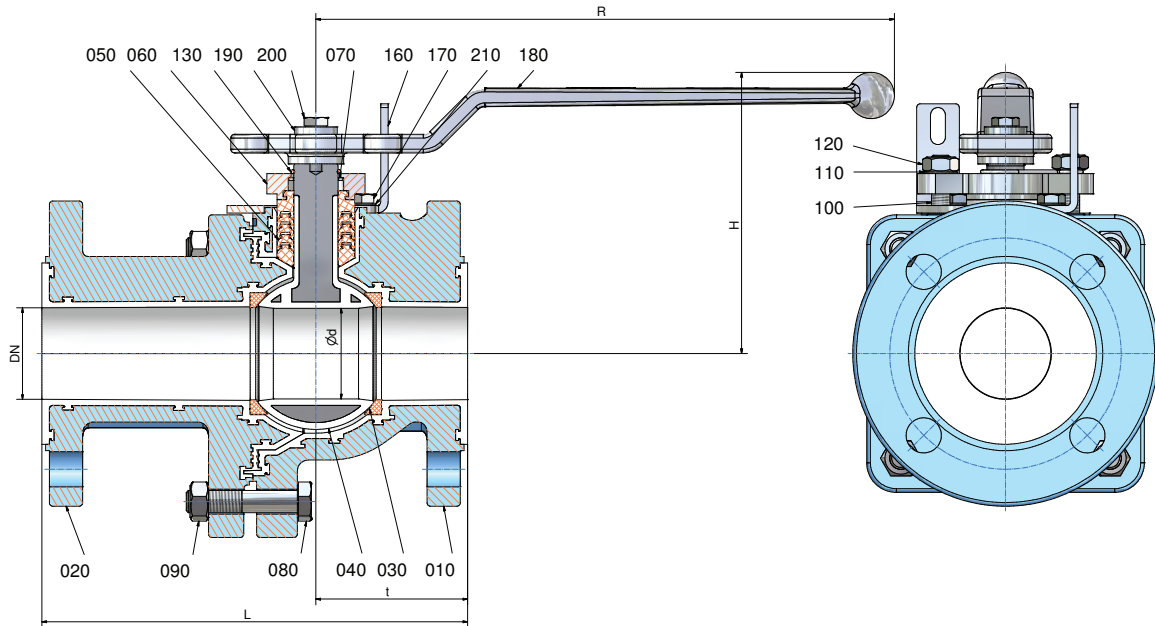


Register 21 CONTENTS - AKH8

Contents	Page
<i>Technical Data AKH8 (DIN)</i>	2
<i>Technical Data AKH8 (ANSI)</i>	3
<i>Material Specification AKH8</i>	4
<i>Dimensions AKH8 (DIN)</i>	5
<i>Dimensions AKH8 (ANSI)</i>	6
<i>Assembly Instructions AKH8</i>	7
<i>Disassembly Instructions AKH8</i>	8
<i>AKH8 - Recommended Tightening Torques</i>	9
<i>AKH8 - Necessary actuator torques</i>	10
<i>Technical Data - AKH8 with close device</i>	11
<i>Material Specification - AKH8 with close device</i>	11
<i>Optional with pressure compensation grooves by slotted seat ring</i>	12
<i>AKH8 - Kv and Cv - Data</i>	13
<i>Optional ball with side vent hole</i>	14
<i>Optional with C-ball</i>	15
<i>Optional with V-ball</i>	16

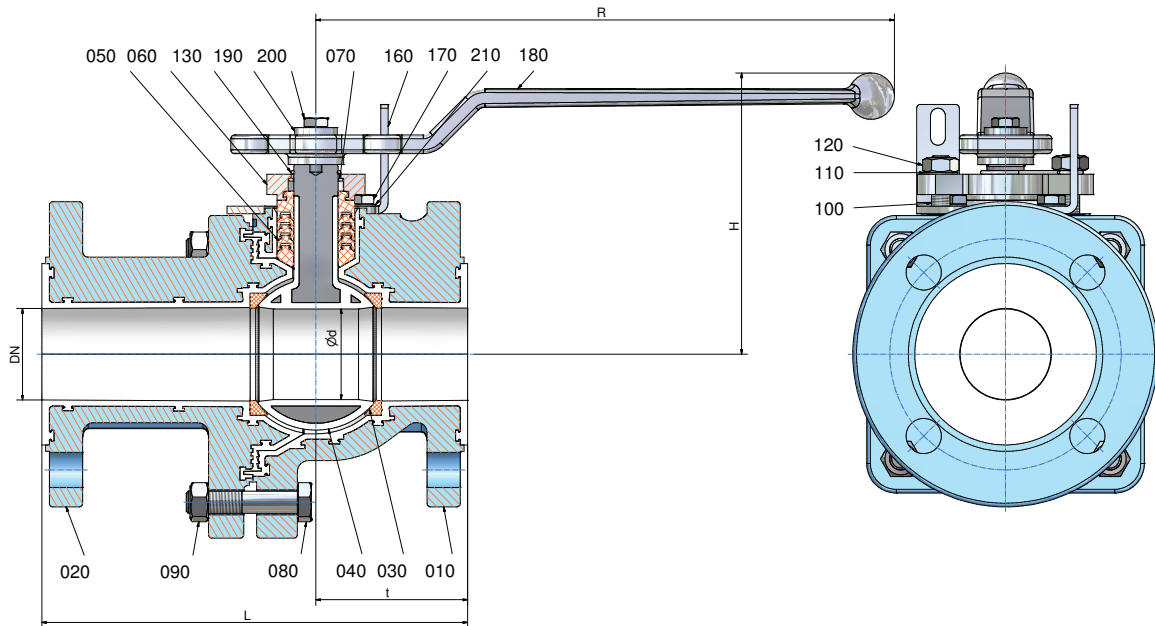
Technical Data AKH8 (DIN)



