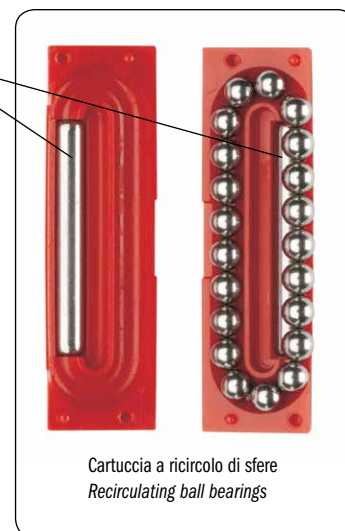
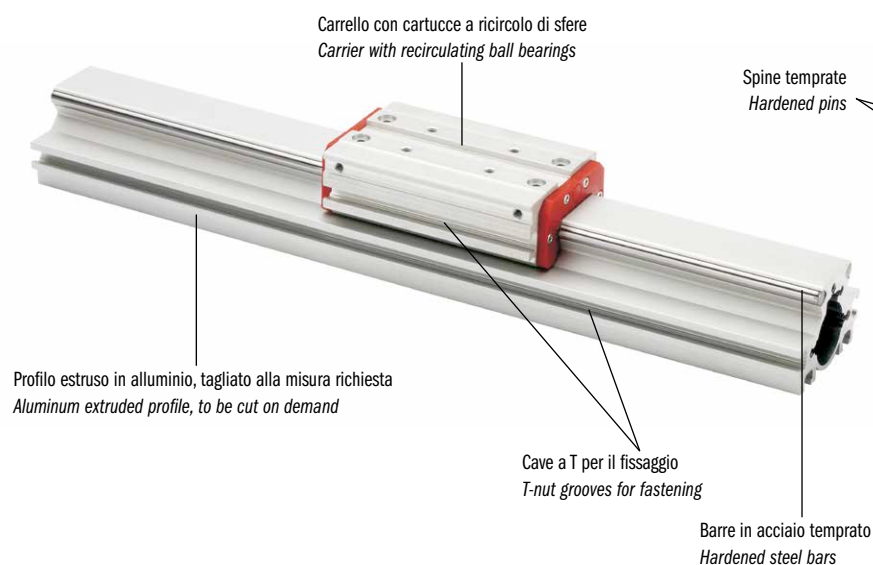


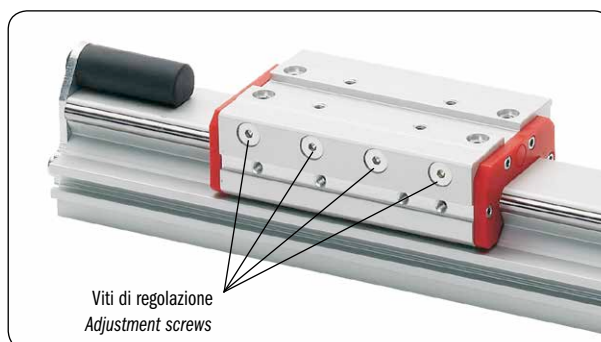
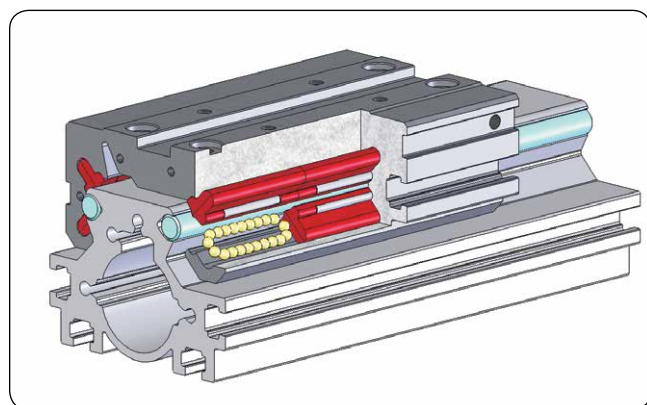
Guide lineari a ricircolo di sfere (serie LP)

- Sistema di guida a ricircolo di sfere.
- Diverse possibilità di montaggio con dadi a T.
- Vari kit opzionali per il montaggio di accessori.
- E' possibile montare più di un carrello per ogni profilo.



Il carrello è ricavato da un estruso di alluminio nel quale sono previste le sedi per le cartucce a ricircolo di sfere. La particolare forma permette l'azzeramento del gioco e la registrazione del precarico tramite le quattro viti di regolazione. L'assemblaggio completo del carrello, il montaggio sulle barre, la registrazione e la prima lubrificazione sono effettuati in fabbrica.

The carrier is made from an aluminium extruded profile, in which the housings for the recirculating ball bearings are located. Thanks to the carrier special profile, with four adjustment screws, it is possible to set to zero the carrier backlash and to adjust the correct bearing preload. The carrier assembling, mounting on the bars, preloading and the first lubrication are made in Gimatic. Two or more carriers, on demand, can be mounted on the same rail, to increase the load capacity or to get two or more independent slides.



Sulla guida lineari possono essere montati due o più carrelli, a richiesta, per aumentare la capacità di carico, oppure per avere due o più slitte comandabili in modo indipendente.

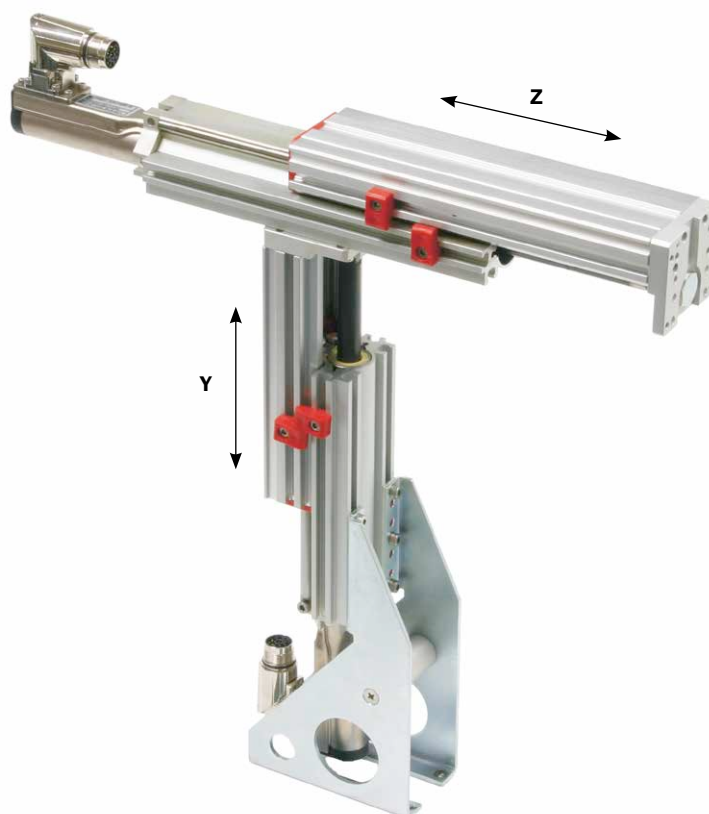


Esempio di applicazione

Manipolatore Y-Z tipo Pick & Place, azionato da motori lineari.

Application example

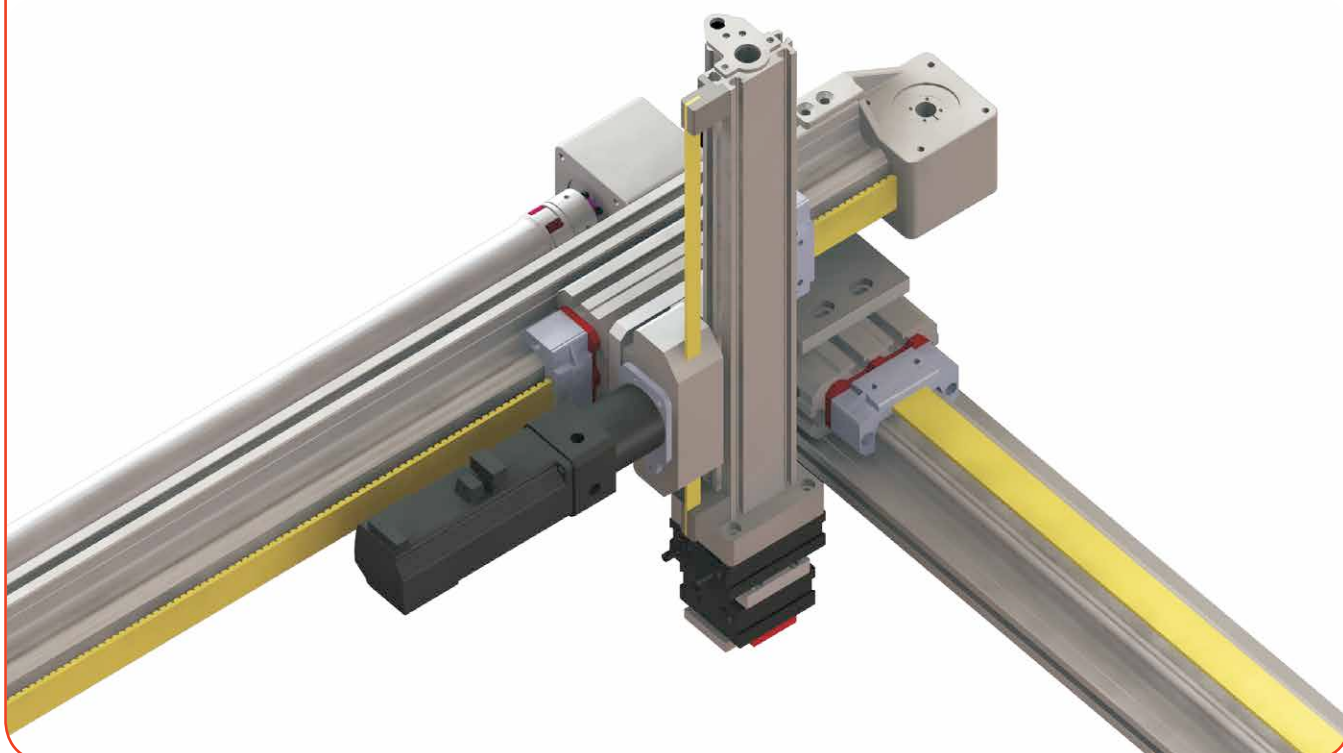
Y-Z Pick & Place manipulator, powered by linear motors.

**Esempio di applicazione**

Asse verticale in manipolatore a portale.

Application example

Vertical axis in gantry manipulator.

