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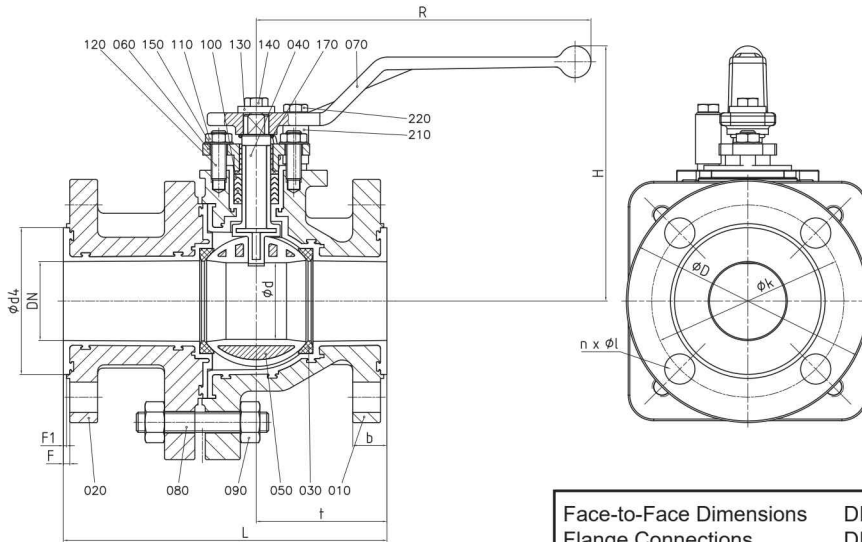
Register 16 Contents - AtoStar

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Technical Manual

Technical Data AS1



Face-to-Face Dimensions DIN EN 558 (Basic series 1)
 Flange Connections DIN EN1092-2 PN 16

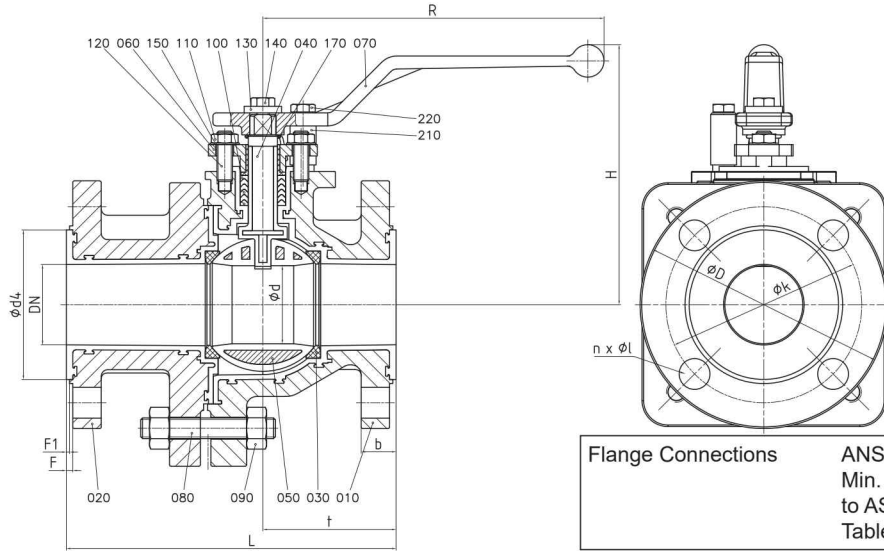
DN / DIN	L	H	R	t	Ød	b	ØD
015	mm 130	120	160	60,5	15	15,5	95
	inch 5,12	4,72	6,3	2,38	0,59	0,61	3,74
020	mm 150	120	160	59	20	16	105
	inch 5,9	4,72	6,3	2,32	0,79	0,63	4,13
025	mm 160	124	160	55,5	24	18	115
	inch 6,3	4,88	6,3	2,19	0,94	0,71	4,53
040	mm 200	145	210	73	38	18	150
	inch 7,87	5,71	8,27	2,87	1,5	0,71	5,91
050	mm 230	160	210	79,5	48	19	165
	inch 9,06	6,3	8,27	3,13	1,89	0,75	6,5
065	mm 290	200	313	93,5	65	20	185
	inch 11,42	7,87	12,32	3,68	2,56	0,79	7,28
080	mm 310	202	313	92	72	21	200
	inch 12,2	7,95	12,32	3,62	2,83	0,83	7,87
100	mm 350	218	313	110,5	95	21	220
	inch 13,78	8,58	12,32	4,35	3,74	0,83	8,66
150	mm 480	316	337*	180	147	28	279,4
	inch 18,9	12,44	13,27*	7,09	5,79	1,1	11

DN / DIN	Øk	nxØl	Ød4	F	F1	weight
015	mm 65	4x14	42	4,5	3	kg 4,5
	inch 2,56	4x0,55	1,65	0,18	0,12	lbs 9,9
020	mm 75	4x14	56	3	1,5	kg 5,1
	inch 2,95	4x0,55	2,2	0,12	0,06	lbs 11,2
025	mm 85	4x14	65	4	2	kg 5,7
	inch 3,35	4x0,55	2,56	0,16	0,08	lbs 12,6
040	mm 110	4x18	85	4	2	kg 11,2
	inch 4,33	4x0,71	3,35	0,16	0,08	lbs 24,7
050	mm 125	4x18	98	4	2	kg 14,8
	inch 4,92	4x0,71	3,86	0,16	0,08	lbs 32,6
065	mm 145	4x18	118	4	2	kg 17,2
	inch 5,71	4x0,71	4,65	0,16	0,08	lbs 37,9
080	mm 160	8x18	133	4	2	kg 32,5
	inch 6,3	8x0,71	5,24	0,16	0,08	lbs 71,7
100	mm 180	8x18	152	4	2	kg 49,9
	inch 7,09	8x0,71	5,98	0,16	0,08	lbs 110,0
150	mm 241,3	8x22	208	4	2	kg 103,0
	inch 9,5	8x0,87	8,19	0,16	0,08	lbs 227,1

* pass-through handlelever Ø 26,51 inch standard



Technical Data AS2



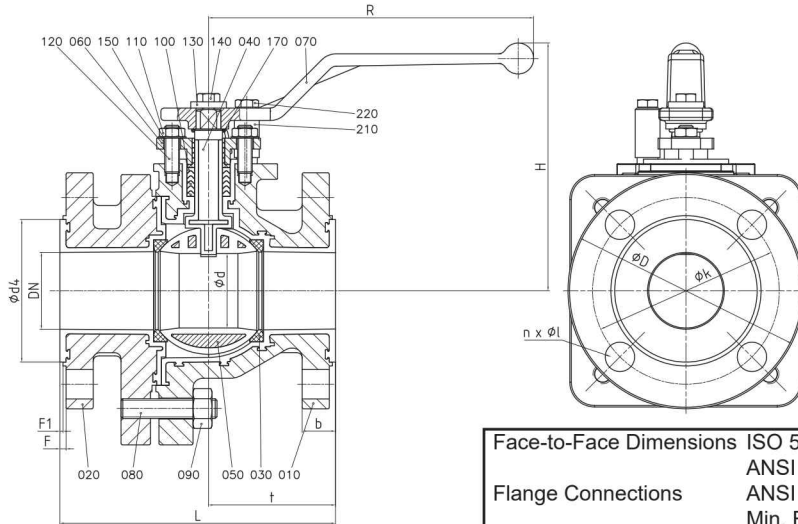
DN / ANSI		L	H	R	t	Ød	b	ØD
¾"	mm	150**	120	160	59	20	16	98,5
	inch	5,9**	4,72	6,3	2,32	0,79	0,63	3,88
1"	mm	152,4	123	160	54,1	24	16,6	107,9
	inch	6	4,84	6,3	2,13	0,94	0,65	4,25
1½"	mm	178	145	210	75	38	20	127
	inch	7	5,71	8,27	2,95	1,5	0,79	5
2"	mm	203	160	210	82	48	21,5	152,4
	inch	8	6,3	8,27	3,23	1,89	0,85	6
3"	mm	241	205	313	97,5	72	26,5	190,5
	inch	9,5	8,07	12,32	3,84	2,83	1,04	7,5
4"	mm	292	218	313	116	95	26,5	228,6
	inch	11,5	8,58	12,32	4,57	3,74	1,04	9
6"	mm	356	312	337*	180	147	28	279,4
	inch	14	12,28	13,27*	7,09	5,79	1,1	11

