

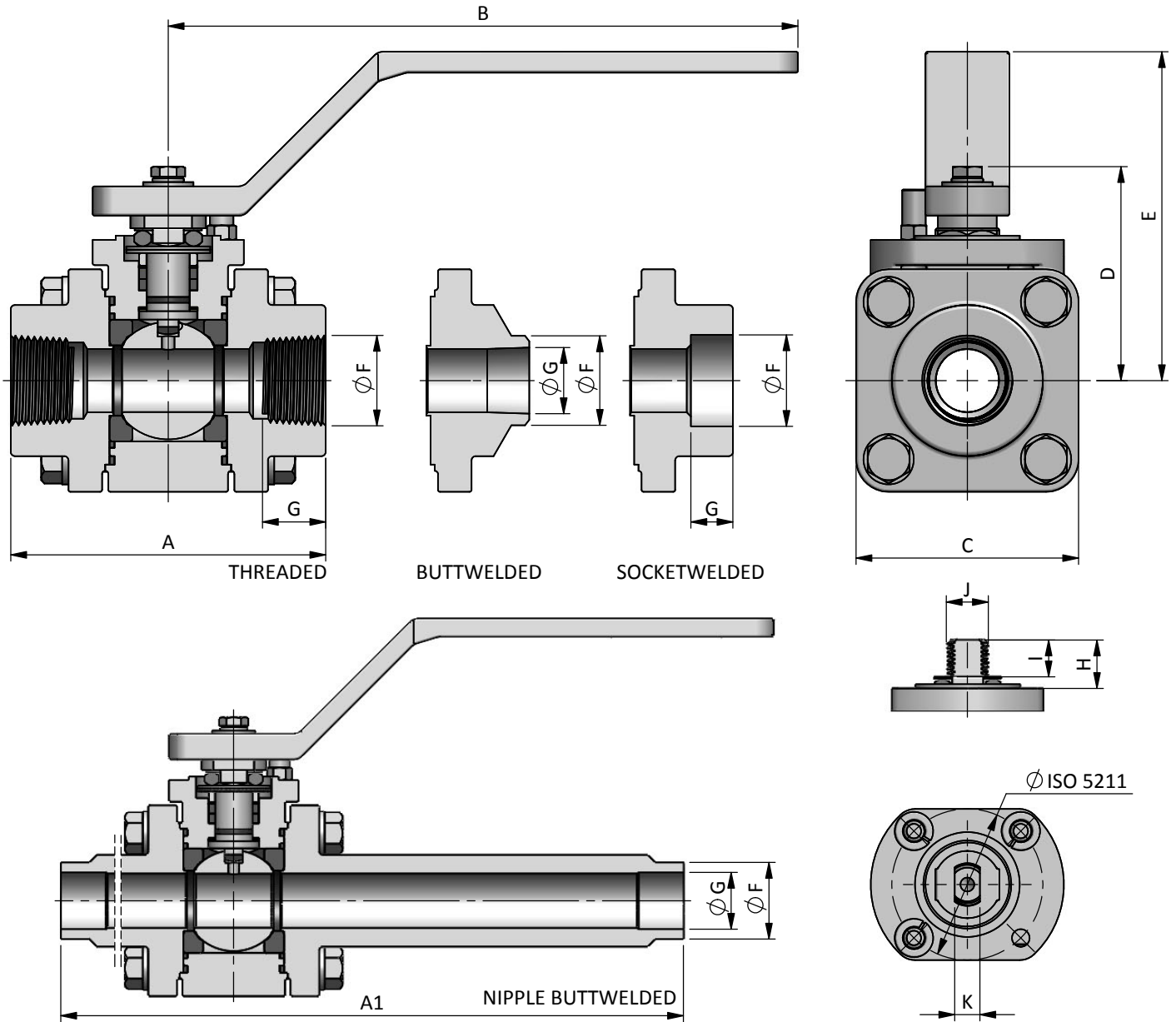
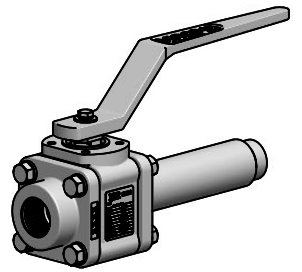
**BILL OF MATERIALS**

Part	Qt.	Description	CARBON STEEL	STAINLESS STEEL
1	1	Body	A216 WCB	A351 CF3M
2	2	End	A216 WCB	A351 CF3M
3	1	Ball	A351 CF8M	
4	1	Stem	A479 316/L	
5	2	Seat	↘	C-RPTFE
6	1	Stem Thrust Seals	↘	C-RPTFE + PEEK
7	2	1st Body Seal	↘	C-RPTFE
8	2	2nd Body Seal	↘	GRAPHITE
9	1	O'Ring	↘	FKM AED
10	1	Stem Packing Set	↘	GRAPHITE + PEEK
11	1	Gland Packing	STAINLESS ST. 316	
12	2	Disc Spring	STAINLESS ST. 316	
13	2	Stem Nut	STAINLESS ST. 316	
14	1	Locking Clip	STAINLESS ST. 316	
15	1	Stop Pin	STAINLESS ST. 316	
16	8	Bolt	A193 Gr. B7 ZINC.	A193 Gr. B8M cl.2
17	1	Handle	A351 CF8M	

