BALL VALVES

PRODUCT CATALOGUE

BROEN

VALVE TECHNOLOGIES

ABOUT US

BROEN

BROEN Group established in 1948 is one of the largest global manufacturer of ball valves. BROEN has 6 production plants in Europe, Russia, North America and employs 900 people. The company has branches in, and export its products to over 50 countries in the world.
BROEN's annual production exceeds 1 million ball valves covering a wide range of sizes and pressures. Broen Oil & Gas, formerly ZAWGAZ, joined the BROEN Group in 2008 and has more than 30 years of experience in the design, production, supply and service of ball valves for the oil and natural gas industries.
BROEN is a part of the stock listed industrial group Aalberts Industries, which specializes in delivering a wide range of technologically advanced products and systems to many industries. Aalberts Industries own more than 140 companies and employ 12 000 people all over the world. BSM valves and Conbraco companies, who belong to Aalberts Industries group, also manufacture valves for the oil and natural gas markets and compliments the BROEN product portfolio.

APPLICATIONS

The BROEN ball valves are dedicated for production, processing, transmission and distribution in the gas, oil, petrochemical, chemical, heating and other industries and for a wide range of fluids, such as:

Gas

NATURAL GAS
PROPANE
BUTANE
OTHER GASES MIXTURES

Since introduction of BOG valves for natural gas we have successfully delivered our products to installations and pipelines operated by largest companies in the CEE countries, i.e. PGNiG SA/ Gaz System SA (Poland), SSP (Slovakia), MOL (Hungary). Constantly developed product portfolio, sophisticated technological solutions, timely deliveries and high quality of customer service – all these features guarantee satisfaction of our Customers.

Fuels

DIESEL
LPG
PETROL
JET A1

BOG valves have been faultlessly operating for more than 10 years in LPG installations of companies like Orlen Gaz, Gaspol, Amerigas (former Shell Gas) in Poland, Lukoil in Kaliningrad (Russia), Latvijas Propana Gaze or Intergaz in Latvia. We supply ball valves for gas/LPG stations, transloading terminals, storage tanks and tank trucks/railcars. We are preferred supplier to all locations where durability, safety and operational reliability is of highest importance. BOG for last 6 years has been certified supplier of ball valves to fuel installations for NATO army bases, including also installations for aviation fuel Jet A1. We have been also supplying products to fuel bases for civil airports, i.e. for company Petrolot operating at the Warsaw airport.

Oil

OIL
LIGHT CRUDE OIL
PENTANE/HEXANE
OTHER OIL PRODUCTS

Similarly to fuel applications, our ball valves are best solution for oil and oil-derivatives installations. Faultless and smooth operation allowed for application in both refineries and oil-storages of such companies as Lotos or Orlen, as well as in heavy-duty oil-heating systems. Sophisticated technological solutions, expertise and satisfaction of our current customers allow for planning of further development of this segment and guarantee our future customers high quality of products and service.

The two way on-off ball valves are designed and produced by BROEN and are recommended to be used as isolating valves. The valves have a low fluid resistance and consequently, high KV values.

The valves with self-lubricating seats are recommended for a wide range of industrial applications.

The metal seated valves are recommended for severe-duty service industrial applications.

The trunnion mounted BROEN ball valves are designed to equally seal in both directions and are fitted with advanced dependable spring loaded seats and optionally with a bleed port. This offers the highest mechanical and functional reliability on the market.

Design for either above or underground services, the BROEN ball valves substantially exceed common requirements for standard, as well as for severe conditions industrial applications.

References

Gaz System (Poland), PGNiG (Poland), Gazprom (Russia), Rosneft (Russia), Lukoil (Russia), Mobile Gas (USA), Lockheed Martin (USA), Ukrnafta (Ukraine) and many others.
Full reference list can be forwarded on request.

QUALITY STANDARDS AND CERTIFICATION

BROEN API 6D range of products conform to industry standards set by the American Petroleum Institute, therefore valves are allowed to bear the Official API Monogram.
BROEN is a certified producer of valves constituting elements of transmission and technological pipelines for hazardous flammable liquids and gas media.
The Fire Safe construction of our valves is certified for both, floating and trunnion mounted ball designs.
The Double Block and Bleed functions of Broen Oil & Gas ball valves are certified by Bureau Veritas, as their function is defined by API 6D and ISO 14313.
BROEN ball valves are PED 97/23/EC certified, which means that quality control for the design, manufacture, final inspection and testing of pressure equipment satisfy the provisions of the Directive.
Consequently, BROEN ball valves are CE marked.
BOG for last 6 years has been certified supplier of ball valves to fuel installations for NATO army bases, including also installations for aviation fuel Jet A1.

PRODUCTION PROGRAM

EN-ISO FULL BORE	DN 15 – 800 PN 16 – 100 TEMP. -60 ÷ 200°C

EN-ISO REDUCED BORE	DN 250 – 800 PN 16 – 40 TEMP. -40 ÷ 200°C

API 6D FULL BORE	DN (NPS) 1/2" – 32" CLASS 150 – 600 TEMP. -29 ÷ 200°C

DZT VALVES	DN 10 – 500 PN 16 – 40 TEMP. -40 ÷ 80°C

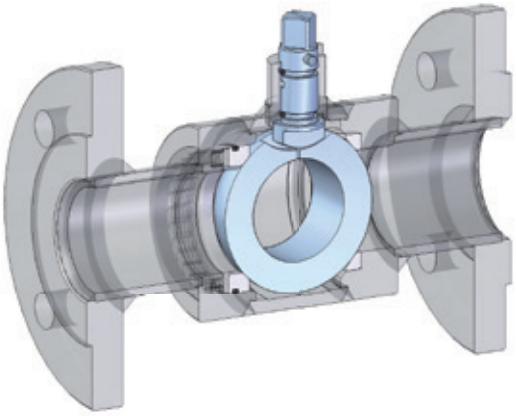
DESCRIPTION OF MAIN VALVE FEATURES

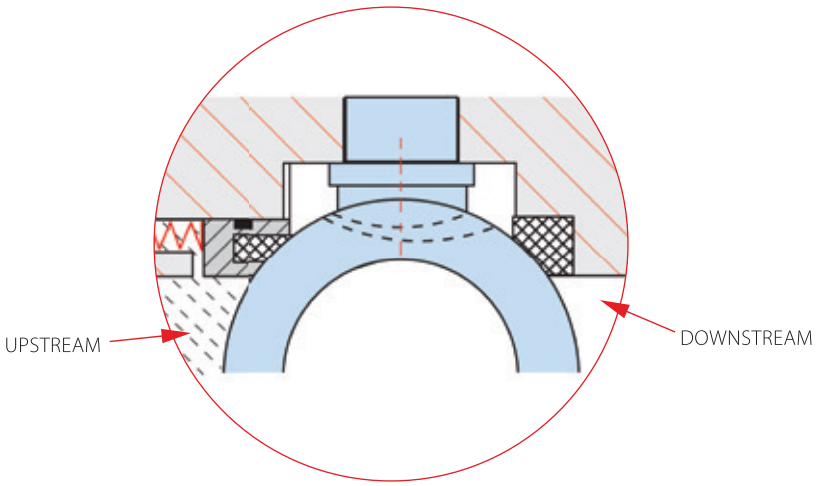
Linear and volumetric compensation for floating ball design

The linear and volumetric compensation system prevents the buildup of excessive pressure in the cavity, which may result from external environment temperature increase.

The phenomenon may cause higher opening torque, the valve keeping full tightness for a shorter time, or worse, the ball getting stuck between the seat.

The linear and volumetric compensation system is a standard solution for all our floating ball type products and is most effective in case of LPG and other liquid media.

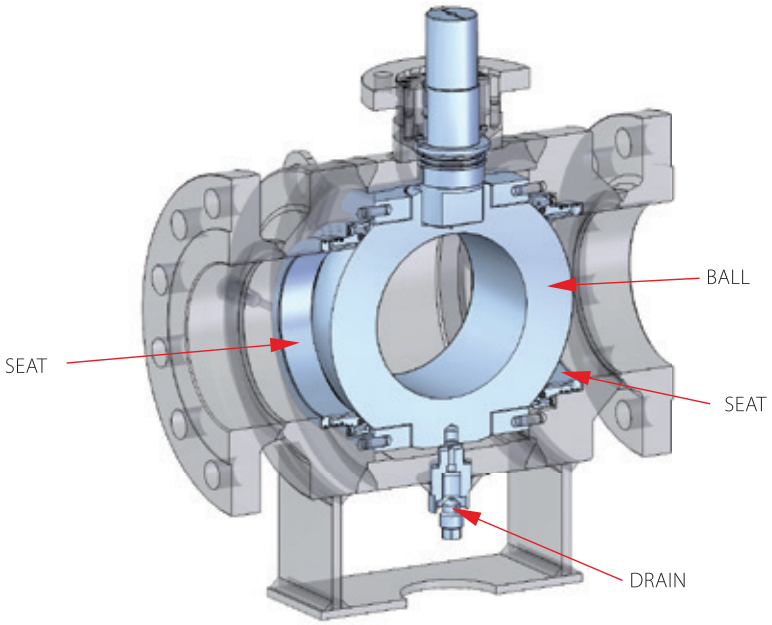




Double block and bleed (DBB)

The DBB system ensures the simultaneous upstream and downstream sealing, while also permitting the release of the overpressure in the cavity, in both, fully open and fully closed position.

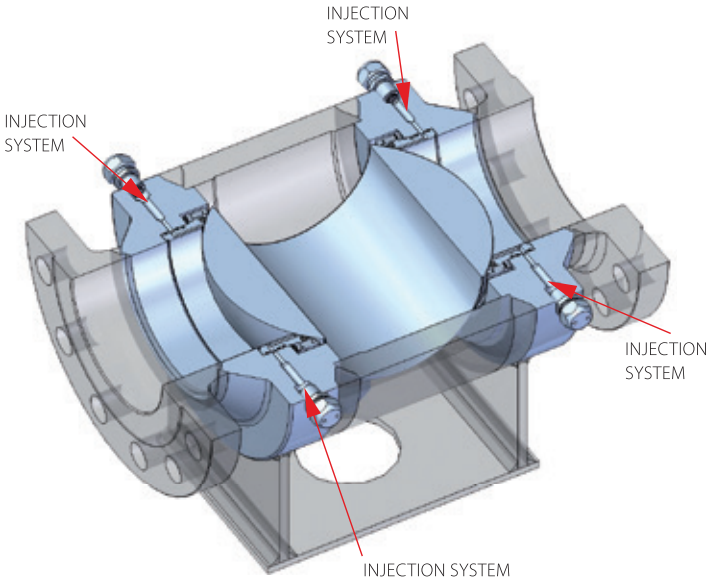
The drain allows the pressure in the cavity to be released manually. This enables the replacement of the upper stem sealing, as well as the tightness of the valve to be checked, without the need to shut down the pipeline.