Face to Face dimensions DIN EN 558 (Basic series 1)
 Flange Connection DIN 2501-1 PN 16

DN / DIN		L	H	R	t	Ød	weight	
015	mm	130	134,5	210	60	16	kg	5,0
	inch	5,12	5,3	8,27	2,36	0,63	lbs	11,0
020	mm	150	134,5	210	63	21	kg	5,5
	inch	5,91	5,3	8,27	2,48	0,83	lbs	12,2
025	mm	160	134,5	210	57,5	24	kg	8,3
	inch	6,3	5,3	8,27	2,26	0,94	lbs	18,3
040	mm	200	146	312,5	68,5	38	kg	13,6
	inch	7,87	5,75	12,3	2,7	1,5	lbs	30,0
050	mm	230	152	312,5	82	49	kg	17,8
	inch	9,06	5,98	12,3	3,23	1,93	lbs	39,2
080	mm	310	212,5	410	114	80	kg	36,4
	inch	12,2	8,37	16,14	4,49	3,15	lbs	80,2
100	mm	350,00	227,5	410	128,5	100,5	kg	47,8
	inch	13,78	8,96	16,14	5,06	3,96	lbs	105,4

Technical Data AKH8 (ANSI)



Flange Connection: ASME B 16.5 Class 150
 Min. Flange thickness acc. to
 ASME B 16.5 Class 150, Table 9
 (Flanged Fittings)

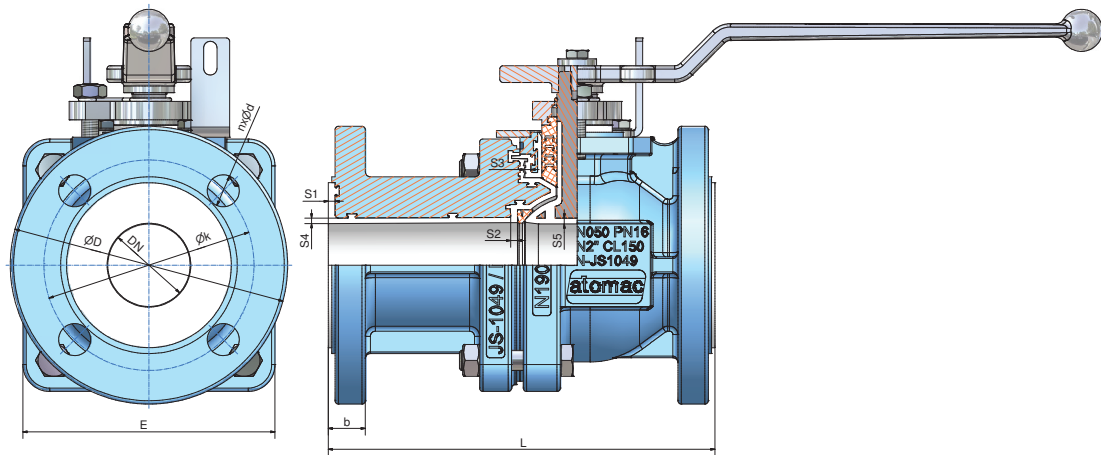
DN / ANSI		L	H	R	t	Ød	weight	
1/2"	mm	130	134,5	210	60	16	kg	5,0
	inch	5,12	5,3	8,27	2,36	0,63	lbs	11,0
3/4"	mm	150	134,5	210	63	21	kg	5,5
	inch	5,91	5,3	8,27	2,48	0,83	lbs	12,2
1"	mm	152,5	135	210	55,5	24	kg	8,3
	inch	6	5,31	8,27	2,19	0,94	lbs	18,3
1 1/2"	mm	178	146	312,5	68,5	38	kg	13,6
	inch	7,01	5,75	12,3	2,7	1,5	lbs	30,0
2"	mm	203	152	312,5	81,5	49	kg	17,8
	inch	7,99	5,98	12,3	3,21	1,93	lbs	39,2
3"	mm	241	212,5	410	114	80,5	kg	36,4
	inch	9,5	8,37	16,14	4,49	3,17	lbs	80,2
4"	mm	292	227,5	410	128,5	100,5	kg	47,8
	inch	11,5	8,96	16,14	5,06	3,96	lbs	105,4