↘ TYPICAL SPARE PARTS

## XFH SERIES

CL600 (1500 psi)  
 FULL BORE - DN 10 (3/8") ÷ 50 (2")  
 REDUCED BORE - DN 15 (1/2") ÷ 65 (2 1/2")  
 THREADED & WELDED ENDS  
 OVERALL DIMENSIONS

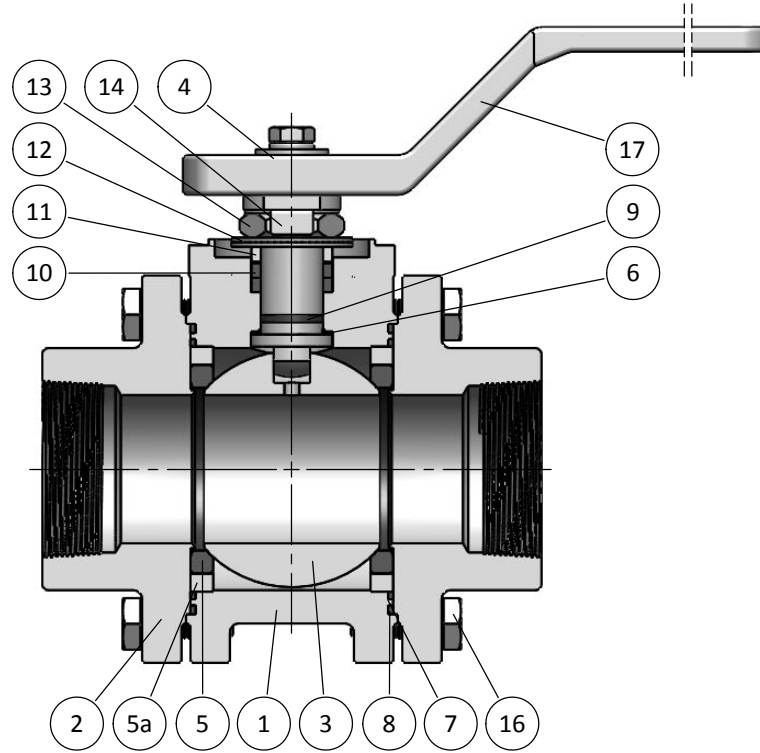
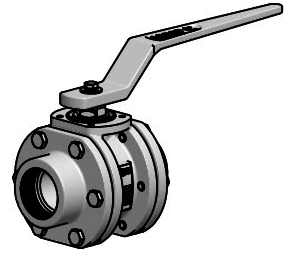


DN / Size				Dimensions								Automation					Weight Approx. [kg]		
FULL BORE		REDUCED BORE		Ball Port	A	A1	B	C	D	E	F	G	H	I	J	K	ISO 5211	Short	Long
mm	inch	mm	inch																
10	3/8"	15	1/2"	11.9	70	-	150	48	50	75	NPT BSPT BSP BW SW	10	7	10	6	F03	1	-	
15	1/2"	20	3/4"	15.1	75	250	150	53	55	80		10	7	10	6	F03	1.2	1.6	
20	3/4"	25	1"	20.6	90	260	180	64.5	65	95		16.5	9.5	12	7.5	F04	2	2.5	
25	1"	32	1 1/4"	25.4	100	270	180	72	70	100		16.5	9.5	12	7.5	F04	3	3.5	
32	1 1/4"	40	1 1/2"	31.8	115	280	210	86	85	120		21.5	12	16	11	F05	4.5	6	
40	1 1/2"	50	2"	38.1	125	290	210	96	90	125		22	12	16	11	F05	6	7	
50*	2"	65	2 1/2"	49.0	165	310	300	ø144	115	145		29	17.5	20	14	F07	10.5	11.5	

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

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

**XFH SERIES**  
CL400/300 (1000/750 psi)  
FULL BORE - DN 65 (2½") ÷ 100 (4")  
REDUCED BORE - DN 80 (3") ÷ 100 (4")  
**STANDARD**  
**BILL OF MATERIALS**



