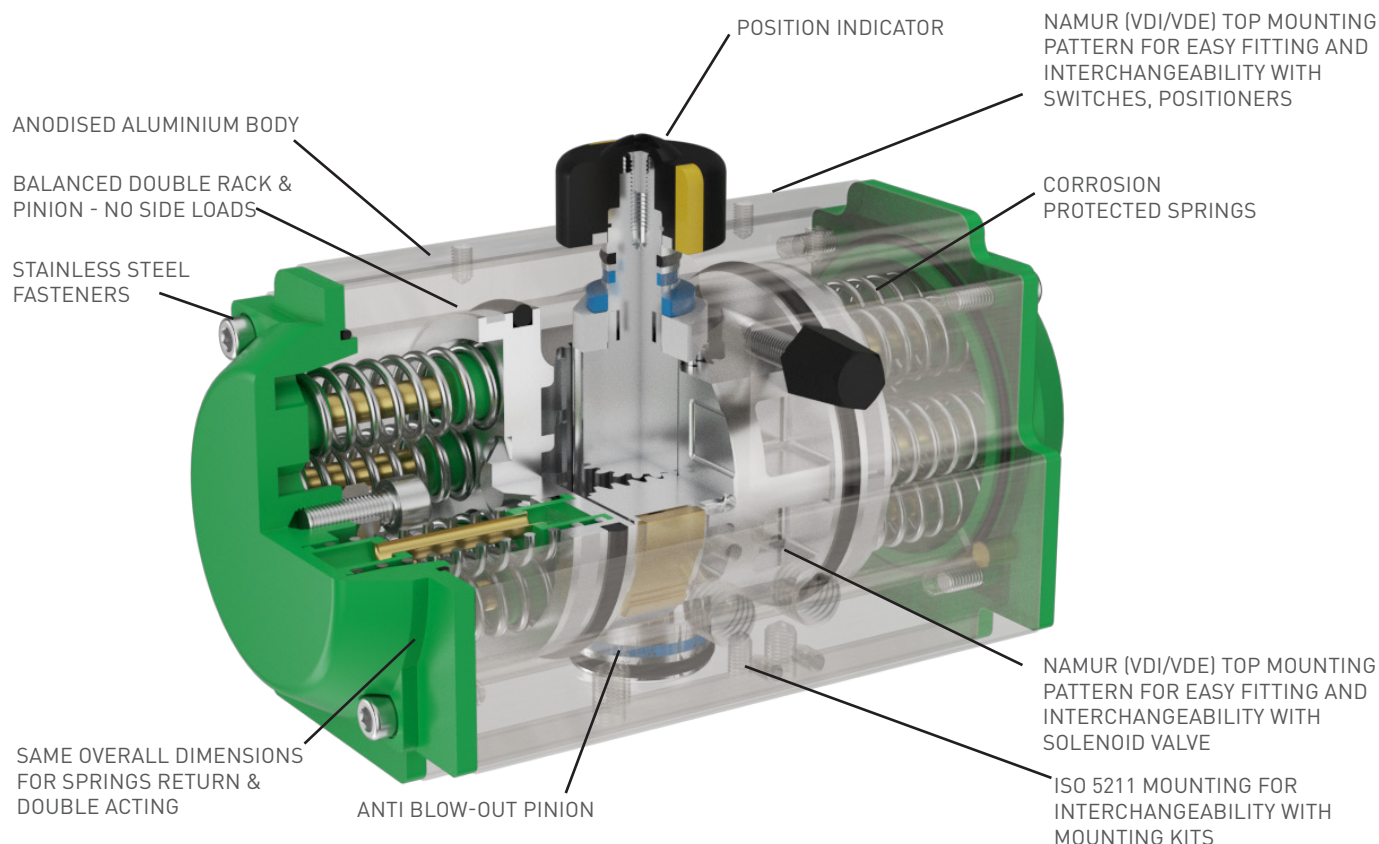


ALFA ACCESSORIES

PNEUMATIC ACTUATORS, GEAR BOXES, LIMIT SWITCH BOXES and other





MAIN FEATURES

Service	AVT standard designed for a stroke of 90°+ 5° with independent open and close adjustment. Stainless Steel full construction available on request (see proper datasheet)
Media	Dry and not lubricated air, filtered. Not corrosive or non-instable inert gas.
Supply Pressure	Double acting and spring return: from 2 bar (29 psi) to 10 bar (145 psi).
Working Temp.	Standard: -20°C < T < +150°C (VITON O-rings) All actuators are standard assembled with o'ring in VITON
Rotation	Standard Rotation: pinion rotates C.C.W. when pressurized the central chamber (port on the left). Opposite rotation [C.W.] available on request.
