature, high-pressure valves

⚠ Safety Precautions

- Select proper valves to meet your requirements within your authority and on your responsibility.
- Read the Instruction Manual carefully to handle valves properly and safely before using the equipments.
- Improper handling can lead to product damage or breakdown.
- (Facing the valve) Turn the handwheel clockwise to CLOSE the valve and counter-clockwise to OPEN it.
- Keep valves either fully opened or fully closed. (Not required with needle valves)
- Contact Utsue Valve when flow-regulating valves or other types of control valves are required
- Do not use more than the limited tightening torque when shutting hand-operated valves are required.
- Turn handwheels backward 1/4 to 1/2 turn after fully opening valve. (For gate valves and globe valves)
- Flow direction of globe and check valves is restricted to oneway traffic.
- Check medium flow direction before installing valves.
- We recommend valves be handled and operated only by qualified persons who are familiar with product specifications.

EXCO-F

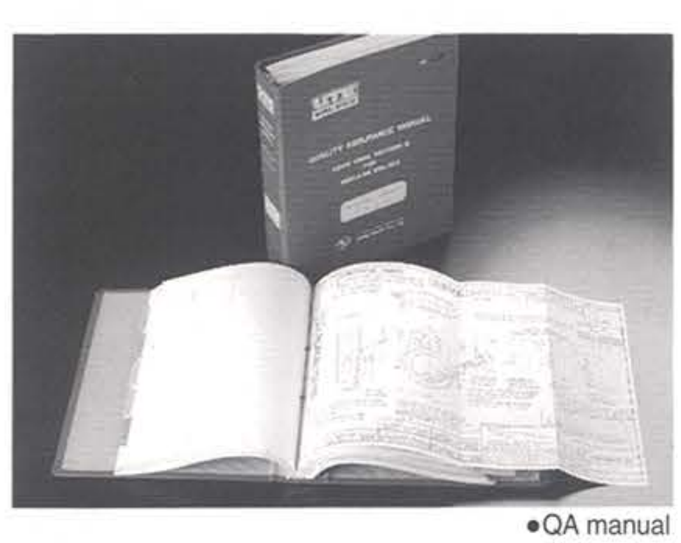
FORGED STEEL

GATE
GLOBE
CHECK
VALVES

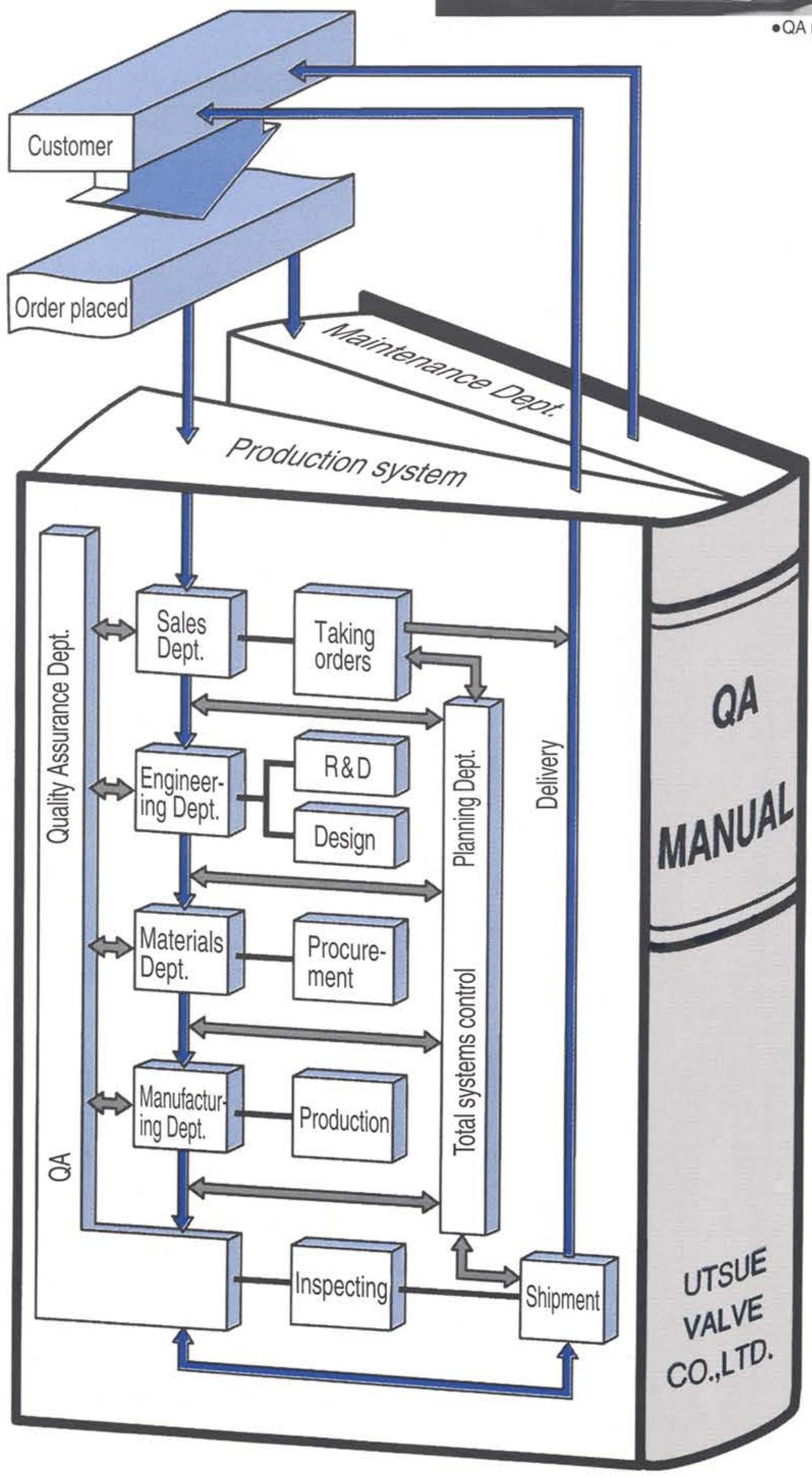
Everything from Taking Orders to Aftercare Service

System

We make every effort to ensure that you get the equipment you need and that it works properly. Any information from taking orders to aftercare service is accurately linked with computer network system.



●QA manual



EXCO-F Forged Steel Valves

●Please use the below type Nos. when ordering or inquiring about EXCO-F Series valves.

Valve type	Pressure class	Type No.	Remark
Gate	800	E115	Standard port
		E215	Full port
Globe	600	E135	Standard port
		E235	Full port
Globe	1500	E137	Standard port
	2500	E139	
	4500	E13C	
Check	600	E155	Standard port
		E255	Full port

Type E115/E215

Valve type No. coding system

E ..... **1** ..... **3** ..... **5** .....

Type symbol
E : EXCO-F Series
U : Others

Developing No.

Valve type
1 : Gate valve
3 : Globe valve
4 : Angle globe valve
5 : Lift check valve
6 : Swing check valve

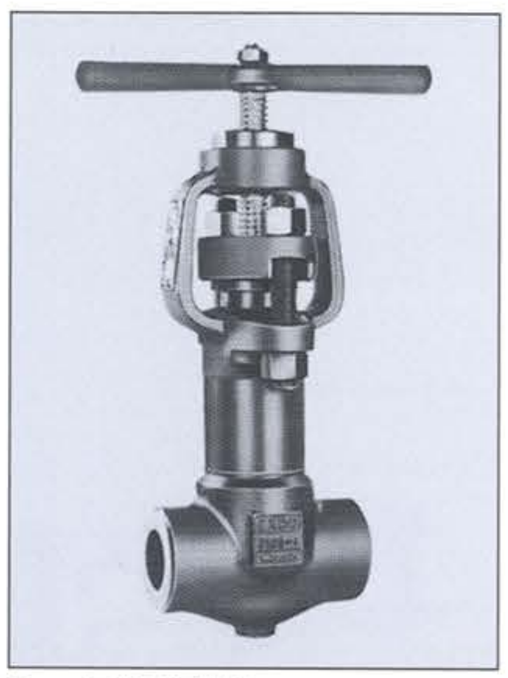
Pressure class
2 : 150 (JIS 10K Flange)
3 : 300 (JIS 20K Flange)
4 : (JIS 30K Flange)
5 : 600 **or 800** (JIS 40K Flange)
6 : 900 (JIS 63K Flange)
7 : 1500
9 : 2500
C : 4500

Class	Valve type \ Developing No.		1 Standard port	2 Full port	3	4	5	6	7	9	H
600 or 800 (WG)	1	Gate valve	E115	E215							
	3	Globe valve	E135	E235				E635 With position indicator	E735 Parabolic with position indicator	E935 Screw down stop check	UH35 Needle with position indicator
	4	Angle valve	E145								UH45 Needle with position indicator
	5	Lift check valve	E155	E255	E355 Spring-loaded	E455 Full port Spring-loaded	E555 For small press. diff.	E655 Full port For small press. diff.			
	6	Swing check valve				E465					
900	1	Gate valve	E116								
	3	Globe valve	E136				E536 Needle with position indicator	E636 With position indicator	E736 Parabolic with position indicator	E936 Screw down stop check	
	4	Angle valve	E146				E546 Needle with position indicator	E646 With position indicator			
	5	Lift check valve	E156								
1500	3	Globe valve	E137		E337 Instrument valve		E537 Needle with position indicator	E637 With position indicator	E737 Parabolic with position indicator		
	4	Angle valve	E147				E547 Needle with position indicator	E647 With position indicator			
	5	Lift check valve	E157								
2500	3	Globe valve	E139		E339 Instrument valve		E539 Needle with position indicator	E639 With position indicator	E739 Parabolic with position indicator		
	4	Angle valve	E149				E549 Needle with position indicator	E649 With position indicator			
	5	Lift check valve	E159								
4500	3	Globe valve	E13C								

● Colored areas are listed in this catalog.
● For instrument valves, see catalog No. 1885JE.

Type E135/E235

Type E155/E255



Type E137/E139

Type E13C

5 5 9 A E

Joint

1 : Butt welding
2 : ASME Flange
3 : JIS Flange
4 : Ring joint
5 : Socket welding (JIS)
6 : Screwed type (Rc)
7 : Socket welding (ASME)
8 : Screwed type (NPT)
9 : API, etc.

Size

51 : 6A (3/8OD)
52 : 8A (1/4B)
53 : 10A (3/8B)
54 : 15A (1/2B)
55 : 20A (3/4B)
56 : 25A (1B)
57 : 32A (1 1/4B)
58 : 40A (1 1/2B)
59 : 50A (2B)

Material

A : S28C
C : SFVA F11A
D : SFVA F22B
K : SUSF304
L : SUSF316
G : SUSF304L
T : ASTM A105
V : ASTM A182 F11
W: ASTM A182 F22
Q : ASTM A182 F304
R : ASTM A182 F316
H : ASTM A182 F304L
Y : SFVC2A
X : Special

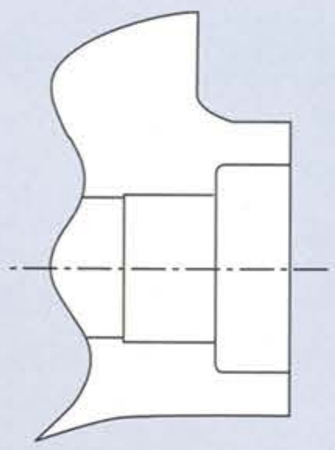
Special specification

Without symbol : Standard
E : Motor operated

●Joint end

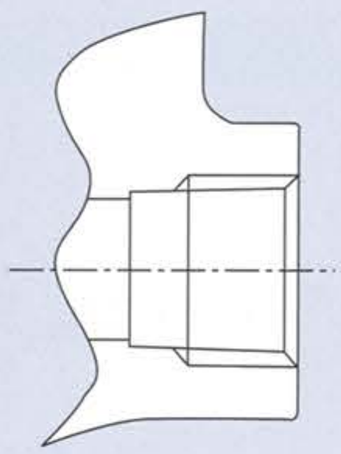
Socket welding end

- ASME
- JIS



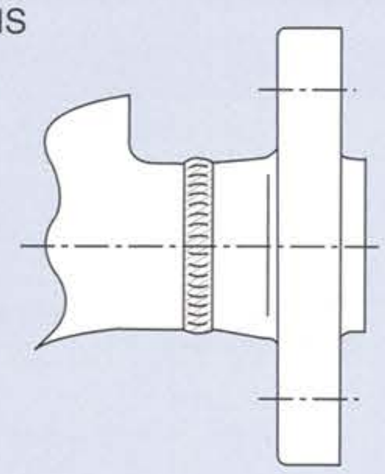
Threaded end

- NPT
- Rc (PT)



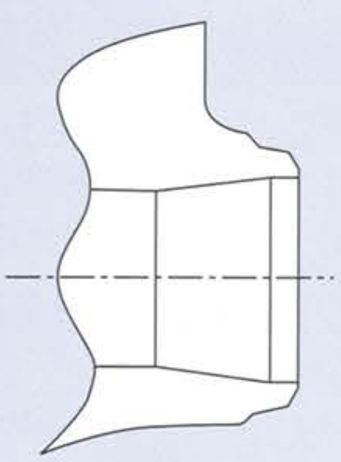
Flanged end

- ASME
- API
- JIS



Butt welding end

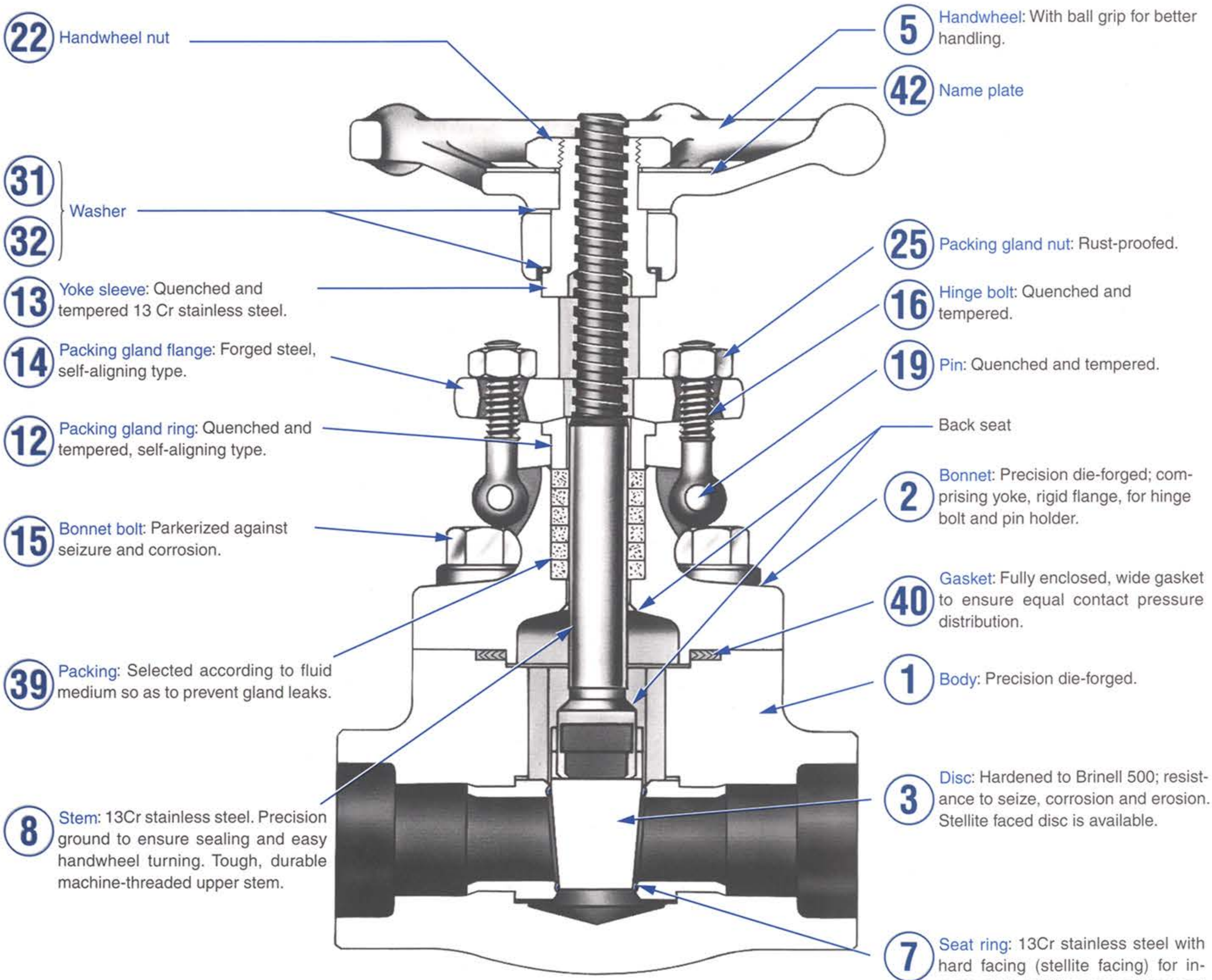
- Specify type, dimension, etc. when ordering.



