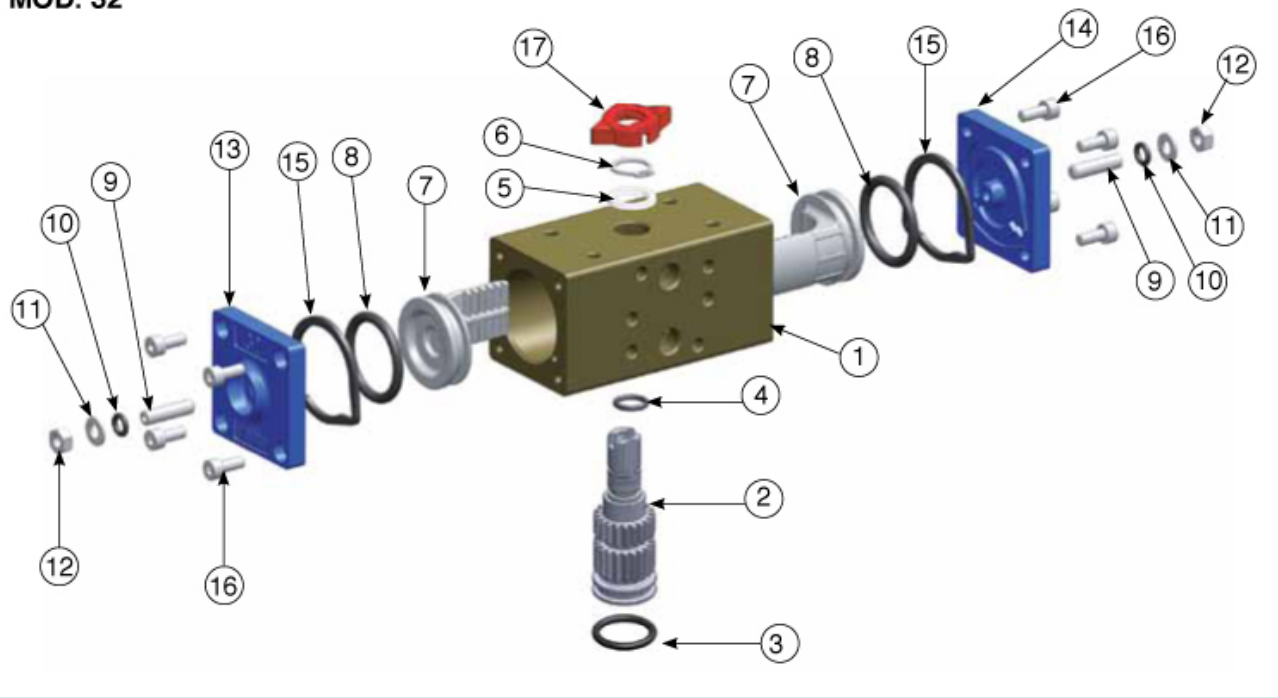
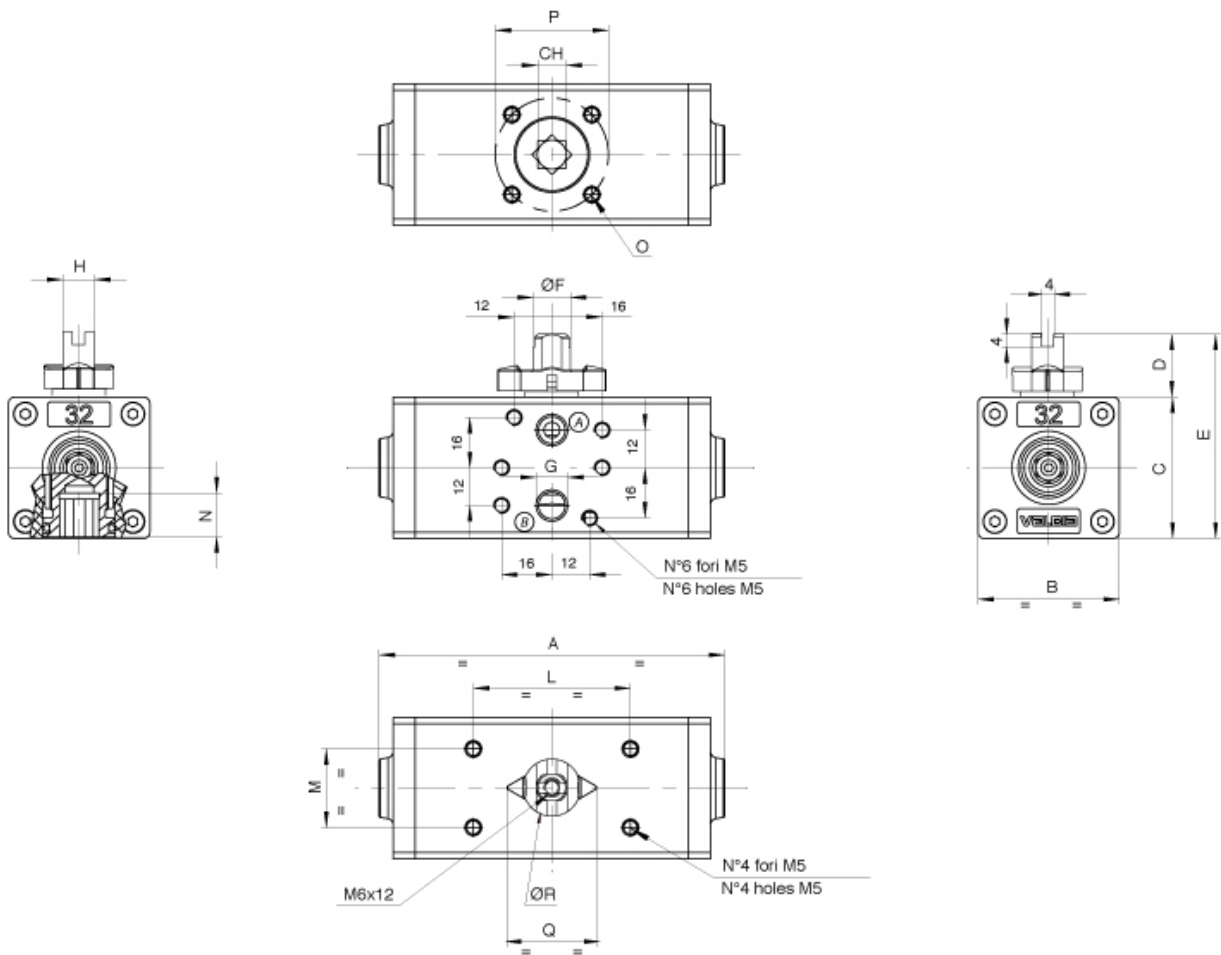


MOD. 32



ITEM	DESCRIPTION	MATERIAL	TREATMENT	Q.TA'
1	Body	Extruded aluminium	Hard anodized	1
2	Anti-blowout pinion	Steel	Nickel plated	1
• 3	O-ring	NBR		1
• 4	O-ring	NBR		1
• 5	Spacer ring	POM		1
6	Snap ring	Steel	Nickel plated	1
7	Piston	Die cast aluminium		2
• 8	O-ring	NBR		2
9	Stop bolt	Stainless steel		2
• 10	O-ring	NBR		2
11	Washer	Stainless steel		2
12	Stop boltretaining nut	Stainless steel		2
13	Left end cap	Die cast aluminium	Painted	1
14	Right end cap	Die cast aluminium	Painted	1
15	End cap seats	NBR		2
16	End cap fixing screw	Stainless steel		8
17	Position indicator	Thermoplastic rubber TPE		1

• Parts subject to wear



(A) Rotazione antioraria
CCW rotation

(B) Rotazione oraria
CW rotation

MOD.	FORATURA ISO 5211	CH	A	B	C	D	E	ØF	G ISO 7/1	H	L	M	N	O	P	Q	øR
32	F03	9	110	45	45	20	65	11,8	1/8"	10	50	25	12	M5x7,5	36	34,5	22

WORKING TIME (SEC)

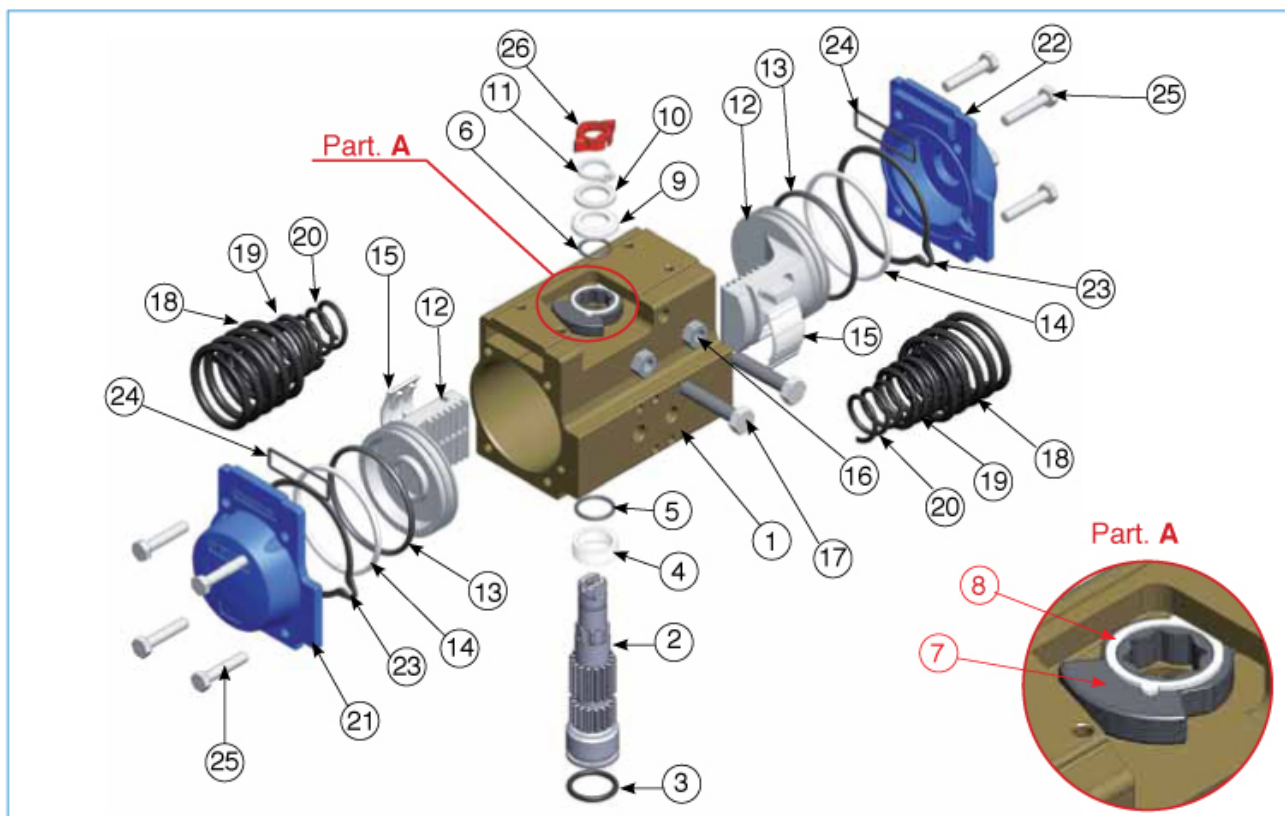
COUNTERCLOCKWISE ROTATION (DA)	CCW	0.03
CLOCKWISE ROTATION (DA)	CW	0.03

WEIGHT CHART (KG)

DOUBLE ACTING	0.49
---------------	------

ACTUATOR AIR CONSUMPTION CHART

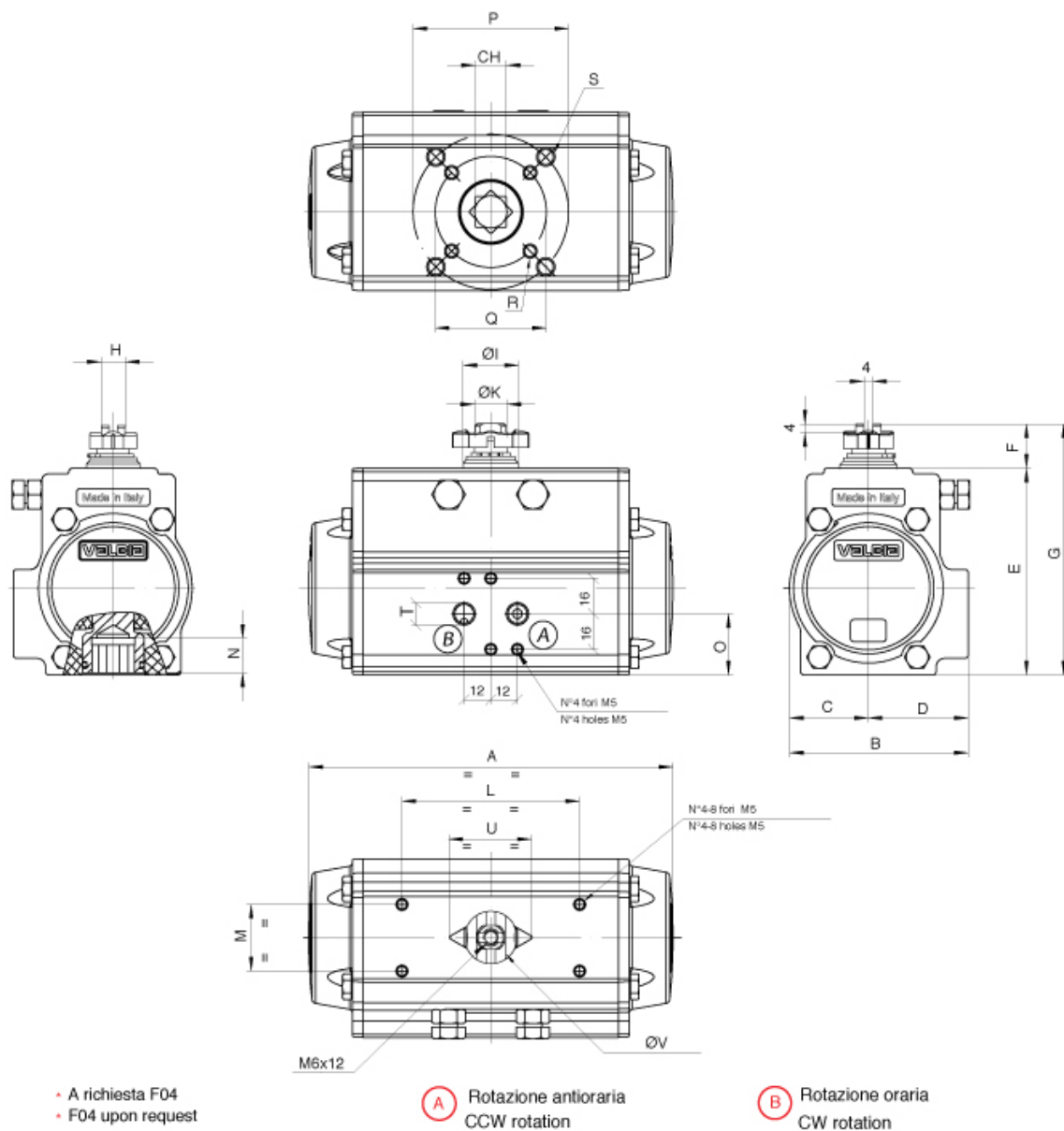
COUNTERCLOCKWISE ROTATION (DA/SR)	CCW	0.04
CLOCKWISE ROTATION (DA)	CW	0.03



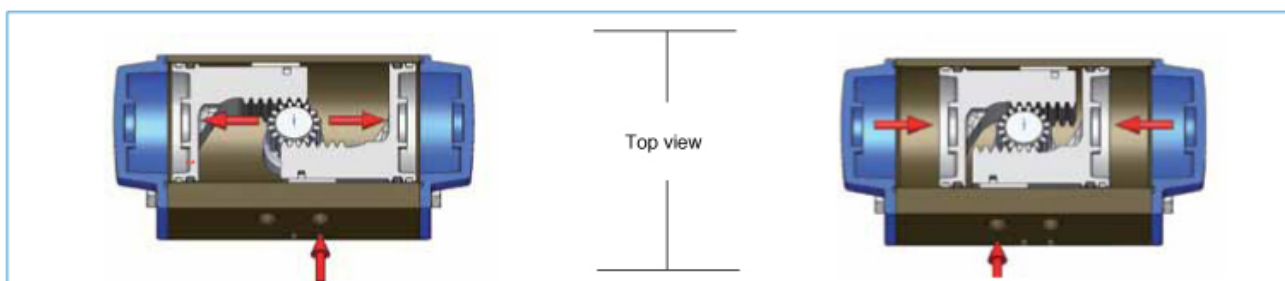
POSIZ. ITEM	DESCRIZIONE DESCRIPTION	MATERIALE MATERIAL	TRATTAMENTO TREATMENT	Q.TA' DA	Q.TA' SR
1	Body	Extruded aluminium	Hard anodized	1	1
2	Anti-blowout pinion	Steel	Nickel plated	1	1
• 3	O-ring	NBR		1	1
• 4	spacer ring	POM		1	1
• 5	O-ring	NBR		1	1
• 6	O-ring	NBR		1	1
7	Cam	Stainless steel		1	1
8	Spacer	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	
*** 19	central spring	Steel	Painted	0	See spring
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

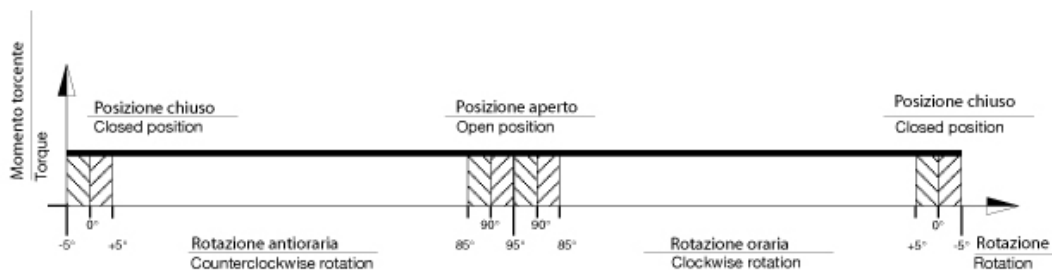
* Parts subject to wear

** Reinforced series DIN 471 - UNI 7436



MOD.	FORATURA ISO 5211	CH	A	B	C	D	E	F	G	H	ØI	J	ØK	L	M	N	O	P	Q	R	S	T ISO 771
52	F03-F05 *	11	141	71	30	41	81,5	20	101,5	9	21	8	12	80	30	12	26,5	50	36	M5X7,5	M6X9	1/8"



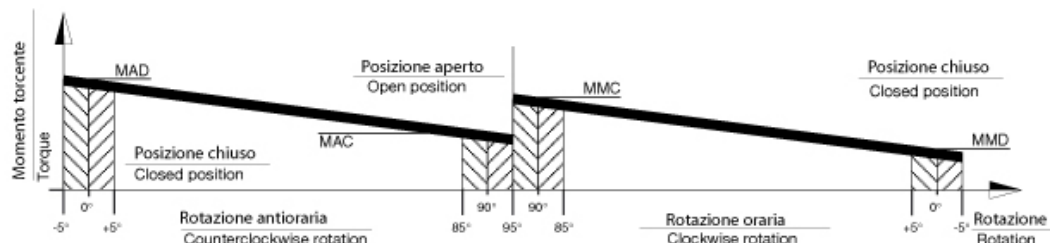
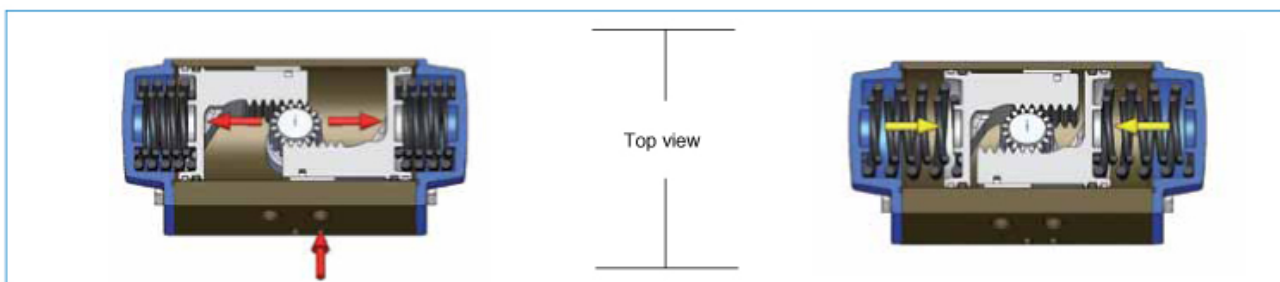


With reference to the above diagram it can be noted that the torque of a double acting actuator remains constant through-out the complete action.

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 (bar)							
	2,5	3	4	5	5,5	6	7	8
	TORQUE OUTPUT DOUBLE ACTING ACTUATORS (Nm)							
DA 52	9	11	14,5	18,5	20	22	26	30



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 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 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.

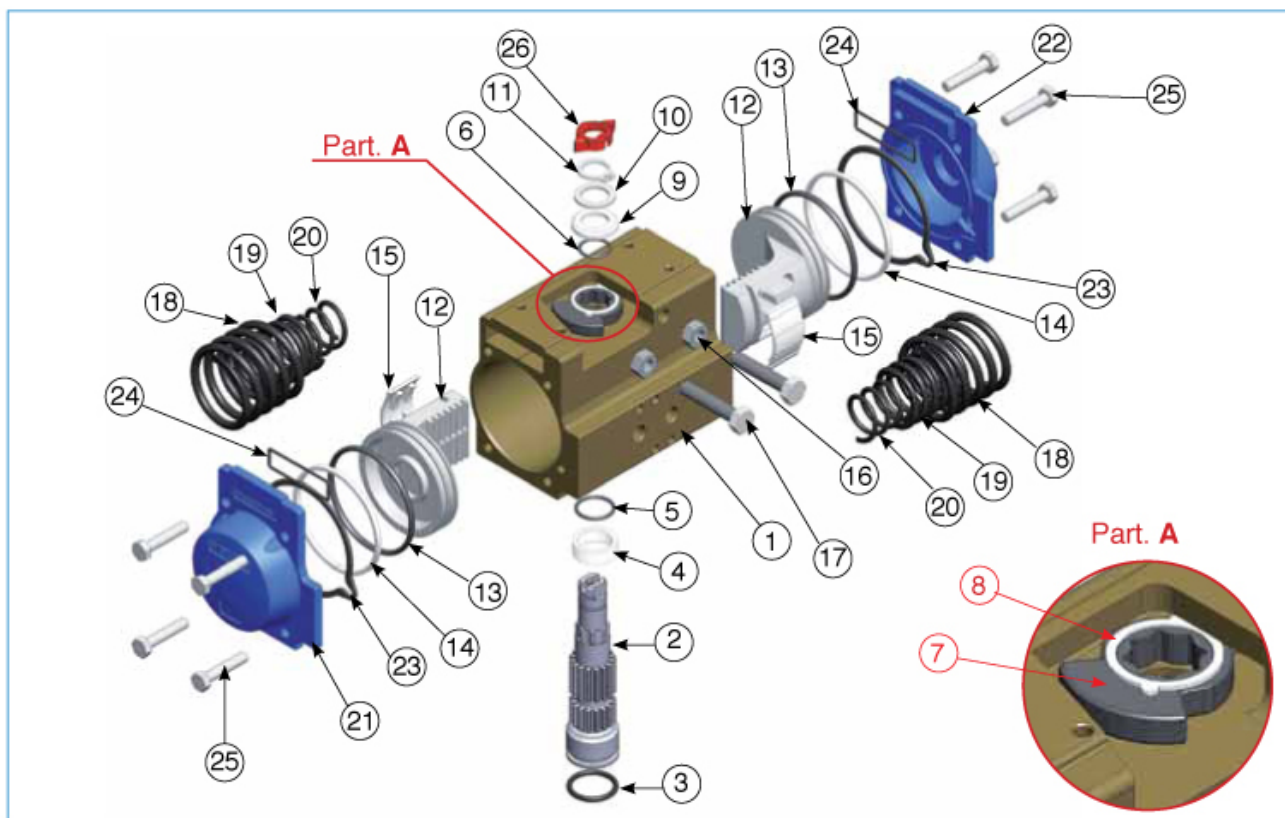
SPRING SETTING		
SET STANDARD 05		
		
SET	EXTERNAL SPRING	INTERNAL SPRING
01	1	1
02	2	-
03	1	2
04	2	1
05	2	2

MOD	SET	SPRING TORQUE (Nm)		AIR SUPPLY PRESSURE (bar)															
				2,5	3	4	5	5,5	6	7	8	TORQUE OUTPUT SPRING RETURN ACTUATORS (Nm)							
		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
SR52	01	3,6	4,9	4,5	1,6	6,4	3,5	10,2	7,4										
	02	4,8	6,7			5,2	1,7	9,0	5,6	12,8	9,4								
	03	5,2	7,5					8,6	4,8	12,4	8,6	14,3	10,5	16,2	12,4				
	04	6,5	9,3					7,3	3,0	11,2	6,8	13,1	8,7	15,0	10,6	18,8	14,5		
	05	8,1	11,9							9,5	4,3	11,4	6,2	13,3	8,1	17,1	11,9	20,9	15,7

WORKING TIME (SEC)		
COUNTERCLOCKWISE ROTATION (DA)	CCW	0,07
CLOCKWISE ROTATION (DA)	CW	0,05
COUNTERCLOCKWISE ROTATION (SR)	CCW	0,07
CLOCKWISE ROTATION (SR)	CW	0,07

