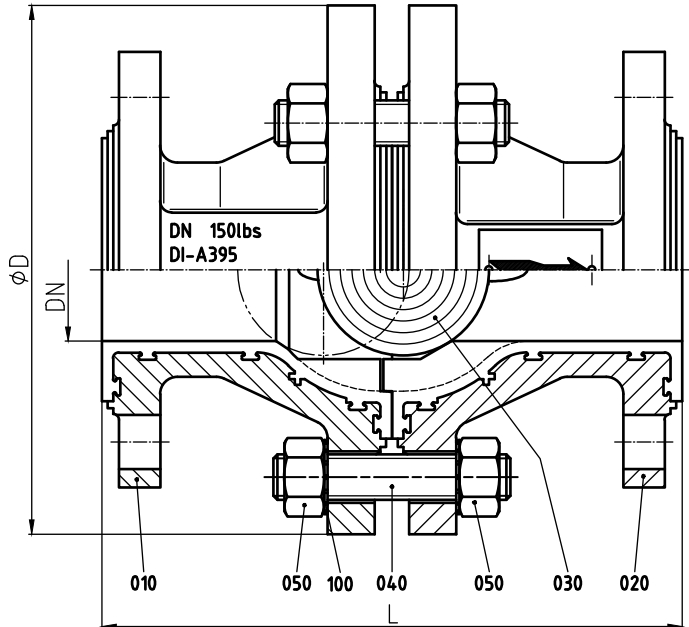


Technical Manual

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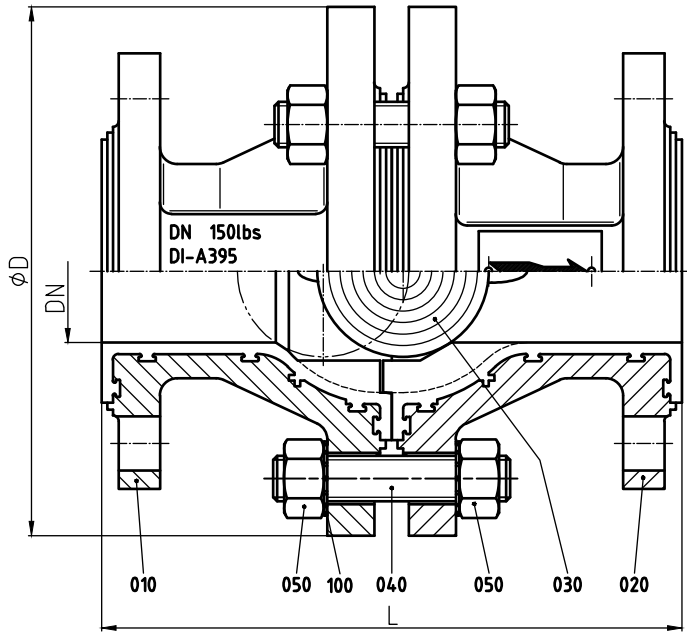


Face-to-Face Dimensions DIN EN 558-1 (Basic series 1)
 Flange Connections DIN EN 1092-2 PN 16
 DN 200- DIN EN 1092-2 PN 10
 Tightness test DIN EN 12266-1 (leak rate B)

DN / DIN		L	ØD	weight	
015	mm	130	105	kg	3,5
	inch	5,12	4,13	lbs	7,7
020	mm	150	105	kg	3,9
	inch	5,91	4,13	lbs	8,6
025	mm	160	140	kg	6,5
	inch	6,3	5,51	lbs	14,3
032	mm	180	150	kg	8,2
	inch	7,09	5,91	lbs	18,1
040	mm	200	165	kg	11,0
	inch	7,87	6,5	lbs	24,3
050	mm	230	185	kg	13,7
	inch	9,06	7,28	lbs	30,1
065	mm	290	220	kg	21,2
	inch	11,42	8,66	lbs	46,8
080	mm	310	250	kg	32,6
	inch	12,2	9,84	lbs	71,8
100	mm	350	285	kg	42,0
	inch	13,78	11,22	lbs	92,5
150*	mm	356	395	kg	80,0
	inch	14	15,55	lbs	176,0
200*	mm	457	515	kg	195,0
	inch	18	20,28	lbs	430,0

* Face-to-Face Dimensions acc. ANSI B 16.10

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Flange Connections ANSI B 16.5 CL150
 Tightness test DIN EN 12266-1 (leak rate B)

