Ball Valves

ANSI Flanged Ball Valves - Types AF95D

1/2“ -2“

2 1/2“ - 6“

2-piece body design (cl. 150)

Full port, stainless steel casting A351 CF8M or carbon steel casting A216 WCB, seals PTFE/glas re-inforced, connection flanges acc. to ASME B16.5 RF, face-to-face dimension acc. to ASME B16.10, suitable for direct mounting, anti-static, blow-out proof stem, pressure relieving seats in SRS- system, double seal system - Fire-Safe certified and FDA conformity at the same time, low emission tested (TA-Luft).

Modular construction with interesting options.

Types	Pressure class	Materials		Connections acc. to	Face-to-Face	Sizes
AF95D	Cl. 150	Carbon Steel	A216 WCB	ASME B16.5 RF	ASME B16.10	½“ - 6“
AF95D	Cl. 150	Stainless Steel	A351 CF8M	ASME B16.5 RF	ASME B16.10	½“ - 6“

DGRL/TA- Luft

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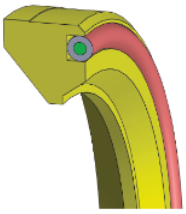
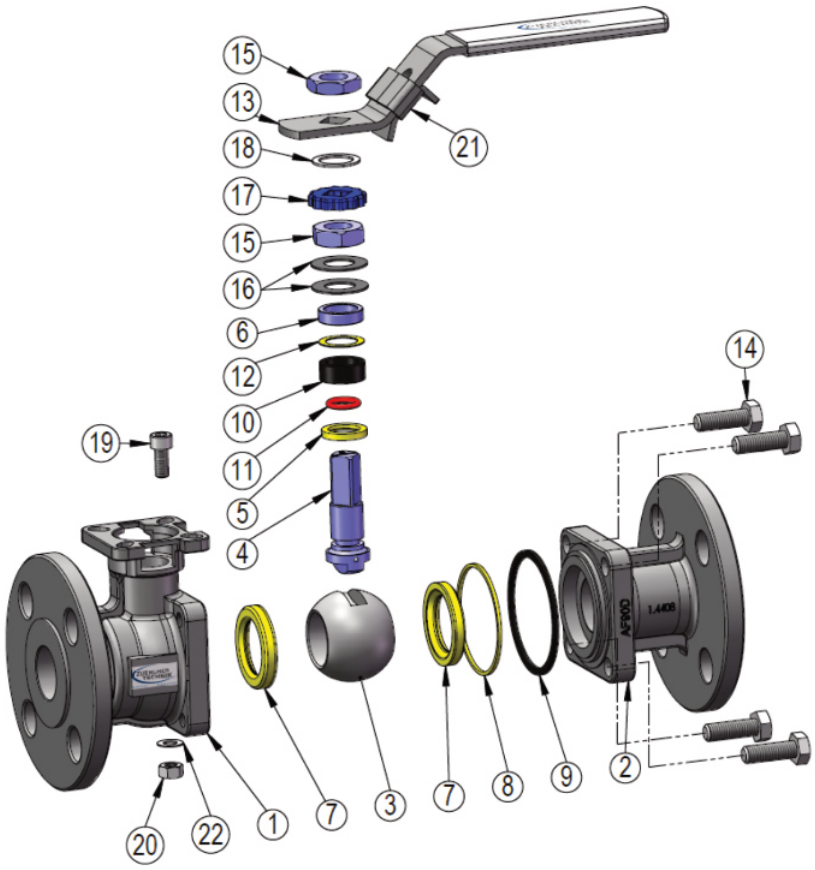
Detail Drawing - Sizes ½“ - 2“

Item No. 7 „SRS“:



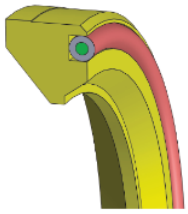


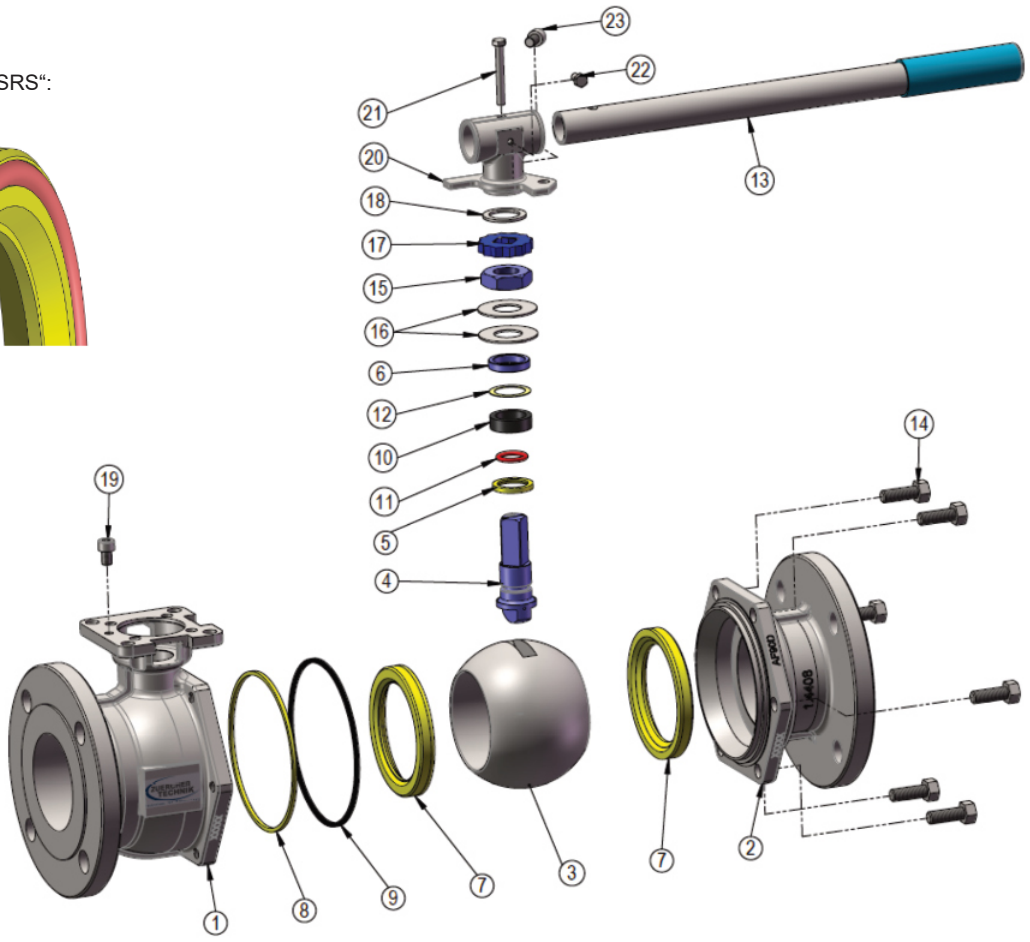
Item No.	Description	Material	Sealing kit Spare part
1	Body part	A351 CF8M / A216 WCB	
2	Flange part	A351 CF8M / A216 WCB	
3	Ball	A351 CF8M	
4	Stem	A351 CF8M	
5	Stem seal	PTFE	x
6	Pressure ring	AISI 316	
7	Seat ring (1x „SRS“)	RPTFE (*)	x
8	Body sealing (wetted part)	PTFE	x
9	Body sealing (atmospheric)	Graphite	x
10	Stem packing	Graphite	x
11	O-ring	FKM/NBR/FEP	x
*	acc. to sealing configuration		

Item No.	Description	Material	Sealing kit Spare part
12	Slide ring	PTFE	x
13	Lever	AISI 304 / PVC	
14	Body screws	A2-70	
15	Stem nut	AISI 304	
16	Belville spring washer	AISI 316	
17	Safety cap	AISI 316	
18	Washer	AISI 316	
19	Cylinder head screw (lock)	AISI 316	
20	Hexagon head screw to item No. 19	AISI 304	
21	Locking device	AISI 316	
22	Distance washer to item No. 19	AISI 304	

Detail Drawing - Sizes 2 ½“ - 6“

Item No. 7 „SRS“:
(up to 4“)