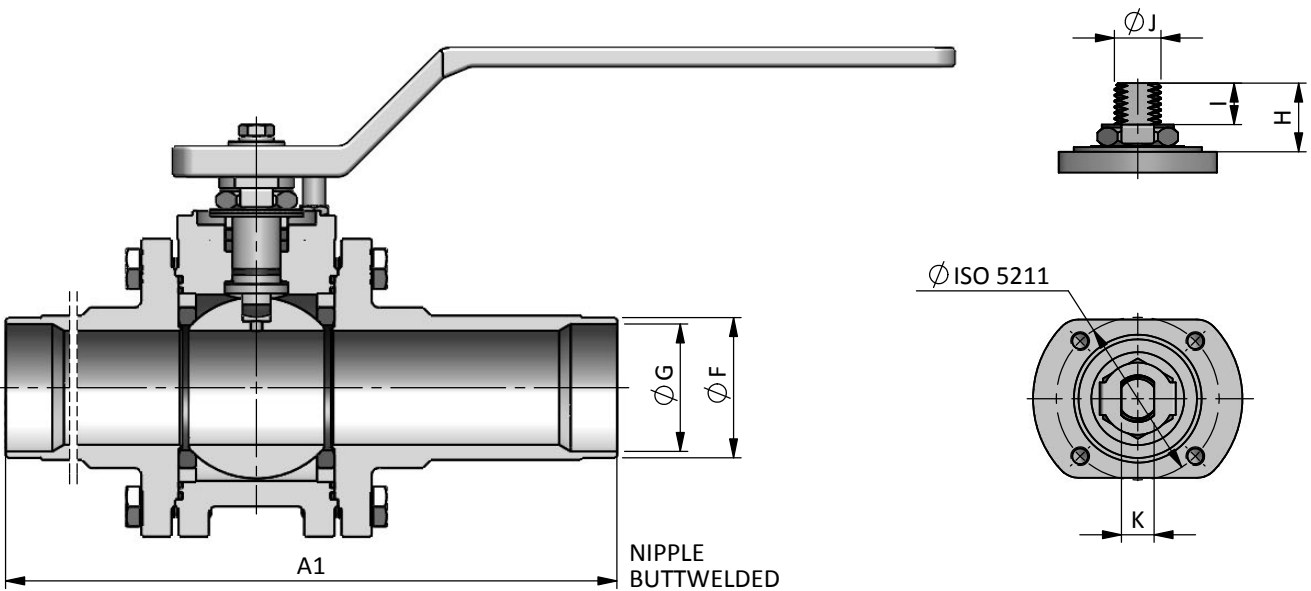
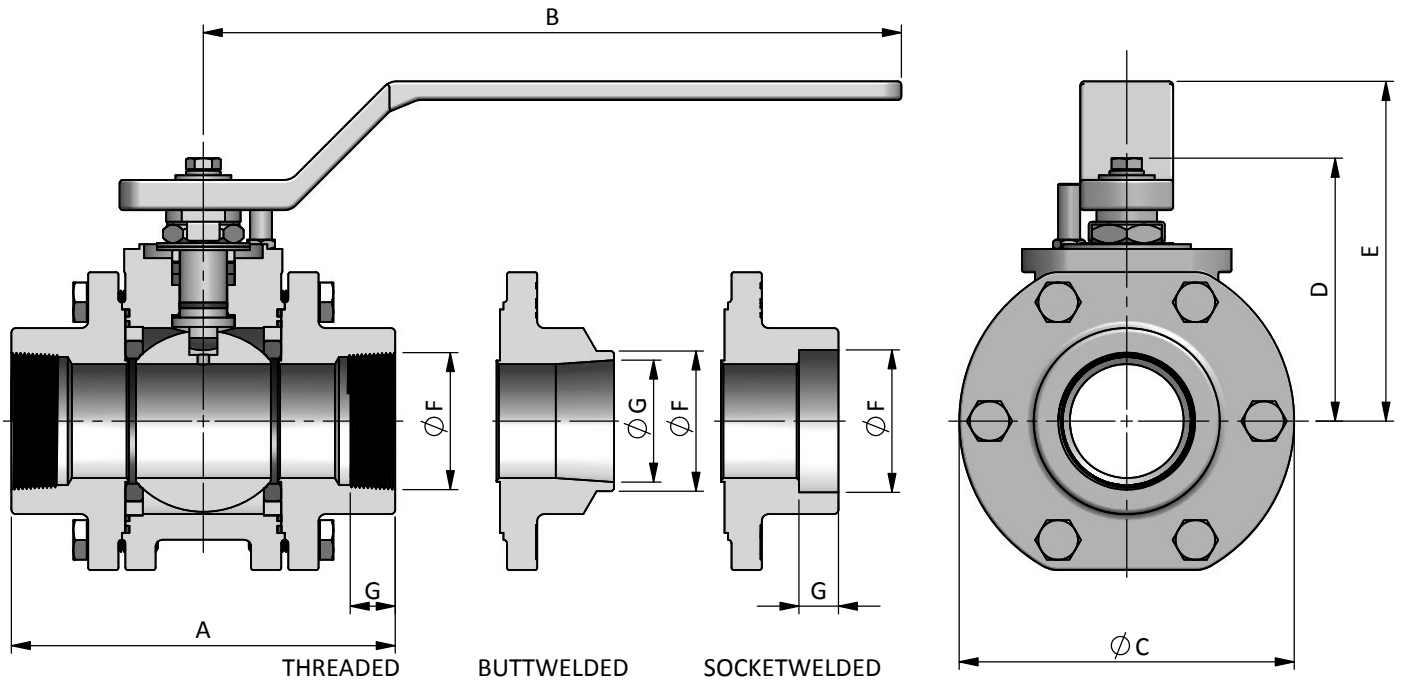
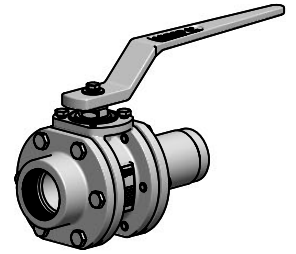
**BILL OF MATERIALS**

