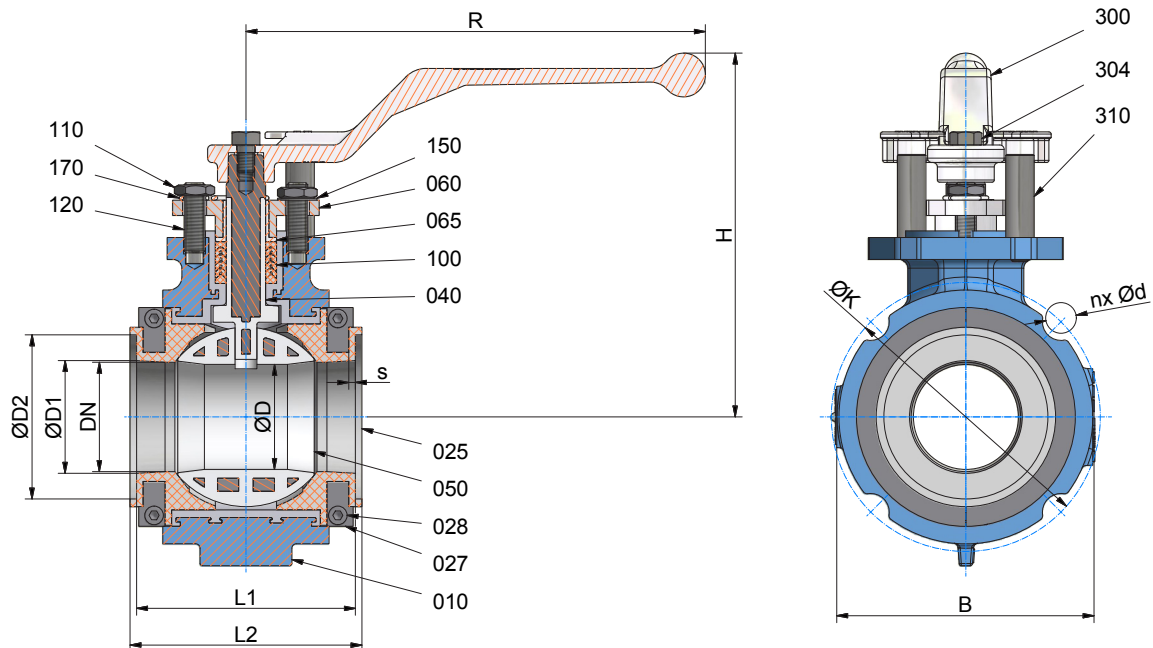


Register 7 CONTENTS - AKH7

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Technical Data AKH7/GK (Glass connection with splirting, short face-to-face)



Glass connection acc. DIN EN 12585 (type: flat)
 Connection DIN EN 1092-2 PN 16

DN / DIN		L1	L2	s	H	R	ØD	ØD1
025	mm	74	80	3	124	160	24	27
	inch	2,91	3,15	0,12	4,88	6,3	0,94	1,06
040	mm	94	100	3	149,5	210	38	42
	inch	3,7	3,94	0,12	5,89	8,27	1,5	1,65
050	mm	100	106	3	166,5	210	48	51,5
	inch	3,94	4,17	0,12	6,56	8,27	1,89	2

DN / DIN		ØD2	B	ØK	n x Ød	weight	
025	mm	43	75	81	4 x M12	kg	1,2
	inch	1,69	2,95	3,19		lbs	2,6
040	mm	61	100	110	4 x M16	kg	3,3
	inch	2,4	3,94	4,33		lbs	7,3
050	mm	75	120	123	4 x M16	kg	3,5
	inch	2,95	4,72	4,84		lbs	7,7

Material specification AKH7/GK

No.	Designation	Quantity	Material	Material-No. DIN	ASTM / AISI
010	body	1	ductil iron / PFA	EN-JS1049 (GGG-40.3) / DIN EN 1563	A 395
		1	ductil iron / PFA conductive	EN-JS1049 (GGG-40.3) / DIN EN 1563	A 395
025	side piece/glass pipe connection	2	PTFE		
		2	PTFE-glass°		
		2	PTFE conductive		
027	ring split	2	steel	1.0037 / DIN EN 10025-2	A 283 Gr. C
028	cylinder head stud	4	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8
040	stem	1	stainless steel / PFA	1.4470 / DIN EN 10283	A 890 CD3MN
		1	stainless steel / PFA conductive	1.4470 / DIN EN 10283	A 890 CD3MN
		1	Hastelloy C4 / PFA °°	2.4610 / DIN 17744	
050	ball	1	cast steel / PFA	1.0619 / DIN EN 10213-2	A 216 Grade WCB
		1	cast steel / PFA conductive	1.0619 / DIN EN 10213-2	A 216 Grade WCB
		1	ceramic Al2O3**		
060	gland follower	1	stainless steel	1.4308 / DIN EN 10283	A 743 CF-8
065	gland insert	1	PTFE-graphite		
100	packing material (chevron)	1 set	PTFE °		
		1 set	PTFE-graphite°		
110	hexagon nut	2	stainless steel	1.4301 / DIN EN 10088-3	A 194 8
120	stud bolt	2	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8
150	serrated lock washer	2	stainless steel	1.4301 / DIN EN 10088-3	AISI 304
170	grounding device	1	stainless steel	1.4310 / DIN EN 10270-3	AISI 301
300	hand lever	1	die cast metall	ZP0410 / DIN EN 12844	
304	hexagon bolt	1	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8
310	stop	2	stainless steel	1.4301 / DIN EN 10088-3	AISI 304

Valves with conductive lining only contain components with conductive materials

**ceramic ball on request

° optional

°° Hastelloy stem on request

Assembly Instructions AKH7/GK

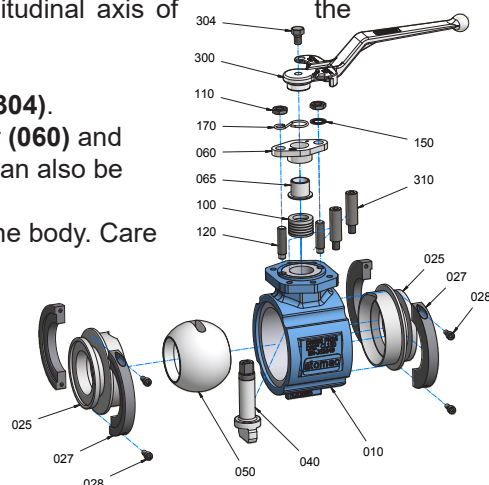
The general installation and maintenance instructions must be observed.