DN / ANSI		Øk	nxØl	Ød4	F	F1	weight	
¾"	mm	69,9	4x16	43	3	1,5	kg	4,8
	inch	2,75	4x0,63	1,69	0,12	0,06	lbs	10,6
1"	mm	79,2	4x16	51	4	2	kg	5,3
	inch	3,12	4x0,63	2,01	0,16	0,08	lbs	11,7
1½"	mm	98,6	4x16	73	4	2	kg	8,8
	inch	3,88	4x0,63	2,87	0,16	0,08	lbs	19,4
2"	mm	120,6	4x19	92	4	2	kg	13,4
	inch	4,75	4x0,75	3,62	0,16	0,08	lbs	29,5
3"	mm	152,4	4x19	127	4	2	kg	30,6
	inch	6,00	4x0,75	5	0,16	0,08	lbs	67,5
4"	mm	190,5	8x19	157	4	2	kg	45,7
	inch	7,5	8x0,75	6,18	0,16	0,08	lbs	100,8
6"	mm	241,3	8X22	208	4	2	kg	95,0
	inch	9,5	8x0,87	8,19	0,16	0,08	lbs	209,4

* pass-through handlever Ø 26,51 inch standard
 ** Face-to-Face Dimensions acc. DIN EN 558 (Basic series 1)

Technical Manual

Technical Data AS3



Face-to-Face Dimensions ISO 5752 Tab.6, short
 ANSI B 16.10
 Flange Connections ANSI B 16.5 Cass 150,
 Min. Flange thickness acc.
 to ASME B 16.5 Cass 150,
 Table 9 (Flanged Fittings)

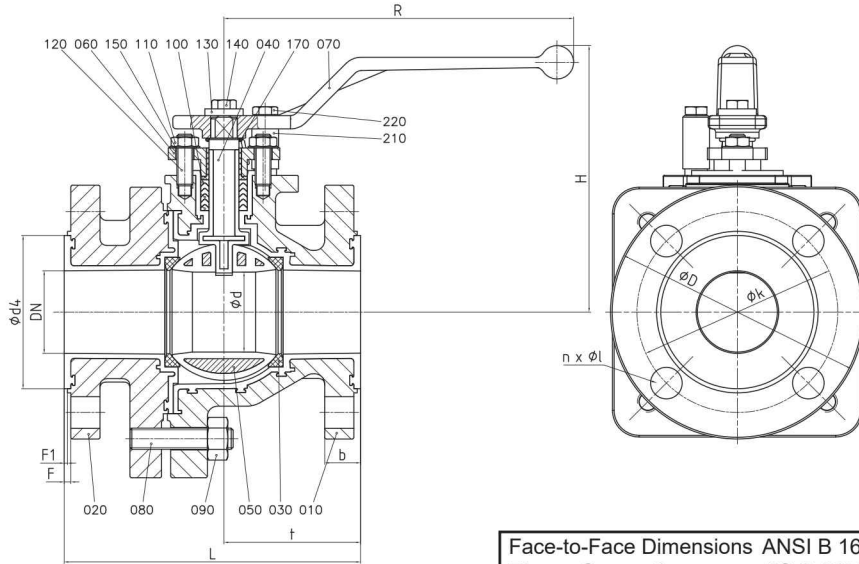
DN / ANSI		L	H	R	t	Ød	b	ØD
1/2"	mm	127**	120	160	59	15	14	88,9
	inch	5**	4,72	6,3	2,32	0,59	0,55	3,5
3/4"	mm	127**	120	160	59	20	16	98,5
	inch	5**	4,72	6,3	2,32	0,79	0,63	3,88
1"	mm	127	123	160	54,1	24	16,6	107,9
	inch	5	4,84	6,3	2,13	0,94	0,65	4,25
1 1/2"	mm	165	146	210	75	38	20	127
	inch	6	5,75	8,27	2,95	1,5	0,79	5
2"	mm	178	161,5	210	82	48	21,5	152,4
	inch	7	6,4	8,27	3,23	1,89	0,85	6
3"	mm	203	205	313	97,5	72	26,5	190,5
	inch	8	8,07	12,32	3,84	2,83	1,04	7,5
4"	mm	229	218	313	116	95	26,5	228,6
	inch	9	8,58	12,32	4,57	3,74	1,04	9
6"	mm	267	303	337*	134	130	28	280
	inch	10,51	11,93	13,27*	5,28	5,12	1,1	11,02

DN / ANSI		Øk	nxØl	Ød4	F	F1	weight	
1/2"	mm	60,5	4x16	36	3	1,5	kg	4,3
	inch	2,38	4x0,63	1,42	0,12	0,06	lbs	9,5
3/4"	mm	69,9	4x16	43	3	1,5	kg	4,6
	inch	2,75	4x0,63	1,69	0,12	0,06	lbs	10,1
1"	mm	79,2	4x16	51	4	2	kg	4,7
	inch	3,12	4x0,63	2,01	0,16	0,08	lbs	10,4
1 1/2"	mm	98,6	4x16	73	4	2	kg	7,8
	inch	3,88	4x0,63	2,87	0,16	0,08	lbs	17,2
2"	mm	120,6	4x19	92	4	2	kg	11,5
	inch	4,75	4x0,75	3,62	0,2	0,08	lbs	25,4
3"	mm	152,4	4x19	127	4	2	kg	25,7
	inch	6	4x0,75	5	0,16	0,08	lbs	56,7
4"	mm	190,5	8x19	157	4	2	kg	36,9
	inch	7,5	8x0,75	6,18	0,16	0,08	lbs	81,4
6"	mm	240	8x23	208	4	2	kg	93,0
	inch	9,45	8x0,91	8,19	0,16	0,08	lbs	205,0