WEIGHT CHART (KG)	
DOUBLE ACTING	1,12
SPRING RETURN	1,30

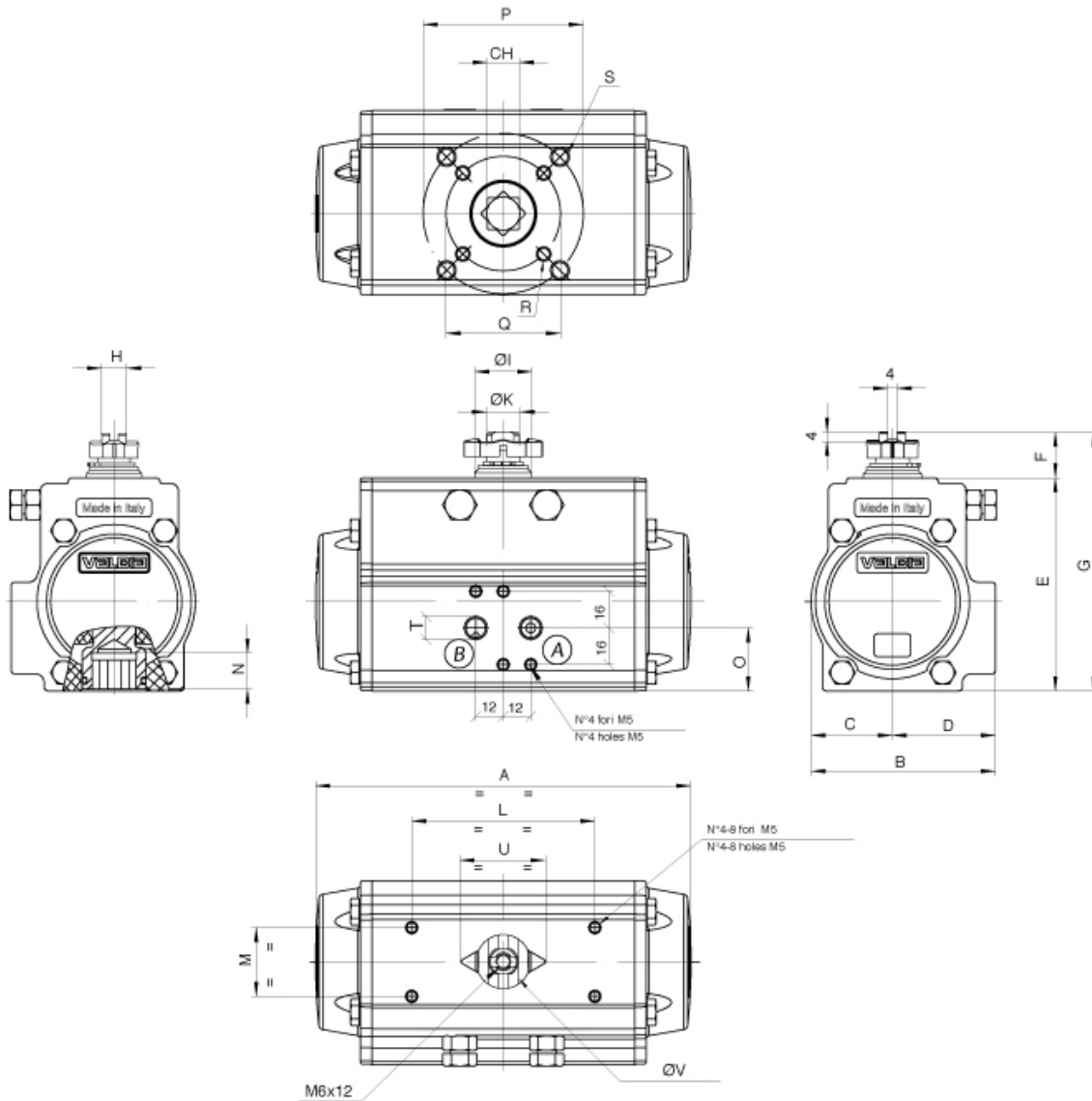
ACTUATOR AIR CONSUMPTION CHART		
COUNTERCLOCKWISE ROTATION (DA/SR)	CCW	0.10
CLOCKWISE ROTATION (DA)	CW	0.13



POSIZ. ITEM	DESCRIZIONE DESCRIPTION	MATERIALE MATERIAL	TRATTAMENTO 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	
*** 19	central spring	Steel	Painted	0	See spring
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

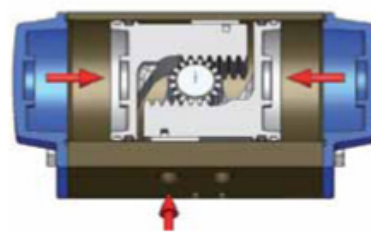
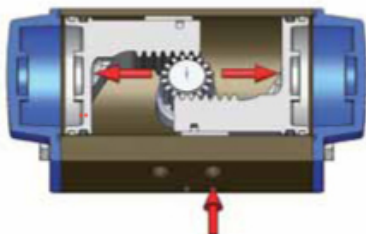


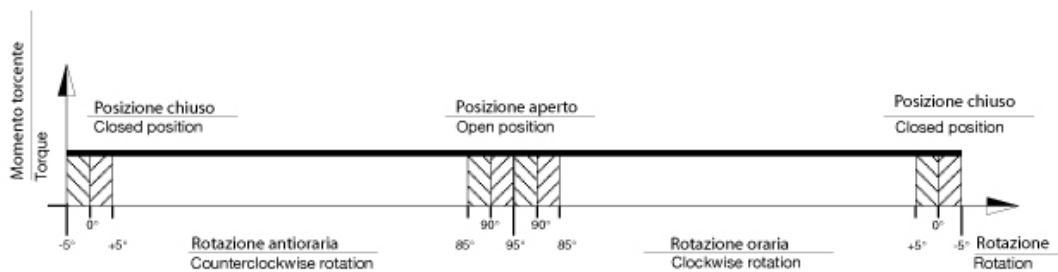
- A richiesta F04
- F04 upon request

(A) Rotazione antioraria
CCW rotation

(B) Rotazione oraria
CW rotation

MOD.	FORATURA ISO 5211	CH	A	B	C	D	E	F	G	H	ØI	J	ØK	L	M	N	O	P	Q	R	S	T ISO 7/1
63	F05 - F07	14	164	80,5	35,5	45	93	20	113	11	25	8	15	80	30	16	27,5	70	50	M6x8	M8x12	1/8"

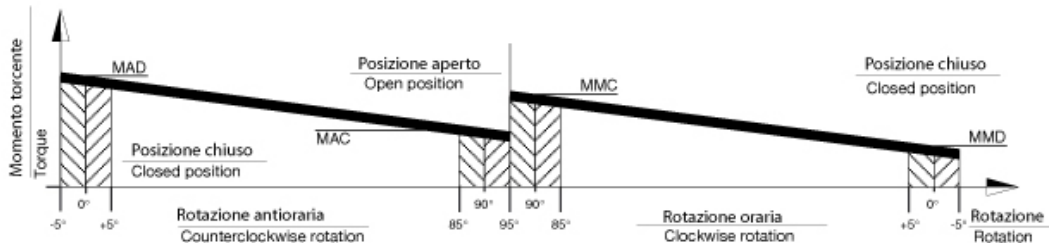
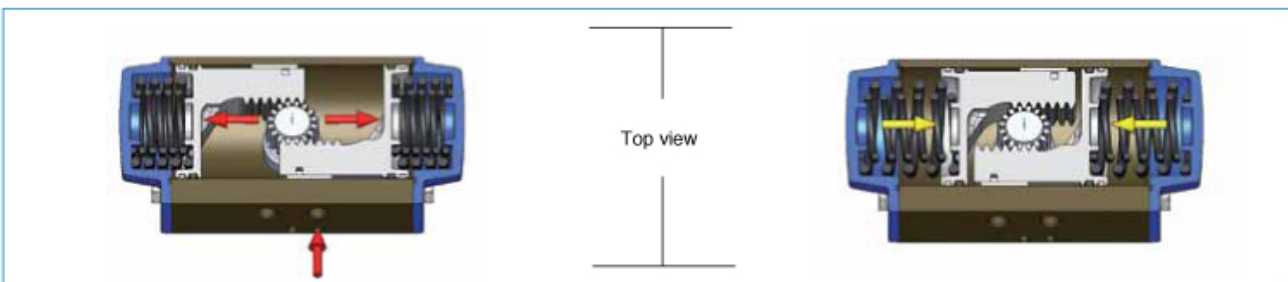




Dal grafico riportato si può notare che la coppia di un attuatore a doppio effetto si mantiene costante lungo tutta la manovra. L'utente potrà procedere alla scelta del modello idoneo alle proprie esigenze basandosi sulle seguenti indicazioni:

1. Verificare la coppia di spunto massimo della valvola da automatizzare.
2. Aumentare del 25-50% (dipende dal tipo di valvola e dalle condizioni di esercizio) il valore della coppia di spunto verificata, stabilendo così un coefficiente di sicurezza.
3. Ottenuto in questo modo il valore di coppia consigliato, si ricerca nella tabella dei momenti torcenti (in corrispondenza della pressione disponibile) un valore di coppia uguale o simile (comunque non inferiore) a quello ottenuto.
4. Trovato il valore basterà spostarsi in orizzontale verso sinistra nella colonna "modello" per avere la misura dell'attuatore adatto.

TYPE	AIR SUPPLY PRESSURE (bar)							
	2,5	3	4	5	5,5	6	7	8
	TORQUE OUTPUT DOUBLE ACTING ACTUATORS (Nm)							
DA 63	15,5	19	26	33	36	39,5	46,5	53,5



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 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 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.

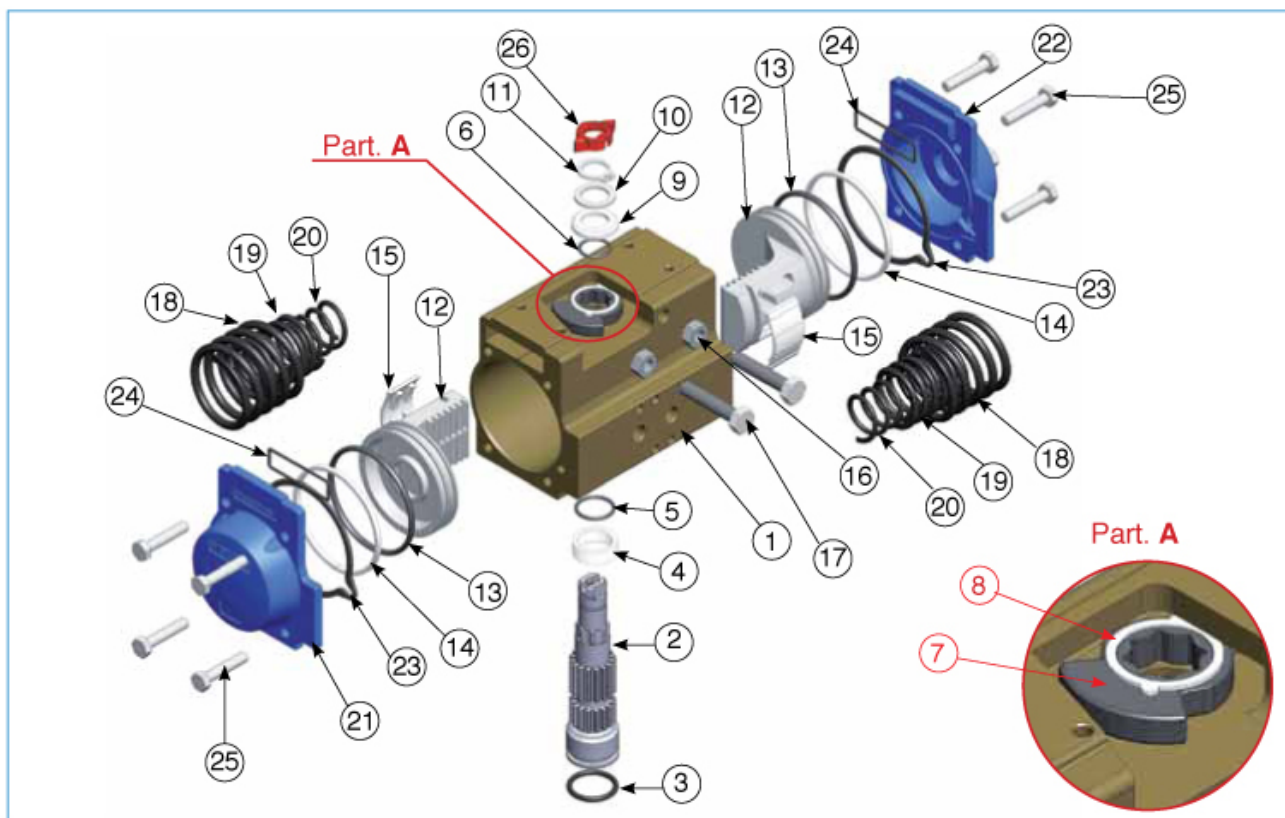
SPRING SETTING		
SET STANDARD 05		
		
SET	EXTERNAL SPRING	INTERNAL SPRING
01	1	1
02	2	-
03	1	2
04	2	1
05	2	2

MOD	SET	SPRING TORQUE (Nm)		AIR SUPPLY PRESSURE (bar)															
				2,5	3	4	5	5,5	6	7	8								
		0° MMD	90° MMC	TORQUE OUTPUT SPRING RETURN ACTUATORS (Nm)															
		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		
SR63	01	5.0	9.6	8.6	2.6	12.0	6.0	18.9	12.8										
	02	6.6	12.3			10.5	3.2	17.4	10.1	24.2	17.0								
	03	8.0	14.5					15.9	7.9	22.8	14.8	26.2	18.2	29.6	21.7				
	04	9.6	17.2					14.4	5.2	21.2	12.0	24.6	15.5	28.1	18.9	34.9	25.8		
	05	12.5	22.1							18.2	7.1	21.7	10.6	25.1	14.0	31.9	20.9	38.8	27.7

WORKING TIME (SEC)		
COUNTERCLOCKWISE ROTATION (DA)	CCW	0,11
CLOCKWISE ROTATION (DA)	CW	0,10
COUNTERCLOCKWISE ROTATION (SR)	CCW	0,13
CLOCKWISE ROTATION (SR)	CW	0,13

WEIGHT CHART (KG)	
DOUBLE ACTING	1,66
SPRING RETURN	1,97

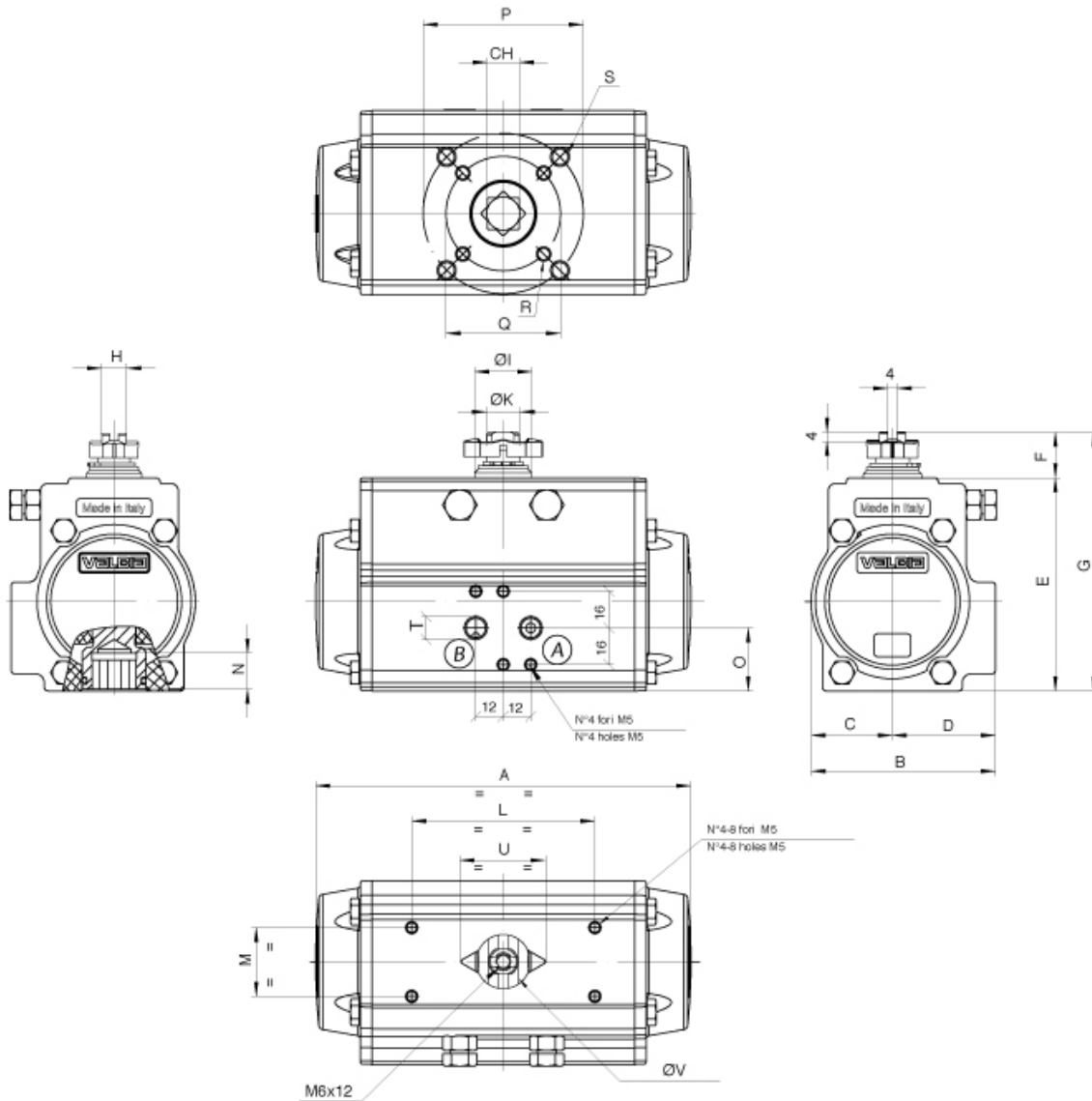
ACTUATOR AIR CONSUMPTION CHART		
COUNTERCLOCKWISE ROTATION (DA/SR)	CCW	0.19
CLOCKWISE ROTATION (DA)	CW	0.23



POSIZ. ITEM	DESCRIZIONE DESCRIPTION	MATERIALE MATERIAL	TRATTAMENTO 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	
*** 19	central spring	Steel	Painted	0	See spring
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

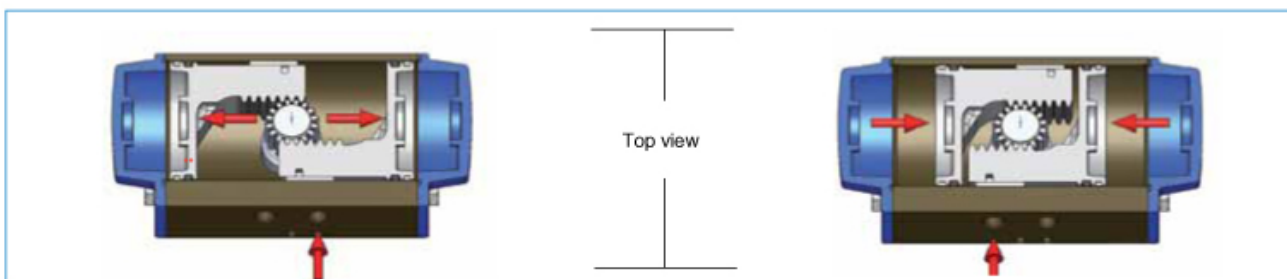


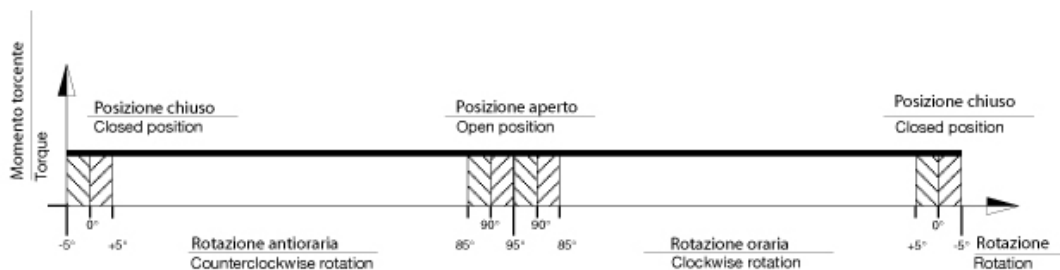
- A richiesta F04
- F04 upon request

(A) Rotazione antioraria
CCW rotation

(B) Rotazione oraria
CW rotation

MOD.	FORATURA ISO 5211	CH	A	B	C	D	E	F	G	H	ØI	J	ØK	L	M	N	O	P	Q	R	S	T ISO 7/1
75	F05 - F07	17	210	94,5	42	52,5	111,1	20	131	13	29	8	19	80	30	19	35	70	50	M6X8	M8X12	1/8"

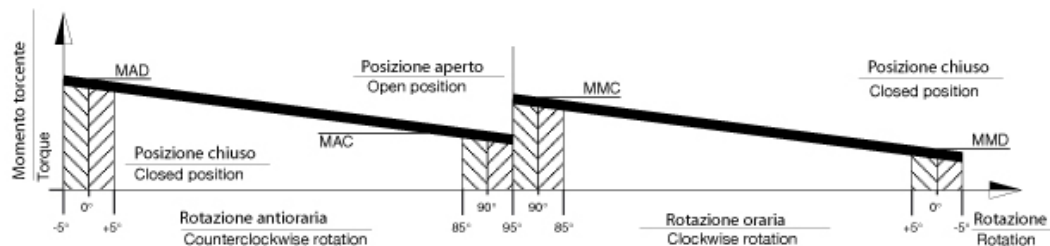
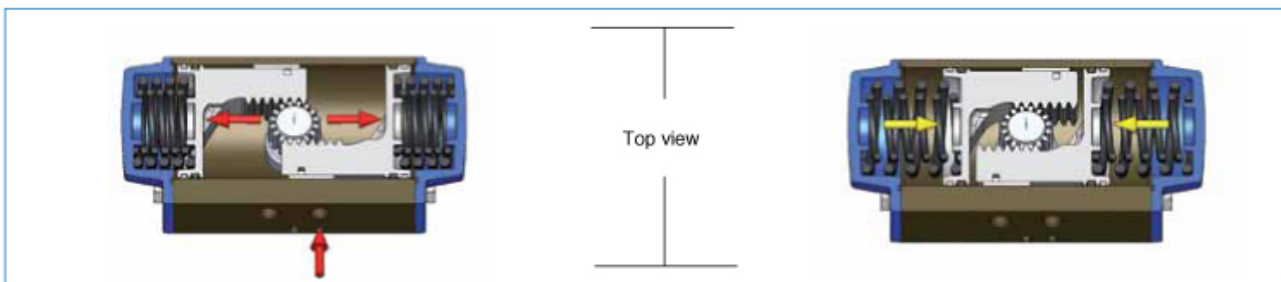




With reference to the above diagram it can be noted that the torque of a double acting actuator remains constant through-out the complete action. The user can decide on which model to choose according to his/her own specific requirements, using the following guidelines:

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 (bar)							
	2,5	3	4	5	5,5	6	7	8
	TORQUE OUTPUT DOUBLE ACTING ACTUATORS (Nm)							
DA 75	29	35	47,5	60	66	72	84,5	97



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 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 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.