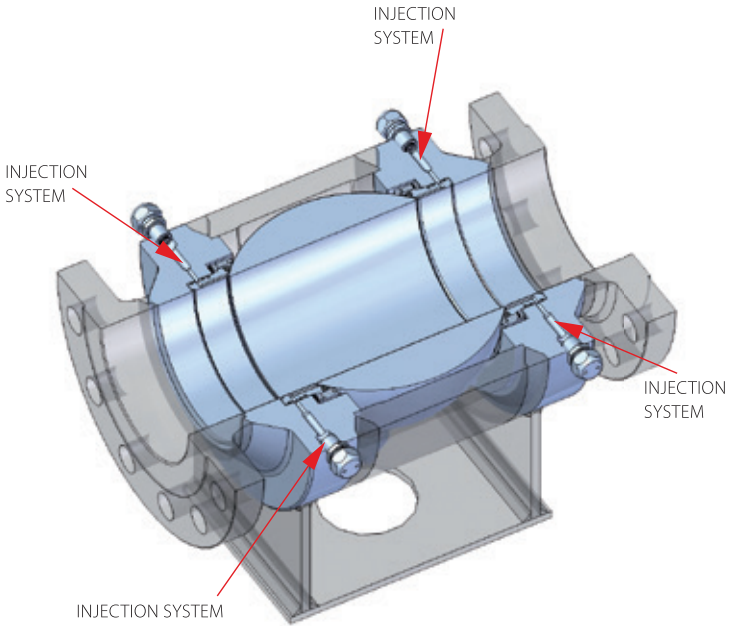
Injection system

Allows the seal to regenerate in case of damage resulting from normal wear or from media contamination, by injecting a sealant, or, to clean the valve by injecting a flushing agent.

It also facilitates the operation of the valve after a long a period of inoperability.



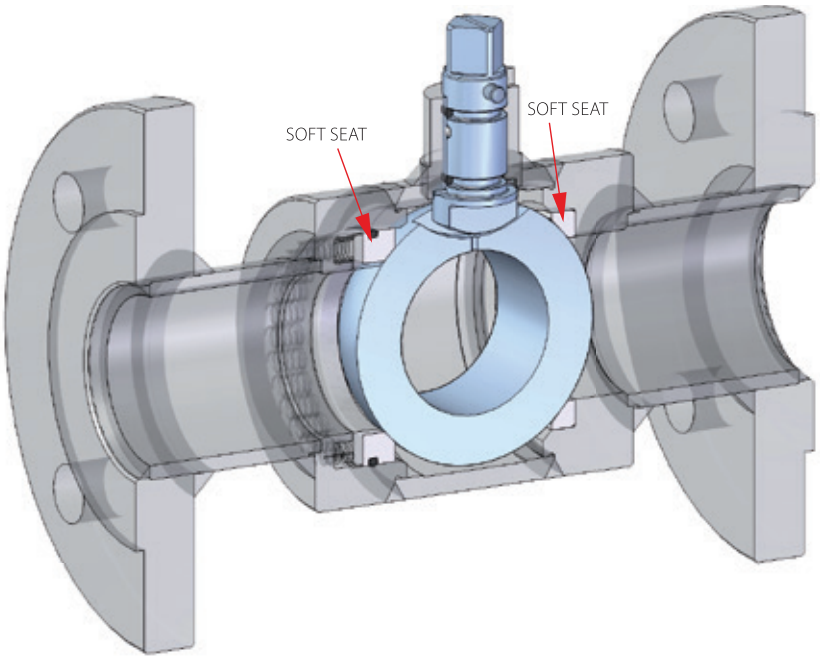
CLOSED POSITION



OPEN POSITION

Soft sealing system

The sealing materials are selected according to application requirements and are based on a customer's technical specifications.

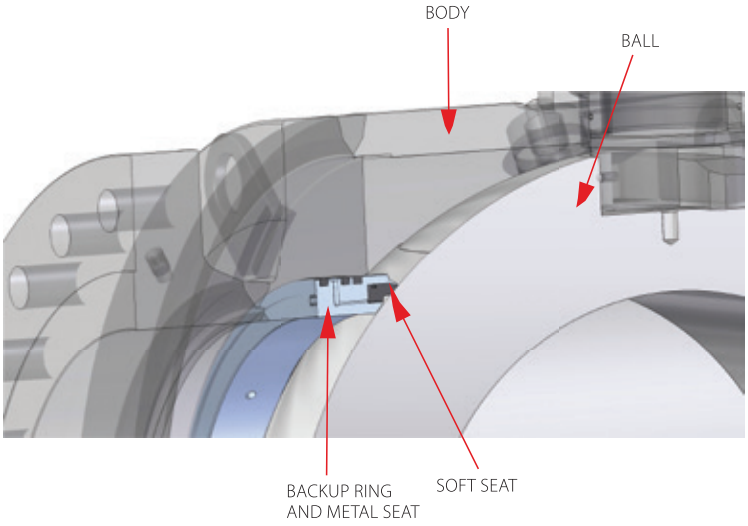


DESCRIPTION OF MAIN VALVE FEATURES

Primary metal secondary soft sealing system (PMSS)

The first sealing concerns the metal surface, while the second concerns the soft sealing, guaranteeing the tightness of the valve.

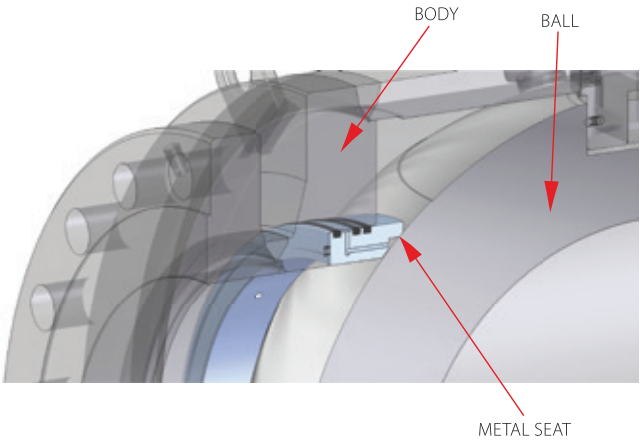
The PMSS type sealing is applied to the valves with a trunnion mounted ball.



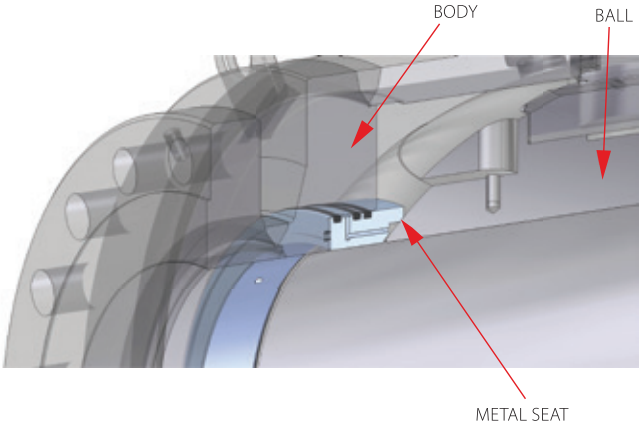
Metal / metal sealing system

The cooperating metal sealing surface are covered with special coating, which allows for long, effective and defect-free operation and sealing.

CLOSED POSITION

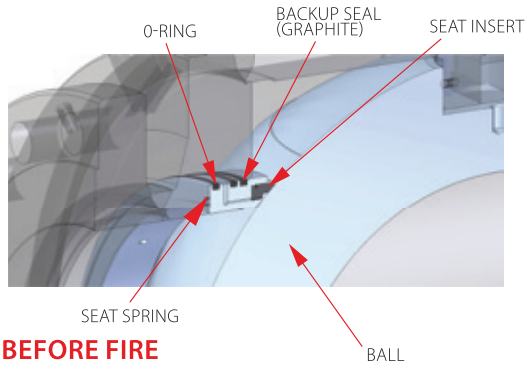


OPEN POSITION

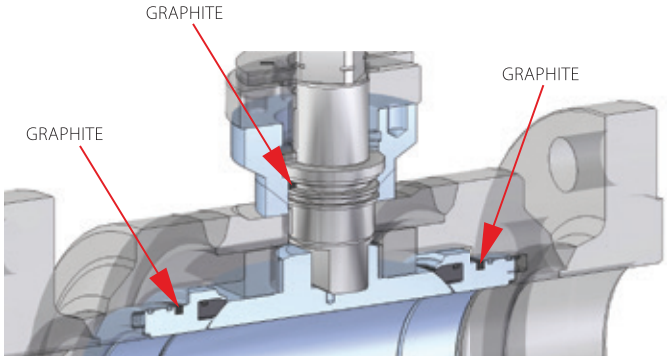


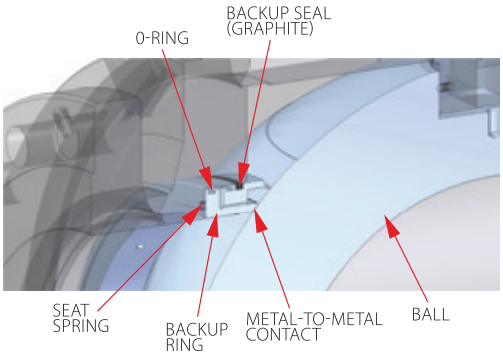
Fire safe

The Fire Safe solution is based on Metal / Metal and Graphite sealing elements.



BEFORE FIRE

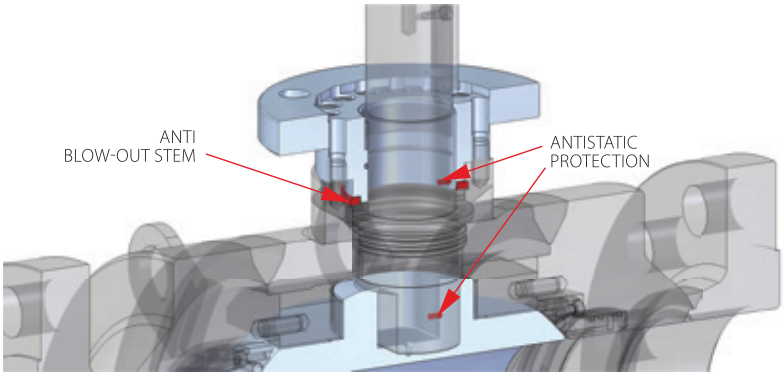




AFTER FIRE

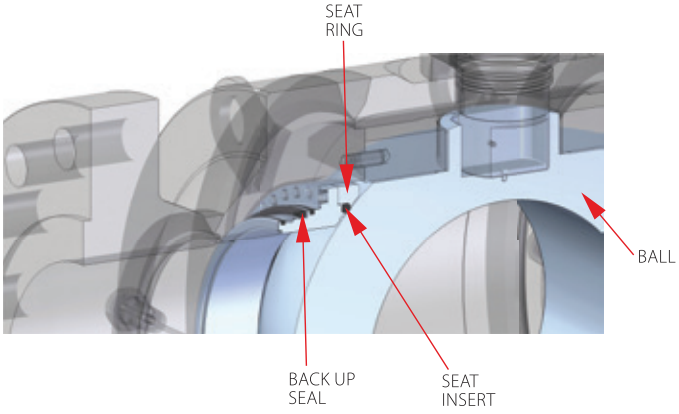
Antistatic protection and anti blow-out stem design

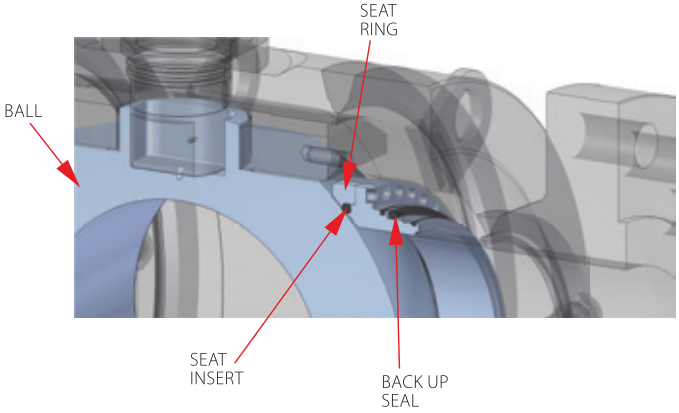
The antistatic design protects against static electric discharge.
The anti blow-out design prevents the stem from blowing out after disassembly of the stem sealing top cover while the valve is under pressure.



