

Technical Manual

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Register 17 CONTENS - AMP3

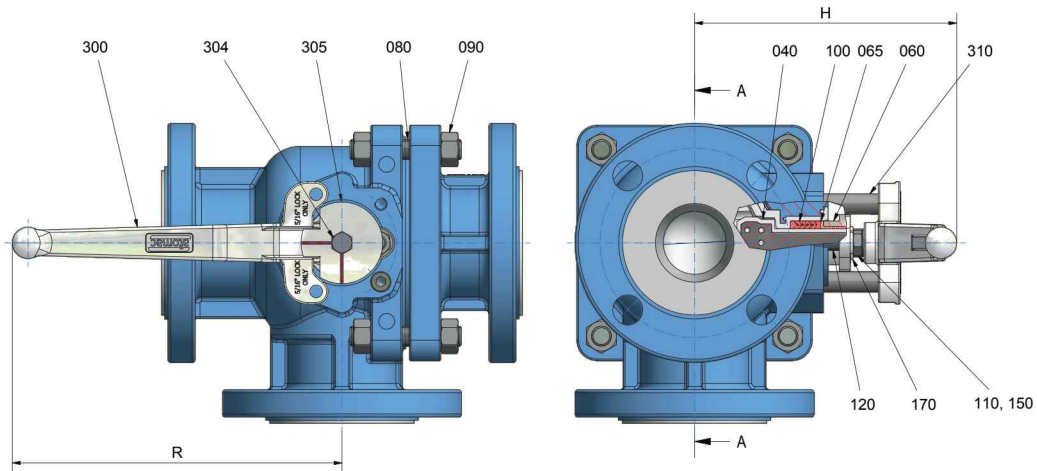
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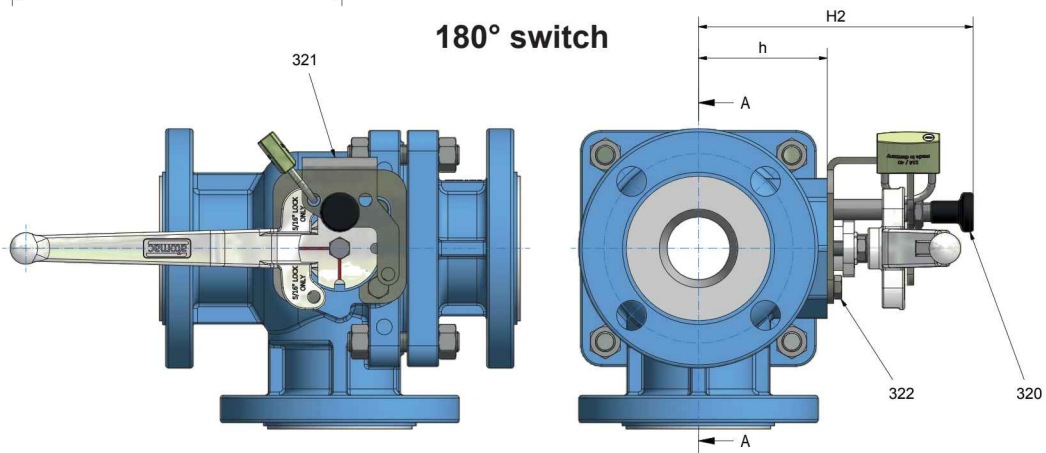


Technical Drawing AMP3

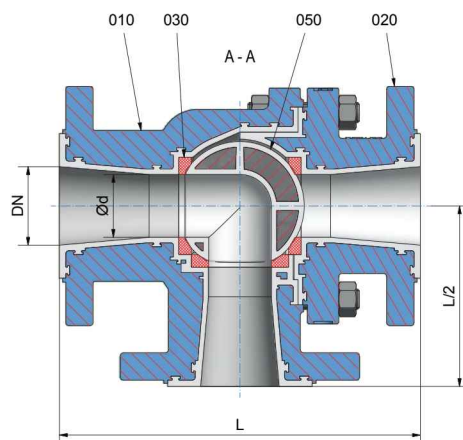
90° switch



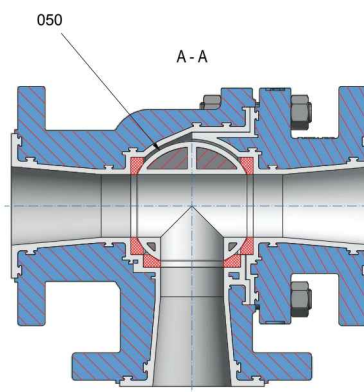
180° switch



L - Ball



T - Ball



DIN Face to Face dimensions: DIN EN 558 (Basic series 1)
 Flange Connection: DIN EN 1092-2

