

AP* DOUBLE AND SIMPLE EFFECT PNEUMATIC ACTUATORS

Double or simple effect pneumatic actuators with 90°, 120° and 180° open/close angle, the internal rotation adjusting system is ever free of side-loads on pistons, shaft and body at every feeding pressure.

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

ASTM 6063 extruded Aluminum Body, inside surface finish Ra=0,4-0,6. 50 micron Hard Anodizing.

ASTM B179 die-casted Aluminum alloy Pistons, 15 micron Anodizing.

ASTM B179 die-casted Aluminum alloy Covers, painted with 60-80 micron polyester powder.

Carbon steel Shaft, 20 micron nickel-plated. Option S.S. AISI 316 (A4).

Screws in Stainless Steel AISI 304 (A2).

Seals in nitrile rubber NBR. Optional : HT= FPM/FKM; LT = SILICONE.

Bearings in low friction acetic 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: High performances synthetic grease. Optional: special grease for HIGH/LOW Temperature.

Several special protections available for chemical, pharmaceutical, food and industrial environments. See coating material treatment table.

Double lower drilling for valve fastening and centering, according to ISO 5211-DIN 3337 Standards.

Double square lower female shaft key (star like), 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.

Lubrication guaranteed for min. 1.000.000 operations.

According to ATEX-94-9-CEE Standard for explosive environment; standard version actuator: II 2GD c Tmax = 95°C.

According to EN 15714-3 design and manufacture std requirements.

Air supply: Dry or lubricated filtered compressed air

Temperature range: standard -20...+80°C

HT -20°C...150°C

LT -40...80°C

XLT -60...80°C

Working Pressure: 8 bar / 120 psi Continuous; 10 bar / 142 psi max

Turning rotation range: +/- 5°

AV



NV



NN



TF TF



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Coating - Material Treatments table

APC**	BODY	COVERS	PISTONS	SHAFT	APPLICATION
AV standard	Hard Anodizing	Polyester painting	Anodizing	High phosphorous nickel-plating (12%) opt. AISI 316 (A4)	Industry general use
Colour	Dark gray	Several	Brown	Polished steel	
Thickness μ	50	60-80	15	20	
NV	High phosphorous nickel-plating (12%)	Polyester painting	Anodizing	High phosphorous nickel-plating (12%) opt. AISI 316 (A4)	Industry general use. Caustic sode. Detergents. Low alcaline solutions
Colour	Polished steel	Several	Brown	Polished steel	
Thickness μ	20	60-80	15	20	
NN	High phosphorous nickel-plating (12%)	High phosphorous nickel-plating (12%)	Anodizing	High phosphorous nickel-plating (12%) opt. AISI 316 (A4)	Industry general use. Caustic sode. Detergents. Low alcaline solutions
Colour	Polished steel	Polished steel	Brown	Polished steel	
Thickness μ	20	20	15	20	
TF TF	Hard Anodizing + PTFE coating	Anodizing + PTFE coating	Anodizing	High phosphorous nickel-plating (12%) opt. AISI 316 (A4)	Industry general use. Caustic sode. Detergents. Low alcaline solutions. Marine environments. High temperatures
Colour	Blue	Blue	Brown	Polished steel	
Thickness μ	Anodizing 50 PTFE 15	Anodizing 50 PTFE 15	15	20	

DOUBLE ACTING TORQUE RATINGS IN Nm

Type	Air supply in bar									
	1	2	3	4	5	6	7	8	9	10
AP032	-	-	-	5	6.3	7.6	8.8	10	11.4	12.6
AP042	-	-	6.5	8.7	10.9	13	15.2	17.3	19.5	21.7
AP050	3	6.1	9.2	12.3	15.4	18.5	21.5	24.6	27.7	30.8
AP063	5.5	11	16.5	22	27.5	33	38.5	44	49.5	55
AP075	11.7	23.4	35.1	46.8	58.5	70.2	81.9	93.6	105.3	117
AP085	17.8	35.6	53.4	71.2	89	106.9	124.7	142.4	160.3	178.1
AP100	27.7	55.4	83.2	110.9	138.6	166.4	194.1	221.8	249.5	277.3
AP115	45.7	91.5	137.2	183	228.7	274.5	320.2	366	411.7	457.5
AP125	60.1	120.3	180.5	240.7	300.9	361.1	421.2	481.4	541.6	601.8
AP145	86.7	173.4	260.1	346.8	433.5	520.2	606.9	693.6	780.3	867
AP160	118.3	236.7	355	473.4	591.7	710.1	828.4	946.8	1065	1183
AP180	159.7	319.4	479	638.6	798.3	958	1119	1277	1437	1598
AP200	221.8	443.7	665.6	887.5	1109	1333	1553	1775	1997	2219
AP240	372.5	745	1118	1490	1863	2235	2608	2980	3353	3725
AP270	539.2	1078	1617	2157	2696	3235	3774	4314	4853	5392
AP330	911.5	1823	2734	3646	4558	5469	6385	7292	8204	9115
AP420	1671	3342	5013	6684	8354	10025	11696	13367	-	-

