

Universal Pneumatic

MOTORIZED BALL VALVES

USE

Universal Pneumatic motorized valve has its peculiar use in interception and regulation of:

- **systems using alternative energies**
- **industrial systems in general using hot and cold fluids**
- **automation systems in general**



Servocontrol

Following versions of **Universal Pneumatic** servocontrol are available:

- **SPRING RETURN** type it opens the valve by letting compressed air into the delivery chamber and it closes it automatically bringing it at atmospheric pressure.
(see working scheme)
- **DOUBLE RETURN** type it opens the valve by letting compressed air into the delivery chamber and it closes it by forcing the compressed air into the return chamber.
(see working scheme)

ACCESSORIES ON REQUEST

- solenoid control valve
- micro limit-switches box
- micro limit-switches
- cams and position indicators
- inductive limit-switches
- position indicators kit
- manual override lever

SERVOCONTROL TECHNICAL FEATURES

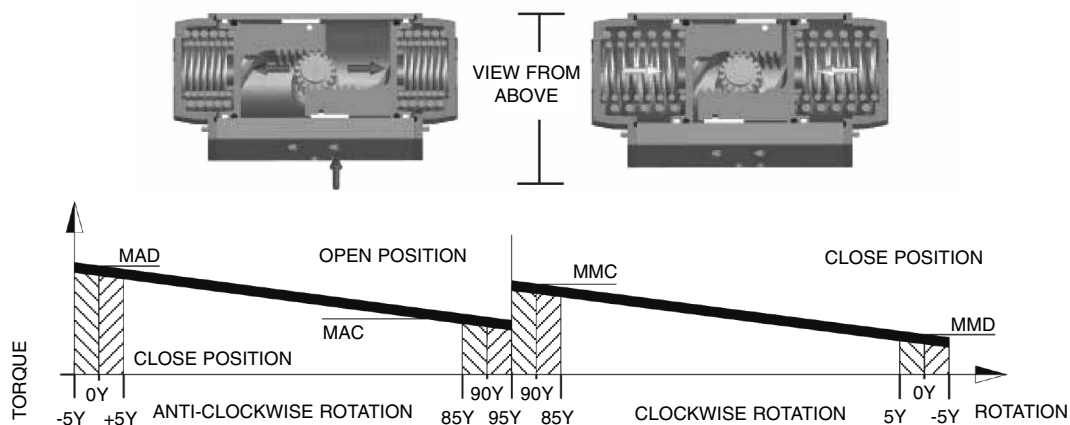
- max. working pressure: 10 bar
- working environment temperature: min. -20°C, max. +85°C
- rotation: 90°



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SPRING RETURN **servocontrol** WORKING SCHEME



Please look at the diagram above.

Even with a constant feed pressure the servocontrol has, in opening phase, a decreasing pull-out torque which is proportional to the opening degree.

This decrease is due to the fact that the springs deform themselves and absorb potential energy of elasticity. This stored energy will be available in closing phase. It's during this second stage indeed that, without any external energy supply, the springs release themselves and work.

The actuator torque is characterized by 4 fundamental values:

Opening rotation:

MAD: actuator torque with released springs

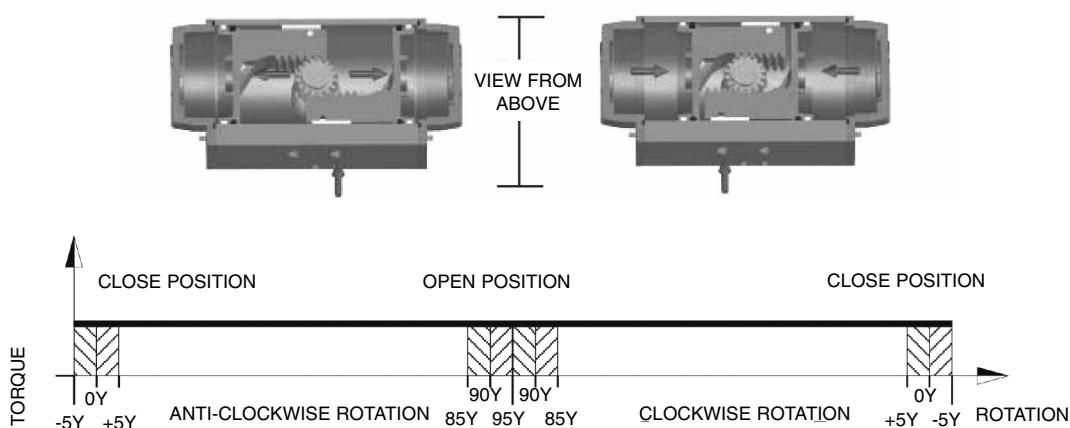
MAC: actuator torque with compressed springs

