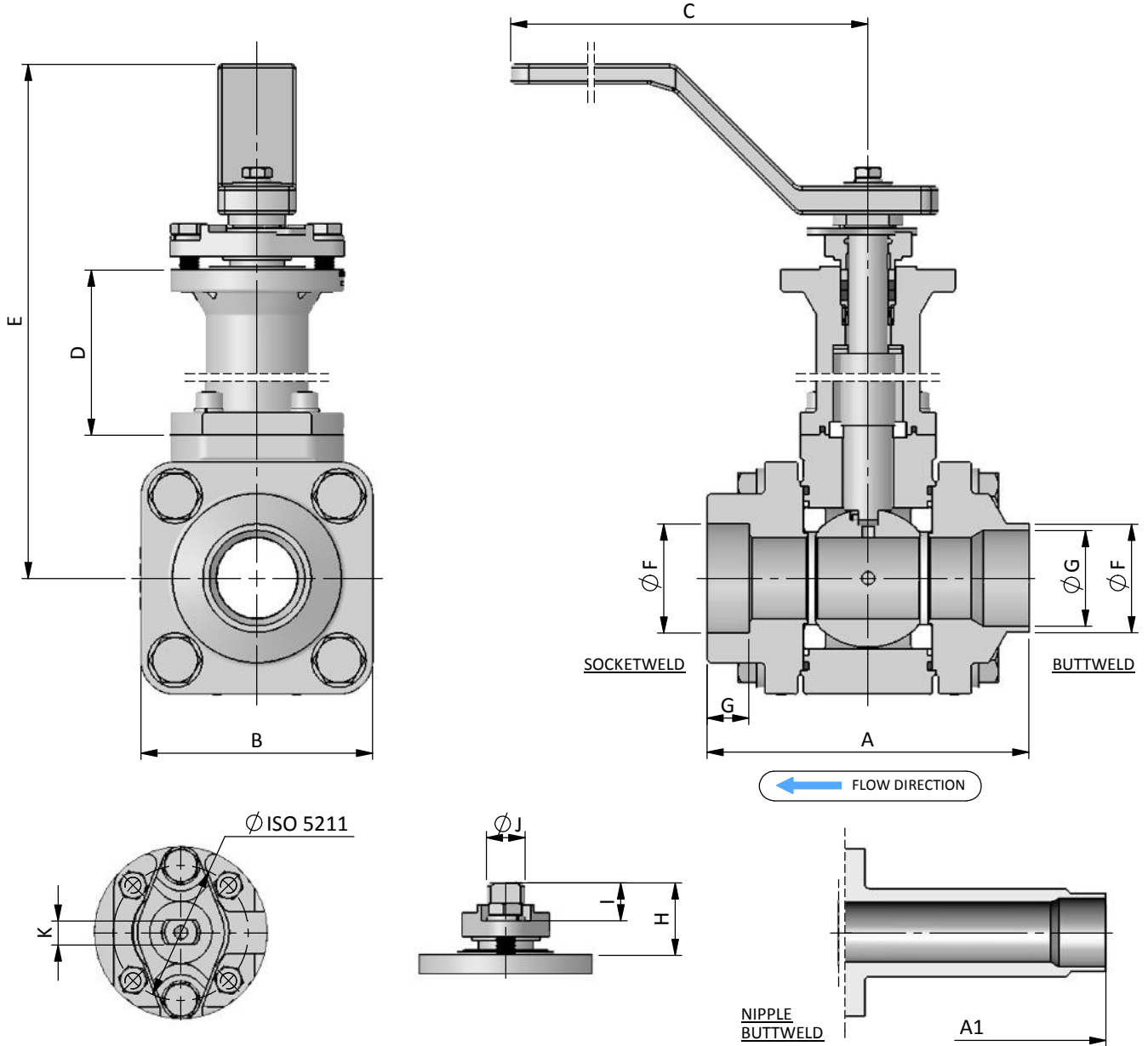
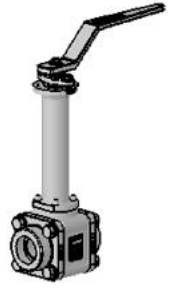