DN / ANSI	L	ØD	weight	
½"	inch 5,16	4,13	lbs	7,5
	mm 131	105	kg	3,4
¾"	inch 5,91	4,13	lbs	8,4
	mm 150	105	kg	3,8
1"	inch 6	5,51	lbs	13,2
	mm 152,4	140	kg	6,0
1½"	inch 7	6,5	lbs	20,5
	mm 178	165	kg	9,3
2"	inch 8	7,3	lbs	29,1
	mm 203	185	kg	13,2
3"	inch 9,5	9,84	lbs	61,6
	mm 241	250	kg	28,0
4"	inch 11,5	11,22	lbs	92,5
	mm 292	285	kg	42,0
6"	inch 14	15,55	lbs	171,8
	mm 356	395	kg	78,0
8"	inch 18	20,28	lbs	365,0
	mm 457	515	kg	166,0

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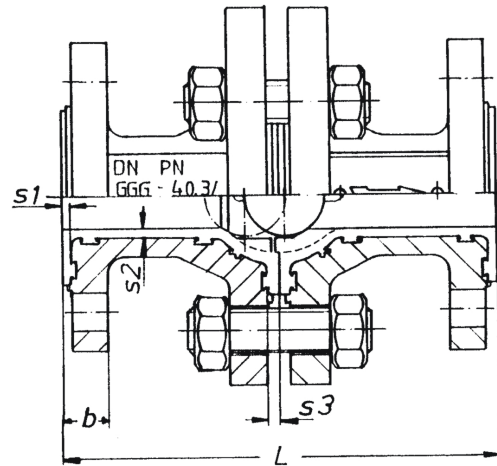
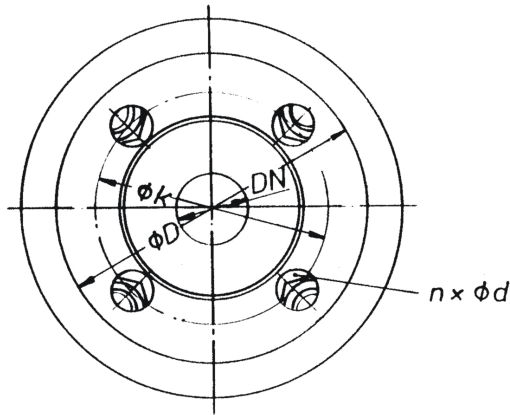
Material specification ARV2

No.	Designation	Pieces	Material	Material-No. DIN	ASTM / AISI
010	body piece	1	ductile iron / PFA	EN-JS1049 (GGG-40.3) / DIN EN 1563	A 395
		1	ductile iron / PFA conductive	EN-JS1049 (GGG-40.3) / DIN EN 1563	A 395
020	body piece	1	ductile iron / PFA	EN-JS1049 (GGG-40.3) / DIN EN 1563	A 395
		1	ductile iron / PFA conductive	EN-JS1049 (GGG-40.3) / DIN EN 1563	A 395
030	ball	1	PTFE-solid ball		
		1	PTFE-solid ball conductive		
040	stud bolt	1 set	stainless steel	1.4301-K70 / DIN EN 10088-3	A 193 B8
050	hexagon nut	1 set	stainless steel	1.4301-K70 / DIN EN 10088-3	A 194 8
100	serrated lock washer (grounding device)	2	stainless steel	1.4301 / DIN EN 10088-3	AISI 304 SS

Valves with conductive lining only contain components with conductive materials

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Dimensions ARV2 (DIN)

