

702-703 VALVE WITH AP PNEUMATIC ACTUATOR

FEATURES

The 702+AP ball valve is designed for the automatic opening / closing of pipes with non-loaded industrial fluids, up to a pressure of 100 bar, and up to 40 bar for the flanged 703s. The 3-part tie-bolt or embedded pin construction with double-sealing, antistatic device and fire safety device enables it to be used in the oil and gas industries. It is a full-bore, fire safe, EC- and ATEX-certified valve. The ISO 5211 mounting pad allows the actuator to be easily assembled. The pneumatic motorisation is available in double and spring-return with numerous options.

AVAILABLE MODELS

702: carbon steel body.

703: stainless steel body.

1/4" to 2" diameters.

Connections: G threaded, and NPT, SW and BW to be welded.

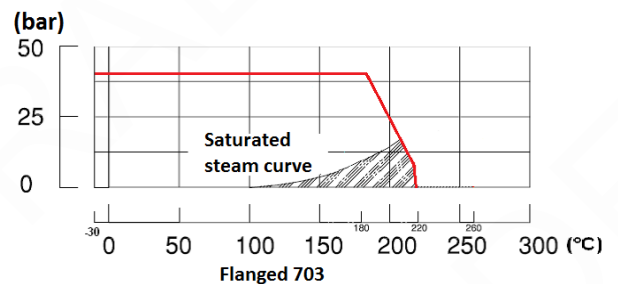
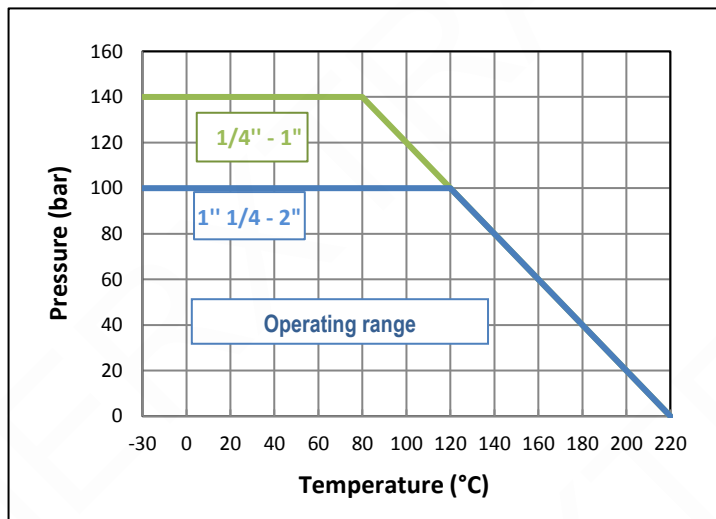
Flanged 703: DN15 to DN50, R.F. PN40 flanges

Double and spring-return actuators.



LIMITS OF USE

Fluid pressure: PS	<p><u>1/4" to 1"</u>: 140 bar (20°C)</p> <p><u>1" 1/4 to 2"</u>: 100 bar</p> <p>DN15 to DN50: 40 bar</p>
Fluid temperature: WT	<p>Steel: -20°C / +218°C</p> <p>Stainless steel: -30°C / +218°C</p>
Ambient temperature	-20°C / +80°C
Motor compressed air	mini 4 bar / maxi 10 bar

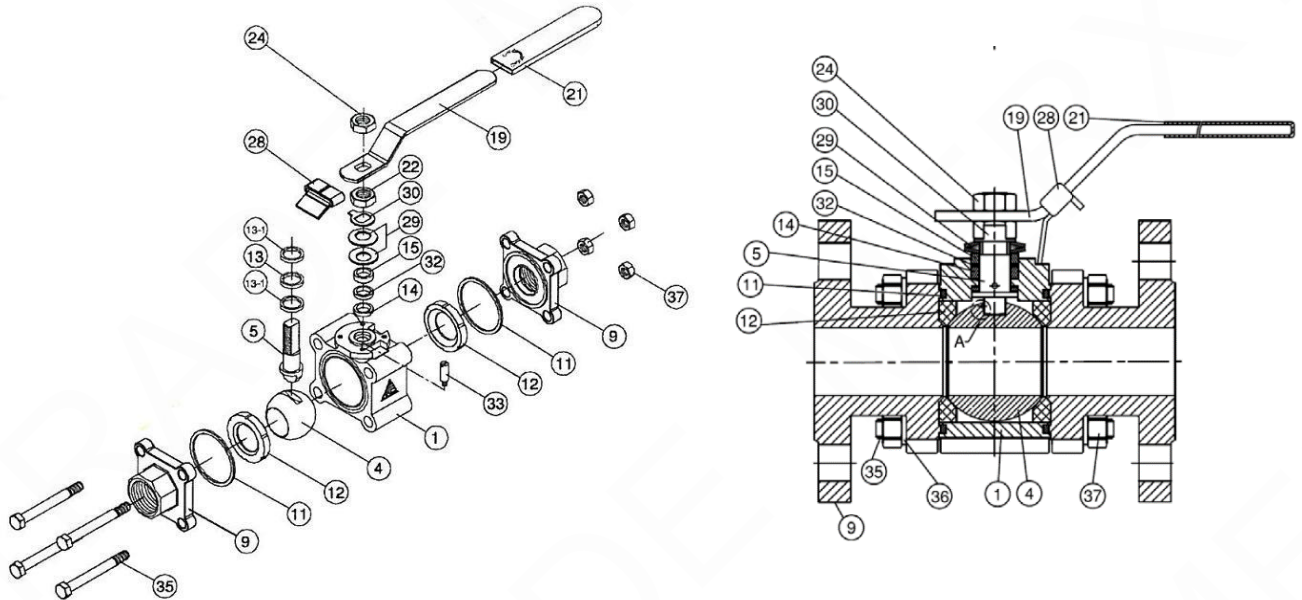


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DIRECTIVES AND MANUFACTURING STANDARDS

OBJECT	Standard	ON	OBJECT	Standard
Pressure Equipment Directive 2014/68/EC	1/4" to 1": not subject		Final test	API 598
	1"1/4 to 2': category III	TÜV 0035	Material certificate	NKS 10204
Design	ANSI B16.34		Fire safe	API 607
Size	EN 12516-1		Connection Motorisation	ISO 5211:
Steel grades	EN 1503-2		Actuator pilot connection	NAMUR
G Connection	ISO 228-1		NPT connection	ANSI B1.20
ATEX Directive	II 2G/D Tx zones 1,2,21 and 22		Switch box connection	VDI/VDE 3845
	EN 13463-1		SIL 3 level (the actuator alone)	NKS 61508