AP032...AP160 90°, 120°, 180°

AP180...AP420 only 90°



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Torque output available from air supply

Type	n° spring	Air supply in bar						SPRING STROKE	
		3		4		5		90°	0°
		0°	90°	0°	90°	0°	90°		
AP042	3	-	-	-	-	7.1	4.1	6.8	3.8
	4	-	-	-	-	-	-	9.0	5.0
AP050	3	5.7	3.5	8.9	6.6	12.0	9.6	5.7	3.5
	4			7.7	4.7	10.8	7.7	7.7	4.7
	5					9.6	5.8	9.6	5.8
	6					8.4	3.9	11.5	7.0
AP063	3	9.4	6.3	14.9	11.7	20.4	17.2	10.2	7.2
	4			12.3	8.3	17.8	13.8	13.7	9.7
	5					15.4	10.4	17.1	12.1
	6					13.0	7.0	20.5	14.5
AP075	3	22.5	12.6	34.2	24.4	46.0	36.1	22.5	12.6
	4			30.0	16.9	41.8	28.6	30.0	16.9
	5					37.6	21.1	37.6	21.1
	6					33.4	13.6	45.1	25.3
AP085	3	34.5	18.9	52.4	36.7	70.2	54.5	34.5	18.9
	4			46.1	25.2	63.9	43.0	46.1	25.2
	5					57.6	31.5	57.6	31.5
	6					51.5	20.0	69.1	37.8
AP100	3	53.2	30.0	80.9	57.7	108.7	85.4	53.2	30.0
	4			70.9	40.0	98.7	67.7	70.9	40.0
	5					88.7	50.0	88.7	50.0
	6					78.7	32.2	106.4	60.0
AP115	3	84.3	53.0	130.0	98.8	175.8	144.5	84.3	53.0
	4			112.3	70.7	158.1	116.4	112.3	70.7
	5					140.4	88.3	140.4	88.3
	6					122.7	60.2	168.5	106.0
AP125	3	116.8	63.7	177.0	123.9	237.3	184.1	116.8	63.7
	4			155.7	85.0	216.0	145.2	155.7	85.0
	5					194.7	106.3	194.7	106.3
	6					173.4	67.4	233.6	127.5
AP145	3	158.0	92.0	245.0	179.0	332.0	265.0	158.0	92.0
	4			211.0	123.0	298.0	210.0	224.0	136.0
	5					264.0	154.0	280.0	170.0
	6					230.0	98.0	336.0	204.0
AP160	3	222.4	132.6	340.7	251.0	459.1	369.3	222.4	132.6
	4			296.5	176.9	414.9	295.2	296.5	176.9
	5					370.7	221.1	370.7	221.1
	6					326.5	147.0	444.8	265.3
AP180	3	287.9	191.0	447.6	350.7	607.3	510.4	287.9	191.0
	4			383.9	254.7	543.6	414.4	383.9	254.7
	5					479.9	318.4	479.9	318.4
	6					416.2	222.4	575.9	382.1
AP200	3	423.6	242.0	644.7	463.8	867.4	685.8	423.6	242.0
	4			564.8	322.6	786.7	544.6	564.8	322.6
	5					706.0	403.4	706.0	403.4
	6					625.3	262.2	847.2	484.1
AP240	3	664.0	453.6	1037	826.2	1409	1199	664.0	453.6
	4			885.4	604.8	1258	977.4	885.4	604.8
	5					1107	756.0	1107	756.0
	6					955.5	534.7	1328	907.2
AP270	3	912.5	705.1	1452	1244	1991	1783	912.5	705.1
	4			1216	940.2	1756	1479	1217	940.1
	5					1521	1175	1521	1175
	6					1286	871.0	1825	1410
AP330	3	1626	1108	2538	2020	3450	2931	1626	1108
	4			2168	1477	3080	2389	2168	1477
	5					2711	1847	2711	1847
	6					2341	1305	3253	2216
AP420	3	2999	2014	4670	3685	6340	5356	2999	2014
	4			3998	2685	5669	4356	3998	2685
	5					4998	3356	4998	3356
	6					4327	2357	5997	4028

