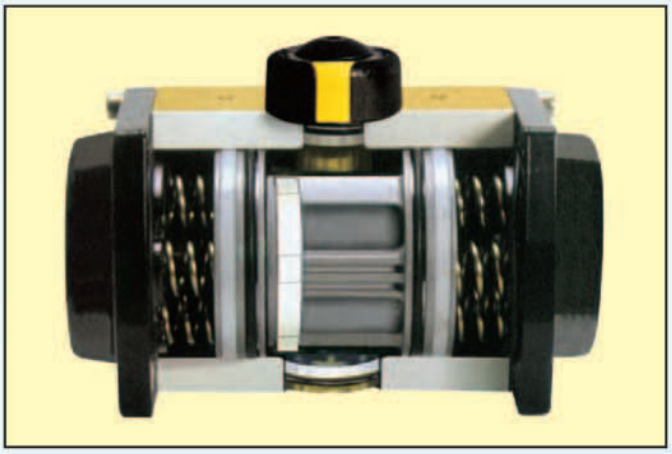


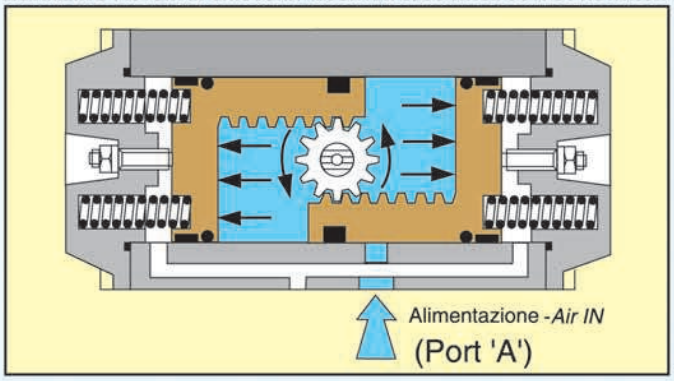
ATTUATORI A SEMPLICE EFFETTO (SR) ISO 5211
SPRING RETURN ACTUATORS (SR) ISO 5211

PRINCIPIO DI FUNZIONAMENTO - *PRINCIPLE OF OPERATION*

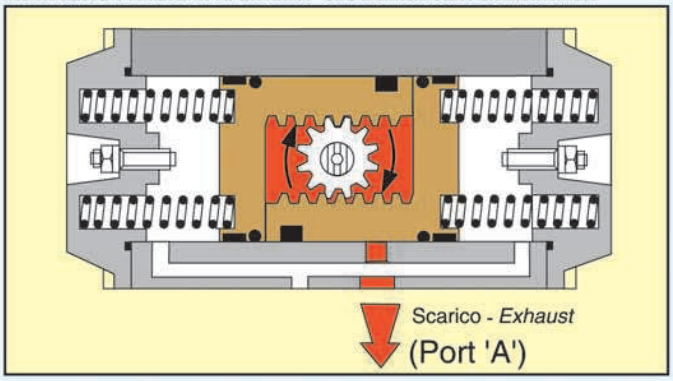
In questo caso, sarà sufficiente immettere pressione nel **Port 'A'**, per ottenere lo spostamento dei pistoni verso l'esterno e di conseguenza, la compressione del pacco di molle inserite tra i pistoni e le testate. Nel momento in cui viene a mancare l'aria di alimentazione, immediatamente intervengono le molle che con la loro azione permettono lo spostamento dei pistoni verso l'esterno, scaricando l'aria esistente, attraverso il **Port 'A'**.

*Pressure applied to **Port 'A'** will cause the inner chambers to be pressurised, forcing the pistons outward to compress the springs.*
*The pinion is rotated counter counteil clockwise. Upon release of pressure through **Port 'A'** the springs will exert pressure to close the pistons and rotate the pinion clockwise rapidly.*
This action will often be used to close a 90° turn valve in shutdown mode.

MOVIMENTO PISTONI IN CHIUSURA -*COUNTER CLOCKWISE OUTPUT ROTATION*



MOVIMENTO PISTONI IN APERTURA - *CLOCKWISE OUTPUT ROTATION*

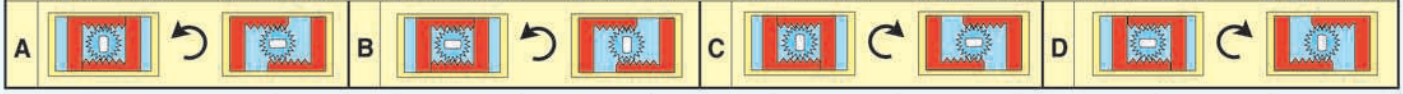


COME DIMENSIONARE GLI ATTUATORI A SEMPLICE EFFETTO (SR) - *SELECTION OF SPRING RETURN ACTUATORS (SR)*

Innanzi tutto occorre conoscere la " coppia richiesta " della valvola e la pressione d'aria disponibile, dopodichè cercare sulla tabella a destra " **SPRING STROKE"** colonna **"0°",**il valore di coppia corrispondente o superiore alla "coppia richiesta". Quindi restando sulla stessa fila, ci si sposta verso sinistra fino a trovare, nella parte alta della tabella, il valore di pressione di alimentazione disponibile, e controllare che il valore di coppia risultante nella colonna **"90°"**sia uguale o maggiore alla "coppia richiesta".
ESEMPIO: Dovendo automatizzare una valvola che richiede una coppia di 60 Nm maggiorata del 25% = 75Nm ci spostiamo nella tabella **SPRING STROKE**, e troviamo nella colonna **"0°"**il valore di 108 Nm, quindi restando sulla stessa fila, ci spostiamo verso sinistra ad incrociare la colonna **"90°"** dell'aria di alimentazione a 5 bar, trovando un valore di 109 Nm. Per cui l'attuatore risultante è **AP5SR5.**
Nel caso in cui il valore di coppia risultante fosse inferiore alla "coppia richiesta" occorre aumentare l'aria di alimentazione dell'attuatore o scegliere un attuatore con alesaggio maggiore, e per questo è necessario rifare la procedura di dimensionamento.
In definitiva il valore di coppia dato dalle molle e quello dato dall'attuatore in corrispondenza dell'aria disponibile, deve essere uguale o maggiore a quello della "coppia richiesta" della valvola.

