



BALL VALVES

DIN FLANGED BALL VALVES - TYPES AF90D, AF94D



2pc body design, PN 16/40
(DN 125—DN 150 in progress),

Full port, stainless steel casting 1.4408 or carbon steel casting 1.0619, seals PTFE re-inforced, connection flanges acc. to EN 1092-1 Form B1, face-to-face dimension acc. to EN 558 row 1 (long pattern) or row 27 (short pattern), 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, TA-Luft certified, modular construction with interesting options.

TYPES OVERVIEW — AF90D, AF94D

Types	NP	Materials		Flanges	Face-to-face	Sizes
AF90D	16/40	Carbon steel	1.0619	DIN EN 1092-1, Form B1	EN 558, row 1	DN15—DN100
AF90D	16/40	Stainless steel	1.4408	DIN EN 1092-1, Form B1	EN 558, row 1	DN15 - DN100
AF94D	16/40	Carbon steel	1.0619	DIN EN 1092-1, Form B1	EN 558, row 27	DN15 - DN150
AF94D	16/40	Stainless steel	1.4408	DIN EN 1092-1, Form B1	EN 558, row 27	DN15 - DN150

Modular construction

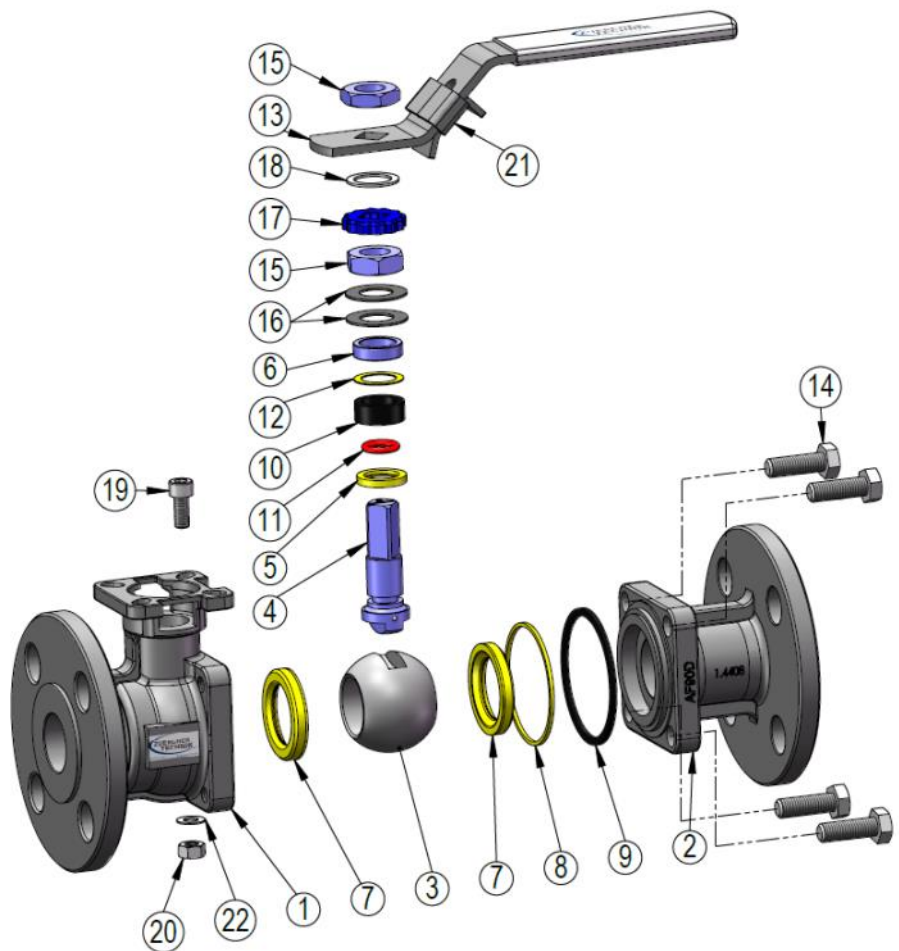
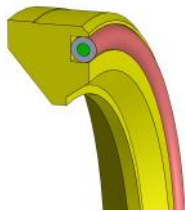


Options

Cavity fillers	Heating jacket	V-ports	Different seat materials	Free of oil and grease	Assembly with gearbox
		 30° 60°			

DETAIL DRAWING — SIZES 1/2" TO 2"

Item Nr. 7 „SRS“:

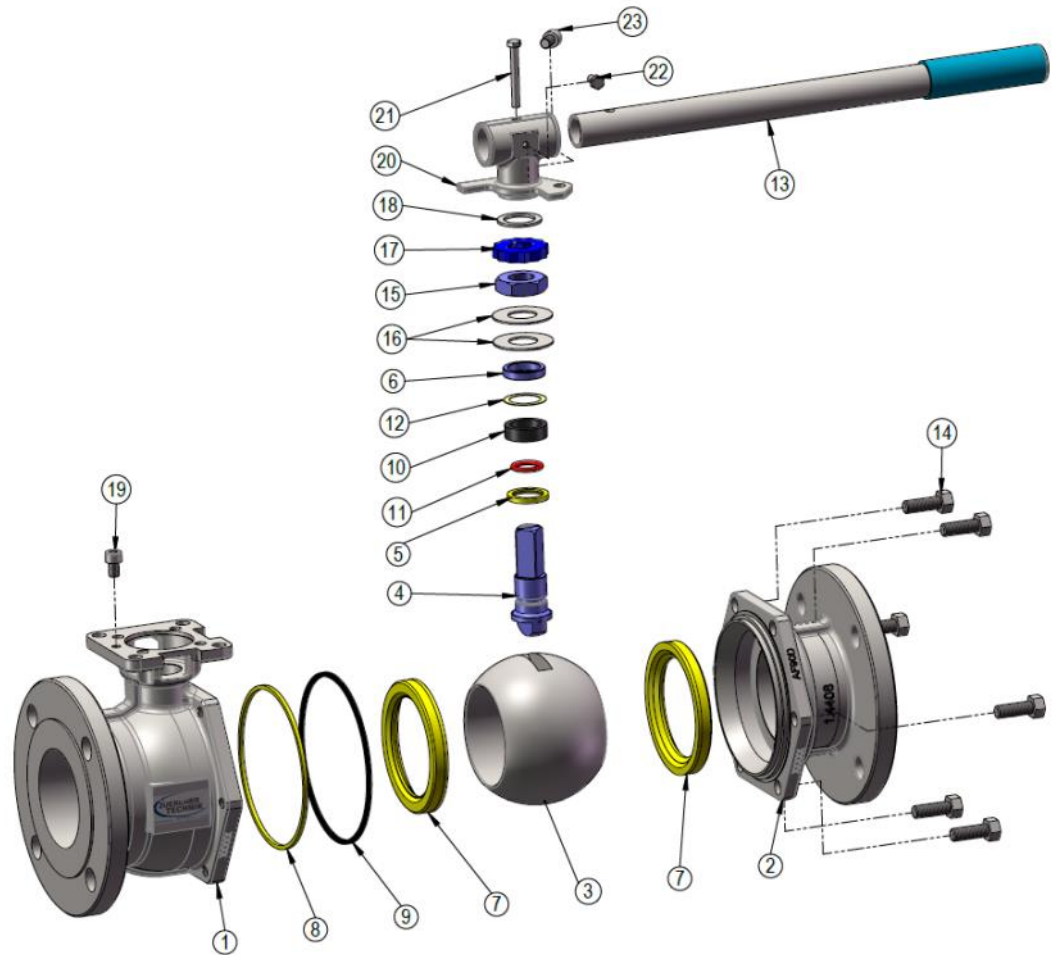
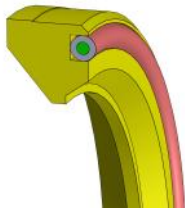


Item Nr.	Description	Material	Sealing kit Spare part
1	Body part	1.4408 / 1.0619	
2	Flange part	1.4408 / 1.0619	
3	Ball	1.4401	
4	Stem	1.4401	
5	Stem seal	PTFE	X
6	Pressure ring	1.4401	X
7	Seat ring (1x „SRS“)	RPTFE (*)	
8	Body sealing (wetted part)	PTFE	
9	Body sealing (atmospheric)	Graphite	
10	Stem packing	Graphite	X
11	O-Ring	FKM	X
*	acc. to sealing configuration		

Item Nr.	Description	Material	Sealing kit Spare part
12	Slide ring	PTFE	X
13	Lever	1.4301 / PVC	
14	Body screws	A2-70	
15	Stem nut	1.4301	
16	Belville spring washer	1.4401	
17	Safety cap	1.4401	
18	Distance washer	1.4401	
19	Cylinder head screw (lock)	1.4401	
20	Hexagon head screw	1.4301	
21	Locking device	1.4401	
22	Distance washer	1.4301	

DETAIL DRAWING — SIZES 2 1/2" TO 6"

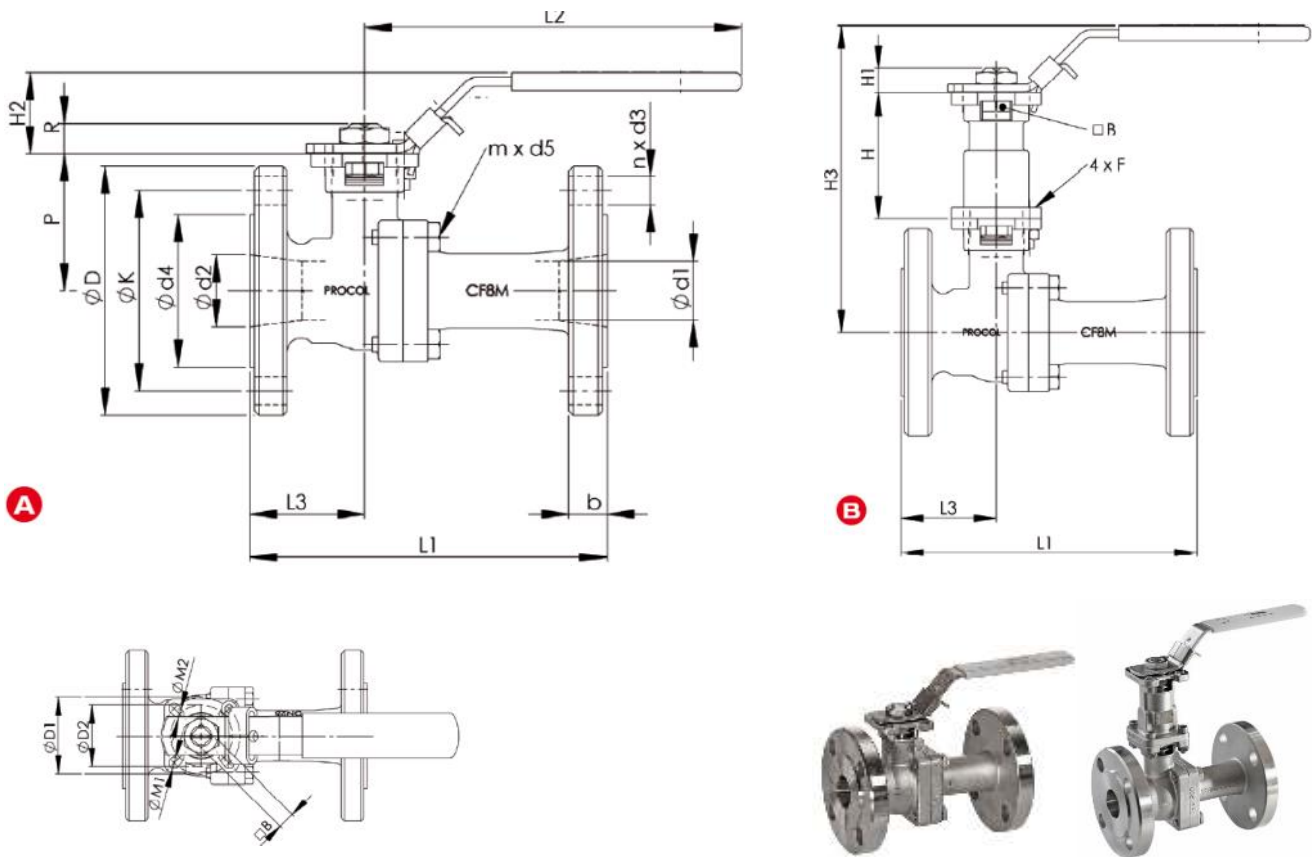
Pos. Nr. 7 „SRS“:



Item Nr.	Description	Material	Sealing kit Spare part
1	Body part	1.4408 / 1.0619	
2	Flange part	1.4408 / 1.0619	
3	Ball	1.4401	
4	Stem	1.4401	
5	Stem seal	PTFE	X
6	Pressure ring	1.4401	
7	Seat ring (1x „SRS“)	RPTFE (*)	X
8	Body sealing (wetted part)	PTFE	X
9	Body sealing (atmospheric)	Grafit	X
10	Stem packing	Grafit	X
11	O-Ring	FKM	X
*	acc. to sealing configuration		

Item Nr.	Description	Material	Sealing kit Spare part
12	Slide ring	PTFE	X
13	Lever	1.4301 / PVC	
14	Body screws	A2-70	
15	Stem nut	1.4301	
16	Belville spring washer	1.4401	
17	Safety cap	1.4401	
18	Distance washer	1.4401	
19	Cylinder head screw (lock)	1.4401	
20	Adapter	1.4408	
21	Hexagon head screw	1.4301	
22	Hexagon head screw	1.4301	
23	Hexagon head screw	1.4301	

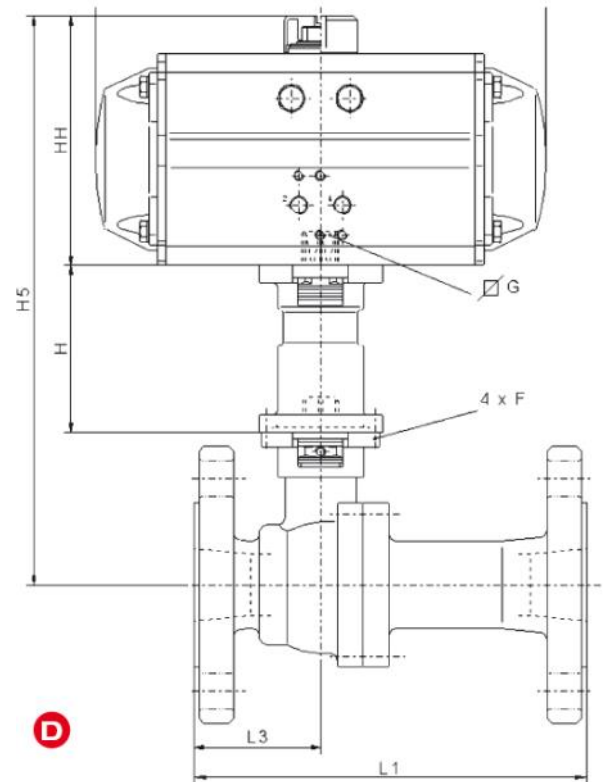
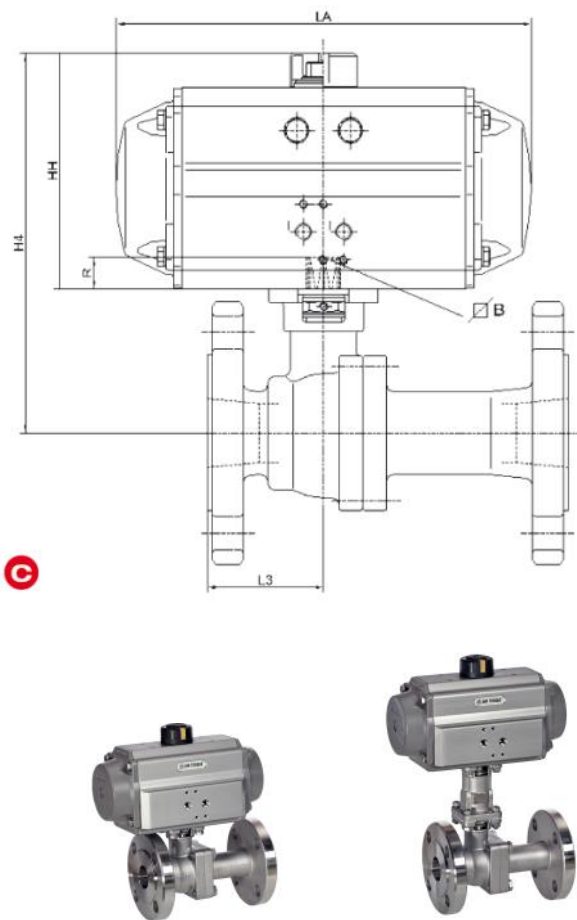
AUTOMATION