EXCO-F (Class 800) Gate Valve

Type E115●Standard port type /E215●Full port type

●Valve size: 1/4 B～2B



●Standard materials (Carbon steel)

Mark	Part name	Material
1	Body	ASTM A105
2	Bonnet	ASTM A105
3	Disc	SUS420J2
5	Handwheel	FCMB270
7	Seat ring	SUS410
8	Stem	SUS416
12	Packing gland ring	SUS416

Mark	Part name	Material
13	Yoke sleeve	SUS416
14	Packing gland flange	S25C
15	Bonnet bolt	SNB7
16	Packing gland bolt	SUS410
19	Pin	SUS410
22	Handwheel nut	SS400
25	Packing gland nut	S45C

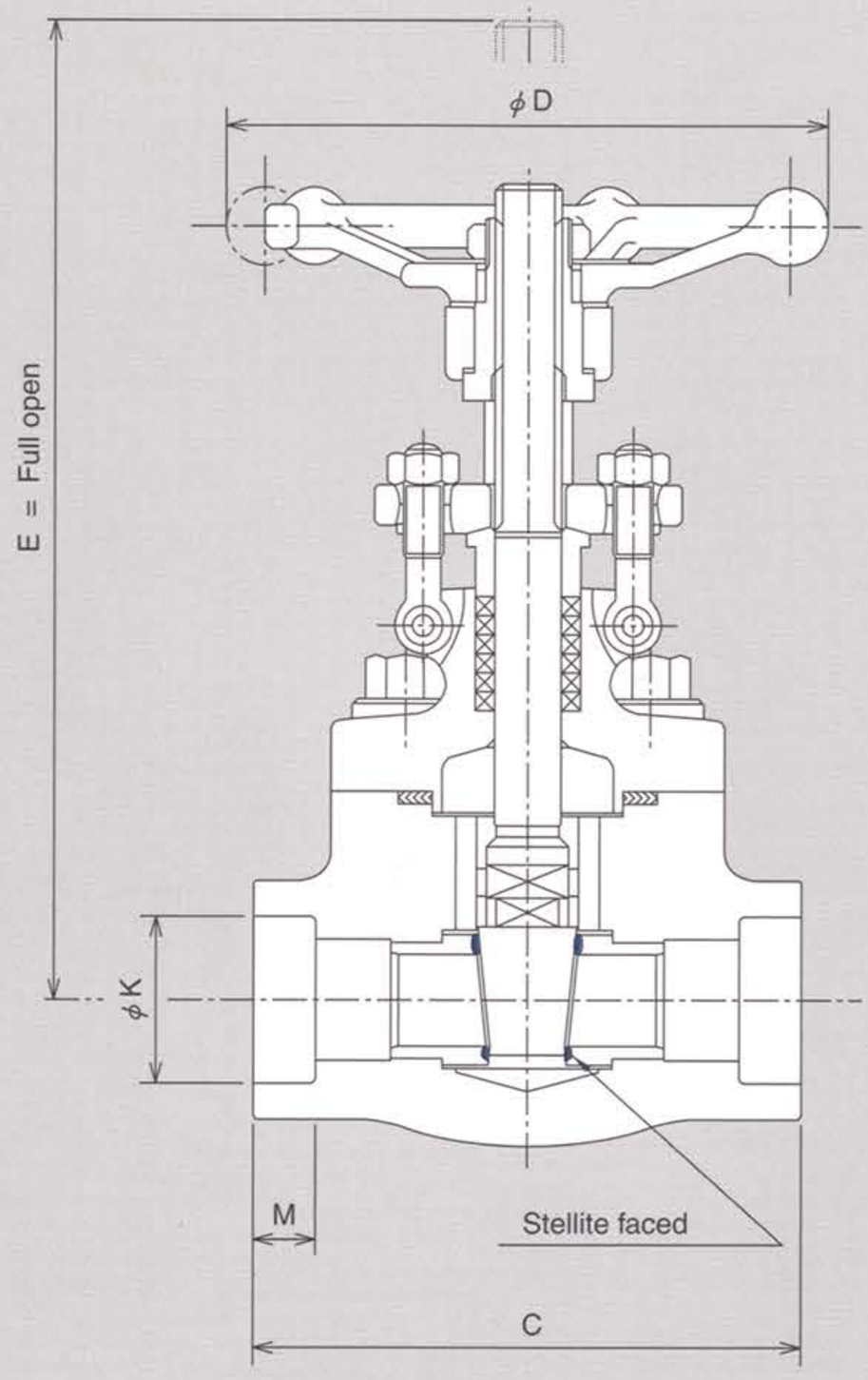
Mark	Part name	Material
31	Washer	SK85
32	Washer	SK85
39	Packing	Graphite with stainless wire
40	Gasket	Graphite · Stainless hoop
42	Nameplate	Aluminum alloy

● Other body/bonnet materials
Low alloy steel
Stainless steel

See pages 19～22 for PRESSURE — TEMPERATURE RATINGS.

- Outside screw and yoke (OS & Y)
- Bolted bonnet (BB)
- Hard faced disc and seat ring

- Type E115/E215 (Socket welding ends)



●Standard dimensions (mm) and weight (kg)

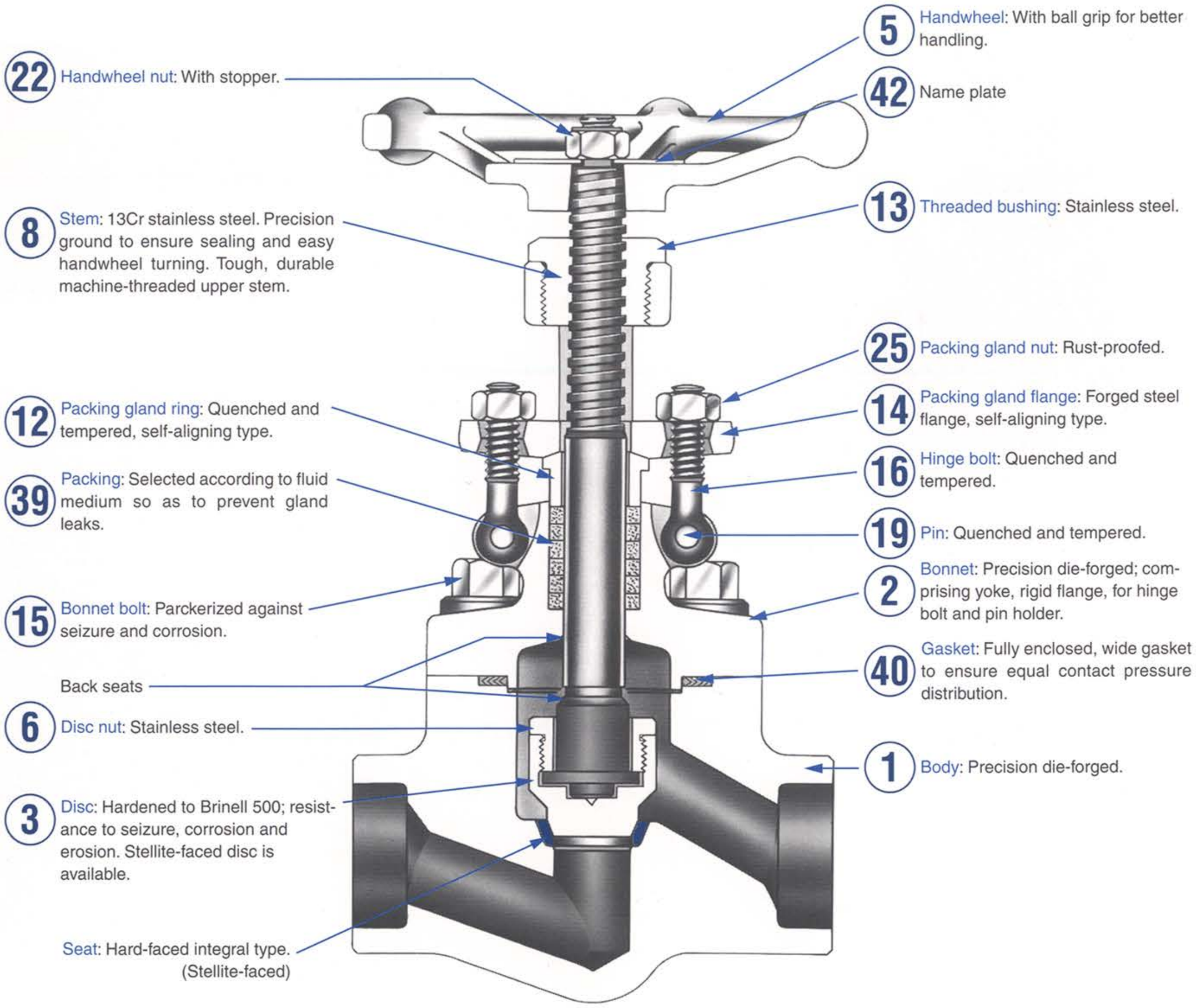
Valve size		Socket inside dia.	Socket depth	Thread size	Type E115				Type E215			
A	B	K	M	B	End-to-end distance C	Handwheel dia. D	Height (Full open) E	Weight	End-to-end distance C	Handwheel dia. D	Height (Full open) E	Weight
8	1/4	14.3	13.0	1/4	84	95	139	1.9	—	—	—	—
10	3/8	17.8	13.0	3/8	84	95	139	1.9	—	—	—	—
15	1/2	22.2	13.0	1/2	84	95	139	1.9	90	110	149	2.2
20	3/4	27.7	13.0	3/4	90	110	149	2.2	114	125	187	4.0
25	1	34.5	13.0	1	114	125	187	4.0	121	155	218	5.0
32	1 1/4	43.2	13.0	1 1/4	121	155	236	7.4	130	180	265	10.5
40	1 1/2	49.1	13.0	1 1/2	121	155	236	7.4	130	180	265	10.5
50	2	61.1	15.9	2	130	180	265	10.5	156	200	340	15.0

● For flange end-to-end distance, see page 14.

EXCO-F (Class 600) Globe Valve

Type E135●Standard port type /E235●Full port type

●Valve size: 1/4 B～2B



●Standard materials (Carbon steel)

Mark	Part name	Material
1	Body	ASTM A105
2	Bonnet	ASTM A105
3	Disc	SUS420J2
5	Handwheel	FCMB270
6	Disc nut	SUS416
8	Stem	SUS416

Mark	Part name	Material
12	Packing gland ring	SUS416
13	Thread bushing	SUS416
14	Packing gland flange	S25C
15	Bonnet bolt	SNB7
16	Packing gland bolt	SUS410
19	Pin	SUS410

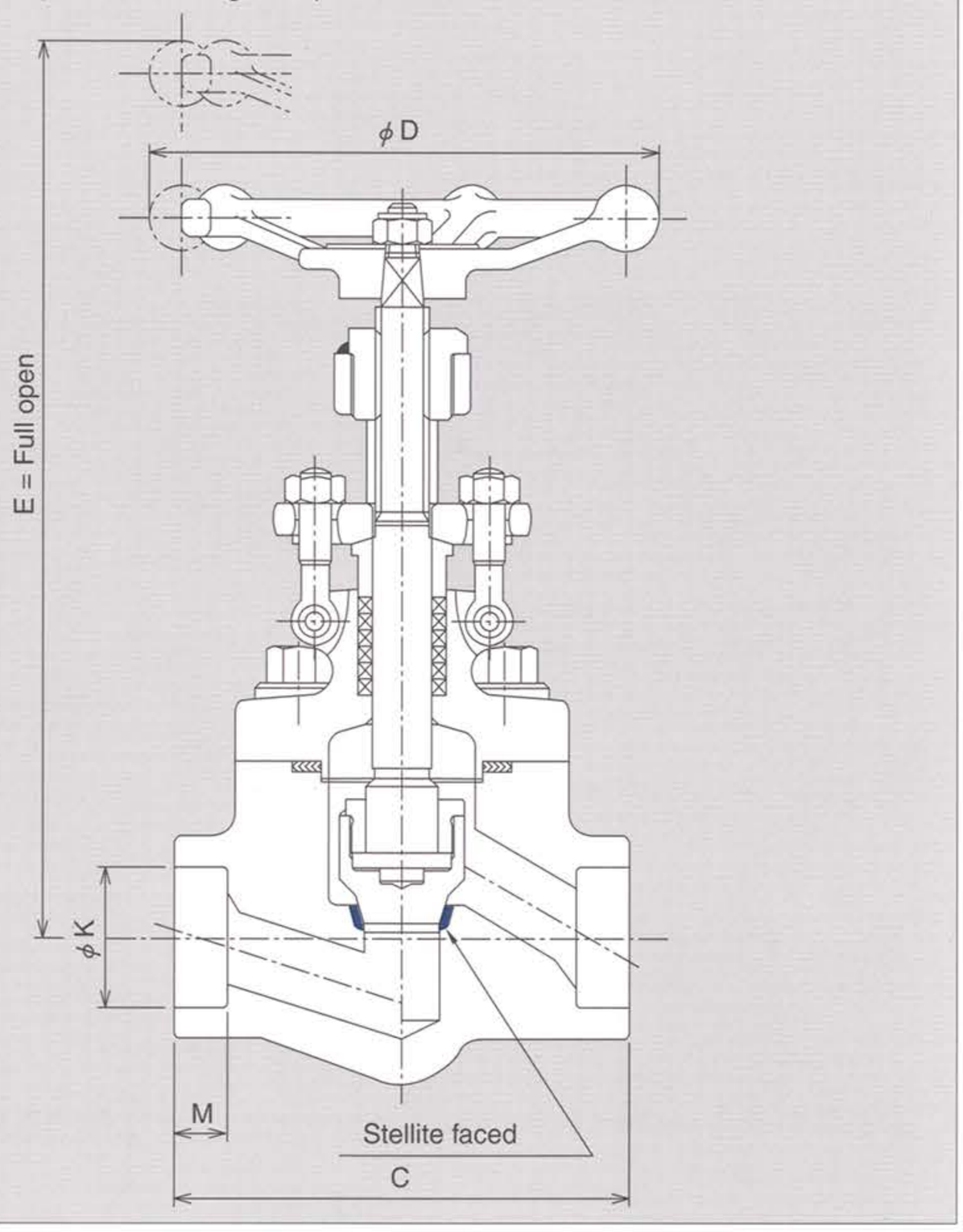
Mark	Part name	Material
22	Handwheel nut	S15C
25	Packing gland nut	S45C
39	Packing	Graphite with stainless wire
40	Gasket	Graphite · Stainless hoop
42	Nameplate	Aluminum alloy

● Other body/bonnet materials
Low alloy steel
Stainless steel

See pages 19～22 for PRESSURE – TEMPERATURE RATINGS.