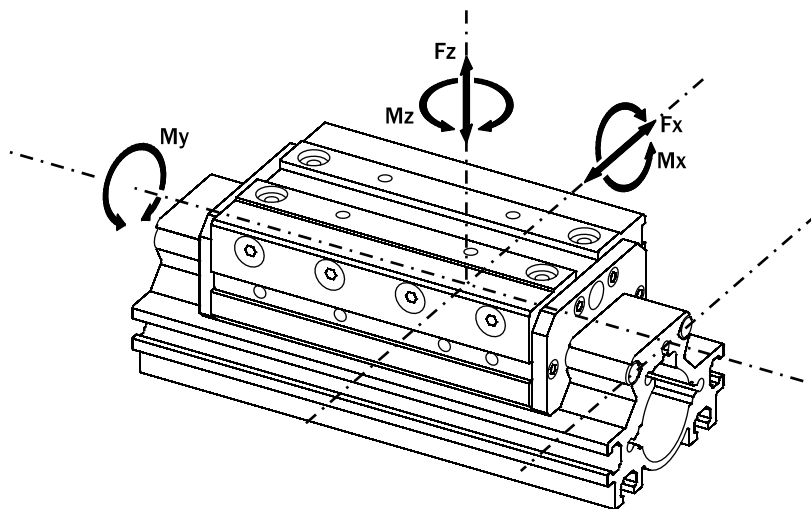


Carichi di sicurezza

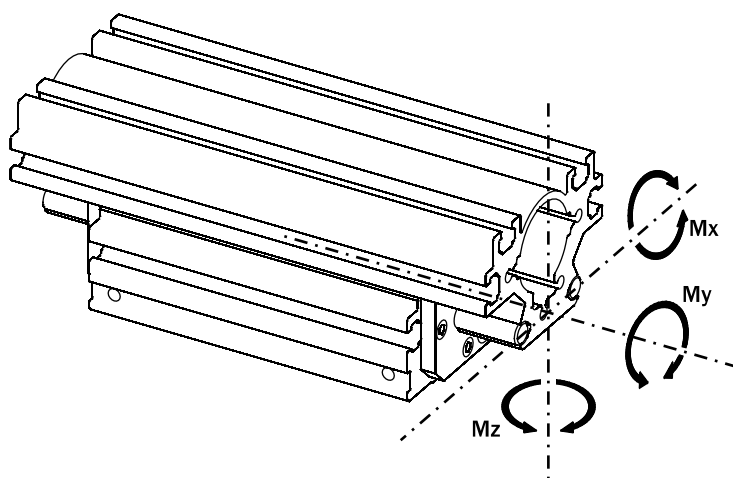
Carichi eccessivi possono danneggiare l'unità, causare difficoltà di funzionamento e compromettere la sicurezza dell'operatore. Verificare che l'indice di carico LF sia inferiore all'unità.

Safety loads

Excessive loads can damage the unit, cause functioning troubles and endanger the safety of the operator. The load factor LF must be lower than 1.



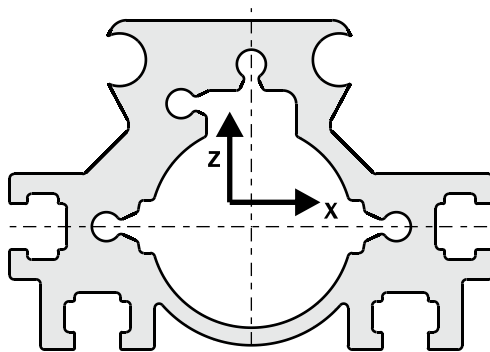
$$LF = \frac{F_x}{F_{x \max}} + \frac{F_z}{F_{z \max}} + \frac{M_x}{M_{x \max}} + \frac{M_y}{M_{y \max}} + \frac{M_z}{M_{z \max}} \leq 1$$



	max
Fx	1200 N
Fz	1200 N
Mx	20 Nm
My	15 Nm
Mz	20 Nm

Momenti d'inerzia del profilo estruso in alluminio

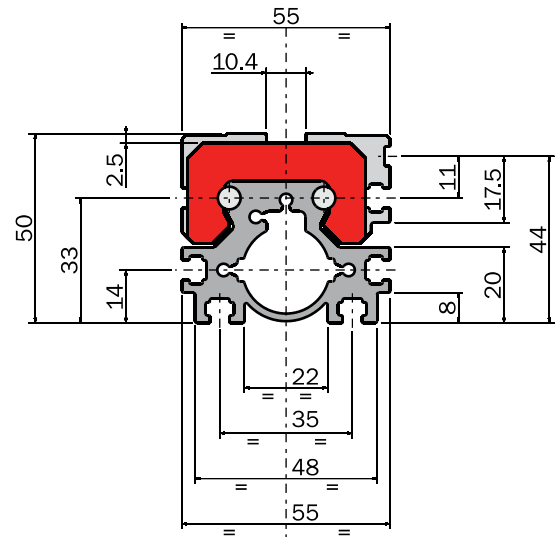
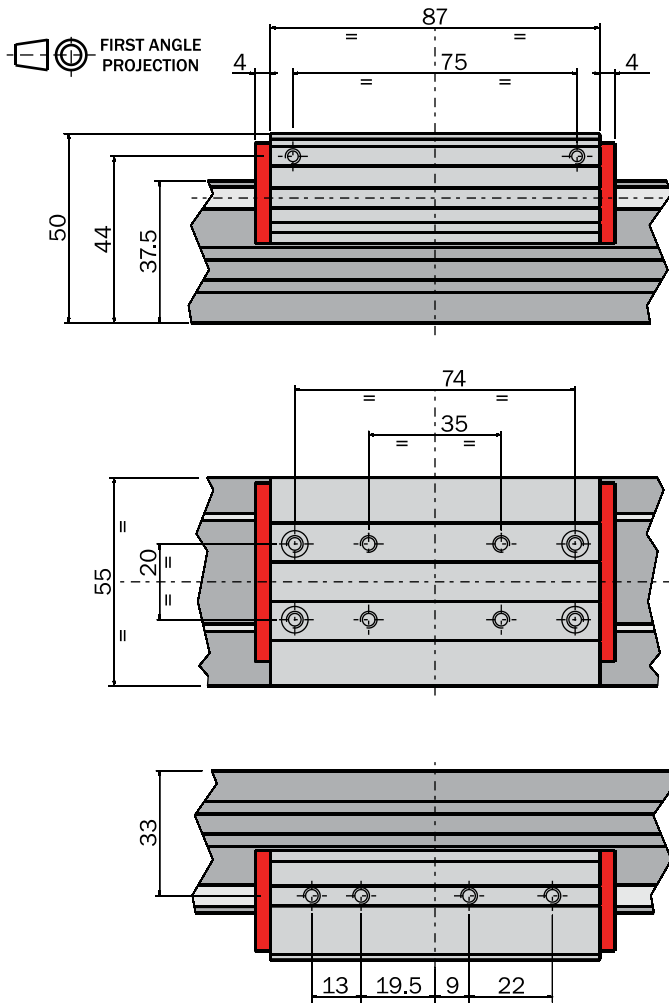
Area moment of inertia for the extruded aluminum profile



$$I_x = 88617 \text{ mm}^4$$

$$I_z = 163056 \text{ mm}^4$$

Dimensioni (mm) / Dimensions (mm)



Calcolo del peso

Ogni carrello completo pesa 0.22 kg .
La guida (profilo in alluminio più barre in acciaio) pesa 2.28 kg/m .

Weight calculation

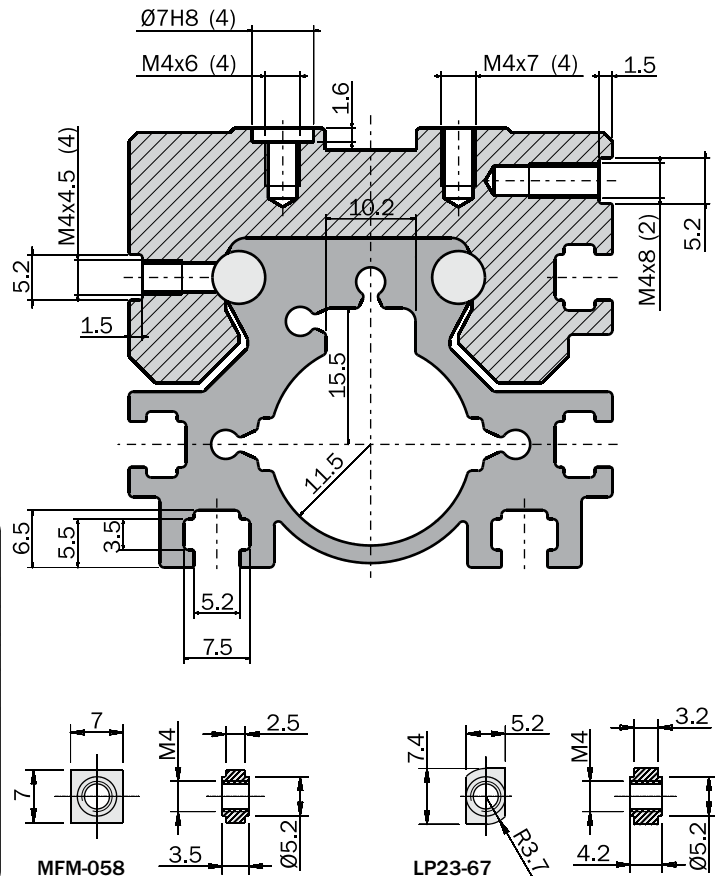
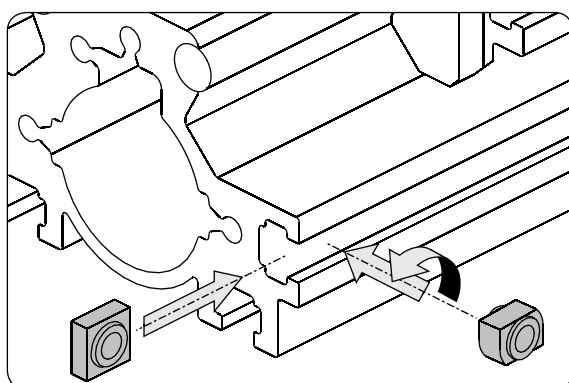
The weight of the carrier is 0.22 kg .
The weight of the guide (alu profile plus steel bars) is 2.28 kg/m .

Cave per dadi a "T"

Tutte le cave hanno le stesse dimensioni.
Ci si possono montare due tipi di dadi a T.

T-nut grooves

All grooves have the same size.
Two T-nut types can be used.



Codice di ordinazione / Ordering code

LP XX - XXXX

Corsa / Stroke [mm] (*)

Per cilindri ISO Ø12, Ø16
For ISO cylinders Ø12, Ø16

00 0÷1500 ⁽¹⁾



Per cilindro senza stelo Origa OSP-P16
For Origa OSP-P16 rodless cylinder

01 0÷1500 ⁽¹⁾



Per motori lineari LinMot P01-23
For linear motor LinMot P01-23

**02 0050
0100**



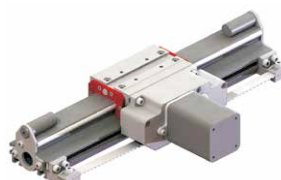
Per cilindro senza stelo Festo DGP-18 e per motori lineari LinMot
For Festo DGP-18 rodless cylinder

03 0÷1500 ⁽¹⁾



Trasmissione a omega, completa di calettatore per alberi Ø10
Omega transmission, with Ø10 shaft locking assembly

06 0÷1500 ⁽¹⁾



Trasmissione a cinghia e pulegge, completa di calettatore per alberi Ø10
Belt drive and pulleys, with Ø10 shaft locking assembly

07 0÷1500 ⁽¹⁾



Con due carrelli autocentranti
With two self-centering carriers

08 96÷1500 ⁽¹⁾



Con cilindro senza stelo Ø25 a trascinamento magnetico
With rodless cylinder Ø25 magnetically coupled

**10 0300
0500
1000
1500**



(*) Per LP08 la corsa è il massimo interasse fra i due carrelli.

(*) For the LP08 the stroke is intended like the maximum interaxis between the two carriers.

(1) E' possibile ordinare lunghezze di guida con step di 1mm.

(1) It is possible to order any guide length in 1mm steps.

(2) E' possibile ordinare lunghezze di guida con step di 100mm.