Dimensions in mm

DN	PN	Ø d1	Ø d2	Ø d4	n x d3	Ø K	Ø D	P	b	R	Row 1		Row 27	
											L1	Weight Kg	L1	Weight Kg
15	16/40	15	18	45	4 x 14	65	95	47	14	11	130	2,4	115	2,3
20	16/40	20	23	58	4 x 14	75	105	53	16	9	150	3,0	120	2,6
25	16/40	25	29	68	4 x 14	85	115	61	16	12	160	3,9	125	3,8
32	16/40	32	38	78	4 x 18	100	140	70	16	13	180	5,4	130	4,9
40	16/40	38	44	88	4 x 18	110	150	79	16	16	200	7,3	140	6,6
50	16/40	50	56	102	4 x 18	125	165	88	18	16	230	10,9	150	9,6
65	16	65	71	122	4 (8) x 18	145	185	110	18	25	290	15,6	170	13,2
65	40	65										17,1	a.A.	a.A.
80	16	80	84	138	8 x 18	160	200	118	20	25	310	18,8	180	16,2
80	40	80										21,7	a.A.	a.A.
100	16	100	109	158	8 x 18	180	220	134	20	22	350	27,8	190	23,3
100	40	100										30,0	a.A.	a.A.
125	16	125										a.A.	a.A.	
150	16	150										a.A.	a.A.	

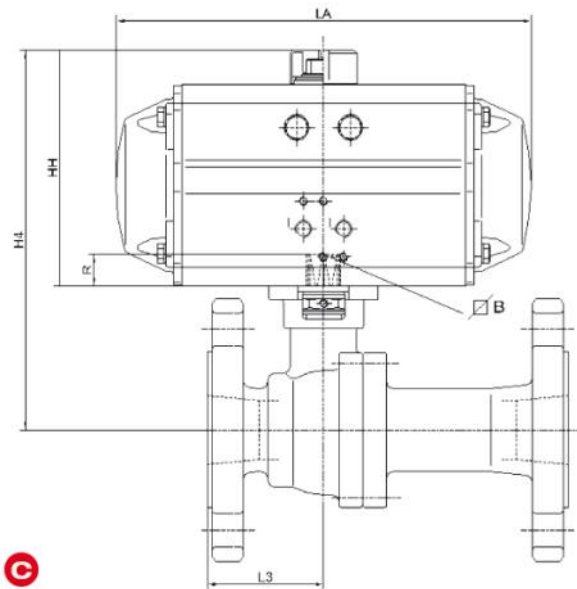
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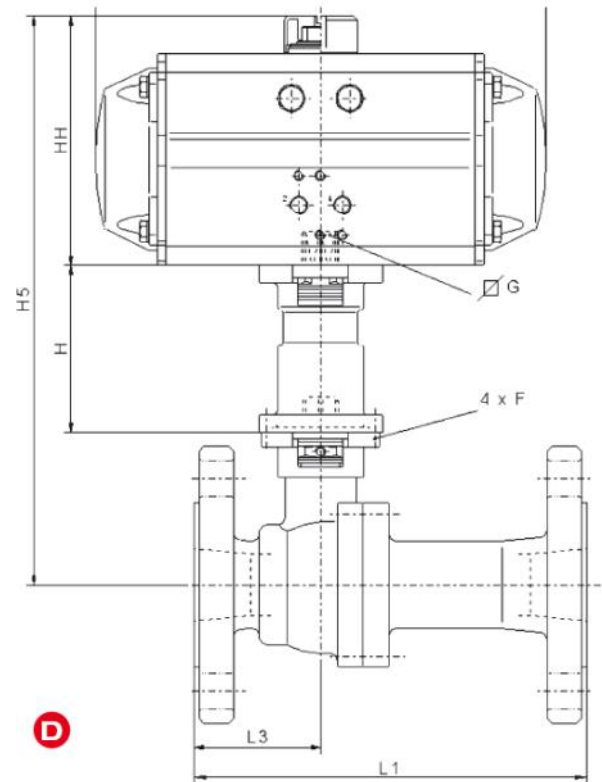
Dimensions in mm