Material specification AKH8

No.	Designation	Pieces	Material	Material-No. / DIN	ASTM / AISI
010	body	1	ductile iron / PFA °	EN-JS1049 (GGG-40.3) /	A 395
			ductile iron / PFA conductive°	DIN EN 1563	
020	side piece	1	ductile iron / PFA °	EN-JS1049 (GGG-40.3) /	A 395
			ductile iron / PFA conductive°	DIN EN 1563	
030	seat ring	2	PTFE° / PTFE-conductive°	pure - PTFE	
040	ball with stem	1	Duplex stainless steel / PFA°		A995 Gr. CD4MCuN
			Duplex stainless steel / PFA conductive°		A995 Gr. CD4MCuN
050	packing material (chevron)	1 set	PTFE° / PTFE-Graphit°		
060	gland follower	1	stainless steel	1.4308 / DIN EN 10283	A 743 CF-8
070	Anti Blow Out Ring	1	stainless steel	1.4301 / DIN EN 10088-3	A 194 8
080	stud bold				
	DN 25, 40, DN ½", 1½"	1 set	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8
	hexagon bold				
	DN 50, 80, 100, DN 2"-4"	1 set	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8
090	hexagon nut	1 set	stainless steel	1.4301 / DIN EN 10088-3	A 194 8
100	stud bold	2	stainless steel	1.4301 / DIN EN 10088-3	A 194 B8
110	serrated lock washer	2	stainless steel	1.4301 / DIN EN 10088-3	AISI 304
120	hexagon nut	1 set	stainless steel	1.4301 / DIN EN 10088-3	A 194 8
130	grounding device	1	stainless steel	1.4310 / DIN EN 10270-3	AISI 301
160	stop	1	stainless steel	1.4104 / DIN EN 10088-3	AISI 430 F
170	hexagon bolt	2	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8
180	hand lever				
	DN 25, 40	1	die cast metall	ZP0410 / DIN EN 12844	
	DN 50, 80, 100	1	ductile iron (galvanized)	EN-GJS-50-7 (GGG-50)	
190	flat washer	1	stainless steel	1.4301 / DIN EN 10088-3	AISI 304
200	hexagon bolt	1	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8
210	serrated lock washer	2	stainless steel	1.4301 / DIN EN 10088-3	AISI 304

° optional

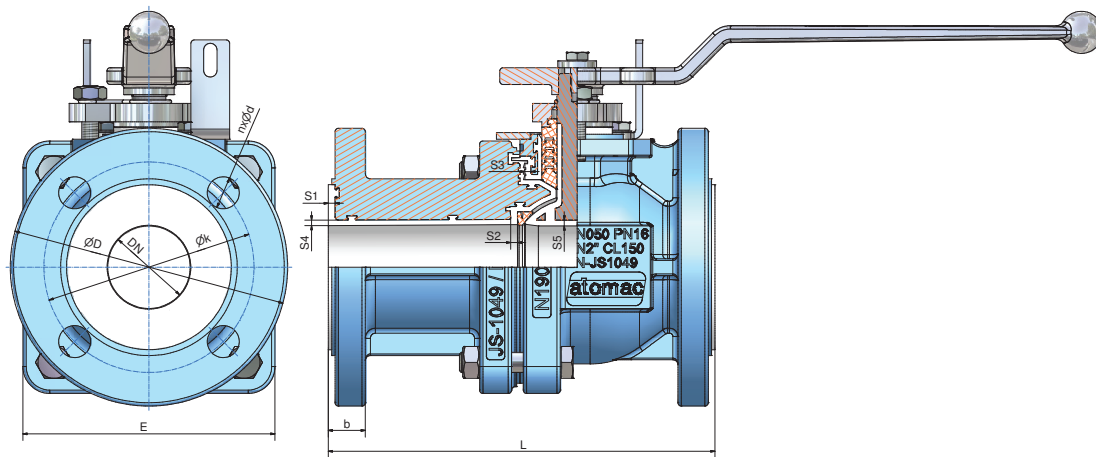
Dimensions AKH8 (DIN)



DN / DIN		L	b	$\varnothing D$	$\varnothing k$	$n \times \varnothing d$	S1	S2	S3	S4	S5	E
015	mm	130	15	95	65	4x14	4	3	3	3,5	7	105
	inch	5,12	0,59	3,74	2,56	4x0,55	0,14	0,12	0,12	0,14	0,28	4,13
020	mm	150	18	105	75	4x14	4	3	3	3,5	4,5	105
	inch	5,91	0,71	4,13	2,95	4x0,55	0,16	0,12	0,12	0,14	0,18	4,13
025	mm	160	19	115	85	4x14	4	3	3	3,5	2,5	105
	inch	6,3	0,75	4,53	3,35	4x0,55	0,16	0,12	0,12	0,14	0,1	4,13
040	mm	200	20	150	110	4x19	4	3,5	3,5	3,5	3,25	144,0
	inch	7,87	0,79	5,91	4,33	4x0,75	0,16	0,14	0,14	0,14	0,13	5,67
050	mm	230	22	165	125	4x19	4	4	3,5	3,5	3	150
	inch	9,06	0,87	6,5	4,92	4x0,75	0,16	0,16	0,14	0,14	0,12	5,91
080	mm	310	26,5	200	160	8x19	4	4	4	4,5	4,25	246
	inch	12,20	1,04	7,87	6,3	8x0,75	0,16	0,16	0,16	0,18	0,17	9,69
100	mm	350	26,5	220	180	8x19	4	5	4	5,5	4,75	266
	inch	13,78	1,04	8,66	7,09	8x0,75	0,16	0,2	0,16	0,22	0,19	10,47

- stem lining DN 25 1,5mm (0,059 inch)
- all other sizes at least 2,5mm (0,098 inch)
- DN80, DN100 octagonal

Dimensions AKH8 (ANSI)



