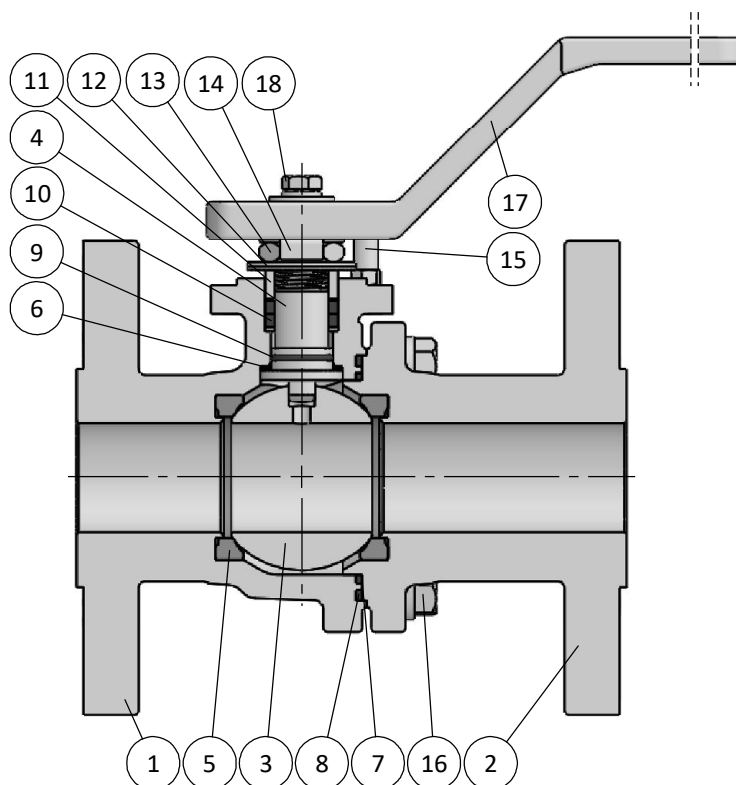
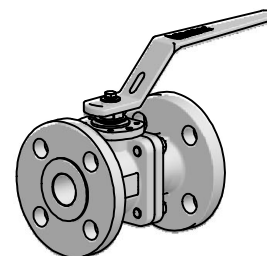


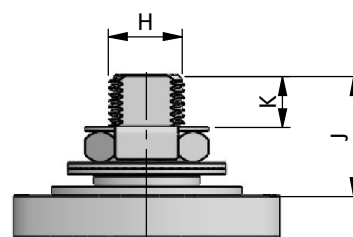
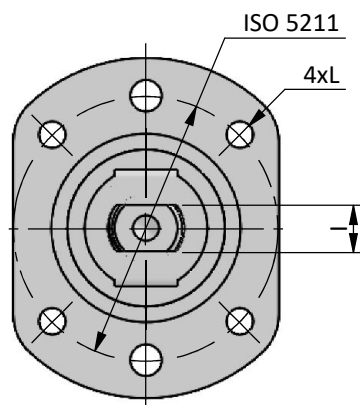
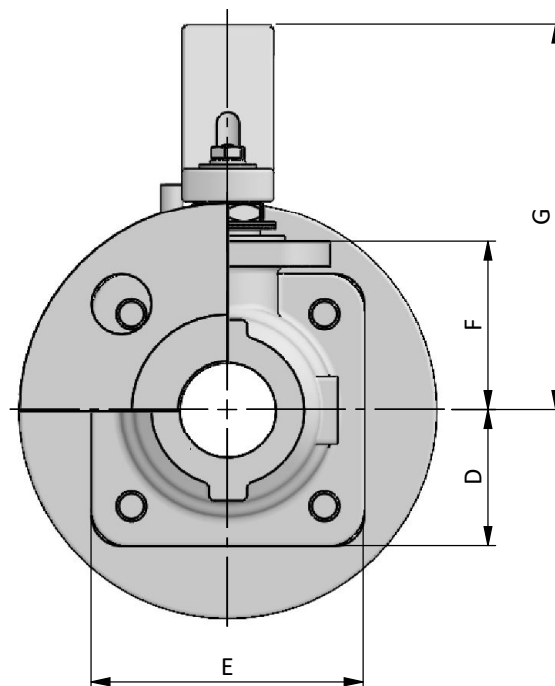
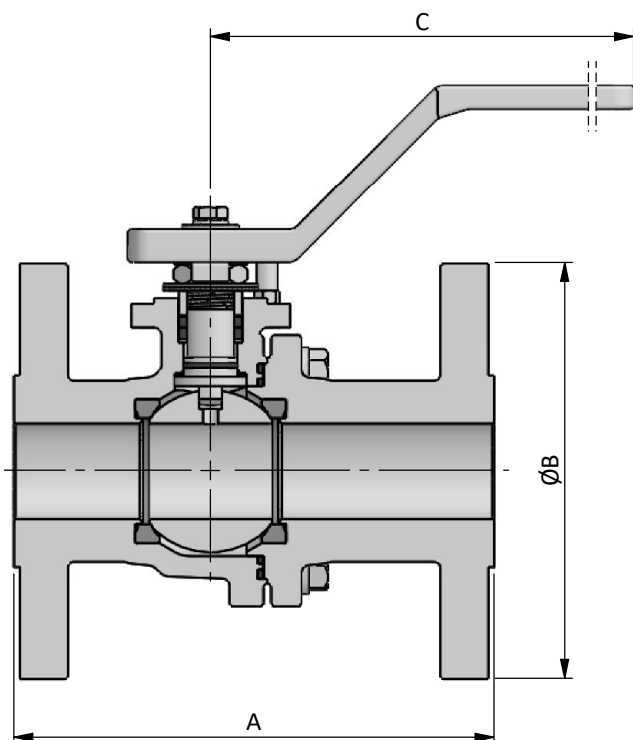
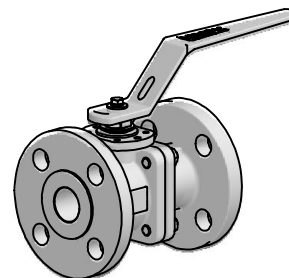




