

**Modello L02**

- Motore a magneti permanenti
- Riduttore epicicloidale
- Stelo filettato trapezoidale
- Asta traslante in acciaio cromato
- Lubrificazione permanente a grasso
- IP 65
- Temperatura di funzionamento -10°C +60°C
- Impiego intermittente (vedi tabelle) a 30°C\*
- Fine corsa a richiesta

(\*) Per impieghi diversi contattare il Ns Ufficio Tecnico

**Model L02**

- Permanent magnet motor
- Planetary gearbox
- ACME lead screw
- Chrome plated steel push rod
- Permanent lubrication by grease
- IP 65
- Temperature range -10°C +60°C
- Intermittent duty (see index) @ 30°C\*
- Limit switches on request

(\*) For any special duty please contact our offices

**L02 (Vdc) S3-30% 5min**

Fmax	Velocità	Versione	Taglia motore	Giri motore	D vite	Passo	Rendimento	Corsa max
Fmax	Speed	Version	Motor size	Motor speed	Screw D	Pitch	Efficiency	Max stroke
[N]	[mm/s]			[rpm]	[mm]	[mm]		[mm]
280	80	M01	36	500	16	12	0,51	795
220	50	M02	36	300	16	12	0,51	800
240	35	M03	36	300	16	8	0,37	800
750	25	M04	36	150	16	12	0,51	795
840	15	M05	36	150	16	8	0,37	800
1600	8	M06	36	150	16	4	0,32	770
2000	5	M07	36	80	16	4	0,32	690

**L02 (Vdc) S3-10% 10min**

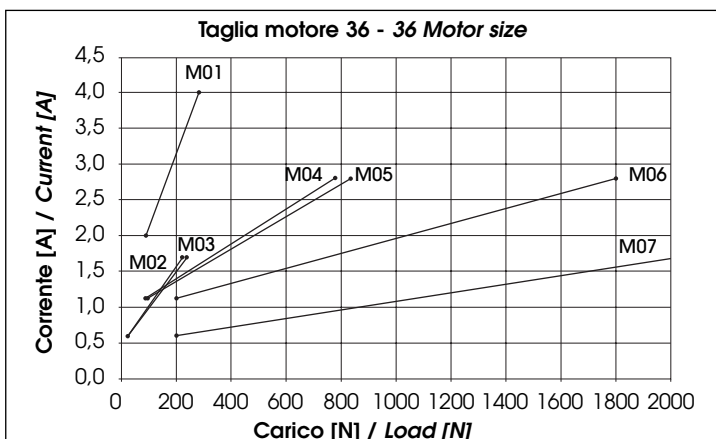
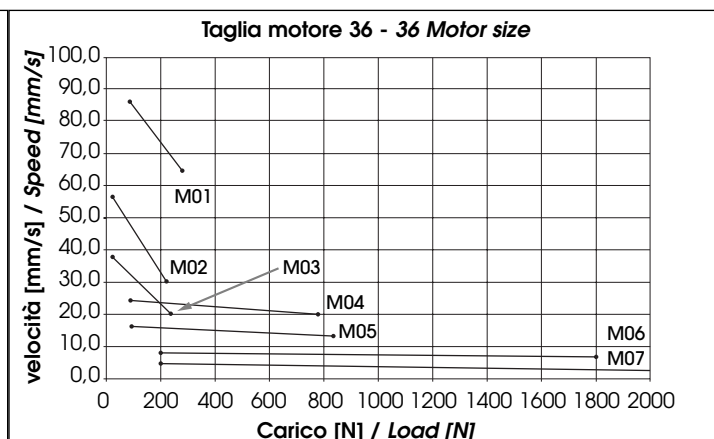
Fmax	Velocità	Versione	Taglia motore	Giri motore	D vite	Passo	Rendimento	Corsa max
Fmax	Speed	Version	Motor size	Motor speed	Screw D	Pitch	Efficiency	Max stroke
[N]	[mm/s]			[rpm]	[mm]	[mm]		[mm]
800	15	M08	36	80	16	12	0,51	795
900	10	M09	36	80	16	8	0,37	800
1500	5	M10	36	80	16	4	0,32	795

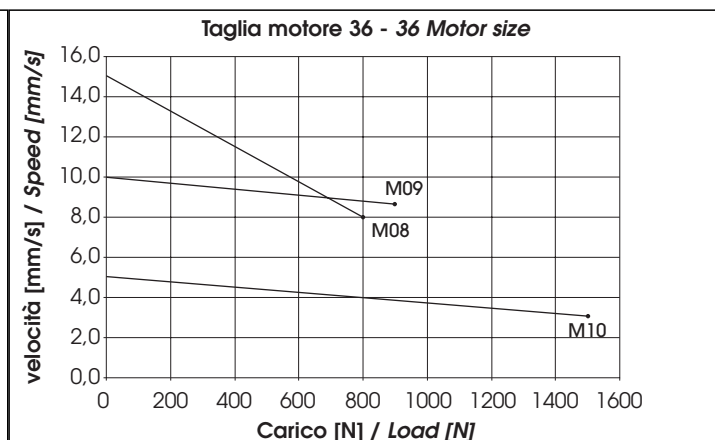
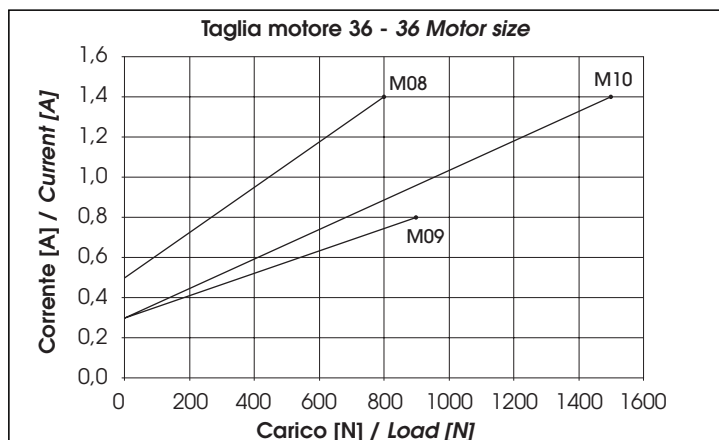
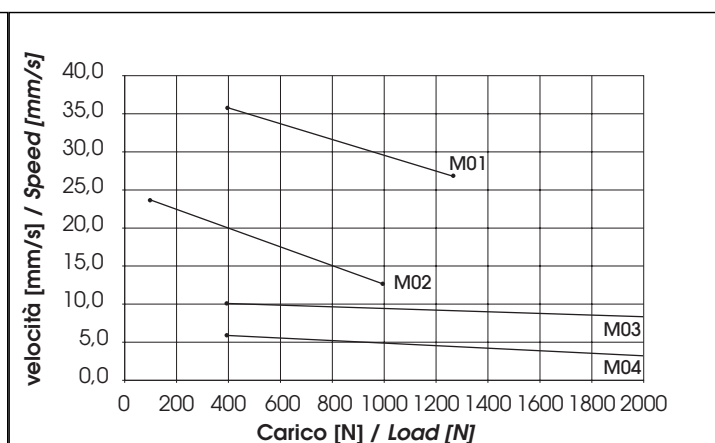
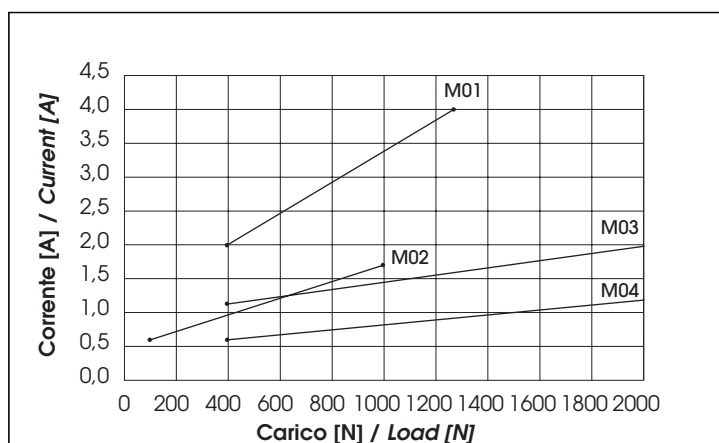
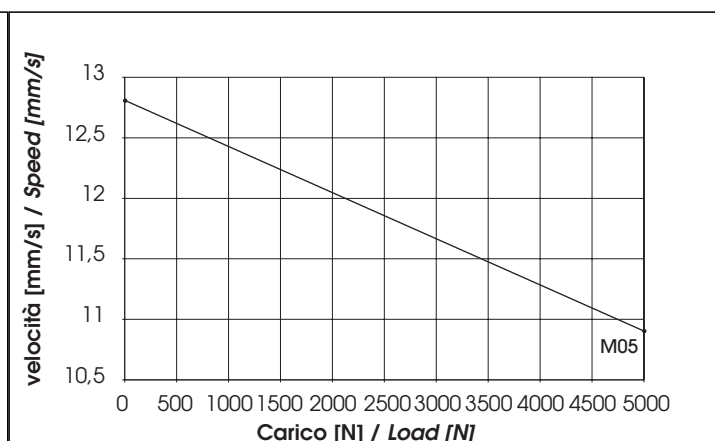
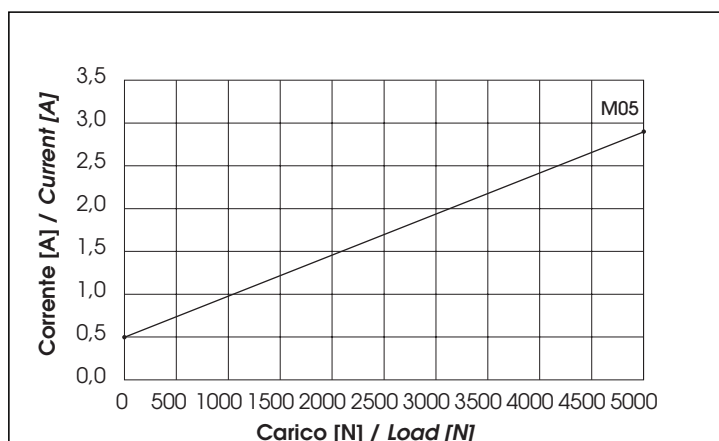
**L02 VRS (ballscrew) (Vdc) S3-30% 5min**