Part	Qt.	Description	CARBON STEEL	STAINLESS STEEL
1	1	Body	A216 WCB	A351 CF3M
2	2	End	A216 WCB	A351 CF3M
3	1	Ball	A351 CF8M	
4	1	Stem	A479 316/L	
5a	2	Seat Ring	A350 LF2 cl.1	A479 316/L
5	2	Seat	C-RPTFE	
6	1	Stem Thrust Seals	C-RPTFE + PEEK	
7	2	1st Body Seal	C-RPTFE	
8	2	2nd Body Seal	GRAPHITE	
9	1	O'Ring	FKM AED	
10	1	Stem Packing Set	GRAPHITE + PEEK	
11	1	Gland Packing	STAINLESS ST. 316	
12	1/2	Disc Spring	STAINLESS ST. 316	
13	2	Stem Nut	STAINLESS ST. 316	
14	1	Locking Clip	STAINLESS ST. 316	
15	1	Stop Pin	STAINLESS ST. 316	
16	-	Bolt	A193 Gr. B7 ZINC.	A193 B8M cl.2
17	1	Handle	A351 CF8M	

↘ TYPICAL SPARE PARTS

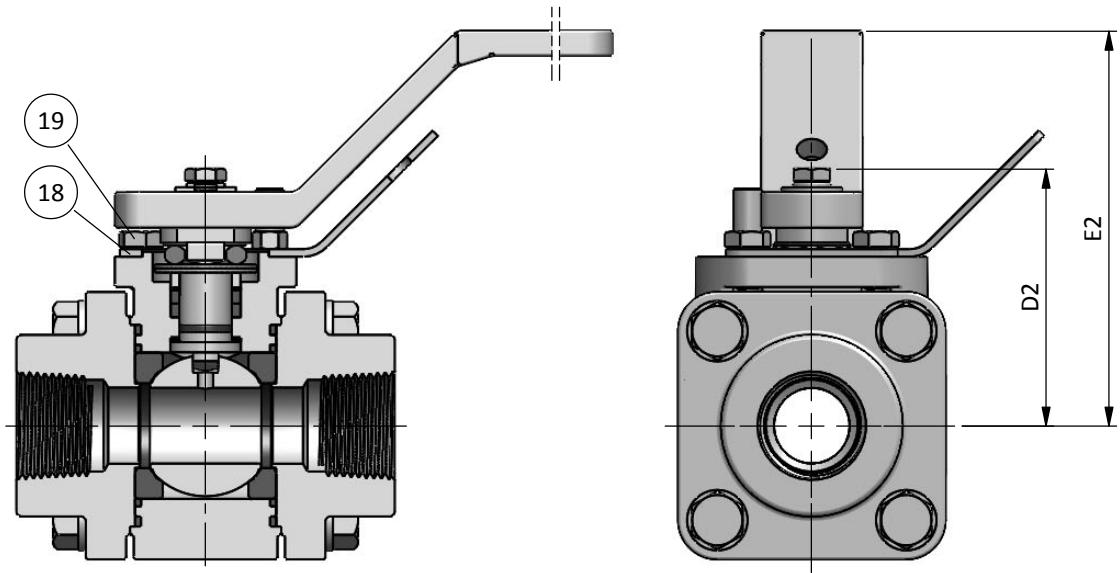
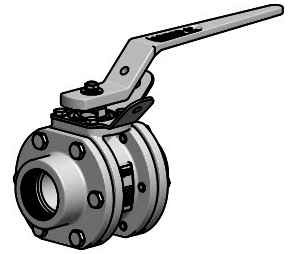
## XFH SERIES

CL400/300 (1000/750 psi)  
 FULL BORE - DN 65 (2½") ÷ 100 (4")  
 REDUCED BORE - DN 80 (3") ÷ 100 (4")  
 THREADED & WELDED ENDS  
 OVERALL DIMENSIONS