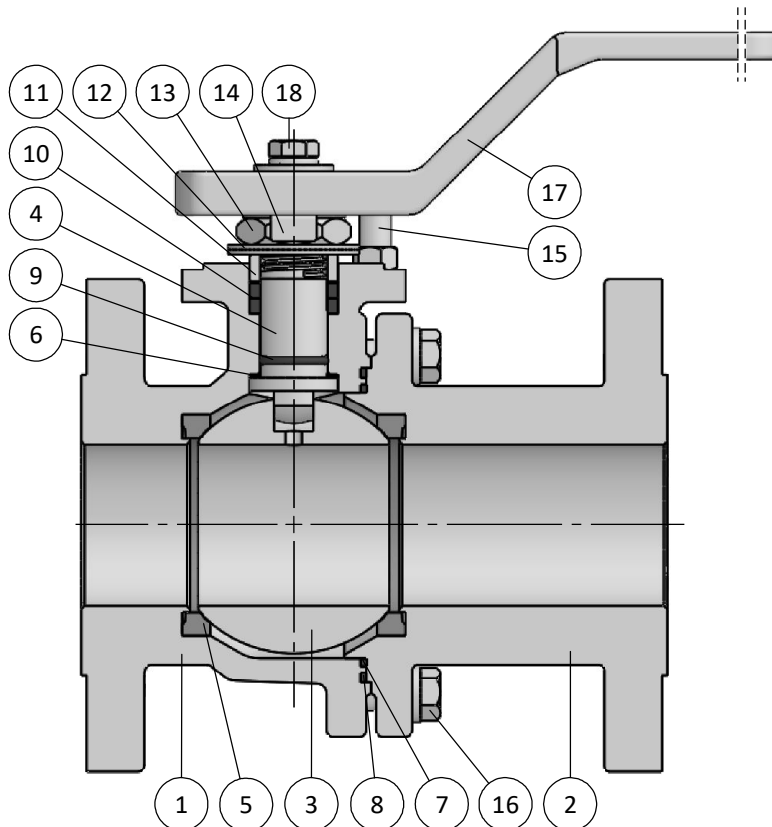
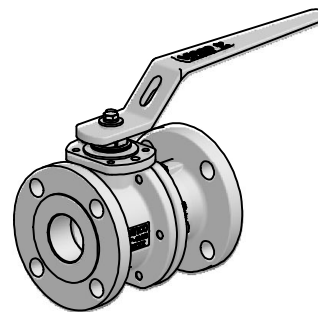
BILL OF MATERIALS

Part	Qt.	Description	CARBON STEEL VERSION	LT CARBON STEEL VERSION	STAINLESS STEEL VERSION
1	1	Body	A216 WCB	A352 LCC	A351 CF8M
2	1	End	A216 WCB	A352 LCC	A351 CF8M
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	1	1st Body Seal	C-RPTFE		
8	1	2nd Body Seal	GRAPHITE		
9	1	O'Ring	FKM		
10	1	Stem Packing Set	GRAPHITE + PEEK		
11	1	Gland Packing	STAINLESS ST. 316		
12	2	Disc Spring	STAINLESS ST. 316		
13	1	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.	A320 Gr. L7M ZINC.	A193 Gr. B8M cl.2
17	1	Handle	A351 CF8		
18	1	Handle Fastener	STAINLESS ST. 304		