Fmax	Velocità	Versione	Taglia motore	Giri motore	D vite	Passo	Rendimento	Corsa max
Fmax	Speed	Version	Motor size	Motor speed	Screw D	Pitch	Efficiency	Max stroke
[N]	[mm/s]			[rpm]	[mm]	[mm]		[mm]
1000	35	M01	36	500	14	5	0,77	765
1000	20	M02	36	300	14	5	0,77	790
2000	10	M03	36	150	14	5	0,77	560
2000	5	M04	36	80	14	5	0,77	560

**L02 VRS (ballscrew) (Vdc) S3-10% 10min**

Fmax	Velocità	Versione	Taglia motore	Giri motore	D vite	Passo	Rendimento	Corsa max
Fmax	Speed	Version	Motor size	Motor speed	Screw D	Pitch	Efficiency	Max stroke
[N]	[mm/s]			[rpm]	[mm]	[mm]		[mm]
1500	5	M05	36	80	14	5	0,77	645

**L02 (Vdc) S3-30% 5min**
**Diagrammi di corrente - Current diagram**

**Diagrammi di velocità - Speed diagram**


**L02 (Vdc) S3-10% 10min**
**Diagrammi di corrente - Current diagram    Diagrammi di velocità - Speed diagram**

**L02 VRS (ballscrew) (Vdc) S3-30% 5min**
**Diagrammi di corrente - Current diagram    Diagrammi di velocità - Speed diagram**

**L02 VRS (ballscrew) (Vdc) S3-10% 10min**
**Diagrammi di corrente - Current diagram    Diagrammi di velocità - Speed diagram**


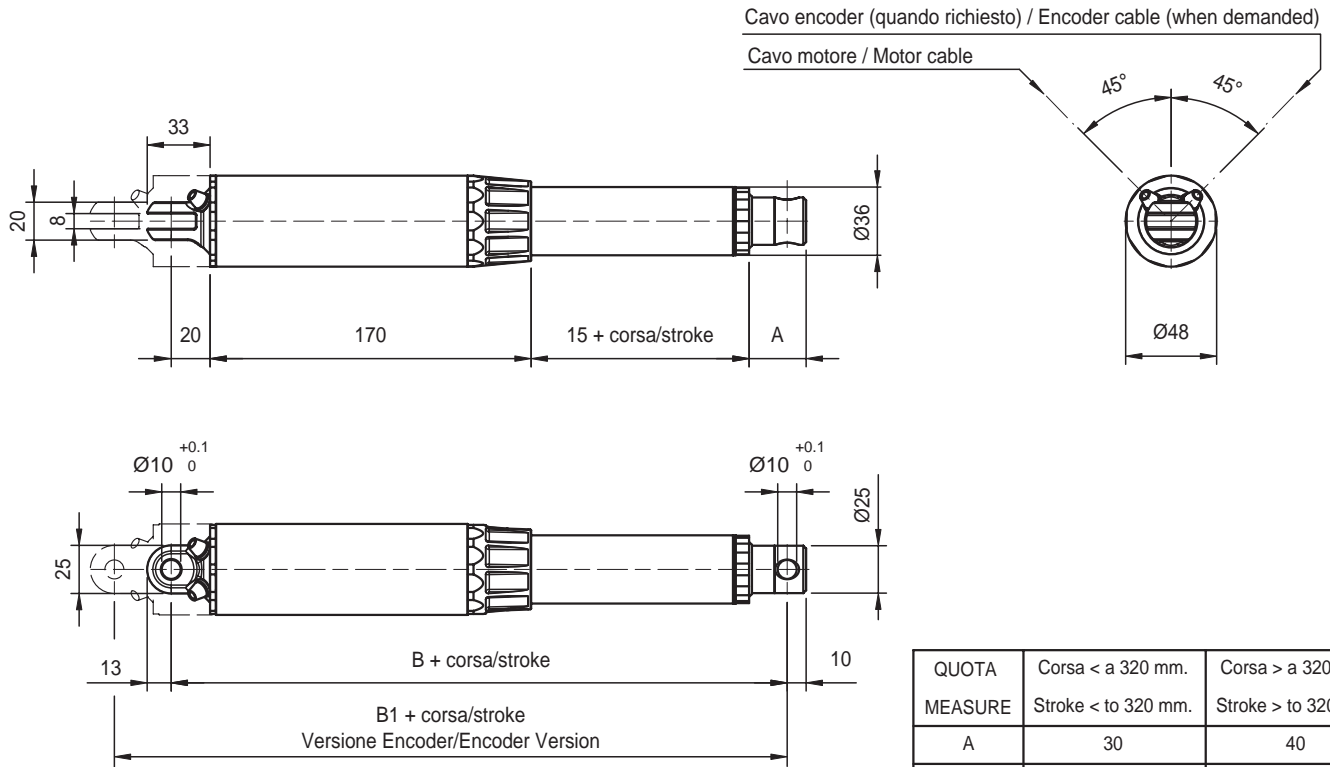
Diagrammi riferiti alla tensione di alimentazione 24Vdc.  
Per tensione 12Vdc raddoppiare il valore di corrente e ridurre il valore di carico del 20%.

Per una corretta scelta dell'attuatore idoneo alla Vs. applicazione si devono utilizzare le informazioni tecniche che trovate al capitolo "Guida alla Scelta degli Attuatori e dei Martinetti Elettromeccanici".

Diagrams valids for 24Vdc power supply.  
For 12Vdc power supply currents are doubled and loads are 20% slower.