BILL OF MATERIALS

Part	Qt.	Description	STAINLESS STEEL VERSION
1	1	Body	A351 CF3M
2	2	End	A351 CF3M
3	1	Ball	A351 CF8M
4	1	Stem	HS STAINLESS ST.
5	2	Seat	TFM 1600
6	2	1st Body Seal	PTFE
7	2	2nd Body Seal	GRAPHITE
8	1	Bearing	PTFE
9	1	Extension	A479 316/L
10	1	Extension Seal	GRAPHITE
11	2	Extension Thrust Seal	316/L + 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	8	Bolt	A193 Gr. B8M cl.2
18	1	Handle Fastener	STAINLESS ST. 316
19	1	Handle	A351 CF8M

↳ TYPICAL SPARE PARTS

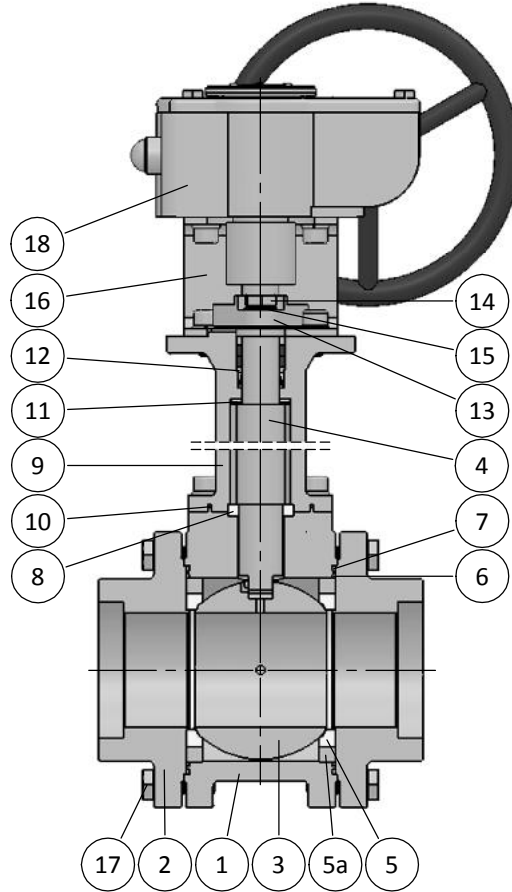
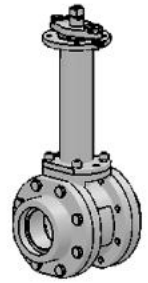


DN / Size				Dimensions								Automation					Weight Approx. [kg]				
FULL BORE		REDUCED BORE		Ball Port	A	A1	B	C	D	E	F	G	H	I	J	K	ISO 5211	Short	Long		
mm	inch	mm	inch																		
15	½"	20	¾"	15.1	75	250	53	150	150	245	BW		22.5	10	10	6	F04	2	2.5		
20	¾"	25	1"	20.6	90	260	64.5	180	150	255			23.5	11.5	12	7.5	F04	3.2	3.5		
25	1"	32	1¼"	25.4	100	270	72	180	150	260			23.5	11.5	12	7.5	F04	3.8	4.2		
32	1¼"	40	1½"	31.8	115	280	86	210	175	305			SW		30	15	16	11	F05	6.3	7
40	1½"	50	2"	38.1	125	290	96	210	175	310					30	15	16	11	F05	7.8	8.2
50*	2"	65	2½"	49.0	165	310	ø144	300	200	360					35	15	20	14	F07	13.7	14

Nipple butt weld only available in full bore version
 DN65 Reduced bore only available in Butt weld version

*Valve construction is similar to DN65 ÷ DN100 (page 4-5)