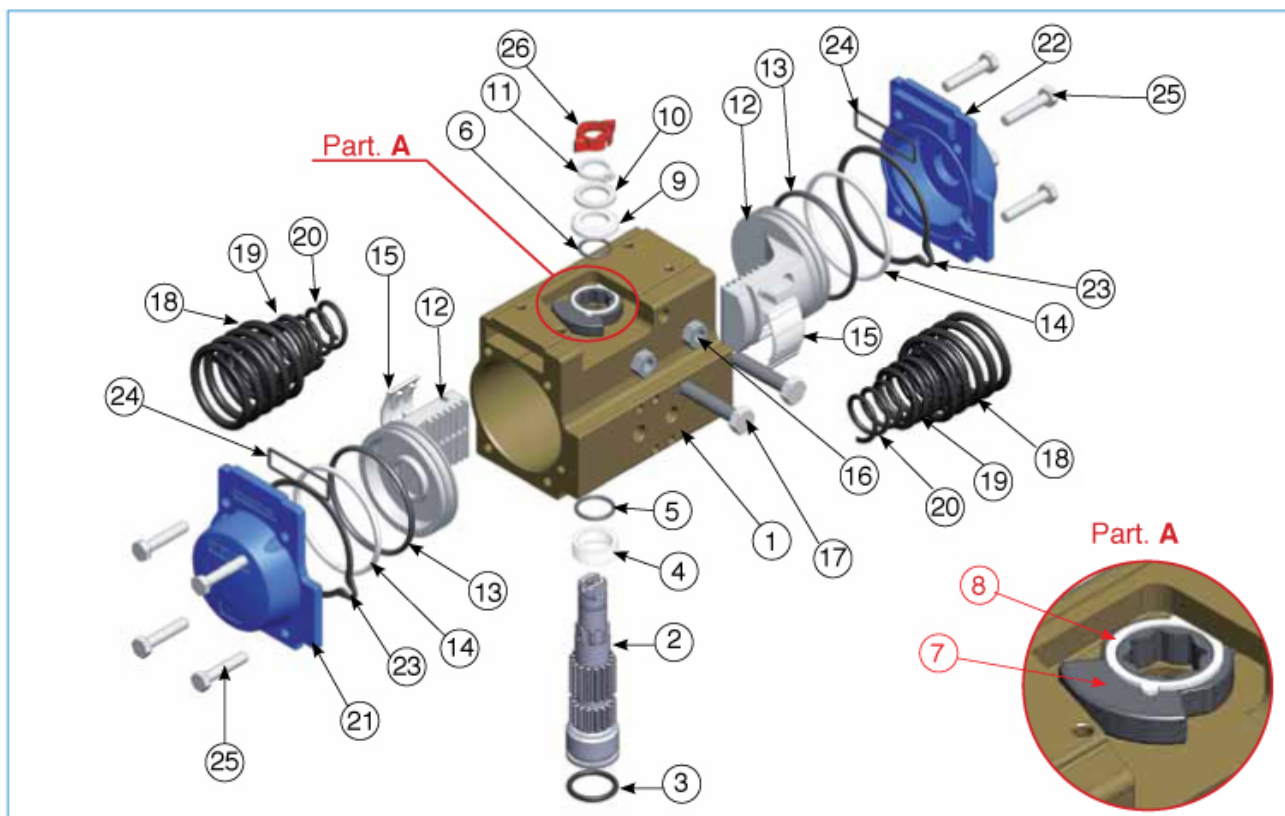
SPRING SETTING		
SET STANDARD 05		
		
SET	EXTERNAL SPRING	INTERNAL SPRING
01	1	1
02	2	-
03	1	2
04	2	1
05	2	2

MOD	SET	SPRING TORQUE (Nm)		AIR SUPPLY PRESSURE (bar)															
				2,5		3		4		5		5,5		6		7		8	
		0° MMD	90° MMC	TORQUE OUTPUT SPRING RETURN ACTUATORS (Nm)															
		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		
SR75	01	10.1	19.5	15.8	3.9	22.0	10.1	34.4	22.5										
	02	13.3	25.6			18.8	4.0	31.2	16.4	43.5	28.7								
	03	15.1	28.2					29.4	13.8	41.8	26.1	48.0	32.3	54.1	38.5				
	04	18.3	34.3					26.2	7.7	38.6	20.0	44.8	25.2	50.9	32.4	63.3	44.8		
	05	23.2	43.0							33.6	11.3	39.8	17.5	46.0	23.7	58.3	36.1	70.7	48.4

WORKING TIME (SEC)		
COUNTERCLOCKWISE ROTATION (DA)	CCW	0,18
CLOCKWISE ROTATION (DA)	CW	0,15
COUNTERCLOCKWISE ROTATION (SR)	CCW	0,32
CLOCKWISE ROTATION (SR)	CW	0,22

WEIGHT CHART (KG)	
DOUBLE ACTING	2,78
SPRING RETURN	3,39

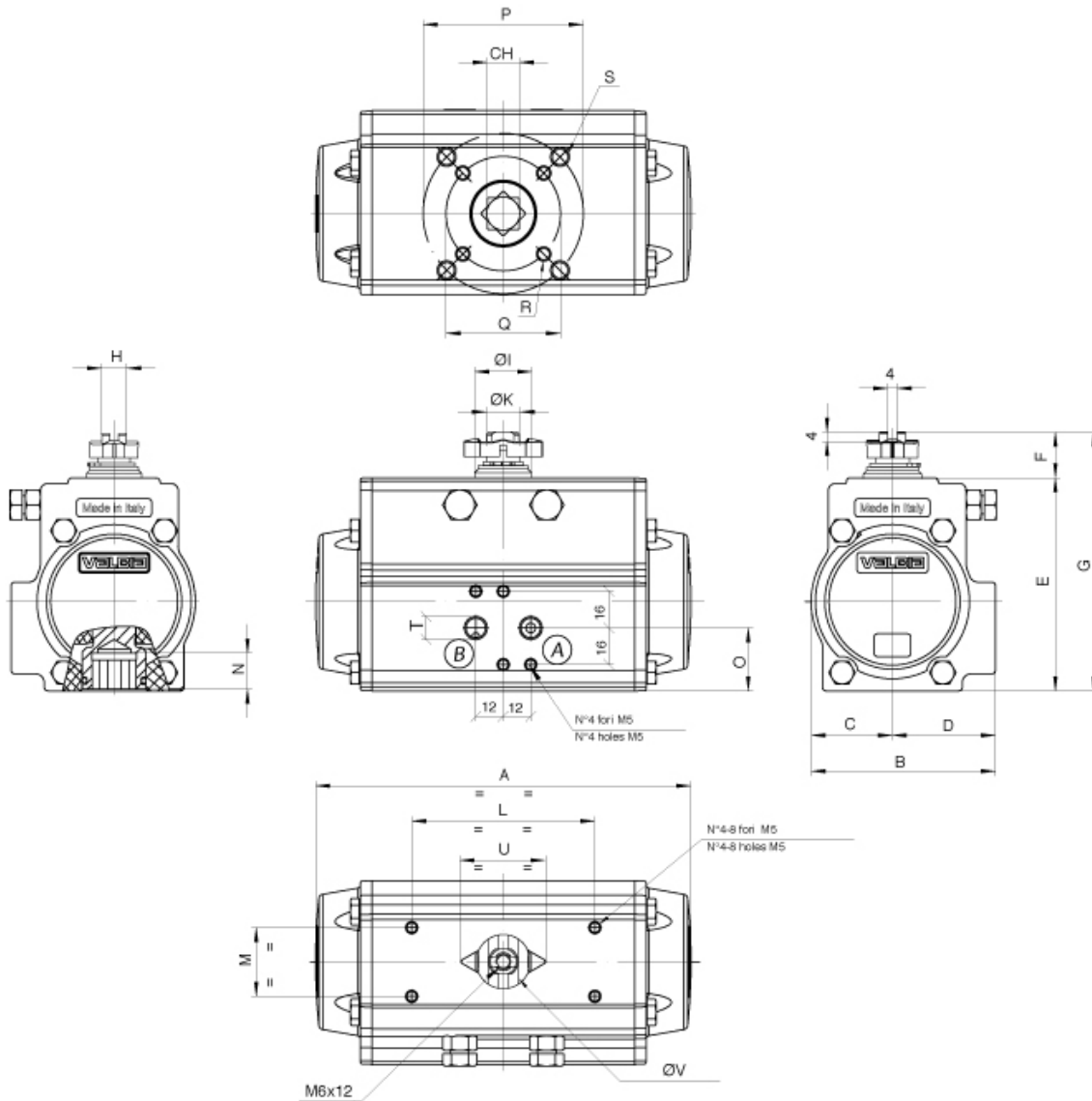
ACTUATOR AIR CONSUMPTION CHART		
COUNTERCLOCKWISE ROTATION (DA/SR)	CCW	0.36
CLOCKWISE ROTATION (DA)	CW	0.44



POSIZ. ITEM	DESCRIZIONE DESCRIPTION	MATERIALE MATERIAL	TRATTAMENTO 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	
*** 19	central spring	Steel	Painted	0	See spring
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

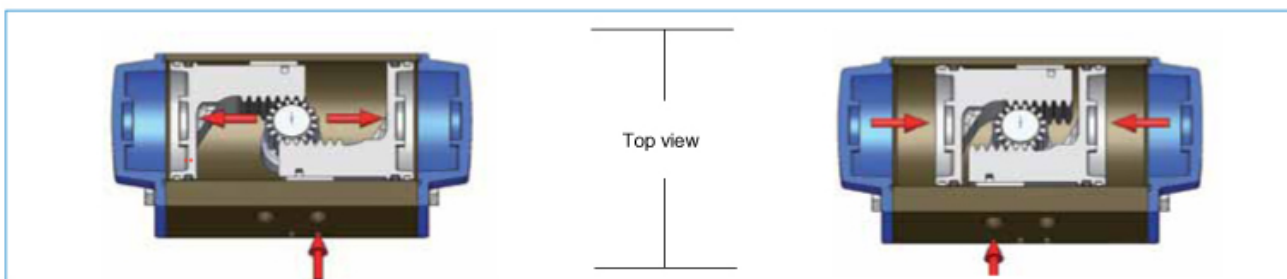


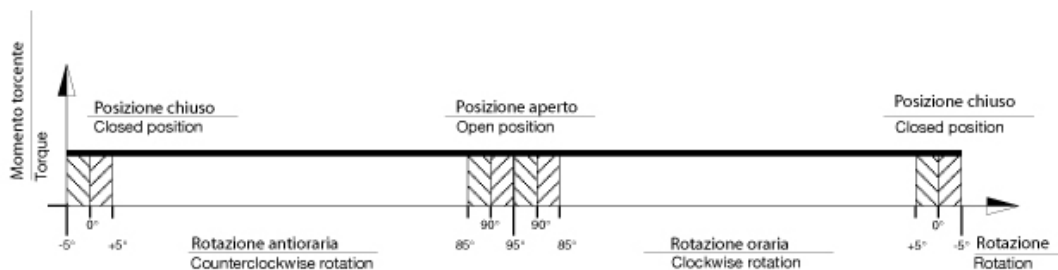
- A richiesta F04
- F04 upon request

(A) Rotazione antioraria
CCW rotation

(B) Rotazione oraria
CW rotation

MOD.	FORATURA ISO 5211	CH	A	B	C	D	E	F	G	H	ØI	J	ØK	L	M	N	O	P	Q	R	S	T ISO 7/1
85	F05 - F07	17	240,5	106	47,5	58,5	125	20	145	15	35	8	22	80	30	19	42	70	50	M6X8	M8X12	1/8"

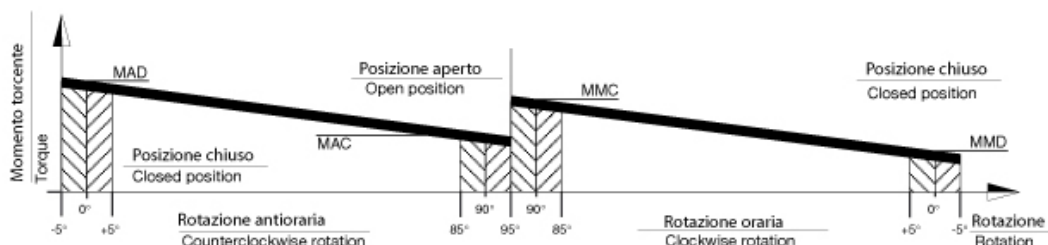
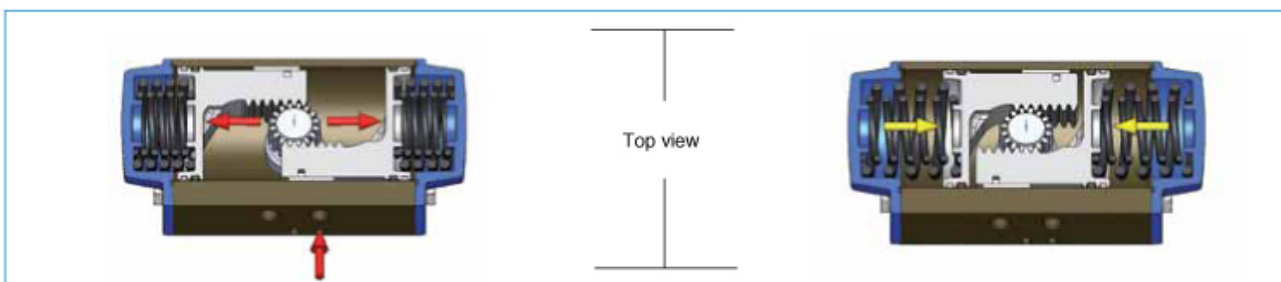




With reference to the above diagram it can be noted that the torque of a double acting actuator remains constant through-out the complete action. The user can decide on which model to choose according to his/her own specific requirements, using the following guidelines:

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 (bar)							
	2,5	3	4	5	5,5	6	7	8
	TORQUE OUTPUT DOUBLE ACTING ACTUATORS (Nm)							
DA 85	41,5	50,5	68,5	87	96	105	123	141



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 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 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.

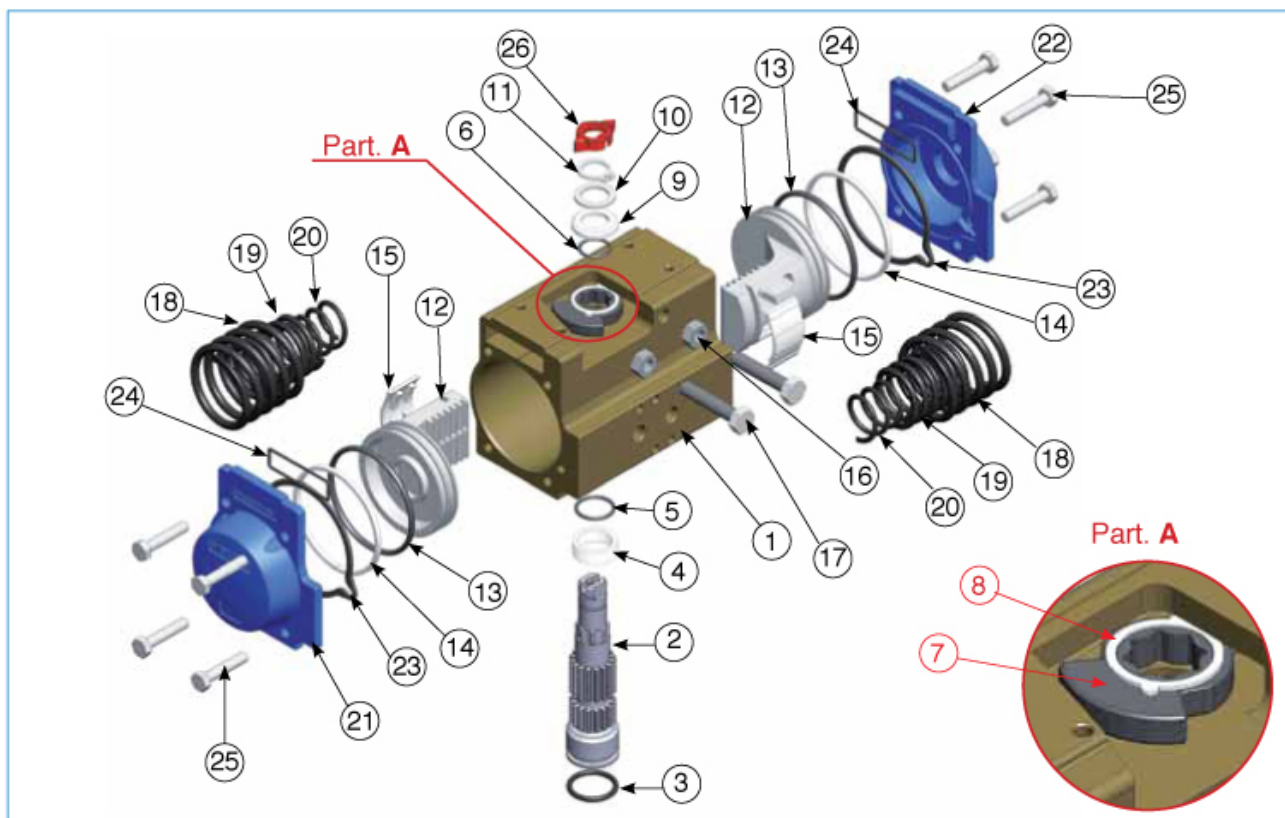
SPRING SETTING		
SET STANDARD 05		
		
SET	EXTERNAL SPRING	INTERNAL SPRING
01	1	1
02	2	-
03	1	2
04	2	1
05	2	2

MOD	SET	SPRING TORQUE (Nm)		AIR SUPPLY PRESSURE (bar)																	
				2,5	3	4	5	5,5	6	7	8	TORQUE OUTPUT SPRING RETURN ACTUATORS (Nm)									
		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		
SR85	01	16.1	27.3	22.2	7.6	31.3	16.6	49.5	34.8												
	02	19.9	33.7			27.6	10.3	45.7	28.4	63.9	46.6										
	03	24.3	40.8					41.3	21.3	59.4	39.5	68.5	48.6	77.6	57.6						
	04	28.1	47.1					37.5	15.0	55.7	33.1	64.8	42.2	73.8	51.3	92.0	69.4				
	05	36.3	60.6							47.5	19.6	56.6	28.7	65.6	37.8	83.8	55.9	101.9	74.1		

WORKING TIME (SEC)		
COUNTERCLOCKWISE ROTATION (DA)	CCW	0,36
CLOCKWISE ROTATION (DA)	CW	0,25
COUNTERCLOCKWISE ROTATION (SR)	CCW	0,32
CLOCKWISE ROTATION (SR)	CW	0,30

WEIGHT CHART (KG)	
DOUBLE ACTING	3,90
SPRING RETURN	4,80

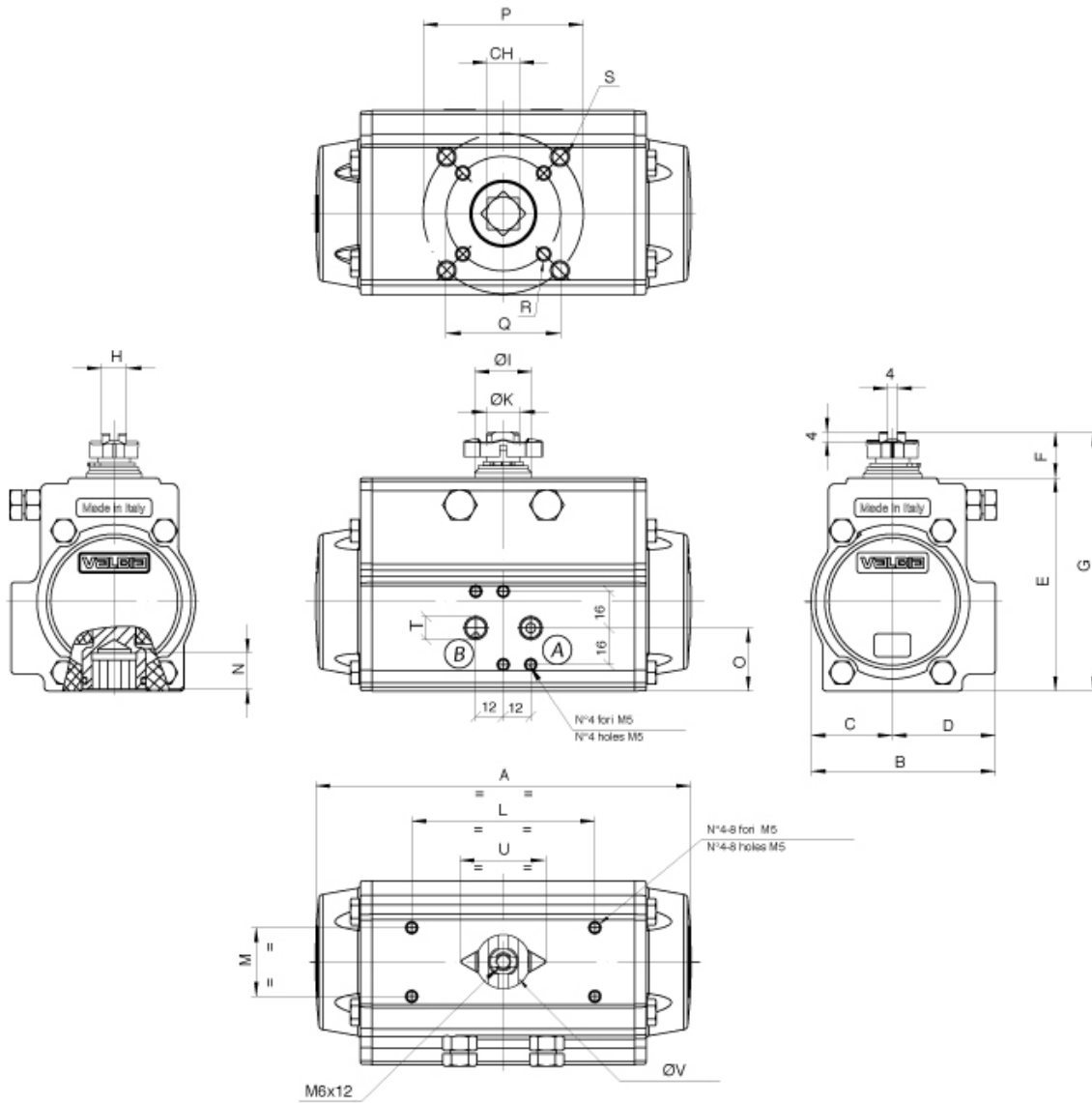
ACTUATOR AIR CONSUMPTION CHART		
COUNTERCLOCKWISE ROTATION (DA/SR)	CCW	0.51
CLOCKWISE ROTATION (DA)	CW	0.64



POSIZ. ITEM	DESCRIZIONE DESCRIPTION	MATERIALE MATERIAL	TRATTAMENTO 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	
*** 19	central spring	Steel	Painted	0	See spring
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

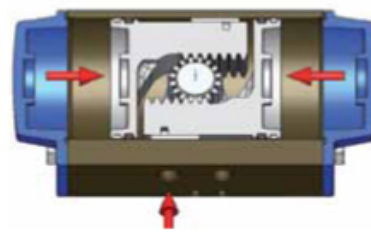
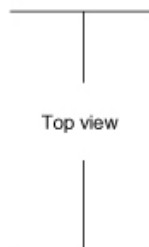
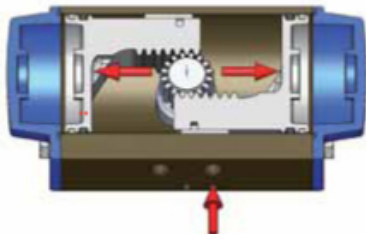


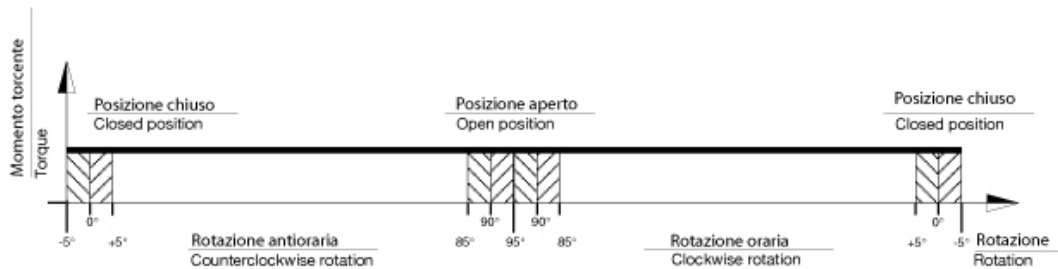
- A richiesta F04
- F04 upon request

A Rotazione antioraria
CCW rotation

B Rotazione oraria
CW rotation

MOD.	FORATURA ISO 5211	CH	A	B	C	D	E	F	G	H	ØI	J	ØK	L	M	N	O	P	Q	R	S	T ISO 7/1
100	F07 - F10	17	275	123	55	68	137,8	20	157,8	15	35	8	22	80	30	20,5	50	102	70	M8X8	M10X14	1/4"

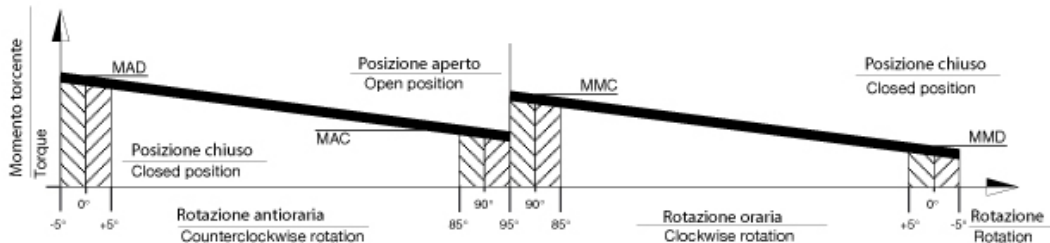
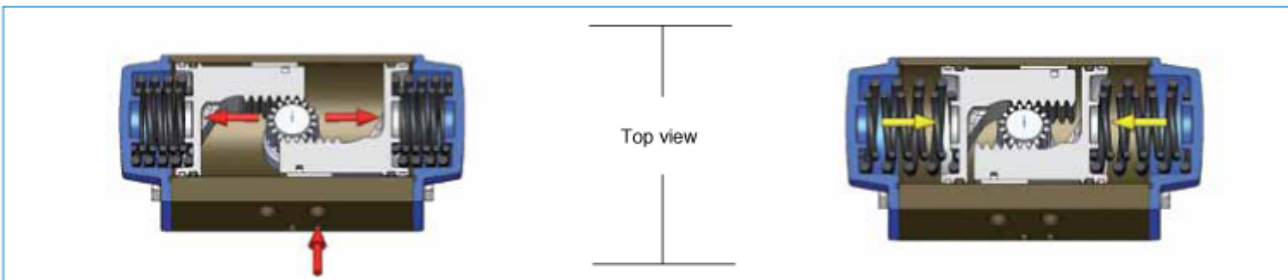




With reference to the above diagram it can be noted that the torque of a double acting actuator remains constant through-out the complete action. The user can decide on which model to choose according to his/her own specific requirements, using the following guidelines:

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 (bar)							
	2,5	3	4	5	5,5	6	7	8
	TORQUE OUTPUT DOUBLE ACTING ACTUATORS (Nm)							
DA 100	66	80	108	136	150	164,5	193	221



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 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 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.