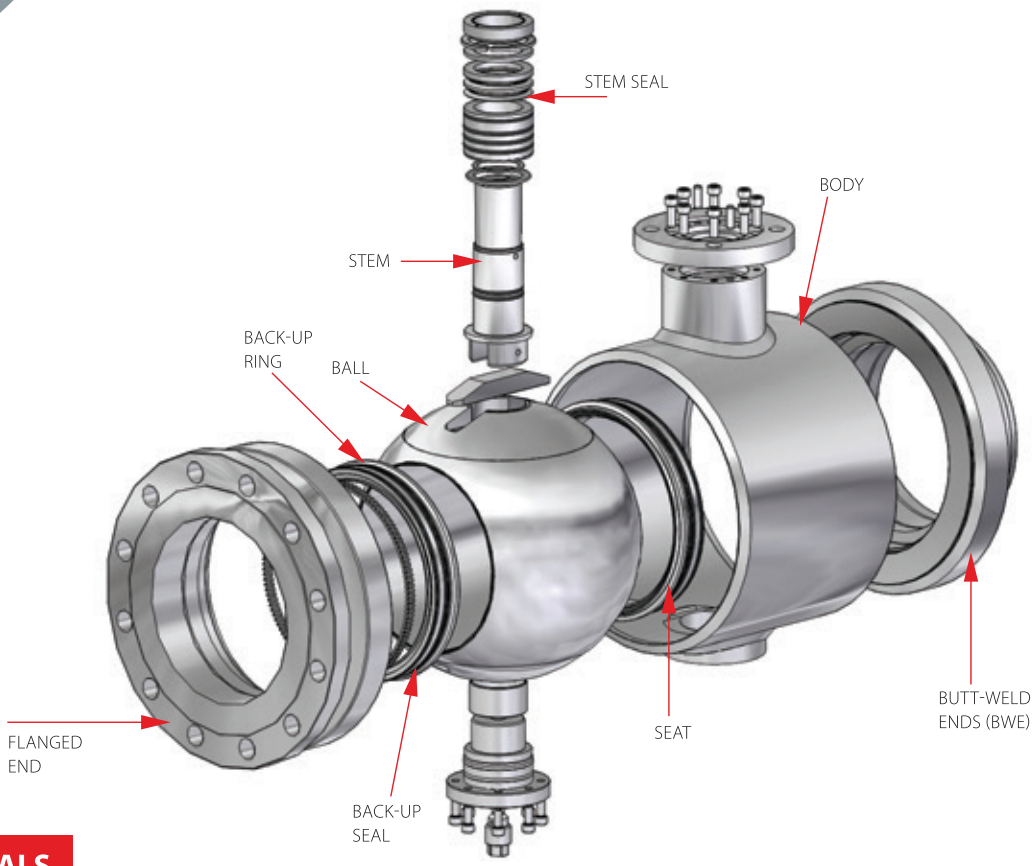
Double piston effect sealing system (DPE)

Both seals in the valves with "Double Piston Effect" (DPE) actively participate in the internal sealing of the valve.
The body cavity pressure activates sealing on the downstream side which provides double sealing prior to cavity pressure relief taking place.





BALL VALVE
PN 16/25/40 FULL BORE



MATERIALS

DN	BODY	FLANGED END	BUTT-WELD ENDS (BWE)	BALL	STEM	BACK-UP RING	SEAT	BACK-UP SEAL	STEM SEAL
15 20 25 32 40 50 65 80	P355NH; P355NL1; S355J2; S355J2H X5CrNi18-10 (AISI 304)	P355NH; P355NL1; S355J2; X5CrNi18-10 (AISI 304)	P355NH; P355NL1; S355J2; S355J2H; X5CrNi18-10 (AISI 304)	X5CrNi18-10 (AISI 304)	X20Cr13 (AISI 420) X5CrNi18-10 (AISI 304)	CS + Ni-Cr SS	PTFE; PTFE+C	HNBR; EPDM; FKM; Graphite; PTFE	HNBR; EPDM; FKM; Graphite; PTFE
100 150 200 250 300 350 400 500 600 700 800	P355NH; P355NL1; S355J2; S355J2H	P355NH; P355QH	P355NH; P355NL1; S355J2; S355J2H	S355J2 + Ni-Cr; A350 LF2 + EN A350 LF2 + EN	X20Cr13 (AISI 420)	CS + Ni-Cr CS + EN		HNBR; EPDM; FKM; Graphite	

CLASSIFICATION OF THE PRODUCTS	TYPE	SCOPE
BALL VALVE FROM CARBON STEEL, FULL BORE, PN 16/25/40	AH-2c-MK, AH-2c-MP, AH-2c-MG	DN 15-25
	AH-2c	DN 32-80
	AH-2cg, AH-2cp, AH-2cd	DN 32-80
	AH-11c, AH-12c	DN 100-150
	AH-11cj, AH-12cj	DN 100-150
	AH-14c, AH-15c	DN 200-800

TEMPERATURE RANGE [°C]
t= -60°C ÷ +100°C
t= -40°C ÷ +100°C
t= -30°C ÷ +100°C
t= -20°C ÷ +150°C
t= -10°C ÷ +200°C

DIMENSIONS [mm]

DN	d	F	t	DBB	IS	L			B	I	D1	T
						FxF	WxW	GxG				
15	15	X	-	-	-	130,0	130,0	100,0	37,0	21,0	21,3	3,2
20	20	X	-	-	-	150,0	150,0	110,0	40,0	24,0	26,9	3,6
25	25	X	-	-	-	160,0	160,0	135,0	48,0	30,0	35,0	5,0
32	32	X	-	-	-	104,0 180,0	270,0	150,0	83,0	35,0	42,4	4,0
40	40	X	-	-	-	106,0 200,0	190,0	160,0	87,0	40,0	48,3	3,6
50	50	X	- X	- OPTION	-	108,0 230,0	216,0	160,0	95,0	48,0	60,3	4,0
65	64	X	-	-	-	112,0 290,0	241,0	210,0	122,0	59,0	76,1	5,0
80	78	X	- X	- OPTION	-	140,0 310,0	283,0	240,0	130,0	71,0	88,9	5,6
100	101	X -	- X	- OPTION	- OPTION	190,0 300,0	305,0	-	173,0	90,0	114,3	5,6
125	126	X -	- X	- OPTION	- OPTION	325,0	600,0	-	215,0	110,0	139,7	6,3
150	152	X -	- X	- OPTION	- OPTION	350,0	457,0	-	253,0	137,0	168,3	7,1
200	202	-	X	X	OPTION	457,0	521,0	-	252,0	203,0	219,1	8,8
250	253	-	X	X	OPTION	533,0	559,0	-	315,0	248,0	273,9	10,0
300	304	-	X	X	OPTION	610,0	635,0	-	355,0	288,0	323,9	10,0
350	336	-	X	X	OPTION	686,0	762,0	-	378,0	311,0	355,6	11,0
400	386	-	X	X	X	762,0	838,0	-	433,0	480,0	406,4	12,5
500	488	-	X	X	X	914,0	991,0	-	561,0	570,0	508,0	12,5
600	588	-	X	X	X	1067,0	1143,0	-	654,0	682,0	610,0	12,5
700	648	-	X	X	X	1245,0	1346,0	-	806,0	790,0	711,0	14,2
800	780	-	X	X	X	1372,0	1524,0	-	890,0	900,0	813,0	16,0

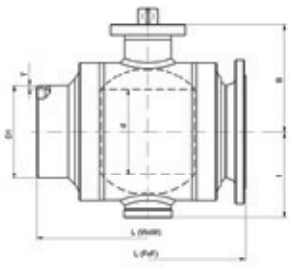
WEIGHT [kg]

DN	FxF			WxW			GxG		
	PN 16	PN 25	PN 40	PN 16	PN 25	PN 40	PN 16	PN 25	PN 40
15	2,5	2,5	2,5	1,2	1,2	1,2	1,2	1,2	1,2
20	3,5	3,5	3,5	1,6	1,6	1,6	1,5	1,5	1,5
25	4,9	4,9	4,9	3,0	3,0	3,0	3,1	3,1	3,1
32	5,1 6,1	5,1 6,1	5,1 6,1	3,1	3,1	3,1	2,8	2,8	2,8
40	5,9 7,3	5,9 7,3	5,9 7,3	3,5	3,5	3,5	3,9	3,9	3,9
50	7,6 17,0	7,6 17,0	7,6 17,0	4,6	4,6	4,6	5,1	5,1	5,1
65	10,4 15,3	10,4 15,3	10,4 15,3	8,4	8,4	8,4	9,4	9,4	9,4
80	14,4 22,0	14,4 22,0	14,4 22,0	13,5	13,5	13,5	15,8	15,8	15,8
100	21,0 26,0	23,0 36,0	23,0 36,0	28,0 30,0	28,0 30,0	28,0 30,0	-	-	-
125	46,0 48,0	57,0 59,0	57,0 59,0	51,0 53,0	51,0 53,0	51,0 53,0	-	-	-
150	75,0 77,0	85,0 87,0	85,0 87,0	79,0 81,0	79,0 81,0	79,0 81,0	-	-	-
200	145,0	148,0	157,0	130,0	130,0	130,0	-	-	-
250	264,0	276,0	293,0	240,0	240,0	240,0	-	-	-
300	448,0	463,0	487,0	421,0	421,0	421,0	-	-	-
350	589,0	617,0	631,0	557,0	557,0	557,0	-	-	-
400	950,0	980,0	1030,0	900,0	900,0	900,0	-	-	-
500	1690,0	1730,0	1770,0	1610,0	1610,0	1610,0	-	-	-
600	2640,0	2645,0	2890,0	2570,0	2570,0	2570,0	-	-	-
700	4234,0	4318,0	4427,0	4126,0	4126,0	4126,0	-	-	-
800	5380,0	6460,0	6295,0	6145,0	6145,0	6145,0	-	-	-