(2) It is possible to order any guide length in 100mm steps.

Consultare il fornitore per lunghezze fuori standard.

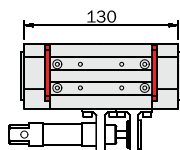
Consult factory for special lengths.

Le parti fornite con ciascun codice di ordinazione sono qui evidenziate.

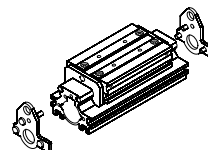
The parts supplied with the ordering codes are here highlighted.

Ingombro della corsa zero [mm] e peso [g/mm]
Zero-stroke length [mm] and weight [g/mm]

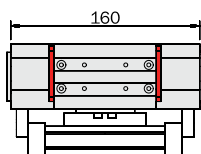
LP00



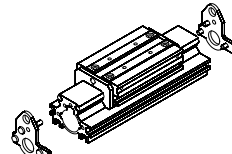
575g + 2.28 g/mm



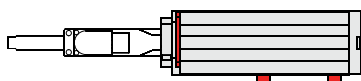
LP01



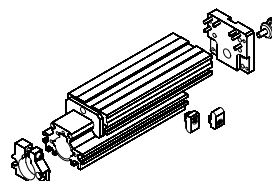
640g + 2.28 g/mm



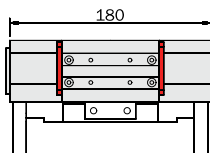
LP02-0050
LP02-0100



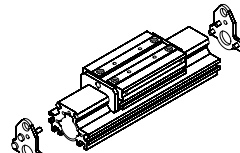
800g
1000g



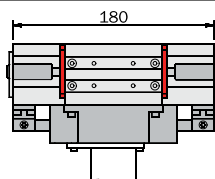
LP03



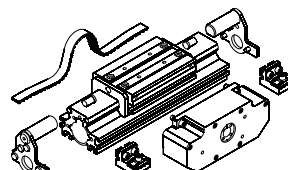
685g + 2.28 g/mm



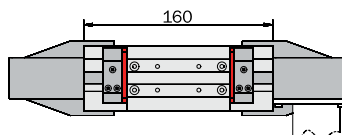
LP06



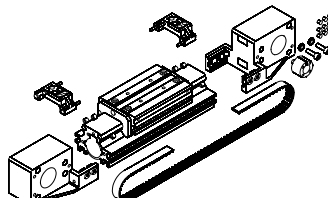
1300g + 2.3 g/mm



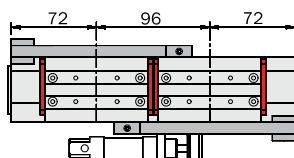
LP07



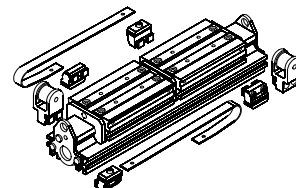
1470g + 2.33 g/mm



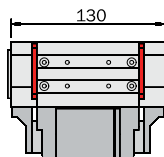
LP08



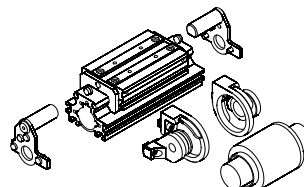
940g + 2.34 g/mm



LP10-0300
LP10-0500
LP10-1000
LP10-1500



1970g
2500g
3860g
5200g



Esistono varie interfacce e kit opzionali per il fissaggio dei cilindri, dei fine corsa, dei deceleratori e dei sensori. Sono venduti in confezioni singole, non assemblati alla guida lineare.
I cilindri, i motori ed i riduttori non sono forniti.

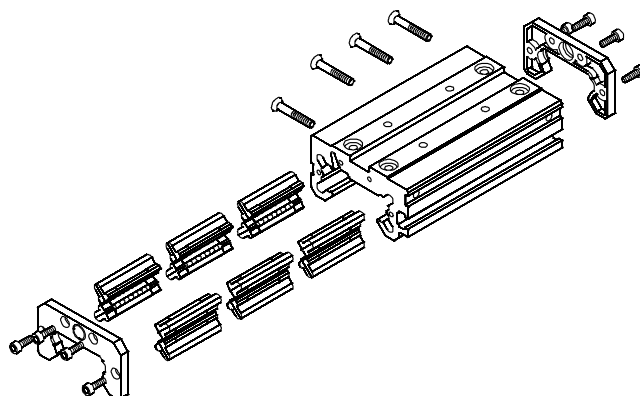
There are also several optional interfaces and kits with the brackets to mount the cylinders, the end stroke stoppers, the shock-absorbers and the sensors. They are sold in single packages, not assembled with the guide.
The cylinders, the motors and gear reducers are not supplied.

Kit opzionali / Optional kits

LPK-001

(220 g)

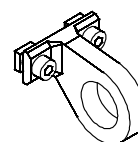
Carrello supplementare (montato da Gimatic su una guida LP)
Additional carrier (mounted on a LP guide by Gimatic)



LPK-002

(40 g)

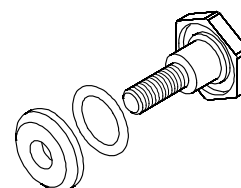
Anello per fissaggio cilindro Ø12 / Ø16
Cylinder holder Ø12 / Ø16



LPK-003

(15 g)

Giunto per stelo LinMot P01-23Sx80
Rod bolt for LinMot P01-23Sx80



LPK-004

(2 g)

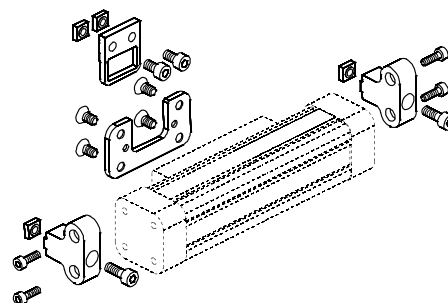
Riscontro corto per deceleratore (per LP00 e LP10)
Shock-absorber short stopper (for LP00 and LP10)



LPK-005

(65 g)

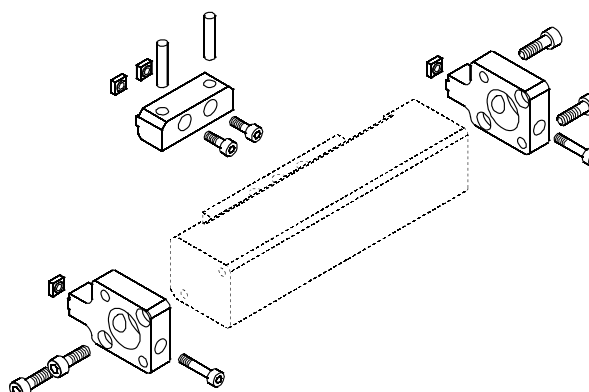
Kit fissaggio cilindro senza stelo Origa Ø16 (OSP-P16)
Fastening kit for Origa rodless cylinder Ø16 (OSP-P16)



LPK-006

(95 g)

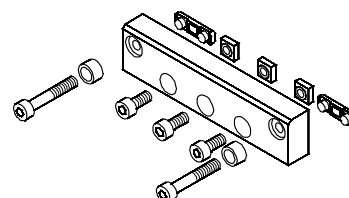
Kit fissaggio cilindro senza stelo Festo Ø18 (DGP-18)
Fastening kit for Festo rodless cylinder Ø18 (DGP-18)



LPK-012

(60 g)

Kit fissaggio statore LinMot P01-23Sx80
Stator fastening kit for LinMot P01-23Sx80

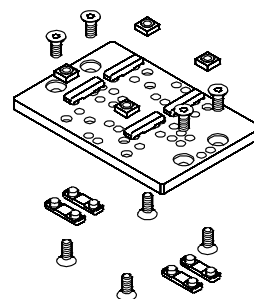


Kit opzionali / Optional kits

LPK-013

(75 g)

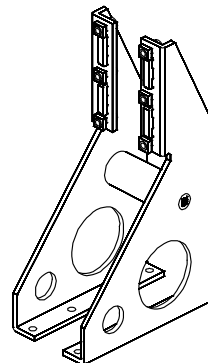
Interfaccia di montaggio per il carrello
Mounting interface plate for the carrier



LPK-021

(530 g)

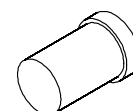
Kit per fissaggio verticale LP02
Vertical mounting kit for LP02



LPK-027

(4 g)

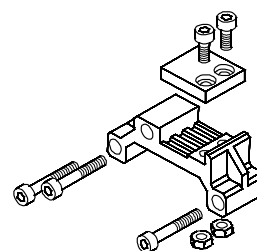
Riscontro lungo per deceleratore (per LP01 e LP03)
Shock-absorber long stopper (for LP01 and LP03)



LPK-032

(40 g)

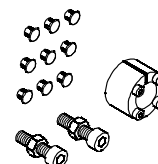
Blocca cinghia per trasmissione a cinghia
Belt clamp for belt drive



LPK-033

(25 g)

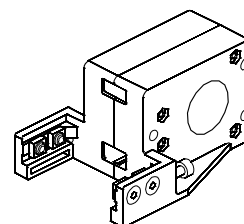
Calettatore, tensionatore e tappi per LP07
Locking assembly, belt tensioner and plugs for LP07



LPK-034

(370 g)

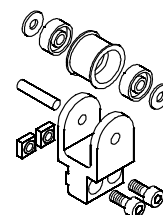
Puleggia per trasmissione a cinghia
Pulley for belt drive



LPK-035

(30 g)

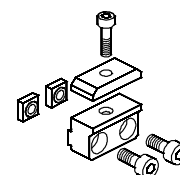
Rinvio per autocentraggio pinza
Transmission wheel for self-centering gripper



LPK-036

(15 g)

Blocca cinghia per autocentraggio pinza
Belt clamp for self-centering gripper

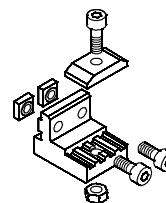


Kit opzionali / Optional kits

LPK-037

(35 g)

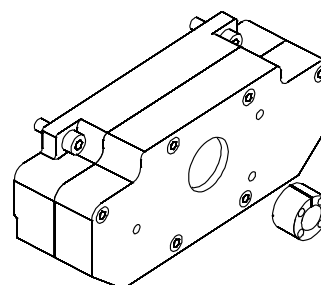
Staffa bloccaggio cinghia dentata sistema Omega
Clamping bracket for Omega system belt



LPK-038

(530 g)

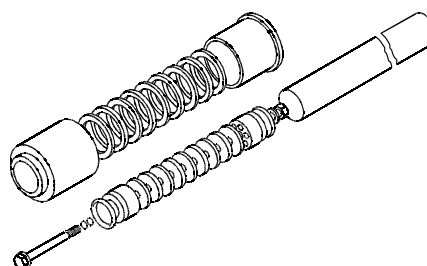
Gruppo pulegge per trasmissione a omega
Pulleys assembly for omega transmission



LPK-039

(300 g)

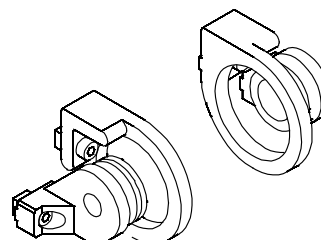
Pistone per cilindro senza stelo a trascinamento magnetico
Piston for magnetically coupled rodless cylinder



LPK-040

(210 g)