Closing rotation:

MMC: compressed springs torque

MMD: released springs torque

DOUBLE RETURN **servocontrol** WORKING SCHEME

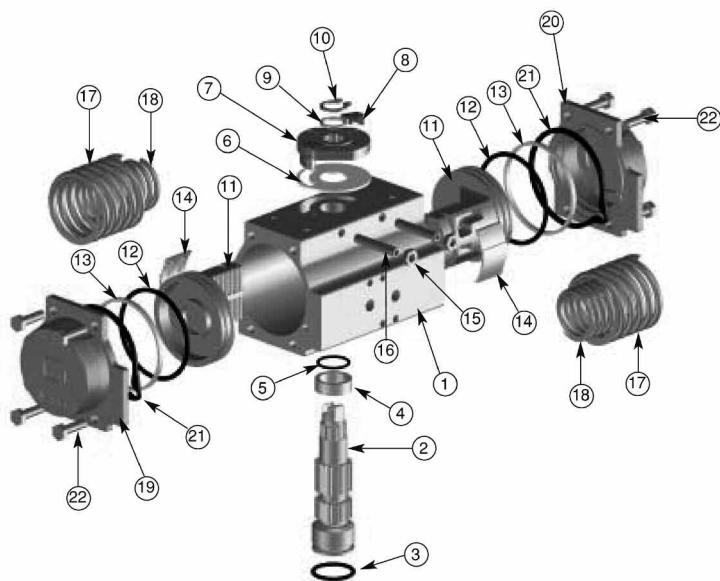


Unlike the spring return model, this actuator is characterized by constant and equal pull-out torque in both moving stages. As the servocontrol does not have return springs, both the open and close stages derive only from the feed pressure.



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USED MATERIAL FOR SERVOCONTROL

1 BODY	EXTRUDED ALUMINIUM
2 EXPLOSION-PROOF PINION	STEEL
3 PINION UNDER O-RING	NBR SHORE 70
4 PINION UPPER O-RING	NBR SHORE 70
5 PINION SPACER RING	P.T.F.E. (TEFLON®) 15% GRAPHITE
6 PINION SEEGER	STEEL
7 POSITION INDICATOR	DIE CAST ALUMINIUM
8 INDICATING ARROW	POLYAMIDE PA6
9 INDICATOR O-RING	NBR SHORE 70
10 PINION THRUST BEARING RING	P.T.F.E. (TEFLON®) 15% GRAPHITE
11 PISTON	DIE CAST ALUMINIUM
12 SEAL	NBR SHORE 70
13 ELASTIC BAND	STEEL
14 PRESSURE REGULATOR	STAINLESS STEEL
15 REGULATION-BLOCKING NUT	STEEL
16 LOCKING PIN	STEEL
17 EXTERNAL SPRING	STEEL
18 INTERNAL SPRING	STEEL
19 LEFT CAP	DIE CAST ALUMINIUM
20 RIGHT CAP	DIE CAST ALUMINIUM
21 CAPS O-RING	NBR SHORE 70
22 CAPS CLOSING SCREW	STAINLESS STEEL

Body valve

Ball shutter assures a better hydraulic seal and reduces charge loss.
The body valve can be fitted without any differences as to the fluid sense.