ANSI Face to Face dimensions: DIN EN 558 (Basic series 1)
 Flange Connection: ASME B 16.5 Cass 150, Min. flange thickness acc. to ASME B 16.5 Cass 150, Table 9 (Flanged Fittings)

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Technical Data AMP3

DIN	ANSI		L	L/2	Ød	R	H	H2	h	weight	
025	1"	mm	160	80	20	160	124	125	52	kg	5,2
		inch	6,3	3,15	0,79	6,3	4,88	4,9	2	lbs	11,5
040	1½"	mm	200	100	32	210	153	158	72	kg	12,0
		inch	7,87	3,94	1,26	8,27	6,02	6,22	2,83	lbs	26,4
050	2"	mm	230	115	40	210	167	163	82	kg	16,7
		inch	9,06	4,53	1,57	8,27	6,57	6,42	3,23	lbs	36,8
080	3"	mm	310	155	60	313	205,5	230	119	kg	32,0
		inch	12,2	6,1	2,36	12,32	8,09	9,06	4,69	lbs	70,5
100	4"	mm	350	175	75	313	217,5	242	132	kg	45,0
		inch	13,78	6,89	2,95	12,32	8,56	9,53	5,2	lbs	99,2
150	6"	mm	480	240	128	674	324,0	335	204	kg	137,7
		inch	18,9	9,45	5,04	26,54	12,76	13,19	8,03	lbs	303,5

Material Specification AMP3

No.	Designation	Quantity	Material	Material-No. / DIN	ASTM / AISI
010	body	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	side 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	seat ring	3	PTFE		
		3	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	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
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
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	1	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 (galvanized)	ZP0410 / DIN EN 12844	
		1	steel (galvanized)	1.0037 / DIN EN 10025-2	A 283 B
304	hexagon bolt	1	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8
305	position indicator	1	stainless steel	1.4301 / DIN EN 10088-3	AISI 304
310	stop	2	stainless steel	1.4301 / DIN EN 10088-3	AISI 304
		1	stainless steel	1.4104 / DIN EN 10088-3	AISI 430 F
320°	locking pin	1	stainless steel	1.4301 / DIN EN 10088-3	AISI 304
321°	locking bracket	1	stainless steel	1.4301 / DIN EN 10088-3	AISI 304
322°	hexagon bolt	2	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8

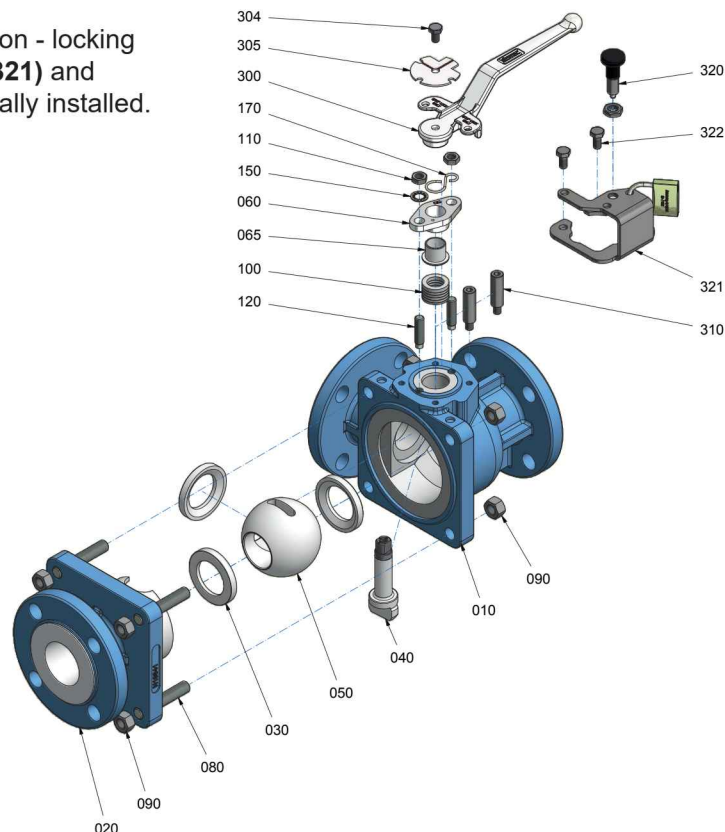
Valves with conductive lining only contain components with conductive materials
 ° only für Switchsymbols No.: 1.1 , 6, 7, 8, 9 (180° Switchsymbol)



