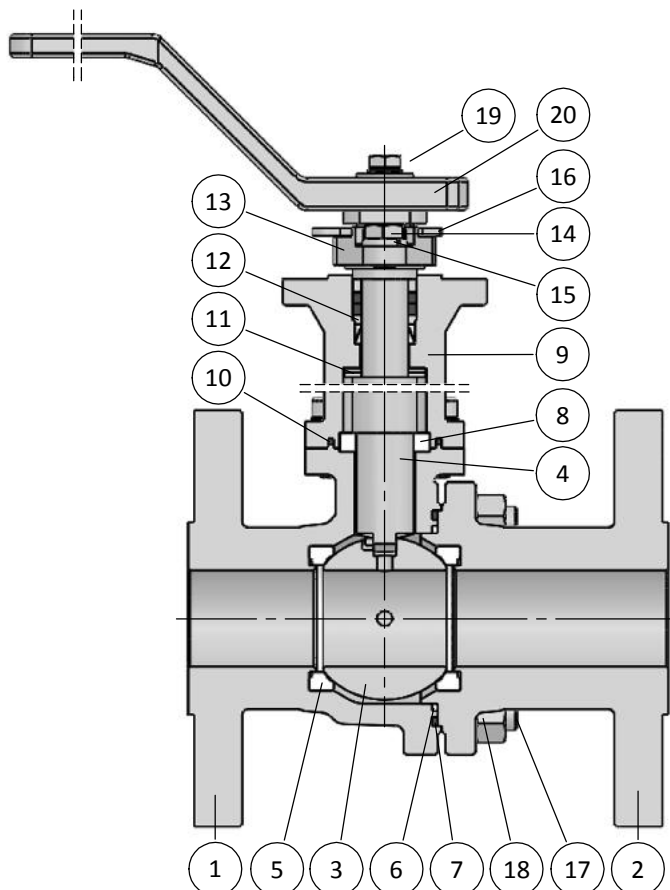
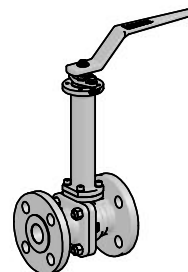


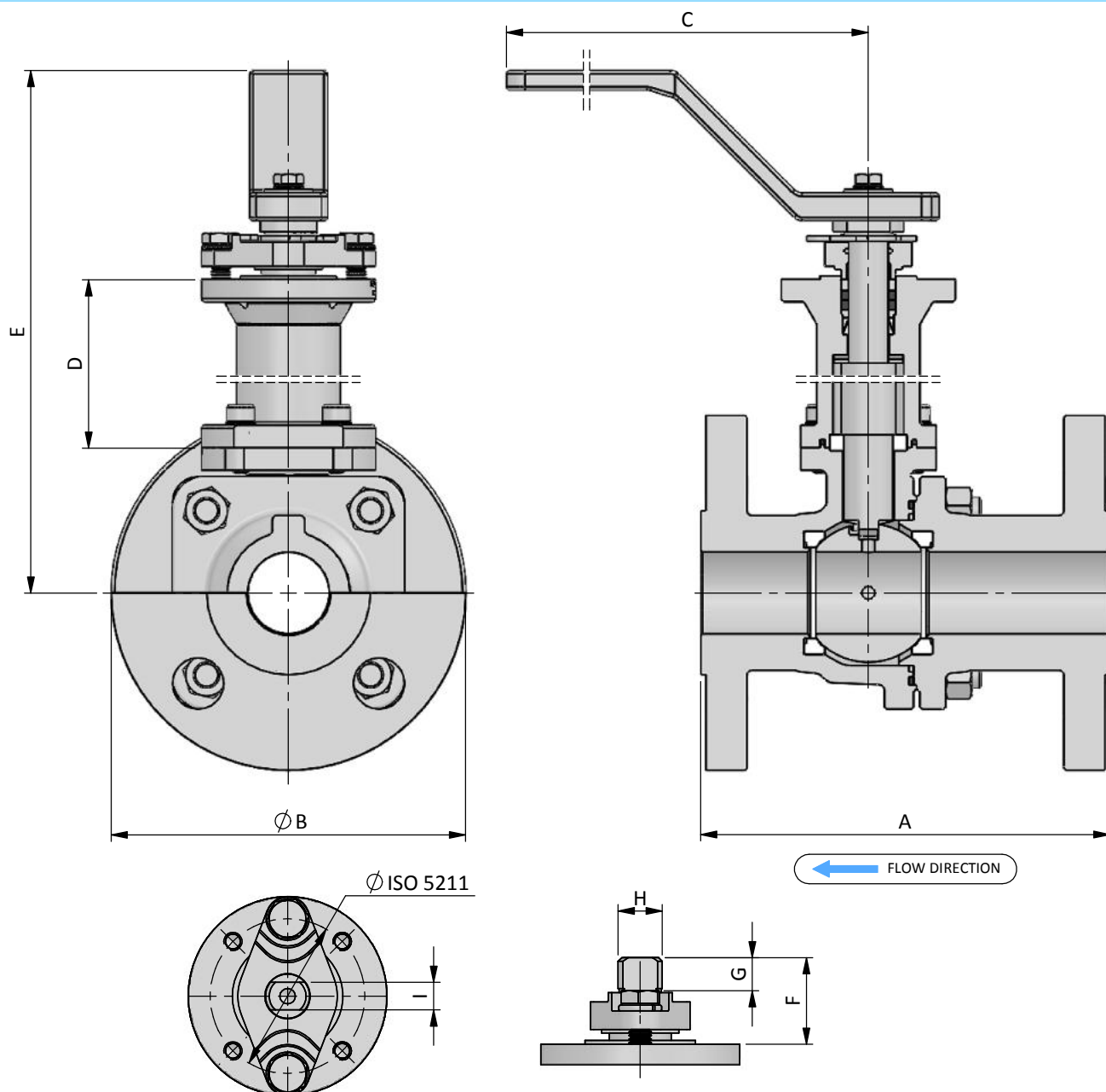
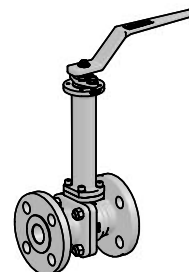