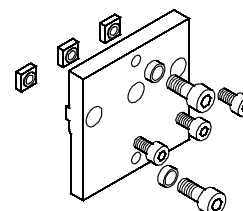
Kit di fissaggio per cilindro senza stelo a trascinamento magnetico LPK-039
Fastening kit for magnetically coupled rodless cylinder LPK-039



LPK-045

(50 g)

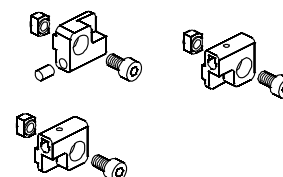
Piastra di interfaccia per flangia LinMot PF02-23
Interface plate for LinMot flange PF02-23



LPK-046

(10 g)

Staffe per sensori
Sensor brackets



LP23-67

(1 g)

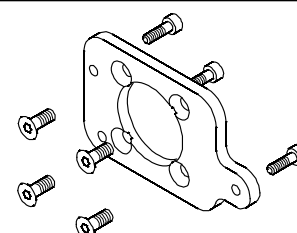
Dado ad innesto M4 per cava 5 (1 pezzo)
M4 rhombus T-nut for slot 5 (1 piece)



LPK-048

(60 g)

Interfaccia per riduttore epicicloidale per alberi Ø10 (LP06)
Adapter plate for planetary gear for shafts Ø10 (LP06)

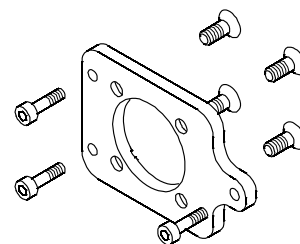


Kit opzionali / Optional kits

LPK-049

(50 g)

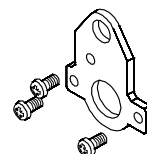
Interfaccia per riduttore epicicloidale per alberi Ø10 (LP07)
Adapter plate for planetary gear for shafts Ø10 (LP07)



LPK-050

(25 g)

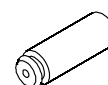
Testata
End plate



LPK-051

(6 g)

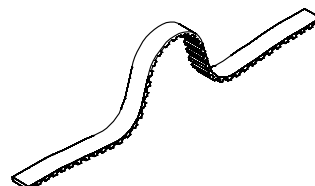
Ammortizzatore in gomma
Rubber stopper



LP23-53

(21 g/m)

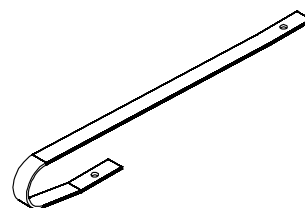
Cinghia dentata per LP06 e LP07
Timing belt for LP06 and LP07



LP23-54

(20 g/m)

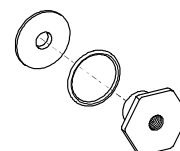
Cinghia piana per LP08 e LL08
Flat belt for LP08 and LL08



LZK-003

(23 g)

Giunto M6 per cilindri Ø12 e Ø16 ISO 6432
Cylinder rod bolt M6 for ISO 6432 cylinders Ø12 and Ø16



MFM-058

(2 g)

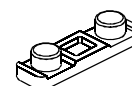
Dado (1 pezzo)
T-nut (1 piece)



MFP-A19

(4 g)

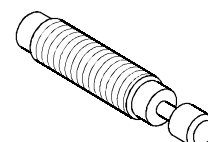
Linguette di centraggio piate (10 pezzi)
Flat centering feather keys (10 pieces)



TK10-4MB

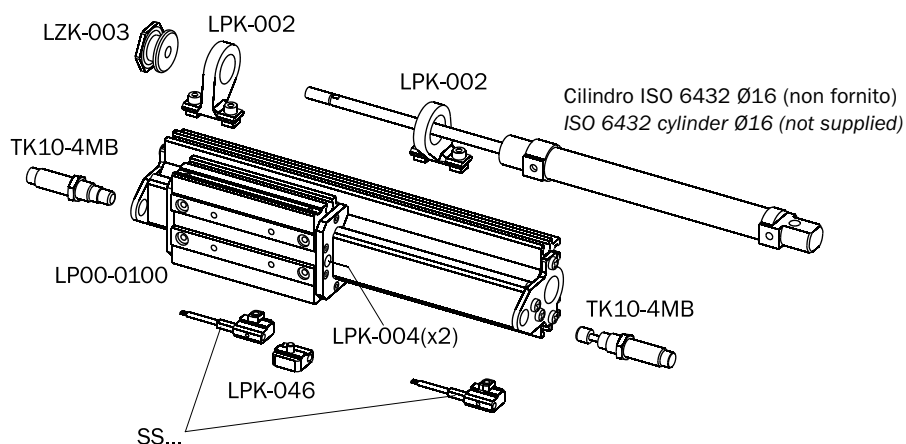
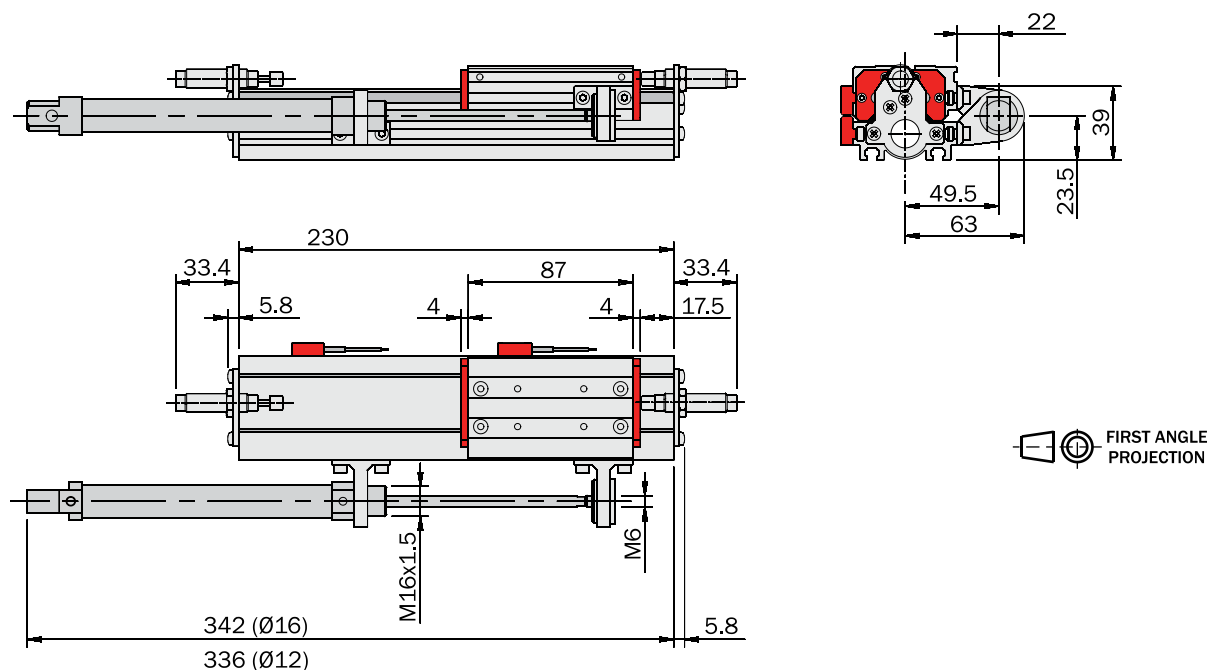
(16 g)

Deceleratore idraulico (M10x1)
Shock-absorber (M10x1)

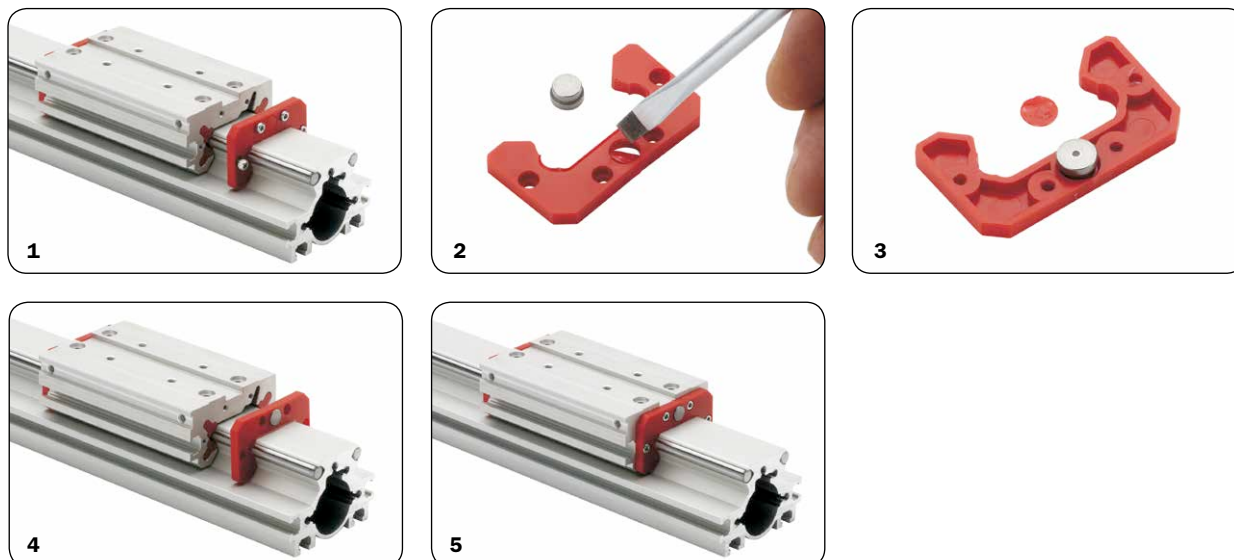


Esempio: Slitta di alesaggio 16mm (cilindro ISO 6432), corsa 100mm, con deceleratori idraulici e sensori

Example: Slide with 16mm piston bore (ISO 6432), 100mm stroke, with hydraulic shock-absorbers and sensors