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															Short	Long
65	2½"	80	3"	62	190	330	360	174	140	175	NPT BSPT BSP BW SW	41.5	26.5	24	18	F07	17.5	19.0	
80	3"	100	4"	75	215	350	360	194	155	190		36	21	24	18	F10	25.5	26.5	
100	4"	N/A		100	265	390	480	244	190	230		50.5	28.5	30	22	F10	45.0	47.0	

Reduced bore only available in Buttweld version



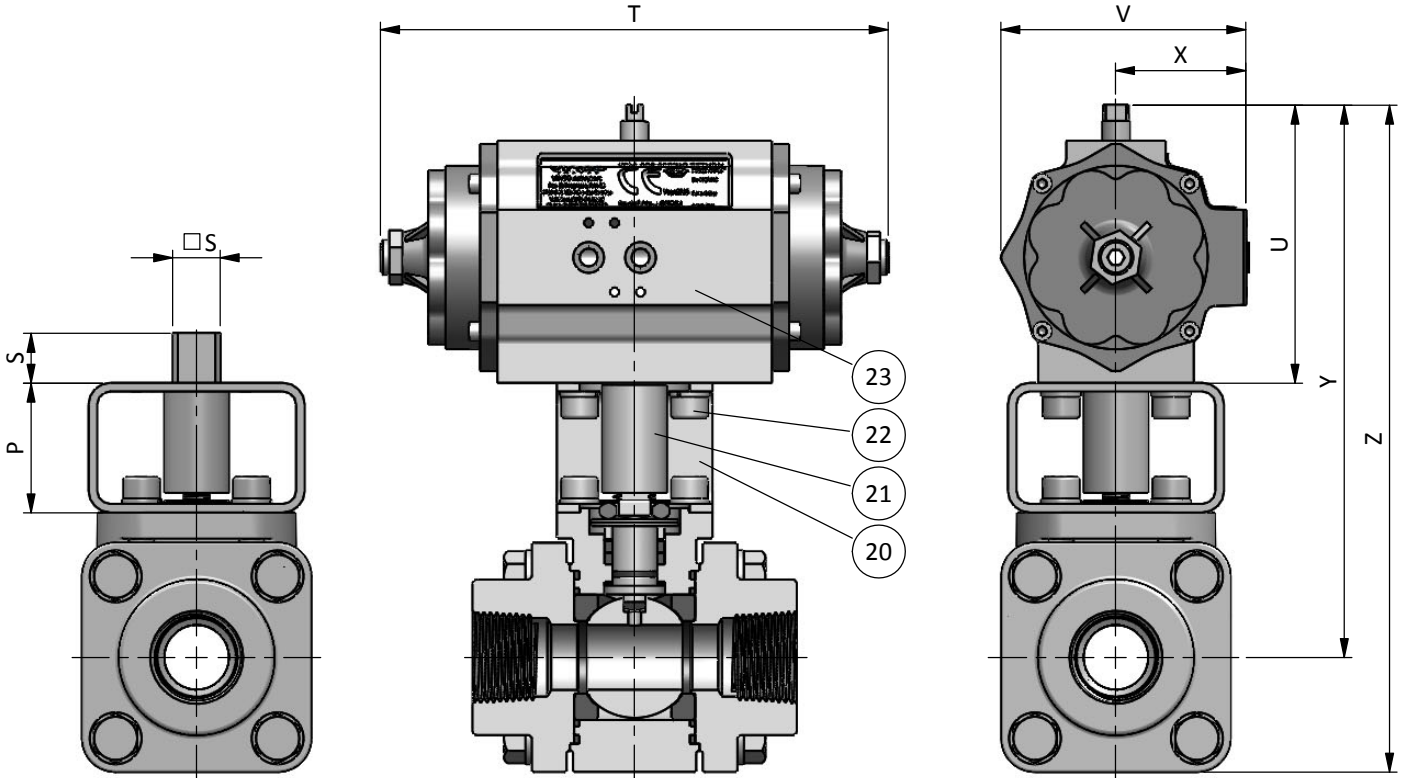
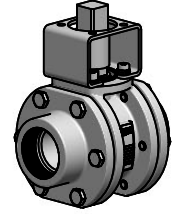
**BILL OF MATERIALS**

Part	Qt.	Description	Material
18	1	Locking Plate	CARBON ST. ZINC.
19	3	Bolt	STAINLESS ST. 304

DN / Size				D2	E2
FULL BORE		REDUCED BORE			
mm	inch	mm	inch		
10	3/8"	15	1/2"	50	75
15	1/2"	20	3/4"	55	80
20	3/4"	25	1"	65	95
25	1"	32	1 1/4"	70	100
32	1 1/4"	40	1 1/2"	85	120
40	1 1/2"	50	2"	90	125
50	2"	65	2 1/2"	115	145
65	2 1/2"	80	3"	140	175
80	3"	100	4"	155	190
100	4"	N/A		190	230