0° = closed pistons, extended springs

90° = open pistons, compressed springs

Spring Stroke = Springs torque output



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Torque output available from air supply

Type	n° spring per side of piston	Air supply in bar						SPRING STROKE	
		6		7		8			
		0°	90°	0°	90°	0°	90°	90°	0°
AP042	3	9.3	6.3	11.5	8.5	13.7	10.7	6.8	3.8
	4	8.1	4.1	10.2	6.2	12.4	8.4	9.0	5.0
AP050	3	15.1	12.7	18.1	15.7	21.2	18.8	5.7	3.5
	4	13.9	10.8	16.9	13.8	20.0	16.9	7.7	4.7
	5	12.7	8.9	15.7	11.9	18.8	15.0	9.6	5.8
	6	11.5	7.0	14.5	10.0	17.6	13.1	11.5	7.0
AP063	3	25.9	22.7	31.4	28.2	36.9	33.7	10.2	7.2
	4	23.3	19.3	28.8	24.8	34.3	30.3	13.7	9.7
	5	20.9	15.9	26.4	21.4	31.9	26.9	17.1	12.1
	6	18.5	12.5	24.0	18.0	29.5	23.5	20.5	14.5
AP075	3	57.7	47.8	69.4	59.5	81.1	71.2	22.5	12.6
	4	53.5	40.3	30.0	16.9	41.8	28.6	30.0	16.9
	5	49.3	32.8	61.0	44.5	72.7	56.2	37.6	21.1
	6	45.1	25.3	56.8	37.0	68.5	48.7	45.1	25.3
AP085	3	88.0	72.3	105.8	90.1	123.6	107.9	34.5	18.9
	4	81.7	60.8	99.5	78.6	117.3	96.4	46.1	25.2
	5	75.4	49.3	93.2	67.1	111.0	84.9	57.6	31.5
	6	69.1	37.8	86.9	55.6	104.7	73.4	69.1	37.8
AP100	3	136.4	113.1	164.1	140.8	191.8	168.5	53.2	30.0
	4	126.4	95.4	154.1	123.1	181.1	150.8	70.9	40.0
	5	116.4	77.7	144.1	195.4	171.8	133.1	88.7	50.0
	6	106.4	60.0	134.1	87.7	161.8	115.4	106.4	60.0
AP115	3	221.6	190.3	267.3	236.0	313.0	281.7	84.3	53.0
	4	203.9	162.2	249.6	207.9	295.3	253.6	112.3	70.7
	5	186.2	134.1	231.9	179.8	277.6	225.5	140.4	88.3
	6	168.5	106.0	214.2	151.7	259.9	197.4	168.5	106.0
AP125	3	297.5	244.2	357.6	304.3	417.7	364.4	116.8	63.7
	4	276.2	205.3	336.3	265.4	396.4	325.5	155.7	85.0
	5	254.9	166.4	315.0	226.5	375.1	286.6	194.7	106.3
	6	233.6	127.5	293.7	187.6	353.8	247.7	233.6	127.5
AP145	3	418.0	352.0	505.0	439.0	592.0	526.0	168.0	102.0
	4	384.0	269.0	471.0	383.0	558.0	470.0	224.0	136.0
	5	350.0	240.0	437.0	327.0	524.0	414.0	280.0	170.0
	6	316.0	184.0	403.0	271.0	490.0	358.0	336.0	204.0
AP160	3	577.4	487.6	695.7	605.9	814.0	724.2	222.4	132.6
	4	533.2	413.5	651.5	531.8	769.8	650.1	296.5	176.9
	5	489.0	339.4	607.3	457.7	725.6	576.0	370.7	221.1
	6	444.8	265.3	563.1	383.6	681.4	501.9	444.8	265.3
AP180	3	766.9	670.0	926.6	829.7	1068.0	989.1	287.9	191.0
	4	703.3	574.0	862.9	733.7	1022.3	893.1	383.9	254.7
	5	639.6	478.1	792.2	637.7	958.6	797.1	479.9	318.4
	6	575.9	382.1	735.6	541.8	849.9	701.1	575.9	382.1
AP200	3	1089	907.7	1311	1130	1533	1351	423.6	242.0
	4	1008	766.5	1230	988.4	1452	1209	564.8	322.6
	5	927.9	625.3	1150	847.2	1372	1068	706.0	403.4
	6	847.2	484.1	1069	706.0	1291	927.0	847.2	484.1
AP240	3	1782	1571	2154	1944	2527	2316	664.0	453.6
	4	1630	1350	2003	1722	2376	2095	885.4	604.8
	5	1479	1129	1852	1501	2224	1874	1107	756.0
	6	1328	907.2	1701	1280	2073	1653	1328	907.2
AP270	3	2530	2323	3069	2862	3608	3401	912.5	705.1
	4	2295	2019	2834	2558	3373	3097	1217	940.1
	5	2060	1714	2599	2144	3138	2793	1521	1175
	6	1825	1410	2364	1954	2903	2489	1825	1410
AP330	3	4361	3843	5273	4755	6184	5666	1626	1108
	4	3992	3301	4903	4212	5815	5123	2168	1477
	5	3622	2759	4534	3670	5445	4582	2711	1847
	6	3253	2216	4165	3128	5076	4040	3253	2216
AP420	3	8011	7026	9682	8697	11353	10368	2999	2014
	4	7340	6027	9011	7698	10682	9369	3998	2685
	5	6669	5027	8340	6698	10010	8369	4998	3356
	6	5997	4028	7668	5698	9339	7369	5997	4028