1. Screw stud bolts (120) into body (010).
2. Insert stem (040) from inside of body in such a way that the flat side is parallel to the longitudinal axis of the body (010).
3. Insert chevron packing (100).
4. Install gland insert (065), gland follower (060), safety washer (150), hexagon nuts (110) and grounding device (170) also on valves top.
5. Assemble hand lever (300) onto stem (040) with the hexagon bolt (304).
6. Insert ball (050) to valve stem by pushing the ball in a downward motion through valve body.
7. Turn handlever (300) 90° off longitudinal of body (open position).
8. Insert side piece (025) on both sides into body (010).
9. Install split ring (027) with cylinder head bolts (028) on the side piece (025).
10. Assemble stops (310) with hexagon bolt (312)

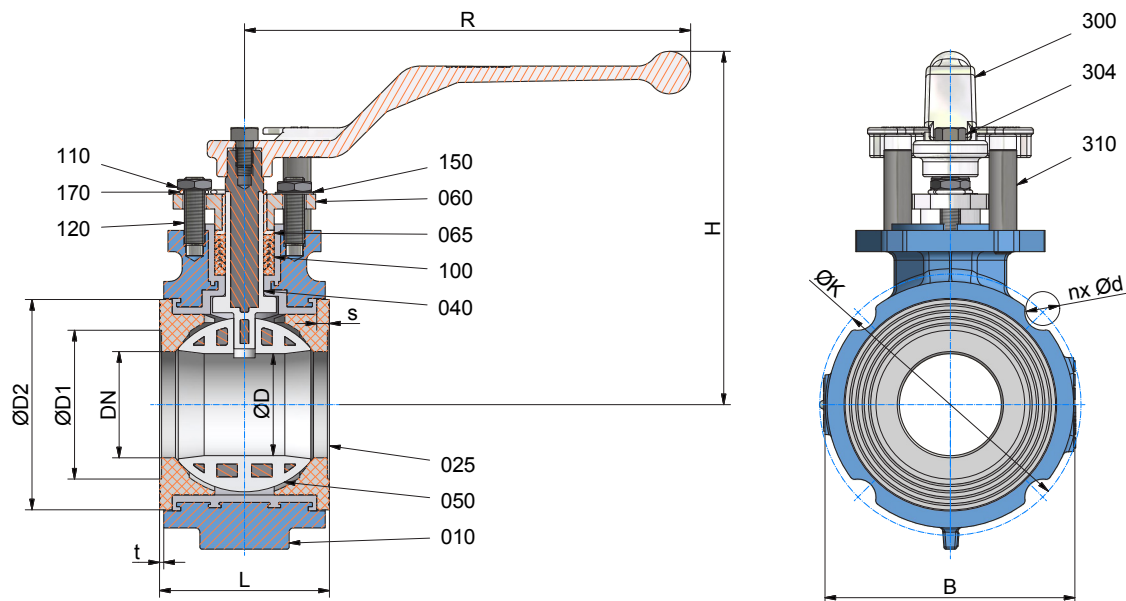
Disassembly Instructions AKH7/GK

For all jobs which are to be carried out on an installed valve, the works safety requirements and the general accident prevention instructions must be observed. Moreover, the general installation and maintenance instructions for atomac fluorcarbon resin lined valves must be considered.

1. Prior to disassembly, the valve must be cleaned of all fluid according to the abovementioned instructions. Particular care must be taken that during the rinsing and draining of the piping the valve is opened and closed repeatedly. These cycles (opening and closing) are to be repeated when emptying the piping. Only when following this procedure, is it ensured that all remaining pressure inside the body (stem guide and ball seats) is eliminated.
2. Put valve on a work bench with a soft cover (rubber mat). To remove the ball (050), put hand lever (300) in closed position (90° to longitudinal axis of valve). The ball can easily be pushed out of the body.
3. Remove hand lever (300) with the hexagon bolt (304).
4. Loose hexagon nuts (110), remove gland follower (060) and gland insert (065). If necessary, stud bolts (120) can also be removed now.
5. Remove stem (040) by pushing it down through the body. Care must be taken not to damage the body liner.
6. Chevron packing (100) can easily be removed.



Technical Data AKH7/KB (Short Face-to-Face, Wafer)



Connection DIN EN 1092-2 PN 16

DN / DIN		L	t	s	H	R	ØD	ØD1
025	mm	48	2	5	124	160	24	35
	inch	1,89	0,08	0,20	4,88	6,3	0,94	1,38
040	mm	70	2	6	149,5	210	38	55
	inch	2,76	0,08	0,24	5,89	8,27	1,5	2,17
050	mm	80	2	6	166,5	210	48	70
	inch	3,15	0,08	0,24	6,56	8,27	1,89	2,76

DN / DIN		ØD2	B	ØK	nx Ød	weight	
025	mm	62	75	81	4 x M12	kg	1,2
	inch	2,44	2,95	3,19		lbs	2,6
040	mm	89	100	110	4 x M16	kg	3,3
	inch	3,5	3,94	4,33		lbs	7,3
050	mm	99	120	123	4 x M16	kg	3,5
	inch	3,9	4,72	4,84		lbs	7,7

