

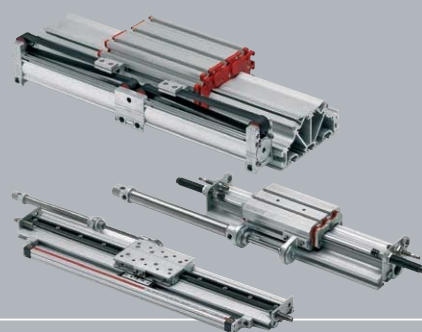
Pinze pneumatiche
Pneumatic grippers

Pinze ad espansione
Air hands

Attuatori lineari
Linear actuators

Guide lineari
Linear guidances

Unità rotanti
Rotary units



Guide lineari a ricircolo di sfere per cilindri senza stelo serie ZVL

- Compatibile con il sistema G-mix [1].
- Due taglie disponibili per cilindri taglia 18 o 32.
- Fornito con deceleratori idraulici [2] e staffe porta-sensori [3].
- Sensori magnetici opzionali [4].
- Staffe opzionali [5] per il montaggio di cilindri senza stelo standard [6].
- Attuatore opzionale per le fermate intermedie [7].

Linear recirculating ball bearing guides for rodless cylinders (series ZVL)

- Compatible with the G-mix system [1].
- Two sizes available for size 18 or 32 cylinders.
- Provided with hydraulic shock-absorbers [2] and sensor brackets [3].
- Optional magnetic sensors [4].
- Optional brackets [5] for standard rodless cylinders [6].
- Optional actuator for intermediate stops [7].

	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW
	ZVL250200	ZVL250300	ZVL250500	ZVL400200	ZVL400300	ZVL400500	ZVL400700	ZVL401000
Schema Lay-out	Per cilindri senza stelo Festo DGC-K-18 For Festo DGC-K-18 rodless cylinders			Per cilindri senza stelo Festo DGC-K-32 For Festo DGC-K-32 rodless cylinders				
	(*) 			(*) 				
Corsa Stroke (S)	200 mm	300 mm	500 mm	200 mm	300 mm	500 mm	700 mm	1000 mm
Lunghezza Length (L)	420 mm	520 mm	720 mm	530 mm	630 mm	830 mm	1030 mm	1330 mm
Peso Weight	1330 g	1530 g	1940 g	3700 g	4100 g	4900 g	5800 g	7000 g

(*) I cilindri non sono forniti / Cylinders not supplied



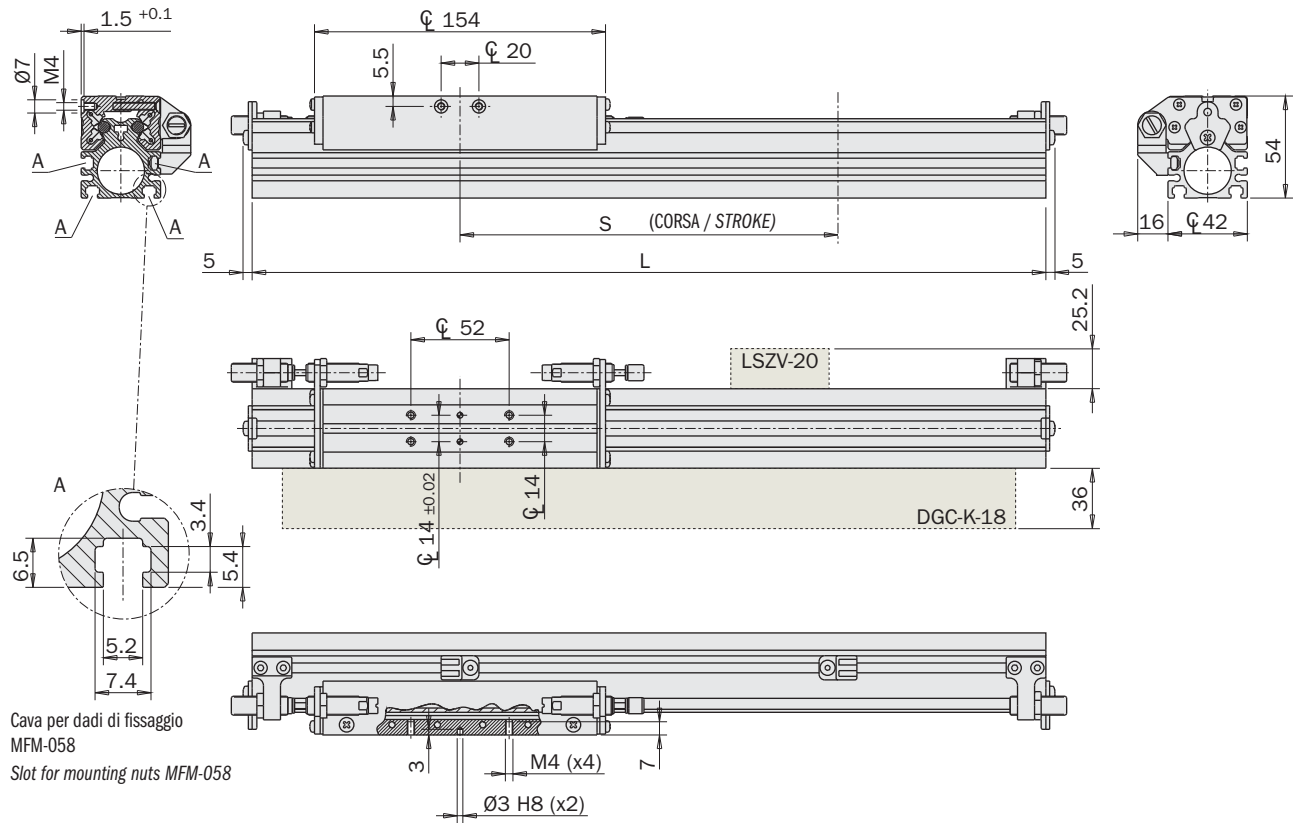
Diagram labels: 1 (G-mix logo), 2 (hydraulic shock absorber), 3 (sensor bracket), 4 (magnetic sensor), 5 (optional bracket), 6 (optional bracket), 7 (optional actuator).

Component labels: ZV25, ZVL25, LV25-KIT-01, MPPM1606, LV25-KIT-04.

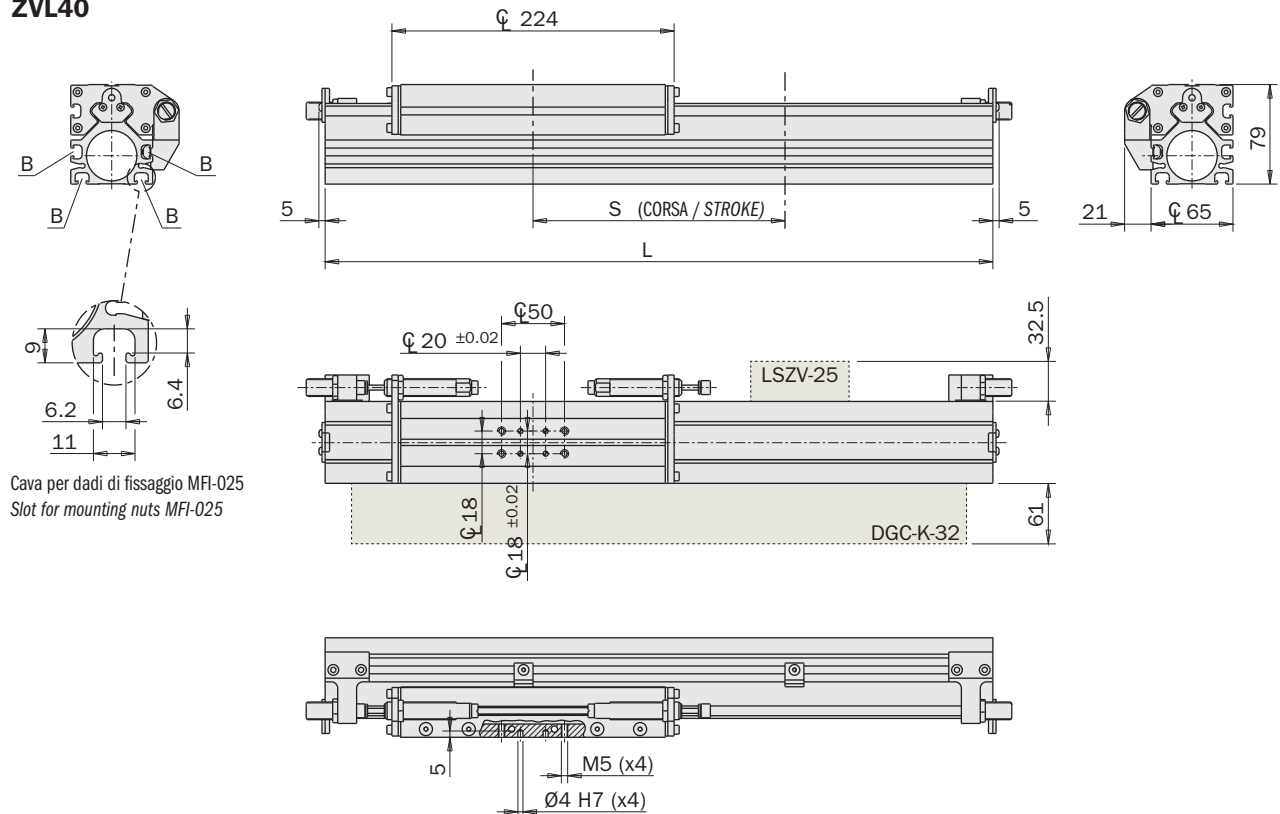
4		
SS4N225-G	PNP	cavo 2.5m / 2.5m cable
SS4M225-G	NPN	cavo 2.5m / 2.5m cable
SS3N203-G	PNP	Connettore M8 / M8 connector
SS3M203-G	NPN	Connettore M8 / M8 connector

	7
ZVL25	LSZV-20
ZVL40	LSZV-25

ZVL25



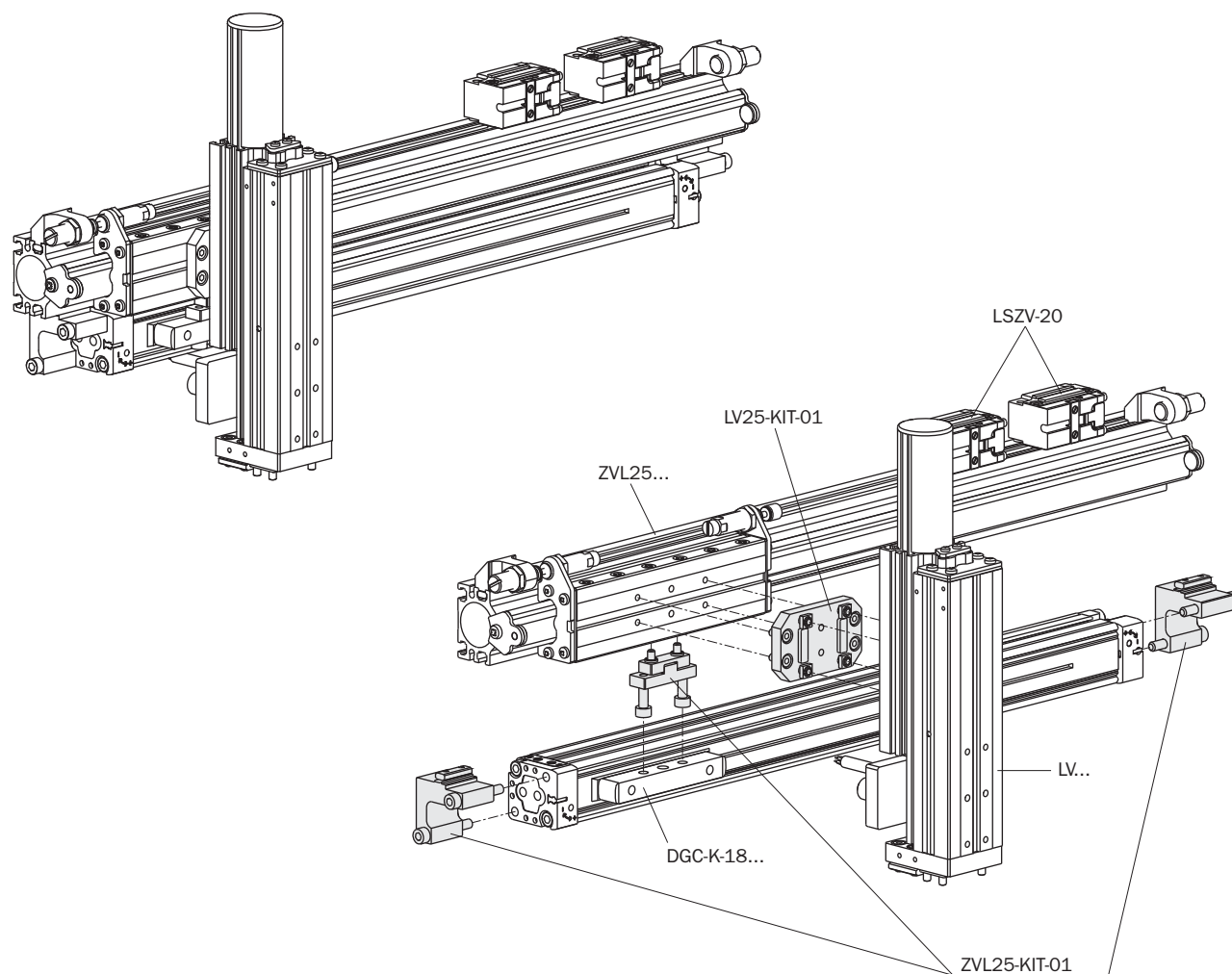
ZVL40



FIRST ANGLE
PROJECTION

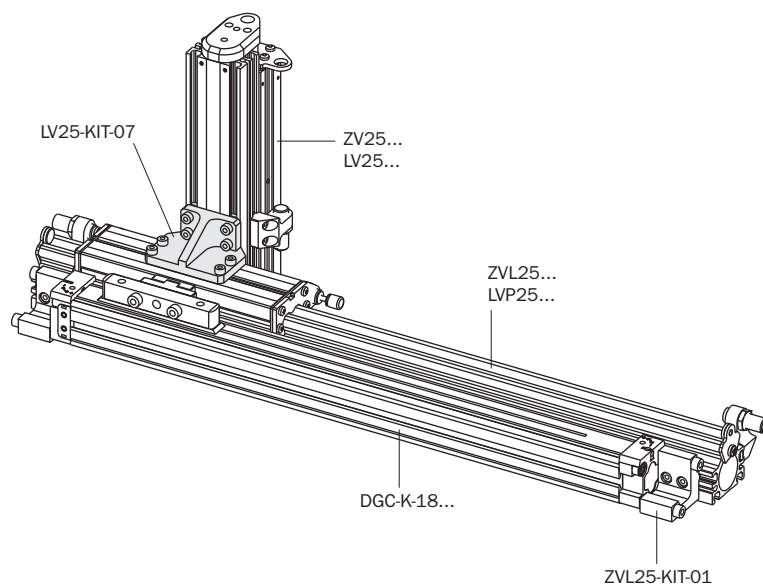
Esempio di applicazione con LV25-KIT-01

Application example with LV25-KIT-01



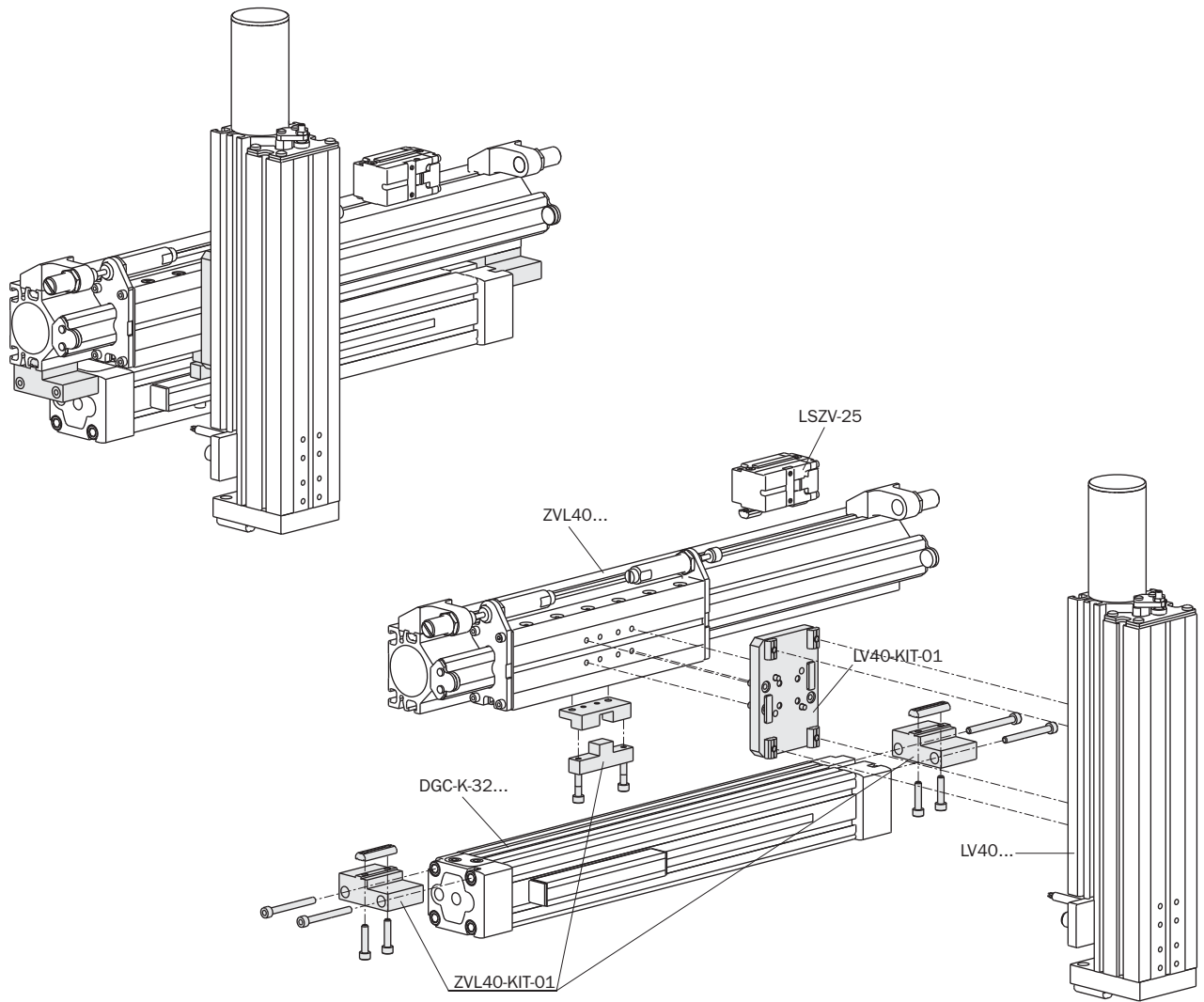
Esempio di applicazione con LV25-KIT-07

Application example with LV25-KIT-07



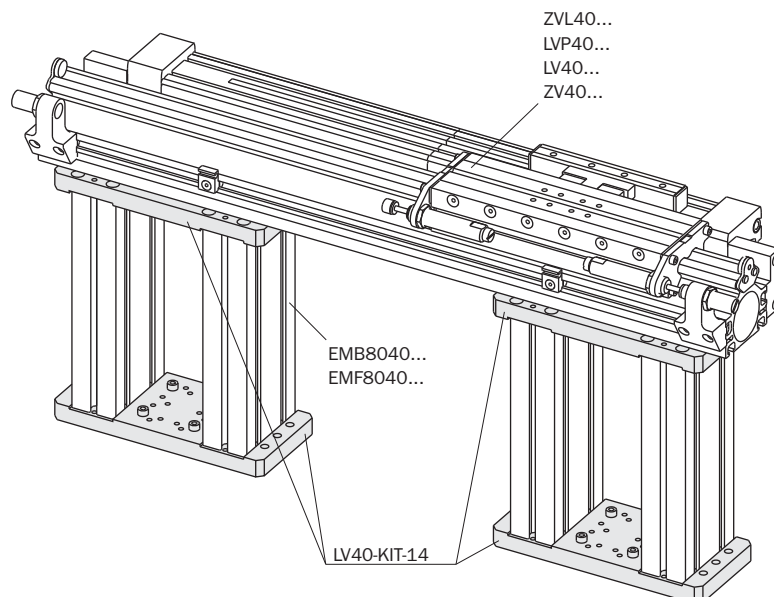
Esempio di applicazione con LV40-KIT-01

Application example with LV40-KIT-01



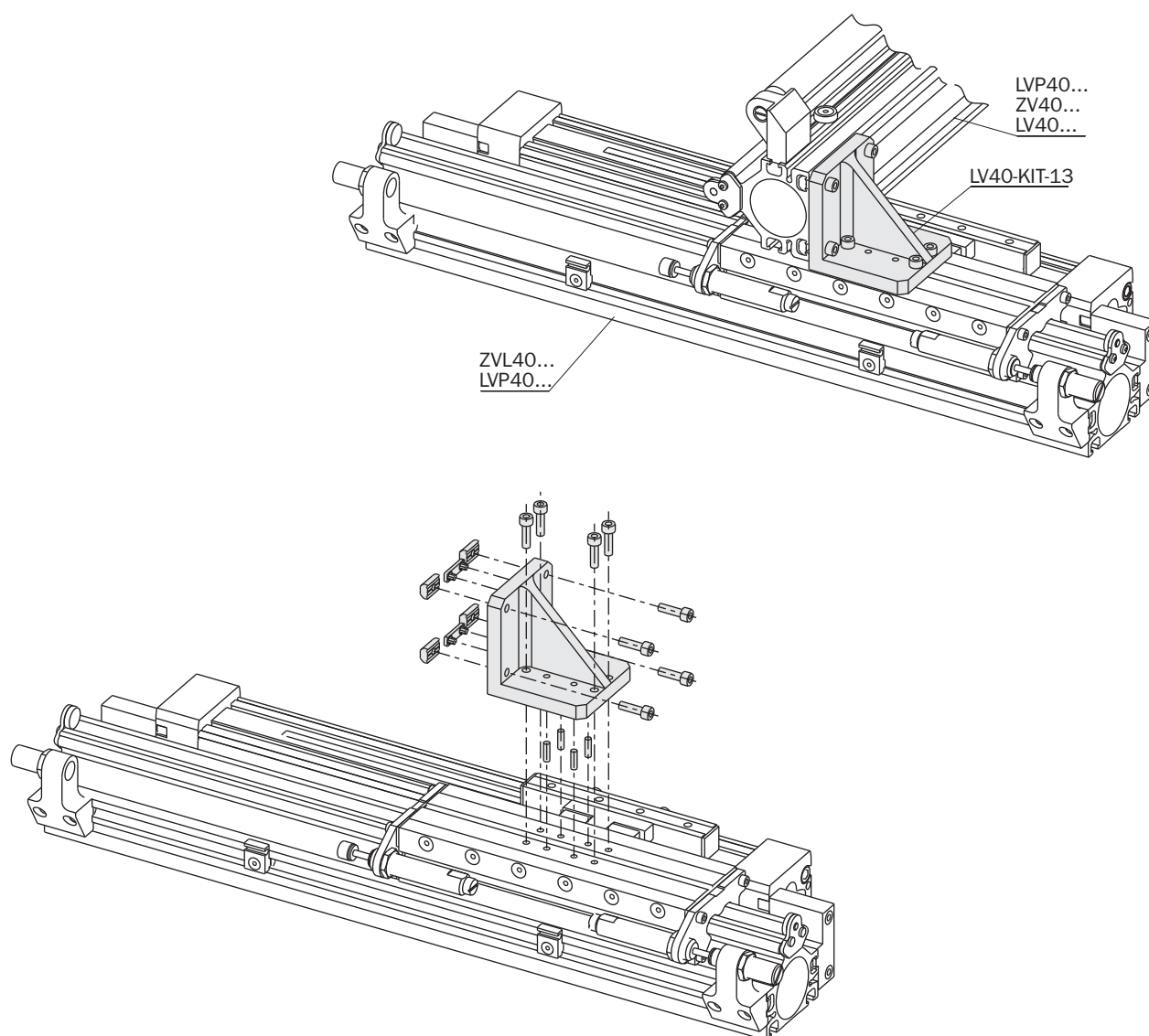
Esempio di applicazione con LV40-KIT-14

Application example with LV40-KIT-14



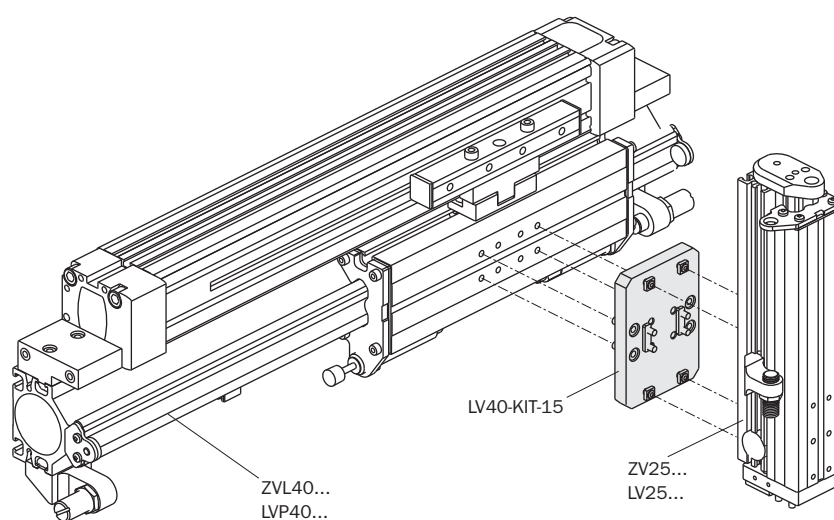
Esempio di applicazione con LV40-KIT-13

Application example with LV40-KIT-13



Esempio di applicazione con LV40-KIT-15

Application example with LV40-KIT-15



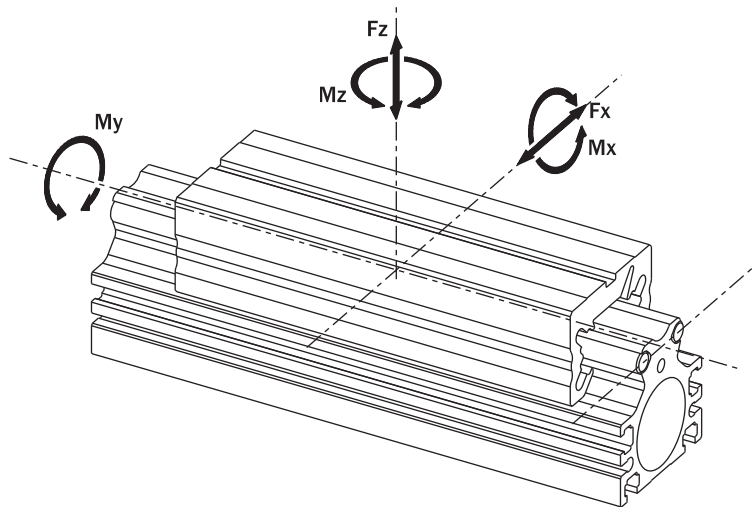
Carichi di sicurezza

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 operation problems and endanger the safety of the operator. Check that the load factor LF is lower than 1.