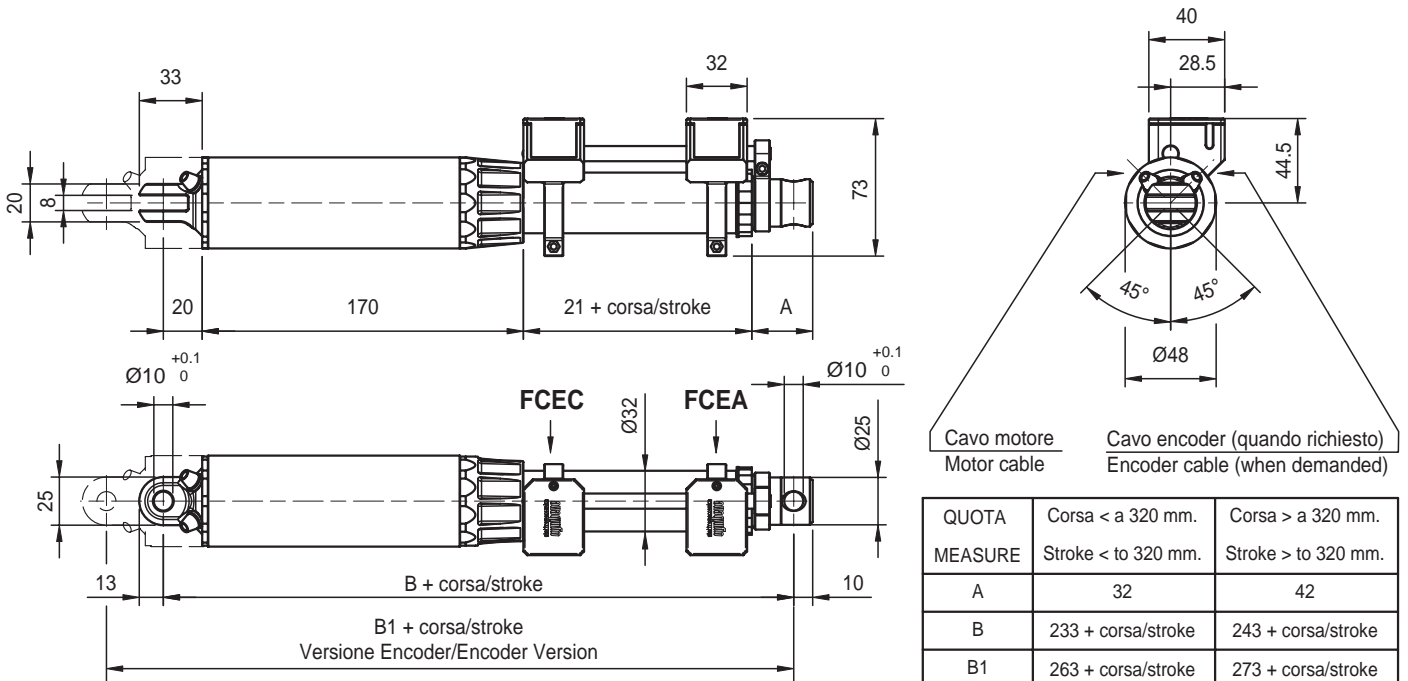
Elements and technical information available in "Electromechanical Actuators + Jack Choice Guideline" have to be carefully considered in order to perform a proper actuator selection according to your application.

**L02**



QUOTA	Corsa < a 320 mm.	Corsa > a 320 mm.
MEASURE	Stroke < to 320 mm.	Stroke > to 320 mm.
A	30	40
B	225 + corsa/stroke	235 + corsa/stroke
B1	255 + corsa/stroke	265 + corsa/stroke

**L02 - FCE**



QUOTA	Corsa < a 320 mm.	Corsa > a 320 mm.
MEASURE	Stroke < to 320 mm.	Stroke > to 320 mm.
A	32	42
B	233 + corsa/stroke	243 + corsa/stroke
B1	263 + corsa/stroke	273 + corsa/stroke

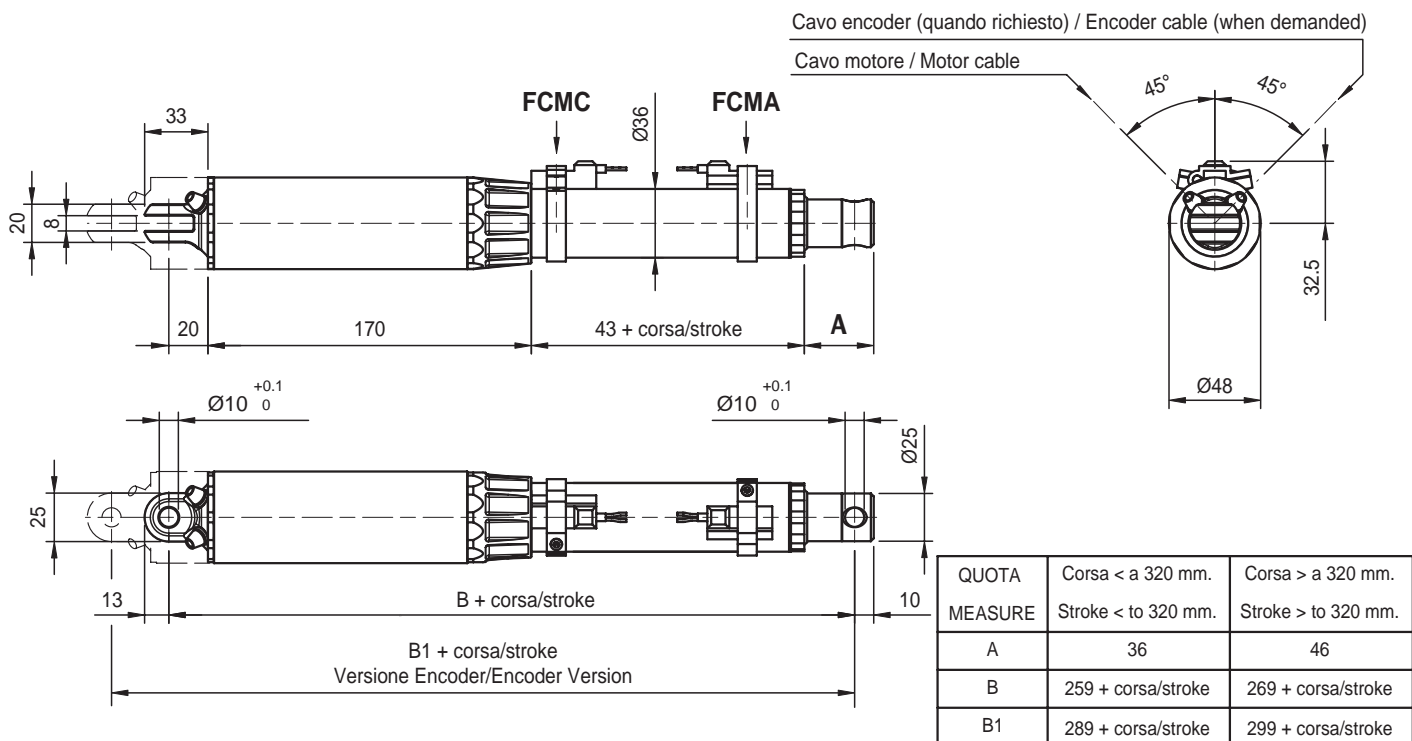
**FCEC** = Finecorsa meccanico chiusura  
**FCEA** = Finecorsa meccanico apertura