↘ TYPICAL SPARE PARTS



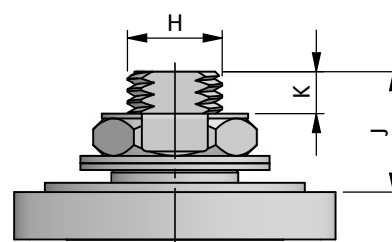
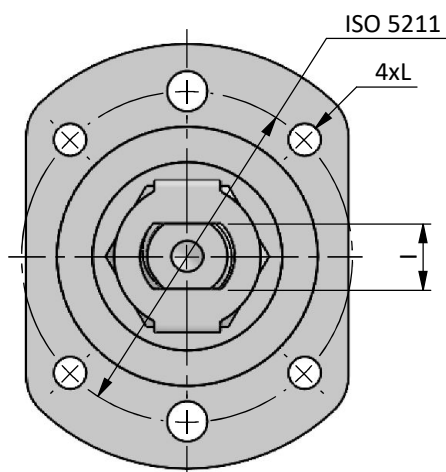
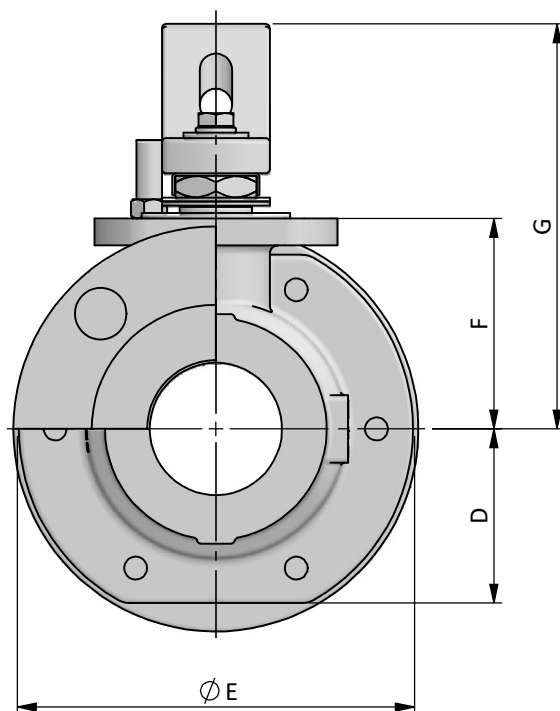
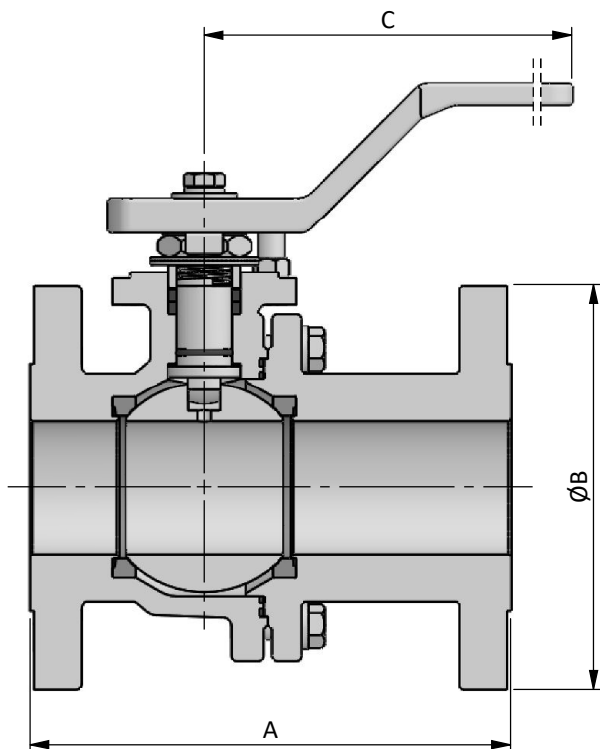
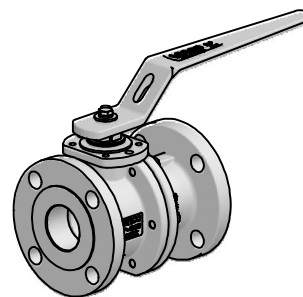
DN / Size		Dimensions										Automation						Weight Approx. [kg]	
FULL BORE		Ball Port	CL150		CL300		C	D	E	F	G	H	I	J	K	L	ISO 5211		
mm	inch		A	B	A	B												CL150	CL300
15	½"	15.1	108	90	140	95	180	27.5	55	35	90	10	6	15	5.5	M5	F04	2	2
20	¾"	20.6	117	100	152	115	180	32.5	65	40	100	12	7.5	20	8	M5	F04	2.5	3.5
25	1"	25.4	127	110	165	125	180	37.5	75	45	105	12	7.5	20	8	M5	F04	3.5	5
40	1½"	38.1	165	125	190	155	210	47.5	95	60	125	16	11	22	8.5	M6	F05	6	9



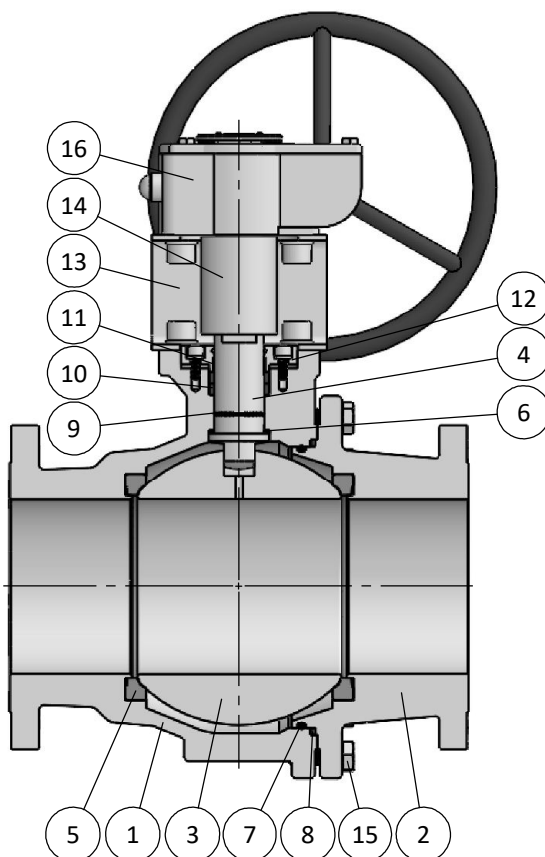
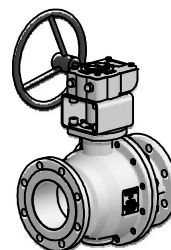
BILL OF MATERIALS