Installation	The AVT actuator is suitable for both outdoor and indoor installation
Lubrication	The actuator is factory life lubricated in normal working conditions, and no further lubrication is required if the actuator is properly used.

Marking The actuator type, size, the pneumatic threaded connection and the ISO drilling are marked on the actuator.

Connections Bottom drilling for valve in accordance with ISO 5211/ DIN 3337. Interface for solenoid valve, shaft top end and top drilling to assemble accessories in accordance with VDI/VDE 3845, NAMUR.

MAIN FEATURES

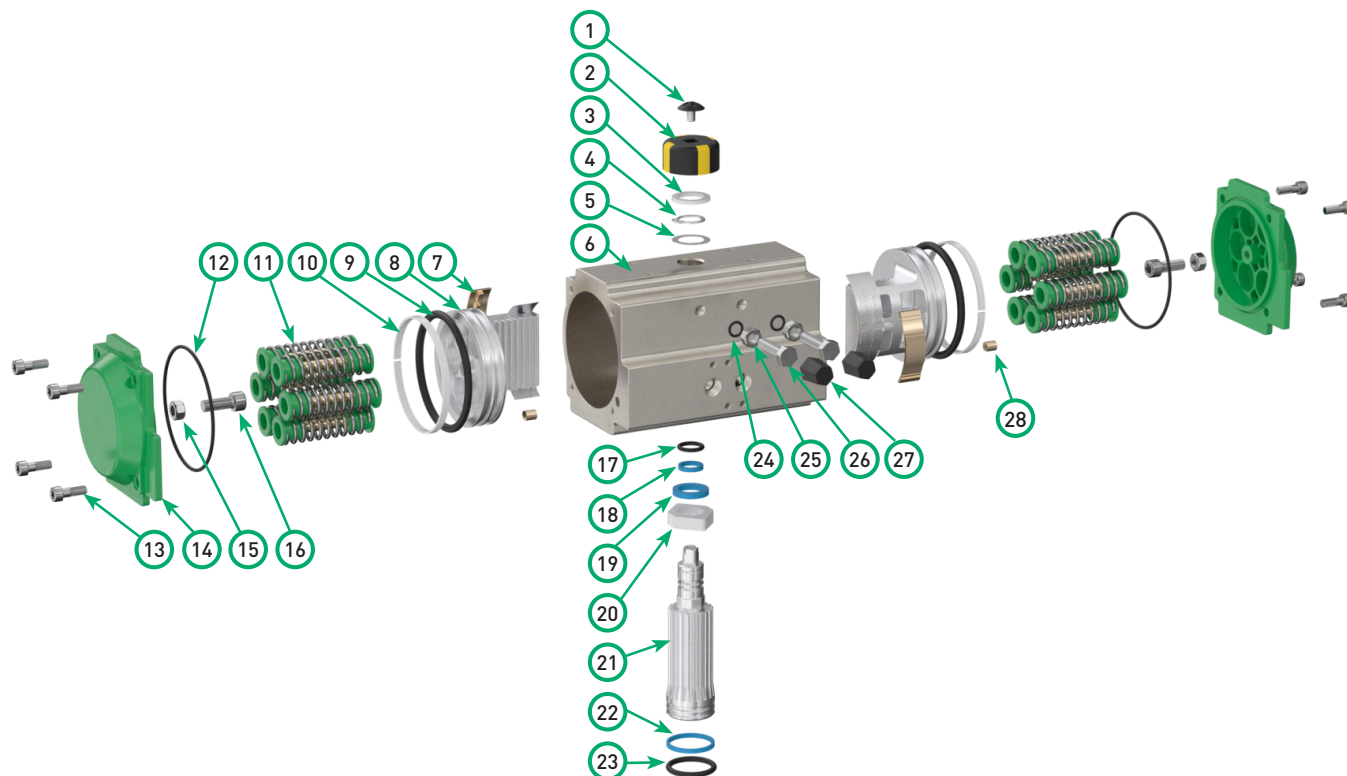
Design & Assembly according to **EN 15714-3**