0° = closed pistons, extended springs

90° = open pistons, compressed springs

Spring Stroke = Springs torque output

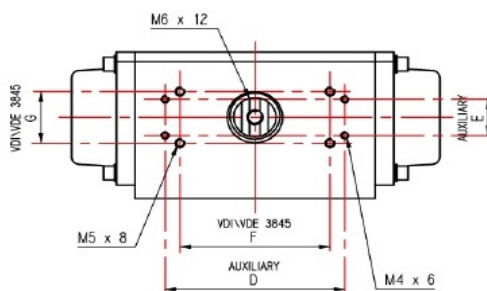
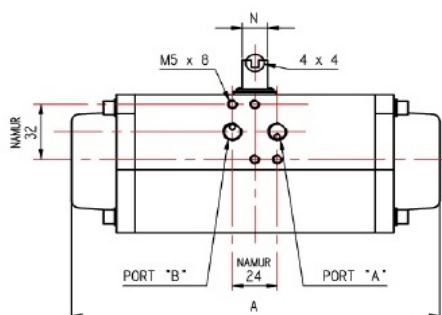


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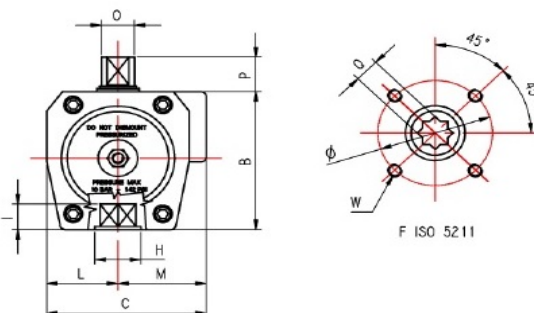
Dimensions

AP	32	42	50	63	75	85	100	115	125	145	160	180	
A-90°	117	160	138	155,5	210	228	280,5	310	362	390	462	474	
A 120°	133	166	163	180	239	273	322	363	424	-	-	-	
A 180°	175	211	196	214	297	332	398	451	518	-	-	-	
B	45	57	67	83	100	110	125	142	155	175	196	220	
C	48	60,5	75	86	94	104	120	134	141	163	178	196	
DxE	-				105x22			139x22					
FxG	50X25	80x30						130x30					
L	22,5	27	33,5	38	42,5	49	55	63,5	69,5	80	88	98	
M	25,5	33,5	41,5	48	51,5	55	65	70,5	71,5	83			
Port A - B	1/8" GAS – NPT			¼" GAS – NPT									
NxO	8x12				14x18			27x36				32x42	
P	20							30			50		
ISO	F03	F03	F03	F03	F04	F05	F05	F07	F07	F10	F10	F10	
	F04	F04	F04	F04	F05	F07	F07	F10	F10	F12	F12	F12	
		F05	F05	F05	F07		F10		F12			F14	
				F07									