* pass-through handlelever Ø 26,51 inch standard

** Face-to-Face Dimensions not acc. ISO 5752, ANSI 16.10

Technical Data AS4



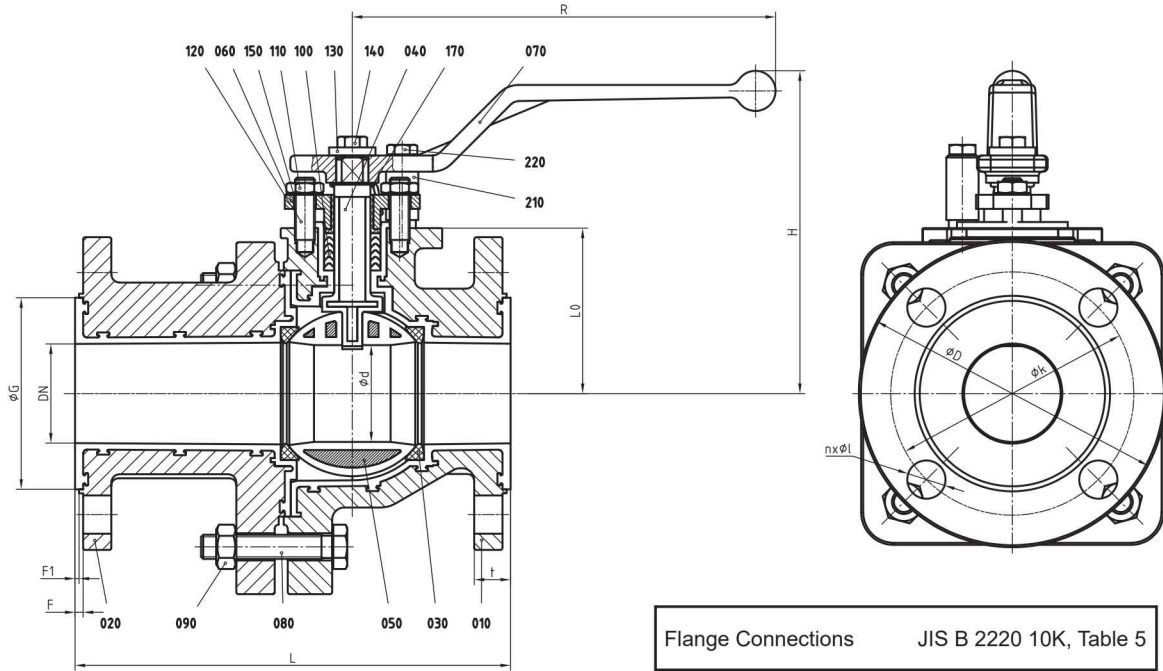
Face-to-Face Dimensions ANSI B 16.10
 Flange Connections JIS B 2220 10K, Table 5

DN / JIS		L	H	R	t	Ød	b	ØD
015	mm	127	120	160	59	15	14	95
	inch	5	4,72	6,3	2,32	0,59	0,55	3,74
020	mm	127	120	160	59	20	16	100
	inch	5	4,72	6,3	2,32	0,79	0,63	3,94
025	mm	127	124	160	54,5	24	17	125
	inch	5	4,88	6,3	2,15	0,94	0,67	4,92
040	mm	165	145	210	73	38	18	140
	inch	6,5	5,71	8,27	2,87	1,5	0,71	5,51
050	mm	178	160	210	78,5	48	18	155
	inch	7	6,3	8,27	3,09	1,89	0,71	6,1
065	mm	190,5	200	313	93,5	65	20	175
	inch	7,5	7,87	12,32	3,68	2,56	0,79	6,89
080	mm	203	203	313	91	72	20	185
	inch	8	7,99	12,32	3,58	2,83	0,79	7,28
100	mm	229	218	313	109,5	95	20	210
	inch	9	8,58	12,32	4,31	3,74	0,79	8,27
150	mm	267	303	337*	134	130	28	280
	inch	10,51	11,93	13,27*	5,28	5,12	1,1	11,02

DN / JIS		Øk	nxØl	Ød4	F	F1	weight
015	mm	70	4x15	50	3	1,5	kg 4,5
	inch	2,76	4x0,59	1,97	0,12	0,06	lbs 9,9
020	mm	75	4x15	56	3	1,5	kg 4,7
	inch	2,95	4x0,59	2,2	0,12	0,06	lbs 10,4
025	mm	90	4x19	65	4	2	kg 4,7
	inch	3,54	4x0,75	2,56	0,16	0,08	lbs 10,4
040	mm	105	4x19	78	4	2	kg 7,8
	inch	4,13	4x0,75	3,07	0,16	0,08	lbs 17,2
050	mm	120	4x19	95	4	2	kg 11,5
	inch	4,72	4x0,75	3,74	0,16	0,08	lbs 25,4
065	mm	140	4x19	115	4	2	kg 23,7
	inch	5,51	4x0,75	4,53	0,16	0,08	lbs 52,2
080	mm	150	8x19	124	4	2	kg 25,7
	inch	5,91	8x0,75	4,88	0,16	0,08	lbs 56,7
100	mm	175	8x19	145	4	2	kg 36,9
	inch	6,89	8x0,75	5,71	0,16	0,08	lbs 81,4
150	mm	240	8x23	208	4	2	kg 92,0
	inch	9,45	8x0,91	8,19	0,16	0,08	lbs 202,8

* pass-through handlever Ø 26,51 inch standard

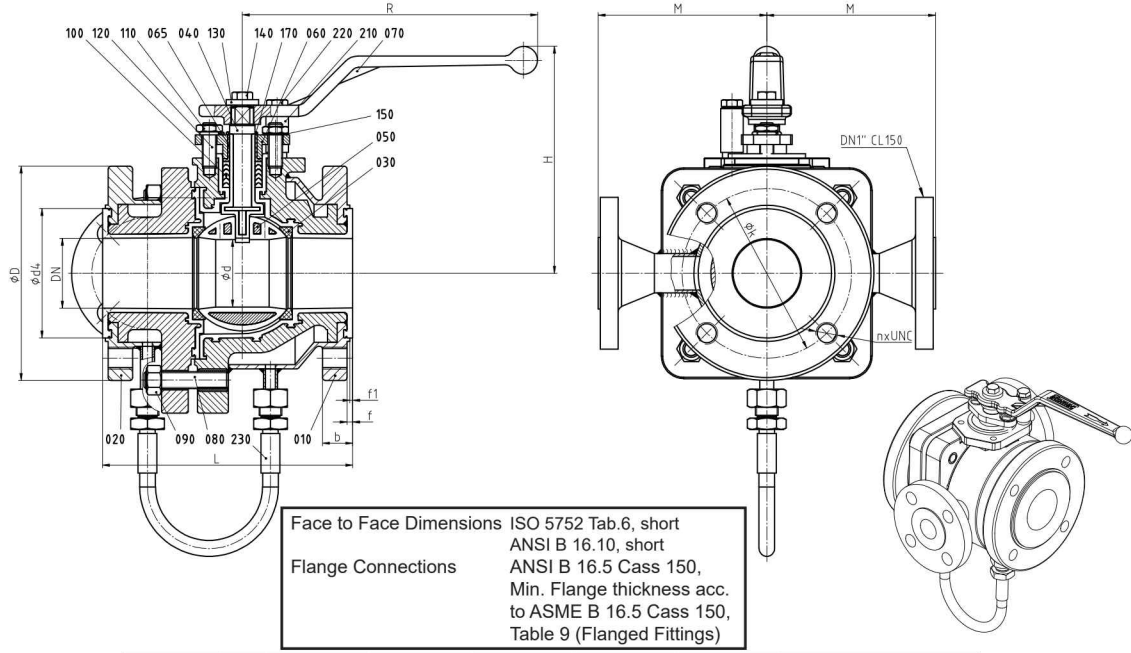
Technical Data AS5



DN		L	H	R	Ød	t	ØD	LO
015	mm	140	120	160	15	14	95	47,5
	inch	5,51	4,72	6,3	0,59	0,55	3,74	1,87
020	mm	152	120	160	20	16	100	47,5
	inch	5,98	4,72	6,3	0,79	0,63	3,94	1,87
025	mm	165	120	160	24	17	125	49
	inch	6,5	4,72	6,3	0,94	0,67	4,92	1,93
040	mm	191	145	210	38	18	140	69
	inch	7,52	5,71	8,27	1,5	0,71	5,51	2,72
050	mm	216	160	210	48	18	155	82
	inch	8,5	6,3	8,27	1,89	0,71	6,1	3,23
065	mm	240	200	313	65	20	175	120
	inch	9,45	7,87	12,32	2,56	0,79	6,89	4,72
080	mm	250	205	313	72	20	185	123
	inch	9,84	8,07	12,32	2,83	0,79	7,28	4,84
100	mm	280	220	313	95	20	210	128
	inch	11,02	8,66	12,32	3,74	0,79	8,27	5,04

