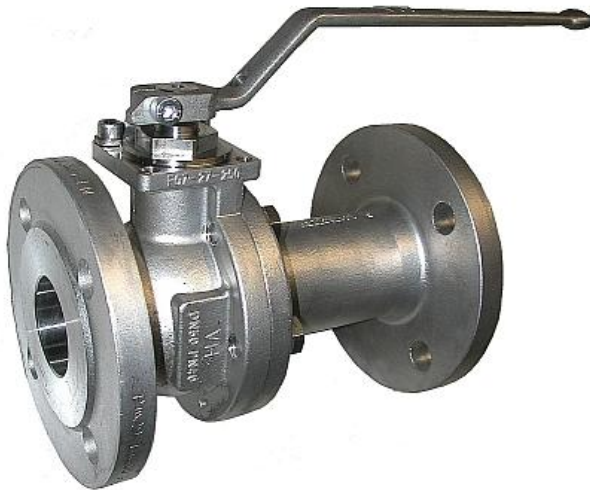




**ball valve
soft seated
maintenance-free
with floating ball**

Flanged ends

**PN 10 – 40
DN 15 – 150**

Type VFD

The sealing variants are approved in accordance with the German clear air regulations „TA-Luft 2021“

Fields of application

General industry, power plants, chemical, oil and petrochemical industry

Operating data

Temperature range, depending on the operating pressure: -10°C to +200°C
Temperatures out of range?
Contact VH Armaturen GmbH

Design

Two-piece body, full bore
Encapsulated seat rings
Antistatic (as) – feature

Pressure equipment directive (PED) 2014/68/EU (category III)
VdTÜV approval mark TÜV.A.217 (since 1994)
VdTÜV Armatur 100, VbF, Gas-HL-VO, WHG
TA-Luft 2021 certified (Version 2021 acc. to ISO15848-1)
Fire-Safe acc. to BS 6755-2 and ISO 10497
Mounting flange acc. to DIN ISO 5211

Coating

Alkyd resin lacquer, pacific blue- RAL 5002
Stainless steel without coating

Materials (acc. to DIN)

body:	forged steel	- 1.0460
	casted steel	- 1.0619
	forged stainless steel	- 1.4404
	casted stainless steel	- 1.4408