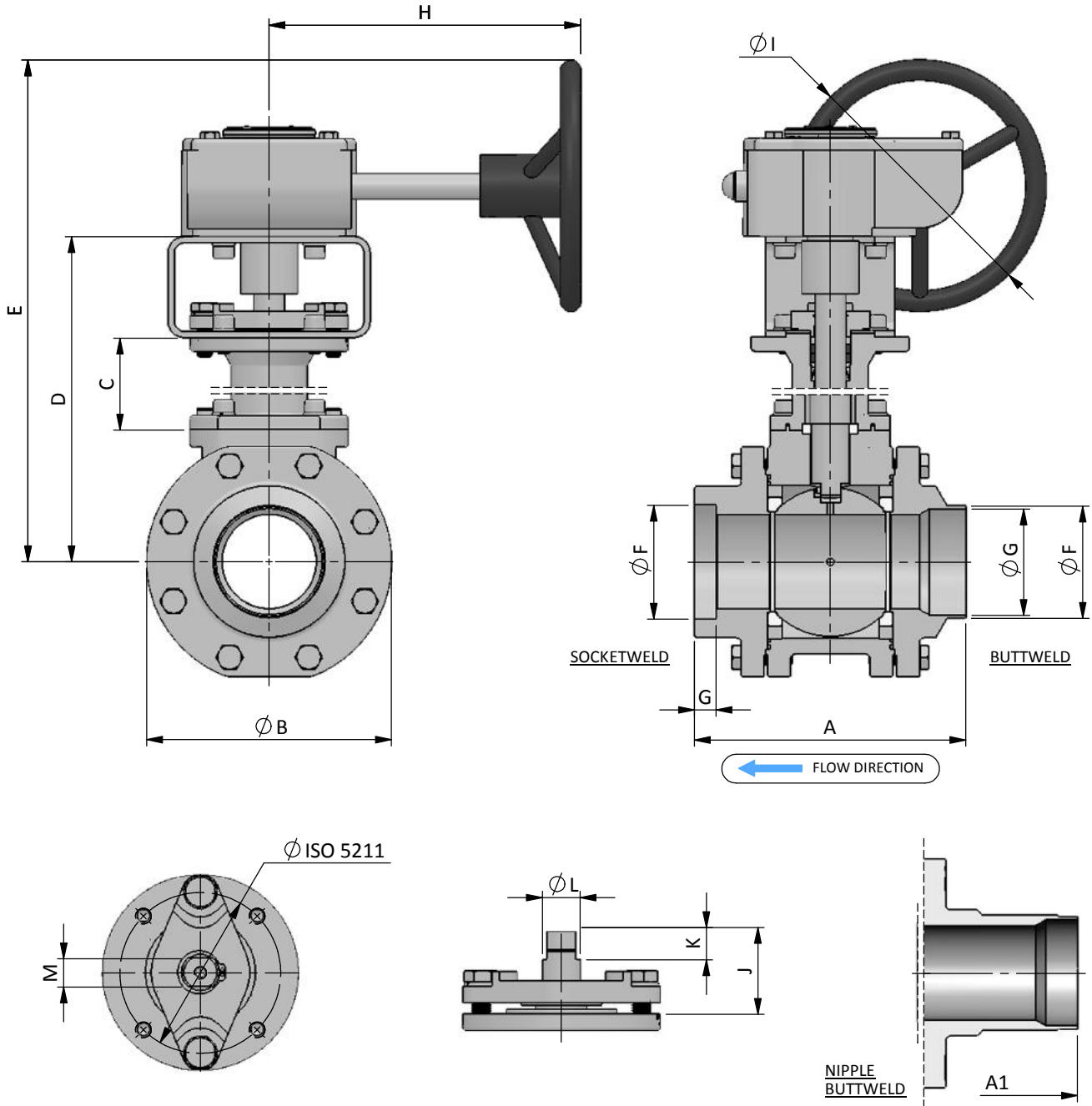
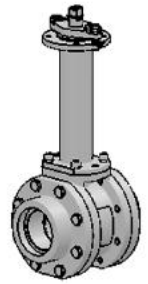
CXF SERIES
CL300 (750 psi)
FULL BORE - DN 65 (2½") ÷ 100 (4")
REDUCED BORE - DN 80 (3") ÷ 100 (4")
STANDARD
BILL OF MATERIALS