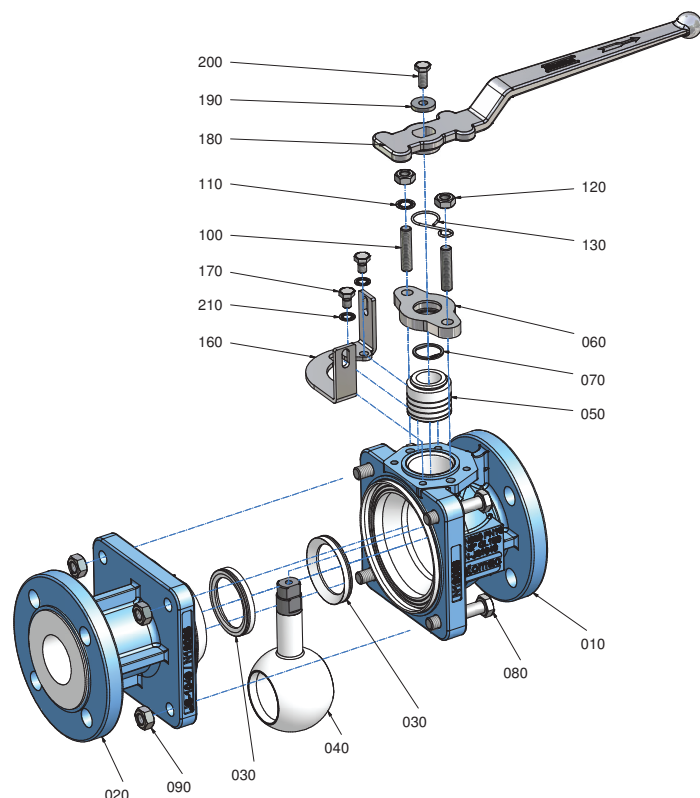
DN / ANSI		L	b	ØD	Øk	nxØd	S1	S2	S3	S4	S5	E
1/2"	mm	130	15	89	60,5	4x16	4	3	3	3,5	7	105
	inch	5,12	0,59	3,5	2,38	4x0,63	0,14	0,12	0,12	0,14	0,28	4,13
3/4"	mm	150	18	98,6	70	4x16	4	3	3	3,5	4,5	105
	inch	5,91	0,71	3,88	2,76	4x0,63	0,16	0,12	0,12	0,14	0,18	4,13
1"	mm	152,5	17	108	79,2	4x16	4	3	3	3,5	2,5	108
	inch	6	0,67	4,25	3,12	4x0,63	0,16	0,12	0,12	0,14	0,1	4,25
1 1/2"	mm	178	20	127	98,6	4x16	4	3,5	3,5	3,5	3,25	144,0
	inch	7,01	0,79	5	3,88	4x0,63	0,16	0,14	0,14	0,14	0,13	5,67
2"	mm	203	21,5	152	120,7	4x19	4	4	3,5	3,5	3	150
	inch	7,99	0,85	6	4,75	4x0,75	0,16	0,16	0,14	0,14	0,12	5,91
3"	mm	241	26,5	190,5	152,4	4x19	4	4	4	4,5	4,25	246
	inch	9,49	1,04	7,5	6	4x0,75	0,16	0,16	0,16	0,18	0,17	9,69
4"	mm	292	26,5	228,6	190,5	8x19	4	5	4	5,5	4,75	266
	inch	11,5	1,04	9	7,5	8x0,75	0,16	0,2	0,16	0,22	0,19	10,47

- stem lining DN 25 1,5mm (0,059 inch)
 all other sizes at least 2,5mm (0,098 inch)
 - DN80, DN100 octagonal

Assembly Instructions AKH8

The general installation and maintenance instructions must be observed.

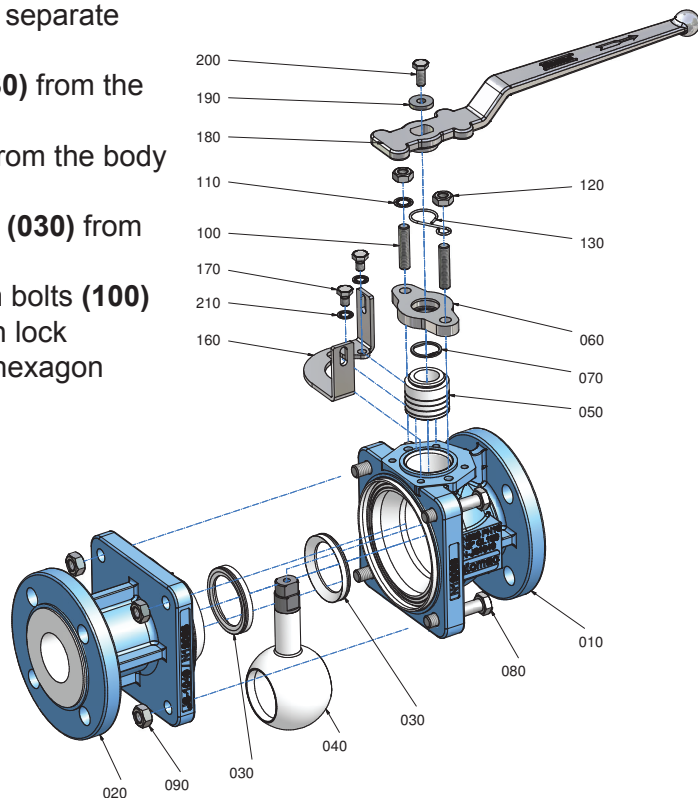
1. Assemble stop **(160)** with hexagon bolt **(170)** and safety washers **(210)** to the body.
2. Screw hexagon bolts **(100)** into the body.
3. Insert first ball seat ring **(030)** into body **(010)**.
4. Insert ball/stem unit **(040)** into the body **(010)**.
5. Install second ball seat ring **(030)** on to ball **(040)**.
6. Install side piece **(020)** on to body **(010)**. Make sure that recess for the stem is on the correct side.
7. Install body bolts **(080)** and hexagon nuts **(090)** and tighten by crisscross method to recommended torques.
8. Assemble chevron packing **(050)**, blow out ring **(070)** and gland follower **(060)**.
9. Insert assembled chevron packing, grounding strap **(130)**, safety washer **(110)** and hexagon nut **(120)**.
10. Install hand lever **(180)** to longitudinal axis and tighten it using lock washer **(210)** and hexagon bolt **(170)**.