2 WAY • TOTAL PASSAGE • BRASS
 Ø 1/4" • 3/8" • 1/2" • 3/4" • 1" • 1 1/4" • 1 1/2" •
 2" • 2 1/2" • 3" • 4"



2 WAY • TOTAL PASSAGE • AISI 316
 Ø 1/2" • 3/4" • 1" • 1 1/4" • 1 1/2" • 2"

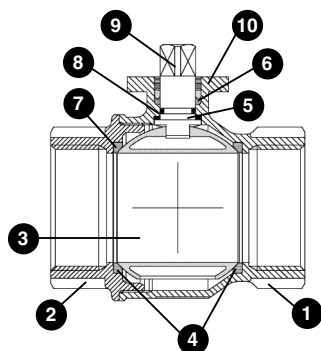


FLANGED BALL
 2 WAY • TOTAL PASSAGE
 DN 25 • 32 • 40 • 50 • 65 • 80 • 100 •
 125 • 150 • 200



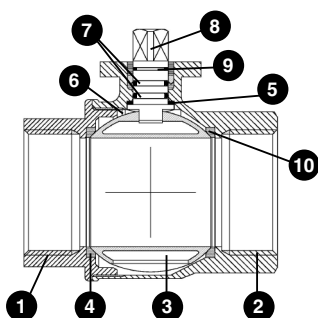
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MOTORIZED BALL VALVES



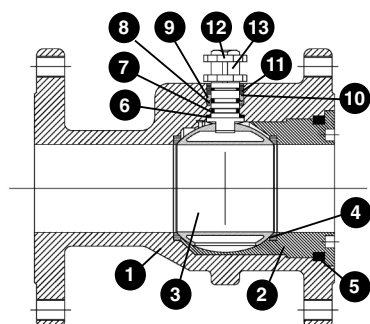
USED MATERIAL FOR 2 WAY - ISO 5211 BODY VALVE

1	BODY	BRASS CW617N UNI EN 12165
2	COUPLING	BRASS CW617N UNI EN 12165
3	SPHERE	BRASS CW617N UNI EN 12165
4	SPHERE GASKET	P.T.F.E. (TEFLON®)
5	ANTI-FRICTION GASKET	P.T.F.E. (TEFLON®)
6	ROD GASKET	P.T.F.E. (TEFLON®)
7	O-RING	FKM VITON®
8	O-RING	FKM VITON®
9	CONTROL ROD	BRASS CW617N UNI EN 12165
10	ISO 5211 ADAPTOR	BRASS CW617N UNI EN 12165



USED MATERIAL FOR 2 WAY - AISI 316 BODY VALVE

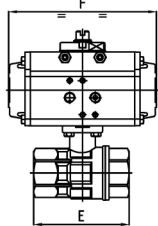
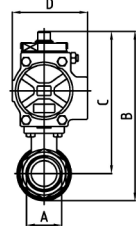
1	BODY	CF8M
2	COUPLING	CF8M
3	SPHERE	INOX AISI 316
4	SPHERE GASKET	P.T.F.E. (TEFLON®)
5	GASKET	P.T.F.E. (TEFLON®)
6	ROD WASHER	P.T.F.E. (TEFLON®)
7	O-RING	FKM VITON®
8	CONTROL ROD	INOX AISI 316
9	ROD GASKET	P.T.F.E. (TEFLON®)
10	O-RING	FKM VITON®



USED MATERIAL FOR 2 WAY - FLANGED BALL BODY VALVE

1	BODY	G250
2	GHIERA	ASTM A105
3	SPHERE	CW617N
4	SPHERE GASKET	P.T.F.E. (TEFLON®)
5	O-RING	BUNA
6	ROD WASHER	P.T.F.E. (TEFLON®)
7	O-RING	BUNA
8	ROD GASKET	P.T.F.E. (TEFLON®)
9	GASKET BUSH	AVP-9SMNPB36
10	HALF TURN WASHER	INOX AISI 430 (DN25-50)
11	CUP SPRING	UNI 3545
12	NUT	UNI 5771
13	ROD	INOX AISI 304