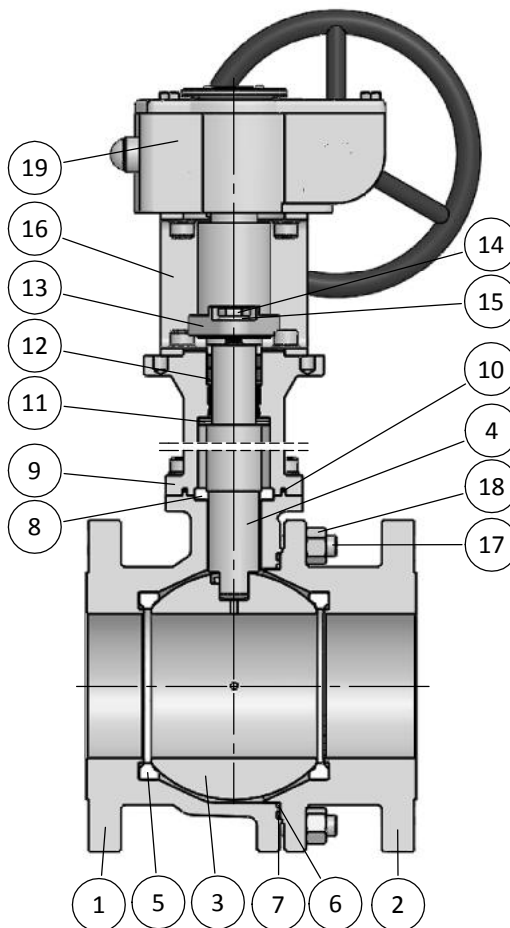
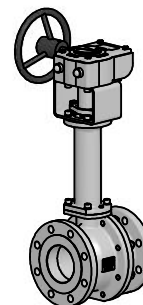
BILL OF MATERIALS

Part	Qt.	Description	STAINLESS STEEL VERSION
1	1	Body	1.4408
2	1	End	1.4408
3	1	Ball	A351 CF8M
4	1	Stem	HS STAINLESS ST.
5	2	Seat	TFM 1600
6	1	1st Body Seal	PTFE
7	1	2nd Body Seal	GRAPHITE
8	1	Bearing	PTFE
9	1	Extension	A479 316/L
10	1	Extension Seal	GRAPHITE
11	2	Extension Thrust Seal	316L + TFM 1600
12	1	Stem Packing Set	TFM 1600 + GRAPHITE
13	1	Gland Packing	A351 CF8M
14	2	Gland Packing Bolt	STAINLESS ST. 316
15	2	Gland Packing Spring	STAINLESS ST. 316
16	1	Stop Pin	STAINLESS ST. 316
17	-	Stud	A4 CL.70
18	-	Nut	A4 CL.70
19	1	Handle Fasteners	STAINLESS ST. 316
20	1	Handle	A351 CF8M