**FCEC** = Closing mechanical switch  
**FCEA** = Opening mechanical switch

**N.B.:** In questa versione non è applicabile l'opzione dell'antirrotazione.

**Note:** Antirrotation key is not available in this version

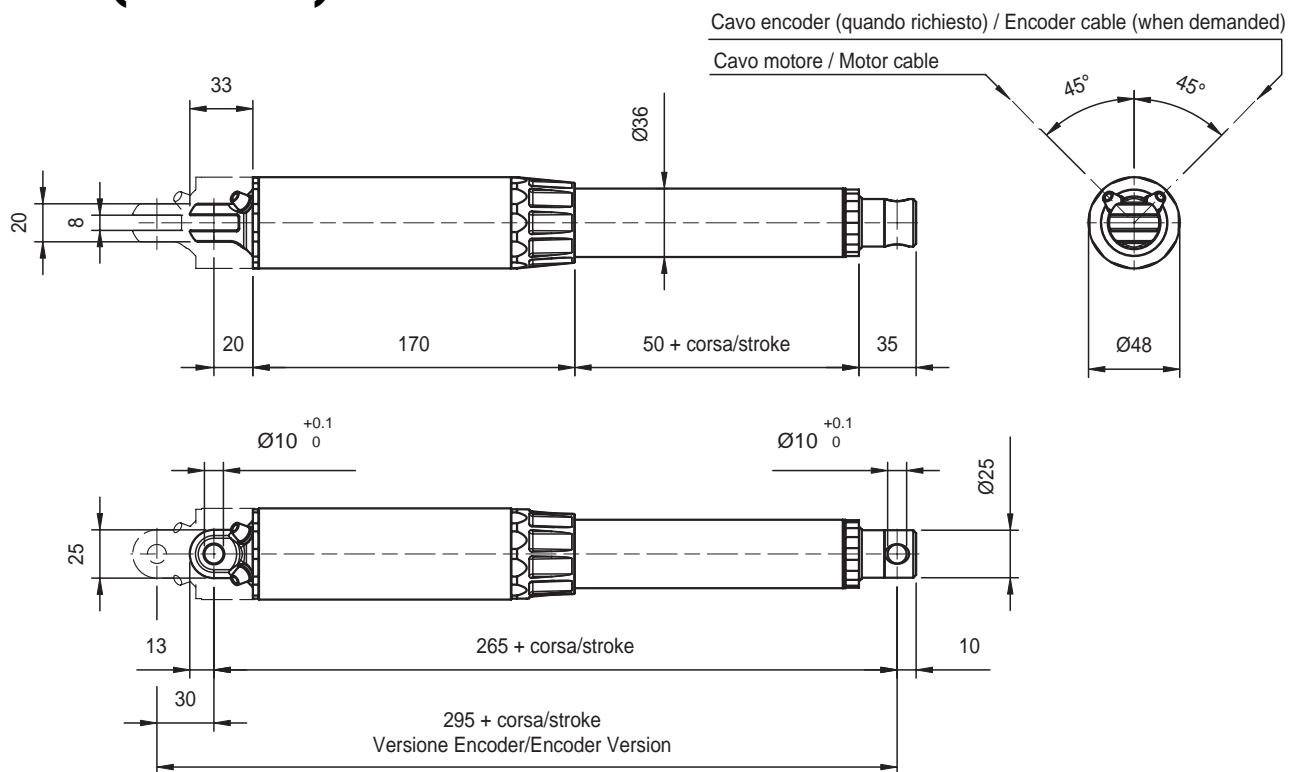
**L02 - FCM**



**FCMC** = Finecorsa magnetico chiusura  
**FCMA** = Finecorsa magnetico apertura

**FCMC** = Closing magnetic switch  
**FCMA** = Opening magnetic switch

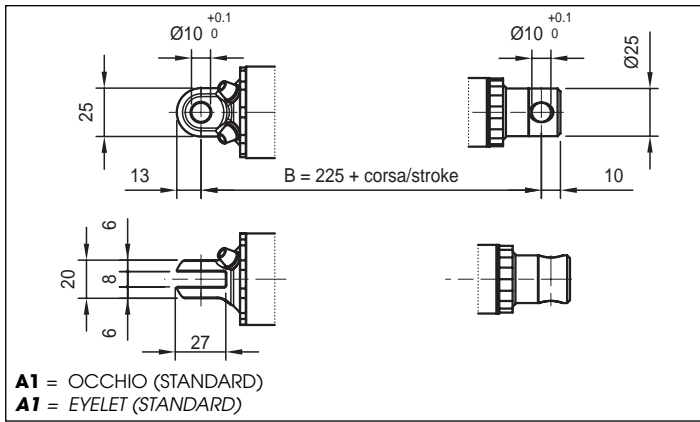
**L02 - VRS (ballscrew)**



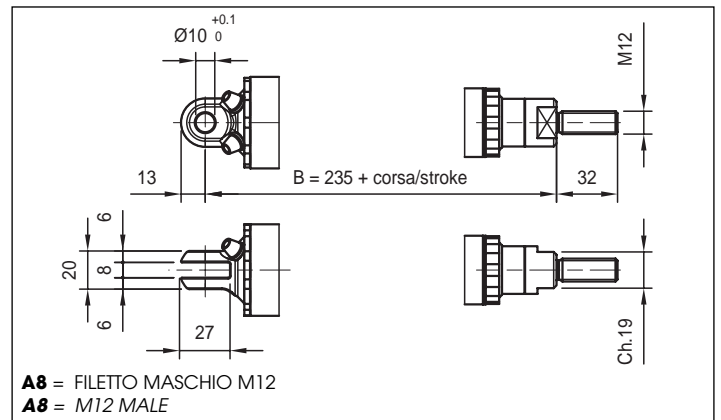
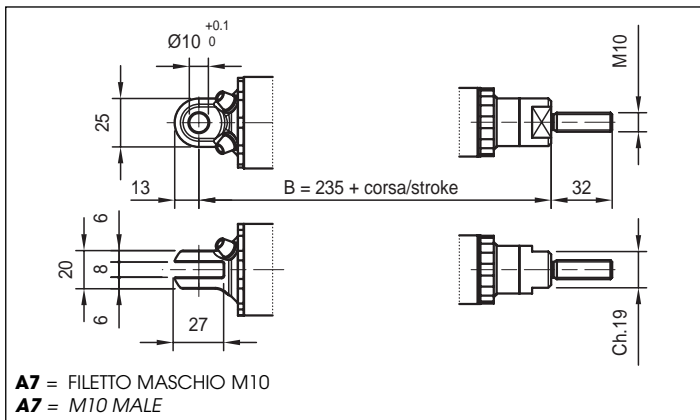
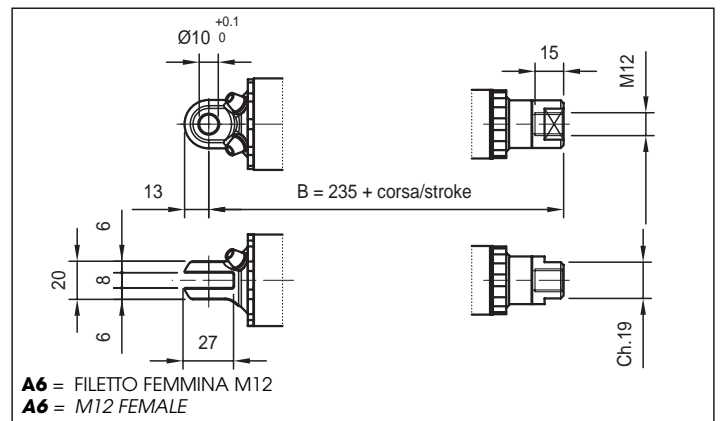
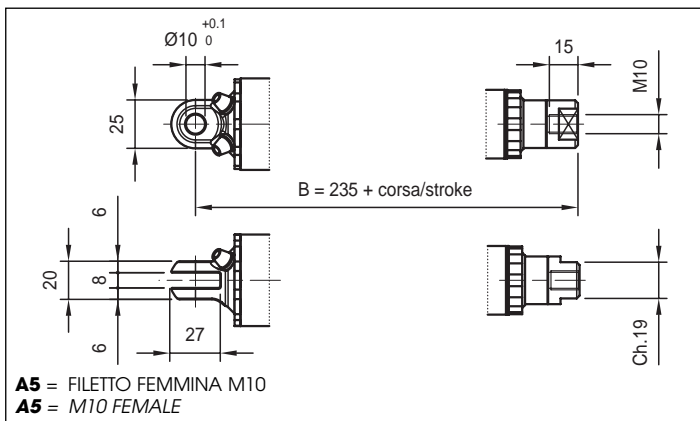
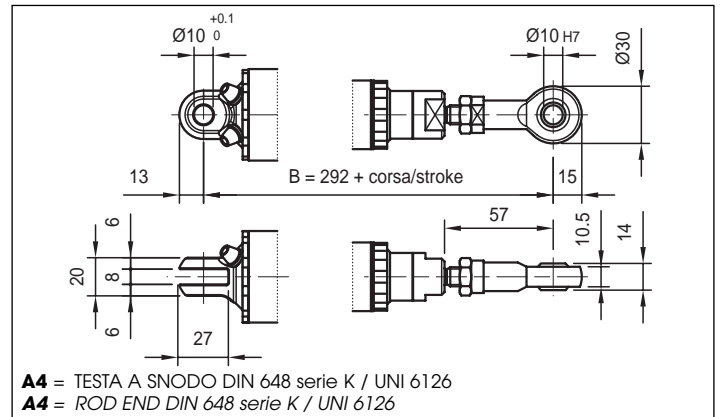
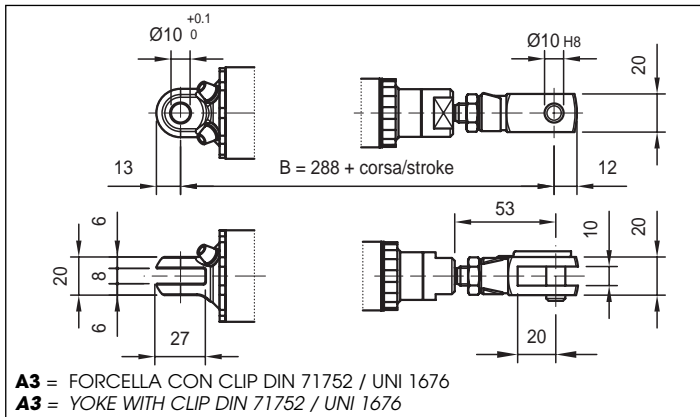
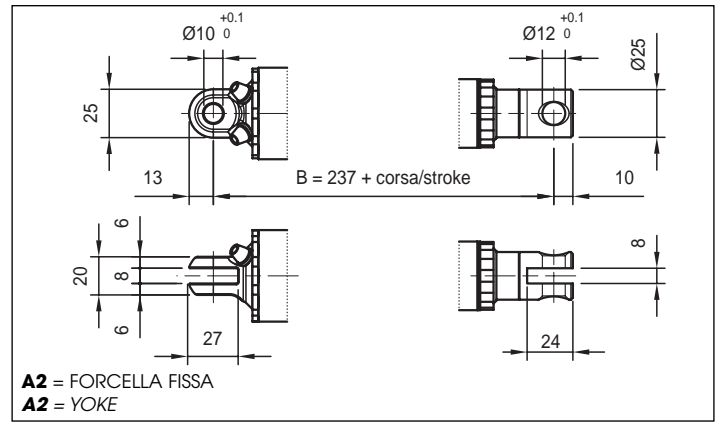
**N.B.:** In questa versione non è applicabile l'opzione dell'antirrotazione.