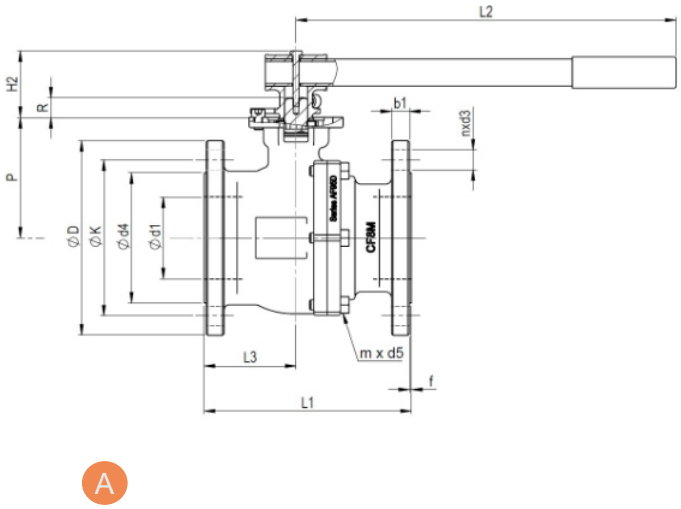




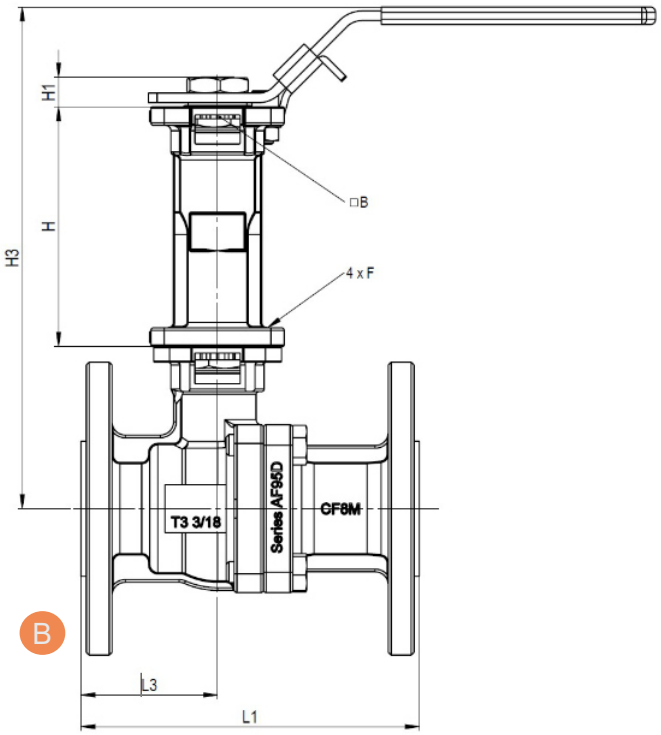
Item No.	Description	Material	Sealing kit Spare part
1	Body part	A351 CF8M / A216 WCB	
2	Flange part	A351 CF8M / A216 WCB	
3	Ball	A351 CF8M	
4	Stem	A351 CF8M	
5	Stem seal	PTFE	x
6	Pressure ring	AISI 316	
7	Seat ring (1x „SRS“)	RPTFE (*)	x
8	Body sealing (wetted part)	PTFE	x
9	Body sealing (atmospheric)	Graphite	x
10	Stem packing	Graphite	x
11	O-ring	FKM/NBR/FEP	x
*	acc. to sealing configuration		

Item No.	Description	Material	Sealing kit Spare part
12	Slide ring	PTFE	x
13	Lever	AISI 304 / PVC	
14	Body screws	A2-70	
15	Stem nut	AISI 304	
16	Belville spring washer	AISI 316	
17	Safety cap	AISI 304	
18	Distance washer	AISI 304	
19	Cylinder head screw	AISI 304	
20	Adapter	A351 CF8M	
21	Hexagon head screw	AISI 304	
22	Hexagon head screw	AISI 304	
23	Hexagon head screw	AISI 304	

Dimensions AF95D cl. 150 - with handlever



A



B

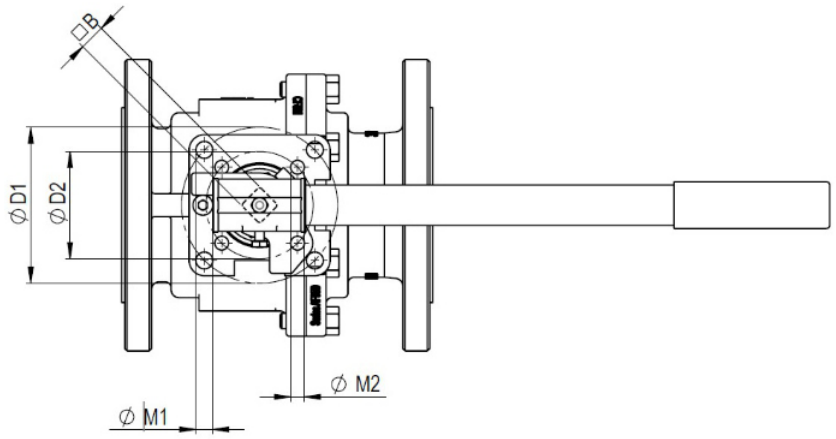
A With handlever

B With handlever and extension

NW	Ød1	Ød4	nxd3	ØK	ØD	f	P	H2	R	b1	L1	L2	L3	Weight in Kg A	Weight in Kg B
DN15 - ½"	15	34.9	4 x 15.875	60.3	90	2	47	40	10	9.6	108	170	44.5	1.8	2.3
DN20 - ¾"	20	42.9	4 x 15.875	69.9	100	2	52.5	40	9	9.6	117	170	44.5	2.2	2.7
DN25 - 1"	25	50.8	4 x 15.875	79.4	110	2	61	40	11	9.6	127	170	51.3	3.0	3.9
DN32 - 1¼"	32	63.5	4 x 15.875	88.9	115	2	70	40	11	11.2	140	170	56.0	4.2	5.1
DN40 - 1½"	38	73	4 x 15.875	98.4	125	2	79	47	15	12.7	165	230	62.5	5.7	7.5
DN50 - 2"	50	92.1	4 x 19.05	120.7	150	2	88	47	15	14.3	178	230	70.0	8.7	10.5
DN65 - 2½"	65	104.8	4 x 19.05	139.7	180	2	110	60	19	15.9	190	370	87.0	12.2	15.5
DN80 - 3"	80	127	4 x 19.05	152.4	190	2	118	60	19	17.5	203	370	90.0	17.5	20.8
DN100 - 4"	100	157.2	8 x 19.05	190.5	230	2	134	60	19	22.3	229	450	103.0	29.4	32.7
DN150 - 6"	150	216	8 x 22	241.3	280	2	198	100.5	27.5	25.9	394	637.5	156.5	65	73.2