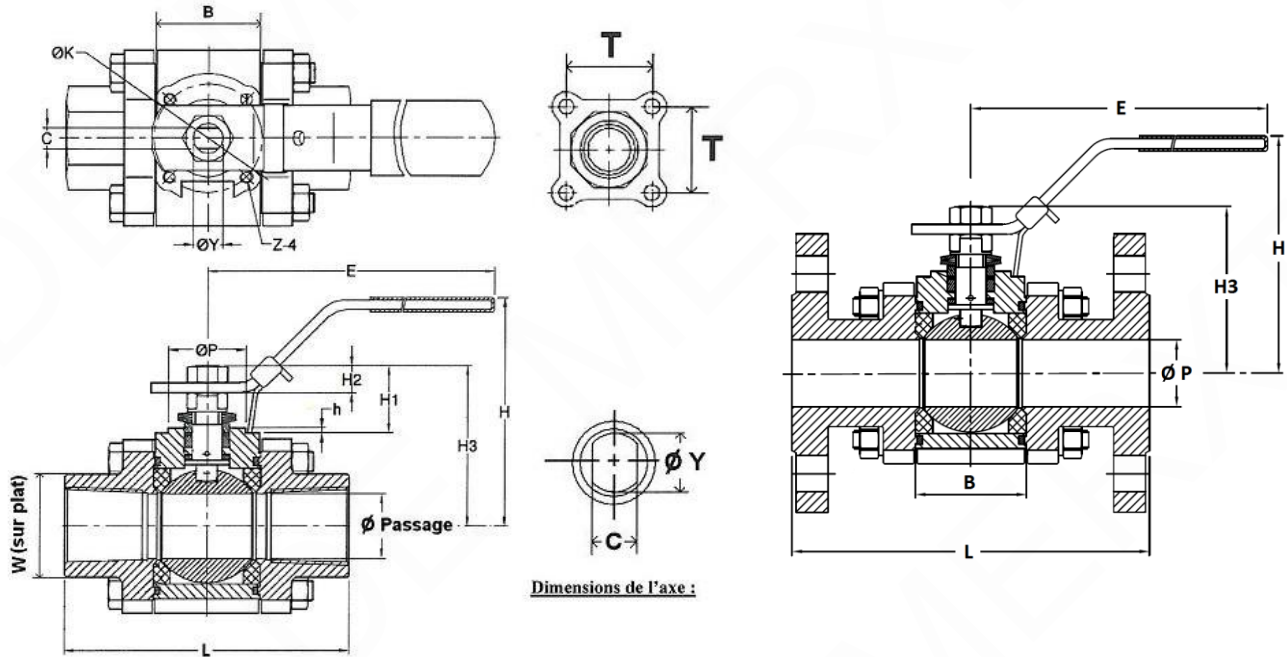
CONSTRUCTION



No.	Name	Steel	Stainless steel	No.	Name	Steel	Stainless steel
1	Body	ASTM A216 WCB	ASTM A351 CF8M	21	Handle sheath		PVC
4	Ball	ASTM A351 CF8M		22	CG nut		304 SS
5	Stem	A182 F 316 SS		24	Grip nut		304 SS
9	Ends	ASTM A216 WCB	ASTM A351 CF8M	28	Padlocking		304 SS
11	Body gasket	Graphite		29	Bellevile spring		301 SS
12	Seat	Loaded PTFE 15% graphoil		30	Lock washer		304 SS
13	Ring	Graphite		32	CG gasket		Loaded PTFE 15% graphoil
13.1	Ring	Loaded PTFE 15% graphoil		33	Pointer		304 SS
14	Packing gland	Graphite		35	Tie-bolt or pin		304 SS
15	Spacer	304 SS		37	Tie-bolt nut		304 SS
19	Handle	304 SS					

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DIMENSIONS (mm)



DN	1/4"	3/8"	1/2"	3/4"	1"	1"1/4	1"1/2	2"
ØD	10	10	15	20	25	32	38	50
L	64.8	64.8	72.5	85.4	105.3	111	127.3	145
L (BW)	64.8	64.8	75	90	110	115	130	145
L Flanges	/	/	130	150	160	180	200	230
B	19.6	19.6	24	31	40.7	47.7	55.6	70
E	134	134	134	134	170	170	207	215
H	64	64	72	77	83	88	104	133
H1	7.4	7.4	16.1	18.4	25.2	24.2	33.4	28.1
H2	6.1	6.1	7.3	9.1	11.6	9.6	15	16
H3	37.2	37.2	45.1	51.4	61.4	64.2	79	99.4
h	0.5	0.5	2	2	2	2	2.2	1.5
C	6.5	6.5	6.5	6.5	8	8	9.7	12
ØY	9.5	9.5	9.5	9.5	11.1	11.1	14.3	19
T	32	32	39	45	50	58	68	82
W	29.5	29.5	30	36	44.5	54	60	73.2
ØK	36	36	36	36	42	42	50	70
ØP	25	25	25	25	30	30	35	55
Z-4	M5	M5	M5	M5	M5	M5	M6	M8
Weight (kg)	0.7	0.7	0.85	01:37	2	2.78	04:08	6.80
Flange weight	/	/	2.2	3.3	4.5	6.5	8.1	13

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AP PNEUMATIC MOTORISATION

The ALPHAIR motorisation proposed as standard comprises:

- rack and pinion actuator of anodised aluminium.
- a safety coefficient of 1.3 minimum compared to the nominal torque of the valve.
- air non-lubricated dry motor.
- an upstream / downstream pressure difference $\Delta P=10$ bar max.

The actuator mount is a yoke + stainless steel driver according to EN 15081.

ACTUATOR DESIGN FOR 6 BAR MOTOR AIR

DN	Double-effect	V (litres)	Time (s)*	Single-effect	V (litres)	Time (s)*
1/4"	AP 50	0.23	1	APS 50/6	0.23	1
3/8"	AP 50	0.23	1	APS 50/6	0.23	1
1/2"	AP 50	0.23	1	APS 63/6	0.45	1
3/4"	AP 50	0.23	1	APS 63/6	0.45	1
1"	AP 50	0.23	1	APS 75/6	0.61	1
1" 1/4	AP 63	0.45	1	APS 75/6	0.61	1
1" 1/2	AP 63	0.45	1	APS 85/6	0.98	1
2"	AP 75	0.61	1	APS 100/6	1.80	2

*indicative time of the no-load actuator for opening or closing.