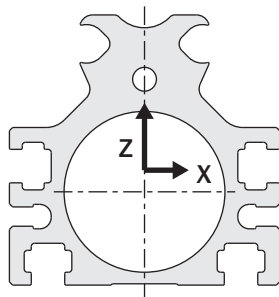
	ZVL25	ZVL40
F _x	1200 N	2500 N
F _z	1200 N	2500 N
M _x	40 Nm	120 Nm
M _y	11 Nm	31 Nm
M _z	40 Nm	120 Nm



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

Momenti d'inerzia del profilo estruso in alluminio

Moments of inertia for the extruded aluminium profile



	ZVL25	ZVL40
I _x	83479 mm ⁴	444096 mm ⁴
I _z	100191 mm ⁴	450893 mm ⁴

Avvertenze

Evitare il contatto con sostanze corrosive, spruzzi di saldatura, polveri abrasive, che potrebbero danneggiare la funzionalità della slitta.

Per nessun motivo, persone od oggetti estranei devono entrare nel raggio d'azione della slitta.

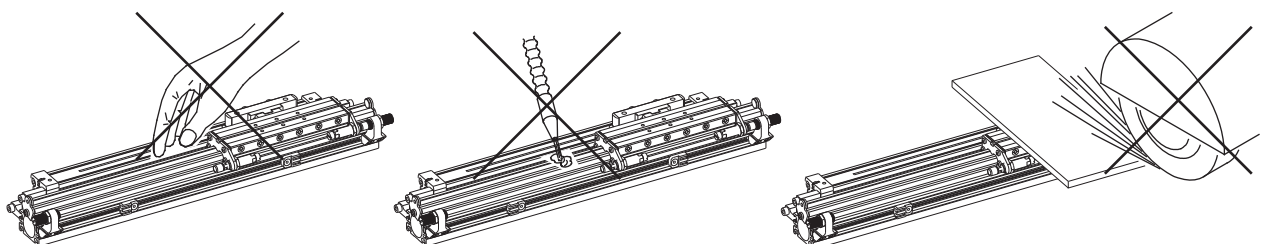
La slitta non deve essere messa in servizio prima che la macchina di cui fa parte sia stata dichiarata conforme alle disposizioni di sicurezza vigenti.

Caution

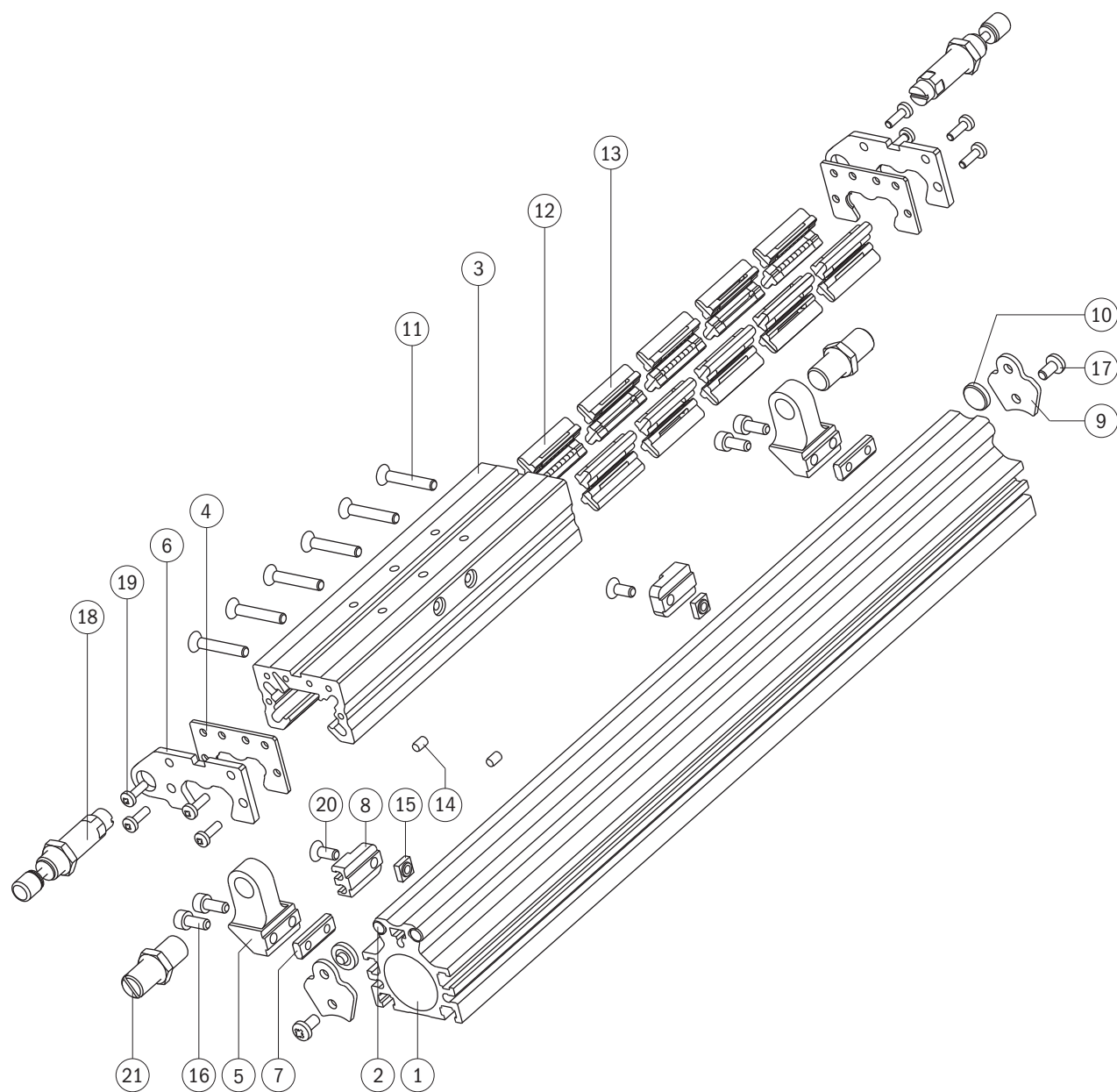
Never let the unit come into contact with corrosive substances, soldering splashes or abrasive powders as they will damage the slide.

Never let non-authorized persons or objects be within the operating range of the slide.

Never operate the slide on a machine that does not comply with the safety standards and laws of your country.



Vista esplosa / Exploded view



Elenco delle parti / Part list

		ZVL250200	ZVL250300	ZVL250500		
1	Profilo guida	ZVL250200-01	ZVL250300-01	ZVL250500-01	Guide profile	1
2	Colonna	ZVL250200-03	ZVL250300-03	ZVL250500-03	Guide rod	2
3	Carrello	ZVL250200-02			Carrier	3
4	Protezione carrello	ZV25030-06			Carrier protection	4
5	Supporto fine-corsa	ZV25030-11			Stroke end bracket	5
6	Portadeceleratore carrello	ZV25030-24			Carrier shock absorber holder	6
7	Dado doppio M4	ZV25030-31			M4 double nut	7
8	Basetta porta sensore	LV25050-22			Sensor holder bracket	8
9	Bloccaggio colonne	LVP25-06			Guide rod locking plate	9
10	Gommino di sicurezza	LVP25-07			Safety rubber pad	10
11	Vite	VITE-092 (M4x25 DIN 965A INOX A2)			Screw	11
12	Cartuccia a ricircolo di sfere	C2521			Recirculating ball bushing	12
13	Semi-guscio cartuccia	2521			Bushing half-case	13
14	Magnete	PAR-06-7			Magnet	14
15	Dado M4	MFM-058			M4 nut	15
16	Vite	VITE-264 (M4x10 DIN 912 Z/B)			Screw	16
17	Vite	VITE-337 (4x8 DIN 7500C Z/B)			Screw	17
18	Deceleratore idraulico M10x1	TK10-3MB MB 32848-B3			Hydraulic shock absorber M10x1	18
19	Vite	VITE-074 (M3x10 DIN 7985A INOX A2)			Screw	19
20	Vite	VITE-352 (M4x10 UNI 5933 Z/B)			Screw	20
21	Sottogruppo finecorsa	FPD1030-00			Stroke end subunit	21

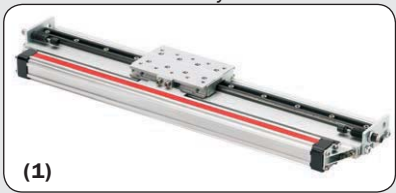
		ZVL400200	ZVL400300	ZVL400500	ZVL400700	ZVL401000		
1	Profilo guida	ZVL400200-01	ZVL400300-01	ZVL400500-01	ZVL400700-01	ZVL401000-01	Guide profile	1
2	Colonna	ZVL400200-02	ZVL400300-02	ZVL400500-02	ZVL400700-02	ZVL401000-02	Guide rod	2
3	Carrello	LVP40-01					Carrier	3
4	Protezione carrello	ZV40050-06					Carrier protection	4
5	Supporto fine-corsa	ZV40050-32					Stroke end bracket	5
6	Portadeceleratore carrello	ZV40050-24					Carrier shock absorber holder	6
7	Dado doppio M5	MFI-016					M5 double nut	7
8	Basetta porta sensore	LV40050-22					Sensor holder bracket	8
9	Bloccaggio colonne	LVP40-06					Guide rod locking plate	9
10	Gommino di sicurezza	LVP40-10					Safety rubber pad	10
11	Vite	VITE-272 (M5x40 DIN 7991 Z/B)					Screw	11
12	Cartuccia a ricircolo di sfere	C-327					Recirculating ball bushing	12
13	Semi-guscio cartuccia	327					Bushing half-case	13
14	Magnete	PAR-06-7					Magnet	14
15	Dado M4	MFI-177					M4 nut	15
16	Vite	VITE-048 (M5x14 DIN 912 INOX A2)					Screw	16
17	Vite	VITE-074 (M3x10 DIN 7985A INOX A2)					Screw	17
18	Deceleratore idraulico M14x1.5	PM25MC-2B SP22039					Hydraulic shock absorber M14x1.5	18
19	Vite	VITE-061 (M4x16 DIN 912 INOX A2)					Screw	19
20	Vite	VITE-189 (M4x14 UNI 5933 INOX A2)					Screw	20
21	Sottogruppo finecorsa	FPD1440-00					Stroke end subunit	21

Guide lineari a ricircolo di sfere serie LZ

- Sistema di guida a ricircolo di sfere.
- Ultrapiatta: solo 30mm di spessore.
- Diverse possibilità di montaggio con dadi a T.
- Vari kit opzionali per il montaggio di accessori.

Linear guides with recirculating ball-bearings series LZ

- Recirculating ball-bearing guide system.
- Very flat: 30mm thickness only.
- Several mounting options with T-nuts.
- Optional kits for accessories.

	LZ00-0050	LZ00-0100	LZ00-0160	LZ00-0200	LZ01-0200	LZ01-0300	LZ01-0400
Schema Lay-out	per cilindri ISO 6432 for ISO 6432 cylinders 				per cilindri senza stelo for rodless cylinders 		
Corsa Stroke	50 mm	100 mm	160 mm	200 mm	200 mm	300 mm	400 mm
L	190 mm	240 mm	300 mm	340 mm	375 mm	475 mm	575 mm
M	17.5 mm	17.5 mm	17.5 mm	17.5 mm	35 mm	35 mm	35 mm
Peso Weight	645 g	750 g	875 g	965 g	1070 g	1290 g	1500 g

(1) I cilindri non sono forniti / Cylinders not supplied

Il carrello è ricavato da un estruso di alluminio nel quale sono previste le sedi per le cartucce a ricircolo di sfere e le cave a T per i vari fissaggi.

La particolare forma permette l'azzeramento del gioco e la registrazione del precarico tramite le quattro viti di regolazione.

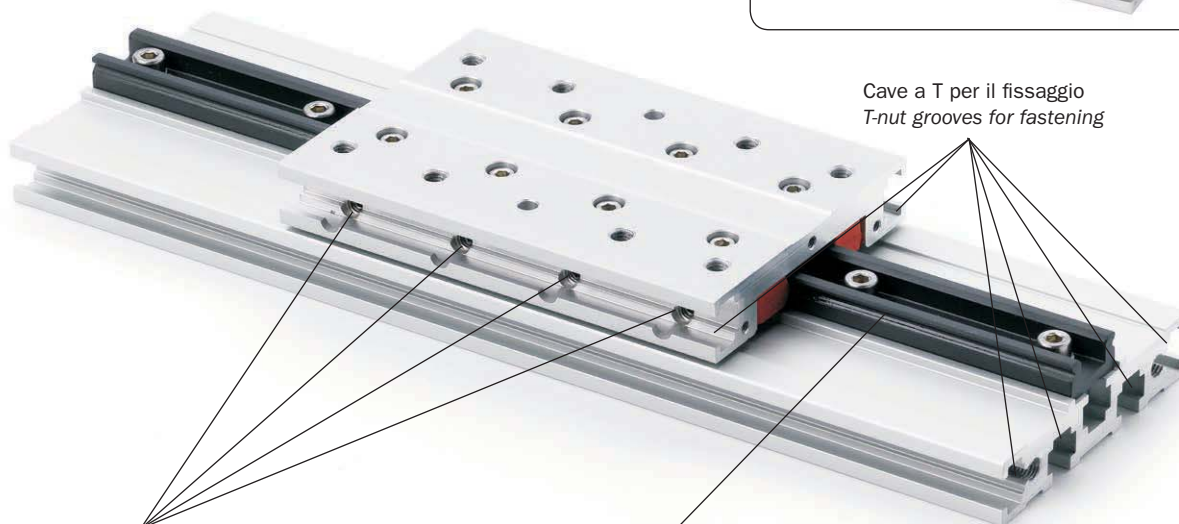
The carrier is made from an aluminium extruded profile, in which the housings for the recirculating ball bearings and the T-nut grooves are located.

Thanks to the carrier special profile, with four adjustment screws, it is possible to set the carrier backlash to zero and to adjust the correct bearing preload.

Cartuccia a ricircolo di sfere
Recirculating ball bearing



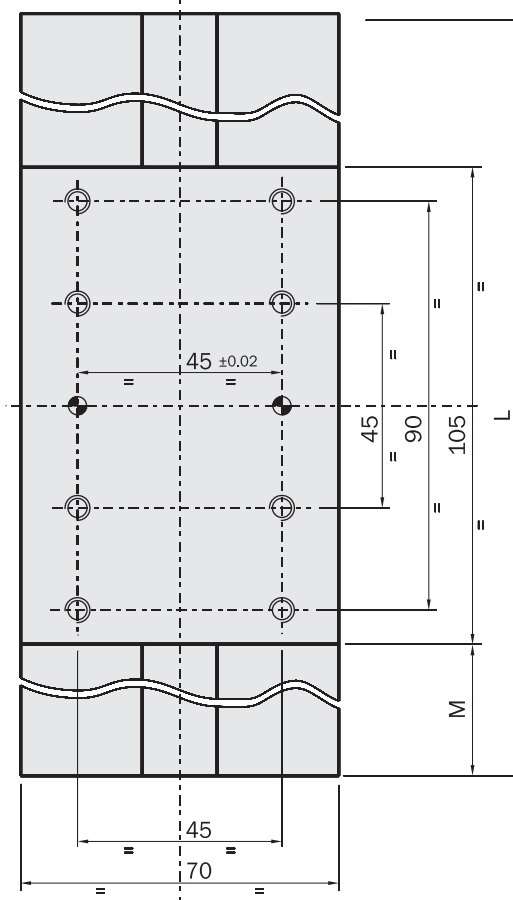
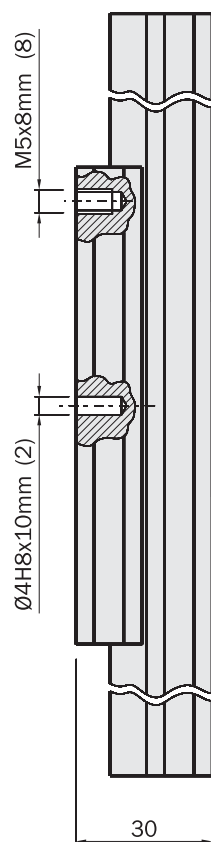
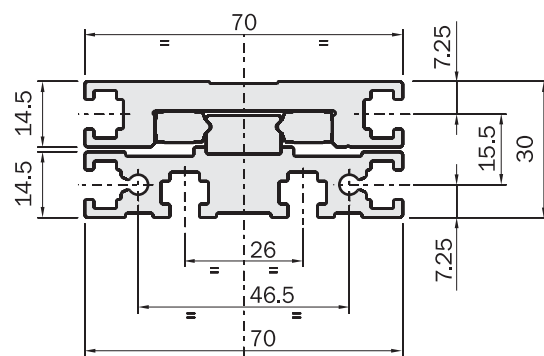
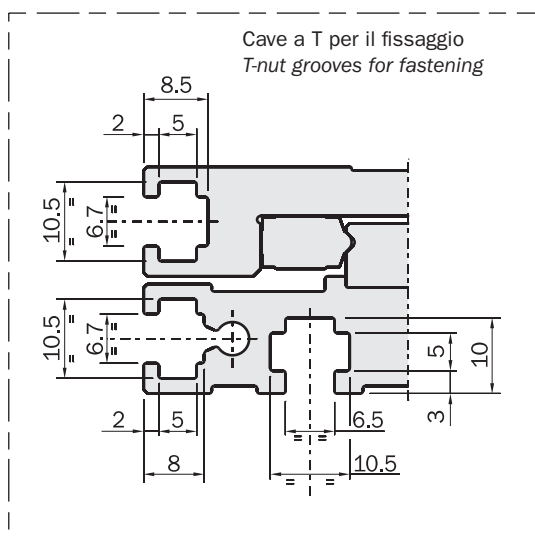
Carrello con cartucce a ricircolo di sfere
Carrier with recirculating ball bearings



Viti di regolazione
Adjustment screws

Guida temprata con piste rettificate
Hardened guideway with overgrinded raceways

Cave a T per il fissaggio
T-nut grooves for fastening

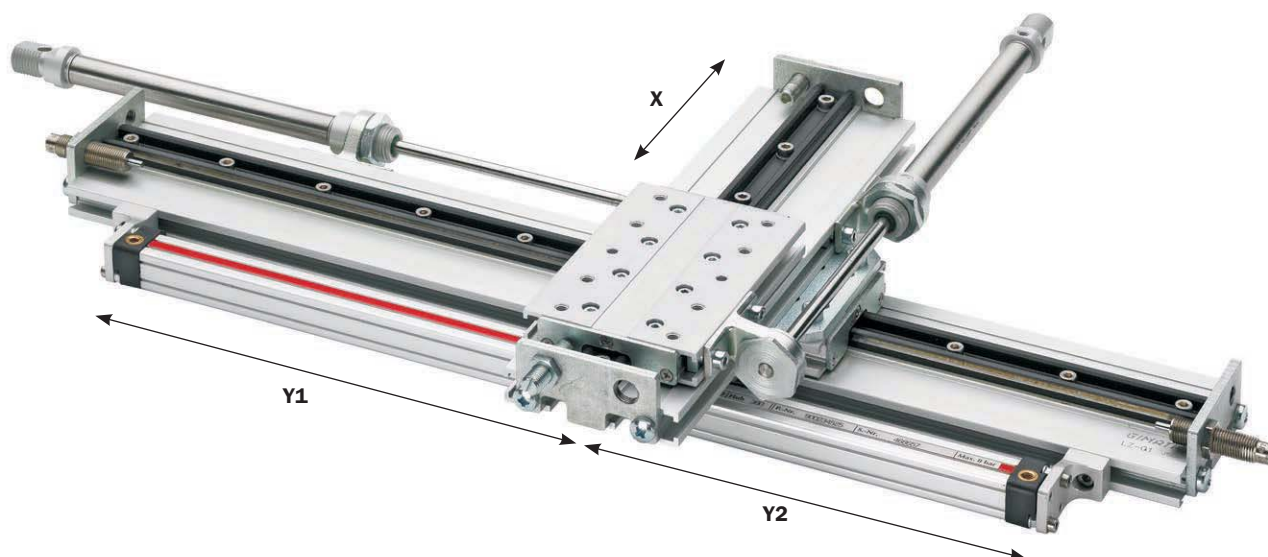
Dimensioni (mm) / Dimensions (mm)


Esempio di applicazione

Manipolatore a due assi con arresto intermedio.
Il carrello dell'asse Y è unito alla rotaia dell'asse X, con il kit LZK-013-2.