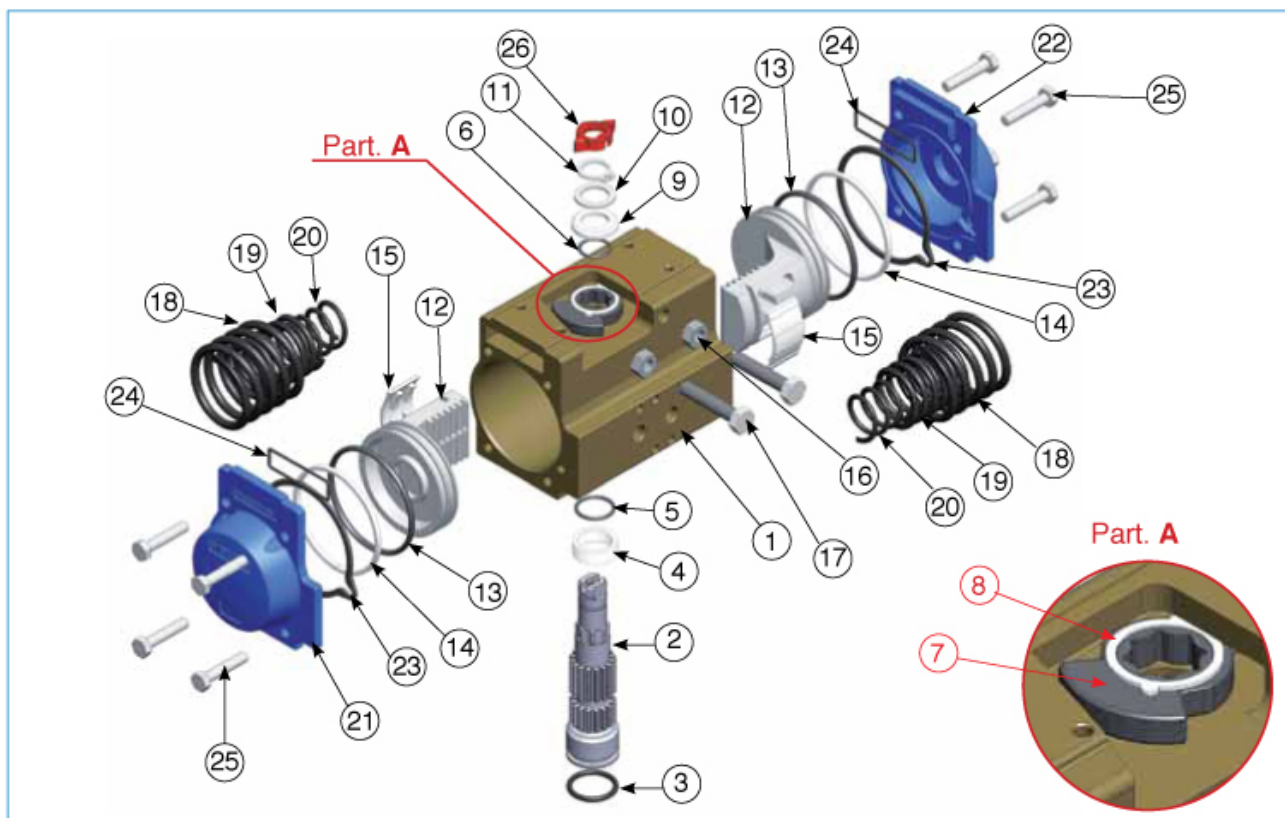
SPRING SETTING		
SET STANDARD 05		
		
SET	EXTERNAL SPRING	INTERNAL SPRING
01	1	1
02	2	-
03	1	2
04	2	1
05	2	2

MOD	SET	SPRING TORQUE (Nm)		AIR SUPPLY PRESSURE (bar)															
				2,5	3	4	5	5,5	6	7	8								
		0° MMD	90° MMC	TORQUE OUTPUT SPRING RETURN ACTUATORS (Nm)															
		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		
SR100	01	24.6	44.6	36.0	10.1	50.2	24.2	78.4	52.5										
	02	32.6	58.9			42.2	9.9	70.5	38.1	98.7	66.4								
	03	35.9	63.7					67.1	33.3	95.4	61.6	109.5	75.7	123.6	89.9				
	04	43.9	78.0					59.1	19.0	87.4	47.3	101.5	61.4	115.7	75.5	143.9	103.8		
	05	55.2	97.2							76.1	28.1	90.2	42.3	104.3	56.4	132.6	84.7	160.8	112.9

TEMPI DI MANOVRA (SEC)		
COUNTERCLOCKWISE ROTATION (DA)	CCW	0,38
CLOCKWISE ROTATION (DA)	CW	0,34
COUNTERCLOCKWISE ROTATION (SR)	CCW	0,54
CLOCKWISE ROTATION (SR)	CW	0,48

WEIGHT CHART (KG)	
DOUBLE ACTING	5,50
SPRING RETURN	7,00

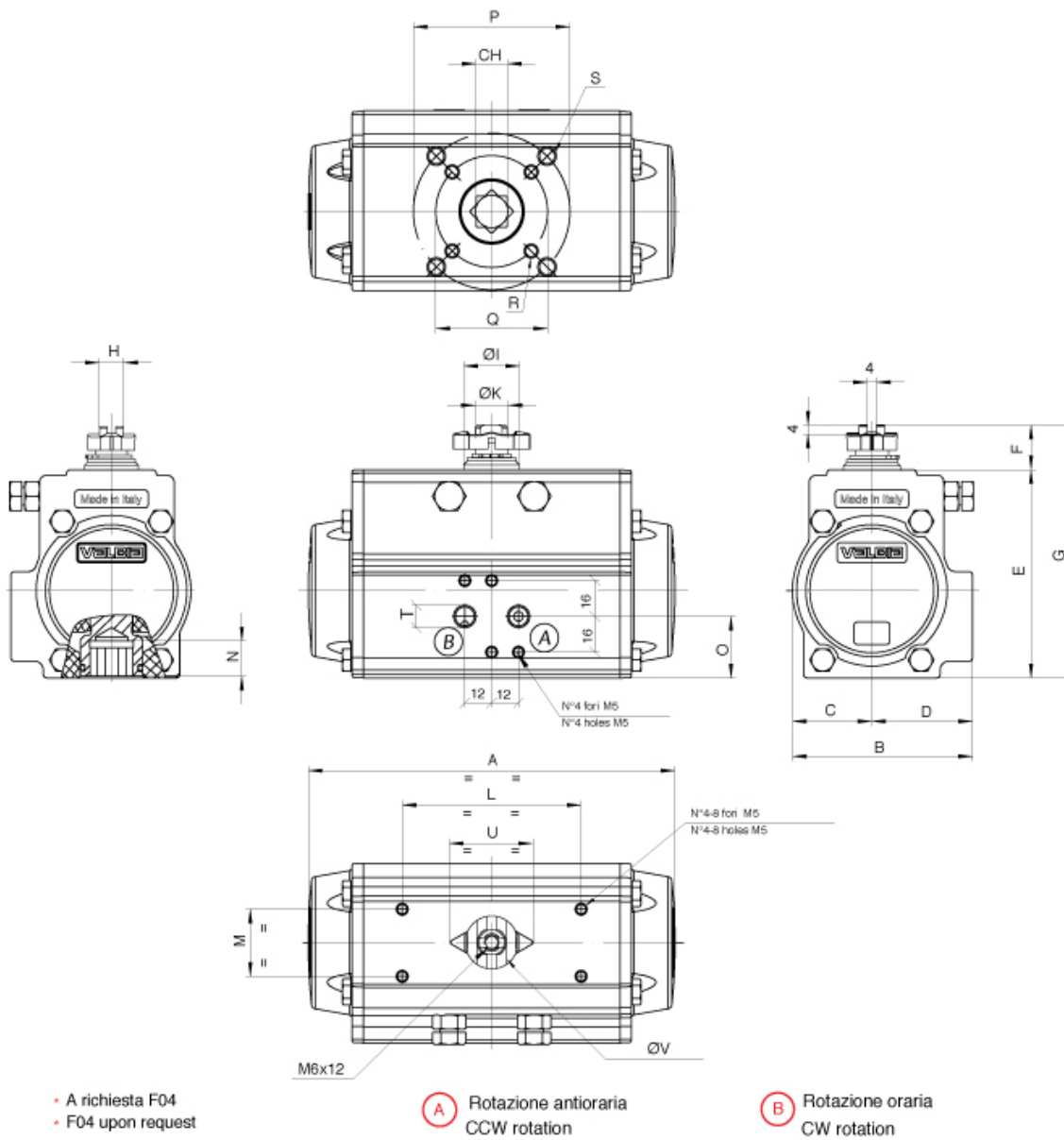
ACTUATOR AIR CONSUMPTION CHART		
COUNTERCLOCKWISE ROTATION (DA/SR)	CCW	0.79
CLOCKWISE ROTATION (DA)	CW	1.00



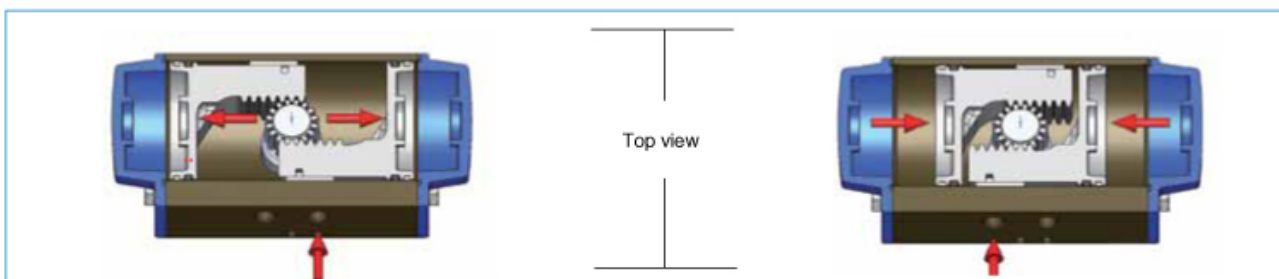
POSIZ. ITEM	DESCRIZIONE DESCRIPTION	MATERIALE MATERIAL	TRATTAMENTO TREATMENT	Q.TA' DA	Q.TA' SR
1	Body	Extruded aluminium	Hard anodized	1	1
2	Anti-blowout pinion	Steel	Nickel plated	1	1
• 3	O-ring	NBR		1	1
• 4	spacer ring	POM		1	1
• 5	O-ring	NBR		1	1
• 6	O-ring	NBR		1	1
7	Cam	Stainless steel		1	1
8	Spacer	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	
*** 19	central spring	Steel	Painted	0	See spring
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

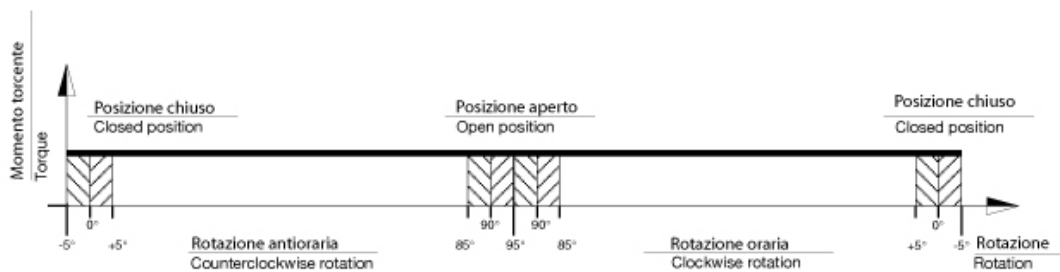
* Parts subject to wear

** Reinforced series DIN 471 - UNI 7436



MOD.	FORATURA ISO 5211	CH	A	B	C	D	E	F	G	H	ØI	J	ØK	L	M	N	O	P	Q	R	S	T ISO 7/1
115	F07 - F10	22	333	137	64	73	162,4	30	192,4	22	49	14	32	80/130	30	24	50	102	70	M8X12	M10X15	1/4"

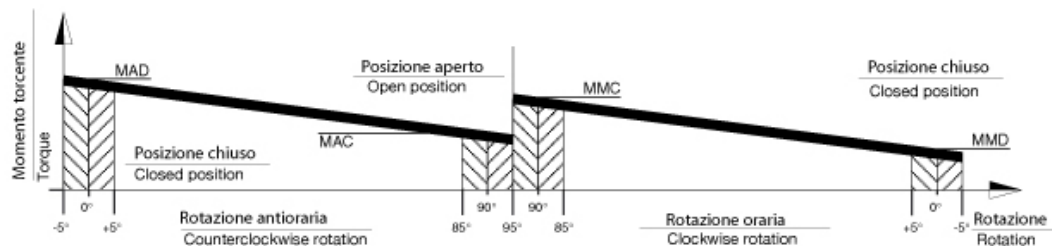
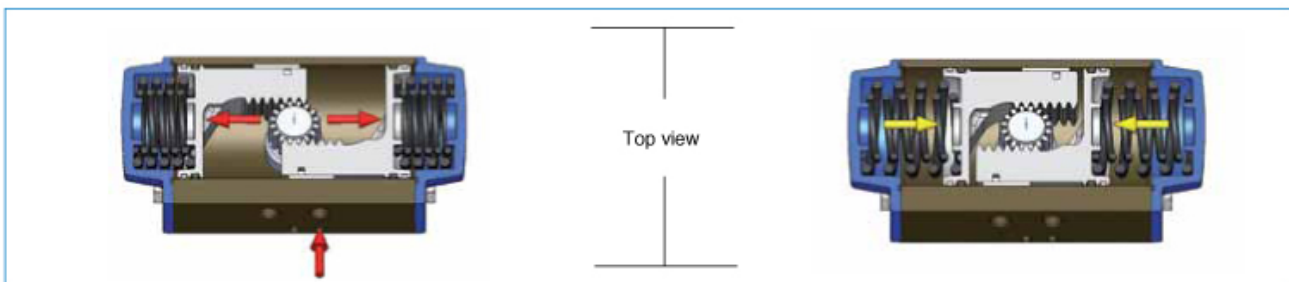




With reference to the above diagram it can be noted that the torque of a double acting actuator remains constant through-out the complete action. The user can decide on which model to choose according to his/her own specific requirements, using the following guidelines:

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 (bar)							
	2,5	3	4	5	5,5	6	7	8
	TORQUE OUTPUT DOUBLE ACTING ACTUATORS (Nm)							
DA 115	109	132	179	226	249	272	319	366



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 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 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.

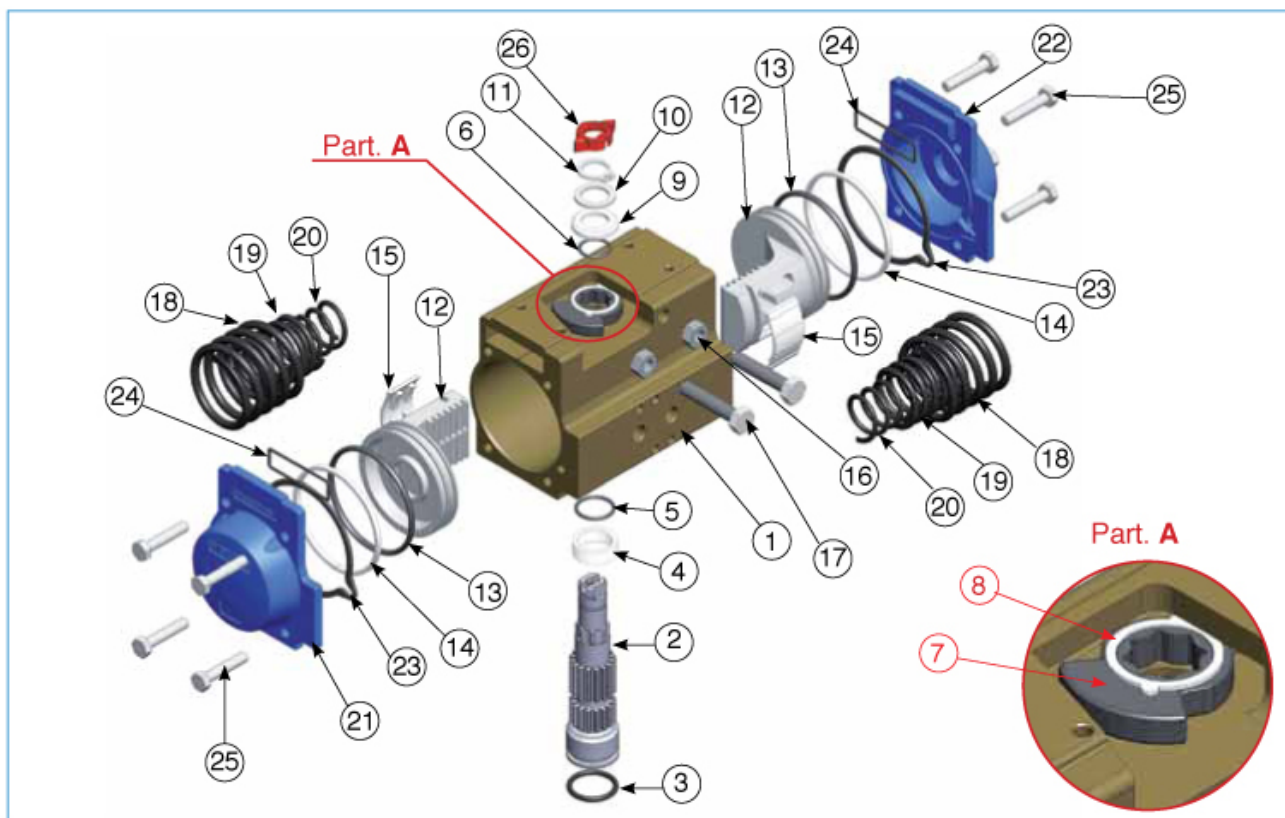
SPRING SETTING		
SET STANDARD 05		
		
SET	EXTERNAL SPRING	INTERNAL SPRING
01	1	1
02	2	-
03	1	2
04	2	1
05	2	2

MOD	SET	SPRING TORQUE (Nm)		AIR SUPPLY PRESSURE (bar)															
				2,5	3	4	5	5,5	6	7	8	TORQUE OUTPUT SPRING RETURN ACTUATORS (Nm)							
		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
SR115	01	41.0	74.4	61.3	18.4	84.7	41.8	131.4	88.5										
	02	50.7	94.4			74.9	21.8	121.6	68.5	168.3	115.2								
	03	60.8	108.1					111.6	54.7	158.3	101.5	181.6	124.8	205.0	148.2				
	04	70.6	128.1					101.8	34.8	148.5	81.5	171.9	104.9	195.2	128.2	241.9	174.9		
	05	90.4	161.8							128.7	47.8	152.0	71.1	175.4	94.5	222.1	141.2	268.8	187.9

WORKING TIME (SEC)		
COUNTERCLOCKWISE ROTATION (DA)	CCW	0,60
CLOCKWISE ROTATION (DA)	CW	0,54
COUNTERCLOCKWISE ROTATION (SR)	CCW	0,92
CLOCKWISE ROTATION (SR)	CW	0,75

WEIGHT CHART (KG)	
DOUBLE ACTING	8,85
SPRING RETURN	11,45

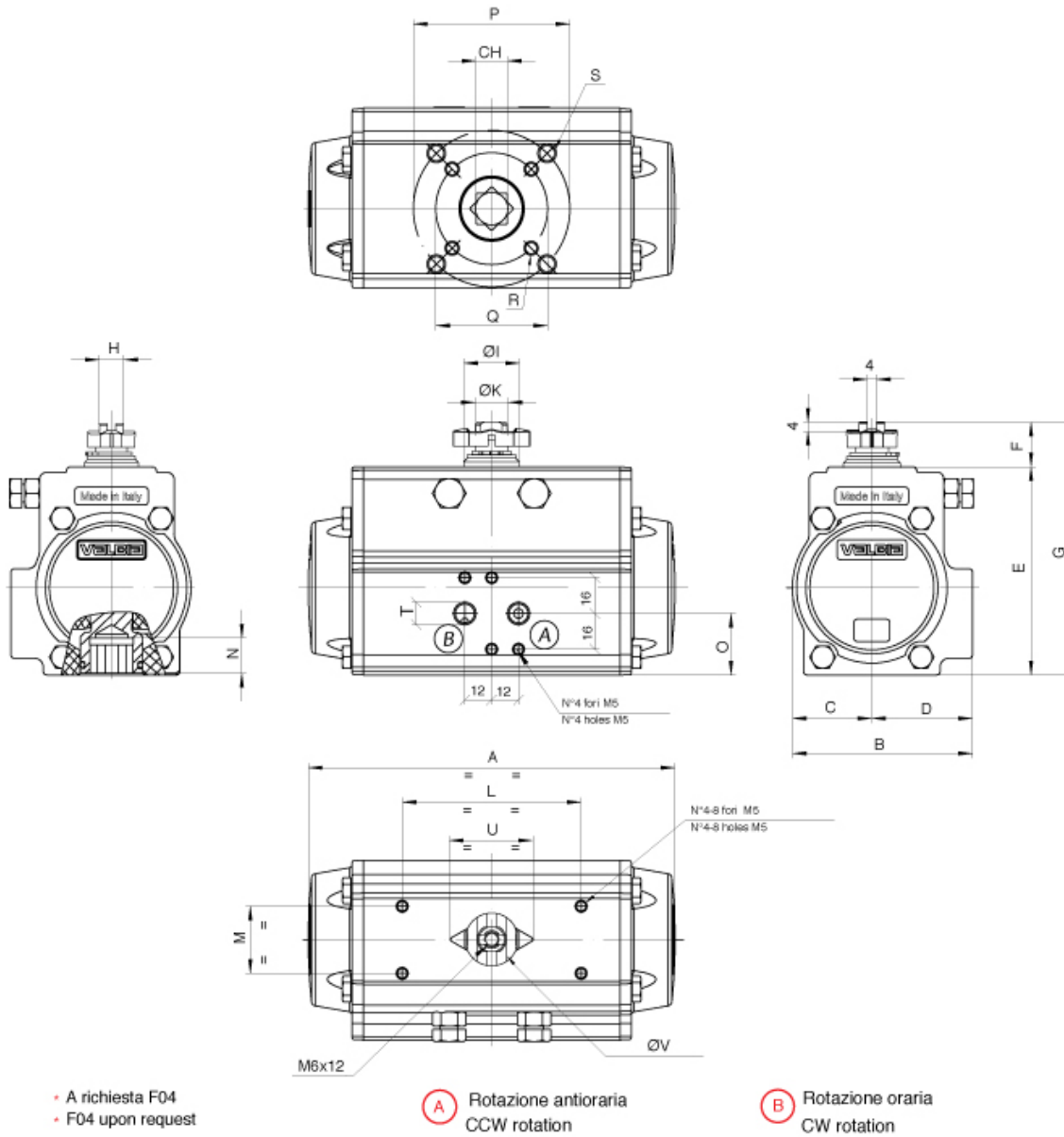
ACTUATOR AIR CONSUMPTION CHART		
COUNTERCLOCKWISE ROTATION (DA/SR)	CCW	1.29
CLOCKWISE ROTATION (DA)	CW	1.71



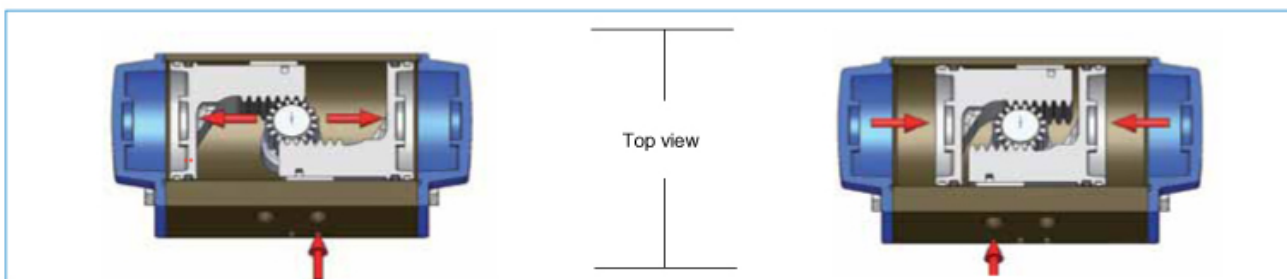
POSIZ. ITEM	DESCRIZIONE DESCRIPTION	MATERIALE MATERIAL	TRATTAMENTO TREATMENT	Q.TA' DA	Q.TA' SR
1	Body	Extruded aluminium	Hard anodized	1	1
2	Anti-blowout pinion	Steel	Nickel plated	1	1
• 3	O-ring	NBR		1	1
• 4	spacer ring	POM		1	1
• 5	O-ring	NBR		1	1
• 6	O-ring	NBR		1	1
7	Cam	Stainless steel		1	1
8	Spacer	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	
*** 19	central spring	Steel	Painted	0	See spring
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

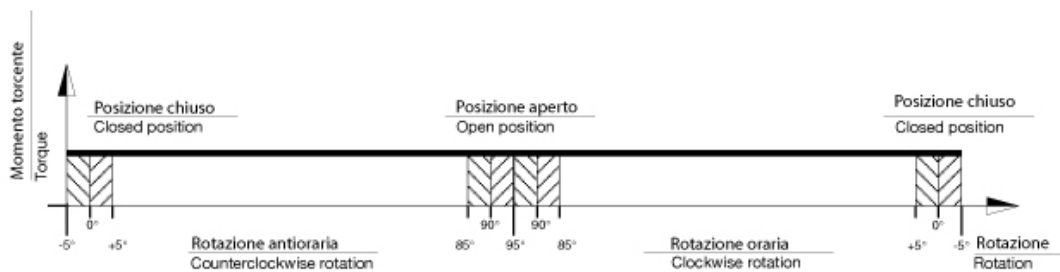
* Parts subject to wear

** Reinforced series DIN 471 - UNI 7436



MOD.	FORATURA ISO 5211	CH	A	B	C	D	E	F	G	H	ØI	J	ØK	L	M	N	O	P	Q	R	S	T ISO 7/1
125	F07 - F10	22	372	148	68	80	174,4	30	204,4	22	49	14	32	80/130	30	24	61	102	70	M8X12	M10X15	1/4"

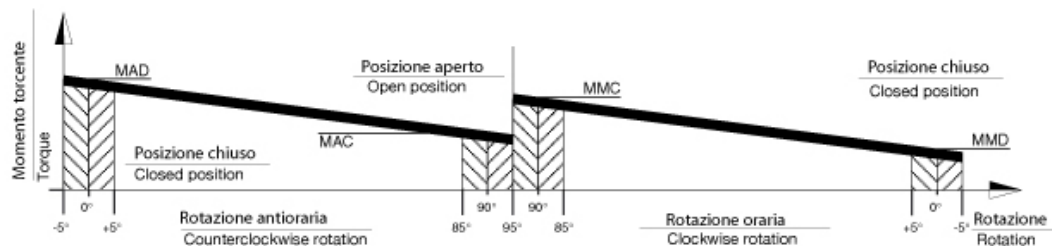
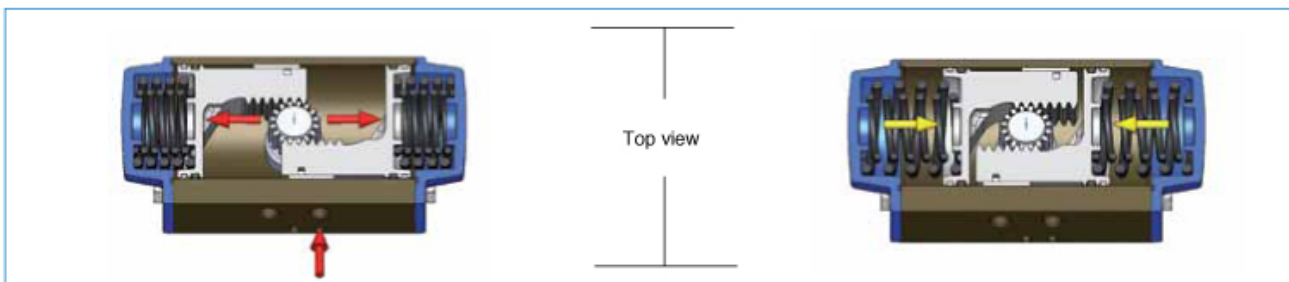




With reference to the above diagram it can be noted that the torque of a double acting actuator remains constant through-out the complete action. The user can decide on which model to choose according to his/her own specific requirements, using the following guidelines:

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 (bar)							
	2,5	3	4	5	5,5	6	7	8
	TORQUE OUTPUT DOUBLE ACTING ACTUATORS (Nm)							
DA 125	143,5	174	235	297	327	358	419	481



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 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 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.