- Outside screw and yoke (OS & Y)
- Bolted bonnet (BB)
- Hard faced disc and body seats

- Type E135/E235 (Socket welding ends)



●Standard dimensions (mm) and weight (kg)

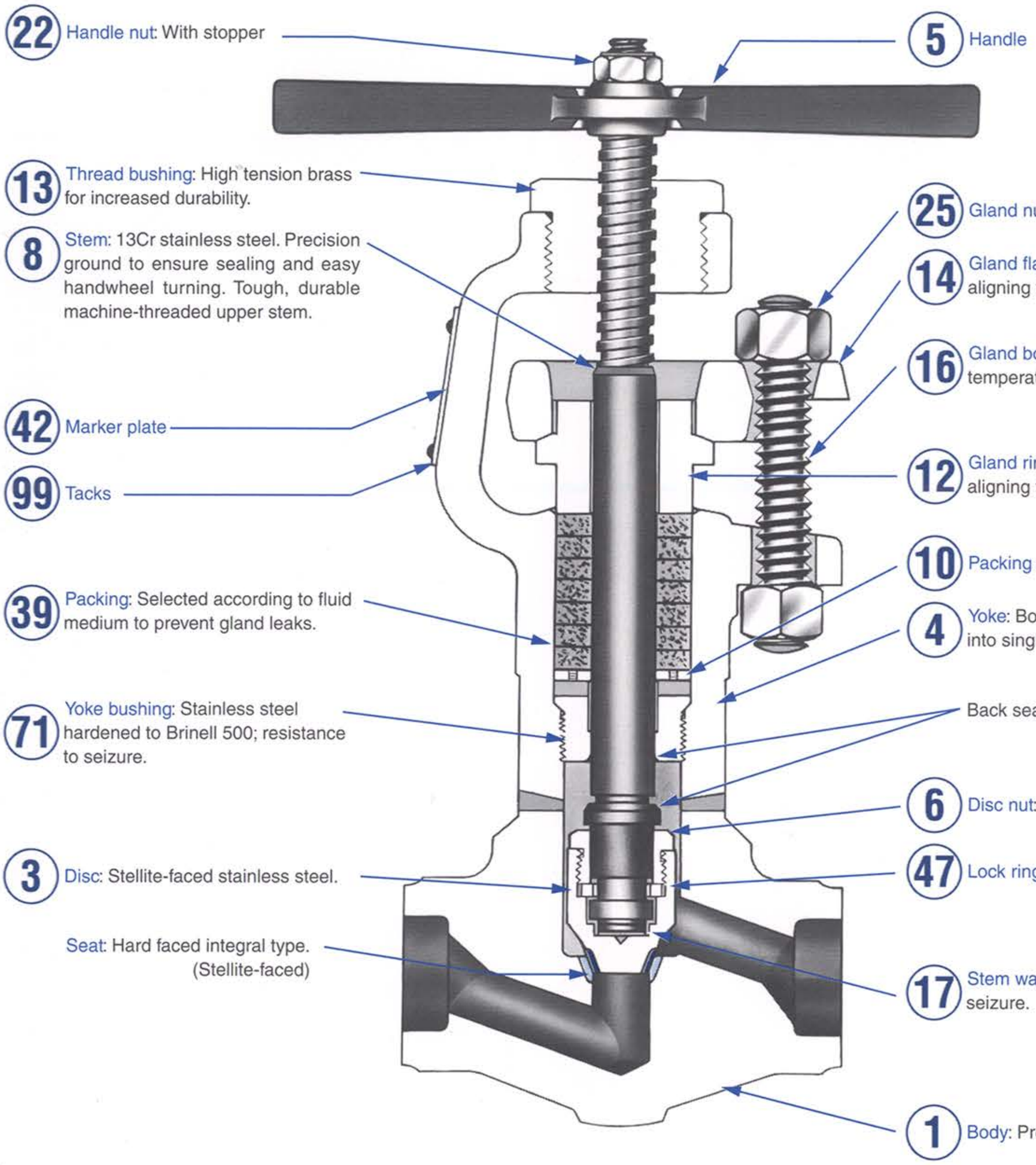
Valve size		Socket inside dia.	Socket depth	Thread size	Type E135				Type E235			
A	B	K	M	B	End-to-end distance C	Handwheel dia. D	Height (Full open) E	Weight	End-to-end distance C	Handwheel dia. D	Height (Full open) E	Weight
8	1/4	14.3	13.0	1/4	84	95	145	1.8	—	—	—	—
10	3/8	17.8	13.0	3/8	84	95	145	1.8	—	—	—	—
15	1/2	22.2	13.0	1/2	84	95	145	1.8	90	110	158	2.1
20	3/4	27.7	13.0	3/4	90	110	158	2.1	111	125	198	3.8
25	1	34.5	13.0	1	111	125	198	3.8	133	155	231	4.9
32	1 1/4	43.2	13.0	1 1/4	165	155	238	7.8	178	180	275	11.2
40	1 1/2	49.1	13.0	1 1/2	165	155	238	7.8	178	180	275	11.2
50	2	61.1	15.9	2	178	180	275	11.2	228	200	338	17.6

● For flange end-to-end distance, see page 14.

EXCO-F (Class 1500/2500) Globe Valve

Type E137 (Class 1500) ●Standard port type /E139 (Class 2500) ●Standard port type

●Valve size: 1/4 B～2B



●Standard materials (Carbon steel)

Mark	Part name	Material
1	Body	ASTM A105
3	Disc	SUS403
4	Yoke	ASTM A105
5	Handle	FCMB270
6	Disc nut	SUS403
8	Stem	SUS403
10	Packing stop ring	SUS416

Mark	Part name	Material
12	Gland ring	C6782BE
13	Thread bushing	C6782BE
14	Gland flange	SCM435
16	Gland bolt	SNB7
17	Stem washer	H-25
22	Handle nut	S15C
25	Gland nut	S45C

Mark	Part name	Material
39	Packing	Graphite with Inconel wire
42	Nameplate	Copper alloy
47	Lock ring	SUS403
71	Yoke bush nut	SUS420J2
99	Tack	C3771BE

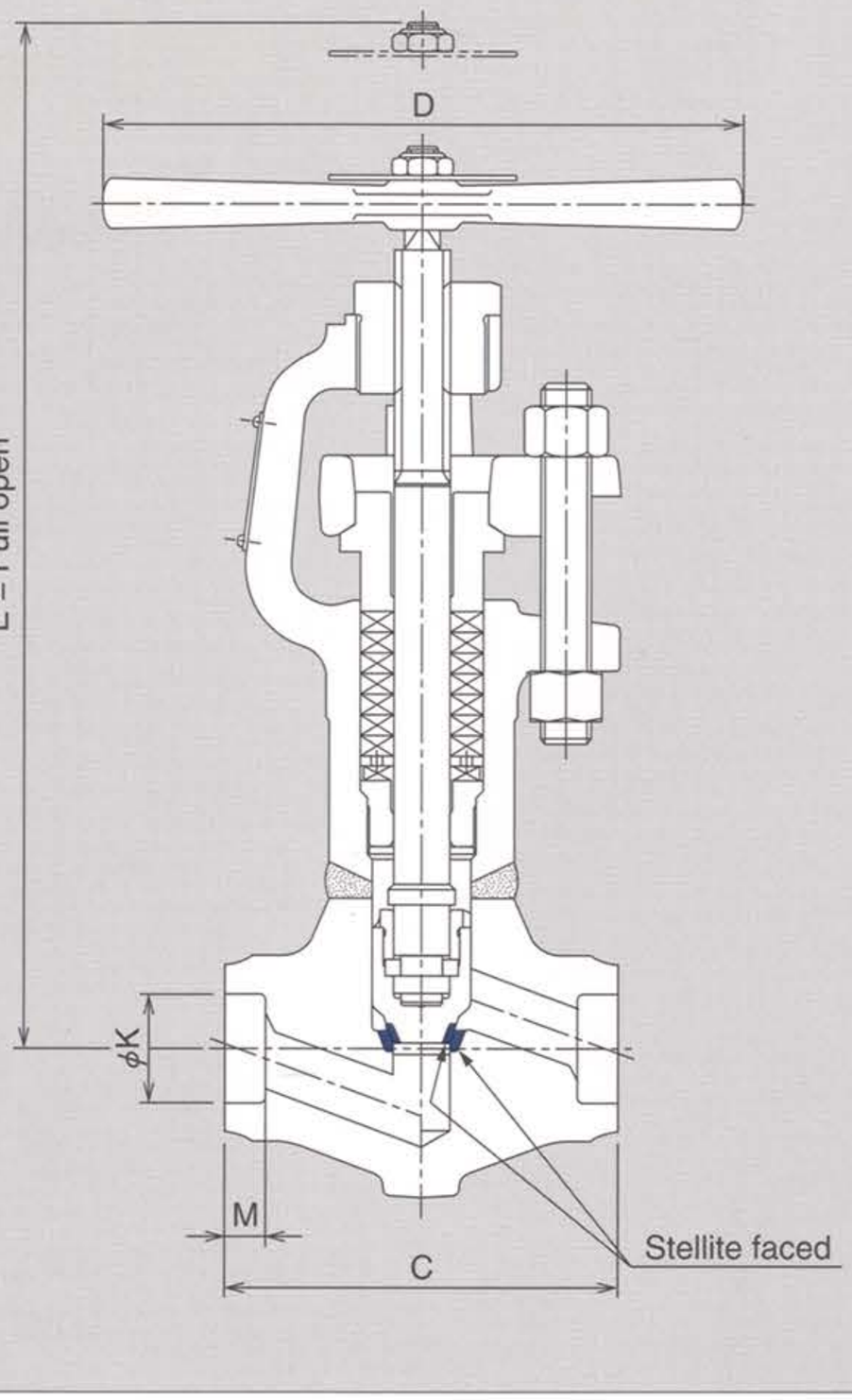
● Other body/bonnet materials
Low alloy steel
Stainless steel

See pages 19～22 for PRESSURE – TEMPERATURE RATINGS.

*Handwheel model is available.

- Outside screw and yoke (OS & Y)
- Body/yoke integral type
- Hard faced disc and body seats

- Type E137/E139 (Socket welding ends)



●Standard dimensions (mm) and weight (kg)

Valve size		Socket inside dia.	Socket depth	End-to-end distance	Handle length	Type E137		Type E139	
A	B	K	M	C	D	Height (Full open) E	Weight	Height (Full open) E	Weight
8	1/4	14.3	13.0	127	181	261	5.4	261	5.4
10	3/8	17.8	13.0	127	181	261	5.4	261	5.4
15	1/2	22.2	13.0	127	181	261	5.4	261	5.4
20	3/4	27.7	13.0	127	206	301	8.6	301	8.6
25	1	34.5	13.0	127	206	301	8.6	301	8.6
32	1 1/4	43.2	13.0	216	318	415	23.1	422	26.3
40	1 1/2	49.1	13.0	216	318	415	23.1	422	26.3
50	2	61.1	15.9	216	318	435	25.0	452	29.4

EXCO-F Ultra High Pressure (Class 4500) Globe Valve

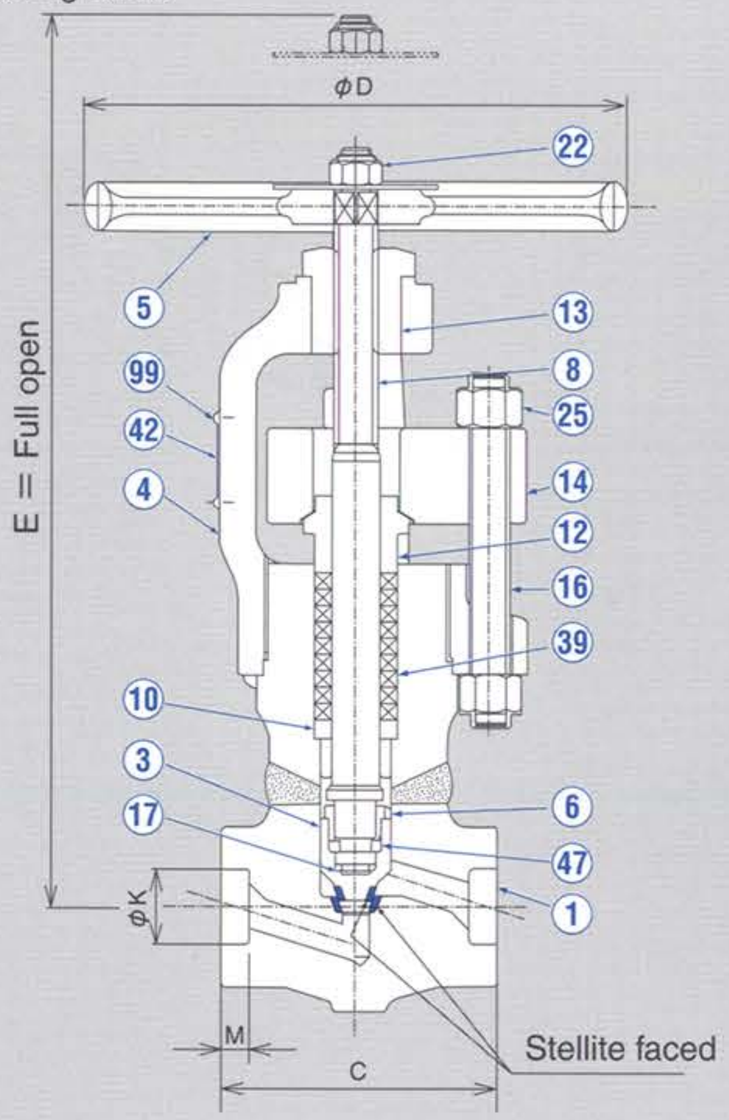
Type E13C (Class 4500)

●Valve size: 1/4 B～2B

See pages 19～22 for PRESSURE – TEMPERATURE RATINGS.

- Outside screw and yoke (OS & Y)
- Boby / yoke integral type
- Hard faced disc and body seats

● Type E13C (Socket welding ends)



●Standard materials (Low alloy steel)

Mark	Part name	Material
1	Body	ASTM A182 F22
3	Disc	SUS316
4	Yoke	SCPH32
5	Handwheel	FCMB270
6	Disc nut	SUS403
8	Stem	SUS403

Mark	Part name	Material
10	Packing stop ring	SUS403
12	Packing gland ring	C6782BE
13	Thread bushing	C6782BE
14	Packing gland flange	S25C
16	Packing gland bolt	SNB7
17	Stem washer	H-25

Mark	Part name	Material
22	Handwheel nut	S15C
25	Packing gland nut	S45C
39	Packing	Graphite with Inconel wire
42	Nameplate	Copper alloy
47	Lock ring	SUS403
99	Tack	C3771BE

● Other body/bonnet materials
Low alloy steel
Stainless steel

●Standard dimensions (mm) and weight (kg)

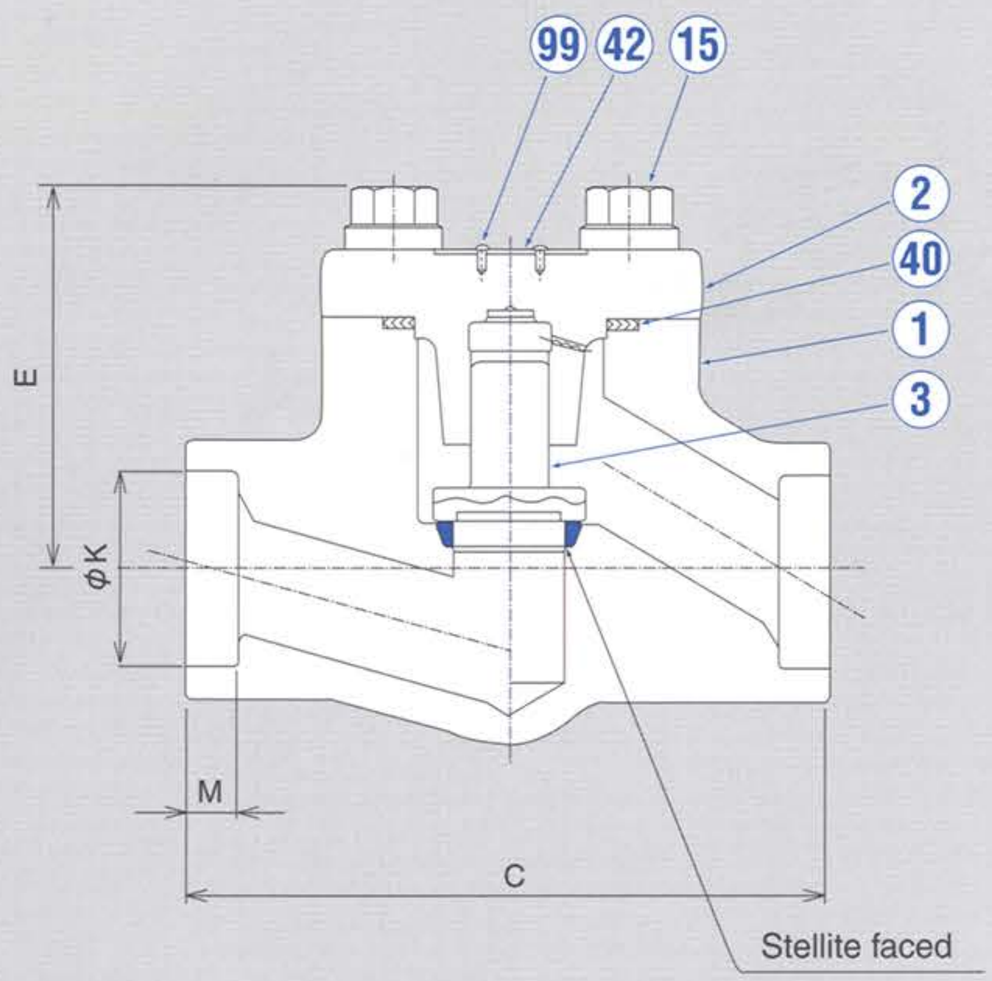
Valve size		Socket inside dia.	Socket depth	End-to-end distance	Handwheel dia.	Height (Full open)	Weight
A	B	K	M	C	D	E	
8	1/4	14.3	13.0	127	200	308	10.6
10	3/8	17.8	13.0	127	200	308	10.6
15	1/2	22.2	13.0	127	200	308	10.6
20	3/4	27.7	13.0	127	250	367	20.0
25	1	34.5	13.0	127	250	367	20.0
32	1 1/4	43.2	13.0	216	350	477	52.0
40	1 1/2	49.1	13.0	216	350	477	52.0
50	2	61.1	15.9	216	350	477	52.0

EXCO-F (Class 600) Check Valve

Type E155 ●Lift type Standard port /E255 ●Lift type Full port /E465 ●Swing type Full Port ●Valve size: 1/4 B～2B

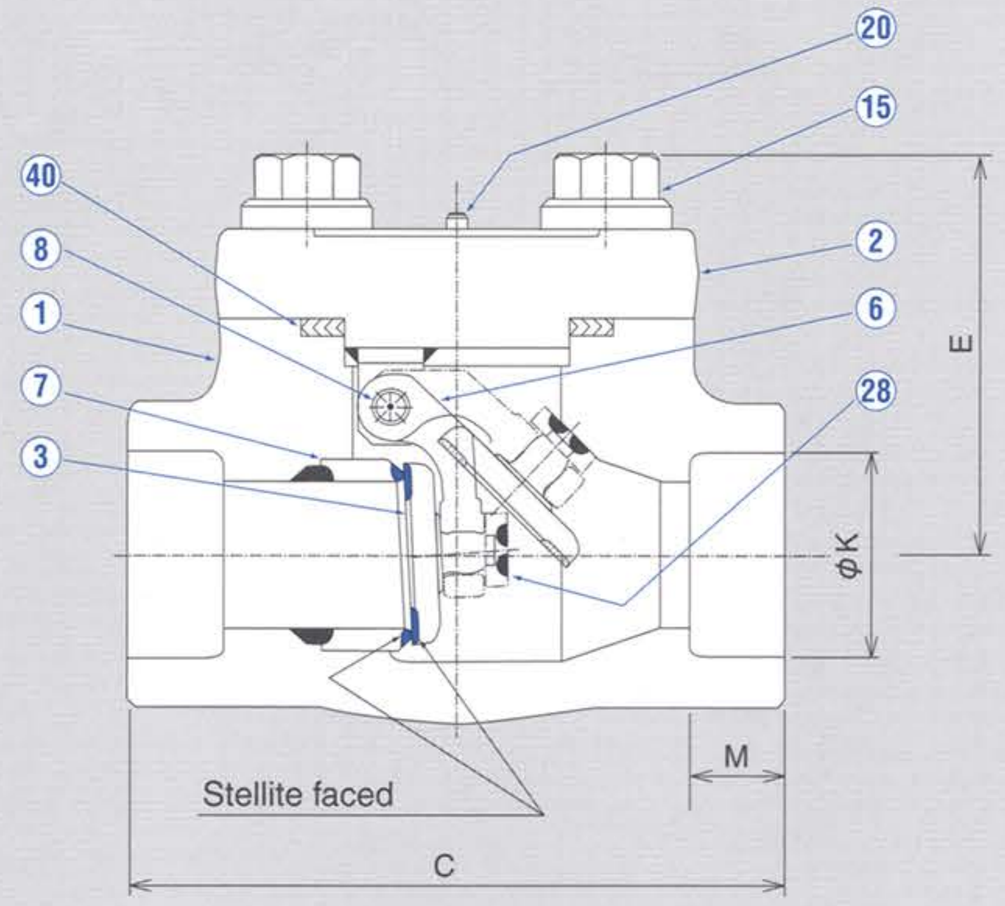
See pages 19～22 for PRESSURE – TEMPERATURE RATINGS.