Assembly Instruction AMP3

The general installation and maintenance instructions must be observed.

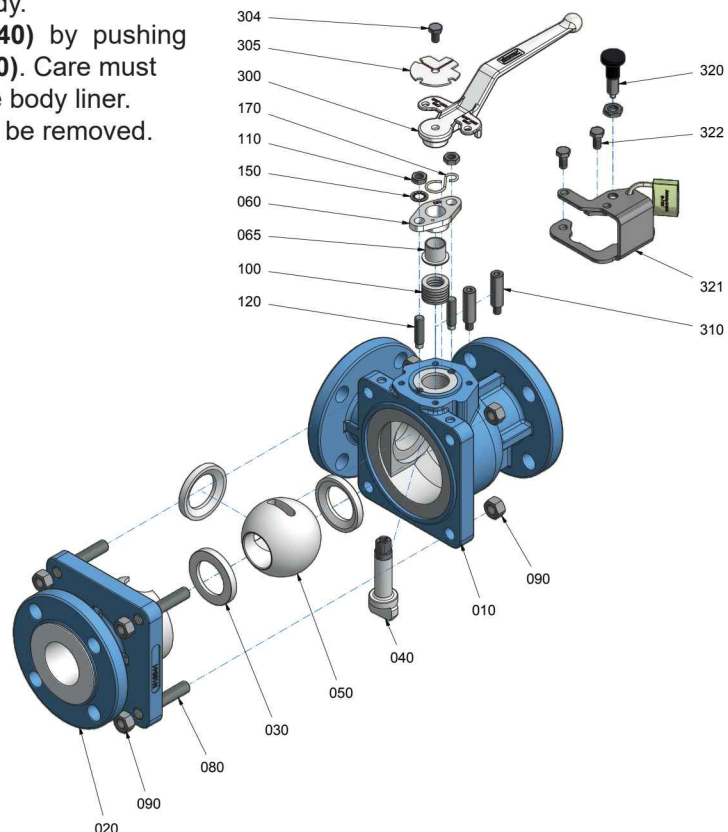
1. Screw stud bolts (120) into body (010).
2. Insert the stem (040) from inside of the body in such a way that the flat side is parallel to the body longitudinal axis.
3. Insert the chevron packing (100).
4. Install gland insert (065), gland follower (060) including the insert (065) as well as the safety washers (150), hexagon nuts (110) and the grounding strap (170).
5. Install hand lever (300) with position indicator (305) and the hexagon bolt (304) on the stem (040).
6. Insert the lower ball seat ring (030) into the body (010).
7. Together with the second ball seat ring (030) insert the L- or T-ball (050) into the body. The stem flats fit the ball flats. Pay attention to which switching symbol is required (see separate switching symbol charts).
8. Turn the ball (050) in that way that the closed side of the ball will show to the side piece connection.
9. Screw stud bolts (080) into side piece (020).
10. Place the third ball seat ring (030) on the ball (050) and install the side piece.
11. Screw the hexagon nuts (090) on the stud bolts (080) and tighten them by crisscross method to recommended torques.
12. According to the configuration - locking pin (320), locking bracket (321) and hexagon bolt (322) additionally installed.