OVERALL DIMENSIONS

SPRING RETURN ACTUATOR		DN	A	B	C	D	E	F
		8	1/4"	140	123	71	67	140
		10	3/8"	140	123	71	67	140
		15	1/2"	140	123	71	67	140
		20	3/4"	142	125	71	76	140
		25	1"	160	135	71	90	140
		32	1 1/4"	168	139	71	102	140
		40	1 1/2"	201	165	81	114	162
		50	2"	220	174	81	138	162
		65	2 1/2"	272	216	106	157	238
		80	3"	294	227	106	188	238
		100	4"	344	261	123	225	272

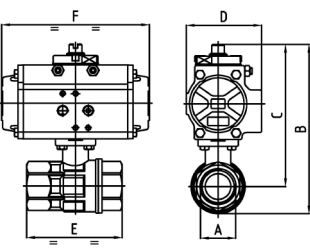
2 Way
BRASS

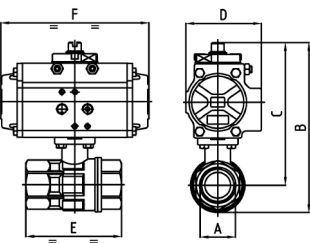


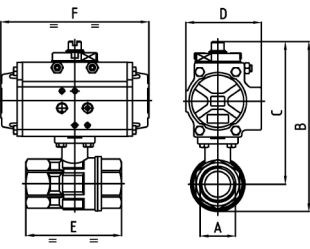
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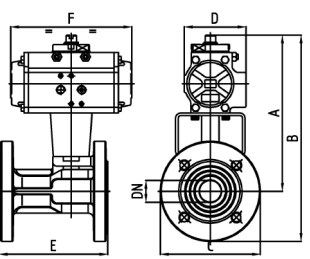
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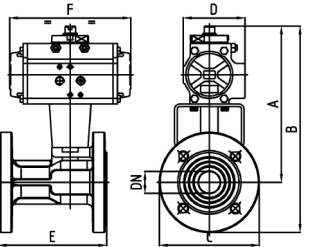
OVERALL DIMENSIONS

DOUBLE ACTING ACTUATOR		DN	A	B	C	D	E	F
	2 Way BRASS	8	1/4"	115	98	45	67	110
		10	3/8"	115	98	45	67	110
		15	1/2"	115	98	45	67	110
		20	3/4"	120	100	45	76	110
		25	1"	135	111	45	90	110
		32	1 1/4"	144	114	45	102	110
		40	1 1/2"	190	154	71	114	140
		50	2"	209	163	71	138	140
		65	2 1/2"	244	188	81	157	162
		80	3"	266	199	81	188	162
100	4"	331	248	106	225	238		

SPRING RETURN ACTUATOR		DN	A	B	C	D	E	F
	2 Way AISI 316	15	1/2"	140	122	71	67	140
		20	3/4"	145	124	71	78	140
		25	1"	160	134	71	90	140
		32	1 1/4"	170	138	71	100	140
		40	1 1/2"	202	164	81	112	162
		50	2"	222	173	81	135	162

DOUBLE ACTING ACTUATOR		DN	A	B	C	D	E	F
	2 Way AISI 316	15	1/2"	115	98	45	67	110
		20	3/4"	121	100	45	78	110
		25	1"	136	110	45	90	110
		32	1 1/4"	146	113	45	100	110
		40	1 1/2"	191	153	71	112	140
		50	2"	211	162	71	135	140

SPRING RETURN ACTUATOR		DN	A	B	C	D	E	F
	2 Way FLANGED BALL	25	191	248	115	81	125	162
		32	197	267	140	81	130	162
		40	243	318	150	106	140	238
		50	263	345	165	123	150	272
		65	327	419	185	137	170	328
		80	350	450	200	148	180	366
		100	368	478	220	148	190	366
		125	425	550	250	187	200	522
		150	499	642	285	218	210	575
		200	541	711	340	218	400	575