BILL OF MATERIALS

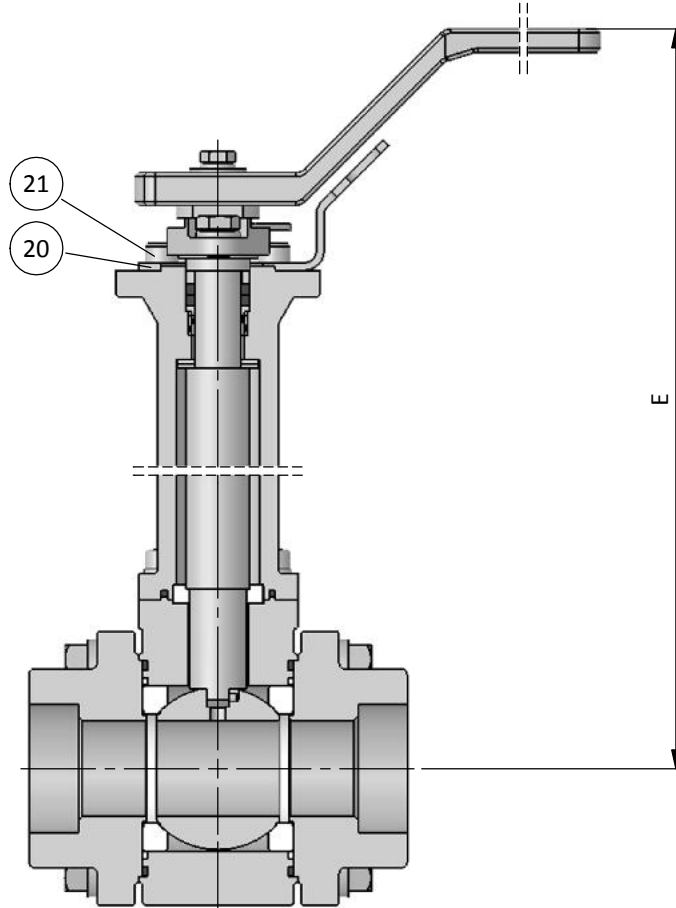
Part	Qt.	Description	STAINLESS STEEL VERSION
1	1	Body	A351 CF3M
2	2	End	A351 CF3M
3	1	Ball	A351 CF8M
4	1	Stem	HS STAINLESS ST.
5a	2	Seat Ring	A479 316/L
5	2	Seat	TFM 1600
6	2	1st Body Seal	PTFE
7	2	2nd Body Seal	GRAPHITE
8	1	Bearing	PTFE
9	1	Extension	A479 316/L
10	1	Extension Seal	GRAPHITE
11	2	Extension Thrust Seal	TFM 1600
12	1	Stem Packing Set	GRAPHITE + PEEK
13	1	Gland Packing	A351 CF8M
14	2	Gland Packing Bolt	STAINLESS ST. 316
15	2	Gland Packing Spring	STAINLESS ST. 316
16	1	Bracket	STAINLESS ST. 304
17	-	Bolt	A193 B8M cl.2
18	1	Gearbox	CAST IRON

↳ TYPICAL SPARE PARTS



DN / Size				Dimensions										Automation					Weight Approx. [kg]			
FULL BORE		REDUCED BORE		Ball Port	A	A1	B	C	D	E	F	G	H	I	J	K	L	M	ISO 5211	Gearbox	Short	Long
mm	inch	mm	inch																			
65	2½"	80	3"	62	190	330	174	200	395	520	SW		220	200	43.5	20.5	24	18	F10	AB215	28.5	29
80	3"	100	4"	75	215	350	194	250	455	645			285	300	43.5	20.5	24	18	F10	AB550	45.5	46
100	4"	N/A		100	265	390	244	250	485	725	BW		300	400	47.5	26	30	22	F10	AB550	65	65.5