ball:	- 1.4404
	- 1.4408

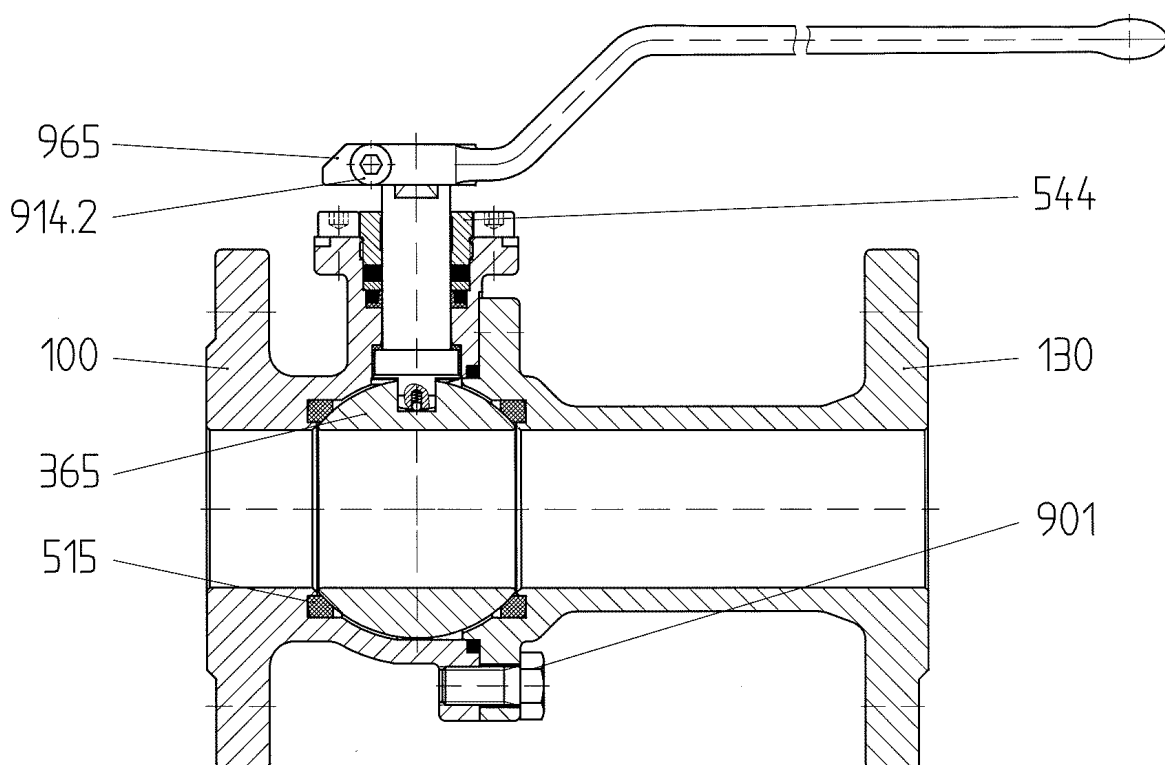
sealings:	
seatrings	- pure TFM

other materials on request.

Order specification

Ball valve TOPI 210
Nominal diameter DN
Nominal pressure PN
Operating conditions
Flow media, temperature, pressure
Connection acc. to DIN EN
Identification number

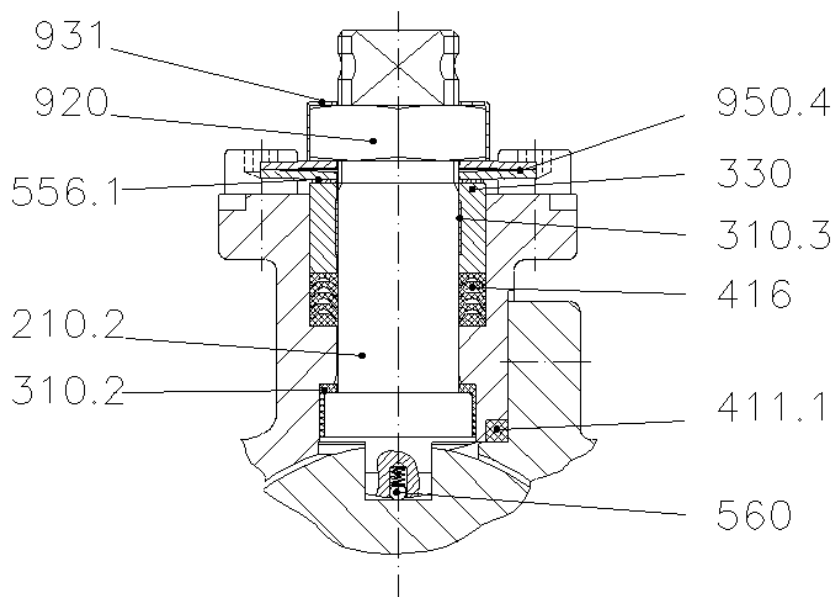
additional testing i.e. DIN EN 12266-2/DIN 3230-5
on customers request



Picture 1: ball valve with full bore

Table1: materials

Item no.	designation	DN	material	
100	body	15 to 150	GS-C 25 N	1.0619
			G-X6CrNiMo 18. 10	1.4408
130	Body part	15 to 150	GS-C 25 N	1.0619
			G-X6CrNiMo 18. 10	1.4408
365	ball	15 to 100	X2CrNiMo 17 132	1.4404
		65 to 150	G-X6CrNiMo 18. 10	1.4408
515	Seat ring		Pure TFM (Standard)	
901	Hex. head bolt		A4 – 70	
914.2	Hex. Socket bolt		8.8, galv. Zn	
544	gland screw		1.4571 (A4)	
965	stainless steel-handle		1.4308	

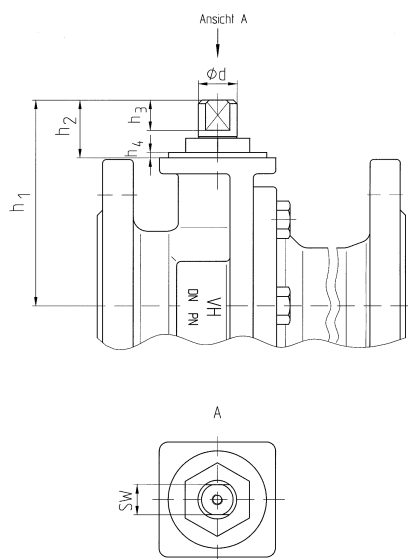


Variant 1: cup seal (graphite free) ("TA-Luft 2021" approved)