Application example

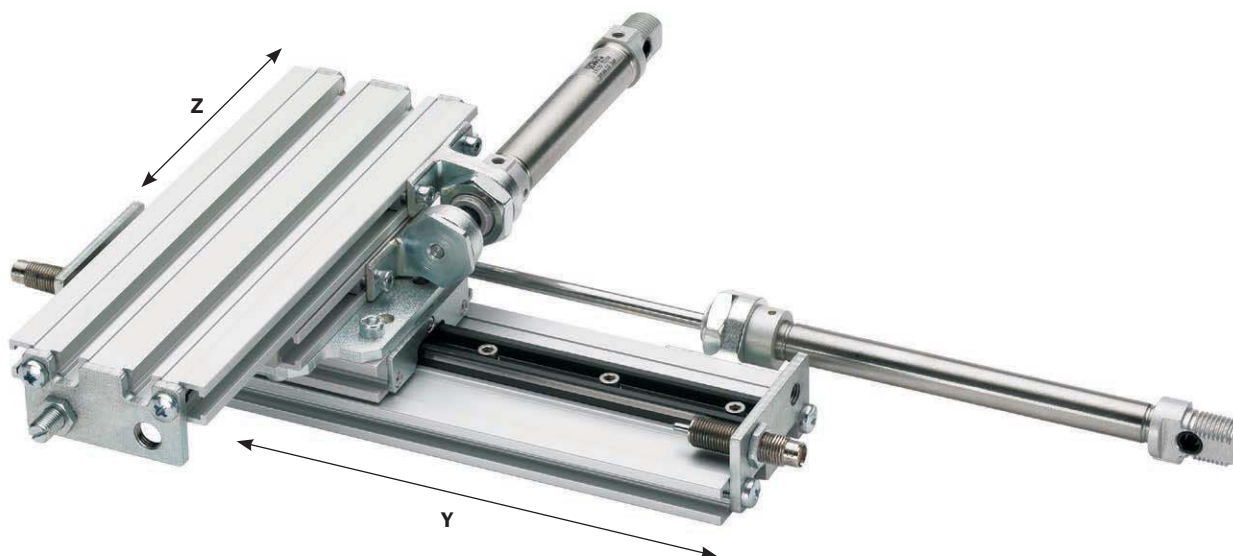
Two-axis manipulator with intermediate stop.
The carrier of the Y axis is connected to the rail of the X axis, by the LZK-013-2 mounting kit

**Esempio di applicazione**

Manipolatore a due assi, tipo portale.
Il carrello dell'asse Y è unito al carrello dell'asse Z, con il kit LZK-013-1.

Application example

Two-axis manipulator, linear gantry style.
The carrier of the Y axis is connected to the carrier of the Z axis, by the LZK-013-1 mounting kit.

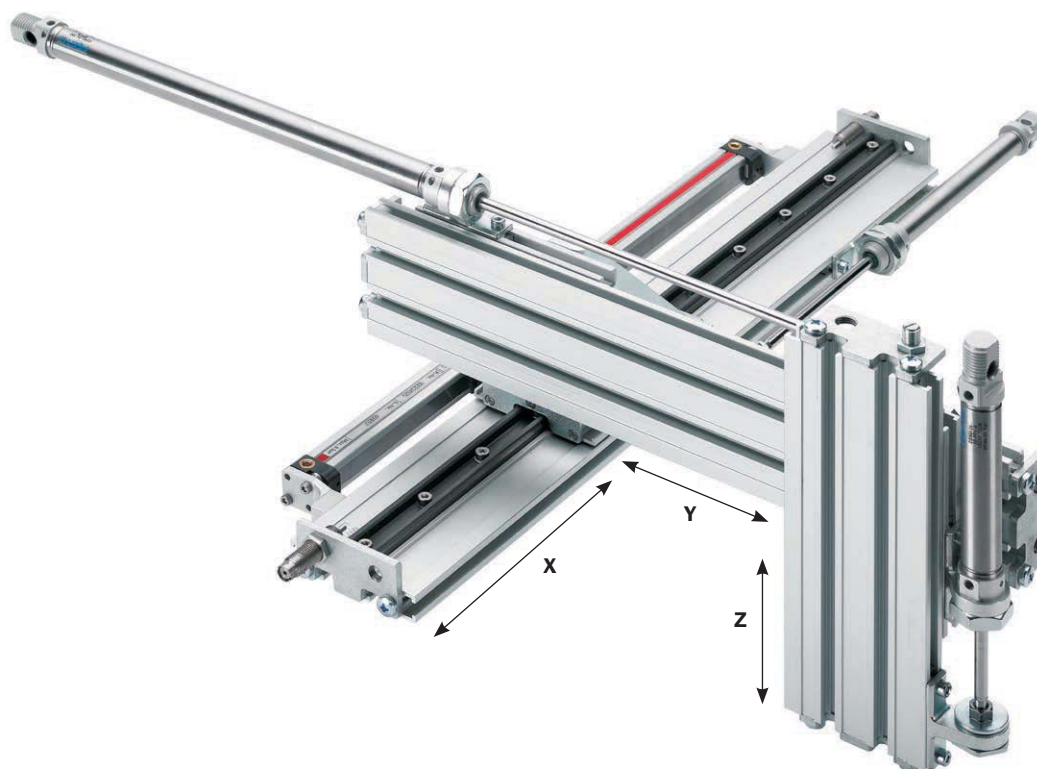


Esempio di applicazione

Manipolatore a tre assi.
Utilizzando due squadrette LLK-021 è possibile unire i carrelli su due piani perpendicolari.

Application example

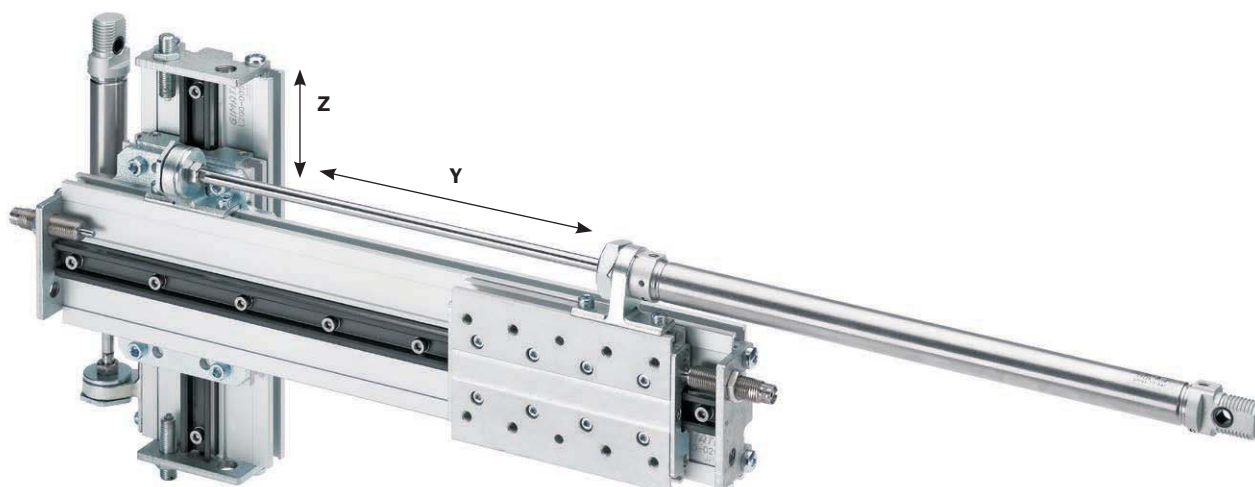
Three-axis manipulator, area gantry style.
With two LLK-021 brackets, it is possible to connect carriers along two perpendicular planes.

**Esempio di applicazione**

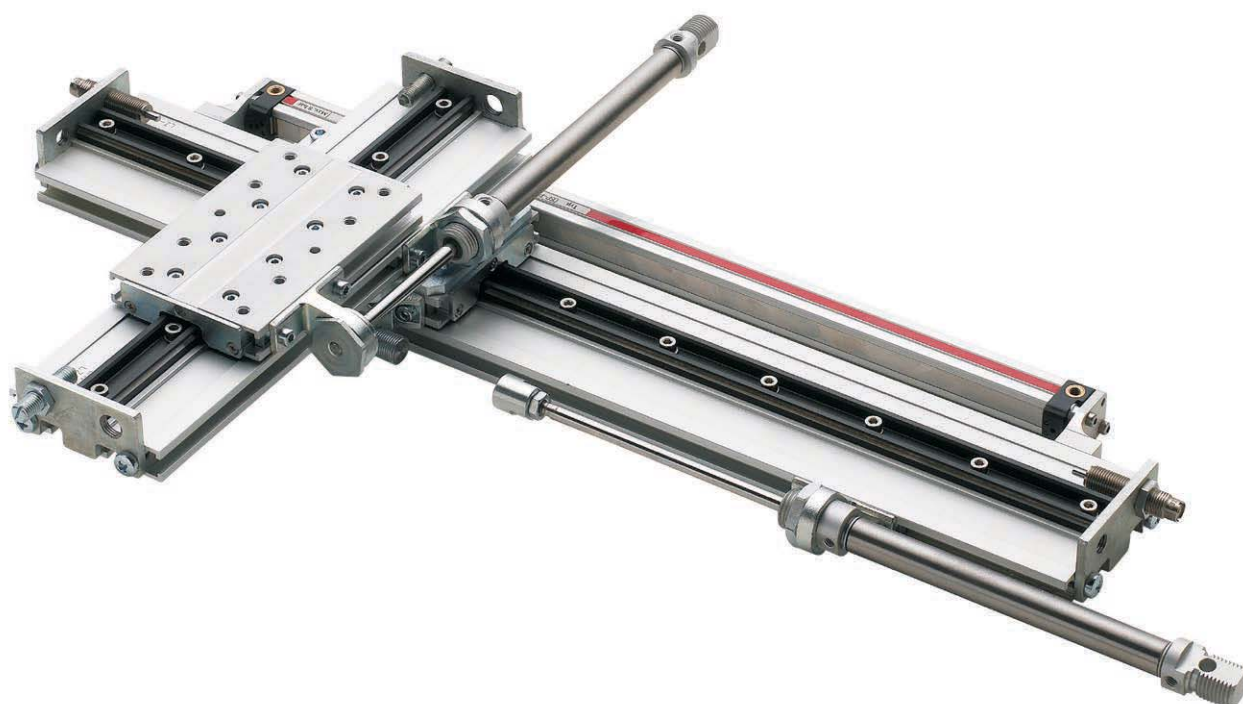
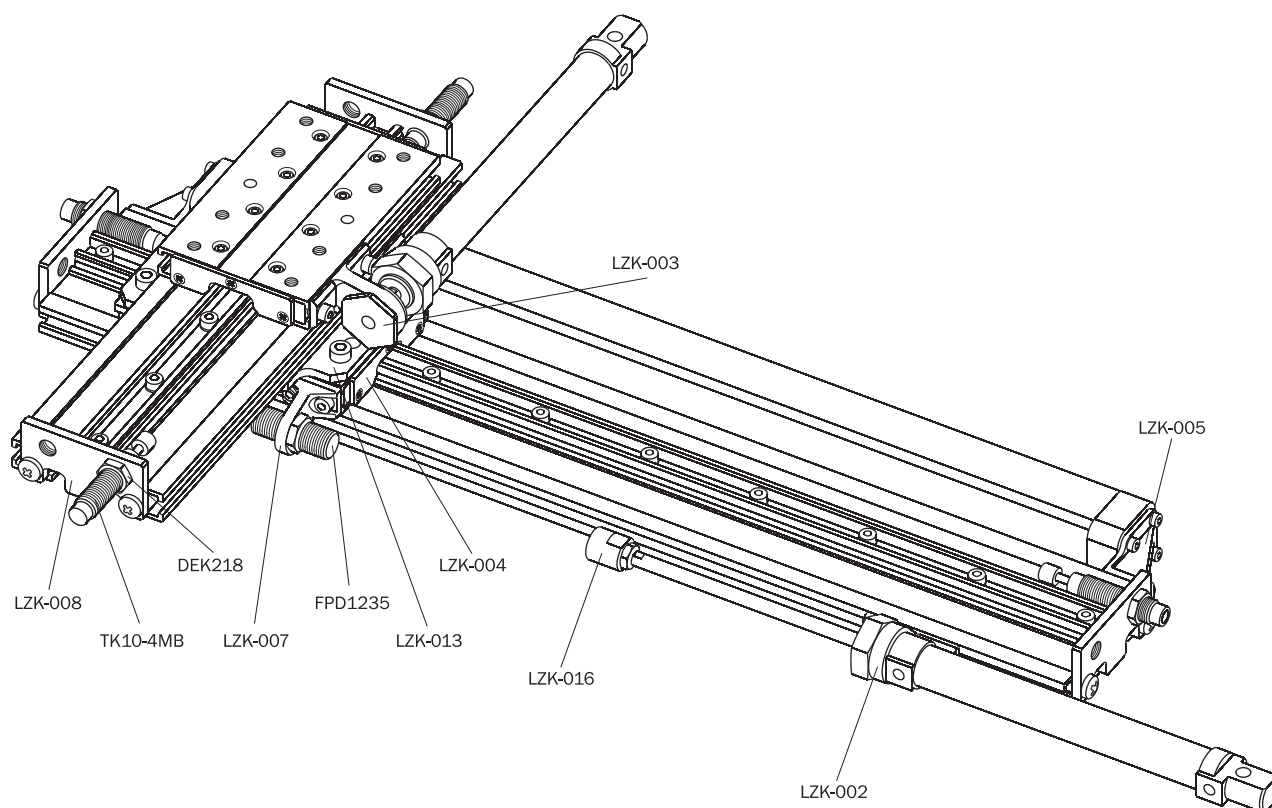
Manipolatore a due assi, tipo Pick & Place.
Il carrello dell'asse Z è unito alla rotaia dell'asse Y, con il kit LZK-013-2.

Application example

Pick & Place two-axis manipulator.
The carrier of the Z axis is connected to the rail of the Y axis, by the LZK-013-2 mounting kit.



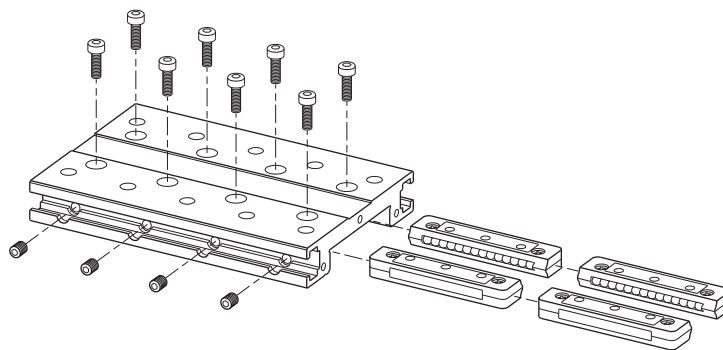
Kit opzionali / Optional kits



LZK-001

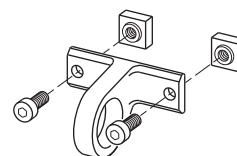
(220 g)

Carrello
Carrier

**LZK-002**

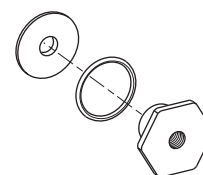
(45 g)

Anello di fissaggio per cilindri Ø12 e Ø16 ISO 6432
Cylinder holder for ISO 6432 cylinders Ø12 and Ø16

**LZK-003**

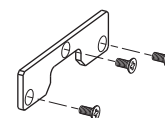
(25 g)

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

**LZK-004**

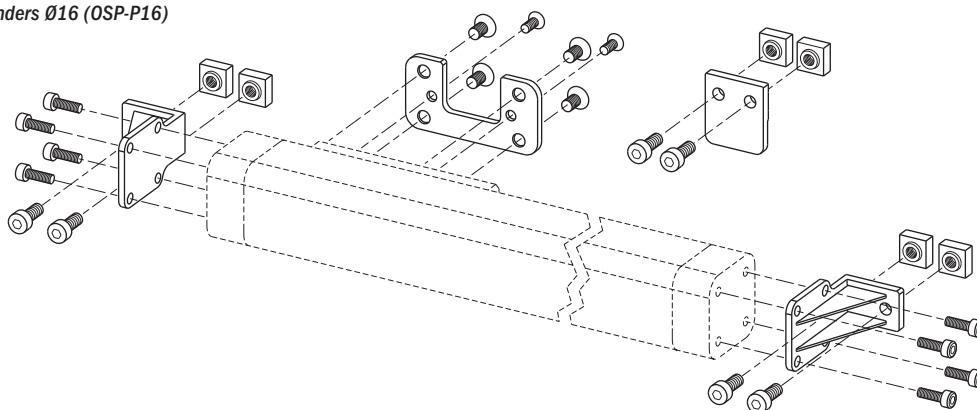
(15 g)

Protezione in acciaio
Steel plate

**LZK-005**

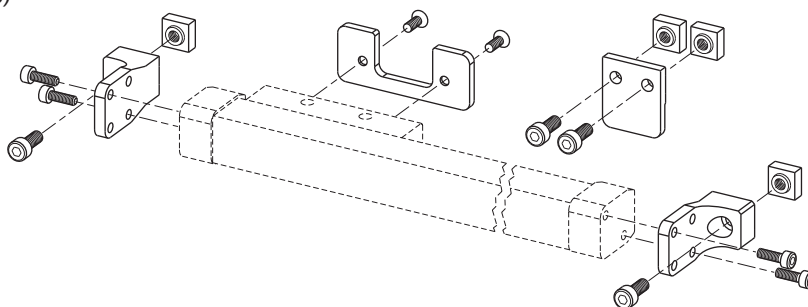
(135 g)

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

**LZK-006**

(70 g)

Kit di fissaggio cilindro senza stelo Origa Ø10 (OSP-P10)
Fastening kit for Origa rodless cylinders Ø10 (OSP-P10)

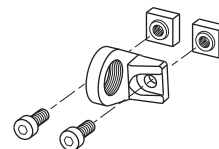


LZK-007

(40 g)

Staffa filettata M12x1 per il fissaggio laterale di deceleratori o grani di fermo per cilindri ISO 6432

Threaded bracket (M12x1) for the side fastening of shock absorbers or end stroke grub screws for cylinders ISO 6432

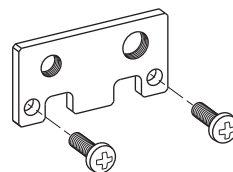


LZK-008

(50 g)

Testata

End plate

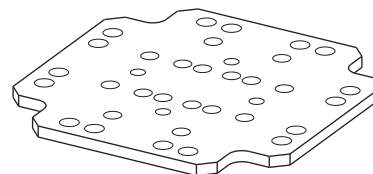


LZK-013

(290 g)

Interfaccia di montaggio

Mounting interface plate

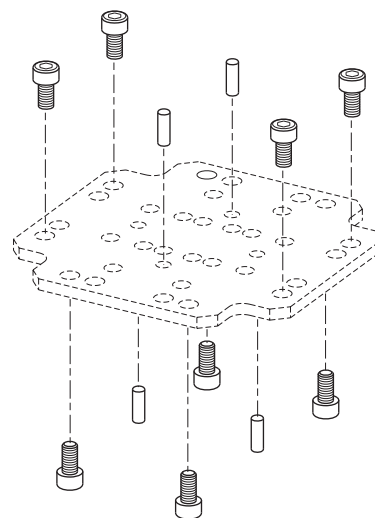


LZK-013-01

(30 g)

Kit per il fissaggio carrello-carrello

Mounting kit carrier to carrier

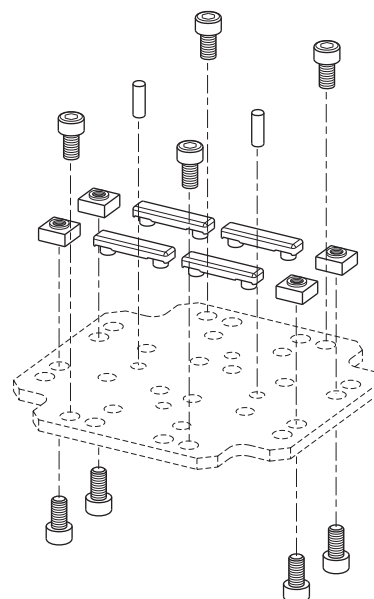


LZK-013-02

(50 g)

Kit per il fissaggio carrello-rotaia

Mounting kit carrier to rail

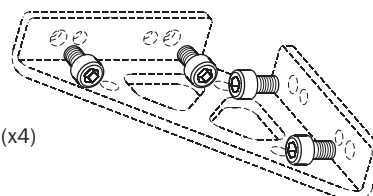


FTK30

(25 g)

Kit viti per LLK-021

Screw kit for LLK-021

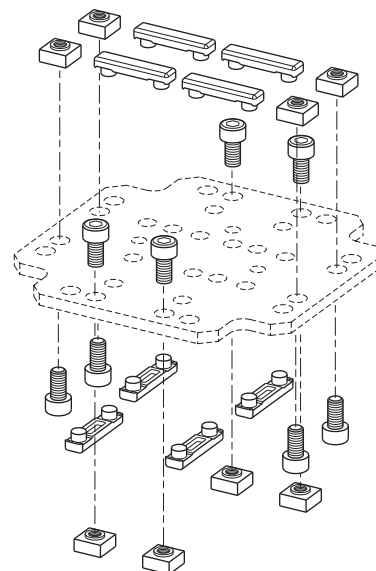


M5x12mm DIN912 INOX (x4)

LZK-013-03 (65 g)

Kit per il fissaggio rotaia-rotaia

Mounting kit rail to rail

**LZK-016** (20 g)

Terminale per cilindro M6 (1 pezzo)

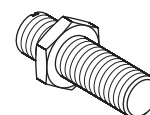
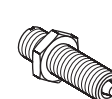
End block for cylinder rod (1 piece)

**FGD/FPD**

Fine corsa

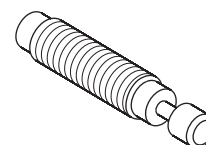
End stroke

FGD0830	M8x1	L=30 mm
FGD1030	M10x1	L=30 mm
FGD1235	M12x1	L=35 mm
FPD0830	M8x1	L=30 mm
FPD1030	M10x1	L=30 mm
FPD1235	M12x1	L=35 mm

FPD**FGD****TK10-4MB** (16 g)

Deceleratore idraulico (M10x1)

Shock-absorber (M10x1)

**MFM**

Dado (1 pezzo)

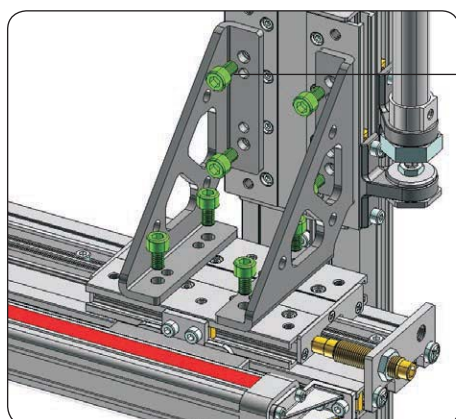
Nut (1 piece)

MFM-059	M5
MFM-070	M4

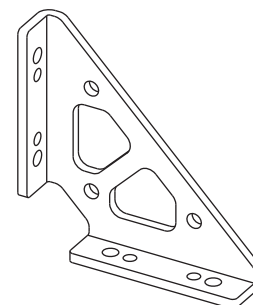
**LLK-021** (170 g)