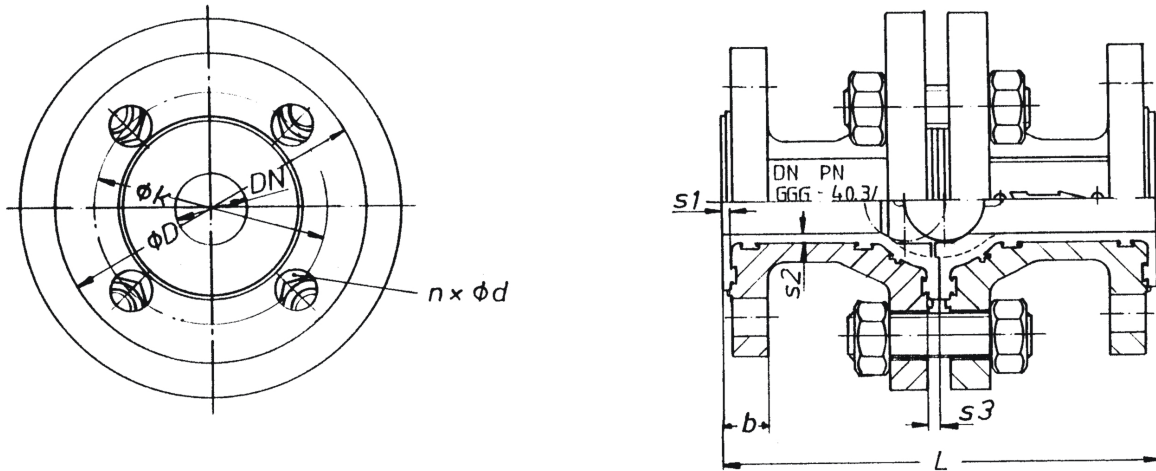


DN / DIN		L	b	ØD	Øk	nxØd	S1	S2	S3
015	mm	130	14	95	65	4x14	3,5	3,5	3,5
	inch	5,12	0,55	3,74	2,56	4x0,55	0,14	0,14	0,14
020	mm	150	15	105	75	4x14	3,5	3,5	3,5
	inch	5,91	0,59	4,13	2,95	4x0,55	0,14	0,14	0,14
025	mm	160	16,5	115	85	4x14	3,5	3,5	4
	inch	6,3	0,65	4,53	3,35	4x0,55	0,14	0,14	0,16
032	mm	180	18	140	100	4x18	4	4	4
	inch	7,09	0,71	5,51	3,94	4x0,71	0,16	0,16	0,16
040	mm	200	19	150	110	4x18	4	4	4
	inch	7,87	0,75	5,91	4,33	4x0,71	0,16	0,16	0,16
050	mm	230	20,5	165	125	4x18	4	4	4
	inch	9,06	0,81	6,5	4,92	4x0,71	0,16	0,16	0,16
065	mm	290	22	185	145	4x18	4	4,5	4
	inch	11,42	0,87	7,28	5,71	4x0,71	0,16	0,18	0,16
080	mm	310	25	200	160	8x18	4	4,5	4
	inch	12,2	0,98	7,87	6,3	8x0,71	0,16	0,18	0,16
100	mm	350	27	220	180	8x18	4	5	4
	inch	13,78	1,06	8,66	7,09	8x0,71	0,16	0,2	0,16
150*	mm	256	30,5	279,4	240	8x22	4	6	4
	inch	14	1,2	11	9,45	8x0,87	0,16	0,24	0,16
200*	mm	457	36,5	343	295	8x22	4	6	4
	inch	18	1,44	13,5	11,61	8x0,87	0,16	0,24	0,16

* Face-to-Face Dimensions acc. ANSI B, 16.10

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Dimensions ARV2 (ANSI)



DN / ANSI		L	b	ϕD	ϕk	$n \times \phi d$	S1	S2	S3
1/2"	inch	5,16	0,55	3,5	2,38	4x0,63	0,14	0,14	0,14
	mm	131	14	88,9	60,5	4x16	3,5	3,5	3,5
3/4"	inch	5,91	0,59	3,88	2,75	4x0,63	0,14	0,14	0,14
	mm	150	15	98,5	70	4x16	3,5	3,5	3,5
1"	inch	6	0,63	4,25	3,13	4x0,63	0,14	0,14	0,16
	mm	152,4	16	107,9	79,2	4x16	3,5	3,5	4
1 1/2"	inch	7	0,98	5	3,88	4x0,63	0,16	0,16	0,16
	mm	178	19	127	98,5	4x16	4	4	4
2"	inch	8	0,81	6	4,75	4x0,75	0,16	0,16	0,16
	mm	203	20,5	152,4	120,5	4x19	4	4	4
3"	inch	9,5	0,98	7,5	6	4x0,75	0,16	0,18	0,16
	mm	241	25	190,5	152,5	4x19	4	4,5	4
4"	inch	11,5	11,4	9	7,5	8x0,75	0,16	0,2	0,16
	mm	292	29	228,6	190,5	8x19	4	5	4
6"	inch	14	1,2	11	9,5	8x0,87	0,16	0,24	0,16
	mm	356	30,5	279,4	241,5	8x22	4	6	4
8"	inch	18	1,44	13,5	11,68	8x0,87	0,16	0,24	0,16
	mm	457	36,5	342,9	296,7	8x22	4	6	4

Spare Parts (item n°) - ARV2

DIN	ANSI	ball PTFE
015	1/2"	0001449
020	3/4"	0001450
025	1"	0001451
032	--	0005749
040	1 1/2"	0001452
050	2"	0001453
065	--	0001458
080	3"	0001454
100	4"	0001455
150	6"	0001456
200	8"	0005967