Table 2: materials

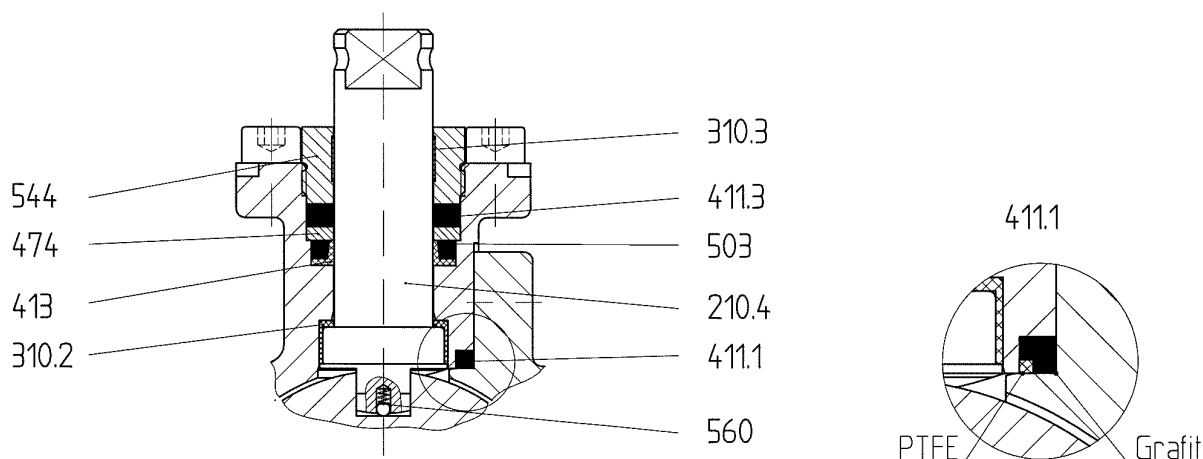
Item no..	designation	material
210.2	stem	1.4462
310.2	Lower control shaft bearing	Pure TFM
310.3	upper control shaft bearing	1.4401 / PTFE
330	Bearing bracket	1.4404
411.1	Joint ring	PTFE, rein
416	Cup seal	PTFE, rein
556.1	Sliding disc	1.4401 / PTFE
560	Antistatic device	1.4571/1.4401
920	nut	A2 – 70
931	Safety plate	1.4301
950.4	Disc spring	1.4310

Control shaft dimensions Var 1



DN	h ₁	h ₂	h ₃	h ₄	ø d	SW	DIN ISO
15	57	22	9	2	11,5	9	F05
20	68	22	9	2	11,5	9	F05
25	73	24	9	2	16	11	F05
32	83	24	9	2	16	11	F05
40	111	36	17	3	22	17	F07
50	119	36	17	3	22	17	F07
65	130	36	17	3	22	17	F07
80	142	41	19	3	26	19	F10
100	160	41	19	3	26	19	F10
150	213	53	25	3	40	27	F12

Fire-Safe-Variant ("TA-Luft 2021" approved)

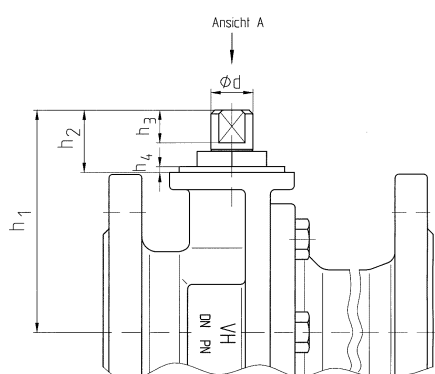


Variant 3: with wedge ring (fire safe)