Squadra di fissaggio 90°

90° mounting bracket

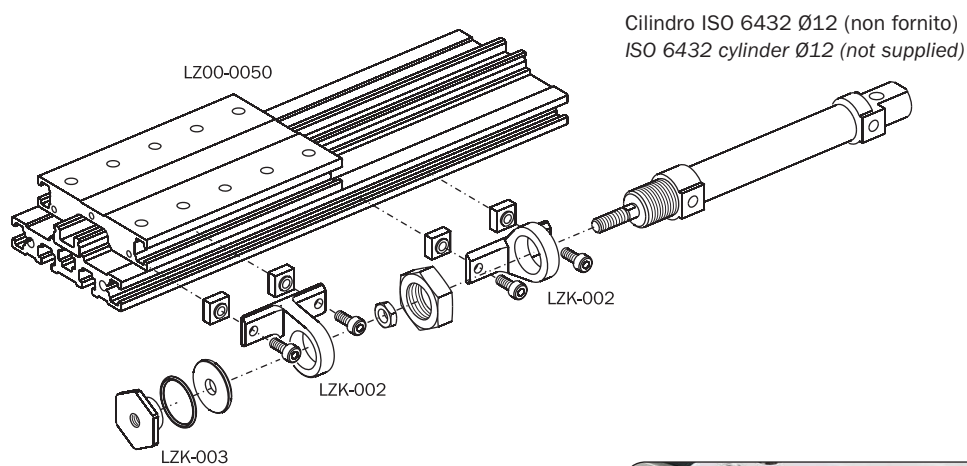
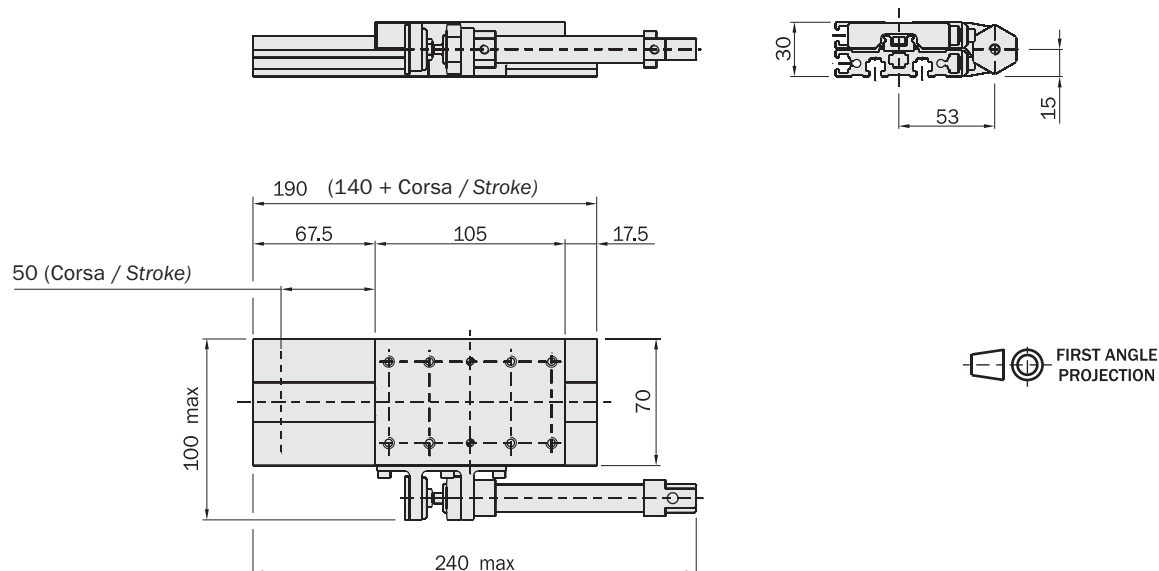


M5x12 mm DIN 912 INOX



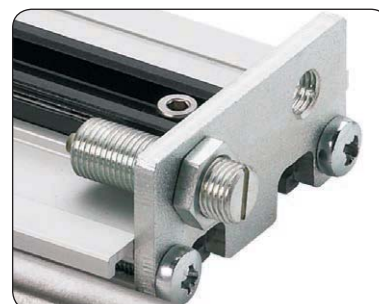
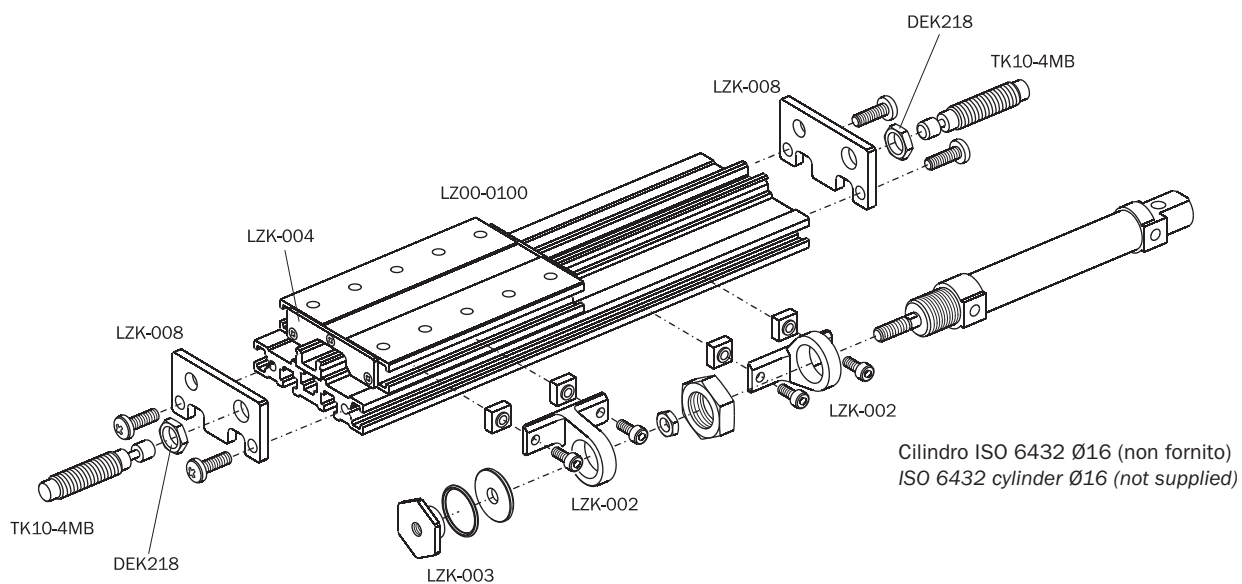
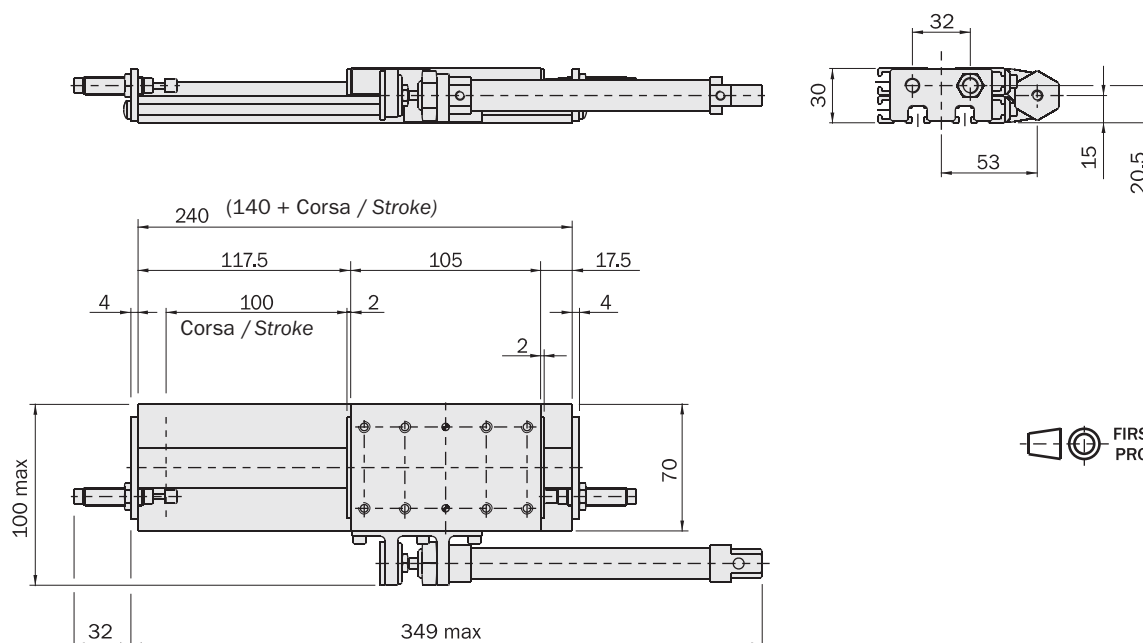
Esempio: Slitta di alesaggio 12mm (cilindro ISO 6432) e corsa 50mm.

Example: Slide with 12mm piston bore (ISO 6432) and 50mm stroke.



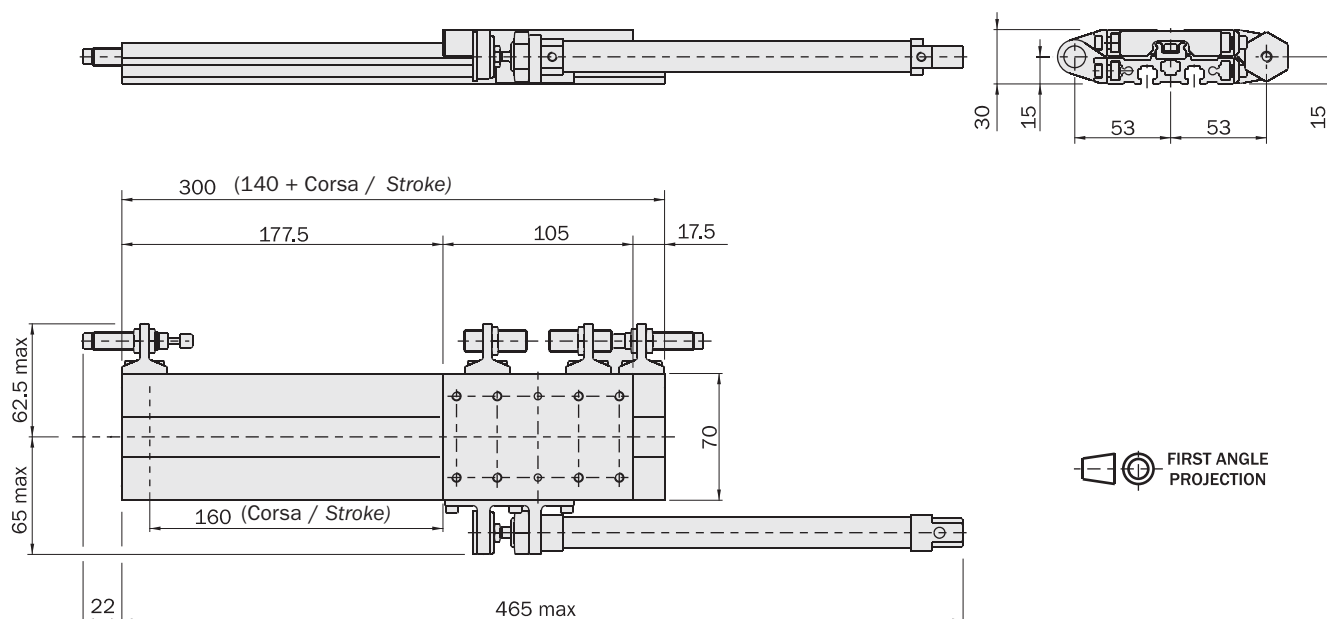
Esempio: Slitta di alesaggio 16mm (cilindro ISO 6432) e corsa 100mm, con deceleratori idraulici sulle testate.

Example: Slide with 16mm piston bore (ISO 6432) and 100mm stroke, with hydraulic shock-absorbers on the end plates.

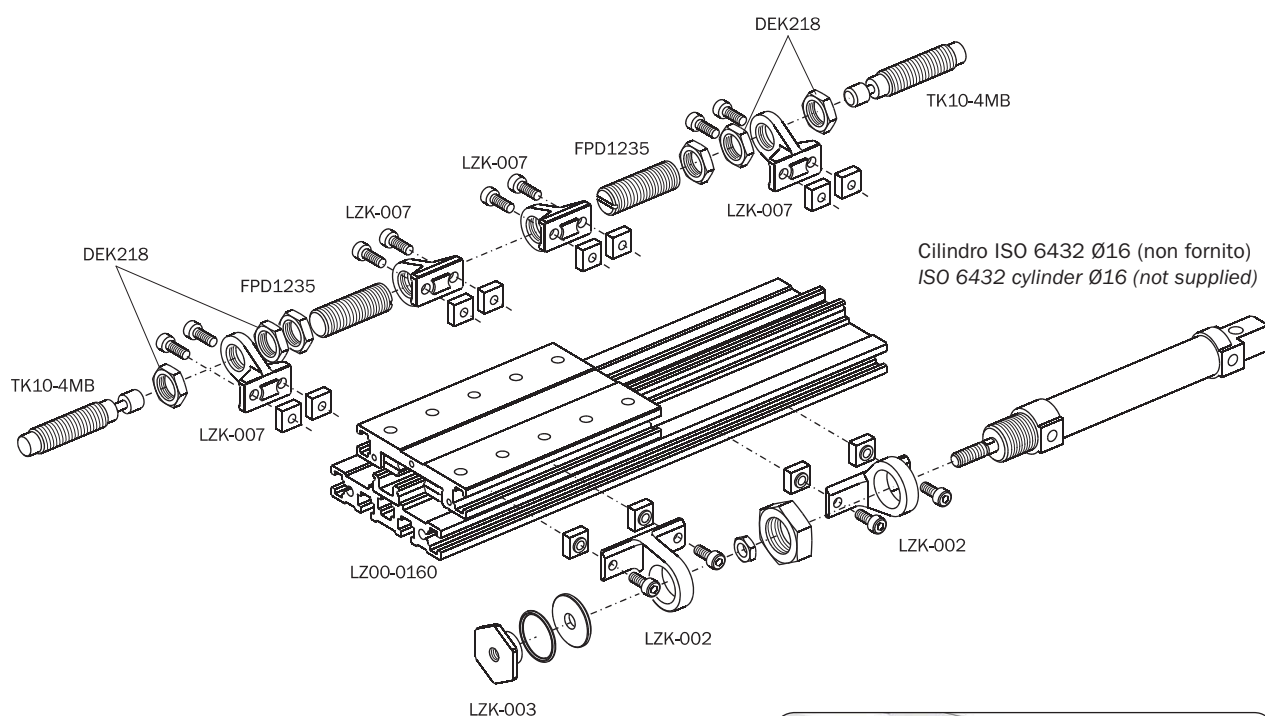


Esempio: Slitta di alesaggio 16mm (cilindro ISO 6432) e corsa 160mm, con deceleratori idraulici sul fianco.

Example: Slide with 16mm piston bore (ISO 6432) and 160mm stroke, with hydraulic shock-absorbers on one side.

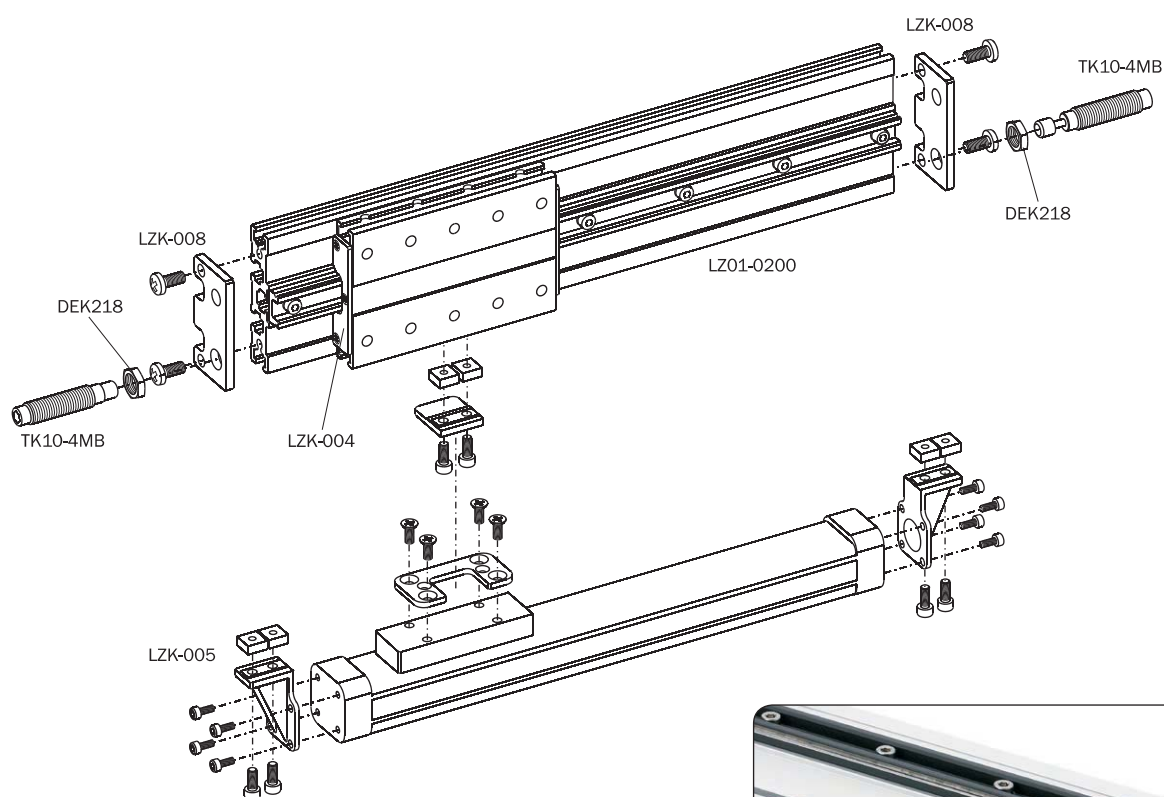
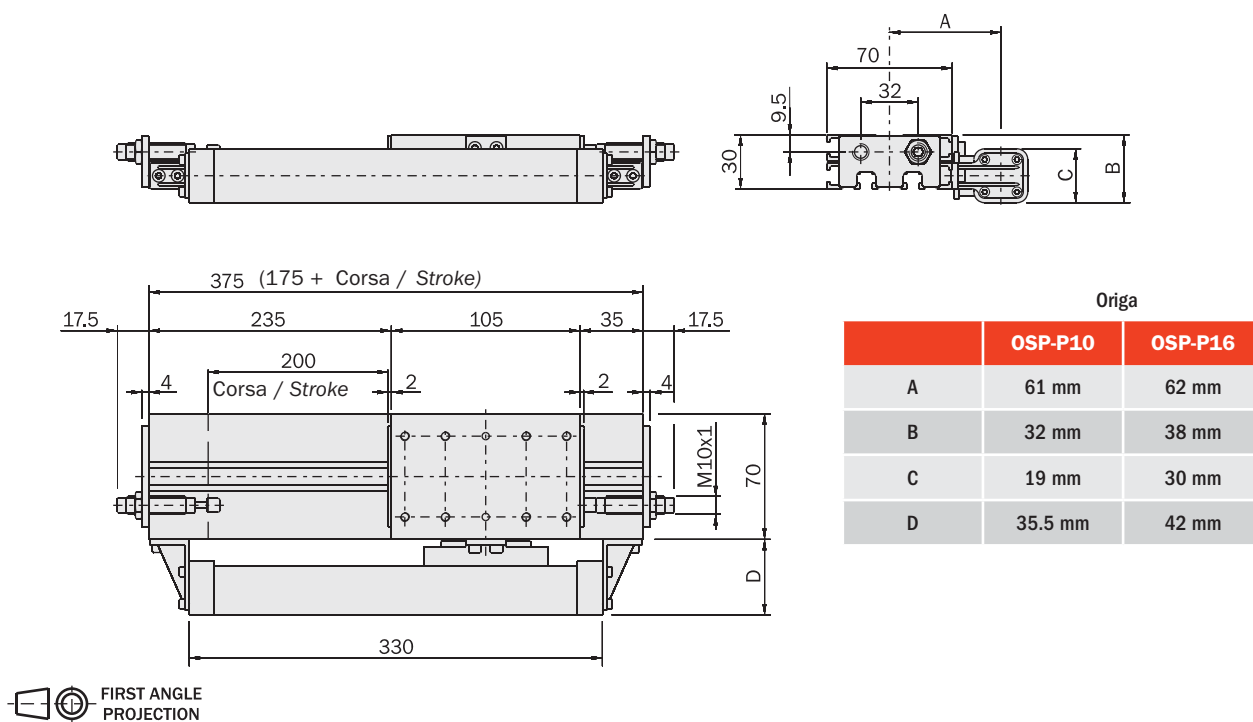


FIRST ANGLE PROJECTION



Esempio: Slitta pneumatica azionata da cilindro senza stelo, con deceleratori idraulici sulle testate.

Example: Pneumatic slide powered by a rodless cylinder, with hydraulic shock-absorbers on the end plates.



Cilindro senza stelo Origa Ø16 (non fornito)
Rodless cylinder Origa Ø16 (not supplied)

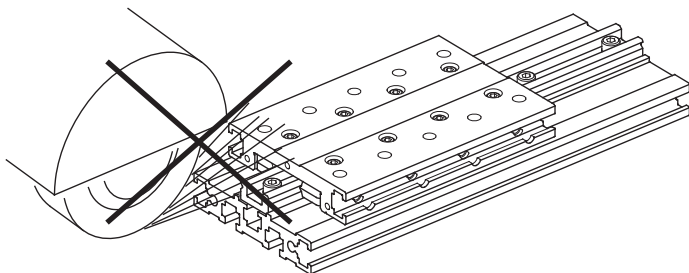


Avvertenze

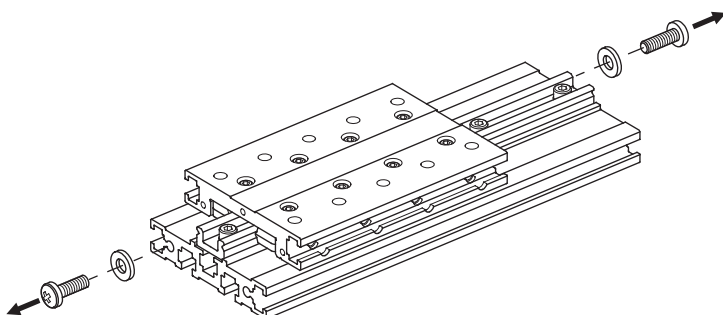
Evitare il contatto con sostanze corrosive, spruzzi di saldatura, polveri abrasive, che potrebbero danneggiare la funzionalità della slitta.

Per nessun motivo, persone od oggetti estranei devono entrare nel raggio d'azione della slitta.

La slitta non deve essere messa in servizio prima che la macchina di cui fa parte sia stata dichiarata conforme alle disposizioni di sicurezza vigenti.



Rimuovere le viti di sicurezza solo prima della messa in funzione: servono ad evitare la fuoriuscita del carrello. Le altre viti, indicate in figura, servono per la registrazione dei cuscinetti a ricircolo di sfere: non devono essere avvitate o svitare.



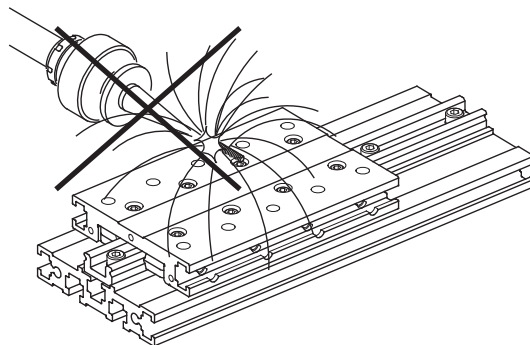
Tenere pulita la guida di scorrimento dei cuscinetti. Controllarla periodicamente e lubrificarla quando appare secca. L'apposito grasso è disponibile in tubetti da 90 grammi. Codice di ordinazione: GLP500-90.

Cautions

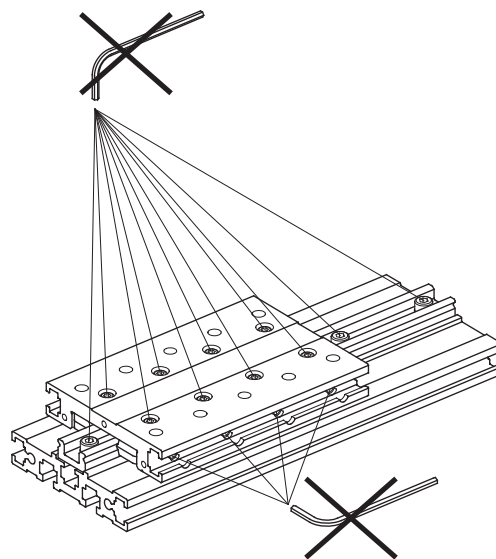
Never let the slide come into contact with corrosive substances, soldering splashes or abrasive powders as they may damage the slide.