Disassembly Instructions for AKH8

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 rinsing and draining of the piping, the valve is opened and closed repeatedly. These cycles (opening and closing) are to be repeated during draining of 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. For disassembly of the valve, put body on a work bench with a soft cover (rubber mat). Remove hand lever (180) and lock washer (190) by releasing hexagon bolt (200).
3. Release hexagon nut (120) and disassemble grounding device (130) and safety washer (110).
4. Remove Chevron packing (050), anti blow out ring (070) and gland follower (060) as a complete unit by pulling the gland follower.
5. Remove body bolts (080) and separate side piece from body.
6. Remove first ball seat ring (030) from the side piece (020).
7. Remove ball/stem unit (040) from the body (010).
8. Remove second ball seat ring (030) from the body (010).
9. If necessary, remove hexagon bolts (100) and hand lever stop (160) with lock washers (210) by releasing hexagon bolts (170).



Technical Manual

AKH8 - recommended tightening torques*

Size	tie rods (080/090)		connection flange		gland bolts (100/110/120)	
	Nm	in.lbs	Nm	in.lbs	Nm	in.lbs
015 1/2"	25	221	10	88	4	35
020 3/4"	25	221	18	160	4	35
025 1"	26	230	25	221	4	35
040 1 1/2"	54	478	50	442	7	62
050 2"	80	708	65	575	7	62
080 3"	84	743	55	486	8	71
100 4"	138	1221	65	575	8	71

* maximum value

AKH8 - Necessary actuator torques

Packingmaterial: chevron PTFE or PTFE-graphite

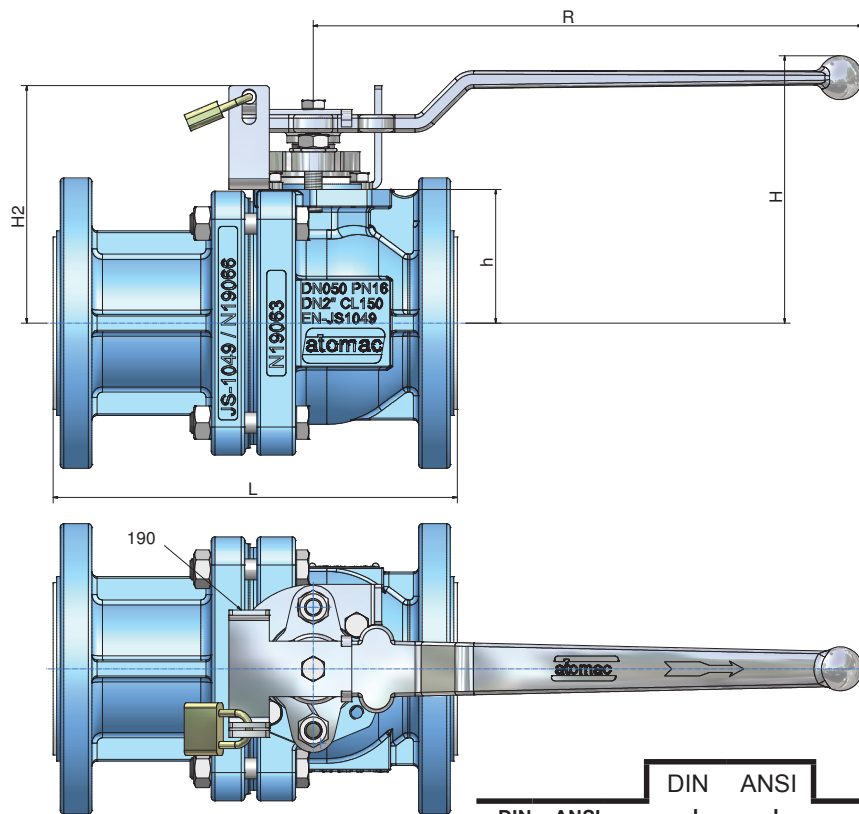
DN	ANSI	0 bar Δp Nm	0 psi Δp in/ lbs	admissible Nm	admissible in/lbs
015	1/2"	8	71	60	531
020	3/4"	8	71	60	531
025	1"	10	89	60	531
040	1 1/2"	20	177	131	1159
050	2"	25	221	131	1159
080	3"	60	531	502	4443
100	4"	80	708	502	4443

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.