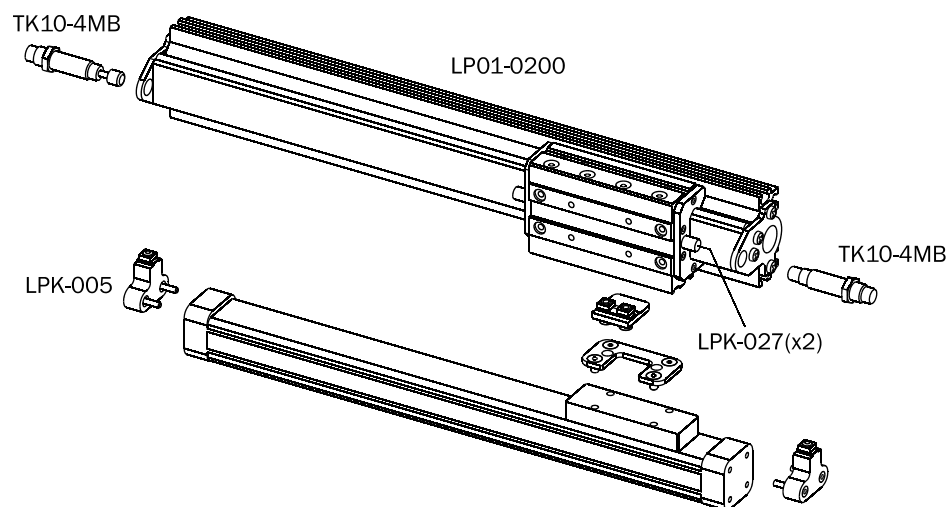
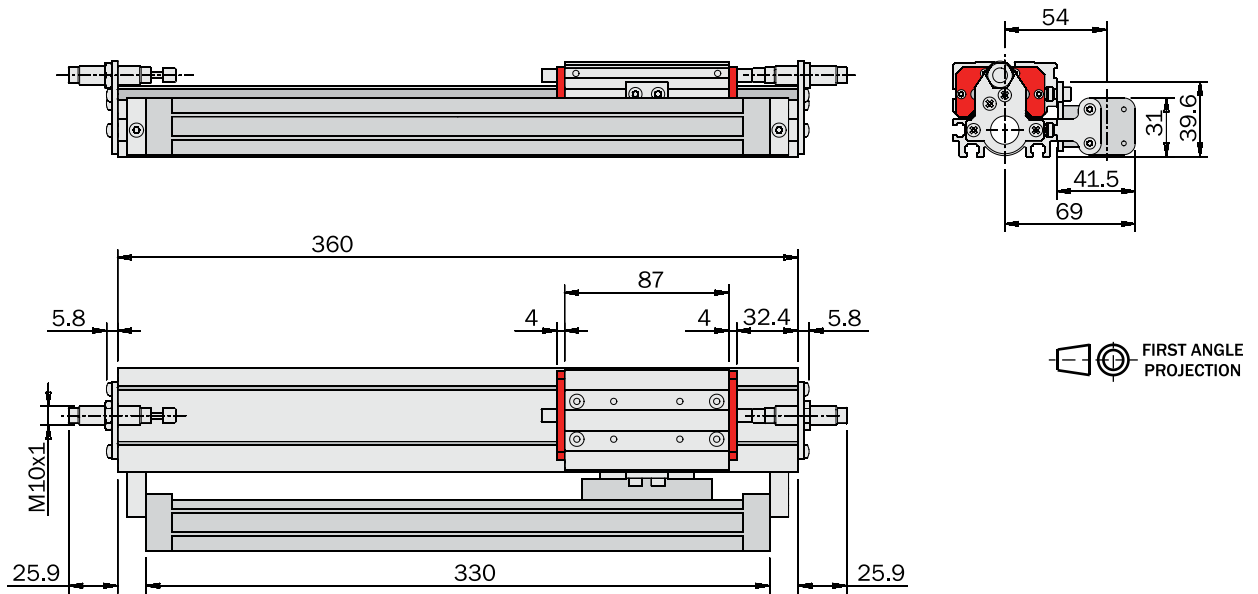


Montaggio LPK-004 e LPK-027 / LPK-004 and LPK-027 mounting



Esempio: Slitta di alesaggio 16mm, corsa 200mm, con deceleratori idraulici, movimentata da cilindro senza stelo Origa

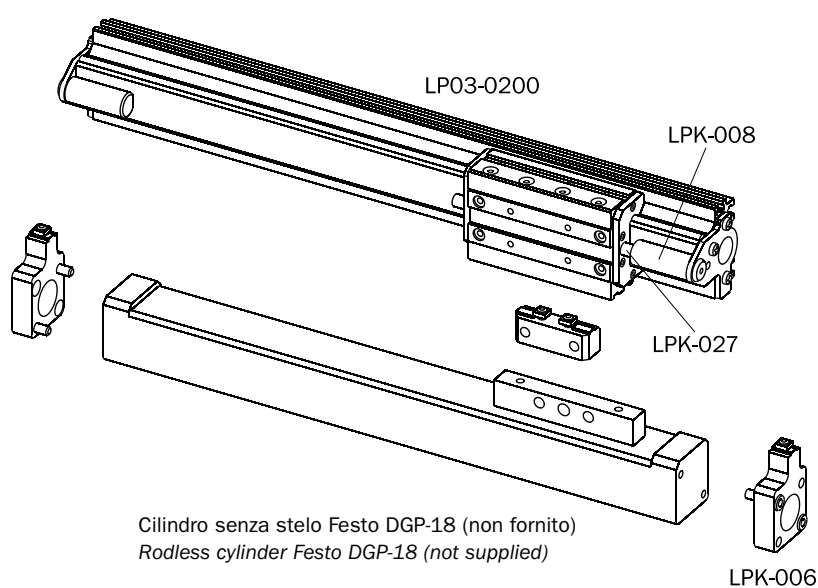
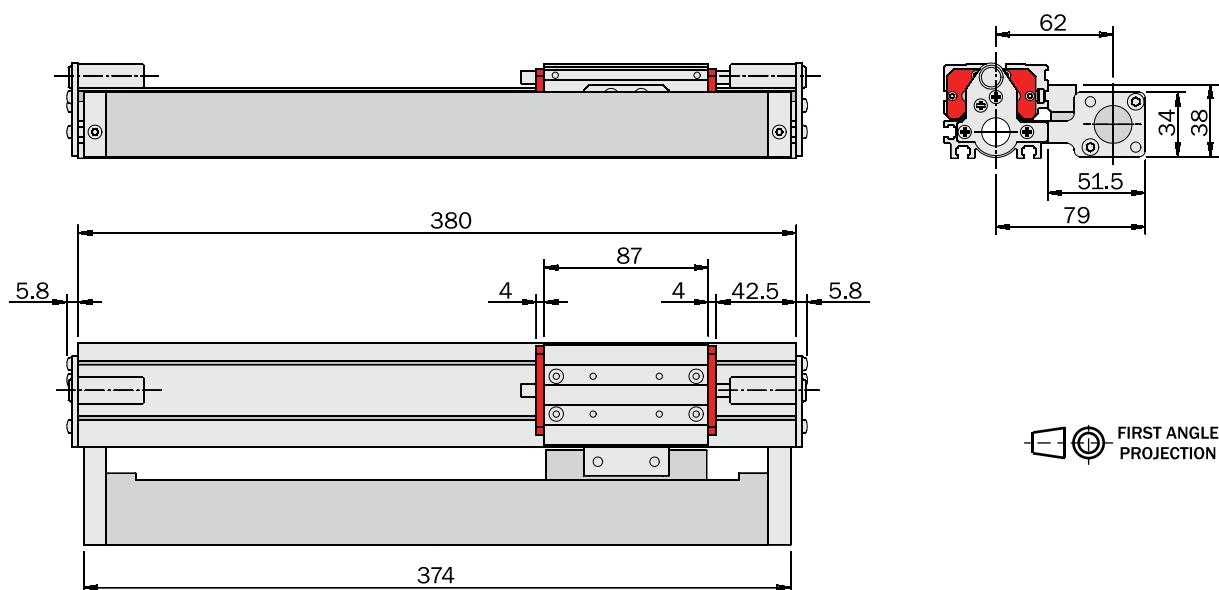
Example: Slide with 16mm piston bore, 200mm stroke, with hydraulic shock-absorbers, powered by the Origa rodless cylinder



Cilindro senza stelo Origa OSP-P16 (non fornito)
Rodless cylinder Origa OSP-P16 (not supplied)

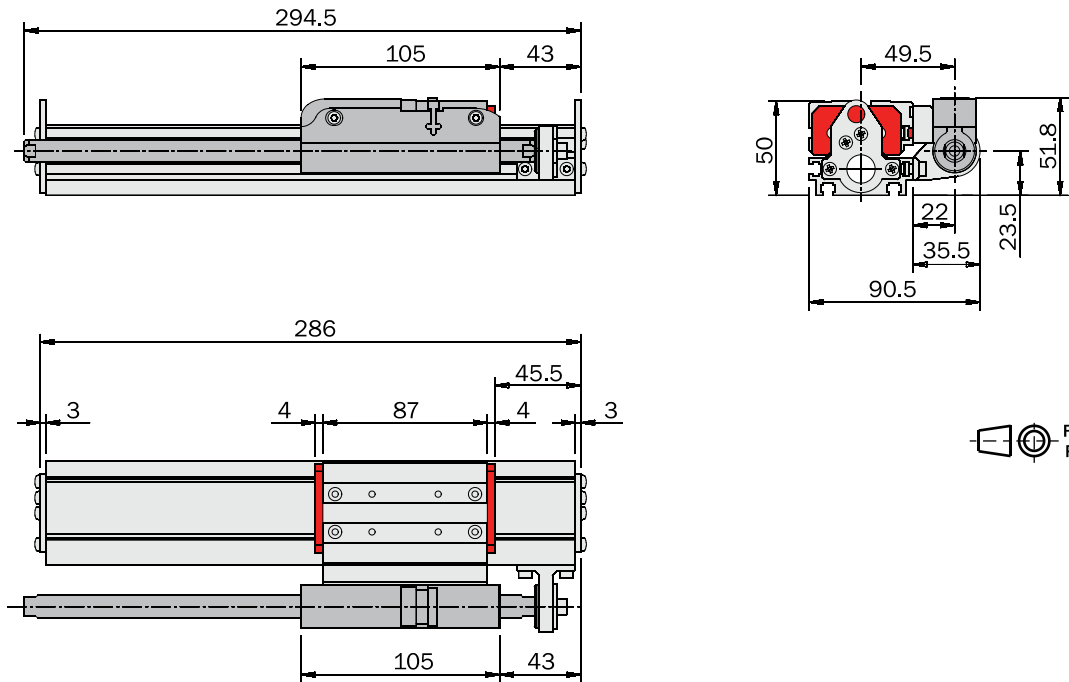
Esempio: Slitta di alesaggio 18mm, corsa 200mm, con fine-corsa d'emergenza in gomma, movimentata da cilindro senza stelo Festo

Example: Slide with 18mm piston bore, 200mm stroke, with rubber emergency stoppers, powered by the Festo rodless cylinder