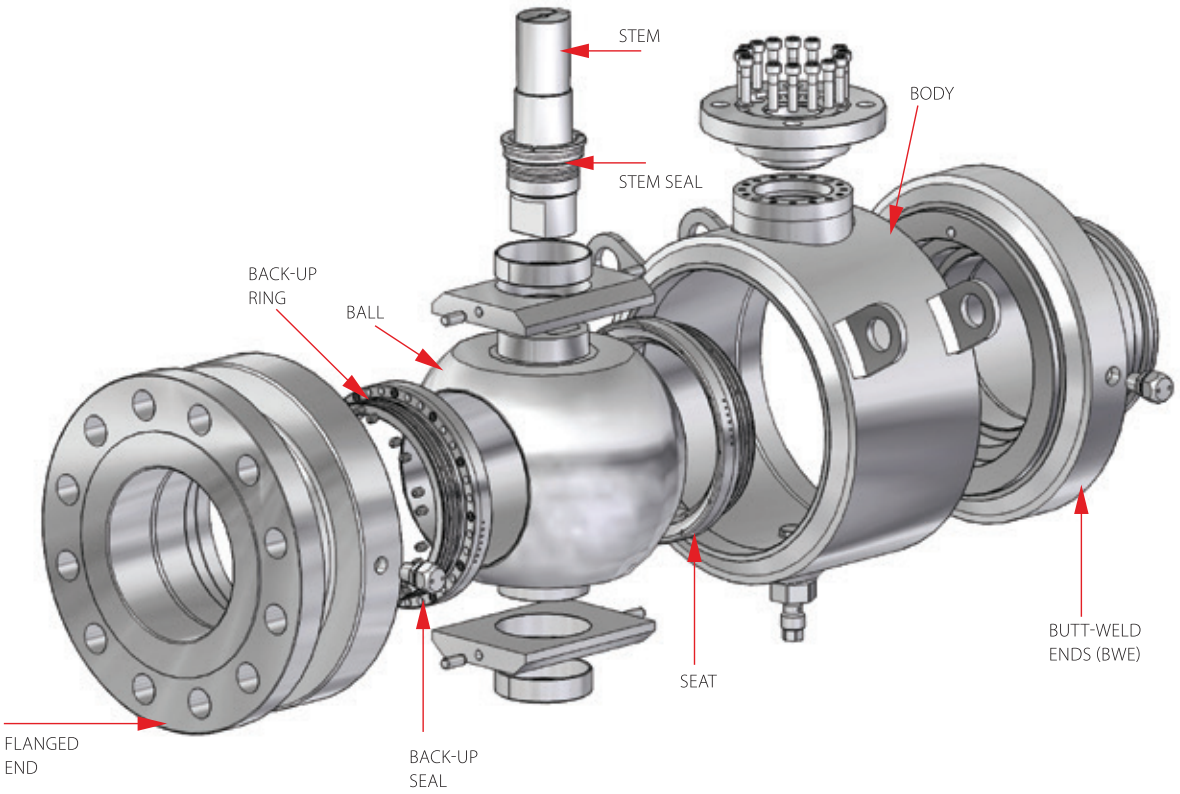
ADDITIONAL COMMENTS:

Flange dimension acc. to EN 1092-1
Flanges standard sealing surface: B2 acc. to EN 1092-1
Butt-Weld Ends acc. to EN 12627
Dimensions D1 and T to agree
Threaded end acc. to ISO 228-1 or ASME B1.20.1

X = Available
F = Floating ball
t = Trunnion mounted ball
DBB = Double Block and Bleed
IS = Injection System
FxF = Flanged ends
WxW = Butt-Weld ends
GxG= Threaded ends



BALL VALVE
PN 63 FULL BORE



MATERIALS

DN	BODY	FLANGED END	BUTT-WELD ENDS (BWE)	BALL	STEM	BACK-UP RING	SEAT	BACK-UP SEAL	STEM SEAL
15 20 25 32 40 50 65 80 100 150	P355NH; P355NL1; S355J2; S355J2H	P355NH; P355NL1; P355QH; S355J2;	P355NH; P355NL1; S355J2; S355J2H	X5CrNi18-10 (AISI 304)	X20Cr13 (AISI 420)	CS + Ni-Cr SS	PTFE+C	HNBR; EPDM; FKM; Graphite	HNBR; EPDM; FKM; Graphite
200 250 300 350 400 500 600 700	A350LF2; P355NH; P355QH		P355NH; P355NL1; S355J2; S355J2H	S355J2 + EN A350 LF2 + EN A350 LF2 + EN		CS + Ni-Cr CS + EN	HNBR		

CLASSIFICATION OF THE PRODUCTS	TYPE	SCOPE
BALL VALVE FROM CARBON STEEL, FULL BORE, PN 63	AH-3, AH-3p, AH-3G	DN 15-25
	AH-3, AH-3p	DN 32-65
	AH-3j, AH-3pj	DN 50-65
	AH-4w, AH-4pw	DN 80-700

TEMPERATURE RANGE [°C]
t= -60°C ÷ +100°C
t= -40°C ÷ +100°C
t= -30°C ÷ +100°C

DIMENSIONS [mm]

DN	d	F	t	DBB	IS	L			B	I	D1	T
						FxF	WxW	GxG				
15	15	X	-	-	-	130,0	165,0	100,0	44,0	21,0	21,3	2,9
20	20	X	-	-	-	150,0	190,0	110,0	47,0	24,0	26,9	3,2
25	25	X	-	-	-	160,0	216,0	135,0	60,0	30,0	35,0	4,5
32	32	X	-	-	-	180,0	229,0	-	83,0	38,0	44,5	5,0
40	40	X	-	-	-	200,0	241,0	-	87,0	45,0	51,0	5,0
50	50	X -	- X	- X	-	230,0	292,0	-	121,0	53,0	60,3	5,0
65	64	X -	- X	- X	-	290,0	330,0	-	132,0	67,0	76,1	7,1
80	78	-	X	X	OPTION	310,0	356,0	-	143,0	124,0	88,9	6,3
100	101	-	X	X	OPTION	350,0	432,0	-	169,0	141,0	114,3	7,1
150	152	-	X	X	X	450,0	559,0	-	228,0	190,0	168,3	8,0
200	202	-	X	X	X	597,0	660,0	-	290,0	350,0	219,1	8,8
250	253	-	X	X	X	673,0	787,0	-	328,0	430,0	273,0	10,0
300	304	-	X	X	X	762,0	838,0	-	395,0	470,0	323,9	10,0
350	335	-	X	X	X	826,0	889,0	-	416,0	490,0	355,6	12,5
400	387	-	X	X	X	902,0	991,0	-	488,0	528,0	406,4	14,2
500	489	-	X	X	X	1054,0	1194,0	-	607,0	602,0	508,0	16,0
600	589	-	X	X	X	1232,0	1232,0	-	722,0	795,0	610,0	16,0
700	684	-	X	X	X	1397,0	1397,0	-	796,0	880,0	711,0	17,5

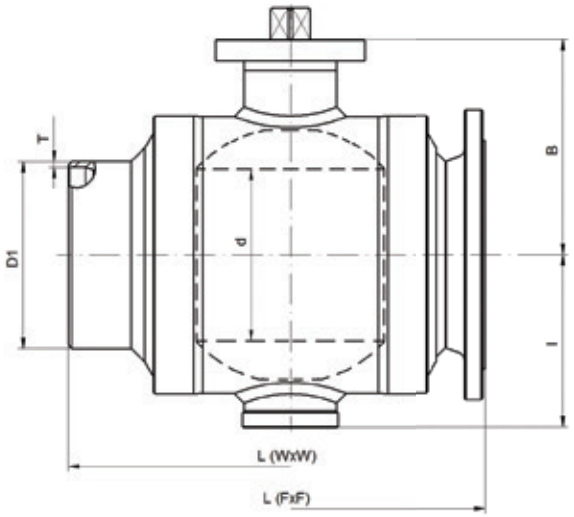
WEIGHT [kg]

DN	FxF	WxW	GxG
	PN 63	PN 63	PN 63
15	3,5	1,4	1,2
20	5,5	2,0	1,6
25	7,8	3,7	3,1
32	9,4	5,8	-
40	12,6	7,9	-
50	15,7	10,6	-
	16,2	19,0	-
65	21,1	14,3	-
	21,8	15,0	-
80	35,0	25,0	-
100	60,0	48,0	-
150	143,0	116,0	-
200	368,0	318,0	-
250	591,0	512,0	-
300	917,0	854,0	-
350	1177,0	1052,0	-
400	1522,0	1369,0	-
500	2583,0	2476,0	-
600	3723,0	3132,0	-
700	5398,0	4608,0	-

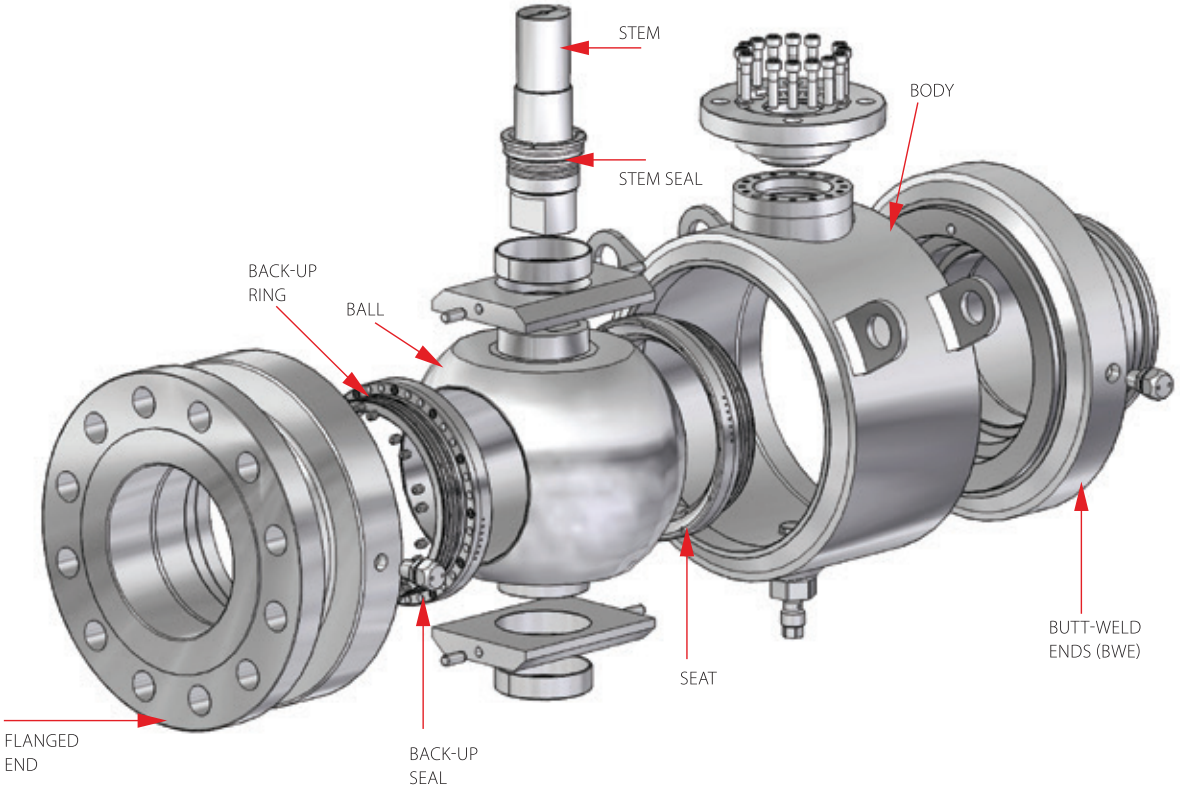
ADDITIONAL COMMENTS:

Flange dimension acc. to EN 1092-1
Flanges standard sealing surface: B2 acc. to EN 1092-1
Butt-Weld Ends acc. to EN 12627
Dimensions D1 and T to agree
Threaded end acc. to ISO 228-1 or ASME B1.20.1

X = Available
F = Floating ball
t = Trunnion mounted ball
DBB = Double Block and Bleed
IS = Injection System
FxF = Flanged ends
WxW = Butt-Weld ends
GxG = Threaded ends