↘ TYPICAL SPARE PARTS



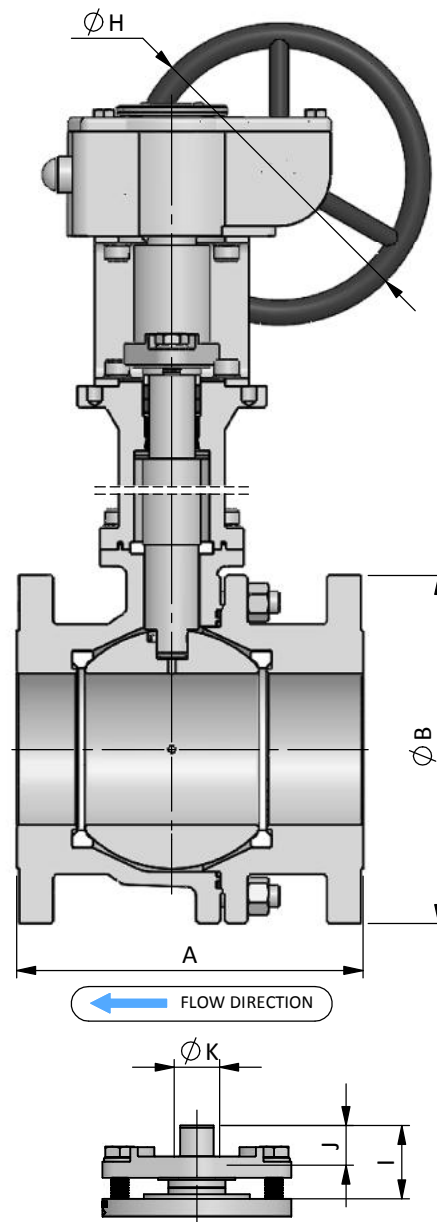
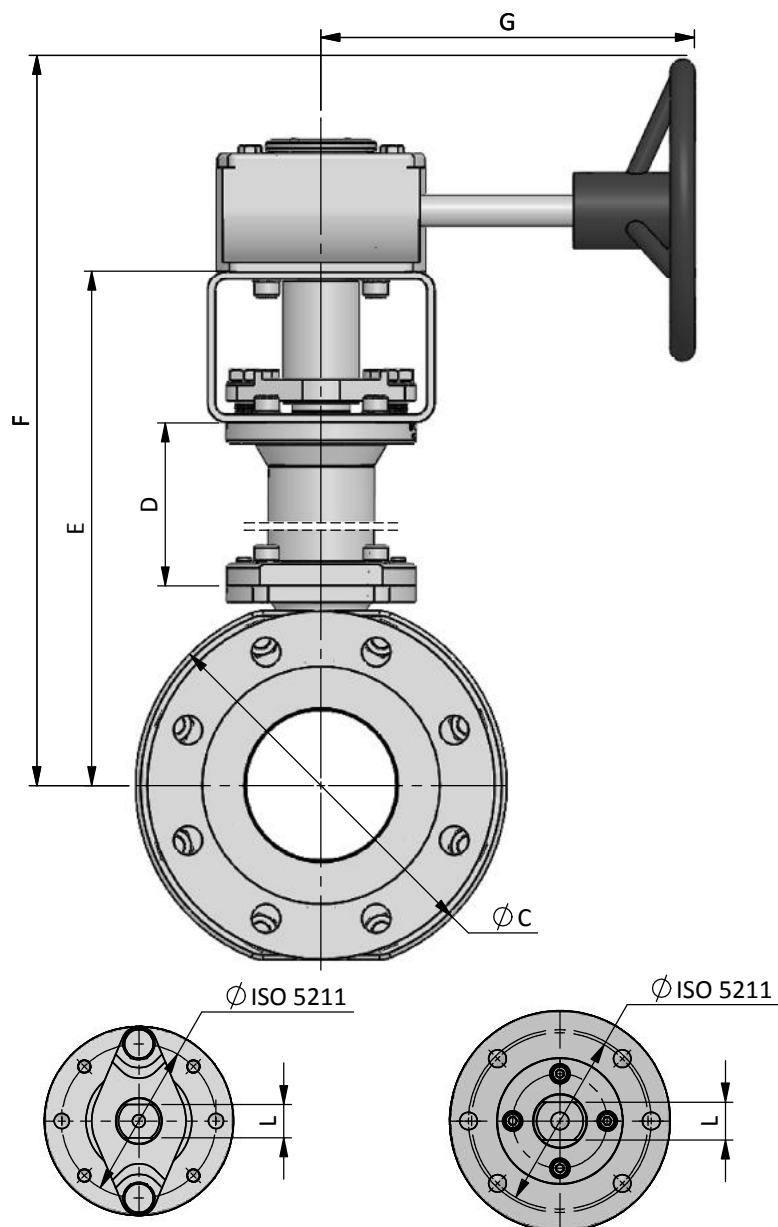
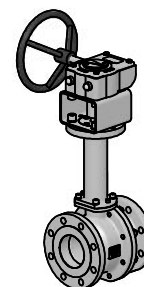
DN / Size		Dimensions								Automation					Weight Approx [kg]	
FULL BORE		Ball Port	F1		F4		C	D	E	F	G	H	I	ISO 5211	F1	F4
mm	inch		A	B	A	B										
15	½"	15.1	130	95	115	95	150	150	245	22.5	10	10	6	F04	-	-
20	¾"	20.6	150	105	120	105	180	150	255	23.5	11.5	12	7.5	F04	-	-
25	1"	25.4	160	115	125	115	180	150	260	23.5	11.5	12	7.5	F04	-	-
32	1¼"	31.8	180	140	130	140	210	175	305	30	15	16	11	F05	-	-
40	1½"	38.1	200	150	140	150	210	175	310	30	15	16	11	F05	-	-
50	2"	49.0	230	165	150	165	300	200	360	36	15	20	14	F07	-	-