Dimensions in mm

Dimensions AF95D cl. 150 - with handlever

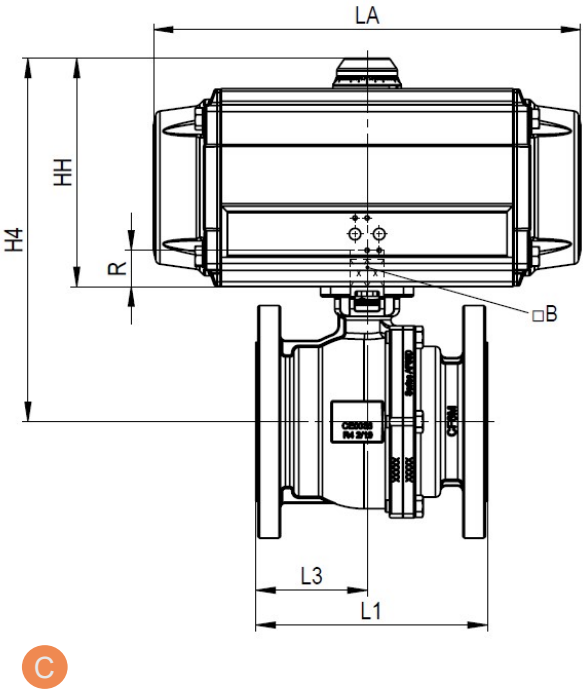


NW	ØD1	ØD2	M1	M2	B	m x d5
DN15 - ½"	42	36	6	6	9	4 x M8x20
DN20 - ¾"	42	36	6	6	9	4 x M8x25
DN25 - 1"	50	42	7	6	11	4 x M8x25
DN32 - 1¼"	50	42	7	6	11	4 x M8x25
DN40 - 1½"	70	50	9	7	14	4 x M10x30
DN50 - 2"	70	50	9	7	14	4 x M12x30
DN65 - 2½"	102	70	11	9	17	6 x M10x30
DN80 - 3"	102	70	11	9	17	6 x M10x30
DN100 - 4"	102	70	11	9	17	6 x M10x30
DN150 - 6"	140	125	17.5	13	27	8 x M16

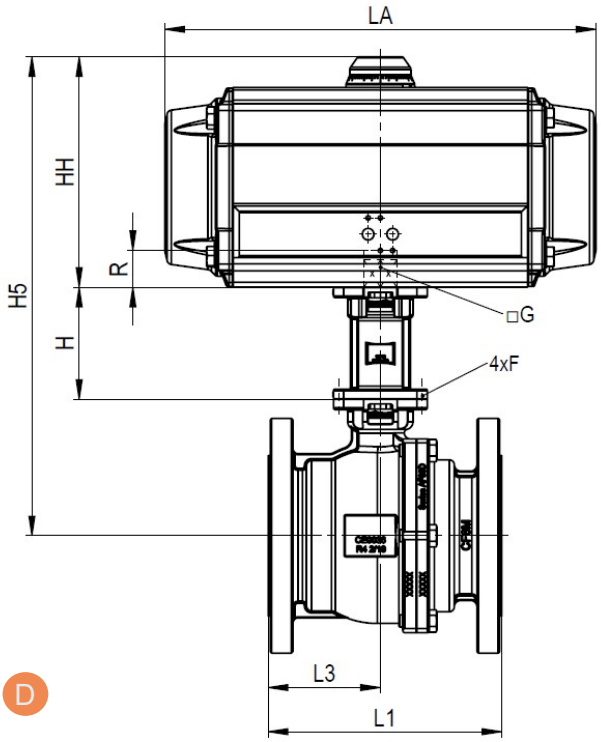
Kv-Werte (m3/h) for Full port	DN15 - ½"	DN20 - ¾"	DN25 - 1"	DN32 - 1¼"	DN40 - 1½"	DN50 - 2"	DN65 - 2½"	DN80 - 3"	DN100 - 4"	DN150 - 6"
	13	25	42	87	135	210	300	550	840	2040