DN	PN	Ø D1	Ø D2	M 1	M 2	m x d5	B	H	H 1	H 2	H 3	L 2	L 3	Kv
15	16/40	42	36	6	6	4 x M8 x 25	9	80	6.1	52	148	170	44.5	11
20	16/40	42	36	6	6	4 x M8 x 25	9	80	6.1	52	153	170	44.5	28
25	16/40	50	42	7	6	4 x M8 x 25	11	90	10.9	52	168	170	51.3	50
32	16/40	50	42	7	6	4 x M8 x 25	11	90	10.9	52	177	170	56.0	71
40	16/40	70	50	10	8	4 x M10 x 25	14	100	13.9	58	223	230	62.5	96
50	16/40	70	50	10	8	4 x M12 x 30	14	100	13.9	58	232	230	70.0	205
65	16	102	70	12	9,5	6 x M10 x 25	17	110	16.8	58	273	370	87.0	275
65	40													
80	16	102	70	12	9,5	6 x M10 x 25	17	110	16.8	58	281	370	90.0	500
80	40													
100	16	102	70	12	9,5	6 x M10 x 25	17	110	16.8	58	297	450	103	700
100	40													
125	16													
150	16													

AUTOMATION



C



D

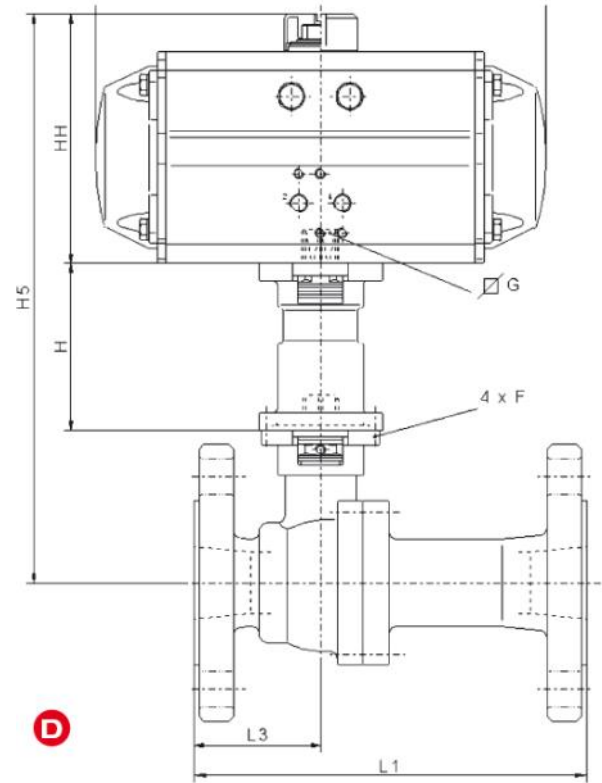
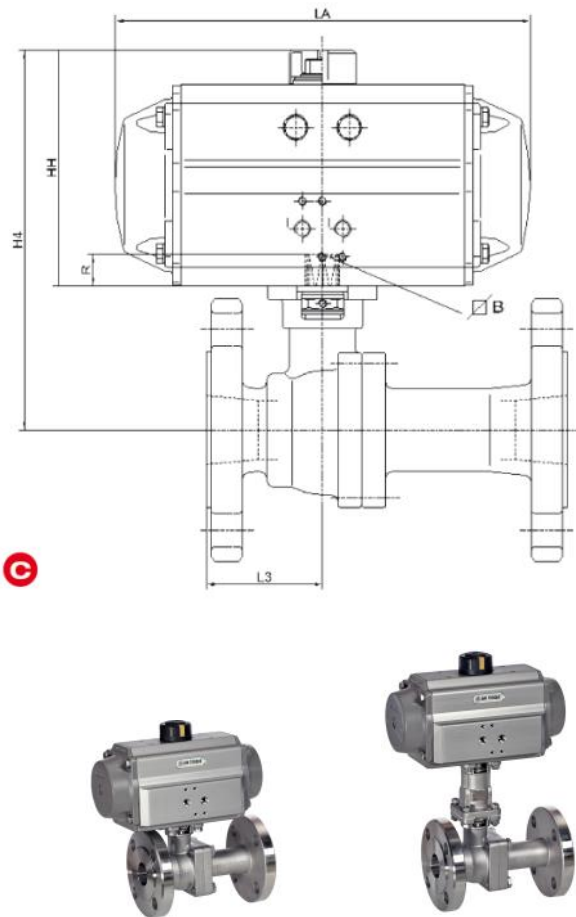
Automatization:

calculated for 6 bar supply air
max. delta p 10 bar
lubricating medias, Seats in RPTFE

Dimensions in mm

DN	Torque Nm		Pneumatic actuator				H 4		H 5		L A	
	20% Safety factor inclusive		Single acting S		Double acting D		S	D	S	D	S	D
	RPTFE- Seat		Typ	HH	Typ	HH						
15	12		AT 101 S12	105	AT 45 D	86	152	133	232	213	154	118
20	13		AT 101 S12	105	AT 45 D	86	158	139	237	218	154	118
25	18		AT 201 S12	122	AT 101 D	105	183	166	279	256	204	154
32	26		AT 201 S12	122	AT 101 D	105	192	175	282	265	204	154
40	44		AT 251 S12	135	AT 201 D	122	214	201	314	301	241	204
50	55		AT 301 S12	147	AT 201 D	122	235	210	335	310	259	204
65	60		AT 351 S12	147	AT 201 D	122	257	232	367	342	304	204
80	90		AT 351 S12	175	AT 251 D	135	293	253	403	363	304	241
100	130		AT 401 S12	187	AT 301 D	147	321	281	431	391	333	259
125												
150												