Never let personnel or objects stand within the operating range of the unit.

Never operate the slide if the machine on which it is fitted does not comply with safety laws and standards of your country.



The safety screws should be removed only before operating the slide: they are necessary to prevent the carriage from falling over. The other screws, shown in the picture, must not be fastened or unfastened: they are used to adjust the recirculating ball bearing.



Keep clean the bearing guideway. Periodically check it and lubricate when dry. The suitable grease is available in 90 grams tubes. Ordering code: GLP500-90.

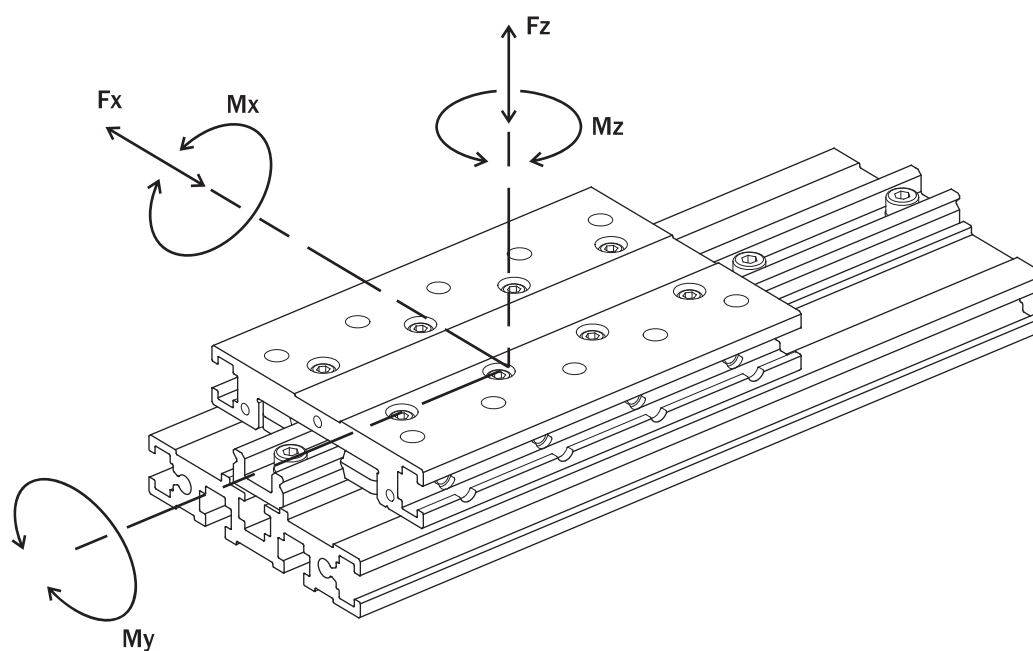


Carichi di sicurezza

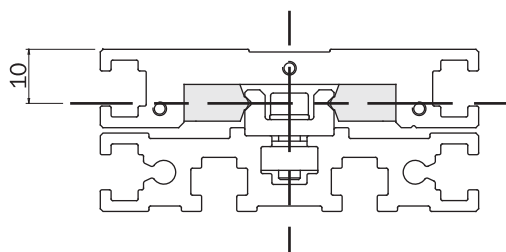
Carichi eccessivi possono danneggiare l'unità, causare difficoltà di funzionamento e compromettere la sicurezza dell'operatore. Verificare che l'indice di carico LF sia inferiore all'unità.

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.

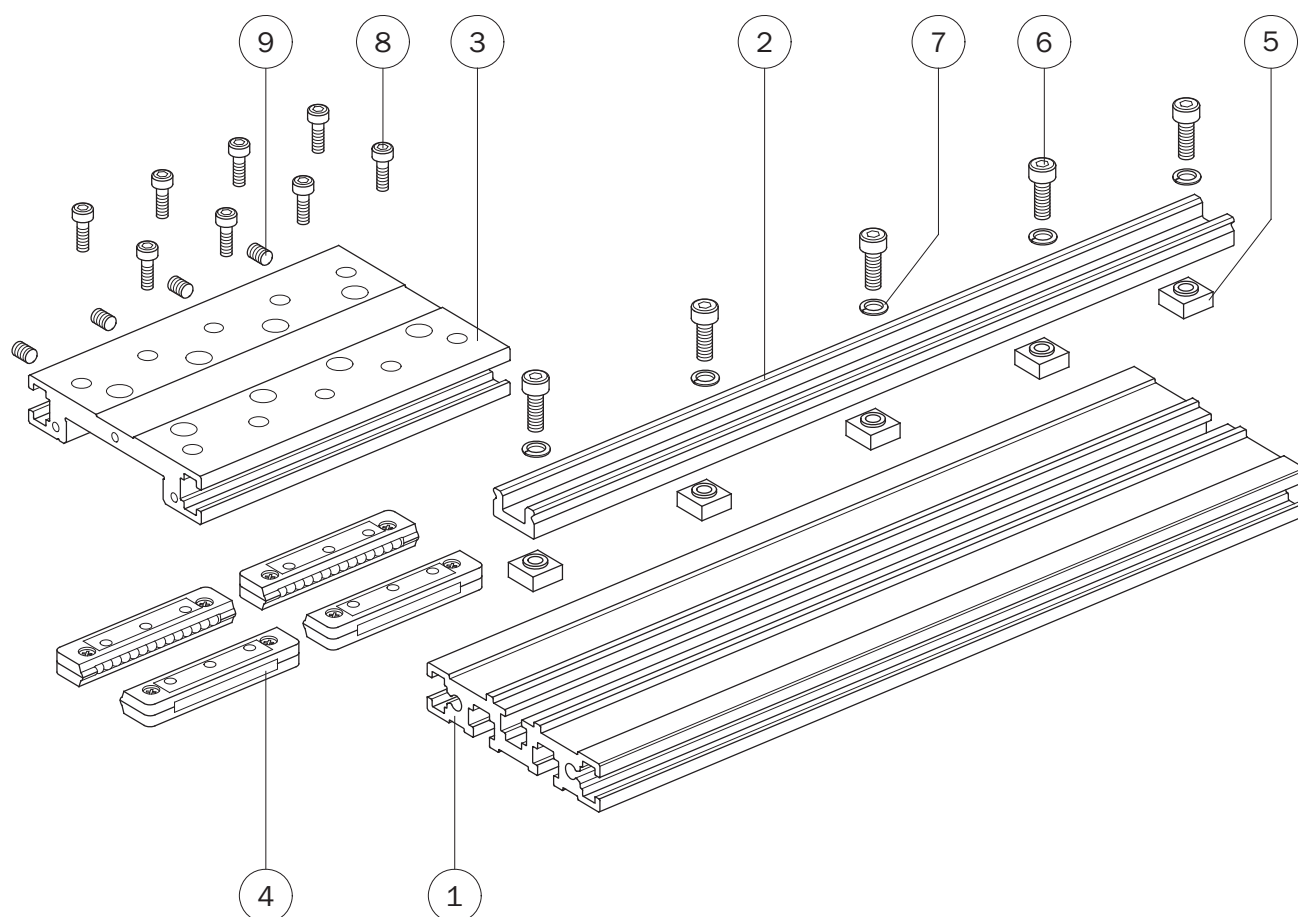


$$LF = \frac{F_x}{F_{x \max}} + \frac{F_z}{F_{z \max}} + \frac{M_x}{M_{x \max}} + \frac{M_y}{M_{y \max}} + \frac{M_z}{M_{z \max}} \leq 1$$



	max
F _x	100 N
F _z	100 N
M _x	10 Nm
M _y	5 Nm
M _z	10 Nm

Elenco delle parti / Part list



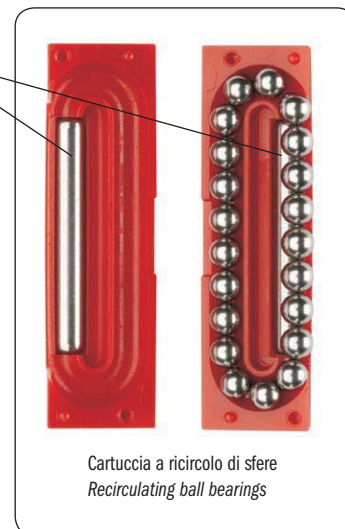
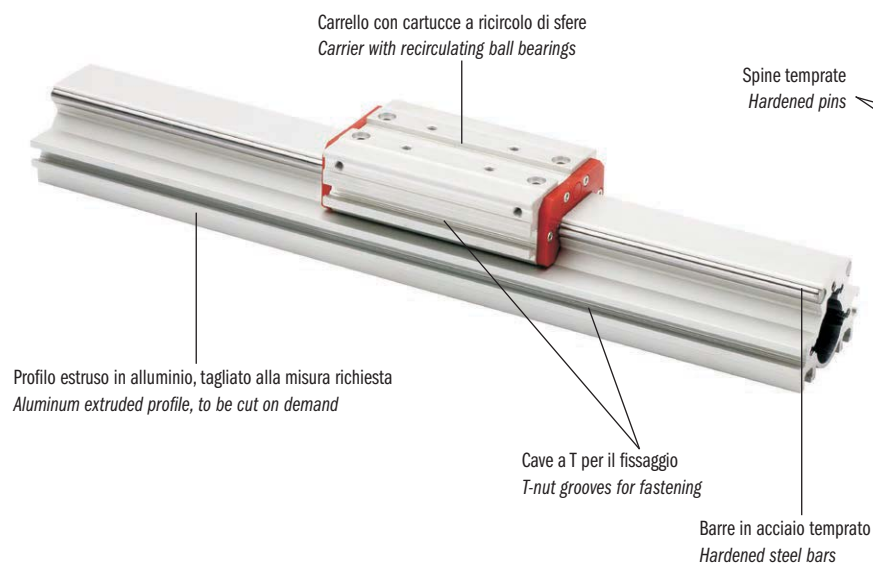
		LZ		
1	Profilo in alluminio	ESTR-LZ...	Alu profile	1
2	Guida	TRAF-LZ...	Guideway	2
3	Carrello	LZ12-03	Carrier	3
4	Cartuccia ricircolo di sfere	CZ334	Ball bushing	4
5	Dado	MFM-070	Nut	5
6	Vite	VITE-029 (M4x12mm DIN 912)	Screw	6
7	Rosetta elastica	VITE-220 (4.3 UNI 1751-B)	Elastic washer	7
8	Vite	VITE-302 (M3x10mm DIN 912)	Screw	8
9	Grano	VITE-273 (M4x5mm DIN 913)	Grub screw	9

Note / Notes

Handwriting practice area with horizontal lines.

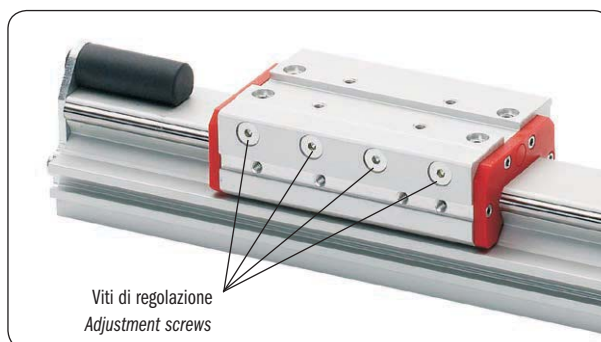
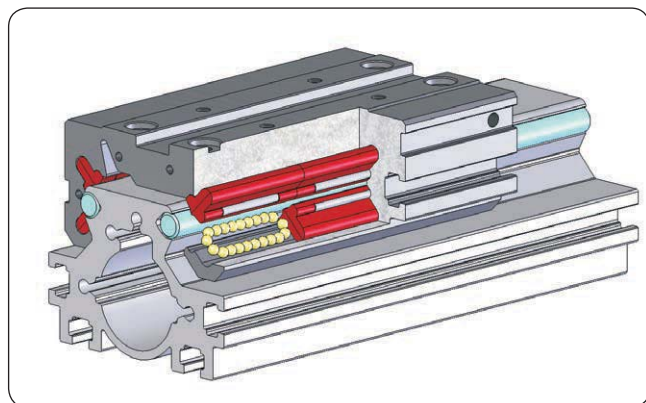
Guide lineari a ricircolo di sfere (serie LP)

- 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

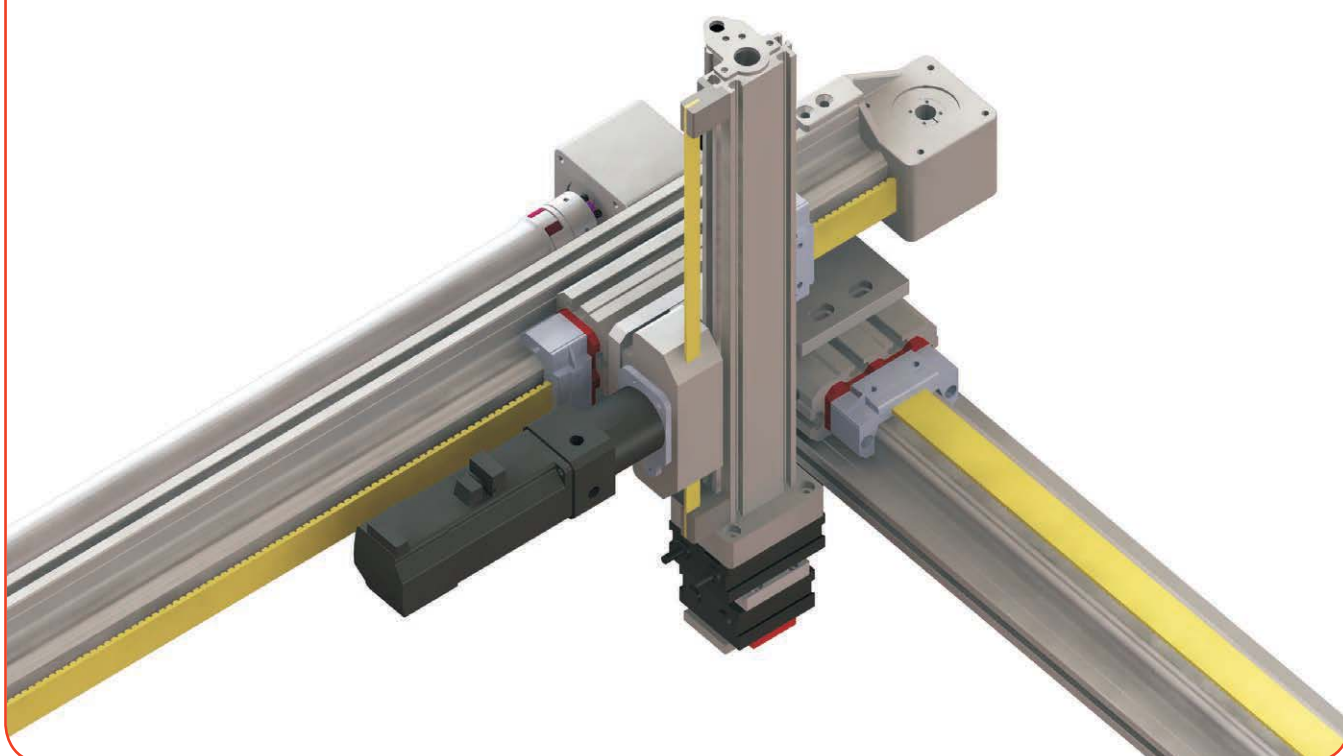
Y-Z Pick & Place manipulator, powered by linear motors.

**Esempio di applicazione**

Asse verticale in manipolatore a portale.

Application example

Vertical axis in gantry manipulator.

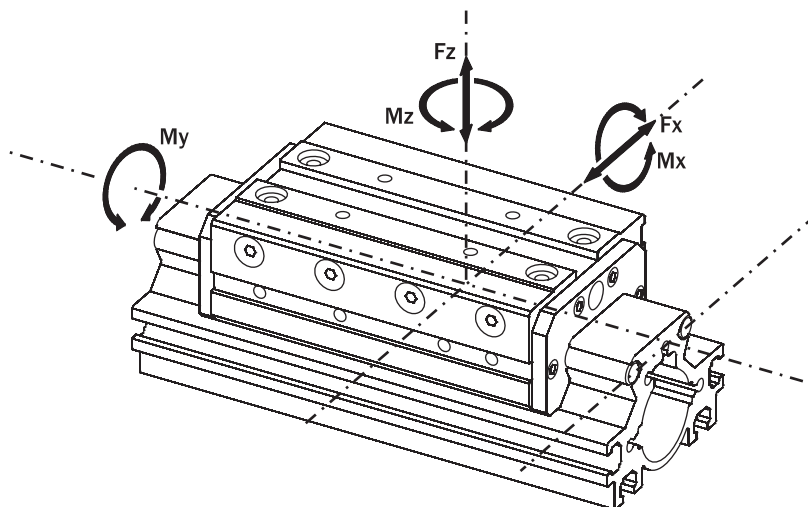


Carichi di sicurezza

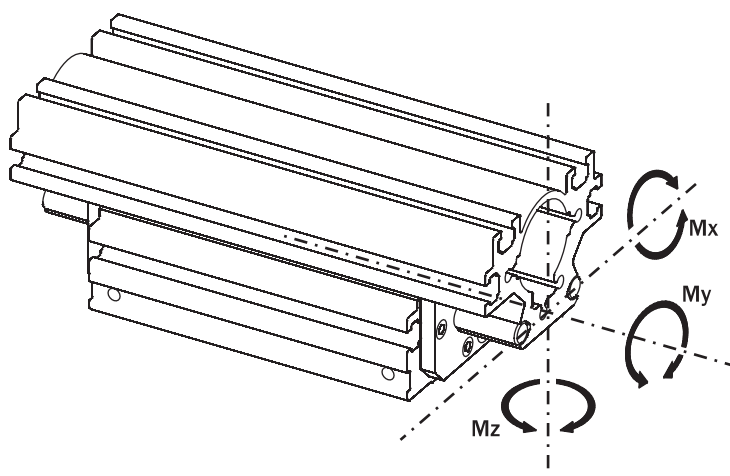
Carichi eccessivi possono danneggiare l'unità, causare difficoltà di funzionamento e compromettere la sicurezza dell'operatore. Verificare che l'indice di carico LF sia inferiore all'unità.

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.



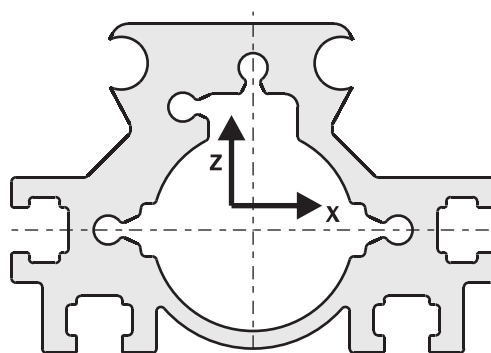
$$LF = \frac{F_x}{F_{x \max}} + \frac{F_z}{F_{z \max}} + \frac{M_x}{M_{x \max}} + \frac{M_y}{M_{y \max}} + \frac{M_z}{M_{z \max}} \leq 1$$



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

Momenti d'inerzia del profilo estruso in alluminio

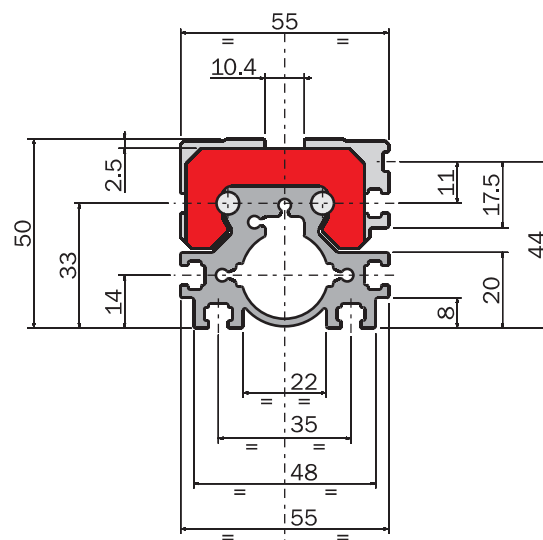
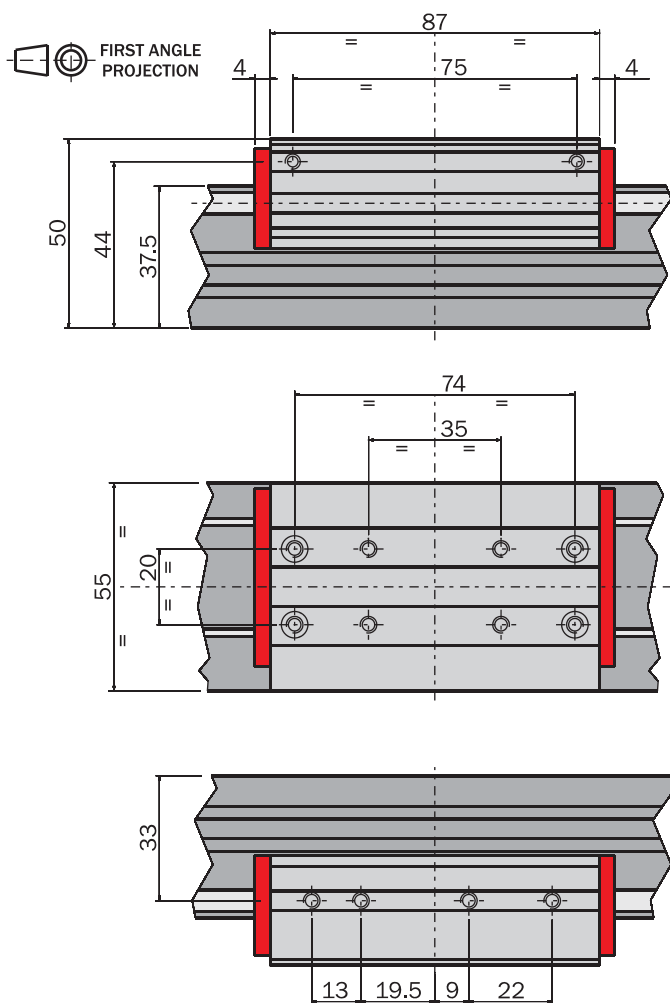
Area moment of inertia for the extruded aluminum profile



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

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

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

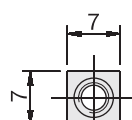
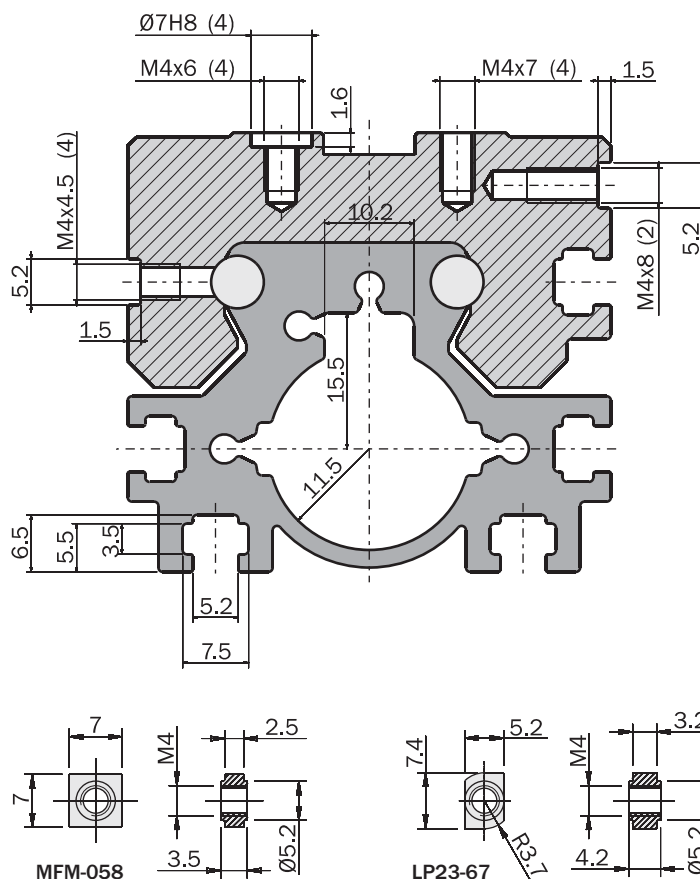
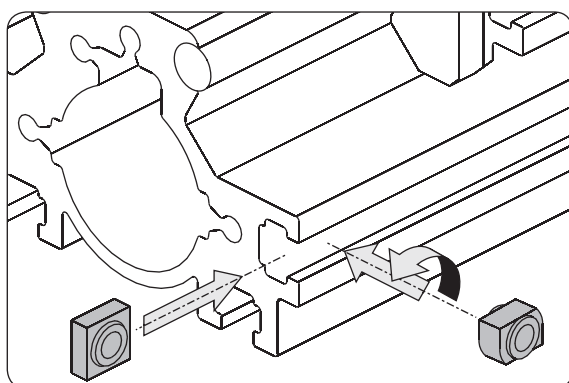
The weight of the carrier is 0.22 kg .
The weight of the guide (alu profile plus steel bars) is 2.28 kg/m .