Dimensions in mm

Dimension AF95D cl. 150 - with actuator



C



D

C Direct mounted with pneum. actuator

D Direct mounted and stem extension

NW	Class	H	F	R
DN15 - ½"	150 LBS	80	4 x M5	6.1
DN20 - ¾"	150 LBS	80	4 x M5	6.1
DN25 - 1"	150 LBS	90	4 x M6	10.9
DN32 - 1¼"	150 LBS	90	4 x M6	10.9
DN40 - 1½"	150 LBS	100	4 x M8	13.9
DN50 - 2"	150 LBS	100	4 x M8	13.9
DN65 - 2½"	150 LBS	110	4 x M10	16.8
DN80 - 3"	150 LBS	110	4 x M10	16.8
DN100 - 4"	150 LBS	110	4 x M10	16.8
DN150 - 6"	150 LBS	150	4 x M16	27.5

Dimensions in mm

DN	Torque in Nm	Pneumatic actuator				H 4		H 5		L A	
	Incl. 20% safety factor	Single acting S		Double acting D							
	RPTFE- Seat	Typ	HH	Typ	HH	S	D	S	D	S	D
DN15 - ½"	12	AT 101 S12	105	AT 45 D	86	152	133	232	213	154	118
DN20 - ¾"	13	AT 101 S12	105	AT 45 D	86	158	139	237	218	154	118
DN25 - 1"	18	AT 201 S12	122	AT 101 D	105	183	166	279	256	204	154
DN32 - 1¼"	26	AT 201 S12	122	AT 101 D	105	192	175	282	265	204	154
DN40 - 1½"	44	AT 251 S12	135	AT 201 D	122	214	201	314	301	241	204
DN50 - 2"	55	AT 301 S12	147	AT 201 D	122	235	210	335	310	259	204
DN65 - 2½"	60	AT 351 S12	147	AT 201 D	122	257	232	367	342	304	204
DN80 - 3"	90	AT 351 S12	175	AT 251 D	135	293	253	403	363	304	241
DN100 - 4"	130	AT 401 S12	187	AT 301 D	147	321	281	431	391	333	259
DN150 - 6"	190	AT 501 S12	226			424		574		423	

DN	Valve with pneumatic actuator		Stem-Extension	Weight in kg C		Weight in kg D	
	Single acting S	Double acting D		S	D	S	D
DN15 - ½"	AT 101 S12	AT 45 D	1621D.008020	3.6	2.6	4.1	3.1
DN20 - ¾"	AT 101 S12	AT 45 D	1621D.008020	4.0	3.0	4.5	3.5
DN25 - 1"	AT 201 S12	AT 101 D	1621D.025032	6	4.6	6.9	5.5
DN32 - 1¼"	AT 201 S12	AT 101 D	1621D.025032	7.2	5.8	8.1	6.7
DN40 - 1½"	AT 251 S12	AT 201 D	1621D.040050	10.1	8.4	11.9	10.2
DN50 - 2"	AT 301 S12	AT 201 D	1621D.040050	14.7	11.4	16.5	13.2
DN65 - 2½"	AT 351 S12	AT 201 D	1621D.065100	21.6	14.9	24.9	18.2
DN80 - 3"	AT 351 S12	AT 251 D	1621D.065100	26.9	21.3	30.2	24.6
DN100 - 4"	AT 401 S12	AT 301 D	1621D.065100	41.8	34.6	45.1	37.9
DN150 - 6"	AT501 S12		1621D.125150	86.4		94.6	

Actuator sizing: 6 bar gauge supply air, lubricating medium, and RPTFE ball seats.
The torque is significantly influenced by the on-/off frequency! The values shown are average values at Δp = max. 10 bar. In the case of non-lubricating media, a corresponding increase in the values must be taken into account when sizing the actuator!

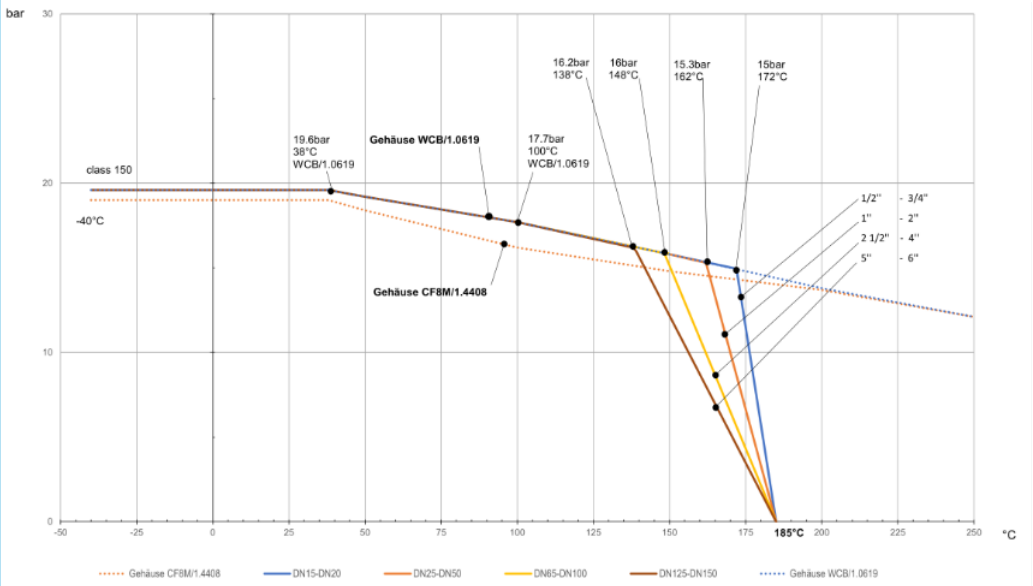
Starting torques (Nm) for lubricating medias	½"	¾"	1"	1¼"	1½"	2"	2½"	3"	4"	6"
Seats in CPTFE	20	27	38	55	88	97	109	195	205	
RPTFE	12	13	18	26	44	55	60	90	130	190
MAST (Nm)	39	39	81	81	105	214	214	483	509	

