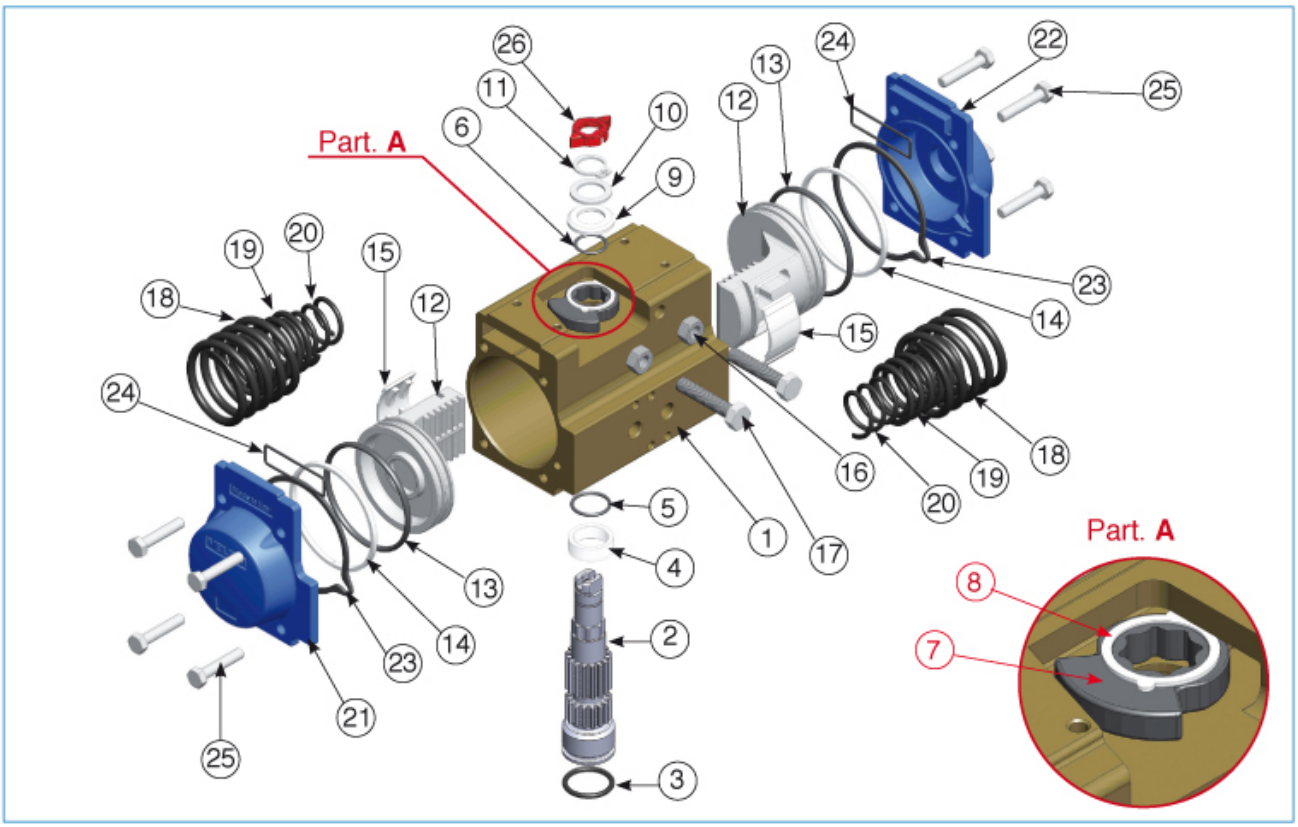
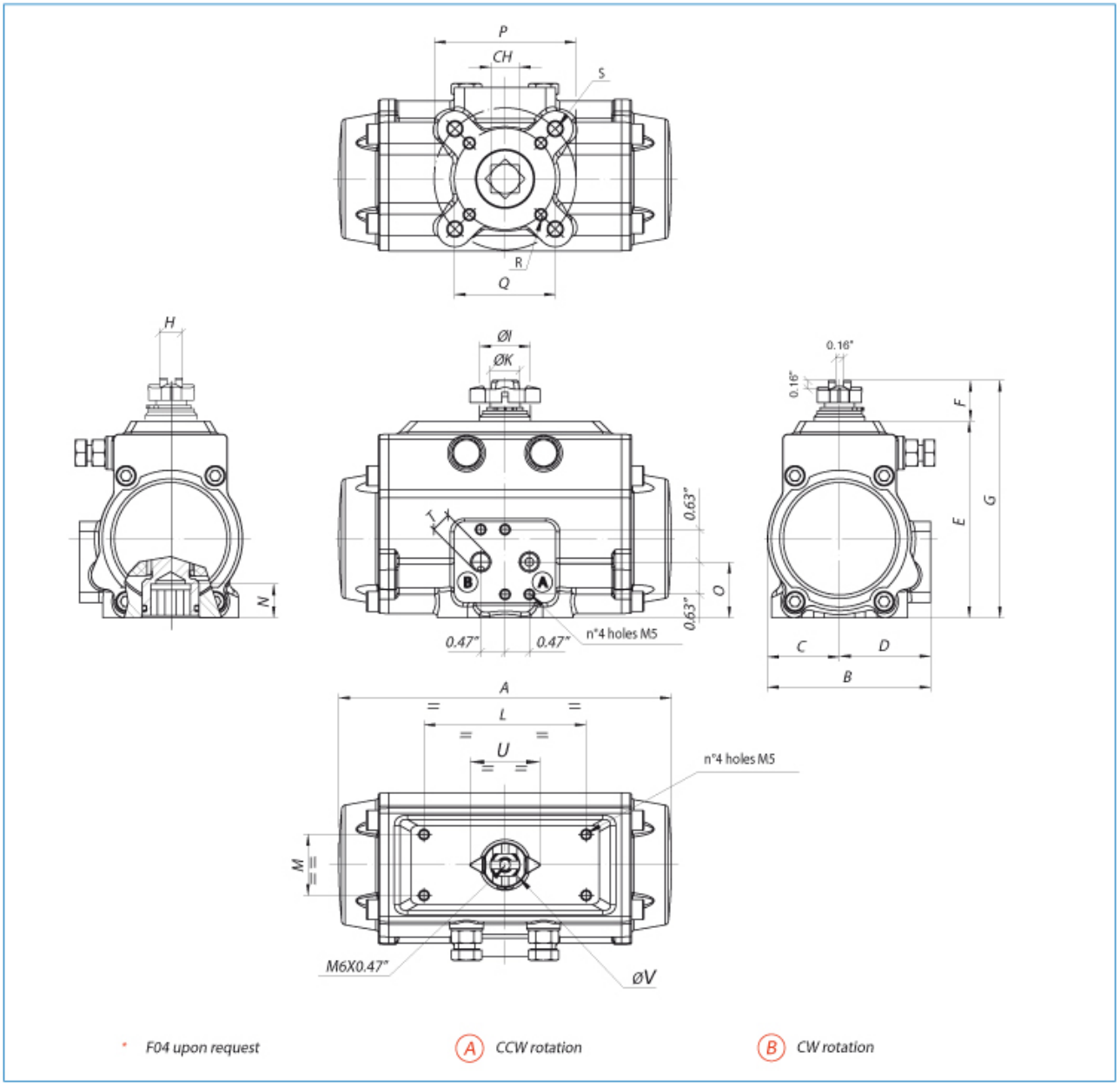
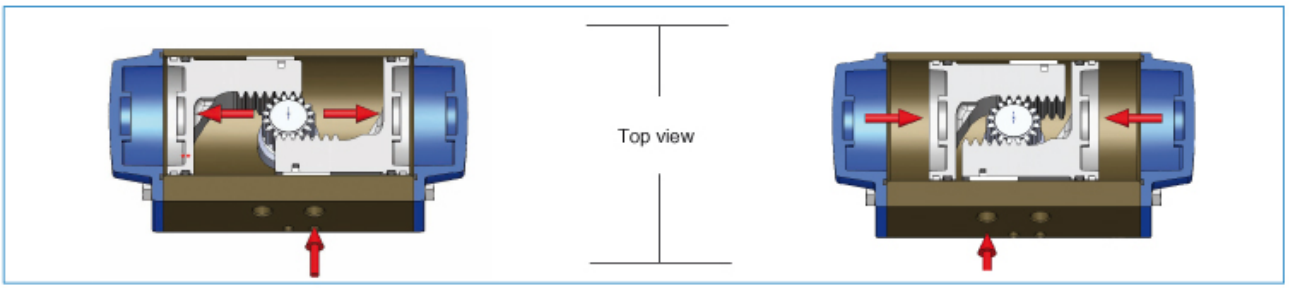