Degree of Protection **IP67**, according **EN 60529**

Design & Assembly according to Directive **2014/34/EU "ATEX"**, Group II, Category 2 GD, according the standards EN 1127-1, UNI EN 13463-1 and UNI EN 13463-5:

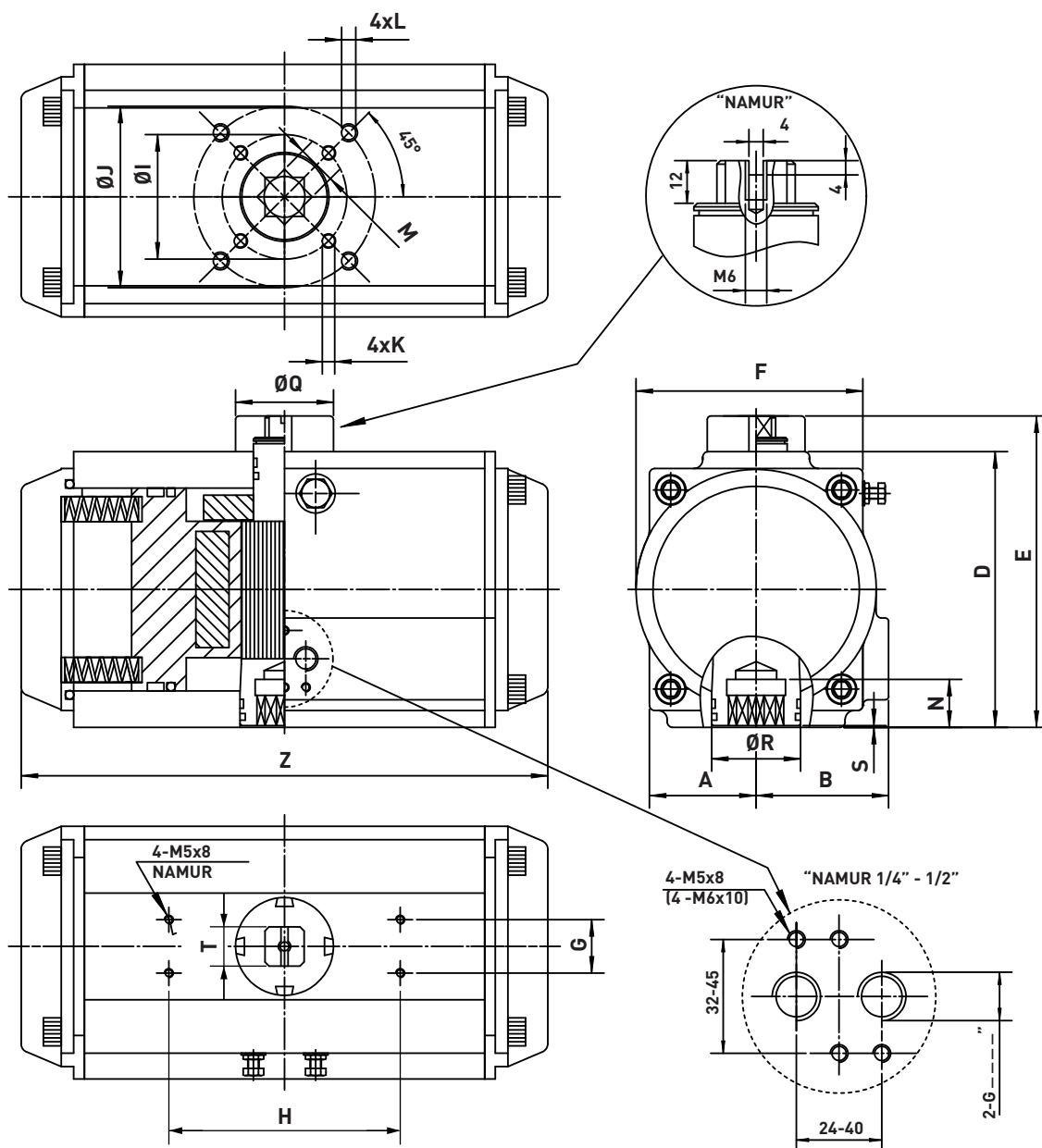
 II 2 GD "c" T3 Tech. File TÜV IT 09 ATEX 004 AR