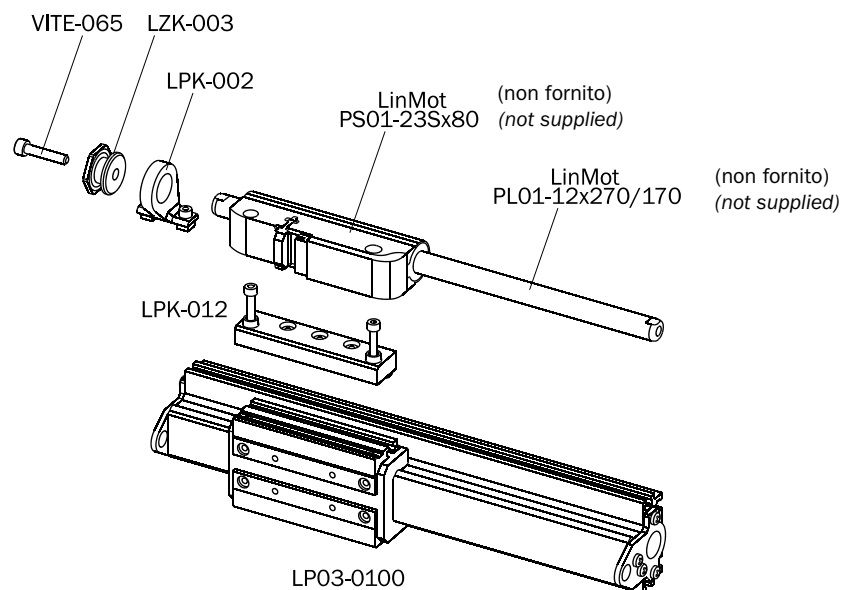


Esempio: Slitta di corsa 100mm, azionata da motore lineare LinMot compatto

Example: Slide, 100mm stroke, powered by a LinMot compact linear motor

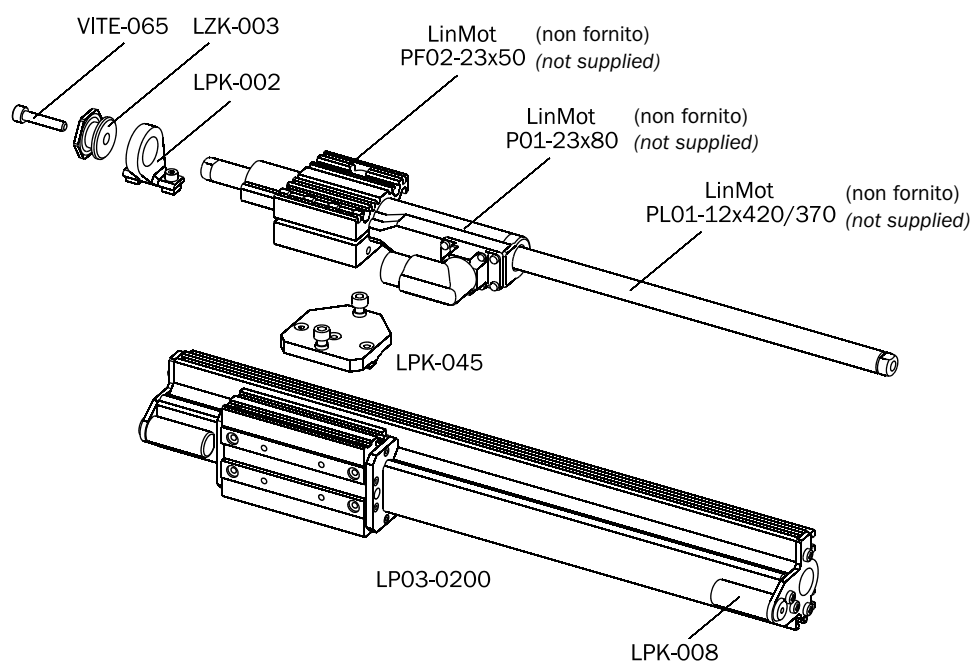
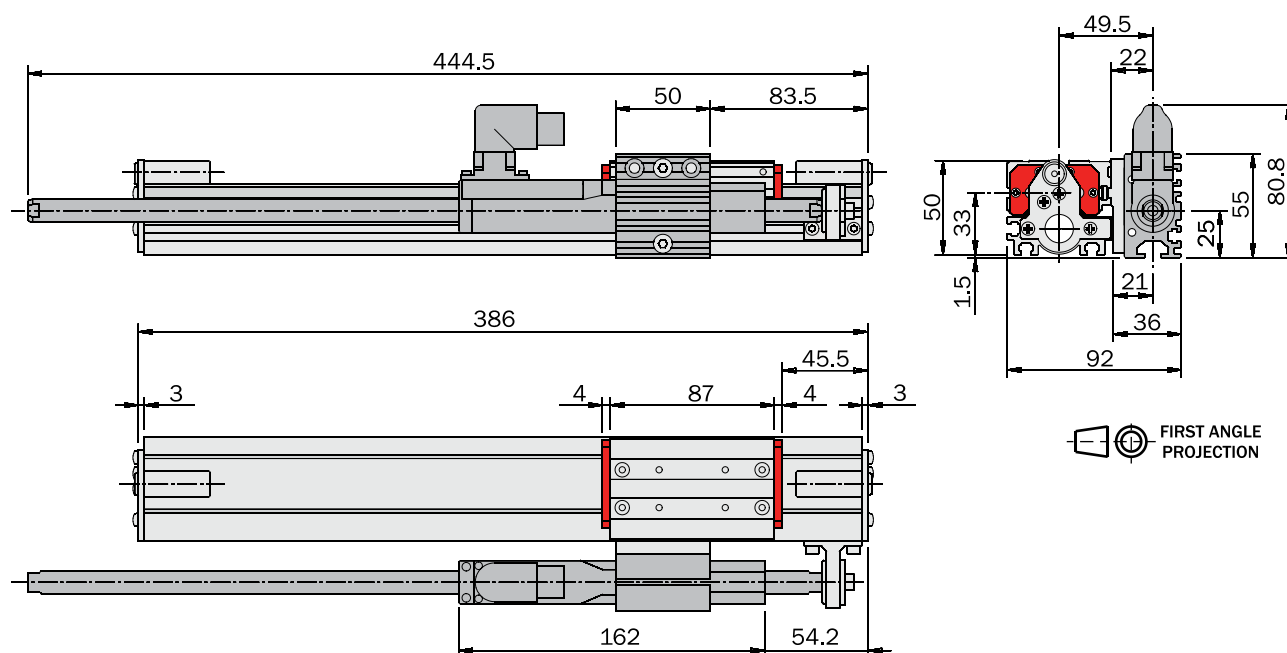


FIRST ANGLE PROJECTION



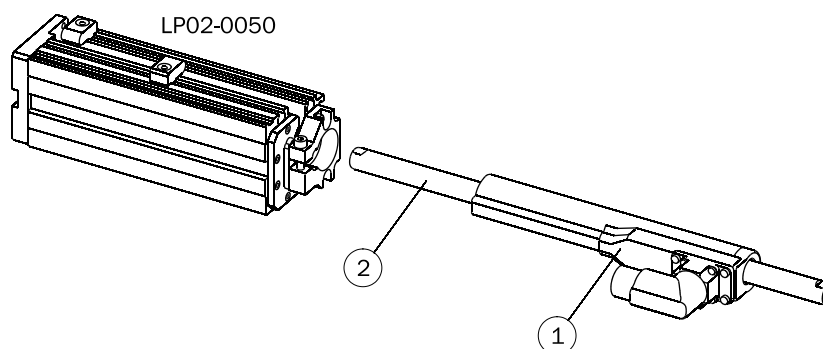
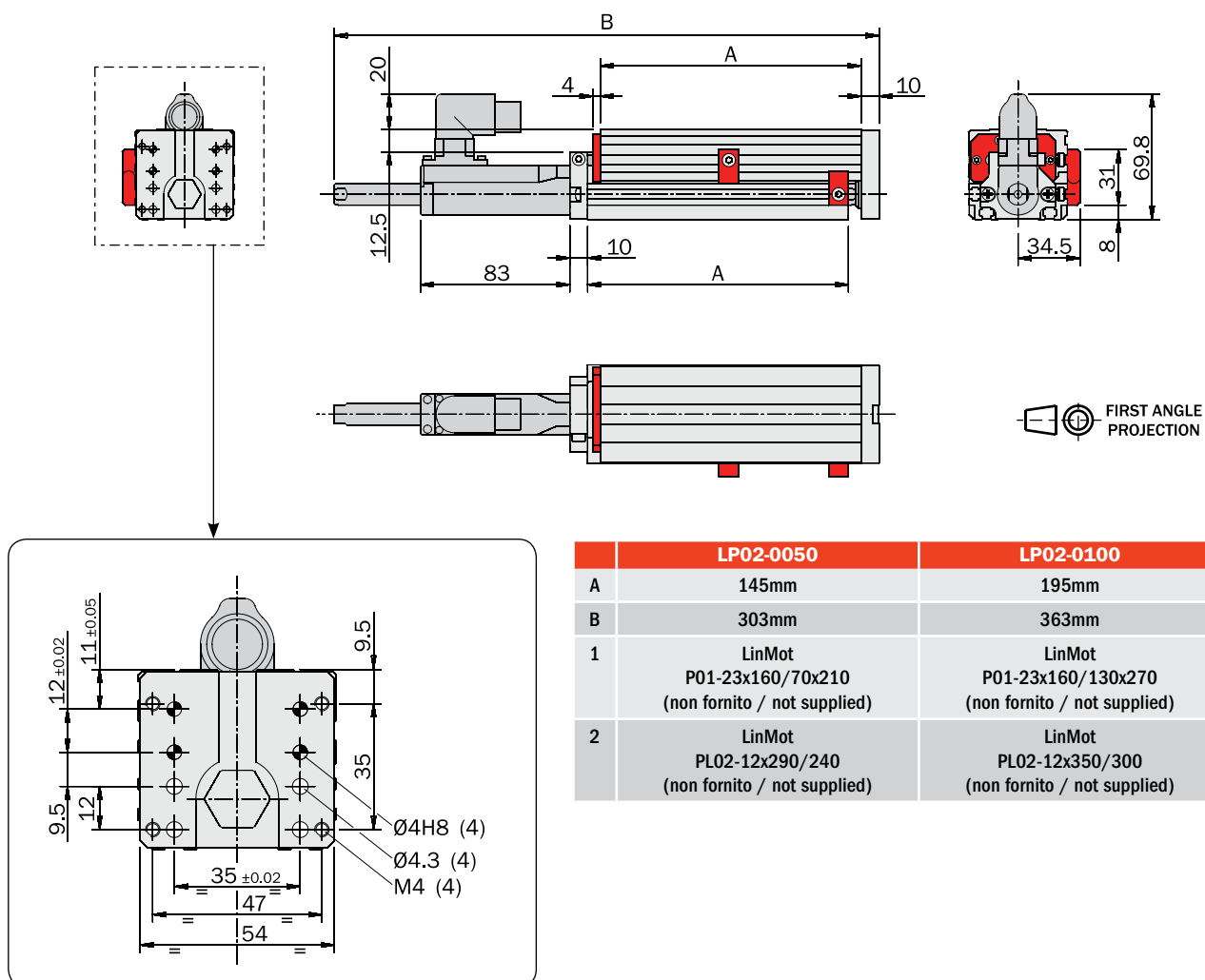
Esempio: Slitta di corsa 200mm, con fine-corsa d'emergenza in gomma, azionata da motore lineare LinMot

Example: Slide, 200mm stroke, with rubber emergency stoppers, powered by a LinMot linear motor



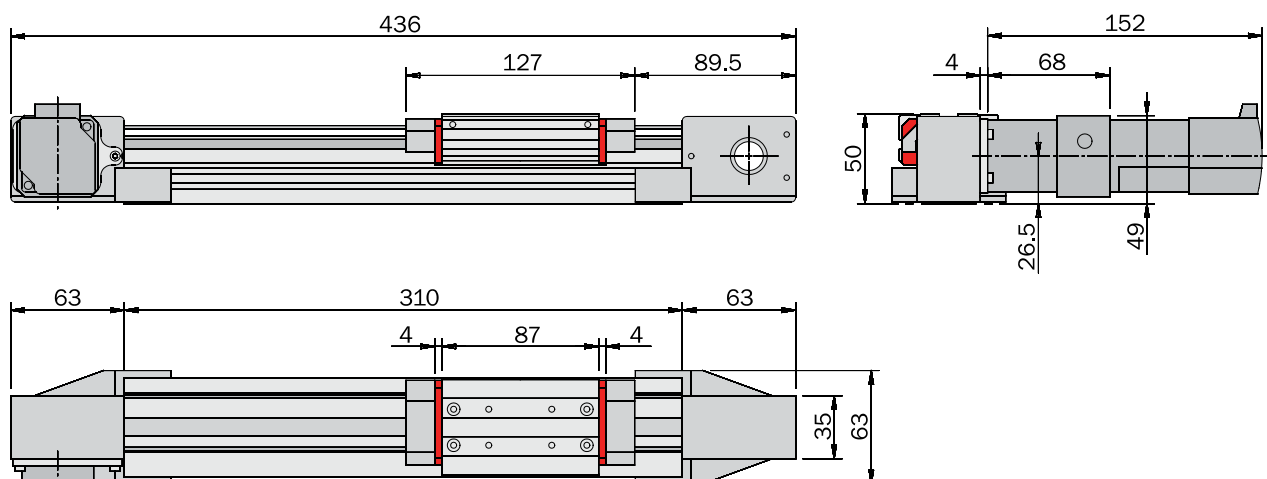
Esempio: Slitte LP02-0050 e LP02-0100 azionate da motore lineare LinMot in linea