● Type E155/E255 (Socket welding ends)



Lift check valve

● Type E465 (Socket welding ends)



Swing check valve

●Standard materials

●Type E155/E255 (Carbon steel)

Mark	Part name	Material
1	Body	ASTM A105
2	Bonnet	ASTM A105
3	Disc	SUS420J2
15	Bonnet bolt	SNB7
40	Gasket	Graphite · Stainless hoop
42	Nameplate	Aluminum alloy
99	Tack	C3771BE

●Type E465 (Carbon steel)

Mark	Part name	Material
1	Body	ASTM A105
2	Bonnet	ASTM A105
3	Disc	S25C
6	Arm	SCS14A
7	Seat ring	S25C
8	Spindle	SUS316
15	Bonnet bolt	SNB7

Mark	Part name	Material
20	Taper pin	SUS304
28	Disc lock fittings	S25C
40	Gasket	Graphite · Stainless hoop

●Standard dimensions (mm) and weight (kg)

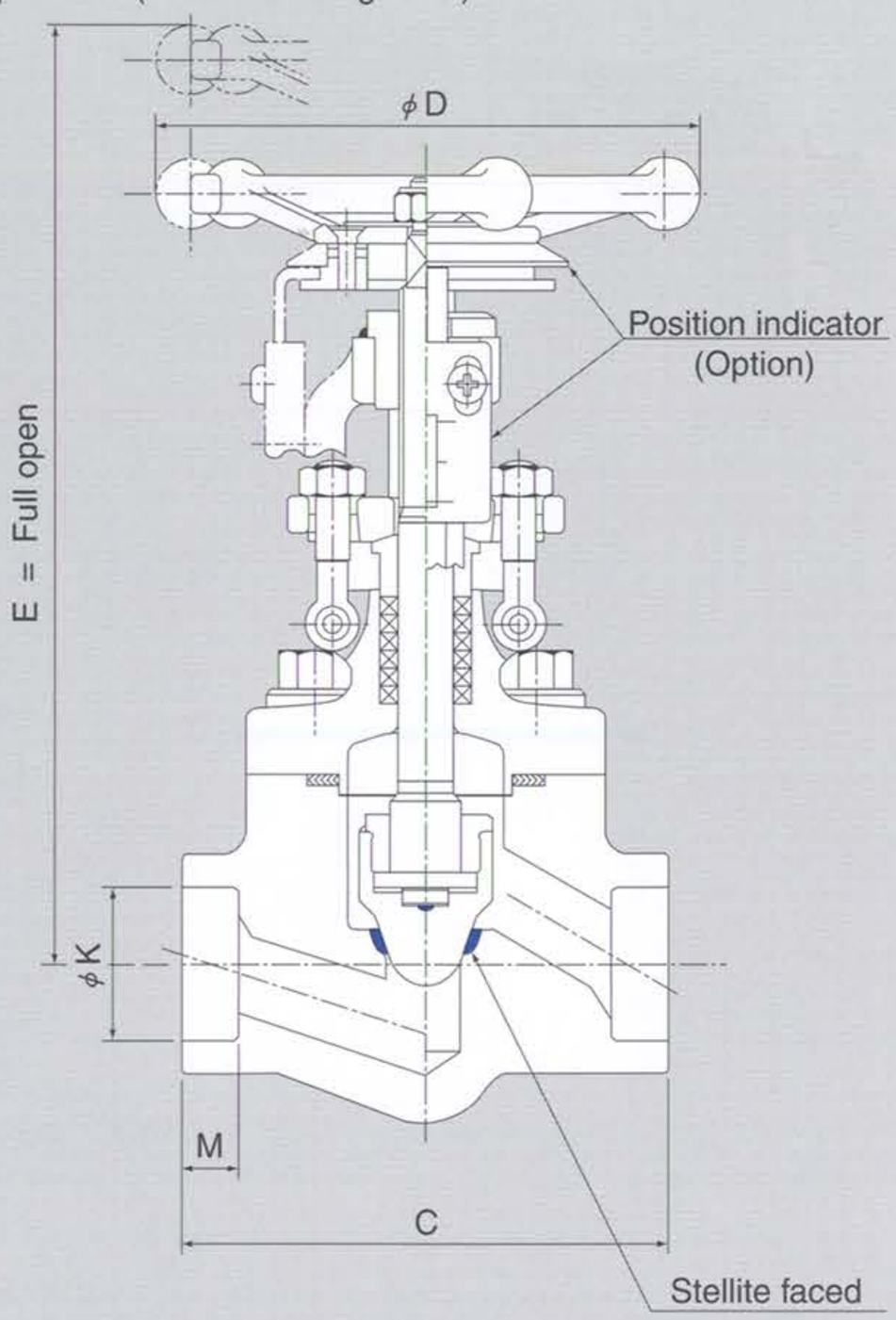
Valve size		Socket inside dia.	Socket depth	Screw size	Type E155			Type E255			Type E465		
A	B	K	M	B	End-to-end distance C	Height E	Weight	End-to-end distance C	Height E	Weight	End-to-end distance C	Height E	Weight
8	1/4	14.3	13.0	1/4	84	48	1.1	—	—	—	—	—	—
10	3/8	17.8	13.0	3/8	84	48	1.1	—	—	—	—	—	—
15	1/2	22.2	13.0	1/2	84	48	1.1	90	54	1.4	90	55	1.5
20	3/4	27.7	13.0	3/4	90	54	1.4	111	71	2.4	90	55	1.5
25	1	34.5	13.0	1	111	71	2.4	133	92	3.6	114	72	2.7
32	1 1/4	43.2	13.0	1 1/4	165	97	6.0	178	118	10.0	121	108	5.2
40	1 1/2	49.1	13.0	1 1/2	165	97	6.0	178	118	10.0	130	120	7.8
50	2	61.1	15.9	2	178	118	10.0	228	145	15.2	156	151	11.5

● For flange end-to-end distance, see page 14.

EXCO-F (Class 600) Flow Rate Control Valve

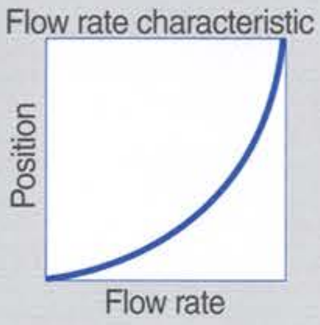
Type E735●Parabolic disc type / UH35● Needle type

●Type E735 (Socket welding ends)

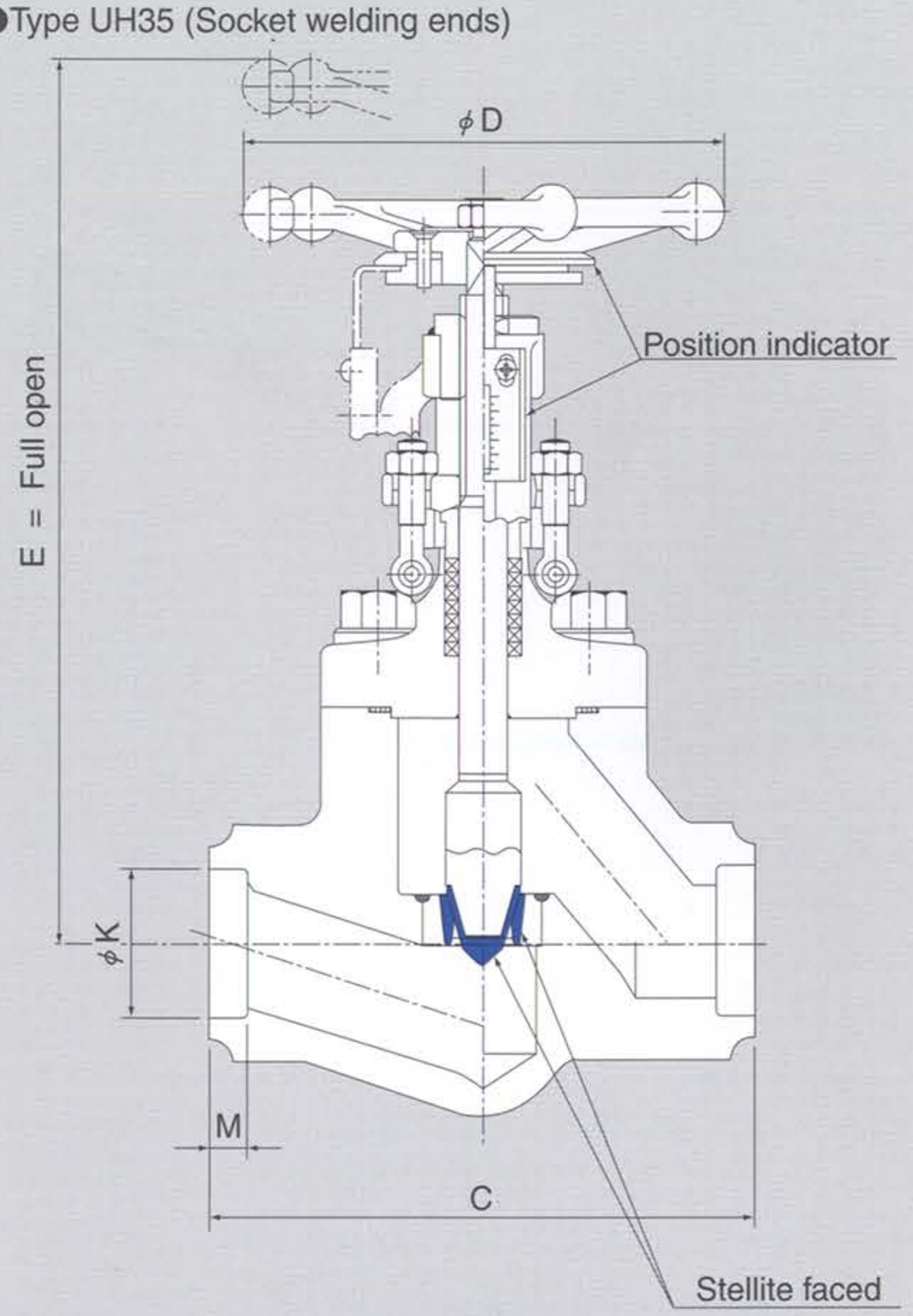


Standard golbe valve (E135) with parabolic-shaped disc and improved flow control. Select UH35 for severe flow condition.
It is also available with position indicator.

Flow rate characteristic

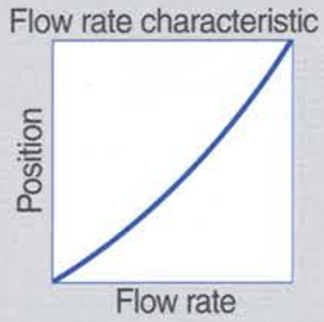


●Type UH35 (Socket welding ends)



Narrower seat orifice and integrated stem-disc for improved vibration resistance and controllability. Stem is stellite-faced near tip for higher erosion resistance.
Position indicator marked by 1/10 turn increments consists of standard equipment.

Flow rate characteristic



●Standard dimensions (mm) and weight (kg)

●Type UH35 (Type E735 data are the same as Type E135. See page 8.)

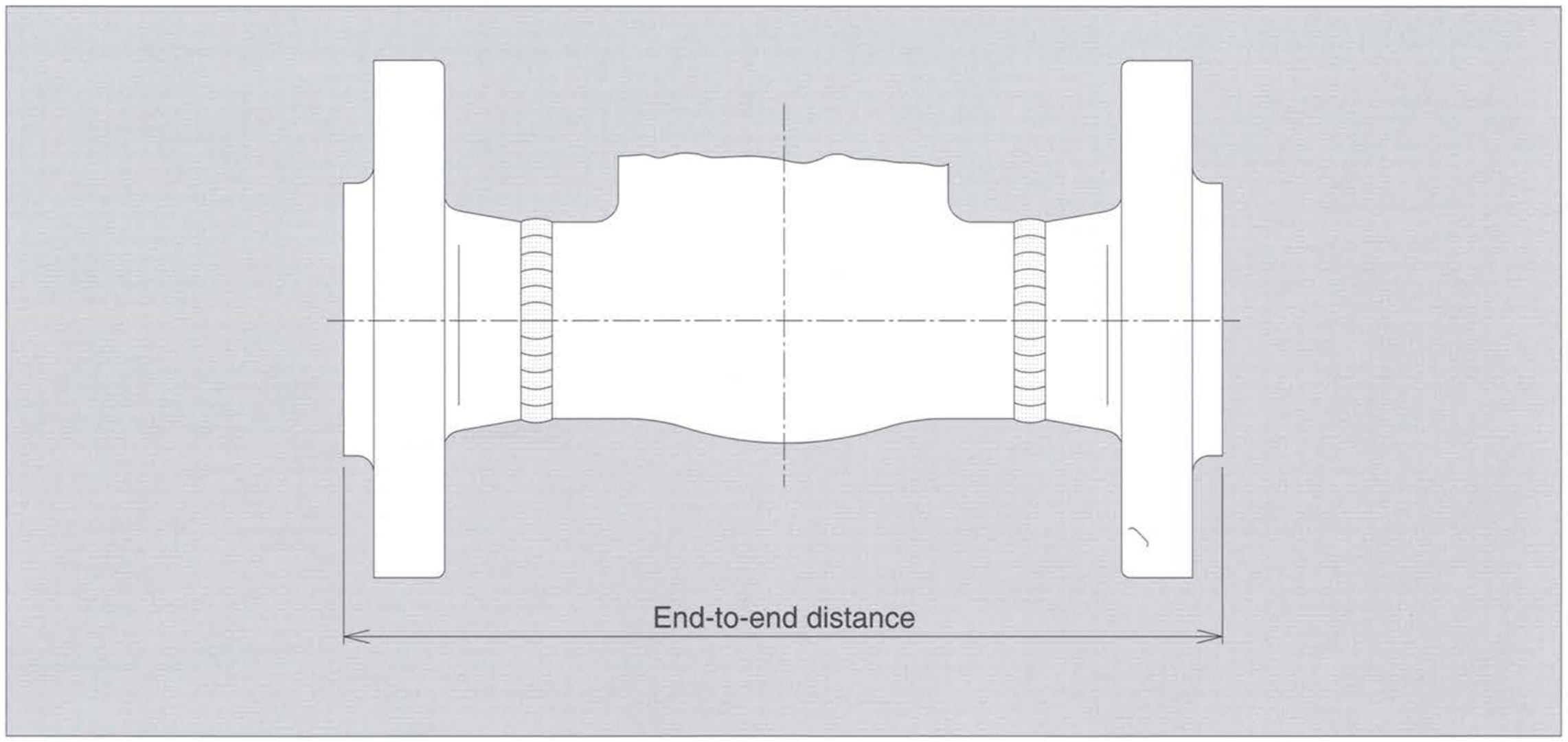
Valve size		Socket inside dia.	Socket depth	End-to-end distance	Hand-wheel dia.	(Note) Height (Full open)	Weight
A	B	K	M	C	D	E	
15	½	22.2	13.0	90	110	162	2.1
20	¾	27.7	13.0	111	125	193	4.1
25	1	34.5	13.0	165	155	236	5.2
40	1½	49.1	13.0	178	180	281	11.5
50	2	61.1	15.9	228	200	337	17.9

● Full open Cv-value

Valve size	Type E735	Type UH35 (Standard)		
		Orifice Ⅰ	Orifice Ⅱ	Orifice Ⅲ
15 A	1.2	0.2	0.4	1.0
20 A	3.2	0.58	1.0	2.4
25 A	5.8	1.2	2.9	5.9
40 A	14	6.0	11	18
50 A	22	6.0	14	22

- To ensure the best valve for your flow conditions, inform needle valve specifications listed on page 18.
  Note: Height (E) varies according to orifice size. Table figures given as reference only.

