

## PNEUMATIC ROTARY ACTUATORS

### AP SERIES

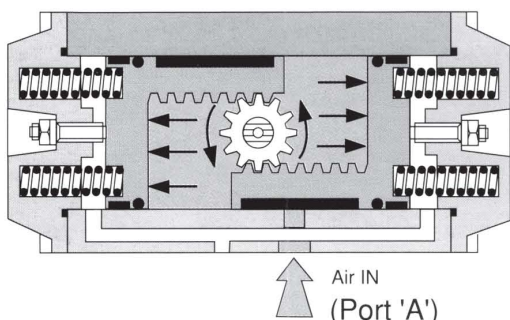
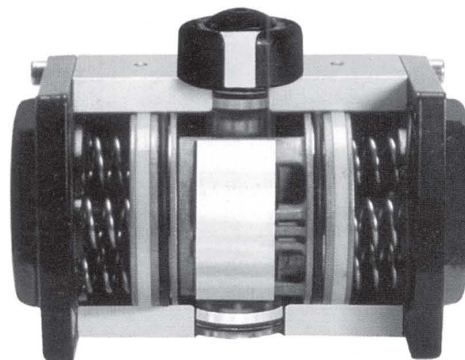
#### SPRING RETURN ACTUATORS (SR) ISO 5211

##### PRINCIPLE OF OPERATION

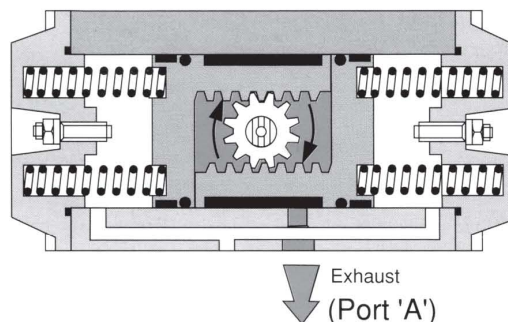
Pressure applied to Port 'A' will cause the inner chambers to be pressurised, forcing the pistons outward to compress the springs.

The pinion is rotated counter 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 shut-down mode.



COUNTER CLOCKWISE OUTPUT ROTATION



CLOCKWISE OUTPUT ROTATION

#### SELECTION OF SPRING RETURN ACTUATORS (SR)

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).

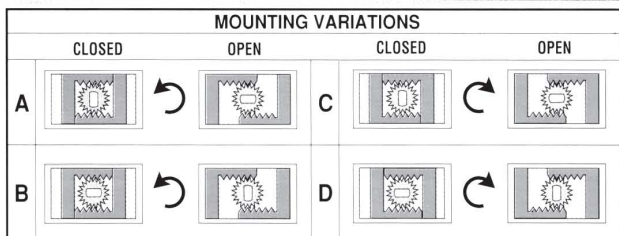
**Example:** Valve torque 60 Nm plus 25% = 75 Nm. Checking the "Spring Stroke / 0°" column, it will be noted that the nearest value is 108 Nm.

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 adequate. This model may be used.

#### WEIGHTS

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.



#### OPENING CLOSING TIME (SECONDS) 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	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	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 SEC	1 SEC	1 SEC	1.5 + 2 SECS	2 SECS	2 + 3 SECS	4 + 6 SECS	7 + 8 SECS

#### RIGHT ARRANGEMENT OF SPRINGS