*Determine the required valve torque (this should include 25% safety margin), and the minimum operating pressure available. Select from the **"SPRING STROKE / "0°"** table a value that is not less than the required valve torque (including safety margin). Next refer to the pressure table and select under your minimum pressure and **"90°"** torque column a figure not less than that required (including safety margin).*
***EXAMPLE:** Valve torque 60 Nm plus 25% = 75 Nm. Checking the **"SPRING STROKE / "0°"** column, it will be noted that the nearest value is 108 Nm. By following the line across to the vertical 5 bar **"90°"** torque column, a figure of 109 Nm is shown therefore, the suitable actuator is the **AP5SR5.** In a normal valve shut-down situation the actuator would operate the valve to break out a less than 108 Nm. If the **"90°"** torque at operating pressure is too* low, *continue down the column until an acceptable value is found, compare with the corresponding **"SPRING STROKE / "0°"** column to ensure that this also is adeguate. This model may be used.*

VARIANTI DI MONTAGGIO - *MOUNTING VARIATIONS*



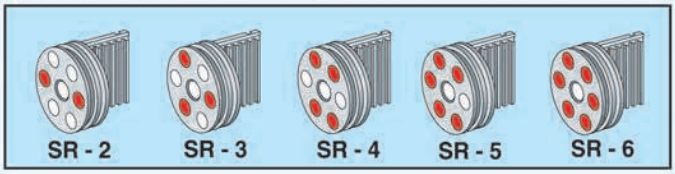
MOD. SR	AP1	AP2 / APM2		AP3 / APM3		AP3,5 / APM3,5		AP4 / APM4		AP4,5 / APM4,5		AP5 / APM5		AP5,5 / APM5,5		AP6 / APM6		AP8 / APM8		AP10 / APM10	
Kg.	1.12	1.56	1.67	3.10	3.18	4.30	4.40	6.20	6.25	9.67	9.76	12.62	12.90	17.09	18.01	23.86	24.60	44.82	45.93	101.00	102.30
lbs.	*2.46*	*3.43*	*3.67*	*6.82*	*7.00*	*9.46*	*9.68*	*13.64*	*13.75*	*21.27*	*21.47*	*27.76*	*28.38*	*37.60*	*39.62*	*52.49*	*54.12*	*98.60*	*101.05*	*222.20*	*225.06*

NOTA: I suddetti valori si riferiscono al peso del comando pneumatico, comprese n°6 molle per ciascun lato della testata.
NOTE: The above mentioned values refer to the weight of pneumatic actuator with 6 (six) springs on each side of cap.

TEMPO DI APERTURA/CHIUSURA (sec.) 5.6 bar / 80 p.s.i.
OPENING / CLOSING TIME (sec.) at 5.6 bar / 80 p.s.i.

MODELLO *MODEL*	AP 1	AP 2	AP 3	AP 3.5	AP 4	AP 4.5	AP 5	AP 5.5	AP 6	AP 8	AP 10
DOPPIO EFFETTO	Meno di *Less than*	Meno di *Less than*	Meno di *Less than*	Meno di *Less than*	Meno di *Less than*	Meno di *Less than*	Meno di *Less than*	Meno di *Less than*			
DOUBLE ACTING	0,5 SEC	1 SEC	1 SEC	1 SEC	1 SEC	1 SEC	1.25 SECS	1.5 SECS	1.5 ÷ 2 SECS	3 ÷ 4 SECS	5 - 6 SECS
SEMPLICE EFFETTO	Meno di *Less than*	Meno di *Less than*	Meno di *Less than*	Meno di *Less than*	Meno di *Less than*	Meno di *Less than*		Meno di *Less than*			
SPRING RETURN	0,5 SEC	1 SEC	1 SEC	1 SECS	1 SECS	1 SEC	1.5 ÷ 2 SECS	2 SECS	2 ÷ 3 SECS	4 ÷ 6 SECS	7 ÷ 8 SECS