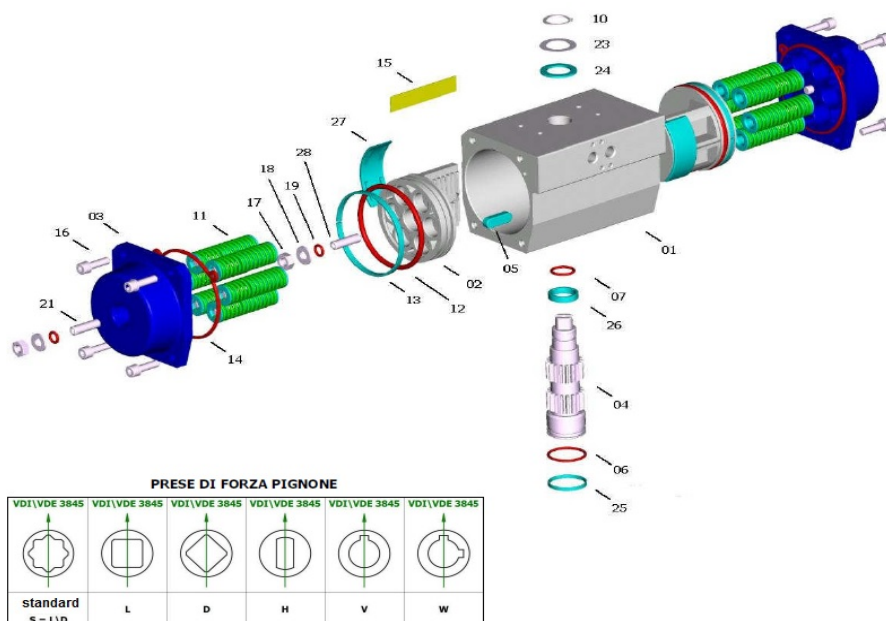
AP	200	240	270	330	420
A-90°	575	604	685	850	934
A 120°	-	-	-	-	-
A 180°	-	-	-	-	-
B	240	298	332	414	534
C	220	300	352	400	521
DxE	139x22	-			
FxG	130x30				200x50
L	110	150	166	190	249
M				210	272
Port A - B	1/4" GAS	1/2" GAS - NPT			
NxO	32x42	32x60	55x80		
P	50				80
ISO	F10	F14	F14	F16	F25
	F12	F16	F16	F25	F30
	F14				
	F16				



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PART	Q.TY	DESCRIPTION	MATERIAL	Specification	Protection
1	1	Body	Extruded aluminum alloy	ASTM 6063 T6	A – N – TF
2	2	Piston	Aluminum alloy	ASTM B179 DIN1725/5	A
3	2	Cover	Aluminum alloy	ASTM B179 DIN1725/5	N – V – TF
4	1	Shaft	Carbon steel Opt S.S. A316	ASTM A105 Opt SS316	N
5*	2	Antiejection key	Acetalic resin - PA66		
6*	1	Lower shaft Oring	NBR – Viton – Silicone		
7*	1	Upper shaft Oring	NBR – Viton – Silicone		
10*	1	Seeger ring	Carbon steel		N
11	0-12	Spring cartridge	Carbon steel, PA66, S.S.	C-98	V
12*	2	Piston Oring	NBR – Viton – Silicone		
13*	2	Piston head bearing	Acetalic resin – PA66		
14*	2	Cover gasket	NBR – Viton – Silicone		
15	1	nameplate	Aluminum		
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	Oring	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		
25*	1	Lower shaft pilot ring	Acetalic resin - PA66		
26*	1	Upper shaft pilot ring	Acetalic resin - PA66		
27*	2-4	Piston bearing	Acetalic resin - PA66		
28	2	Piston dowel	Stainless steel	AISI 304 A2	



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