Pressure / Temperature Charts

For flanges ANSI class 150 acc. to ANSI B16.5

Allowable temperature TS		38 °C	93 °C	149 °C	204 °C	260 °C
Allowable pressure PS in bar g	A216 WCB	19.7	17.9	15.9	13.8	11.7
	A351 CF8M	19.0	16.2	14.8	13.4	11.7

PTFE



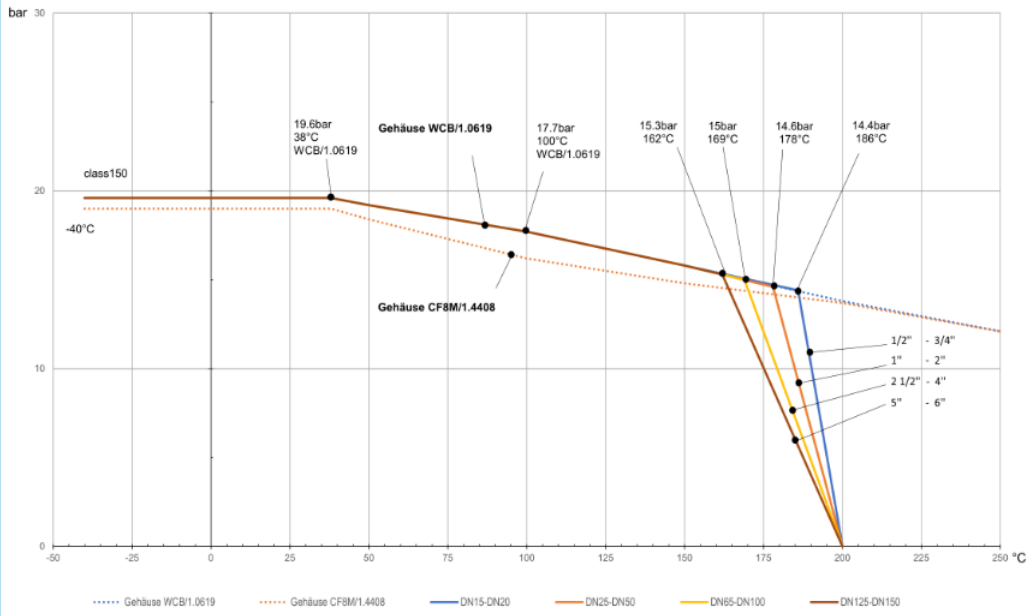
PTFE

PTFE (Teflon©) is the most used sealing material for ball valves with excellent resistance against almost all medias.

Color: pale white

Tests: FDA approved, USP cl. VI
EU1935/2004

RPTFE



RPTFE

PTFE virgin, reinforced with a part of glass fibre ca. 15%, same chemical resistance as PTFE virgin, but higher resistance of load changes consistency compared to PTFE and use at higher p/T values.