Disassembly Instruction AMP3

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 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, it is ensured that all remaining pressure inside the body (stem guide and ball seats) is eliminated.
2. For disassembly of the valve put it on a work bench with a soft cover (rubber mat). If necessary, remove hand lever stops (310), locking pin (320), locking bracket (321) and hexagon bolt (322) additionally installed.
3. Disassemble the hand lever (300) with the hexagon bolt (304) and position indicator (305). Remove hexagon nuts (110) and lock washer (150).
4. Remove grounding device (170), gland insert (065) and packing gland follower (060). If necessary stud bolts (120) can also be removed now.
5. Unscrew the hexagon nuts (090) and remove side piece (020) from the body (010).
6. Remove the ball seat ring (030) out of the side piece (020).
7. Including the ball seat ring (030) on side remove the ball (050) out of the body (010).
8. The lower ball seat ring (030) can easily be removed now out of the body.
9. Disassemble the stem (040) by pushing down through the body (010). Care must be taken not to damage the body liner.
10. Chevron packing (100) can be removed.



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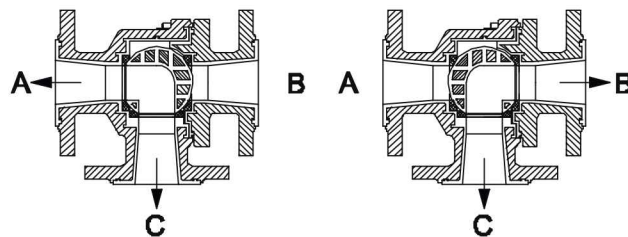
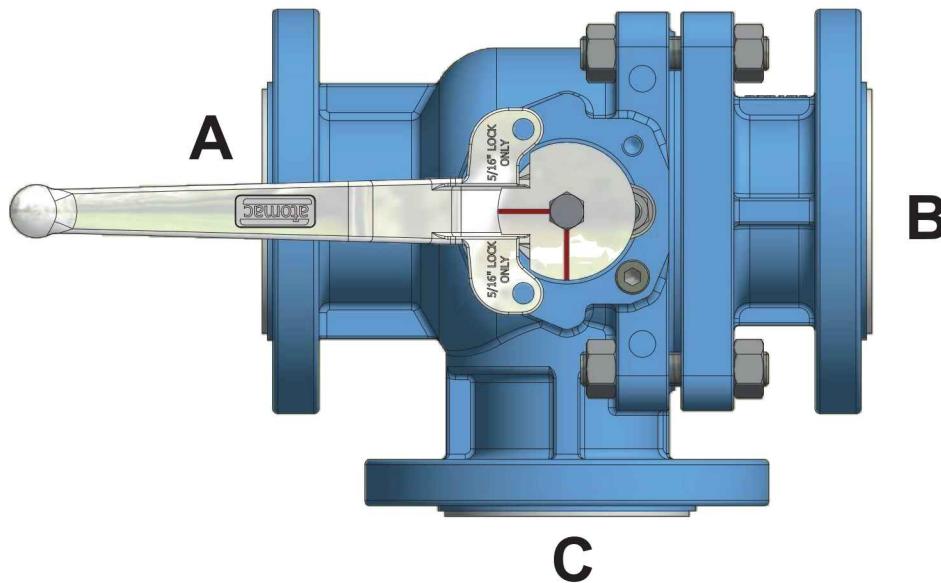
AMP3 - Recommended Tightening Torques*

DN	tie rods (080/090)		connection flange		gland bolts (110/120/150)	
	Nm	lbf · in	Nm	lbf · in	Nm	lbf · in
025	21	186	36	319	4	35
1"	14	124	17	150	4	35
040	49	434	75	664	7	62
1½"	52	460	39	345	7	62
050	70	620	95	841	7	62
2"	75	664	79	699	7	62
080	61	540	75	664	8	71
3"	65	575	129	1142	8	71
100	114	1009	87	770	8	71
4"	116	1027	97	858	8	71
150	190	1682	130	1151	12	106
6"	190	1682	129	1142	12	106