Part	Qt.	Description	CARBON STEEL VERSION	LT CARBON STEEL VERSION	STAINLESS STEEL VERSION
1	1	Body	A216 WCB	A352 LCC	A351 CF8M
2	1	End	A216 WCB	A352 LCC	A351 CF8M
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	1	1st Body Seal	C-RPTFE		
8	1	2nd Body Seal	GRAPHITE		
9	1	O'Ring	FKM		
10	1	Stem Packing Set	GRAPHITE + PEEK		
11	1	Gland Packing	STAINLESS ST. 316		
12	2	Disc Spring	STAINLESS ST. 316		
13	1	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.	A320 Gr. L7M ZINC.	A193 Gr. B8M cl.2
17	1	Handle	A351 CF8		
18	1	Handle Fastener	STAINLESS ST. 304		

↘ TYPICAL SPARE PARTS



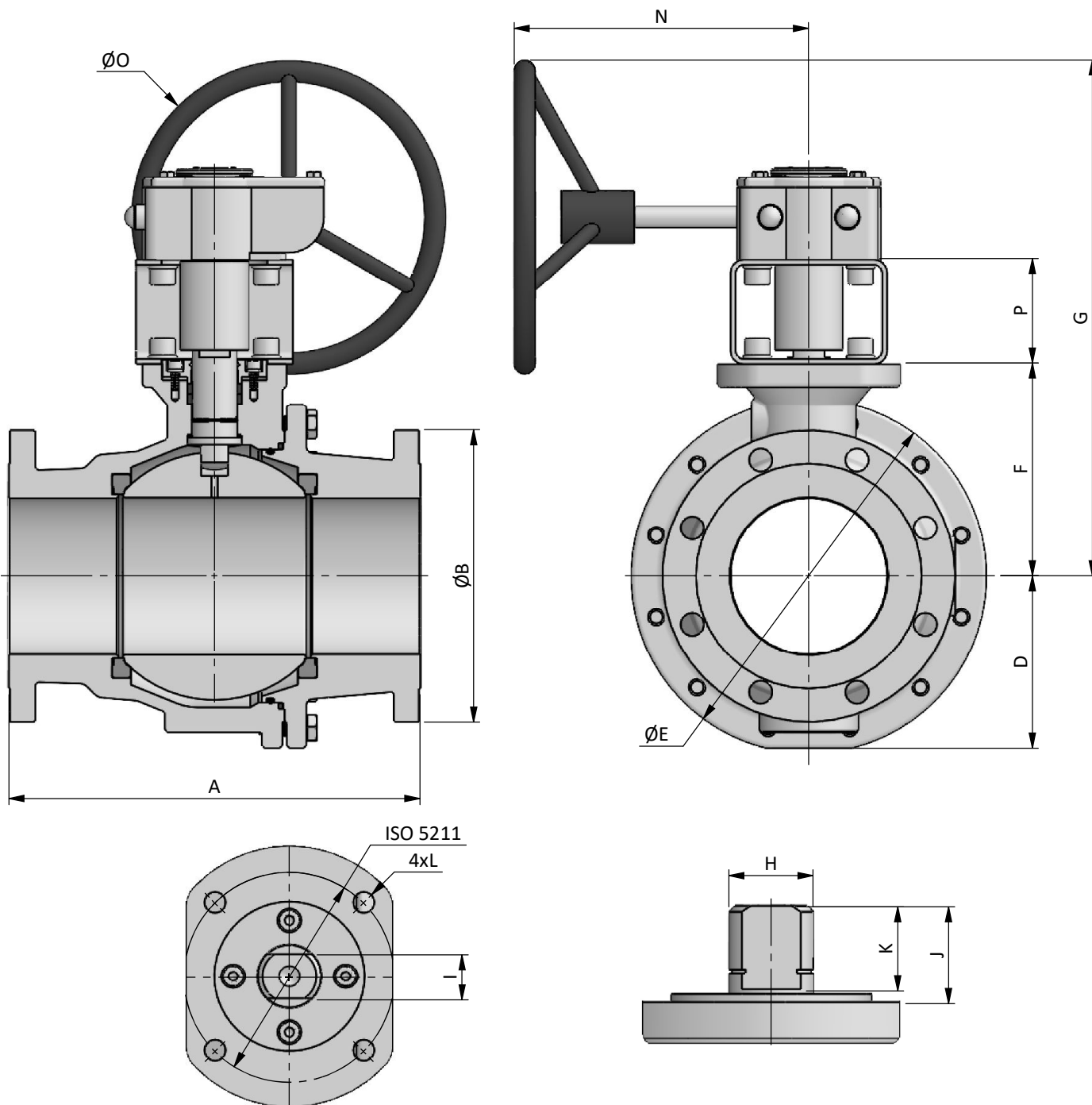
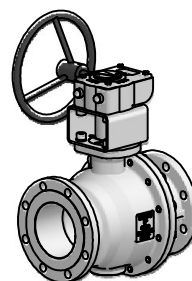
DN / Size		Dimensions										Automation						Weight Approx. [kg]	
FULL BORE		Ball Port	CL150		CL300		C	D	E	F	G	H	I	J	K	L	ISO 5211	CL150	CL300
mm	inch		A	B	A	B													
50	2"	49	178	150	216	165	300	65	145	80	150	20	14	26	9	M8	F07	10	15
65	2½"	62	190	180	241	190	360	80	175	95	175	24	18	35	14.5	M8	F07	20	25
80	3"	75	203	190	282	210	420	90	200	105	190	24	18	35	12	M10	F10	25	30
100	4"	100	229	230	305	255	480	115	250	135	225	30	22	42.5	16.5	M10	F10	40	50