BALL VALVE
PN 100 FULL BORE



MATERIALS

DN	BODY	FLANGED END	BUTT-WELD ENDS (BWE)	BALL	STEM	BACK-UP RING	SEAT	BACK-UP SEAL	STEM SEAL
15 20 25 32 40 50 65 80 100 150	P355NH; P355NL1; S355J2; S355J2H	P355NH; P355NL1; P355QH; S355J2;	P355NH; P355NL1; S355J2; S355J2H	X5CrNi18-10 (AISI 304)	X20Cr13 (AISI 420)	CS + Ni-Cr SS	PTFE+C	HNBR; EPDM; FKM; Graphite	HNBR; EPDM; FKM; Graphite
200 250 300 350 400 500 600 700	A350LF2; P355NH; P355QH		P355NH; P355NL1; S355J2; S355J2H	S355J2 + EN A350 LF2 + EN A350 LF2 + EN		CS + Ni-Cr CS + EN	HNBR		

CLASSIFICATION OF THE PRODUCTS	TYPE	SCOPE
BALL VALVE FROM CARBON STEEL, FULL BORE, PN 100	AH-3, AH-3p, AH-3G	DN 15-25
	AH-3, AH-3p	DN 32-65
	AH-3j, AH-3pj	DN 50-65
	AH-4w, AH-4pw	DN 80-700

TEMPERATURE RANGE [°C]
t= -60°C ÷ +100°C
t= -40°C ÷ +100°C
t= -30°C ÷ +100°C

DIMENSIONS [mm]

DN	d	F	t	DBB	IS	L			B	I	D1	T
						FxF	WxW	GxG				
15	15	X	-	-	-	130,0	165,0	100,0	44,0	21,0	21,3	2,9
20	20	X	-	-	-	150,0	190,0	110,0	47,0	24,0	26,9	3,2
25	25	X	-	-	-	160,0	216,0	135,0	60,0	30,0	35,0	4,5
32	32	X	-	-	-	180,0	229,0	-	83,0	38,0	44,5	5,0
40	40	X	-	-	-	200,0	241,0	-	87,0	45,0	51,0	5,0
50	50	X -	- X	- X	-	230,0	292,0	-	121,0	53,0	60,3	5,0
65	64	X -	- X	- X	-	290,0	330,0	-	132,0	67,0	76,1	7,1
80	78	-	X	X	OPTION	310,0	356,0	-	143,0	124,0	88,9	6,3
100	101	-	X	X	OPTION	350,0	432,0	-	169,0	141,0	114,3	7,1
150	152	-	X	X	X	450,0	559,0	-	228,0	190,0	168,3	8,0
200	202	-	X	X	X	660,0	660,0	-	290,0	350,0	219,1	8,8
250	253	-	X	X	X	787,0	787,0	-	328,0	430,0	273,0	10,0
300	304	-	X	X	X	838,0	838,0	-	395,0	470,0	323,9	10,0
350	335	-	X	X	X	889,0	889,0	-	416,0	490,0	355,6	12,5
400	387	-	X	X	X	991,0	991,0	-	488,0	528,0	406,4	14,2
500	489	-	X	X	X	1194,0	1194,0	-	607,0	602,0	508,0	16,0
600	589	-	X	X	X	1397,0	1397,0	-	722,0	795,0	610,0	16,0
700	684	-	X	X	X	1549,0	1549,0	-	796,0	880,0	711,0	17,5

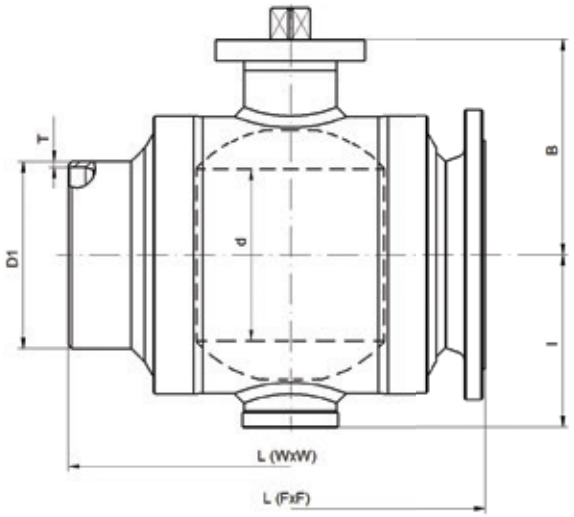
WEIGHT [kg]

DN	FxF	WxW	GxG
	PN 100	PN 100	PN 100
15	3,5	1,4	1,2
20	5,5	2,0	1,6
25	7,8	3,7	3,1
32	9,4	5,8	-
40	12,6	7,9	-
50	16,9	10,6	-
	17,5	19,0	-
65	22,8	14,3	-
	23,6	15,0	-
80	37,0	25,0	-
100	66,0	48,0	-
150	152,0	116,0	-
200	390,0	318,0	-
250	665,0	512,0	-
300	1043,0	854,0	-
350	1302,0	1052,0	-
400	1853,0	1565,0	-
500	3339,0	2863,0	-
600	4216,0	3132,0	-
700	5910,0	4608,0	-

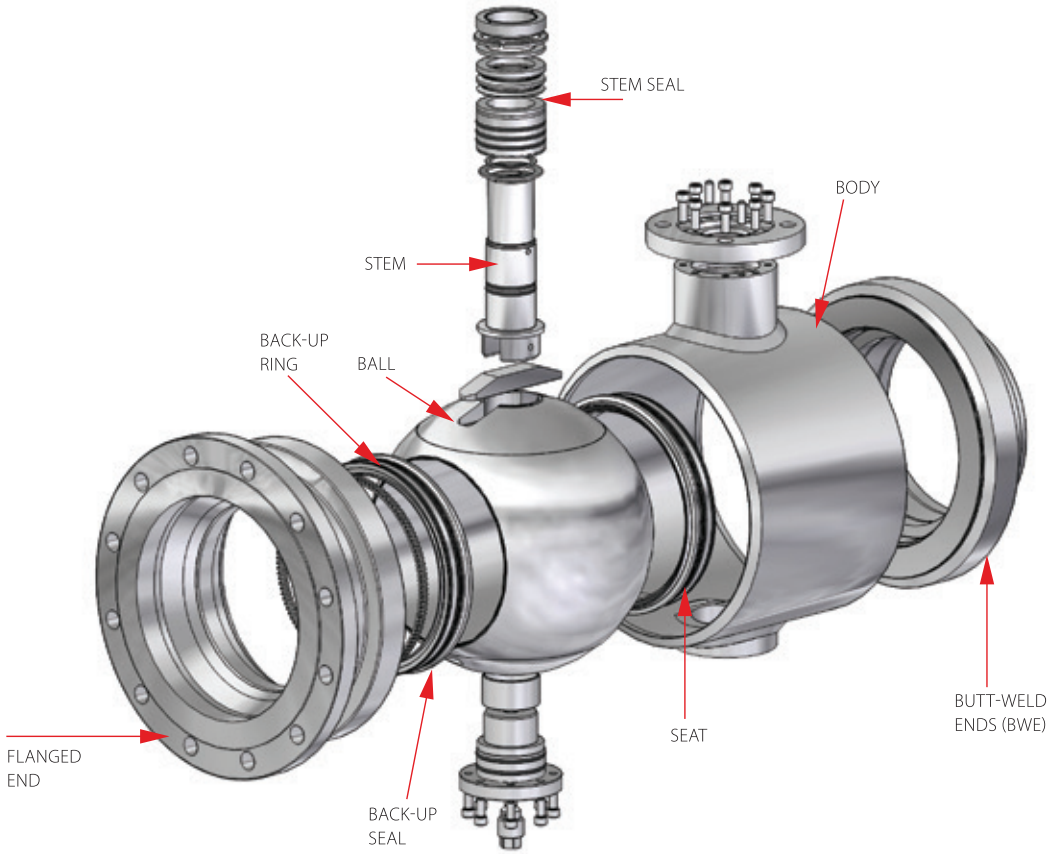
ADDITIONAL COMMENTS:

Flange dimension acc. to EN 1092-1
Flanges standard sealing surface: B2 acc. to EN 1092-1
Butt-Weld Ends acc. to EN 12627
Dimensions D1 and T to agree
Threaded end acc. to ISO 228-1 or ASME B1.20.1

X = Available
F = Floating ball
t = Trunnion mounted ball
DBB = Double Block and Bleed
IS = Injection System
FxF = Flanged ends
WxW = Butt-Weld ends
GxG = Threaded ends



BALL VALVE
PN 16/25/40 REDUCED BORE



MATERIALS

DN	BODY	FLANGED END	BUTT-WELD ENDS (BWE)	BALL	STEM	BACK-UP RING	SEAT	BACK-UP SEAL	STEM SEAL
250 300 350 400 500 600 700 800	P355NH; P355NL1; S355J2; S355J2H	P355NH; P355QH	P355NH; P355NL1; S355J2; S355J2H	A350 LF2 + EN	X20Cr13 (AISI 420)	CS + Ni-Cr CS + EN	PTFE; PTFE+C	HNBR; EPDM; FKM; Graphite; PTFE	HNBR; EPDM; FKM; Graphite; PTFE

CLASSIFICATION OF THE PRODUCTS	TYPE	SCOPE
BALL VALVE FROM CARBON STEEL, REDUCED BORE, PN 16/25/40	AH-14cr, AH-15cr	DN 250-800

TEMPERATURE RANGE [°C]
t= -40°C ÷ +100°C
t= -20°C ÷ +150°C
t= -30°C ÷ +100°C
t= -10°C ÷ +200°C

DIMENSIONS [mm]

DN	d	F	t	DBB	IS	L			B	I	D1	T
						FxF	WxW	GxG				
250	202	-	X	X	OPTION	533,0	559,0	-	252,0	203,0	273,0	10,0
300	253	-	X	X	OPTION	610,0	635,0	-	315,0	248,0	323,9	10,0
350	304	-	X	X	OPTION	686,0	762,0	-	355,0	288,0	355,6	11,0
400	336	-	X	X	OPTION	762,0	838,0	-	378,0	311,0	406,4	12,5
500	386	-	X	X	X	914,0	991,0	-	433,0	480,0	508,0	12,5
600	488	-	X	X	X	1067,0	1143,0	-	561,0	570,0	610,0	12,5
700	588	-	X	X	X	1245,0	1346,0	-	654,0	682,0	711,0	14,2
800	684	-	X	X	X	1372,0	1524,0	-	806,0	790,0	813,0	16,0

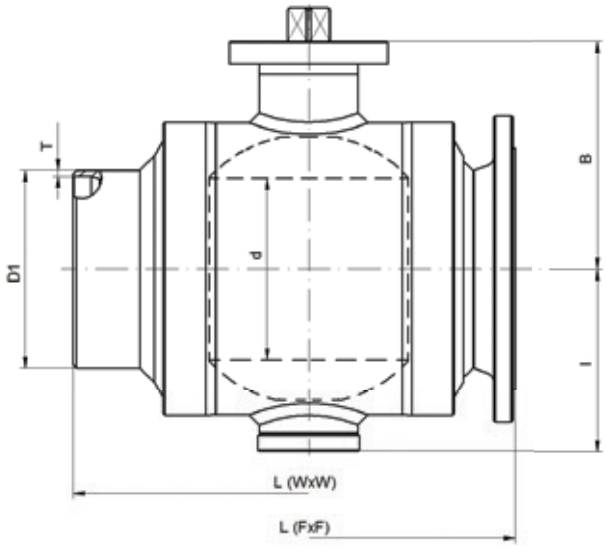
WEIGHT [kg]