## XFH SERIES

CL600/400/300 (1500/1000/750 psi)  
 FULL BORE - DN 10 (3/8") ÷ 100 (4")  
 REDUCED BORE - DN 15 (1/2") ÷ 100 (4")  
 BRACKET FOR AUTOMATION



### BILL OF MATERIALS

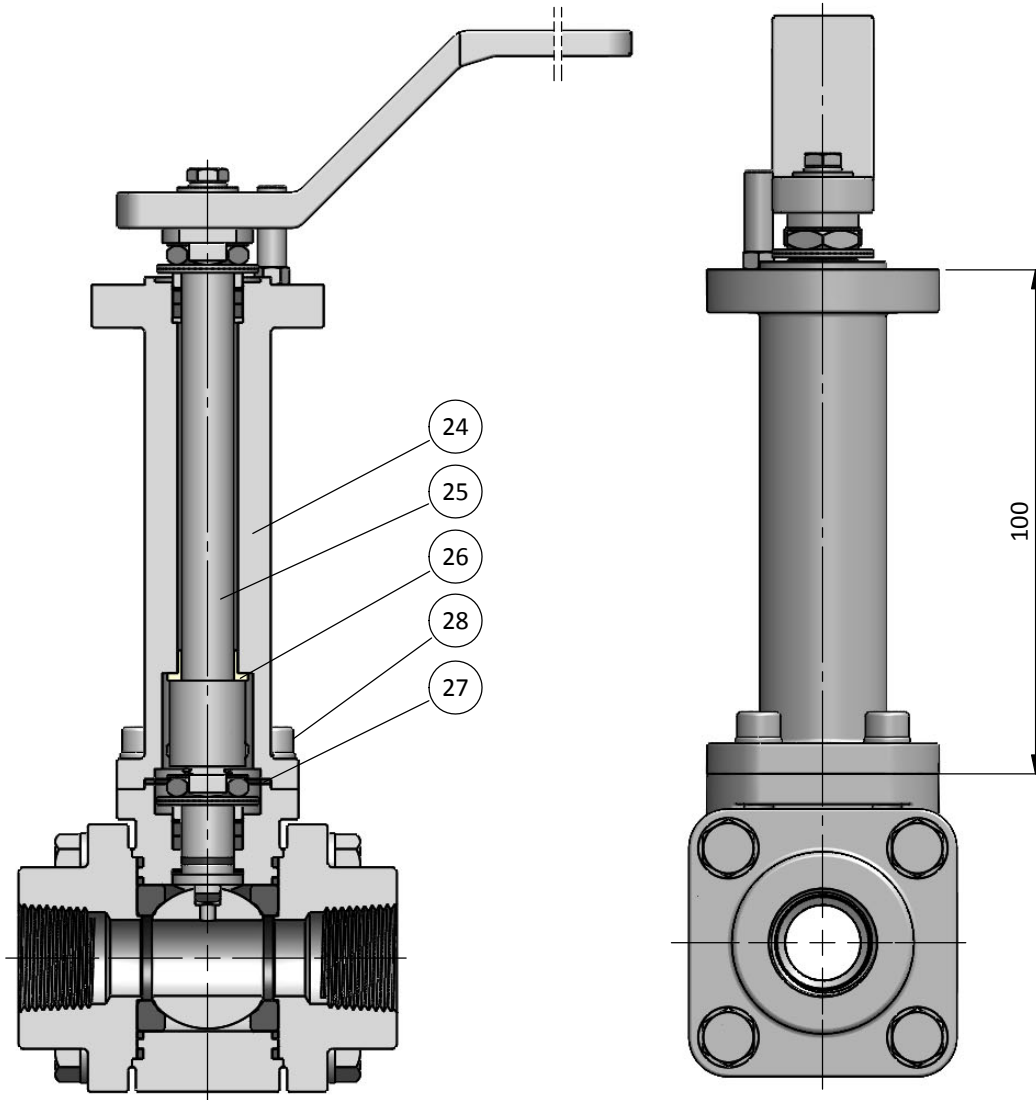
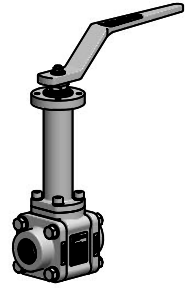
Part	Qt.	Description	Material
20	1	Bracket	STAINLESS ST. 304
21	1	Stem Extension	A479 316/L
22	8	Bolt	STAINLESS ST. 304
23	1	Pneumatic Actuator	ALUMINIUM