ACTUATOR DESIGN FOR 5 BAR MOTOR AIR

DN	Double-effect	V (litres)	Time (s)*	Single-effect	V (litres)	Time (s)*
1/4"	AP 50	0.23	1	APS 75/5	0.61	1
3/8"	AP 50	0.23	1	APS 75/5	0.61	1
1/2"	AP 63	0.45	1	APS 75/5	0.61	1
3/4"	AP 63	0.45	1	APS 75/5	0.61	1
1"	AP 75	0.61	1	APS 85/5	0.98	2
1" 1/4	AP 75	0.61	1	APS100/5	1.80	2
1" 1/2	AP 75	0.61	1	APS100/5	1.80	2
2"	AP 85	0.98	2	APS 115/5	2.80	2

*indicative time of the no-load actuator for opening or closing.

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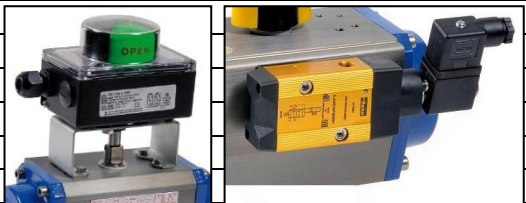
ACTUATOR DESIGN FOR 4 BAR MOTOR AIR

DN	Double-effect	V (litres)	Time (s)*	Single-effect	V (litres)	Time (s)*
1/4"	AP 63	0.45	1	APS 75/4	0.61	1
3/8"	AP 63	0.45	1	APS 75/4	0.61	1
1/2"	AP 63	0.45	1	APS 75/4	0.61	1
3/4"	AP 63	0.45	1	APS 85/4	0.98	2
1"	AP 75	0.61	1	APS 85/4	0.98	2
1" 1/4	AP 75	0.61	1	APS100/4	1.80	2
1" 1/2	AP 75	0.61	1	APS 115/4	2.80	2
2"	AP 85	0.98	2	APS 115/4	2.80	2

*indicative time of the no-load actuator for opening or closing.

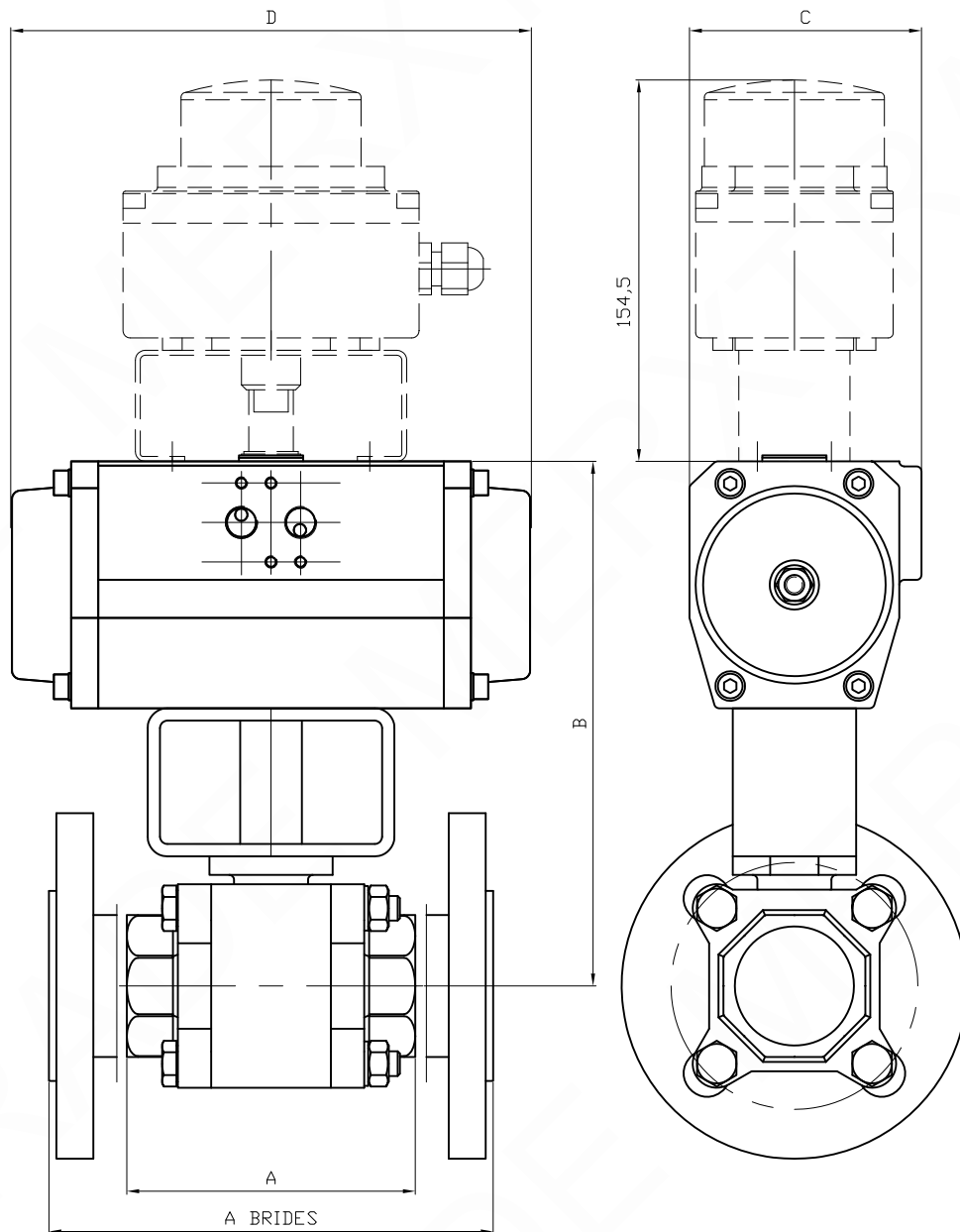
MOTORISATION OPTIONS

There are many options, so please contact our sales service for more information on these:

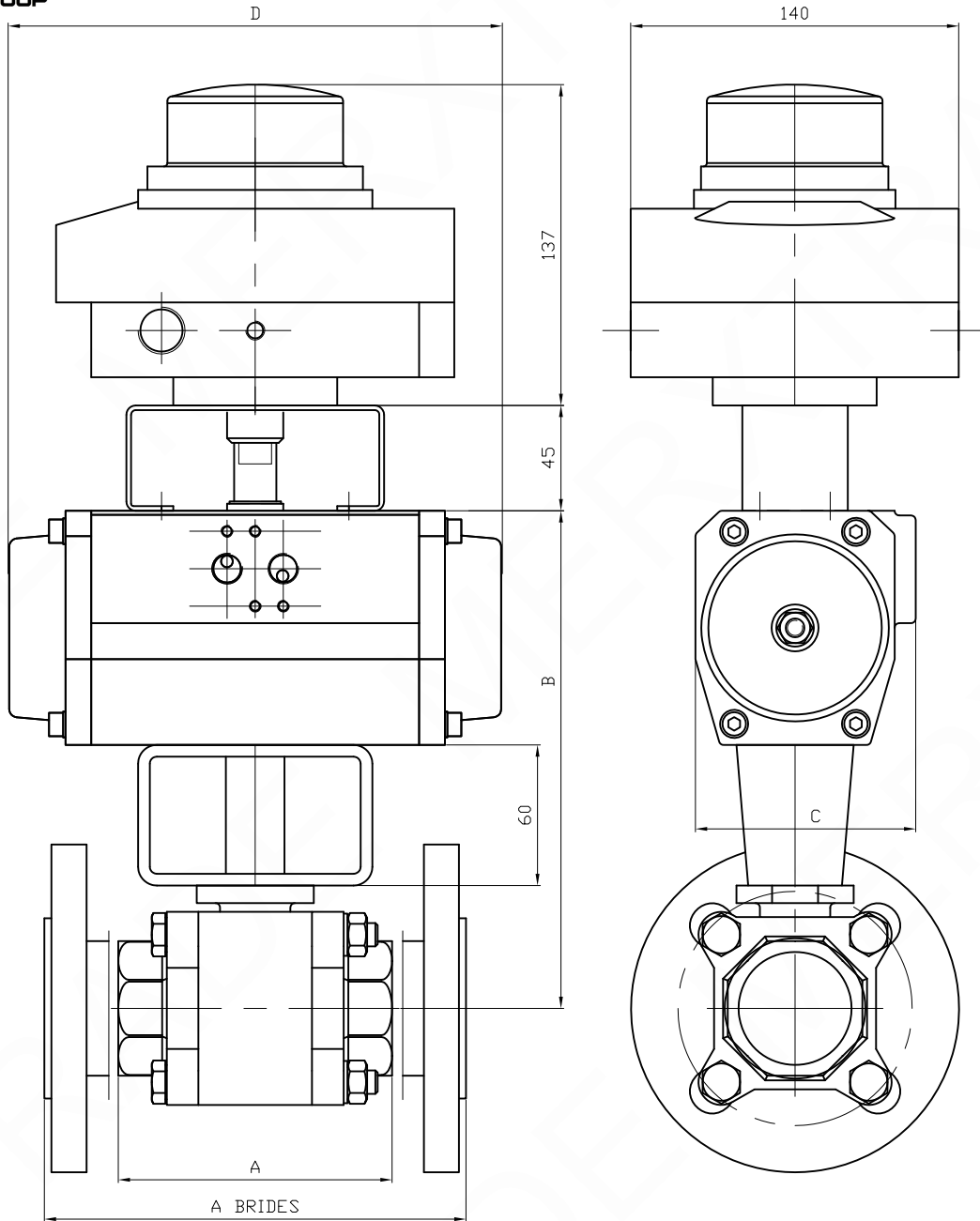
1	actuators dimensioned for a compressed air pressure of 3 bar	
2	actuator dimensioned for an upstream / downstream pressure difference ΔP greater than 10 bar	
3	actuator with special coatings, stainless steel actuator	
4	Actuator for very low (-60°C) or very high (+150°C) ambient temperatures.	
5	Automatic safety valve with a reinforced safety coefficient and closing time < 1s,	
6	thermal dispersion yoke for high temperature fluids	
7	100mm high steel height adjustment for installing heat-insulation	
8	special version for ATEX zones	
9	manual override with declutchable gear box	
10	compressed air filter regulator	
11	All types of piloting solenoid valves	
12	all types of switch boxes	
13	all types of positioner	
14	quick exhaust	
15	flow-rate limiters - exhaust brakes	
16	air lock	

INSTALLATION IN AN ATEX ZONE

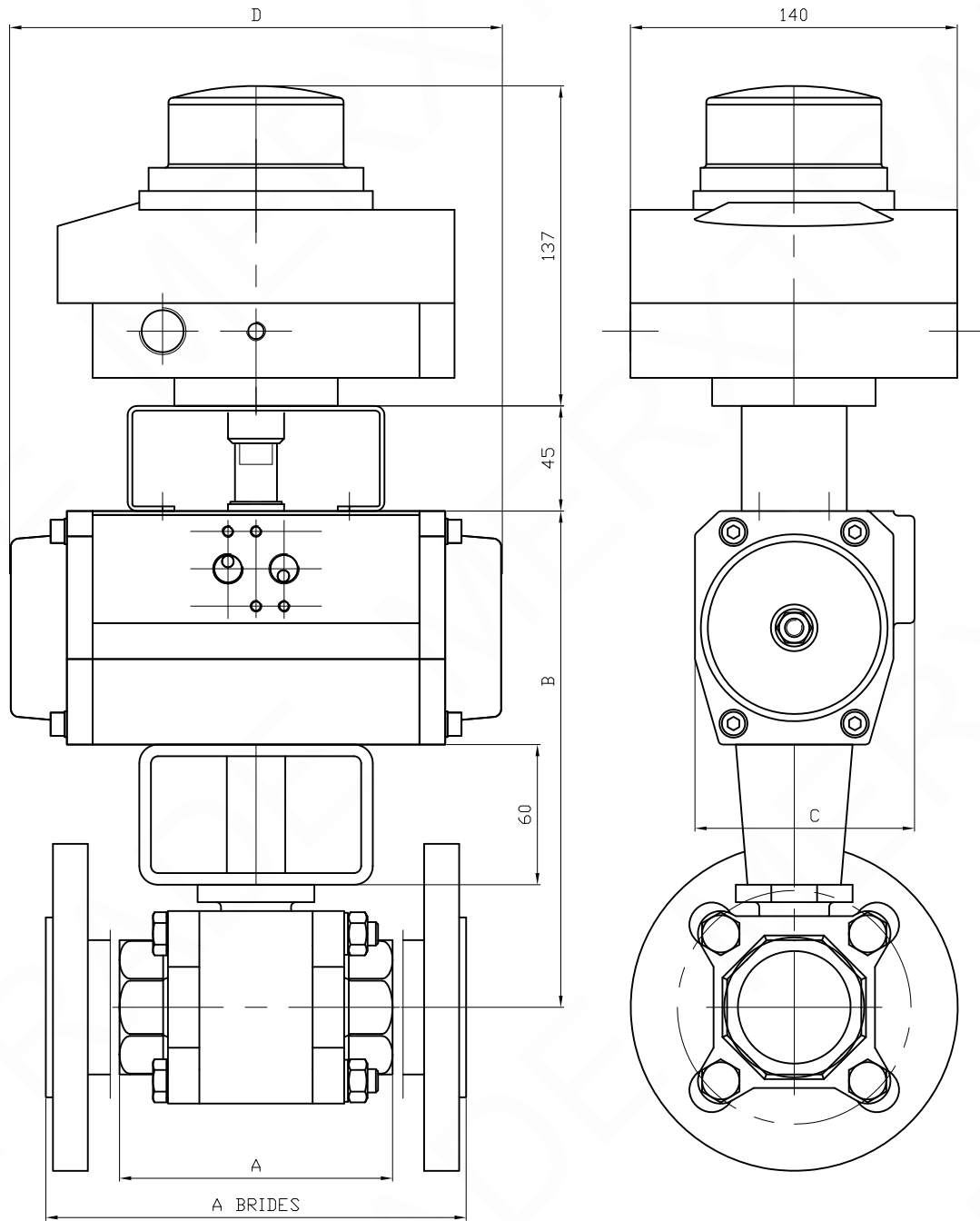
For 702-703+AP automatic valves to be installed in ATEX 1, 2, 21 or 22 zones, this has to be specified when ordering. Our services will check of the assembly, the installation of an earthing braid, and will issue an assembly certificate. Our authorised technicians carry out these operations in the workshop. Please contact us. The special assembly instructions for valves must also be followed.