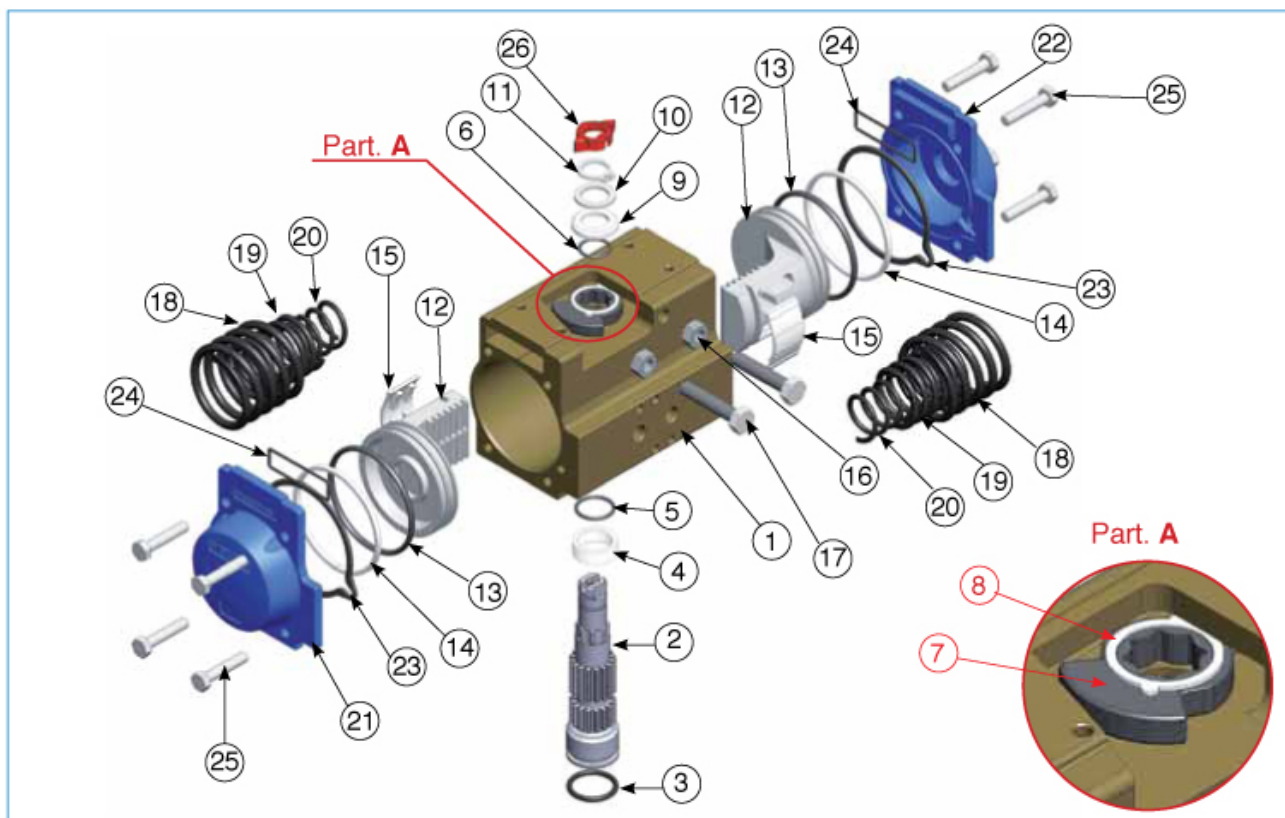
SPRING SETTING		
SET STANDARD 05		
		
SET	EXTERNAL SPRING	INTERNAL SPRING
01	1	1
02	2	-
03	1	2
04	2	1
05	2	2

MOD	SET	SPRING TORQUE (Nm)		AIR SUPPLY PRESSURE (bar)																	
				2,5	3	4	5	5,5	6	7	8	TORQUE OUTPUT SPRING RETURN ACTUATORS (Nm)									
		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		
SR125	01	53.1	99.1	80.2	21.2	110.9	51.9	172.2	113.2												
	02	63.3	117.5			100.7	33.5	162.1	94.8	223.4	156.1										
	03	81.1	148.4					144.2	63.9	205.5	125.2	236.2	155.9	266.8	186.5						
	04	91.3	166.9					134.1	45.5	195.4	106.8	226.1	137.5	256.7	168.1	318.0	229.4				
	05	119.2	216.2							167.4	57.5	198.1	88.1	228.7	118.8	290.1	180.1	351.4	241.4		

WORKING TIME (SEC)		
COUNTERCLOCKWISE ROTATION (DA)	CCW	0,80
CLOCKWISE ROTATION (DA)	CW	0,70
COUNTERCLOCKWISE ROTATION (SR)	CCW	1,20
CLOCKWISE ROTATION (SR)	CW	0,94

WEIGHT CHART (KG)	
DOUBLE ACTING	10,80
SPRING RETURN	14,08

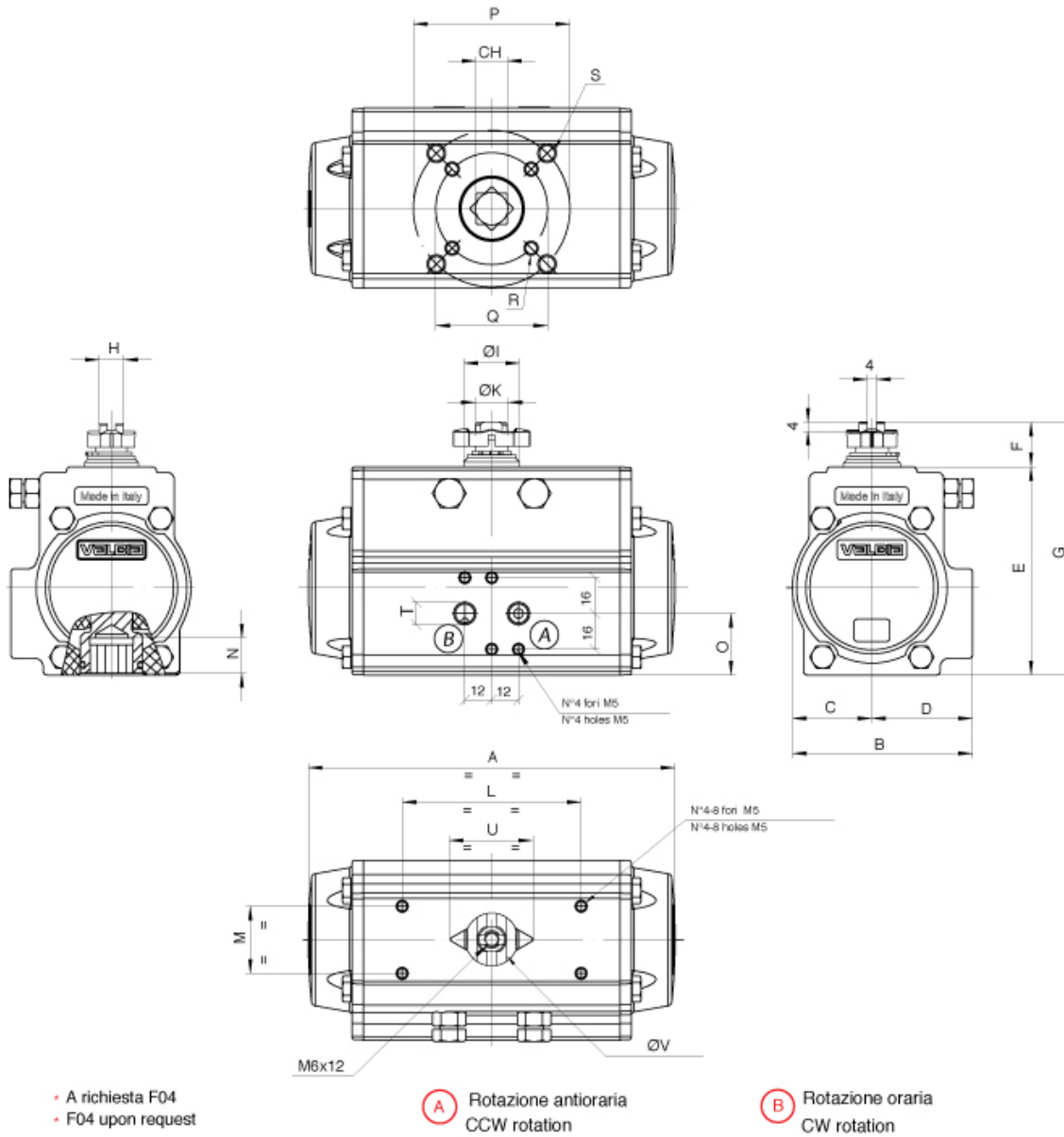
ACTUATOR AIR CONSUMPTION CHART		
COUNTERCLOCKWISE ROTATION (DA/SR)	CCW	1.63
CLOCKWISE ROTATION (DA)	CW	2.21



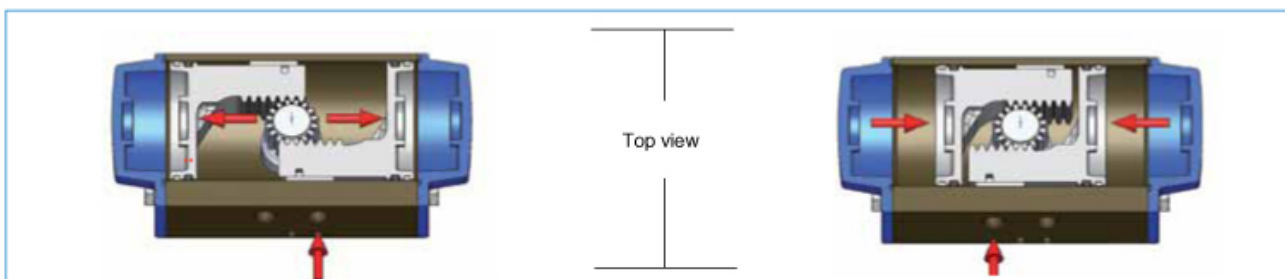
POSIZ. ITEM	DESCRIZIONE DESCRIPTION	MATERIALE MATERIAL	TRATTAMENTO TREATMENT	Q.TA' DA	Q.TA' SR
1	Body	Extruded aluminium	Hard anodized	1	1
2	Anti-blowout pinion	Steel	Nickel plated	1	1
• 3	O-ring	NBR		1	1
• 4	spacer ring	POM		1	1
• 5	O-ring	NBR		1	1
• 6	O-ring	NBR		1	1
7	Cam	Stainless steel		1	1
8	Spacer	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	
*** 19	central spring	Steel	Painted	0	See spring
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

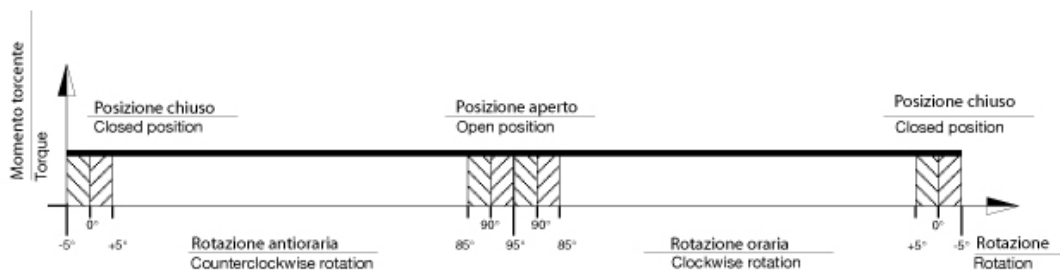
* Parts subject to wear

** Reinforced series DIN 471 - UNI 7436



MOD.	FORATURA ISO 5211	CH	A	B	C	D	E	F	G	H	ØI	J	ØK	L	M	N	O	P	Q	R	S	T ISO 7/1
140	F10 - F12	27	435	164	76,5	87,5	197	30	227	24	49	16	35	80/130	30	29	71	125	102	M10X15	M12X18	1/4"

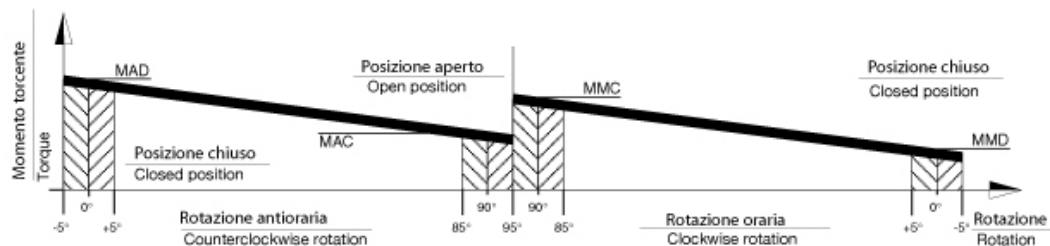
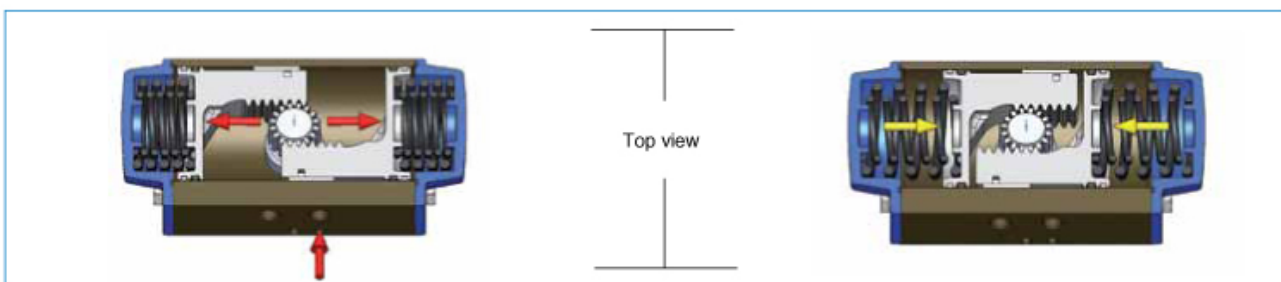




With reference to the above diagram it can be noted that the torque of a double acting actuator remains constant through-out the complete action. The user can decide on which model to choose according to his/her own specific requirements, using the following guidelines:

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 (bar)							
	2,5	3	4	5	5,5	6	7	8
	TORQUE OUTPUT DOUBLE ACTING ACTUATORS (Nm)							
DA 140	205	246	328	410	451	493	575	657



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 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 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.

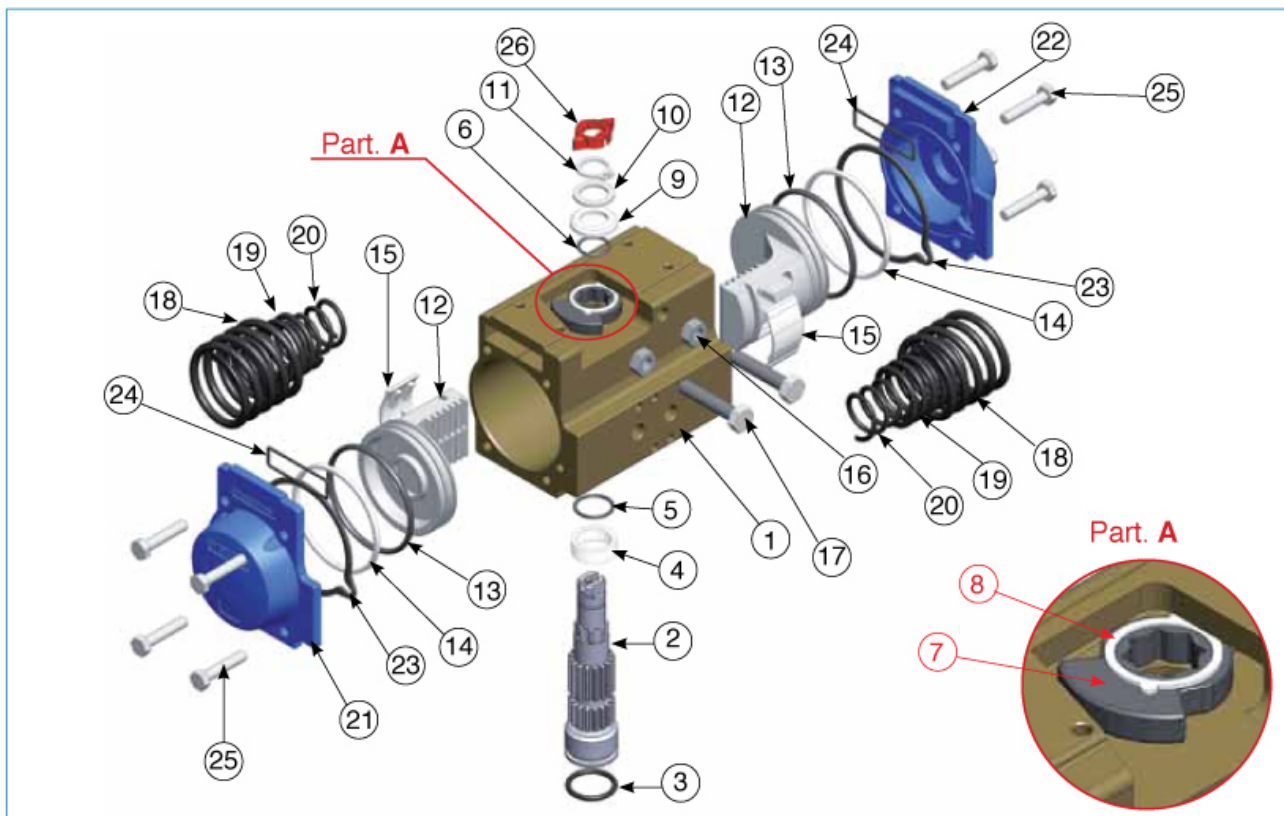
SPRING SETTING		
SET STANDARD 05		
		
SET	EXTERNAL SPRING	INTERNAL SPRING
01	1	1
02	2	-
03	1	2
04	2	1
05	2	2

MOD	SET	SPRING TORQUE (Nm)		AIR SUPPLY PRESSURE (bar)															
				2,5	3	4	5	5,5	6	7	8								
		0° MMD	90° MMC	TORQUE OUTPUT SPRING RETURN ACTUATORS (Nm)															
		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		
SR140	01	82	152	119	36	160	77	242	159										
	02	92	172			149	56	231	138	313	220								
	03	117	221					205	86	287	168	328	209	369	250				
	04	128	240					193	64	275	146	316	187	358	229	440	311		
	05	164	308							238	72	279	114	320	155	402	237	484	319

WORKING TIME (SEC)		
COUNTERCLOCKWISE ROTATION (DA)	CCW	1,13
CLOCKWISE ROTATION (DA)	CW	0,94
COUNTERCLOCKWISE ROTATION (SR)	CCW	1,64
CLOCKWISE ROTATION (SR)	CW	1,25

WEIGHT CHART (KG)	
DOUBLE ACTING	16,30
SPRING RETURN	21,80

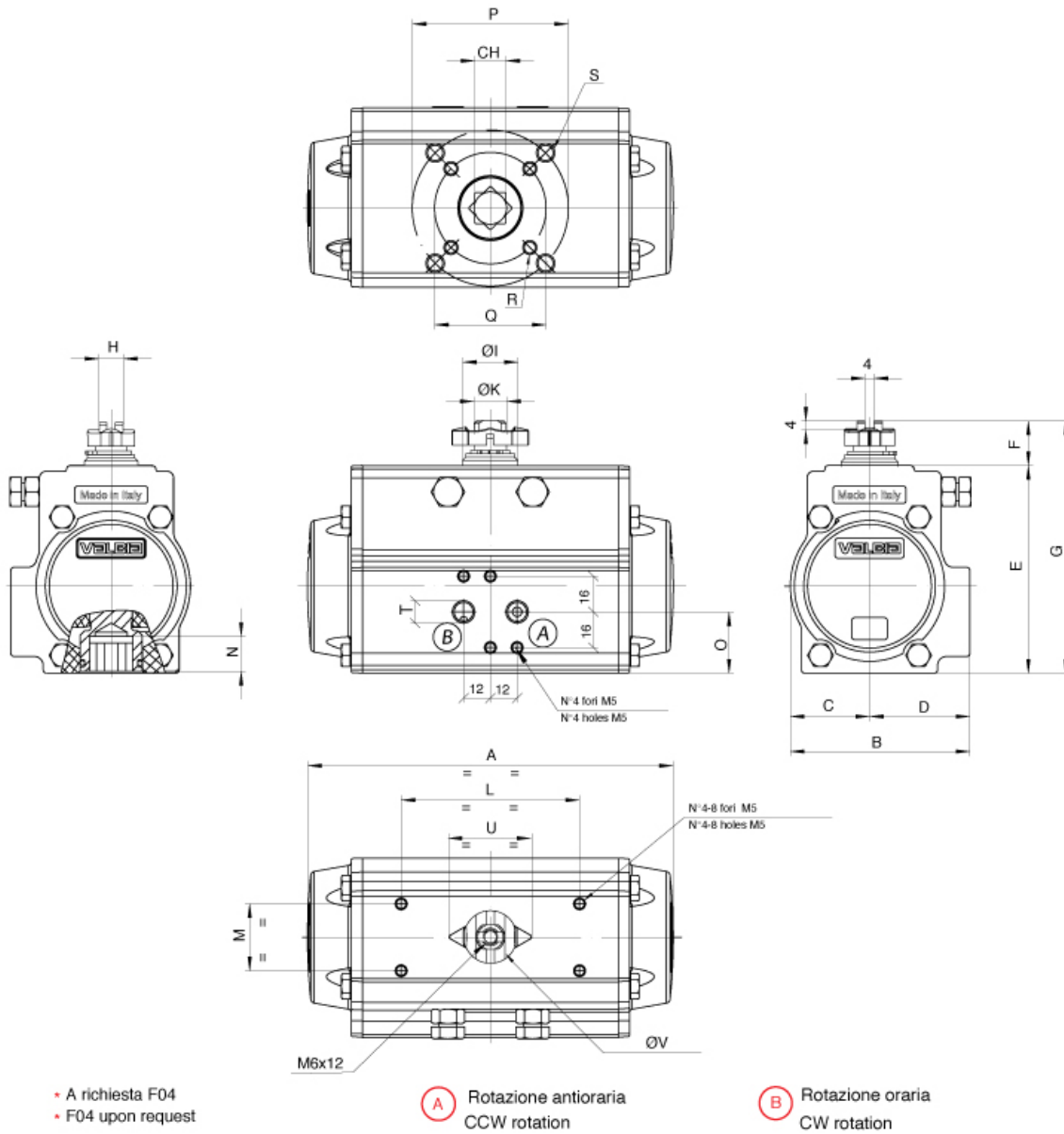
ACTUATOR AIR CONSUMPTION CHART		
COUNTERCLOCKWISE ROTATION (DA/SR)	CCW	2.26
CLOCKWISE ROTATION (DA)	CW	3.16