DISPOSIZIONE CORRETTA DELLE MOLLE – *RIGHT ARRANGEMENT OF SPRINGS*



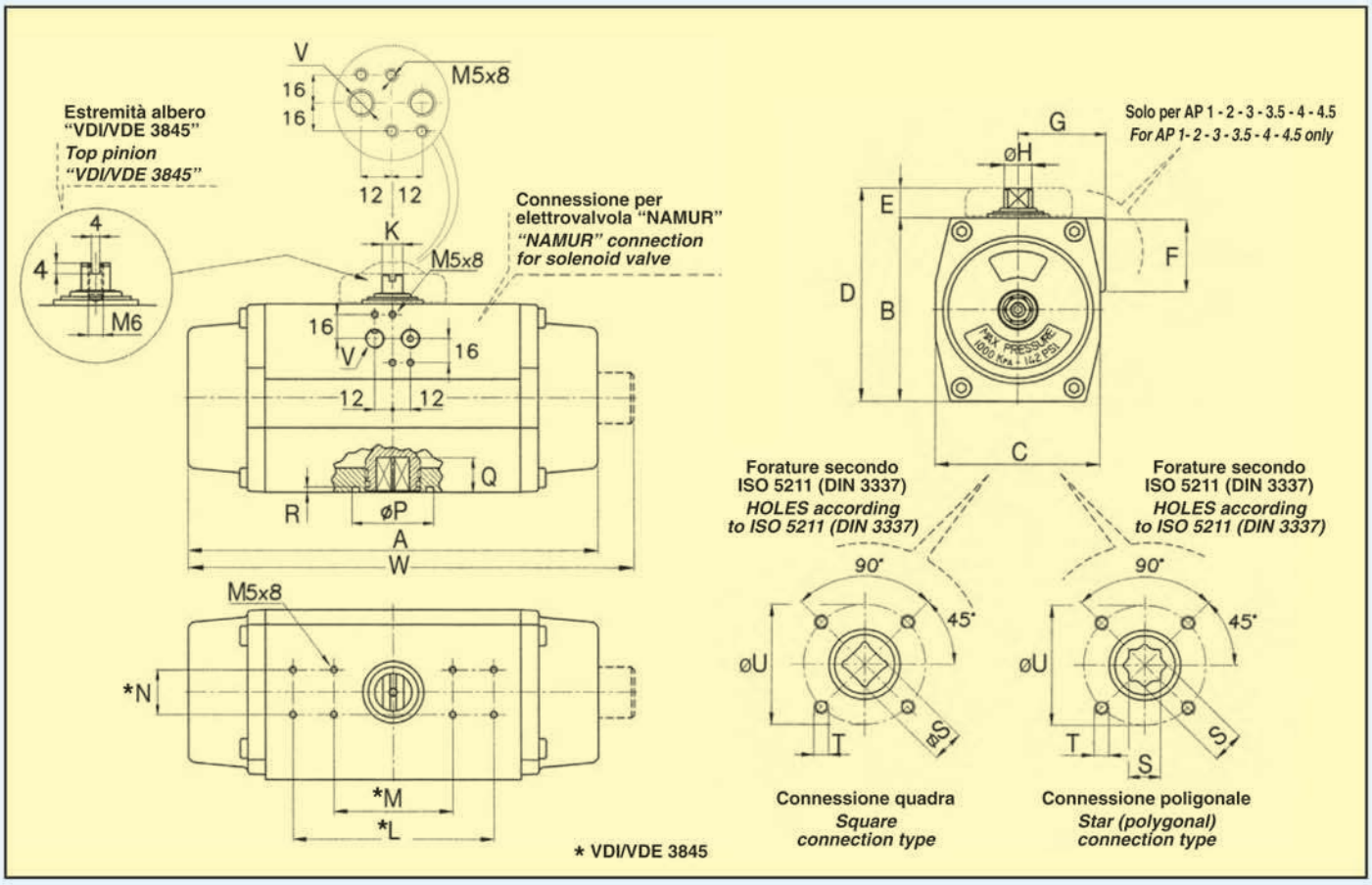
MOMENTO TORCENTE ATTUATORI SEMPLICE EFFETTO (SR) - *TORQUE OUTPUT SPRING RETURN ACTUATORS (SR)*