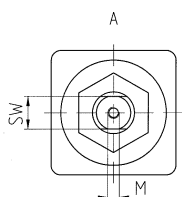
Table 3: materials

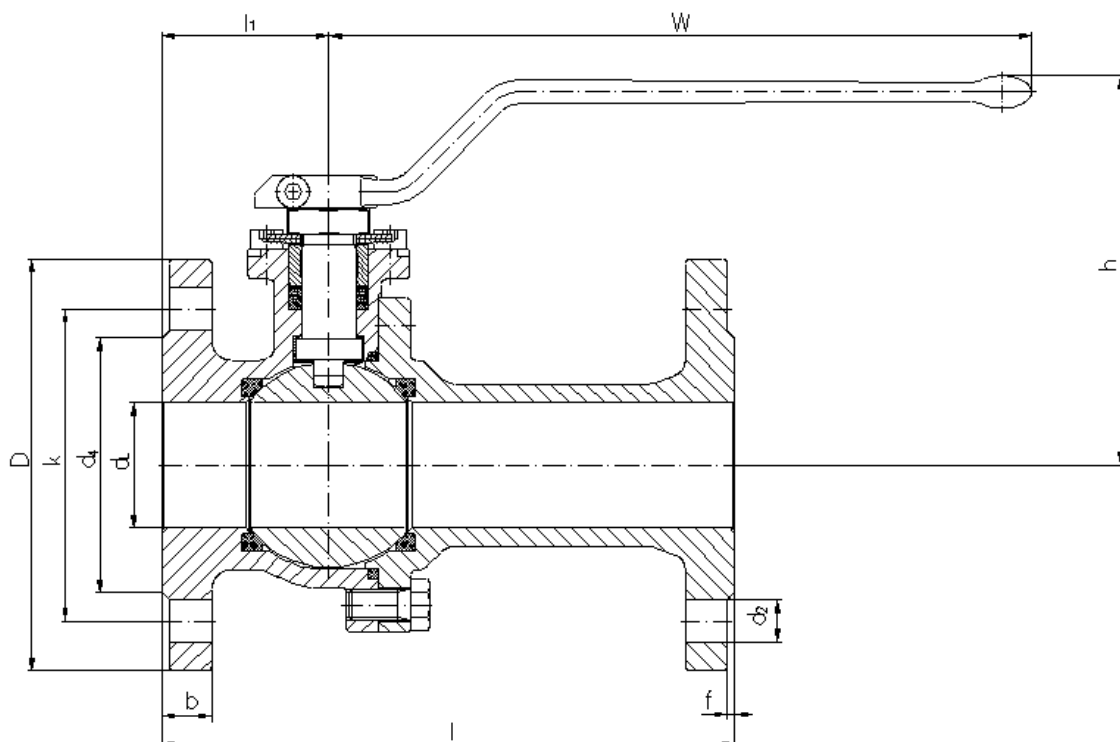
Item no.	designation	material
210.4	stem	1.4462
310.2	lower control shaft bearing	Pure TFM
310.3	upper control shaft bearing	1.4401 / PTFE
411.1	Wedge-ring	Graphite/PTFE
411.3	Wedge-ring	Graphite
413	Wedge-facing ring	Pure PTFE
474	thrusting	1.4404 / 1.4571
503	Wedge ring	Graphite
544	Stuffingbox screw	1.4404
560	Antistatic device	1.4571 / 1.4401

Dimensions control shaft Var 3



DN	h ₁	h ₂	h ₃	h ₄	ø d	SW	DIN ISO 5211
15	55	20	9	2	12	9	F05
20	66	20	9	2	12	9	F05
25	74,5	25	14	2	18	14	F05
32	83	25	14	2	16	11	F05
40	108	32,5	17	3	22	17	F07
50	116	32,5	17	3	22	17	F07
65	127	32,5	17	3	22	17	F07
80	139	37,5	19	3	26	19	F10
100	157	37,5	19	3	26	19	F10
150	213	53	25	3	40	27	F12