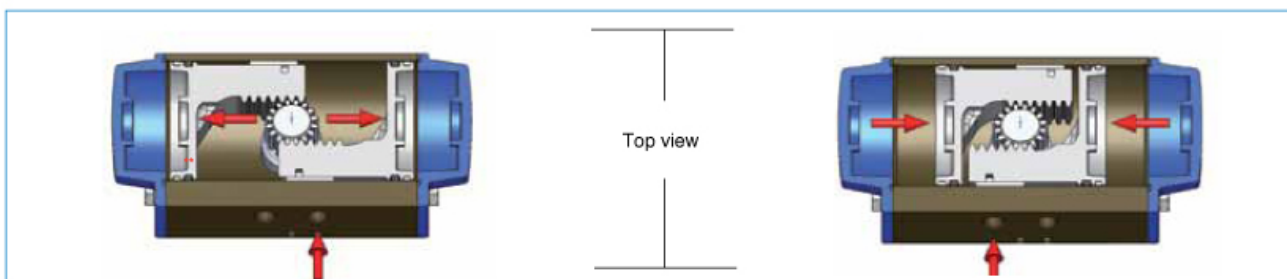
POSIZ. ITEM	DESCRIZIONE DESCRIPTION	MATERIALE MATERIAL	TRATTAMENTO TREATMENT	Q.TA' DA	Q.TA' SR
1	Body	Extruded aluminium	Hard anodized	1	1
2	Anti-blowout pinion	Steel	Nickel plated	1	1
• 3	O-ring	NBR		1	1
• 4	spacer ring	POM		1	1
• 5	O-ring	NBR		1	1
• 6	O-ring	NBR		1	1
7	Cam	Stainless steel		1	1
8	Spacer	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	
*** 19	central spring	Steel	Painted	0	See spring
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

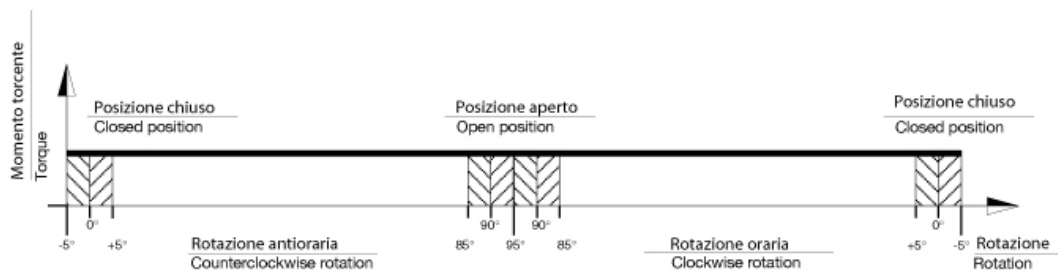
• Parts subject to wear

** Reinforced series DIN 471 - UNI 7436



MOD.	FORATURA ISO 5211	CH	A	B	C	D	E	F	G	H	ØI	J	ØK	L	M	N	O	P	Q	R	S	T ISO 7/1
160	F10 - F12	27	500	186	87	99	221	30	251	30	57	16	40	80/130	30	32	80	125	102	M10X14	M12X17	1/4"

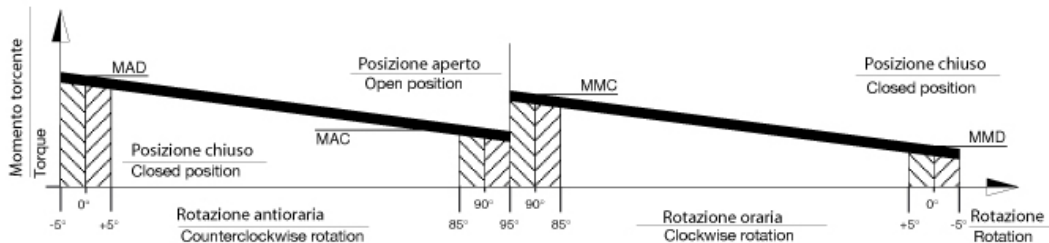
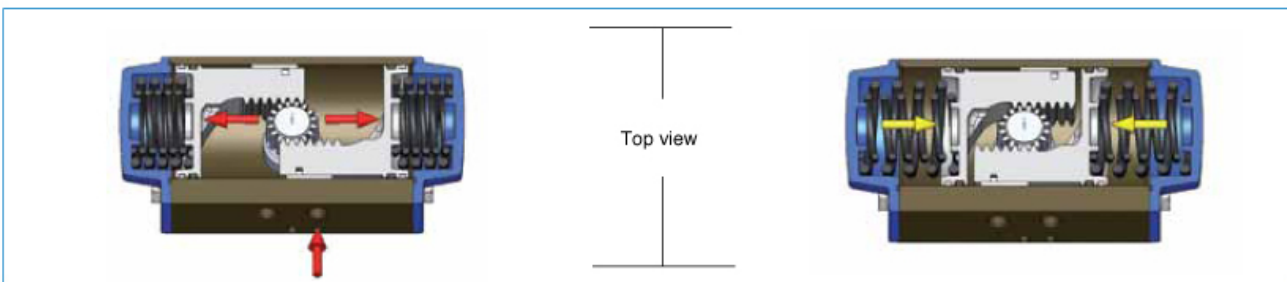




With reference to the above diagram it can be noted that the torque of a double acting actuator remains constant through-out the complete action. The user can decide on which model to choose according to his/her own specific requirements, using the following guidelines:

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.

MODELLO	PRESSIONE DI ALIMENTAZIONE (bar)							
	2,5	3	4	5	5,5	6	7	8
MOMENTO TORCENTE ATTUATORI A DOPPIO EFFETTO (Nm)								
DA 160	287	344	458	573	630	688	802	917



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 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 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.

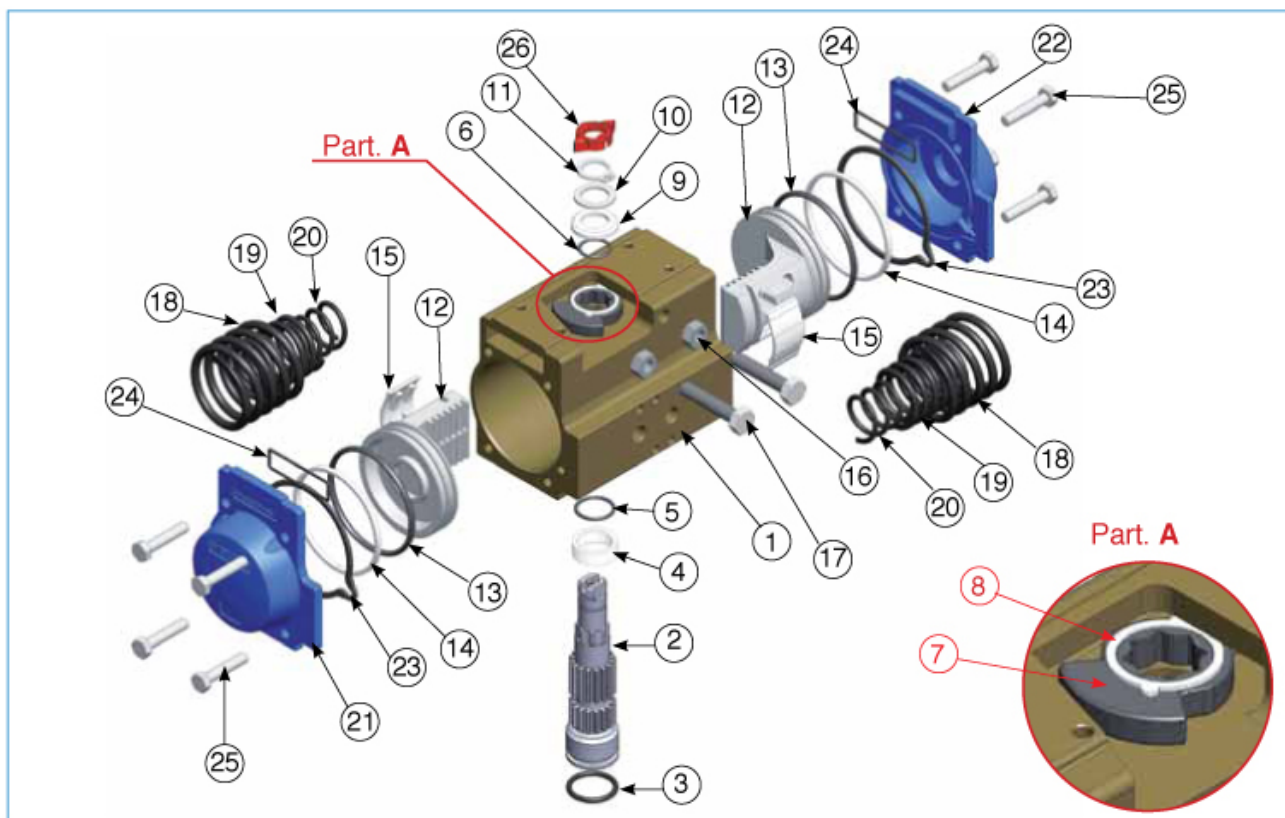
SPRING SETTING		
SET STANDARD 05		
		
SET	EXTERNAL SPRING	INTERNAL SPRING
01	1	1
02	2	-
03	1	2
04	2	1
05	2	2

MOD	SET	SPRING TORQUE (Nm)		AIR SUPPLY PRESSURE (bar)															
				2,5	3	4	5	5,5	6	7	8	TORQUE OUTPUT SPRING RETURN ACTUATORS (Nm)							
		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
SR160	01	83	131	199	148	256	205												
	02	119	188			218	145	332	259										
	03	143	225			193	105	307	219	422	334								
	04	185	292					262	148	377	263	434	320						
	05	202	319							358	235	415	292	473	350				
	06	268	423									346	181	404	239	518	353	633	468

WORKING TIME (SEC)		
COUNTERCLOCKWISE ROTATION (DA)	CCW	1,43
CLOCKWISE ROTATION (DA)	CW	1,25
COUNTERCLOCKWISE ROTATION (SR)	CCW	2,27
CLOCKWISE ROTATION (SR)	CW	1,60

WEIGHT CHART (KG)	
DOUBLE ACTING	21,75
SPRING RETURN	29,50

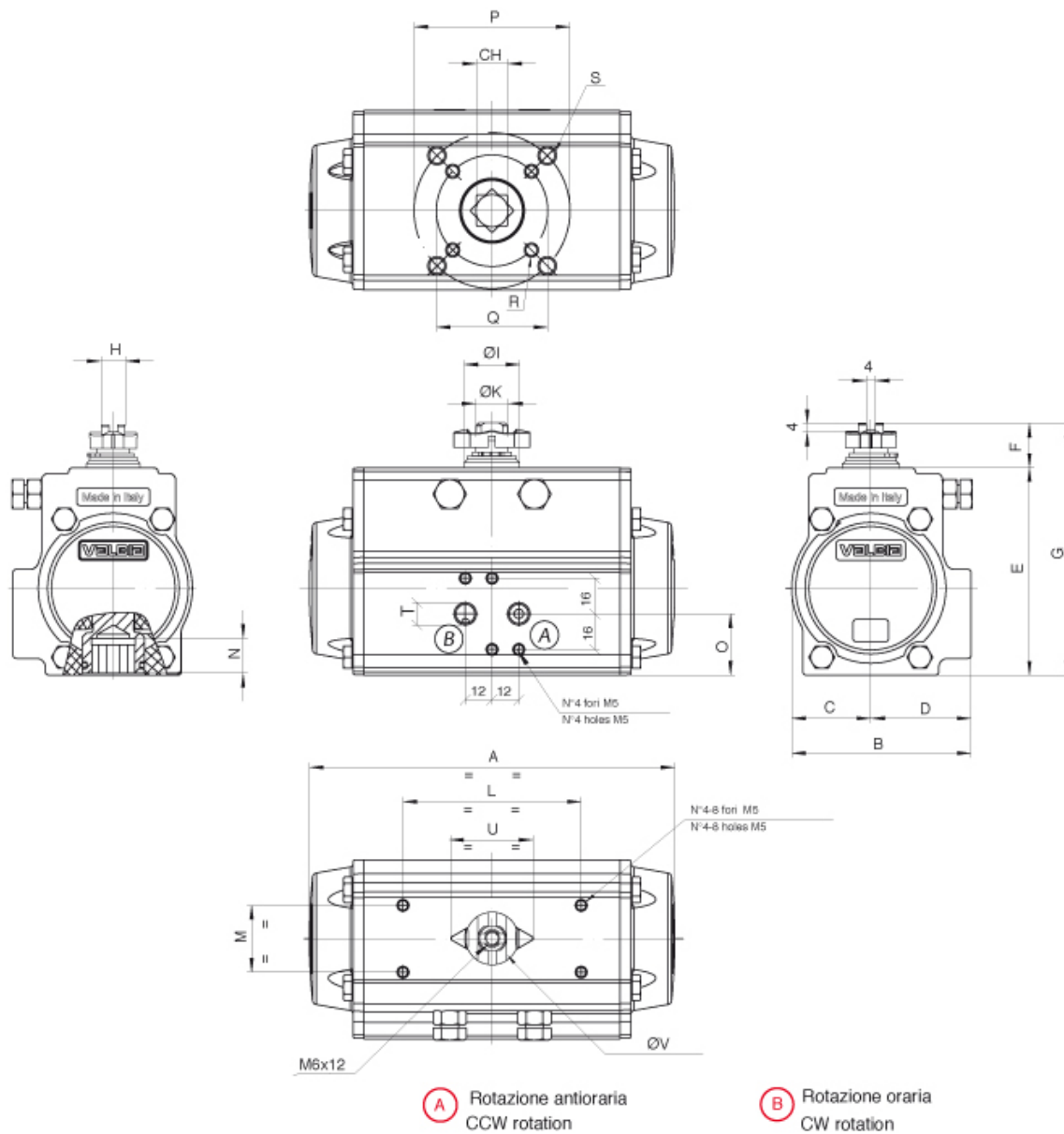
ACTUATOR AIR CONSUMPTION CHART		
COUNTERCLOCKWISE ROTATION (DA/SR)	CCW	3.61
CLOCKWISE ROTATION (DA)	CW	5,02



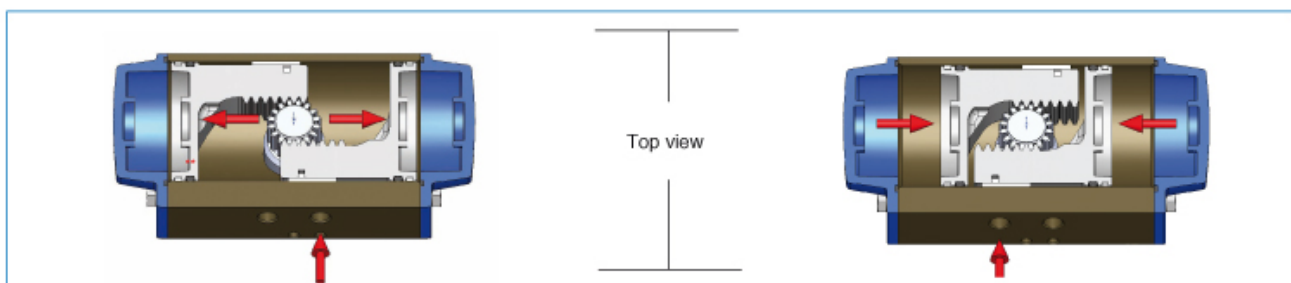
POSIZ. ITEM	DESCRIZIONE DESCRIPTION	MATERIALE MATERIAL	TRATTAMENTO TREATMENT	Q.TA' DA	Q.TA' SR
1	Body	Extruded aluminium	Hard anodized	1	1
2	Anti-blowout pinion	Steel	Nickel plated	1	1
• 3	O-ring	NBR		1	1
• 4	spacer ring	POM		1	1
• 5	O-ring	NBR		1	1
• 6	O-ring	NBR		1	1
7	Cam	Stainless steel		1	1
8	Spacer	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	
*** 19	central spring	Steel	Painted	0	See spring
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

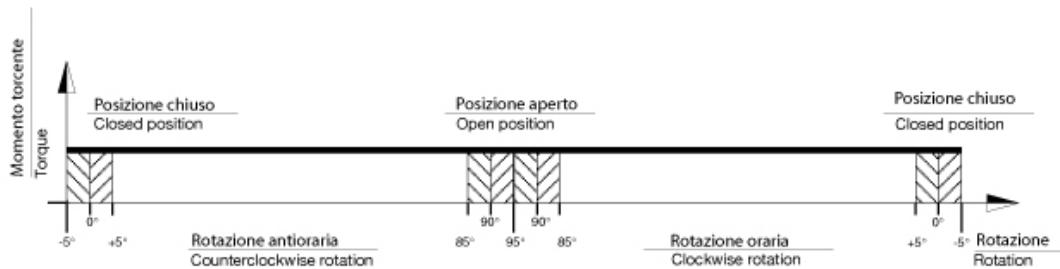
* Parts subject to wear

** Reinforced series DIN 471 - UNI 7436



MOD.	DRILLING-SO 5211	CH	A	B	C	D	E	F	G	H	ØI	ØK	L	M	N	O	P	Q	R	S	T ISO 7/1	U	ØV
180	F10-F14	36	493	213	98	115	253	30	283	36	62	45	80/130	30	43	99	140	102	M10X15	M16X25	1/4"	80,5	60

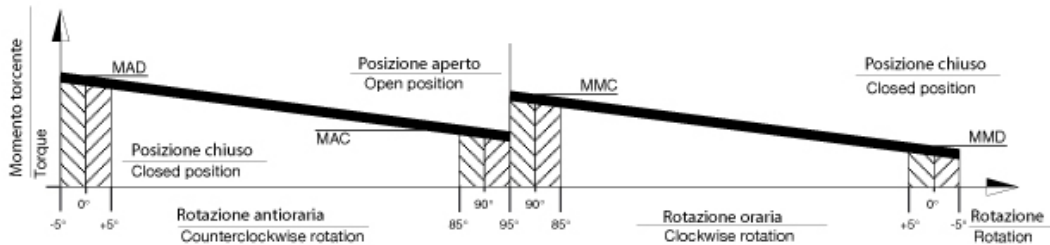
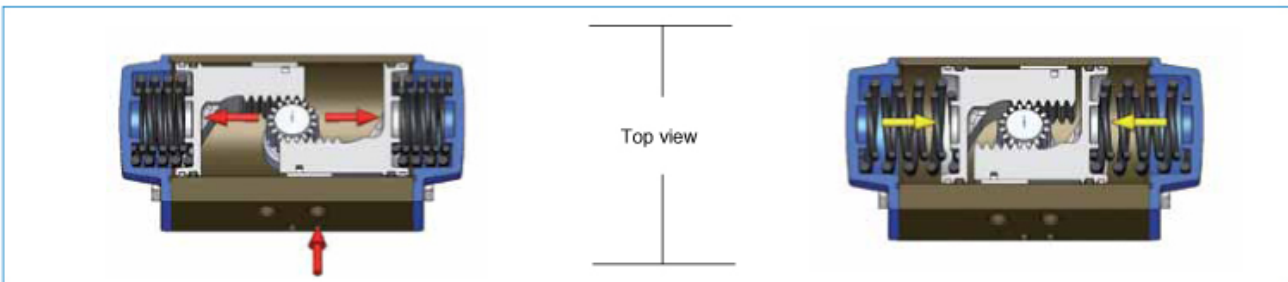




With reference to the above diagram it can be noted that the torque of a double acting actuator remains constant through-out the complete action. The user can decide on which model to choose according to his/her own specific requirements, using the following guidelines:

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 (bar)							
	2,5	3	4	5	5,5	6	7	8
	TORQUE OUTPUT DOUBLE ACTING ACTUATORS (Nm)							
DA 180	395	474	632	789	868	947	1105	1263



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 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 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.

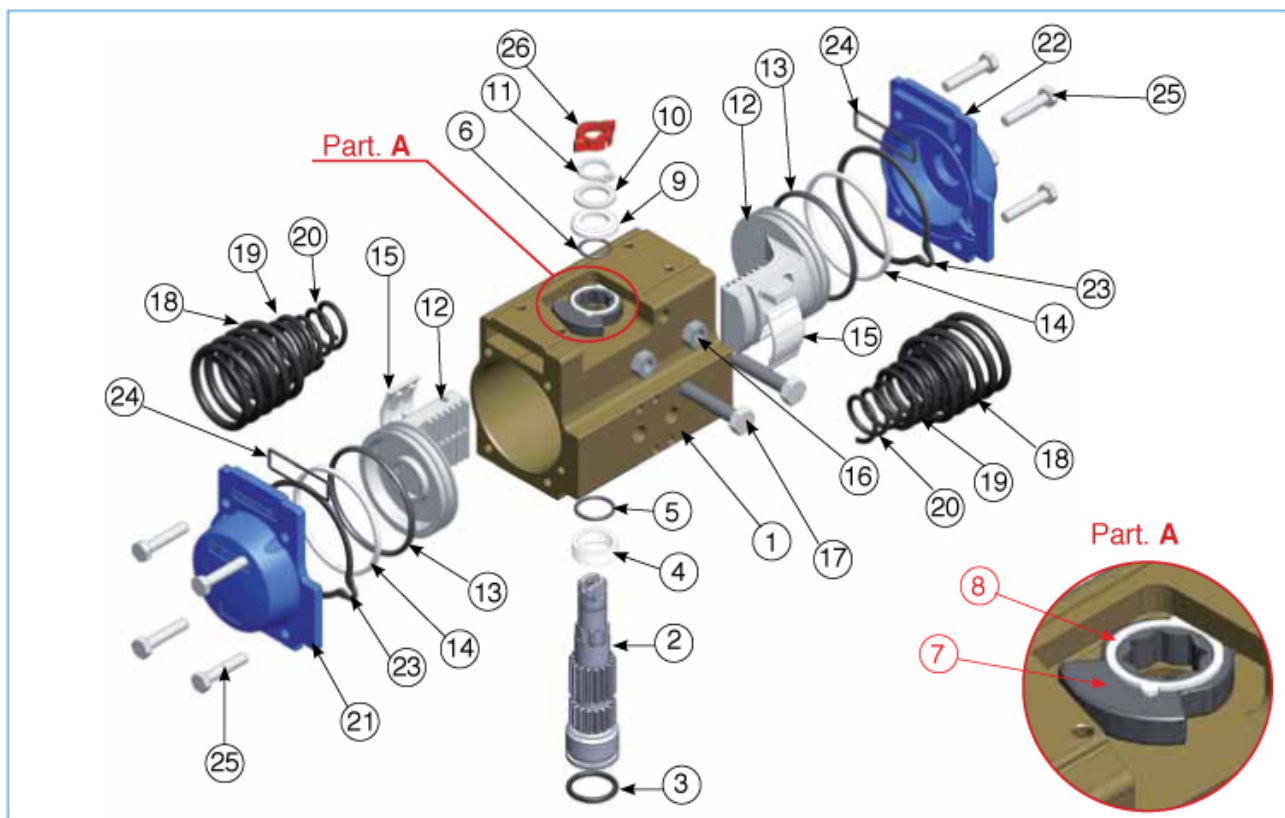
SPRING SETTING		
SET STANDARD 05		
		
SET	EXTERNAL SPRING	INTERNAL SPRING
01	1	1
02	2	-
03	1	2
04	2	1
05	2	2

MOD	SET	MOMENTO MOLLE (Nm)		AIR SUPPLY PRESSURE (bar)															
				2,5		3		4		5		5,5		6		7		8	
		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
SR180	01	102	168	287	217	366	296												
	02	160	252			304	206	462	364										
	03	182	294			281	162			596	477								
	04	262	414					354	196			511	353	590	432				
	05	262	420								511	343	590	422	669	501			
	06	364	582										482	254	561	333	719	491	877

WORKING TIME (SEC)		
COUNTERCLOCKWISE ROTATION (DA)	CCW	1,99
CLOCKWISE ROTATION (DA)	CW	1,80
COUNTERCLOCKWISE ROTATION (SR)	CCW	3,08
CLOCKWISE ROTATION (SR)	CW	2,38