Color: white

Tests: FDA approved
EU 1935/2004

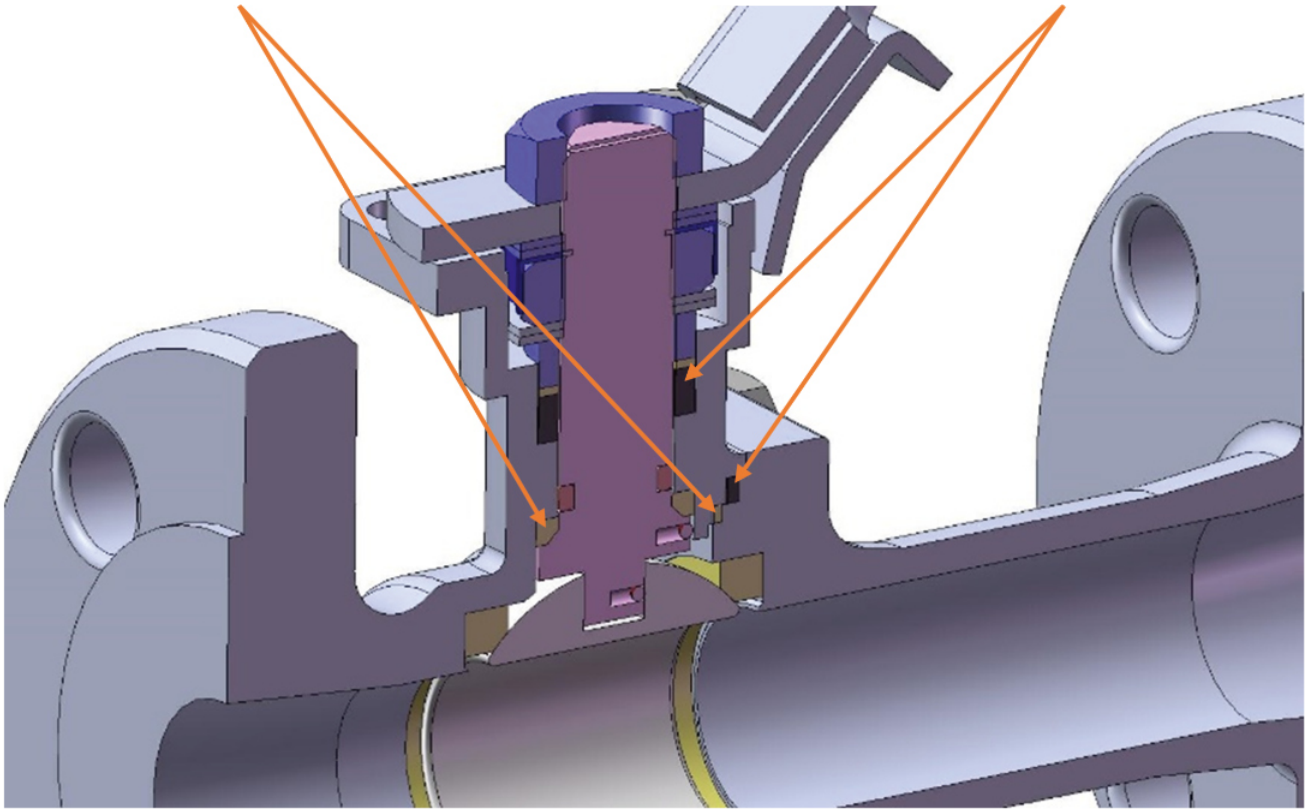
Double Seal System

PTFE

The inner/wetted PTFE body seal (FDA conform) prevents that graphitic particle contaminates the medium.

Graphite

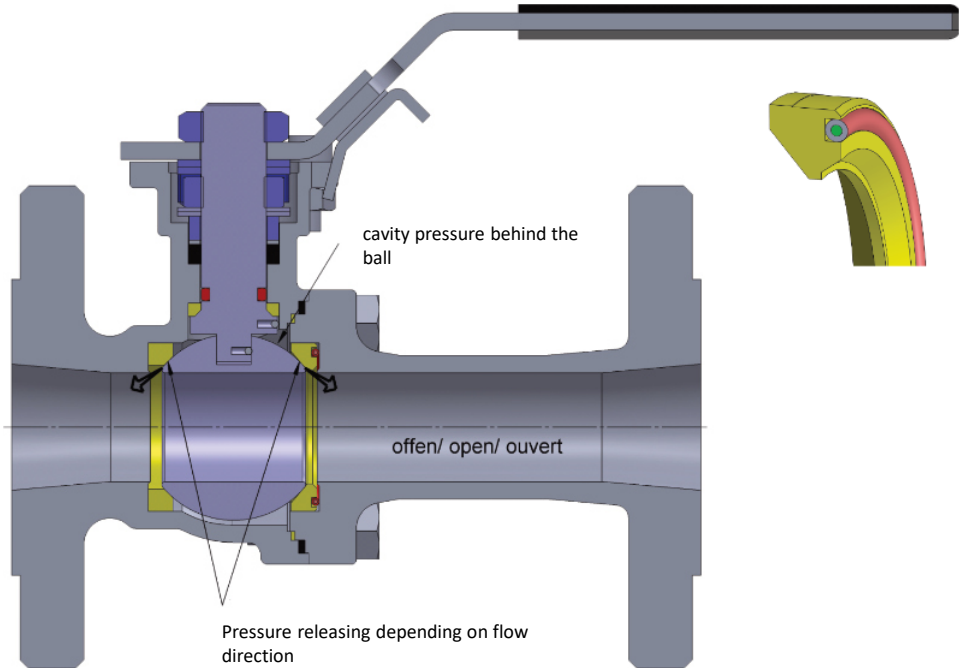
The external graphite body seal prevents the escape of the medium in case of fire (FireSafe).



The double seal system enables the valve to comply with Fire-Safe and FDA standards at the same time. A solution particularly for chemistry and pharma which offers increased safety.