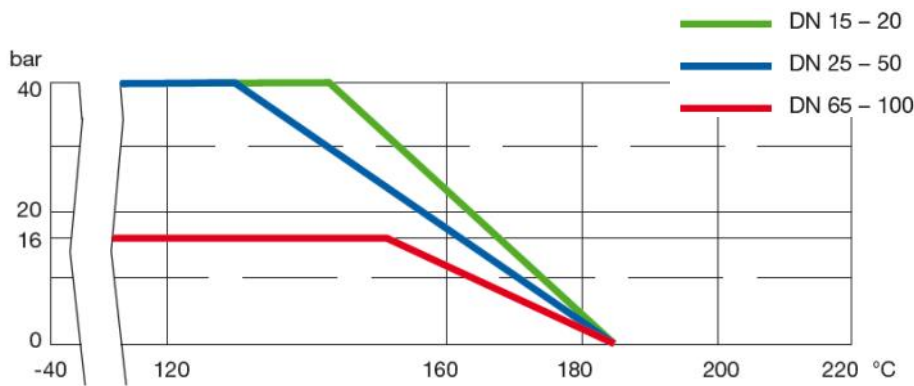
AUTOMATION



DN	Valve with pneumatic actuator		Stem-Extension	Weight kg (C)		Weight kg (C)		Weight kg (D)		Weight kg (D)	
	Single acting	Double acting		Row 1		Row 27		Row 1		Row 27	
	S	D		S	D	S	D	S	D	S	D
15	AT 101 S12	AT 45 D	1621D.008020	4.2	3.3	4.1	3.2	4.7	3.8	4.6	3.7
20	AT 101 S12	AT 45 D	1621D.008020	4.8	3.9	4.6	3.7	5.3	4.4	5.1	4.2
25	AT 201 S12	AT 101 D	1621D.025032	7.3	5.8	7.1	5.6	8.2	6.7	8.0	6.5
32	AT 201 S12	AT 101 D	1621D.025032	8.6	7.1	8.3	6.8	9.5	8.0	9.2	7.7
40	AT 251 S12	AT 201 D	1621D.040050	11.8	10.1	10.8	9.1	13.6	11.9	12.6	10.9
50	AT 301 S12	AT 201 D	1621D.040050	17.3	13.7	16.0	12.4	19.1	15.5	17.8	14.2
65	AT 351 S12	AT 201 D	1621D.065100	25.3	18.4	23.7	16.8	28.6	21.7	27.0	20.1
65	AT 351 S12	AT 201 D	1621D.065100	25.7	18.8	24.6	17.7	29.0	22.1	27.9	21.0
80	AT 351 S12	AT 251 D	1621D.065100	28.5	22.7	25.5	19.7	31.8	26.0	28.8	23.0
80	AT 351 S12	AT 251 D	1621D.065100	29.7	23.9	28.5	22.7	33.0	27.2	31.8	26.0
100	AT 401 S12	AT 301 D	1621D.065100	40.0	33.5	34.1	27.6	43.3	36.8	37.4	30.9
100	AT 401 S12	AT 301 D	1621D.065100	42.1	35.6	39.3	32.8	45.4	38.9	42.6	36.1
125											
150											

PRESSURE / TEMPERATURE CHARTS

PTFE



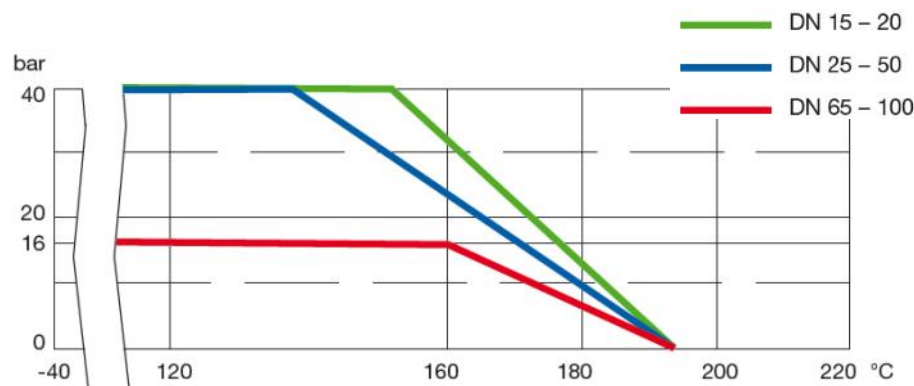
PTFE virgin

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

RPTFE



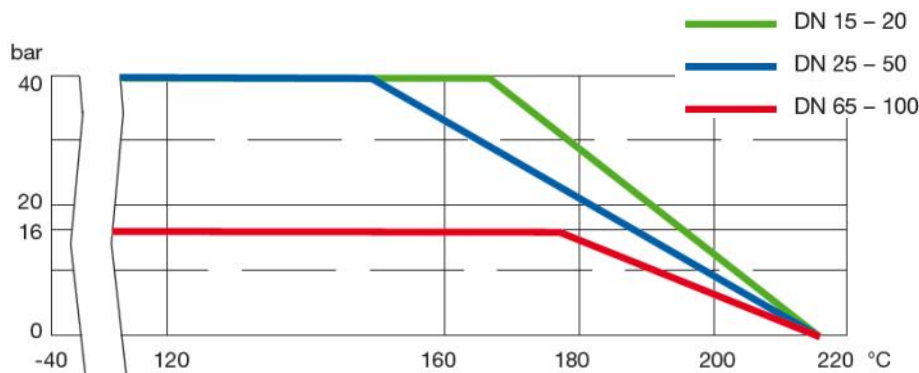
RPTFE

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

CPTFE



CPTFE

PTFE virgin, reinforced with a higher part of carbon fibre ca. 25%, to use for higher temperature range and higher consistency of load changes compared to RPTFE.