**Note:** Antirrotation key is not available in this version

**Attacchi anteriori L02**



**Front ends L02**



**N.B.:** Variazioni quota "B" in base al modello  
**Note:** "B" dimension variations depending on model  
**N.B.:** In versione Encoder la quota "B" aumenta di 30 mm  
**Note:** When featuring encoder, dimension "B" is 30 mm longer

L02 = Vedi figure / See pictures  
L02 corsa / stroke > 320 mm = + 10 mm  
L02-FCE corsa / stroke < 320 mm = + 8 mm  
L02-FCE corsa / stroke > 320 mm = + 18 mm  
L02-FCM = + 34 mm  
L02-FCM corsa / stroke > 320 mm = + 44 mm  
L02-VRS = + 40 mm

**Modello L03**

- Motore a magneti permanenti
- Riduttore epicicloidale
- Stelo filettato trapezoidale e VRS
- Asta traslante in acciaio cromato
- Lubrificazione permanente a grasso
- IP 65
- Temperatura di funzionamento -10°C +60°C
- Impiego intermittente S3 30% (5 min) a 30°C\*
- Fine corsa a richiesta

(\*) Per impieghi diversi contattare il Ns Ufficio Tecnico

**Model L03**

- Permanent magnet motor
- Planetary gearbox
- ACME lead screw / VRS (ballscrew)
- Chrome plated steel push rod
- Permanent lubrication by grease
- IP 65
- Temperature range -10°C +60°C
- Intermittent duty S3 30% (5 min) @ 30°C\*
- Limit switches on request

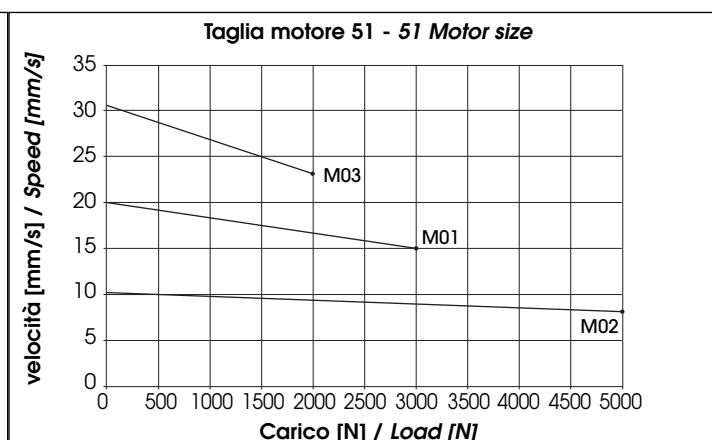
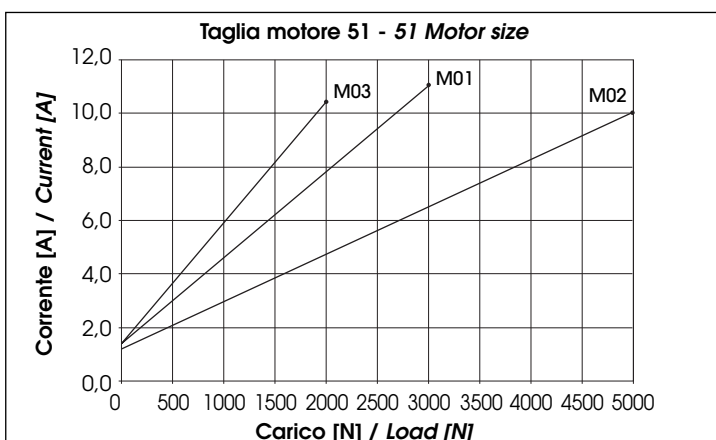
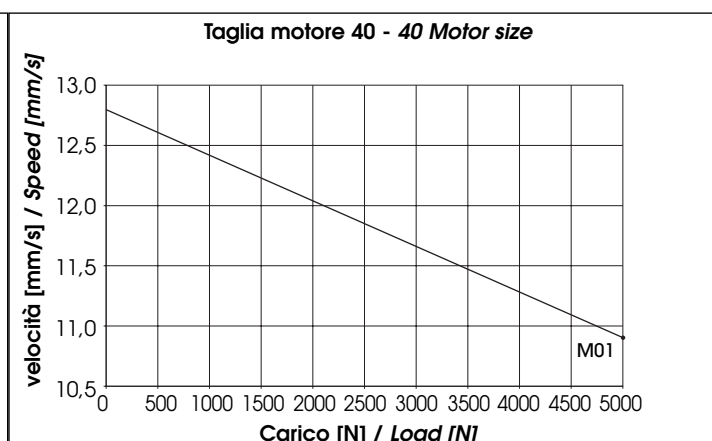
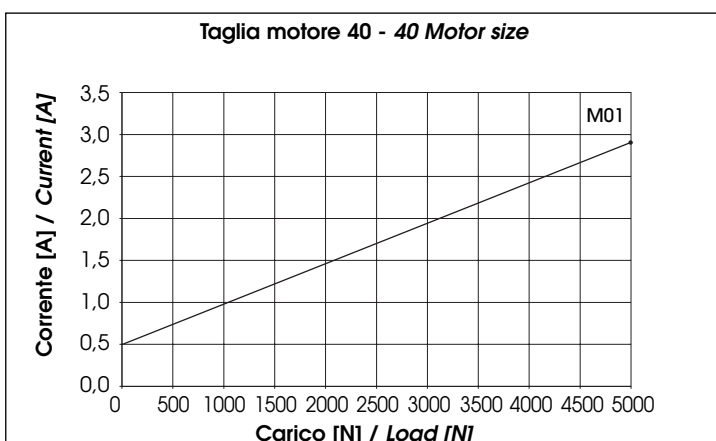
(\*) For any special duty please contact our offices

**L03 (Vdc) S3-30% 5min**

Fmax	Velocità	Versione	Taglia motore	Giri motore	D vite	Passo	Rendimento	Corsa max
Fmax	Speed	Version	Motor size	Motor speed	Screw D	Pitch	Efficiency	Max stroke
[N]	[mm/s]			[rpm]	[mm]	[mm]		[mm]
2000	30	M03	51	155	16	12	0,51	690
3000	20	M01	51	155	16	8	0,37	560
5000	10	M02	51	155	16	4	0,32	435

**L03 VRS (ballscrew) (Vdc) S3-30% 5min**

Fmax	Velocità	Versione	Taglia motore	Giri motore	D vite	Passo	Rendimento	Corsa max
Fmax	Speed	Version	Motor size	Motor speed	Screw D	Pitch	Efficiency	Max stroke
[N]	[mm/s]			[rpm]	[mm]	[mm]		[mm]
5000	12	M01	51	155	14	5	0,77	355

**L03**
**Diagrammi di corrente - Current diagram**
**Diagrammi di velocità - Speed diagram**

**L03 VRS (ballscrew)**
**Diagrammi di corrente - Current diagram**
**Diagrammi di velocità - Speed diagram**


Diagrammi riferiti alla tensione di alimentazione 24Vdc.  
Per tensione 12Vdc raddoppiare il valore di corrente e ridurre il valore di carico del 20%.