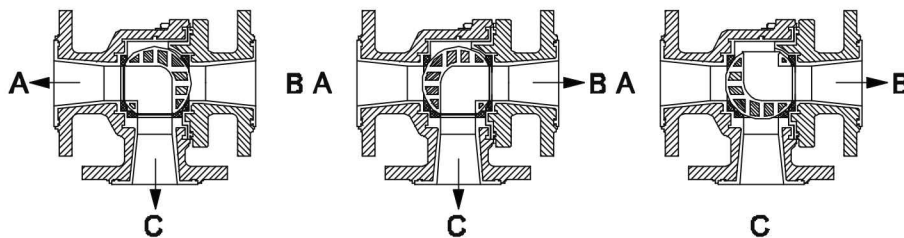
* maximum value

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

Switchsymbols AMP3L

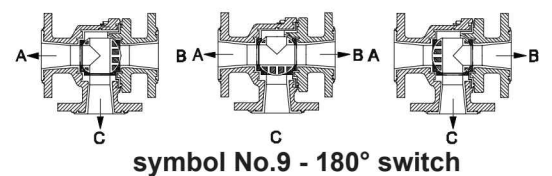
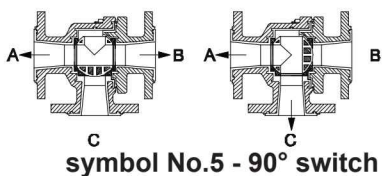
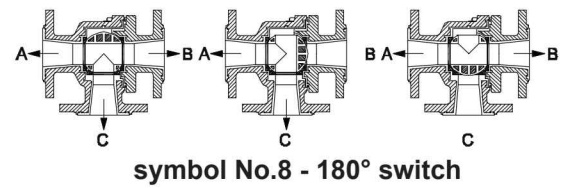
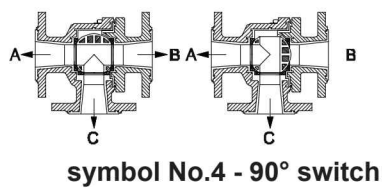
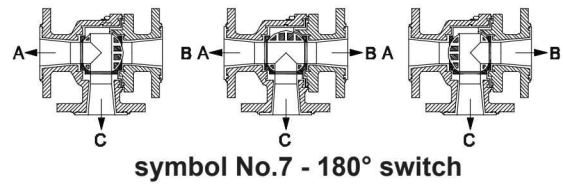
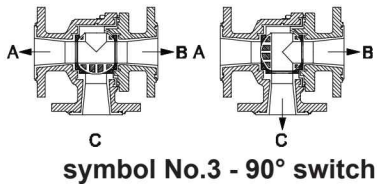
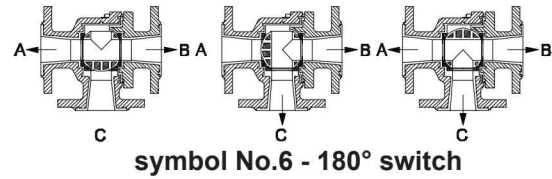
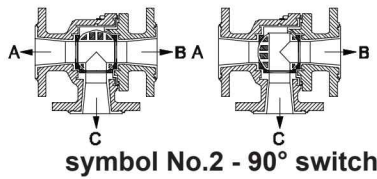
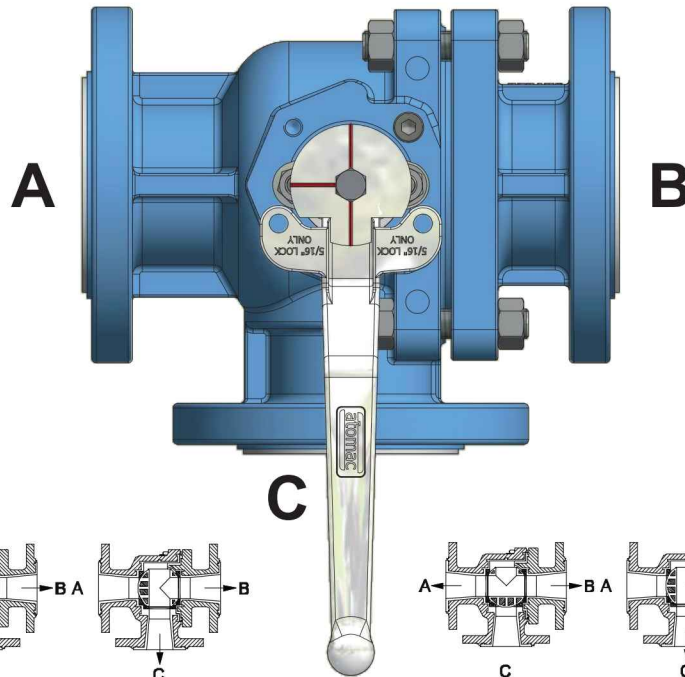