The actuator is **TÜV certified IEC 61508** Functional Safety Data and can be used up to **SIL 3** (certificate n° 28712136 – Double Acting and n°28712136 – Spring Return)



PART N°	DESCRIPTION	Q.TY	MATERIALS
1	Cap Screw	1	Plastic (PP GF30)
2	Cap	1	Plastic (PP GF30)
3	Spring clip (pinion)	1	Stainless Steel (AISI 304)
4	Pinion outside Metal washer	1	Stainless Steel (AISI 304)
5 (*)	Pinion outside Washer	1	Delrin
6	Body	1	Extruded Aluminium Alloy (Al 6005-T5)
7 (*)	Piston guide	2	Delrin
8	Piston	2	Die Cast Aluminium
9 (*)	Piston O-Ring	2	VITON 75 Sh.A
10 (*)	Piston bearing	2	Delrin
11	Spring Cartridges (SA) (*)	4 to 12	Spring Steel (60Si2MnA) + Plastic (PP GF30)
12 (*)	End Cap O-Ring	2	VITON 75 Sh.A
13	End Cap Bolt	2	Stainless Steel (A2-70)
14	End Cap	2	Die Cast Aluminium
15	Inside Stop Screw	2	Stainless Steel (A2-70)
16	Inside Stop Screw Nut	2	Stainless Steel (A2-70)
17 (*)	Pinion Top O-Ring	1	VITON 75 Sh.A
18 (*)	Pinion Top Bearing	1	Delrin
19 (*)	Pinion Inside Washer	1	Delrin
20	Cam	1	Alloy Steel (C45)
21	Pinion	1	Alloy Steel (C45)
22 (*)	Pinion Bottom Bearing	1	Alloy Steel (C45)
23 (*)	Pinion Bottom O-Ring	1	VITON 75 Sh.A
24 (*)	Adjust Screw O-Ring	2	VITON 75 Sh.A
25	Adjust Screw Nut	2	Stainless Steel (A2-70)
26	Adjust Screw	2	Stainless Steel (A2-70)
27	Adjust Screw Cap	2	NBR
28	Plug (Hole Sealant)	2	NBR