Reduced bore only available in Butt weld version

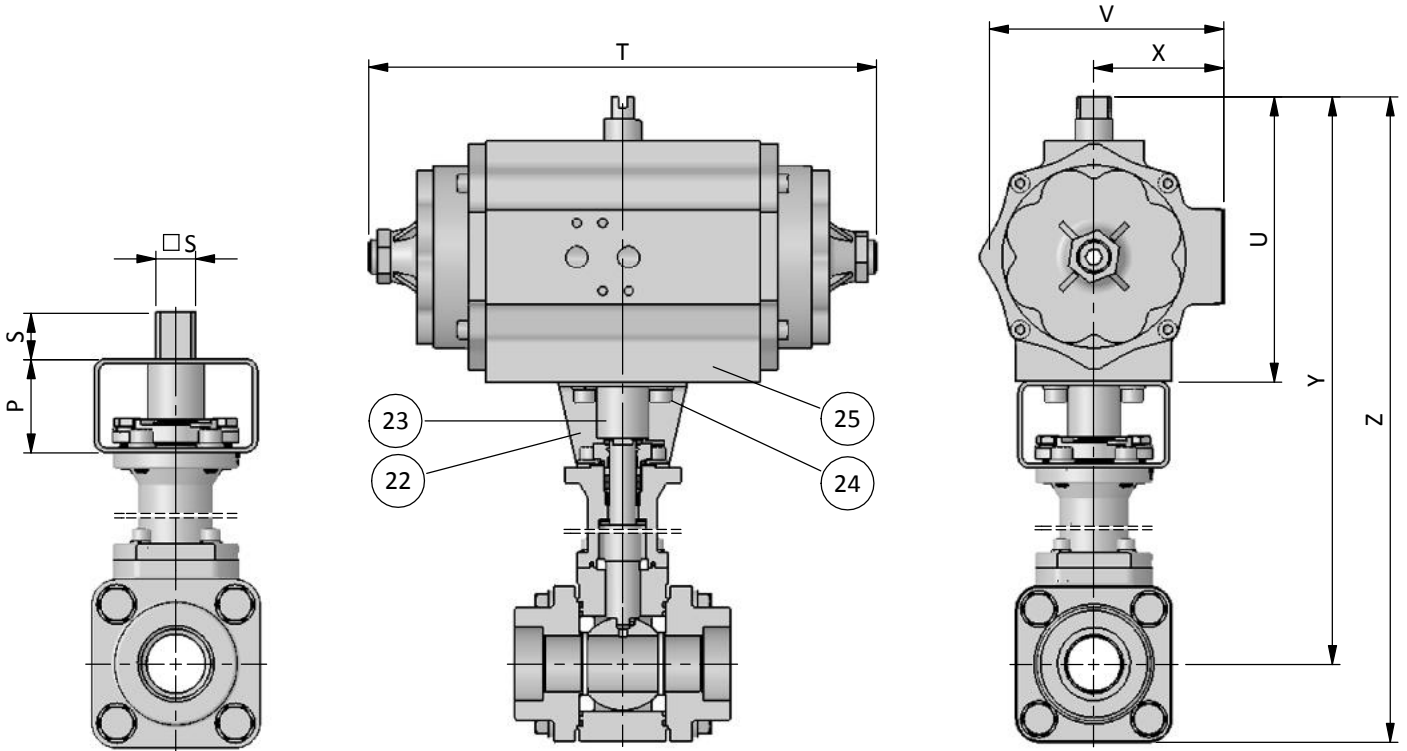


BILL OF MATERIALS

Part	Qt.	Description	STAINLESS STEEL VERSION
20	1	Locking Plate	STAINLESS ST. 316
21	3	Bolt	STAINLESS ST. 316

DN / Size				Dimensions
FULL BORE		REDUCED BORE		E
mm	inch	mm	inch	
15	½"	20	¾"	245
20	¾"	25	1"	255
25	1"	32	1¼"	260
32	1¼"	40	1½"	305
40	1½"	50	2"	310
50	2"	65	2½"	360