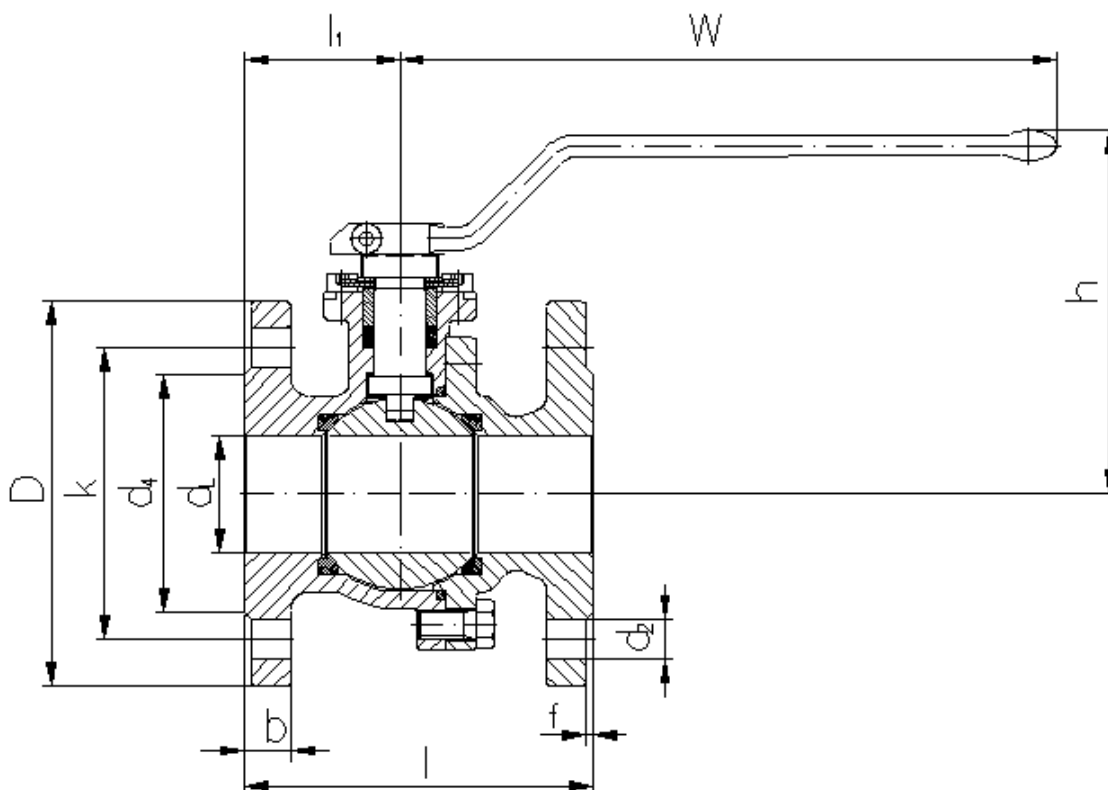


Picture 2: Ball valve with full bore flange acc. To DIN EN 1092-1 form B1; face to face dimension row 28 acc. to DIN EN 558-1 (F17 (long) acc. to DIN 3202 part 1)

Table 4: Dimensions and weights for ball valves Topi 210 long version (pic. 2)

Main dimensions														
VFD														weight
PN	DN	d _L	l	l ₁	h	W	D	b	k	z	d ₂	d ₄ x f	ISO 5211	kg
10/16 to 40	15	15	130	52,5	108	210	95	16	65	4	14	45 x 2	F 05	2,5
	20	20	150	55,0	119		105	18	75			58 x 2		4,0
	25	25	160	57,0	124		115		85			68 x 2		5,0
	32	31	180	58,2	133		140		100		18	78 x 2	6,5	
	40	40	200	64,5	151	282	150		110			88 x 3	F 07	9,0
	50	50	230	67,0	159		165	20	125			102 x 3		12,5
10/16	65	65	290	71,0	170		185	18	145	8		122 x 3	F 10	16,0
	80	77	310	83,0	199	500	200	20	160			138 x 3		22,5
	100	100	350	87,0	217		220		180			158 x 3		30,5
40	65	65	290	71,0	170	282	185	22	145		18	122 x 3	F 07	16,5
	80	77	310	83,0	199	500	200	24	160			138 x 3		F 10
	100	100	350	87,0	217			235			190	22	158 x 3	

VFD: full bore, flanged, dimensions acc. to DIN



Picture 3: full bore ball valve with connection flange acc. to DIN EN1092-1 form B1; face to face length row 27 acc.to EN 558-1 (F18 acc. to DIN 3202 part 1)

Table 5: Dimensions and weights for ball valves Topi 210 short version (pic. 3)