DN	1/4" - 3/8"		1/2"		3/4"		1"		1 1/4"		1 1/2"		2"	
ALPHAIR	50 DE	50 SE	50 DE	63 SE	50 DE	63 SE	50 DE	75 SE	63 DE	75 SE	63 DE	85 SE	75 DE	100 SE
A	65		72		86		105		111		127		145	
A Brides	/		130		150		160		180		200		230	
B	156.8	156	172	160	176	163.2	196.2	183	200	188.6	215.6	231.3	256.3	
C	75	75	86	75	86	75	94	75	94	86	104	94	120	
D	138	138	156	138	156	138	210	156	210	156	228	210	281	
KG	2.14	2.29	3.02	2.8	3.54	3.44	5.74	4.75	6.52	6.05	9.3	10.7	13.9	
KG Brides	/		3.93	4.62	5.1	5.72	6.23	8.5	8.72	10.6	10.4	13.6	16.8	20.84



DN	1/4"-3/8"		1/2"		3/4"		1"		1 1/4"		1 1/2"		2"	
ALPHAIR	50 DE	75 SE	63 DE	75 SE	63 DE	75 SE	75 DE	85 SE	75 DE	100 SE	75 DE	100 SE	85 DE	115 SE
A	65		72		86		105		111		127		145	
A Brides	/		130		150		160		180		200		230	
B	156.8	189.8	172	189	176	193	196.2	206.2	200	225	205.6	230.6	241.3	273.3
C	75	94	86	94	86	94	94	104	94	120	94	120	104	134
D	138	210	155.5	210	155.5	210	210	228	210	280.5	210	280.5	228	310
KG	2.14	4.44	2.82	4.59	3.34	5.11	5.27	7.20	6.05	9.97	7.35	11.27	11.37	17.47
KG Brides	/	/	4.17	5.94	5.27	7.04	7.77	9.7	9.77	13.7	11.37	15.3	17.57	23.67



DN	1/4"-3/8"		1/2"		3/4"		1"		1 1/4"		1 1/2"		2"	
ALPHAIR	63/4DE	75/4SE	63/4DE	75/4SE	63/4DE	85/4SE	75/4DE	85/4SE	75/4DE	100/4SE	75/4DE	115/4SE	85/4DE	115/4SE
A	65		72		86		105		111		127		145	
A Brides	/		130		150		160		180		200		230	
B	172.8	189.8	172	189	176	203	196.2	206.2	200	225	205.6	247.6	241.3	273.3
C	86	94	86	94	86	104	94	104	94	120	94	134	104	134
D	156	210	156	210	156	228	210	228	210	280.5	210	310	228	310
KG	2.67	4.44	2.82	4.59	3.34	6.57	5.27	7.20	6.05	9.97	7.35	14.75	11.37	17.47
KG Brides	/	/	4.17	5.94	5.27	8.5	7.77	9.7	9.77	13.7	11.37	18.77	17.57	23.67



Alpha



PNEUMATIC RACK & PINION ACTUATORS 90° - 120° - 180°

ALUMINIUM



JANUARY 2006

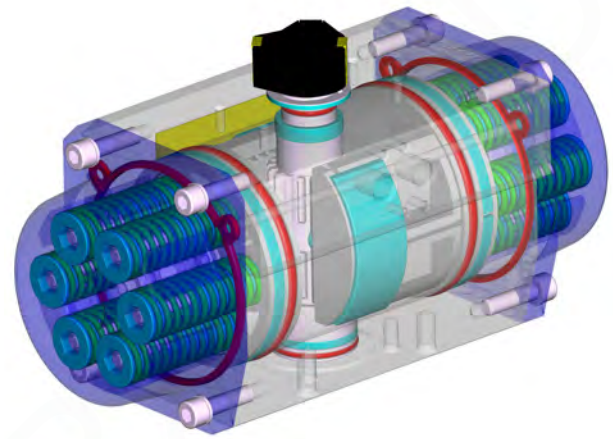
www.merxtrade.com

ALPHAIR pneumatic actuators are made by the best manufacture experience on design, material, machining, assembly.

The internal rotation adjusting system is ever free of side-loads on pistons, shaft and body at every feeding pressure.

HEAVY DUTY, MAXIMUM LIFETIME!

ALPHAIR pneumatic actuators are compact, heavy and reliable. Easy assembly/change on every mean of valve.