Technical Data - AKH8 with close device

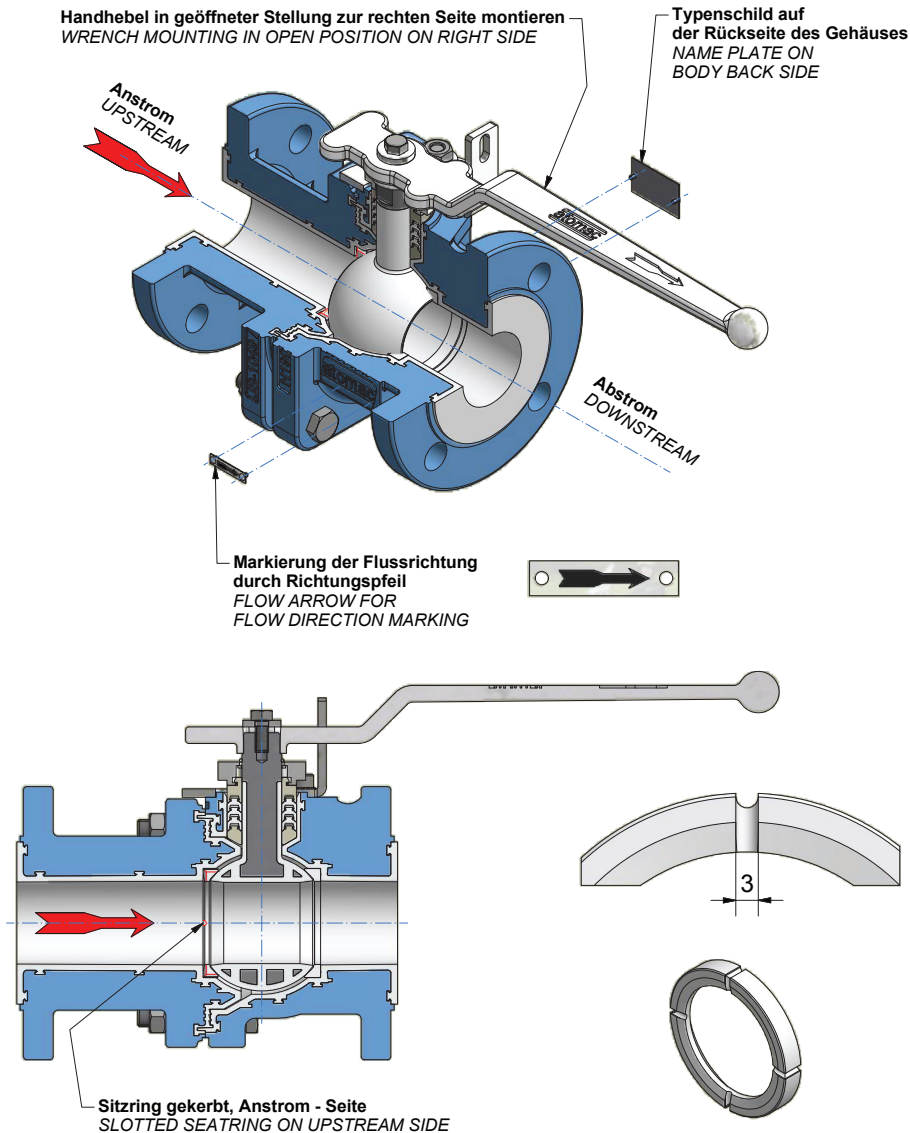


		DIN		ANSI						
DIN	ANSI	L	L	H	R	H2	h			
015	½"	mm	130	130	134,5	210	101	49		
		inch	5,12	5,12	5,3	8,27	3,98	1,93		
020	¾"	mm	150	150	134,5	210	101	49		
		inch	5,91	5,91	5,3	8,27	3,98	1,93		
025	1"	mm	160	153	135	210	101	49		
		inch	6,3	6	5,3	8,27	3,98	1,93		
040	1½"	mm	200	178	146	312,5	128	69		
		inch	7,87	7,01	5,75	12,3	5,04	2,72		
050	2"	mm	230	203	152	312,5	135	76		
		inch	9,06	7,99	5,98	12,3	5,31	2,99		
080	3"	mm	310	241	212,5	410	200	116		
		inch	12,2	9,5	8,37	16,14	7,87	4,57		
100	4"	mm	350	292	227,5	410	216	132		
		inch	13,78	11,5	8,96	16,14	8,5	5,2		

Material specification - AKH8 with close device

No.	Designation	Pieces	Material	Material-No.	DIN	ASTM / AISI
190	locking plate	1	stainless steel	1.4301	DIN EN 10088-3	AISI 304

Optional with pressure compensation grooves by slotted seat ring



1. Recleaning

The ball valve should be thoroughly cleaned with a clean, dry, lint-free towel and blown off with dry nitrogen gas. This will assure that the valve is free from moisture, grease and other media before packing.