Larger size valves available with lockable gearboxes

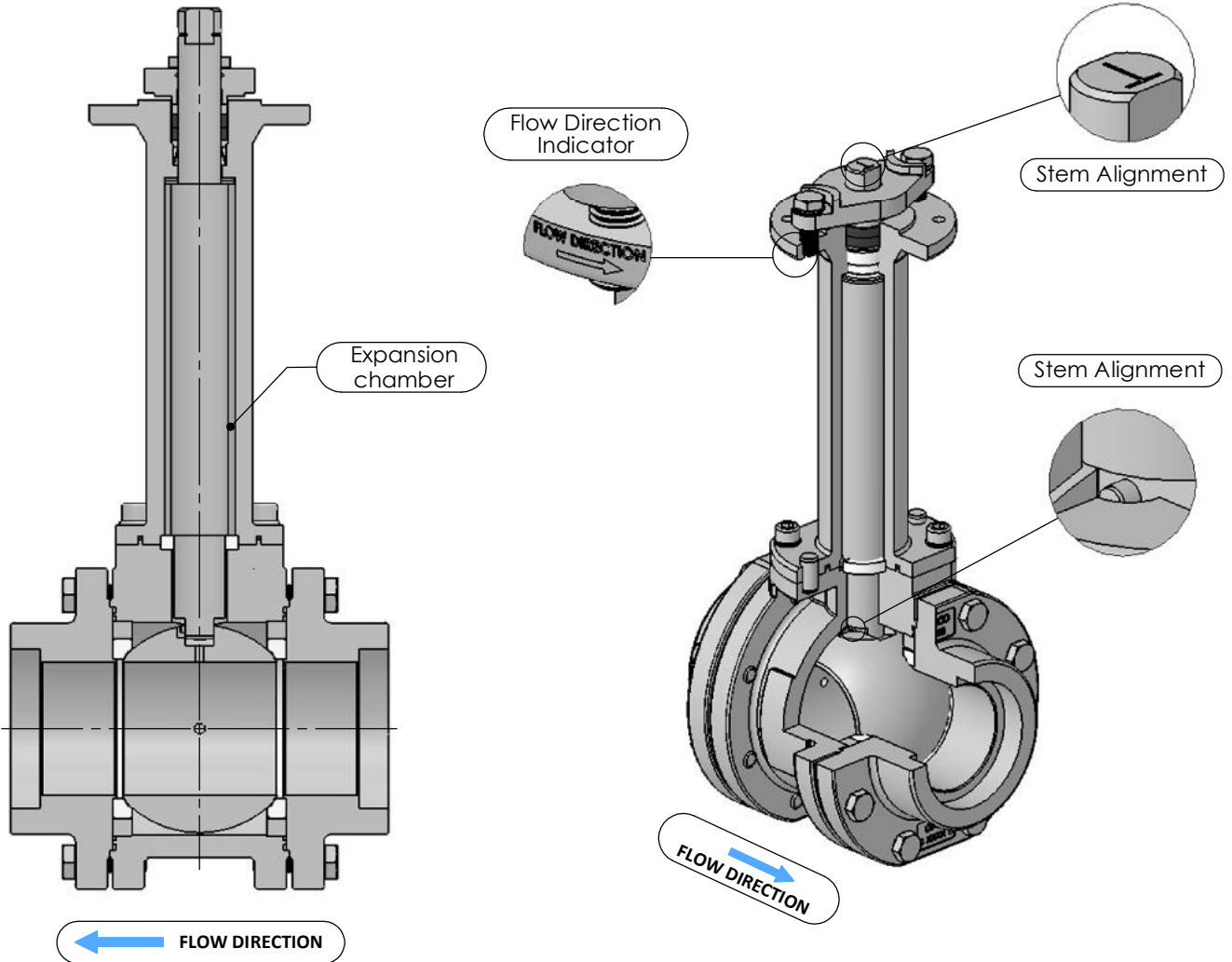
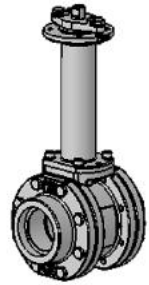