End-to-End Distance on Flanged Valves



●Standard port type (Unit:mm)

Type / Flange / Valve size	E115						E135/E735/E155					
	ASME	JPI	JIS	ASME	JPI	JIS	ASME	JPI	JIS	ASME	JPI	JIS
	150 300		10K 20K	600		30K 40K	150 300		10K 20K	600		30K 40K
15 A	152			165			152			165		
20 A	178			190			178			190		
25 A	203			216			203			216		
40 A	190			241			229			241		
50 A	216			292			267			292		

●Full port type (Unit:mm)

Type / Flange / Valve size	E215						E235/E255					
	ASME	JPI	JIS	ASME	JPI	JIS	ASME	JPI	JIS	ASME	JPI	JIS
	150 300		10K 20K	600		30K 40K	150 300		10K 20K	600		30K 40K
15 A	158			165			158			165		
20 A	202			190			199			212		
25 A	210			216			225			238		
40 A	※	190		241			242			254		
50 A	242			318			317			342		

※Note: CLASS 150 applies to 190, CLASS 300 applies 229.

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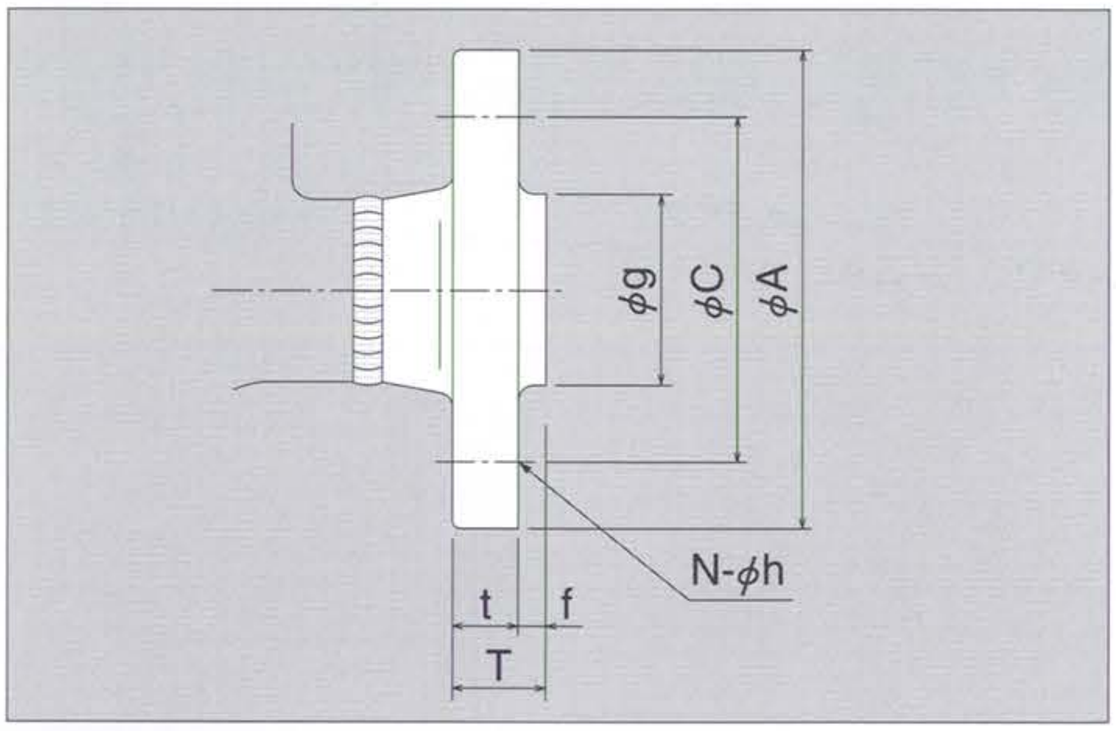
●Flange dimensions (Unit: mm)



●JIS 10K—FF

Valve size	φA	φC	φg	f	t	T	N-φh
15A(1/2B)	95	70	—	—	—	12	4-15
20A(3/4B)	100	75	—	—	—	14	4-15
25A(1 B)	125	90	—	—	—	14	4-19
40A(1 1/2B)	140	105	—	—	—	16	4-19
50A(2 B)	155	120	—	—	—	16	4-19

●JIS 10K—RF

Valve size	φA	φC	φg	f	t	T	N-φh
15A(1/2B)	95	70	51	1	11	12	4-15
20A(3/4B)	100	75	56	1	13	14	4-15
25A(1 B)	125	90	67	1	13	14	4-19
40A(1 1/2B)	140	105	81	2	14	16	4-19
50A(2 B)	155	120	96	2	14	16	4-19

●ASME 150—RF API 150—RF

Valve size	φA	φC	φg	f	t	T	N-φh
15A(1/2B)	89	60.5	35.1	1.6	9.9	11.5	4-16
20A(3/4B)	99	69.9	43.0	1.6	11.4	13.0	4-16
25A(1 B)	108	79.3	50.8	1.6	12.9	14.5	4-16
40A(1 1/2B)	127	98.6	73.2	1.6	16.4	18.0	4-16
50A(2 B)	153	120.7	92.0	1.6	17.9	19.5	4-19

●JIS 20K—RF

Valve size	φA	φC	φg	f	t	T	N-φh
15A(1/2B)	95	70	51	1	13	14	4-15
20A(3/4B)	100	75	56	1	15	16	4-15
25A(1 B)	125	90	67	1	15	16	4-19
40A(1 1/2B)	140	105	81	2	16	18	4-19
50A(2 B)	155	120	96	2	16	18	8-19

●ASME 300—RF API 300—RF

Valve size	φA	φC	φg	f	t	T	N-φh
15A(1/2B)	96	66.6	35.1	1.6	12.9	14.5	4-16
20A(3/4B)	118	82.6	43.0	1.6	14.4	16.0	4-19
25A(1 B)	124	88.9	50.8	1.6	16.4	18.0	4-19
40A(1 1/2B)	156	114.3	73.2	1.6	19.4	21.0	4-22
50A(2 B)	166	127.0	92.0	1.6	20.9	22.5	8-19

●JIS 30K—RF

Valve size	φA	φC	φg	f	t	T	N-φh
15A(1/2B)	115	80	55	1	17	18	4-19
20A(3/4B)	120	85	60	1	17	18	4-19
25A(1 B)	130	95	70	1	19	20	4-19
40A(1 1/2B)	160	120	90	2	20	22	4-23
50A(2 B)	165	130	105	2	20	22	8-19

●ASME 600—RF API 600—RF

Valve size	φA	φC	φg	f	t	T	N-φh
15A(1/2B)	96	66.6	35.1	6.4	14.5	20.9	4-16
20A(3/4B)	118	82.6	43.0	6.4	16.0	22.4	4-19
25A(1 B)	124	88.9	50.8	6.4	18.0	24.4	4-19
40A(1 1/2B)	156	114.3	73.2	6.4	22.5	28.9	4-22
50A(2 B)	166	127.0	92.0	6.4	25.5	31.9	8-19

●JIS 40K—RF

Valve size	φA	φC	φg	f	t	T	N-φh
15A(1/2B)	115	80	55	1	19	20	4-19
20A(3/4B)	120	85	60	1	19	20	4-19
25A(1 B)	130	95	70	1	21	22	4-19
40A(1 1/2B)	160	120	90	2	22	24	4-23
50A(2 B)	165	130	105	2	24	26	8-19

●ASME 900—RF API 600—RF

Valve size	φA	φC	φg	f	t	T	N-φh
15A(1/2B)	121	82.6	35.1	6.4	22.5	28.9	4-22
20A(3/4B)	131	88.9	43.0	6.4	25.5	31.9	4-22
25A(1 B)	150	101.6	50.8	6.4	28.5	34.9	4-26
40A(1 1/2B)	178	124.0	73.2	6.4	32.0	38.4	4-29
50A(2 B)	216	165.1	92.0	6.4	38.5	44.9	8-26

●JPI 150—RF

Valve size	φA	φC	φg	f	t	T	N-φh
15A	90	60.3	34.9	2.0	9.6	11.6	4-16
20A	100	69.9	42.9	2.0	11.2	13.2	4-16
25A	110	79.4	50.8	2.0	12.7	14.7	4-16
40A	125	98.4	73.0	2.0	15.9	17.9	4-16
50A	150	120.7	92.1	2.0	17.5	19.5	4-19

●ASME 1500—RF API 1500—RF

Valve size	φA	φC	φg	f	t	T	N-φh
15A(1/2B)	121	82.6	35.1	6.4	22.5	28.9	4-22
20A(3/4B)	131	88.9	43.0	6.4	25.5	31.9	4-22
25A(1 B)	150	101.6	50.8	6.4	28.5	34.9	4-26
40A(1 1/2B)	178	124.0	73.2	6.4	32.0	38.4	4-29
50A(2 B)	216	165.1	92.0	6.4	38.5	44.9	8-26

●JPI 300—RF

Valve size	φA	φC	φg	f	t	T	N-φh
15A	95	66.7	34.9	2.0	12.7	14.7	4-16
20A	115	82.6	42.9	2.0	14.3	16.3	4-19
25A	125	88.9	50.8	2.0	15.9	17.9	4-19
40A	155	114.3	73.0	2.0	19.1	21.1	4-22
50A	165	127.0	92.1	2.0	20.7	22.7	8-19

●ASME 2500—RF API 2500—RF

Valve size	φA	φC	φg	f	t	T	N-φh
15A(1/2B)	134	88.9	35.1	6.4	30.5	36.9	4-22
20A(3/4B)	140	95.3	43.0	6.4	32.0	38.4	4-22
25A(1 B)	159	108.0	50.8	6.4	35.5	41.9	4-26
40A(1 1/2B)	204	146.1	73.2	6.4	44.5	50.9	4-32
50A(2 B)	235	171.5	92.0	6.4	51.0	57.4	8-29

●JPI 600—RF

Valve size	φA	φC	φg	f	t	T	N-φh
15A	95	66.7	34.9	7.0	14.3	21.3	4-16
20A	115	82.6	42.9	7.0	15.9	22.9	4-19
25A	125	88.9	50.8	7.0	17.5	24.5	4-19
40A	155	114.3	73.0	7.0	22.3	29.3	4-22
50A	165	127.0	92.1	7.0	25.4	32.4	8-19

●Hydrostatic pressure test

●Materials

ASME materials group	Steel type	Material
1.1	Carbon steel	S28C, SFVC2A, ASTM A105, SCPH2, ASTM A216 WCB
1.9	1-¼Cr-½Mo	SFVA F11A, ASTM A182 F11 Class2, SCPH21, ASTM A217 WC6
1.10	2-¼Cr-1Mo	SFVA F22B, ASTM A182 F22 Class3, SCPH32, ASTM A217 WC9
1.15	9Cr-1Mo-V	火SFVA F28, ASTM A182 F91, 火SCPH91, A217 C12A
2.1	18Cr-8Ni	SUSF304, ASTM A182 F304, SCS13A, SCS19A
2.2	16Cr-12Ni-2Mo	SUSF316, ASTM A182 F316, SCS14A, SCS16A
2.3	16Cr-12Ni-2Mo(LC)	SUSF316L, ASTM A182 F316L
	18Cr-8Ni(LC)	SUSF304L, ASTM A182 F304L

●ASME Hydrostatic test pressure on Standard class (MPa)

ASME materials group	Class 150		Class 300		Class 600		Class 800	
	Shell test	Closure test	Shell test	Closure test	Shell test	Closure test	Shell test	Closure test
1.1	3.0	2.2	7.7	5.7	15.4	11.3	20.5	15.0
1.9 & 1.10 & 1.15	3.0	2.2	7.8	5.7	15.6	11.4	20.7	15.2
2.1 & 2.2	2.9	2.1	7.5	5.5	14.9	11.0	19.9	14.6
2.3	2.4	1.8	6.3	4.6	12.5	9.1	16.6	12.2

ASME materials group	Class 900		Class 1500		Class 2500		Class 4500	
	Shell test	Closure test	Shell test	Closure test	Shell test	Closure test	Shell test	Closure test
1.1	23.0	16.9	38.3	28.1	63.9	46.9	* 114.9	* 84.3
1.9 & 1.10 & 1.15	23.3	17.1	38.8	28.5	64.7	47.4	* 116.4	* 85.4
2.1 & 2.2	22.4	16.4	37.3	27.4	62.1	45.6	* 111.7	* 82.0
2.3	18.7	13.7	31.1	22.8	51.8	38.0	* 93.1	* 68.3

Note: Table figures conform to ASME B16.34
*Upper limit pressure given for hydraulic test where marked with *. Unless specified, shell test pressure is set as 2 times max. working pressure, and seat as 1.5 times max. working pressure.

●JIS Hydrostatic test pressure of valve with flanges (MPa)

JIS 10K		JIS 16K		JIS 20K		JIS 30K		JIS 40K	
Shell test	Closure test	Shell test	Closure test	Shell test	Closure test	Shell test	Closure test	Shell test	Closure test
2.1	1.6	4.1	3.0	5.1	3.8	7.7	5.7	10.2	7.5

Note: Table figures conform to JIS B 2220.

●JPI Hydrostatic test pressure (MPa)

ASME materials group	Class 150		Class 300		Class 600		Class 800	
	Shell test	Closure test	Shell test	Closure test	Shell test	Closure test	Shell test	Closure test
1.1	3.10	2.16	7.76	5.61	15.34	11.22	20.51	14.98
1.9 & 1.10 & 1.15	3.10	2.20	7.76	5.69	15.51	11.38	20.68	15.17
2.1 & 2.2	2.93	2.09	7.58	5.46	15.00	10.92	19.99	14.56
2.3	2.41	1.74	6.21	4.55	12.41	9.10	16.55	12.13

ASME materials group	Class 900		Class 1500		Class 2500	
	Shell test	Closure test	Shell test	Closure test	Shell test	Closure test
1.1	23.10	16.84	38.44	28.10	63.95	46.79
1.9 & 1.10 & 1.15	23.27	17.06	38.78	28.44	64.64	47.40
2.1 & 2.2	22.41	16.38	37.23	27.30	62.05	45.51
2.3	18.62	13.65	31.03	22.75	51.71	37.92

Note: Table figures conform to JPI 7S-39.

Engineering sheet

●Formulas for calculating Cv

Liquid

$$\frac{0.3656Q\sqrt{G}}{\sqrt{\Delta p}}$$

Gas

$$\frac{Q\sqrt{G}}{173.3\sqrt{\Delta p(p_1+p_2)}}$$

Temperature correction (over 60°C)

$$\frac{Q\sqrt{G(492+9T/5)}}{3955\sqrt{\Delta p(p_1+p_2)}}$$

Saturated Steam

$$\frac{W}{138.1\sqrt{\Delta p(p_1+p_2)}}$$

Superheated Steam

$$\frac{(1+0.00126\,T_{SH})\,W}{138.1\sqrt{\Delta p(p_1+p_2)}}$$

●Symbols

Q : Flow rate of fluid (m^3/H)/gas (Nm^3/H)

W : Steam flow rate (kg/H)

p_1 : Inlet pressure (MPa abs)

p_2 : Outlet pressure (MPa abs)

Δp : Pressure difference (MPa)

G : Specific gravity ... Liquids : Water = 1.0
Gas: Air = 1.0

T_{SH} : Degree of superheat (℃) ...
Temperature of super-heated steam — Temperature of saturated steam that shows same pressure as the super-heated steam

T : Temperature (℃)

●Notes

1. Cv correction is needed with liquids when evaporated after decompression (e.g.: saturated water).
2. Cv correction is needed if the coefficient of kinematic viscosity for the liquid is over 20 mm^2/s.
3. With gas or steam, when $p_2 < \frac{p_1}{2}$, substitute "0.87 p_1" in for the denominator $\sqrt{\Delta p(p_1+p_2)}$ when making calculations.

●Cv: Capacity coefficient. Expresses valve flow rate at 60°F when pressure difference is 1 lbf/in^2, in US gal/min.