DN / Size				Automation				Actuator*					
FULL BORE		REDUCED BORE		P	S	ISO 5211	REF.	T	U	V	X	Y	Z
mm	inch	mm	inch										
10	3/8"	15	1/2"	30	11	F03	005-10	180	111	89	49	175	200
15	1/2"	20	3/4"	30	11	F03	005-10	180	111	89	49	175	200
20	3/4"	25	1"	40	17	F05	008-10	233	131	112	49	215	245
25	1"	32	1 1/4"	40	17	F05	008-10	233	131	112	57	215	250
32	1 1/4"	40	1 1/2"	50	19	F07	012-08	280	131	112	57	235	280
40	1 1/2"	50	2"	50	22	F07	020-14	294	151	133	70	260	310
50	2"	65	2 1/2"	60	22	F07	020-14	294	151	133	70	285	350
65	2 1/2"	80	3"	60	22	F07	030-18	286	189	169	85	345	420
80	3"	100	4"	100	27	F10	040-18	344	199	169	85	410	500
100	4"	N/A		100	36	F10	100-18	440	246	210	108	480	595

\*Pneumatic Actuators selected for PTFE and filled PTFE seats considering input air pressure of 5.5bar and minimum 25% safety margin

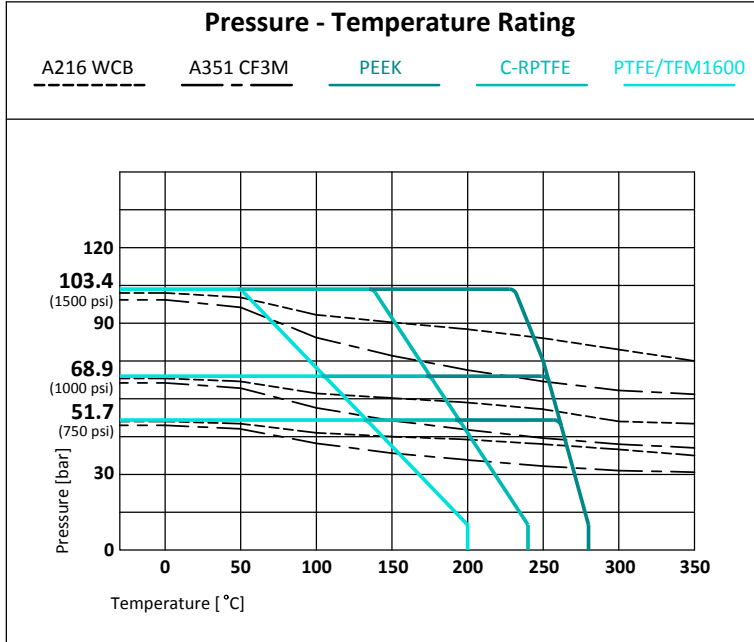
**XFH SERIES**

CL600/400/300 (1500/1000/750 psi)  
 FULL BORE - DN 10 (3/8") ÷ 100 (4")  
 REDUCED BORE - DN 15 (1/2") ÷ 100 (4")  
**EXTENDED STEM**



**BILL OF MATERIALS**

Part	Qt.	Description	CARBON STEEL	STAINLESS STEEL
24	1	Extension	A350 LF2 cl.1	A479 316/L
25	1	Stem Extension	A479 316/L	
26	1	Bearing	TFM 1600	
27	1	Extension Seal	GRAPHITE	
28	4	Bolt	STAINLESS ST. 304	



### Working Conditions

Material		mOT* [ °C ]		MOT* [ °C ]
A216 WCB	PTFE / TFM 1600	-29		200
	C-RPTFE	-29		240
	PEEK	-29		280
A351 CF3M	PTFE / TFM 1600	-50	-100*	200
	C-RPTFE	-50	-100*	240
	PEEK	-50		280

\*mOT - minimum Operating Temperature  
 \*MOT - Maximum Operating Temperature at 10 bar  
 Standard version recommended down to -50 °C  
 \*Extended version recommended down to -100 °C

DN	Rating
FB 10 (3/8") to 50 (2") RB 15 (1/2") to 65 (2 1/2")	103.4 bar / 1500 psi
FB 65 (2 1/2") to 80 (3") RB 80 (3") to 100 (4")	68.9 bar / 1000 psi
FB 100 (4")	51.7 bar / 750 psi