BILL OF MATERIALS

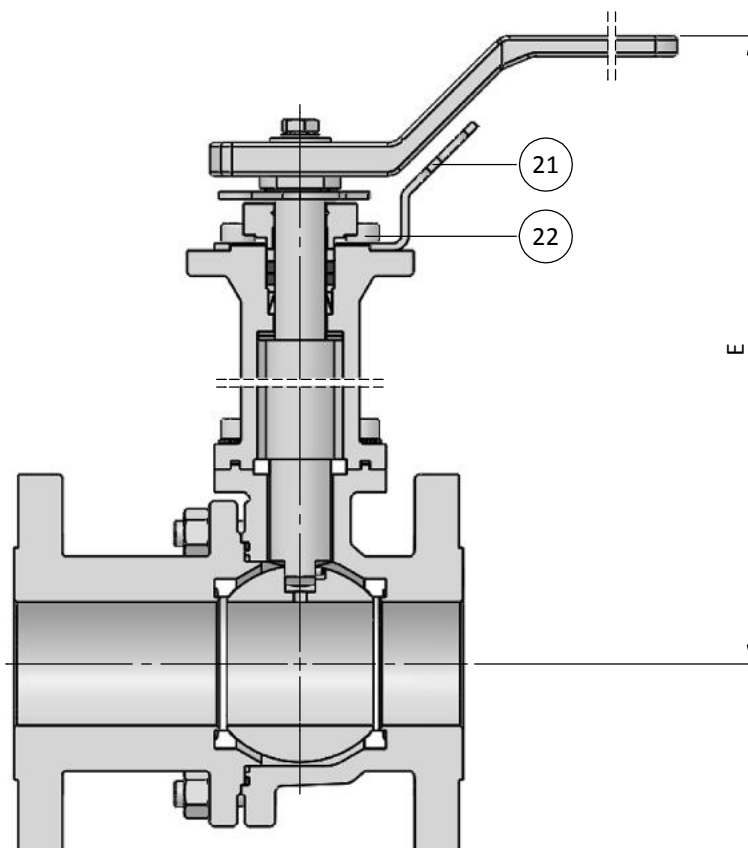
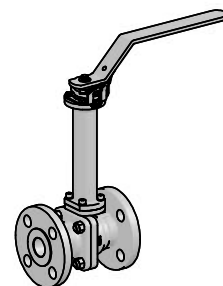
Part	Qt.	Description	STAINLESS STEEL VERSION
1	1	Body	1.4408
2	1	End	1.4408
3	1	Ball	A351 CF8M
4	1	Stem	HS STAINLESS ST.
5	2	Seat	TFM 1600
6	1	1st Body Seal	PTFE
7	1	2nd Body Seal	GRAPHITE
8	1	Stem Packing Set	GRAPHITE + PEEK
9	1	Bearing	PTFE
10	1	Extension	A479 316/L
11	1	Extension Seal	316L + TFM 1600
12	2	Extension "L" Seal	TFM 1600 + GRAPHITE
13	1	Gland Packing	A351 CF8M A479 316/L
14	2	Gland Packing Bolt	STAINLESS ST. 316
15	2	Gland Packing Spring	STAINLESS ST. 316
16	1	Bracket	STAINLESS ST. 304
17	-	Stud	A4 CL.70
18	-	Nut	A4 CL.70
19	1	Gearbox	CAST IRON

