

3-way ball valve, article 445-MS with pneumatic actuator Diameter G 3/8" up to G 2"

3-ball valve threaded ends, full bore and with standardized interface according to ISO 5211 for direct mounting of pneumatic or electrical actuators. Designed for general, industrial use. The nickel-plated brass ball is optionally available with **L-bore** or **T-bore**. Suitable for neutral gaseous and liquid media (no steam) considering material resistance brass CW 617N.

- **three sides female thread according to ISO 228**
- **body outside nickel-plated**
- **all sides 100% tight closing by the use of 4 PTFE-ball seals**

Note: The freezing of the medium in the ball valve must be avoided in any case.



	Ambient	-15° C ... +60° C
	Medium	-20° C ... +160° C

Operating-variants:

Lever

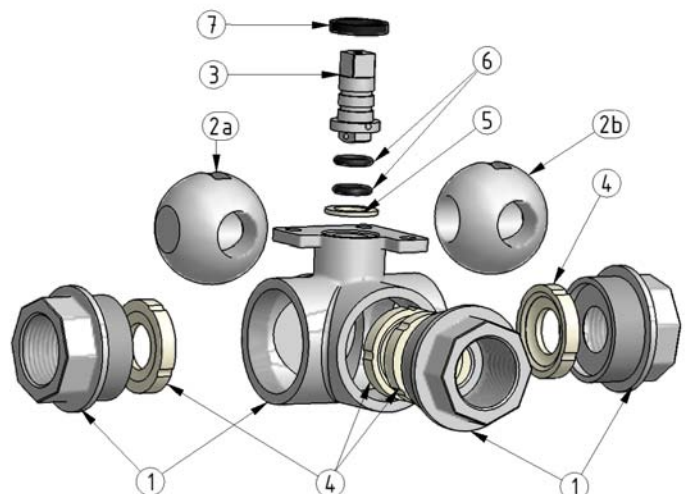


electrical actuator



- Design Standard DIN EN 12516-1
- Housing strength DIN EN 12516-2
- Design pressure PN 30 / PN 16 / PN 10 (depending on nominal diameter)
- Identification EN 19, MSS SP-25
- Inspection / test DIN EN 12266 P10 / P11 / P12

Pos.	Description	Material
1	Body	Brass CW 617N nickel-plated
	threaded ends	Brass CW 617N nickel-plated
2a	Ball L-bore	Brass CW 614N chrome-plated
2b	Ball T-bore	Brass CW 614N chrome-plated
3	Stem	Brass CW 614N
4	Ball seal	4x PTFE-profile shells
5	Washer	PTFE
6	Seal	2x O-ring VITON
7	Washer	Polyamide PA6



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Ball valve and pneumatic actuator each enable direct, backlash-free assembly due to their standardized interfaces according to ISO 5211. Modern industrial design and compact construction characterize this pneumatic rotary actuator series. High-quality materials and the robust, reliable design guarantee high availability in daily use.

Depending on the process requirements, there are two versions to choose from:

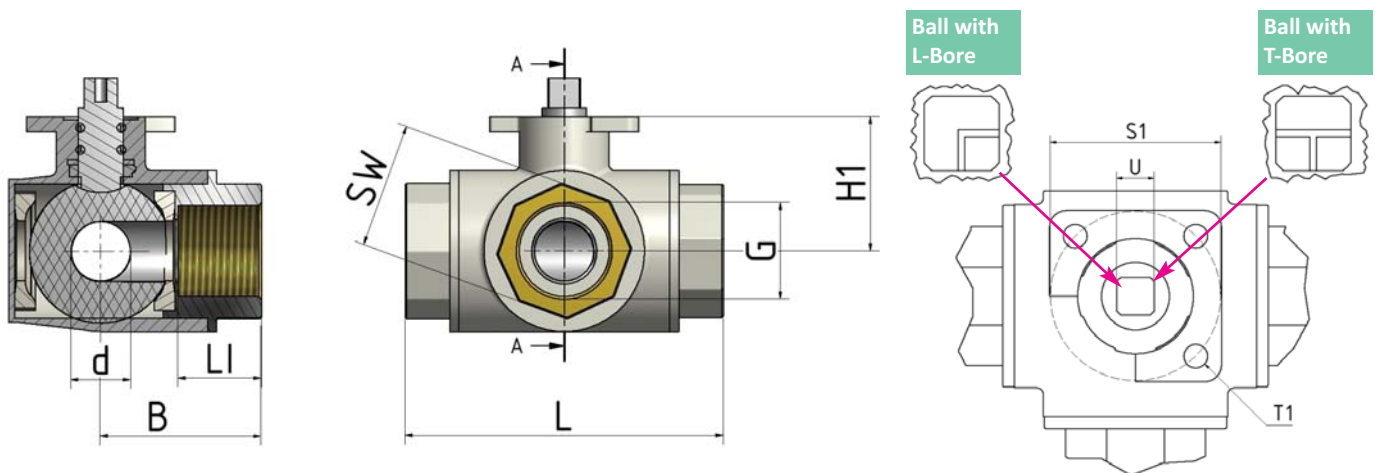
Function double-acting = Pressurization of the air chambers alternately on both sides

Function single-acting = Pressurization of only one air chamber, resetting by built-in spring assemblies (optionally spring-opening or spring-closing)

Quality of the control medium filtered compressed air according to DIN/ISO 8573-1, class 4.