Cave per dadi a "T"

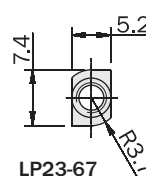
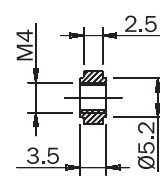
Tutte le cave hanno le stesse dimensioni.
Ci si possono montare due tipi di dadi a T.

T-nut grooves

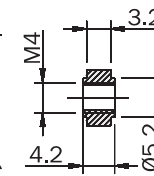
All grooves have the same size.
Two T-nut types can be used.



MFM-058



LP23-67



Codice di ordinazione / Ordering code

LP

X	X
---	---

 -

X	X	X	X
---	---	---	---

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



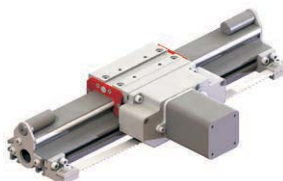
Per cilindro senza stelo Festo DGC-K-18 e per motori
lineari LinMot
For Festo DGC-K-18 rodless cylinder

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.

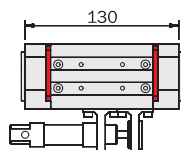
Consult factory for special lengths.

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

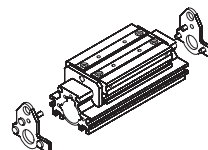
The parts supplied with the ordering codes are here highlighted.

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

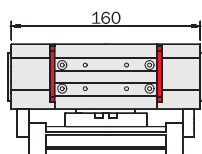
LP00



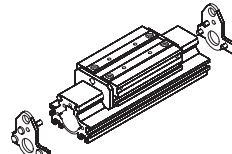
575g + 2.28 g/mm



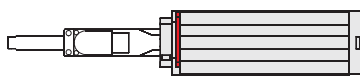
LP01



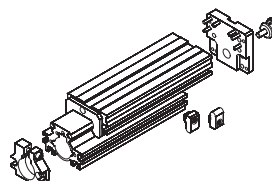
640g + 2.28 g/mm



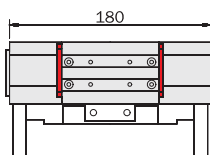
LP02-0050
LP02-0100



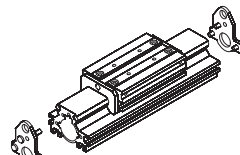
800g
1000g



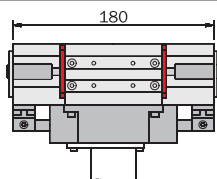
LP03



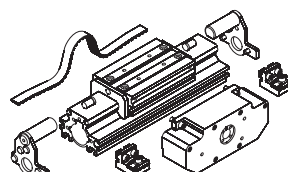
685g + 2.28 g/mm



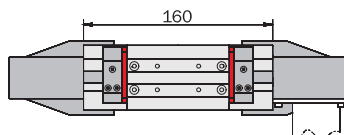
LP06



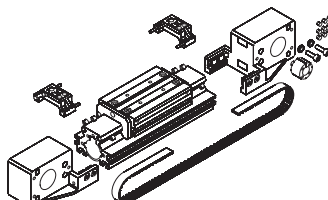
1300g + 2.3 g/mm



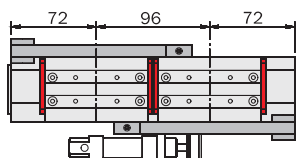
LP07



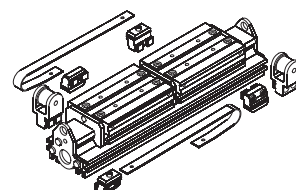
1470g + 2.33 g/mm



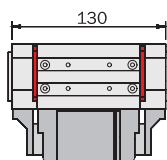
LP08



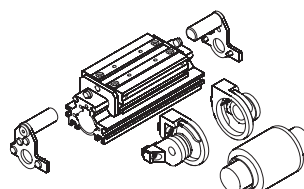
940g + 2.34 g/mm



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.

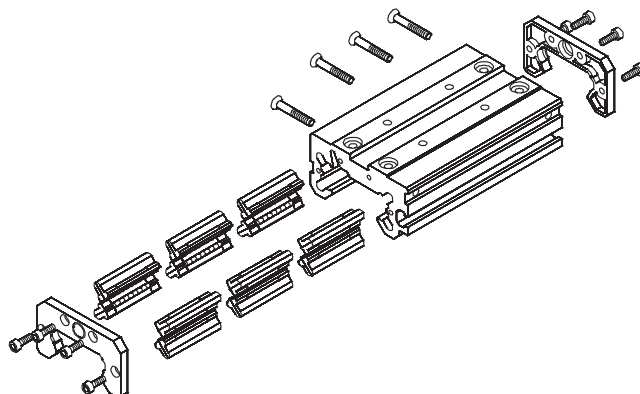
There are also several optional interfaces and kits with the brackets to mount the cylinders, the end stroke stoppers, the shock-absorbers and the sensors. They are sold in single packages, not assembled with the guide. The cylinders, the motors and gear reducers are not supplied.

Kit opzionali / Optional kits

LPK-001

(220 g)

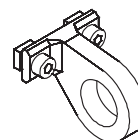
Carrello supplementare (montato da Gimatic su una guida LP)
Additional carrier (mounted on a LP guide by Gimatic)



LPK-002

(40 g)

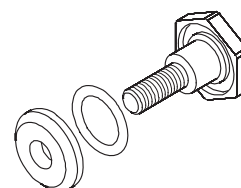
Anello per fissaggio cilindro Ø12 / Ø16
Cylinder holder Ø12 / Ø16



LPK-003

(15 g)

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



LPK-004

(2 g)

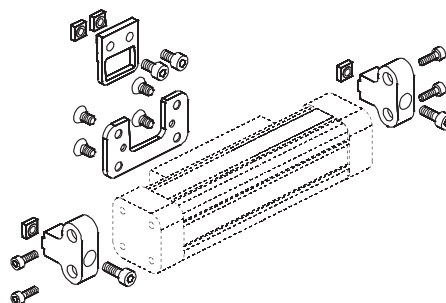
Riscontro corto per deceleratore (per LP00 e LP10)
Shock-absorber short stopper (for LP00 and LP10)



LPK-005

(65 g)

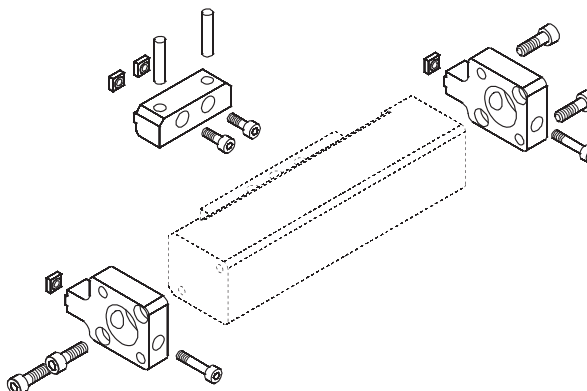
Kit fissaggio cilindro senza stelo Origa Ø16 (OSP-P16)
Fastening kit for Origa rodless cylinder Ø16 (OSP-P16)



LPK-006

(95 g)

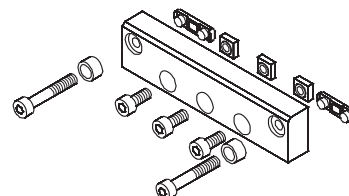
Kit fissaggio cilindro senza stelo Festo Ø18 (DGC-K-18)
Fastening kit for Festo rodless cylinder Ø18 (DGC-K-18)



LPK-012

(60 g)

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

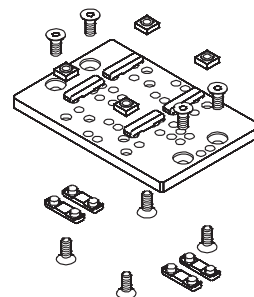


Kit opzionali / Optional kits

LPK-013

(75 g)

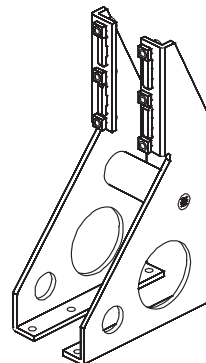
Interfaccia di montaggio per il carrello
Mounting interface plate for the carrier



LPK-021

(530 g)

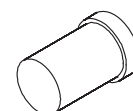
Kit per fissaggio verticale LP02
Vertical mounting kit for LP02



LPK-027

(4 g)

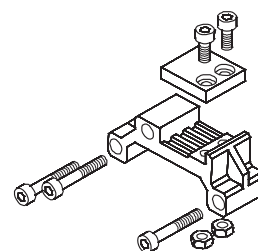
Riscontro lungo per deceleratore (per LP01 e LP03)
Shock-absorber long stopper (for LP01 and LP03)



LPK-032

(40 g)

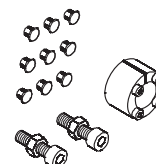
Blocca cinghia per trasmissione a cinghia
Belt clamp for belt drive



LPK-033

(25 g)

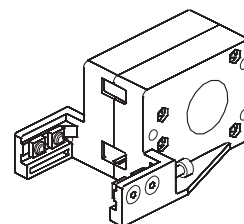
Calettatore, tensionatore e tappi per LP07
Locking assembly, belt tensioner and plugs for LP07



LPK-034

(370 g)

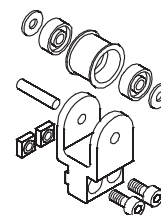
Puleggia per trasmissione a cinghia
Pulley for belt drive



LPK-035

(30 g)

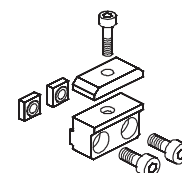
Rinvio per autocentraggio pinza
Transmission wheel for self-centering gripper



LPK-036

(15 g)

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

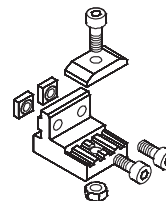


Kit opzionali / *Optional kits*

LPK-037

(35 g)

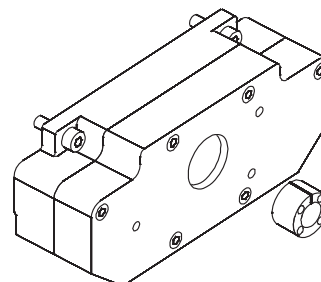
Staffa bloccaggio cinghia dentata sistema Omega
Clamping bracket for Omega system belt



LPK-038

(530 g)

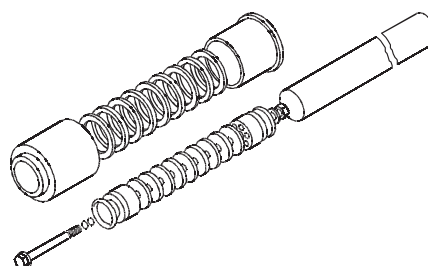
Gruppo pulegge per trasmissione a omega
Pulleys assembly for omega transmission



LPK-039

(300 g)

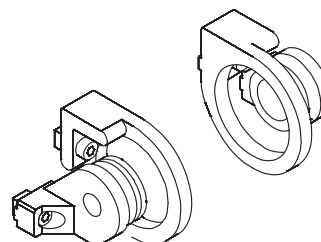
Pistone per cilindro senza stelo a trascinamento magnetico
Piston for magnetically coupled rodless cylinder



LPK-040

(210 g)

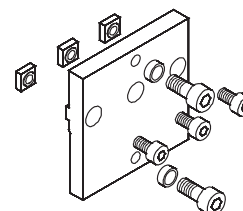
Kit di fissaggio per cilindro senza stelo a trascinamento magnetico LPK-039
Fastening kit for magnetically coupled rodless cylinder LPK-039



LPK-045

(50 g)

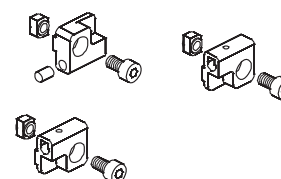
Piastra di interfaccia per flangia LinMot PF02-23
Interface plate for LinMot flange PF02-23



LPK-046

(10 g)

Staffe per sensori
Sensor brackets



LP23-67

(1 g)

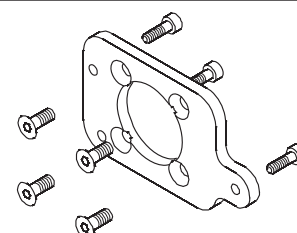
Dado ad innesto M4 per cava 5 (1 pezzo)
M4 rhombus T-nut for slot 5 (1 piece)



LPK-048

(60 g)

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

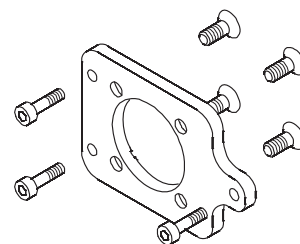


Kit opzionali / Optional kits

LPK-049

(50 g)

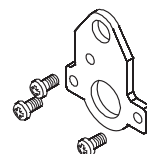
Interfaccia per riduttore epicicloidale per alberi Ø10 (LP07)
Adapter plate for planetary gear for shafts Ø10 (LP07)



LPK-050

(25 g)

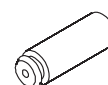
Testata
End plate



LPK-051

(6 g)

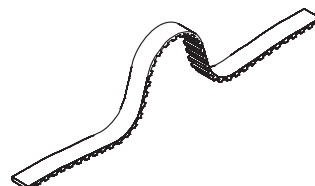
Ammortizzatore in gomma
Rubber stopper



LP23-53

(21 g/m)

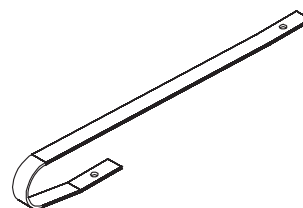
Cinghia dentata per LP06 e LP07
Timing belt for LP06 and LP07



LP23-54

(20 g/m)

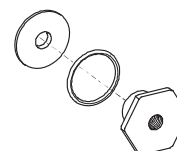
Cinghia piana per LP08 e LL08
Flat belt for LP08 and LL08



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)

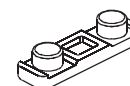
Dado (1 pezzo)
T-nut (1 piece)



MFP-A19

(4 g)

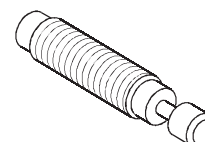
Linguette di centraggio piate (10 pezzi)
Flat centering feather keys (10 pieces)



TK10-4MB

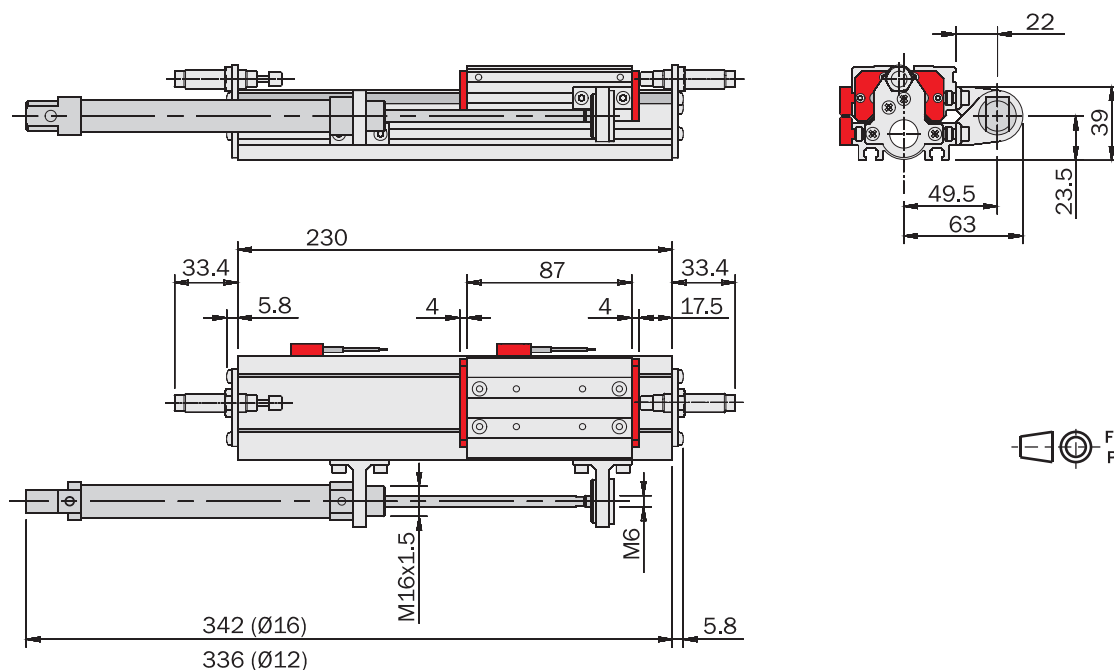
(16 g)

Deceleratore idraulico (M10x1)
Shock-absorber (M10x1)

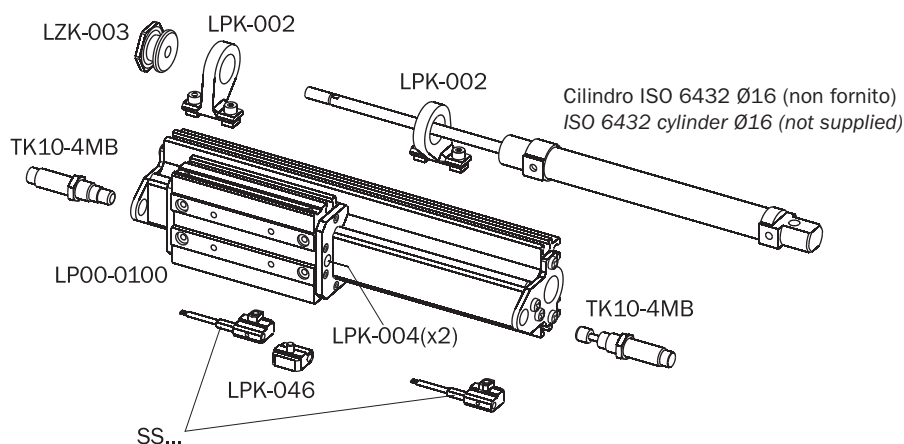


Esempio: Slitta di alesaggio 16mm (cilindro ISO 6432), corsa 100mm, con deceleratori idraulici e sensori

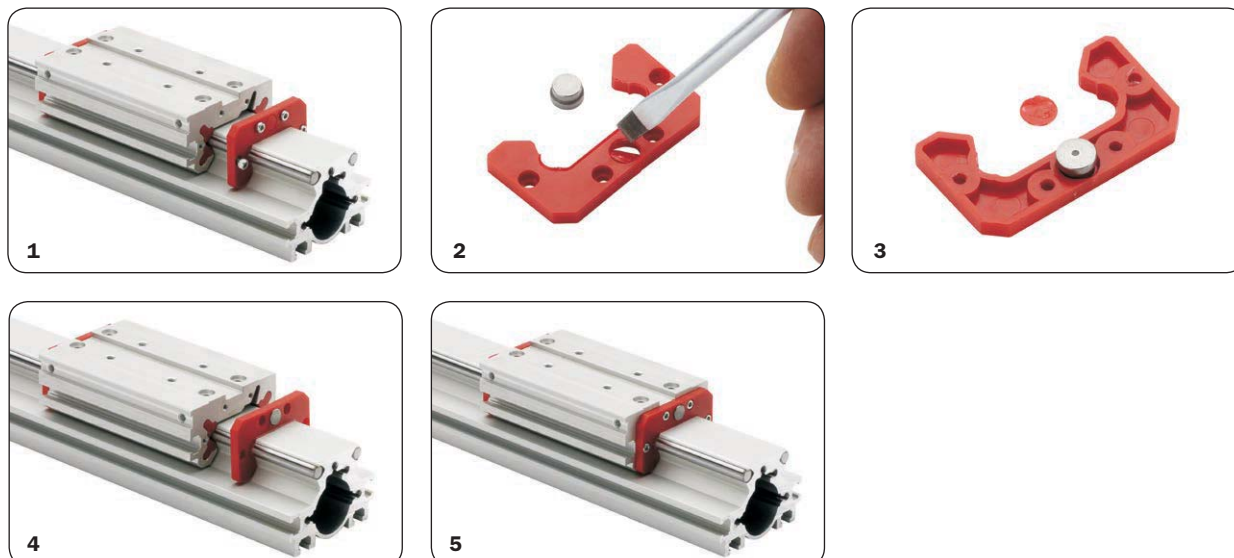
Example: Slide with 16mm piston bore (ISO 6432), 100mm stroke, with hydraulic shock-absorbers and sensors



FIRST ANGLE PROJECTION

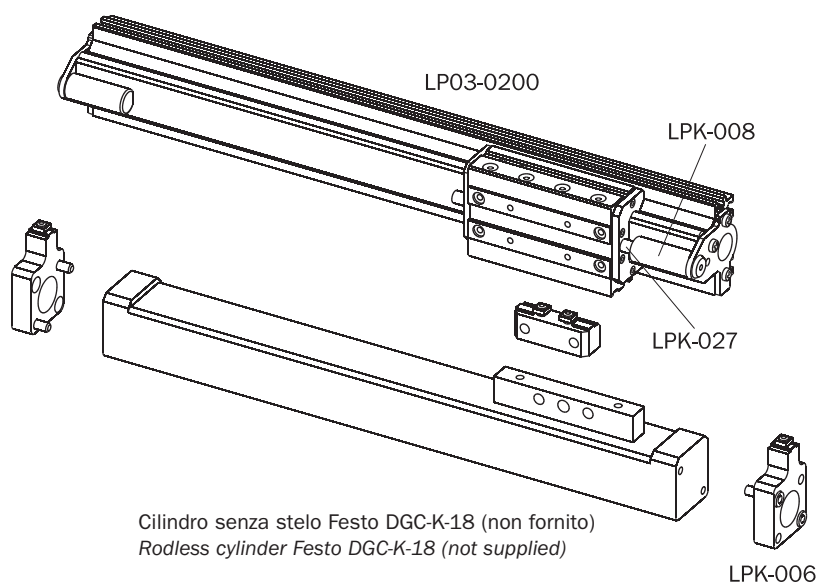
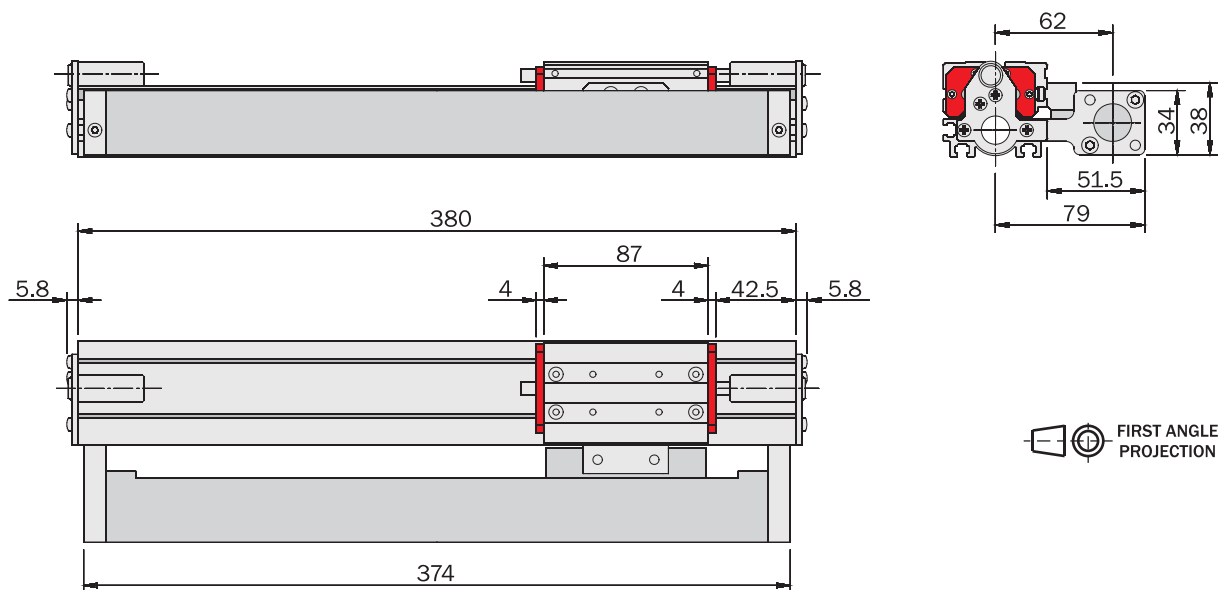