↘ TYPICAL SPARE PARTS



Class	DN / Size		Dimensions											Automation						Weight Approx [kg]	
	FULL BORE		Ball Port	F1		F4		C	D	E	F	G	H	I	J	K	L	ISO 5211	Gearbox		
	mm	inch		A	B	A	B														
PN16	65	2½"	62	290	185	170	185	154	200	395	520	220	200	43.5	20.5	24	18	F10	AB215-15	-	-
	80	3"	75	310	200	180	200	177	250	455	595	250	200	43.5	20.5	24	18	F10	AB550-20	-	-
	100	4"	100	350	220	190	220	230	250	485	675	285	300	51	26	30	22	F10	AB550-20	-	-
	150	6"	150	-	-	350*	285	340	300	600	890	310	500	57.5	35	42	30	F14	AB880-20	-	-
PN40	65	2½"	62	290	185	170	185	154	200	395	520	220	200	43.5	20.5	24	18	F10	AB215-15	-	-
	80	3"	75	310	200	180	200	177	250	455	645	285	300	43.5	20.5	24	18	F10	AB550-20	-	-
	100	4"	100	350	235	190	235	230	250	485	725	300	400	51	26	30	22	F10	AB550-20	-	-

*Face to face according to F5

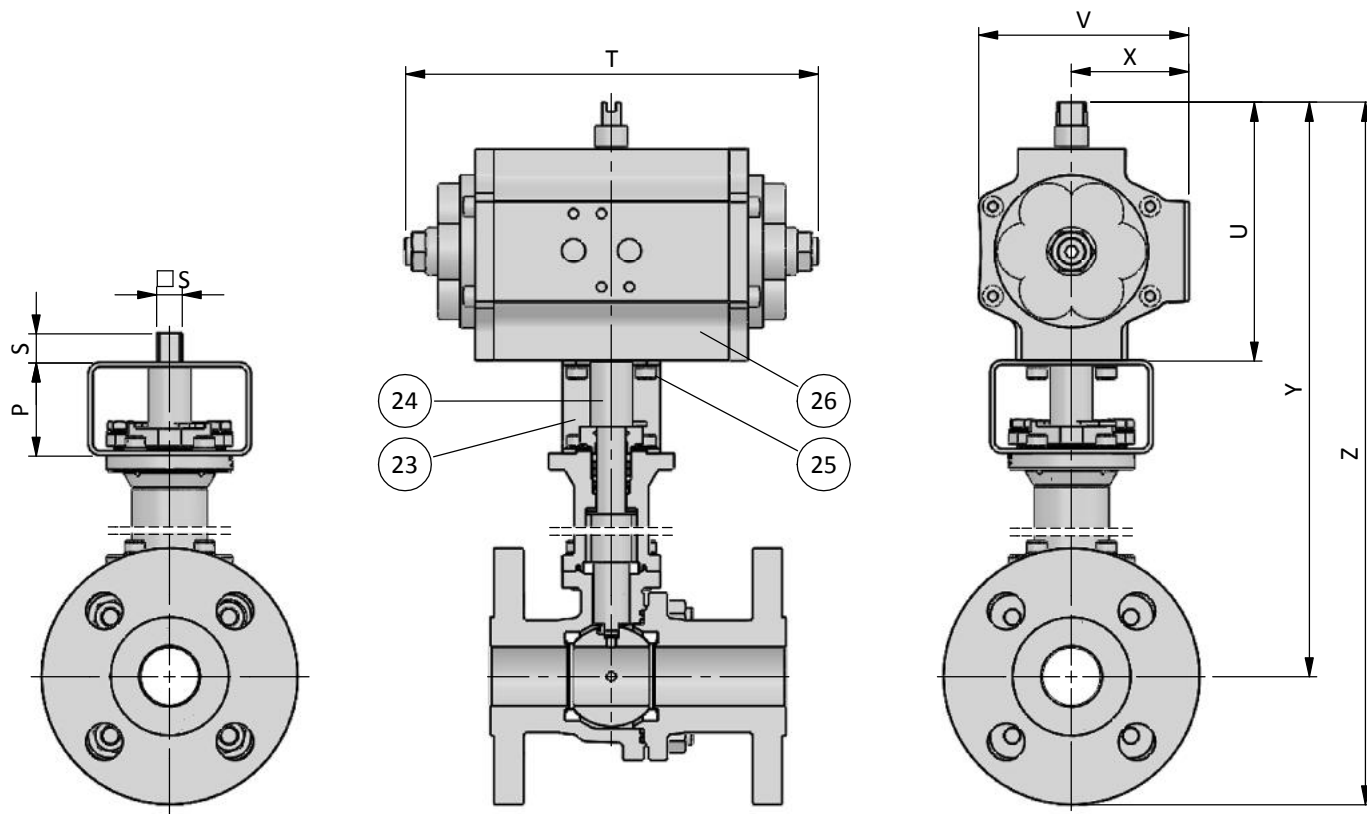
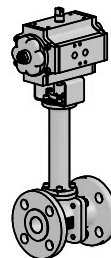


BILL OF MATERIALS

Part	Qt.	Description	STAINLESS ST. VERSION
21	1	Locking Plate	STAINLESS ST. 316
22	1	Bolt	A4 CL.70

DN / Size		Dimensions
FULL BORE		E
mm	inch	
15	½"	245
20	¾"	255
25	1"	260
32	1¼"	305
40	1½"	310
50	2"	360

Larger size valves available with lockable gearboxes

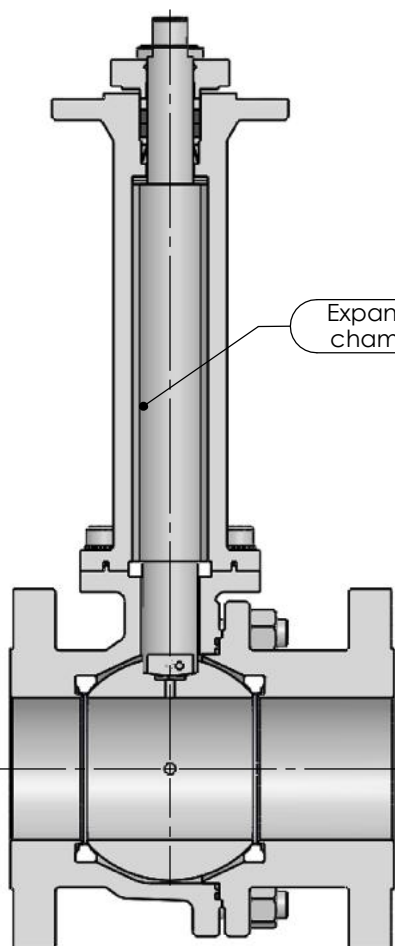
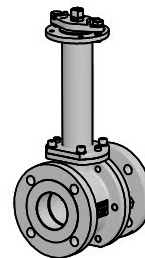


BILL OF MATERIALS

Part	Qt.	Description	Material
23	1	Bracket	STAINLESS ST. 304
24	1	Stem Extension	HS STAINLESS ST.
25	8	Bolt	A4 CL.70
26	1	Pneumatic Actuator	ALUMINIUM