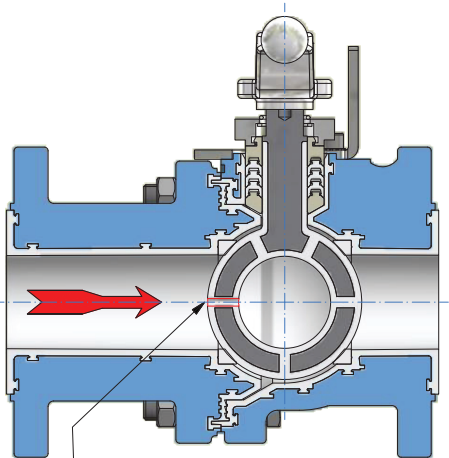
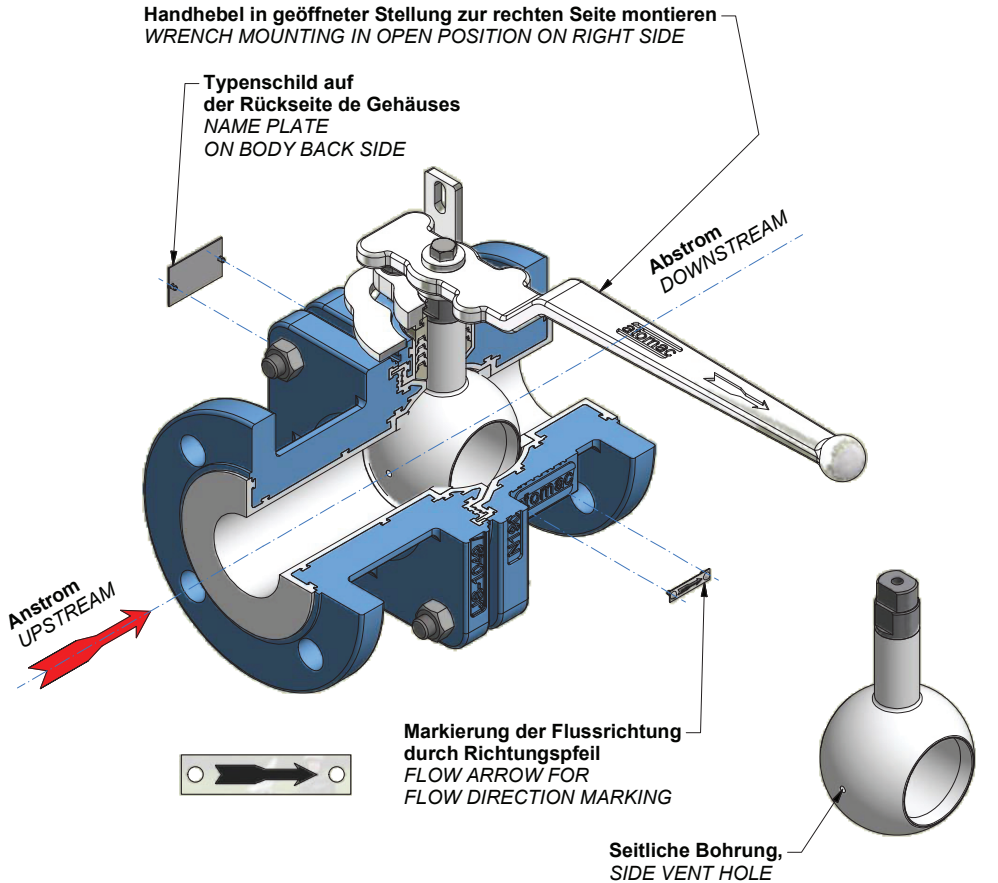
2. Packing

Prior to packing, the ball valve should be jig welded in a PE-foil (0.2 mm thick). The bag contains desiccants acc. to DIN 55473, quantity acc. to DIN 55474 and a moisture indicator.

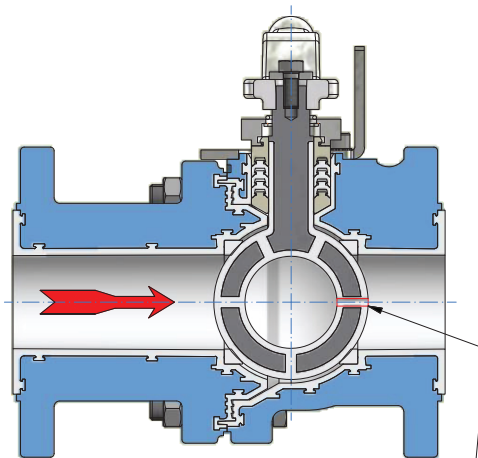
AKH8 - K_v Data and C_v Data (DIN EN 60534-2-3)

Size	K_v m ³ /h	C_v gal/min
015 1/2"	16,9	19,6
020 3/4"	24,4	28,4
025 1"	38,6	44,9
040 1 1/2"	121,4	141,1
050 2"	199,9	232,3
080 3"	525,8	611,1
100 4"	940,2	1092,8