Material specification AKH7/KB

No.	Designation	Quantity	Material	Material-No. DIN	ASTM / AISI
010	body	1	ductil iron / PFA	EN-JS1049 (GGG-40.3) / DIN EN 1563	A 395
		1	ductil iron / PFA conductive	EN-JS1049 (GGG-40.3) / DIN EN 1563	A 395
025	side piece/glass pipe connection	2	PTFE		
		2	PTFE conductive		
		2	PTFE-glass°		
040	stem	1	stainless steel / PFA	1.4470 / DIN EN 10283	A 890 CD3MN
		1	stainless steel / PFA conductive	1.4470 / DIN EN 10283	A 890 CD3MN
		1	Hastelloy C4 / PFA °°	2.4610 / DIN 17744	
050	ball	1	cast steel / PFA	1.0619 / DIN EN 10213-2	A 216 Grade WCB
		1	cast steel / PFA conductive	1.0619 / DIN EN 10213-2	A 216 Grade WCB
		1	ceramic Al2O3**		
060	gland follower	1	stainless steel	1.4308 / DIN EN 10283	A 743 CF-8
065	gland insert	1	PTFE-graphite		
100	packing material (chevron)	1 set	PTFE °		
		1 set	PTFE-graphite°		
110	hexagon nut	2	stainless steel	1.4301 / DIN EN 10088-3	A 194 8
120	stud bolt	2	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8
150	serrated lock washer	2	stainless steel	1.4301 / DIN EN 10088-3	AISI 304
170	grounding device	1	stainless steel	1.4310 / DIN EN 10270-3	AISI 301
300	hand lever	1	die cast metall	ZP0410 / DIN EN 12844	
304	hexagon bolt	1	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8
310	stop	2	stainless steel	1.4301 / DIN EN 10088-3	AISI 304

Valves with conductive lining only contain components with conductive materials

**ceramic ball on request

° optional

°° Hastelloy stem on request

Assembly Instructions AKH7/KB

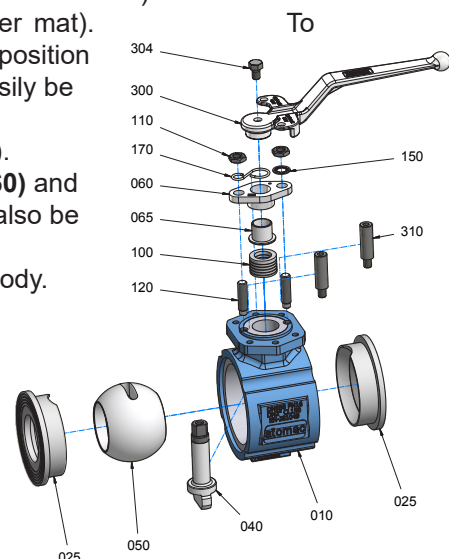
The general installation and maintenance instructions must be observed.

1. Screw stud bolts **(120)** into body **(010)**.
2. Insert stem **(040)** from inside of body in such a way that the flat side is parallel to the longitudinal axis of the body.
3. Insert chevron packing **(100)**.
4. Install gland insert **(065)**, gland follower **(060)**, safety washer **(150)**, hexagon nuts **(110)** and grounding device **(170)** also on valves top.
5. Assemble hand lever **(300)** onto stem **(040)** with the hexagon bolt **(304)**.
6. Insert ball **(050)** to valve stem by pushing the ball in a downward motion through valve body.
7. Turn handlever **(300)** 90° off longitudinal of body (open position).
8. Install side piece **(025)** on both sides.
9. Assemble stops **(310)** with hexagon bolt **(312)**.

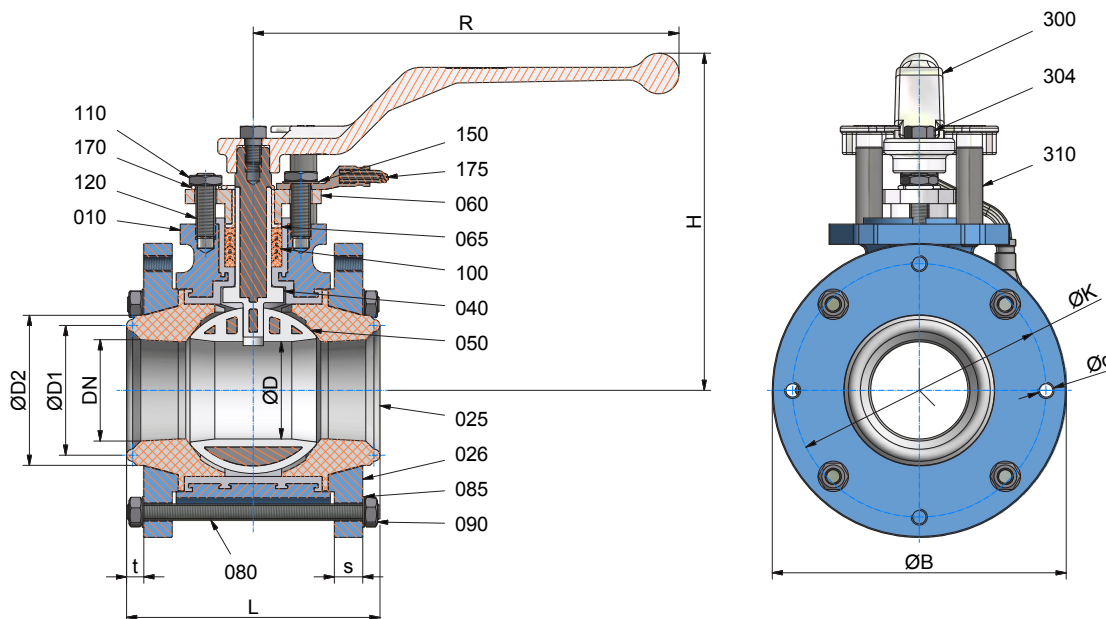
Disassembly Instructions AKH7/KB

For all jobs which are to be carried out on an installed valve, the works safety requirements and the general accident prevention instructions must be observed. Moreover, the general installation and maintenance instructions for atomac fluorcarbon resin lined valves must be considered.