WEIGHT CHART (KG)	
DOUBLE ACTING	29,00
SPRING RETURN	39,90

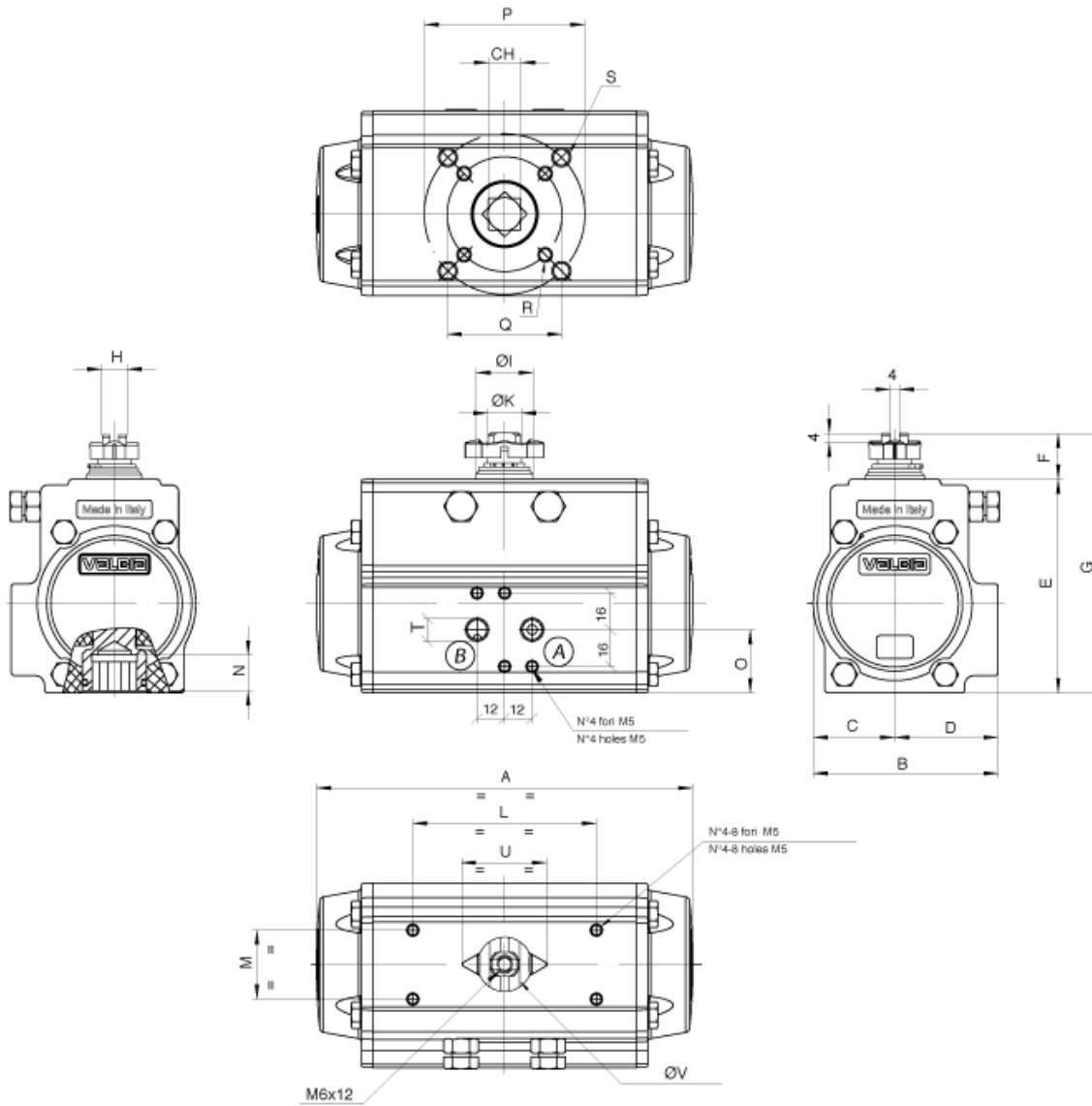
ACTUATOR AIR CONSUMPTION CHART		
COUNTERCLOCKWISE ROTATION (DA/SR)	CCW	4,63
CLOCKWISE ROTATION (DA)	CW	6,60



POSIZ. ITEM	DESCRIZIONE DESCRIPTION	MATERIALE MATERIAL	TRATTAMENTO 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	
*** 19	central spring	Steel	Painted	0	See spring
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

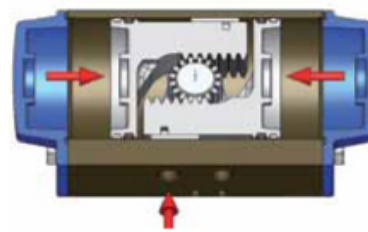
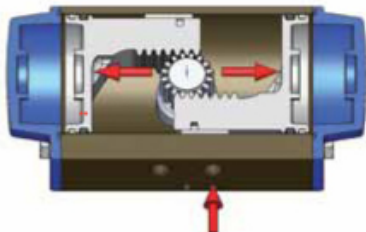


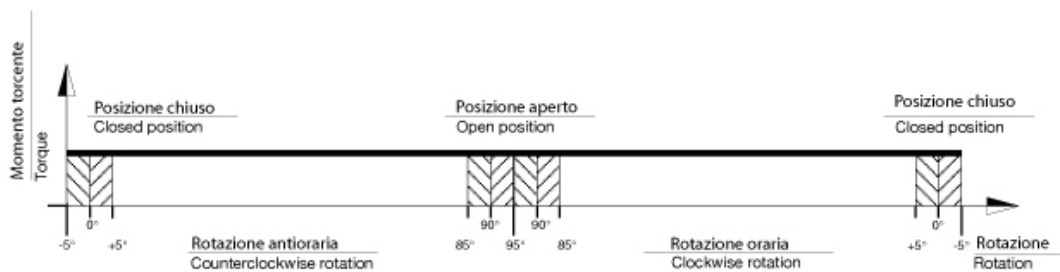
- A richiesta F04
- F04 upon request

(A) Rotazione antioraria
CCW rotation

(B) Rotazione oraria
CW rotation

MOD.	FORATURA ISO 5211	CH	A	B	C	D	E	F	G	H	ØI	J	ØK	L	M	N	O	P	Q	R	S	T ISO 7/1
200	F14	36	578,5	217	108	109	278	30	308	36	67	16	50	80/130	30	37	78	140	/	/	M16X24	1/4"

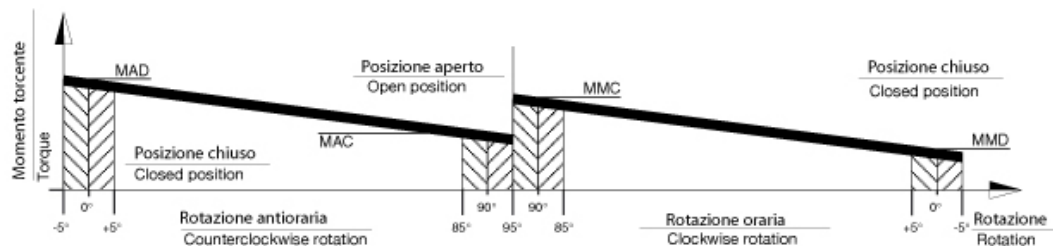
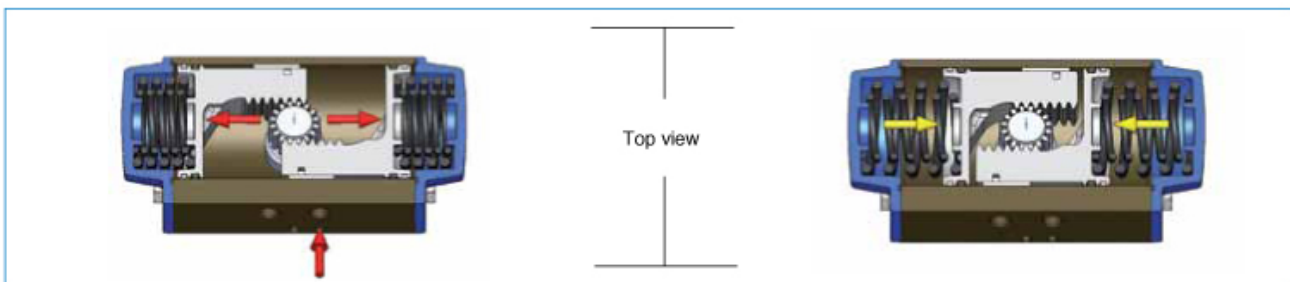




With reference to the above diagram it can be noted that the torque of a double acting actuator remains constant through-out the complete action. The user can decide on which model to choose according to his/her own specific requirements, using the following guidelines:

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 (bar)							
	2,5	3	4	5	5,5	6	7	8
	TORQUE OUTPUT DOUBLE ACTING ACTUATORS (Nm)							
DA 200	532	638	851	1063	1170	1276	1489	1701



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 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 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.

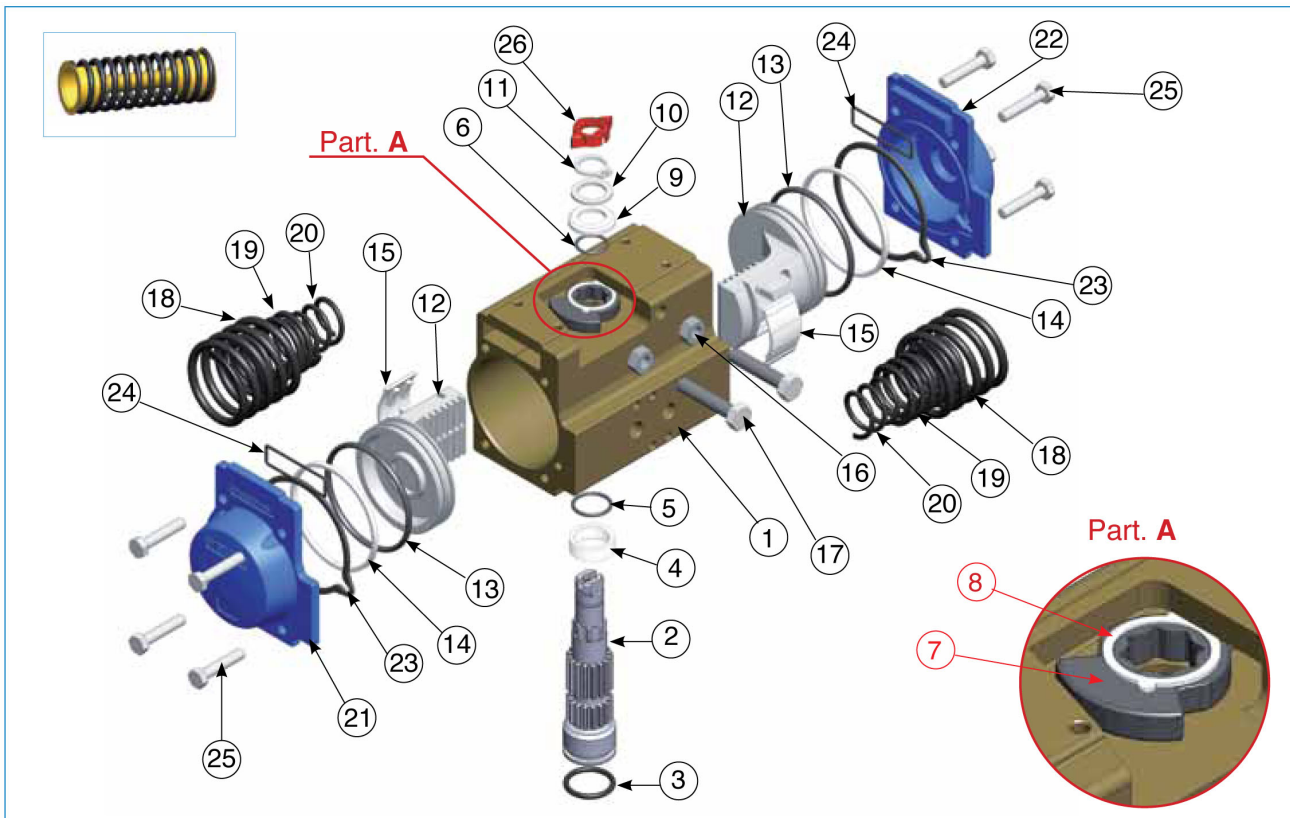
SPRING SETTING		
SET STANDARD 05		
		
SET	EXTERNAL SPRING	INTERNAL SPRING
01	1	1
02	2	-
03	1	2
04	2	1
05	2	2

MOD	SET	SPRING TORQUE (Nm)		AIR SUPPLY PRESSURE (bar)																
				2,5	3	4	5	5,5	6	7	8									
		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			
SR200	01	169	251	353	269	459	375													
	02	237	353			381	262	594	475											
	03	288	428			330	188	543	401	755	613									
	04	338	522					483	295	695	507	802	614							
	05	406	604								626	425	733	532	839	638				
	06	507	773										622	352	728	458	941	671	1153	883

WORKING TIME (SEC)		
COUNTERCLOCKWISE ROTATION (DA)	CCW	3,08
CLOCKWISE ROTATION (DA)	CW	2,41
COUNTERCLOCKWISE ROTATION (SR)	CCW	3,58
CLOCKWISE ROTATION (SR)	CW	2,80

WEIGHT CHART (KG)	
DOUBLE ACTING	37,00
SPRING RETURN	55,00

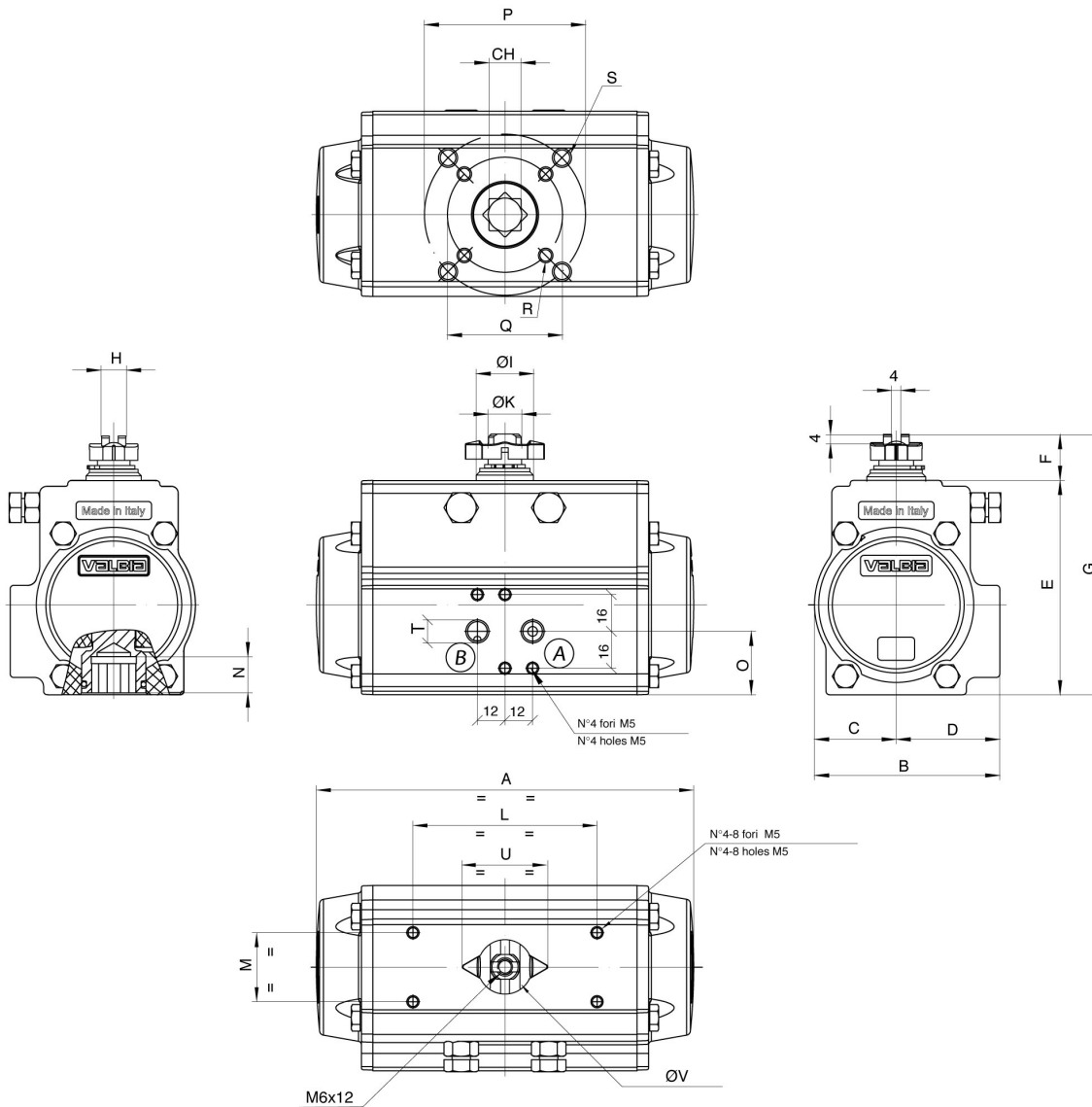
ACTUATOR AIR CONSUMPTION CHART		
COUNTERCLOCKWISE ROTATION (DA/SR)	CCW	5,70
CLOCKWISE ROTATION (DA)	CW	10,55



POSIZ. ITEM	DESCRIZIONE DESCRIPTION	MATERIALE MATERIAL	TRATTAMENTO 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

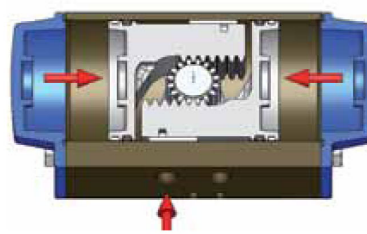
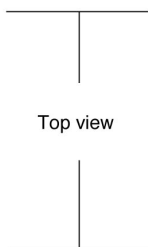
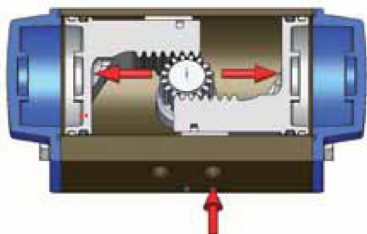


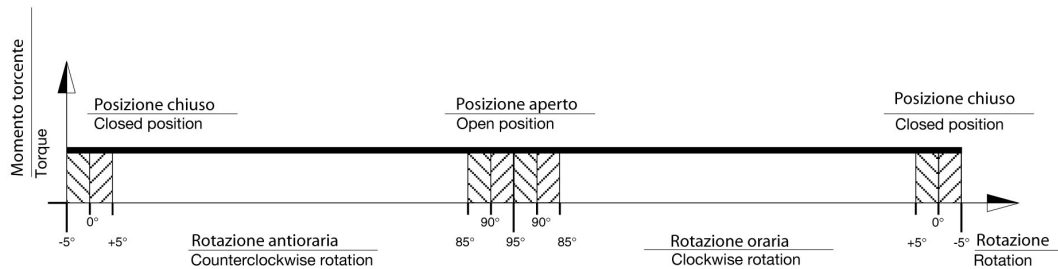
- A richiesta F04
- F04 upon request

(A) Rotazione antioraria
CCW rotation

(B) Rotazione oraria
CW rotation

MOD.	FORATURA ISO 5211	CH	A	B	C	D	E	F	G	H	ØI	J	ØK	L	M	N	O	P	Q	R	S	T ISO 7/1
230	F16	46	690	248,5	124	124,5	325	30	355	36	67	16	50	80/130	30	50	92	165	/	/	M20X29	1/4"

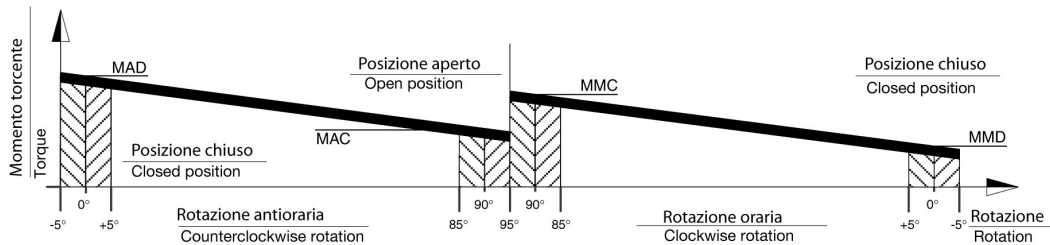
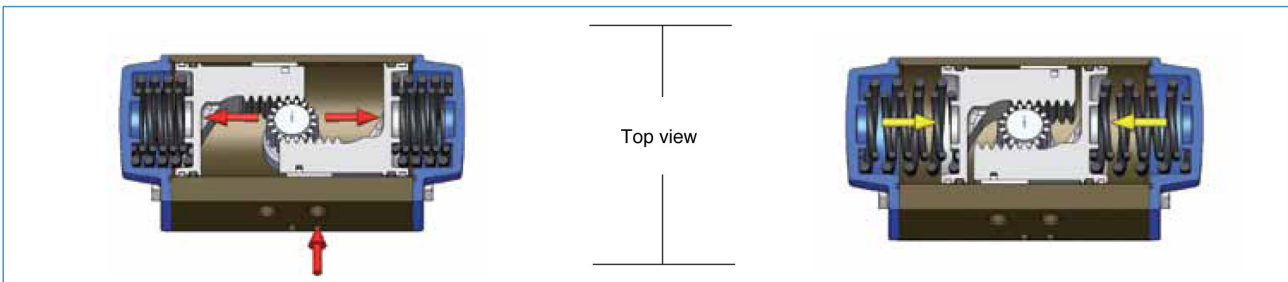




With reference to the above diagram it can be noted that the torque of a double acting actuator remains constant through-out the complete action. The user can decide on which model to choose according to his/her own specific requirements, using the following guidelines:

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 (bar)							
	2,5	3	4	5	5,5	6	7	8
	TORQUE OUTPUT DOUBLE ACTING ACTUATORS (Nm)							
DA 230	879	1055	1406	1758	1934	2109	2461	2812



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		
07	5/6		
08	6/6		

MOD.230

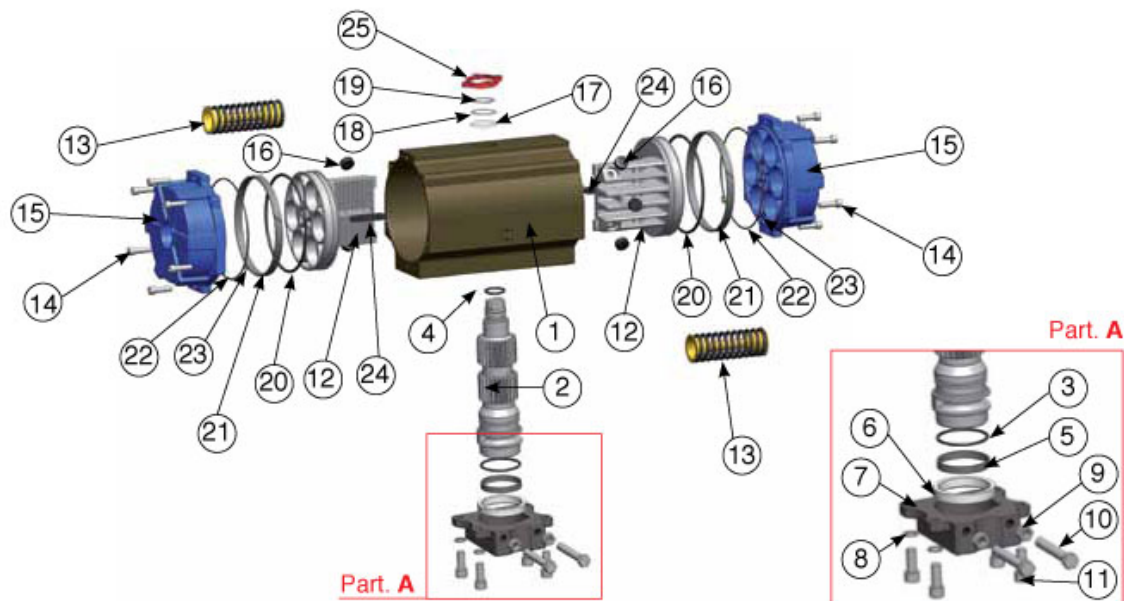
MOD.270 e 330

MOD	SET	SPRING TORQUE (Nm)		AIR SUPPLY PRESSURE (bar)															
				2,5	3	4	5	5,5	6	7	8								
		0° MMD	90° MMC	TORQUE OUTPUT SPRING RETURN ACTUATORS (Nm)															
		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	01	389	666	466	172	642	348	993	699										
	02	466	799			560	206	911	557										
	03	544	933					828	416	1180	768								
	04	622	1066					746	274	1098	626	1274	802						
	05	700	1199					663	133	1015	485	1191	661	1366	836				
	06	777	1332							933	343	1109	519	1284	694	1636	1046	1987	1397