STANDARD VERSION FEATURES

- **ASTM 6063 extruded Aluminium Body**, inside surface finish Ra=0,4-0,6. 50 micron Hard Anodizing.
 - **ASTM B179 die-casted Aluminium alloy Pistons**, 15 micron Anodizing.
 - **ASTM B179 die-casted Aluminium alloy Covers**, painted with 60-80 micron polyester powder.
 - **Carbon steel Shaft**, 20 micron nickel-plated. Optional in Stainless Steel AISI 316 (A4).
 - Screws in Stainless Steel AISI 304 (A2).
 - Seals in nitrile nubber NBR. Optional HIGH Temperature = VITON. Optional LOW Temperature = SILICONE.
 - Bearings in low friction acetal resin LAT-LUB, easily replaceable for maintenance. Optional HIGH/LOW Temperature = PA 66.
 - Pre-compressed Spring Cartridges, easily replaceable for maintenance, 60-80 micron polyester painted.
 - Standard grease: Mollibdenum Bisulphide. Optional: special grease for HIGH/LOW Temperature.
 - Several special protections available for chemical, pharmaceutical, food and industrial environments.
- Double lower drilling for valve fastening and centering, according to **ISO 5211-DIN 3337 Standards**.
 - Double square lower female shaft key (starlike), according to **ISO 5211-DIN 3337 Standards** for assembly on valves with square key on line (0°) and diagonal key (45°).
 - Solenoid connections according to **NAMUR VDI\VDE-3845 Standards**.
 - Top drilling for accessories fastening, and upper shaft end according to **NAMUR VDI\VDE-3845 Standards**.
 - Position indicator on request, enabling switch-box assembly on top.
- Aluminium adhesive nameplates, with progressive serial number punched.
 - Lubrification carried out by the manufacturer, guaranteed for min. 1.000.000 operations.
 - Running test and 100% seal test carried out with electronic equipment and certification of each individual product.
 - Standard execution for temperatures from -20°C to +80°C (optional, special execution for extreme temperatures).
 - According to **ATEX-94-9-CEE Standard** for explosive environment; STANDARD version actuator: II 2GD c Tmax = 95°C.

AIR SUPPLY	TEMPERATURE RANGE	FEEDING PRESSURE	TURNING ROTATION RANGE
Dry or lubricated filtered compressed air.	Standard -20° +80°C (-4 +175°F)	8 bar/120 psi – CONTINUOUS 10 bar/142 psi - MAXIMUM	+/- 5°
	LOW Temperature -40° +80°C (-40 + 175°F) HIGH Temperature -20° +150°C (-4 + 300°F)		

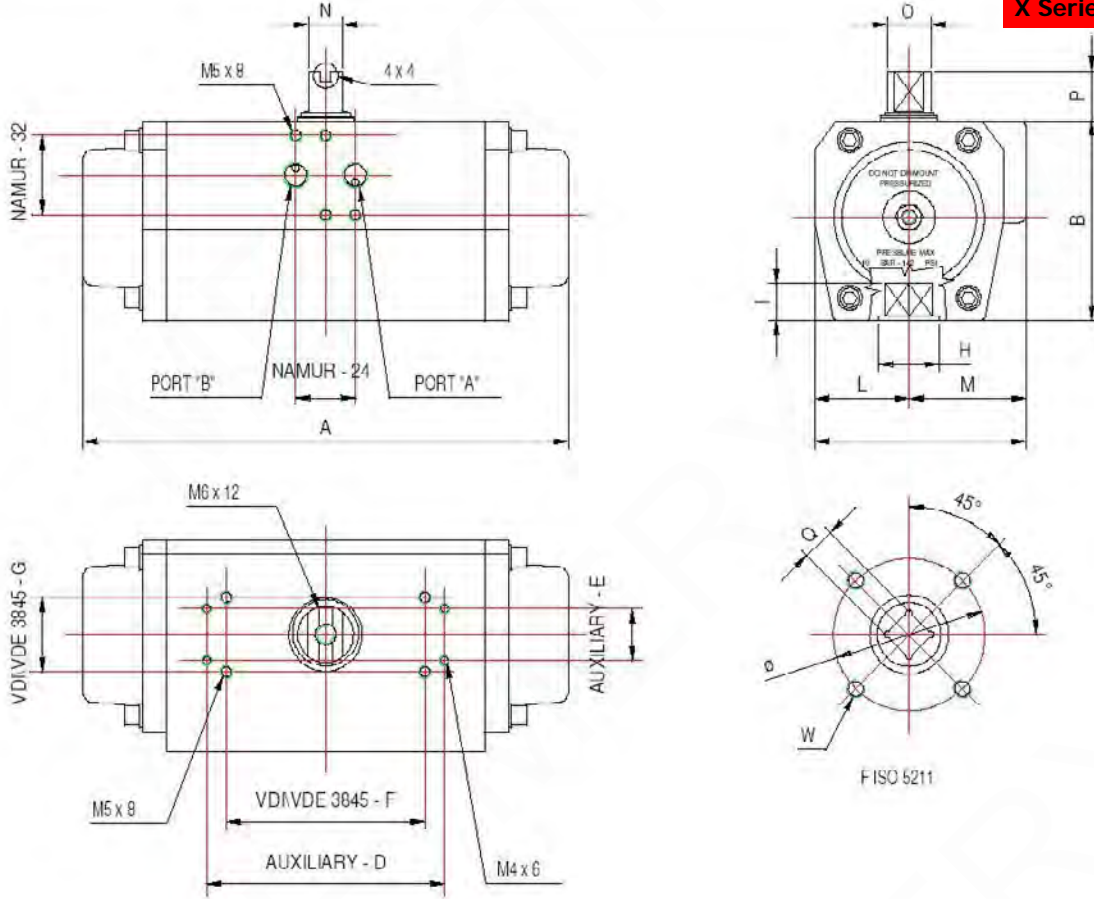
**I Series = 90°
 Y Series = 120°
 X Series = 180°**

DOUBLE ACTING TORQUE RATINGS IN Nm

TYPE	AIR SUPPLY IN BAR							
	3	4	5	6	7	8	9	10
AP 032	-	5,0	6,3	7,6	8,8	10,0	11,4	12,6
AP 042	6,5	8,7	10,9	13,0	15,2	17,3	19,5	21,7
AP 050	9,2	12,3	15,4	18,5	21,5	24,6	27,7	30,8
AP 063	16,5	22,0	27,5	33,0	38,5	44,0	49,5	55,0
AP 075	35,1	46,8	58,5	70,2	81,9	93,6	105,3	117,0
AP 085	53,4	71,2	89,0	106,9	124,7	142,4	160,3	178,1
AP 100	83,2	110,9	138,6	166,4	194,1	221,8	249,5	277,3
AP 115	137,2	183,0	228,7	274,5	320,2	366,0	411,7	457,5
AP 125	180,5	240,7	300,9	361,1	421,2	481,4	541,6	601,8