Please specify specificatoins when ordering.

●Motor Operated Valve Specifications

Client				Destination			
UTE Order No.				Valve No.		Q'ty	
Class–Diameter	Class Diameter A			Valve type		Delivery date	・ ・

Valve spec.	Max. (Shut of) Pressure x Temp.	MPaG ・ ˚C		
	Inching	Yes (Times/Hour/1 Operation) ・ No		
	DSS	Yes ・ No		
	Liquid	Steam ・Water ・Drain ・Heavy Oil ・Others		
Valve Control Spec.	Standard	JEC ・ NEMA ・ Others		
	Maker	Nihon Gear ・ Seibu ・ Shimazu		
	Protection	Totally-enclosed outdoor use ・ Explosion-proof d G ・ Increased Safety eG		
	Handle switching	Automatic Return ・ Manual Return		
	Seating	(Open) Geared Torque / (Close) Geared Torque		
	Power Motor	AC・DC V/3P ・ 1P/50HZ ・ 60HZ		
	Power Control	AC・DC V/3P ・ 1P/50HZ ・ 60HZ		
	Voltage Drop	Yes % ・ No		
	Insulating Class	E ・ B ・ F ・ H		
	Rated Time	15 min. (STD) ・ 30 min ・ 6.5 min. (DCSTD)		
	Limit Switch	2 trains ・ 4 trains ・ 6 trains ・ others		
	Field Position Indicator	100% (STD) ・ 3 positions ・ Others: /Japanese・English		
	Wire Through Hole	Motor	G ・ Pieces・Maker STD	
		Control	G ・ Pieces・Maker STD	
		Calculation	G ・ Pieces・Maker STD	
	Opening/Closing	Yes min. ・ No		

Valve Control Option	Push Button	Yes (Open ・ Stop ・ Close) ・ No		
	Lamp	Yes (Colors: Open ・ Middle ・ Close) ・ No		
	Selsyn	Transmitter	Yes (Model ・ A C V) ・ No	
		Receiver	Yes (Model ・ Frame angle ・ Color) ・ No	
	Potentio-meter	Transmitter	Yes (Model ・ Degree ・ Ω) ・ No	
		Receiver	Yes (Model ・ Frame angle ・ Color) ・ No	
		Regulator	Yes (Model) ・ No	
	Connector	Motor	Yes (Model ・ Wire dia.□ ・ Cores ・ Dia.) ・ No	
		Control	Yes (Model ・ Wire dia.□ ・ Cores ・ Dia.) ・ No	
		Calculation	Yes (Model ・ Wire dia.□ ・ Cores ・ Dia.) ・ No	
	Explosion-proof ・ Increased Safety	Explosion-proof Grade	(Explosion-proof) d_2G_4 ・ d_2G_3 /(Increased Safety) eG_3 ・ ed_2G_3 only	
		Pressure-proof Packing	Motor	Cable Dia.□ ・ Cores ・ Dia. ・ Screw G
			Control	Cable Dia.□ ・ Cores ・ Dia. ・ Screw G
			Calculation	Cable Dia.□ ・ Cores ・ Dia. ・ Screw G
		Explosion-proof Grade	(Explosion-proof) d_2G_4 ・ d_2G_3 /(Increased Safety) eG_3 ・ ed_2G_3 only	
		Pressure-proof Screw	Motor	Cable Dia.□ ・ Cores ・ Dia. ・ Screw G
			Control	Cable Dia.□ ・ Cores ・ Dia. ・ Screw G
			Calculation	Cable Dia.□ ・ Cores ・ Dia. ・ Screw G
	Note 1: E and B types only for d_2G_4, H type only for d_2G_3			
	Note 2: eG_3 shows the motor grade, ed_2G_3 shows the actuator grade			

Remarks

●Needle Valve Specifications

Client			Destination		
UTE Order No.			Valve No.	Q'ty	
Class–Diameter	Class Diameter A		Valve type	Delivery date	・ ・
Valve Name	Bypass ・Flow Regulator ・Pressure Regulator ・Pressure Relief ・External Blow ・Filling Water ・Continuous Blow ・Drain ・Recirculation ・Other				

Valve Spec.	Design Pressure x Temp.	MPaG ・ ˚C			
	Valve Form	Globe Valve Needle ・ Angle Needle ・ Others			
	Needle Characteristic	Equal Percent (Quadric Curve) ・ Linear (Straight Line) ・ Others			
	Operation Mode	Pause ・ Start ・ Run ・ Trouble ・ Others			
Needle Spec.	Fluid*	Water ・ Steam (Super Heated ・ Saturated) ・ Drain (Water ・ Steam) ・ Oil ・ Gas ・ Others			
	Conditions	CASE I (MAX.)	CASE II (NOR.)	CASE III (MIN.)	CASE IV
	Flow Rate*	kg/H・m^3/H・Nm^3/H	kg/H・m^3/H・Nm^3/H	kg/H・m^3/H・Nm^3/H	kg/H・m^3/H・Nm^3/H
	Primary Pressure*	MPaA	MPaA	MPaA	MPaA
	Secondary Pressure*	MPaA	MPaA	MPaA	MPaA
	Pressure Difference*	MPa	MPa	MPa	MPa
	Primary Temperature*	˚C	˚C	˚C	˚C
	Specific Volume****	m^3/kg	m^3/kg	m^3/kg	m^3/kg
	Enthalpy****	KJ/kg	KJ/kg	KJ/kg	KJ/kg
	Humidity****	%	%	%	%
	Specific Gravity***				mm^2/s
	Viscosity***	mm^2/s	mm^2/s	mm^2/s	
	Molecular Weight**				
	Designated Position (%)				

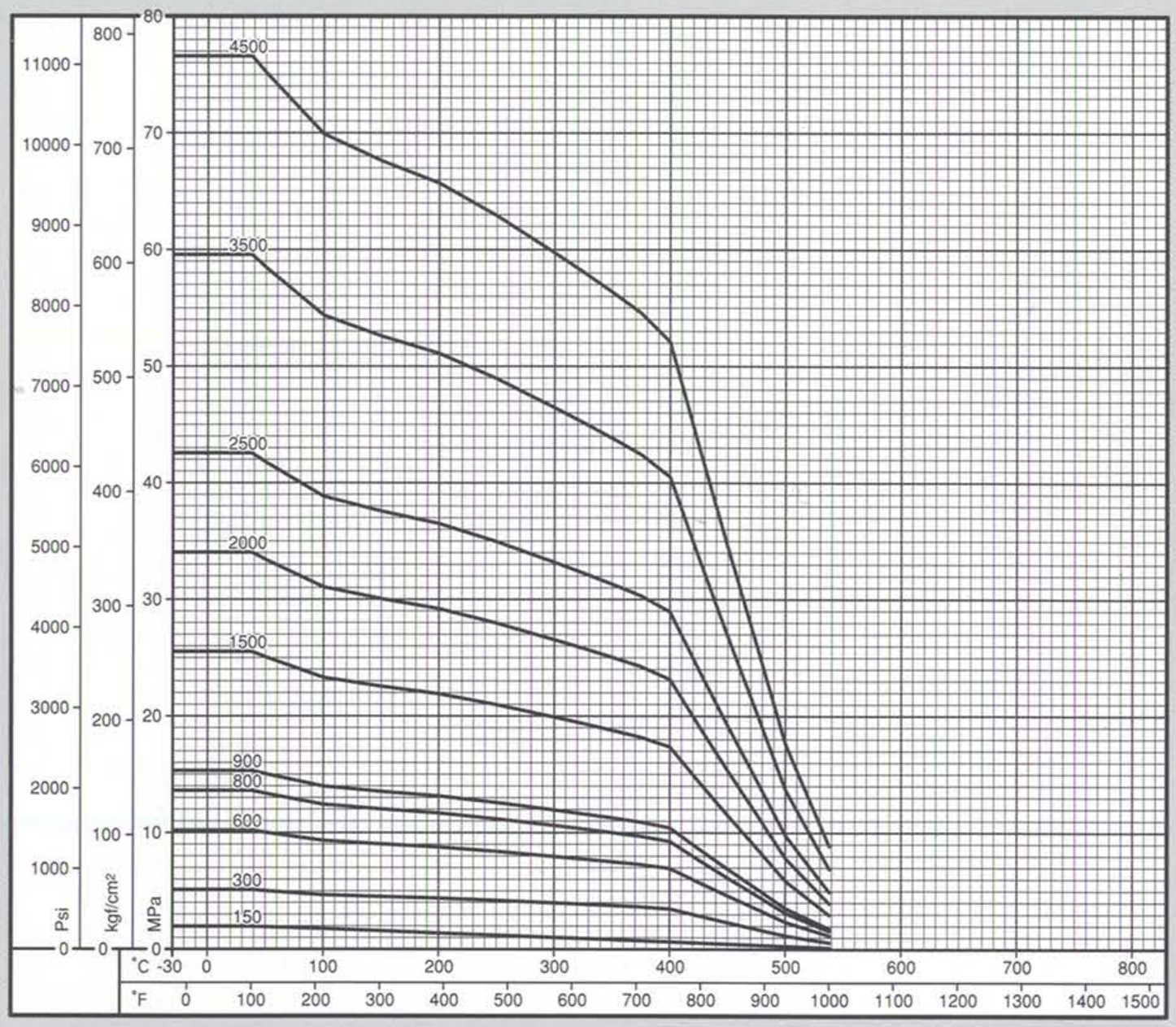
Note: *... All, **... Gas, ***... Oil or Viscous Liquid, ****...Steam

Remarks

Clarify the pressure unit if you use a different unit from the one shown above.

Pressure-Temperature Ratings ASME B16.34-2004 Standard Class

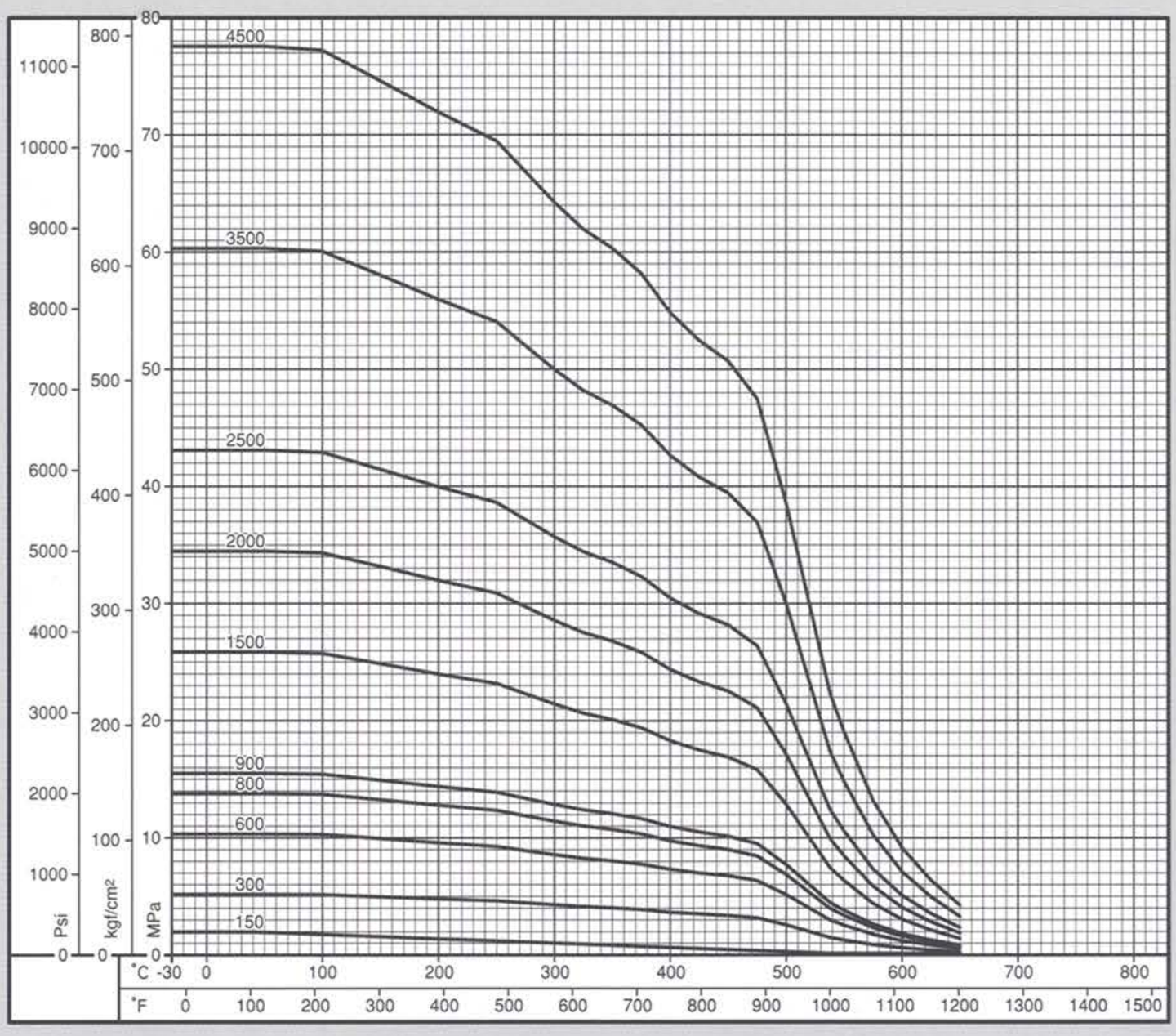
●Applicable Materials: S25C, S28C, SF50A, SFVC2A, SCPH2, A105, A216WCB



Temperature		Max. Working Pressure in MPa by Classes									
°F	°C	150	300	600	800	900	1500	2000	2500	3500	4500
−20～100	−29～38	1.96	5.11	10.21	13.61	15.32	25.53	34.04	42.55	59.57	76.59
122	50	1.92	5.01	10.02	13.36	15.04	25.06	33.41	41.77	58.48	75.19
212	100	1.77	4.66	9.32	12.42	13.98	23.30	31.06	38.83	54.36	69.90
302	150	1.58	4.51	9.02	12.02	13.52	22.54	30.05	37.56	52.58	67.61
392	200	1.38	4.38	8.76	11.68	13.14	21.90	29.20	36.50	51.10	65.70
482	250	1.21	4.19	8.39	11.18	12.58	20.97	27.96	34.95	48.93	62.91
572	300	1.02	3.98	7.96	10.62	11.95	19.91	26.54	33.18	46.45	59.73
617	325	0.93	3.87	7.74	10.32	11.61	19.36	25.81	32.26	45.16	58.07
662	350	0.84	3.76	7.51	10.01	11.27	18.78	25.04	31.30	43.82	56.35
707	375	0.74	3.64	7.27	9.69	10.91	18.18	24.24	30.31	42.43	54.55
752	400	0.65	3.47	6.94	9.26	10.42	17.36	23.14	28.93	40.50	52.08
797	425	0.55	2.88	5.75	7.67	8.63	14.38	19.17	23.97	33.56	43.15
842	450	0.46	2.30	4.60	6.13	6.90	11.50	15.33	19.17	26.84	34.51
887	475	0.37	1.74	3.49	4.65	5.23	8.72	11.62	14.53	20.34	26.15
932	500	0.28	1.18	2.35	3.13	3.53	5.88	7.83	9.79	13.71	17.63
1000	538	0.14	0.59	1.18	1.57	1.77	2.95	3.93	4.92	6.89	8.86
1022	550										
1067	575										
1112	600										
1157	625										
1202	650										
1247	675										
1292	700										
1337	725										
1382	750										
1427	775										
1472	800										
1500	816										

Note: Choose the pressure and temperature within the colored range.