The unit is always delivered adjusted and tested ready for operation.

Further information on the pneumatic actuators can be found in the individual data sheets.



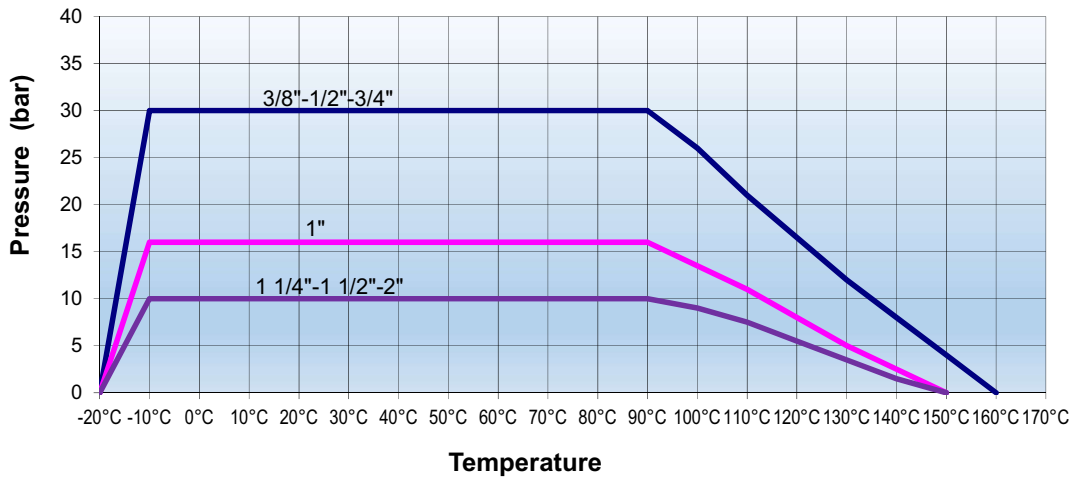
Diameter	L (mm)	LI (mm)	H1 (mm)	SW (mm)	d (mm)	B (mm)	S1	U (mm)	T1 Ø (mm)	Pressure rating max. (bar)	Weight (kg)
G 3/8"	67,0	11,4	30,5	22	11	33,5	F03	9	3 x 6	30	0,52
G 1/2"	77,0	15,0	32,5	27	15	38,5	F03	9	3 x 6	30	0,65
G 3/4"	87,0	16,3	41,5	32	20	43,5	F05	11	3 x 7	30	1,10
G 1"	105,0	19,1	47,0	41	25	52,5	F05	11	3 x 7	16	1,83
G 1 1/4"	122,5	21,4	59,5	50	32	61,2	F05	11	3 x 7	10	2,75
G 1 1/2"	138,5	21,4	74,0	55	40	69,2	F07	14	3 x 9	10	4,57
G 2"	166,0	25,7	85,0	70	50	83,0	F07	14	3 x 9	10	8,37

Diameter	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Ball bore Ø	11,0	15,0	20,0	25,0	32,0	40,0	50,0
KV-Value	3,0	3,9	7,9	13,0	20,7	36,7	54,0

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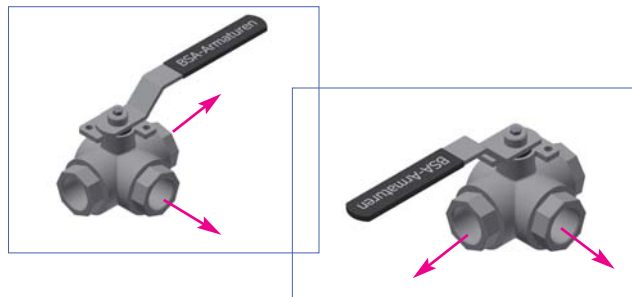
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Pressure-Temperature Diagram

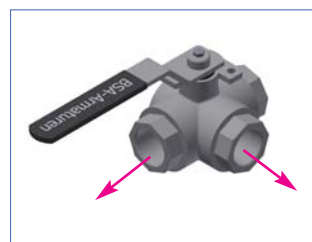
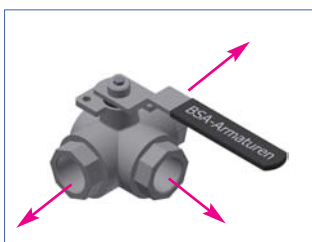


possible switching paths 3-way ball valves

3-way ball valve, article 445-MS with L-ball bore		
	switch-path 1	switch-path 2
basic position		
switch position 90°		
direction of rotation	right	left