1. Prior to disassembly, the valve must be cleaned of all fluid according to the abovementioned instructions. Particular care must be taken that during the rinsing and draining of the piping the valve is opened and closed repeatedly. These cycles (opening and closing) are to be repeated when emptying the piping. Only when following this procedure, is it ensured that all remaining pressure inside the body (stem guide and ball seats) is eliminated.
2. Put valve on a work bench with a soft cover (rubber mat).
remove the ball **(050)**, put hand lever **(300)** in closed position (90° to longitudinal axis of the valve). The ball can easily be pushed out of the body.
3. Remove hand lever **(300)** with the hexagon bolt **(304)**.
4. Loose hexagon nuts **(110)**, remove gland follower **(060)** and gland insert **(065)**. If necessary, stud bolts **(120)** can also be removed now.
5. Remove stem **(040)** by pushing it down through the body. Care must be taken not to damage the body liner.
6. Chevron packing **(100)** can easily be removed.



Technical Data AKH7/KP (Glass connections with ball - cup)



Glass connection acc. DIN EN 12585
(type: ball - cup / concave - convex)

DN / DIN		L	t	s	H	R	ØD	ØD1
025	mm	80	7	8	124	160	24	35
	inch	3,15	0,28	0,31	4,88	6,3	0,94	1,38
040	mm	110	7	13	149,5	210	38	51
	inch	4,33	0,28	0,51	5,89	8,27	1,5	2,01
050	mm	125	8,5	14	166,5	210	49	64
	inch	4,92	0,33	0,55	6,56	8,27	1,93	2,52

DN / DIN		ØD2	ØB	ØK	Ød	weight	
025	mm	44	105	85	4xM8	kg	2,2
	inch	1,73	4,13	3,35	4xM8	lbs	4,8
040	mm	62	135	110	4xM8	kg	5,2
	inch	2,44	5,31	4,33	4xM8	lbs	11,5
050	mm	74	145	125	4xM8	kg	7,5
	inch	2,91	5,71	4,92	4xM8	lbs	16,5

Flange connection with planned face also possible.

Material specification AKH7/KP

No.	Designation	Quantity	Material	Material-No. DIN	ASTM / AISI
010	body	1	ductil iron / PFA	EN-JS1049 (GGG-40.3) / DIN EN 1563	A 395
		1	ductil iron / PFA conductive	EN-JS1049 (GGG-40.3) / DIN EN 1563	A 395
025	side piece/glass pipe connection	2	PTFE		
		2	PTFE conductive		
		2	PTFE-glass°		
026	flange	2	steel, zinc plated	1.0570 / DIN EN 10025-2	A 283 D
040	stem	1	stainless steel / PFA	1.4470 / DIN EN 10283	A 890 CD3MN
		1	stainless steel / PFA conductive	1.4470 / DIN EN 10283	A 890 CD3MN
		1	Hastelloy C4 / PFA °°	2.4610 / DIN 17744	
050	ball	1	cast steel / PFA	1.0619 / DIN EN 10213-2	A 216 Grade WCB
		1	cast steel / PFA conductive	1.0619 / DIN EN 10213-2	A 216 Grade WCB
		1	ceramic Al ₂ O ₃ **		
060	gland follower	1	stainless steel	1.4308 / DIN EN 10283	A 743 CF-8
065	gland insert	1	PTFE-graphite		
080	stud bolt	1 set	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8
085	serrated lock washer	1 set	stainless steel	1.4301 / DIN EN 10088-3	AISI 304
090	hexagon nut	1 set	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8
100	packing material (chevron)	1 set	PTFE °		
		1 set	PTFE-graphite°		
110	hexagon nut	2	stainless steel	1.4301 / DIN EN 10088-3	A 194 8
120	stud bolt	2	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8
150	serrated lock washer	2	stainless steel	1.4301 / DIN EN 10088-3	AISI 304
170	grounding drvice	1	stainless steel	1.4310 / DIN EN 10270-3	AISI 301
175	grounding strap	1	stainless steel / PVC	1.4401 / DIN EN 10088-3	AISI316
300	hand lever	1	die cast metall	ZP0410 / DIN EN 12844	
304	hexagon bolt	1	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8
310	stop	2	stainless steel	1.4301 / DIN EN 10088-3	AISI 304