FDA + firesafe

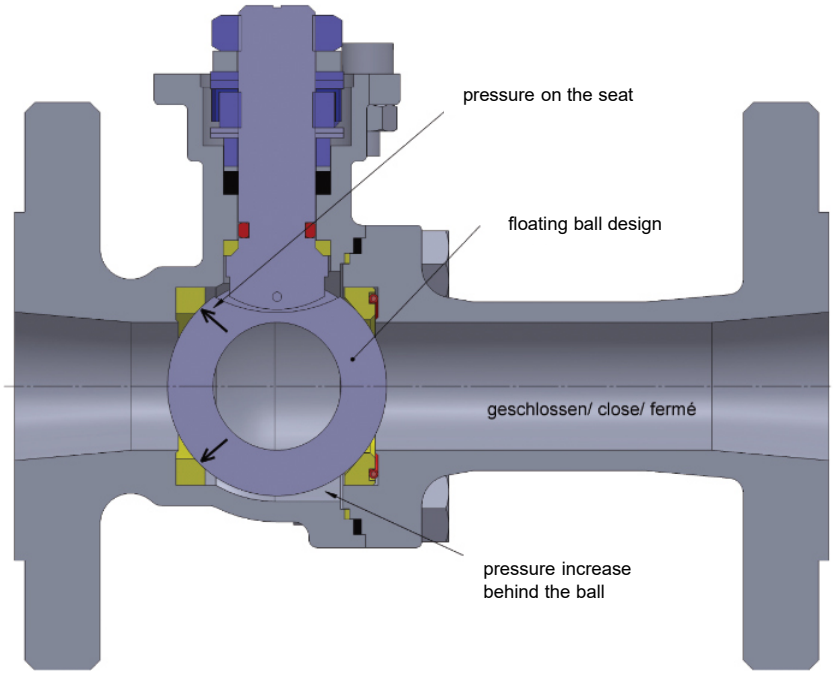
Pressure Relieving System SRS



The pressure relieving system safely discharges overpressure behind the ball and prevents damage to the sealing system. One of the two seat rings is equipped with a FEP- coated O-ring which acts as a spring element. This spring action gives way at correspondingly high differential pressure and relieves overpressure.

Pressure behind the ball is locked in.

A pressure increase is also possible in open ball position.

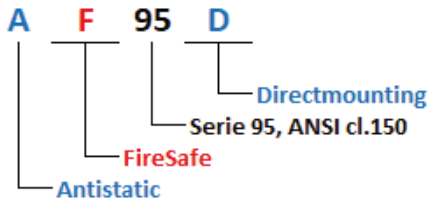


Flow

In closed position, the pressure is locked behind the ball. Existing process conditions can increase the pressure behind the ball (hot media, high ambient temperature, etc.).

The pressure increase of the locked media will be relieved via the spring acting seat ring.

Article Codification / Identification



Sample:
Ball valve, type AF95D, size 2“, cl.150 RF, CF8M, seat rings in PTFE/15% glas

Code 1	Code 2	Code 3	Fix	Code 4	Code 5	Code 6
9	5	050	D.	150	R3	-
Remark: Further adders at Article No.(e.g. ...comp.z…) are needed acc. to internal system						

Code 1	Body material, Type
9	Stainless steel, CF8M, Type AF95D
09	Carbon steel, WCB, Type AF95D

Code 2	Face to Face dimension
5	acc. to ANSI/ASME B16.10

Code 3	DN										
	DN 15 - ½"	DN 20 - ¾"	DN25 - 1"	DN32 - 1 ¼"	DN40 - 1 ½"	DN50 - 2"	DN65 - 2 ½"	DN80 - 3"	DN100 - 4"	DN125 - 5"	DN150 - 6"
Full bore	015	020	025	032	040	050	065	080	100	125	150

Code 4	Design / Nominal Pressure
150	Standard- ANSI class 150
X	Special

Code 5	Sealing configuration / Sealing material specification				
	Description	Seating ring	Body sealing (wetted / outside)	Stem packing	Stem seal
C3*	CRCR	PTFE+25% carbon	PTFE+15% glas / graphite	PTFE+25% carbon	PTFE+15% glas
P	PRCR	PEEK© virgin	PTFE+15% glas / graphite	PTFE+25% carbon	PTFE+15% glas
R3*	RRCR	PTFE+15% glas	PTFE+15% glas / graphite	PTFE+25% carbon	PTFE+15% glas
T4	TRCR	PTFE virgin	PTFE+15% glas / graphite	PTFE+25% carbon	PTFE+15% glas
X	Special				
*	Standard with pressure relieving seat „SRS“				

Code 6	Options
DA	Pressure relief whole between ball and stem
FO	Free of oil and grease
HM	Heating jacket
X	Special

*Other body materials and/or other pressure rates on request

Configuration / Variations

Modular construction				
				

Options					
Cavity fillers	Heating jacket	V-port balls	Different seat materials	Free of oil and grease	Assembly with gearbox
					

THE THING AS A WHOLE IS MORE THAN THE SUM OF ITS SINGLE COMPONENTS.

ZUERCHER TECHNIK