DN	FxF			WxW			GxG		
	PN 16	PN 25	PN 40	PN 16	PN 25	PN 40	PN 16	PN 25	PN 40
250	185,0	195,0	207,0	152,0	152,0	152,0	-	-	-
300	299,0	312,0	336,0	255,0	255,0	255,0	-	-	-
350	486,0	512,0	541,0	442,0	442,0	442,0	-	-	-
400	644,0	679,0	731,0	583,0	583,0	583,0	-	-	-
500	1214,0	1251,0	1290,0	1094,0	1094,0	1094,0	-	-	-
600	2050,0	2070,0	2227,0	1802,0	1802,0	1802,0	-	-	-
700	3217,0	3299,0	3505,0	3083,0	3083,0	3083,0	-	-	-
800	4652,0	4757,0	5044,0	4455,0	4455,0	4455,0	-	-	-

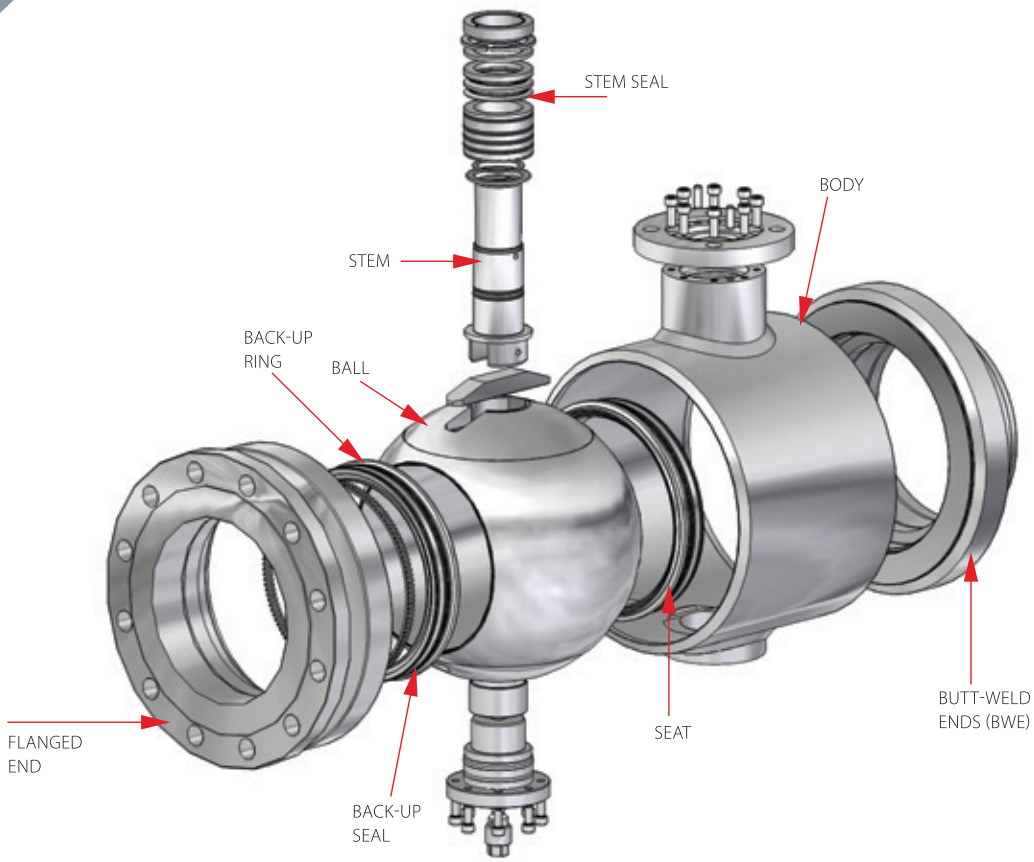
ADDITIONAL COMMENTS:

Flange dimension acc. to EN 1092-1
Flanges standard sealing surface: B2 acc. to EN 1092-1
Butt-Weld Ends acc. to EN 12627
Dimensions D1 and T to agree

X = Available
F = Floating ball
t = Trunnion mounted ball
DBB = Double Block and Bleed
IS = Injection System
FxF = Flanged ends
WxW = Butt-Weld ends
GxG = Threaded ends



BALL VALVE
CLASS 150



MATERIALS

NPS	BODY	FLANGED END	BUTT-WELD ENDS (BWE)	BALL	STEM	BACK-UP RING	SEAT	BACK-UP SEAL	STEM SEAL
1/2"	P355NH; P355NL1; S355J2; S355J2H	P355NH; P355NL1; S355J2;	P355NH; P355NL1; S355J2; S355J2H	X5CrNi18-10 (AISI 304)	X20Cr13 (AISI 420)	CS + Ni-Cr SS CS + EN	PTFE; PTFE+C	HNBR; EPDM; FKM; Graphite	HNBR; EPDM; FKM; Graphite; PTFE
3/4"									
1"									
1 1/4"									
1 1/2"									
2"									
2 1/2"									
3"									
4"	P355NH; P355NL1; S355J2; S355J2H	P355NH; P355QH	P355NH; P355NL1; S355J2; S355J2H	S355J2 + Ni-Cr; A350 LF2 + EN					
6"				A350 LF2 + EN					
8"									
10"									
12"									
14"									
16"									
20"									
24"									
28"									
32"									

CLASSIFICATION OF THE PRODUCTS	TYPE	SCOPE
BALL VALVE FROM CARBON STEEL, FULL BORE, CLASS 150	AH-2c-MK, AH-2c-MP, AH-2c-MG	NPS 1/2"-1"
	AH-2c, AH-2cp, AH-2cg	NPS 11/4"-3"
	AH-11c, AH-12c	NPS 4"-6"
	AH-14c,AH-15c	NPS 8"-32"

TEMPERATURE RANGE [°C]
t= -29°C ÷ +100°C
t= -40°C ÷ +100°C
t= -20°C ÷ +150°C
t= -10°C ÷ +200°C

DIMENSIONS [mm]

NPS	d	F	t	DBB	IS	L			B	I	D1	T
						FxF	WxW	GxG				
1/2"	15	X	-	-	-	108,0	140,0	100,0	37,0	21,0	21,3	3,2
3/4"	20	X	-	-	-	117,0	152,0	110,0	40,0	24,0	26,9	3,6
1"	25	X	-	-	-	127,0	165,0	135,0	48,0	30,0	35,0	5,0
1 1/4"	32	X	-	-	-	140,0	178,0	150,0	83,0	35,0	42,4	3,6
1 1/2"	40	X	-	-	-	165,0	190,0	160,0	87,0	40,0	48,3	3,6
2"	50	X	X	OPTION	-	178,0	216,0	160,0	95,0	48,0	60,3	4,0
2 1/2"	64	X	-	-	-	190,0	241,0	210,0	122,0	59,0	76,1	5,0
3"	78	X	X	OPTION	-	203,0	283,0	-	130,0	71,0	88,9	5,6
4"	101	X -	- X	- OPTION	- OPTION	229,0	305,0	-	173,0	90,0	114,3	6,0
6"	152	X -	- X	- OPTION	- OPTION	394,0	457,0	-	253,0	137,0	168,3	7,1
8"	202	-	X	X	OPTION	457,0	521,0	-	252,0	203,0	219,1	8,8
10"	253	-	X	X	OPTION	533,0	599,0	-	315,0	248,0	273,0	10,0
12"	304	-	X	X	OPTION	610,0	635,0	-	355,0	288,0	323,9	10,0
14"	336	-	X	X	OPTION	686,0	762,0	-	378,0	311,0	355,6	11,0
16"	386	-	X	X	X	762,0	838,0	-	433,0	480,0	406,4	12,5
20"	488	-	X	X	X	914,0	991,0	-	561,0	570,0	508,0	12,5
24"	588	-	X	X	X	1067,0	1143,0	-	654,0	682,0	610,0	12,5
28"	684	-	X	X	X	1245,0	1346,0	-	806,0	790,0	711,0	14,2
32"	780	-	X	X	X	1372,0	1524,0	-	890,0	900,0	813,0	16,0

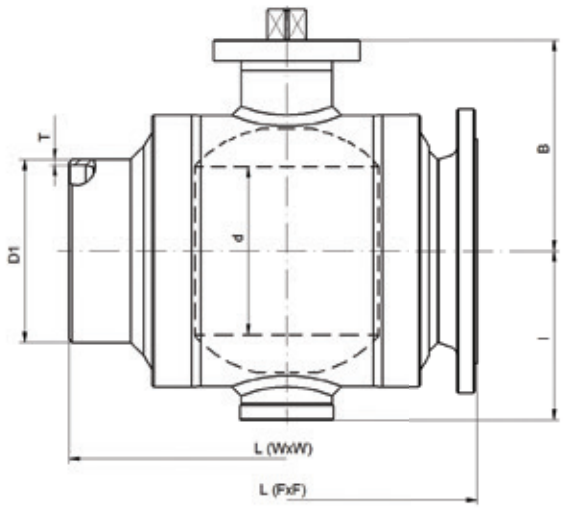
WEIGHT [kg]

NPS	FxF	WxW	GxG
	CL 150	CL 150	CL 150
1/2"	2,0	1,2	1,2
3/4"	2,7	1,6	1,5
1"	4,4	3,0	3,1
1 1/4"	4,5	2,7	2,8
1 1/2"	6,5	3,5	3,9
2"	9,1	4,8	5,1
2 1/2"	14,9	8,4	9,4
3"	18,9	13,5	-
4"	35,0 46,0	28,0 30,0	-
6"	97,0 99,0	79,0 81,0	-
8"	148,0	130,0	-
10"	273,0	240,0	-
12"	467,0	421,0	-
14"	594,0	557,0	-
16"	970,0	900,0	-
20"	1700,0	1610,0	-
24"	2740,0	2570,0	-
28"	4360,0	4126,0	-
32"	6296,0	6145,0	-