Valves with conductive lining only contain components with conductive materials

** ceramic ball on request

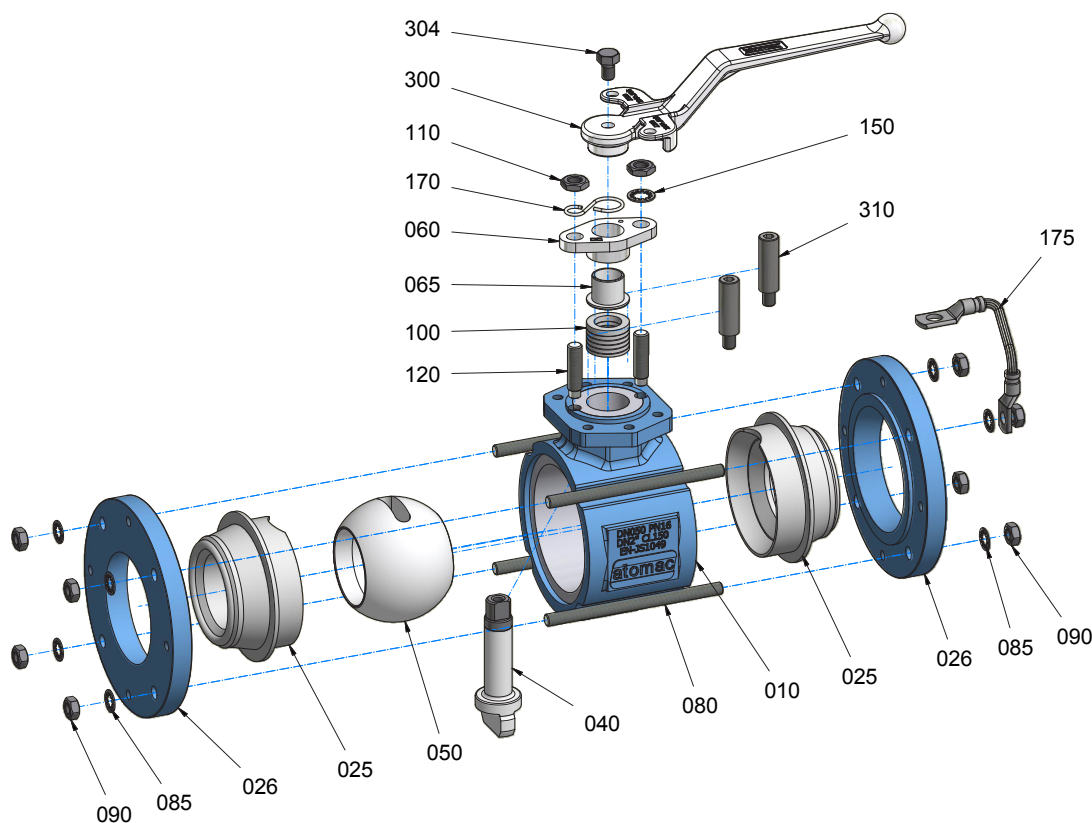
° optional

°° Hastelloy stem on request

Assembly Instructions AKH7/KP

The general installation and maintenance instructions must be observed.

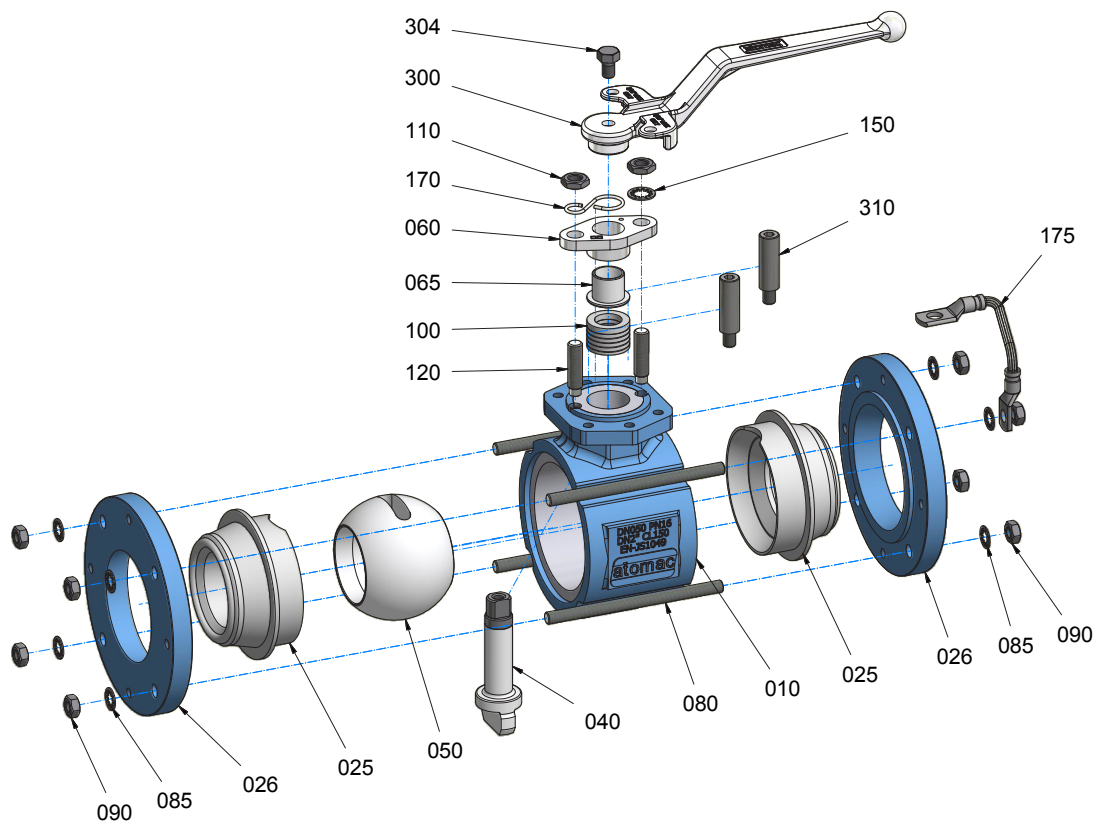
1. Screw stud bolts (120) into body (010).
2. Insert stem (040) from inside of the body in such a way that the flat side is parallel to the longitudinal axis of the body.
3. Insert chevron packing (100).
4. Install gland insert (065), gland follower (060), safety washer (150), hexagon nuts (110) and grounding device (170) and grounding strap (175) on valve top..
5. Assemble hand lever (300) onto stem (040) with the hexagon bolt (304).
6. Insert ball (050) to valve stem by pushing the ball in a downward motion through valve body.
7. Turn hand lever (300) 90° off longitudinal axis of body (open position).
8. Assemble side piece for glass connection (025) into flange (026).
9. Install body bolts (080), lock washers (085), hexagon nuts (090), and tighten by criss-cross method to recommended torque.
10. Assemble stops (310) with hexagon bolt (312).