N m
lb f.in

MODELLO *MODEL*	N° MOLLE PER TESTATA *N° OF SPRINGS FOR EACH SIDE OF CAP*	PRESSIONE DI ALIMENTAZIONE- *OPERATING PRESSURE* - bar / *p.s.i.*												*SPRING STROKE*	
		3	44	4	58	5	73	6	87	7	102	8	116		
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	90°	0°
AP1SR	2	6.5	5.4	9.4	8.3	12.4	11.3	15.3	14.2	19.3	18.2	22.4	21.3	3.5	2.4
		58.0	*48.2*	*83.8*	*74.0*	*110.6*	*100.8*	*136.5*	*126.7*	*172.2*	*162.3*	*199.8*	*190.0*	*31.2*	*21.4*
	3	5.3	3.7	8.2	6.6	11.2	9.6	14.1	12.5	18.1	16.5	21.2	19.6	5.2	3.6
		47.3	*33.0*	*73.1*	*58.9*	*99.9*	*85.6*	*125.8*	*111.5*	*161.5*	*147.2*	*189.1*	*174.8*	*46.4*	*32.1*
	4	4.1	1.9	7	4.8	10	7.8	12.9	10.7	16.9	14.7	20	17.8	7.0	4.8
		36.6	*16.9*	*62.4*	*42.8*	*89.2*	*69.6*	*115.1*	*95.4*	*150.7*	*131.1*	*178.4*	*158.8*	*62.4*	*42.8*
	5	=	=	3.1	2.7	8.8	6.1	11.7	9.0	15.7	13.0	18.8	16.1	8.7	6
		=	=	*27.7*	*24.1*	*78.5*	*54.4*	*104.4*	*80.3*	*140.0*	*116.0*	*167.7*	*143.6*	*77.6*	*53.5*
	6	=	=	=	=	7.6	4.3	10.5	7.2	14.5	11.2	17.6	14.3	10.5	7.2
		=	=	=	=	*67.8*	*38.4*	*93.7*	*64.2*	*129.3*	*99.9*	*157.0*	*127.6*	*93.7*	*64.2*
AP2SR	2	10.3	8.5	15.0	13.2	19.7	17.9	24.4	22.6	29.1	27.3	33.8	32.0	5.6	3.8
		91.9	*75.8*	*133.8*	*117.7*	*175.7*	*159.7*	*217.6*	*201.6*	*259.6*	*243.5*	*301.5*	*285.4*	*50.0*	*33.9*
	3	8.4	5.7	13.1	10.4	17.8	15.1	22.5	19.8	27.2	24.5	31.9	29.2	8.4	5.7
		74.9	*50.8*	*116.9*	*92.8*	*158.8*	*134.7*	*200.7*	*176.6*	*242.6*	*218.5*	*284.5*	*260.5*	*74.9*	*50.8*
	4	=	=	11.2	7.6	15.9	12.3	20.6	17.0	25.3	21.7	30.0	26.4	11.2	7.6
		=	=	*99.9*	*67.8*	*141.8*	*109.7*	*183.8*	*151.6*	*225.7*	*193.6*	*267.6*	*235.5*	*99.9*	*67.8*
	5	=	=	=	=	14.0	9.5	18.7	14.2	23.4	18.9	28.1	23.6	14.0	9.5
		=	=	=	=	*124.9*	*84.7*	*166.8*	*126.7*	*208.7*	*168.6*	*250.7*	*210.5*	*124.9*	*84.7*
	6	=	=	=	=	12.1	6.7	16.8	11.4	21.5	16.1	26.2	20.8	16.8	11.4
		=	=	=	=	*107.9*	*59.8*	*149.9*	*101.7*	*191.8*	*143.6*	*233.7*	*185.5*	*149.9*	*101.7*
AP3SR	2	22.0	18.0	32.0	28.0	42.0	38.0	52.0	48.0	62.0	58.0	72.0	68.0	12.0	8.0
		196.2	*160.6*	*285.4*	*249.8*	*374.6*	*339.0*	*463.8*	*428.2*	*553.0*	*517.4*	*642.2*	*606.6*	*107.0*	*71.4*
	3	18.0	12.0	28.0	22.0	38.0	32.0	48.0	42.0	58.0	52.0	68.0	62.0	18.0	12.0
		160.6	*107.0*	*249.8*	*196.2*	*339.0*	*285.4*	*428.2*	*374.6*	*517.4*	*463.8*	*606.6*	*553.0*	*160.6*	*107.0*
	4	=	=	24.0	16.0	34.0	26.0	44.0	36.0	54.0	46.0	64.0	56.0	24.0	16.0
		=	=	*214.1*	*142.7*	*303.3*	*231.9*	*392.5*	*321.1*	*481.7*	*410.3*	*570.9*	*499.5*	*214.1*	*142.7*
	5	=	=	=	=	30.0	20.0	40.0	30.0	50.0	40.0	60.0	50.0	30.0	20.0
		=	=	=	=	*267.6*	*178.4*	*356.8*	*267.6*	*446*	*356.8*	*535.2*	*446*	*267.6*	*178.4*
	6	=	=	=	=	26.0	14.0	36.0	24.0	46.0	34.0	56.0	44.0	36.0	24.0
		=	=	=	=	*231.92*	*124.9*	*321.1*	*214.1*	*410.3*	*303.3*	*499.5*	*392.5*	*321.12*	*214.08*
AP3.5SR	2	41.5	30.0	58.5	47.0	75.5	64.0	92.5	81.0	109.5	98.0	126.5	115.0	21.0	9.5
		370.2	*267.6*	*521.8*	*419.2*	*673.5*	*570.9*	*825.1*	*722.5*	*976.7*	*874.2*	*1128.4*	*1025.8*	*187.3*	*84.7*
	3	32.0	20.0	49.0	37.0	66.0	54.0	83.0	71.0	100.0	88.0	117.0	105.0	31.0	19.0
		285.4	*178.4*	*437.1*	*330.0*	*588.7*	*481.7*	*740.4*	*633.3*	*892.0*	*785.0*	*1043.6*	*936.6*	*276.5*	*169.5*
	4	=	=	43.0	20.0	60.0	37.0	77.0	54.0	94.0	71.0	111.0	88.0	48.0	25.0
		=	=	*383.6*	*178.4*	*535.2*	*330.0*	*686.8*	*481.7*	*838.5*	*633.3*	*990.1*	*785.0*	*428.2*	*223.0*
	5	=	=	=	=	53.0	33.0	70.0	50.0	87.0	67.0	104.0	84.0	52.0	32.0
		=	=	=	=	*472.8*	*294.4*	*624.4*	*446.0*	*776.0*	*597.6*	*927.7*	*749.3*	*463.8*	*285.4*