BILL OF MATERIALS

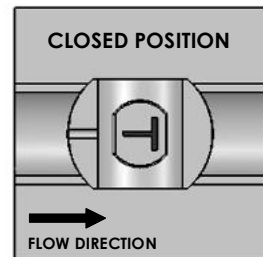
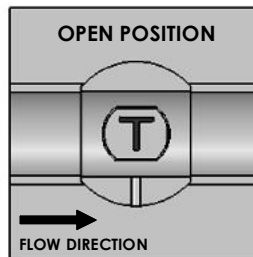
Part	Qt.	Description	Material
22	1	Bracket	STAINLESS ST. 304
23	1	Stem Extension	HS STAINLESS ST.
24	8	Bolt	STAINLESS ST. 316
25	1	Pneumatic Actuator	ALUMINIUM

DN / Size				Automation		Actuator *						
FULL BORE		REDUCED BORE		P	S	REF.	T	U	V	X	Y	Z
mm	inch	mm	inch									
15	½"	20	¾"	40	17	KPM008-10	233	131	112	57	355	385
20	¾"	25	1"	40	19	KPM012-08	280	131	112	57	365	395
25	1"	32	1¼"	40	22	KPM020-14	294	151	133	70	385	425
32	1¼"	40	1½"	50	27	KPM040-18	344	199	169	85	475	520
40	1½"	50	2"	50	27	KPM060-20	377	230	195	100	515	565
50	2"	65	2½"	60	27	KPM060-20	377	230	195	100	565	630
65	2½"	80	3"	100	36	KPM140-24	445	272	232	120	665	745
80	3"	100	4"	100	36	KPM250-40	460	340	305	151	795	890
100	4"	N/A		120	46	KPM370-20	670	340	305	151	845	955

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

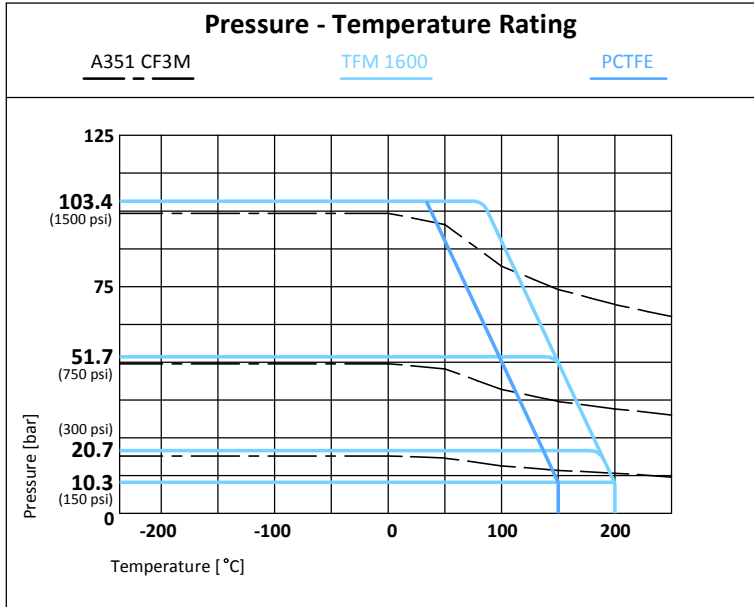


DN SIZE				Expansion chamber
FULL BORE		REDUCED BORE		
mm	inch	mm	inch	cm ³
15	½"	20	¾"	9
20	¾"	25	1"	18
25	1"	32	1¼"	18
32	1¼"	40	1½"	33
40	1½"	50	2"	33
50	2"	65	2½"	53
65	2½"	80	3"	65
80	3"	100	4"	88
100	4"	N/A		154



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.