(*) Parts included in Maintenance Kit



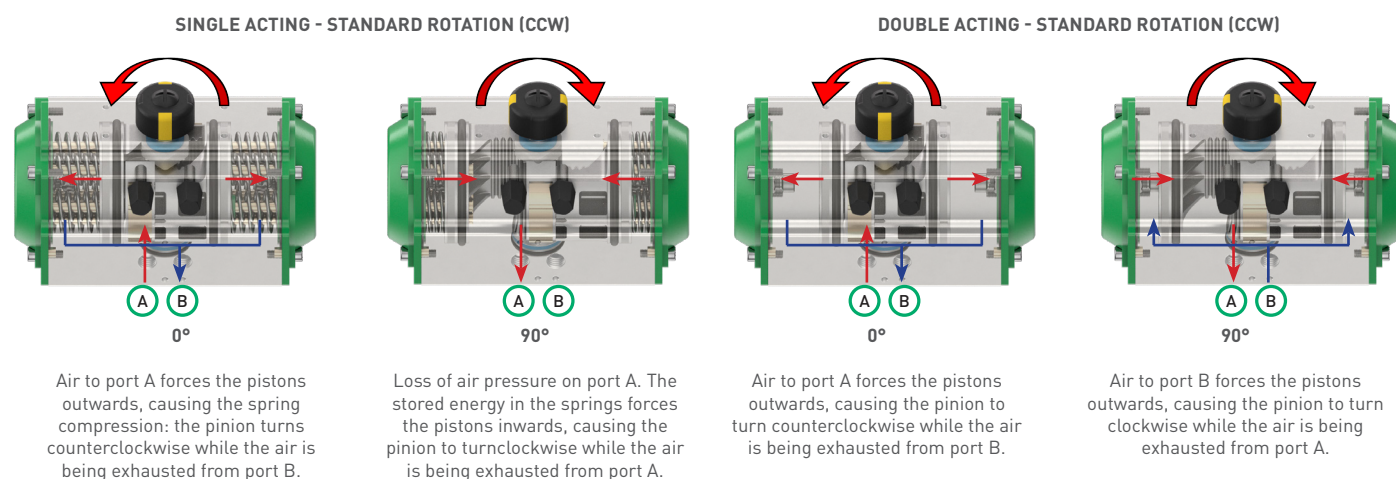
SIZE	A	B	D	E	F	G	H	$\emptyset I$ (ISO)	$\emptyset J$ (ISO)	K	L	M	N	$\emptyset Q$	$\emptyset R$	S	T	Z	AIR CONNECTION	Kg
045	29	29	65	85	58	30	80	$\emptyset 36(F03)$	$\emptyset 50(F05)$	M5x8	M6x10	11	14	40	23	1,5	10	146	NAMUR G1/4"	1,1
052	30	41	72	92	65	30	80	$\emptyset 36(F03)$	$\emptyset 50(F05)$	M5x8	M6x10	11	14	40	23	1,5	10	147	NAMUR G1/4"	1,5
063	36	47	87	107	72	30	80	$\emptyset 50(F05)$	$\emptyset 70(F07)$	M6x10	M8x13	14	18	40	28	1,5	10	168	NAMUR G1/4"	2,2
075	42	53	99	119	81	30	80	$\emptyset 50(F05)$	$\emptyset 70(F07)$	M6x10	M8x13	14	18	40	28	1,5	10	184	NAMUR G1/4"	2,9
083	46	57	109	129	92	30	80	$\emptyset 50(F05)$	$\emptyset 70(F07)$	M6x10	M8x13	17	21	40	35	1,5	10	204	NAMUR G1/4"	3,6
092	50	58	116	136	98	30	80	$\emptyset 50(F05)$	$\emptyset 70(F07)$	M6x10	M8x13	17	21	40	39	1,5	14	262	NAMUR G1/4"	5,5
105	57	64	133	153	109	30	80	$\emptyset 70(F07)$	$\emptyset 102(F10)$	M8x13	M10x16	22	26	40	46	1,5	14	268	NAMUR G1/4"	6,7
125	67	74	155	175	127	30	80	$\emptyset 70(F07)$	$\emptyset 102(F10)$	M8x13	M10x16	22	26	55	50	1,5	22	301	NAMUR G1/4"	11
140	75	77	171	192	137	30	80	$\emptyset 102(F10)$	$\emptyset 125(F12)$	M10x16	M12x20	27	31	55	67	1,5	22	390	NAMUR G1/4"	15
160	87	87	197	217	158	30	80	$\emptyset 102(F10)$	$\emptyset 125(F12)$	M10x16	M12x20	27	31	55	78	2	22	458	NAMUR G1/4"	23
190	103	103	230	260	189	30	130	--	$\emptyset 140(F14)$	--	M16x25	36	40	80	90	2	32	525	NAMUR G1/4"	38
210	113	113	255	285	210	30	130	--	$\emptyset 140(F14)$	--	M16x25	36	40	80	90	2	32	532	NAMUR G1/4"	47
240	130	130	289	319	245	30	130	--	$\emptyset 165(F16)$	--	M20x25	46	50	80	102	3	32	602	NAMUR G1/2"	66
270	147	147	326	356	273	30	130	--	$\emptyset 165(F16)$	--	M20x25	46	50	80	102	3	32	722	NAMUR G1/2"	116
300	162	162	348	378	324	30	130	--	$\emptyset 165(F16)$	--	M20x25	46	60	80	102	3	32	742	NAMUR G1/2"	130