	6	=	=	=	=	47.0	22.0	64.0	39.0	81.0	56.0	106.4	73.0	63.0	38.0
		=	=	=	=	*419.2*	*196.2*	*570.9*	*347.9*	*722.5*	*499.5*	*949.1*	*651.2*	*562.0*	*339.0*
AP4SR	2	52.7	42.4	76.7	66.4	100.7	90.4	123.7	113.4	149.7	139.4	173.7	175.2	28.6	18.3
		470.1	*378.2*	*684.2*	*592.3*	*898.2*	*806.4*	*1103.4*	*1011.5*	*1335.3*	*1243.4*	*1549.4*	*1562.8*	*255.1*	*163.2*
	3	43.0	28.0	67.0	52.0	91.0	76.0	114.0	99.0	140.0	125.0	164.0	153.6	43.0	28.0
		383.6	*249.8*	*597.6*	*463.8*	*811.7*	*677.9*	*1016.9*	*883.1*	*1248.8*	*1115.0*	*1462.9*	*1370.1*	*383.6*	*249.8*
	4	=	=	58.0	38.0	82.0	62.0	105.0	85.0	131.0	111.0	155.0	132.0	57.0	37.0
		=	=	*517.4*	*339.0*	*731.4*	*553.0*	*936.6*	*758.2*	*1168.5*	*990.1*	*1382.6*	*1177.4*	*508.4*	*330.0*
	5	=	=	=	=	73.0	47.0	96.0	70.0	122.0	96.0	146.0	110.4	72.0	46.0
		=	=	=	=	*651.2*	*419.2*	*856.3*	*624.4*	*1088.2*	*856.3*	*1302.3*	*984.8*	*642.2*	*410.3*
	6	=	=	=	=	64.0	33.0	87.0	56.0	113.0	82.0	137.0	88.8	86.0	55.0
		=	=	=	=	*570.9*	*294.4*	*776.0*	*499.5*	*1008.0*	*731.4*	*1222.0*	*792.1*	*767.1*	*490.6*
AP4.5SR	2	96.8	77.5	140.4	121.1	184.0	164.7	227.6	208.3	271.2	251.9	314.8	295.5	53.3	34.0
		863.4	*691.3*	*1252.4*	*1080.2*	*1641.3*	*1469.1*	*2030.2*	*1858.0*	*2419.1*	*2246.9*	*2808.0*	*2635.9*	*475.4*	*303.2*
	3	79.8	50.9	123.4	94.5	167.0	138.1	210.6	181.7	254.2	225.3	297.8	268.9	79.9	51.0
		711.8	*454.0*	*1100.7*	*842.9*	*1489.6*	*1231.9*	*1878.6*	*1620.8*	*2267.5*	*2009.7*	*2656.4*	*2398.6*	*712.7*	*454.9*
	4	62.8	24.2	106.4	67.8	150.0	111.4	193.6	155.0	237.2	198.6	280.8	242.2	106.6	68.0
		560.2	*215.9*	*949.1*	*604.8*	*1338.0*	*993.7*	*1726.9*	*1382.6*	*2115.8*	*1771.5*	*2504.7*	*2160.4*	*950.9*	*606.6*
	5	=	=	89.4	41.1	133.0	84.7	176.6	128.3	220.2	171.9	263.8	215.5	133.3	85.0
		=	=	*797.4*	*366.6*	*1186.4*	*755.5*	*1575.3*	*1144.4*	*1964.2*	*1533.3*	*2353.1*	*1922.3*	*1189.0*	*758.2*
	6	=	=	72.4	14.4	116.0	58.0	159.6	101.6	203.2	145.2	246.8	188.8	160.0	102.0
		=	=	*645.8*	*128.4*	*1034.7*	*517.4*	*1423.6*	*906.3*	*1812.5*	*1295.2*	*2201.5*	*1684.1*	*1427.2*	*909.8*
AP5SR	2	123.7	99.4	178.7	154.4	234.7	210.4	289.7	265.4	345.2	320.9	400.7	376.4	67.6	43.3
		1103.4	*886.6*	*1594.0*	*1377.2*	*2093.5*	*1876.8*	*2584.1*	*2367.4*	*3079.2*	*2862.4*	*3574.2*	*3357.5*	*603.0*	*386.2*
	3	103.0	66.0	158.0	121.0	214.0	177.0	269.0	232.0	324.5	287.5	380.0	343.0	101.0	64.0
		918.8	*588.7*	*1409.4*	*1079.3*	*1908.9*	*1578.8*	*2399.5*	*2069.4*	*2894.5*	*2564.5*	*3389.6*	*3059.6*	*900.9*	*570.9*
	4	=	=	136.0	87.0	192.0	143.0	247.0	198.0	302.5	253.5	358.0	309.0	135.0	86.0
		=	=	*1213.1*	*776.0*	*1712.6*	*1275.6*	*2203.2*	*1766.2*	*2698.3*	*2261.2*	*3193.4*	*2756.3*	*1204.2*	*767.1*
	5	=	=	=	=	170.0	109.0	225.0	164.0	280.5	219.5	336.0	275.0	169.0	108.0
		=	=	=	=	*1516.4*	*972.3*	*2007.0*	*1462.9*	*2502.1*	*1957.9*	*2997.1*	*2453.0*	*1507.5*	*963.4*
	6	=	=	=	=	148.0	75.0	203.0	130.0	258.5	185.5	314.0	241.0	203.0	130.0
		=	=	=	=	*1320.2*	*669.0*	*1810.8*	*1159.6*	*2305.8*	*1654.7*	*2800.9*	*2149.7*	*1810.8*	*1159.6*
AP5.5SR	2	176.2	132.8	258.7	215.3	337.5	294.1	416.4	373.0	495.2	451.8	574.0	530.6	100.0	56.6
		1571.7	*1184.6*	*2307.6*	*1920.5*	*3010.5*	*2623.4*	*3714.3*	*3327.2*	*4417.2*	*4030.1*	*5120.1*	*4733.0*	*892.0*	*504.9*
	3	147.9	82.8	230.4	165.3	309.2	244.1	388.1	323.0	466.9	401.8	545.7	480.6	150.0	84.9
		1319.3	*738.6*	*2055.2*	*1474.5*	*2758.1*	*2177.4*	*3461.9*	*2881.2*	*4164.7*	*3584.1*	*4867.6*	*4287.0*	*1338.0*	*757.3*
	4	119.5	32.8	202.0	115.3	280.8	194.1	359.7	273.0	438.5	351.8	517.3	430.6	200.0	113.3