I Series = 90°

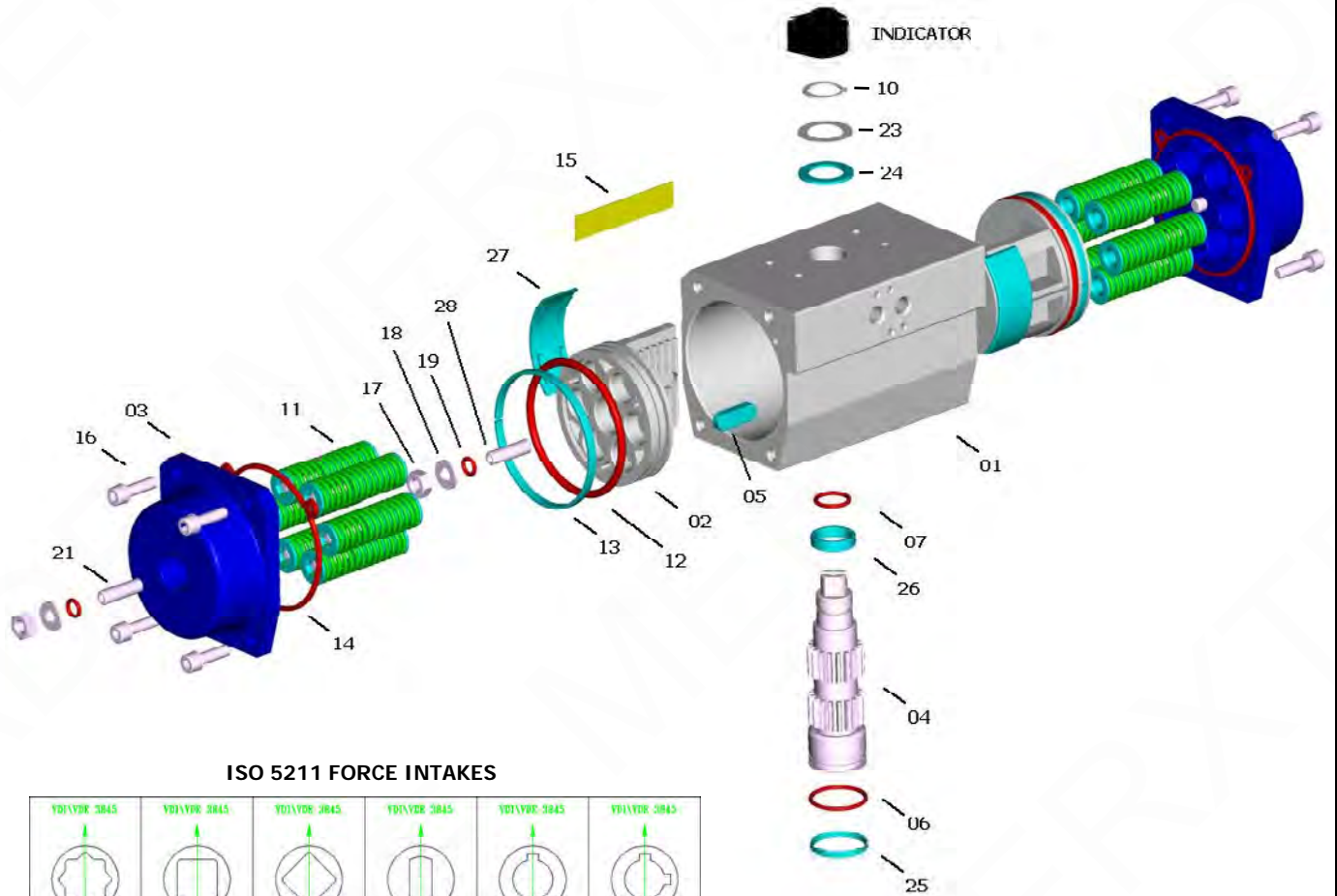
AP 145	260,1	346,8	433,5	520,2	606,9	693,6	780,3	867,0
AP 160	355,0	473,4	591,7	710,1	828,4	946,8	1065,1	1183,5
AP 180	479,0	638,6	798,3	958,0	1118,6	1277,3	1437,0	1597,6
AP 200	665,6	887,5	1109,4	1333,3	1553,1	1775,0	1996,9	2218,8
AP 240	1117,6	1490,2	1862,7	2235,3	2607,8	2980,4	3352,9	3725,4
AP 270	1617,6	2156,8	2696,0	3235,2	3774,4	4313,6	4852,8	5392,0
AP 330	2929,5	3906,0	4882,4	5858,9	6835,4	7811,9	8788,4	9764,9



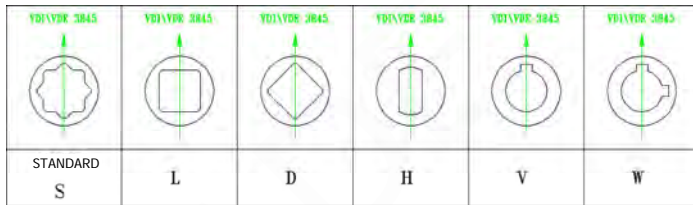
Standard feeding connection 1/2" GAS – NPT for AP 240, 270, 330
Special NAMUR plate on request

POSITION	TYPE																
	AP032	AP042	AP050	AP063	AP075	AP085	AP100	AP115	AP125	AP145	AP160	AP180	AP200	AP240	AP270	AP330	
A-90°	117	160	138	155,5	210	228	280,5	310	362	390	462	474	575	604	685	850	
A-120°	150	194	172	201	249	282	332	373	432	-	-	-	-	-	-	-	
A-180°	195	230	211	220	298	338	401	462	570	-	-	-	-	-	-	-	
B	45	57	67	83	100	110	125	142	155	175	196	220	240	298	332	414	
C	48	60,5	75	86	94	104	120	134	141	163	176	196	220	300	352	400	
AUXILIARY D x E	-			105 x 22				139 x 22					-				
VDI/VDE 3845 F x G	50 x 25		80 x 30						130 x 30								
L	22,5	27	33,5	38	42,5	49	55	63,5	69,5	80	88	98	110	150	166	190	
M	25,5	33,5	41,5	48	51,5	55	65	70,5	71,5	83						210	
Port A Port B DIN 259	1/8" GAS - NPT				1/4" GAS - NPT						1/2" GAS - NPT						
N x O	8 x 12			14 x 18				27 x 36				32 x 42		32 x 60		55 x 80	
P	20						30				50						
Q x I	9 x 10	9 x 10 11 x 13	9 x 10 11 x 13	9 x 10 11 x 13 14 x 16	11 x 13 14 x 16 17 x 20	14 x 16 17 x 20	17 x 20 22 x 25	17 x 20 22 x 25	17 x 20 22 x 25 27 x 30	22 x 25 27 x 30	22 x 25 27 x 30	27 x 30 36 x 39	27 x 30 36 x 39	36 x 39 46 x 50	36 x 39 46 x 50	46 x 50 55 x 60	
F ISO 5211	F03 F04	F04 F03/05	F03 F04 F03/05 F05	F04 F03/05 F05 F05/07	F04 F05/07	F05/07	F07/10 F5/7/10	F07/10	F07/10 F12	F10/12	F10/12	F10/12 F14	F10/12 F14	F14 F16	F14 F16	F16 F25	