DN		Øk	nxØl	ØG	F	F1	weight	
015	mm	70	4x15	50	3	1,5	kg	4,3
	inch	2,76	4x0,59	1,97	0,12	0,06	lbs	9,5
020	mm	75	4x15	56	3	1,5	kg	4,8
	inch	2,95	4x0,59	2,20	0,12	0,06	lbs	10,6
025	mm	90	4x19	65	4	2	kg	5,0
	inch	3,54	4x0,75	2,56	0,16	0,08	lbs	11,0
040	mm	105	4x19	78	4	2	kg	8,1
	inch	4,13	4x0,75	3,07	0,16	0,08	lbs	17,9
050	mm	120	4x19	95	4	2	kg	12,3
	inch	4,72	4x0,75	3,74	0,16	0,08	lbs	27,1
065	mm	140	4x19	115	4	2	kg	24,4
	inch	5,51	4x0,75	4,53	0,16	0,08	lbs	53,8
080	mm	150	8x19	124	4	2	kg	27,4
	inch	5,91	8x0,75	4,88	0,16	0,08	lbs	60,4
100	mm	175	8x19	145	4	2	kg	39,5
	inch	6,89	8x0,75	5,71	0,16	0,08	lbs	87,1

Technical Data AS6



Face to Face Dimensions ISO 5752 Tab.6, short
 ANSI B 16.10, short
 Flange Connections ANSI B 16.5 Cass 150,
 Min. Flange thickness acc.
 to ASME B 16.5 Cass 150,
 Table 9 (Flanged Fittings)

DN		L	H	R	Ød	b	Øk	M
1"	mm	127	123	160	24	16,6	79,2	100
	inch	5	4,84	6,3	0,94	0,65	3,12	3,94
1½"	mm	165	146	210	38	20	98,2	110
	inch	6,5	5,75	8,27	1,5	0,79	3,87	4,33
2"	mm	178	162	210	48	21,5	120,6	120
	inch	7,01	6,4	8,27	1,89	0,85	4,75	4,72
3"	mm	203	204	313	72	26,5	152,4	160
	inch	7,99	8,03	12,32	2,83	1,04	6	6,3
4"	mm	229	219	313	95	26,5	190,5	170
	inch	9,02	8,62	12,32	3,74	1,04	7,5	6,69
6"	mm	267	304	337°	130	28	241	200
	inch	10,51	11,97	13,27°	5,12	1,1	9,49	7,87
8"	mm	292	316	337°	147	32	298,5	220
	inch	11,5	12,44	13,27°	5,79	1,26	11,75	8,66

DN		nxUNC	ØD	Ød4	f	f1	weight	
1"	mm		107,9	51	4	2	kg	7,5
	inch	4x1/2-13	4,25	2,01	0,16	0,08	lbs	16,5
1½"	mm		127	73	4	2	kg	12,1
	inch	4x1/2-13	5	2,87	0,16	0,08	lbs	26,7
2"	mm		152,4	92	4	2	kg	17,2
	inch	4x5/8-11	6	3,62	0,16	0,08	lbs	37,9
3"	mm		190,5	127	4	2	kg	33,4
	inch	4x5/8-11	7,5	5	0,16	0,08	lbs	73,6
4"	mm		228,6	157	4	2	kg	45,0
	inch	8x5/8-11	9	6,18	0,16	0,08	lbs	99,2
6"	mm		279,4	208	4	2	kg	82,0
	inch	8x3/4-10	11	8,19	0,16	0,08	lbs	180,8
8"	mm		342,9	262	4	2	kg	112,0
	inch	8x3/4-10	13,5	10,31	0,16	0,08	lbs	246,9

° pass-through handlelever Ø 674 mm standard
 * reduced port



Material specification AtoStar (AS1 - AS5)

No.	Designation	Pieces	Material	Material-No. / DIN	ASTM / AISI	
010	body	1	stainless steel / PFA	1.4408 / DIN EN 10213-4	A 744 CF-8M	
		1	stainless steel / PFA conductive	1.4408 / DIN EN 10213-4	A 744 CF-8M	
020	side piece	1	stainless steel / PFA	1.4408 / DIN EN 10213-4	A 744 CF-8M	
		1	stainless steel / PFA conductive	1.4408 / DIN EN 10213-4	A 744 CF-8M	
030	seat ring	2	PTFE			
		2	PTFE conductive			
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	
050	ball	DN 15 - 50, DN ½" - 2"	1	cast steel / PFA	1.0619 / DIN EN 10213-2	ASTM A216 Grade WCB
			1	cast steel / PFA conductive	1.0619 / DIN EN 10213-2	ASTM A216 Grade WCB
		DN 65 - 150, DN 3" - 6"	1	ductile iron / PFA	EN-JS-1049 (GGG-40.3) / DIN EN 1563	A 395
			1	ductile iron / PFA conductive	EN-JS-1049 (GGG-40.3) / DIN EN 1563	A 395
060	gland follower	1	stainless steel	1.4308 / DIN EN 10283	A 743 CF-8	
065	gland insert	1	PTFE-graphite			
070	wrench	DN 15 - 100, DN ½" - 4"	1	stainless steel	1.4308 / DIN EN 10283	A 743 CF-8
			1	stainless steel	1.4308 / DIN EN 10283	A 743 CF-8
		T-lever DN 150, DN 6"	1	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8
080	stud bolt	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	packing material (chevron)	1 set	PTFE °			
			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	
130	lock washer	1	stainless steel	1.4301 / DIN EN 10088-3	AISI 304	
140	hexagon bolt	1	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8	
150	serrated lock washer	2	stainless steel	1.4310 / DIN EN 10270-3	AISI 301	
170	grounding device	1	stainless steel	1.4310 / DIN EN 10270-3	AISI 301	
210	stop	DN 15 - 100, DN ½" - 4"	1	stainless steel	1.4301 / DIN EN 10088-3	AISI 304
			1	stainless steel	1.4104 / DIN EN 10088-3	AISI 430F
		DN 150, DN 6"	1	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8
220	hexagon bolt	1	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8	

Valves with conductive lining only contain components with conductive materials

° optional

Technical Manual

Material specification AtoStar (AS6)

No.	Designation	Pieces	Material	Material-No./ DIN	ASTM / AISI
010	body / heating jacket	1	stainless steel / PFA	1.4408 / DIN EN 10213-4	A 744 CF-8M
		1	stainless steel / PFA conductive	1.4408 / DIN EN 10213-4	A 744 CF-8M
	heating jacket	1	stainless steel	1.4301 / DIN EN 10088-3	AISI 304
020	side piece	1	stainless steel / PFA	1.4408 / DIN EN 10213-4	A 744 CF-8M
		1	stainless steel / PFA conductive	1.4408 / DIN EN 10213-4	A 744 CF-8M
030	heating jacket	1	stainless steel	1.4301 / DIN EN 10088-3	AISI 304
	seat ring	2	PTFE		
040		2	PTFE conductive		
	stem	1	stainless steel / PFA	1.4470 / DIN EN 10283	A 890 CD3MN
050		1	stainless steel / PFA conductive	1.4470 / DIN EN 10283	A 890 CD3MN
	ball				
060	DN 1" - 2"	1	cast steel / PFA	1.0619 / DIN EN 10213-2	ASTM A216 Grade WCB
		1	cast steel / PFA conductive	1.0619 / DIN EN 10213-2	ASTM A216 Grade WCB
	DN 3" - 8"	1	ductile iron / PFA	EN-JS-1049 (GGG-40.3) / DIN EN 1563	A 395
		1	ductile iron / PFA conductive	EN-JS-1049 (GGG-40.3) / DIN EN 1563	A 395
065	gland follower	1	stainless steel	1.4308 / DIN EN 10283	A 743 CF-8
070	gland insert	1	PTFE-graphite		
080	wrench				
	DN 1" - 4"	1	stainless steel	1.4308 / DIN EN 10283	A 743 CF-8
	T-lever DN 6", 8"	1	stainless steel	1.4308 / DIN EN 10283	A 743 CF-8
090	stud bolt	1 set	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8
100	hexagon nut	1 set	stainless steel	1.4301 / DIN EN 10088-3	A 194 8
110	packing material	1 set	PTFE °		
	(chevron)	1 set	PTFE-graphite °		
120	hexagon nut	2	stainless steel	1.4301 / DIN EN 10088-3	A 194 8
130	stud bolt	2	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8
140	lock washer	1	stainless steel	1.4301 / DIN EN 10088-3	AISI 304
150	hexagon bolt	1	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8
170	serrated lock washer	2	stainless steel	1.4310 / DIN EN 10270-3	AISI 301
210	grounding device	1	stainless steel	1.4310 / DIN EN 10270-3	AISI 301
	stop				
	DN 1" - 4"	1	stainless steel	1.4301 / DIN EN 10088-3	AISI 304
220		1	stainless steel	1.4104 / DIN EN 10088-3	AISI 430F
	hexagon bolt	1	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8
230	heating jacket hose - set	1	PTFE		