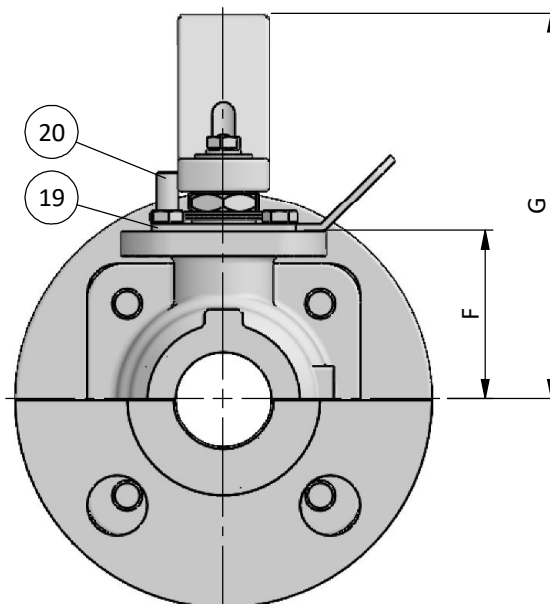
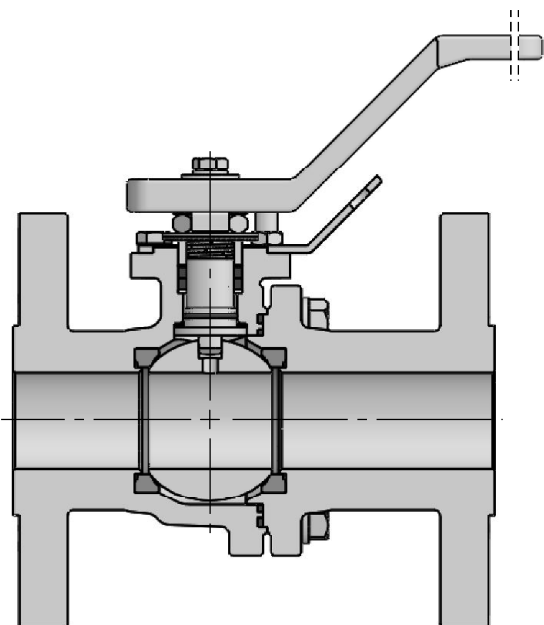
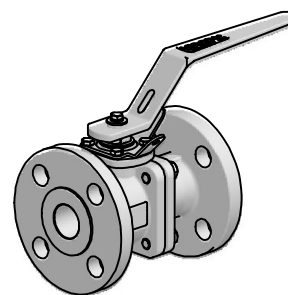
BILL OF MATERIALS

Part	Qt.	Description	CARBON STEEL VERSION	LT CARBON STEEL VERSION	STAINLESS STEEL VERSION
1	1	Body	A216 WCB	A352 LCC	A351 CF8M
2	1	End	A216 WCB	A352 LCC	A351 CF8M
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	1	Body O'Ring	FKM		
8	1	Body Seal	GRAPHITE		
9	1	O'Ring	FKM		
10	1	Stem Packing Set	GRAPHITE + PEEK		
11	1	Bearing	PTFE		
12	1	Gland Packing	A479 316/L		
13	1	Bracket	STAINLESS ST.304		
14	1	Bracket Stem	A479 316/L		
15	-	Bolt	A193 Gr. B7 ZINC.	A320 Gr. L7M ZINC.	A193 Gr. B8M cl.2
16	1	Gearbox	CAST IRON		