Example: Slides LP02-0050 and LP02-0100, powered by an in-line LinMot linear motor



Esempio: Slitta con trasmissione a cinghia (corsa 150mm) azionata da motoriduttore

Example: Slide with belt drive (150mm stroke) powered by servomotor and gear reducer

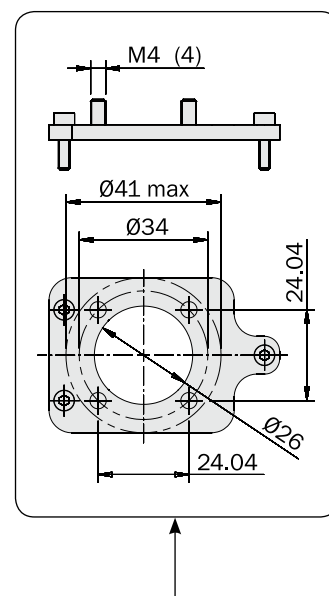
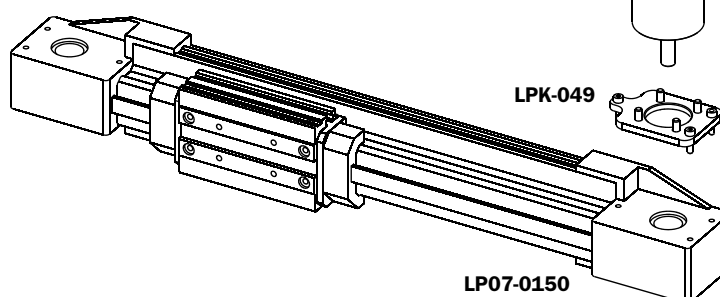


FIRST ANGLE PROJECTION

Cinghia Belt	T5-10
Carico ammesso sulla cinghia Allowable tensile load on the belt	320N
Diametro calettatore Lock unit diameter	10mm
Coppia per serraggio calettatore Torque for lock unit mounting	1.2Nm
Corsa per ogni rotazione puleggia Stroke per pulley revolution	100mm
Inerzia pulegge Pulleys inertia	18kgmm ²
Massa del carrello Carrier mass	0.3kg
Attrito del carrello Carrier friction	11N
Carico dinamico dei cuscinetti (C) Bearings dynamic load rate (C)	4360N
Carico statico dei cuscinetti (Co) Bearings static load rate (Co)	2600N
Velocità massima Maximum speed	2m/s
Ripetibilità Repeatability	±0.1mm

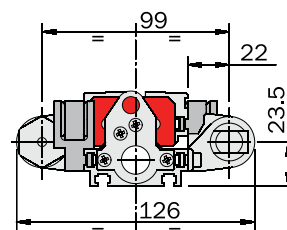
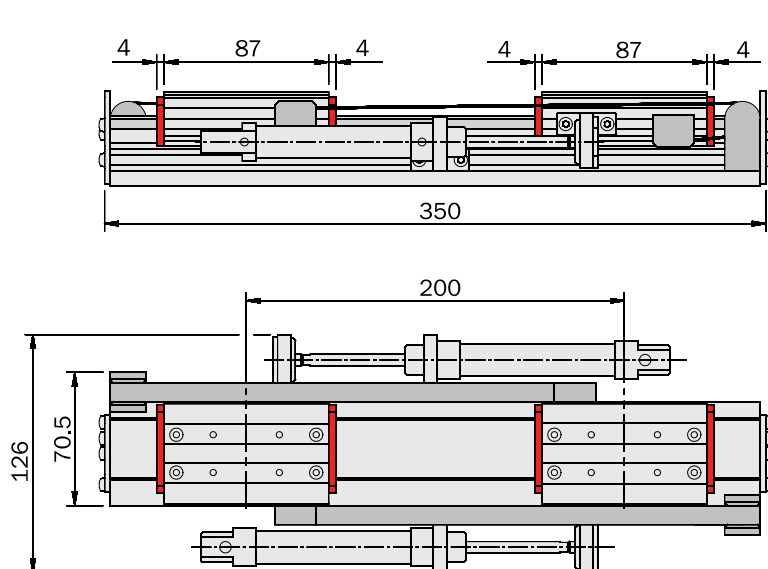
Motore Mitsubishi / Mitsubishi motor
HF-KE13W1-S100 (100W)
(non fornito) / (not supplied)

Riduttore Pini / Pini gear reducer
GL4038X253046
(non fornito) / (not supplied)

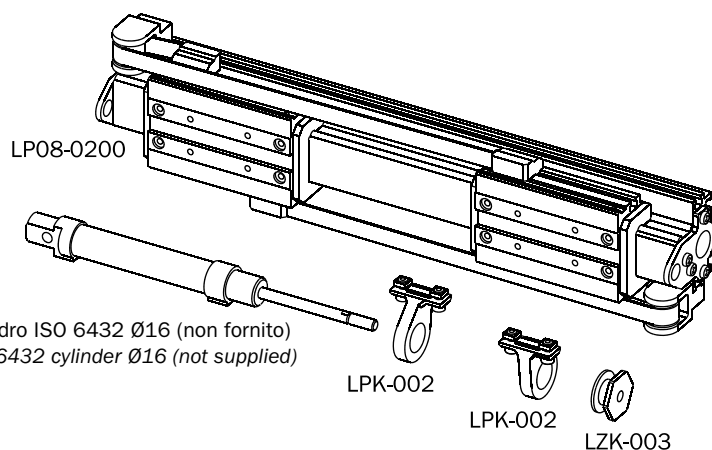


Esempio: Pinza autocentrante (interasse: 200mm) azionata da due cilindri ISO 6432 di alesaggio 16mm e corsa 50mm

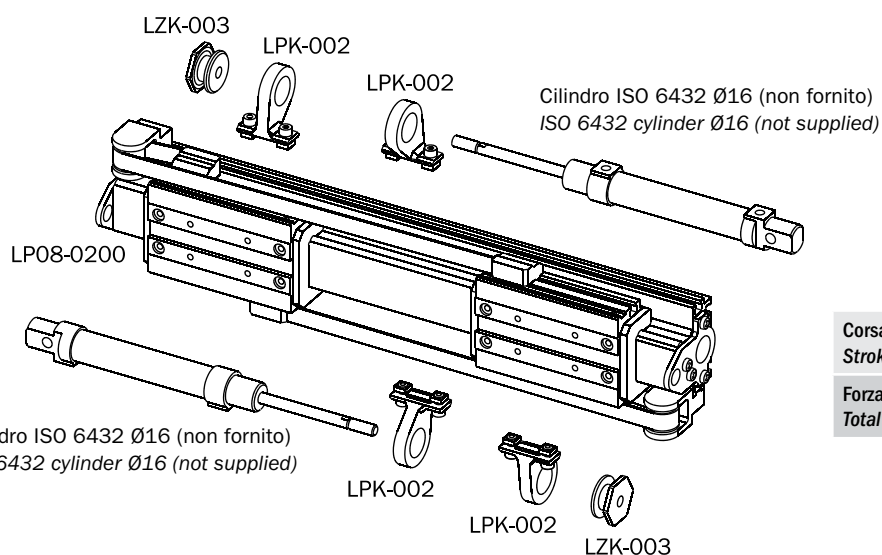
Example: Selfcentering gripper (interaxis: 200mm) powered by two 16mm ISO 6432 cylinders, stroke 50mm



FIRST ANGLE PROJECTION



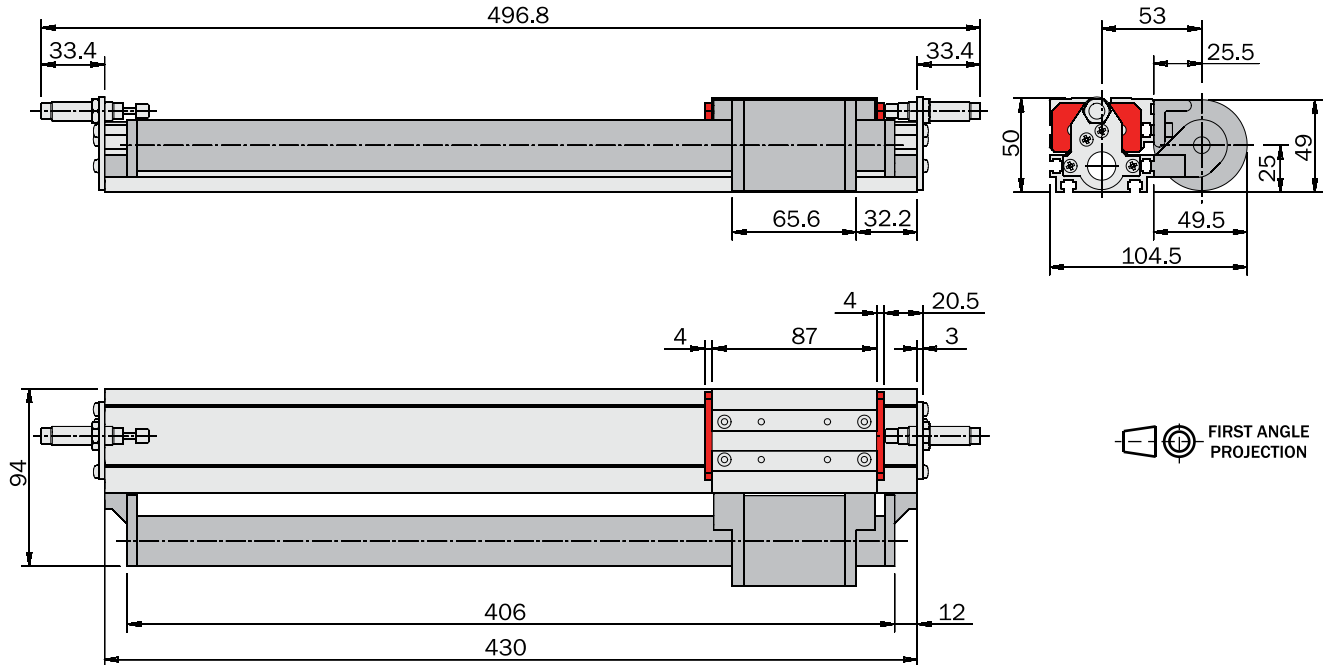
Corsa Stroke	2x50 mm
Forza totale a 6 bar Total force at 6 bar	100 N