Color: black

Manufacturer standard:

acc. EC 1935/2004

MORE PRESSURE / TEMPERATURE CHARTS FOLLOW UP

PEEK®	PEEK®
TFM®1600	TFM®1600

Kv-Value (m ³ /h) for Full port	DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80	DN100	DN125	DN150
	11	28	50	71	102	205	275	500	867		

The torque is significantly influenced by the on-/off frequency! The values shown are average values at $\Delta p = \max.$ 10 bar. In the case of non-lubricating media, a corresponding increase in the values must be taken into account when dimensioning the actuator!

Starting torques (Nm) for Lubri- cating medias	DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80	DN100	DN125	DN150
Seats in CPTFE	20	27	38	55	88	97	109	195	205		
Seats in TFM®1600											
Seats in PEEK®											
MAST (Nm)	39	39	81	81	105	214	214	483	509		

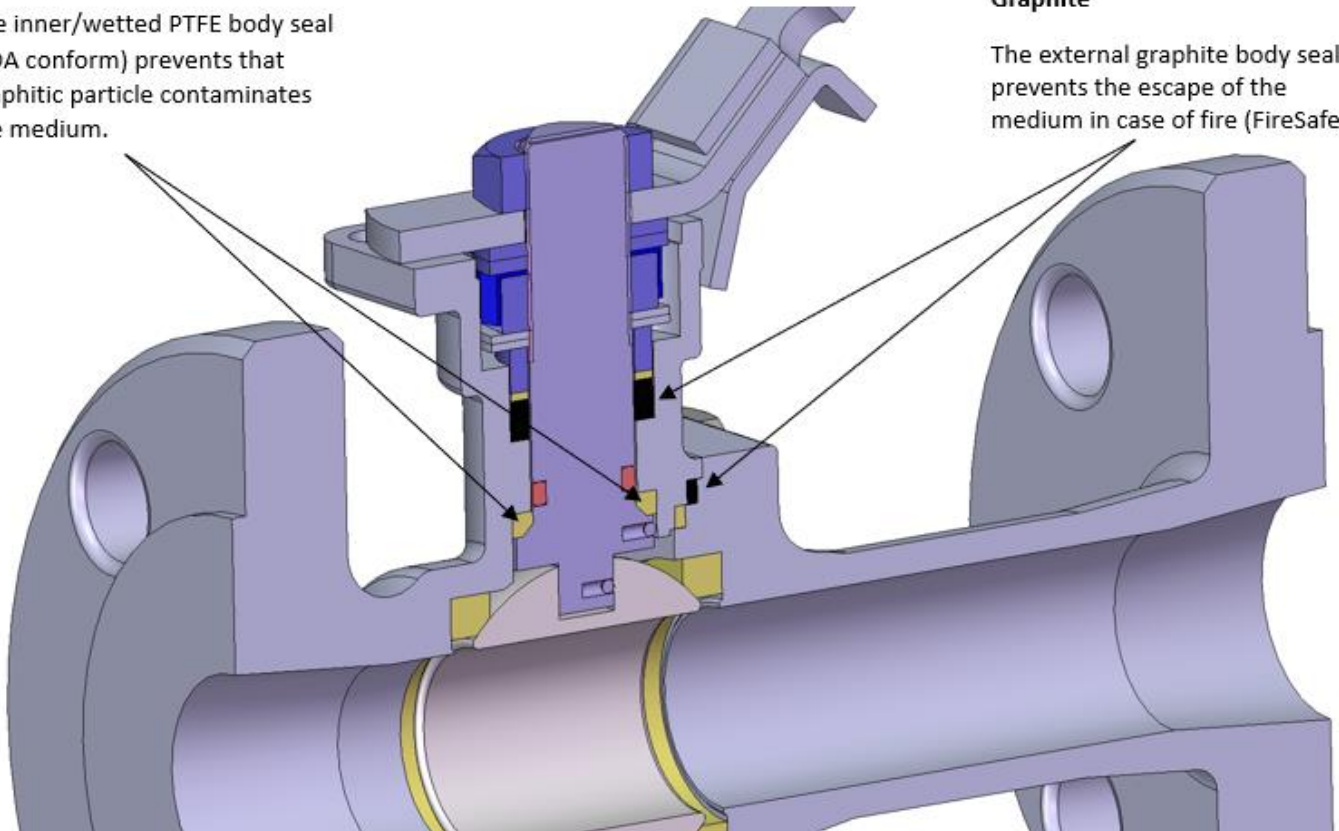
DOUBLE SEAL SYSTEM

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).