↘ TYPICAL SPARE PARTS



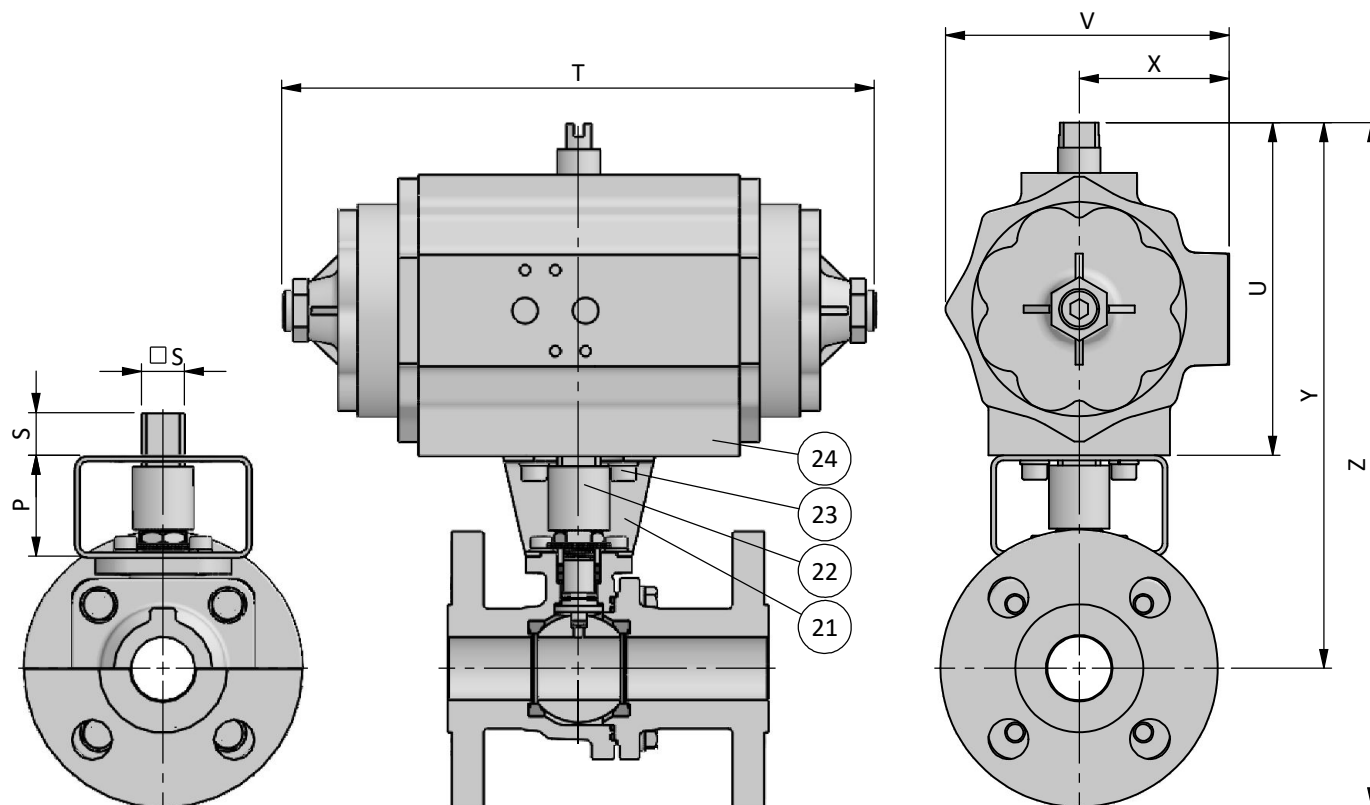
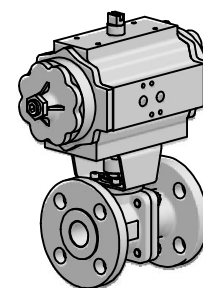
DN / Size		Dimensions									Automation									Weight Approx. [Kg]	
FULL BORE		Ball Port	CL150		CL300		D	E	F	G	H	I	J	K	M	N	O	P	ISO 5211		
mm	inch		A	B	A	B														CL150	C300
150	6"	151	394	280	-	-	165	340	205	495	42	30	48.5	28.5	M16	285	300	100	F14	125	-
150	6"	151	-	-	403	320	170	350	205	495	42	30	48.5	28.5	M16	285	300	100	F14	-	145
200	8"	202	457	345	-	-	215	440	260	600	56	36	70	65	M20	285	400	100	F16	220	-
200	8"	202	-	-	502	380	220	450	260	615	56	36	70	65	M20	330	400	100	F16	-	270



BILL OF MATERIALS

Part	Qt.	Description	Material
19	1	Locking Plate	STAINLESS ST. 304
20	1	Stop Pin	STAINLESS ST. 316

DN / Size		Dimensions	
FULL BORE		F	G
mm	inch		
15	½"	35	90
20	¾"	40	100
25	1"	45	105
40	1½"	60	125
50	2"	80	150
65	2½"	95	175
80	3"	105	190
100	4"	135	225
150	6"	GEARBOX	
200	8"		