		1065.9	*292.6*	*1801.8*	*1028.5*	*2504.7*	*1731.4*	*3208.5*	*2435.2*	*3911.4*	*3138.1*	*4614.3*	*3841.0*	*1784.0*	*1010.6*
	5	=	=	173.7	65.3	252.5	144.1	331.4	223.0	410.2	301.8	489.0	380.6	250.0	141.6
		=	=	*1549.4*	*582.5*	*2252.3*	*1285.4*	*2956.1*	*1989.2*	*3659.0*	*2692.1*	*4361.9*	*3395.0*	*2230.0*	*1263.0*
	6	=	=	145.3	15.3	224.1	94.1	303.0	173.0	381.8	251.8	460.6	330.6	300.0	170.0
		=	=	*1296.1*	*136.5*	*1999*	*839.4*	*2702.8*	*1543.2*	*3405.7*	*2246.1*	*4108.6*	*2949.0*	*2676.0*	*1516.4*
AP6SR	2	257.0	200.0	371.0	314.0	484.0	427.0	597.0	540.0	711.5	654.5	825.0	768.0	140.0	83.0
		2292.4	*1784.0*	*3309.3*	*2800.9*	*4317.3*	*3808.8*	*5325.2*	*4816.8*	*6346.6*	*5838.1*	*7359.0*	*6850.6*	*1248.8*	*740.4*
	3	215.0	130.0	329.0	244.0	442.0	357.0	555.0	470.0	669.5	584.5	783.0	698.0	210.0	125.0
		1917.8	*1159.6*	*2934.7*	*2176.5*	*3942.6*	*3184.4*	*4950.6*	*4192.4*	*5971.9*	*5213.7*	*6984.4*	*6226.2*	*1873.2*	*1115.0*
	4	=	=	287.0	174.0	400.0	287.0	513.0	400.0	627.5	514.5	741.0	628.0	280.0	167.0
		=	=	*2560.0*	*1552.1*	*3568.0*	*2560.0*	*4576.0*	*3568.0*	*5597.3*	*4589.3*	*6609.7*	*5601.8*	*2497.6*	*1489.6*
	5	=	=	=	=	358.0	217.0	471.0	330.0	585.5	4445	699.0	558.0	350.0	209.0
		=	=	=	=	*3193.4*	*1935.6*	*4201.3*	*2943.6*	*5222.7*	*3964.9*	*6235.1*	*4977.4*	*3122.0*	*1864.3*
	6	=	=	=	=	316.0	147.0	429.0	260.0	543.5	374.5	657.0	488.0	420.0	251.0
		=	=	=	=	*2818.7*	*1311.2*	*3826.7*	*2319.2*	*4848.0*	*3340.5*	*5860.4*	*4353.0*	*3746.4*	*2238.9*
AP8SR	2	478.0	386.0	691.0	599.0	904.0	812.0	1116.0	1024.0	1331.0	1239.0	1704.0	1452.0	252.0	160.0
		4263.8	*3443.1*	*6163.7*	*5343.1*	*8063.7*	*7243.0*	*9954.7*	*9134.1*	*11872.5*	*11051.9*	*15199.7*	*12951.8*	*2247.8*	*1427.2*
	3	398.0	260.0	611.0	473.0	824.0	686.0	1036.0	898.0	1251.0	1113.0	1464.0	1326.0	378.0	240.0
		3550.2	*2319.2*	*5450.1*	*4219.2*	*7350.1*	*6119.1*	*9241.1*	*8010.2*	*11158.9*	*9928.0*	*13058.9*	*11827.9*	*3371.8*	*2140.8*
	4	=	=	531.0	347.0	744.0	560.0	956.0	772.0	1171.0	987.0	1384.0	1200.0	504.0	320.0
		=	=	*4736.5*	*3095.2*	*6636.5*	*4995.2*	*8527.5*	*6886.2*	*10445.3*	*8804.0*	*12345.3*	*10704.0*	*4495.7*	*2854.4*
	5	=	=	=	=	664.0	434.0	876.0	646.0	1091.0	861.0	1304.0	1074.0	630.0	400.0
		=	=	=	=	*5922.9*	*3871.3*	*7813.9*	*5762.3*	*9731.7*	*7680.1*	*11631.7*	*9580.1*	*5619.6*	*3568.0*
	6	=	=	=	=	584.0	308.0	796.0	520.0	1011.0	735.0	1224.0	948.0	756.0	480.0
		=	=	=	=	*5209.3*	*2747.4*	*7100.3*	*4638.4*	*9018.1*	*6556.2*	*10918.1*	*8456.2*	*6743.5*	*4281.6*
AP10SR	2	1181.0	957.0	1720.0	1496.0	2259.0	2032.0	2798.0	2574.0	3337.0	3113.0	3876.0	3652.0	660.0	436.0
		10534.5	*8536.4*	*15342.4*	*13344.3*	*20150.3*	*18125.4*	*24958.2*	*22960.1*	*29766.0*	*27768.0*	*34573.9*	*32575.8*	*5887.2*	*3889.1*
	3	963.0	628.0	1502.0	1167.0	2041.0	1706.0	2580.0	2245.0	3119.0	2748.0	3658.0	3323.0	989.0	654.0
		8590.0	*5061.8*	*13397.8*	*10409.6*	*18205.7*	*15217.5*	*23013.6*	*20025.4*	*27821.5*	*24833.3*	*32629.4*	*29641.2*	*8821.9*	*5833.7*
	4	=	=	1284.0	837.0	1823.0	1376.0	2362.0	1915.0	2901.0	2454.0	3440.0	2993.0	1319.0	872.0
		=	=	*11453.3*	*7466.0*	*1621.2*	*12273.9*	*21069.0*	*17081.8*	*25876.9*	*21889.7*	*30684.8*	*26697.6*	*11765.5*	*7778.2*
	5	=	=	=	=	1605.0	1046.0	2144.0	1585.0	2683.0	2124.0	3222.0	2663.0	1649.0	1090.0
		=	=	=	=	*14316.6*	*9330.0*	*19124.5*	*14138.2*	*23932.4*	*18946.1*	*28740.2*	*23754.0*	*14709.1*	*9722.8*
	6	=	=	=	=	=	=	1909.0	1254.0	2448.0	1793.0	2987.0	2332.0	1980.0	1325.0
		=	=	=	=	=	=	*17028.3*	*11185.7*	*21856.2*	*15993.6*	*26644.0*	*20801.4*	*17661.6*	*11819.0*