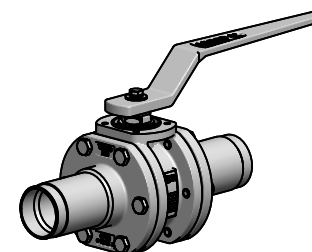
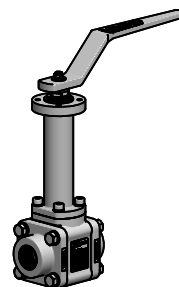
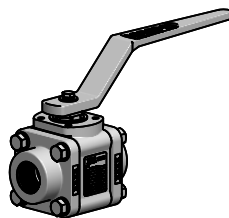
DN / Size				Torque Valve Figure [Nm] *						Maximum Allowable Stem Torque [Nm]			Flow Coefficient Cv
FULL BORE		REDUCED BORE		C-RPTFE						316	HS ST.	718	
mm	inch	mm	inch	BTO	RTO	ETO	BTC	RTC	ETC	MAST			
10	3/8"	15	1/2"	6	4	4	4	4	5	16	40	53.5	12
15	1/2"	20	3/4"	8	5	6	6	5	6	16	40	53.5	20
20	3/4"	25	1"	12	7	8	8	7	9	29.5	71.5	98.5	45
25	1"	32	1 1/4"	17	10	12	12	10	13	29.5	71.5	98.5	75
32	1 1/4"	40	1 1/2"	30	17	20	20	17	23	82.5	200	275	105
40	1 1/2"	50	2"	39	22	26	26	22	30	82.5	200	275	175
50	2"	65	2 1/2"	50	28	33	33	28	38	110	385	535	300
65	2 1/2"	80	3"	70	39	46	46	39	53	205	715	1000	500
80	3"	100	4"	100	55	65	65	55	75	205	715	1000	1000
100	4"	N/A		200	110	130	130	110	150	405	1420	1950	2000

\*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 PED 2014/68/EU Fire Safe Design acc. to API 607Ed.6/ISO 10497 ATEX II 2GD Design acc. to 2014/34/EU Fugitive Emissions Class B acc. to ISO 15848 CO1 (-46 °C to RT) Quality System Certified acc. to ISO 9001	ASME B16.34   ISO 17292 ASME B1.20.1   ISO 7-1   ISO 228-1 ASME B16.25   ASME B36.10M ASME B16.11 MSS-SP-25 ISO 5211	Pressure tests according to: EN12266-1 / API 598 / ISO 5208 Rate A Tests applied: Hydrostatic Shell Test Hydrostatic Seat Test Pneumatic Tightness Test Pneumatic Seat Test 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 O'RING	OPTIONS																						
XFH		1	F - FB	010	<b>BUTTWELD</b>							A - 2 Opposite sides Flattened Ends C - Spring Return D - Simple Extension 60 mm E - Extension 100 mm F - Bracket Automation G - Gear Box H - Actuators I - Switch Box / Limit Switches L - Locking Lever/Handle O - Oval Lever/Handle R - Bare Shaft / Bare Stem S - Solenoid Valve T - Upstream Relief Hole W - "V" Ball Port Y - Full Execution SS.316 Z - Others																					
					3 - CL600	R - RB	015	B1	- BW SCH 10	C	- A351 CF3M		A - B7 F - B8M cl.2	3 - C-RPTFE   C-RPTFE	1 - Grafite   Grafite   FKM AED																		
								020	B2	- BW SCH 40	Z					- Others																	
									025	B3	- BW SCH 80																						
										032	B4					- BW SCH 160*																	
											040					B6	- BW ISO 1127 S1																
																050	B9	- OTHERS															
																	065	<b>SOCKETWELD</b>															
																		3 - CL400	R - RB	080	C1	- SW ASME B16.11											
																					2 - CL300	R - RB	100	C9	- OTHERS								
																								<b>THREADED</b>									
																								D1	- BSP - ISO 228/1								
																									D2	- BSPT - ISO 7/1							
																										D3	- NPT - B1.20.1						
																											D9	- OTHERS					
<b>INTEGRAL NIPPLE**</b>																																	
N1	- BW SCH 10																																
	N2	- BW SCH 40																															
		N3	- BW SCH 80																														
			N4	- BW SCH 160*																													
				N6	- BW ISO 1127 S1																												
					N9	- OTHERS																											
						<b>WELDED BLOCK</b>																											
						W100	- BLOCK 100																										
							W500	- BLOCK 500																									

\* Sch 160 up to DN 50

\*\*Except DN 10

**Example:**

**XFH31F015B1D3AFA31E**

**XFH21F080N1N1CFF12**

## HYDROGEN RANGE

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



XFH Series  
3 pieces bolted - Floating  
CI 300 to 600  
DN ¾" (10) to 4" (100)



SFH Series  
3 pieces bolted - Floating  
CI 800  
DN ½" (15) to 1½" (40)



HFH Series  
3 pieces bolted - Floating  
CI 1500  
DN ½" (15) to 1½" (40)



HFH Series  
3 pieces bolted - Floating  
CI 2500  
DN ½" (15) to 1" (25)



HFH Series  
3 pieces bolted - Floating  
CI 4000  
DN ½" (15) to 1" (25)



## OTHER RANGE

SANITARY RANGE  
XP / RP / LP / MP / QP



CRYOGENIC RANGE  
CCF / CBF / CXF / CSF / CVT



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