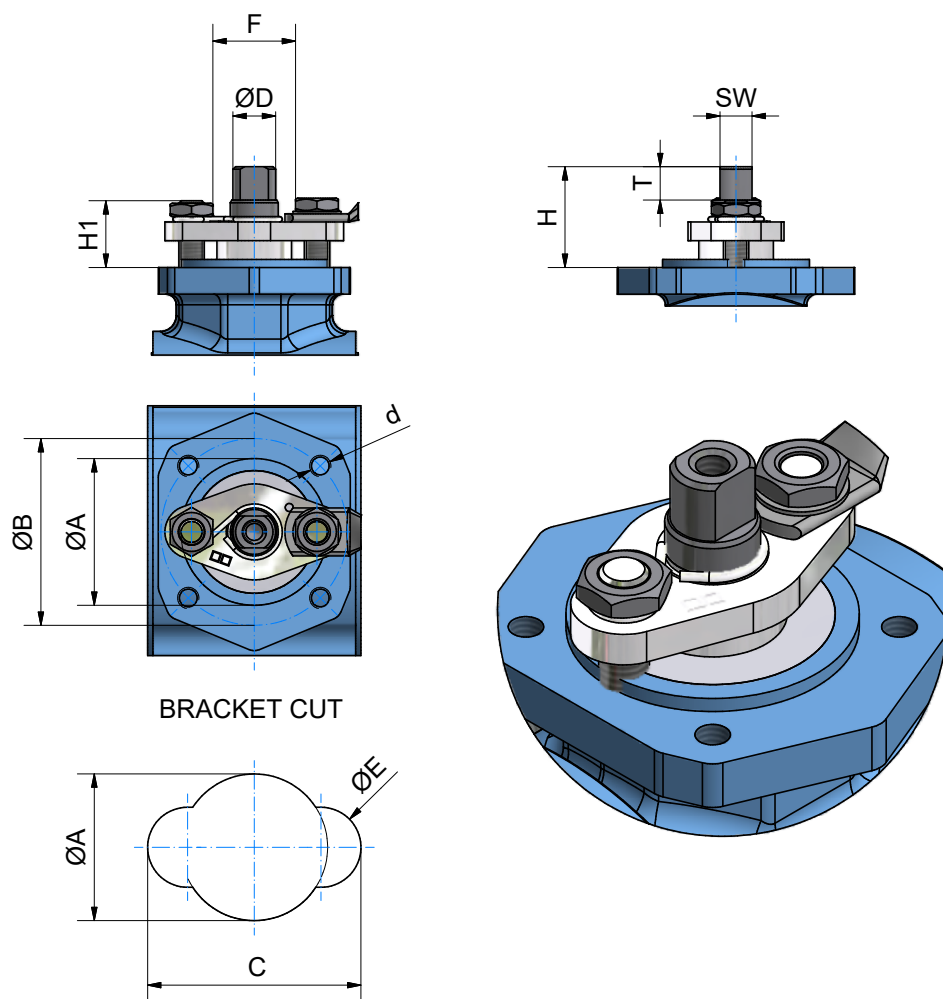
Disassembly Instructions AKH7/KP

For all jobs which are to be carried out on an installed valve, the works safety requirements and the general accident prevention instructions must be observed. Moreover, the general installation and maintenance instructions for atomac fluorocarbon resin lined valves must be considered.

1. Prior to disassembly, the valve must be cleared of all fluid according to the above-mentioned instructions. Particular care must be taken that during the rinsing and draining of the piping the valve is opened and closed repeatedly. These cycles (opening and closing) are to be repeated when emptying the piping. Only when following this procedure, it is ensured that all remaining pressure inside the body (stem guide and ball seats) is eliminated.
2. Put body on a work bench with a soft cover (rubber mat).
3. Remove hexagon nuts (090), washer (085) and grounding strap (175) from upper flange (026).
4. Remove the side piece (025) and flange (026) from the body (010).
5. To remove the ball (050), put hand lever (300) is closed position (90° to longitudinal axis of the valve). The ball (050) can easily be pushed out of the body.
6. Remove hand lever (300) with the hexagon bolt (304)..
7. Loose hexagon nuts (110) and remove anti-static device (170) as well as gland follower (060) and gland insert (065). If necessary, stud bolts (120) can also be removed now.
8. Remove stem (040) by pushing it down through the body. Care must be taken not to damage body liner. Chevron packing (100) can easily be removed.



AKH7 - Top Work Dimensions



DN / DIN	ISO-5211	$\varnothing A$	$\varnothing B$	C	d	$\varnothing E$	$\varnothing D$	SW	T	H	H1	F
025	mm	35	50	60	M6	25	10	8	9,3	29,5	22	22
	inch	1,38	1,97	2,36		0,98	0,39	0,31	0,37	1,16	0,87	0,87
040	mm	55	70	75	M8	25	16	12	12,5	34	26	28
	inch	2,17	2,76	2,95		0,98	0,63	0,47	0,49	1,34	1,02	1,1
050	mm	55	70	75	M8	25	16	12	12,5	38	26	28
	inch	2,17	2,76	2,95		0,98	0,63	0,47	0,49	1,5	1,02	1,1

Spare Parts (item n°) - AKH7/GK, KB and KP

DN	Ball	
	PFA	Ceramic°
025	80-0000323	80-0002317
040	80-0000325	80-0002319
050	80-0000326	80-0002320

DN	Side Piece - PTFE			Seat Ring - PTFE KPF
	GK	KB	KP, KPF	
025	80-0052756	80-0047321	80-0051171	80-0055541
040	80-0064844	80-0066971	80-0063444	---
050	80-0052757	80-0047354	80-0051172	80-0062922

DN	Stem		Packing (set)	
	Stainless Steel/ PFA	Hastelloy / PFA	PTFE	PTFE / Graphite
025	80-0000115	80-0000116	80-0000167	80-0000174
040	80-0000117	80-0000118	80-0000168	80-0000175
050	80-0000119	80-0000120	80-0000169	80-0000176

° Al₂O₃

AKH7 - Necessary actuator torques

Packingmaterial: chevron PTFE or PTFE-graphite

Size	0 bar Δ p Nm	0 psi Δ p lbf · in
025	10	89
040	25	221
050	30	266

Test medium is air.