DN / Size		Actuator *																		
FULL BORE		PN16									PN40									
mm	inch	P	S	REF.	T	U	V	X	Y	Z	P	S	REF.	T	U	V	X	Y	Z	
15	½"	-	-	-	-	-	-	-	-	-	40	17	008-10	233	131	112	57	355	405	
20	¾"	-	-	-	-	-	-	-	-	-	40	17	008-10	233	131	112	57	365	415	
25	1"	-	-	-	-	-	-	-	-	-	40	19	012-08	280	131	112	57	365	425	
32	1¼"	-	-	-	-	-	-	-	-	-	50	22	030-18	286	189	169	85	470	535	
40	1½"	-	-	-	-	-	-	-	-	-	50	27	040-18	344	199	169	85	485	560	
50	2"	-	-	-	-	-	-	-	-	-	60	27	060-20	377	230	195	100	570	650	
65	2½"	100	36	100-18	440	246	210	108	640	730	100	36	140-24	445	272	232	120	665	760	
80	3"	100	36	140-24	445	272	232	120	730	830	100	36	200-20	537	272	232	120	730	830	
100	4"	100	46	250-40	460	340	305	151	825	935	120	46	370-20	670	340	305	151	845	960	
150	6"	100	55	500-32	794	450	406	207	1050	1200	-	-	-	-	-	-	-	-	-	

*Pneumatic Actuators selected for TFM1600 seats considering input air pressure of 5.5bar and minimum 50% safety margin



Expansion
chamber

← FLOW DIRECTION

Flow Direction
Indicator

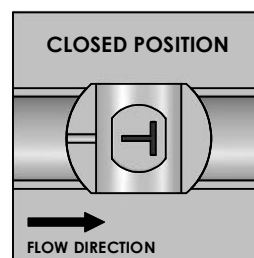
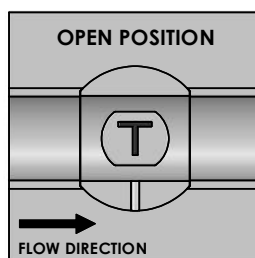


Stem Alignment

Stem Alignment

→ FLOW DIRECTION

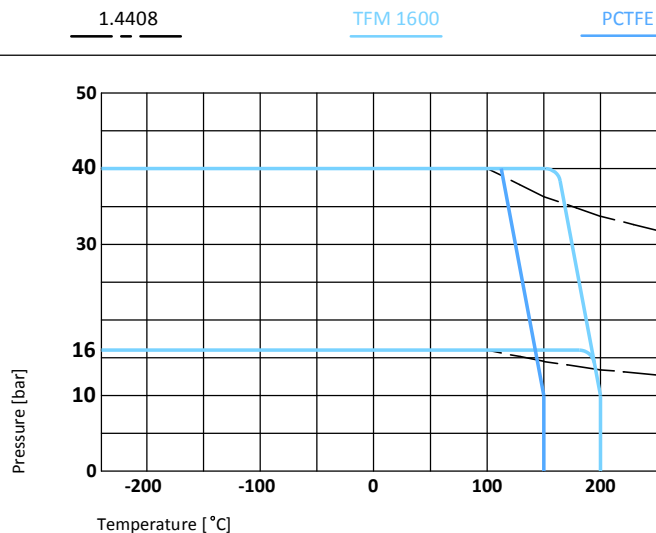
DN SIZE		Expansion Chamber
FULL BORE		
mm	inch	cm ³
15	½"	9
20	¾"	18
25	1"	18
40	1½"	33
50	2"	53
65	2½"	65
80	3"	88
100	4"	154
150	6"	245



STEM ALIGNMENT SAFETY DESIGN

RIB AND GROOVE DESIGN BETWEEN THE BALL AND THE STEM TO GUARANTEE THE ALIGNMENT OF THE UPSTREAM RELIEF HOLE AVOIDING INCORRECT INSTALLATIONS. POSITION OF THE UPSTREAM RELIEF HOLE VISIBLE ON TOP OF THE STEM.

Pressure - Temperature Rating



Work Conditions

Material		mOT* [°C]	MOT* [°C]
1.4408	TFM 1600	-196	200
	PCTFE	-196	150

*mOT - minimum Operating Temperature.