Valves with conductive lining only contain components with conductive materials

° *optional*

Technical Manual

Spare Parts (item n°) - AtoStar Standard Version

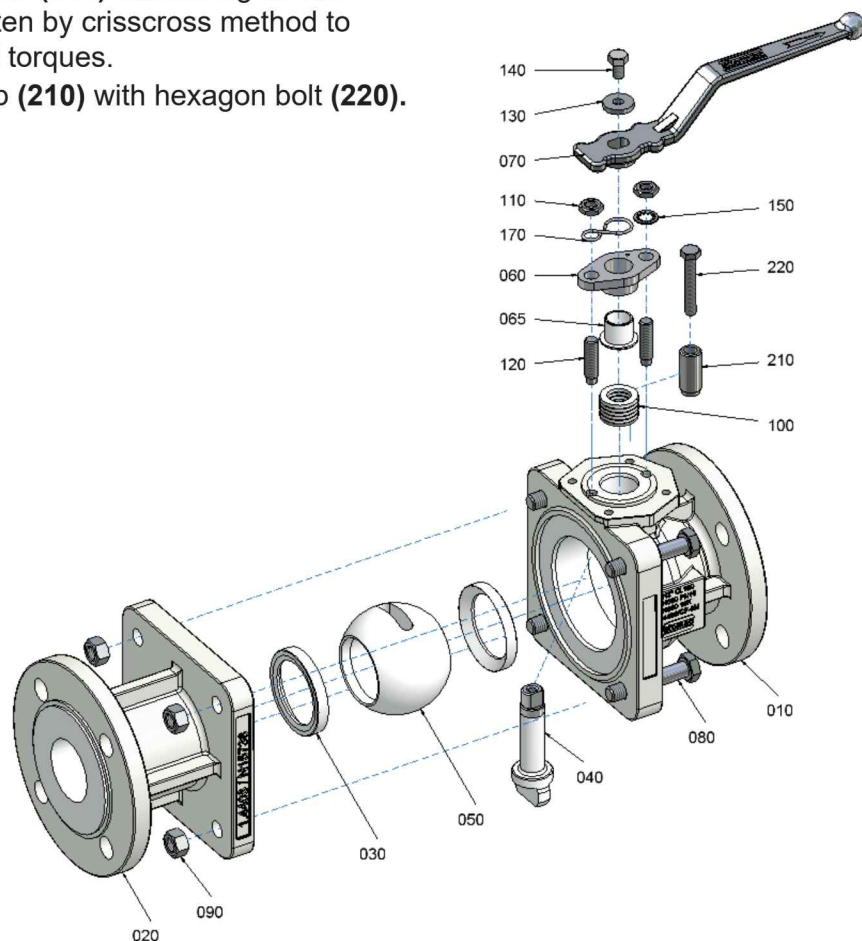
	DN		Ball	Seat Rings
			PFA	PTFE
AS1, AS2, AS3, AS4, AS5, AS6	015	1/2"	0000321	0000159
	020	3/4"	0000322	0000159
	025	1"	0000323	0000159
	040	1 1/2"	0000325	0000160
	050	2"	0000326	0000161
	065	--	0000327	0000162
	080	3"	0009172	0009425
	100	4"	0009173	0009426
AS3, AS4, AS6	150	6"	0009341	0009427
AS1, AS2	150	6"	0000330	0000165
AS6	--	8"	0000331	0000166

	DN		Stem		Packing (set)
			Stainless Steel / PFA	Hastelloy / PFA	PTFE
AS1, AS2, AS3, AS4, AS5, AS6	015	1/2"	0000113	0000114	0000167
	020	3/4"	0000113	0000114	0000167
	025	1"	0000115	0000116	0000167
	040	1 1/2"	0000117	0000118	0000168
	050	2"	0000119	0000120	0000169
	065	--	0000121	0000122	0000170
	080	3"	0000121	0000122	0000170
	100	4"	0000121	0000122	0000170
AS1, AS2, AS6	150	6"	0000123	0000124	0000172
AS3, AS4	150	6"	0000123	0000124	0000172
AS6	--	8"	0000125	0000126	0000173

Assembly Instructions AtoStar (AS1 - AS5)

The general installation and maintenance instructions must be observed.

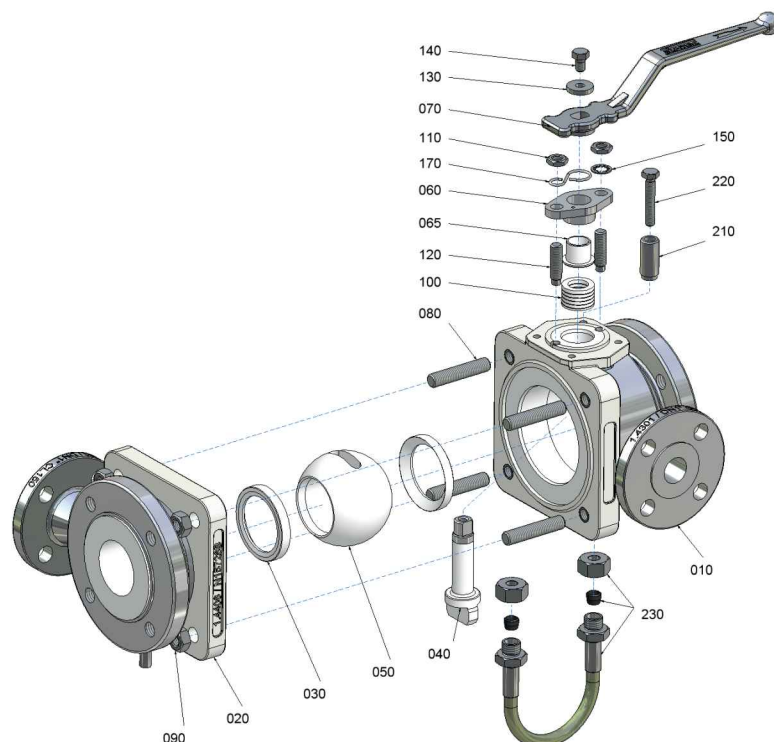
1. Screw stud bolts (120) into body (010).
2. Insert stem (040) from inside of body in such a way that the flat side is parallel to body longitudinal axis.
3. Insert chevron packing (100).
4. Install gland insert (065), gland follower (060), safety washers (150), hexagon nuts (110) and grounding strap (170) also on valves with actuator.
5. Install hand lever (070) on to stem (040) and tighten it using lock washer (130) and hexagon bolt (140).
6. Insert first ball seat ring (030) into body (010).
7. Insert ball (050) to valve stem by pushing the ball in a downward motion through valve body.
8. Turn hand lever 90° of longitudinal axis of body.
9. Install second ball seat ring (030) on to ball (050).
10. Install side piece (020) on to body (010).
11. Install body bolts (080) and hexagon nuts (090) and tighten by crisscross method to recommended torques.
12. Assemble stop (210) with hexagon bolt (220).