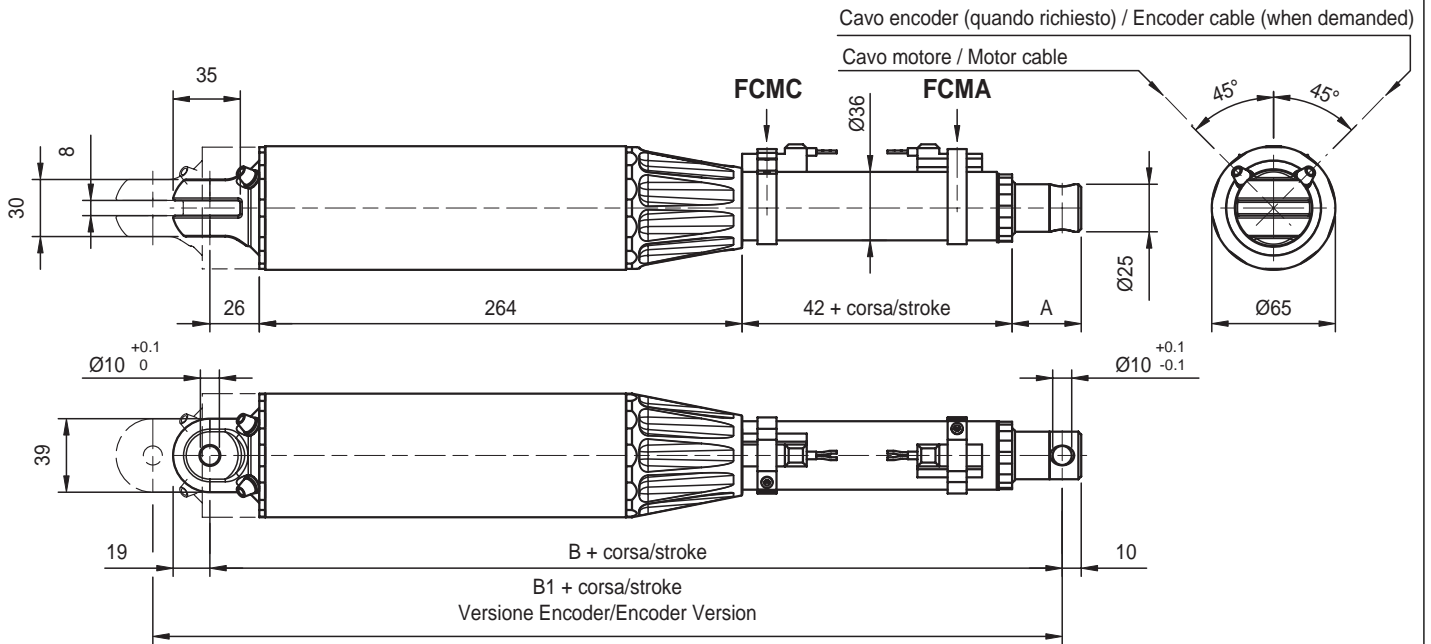
Per una corretta scelta dell'attuatore idoneo alla Vs. applicazione si devono utilizzare le informazioni tecniche che trovate al capitolo "Guida alla Scelta degli Attuatori e dei Martinetti Elettromeccanici".

Diagrams valids for 24Vdc power supply.  
For 12Vdc power supply currents are doubled and loads are 20% slower.

Elements and technical information available in "Electromechanical Actuators + Jack Choice Guideline" have to be carefully considered in order to perform a proper actuator selection according to your application.



**L03 - FCM**

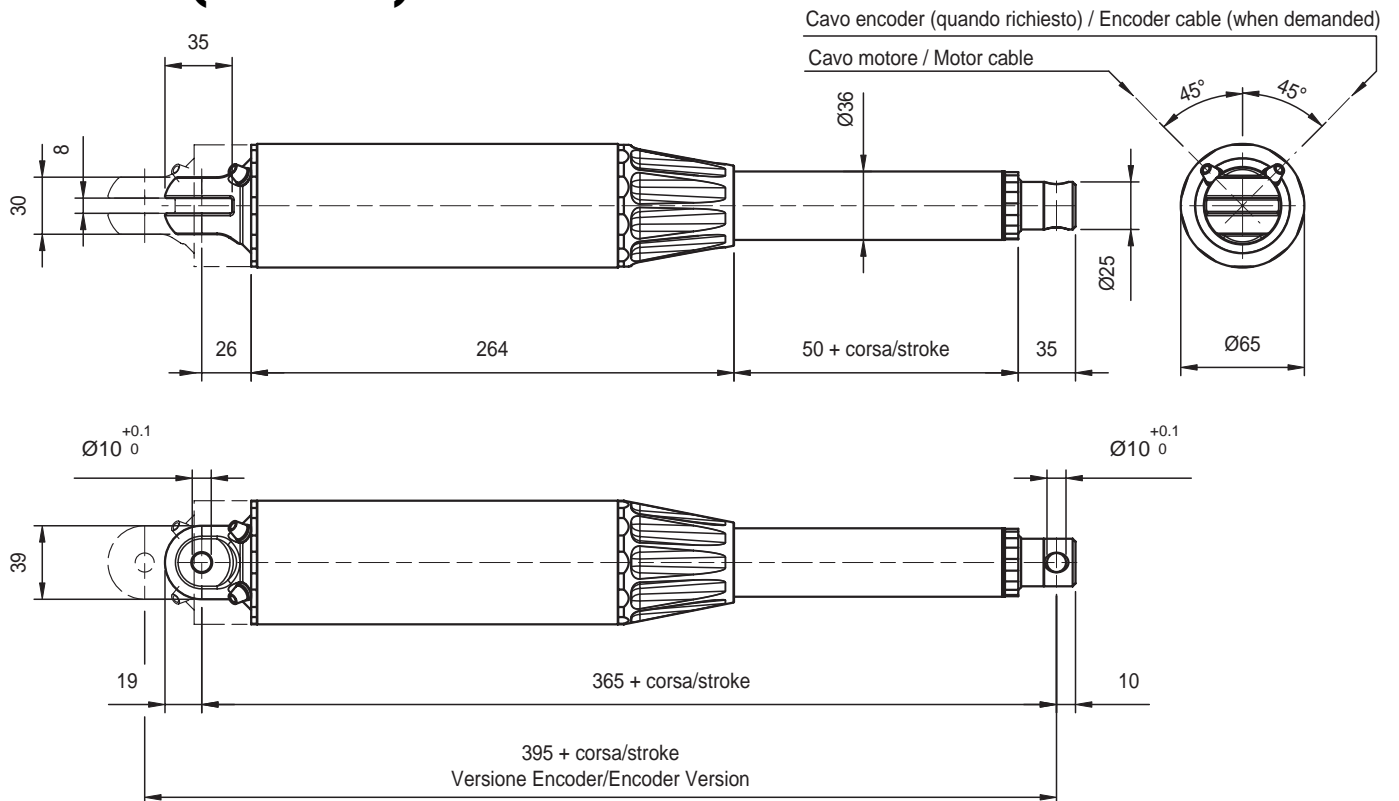


**FCMC** = Finecorsa magnetico chiusura  
**FCMA** = Finecorsa magnetico apertura

**FCMC** = Closing magnetic switch  
**FCMA** = Opening magnetic switch

QUOTA MEASURE	Corsa < a 320 mm. Stroke < to 320 mm.	Corsa > a 320 mm. Stroke > to 320 mm.
A	36	46
B	358 + corsa/stroke	368 + corsa/stroke
B1	388 + corsa/stroke	398 + corsa/stroke