Main dimensions														
VFD														weight
PN	DN	d _L	I	I ₁	h	W	D	b	k	z	d ₂	d ₄ x f	ISO 5211	kg
10/16 to 40	15	15	115	52,5	108	210	95	16	65	4	14	45 x 2	F 05	2,4
	20	20	120	55,0	119		105	18	75			58 x 2		3,5
	25	25	125	57,0	124		115		85			68 x 2		5,0
	32	31	130	58,2	132		140		100		78 x 2	6,5		
	40	40	140	64,5	142	282	150		110	18	88 x 3	F 07	8,5	
	50	50	150	67,0	150		165	20	125		102 x 3		12,5	
10/16	65	65	170	71,0	161		185	18	145		122 x 3		15,5	
	80	77	180	83,0	203	500	200	20	160	8	138 x 3	F 10	22,0	
	100	100	190	87,0	220		220		180		158 x 3		31,0	
	150	150	350	124,0	210	650	285	22	240		22	212 x 3	F 12	75,8
40	65	65	170	71,0	161	282	185		145		18	122 x 3	F 07	16,0
	80	77	180	83,0	203	500	200	24	160	138 x 3		F 10		23,0
	100	100	190	87,0	220		235		190	22			158 x 3	32,5

VFD: full bore, flanged, dimensions acc. to DIN

connection

DIN flange		
nom. pressure	connection	flange
- PN 10/16, 40	Flanged ends acc. to DIN EN 1092 part 1	acc. DIN EN 1092-1 Form B 1 ¹⁾ R _{a max} : 12,5 µm R _{z max} : 50 µm

Please note:

the ball valve can be installed in any position and irrespective of flow direction.

¹⁾ other connection features on request

technical data

flow characteristics – k_v (m³/h)

DN	15	20	25	32	40	50	65	80	100	150
k _v	12	23	60	72	175	360	620	930	1900	3500

Torque in Nm

Δ p bar	Nominal diameter									
	15	20	25	32	40	50	65	80	100	150
0	3	3,5	6	9	14	17	39	59	75	130
10	4	6	10	15	24	27	55	80	105	220
16	5	8	16	21	31	36	70	100	132	306
25	7	11	20	30	39	55	95	130	180	-
40	9	15	26	41	50	72	130	190	265	-

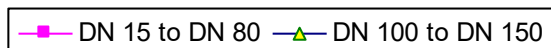
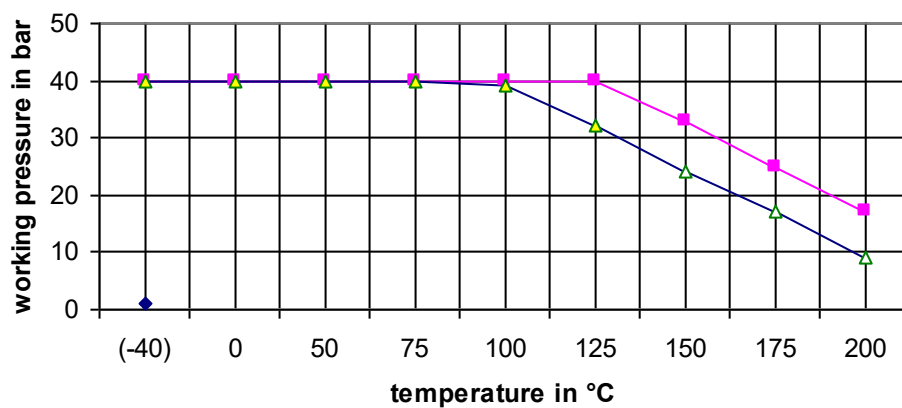
Max. torque stem in Nm

DN	15	20	25	32	40	50	65	80	100	150
M _{d max}	30	50	336	336	600	600	600	1000	1000	3500

Max. allowed torque F-Row (mounted with 4 A4-70 screws; shear force)

DN	15	20	25	32	40	50	65	80	100	150
F-Row	F05	F05	F05	F05	F07	F07	F07	F10	F10	F12
M _{d max} Nm	922	922	922	922	2348	2348	2348	5420	5420	9652

Pressure-temperature rating for TOPI 210 VFD pure TFM, (minimum value ²⁾)



²⁾ for operating conditions out of range please contact VH- Armaturen GmbH