Optional ball with side vent hole

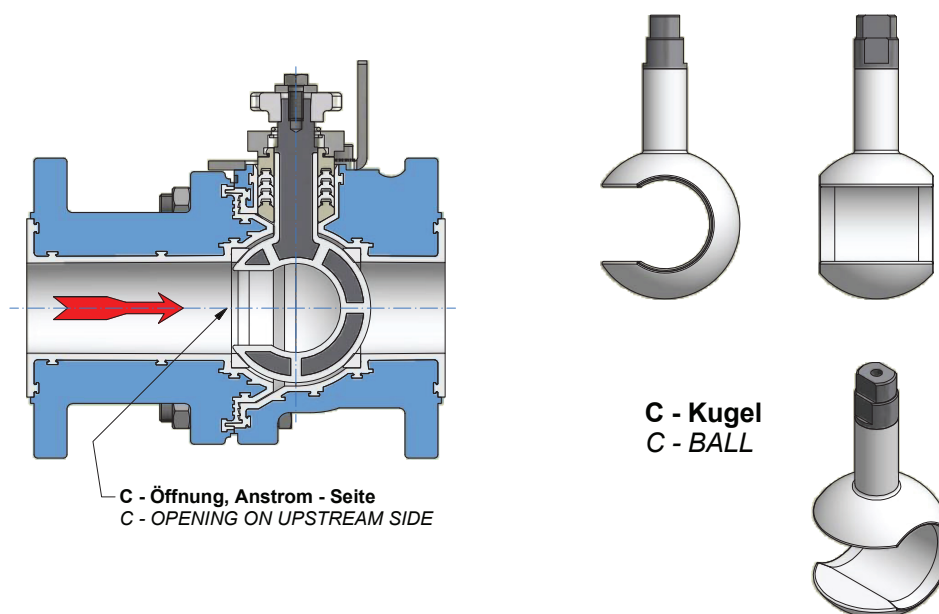
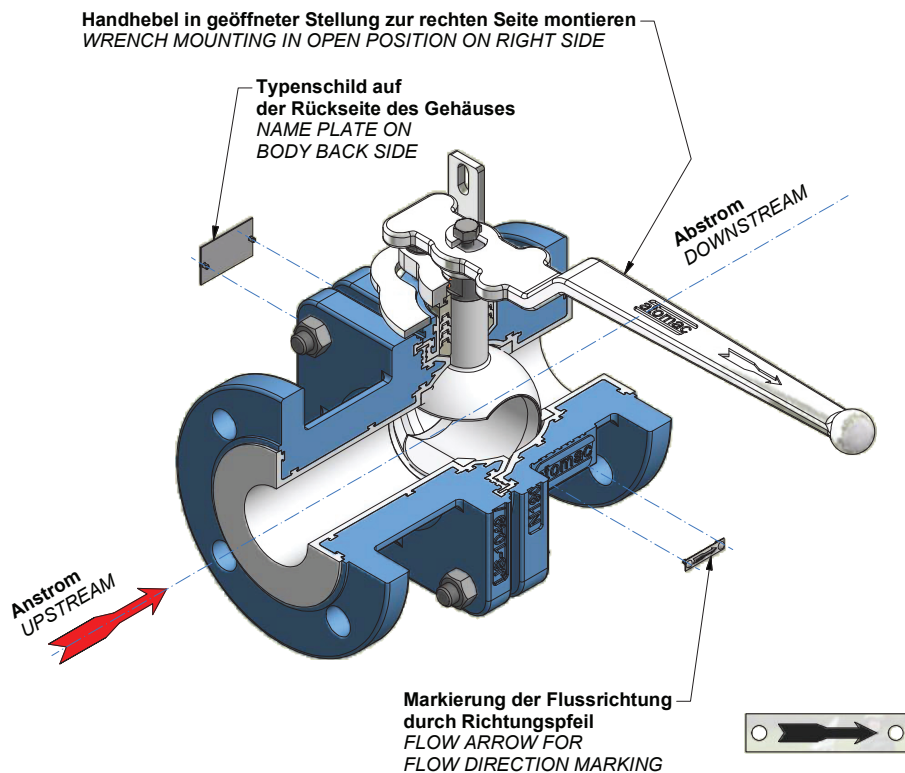


STANDARD
 Seitliche Bohrung, Anstrom - Seite
 SIDE VENT HOLE ON UPSTREAM SIDE



OPTIONAL
 Seitliche Bohrung, Abstrom - Seite
 SIDE VENT HOLE ON DOWNSTREAM SIDE

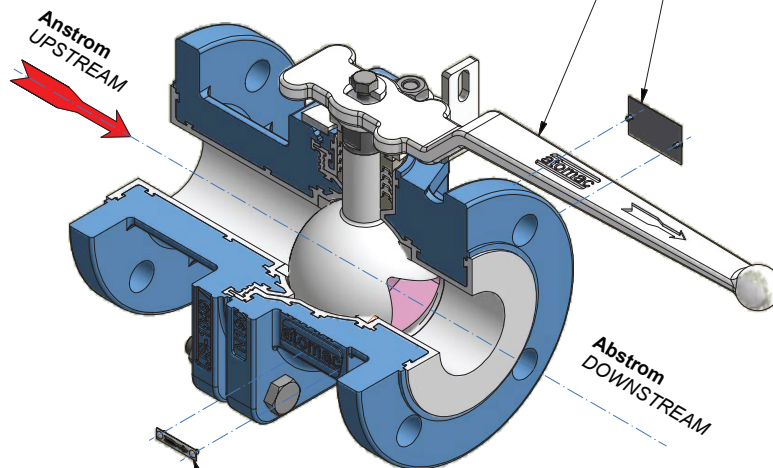
Optional with C-ball



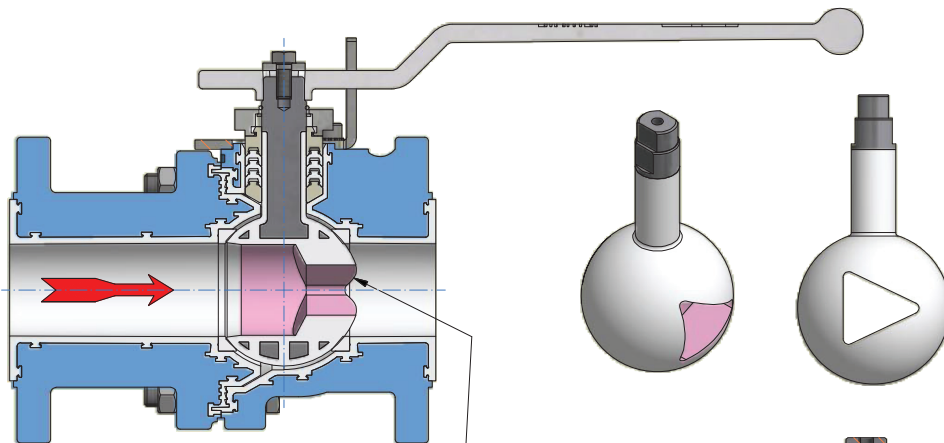
Optional with V-ball

Handhebel in geöffneter Stellung zur rechten Seite montieren
WRENCH MOUNTING IN OPEN POSITION ON RIGHT SIDE

Typenschild auf
der Rückseite des Gehäuses
NAME PLATE ON
BODY BACK SIDE



Markierung der Flussrichtung
durch Richtungspfeil
FLOW ARROW FOR
FLOW DIRECTION MARKING



Kleine Öffnung, Abstrom - Seite
SMALL OPENING ON DOWNSTREAM SIDE

V - Kugel
V - BALL