Assembly Instructions ARV2

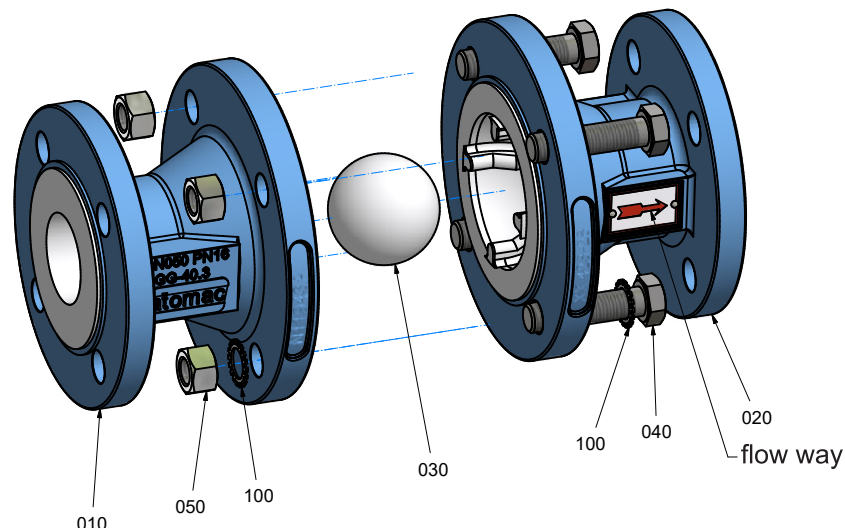
The general installation and maintenance instructions must be observed.

1. Put the body piece **(010)** on a work bench with a soft cover (rubber mat).
2. Insert ball **(030)** carefully into body piece **(010)**.
3. During assembly of the two body pieces **(020)** and **(010)**, it is important that the ball guide rails are laying exactly opposite to each other.
4. Assemble one body bolts **(040)**, one nuts **(050)** with 2 serrated lock washers (grounding device) **(100)**.
5. Assemble body bolts **(040)** and nuts **(050)**. Tighten them by criss-cross method acc. to the recommended torques.

Disassembly Instructions ARV2

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

1. Prior to disassembly, the valve must be drained of all line media, acc. to the above-mentioned instructions. After having removed the flange connection, put valve on workbench with soft cover (rubber mat).
2. Remove hexagon nuts **(050)**.
3. Remove body piece **(020)** from side piece **(010)**.
4. Remove ball **(030)**. Inspect ball on damages (replace ball, if necessary).
5. Inspect ball seat on damages (replace side piece **(010)** if (necessary).



ARV2 Ball Check Valve

Recommended Installation Practices

Vertical installation

- The proper valve installation is with the flow direction from the bottom up. The flow arrow on the body indicates the direction of flow. A minimum of 1 psi is necessary to move the ball off of the seat. With no positive stream pressure, the ball will seat against back flow by gravity. *(If the desired direction of flow is from the top down, a standard ball will not allow the valve to check against back flow with fluid pressure being exerted from the bottom. Contact your local Flowserve Representative for assistance).*

Horizontal installation

- The Atomac ARV2 ball check valve will function properly in a horizontal application when installed correctly. First, ensure the pipe line is relatively level. The ball should not be restricted from checking by the pull of gravity.
- The ball will check properly when exposed to back flow conditions. However, in the horizontal position, the media must be liquid to provide adequate force to seat. (When installed horizontally the valve may not provide adequate back flow protection in a gas service).

Installation precautions

- Do not install a ball check valve directly to the inlet or discharge side of a pump. Due to the flow characteristics introduced by the vortices produced by a running pump, allow approximately 10 pipe diameters installation distance from the pump.
- When installing this fully lined product into fully lined pipe, a pipe flange gasket is not necessary. The valve body to lined flange fitting is self gasketing. However, if installing into a metallic piping system, a separate flange gasket is recommended to prevent putting flange serrations into the valve gasket surface.
- The flange connection torques that should be used are those published by the lined pipe supplier. Install the fasteners using the crisscross method to ensure proper loading of the gasket connection. Improper torque loading or over torque loading may damage both the valve gasket connection as well as the flange gasket connection.

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ARV2 - recommended tightening torques*

DN	tie rods (040/050)		connection flange	
	Nm	lbf · in	Nm	lbf · in
015	14	119	11	97
½"	14	127	8	71
020	13	112	19	168
¾"	14	119	11	97
025	30	263	33	292
1"	32	279	15	133
032	36	319	41	363
040	41	366	52	460
1½"	42	374	29	257
050	55	486	67	593
2"	62	550	59	522
065	49	430	93	823
080	68	597	55	487
3"	69	613	100	885
100	88	781	64	566
4"	88	781	76	673
150	171	1513	131	1159
6"	171	1513	129	1142
200	297	2628	206	1823
8"	319	2820	206	1823

* max. 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

**ARV2 - 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"	7,0	8,1
020	¾"	16,0	18,6
025	1"	23,5	27,3
032	--	40,3	46,8
040	1 ½"	58,0	67,4
050	2"	125,0	145,3
065	--	179,2	208,3
080	3"	272,4	316,6
100	4"	493,7	573,8
150	6"	1072,8	1246,9
200	8"	1870,0	2173,5