DOUBLE ACTING ACTUATOR		DN	A	B	C	D	E	F
	2 Way FLANGED BALL	25	179	237	115	71	125	140
		32	186	256	140	71	130	140
		40	215	290	150	81	140	162
		50	238	321	165	95	150	204
		65	264	356	185	106	170	238
		80	275	375	200	106	180	238
		100	326	436	220	123	190	272
		125	379	504	250	137	200	328
		150	414	556	285	148	210	366
		200	490	660	340	187	400	522



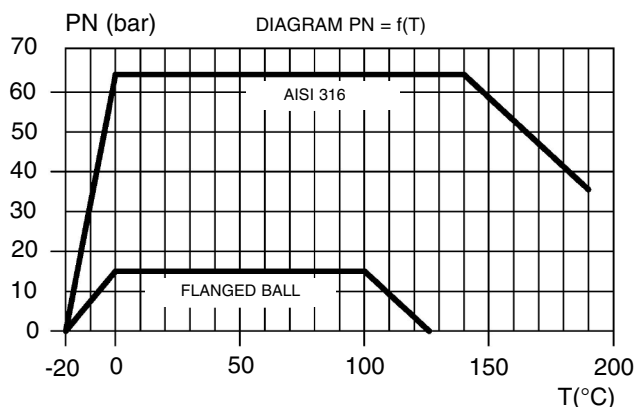
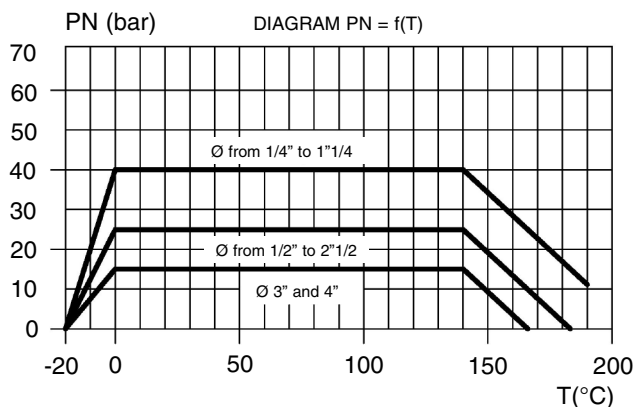
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FLUID MECHANICAL CHARACTERISTICS

Kv (m³/h with $\Delta p = 100\text{kPa} = 1\text{bar}$)

MODEL	Ø	Kv (m ³ /h)
2 WAY BRASS	1/4"	5,4
	3/8"	6
	1/2"	16,3
	3/4"	29,5
	1"	43
	1"1/4	89
	1"1/2	230
	2"	265
	2"1/2	540
	3"	873
2 WAY AISI 316	4"	1390
	1/2"	16,3
	3/4"	29,5
	1"	43
	1"1/4	89
2 WAY FLANGED BALL	1"1/2	230
	2"	265
	1"	43
	1"1/4	89
	1"1/2	230
	2"	265
	2"1/2	540
	3"	873
4"	1390	
	5"	1707
	6"	2024
	8"	2720



PRESSURE

	2 WAY BRASS		2 WAY AISI 316	2 WAY FLANGED BALL
	Ø from 1/4" to 1"1/4	Ø from 1/2" to 2"1/2	Ø 3" - 4"	
• Nominal working pressure (bar)	40	25	16	16
• Working max differential (bar)	16	16	16	16

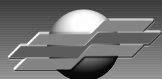
FLUIDS Usable fluids

Water and fluids compatible with EPDM® and TEFLON® • Other fluids on request

* TEMPERATURES

	2 WAY BRASS	2 WAY AISI 316	2 WAY FLANGED BALL
• Minimum	-20°C	-20°C	-20°C
• Maximum	+160°C	+160°C	+120°C

* Higher temperatures on request



HYDROTHERMIC SYSTEMS
COMPARATO NELLO SRL

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