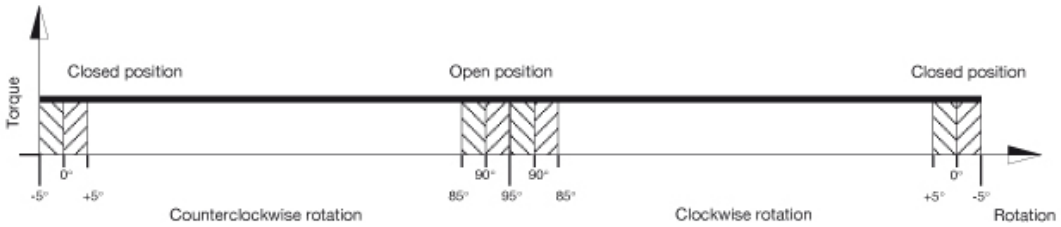
ITEM	DESCRIPTION	MATERIAL	TREATMENT	Q.TA' DA	Q.TA' SR
1	Body	Extruded aluminium	Hard anodized	1	1
2	Anti-blowout pinion	Steel	Nickel plated	1	1
• 3	O-ring	NBR		1	1
• 4	spacer ring	POM		1	1
• 5	O-ring	NBR		1	1
• 6	O-ring	NBR		1	1
7	Cam	Stainless steel		1	1
8	Spacer	POM		1	1
• 9	Spacer	POM		1	1
10	Washer	Stainless steel		1	1
** 11	Snap ring	Steel	Nickel plated	1	1
12	Piston	Die cast aluminium		2	2
• 13	O-ring	NBR		2	2
• 14	Antifriction ring	POM		2	2
• 15	Thrust block	POM		2 [4]	2 [4]
16	Stop bolt retaining nut	Stainless steel		2	2
17	Stop bolt	Stainless steel		2	2
18	External spring	Steel	Painted	0	See spring
*** 19	central spring	Steel	Painted	0	
20	internal spring	Steel	Painted	0	
21	Left end cap	Die cast aluminium	Painted	1	1
22	Right end cap	Die cast aluminium	Painted	1	1
23	End cap seats	NBR		2	2
24	O-ring	NBR		2	2
25	End cap fixing screw	Stainless steel		8	8
26	Position indicator	Thermoplastic rubber TPE		1	1