Work Conditions			
Material		mOT* [°C]	MOT* [°C]
A351 CF3M	TFM 1600	-196	200
	PCTFE	-196	150

*mOT - minimum Operating Temperature.
 *MOT - Maximum Operating Temperature at 10 bar

DN / SIZE	Rating
FB 15 (½") to 40 (1½") RB 20 (¾") to 50 (2")	103.4 bar / 1500 psi
FB 50 (2") to 100 (4") RB 65 (2½") to 100 (4")	51.7 bar / 750 psi

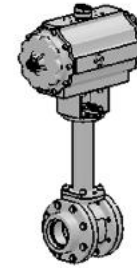
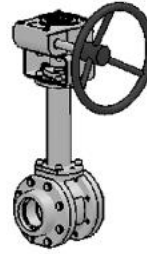
DN / Size				Torque Valve Figure [Nm]*	Maximum Allowable Stem Torque [Nm]	Flow Coefficient Cv
FULL BORE		REDUCED BORE		BTO	MAST	
mm	inch	mm	inch	TFM 1600		
15	½"	20	¾"	15	40	15
20	¾"	25	1"	25	71.5	35
25	1"	32	1¼"	35	71.5	50
32	1¼"	40	1½"	70	200	90
40	1½"	50	2"	110	200	135
50	2"	65	2½"	125	385	230
65	2½"	80	3"	250	715	380
80	3"	100	4"	400	715	575
100	4"	N/A		700	1420	965

*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 <i>(on going process)</i>	ASME B16.34 ISO 17292	Pressure tests according to: EN12266-1 / API 598 / ISO 5208 Rate A Ambient temperature tests applied: Hydrostatic Shell Test Hydrostatic Seat Test Pneumatic Tightness Test Pneumatic Seat Test Cryogenic pressure test according BS 6364 available under request EN 10204 type 3.1 Certificate
CE Certification acc. to PED 2014/68/EU	ASME B16.25 ASME B36.10M	
Fire Safe Design acc. to API 607Ed.6/ISO 10497	ASME B16.11	
CE Certification acc. to ATEX II 2GD 2014/34/EU	MSS-SP-25	
Quality System Certified acc. to ISO 9001	ISO 5211	

Standards acc. to the latest available revision



SERIE	CLASS	VERSION	PORT	DN	ENDS	BODY	BALL STEM	BOLTING	SEATS 1ª SEAL	PACKING 2ªSEAL	OPTIONS
CXF	3 - CL600	3	F - FB	015	BUTTWELD	C - A351 CF3M	O - A351 CF8M HS STAINLESS ST.	F - B8M cl.2	2 - TFM 1600 PTFE	1 - V TFM + Grafite Grafite	A - 2 Opposite sides Flattened Ends
	2 - CL300		R - RB	020	B1 - BW SCH 10	Z - Others	Z - Others	8 - PCTFE PTFE	2 - V TFM PTFE	B - BS 6364 Extension	
				025	B2 - BW SCH 40						F - Bracket Automation
				032	B3 - BW SCH 80						G - Gear Box
				040	B6 - BW ISO 1127 S1						H - Actuators
				050	B9 - OTHERS						I - Switch Box / Limit Swiches
				065	SOCKETWELD						L - Locking Lever/Handle
				080	C1 - SW ASME B16.11						O - Oval Lever/Handle
				100	C9 - OTHERS						R - Bare Shaft / Bare Stem
					INTEGRAL NIPPLE						S - Solenoid Valve
					N1 - BW SCH 10						W - "V" Ball Port
					N2 - BW SCH 40						Z - Others
					N3 - BW SCH 80						
					N6 - BW ISO 1127 S1						
					N9 - OTHERS						

Example:

CXF31F015B1D3COF21L

CXF11F100N6N6COF22H

CRYOGENIC RANGE

CRYOGENIC RANGE
CCF / CBF / CSF / CVT



INDUSTRIAL RANGE

CF Series
2 split body - Floating
Cl 150/300
DN ½" (15) to 4" (100)



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



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



HF Series
3 pieces bolted - Floating
Cl 1500/2500
DN ½" (15) to 1½" (40)



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



VTR Series
3 pieces bolted - Trunnion
Cl 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