●Applicable Materials: SFVAF11A, SCPH21, A182F11C*l*.2, A217WC6

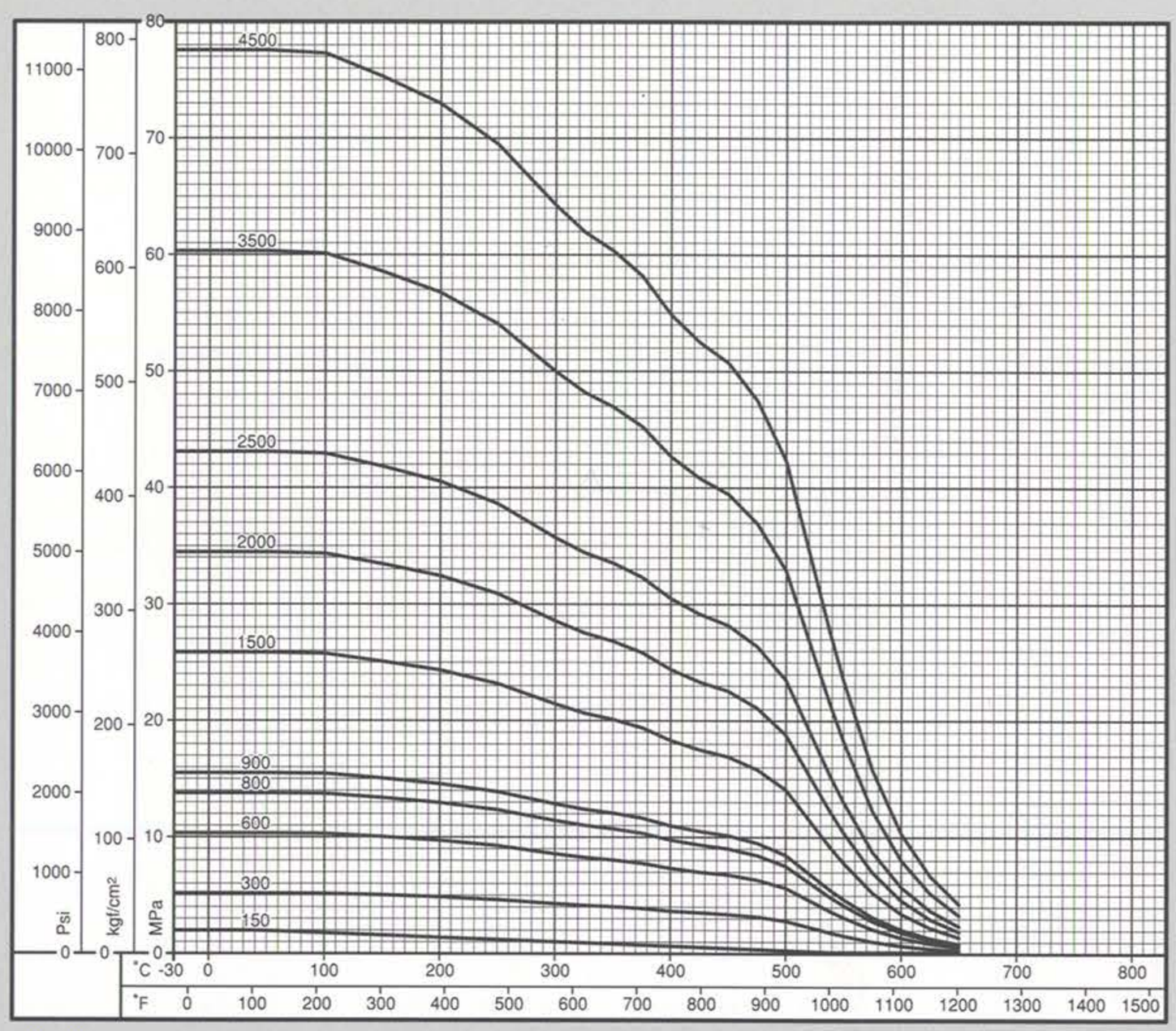


Temperature		Max. Working Pressure in MPa by Classes									
°F	°C	150	300	600	800	900	1500	2000	2500	3500	4500
−20～100	−29～38	1.98	5.17	10.34	13.78	15.51	25.86	34.47	43.09	60.33	77.57
122	50	1.95	5.17	10.34	13.78	15.51	25.86	34.47	43.09	60.33	77.57
212	100	1.77	5.15	10.30	13.72	15.44	25.74	34.32	42.90	60.06	77.22
302	150	1.58	4.97	9.95	13.26	14.92	24.87	33.16	41.45	58.03	74.62
392	200	1.38	4.80	9.59	12.79	14.39	23.98	31.97	39.96	55.95	71.94
482	250	1.21	4.63	9.27	12.35	13.90	23.18	30.90	38.62	54.05	69.48
572	300	1.02	4.29	8.57	11.43	12.86	21.44	28.57	35.71	49.98	64.26
617	325	0.93	4.14	8.26	11.02	12.40	20.66	27.54	34.43	48.19	61.96
662	350	0.84	4.03	8.04	10.72	12.07	20.11	26.82	33.53	46.93	60.33
707	375	0.74	3.89	7.76	10.35	11.65	19.41	25.86	32.32	45.25	58.18
752	400	0.65	3.65	7.33	9.76	10.98	18.31	24.40	30.49	42.67	54.85
797	425	0.55	3.52	7.00	9.34	10.51	17.51	23.33	29.16	40.81	52.47
842	450	0.46	3.37	6.77	9.01	10.14	16.90	22.54	28.18	39.44	50.70
887	475	0.37	3.17	6.34	8.45	9.51	15.82	21.10	26.39	36.93	47.48
932	500	0.28	2.57	5.15	6.86	7.72	12.86	17.14	21.44	30.01	38.59
1000	538	0.14	1.49	2.98	3.97	4.47	7.45	9.93	12.41	17.37	22.34
1022	550	☆ 0.14	1.27	2.54	3.38	3.81	6.35	8.46	10.59	14.82	19.06
1067	575	☆ 0.14	0.88	1.76	2.34	2.64	4.40	5.87	7.34	10.27	13.20
1112	600	☆ 0.14	0.61	1.22	1.62	1.83	3.05	4.07	5.09	7.12	9.16
1157	625	☆ 0.14	0.43	0.85	1.13	1.28	2.13	2.84	3.55	4.97	6.39
1202	650	☆ 0.11	0.28	0.57	0.75	0.85	1.42	1.89	2.36	3.30	4.26
1247	675										
1292	700										
1337	725										
1382	750										
1427	775										
1472	800										
1500	816										

Note: Choose the pressure and temperature within the colored range. Not available for flanged valves where marked with ☆.

Pressure-Temperature Rating

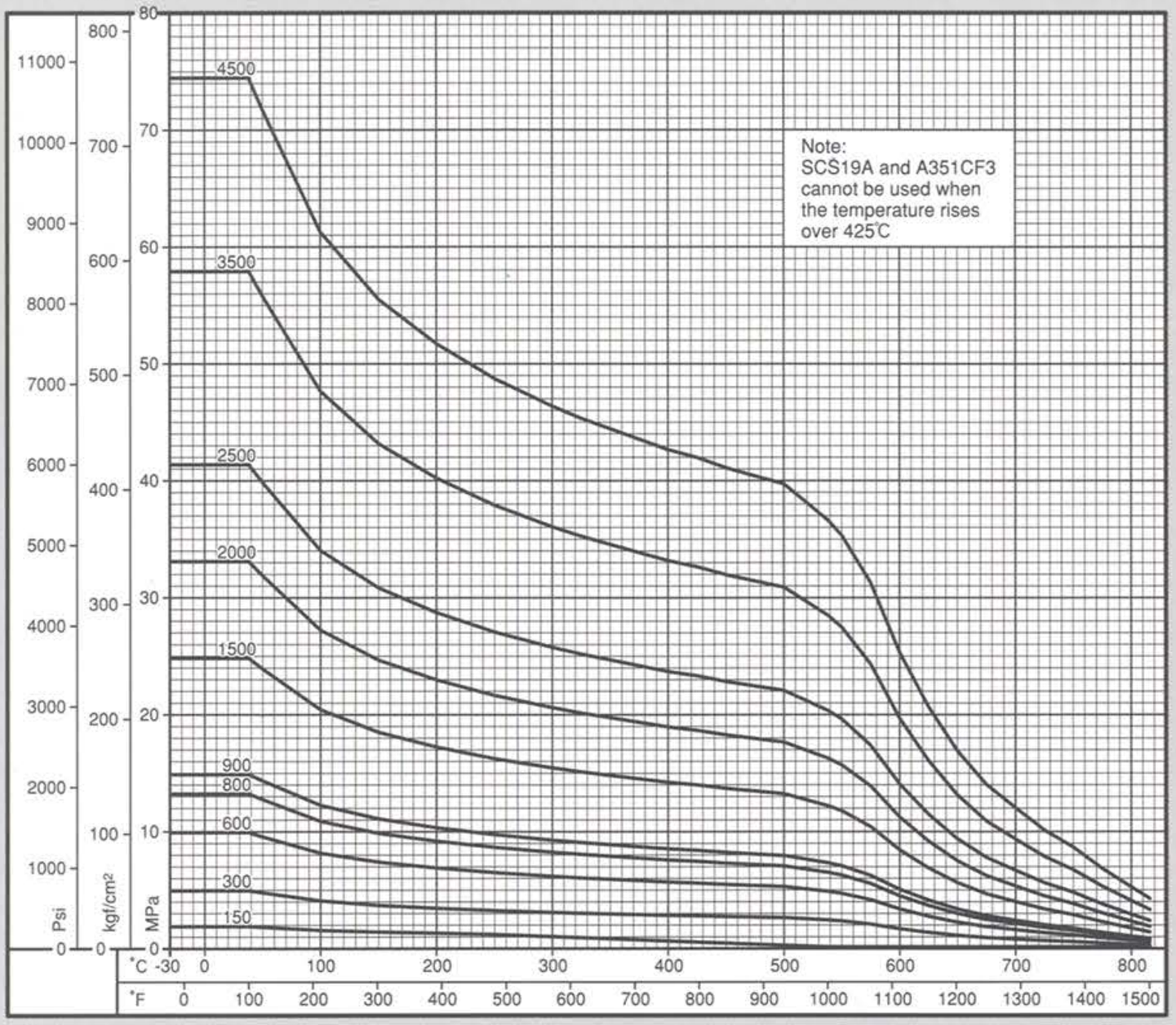
●Applicable Materials: SFVAF22B, SCPH32, A182F22C*l*.3, A217WC9



Temperature		Max. Working Pressure in MPa by Classes									
°F	°C	150	300	600	800	900	1500	2000	2500	3500	4500
−20～100	−29～38	1.98	5.17	10.34	13.78	15.51	25.86	34.47	43.09	60.33	77.57
122	50	1.95	5.17	10.34	13.78	15.51	25.86	34.47	43.09	60.33	77.57
212	100	1.77	5.15	10.30	13.74	15.46	25.76	34.35	42.94	60.12	77.30
302	150	1.58	5.03	10.03	13.38	15.06	25.08	33.45	41.82	58.55	75.28
392	200	1.38	4.86	9.72	12.96	14.58	24.34	32.44	40.54	56.76	72.98
482	250	1.21	4.63	9.27	12.35	13.90	23.18	30.90	38.62	54.05	69.48
572	300	1.02	4.29	8.57	11.43	12.86	21.44	28.57	35.71	49.98	64.26
617	325	0.93	4.14	8.26	11.02	12.40	20.66	27.54	34.43	48.19	61.96
662	350	0.84	4.03	8.04	10.72	12.07	20.11	26.82	33.53	46.93	60.33
707	375	0.74	3.89	7.76	10.35	11.65	19.41	25.86	32.32	45.25	58.18
752	400	0.65	3.65	7.33	9.76	10.98	18.31	24.40	30.49	42.67	54.85
797	425	0.55	3.52	7.00	9.34	10.51	17.51	23.33	29.16	40.81	52.47
842	450	0.46	3.37	6.77	9.01	10.14	16.90	22.54	28.18	39.44	50.70
887	475	0.37	3.17	6.34	8.45	9.51	15.82	21.10	26.39	36.93	47.48
932	500	0.28	2.82	5.65	7.53	8.47	14.09	18.79	23.50	32.90	42.30
1000	538	0.14	1.84	3.69	4.91	5.53	9.22	12.29	15.37	21.51	27.66
1022	550	☆ 0.14	1.56	3.13	4.17	4.69	7.82	10.42	13.03	18.23	23.45
1067	575	☆ 0.14	1.05	2.11	2.81	3.16	5.26	7.01	8.77	12.28	15.79
1112	600	☆ 0.14	0.69	1.38	1.84	2.07	3.44	4.59	5.74	8.03	10.33
1157	625	☆ 0.14	0.45	0.89	1.19	1.34	2.23	2.97	3.72	5.20	6.69
1202	650	☆ 0.11	0.28	0.57	0.75	0.85	1.42	1.89	2.36	3.30	4.26
1247	675										
1292	700										
1337	725										
1382	750										
1427	775										
1472	800										
1500	816										

Note: Choose the pressure and temperature within the colored range. Not available for flanged valves where marked with ☆.

●Applicable Materials: SUS304/F304, SCS13A/19A, A182F304, A351CF8/CF3



Temperature		Max. Working Pressure in MPa by Classes									
℉	℃	150	300	600	800	900	1500	2000	2500	3500	4500
−20~100	−29~38	1.90	4.96	9.93	13.23	14.89	24.82	33.09	41.37	57.91	74.46
122	50	1.83	4.78	9.56	12.75	14.35	23.91	31.88	39.85	55.79	71.73
212	100	1.57	4.09	8.17	10.89	12.26	20.43	27.23	34.04	47.66	61.28
302	150	1.42	3.70	7.40	9.86	11.10	18.50	24.67	30.84	43.17	55.51
392	200	1.32	3.45	6.90	9.19	10.34	17.24	22.98	28.73	40.22	51.72
482	250	1.21	3.25	6.50	8.66	9.75	16.24	21.65	27.07	37.90	48.73
572	300	1.02	3.09	6.18	8.24	9.27	15.46	20.61	25.76	36.06	46.37
617	325	0.93	3.02	6.04	8.06	9.07	15.11	20.14	25.19	35.26	45.33
662	350	0.84	2.96	5.93	7.90	8.89	14.81	19.75	24.69	34.56	44.44
707	375	0.74	2.90	5.81	7.74	8.71	14.52	19.35	24.19	33.86	43.55
752	400	0.65	2.84	5.69	7.58	8.53	14.22	18.96	23.70	33.18	42.66
797	425	0.55	2.80	5.60	7.46	8.40	14.00	18.66	23.33	32.65	41.99
842	450	0.46	2.74	5.48	7.30	8.22	13.70	18.27	22.84	31.97	41.11
887	475	0.37	2.69	5.39	7.18	8.08	13.47	17.96	22.45	31.42	40.40
932	500	0.28	2.65	5.30	7.06	7.95	13.24	17.65	22.07	30.90	39.73
1000	538	0.14	2.44	4.89	6.51	7.33	12.21	16.28	20.36	28.50	36.64
1022	550	☆ 0.14	2.36	4.71	6.28	7.07	11.78	15.70	19.63	27.48	35.34
1067	575	☆ 0.14	2.08	4.17	5.55	6.25	10.42	13.89	17.37	24.32	31.27
1112	600	☆ 0.14	1.69	3.38	4.50	5.06	8.44	11.25	14.07	19.69	25.32
1157	625	☆ 0.14	1.38	2.76	3.68	4.14	6.89	9.19	11.49	16.08	20.68
1202	650	☆ 0.14	1.13	2.25	3.00	3.38	5.63	7.50	9.38	13.13	16.89
1247	675	☆ 0.14	0.93	1.87	2.48	2.80	4.67	6.23	7.79	10.90	14.02
1292	700	☆ 0.14	0.80	1.61	2.14	2.41	4.01	5.35	6.69	9.36	12.04
1337	725	☆ 0.14	0.68	1.35	1.80	2.03	3.38	4.50	5.63	7.88	10.13
1382	750	☆ 0.14	0.58	1.16	1.54	1.73	2.89	3.84	4.81	6.74	8.67
1427	775	☆ 0.14	0.46	0.90	1.21	1.37	2.28	3.04	3.80	5.32	6.84
1472	800	☆ 0.12	0.35	0.70	0.93	1.05	1.74	2.33	2.92	4.09	5.26
1500	816	☆ 0.10	0.28	0.59	0.77	0.86	1.41	1.89	2.38	3.32	4.27

Note: Choose the pressure and temperature within the colored range. Not available for flanged valves where marked with ☆.

EXCO-F Series Quality Control

●EXCO-F Series valves quality control

EXCO-F Series valves are subjected to strict quality controls to assure that all parts have been properly assembled and that valves function satisfactory (leak-free smooth operating, etc.). Brief outlines of quality control are;

1. Material control
Chemical elements and mechanical properties of forged steel and bar materials shall strictly be inspected against supplier test data. Materials are then carefully selected based on requested conditions of use and labeled for comparison with the finished product.

2. Parts control
(1) Process control
All tools used in processing parts are subjected to controls in order to ensure preciseness. Finished products are closely examined for dimensional accuracy using specially designed gauges.

(2) Heat treatment control
Each part shall be heat-treated in accordance with specified hardness and process standards. Hardness is closely measured and kept under control.

3. Assembly control
Based on control items 1 and 2, we ensure all products coming off the line are of uniform precision and quality.

4. Finished product inspection
All finished products shall be checked closely part-by-part, and inspected for pressure and leak tests (valve seat) using the hydraulic pressure given on page 16. After the products passed the inspection, valve internal surfaces shall be dried and valve connection openings be sealed.

5. Air-tightness test
EXCO-F Series valves are recommended for vapor, water, oil, gas and air, however air-tightness tests are performed upon request. Clearly indicate how you intend to use the product when ordering. We will hellp you select the most suitable gland packing.

6. High pressure gas handling products
UTE is certified by the Ministry of International Trade and Industry to perform high pressure gas tests. Technical information is available upon request. When making inquiries, please provide us with the below information.

(1) User's name
(2) Class (1, 2, or 3)
(3) Types of fluid
(4) Pressure and temperature of fluid

Contact us for use in nuclear power generation, processing prohibited oil, etc.