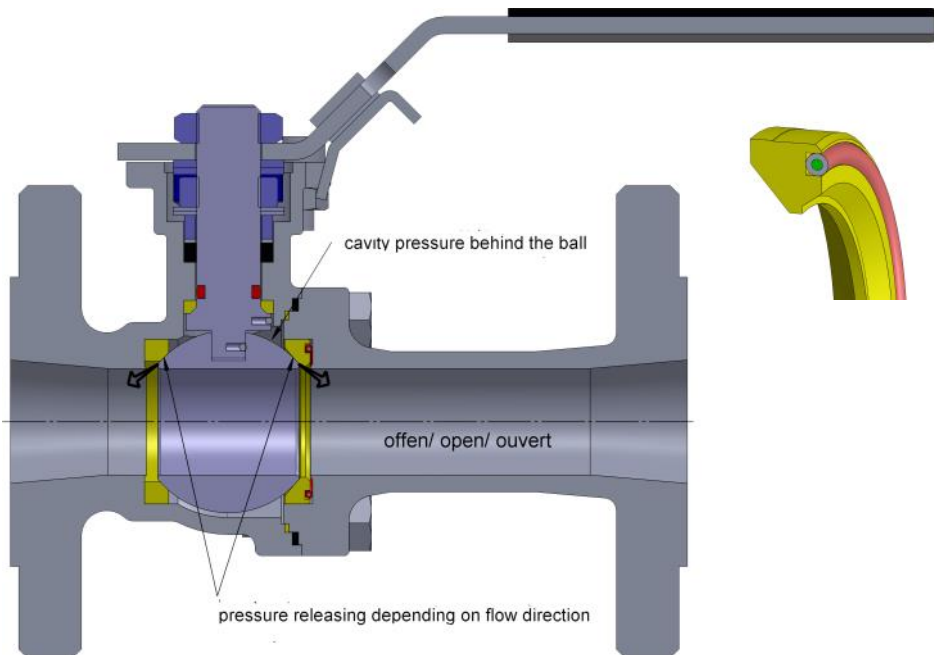
The double seal system enables the valve to comply with Fire-Safe and FDA standards at the same time. A solution particularly for chemistry and pharma which offers increased safety.



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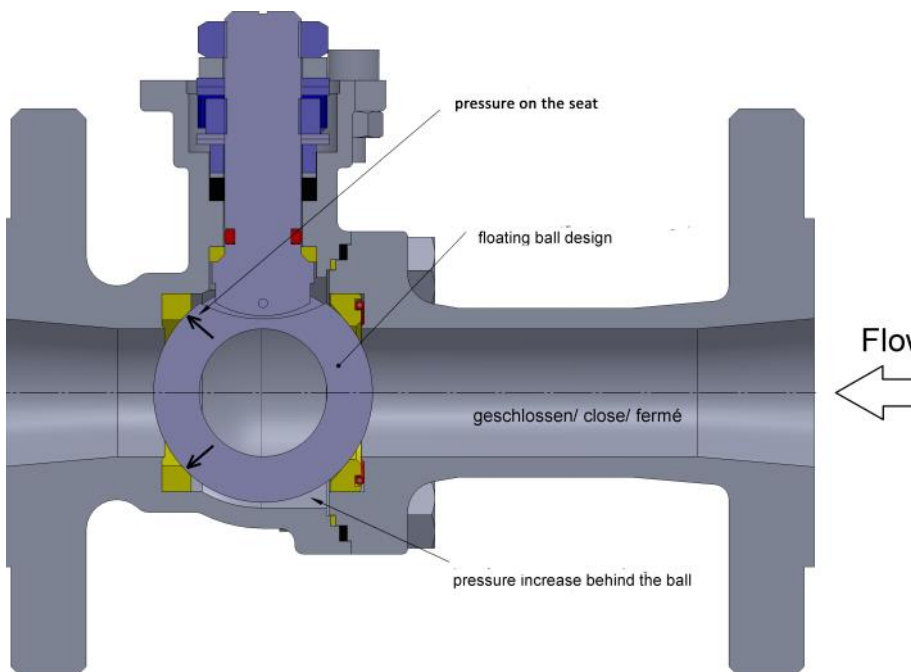
PRESSURE RELIEVING SYSTEM SRS



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.

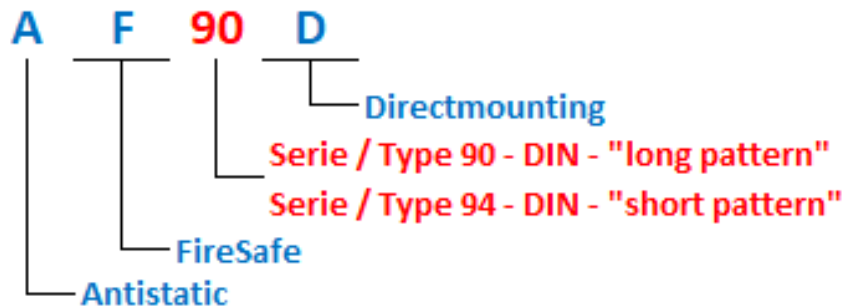
A pressure increase is also possible in open ball position.



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



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

Code 2	Face to Face dimension
0	acc. to DIN EN558, row 1 (long)
4	acc. to DIN EN558, row 27 (short)

Code 4	Design / Nominal Pressure
000	acc. DIN PN16/PN40 Same PN for =< DN50
160/400	Different acc. DIN PN16 or PN40 for sizes =>DN80
164/168	DN65: Flange design for 4-hole/8-hole at PN16

Code 3	Sizes
DN	Full bore
15	015
20	020
25	025
32	032
40	040
50	050
65	065
80	080
100	100
125	125
150	150


	Remark
X	other body materials and/or other pressure rates on request

ARTICLE CODIFICATION / IDENTIFICATION

Code 5	Sealing configuration / Sealing material specification				
	Description	Seating ring	Body sealing	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

Sample:

Ball valve, type AF90D, DN 50, PN16/40, 1.4408, seat rings in RPTFE							
Code 1	Code 2	Code 3	Fix	Code 4	Code 5	Code 6	
9	0	050	D.	000	R3	-	
Remark: further adders at Article Nr.(z.B. ...comp.z...) are needed acc. to internal system							



DGRL/TA-Luft





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

**ZUERCHER
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