symbol No.1 - 90° switch



symbol No.1.1 - 180° switch

Switchsymbols AMP3T



When supplied, the seat tightness of the AMP3 (T-Ball-version) complies to applied standard for all three branches.

- EN 12266-1, P12 (Table A.5, leakage rate A = 0 bubbles, test medium: gas)
- API 598 (soft seated valves, table 6 = 0 bubbles, test medium: gas)

During operation (for valves with symbols 3, 5, 6, 8 and 9) a leakage of branch "C" cannot be excluded because of the geometry of a 3-way-valve.

AMP3 - Actuator Sizing Torques

Packingmaterial: chevron PTFE or PTFE-graphite

- for clean and clear application**

Size	0 bar Δ p Nm	0 psi Δ p lbf · in	10 bar Δ p Nm	150 psi Δ p lbf · in	19 bar Δ p Nm	275 psi Δ p lbf · in	MAST	
							Nm	lbf · in
025 1"	14	124	20	177	23	204	40	354
040 1½"	22	195	30	266	34	301	115	1018
050 2"	30	266	41	363	62	549	130	1151
080 3"	82	726	115	1018	175	1549	420	3717
100 4"	110	974	153	1354	228	2018	420	3717
150 6"	290	2567	410	3629	615	5443	1107	9798

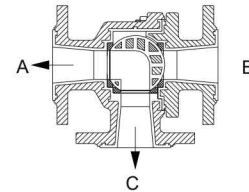
- for dry and slurry application**

Size	0 bar Δ p Nm	0 psi Δ p lbf · in	10 bar Δ p Nm	150 psi Δ p lbf · in	19 bar Δ p Nm	275 psi Δ p lbf · in	MAST	
							Nm	lbf · in
025 1"	18	161	26	230	30	265	40	354
040 1½"	29	253	39	345	44	391	115	1018
050 2"	39	345	53	472	81	713	130	1151
080 3"	107	943	150	1323	228	2014	420	3717
100 4"	143	1266	199	1760	296	2623	420	3717
150 6"	377	3337	533	4717	800	7076	1107	9798

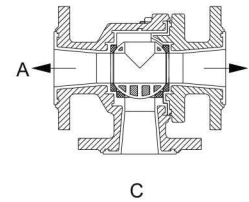
- Stated torques are sizing torques. No further safety factors are to be applied against these torques.
- Stated sizing torques are „Break-Open“ and „Re-Seating“ torques. Running torques are typically 35% below sizing torques.
- The stated „MAST“ value is the Maximum Allowable Stem Torque. Beyond this 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.

AMP3 - K_v Data and C_v Data (DIN EN 60534-2-3)

AMP3 L A → C (B → C)			
ANSI	DIN	K_v m ³ /h	C_v gal/min
1"	025	11,9	13,8
1 1/2"	040	31,4	36,5
2"	050	51,6	60,0
3"	080	107,0	124,4
4"	100	190,7	221,7
6"	150	- at the moment not available -	



AMP3 T A → B			
ANSI	DIN	K_v m ³ /h	C_v gal/min
1"	025	24,9	28,9
1 1/2"	040	80,2	93,2
2"	050	129,0	149,9
3"	080	292,6	340,1
4"	100	572,3	665,2
6"	150	- at the moment not available -	



AMP3 T A → C (B → C)			
ANSI	DIN	K_v m ³ /h	C_v gal/min
1"	025	9,4	10,9
1 1/2"	040	32,1	37,3
2"	050	53,5	62,2
3"	080	108,4	126,0
4"	100	177,5	206,3
6"	150	- at the moment not available -	