**L03 - VRS (ballscrew)**

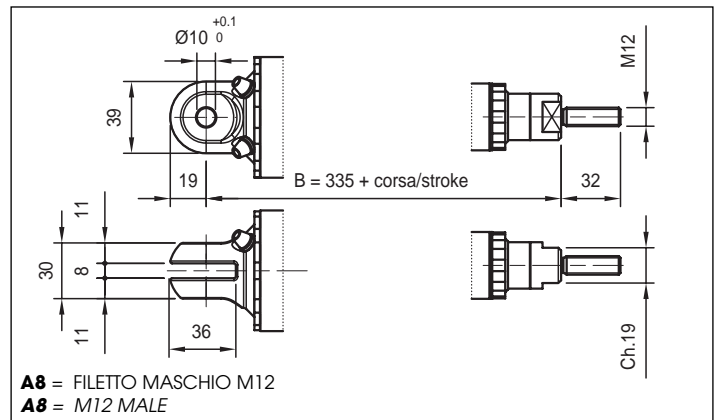
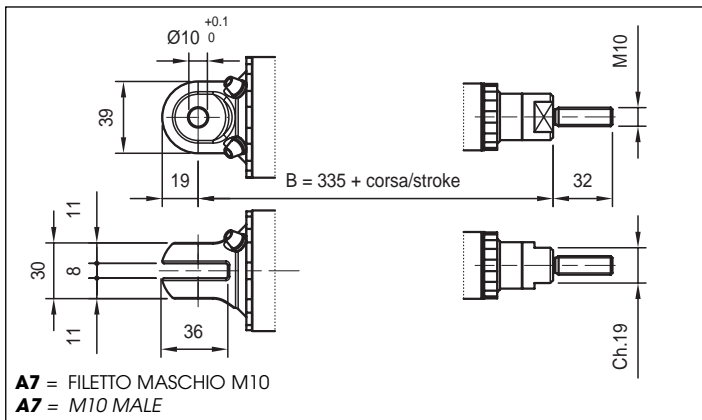
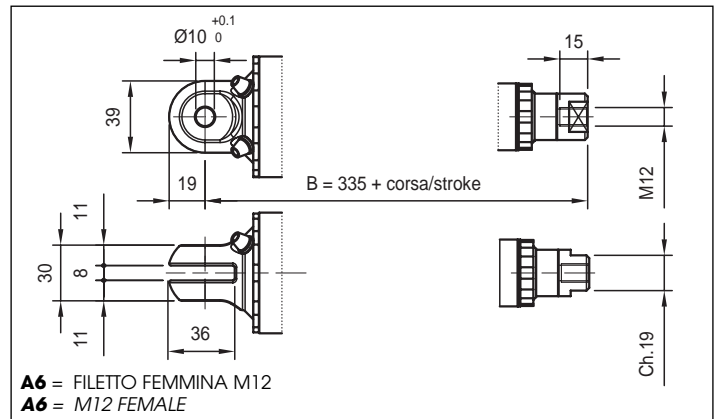
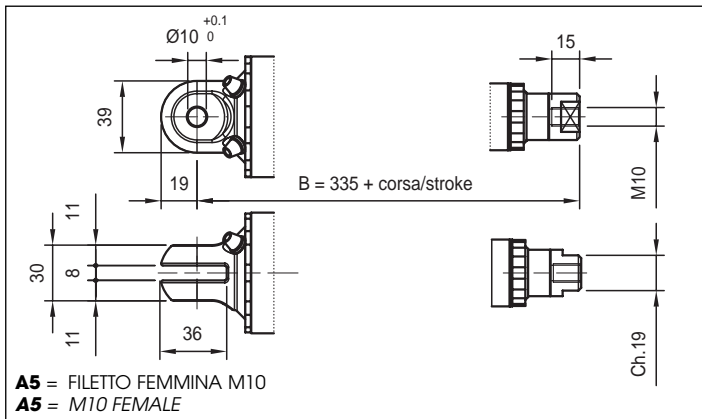
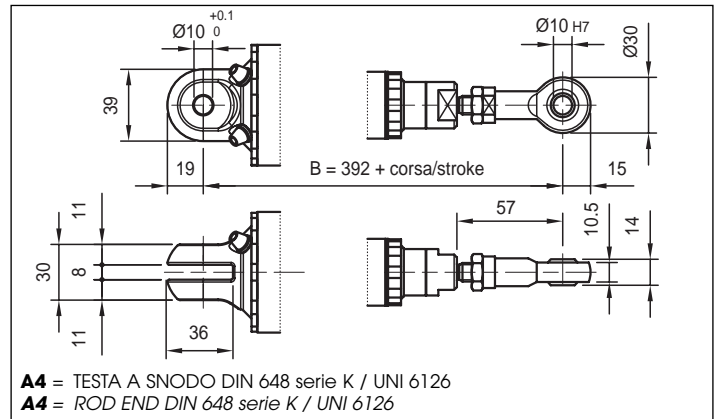
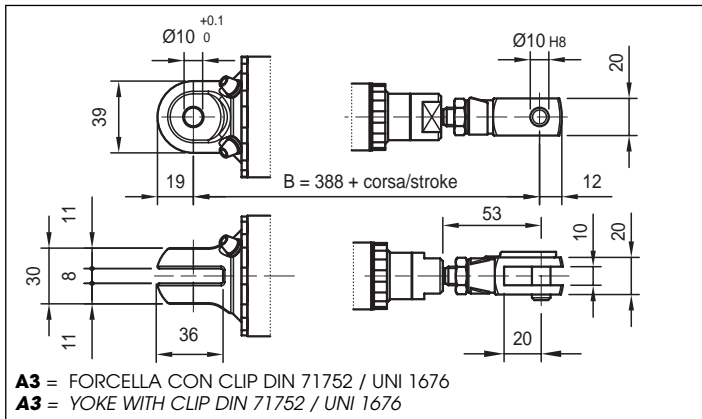
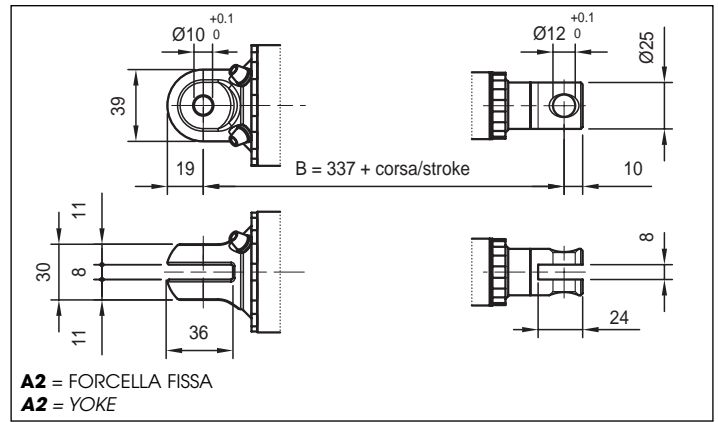
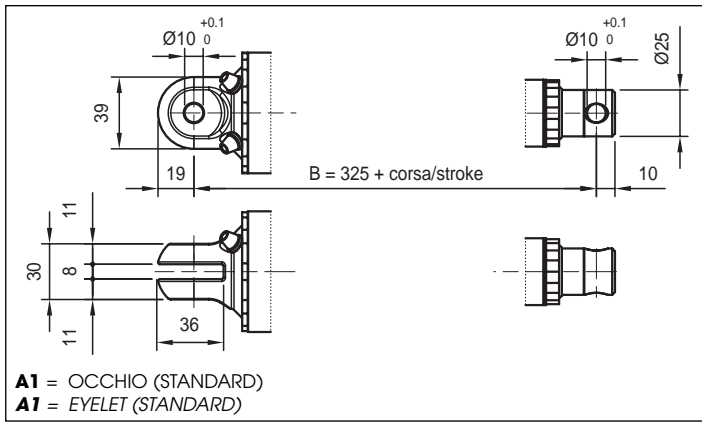


**N.B.:** In questa versione non è applicabile l'opzione dell'antirrotazione.

**Note:** Antirrotation key is not available in this version

**Attacchi anteriori L03**

**Front ends L03**



**N.B.:** Variazioni quota "B" in base al modello  
**Note:** "B" dimension variations depending on model  
**N.B.:** In versione Encoder la quota "B" aumenta di 30 mm  
**Note:** When featuring encoder, dimension "B" is 30 mm longer

L03 = Vedi figure / See pictures  
L03 corsa / stroke > 320 mm = + 10 mm  
L03-FCE corsa / stroke < 320 mm = + 8 mm  
L02-FCE corsa / stroke > 320 mm = + 18 mm  
L02-FCM = + 33 mm  
L02-FCM corsa / stroke > 320 mm = + 43 mm  
L02-VRS = + 40 mm

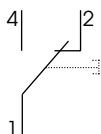
**Dispositivi Controllo Corsa  
Elettrici / Elettronici**
**Electric/Electronic  
Stroke Control Devices**
**Fine corsa**
**Limit switches**

<b>Prestazioni / Performances</b>	<b>Tipo / Type</b>
	<b>XCF</b>
Tensione / Voltage	250 Vac
Carico resistivo / Resistive load	10 A
Carico motore / Motor load	2 A

**Caratteristiche tecniche micro**

Le caratteristiche dei microinterruttori di finecorsa montati sono le seguenti:

- Alloggiamento: PA66 rinforzato con fibra di vetro
- Meccanismo: azione a scatto con molla in acciaio inox. Un contatto in scambio NC/NO

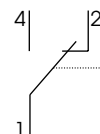


- Contatti: argento
- Terminali: dorati
- Vita meccanica: minimo 5x10<sup>6</sup> azionamenti non impulsivi.

**Switches technicals features**

Limit Switches Features following:

- Housing: Glass fibre reinforce PA66
- Mechanism: Snap-action coil spring mechanism with stainless steel spring. Changeover, normally-closed / normally-open



- Contacts: fine silver
- Terminals: gold flashed
- Mechanical life: 5x10<sup>6</sup> cycle minimum (impact free actuation).