Test temperature is 20°C (68°F).

Please note the conditions of service temperatur-diagrams of pressure/vacuum: register 1, page 13.

AKH7 - recommended tightening torques° KP Version

DN	tie rods (080/090)		Glass connection flange DIN EN 12585		connection flange DIN EN 1092 PN16		gland bolts (120)	
	Nm	lbf · in	Nm	lbf · in	Nm	lbf · in	Nm	lbf · in
025	10	89	2,5	22	25	221	4	35
040	17	151	4	36	50	442	7	62
050	20	1177	4,5	40	65	575	7	62

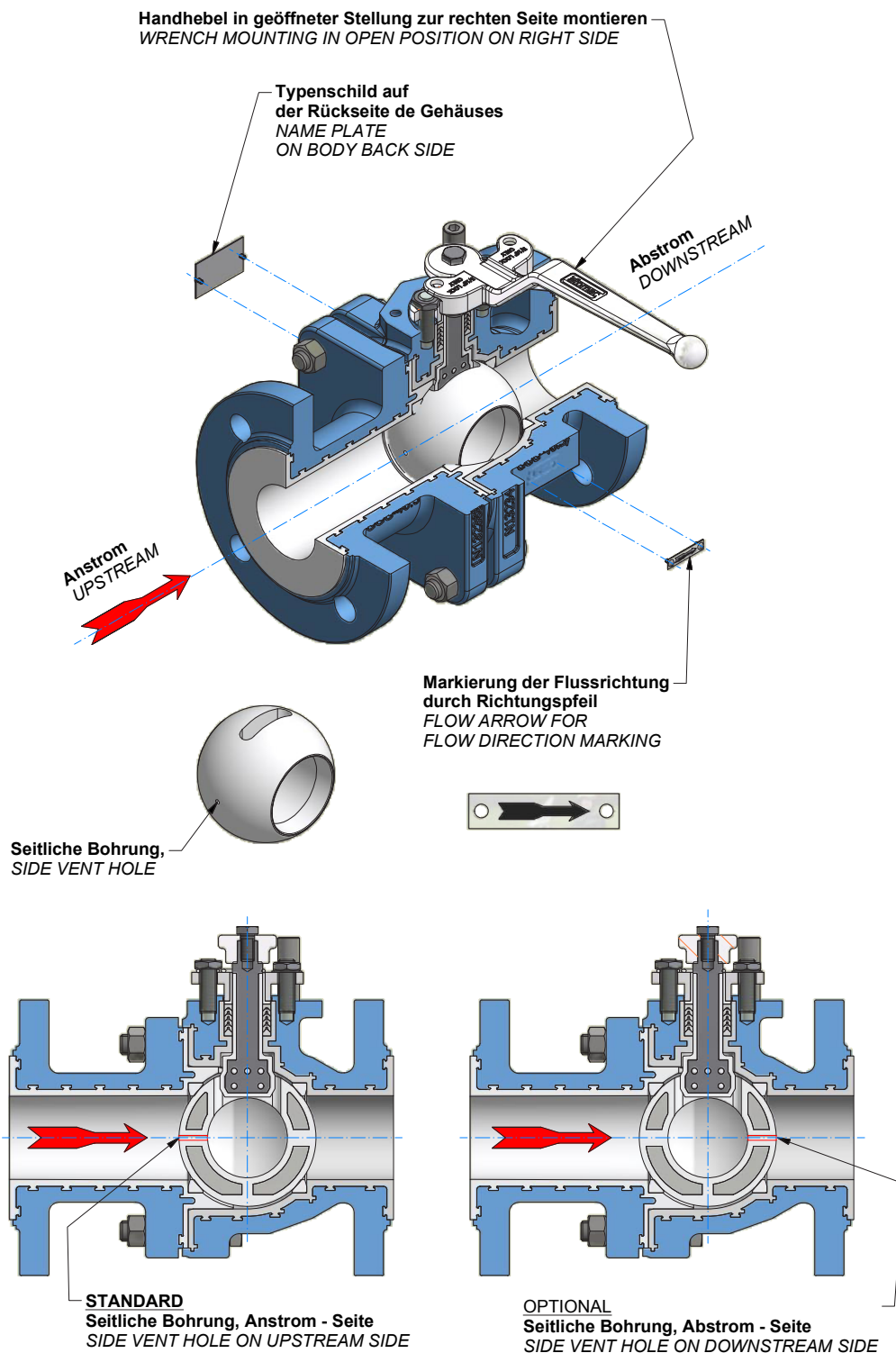
° maximum value

When bolting together dissimilar materials, always tighten to the lowest recommended torque of the components in the joint. Using higher torques may cause excessive deformation of the „softer“ material in the joint