NOTA: Il valore del momento torcente, riportato in tabella, si intende valido anche per i modelli della serie APM ed esso non dovrà mai essere inferiore a quello richiesto dalla valvola.

NOTE: *The output torque of selected actuator mentioned in the table are suitable also for APM series and the value should never be less the required valve torque.*



CONSUMO ARIA PER CORSA - *AIR CONSUMPTION FOR STROKE (FREE AIR)*

MODELLO - *MODEL*	U.M.	AP1 DA/SR	AP2 DA/SR	AP3 DA/SR	AP3.5 DA/SR	AP4 DA/SR	AP4.5 DA/SR	AP5 DA/SR	AP5.5 DA/SR	AP6 DA/SR	AP8 DA/SR	AP10 DA/SR
In apertura	Litri - *Liters*	0.08	0.12	0.24	0.48	0.68	1	1.4	1.6	3.2	5.3	14.2
Counter clockwise	*Cu.ft.*	*0.003*	*0.004*	*0.008*	*0.017*	*0.024*	*0.035*	*0.049*	*0.057*	*0.11*	*0.19*	*0.5*
In chiusura (Solo DA)	Litri - *Liters*	0.10	0.16	0.44	0.56	0.96	1.6	2.16	2.56	4	8.6	16.5
Clockwise (DA only)	*Cu.ft.*	*0.0035*	*0.006*	*0.016*	*0.020*	*0.034*	*0.057*	*0.076*	*0.09*	*0.14*	*0.30*	*0.58*

PESI - *WEIGHTS*

MOD. DA	AP1	AP2 / APM2		AP3 / APM3		AP3,5 / APM3,5		AP4 / APM4		AP4,5 / APM4,5		AP5 / APM5		AP5,5 / APM5,5		AP6 / APM6		AP8 / APM8		AP10 / APM10	
Kg.	1.00	1.42	1.44	2.54	2.62	3.68	3.78	5.10	5.15	8.24	8.33	10.10	10.38	13.94	14.86	19.66	20.40	36.60	37.70	77.00	78.30
lbs.	*2.20*	*3.12*	*3.17*	*5.59*	*5.76*	*8.10*	*8.32*	*11.22*	*11.33*	*18.13*	*18.33*	*22.22*	*22.84*	*30.67*	*32.69*	*43.25*	*44.88*	*80.52*	*82.94*	*169.40*	*172.26*

DIMENSIONI - *DIMENSIONS*

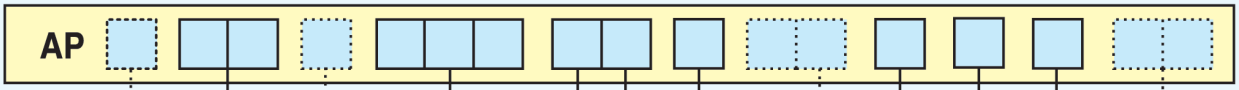
MODELLO *MODEL*	U.M.	A	W*	B	C	D	E	F	G	H	K	L	M	N	P	Q	R	⌀ S-S	T	U	V	ISO 5211 STD	ISO 5211 *SPECIAL*
AP1 DA/SR	mm	142	162	67	60	87	20	42	41	12	8	-	80	30	25	10	2	9/11**	M5/M6	36/50	1/8"	F03/F05	F04
	ins.	*5.59*	*6.38*	*2.64*	*2.36*	*3.43*	*0.79*	*1.65*	*1.61*	*0.47*	*0.31*	-	*3.15*	*1.18*	*0.98*	*0.39*	*0.08*	*0.35/0.43***		*1.42/1.97*			
AP2 DA/SR	mm	155	171	83	73	103	20	42	44.5	12	8	-	80	30	30/35	12	2	11/14**	M5/M6	42/50	1/4"	***	—
	ins.	*6.10*	*6.73*	*3.27*	*2.87*	*4.06*	*0.79*	*1.65*	*1.75*	*0.47*	*0.31*	-	*3.15*	*1.18*	*1.18/1.38*	*0.47*	*0.08*	*0.43/0.55***		*1.65/1.97*		F04/F05	
AP3 DA/SR	mm	213	240	100	85	120	20	50	49.5	14	10	-	80	30	35	16	3	14/17**	M6/M8	50/70	1/4"	F05/F07	—
	ins.	*8.33*	*9.45*	*3.94*	*3.35*	*4.72*	*0.79*	*1.97*	*1.95*	*0.55*	*0.39*	-	*3.15*	*1.18*	*1.38*	*0.63*	*0.12*	*0.43/0.67***		*1.97/2.76*			
AP3.5 DA/SR	mm	236	268	110	98	130	20	50	53	19	14	-	80	30	55	20	3.5	17/22**	M8	70	1/4"	F07	F05/F07
	ins.	*9.29*	*10.55*	*4.33*	*3.86*	*5.12*	*0.79*	*1.97*	*2.09*	*0.75*	*0.55*	-	*3.15*	*1.18*	*2.17*	*0.79*	*0.14*	*0.67/0.87***		*2.76*			
AP4 DA/SR	mm	276	304	125	110	145	20	50	58	19	14	-	80	30	55	20	3.5	17/22**	M8/M10	70/102	1/4"	F07/F10	—
	ins.	*10.87*	*11.97*	*4.92*	*4.33*	*5.71*	*0.79*	*1.97*	*2.28*	*0.75*	*0.55*	-	*3.15*	*1.18*	*2.17*	*0.79*	*0.14*	*0.67/0.87***		*2.76/4.02*			
AP4.5 DA/SR	mm	310	350	142	128	172	30	58	69	28	20	130	80	30	70	24	3.5	17**/22	M10	102	1/4"	F10	F07
	ins.	*12.20*	*13.78*	*5.59*	*5.04*	*6.77*	*1.18*	*2.28*	*2.72*	*1.10*	*0.79*	*5.12*	*3.15*	*1.18*	*2.76*	*0.94*	*0.14*	*0.67**/0.87*		*4.02*			
AP5 DA/SR	mm	366	405	155	140	185	30	-	-	28	20	130	80	30	70	24	3.5	17**/22	M10	102	1/4"	F10	F07/F12
	ins.	*14.41*	*15.94*	*6.10*	*5.51*	*7.28*	*1.18*	-	-	*1.10*	*0.79*	*5.12*	*3.15*	*1.18*	*2.76*	*0.94*	*0.14*	*0.67**/0.87*		*4.02*			
AP5.5 DA/SR	mm	388	442	176	160	206	30	-	-	36	28	130	80	30	85	29	3.5	22**/27	M12	125	1/4"	F12	F10
	ins.	*15.27*	*17.40*	*6.93*	*6.30*	*8.11*	*1.18*	-	-	*1.42*	*1.10*	*5.12*	*3.15*	*1.18*	*3.35*	*1.14*	*0.14*	*0.87**/1.06*		*4.92*			
AP6 DA/SR	mm	468	500	200	175	230	30	-	-	36	28	130	80	30	85	29	3.5	22**/27	M12	125	1/4"	F12	F10
	ins.	*18.42*	*19.68*	*7.87*	*6.89*	*9.06*	*1.18*	-	-	*1.42*	*1.10*	*5.12*	*3.15*	*1.18*	*3.35*	*1.14*	*0.14*	*0.87**/1.06*		*4.92*			
AP8 DA/SR	mm.	563	612	250	215	300	50	-	-	48	32	130	-	30	100	38	5	27**/36	M16	140	1/4"	F14	F12
	ins.	*22.16*	*24.09*	*9.84*	*8.46*	*11.81*	*1.97*	-	-	*1.89*	*1.26*	*5.12*	-	*1.18*	*3.94*	*1.50*	*0.20*	*1.06**/1.42*		*5.51*			
AP10 DA/SR	mm.	750	838	335	290	385	50	-	-	48	32	130	-	30	130	50	5	36**/46	M20	165	1/4"	F16	F14
	ins.	*29.53*	*32.99*	*13.19*	*11.42*	*15.16*	*1.97*	-	-	*1.89*	*1.26*	*5.12*	-	*1.18*	*5.12*	*1.97*	*0.20*	*1.42**/1.81*		*6.50*			