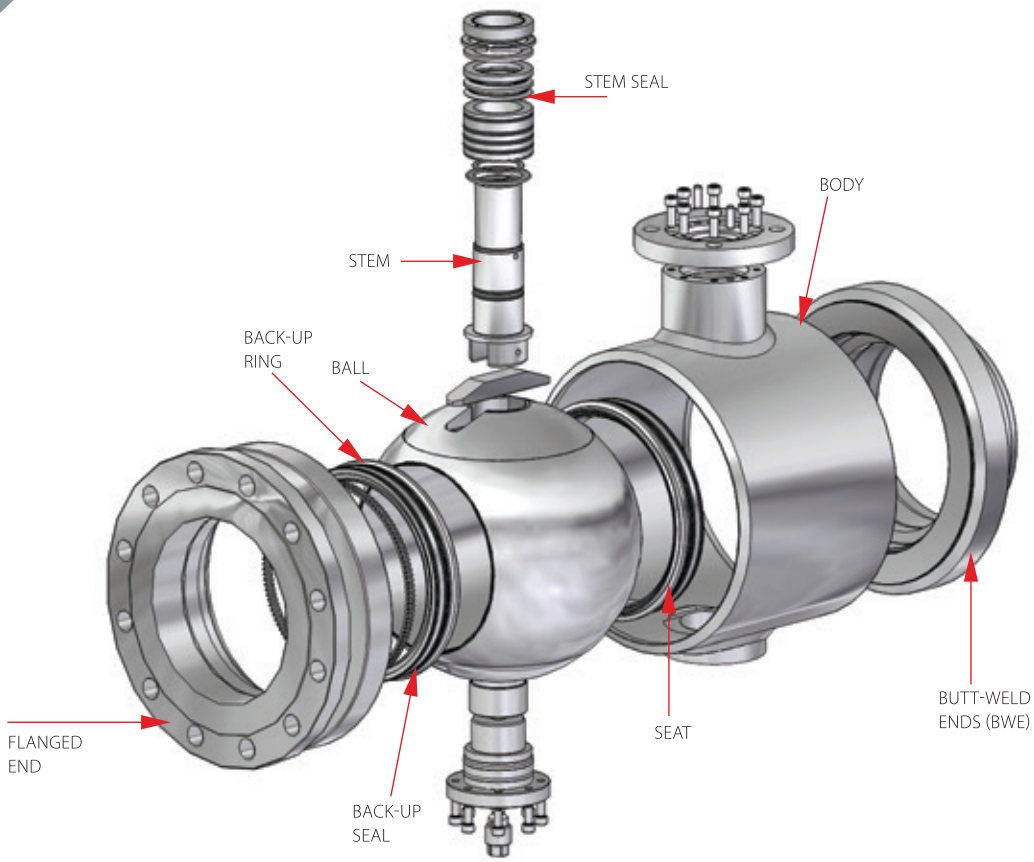
ADDITIONAL COMMENTS:

Flange dimension acc. to EN 1759-1; ASME B 16.5; ASME B 16.47
Flanges standard sealing surface: B acc. to EN 1759-1; RF acc. to ASME B 16.5, ASME B 16.47
Butt-Weld Ends acc. to EN 12627
Dimensions D1 and T to agree
Threaded end acc. to ISO 228-1 or ASME B1.20.1

X = Available
F = Floating ball
t = Trunnion mounted ball
DBB = Double Block and Bleed
IS = Injection System
FxF = Flanged ends
WxW = Butt-Weld ends
GxG = Threaded ends



BALL VALVE
CLASS 300



MATERIALS

NPS	BODY	FLANGED END	BUTT-WELD ENDS (BWE)	BALL	STEM	BACK-UP RING	SEAT	BACK-UP SEAL	STEM SEAL
1/2″ 3/4″ 1″ 1 1/4″ 1 1/2″ 2″ 2 1/2″ 3″	P355NH; P355NL1; S355J2; S355J2H	P355NH; P355NL1; S355J2;	P355NH; P355NL1; S355J2; S355J2H	X5CrNi18-10 (AISI 304)	X20Cr13 (AISI 420)	CS + Ni-Cr SS CS + EN	PTFE; PTFE+C	HNBR; EPDM; FKM; Graphite	HNBR; EPDM; FKM; Graphite; PTFE
4″ 6″ 8″ 10″ 12″ 14″ 16″ 20″ 24″ 28″ 32″	P355NH; P355NL1; S355J2; S355J2H	P355NH; P355QH	P355NH; P355NL1; S355J2; S355J2H	S355J2 + Ni-Cr; A350 LF2 + EN A350 LF2 + EN					

CLASSIFICATION OF THE PRODUCTS	TYPE	SCOPE
BALL VALVE FROM CARBON STEEL, FULL BORE, CLASS 300	AH-2c-MK, AH-2c-MP, AH-2c-MG	NPS 1/2"-1"
	AH-2c, AH-2cp, AH-2cg	NPS 1 1/4"-3"
	AH-11c, AH-12c	NPS 4"-6"
	AH-14c,AH-15c	NPS 8"-32"

TEMPERATURE RANGE [°C]
t= -29°C ÷ +100°C
t= -40°C ÷ +100°C
t= -20°C ÷ +150°C
t= -10°C ÷ +200°C

DIMENSIONS [mm]

NPS	d	F	t	DBB	IS	L			B	I	D1	T
						FxF	WxW	GxG				
1/2"	15	X	-	-	-	140,0	140,0	100,0	37,0	21,0	21,3	3,2
3/4"	20	X	-	-	-	152,0	152,0	110,0	40,0	24,0	26,9	3,6
1"	25	X	-	-	-	165,0	165,0	135,0	48,0	30,0	35,0	5,0
1 1/4"	32	X	-	-	-	178,0	178,0	150,0	83,0	35,0	42,4	3,6
1 1/2"	40	X	-	-	-	190,0	190,0	160,0	87,0	40,0	48,3	3,6
2"	50	X	X	OPTION	-	216,0	216,0	160,0	95,0	48,0	60,3	4,0
2 1/2"	64	X	-	-	-	241,0	241,0	210,0	122,0	59,0	76,1	5,0
3"	78	X	X	OPTION	-	283,0	283,0	-	130,0	71,0	88,9	5,6
4"	101	X -	- X	- OPTION	- OPTION	305,0	305,0	-	173,0	90,0	114,3	6,0
6"	152	X -	- X	- OPTION	- OPTION	403,0	457,0	-	253,0	137,0	168,3	7,1
8"	202	-	X	X	OPTION	502,0	521,0	-	252,0	203,0	219,1	8,8
10"	253	-	X	X	OPTION	568,0	559,0	-	315,0	248,0	273,0	10,0
12"	304	-	X	X	OPTION	648,0	635,0	-	355,0	288,0	323,9	10,0
14"	336	-	X	X	OPTION	762,0	762,0	-	394,0	311,0	355,6	11,0
16"	386	-	X	X	X	838,0	838,0	-	433,0	480,0	406,4	12,5
20"	488	-	X	X	X	991,0	991,0	-	561,0	570,0	508,0	12,5
24"	588	-	X	X	X	1143,0	1143,0	-	654,0	682,0	610,0	12,5
28"	684	-	X	X	X	1346,0	1346,0	-	806,0	790,0	711,0	14,2
32"	780	-	X	X	X	1524,0	1524,0	-	890,0	900,0	813,0	16,0

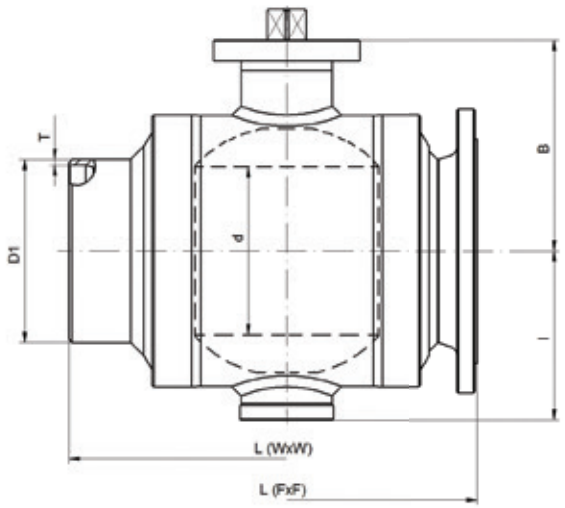
WEIGHT [kg]

NPS	FxF	WxW	GxG
	CL 300	CL 300	CL 300
1/2"	2,5	1,2	1,2
3/4"	3,9	1,6	1,5
1"	5,7	3,0	3,1
1 1/4"	6,3	2,7	2,8
1 1/2"	8,6	3,5	3,9
2"	10,8	4,8	5,1
2 1/2"	17,3	8,4	9,4
3"	26,2	13,5	-
4"	48,0 58,0	28,0 30,0	-
6"	111,0 113,0	79,0 81,0	-
8"	175,0	130,0	-
10"	310,0	240,0	-
12"	516,0	421,0	-
14"	694,0	557,0	-
16"	1080,0	900,0	-
20"	1865,0	1610,0	-
24"	2990,0	2570,0	-
28"	4678,0	4126,0	-
32"	7318,0	6145,0	-

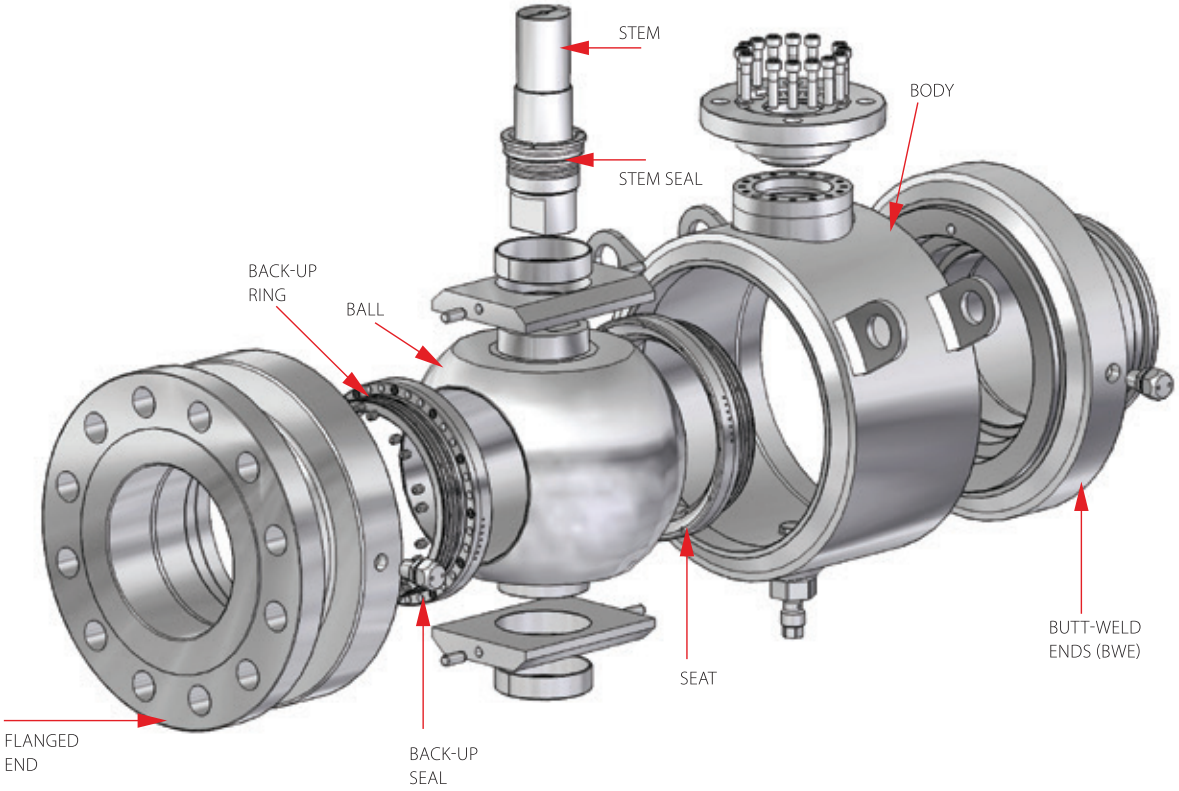
ADDITIONAL COMMENTS:

Flange dimension acc. to EN 1759-1; ASME B 16.5; ASME B 16.47
Flanges standard sealing surface: B acc. to EN 1759-1; RF acc. to ASME B 16.5, ASME B 16.47
Butt-Weld Ends acc. to EN 12627
Dimensions D1 and T to agree
Threaded end acc. to ISO 228-1 or ASME B1.20.1