Assembly Instructions AtoStar (AS6)

The general installation and maintenance instructions must be observed.

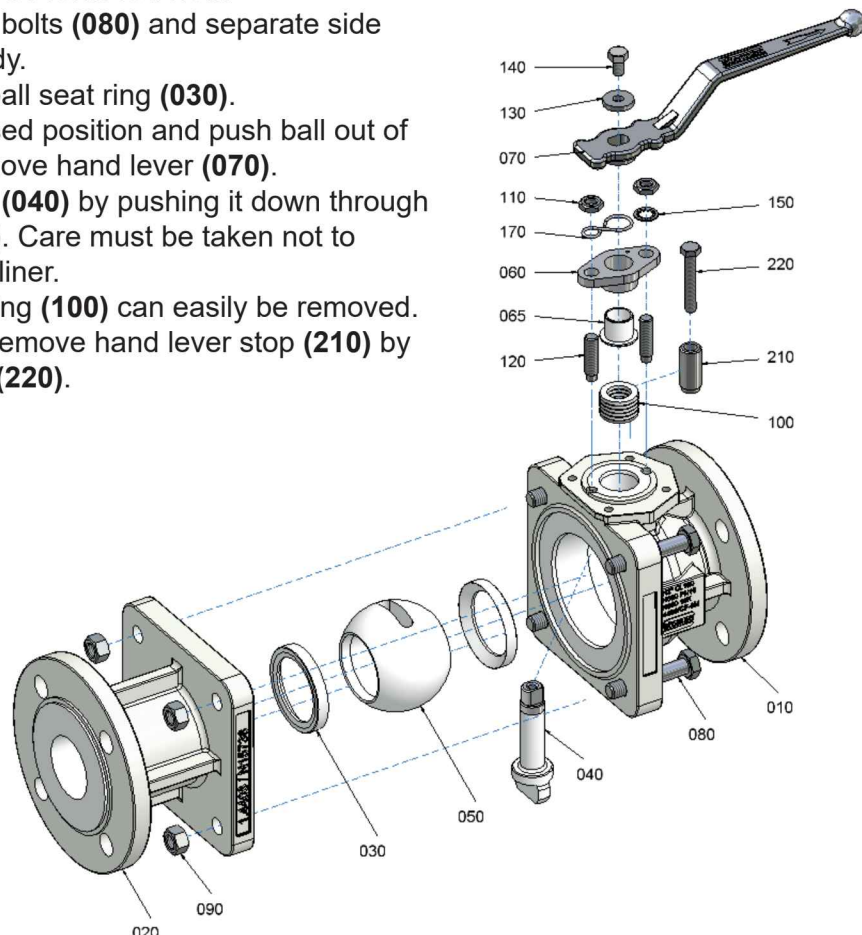
1. Screw stud bolts (120) into body (010).
2. Insert stem (040) from inside of body in such a way that the flat side is parallel to body longitudinal axis.
3. Insert chevron packing (100).
4. Install gland follower (060), safety washers (150), hexagon nuts (110) and grounding strap (170) also on valves with actuator.
5. Install hand lever (070) on to stem (040) and tighten it using lock washer (130) and hexagon bolt (140).
6. Insert first ball seat ring (030) into body (010).
7. Insert ball (050) to valve stem by pushing the ball in a downward motion through valve body.
8. Turn hand lever 90° of longitudinal axis of body.
9. Install second ball seat ring (030) on to ball (050).
10. Install side piece (020) on to body (010).
11. Install body bolts (080) and hexagon nuts (090) and tighten by crisscross method to recommended torques.
12. Assemble stop (210) with hexagon bolt (220).
13. Fasten the flexible hose (230) at the connection nipples of the body and side piece.



Disassembly Instructions for AtoStar (AS1 - AS5)

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 fluor-carbon resin lined valves must be considered.

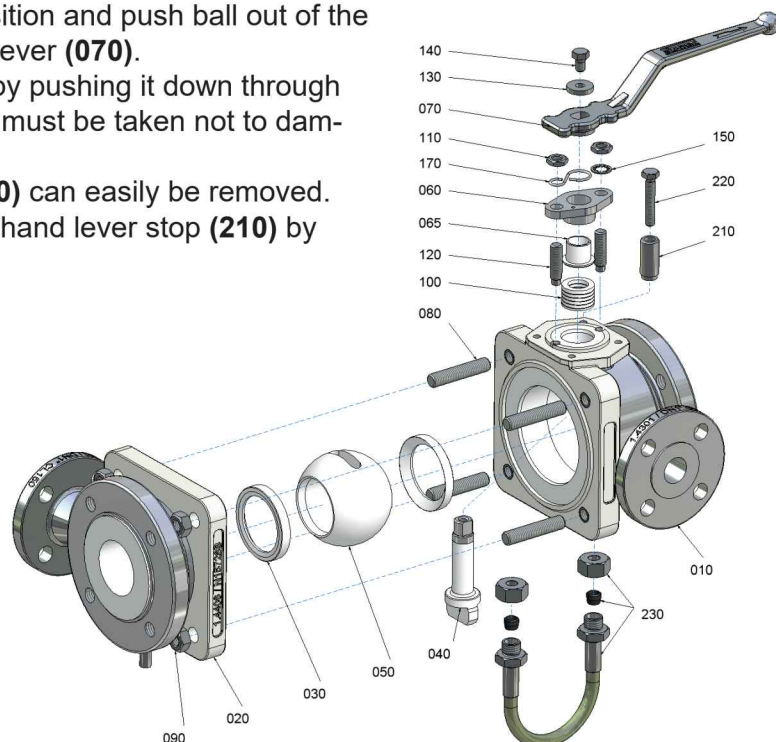
1. Prior to disassembly, the valve must be cleared of all fluid according to the above-mentioned instructions. Particular care must be taken that during rinsing and draining of the piping, the valve is opened and closed repeatedly. These cycles (opening and closing) are to be repeated during draining 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 hexagon bolt (110) and lock washer (150).
3. Open valve completely. Remove hand lever.
4. Disassemble grounding device (170).
5. Disassemble gland follower (060) and gland insert (065). If necessary, stud bolts (120) can also be removed now.
6. Remove body bolts (080) and separate side piece from body.
7. Remove first ball seat ring (030).
8. Put ball in closed position and push ball out of the body. Remove hand lever (070).
9. Remove stem (040) by pushing it down through the body (010). Care must be taken not to damage body liner.
10. Chevron packing (100) can easily be removed.
11. If necessary, remove hand lever stop (210) by releasing bolt (220).



Disassembly Instructions for AtoStar (AS6)

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).
3. Remove the flexible hose (230) from connection nipples of the body and side piece. **Attention:** Take care of the discontinued heating medium!
4. Remove hexagon bolt (110) and lock washer (150).
5. Open valve completely. Remove hand lever.
6. Disassemble grounding device (170).
7. Disassemble gland follower (060). If necessary, stud bolts (120) can also be removed now.
8. Remove body bolts (080) and separate side piece from body.
9. Remove first ball seat ring (030).
10. Put ball in closed position and push ball out of the body. Remove hand lever (070).
11. Remove stem (040) by pushing it down through the body (010). Care must be taken not to damage body liner.
12. Chevron packing (100) can easily be removed.
13. If necessary, remove hand lever stop (210) by releasing bolt (220).