Corsa Stroke	2x50 mm
Forza totale a 6 bar Total force at 6 bar	200 N

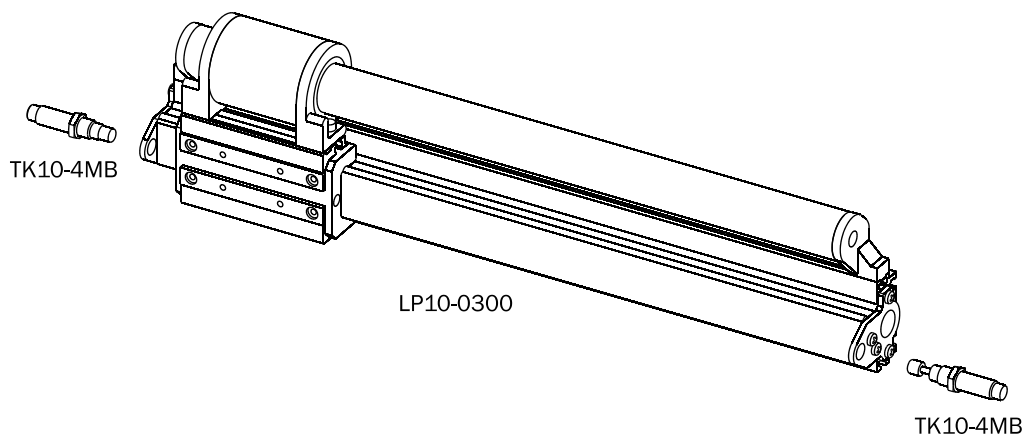
Esempio: Attuatore pneumatico (alesaggio 25mm, corsa 300mm) a trascinamento magnetico, con deceleratori idraulici

Example: Pneumatic actuator (piston bore: 25mm, stroke: 300mm) magnetically coupled, with hydraulic shock-absorbers



Avvertenza
La pressione massima di utilizzo è 5bar

Caution
Maximum working pressure is 5bar



LPK-013

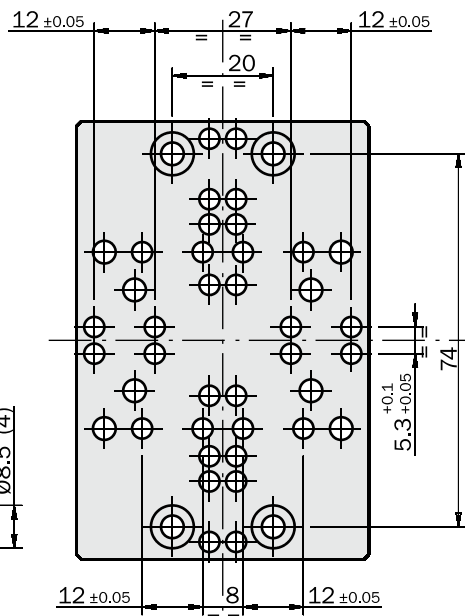
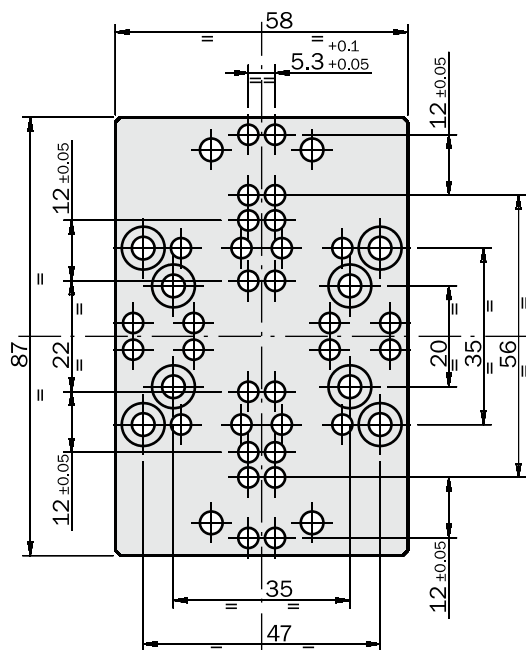
Interfaccia di montaggio

Va fissata al carrello e serve per il montaggio diretto di un'altra guida LP.
Peso: 75 g

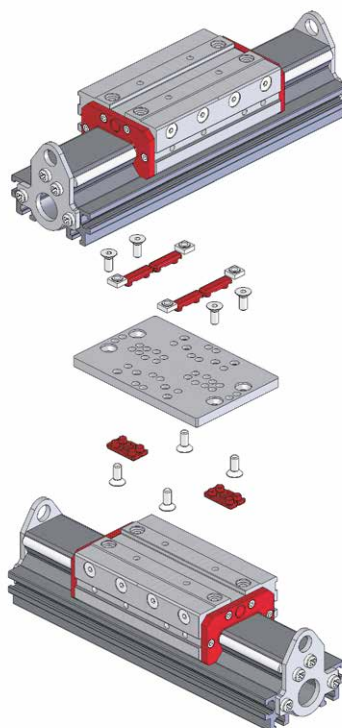
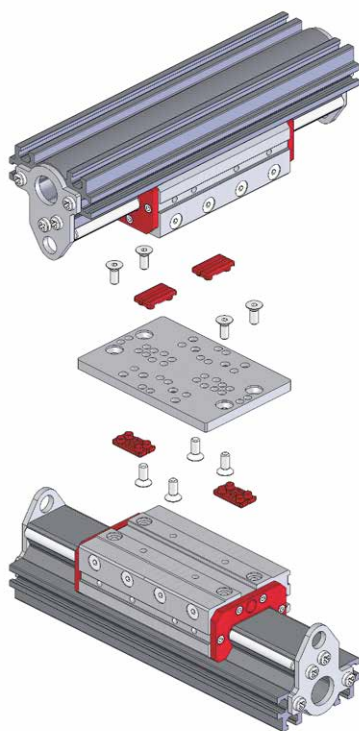
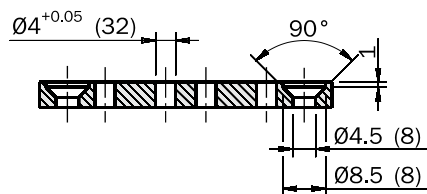
LPK-013

Mounting interface plate

It must be fixed to the carrier for direct mounting of an additional guide LP.
Weight : 75 g



FIRST ANGLE PROJECTION



Sensori

Il rilevamento della posizione di lavoro è affidato a uno o più sensori magnetici di prossimità (opzionali), che rilevano la posizione attraverso un magnete. Quindi, per un corretto funzionamento, è da evitare l'impiego in presenza di forti campi magnetici od in prossimità di grosse masse di materiale ferromagnetico.

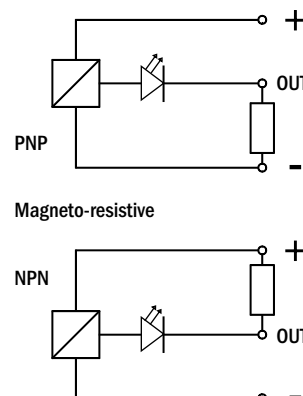
I sensori utilizzabili sono:



Sensors

The operating position is detected by magnetic proximity sensors (optional) through a magnet. The use of magnetic proximity sensors is therefore to be avoided in the vicinity of large masses of ferromagnetic material or intense magnetic fields as this may cause detection problems.

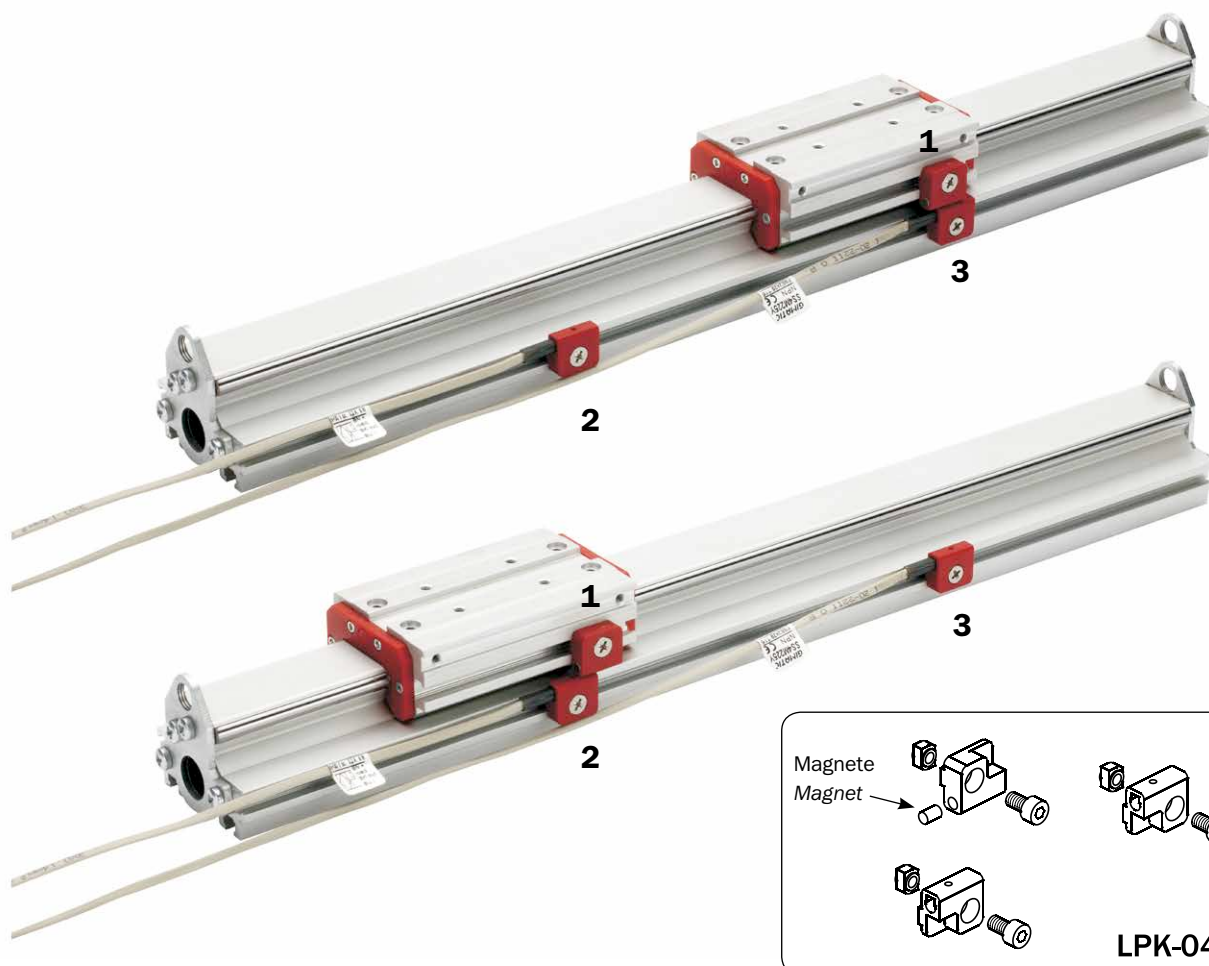
Use sensors:



			LP...
SS4N225-G	PNP	cavo 2.5m / 2.5m cable	☑
SS4M225-G	NPN	cavo 2.5m / 2.5m cable	☑
SS3N203-G	PNP	Connettore M8 / M8 snap plug connector	☑
SS3M203-G	NPN	Connettore M8 / M8 snap plug connector	☑

Per montare 2 sensori è necessario il kit LPK-046.

One kit LPK-046 is necessary to mount two sensors.



Lubrificazione

Controllare periodicamente le colonne di guida e lubrificarle quando sono secche.
L'apposito grasso è disponibile in tubetti da 90 grammi.
Codice di ordinazione: GLP500-90.

Lubrication

Periodically check the steel bars and lubricate when dry.
The suitable grease is available in 90 grams tubes.
Ordering code: GLP500-90.



Rimuovere la protezione rossa (quattro viti)

Remove the four screws and then the red plastic plate



Applicare il lubrificante sulle colonne di guida in acciaio

Lubricate the steel bars



Muovere il carrello per distribuire il lubrificante nelle cartucce

Move the carrier to distribute the lubricant in the ball bearings