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

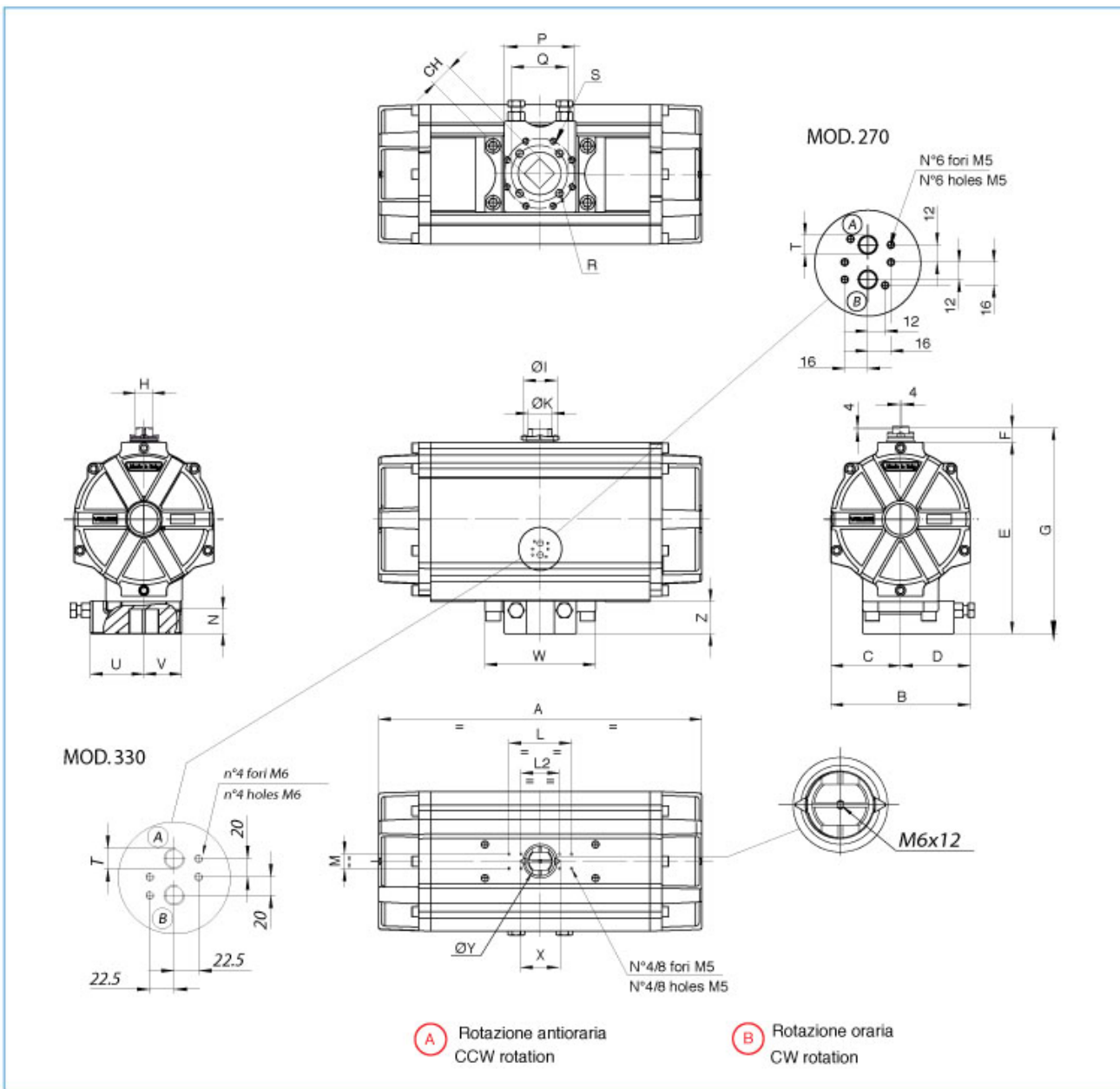
WEIGHT CHART (KG)	
DOUBLE ACTING	58,50
SPRING RETURN	71,00

CTUATOR AIR CONSUMPTION CHART		
COUNTERCLOCKWISE ROTATION (DA/SR)	CCW	10,68
CLOCKWISE ROTATION (DA)	CW	15,05



POSIZ. ITEM	DESCRIZIONE DESCRIPTION	MATERIALE MATERIAL	TRATTAMENTO TREATMENT	Q.TA' DA	Q.TA' SR
1	Corpo - Body	Alluminio estruso - Extruded aluminium	Ossidato duro - Hard anodized	1	1
2	Pignone antiespulsione - Anti-blowout pinion	Acciaio - Steel	Nichelato - Nickel plated	1	1
• 3	O-ring	NBR		1	1
• 4	O-ring	NBR		1	1
• 5	Anello antifrizione - Antifriction ring	PTFE 15% grafite - PTFE 15% graphite		1	1
• 6	Anello antifrizione - Antifriction ring	PTFE		1	1
7	Plastra - Plate	mod.270 GGG40 - mod.330 C45	Verniciato - Painted	1	1
8	Rondella - Washer	Acciaio inox - Stainless steel		4	8
9	Dado di bloccaggio - Stop bolt retaining nut	Acciaio inox - Stainless steel		2	2
10	Vite di regolazione - Stop crew	Acciaio - Steel	Zincato - Zinc plated	2	2
11	Viti di fissaggio - Fixing screws	Acciaio inox - Stainless steel		4	4
12	Pistone - Piston	Alluminio pressofuso - Die cast aluminium		2	2
13	Molla precompressa - Precompressed spring	Acciaio - Steel	Verniciata - Painted	0	Vedi set molla pagina 19 See spring setting at page 19
14	Vite di serraggio tappi - End cap fixing screw	Acciaio inox - Stainless steel		mod.270 12 mod.330 16	mod.270 12 mod.330 16
15	Tappo - End cap	Alluminio pressofuso - Die cast aluminium	Verniciato - Painted	2	2
• 16	Pattino reggispinta - Thrust block	POM		mod.270 6 mod.330 8	mod.270 6 mod.330 8
• 17	Anello distanziale - Spacer ring	POM		1	1
18	Rondella pignone - Pinion washer	Acciaio inox - Stainless steel		1	1
19	Seeger - Snap ring	Acciaio - Steel	Nichelato - Nickel plated	1	1
• 20	O-ring	NBR		2	2
• 21	Anello antifrizione - Antifriction ring	PTFE 15% grafite - PTFE 15% graphite		2	2
22	O-ring	NBR		2	2
23	O-ring	NBR		mod.270 4 mod.330 2	mod.270 4 mod.330 2
24	Chiavetta antiespulsione - Anti blowout key	POM		2	2
25	Indicatore di posizione - Position indicator	Gomma termoplastica TPE Thermoplastic rubber TPE		1	1

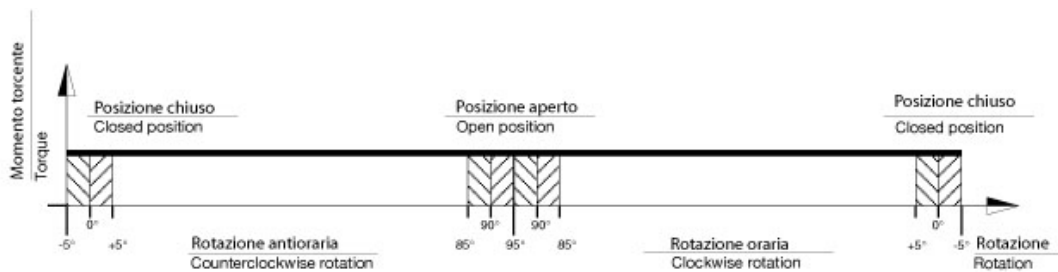
• Particolari soggetti ad usura - Parts subject to wear



MOD.	FORATURA ISO 5211	CH	A	B	C	D	E	F	G	H	ØI	J	ØK	L	L2	M	N	P	Q	R	S	T ISO 7/1	U	V	W	Z
270	F16	46**	672	290	145	145	399	30	429	36	70	20	50	130	80	30	50	/	165	M20X30	/	1/4"	111	79	230	68

** Solo quadro a 45°

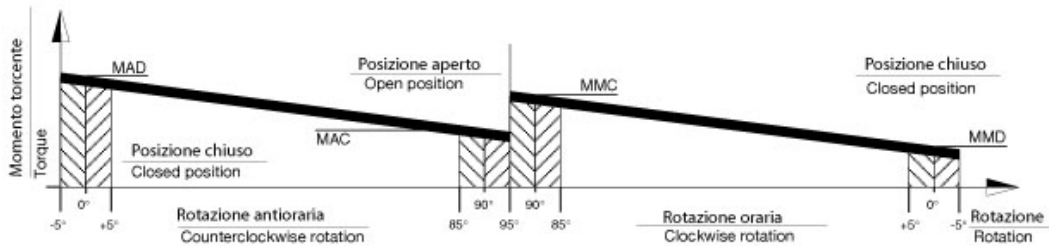




Dal grafico riportato si può notare che la coppia di un attuatore a doppio effetto si mantiene costante lungo tutta la manovra. L'utilizzatore potrà procedere alla scelta del modello idoneo alle proprie esigenze basandosi sulle seguenti indicazioni:

1. Verificare la coppia di spunto massimo della valvola da automatizzare.
2. Aumentare del 25-50% (dipende dal tipo di valvola e dalle condizioni di esercizio) il valore della coppia di spunto verificata, stabilendo così un coefficiente di sicurezza.
3. Ottenuto in questo modo il valore di coppia consigliato, si ricerca nella tabella dei momenti torcenti (in corrispondenza della pressione disponibile) un valore di coppia uguale o simile (comunque non inferiore) a quello ottenuto.
4. Trovato il valore basterà spostarsi in orizzontale verso sinistra nella colonna "modello" per avere la misura dell'attuatore adatto.

MODELLO	PRESSIONE DI ALIMENTAZIONE (bar)							
	2,5	3	4	5	5,5	6	7	8
	MOMENTO TORCENTE ATTUATORI A DOPPIO EFFETTO (Nm)							
DA 270	1292	1550	2067	2584	2842	3101	3617	4134



Dal grafico riportato si può notare che la coppia di un attuatore a semplice effetto non è costante ma decrescente. Questo è dovuto all'azione delle molle che si comprimono opponendosi al movimento dei pistoni, accumulando energia che sarà resa disponibile in modo decrescente durante l'inversione della rotazione. La coppia dall'attuatore è quindi caratterizzata da 4 valori fondamentali:

Rotazione in apertura

- MAD = Coppia attuatore con molle distese
- MAC = Coppia attuatore con molle compresse

Rotazione in chiusura

- MMC = Coppia molle compresse
- MMD = Coppia molle distese

L'utilizzatore potrà procedere alla scelta del modello idoneo alle proprie esigenze basandosi sulle seguenti indicazioni:

1. Verificare la coppia di spunto massima della valvola da automatizzare.
2. Aumentare del 25-50% (dipende dal tipo di valvola e dalle condizioni di esercizio) il valore della coppia di spunto verificata, stabilendo così un coefficiente di sicurezza.
3. Ottenuto in questo modo il valore di coppia consigliato, si ricerca nella tabella dei momenti torcenti (in corrispondenza della pressione disponibile) un valore di coppia uguale o simile (comunque non inferiore) a quello ottenuto considerando però il valore più basso tra i valori MMD e MAC.
4. Trovato il valore basterà spostarsi in orizzontale verso sinistra nella colonna "modello" per avere la misura dell'attuatore adatto.

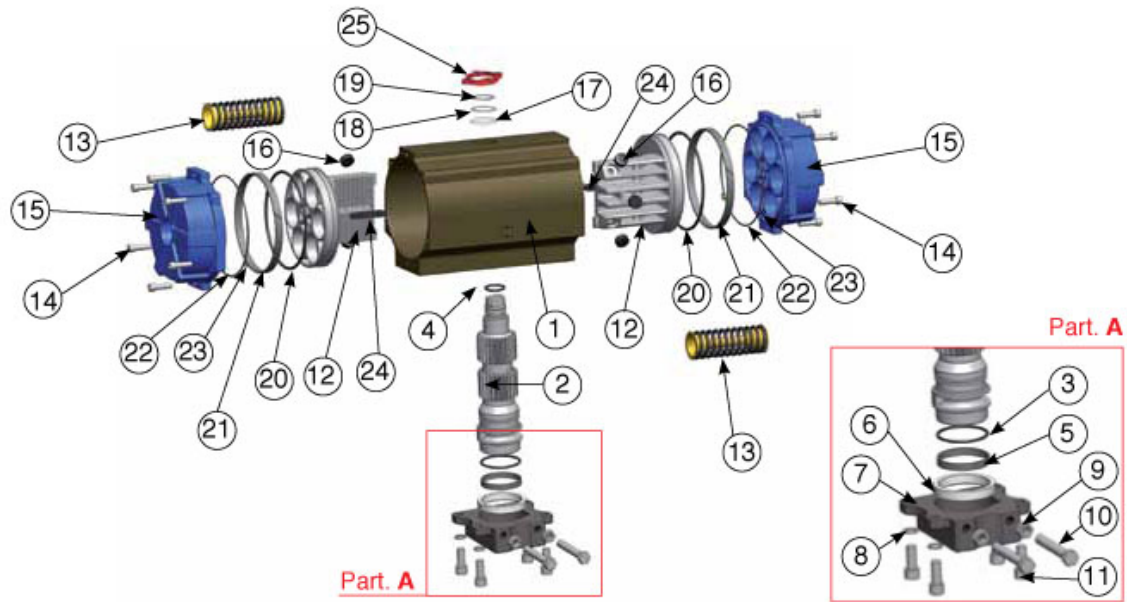
SET DI MOLLE	
	
MOLLA UNICA PRECOMPRESSA	
SET	N° MOLLE PER LATO
01	2/3
02	3/3
03	3/4
04	4/4
05	4/5
06	5/5
07	5/6
08	6/6

MOD	SET	MOMENTO MOLLE (Nm)		PRESSIONE ALIMENTAZIONE (bar)															
				2,5		3		4		5		5,5		6		7		8	
		0° MMD	90° MMC	MOMENTO TORCENTE ATTUATORI A SEMPLICE EFFETTO (Nm)															
		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		
SR270	01	506	791	780	490	1044	754	1572	1282										
	02	607	949	672	324	936	588	1464	1116										
	03	708	1107	564	158	828	422	1356	950	1884	1478								
	04	810	1265			721	257	1249	785	1777	1313	2041	1577						
	05	911	1423					1141	619	1669	1147	1933	1411	2197	1675				
	06	1012	1581					1033	453	1561	981	1825	1245	2089	1509				
	07	1113	1740					925	287	1453	815	1717	1079	1981	1343	2508	1870		
	08	1214	1898					817	121	1345	649	1609	913	1873	1177	2400	1704	2928	2232

TEMPI DI MANOVRA (SEC)		
ROTAZIONE ANTIORARIA (DA)	CCW	6,16
ROTAZIONE ORARIA (DA)	CW	5,47
ROTAZIONE ANTIORARIA (SR)	CCW	8,97
ROTAZIONE ORARIA (SR)	CW	6,62

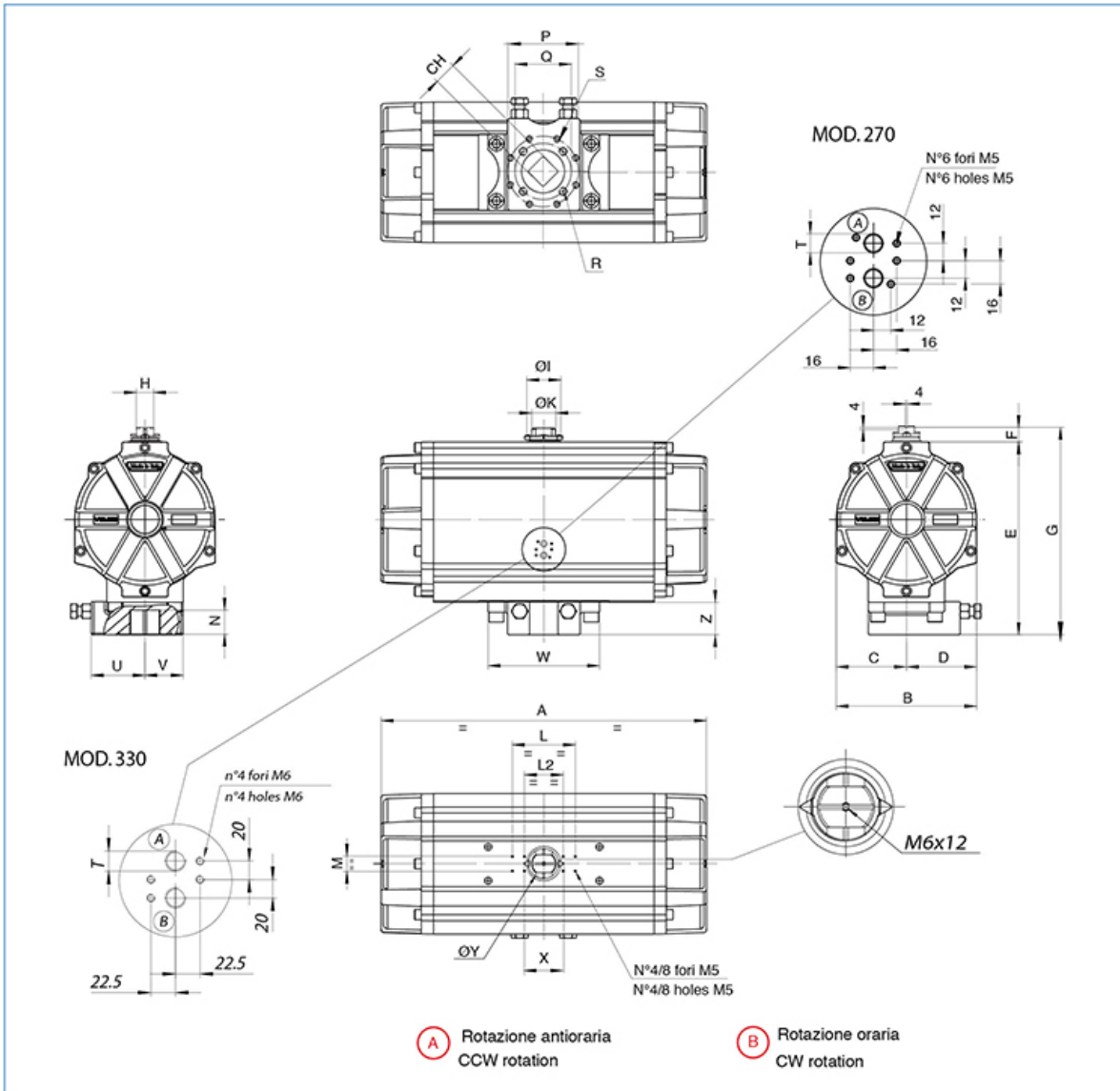
TABELLA PESI	
DOPPIO EFFETTO	82,67
SEMPLICE EFFETTO	100,27

TABELLA DI CONSUMO D'ARIA ATTUATORI		
ROTAZIONE ANTIORARIA (DA/SR)	CCW	15,0
ROTAZIONE ORARIA (DA)	CW	17,8

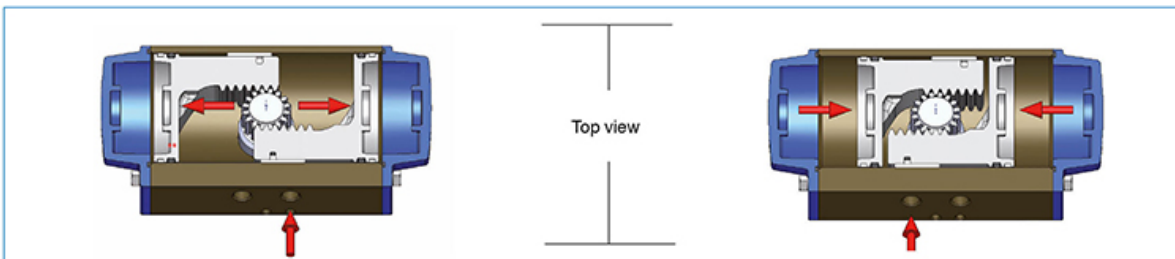


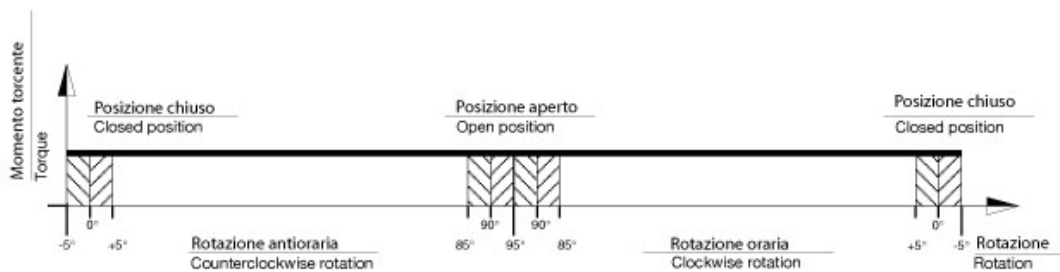
ITEM	DESCRIPTION	MATERIAL	TREATMENT	Q.TA' DA	Q.TA' SR
1	Body	Extruded aluminium	Hard anodized	1	1
2	Anti-blowout pinion	Steel	Nickel plated	1	1
• 3	O-ring	NBR		1	1
• 4	O-ring	NBR		1	1
• 5	Antifriction ring	PTFE 15% graphite		1	1
• 6	Antifriction ring	PTFE		1	1
7	Plate	mod.270 GGG40 - mod.330 C45	Painted	1	1
8	Washer	Stainless steel		4	8
9	Stop bolt retaining nut	Stainless steel		2	2
10	Stop crew	Steel	Zinc plated	2	2
11	Fixing screws	Stainless steel		4	4
12	Piston	Die cast aluminium		2	2
13	Precompressed spring	Steel	Painted	0	See spring
14	End cap fixing screw	Stainless steel		mod.270 12 mod.330 16	mod.270 12 mod.330 16
15	End cap	Die cast aluminium	Painted	2	2
• 16	Thrust block	POM		mod.270 6 mod.330 8	mod.270 6 mod.330 8
• 17	Spacer ring	POM		1	1
18	Pinion washer	Stainless steel		1	1
19	Snap ring	Steel	Nickel plated	1	1
• 20	O-ring	NBR		2	2
• 21	Antifriction ring	PTFE 15% graphite		2	2
22	O-ring	NBR		2	2
23	O-ring	NBR		mod.270 4 mod.330 2	mod.270 4 mod.330 2
24	Anti blowout key	POM		2	2
25	Position indicator	Thermoplastic rubber TPE		1	1

• Parts subject to wear



MOD.	FORATURA ISO 5211	CH	A	B	C	D	E	F	G	H	ØI	ØK	L	L2	M	N	P	Q	R	S	T ISO 7/1	U	V	W	Z	X	ØY
330	F16-F25	55	881	402	201	201	505	50	555	36	109	50	130	/	30	62	254	165	M20X30	M16X26	1/2"	129	135	297	95	80,5	60

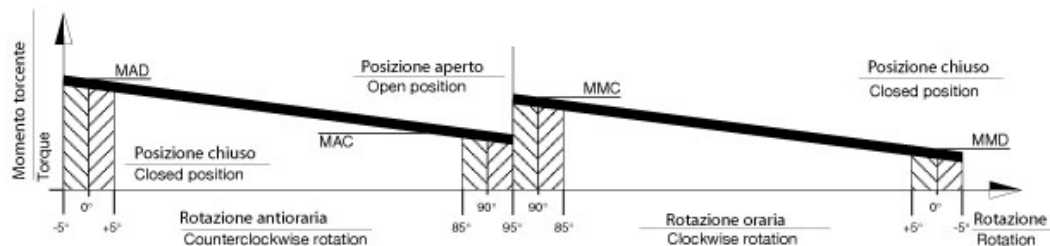
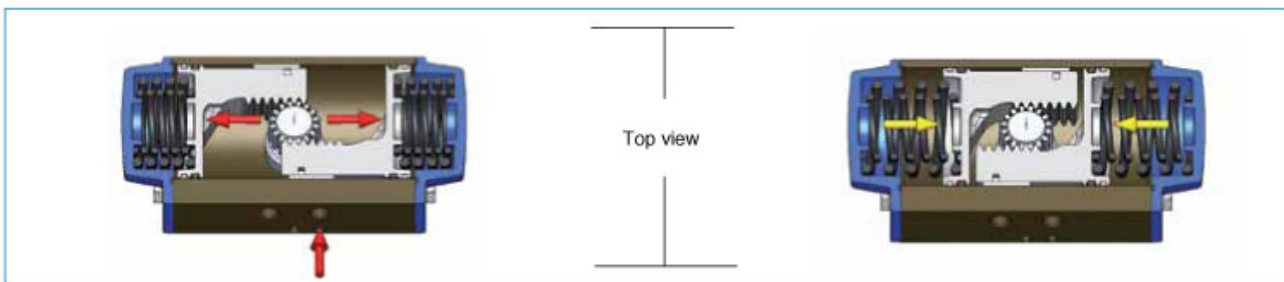




With reference to the above diagram it can be noted that the torque of a double acting actuator remains constant through-out the complete action. The user can decide on which model to choose according to his/her own specific requirements, using the following guidelines:

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 (bar)							
	2,5	3	4	5	5,5	6	7	8
	TORQUE OUTPUT DOUBLE ACTING ACTUATORS (Nm)							
DA 330	2299	2759	3679	4599	5059	5519	6438	7358



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

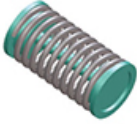
MAD = Actuator torque with unfolded springs
 MAC = Actuator torque with compressed springs.

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
07	5/6
08	6/6

MOD	SET	SPRING TORQUE (Nm)		AIR SUPPLY PRESSURE (bar)																
				2,5		3		4		5		5,5		6		7		8		
		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	
SR330	01	884	1372	1361	842	1821	1302	2741	2222											
	02	1060	1647	1173	550	1633	1010	2553	1930											
	03	1237	1921	985	259	1445	719	2365	1639	3285	2559									
	04	1414	2196			1258	427	2178	1347	3098	2267	3558	2727							
	05	1591	2470					1990	1056	2910	1976	3370	2436	3830	2896					
	06	1767	2745					1802	764	2722	1684	3182	2144	3642	2604					
	07	1944	3019					1615	473	2535	1393	2995	1853	3455	2313	4374	3232			
	08	2121	3294							2347	1101	2807	1561	3267	2021	4186	2940	5106	3860	

WORKING TIME (SEC)		
COUNTERCLOCKWISE ROTATION (DA)	CCW	5,50
CLOCKWISE ROTATION (DA)	CW	5,50
COUNTERCLOCKWISE ROTATION (SR)	CCW	6,40
CLOCKWISE ROTATION (SR)	CW	7,40

WEIGHT CHART (KG)	
DOUBLE ACTING	168
SPRING RETURN	209

CTUATOR AIR CONSUMPTION CHART		
COUNTERCLOCKWISE ROTATION (DA/SR)	CCW	25,5
CLOCKWISE ROTATION (DA)	CW	44,2