*MOT - Maximum Operating Temperature at 10 bar

DN / SIZE	Rating	
	PN16	PN40
FB 15 (½") to 150 (6")	PN16 16 bar	PN40 40 bar

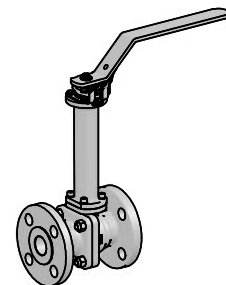
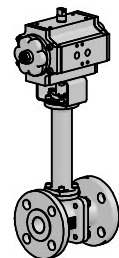
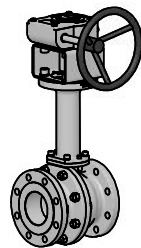
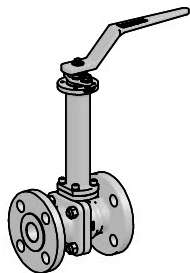
DN / Size		Torque Valve Figure [Nm] *		Maximum Allowable Stem Torque [Nm]	Flow Coefficient Cv
		PN16	PN40		
FULL BORE		BTO		MAST	
mm	inch	TFM 1600			
15	½"	-	10	40	
20	¾"	-	17	71.5	
25	1"	-	28	71.5	
32	1¼"	-	50	200	
40	1½"	-	70	200	
50	2"	-	115	385	
65	2½"	150	215	715	
80	3"	210	350	715	
100	4"	400	600	1420	
150	6"	1000	-	4075	

*Values without safety margin

Reference BTO 100% - RTO 55% | ETO 75% | BTC 75% | RTC 55% | ETC 80%

CERTIFICATION	CONSTRUCTION STANDARDS	TEST STANDARDS
CE Certification acc. to TPED 2010/35/EU (on going process)	ASME B16.34 ISO 17292	Pressure tests according to: EN12266-1 / API 598 / ISO 5208 Rate A
CE Certification acc. to PED 2014/68/EU	ASME B16.5	Ambient temperature tests applied: Hydrostatic Shell Test
Fire Safe Design acc. to API 607Ed.6/ISO 10497	ASME B16.10	Hydrostatic Seat Test
CE Certification acc. to ATEX II 2GD 2014/34/EU	MSS-SP-25	Pneumatic Tightness Test
Quality System Certified acc. to ISO 9001	ISO 5211	Pneumatic Seat Test
		Cryogenic pressure test according BS 6364 available under request
		EN 10204 type 3.1 Certificate

Standards acc. to the latest available revision



SERIE	CLASS	VERSION	PORT	DN	ENDS	BODY	BALL STEM	BOLTING	SEATS 1ª SEAL	PACKING 2ªSEAL	OPTIONS
CCF	1 - PN16 2 - PN40	6 - DIN	F - FB	015	FLANGED RF	F - 1.4408	O - A351 CF8M HS STAINLESS ST.	F - B8M cl.2	2 - TFM 1600 PTFE 8 - PCTFE PTFE	1 - V TFM + Grafite Grafite 2 - V TFM PTFE	B - BS 6364 Extension
				020	F2 - DIN F4/5 Form B	Z - Others	Z - Others				F - Bracket Automation
				025	F3 - DIN F1 Form B						G - Gear Box
				040							H - Actuators
				050							I - Switch Box / Limit Swiches
				065							L - Locking Lever/Handle
				080							O - Oval Lever/Handle
				100							R - Bare Shaft / Bare Stem
				150							S - Solenoid Valve
											W - "V" Ball Port
											Z - Others

Example:

CCF26F015F3F3FFF21

CCF16F100F2F2FFF21H

CRYOGENIC RANGE

CRYOGENIC RANGE
CXF / CBF / CSF / CVT



INDUSTRIAL RANGE

CF Series
2 split body - Floating
CI 150/300
DN ½" (15) to 8" (200)



BF Series
2 split body - Floating
CI 150 to 600
DN ½" (15) to 4" (100)



SF Series
3 pieces bolted - Floating
CI 300 to 800
DN ½" (15) to 4" (100)



HF Series
3 pieces bolted - Floating
CI 1500/2500
DN ½" (15) to 2" (50)



ST Series
Multi-ways - Floating
CI 150 to 600
DN ¾" (10) to 2" (50)



VTR Series
3 pieces bolted - Trunnion
CI 150 to 2500
DN ½" (15) to 12" (300)



OTHER RANGE

SANITARY RANGE
XP / RP / LP / MP / QP



METALLIC SEATS RANGE
CFM / BFM / XFM / SFM / VTM