BILL OF MATERIALS

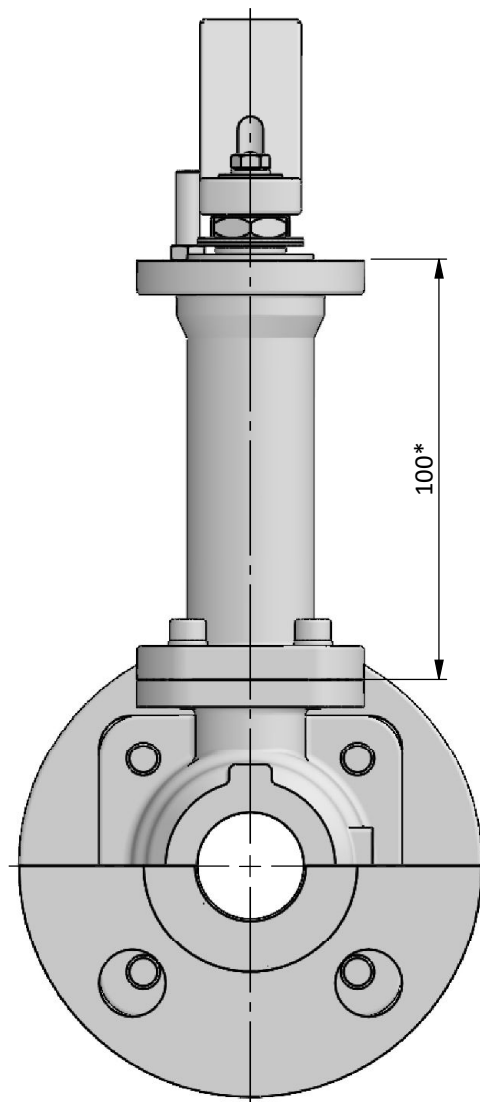
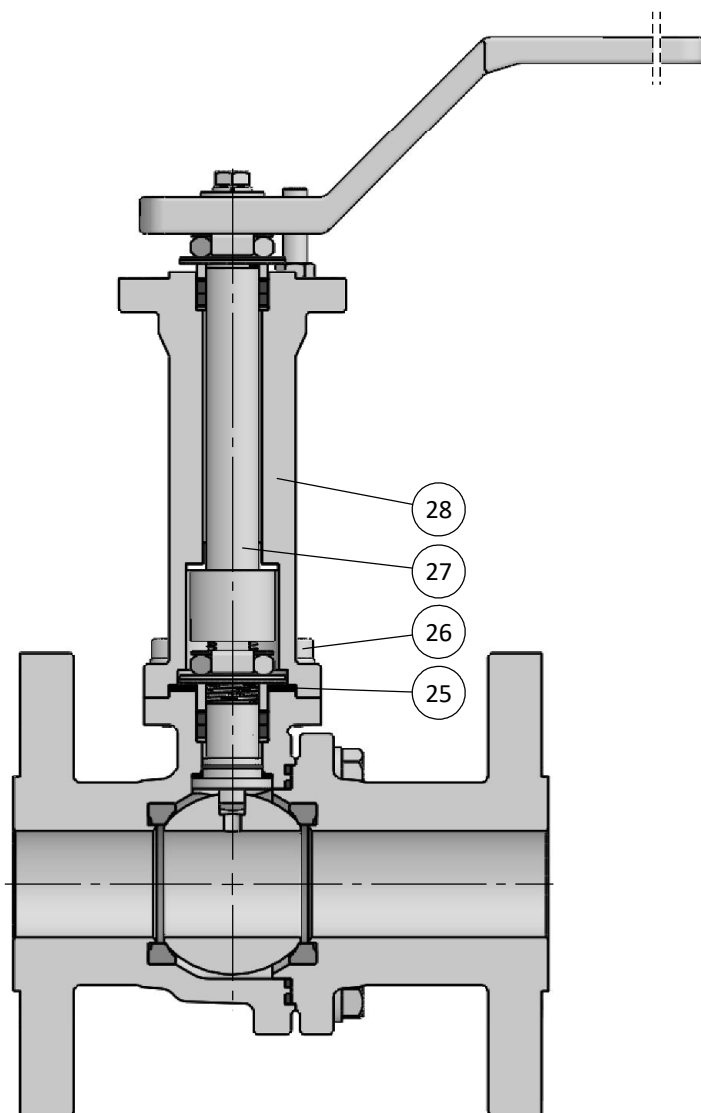
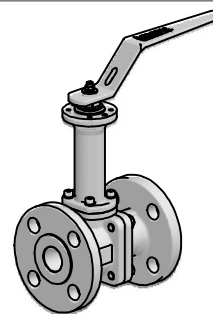
Part	Qt.	Description	Material
21	1	Bracket	STAINLESS ST. 304
22	1	Coupling	A479 316/L
23	8	Bolt	STAINLESS ST. 316
24	1	Actuator	ALUMINIUM

DN / Size		Automation		Actuator*							Automation		Actuator*						
FULL BORE		P	S	CL150							P	S	CL300						
mm	inch			REF.	T	U	V	X	Y	Z			REF.	T	U	V	X	Y	Z
15	½"	40	11	005-10	180	111	89	49	190	235	40	11	005-10	180	111	89	49	190	235
20	¾"	40	11	005-10	180	111	89	49	195	245	40	11	005-10	180	111	89	49	195	250
25	1"	40	17	008-10	233	131	112	57	220	275	40	17	008-10	233	131	112	57	220	280
40	1½"	50	19	012-08	280	131	112	57	240	305	50	19	012-08	280	131	112	57	240	320
50	2"	60	19	012-08	280	131	112	57	270	345	60	22	020-14	294	151	133	70	290	375
65	2½"	60	22	030-18	286	189	169	85	345	435	60	22	030-18	286	189	169	85	345	440
80	3"	100	22	030-18	286	189	169	85	395	490	100	27	040-18	344	199	169	85	405	510
100	4"	100	27	040-18	344	199	169	85	435	550	100	36	100-18	440	246	210	108	480	610
150	6"	100	46	200-20	537	272	232	120	580	720	100	36	250-40	460	340	305	151	645	805
200	8"	100	46	370-20	670	340	305	151	700	875	under request								