* Dimensione solo per serie APM
Dimension only for APM series

** Dimensione su richiesta
Dimension on request

*** Foratura da specificare in caso di ordine
To be chosen when ordering

COME ORDINARE GLI ATTUATORI "AIR POWER" - *HOW TO ORDER "AIR POWER" ACTUATORS*



LIMITAZIONE INTERNA *DOUBLE STROKE ADJUSTMENT*

M	SU RICHIESTA / *ON REQUEST*

ESECUZIONE SPECIALE *SPECIAL EXECUTION*

01	BUSSOLA DI CENTRAGGIO *CENTER RING*
03	LIMITAZIONE 0°÷90° *0°÷90° ADJUSTMENT SCREW*

MODELLO - *MODEL*

AP0	00
AP1	01
AP2(FO4)	2A
AP2(FO5)	2B
AP3	03
AP3.5	35
AP4	04
AP4.5	45
AP5	05
AP5.5	55
AP6	06
AP8	08
AP10	10

FORATURA SPECIALE *SPECIAL DRILLING*

F04
F04
-
-
-
F05/F07
-
F07
F07/F12
F10
F10
F12
F14

GUARNIZIONE - *SEAL TYPE*

S	BUNA N / *BUNA N* (-20° C +80° C) / *(-4° F + 175° F)*
H	VITON / *VITON* (+20° C +150° C) / *(+68° F + 302° F)*
L	SILICONE / *SILICON* (-50° C +100° C) / *(-58° F + 212° F)*

INDICE - *POS. INDIC.*

I	INDICE / *POS. INDIC.*
C	CAMMA / *CAM*
W	SENZA / *WITHOUT*

MOLLE-*SPRINGS*

* DA0
** S04
S05
S06
S07
S08
S09
S10
S11
S12

CORPO - *BODY*

FILET./*THREAD.*		ANODIZ./*ANODIZ.*	
B	GAS/*B.S.P.P.*	G	ORO / *GOLD*
N	N.P.T.	H	DURA / *HARD*
		N	NEUTRA / *NEUTRAL*
		K	NICK. CHIM. / *E.N.P.*
		T	RIVESTITO P.T.F.E. / *COATED P.T.F.E.*

TESTATA - *END CAP*

B	NERO EPOX / *BLACK EPOXY COATED*
H	ANODIZ. DURA / *HARD ANODIZING*
K	NICK. CHIM. / *E.N.P.*
L	BLU EPOX / *BLUE EPOXY COATED*
R	RIVESTITA RILSAN / *COATED RILSAN*
T	RIVESTITA P.T.F.E. / *COATED P.T.F.E.*

STELO - *PINION*

1	AVP NICK.CHIM./ *E.N.P. FREE-CUTTING STEEL*	◆
2	AVP NICK.CHIM./ *E.N.P. FREE-CUTTING STEEL*	✹
3	AISI 303 / *303 S.S.*	◆
4	AISI 303 / *303 S.S.*	✹

CONNESSIONE SPECIALE *SPECIAL CONNECTION*

09	QUADRO/POLIGONO - *SQUARE/STAR*	mm 09
11	QUADRO/POLIGONO - *SQUARE/STAR*	mm 11
14	QUADRO/POLIGONO - *SQUARE/STAR*	mm 14
17	QUADRO/POLIGONO - *SQUARE/STAR*	mm 17
22	QUADRO/POLIGONO - *SQUARE/STAR*	mm 22
27	QUADRO/POLIGONO - *SQUARE/STAR*	mm 27
36	QUADRO/POLIGONO - *SQUARE/STAR*	mm 36

* doppio effetto / *double acting.*

** semplice effetto (numero totale di molle per attuatore)
spring return (total number of springs for actuator)