AtoStar - Recommended tightening torques*

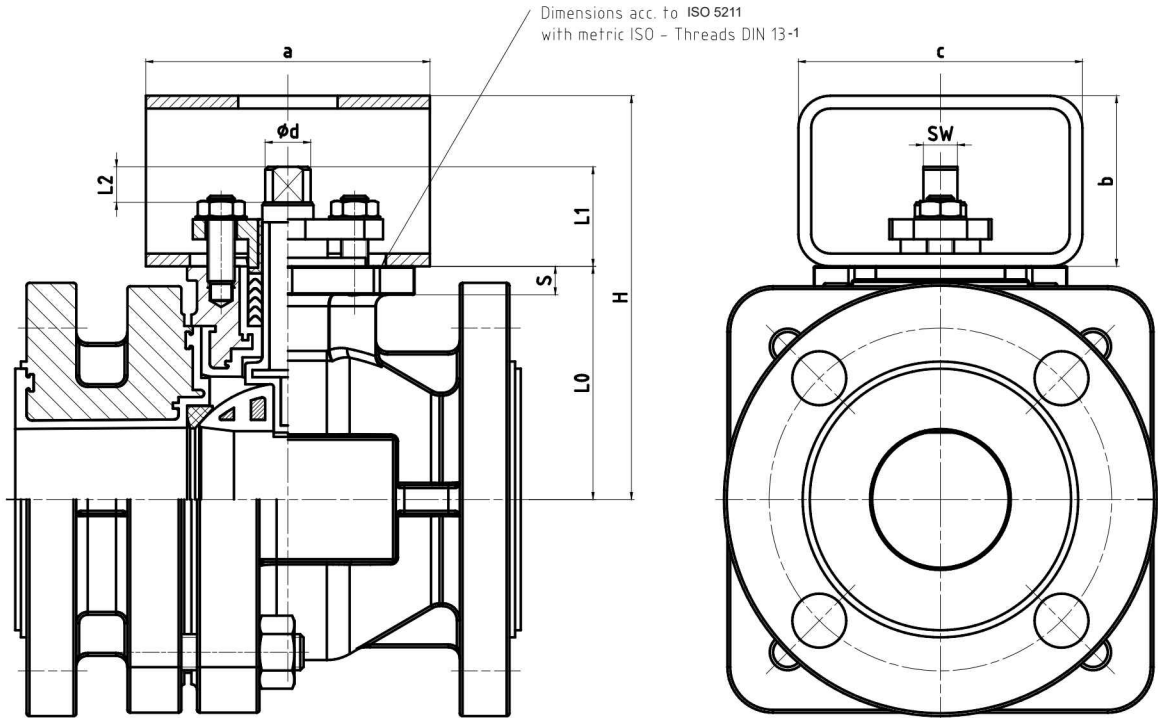
DN		tie rods (080/090)		connection flange		gland bolts (110/120/150)	
		Nm	lbf · in	Nm	lbf · in	Nm	lbf · in
015	½"	25	221	10	88	4	35
020	¾"	25	221	18	160	4	35
025	1"	19	168	15	133	4	35
040	1½"	38	336	26	257	7	62
050	2"	66	584	60	531	7	62
065	--	141	1248	90	796	8	71
080	3"	116	1027	100	885	8	71
100	4"	140	1239	76	673	8	71
150	6"	180	1593	139	1150	12	106
--	8" °	180	1593	195	1725	12	166

* maximale Werte

° AS6

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

AtoStar - Dimension sheet for actuator mounting acc. to NAMUR - recommendation



DN			H	a	b	c	SW	d	S	LO	L1	L2	DIN EN ISO 15211
015	1/2"	mm	107,5	75	60	100	8	10	7,5	47,5	26,5	7,5	F05
		inch	4,23	2,95	2,36	3,94	0,315	0,393	0,3	1,87	1,04	0,3	
020	3/4"	mm	107,5	75	60	100	8	10	7,5	47,5	26,5	7,5	F05
		inch	4,23	2,95	2,36	3,94	0,315	0,393	0,3	1,87	1,04	0,3	
025	1"	mm	109	75	60	100	8	10	-	49	29,5	9,3	F05
		inch	4,29	2,95	2,36	3,94	0,315	0,394	-	1,93	1,16	0,37	
040	1 1/2"	mm	129	100	60	100	12	16	-	69	34,5	12,5	F07
		inch	5,08	3,94	2,36	3,94	0,472	0,630	-	2,72	1,36	0,49	
050	2"	mm	142	100	60	100	12	16	-	82	37	12,5	F07
		inch	5,59	3,94	2,36	3,94	0,472	0,630	-	3,23	1,46	0,49	
065	--	mm	200	135	80	140	16	22	13	120	46	15,5	F10
		inch	7,87	5,31	3,15	5,51	0,630	0,866	0,51	4,72	1,81	0,61	
080	3"	mm	203	135	80	140	16	22	13	123	46	15,5	F10
		inch	8	5,31	3,15	5,51	0,630	0,866	0,51	4,84	1,81	0,61	
100	4"	mm	218	135	80	140	16	22	13	138	46	15,5	F10
		inch	8,58	5,31	3,15	5,51	0,630	0,866	0,51	5,43	1,81	0,61	
150	6"	mm	271	135	80	140	20	30	14	191	57	19,5	F12
		inch	10,67	5,31	3,15	5,51	0,787	1,181	0,55	7,52	2,24	0,77	
--	8" °	mm	376	225	120	220	27	40	14	256	61	19,5	F12
		inch	14,8	8,86	4,72	8,66	1,06	1,57	0,55	10,08	2,4	0,77	

° AS6

AtoStar - Actuator Sizing Torques

Packingmaterial: chevron PTFE or PTFE-graphite

- for clean and clear application

Size		0 bar Δ p	0 psi Δ p	10 bar Δ p	150 psi Δ p	19 bar Δ p	275 psi Δ p	MAST	
		Nm	lbf · in	Nm	lbf · in	Nm	lbf · in	Nm	lbf · in
015	½"	7	62	7	62	8	71	40	354
020	¾"	7	62	7	62	8	71	40	354
025	1"	7	62	8	71	8	71	40	354
040	1½"	20	177	27	239	34	301	115	1018
050	2"	27	239	34	301	45	398	130	1151
065	-	51	451	73	646	93	426	420	3717
080	3"	54	478	67	593	89	788	420	3717
100	4"	63	558	97	859	124	1097	420	3717
150	6"	160	1416	240	2124	310	2744	1107	9798
-	8"	160	1416	240	2124	310	2744	1107	9798

- for dry and slurry application

Size		0 bar Δ p	0 psi Δ p	10 bar Δ p	150 psi Δ p	19 bar Δ p	275 psi Δ p	MAST	
		Nm	lbf · in	Nm	lbf · in	Nm	lbf · in	Nm	lbf · in
015	½"	9	81	9	81	10	92	40	354
020	¾"	9	81	9	81	10	92	40	354
025	1"	9	81	10	92	10	92	40	354
040	1½"	26	230	35	311	44	391	115	1018
050	2"	35	311	44	391	59	518	130	1151
065	-	66	587	95	840	121	1070	420	3717
080	3"	70	621	87	771	116	1024	420	3717
100	4"	82	725	126	1116	161	1427	420	3717
150	6"	208	1841	312	2761	403	3567	1107	9798
-	8"	208	1841	312	2761	403	3567	1107	9798