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

CF SERIES

CL150/CL300 (300/750 psi)
FULL BORE - ½" (DN15) ÷ 8" (DN200)
EXTENDED STEM



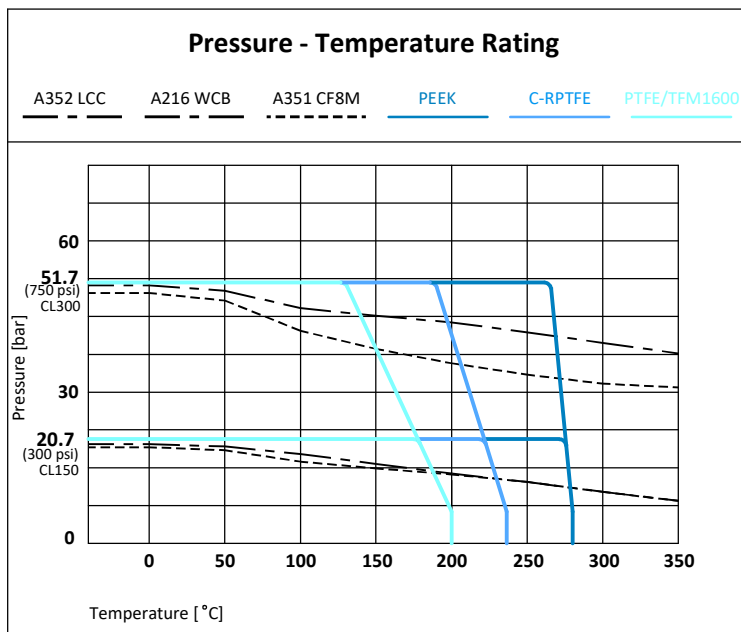
BILL OF MATERIALS

Part	Qt.	Description	Material
25	1	Extension	A351 CF8M
26	1	Stem	A479 316/L
27	1	Extension Seal	GRAPHITE
27	4	Bolt	STAINLESS ST. 316

* Size 6" and 8" valve extension height is 150mm and 200mm

CF SERIES

CL150/CL300 (300/750 psi)
FULL BORE
DN ½" (15) ÷ 8" (200)
TECHNICAL SPECIFICATIONS



Working Conditions					
Material	mOT* [°C]				MOT* [°C]
	WCB	LCC	CF8M		
PTFE TFM1600	-29	-46	-50	-100*	200
C-RPTFE	-29	-46	-50	-100*	240
PEEK	-29	-46	-50		280

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

DN	Rating
FB 15 (½") to 200 (8")	CL300 - 51.7 bar / 750 psi
FB 15 (½") to 200 (8")	CL150 - 20.7 bar / 300 psi

DN / Size		Torque Valve Figure [Nm] *												Maximum Allowable Stem Torque [Nm]					Flow Coefficient Cv
FULL BORE		C-RPTFE												316	S31803	S32760	S17400	718	
mm	inch	CL150						CL300						MAST					
		BTO	RTO	ETO	BTC	RTC	ETC	BTO	RTO	ETO	BTC	RTC	ETC						
15	½"	5	3	4	4	3	4	7	4	6	6	4	6	16	25	30	40	53.5	20
20	¾"	8	5	6	6	5	7	10	6	8	8	6	8	29.5	45	55	71.5	98.5	45
25	1"	12	7	9	9	7	10	14	8	11	11	8	12	29.5	45	55	71.5	98.5	75
40	1½"	22	13	17	17	13	18	33	19	25	25	19	27	82.5	125	150	200	275	175
50	2"	28	16	21	21	16	23	44	25	33	33	25	36	110	240	290	385	535	300
65	2½"	58	32	44	44	32	47	68	38	51	51	38	55	205	445	540	715	1000	500
80	3"	70	39	53	53	39	56	90	50	68	68	50	72	205	445	540	715	1000	1000
100	4"	110	61	83	83	61	88	200	110	150	150	110	160	405	880	1075	1420	1950	2000
150	6"	350	193	263	263	193	280	500	275	375	375	275	400	1150	2525	3085	4075	5600	4500
200	8"	850	468	638	638	468	680	1650	908	1238	1238	908	1320	2530	5550	6800	8950	12350	10000

*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 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 ASME B16.5 ASME B16.10 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

INDUSTRIAL RANGE

XF Series
3 pieces bolted - Floating
CI 300 to 600
DN 3/8" (10) to 6" (150)



SF Series
3 pieces bolted - Floating
CI 300 to 800
DN 3/8" (10) to 4" (100)



BF Series
2 split body - Floating
CI 150 to 600
DN 1/2" (15) to 4" (100)



HF Series
3 pieces bolted - Floating
CI 1500/2500
DN 3/8" (10) to 2" (50)



QF Series
Multi-ways - Floating
CI 150 to 600
DN 1/2" (15) to 2" (50)



VTR Series
3 pieces bolted - Trunnion
CI 150 to 2500
DN 1/2" (15) to 12" (300)



OTHER RANGE

SANITARY RANGE
XP / RP / LP / MP / QP



CRYOGENIC RANGE
CCF / C XF / CBF / CSF / CVT



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