• Parts subject to wear ** Reinforced series DIN 471 - UNI 7436



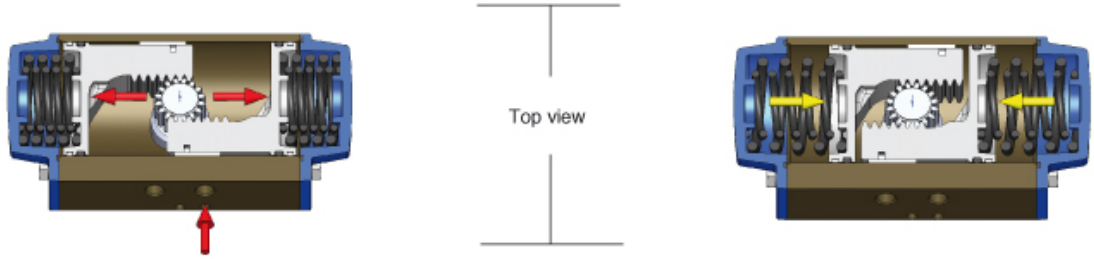
MOD.	DRILLING ISO 5211	CH	A	B	C	D	E	F	G	H	ØI	ØK	L	M	N	O	P	Q	R	S	T NPT	U	ØV
230	F16	1.81	27.17	9.78	4.88	4.90	12.80	1.18	13.98	1.42	2.64	1.97	3.15/5.12	1.18	1.97	3.62	6.50	/	/	3/4-10 UNC 2Bx1.14"	1/4"	3.17	2.36