Montaggio LPK-004 e LPK-027 / LPK-004 and LPK-027 mounting



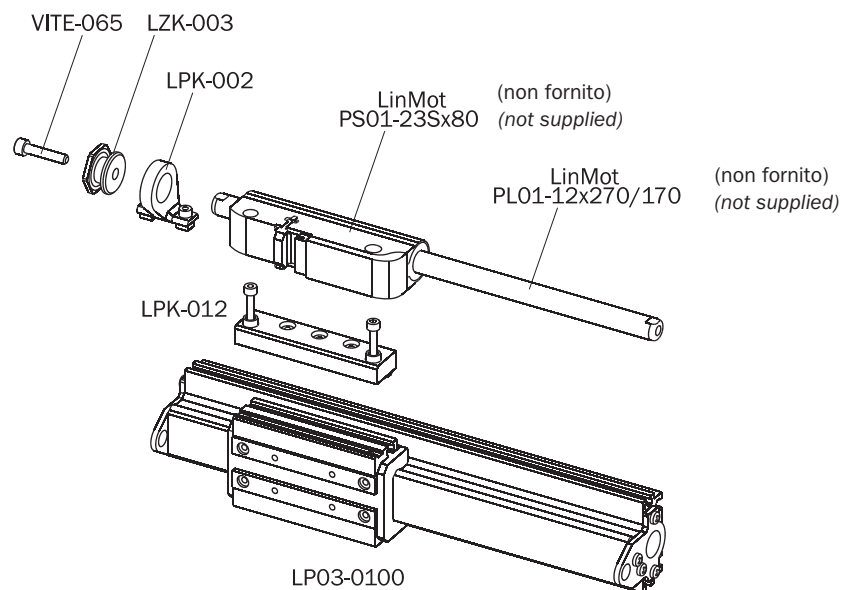
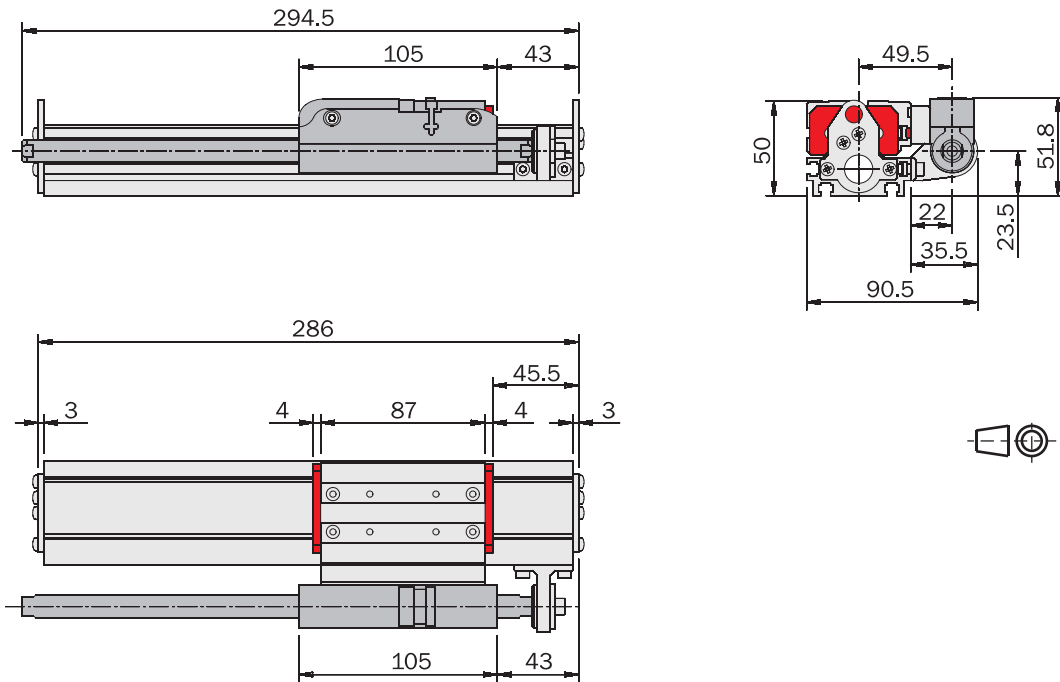
Esempio: Slitta di alesaggio 18mm, corsa 200mm, con fine-corsa d'emergenza in gomma, movimentata da cilindro senza stelo Festo

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



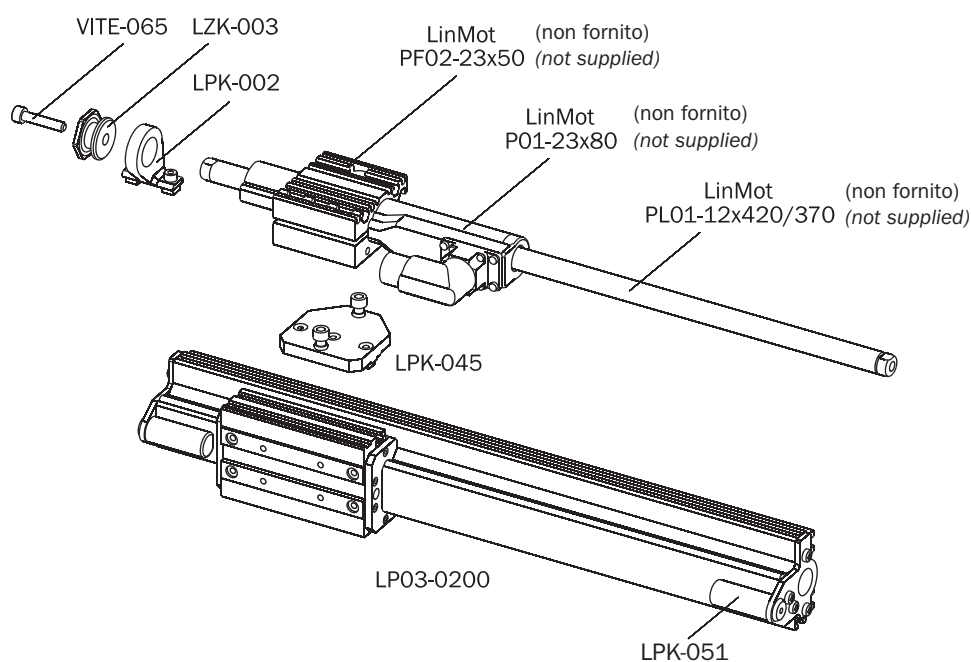
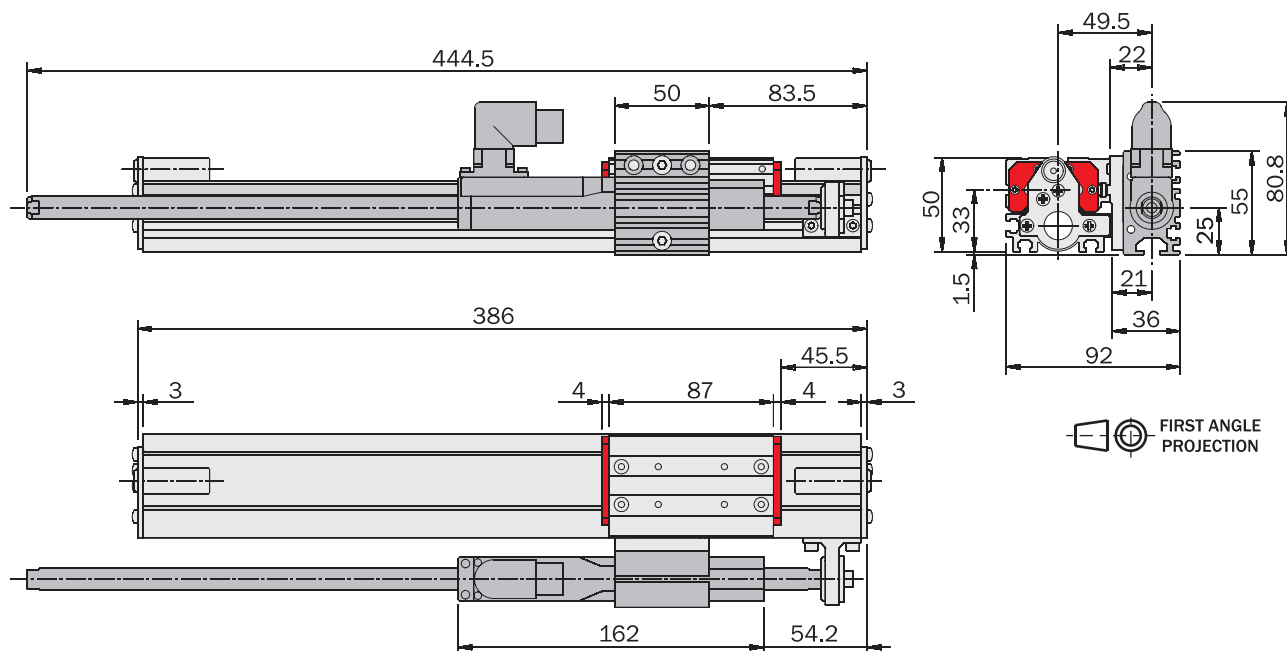
Esempio: Slitta di corsa 100mm, azionata da motore lineare LinMot compatto

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



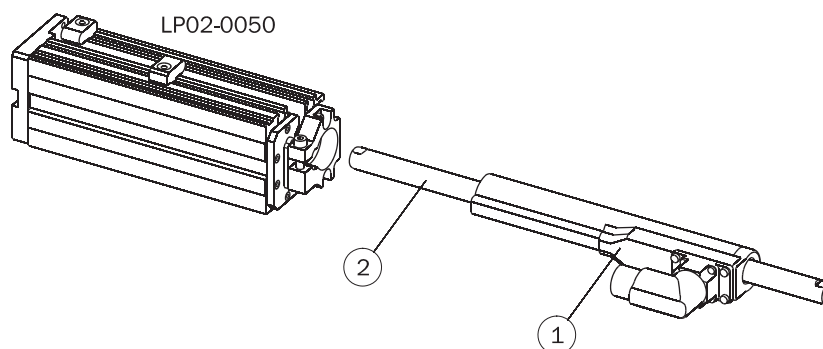
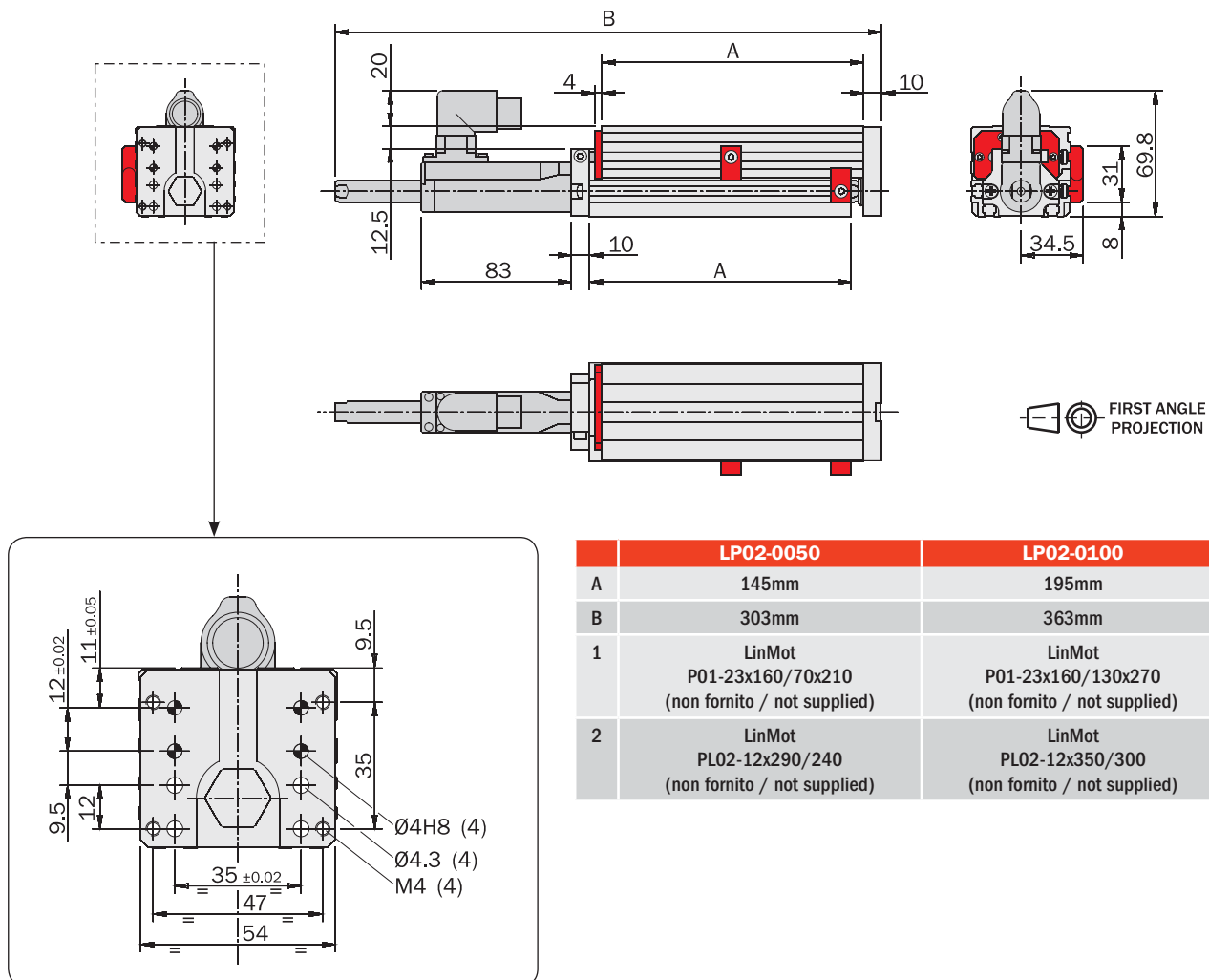
Esempio: Slitta di corsa 200mm, con fine-corsa d'emergenza in gomma, azionata da motore lineare LinMot

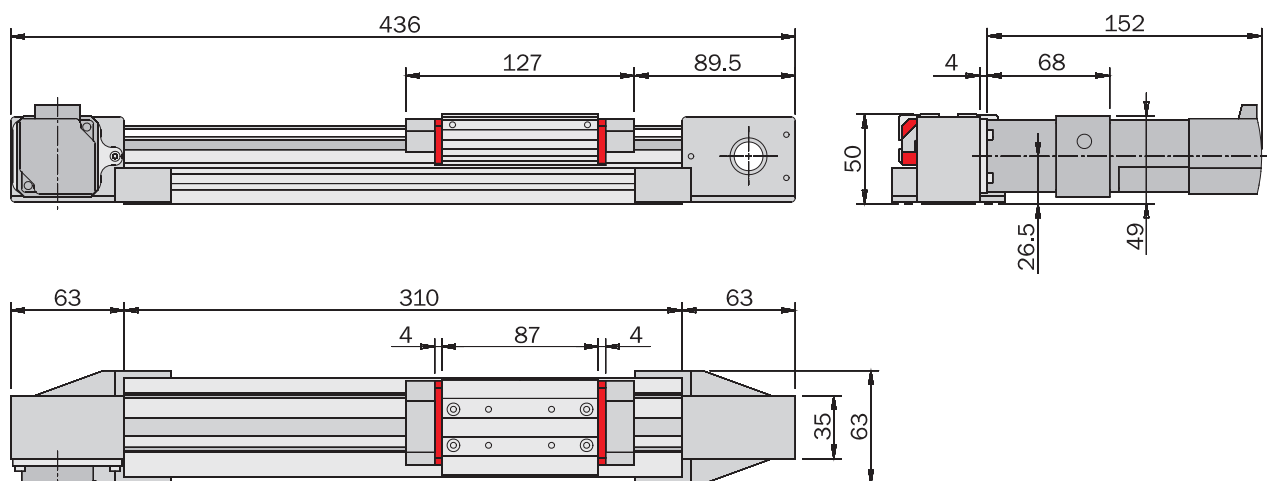
Example: Slide, 200mm stroke, with rubber emergency stoppers, powered by a LinMot linear motor



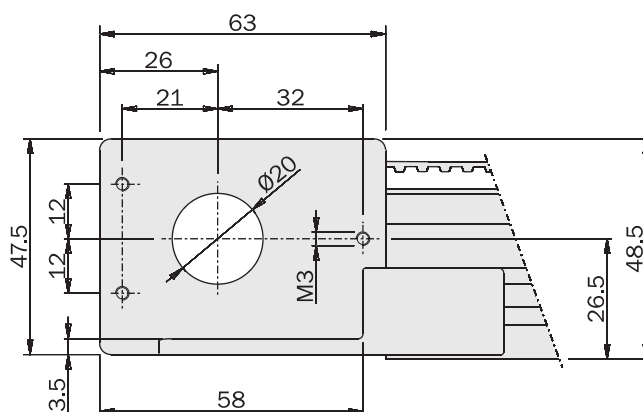
Esempio: Slitte LP02-0050 e LP02-0100 azionate da motore lineare LinMot in linea

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


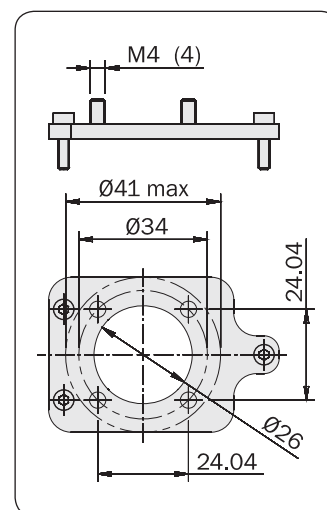
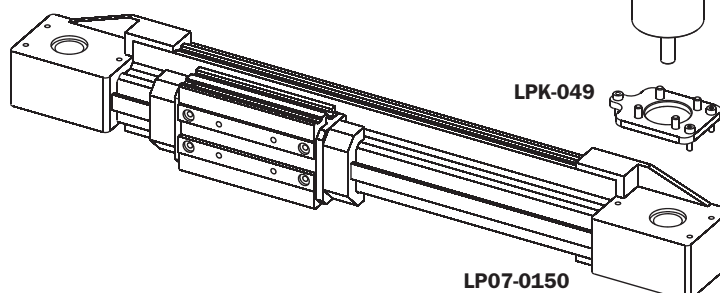
FIRST ANGLE PROJECTION



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

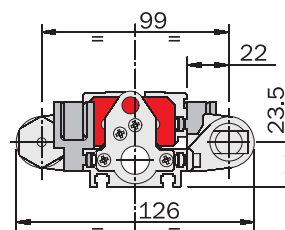
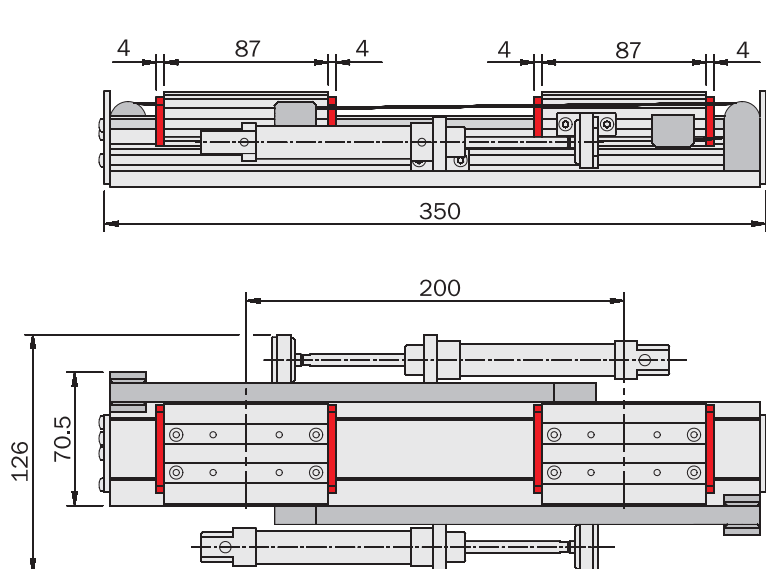
Motore Mitsubishi / Mitsubishi motor
HF-KE13W1-S100 (100W)
(non fornito) / (not supplied)

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

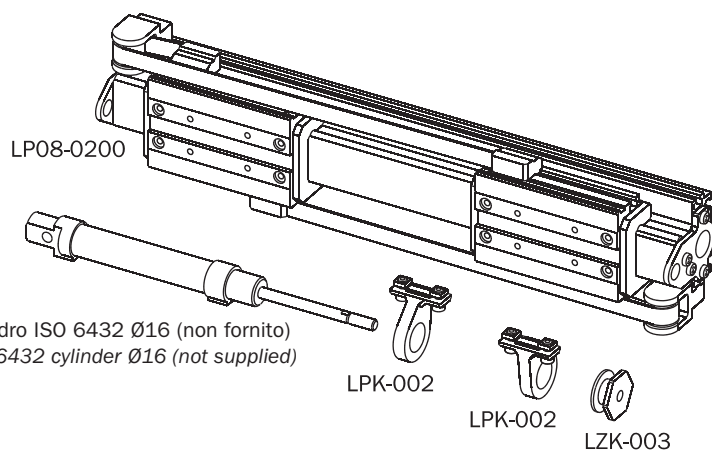


Esempio: Pinza autocentrante (interasse: 200mm) azionata da due cilindri ISO 6432 di alesaggio 16mm e corsa 50mm

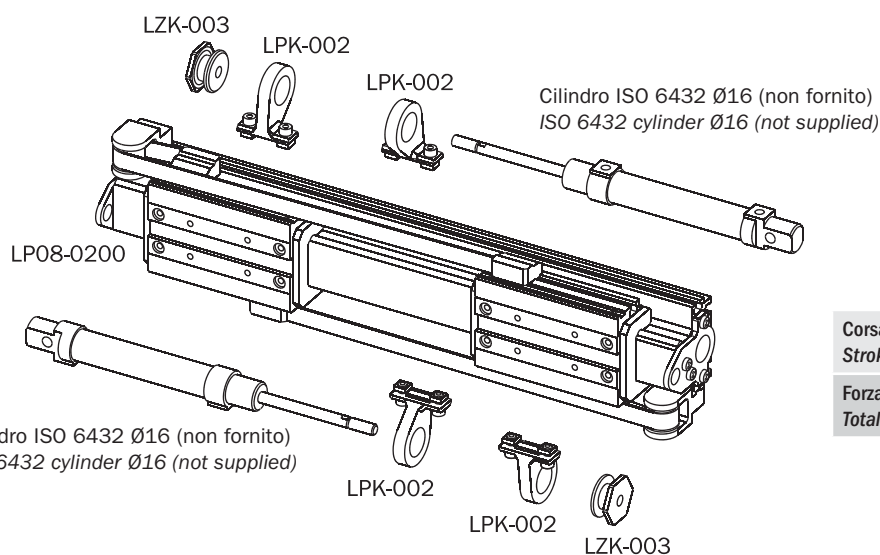
Example: Selfcentering gripper (interaxis: 200mm) powered by two 16mm ISO 6432 cylinders, stroke 50mm