Operating time

DOUBLE ACTING			SPRING RETURN		
SIZE	0° - 90°	90° - 0°	SIZE	0° - 90°	90° - 0°
045 DA	0,5	0,4	045 SR08	2,4	0,4
052 DA	0,6	0,5	052 SR08	2,6	0,5
063 DA	0,7	0,6	063 SR08	2,7	0,6
075 DA	0,8	0,7	075 SR08	2,8	0,7
083 DA	0,9	0,8	083 SR08	3,0	0,8
092 DA	1,0	0,9	092 SR08	3,2	1,0
105 DA	1,5	1,3	105 SR08	4,3	1,2
125 DA	2,4	1,8	125 SR08	4,8	1,5
140 DA	2,5	2,1	140 SR08	5,2	1,8
160 DA	4,0	2,6	160 SR08	6,0	3,5
190 DA	4,5	3,5	190 SR08	8,5	4,5
210 DA	5,5	4,5	210 SR08	13,5	5,5
240 DA	9,0	8,5	240 SR08	18,0	6,5
270 DA	11,0	10,5	270 SR08	24,5	13,0
300 DA	17,0	15	300 SR08	31,5	17,0

- The operating speeds (U.M. seconds) are given for reference only, and are related to the actuator only, without considering any type of device (Solenoid Valve, Flow Regulator,...) and its delay.
- Air Supply: 5 bar.
- Actuator with no load applied.
- Speeds other than those given above are obtainable if required by using additional control equipment.
- These times can vary under several working conditions.

Operating principle



Air volume and air consumption

SIZE	OPENING VOLUME [N.Lt]	CLOSING VOLUME [N.Lt]
045	0,08	0,11
052	0,12	0,16
063	0,21	0,23
075	0,30	0,34
083	0,43	0,47
092	0,64	0,73
105	0,95	0,88
125	1,60	1,40
140	2,50	2,20
160	3,70	3,20
190	5,90	5,40
210	7,50	7,50
240	11,00	9,00
270	17,00	14,00
300	23,80	29,70

HOW TO CALCULATE AIR CONSUMPTION FOR A COMPLETE CYCLE (0°-90° and 90°-0°):

Double Acting Actuator:

$$N.Lt / cycle = \frac{[Opening Volume + Closing Volume] \times [Air Supply (Kpa) + 101,325]}{101,325}$$

Spring Return Actuator, Fail Close:

$$N.Lt / cycle = \frac{Opening Volume \times [Air Supply (Kpa) + 101,325]}{101,325}$$

Spring Return Actuator, Fail Open:

$$N.Lt / cycle = \frac{Closing Volume \times [Air Supply (Kpa) + 101,325]}{101,325}$$