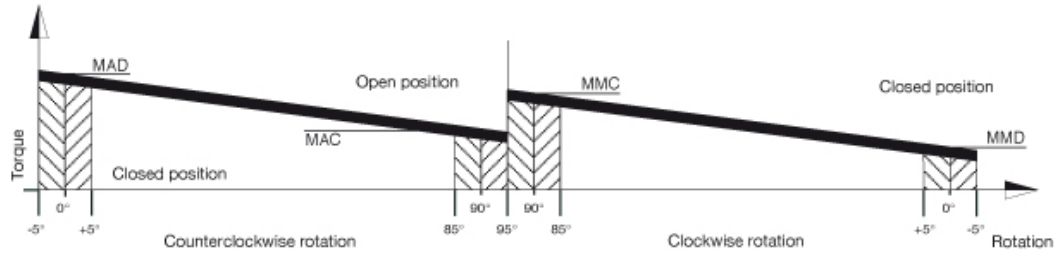




With reference to the above diagram it can be noted that the torque of a double acting actuator remains constant through-out the complete action.
The user can decide on which model to choose according to his/her own specific requirements, using the following guidelines:
1. Define the maximum torque of the valve to automate.
2. To obtain a safety factor increase the torque value chosen by 25-50% (subject to the type of valve and working conditions).
3. Once the torque value suggested is obtained consult the torque chart and in relation to the corresponding air pressure find a torque value exact to or exceeding the one obtained.
4. Once the torque value is determined move horizontally to the column "model" to find the actuator model required.

TYPE	AIR SUPPLY PRESSURE (psi)							
	40	50	60	70	80	90	100	115
	TORQUE OUTPUT DOUBLE ACTING ACTUATORS (in-Lbs)							
DA 230	8589	10738	12880	15031	17180	19289	21440	24671





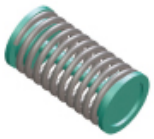
With reference to the above diagram the torque of a spring return actuator is not constant but decreasing. This is due to the action of the springs that when compressed during air actuation counteract the piston movement and accumulate energy which will be available in a decreasing way during the rotation inversion.
The torque given by the actuator is defined by four fundamental values.

Opening rotation

MAD = Actuator torque with unfolded springs
MAC = Actuator torque with compressed springs.

Closing rotation

MMC = Torque with compressed springs.
MMD = Torque with unfolded springs
The user can decide on which model to chose according to his/her own specific requirements, using the following guidelines:
1. Define the maximum torque of the valve to automate.
2. To obtain a safety factor increase the torque value chosen by 25-50%
(subject to the type of valve and working conditions).
3. Once the torque value suggested is obtained consult the torque chart and in relation to the corresponding air pressure find the torque value exact to or exceeding the one obtained, taking account of the lower value between the MMD and MAC values.
4. Once the torque value is determined move horizontally to the column "model" to find the actuator model required.

SPRING SETTING	
	
PRETENSIONED SPRING	
SET	N° OF SPRINGS FOR EACH SIDE
01	2/3
02	3/3
03	3/4
04	4/4
05	4/5
06	5/5

MOD	SET	SPRING TORQUE (Nm)		AIR SUPPLY PRESSURE (psi)															
				40		50		60		70		80		70		100		115	
				TORQUE OUTPUT SPRING RETURN ACTUATORS (in-Lbs)															
		0° MMD	90° MMC	0° MAD	90° MAC	0° MAD	90° MAC	0° MAD	90° MAC	0° MAD	90° MAC	0° MAD	90° MAC	0° MAD	90° MAC	0° MAD	90° MAC	0° MAD	90° MAC
SR230	1	3443	5895	4124	1522	5682	3080	8789	6187										
	2	4124	7072			4956	1823	8063	4930										
	3	4815	8258					7328	3682	10444	6797								
	4	5505	9435					6603	2425	9718	5541	11276	7098						
	5	6196	10612					5868	1177	8984	4293	10541	5850	12090	7399				
	6	6877	11789							8258	3036	9815	4594	11364	6142	14480	9258	17586	12364

WORKING TIME (SEC)		
COUNTERCLOCKWISE ROTATION (DA)	CCW	4,15
CLOCKWISE ROTATION (DA)	CW	3,80
COUNTERCLOCKWISE ROTATION (SR)	CCW	6,20
CLOCKWISE ROTATION (SR)	CW	5,40

WEIGHT CHART (Lbs)	
DOUBLE ACTING	128,99
SPRING RETURN	156,56

ACTUATOR AIR CONSUMPTION CHART		Litres: 1 Litre = 1000 cm3
COUNTERCLOCKWISE ROTATION (DA/SR)	CCW	651,73
CLOCKWISE ROTATION (DA)	CW	918,4

To obtain the air consumption in Nl/min multiply the value in the chart for the correct parameters. That is to say for the supplied absolute pressure and the number of strokes in a minute.