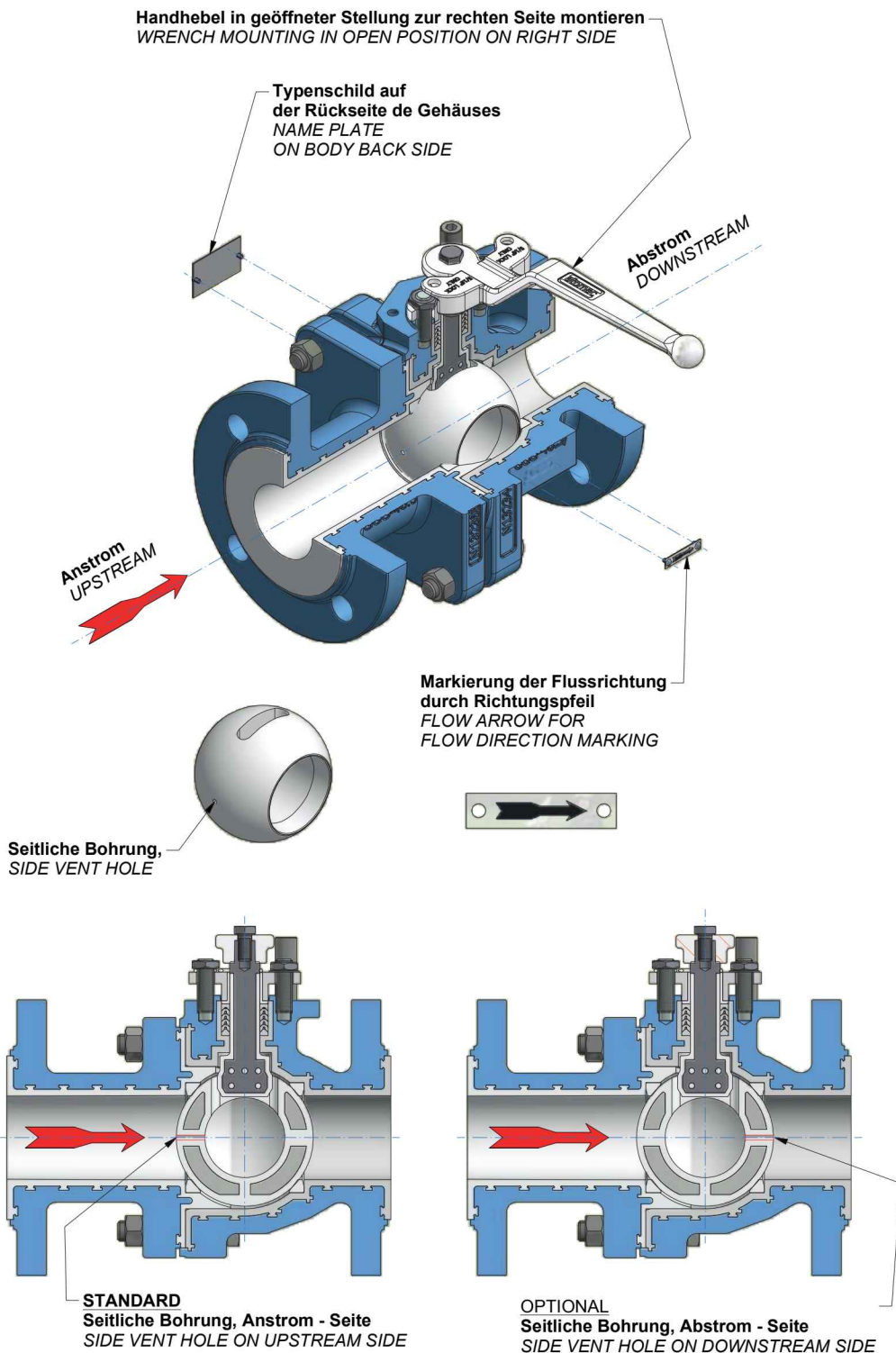
- Stated torques are sizing torques. No further safety factors are to be applied against these torques.
- The use of ceramic balls in lined valves will result in 15% higher sizing torques.
- The use of C-Balls or V-Balls does not result in change in sizing torques.
- Stated sizing torques are „Break-Open“ and „Re-Seating“ torques. Running torques are typically 35% below sizing torques.
- The stated „MAST“ value is the Maximum Allowable Stem Torque. Beyond this value permanent deformation / destruction of liner is to be expected.
- Please note the service conditions of the pressure- / vacuum-temperature-diagrams: register 1, page 13.

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

DIN	ANSI	K_v m ³ /h	C_v gal/min
015	½"	16,9	19,6
020	¾"	24,4	28,4
025	1"	46,6	54,1
040	1 ½"	126,9	147,5
050	2"	202,5	235,4
065	-	329,3	382,7
080	3"	507,8	590,2
100	4"	953,4	1108,1
150	6"	1577,7	1833,8
-	8" °	2134,0	2480,3

° AS6

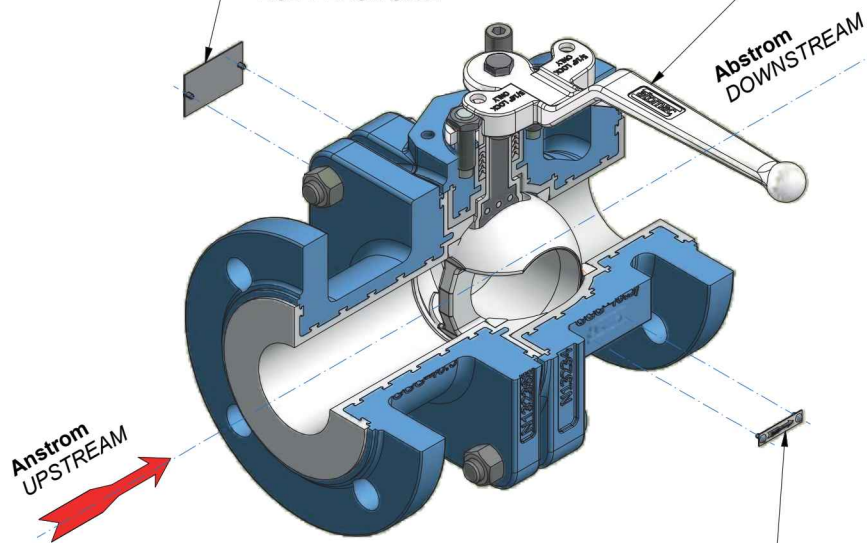
Optional ball with side vent hole



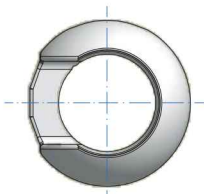
Optional with C-ball

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

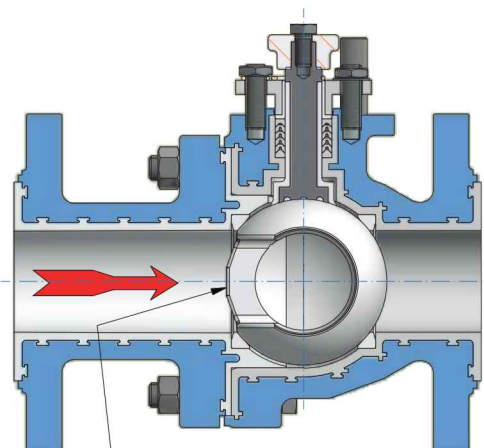
Typenschild auf
der Rückseite des Gehäuses
NAME PLATE ON
BODY BACK SIDE



Markierung der Flussrichtung
durch Richtungspfeil
FLOW ARROW FOR
FLOW DIRECTION MARKING



C - Kugel
C - BALL



C - Öffnung, Anstrom - Seite
C - OPENING ON UPSTREAM SIDE

Optional with V-ball or S-ball