**Fine corsa magnetici FCM**
**Magnetic limit switches FCM**

<b>Prestazioni / Performances</b>	<b>Tipo / Type</b>		
	<b>DSM 1 H 425</b>	<b>DSL 1 C 225</b>	<b>DSL 4 N 225</b>
Tensione in DC / DC voltage	3 / 110 V	3 / 30 V	6 / 30 V
Tensione in AC / AC voltage	3 / 110 V	3 / 30 V	/
Corrente a 25°C / 25°C Current	0,5 A	0,1 A	0,20 A
Potenza / Power	20 VA	6 VA	4 W
Tempo inserzione / ON time	0,5 ms	0,5 ms	0,8 ms
Tempo disinserzione / OFF time	0,02 ms	0,1 ms	0,3 ms
Cavo alimentazione / Supply cable	PVC 2 x 0,14 mm	PVC 2 x 0,14 mm	PVC 3 x 0,14 mm
Lunghezza cavo / Cablelength	2500 mm		
Protezione / Protection	IP67		

## Circuito H (DSM)

Circuito con ampolla Reed normalmente chiusa protetta da varistore contro le sovratensioni generate all'apertura del circuito, e sistema di visualizzazione.

## Circuito N - PNP (DSL)

Circuito con effetto di Hall normalmente aperto con uscita PNP.

Protetto contro l'inversione di polarità e contro picchi di sovratensione.

LED GIALLO: presenza tensione (solo DSM). LED VERDE: carico inserito (LED giallo per DSL - DCB)

## Circuito C (DSL)

Circuito con ampolla Reed normalmente aperta, protetta da varistore contro le sovratensioni generate all'apertura del circuito, e sistema di visualizzazione.

## Circuit H (DSM)

Circuit with Reed switch normally closed protected by a varistor against overvoltages caused when switching off, with indicator.

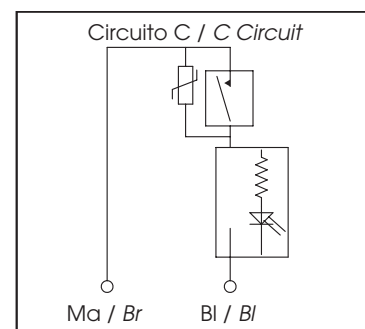
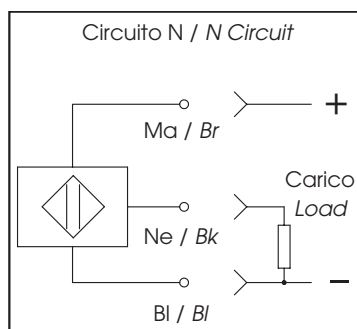
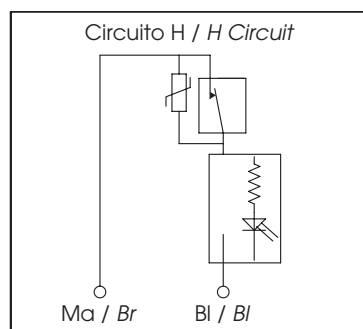
## Circuit N - PNP (DSL)

Circuit with Hall-effect switch normally open with outlet PNP, protections against overvoltages spikes and reverse of polarity.

Yellow LED: Voltage in (only for DSM). Green LED: Load in (yellow LED for DSL - DCB).

## Circuit C (DSL)

Circuit with Reed switch normally open protected by a varistor against overvoltages caused when switching off, with indicator.



## Caratteristiche tecniche Encoder

### Encoder su motore CC

24Vdc

Alimentazione Encoder: 3,8/24 V (cavi marrone/bianco)

NPN

4 impulsi/ giro onda quadra

Corrente max. in uscita = 100mA

## Encoder technical specs

### DC motor onboard Encoder

24Vdc

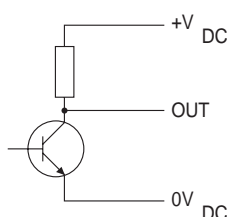
Encoder supply: 3,8/24 V (brown/white cables)

NPN

4 ppr square wave

Max. output current = 100mA

## Encoder (solo per versione L02)



- Alimentazione Encoder 3,8 V...24Vdc
- NPN + resistenza di polarizzazione 3,9 KΩ
- 4 impulsi/giro onda quadra
- Corrente massima d'uscita: 100 mA

- Encoder Power Supply 3,8 V...24Vdc
- NPN + pull-up resistor 3,9 KΩ
- 4 ppr square wave
- Maximum output current: 100 mA

## **Riferimento Sigla d'ordinazione**

### **Fine Corsa Meccanici:**

2FC1 = 2 Micro XCF

3FC1 = 3 Micro XCF

4FC1 = 4 Micro XCF

### **Fine Corsa Magnetici:**

2FCM0 = 2 Sensori DSM 1H

2FCM1 = 2 Sensori DSL 1C

2FCM2 = 2 Sensori DSL.4N

3FCM0 = 3 Sensori DSM 1H

3FCM1 = 3 Sensori DSL 1C

3FCM2 = 3 Sensori DSL.4N

### **Encoder:**

E10 = Encoder 1 canale 4ppr NPN (Open Collector)  
(solo per versione L02)

## **Ordering Key references**

### **Mechanical limit switches:**

*2FC1 = 2 Microswitches XCF*

*3FC1 = 3 Microswitches XCF*

*4FC1 = 4 Microswitches XCF*

### **Magnetic limit switches:**

*2FCM0 = 2 Sensors DSM 1H*

*2FCM1 = 2 Sensors DSL 1C*

*2FCM2 = 2 Sensors DSL.4N*

*3FCM0 = 3 Sensors DSM 1H*

*3FCM1 = 3 Sensors DSL 1C*

*3FCM2 = 3 Sensors DSL.4N*

### **Encoder:**

*E10 = Encoder 1 channel 4 ppr NPN (Open collector)  
(only for L02 version)*

## SIGLA DI ORDINAZIONE - ORDERING KEY

L02 / 0250 / M01 / 24 / 2FC0 / E10 / IP65 / P1 / A1 / A+B / N.DIS

**MODELLO / MODEL:** \_\_\_\_\_

L02  
L02-FCE  
L02-FCM  
L02-VRS  
L03  
L03-FCE  
L03-FCM  
L03-VRS

**CORSA / STROKE:** mm \_\_\_\_\_  
es. 250 mm = 0250

**VELOCITÀ / SPEED:** mm/s Pag.149 (L02) / 154 (L03)

M01 / M02 / M03 = **Modello / Model: L02**

M01 / M02 = **Modello / Model: L03**

M01 = **Modello / Model: L03-VRS**

M00 = **Velocità non contemplate / Speed to be provided**

**MOTORE / MOTOR:** \_\_\_\_\_

**D.C.:**

12 Vdc / 24 Vdc

**FINE CORSA / LIMIT SWITCHES:** Pag. 160 \_\_\_\_\_

**Senza / None:** Omettere / Leave blank

**ENCODER / ENCODER:** Pag. 160 \_\_\_\_\_

**E10:** Encoder 1 canale 4ppr NPN (Open Collector) (solo per versione L02)/

*Encoder 1 channel 4 ppr NPN (Open collector) (only for L02 version)*

**GRADO PROTEZIONE / PROTECTION CLASS:** \_\_\_\_\_

**IP65** (Standard): Omettere / Leave blank

**ATTACCO POSTERIORE / REAR END:** \_\_\_\_\_

**P0** = Senza / None

**P1** = Forcella Fissa / Yoke (Standard)

**P2** = Attacco a Disegno / Special (Drawing to be provided)

**ATTACCO ANTERIORE / FRONT END:** Pag. 153 (L02) / 157 (L03)

**A0** = Senza / None

**A1** = Occhio / Eyelet (Standard)

**A2** = Forcella Fissa / Yoke

**A3** = Forcella + Clip / Yoke + Clip

**A4** = Testa a Snodo / Rod end

**A5** = Filetto Femmina M10 / M10 female

**A6** = Filetto Femmina M12 / M12 female

**A7** = Filetto Maschio M10 / M10 male

**A8** = Filetto Maschio M12 / M12 male

**A9** = Attacco a Disegno / Special (Drawing to be provided)

**OPZIONI / OPTIONS:** \_\_\_\_\_

**Senza / None:** Omettere / Leave blank

**A** = Versione Inox (canotto, asta, attacco anteriore) / *Stainless steel version (protection tube, rod, front end)*

**F** = Verniciatura / *Painting*

**L** = Antirrotazione / *Anti-rotation device*

**VARIANTI / VERSIONS:** \_\_\_\_\_

**N° Disegno / Drawing number:** Per Condizioni non Contemplate / *Drawing to be provided*

**Senza / None:** Omettere / Leave blank