POSITION	F ISO 5211											
	F03	F04	F03/05	F05	F05/07	F5/7/10	F07/10	F10/12	F12	F14	F16	F25
Ø (W)	36 (M5x8)	42 (M5x8)	36 (M5x8) 50 (M6x9)	50 (M6x9)	50 (M6x9) 70 (M8x12)	50 (M6x9) 70 (M8x12) 102 (M10x15)	70 (M8x12) 102 (M10x15)	102 (M10x15) 125 (M12x18)	125 (M12x18)	140 (M16x24)	165 (M20x30)	254 (M16x24)
H	25 excluded AP 032	30	25	35	35 (AP085=40)	40	55	AP145 = 70 AP160 = 75 AP180 = 85 AP200 = 85	75	100 (AP270=104)	130	200



ISO 5211 FORCE INTAKES




PART	QUANTITY	DESCRIPTION	MATERIAL	SPECIFICATION	PROTECTION
1	1	Body	Extruded aluminium alloy	ASTM 6063 T6	A - N - TF
2	2	Piston	Aluminium alloy	ASTM B179 - DIN1725/5	A
3	2	Cover	Aluminium alloy	ASTM B179 - DIN1725/5	N - V - TF
4	1	Shaft	Carbon steel optional S.S. AISI 316 (A4)	ASTM A105 optional S.S. AISI 316 (A4)	N
5 *	2	Antiejection key	Acetalic resin - PA66 - PA66		
6 *	1	Lower shaft O-Ring	NBR - Viton - Silicone		
7 *	1	Upper shaft O-Ring	NBR - Viton - Silicone		
10 *	1	Seeger ring	Carbon steel		N
11	0-12	Spring cartridge	Carbon steel, PA 66, S.S.	C-98	V
12 *	2	Piston O-Ring	NBR - Viton - Silicone		
13 *	2	Piston head bearing	Acetalic resin - PA66 - PA66		
14 *	2	Cover gasket	NBR - Viton - Silicone		
15	1	Nameplate	Aluminium		
16	8-16	Cover fastening screw	Stainless Steel	AISI 304 (A2)	
17	4	Nut	Stainless Steel	AISI 304 (A2)	
18	4	Washer	Stainless Steel	AISI 304 (A2)	
19 *	4	O-Ring	NBR - Viton - Silicone		
21	2	Cover dowel	Stainless Steel	AISI 304 (A2)	
23 *	1	Shaft thrust washer	Stainless Steel	AISI 304 (A2)	
24 *	1	Antifriction washer	Acetalic resin - PA66 - PA66		
25 *	1	Lower shaft pilot ring	Acetalic resin - PA66 - PA66		
26 *	1	Upper shaft pilot ring	Acetalic resin - PA66 - PA66		
27 *	2-4	Piston bearing	Acetalic resin - PA66 - PA66		
28	2	Piston dowel	Stainless Steel	AISI 304 (A2)	


* Standard NBR spare parts set - Special HIGH Temperatures VITON - Special LOW Temperatures SILICONE


Protection


A = Anodizing N = chemical Nickel-plating V = Painting TF = Anodizing+PTFE



	AV	DESCRIPTION				APPLICATION FIELD
		Body	Covers	Pistons	Shaft	
		standard	Hard Anodizing	Polyester painting	Anodizing	
Colour	Dark gray	Several available	Brown	Polished steel		
Thickness	50 µ	60/80 µ	15 µ	20 µ		

	NV	DESCRIPTION				APPLICATION FIELD
		Body	Covers	Pistons	Shaft	
			High phosphorous nickel-plating (12%)	Polyester painting	Anodizing	
Colour	Polished steel	Several available	Brown	Polished steel		
Thickness	20 µ	60/80 µ	15 µ	20 µ		

	NN	DESCRIPTION				APPLICATION FIELD
		Body	Covers	Pistons	Shaft	
			High phosphorous nickel-plating (12%)	High phosphorous nickel-plating (12%)	Anodizing	
Colour	Polished steel	Polished steel	Brown	Polished steel		
Thickness	20 µ	20 µ	15 µ	20 µ		

	TF TF	DESCRIPTION				APPLICATION FIELD
		Body	Covers	Pistons	Shaft	
			Hard Anodizing + PTFE coating	Anodizing + PTFE coating	Anodizing	
Colour	Blue	Blue	Brown	Polished steel		
Thickness	Anodizing 50 µ PTFE 15 µ	Anodizing 50 µ PTFE 15 µ	15 µ	20 µ		

HARD ANODIZING

Anodizing is an electrolytic process that produces anodic coating on aluminum, called alumine, with high thickness. Alumine is one of the most hard known materials, with resistance values up to 400-600 HV (45-65 HRC); properties and features of Hard Anodizing (alumine thickness 50 micron) are well know and appreciated both for mechanical and chemical resistance.

- > **Best friction and corrosion resistance, best surface hardness, good thermic and electrical insulation.**

ELECTROLESS NICKEL-PLATING

Chemical nickel-plating is an electroless coating process that gives nickel layers at extremely constant thickness also on sharp angles, blind-holes, threads and grooves recess. During the process, nickel is combined with phosphor at a percentage of 12% (high-phospor). The obtained surface hardness is about 400-480 HV (45-55 HRC).

- > **Best friction and corrosion resistance, best surface hardness, best external appearance similar to S.S., increased resistance to alcali and detergents in sanitary and food applications.**

POLYESTER PAINTING

Polyester painting is obtained throug powder coatings on polarized parts, by means of light differences in electrical potentials. After applications, parts are baked in order to polymerize and let the painting be spread to avoid micro-porosity. The best elasticity can be obtained at 60/80 micron thickness; a satisfactory adhesion can be assured by sandblasting or brushing, and by special degreasing baths of the rough pieces to be treated.

- > **Better corrosion resistance, protection against crashes, better external appearance and several available colours, resistance to chemicals.**

HARD ANODIZING + PTFE COATING

As further improvement of the hard anodizing on aluminium alloys, protective coating made of PTFE is used, known for its particular chemical and physical features. On these double treated surfaces, oxide hardness and low roughness (internal slipping parts) is summed to the chemical resistance and the excellent qualities as a thermic barrier of PTFE (external surfaces, subjected to corrosion).

- > **Best corrosion resistance, protection against high temperatures, crashes, extreme resistance to chemicals and in marine environment.**

AISI 316 (A4) STAINLESS STEEL SHAFT (OPTIONAL)

AISI 316 (A4) Stainless Steel shaft, with its great corrosion resistance, is recommended for special applications such as: marine and chemical environments, food and pharmaceutical industry, high temperature applications.