X = Available
F = Floating ball
t = Trunnion mounted ball
DBB = Double Block and Bleed
IS = Injection System
FxF = Flanged ends
WxW = Butt-Weld ends
GxG = Threaded ends



BALL VALVE
CLASS 600



MATERIALS

NPS	BODY	FLANGED END	BUTT-WELD ENDS (BWE)	BALL	STEM	BACK-UP RING	SEAT	BACK-UP SEAL	STEM SEAL
1/2″ 3/4″ 1″ 1 1/4″ 1 1/2″ 2″	P355NH; P355NL1; S355J2; S355J2H	P355NH; P355NL1; P355QH; S355J2;	P355NH; P355NL1; S355J2; S355J2H	X5CrNi18-10 (AISI 304)	X20Cr13 (AISI 420)	CS + Ni-Cr SS	PTFE+C	HNBR; EPDM; FKM; Graphite	HNBR; EPDM; FKM; Graphite
2 1/2″ 3″ 4″ 6″ 8″ 10″ 12″ 14″ 16″ 20″ 24″ 28″	A350LF2; P355NH; P355QH P420NL1		P355NH; P355NL1; S355J2; S355J2H	S355J2 + EN; A350 LF2 + EN A350 LF2 + EN		CS + Ni-Cr CS + EN	HNBR		

CLASSIFICATION OF THE PRODUCTS	TYPE	SCOPE
BALL VALVE FROM CARBON STEEL, FULL BORE, CLASS 600	AH-3, AH-3p, AH-3G	NPS 1/2"-1"
	AH-3, AH-3p	NPS 1 1/4"-1 1/2"
	AH-3j, AH-3pj	NPS 2"-2 1/2"
	AH-4w, AH-4pw	NPS 3"-28"

TEMPERATURE RANGE [°C]
t= -29°C ÷ +100°C
t= -40°C ÷ +100°C

DIMENSIONS [mm]

NPS	d	F	t	DBB	IS	L			B	I	D1	T
						FxF	WxW	GxG				
1/2"	15	X	-	-	-	165,0	165,0	100,0	44,0	21,0	21,3	2,9
3/4"	20	X	-	-	-	190,0	190,0	110,0	47,0	24,0	26,9	3,2
1"	25	X	-	-	-	216,0	216,0	135,0	60,0	30,0	35,0	4,5
1 1/4"	32	X	-	-	-	229,0	229,0	-	83,0	38,0	44,5	5,0
1 1/2"	40	X	-	-	-	241,0	241,0	-	87,0	45,0	51,0	5,0
2"	50	X -	- X	- X	- -	292,0	292,0	- -	121,0	53,0 63,0	60,3	5,0
2 1/2"	64	X -	- X	-	-	330,0	330,0	- -	132,0	67,0 75,0	76,1	7,1
3"	78	-	X	X	OPTION	356,0	356,0	-	143,0	124,0	88,9	6,3
4"	101	-	X	X	OPTION	432,0	432,0	-	169,0	141,0	114,3	7,1
6"	152	-	X	X	X	559,0	559,0	-	228,0	190,0	168,3	8,0
8"	202	-	X	X	X	660,0	660,0	-	290,0	350,0	219,1	8,8
10"	253	-	X	X	X	787,0	787,0	-	328,0	430,0	273,0	10,0
12"	304	-	X	X	X	838,0	838,0	-	395,0	470,0	323,9	10,0
14"	335	-	X	X	X	889,0	889,0	-	416,0	490,0	355,6	12,5
16"	387	-	X	X	X	991,0	991,0	-	488,0	528,0	406,4	14,2
20"	489	-	X	X	X	1194,0	1194,0	-	607,0	602,0	508,0	16,0
24"	589	-	X	X	X	1397,0	1397,0	-	722,0	795,0	610,0	16,0
28"	684	-	X	X	X	1549,0	1549,0	-	796,0	880,0	711,0	17,5

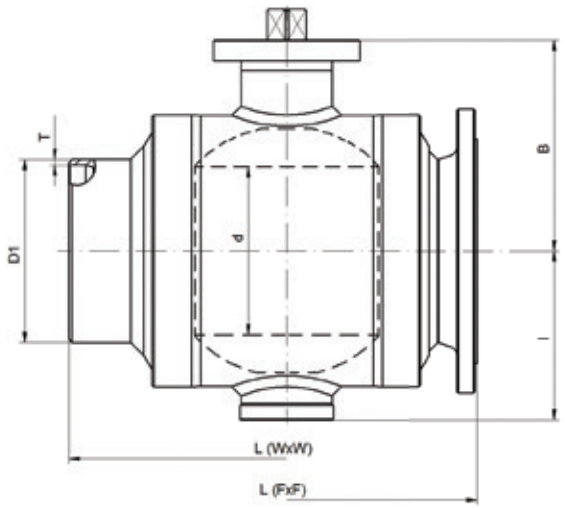
WEIGHT [kg]

NPS	FxF	WxW	GxG
	CL 600	CL 600	CL 600
1/2"	2,9	1,4	1,2
3/4"	4,6	2,0	1,6
1"	6,8	3,7	3,1
1 1/4"	11,9	5,8	-
1 1/2"	16,1	7,9	-
2"	20,0	10,6 19,0	- -
2 1/2"	31,0 36,0	14,3 15,0	- -
3"	40,0	25,0	-
4"	84,0	48,0	-
6"	178,0	116,0	-
8"	402,0	318,0	-
10"	680,0	512,0	-
12"	1029,0	854,0	-
14"	1237,0	1052,0	-
16"	1818,0	1565,0	-
20"	3239,0	2863,0	-
24"	4216,0	3132,0	-
28"	5910,0	4608,0	-

ADDITIONAL COMMENTS:

Flange dimension acc. to EN 1759-1; ASME B 16.5, ASME B 16.47
Flanges standard sealing surface: B acc. to EN 1759-1;
RF acc. to ASME B 16.5, ASME B 16.47
Butt-Weld Ends acc. to EN 12627
Dimensions D1 and T to agree
Threaded end acc. to ISO 228-1 or ASME B1.20.1

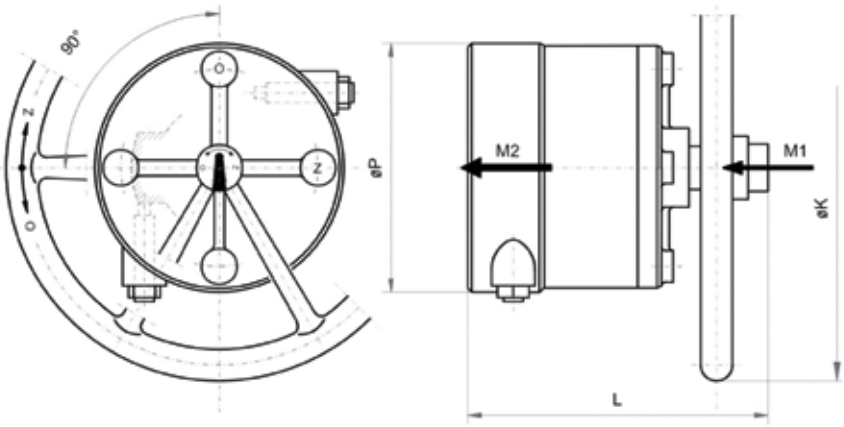
X = Available
F = Floating ball
t = Trunnion mounted ball
DBB = Double Block and Bleed
IS = Injection System
FxF = Flanged ends
WxW = Butt-Weld ends
GxG = Threaded ends



ACCESSORIES

Planetary gear

The planetary gear, a product of Broen Oil & Gas, is used for manual actuation of ball valves and is substantially reduces the effort required for this operation.
The Open / Closed, end positions are enforced by bumpers which are set during the installation of the gear on the valve and are then protected against further changes to the initial settings.
The PO-27 planetary gear is a non-self-locking, two stage planetary gear, using cylindrical lubricated gears.
The planetary gears can also be installed on top of stem extension columns, or between the valves and the respective columns, thereby enabling the actuation of valves being installed on underground piping systems.



DIMENSIONS [mm]

Type of gear	Transmission	M1 [Nm]	M2 [Nm]	$t^{ambient}$ [°C]	L [mm]	ØK [mm]	ØP [mm]	Maximum pressure exercised on the wheel 1 hand	Connection acc. to ISO 5211	Housing for the stem and its depth [mm x mm]	~ Weight [kg]
PO-27/100	1:27	100,0	2 000,0	-40 +150	~200,0	450,0	170,0	460,0	F12 F14	22 x 35 or 27 x 40 or 36 x 50	18.0
PO-27/200	1:27	200,0	4 000,0	-40 +150	~270,0	650,0	220,0	660,0	F14 F16	26 x 60 or Ø60 x 80 with insert 18 x 11	37.3
PO-27/300	1:27	290,0	6 000,0	-40 +150		800,0	300,0	720,0	F25 Ø72 x 110 with insert 20 x 12	Ø72x110 with insert 20 x 12	54.5

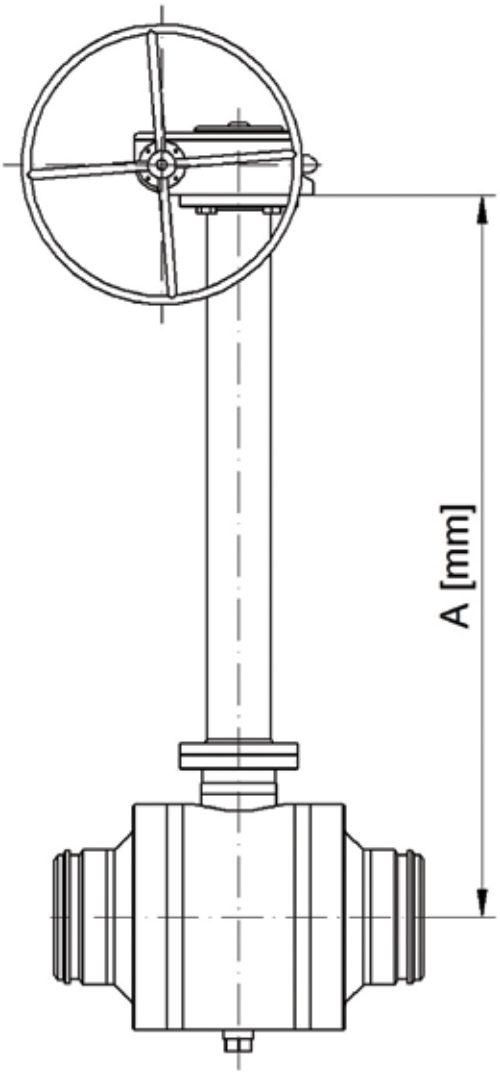
M1 – inlet torque
M2 – outlet torque

Columns

The stem extension columns are made according to the Broen Oil & Gas standard, or to a customer requested height.
Rigid telescope type stem extensions are also available.

A lever, planetary or other type of gear or any other drive type (electric, pneumatic, hydraulic etc.) can be installed on top of the column. A planetary gear can also be installed directly on the valve, beneath the column.

The height of the stem extension column is counted from the valve axis to the top of the column (size „A"). This dimension should be included in the request for a quotation and in the purchase order.



BROEN
VALVE TECHNOLOGIES

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