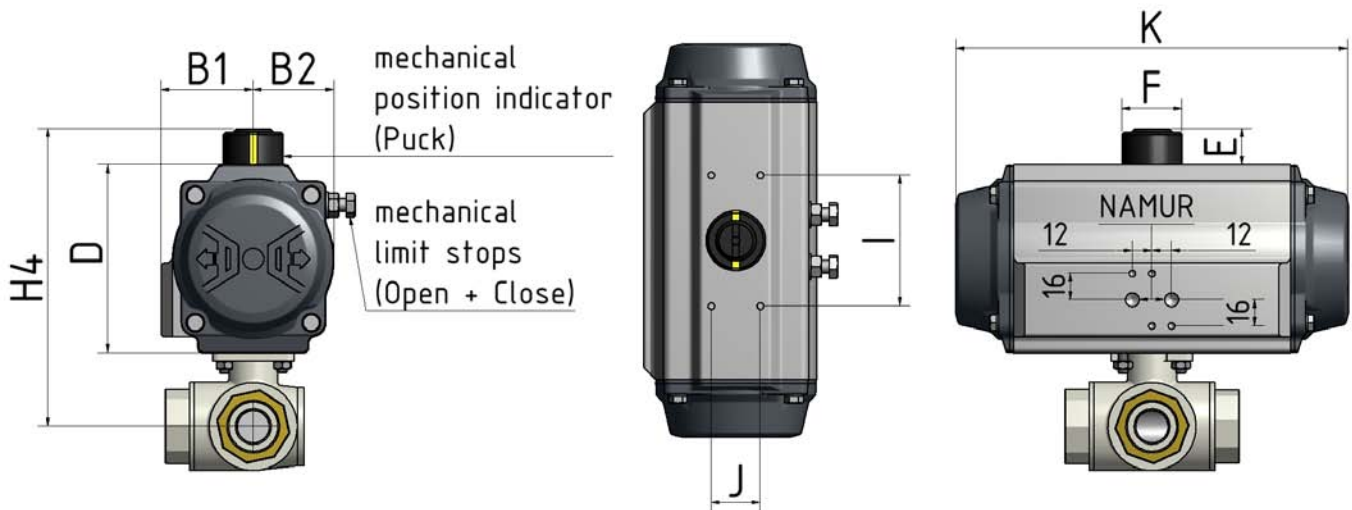
3-way ball valve, article 445-MS with T-ball bore								
	switch-path 1	switch-path 2	switch-path 3	switch-path 4	switch-path 5	switch-path 6	switch-path 7	switch-path 8
basic position								
switch position 90°								
direction of rotation	right	left	right	left	right	left	right	left



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3-way ball valve, article 445-MS with pneumatic actuator Diameter G 3/8" up to G 2"

Longitudinal construction standard, if transverse construction desired, please indicate when ordering.