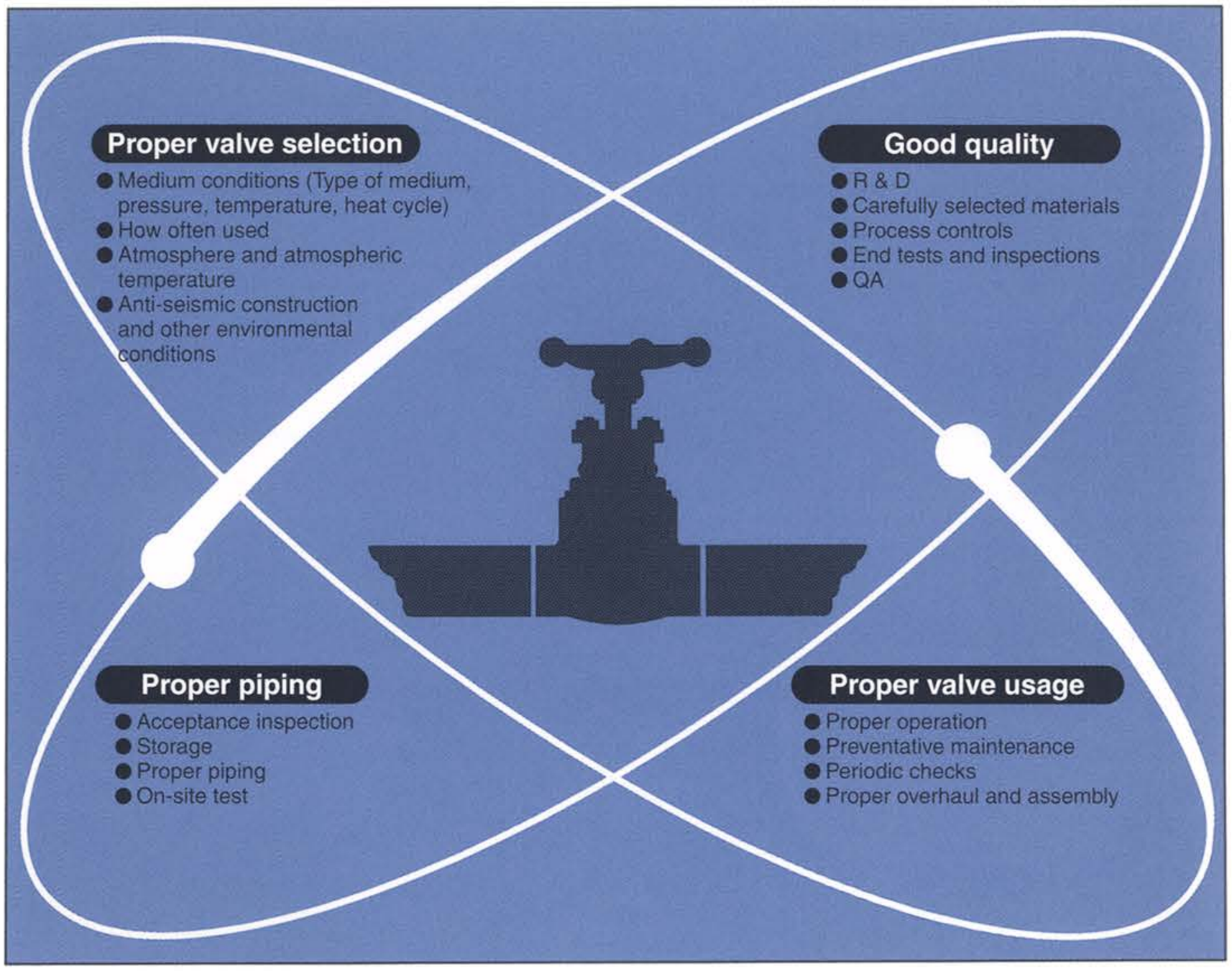
Fabrication sequence chart

Hydraulic pressure test equipment

Helium leak detector

●Precautions in usage with EXCO-F Series valves

Observe the following 4 points in order to obtain the best lasting performance from valves.



●Handling precautions for EXCO-F Series valves

Although all EXCO-F Series valves and parts are inspested prior to shipment, improper handling can impair performance. It is required to read these handling precautions in order to get the maximum performance. We recommend the product to be handled only by qualified personnel with ample knowledge of the product.

1. Storage

(1) Keep polyethylene caps on valve ends while in storage. Infiltrated foreign matter can damage the seat and eventually cause leaking.
(2) Do not store valves outdoors, in dusty places or in other adverse environment. Harsh environmental conditions can cause malfunctions or damage the seat.
(3) Avoid leaving valves on the ground or concrete floors. Store on wood shelves in a dry place.

2. Care on installation

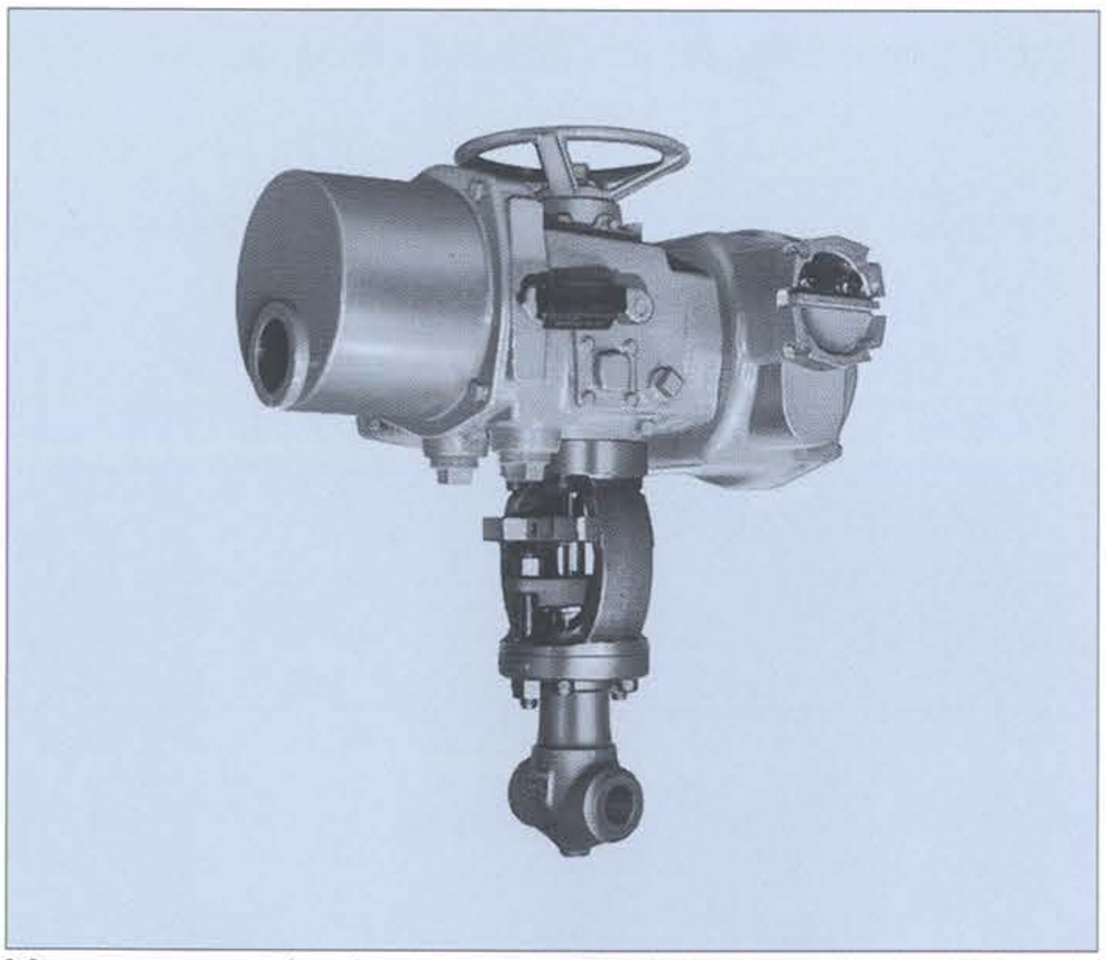
(1) Check valve type, materials and size before connecting to pipes, and connect only when sure of having the proper parts.
(2) With globe valves and check valves, check the flow direction arrow on the valve body before connecting to pipes. Also, keep lift check valves horizontal to prevent them from shutting by themselves under gravity.

3. Valve operation & maintenance

(1) Turning the handwheel counter-clockwise opens the valve while clockwise shuts it. Levers and other helping means for turning the handwheel can impair valve functioning, and should be avoided.
(2) Periodically grease the threaded part on valve stems.
(3) Coat valves externally with a suitable rust-proofing if using the valve outdoors.
(4) At the first time in using the valve, regulate surface pressure on packing by tightening the gland. Be careful to tighten the gland evenly.
(5) If leaking is detected around the stem, evenly tighten the gland bolts to utilize the back seat to seal the leak. If the leak persists, change the packing. In such case, before disassemble check that the valve is internally depressurized.

EXCO-F Series Lineups

EXCO is a trademark of UTE, which coins an acronym formed of the words **EX**cellent and **CO**mpact. **EXCO-F** are great small **F**orged valves designed and built with sound technology. Over the years, we have provided customers all over the world with valves for every sort of use. EXCO-F valves, installed at many plants domestic and overseas, have certainly been in good order.
Some examples of the EXCO-F Series are shown here.
Have a good look and let us know what you need.



Motor operated valve

Globe valve with position indicator

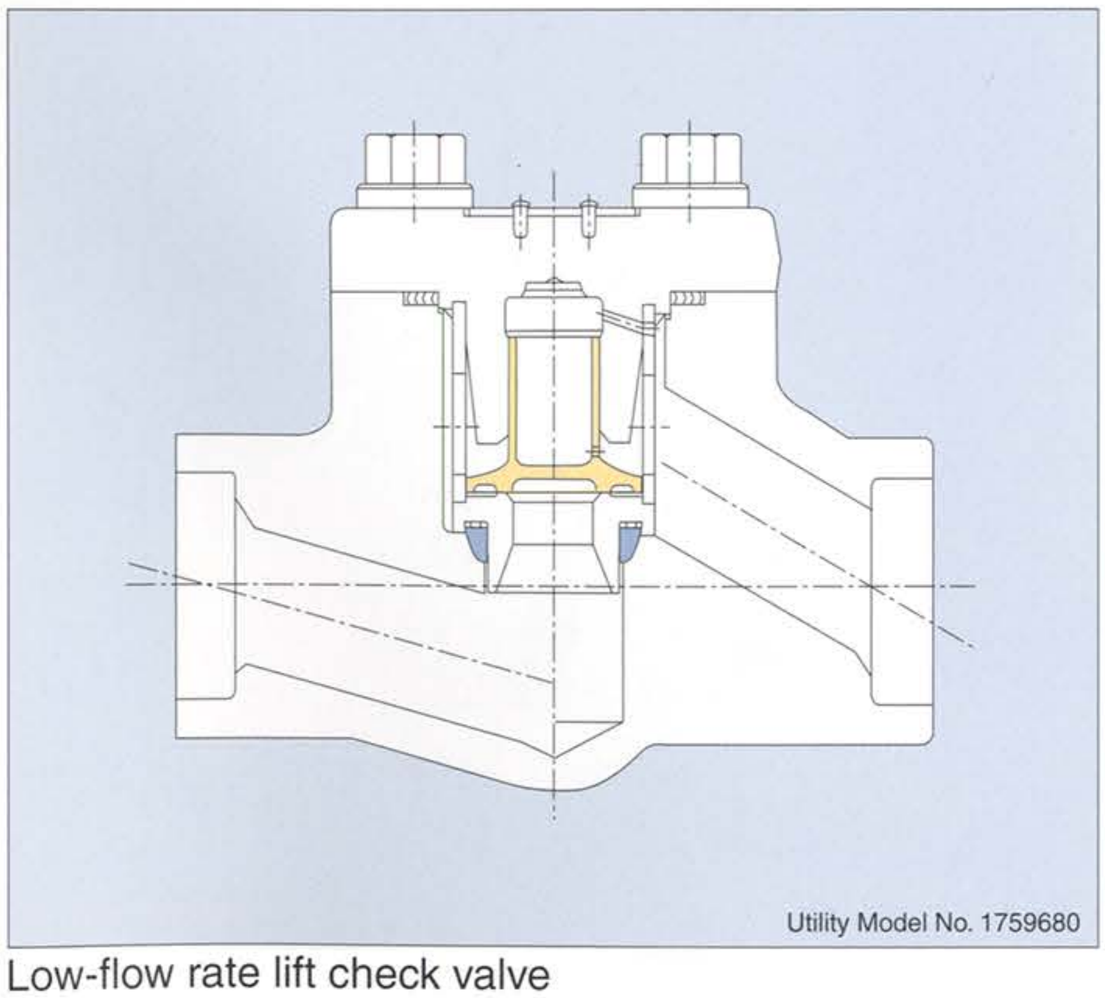
High pressure lift check valve

With open/close limit switch

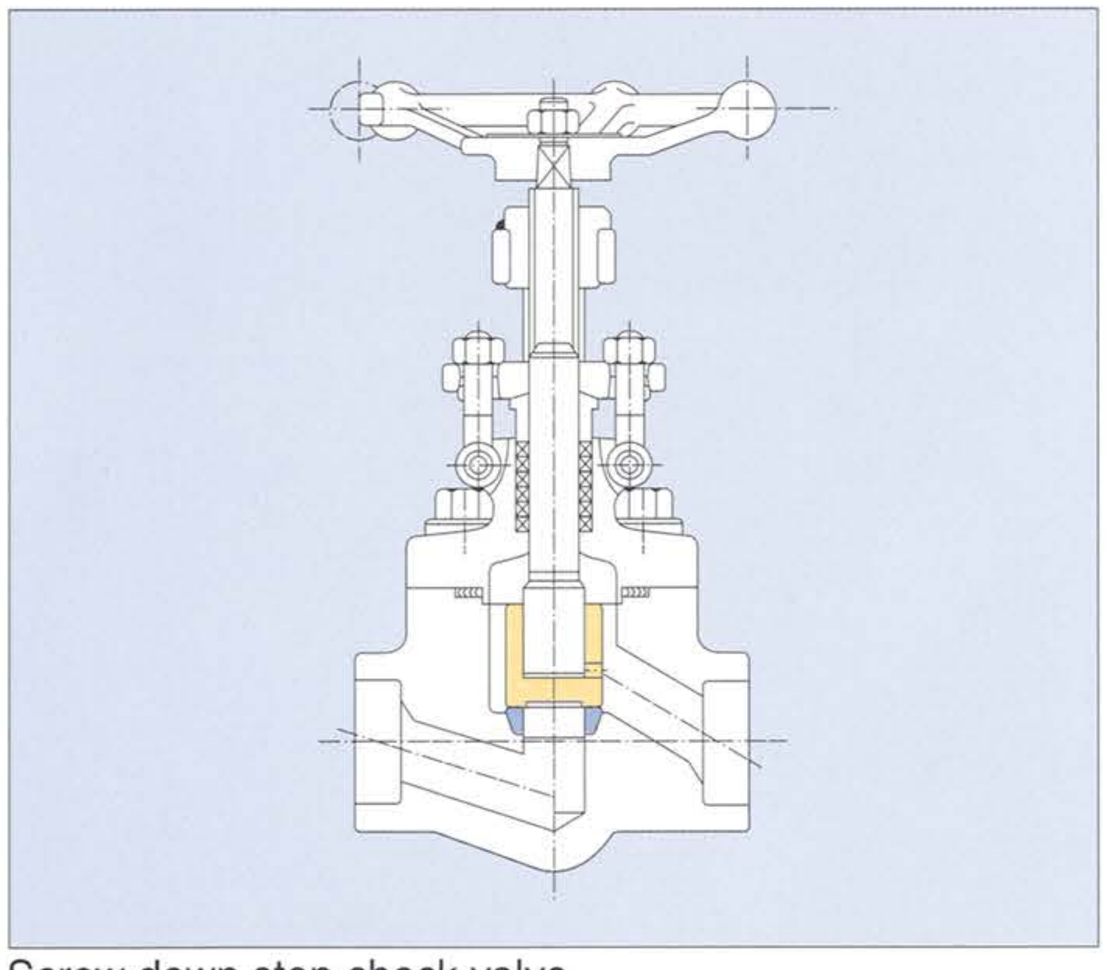
Bellows seal valve

Angle globe valve

High pressure angle needle valve



Low-flow rate lift check valve



Screw down stop check valve

UTSUE VALVE CO., LTD.

Head Office & Plant:2-1-13, Kitamura, Taisho-ku, Osaka 551-0032, Japan
Tel :06-6552-3162 Fax: 06-6551-3245
URL :http://www.utsue-valve.co.jp
e-mail:ute2@sage.ocn.ne.jp (Sales Department)
e-mail:ute@maple.ocn.ne.jp (Engineering Department)
Office & Works :Tokyo / Hitachi / Takahama / Kashiwazaki-kariwa

JH-L STDM