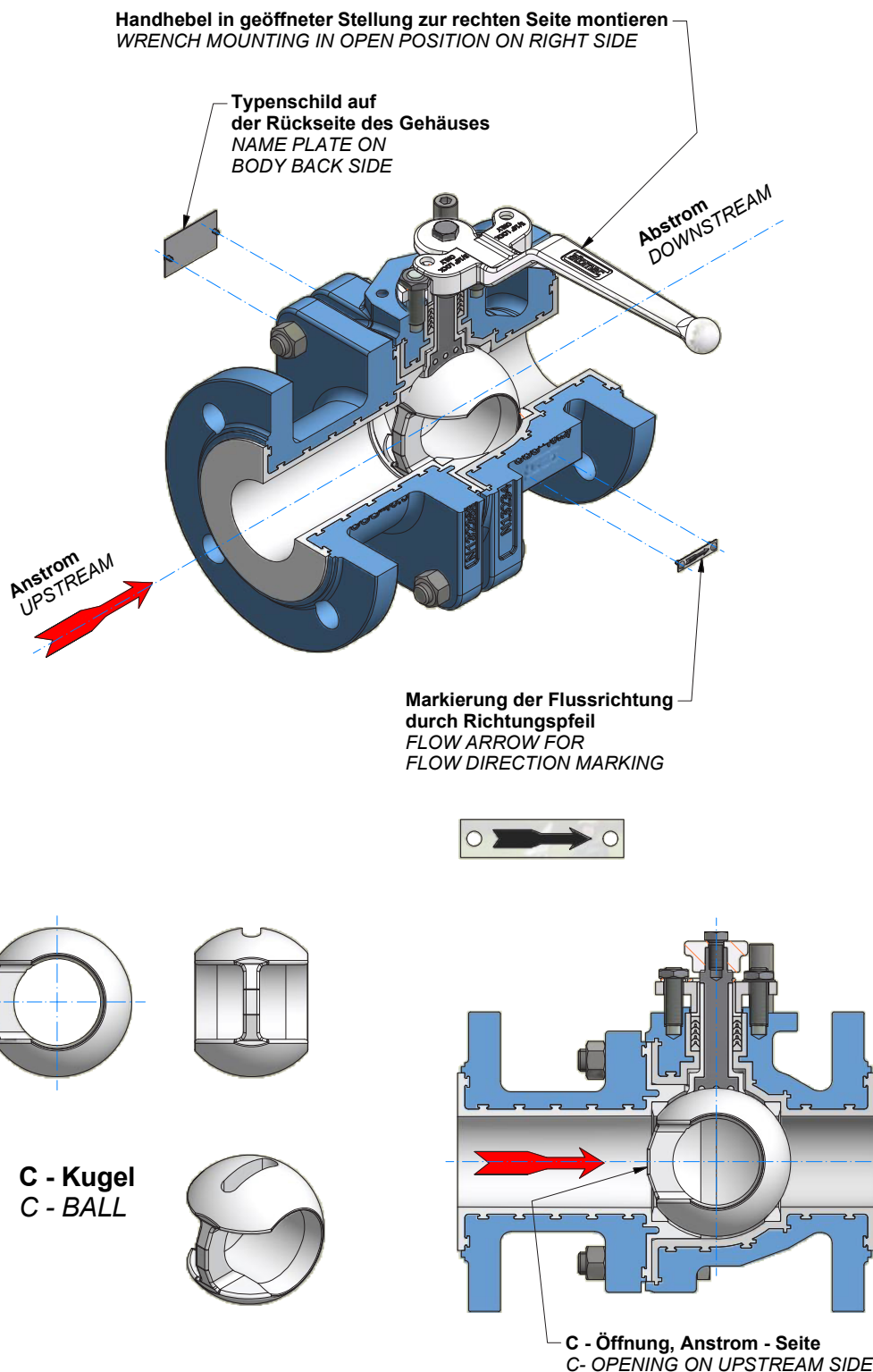
AKH7 - K_v Data and C_v Data (DIN EN 60534-2-3)

DIN	K _v m³/h	C _v gal/min
025	44,6	51,8
040	119,3	138,7
050	201,2	233,9

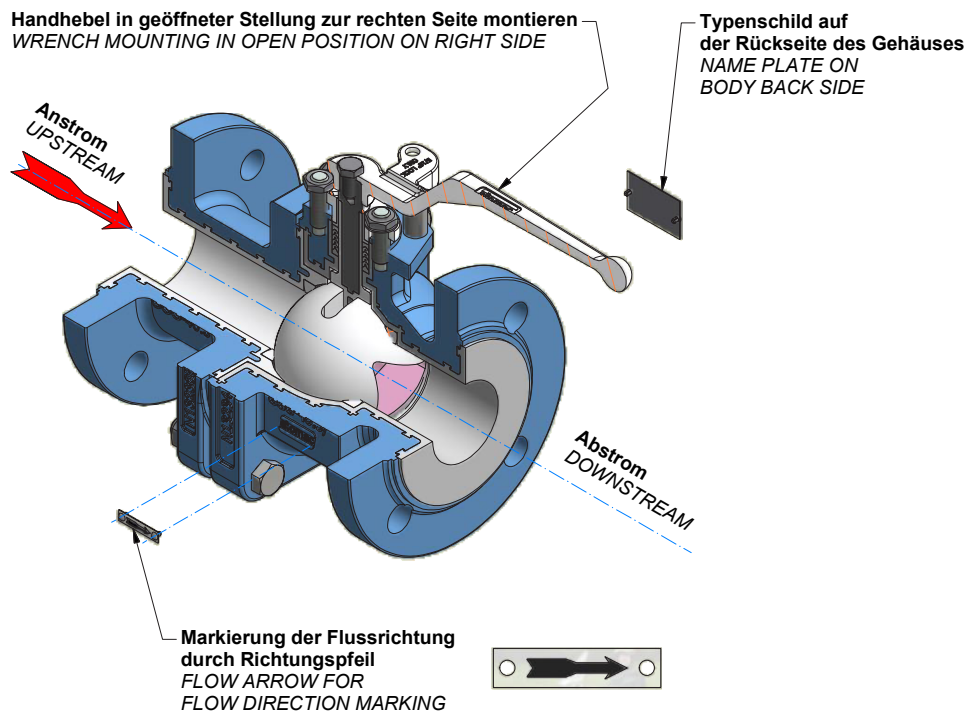
Optional ball with side vent hole



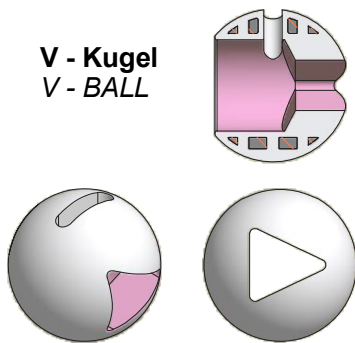
Optional with C-ball



Optional with V-ball or S-ball



V - Kugel
V - BALL



S - Kugel
S - BALL