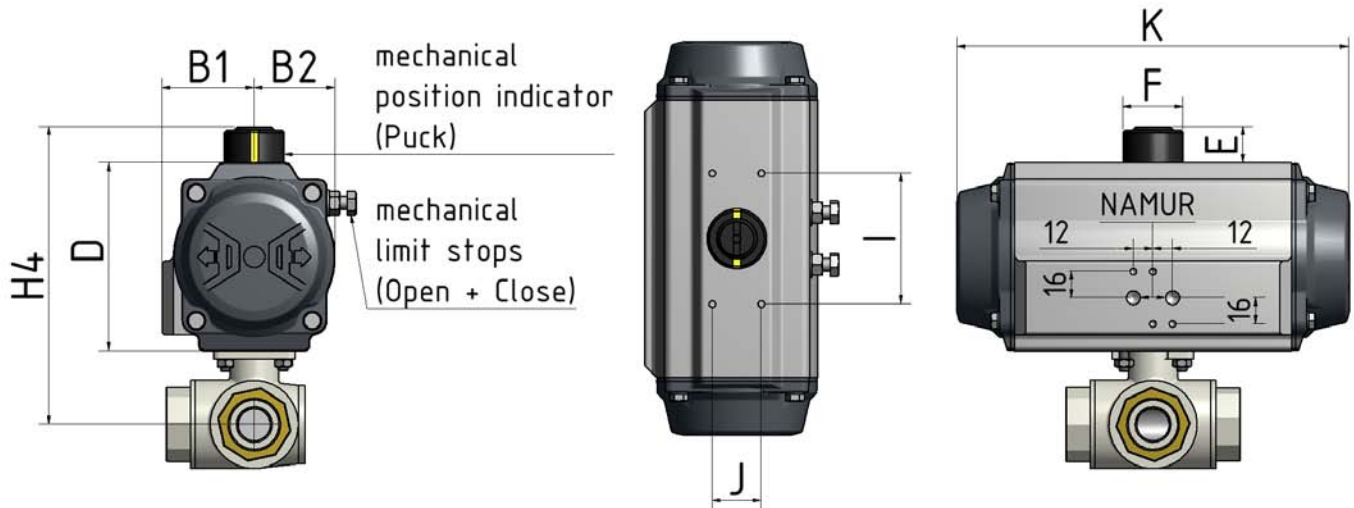
- double acting -

Diameter	Article-No.:		Actuator design up to 10 bar										Air connection	Weight (kg)
	L-Bore	T-Bore	H4 (mm)	D (mm)	B1 (mm)	B2 (mm)	J (mm)	I (mm)	K (mm)	F (mm)	E (mm)			
G 3/8"	193.3748.0.62	193.3750.0.62	116,5	66	35,5	26,5	30	80	118,0	37	20	G 1/8"	1,27	
DR 10	86.8200.5.10	86.8200.5.10												
G 1/2"	193.3748.0.63	193.3750.0.63	118,5	66	35,5	26,5	30	80	118,0	37	20	G 1/8"	1,40	
DR 10	86.8200.5.10	86.8200.5.10												
G 3/4"	193.3748.0.65	193.3750.0.65	146,5	85	48,5	36,0	30	80	153,5	37	20	G 1/8"	2,71	
DR 30	86.8200.5.30	86.8200.5.30												
G 1"	193.3747.0.67	193.3749.0.67	152,0	85	48,5	36,0	30	80	153,5	37	20	G 1/8"	3,44	
DR 30	86.8200.5.30	86.8200.5.30												
G 1 1/4"	193.3747.0.68	193.3749.0.68	164,5	85	48,5	36,0	30	80	153,5	37	20	G 1/8"	4,63	
DR 30	86.8200.5.30	86.8200.5.30												
G 1 1/2"	193.3747.0.69	193.3749.0.69	196,0	102	50,5	42,5	30	80	203,5	37	20	G 1/8"	7,25	
DR 60	86.8200.5.60	86.8200.5.60												
G 2"	193.3747.0.71	193.3749.0.71	207,0	102	50,5	42,5	30	80	203,5	37	20	G 1/8"	11,05	
DR 60	86.8200.5.60	86.8200.5.60												

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- single acting -
spring closing spring opening

Diameter	Article-No.:		Actuator design up to 10 bar										Air connection	Weight (kg)
	L-Bore	T-Bore	H4 (mm)	D (mm)	B1 (mm)	B2 (mm)	J (mm)	I (mm)	K (mm)	F (mm)	E (mm)			
G 3/8"	193.3748.0.62	193.3750.0.62												
SC 30	86.8201.5.30-10	86.8201.5.30-10	135,5	85	48,5	36,0	30	80	153,5	37	20	G 1/8"	2,33	
	86.8202.5.30-08	86.8202.5.30-08											2,29	
G 1/2"	193.3748.0.63	193.3750.0.63												
SC 30	86.8201.5.30-10	86.8201.5.30-10	137,5	85	48,5	36,0	30	80	153,5	37	20	G 1/8"	2,46	
	86.8202.5.30-08	86.8202.5.30-08											2,42	
G 3/4"	193.3748.0.65	193.3750.0.65												
SC 60	86.8201.5.60-10	86.8201.5.60-10	163,5	102	50,5	42,5	30	80	203,5	37	20	G 1/8"	4,08	
	86.8202.5.60-10	86.8202.5.60-10												
G 1"	193.3747.0.67	193.3749.0.67												
SC 60	86.8201.5.60-10	86.8201.5.60-10	169,0	102	50,5	42,5	30	80	203,5	37	20	G 1/8"	4,81	
	86.8202.5.60-10	86.8202.5.60-10												
G 1 1/4"	193.3747.0.68	193.3749.0.68												
SC 60	86.8201.5.60-10	86.8201.5.60-10	181,5	102	50,5	42,5	30	80	203,5	37	20	G 1/8"	5,73	
	86.8202.5.60-10	86.8202.5.60-10												
G 1 1/2"	193.3747.0.69	193.3749.0.69												
SC 100	86.8201.5.100-11	86.8201.5.100-11	209,0	115	56,5	49,5	30	80	241,0	37	20	G 1/8"	8,94	
	86.8202.5.100-08	86.8202.5.100-08											8,79	
G 2"	193.3747.0.71	193.3749.0.71												
SC 150	86.8201.5.150-11	86.8201.5.150-11	232,0	127	63,0	55,5	30	80	259,0	37	20	G 1/4"	14,29	
	86.8202.5.150-08	86.8202.5.150-08											14,08	

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