FIRST ANGLE PROJECTION



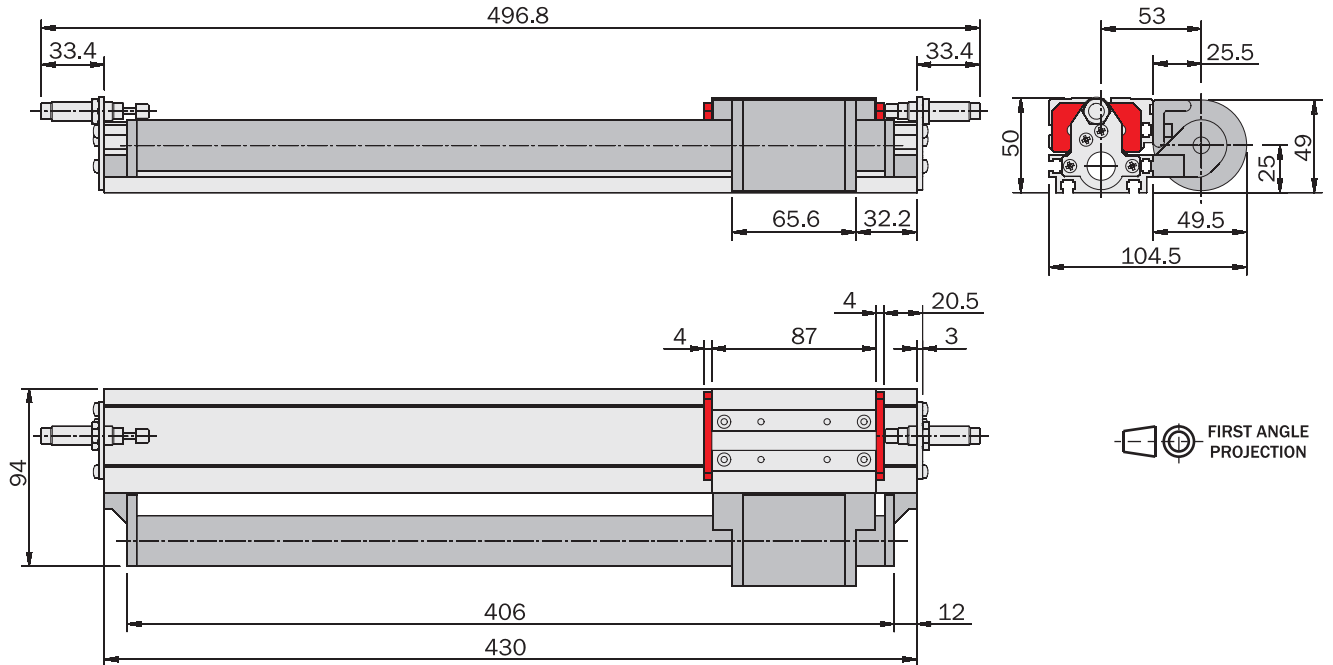
Corsa Stroke	2x50 mm
Forza totale a 6 bar Total force at 6 bar	100 N



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

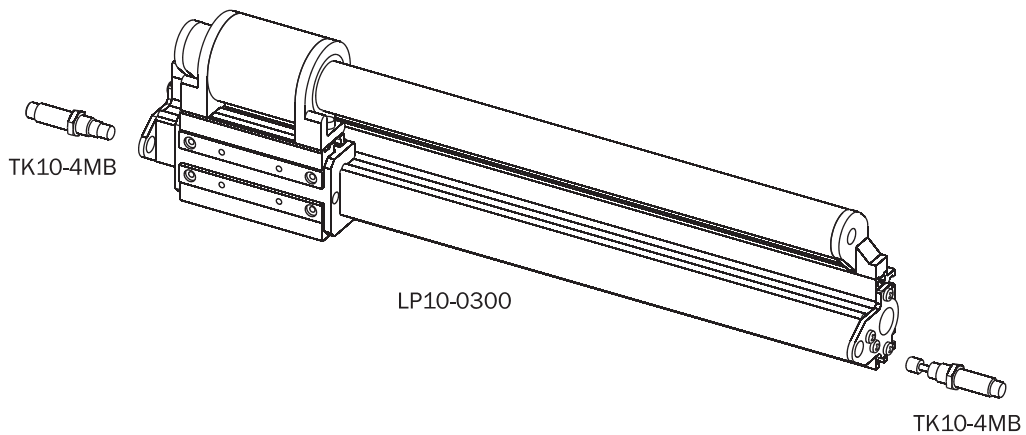
Esempio: Attuatore pneumatico (alesaggio 25mm, corsa 300mm) a trascinamento magnetico, con deceleratori idraulici

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.

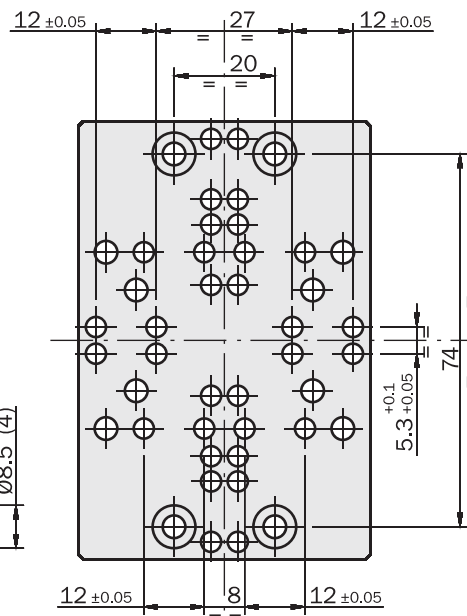
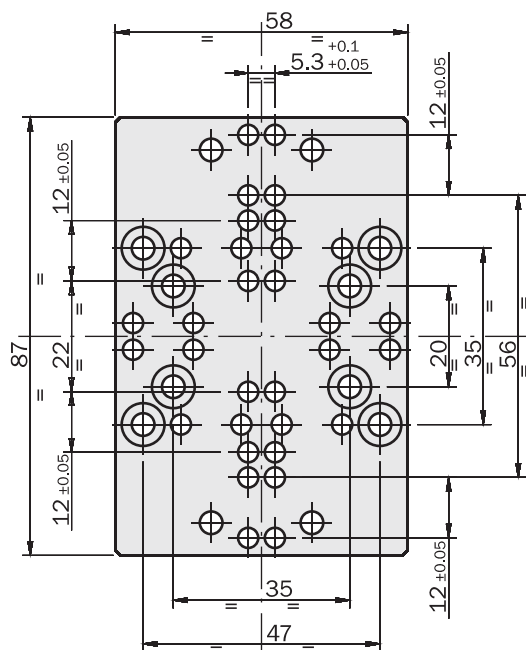
Peso: 75 g

LPK-013

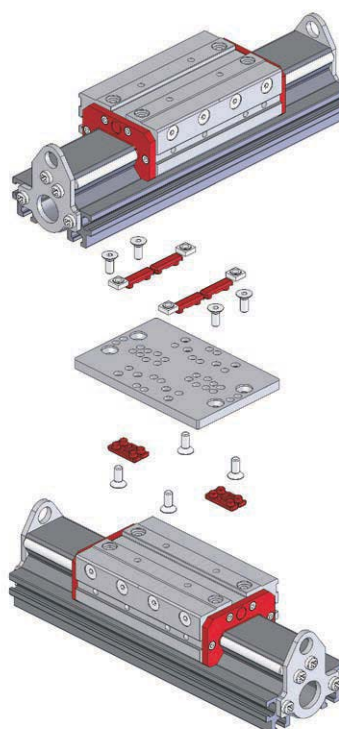
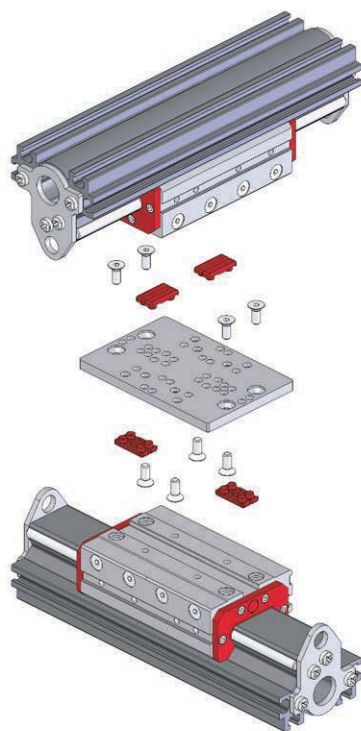
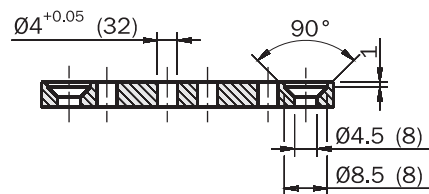
Mounting interface plate

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.

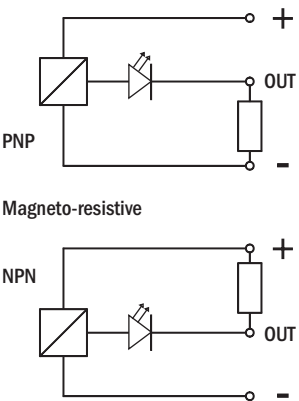
I sensori utilizzabili sono:



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.

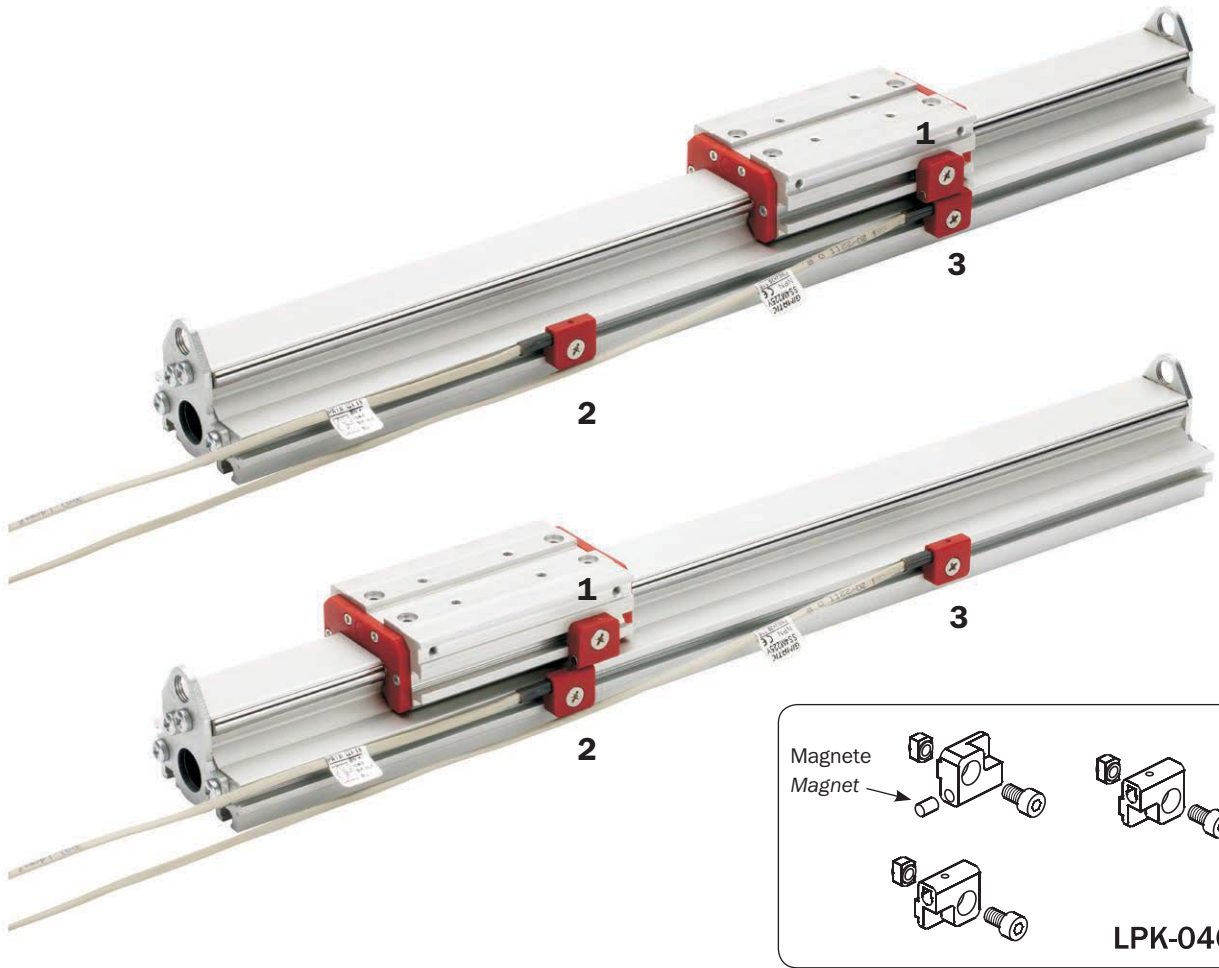
Use sensors:



			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.



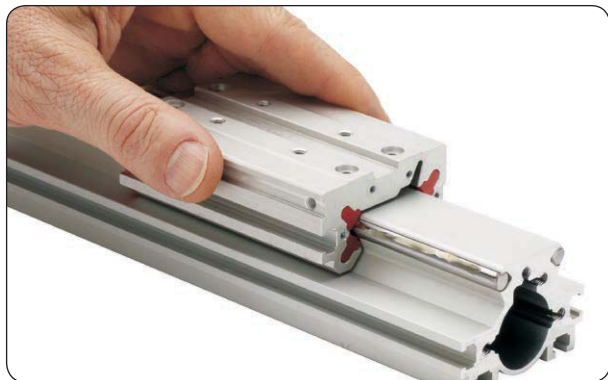
Rimuovere la protezione rossa (quattro viti)

Remove the four screws and then the red plastic plate



Applicare il lubrificante sulle colonne di guida in acciaio

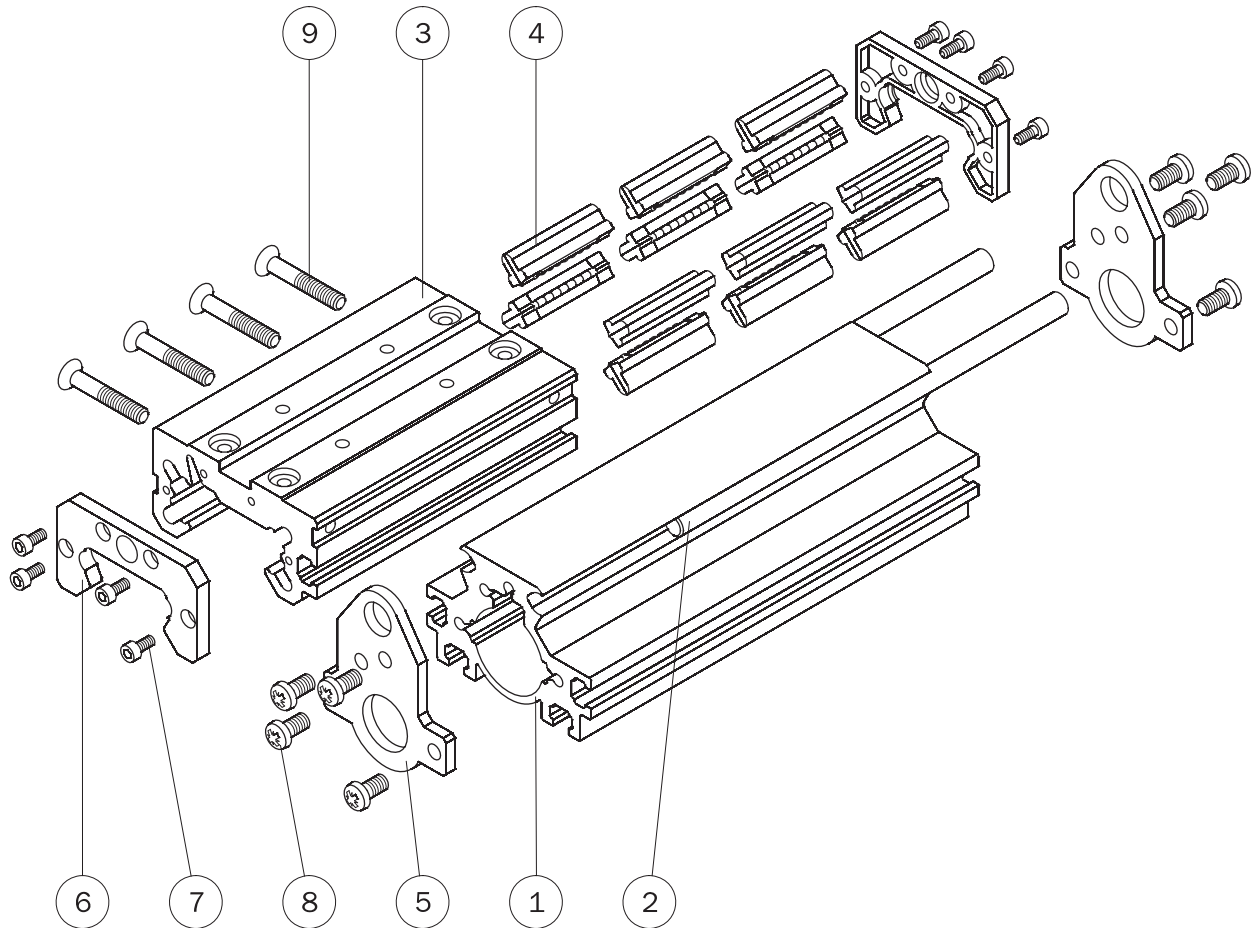
Lubricate the steel bars



Muovere il carrello per distribuire il lubrificante nelle cartucce

Move the carrier to distribute the lubricant in the ball bearings

Elenco delle parti / Part list



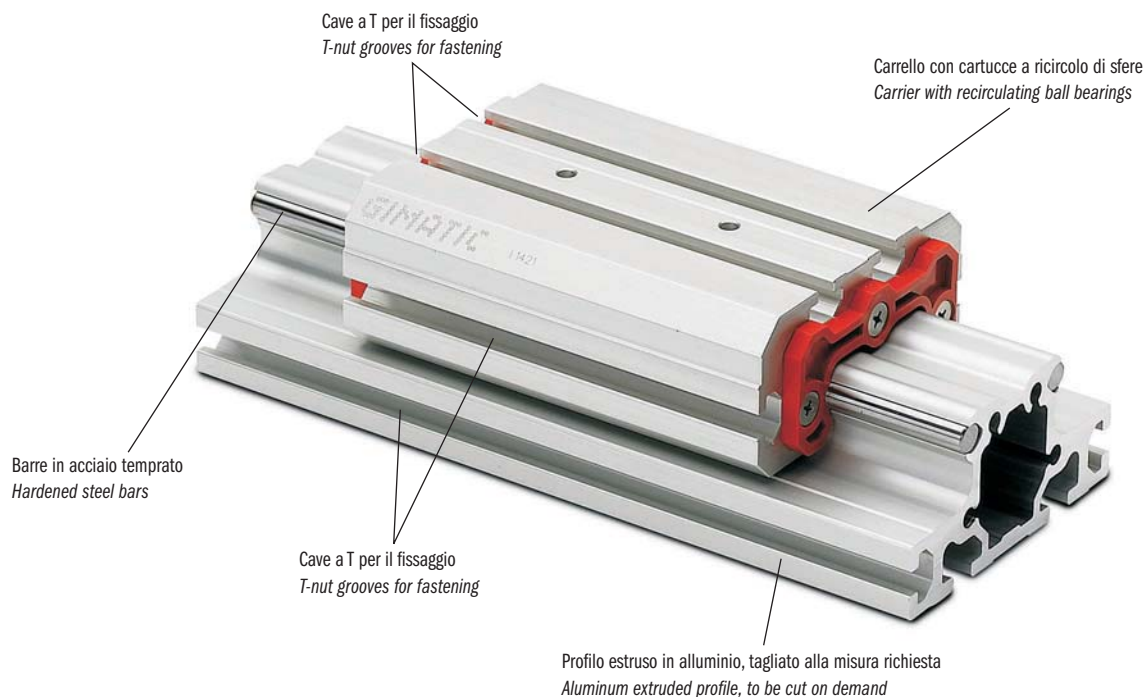
		LP		
1	Profilo in alluminio	ESTR-LP23-02	Alu profile	1
2	Guida	BARRA-002 Ø6 mm	Guideway	2
3	Carrello	LP23-10	Carrier	3
4	Cartuccia ricircolo di sfere	C-2521	Ball bushing	4
5	Testata	LP23-12	End plate	5
6	Protezione carrello	LP23-05	Protection	6
7	Vite	M2.5x6 mm DIN912 Z/B	Screw	7
8	Vite	M4x8 mm DIN7500C Z/B	Screw	8
9	Vite	M4x25 mm UNI5933 Z/B	Screw	9

Guide lineari a ricircolo di sfere serie LL

- Sistema di guida a ricircolo di sfere.
- Semplici da usare ed economiche.
- Diverse possibilità di montaggio con dadi a T.
- Vari kit opzionali per il montaggio di accessori.
- Qualsiasi lunghezza fino a 6000mm è possibile.
- E' possibile montare più di un carrello per ogni profilo.

Linear guidance with recirculating ball-bearing series LL

- Recirculating ball-bearing guide system.
- Easy fitting and inexpensive.
- Several mounting options with T-nuts.
- Optional kits for accessories.
- Available in any length up to 6000mm.
- More than one carrier per rail is possible.



Il carrello è ricavato da un estruso di alluminio nel quale sono previste le sedi per le cartucce a ricircolo di sfere e le cave a T per i vari fissaggi.

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.

Sulla guida lineare 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.

The carrier is made from an aluminium extruded profile, in which the housings for the recirculating ball bearings and the T-nut grooves 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.

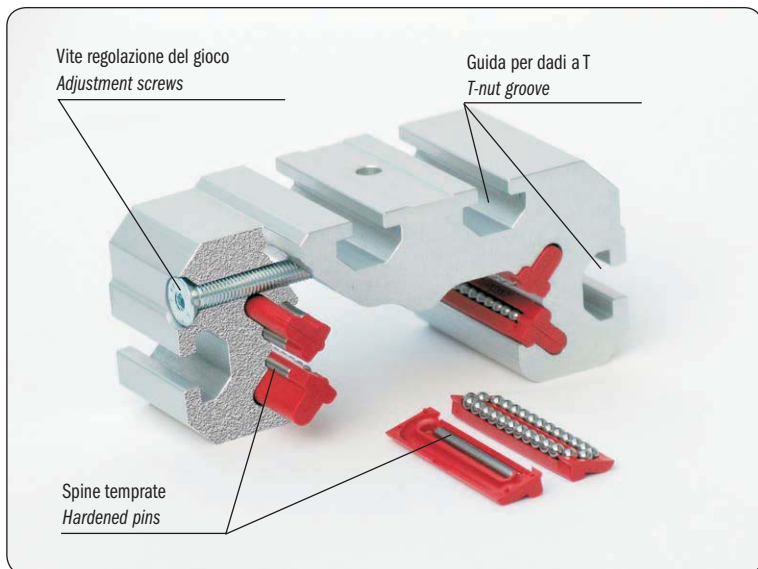
Two or more carriers, on demand, can be mounted on the same rail, to increase the load capacity or to get two or more independent slides.

Vite regolazione del gioco
Adjustment screws

Guida per dadi a T
T-nut groove

Spine temprate
Hardened pins

Cartuccia a ricircolo di sfere
Recirculating ball bearing

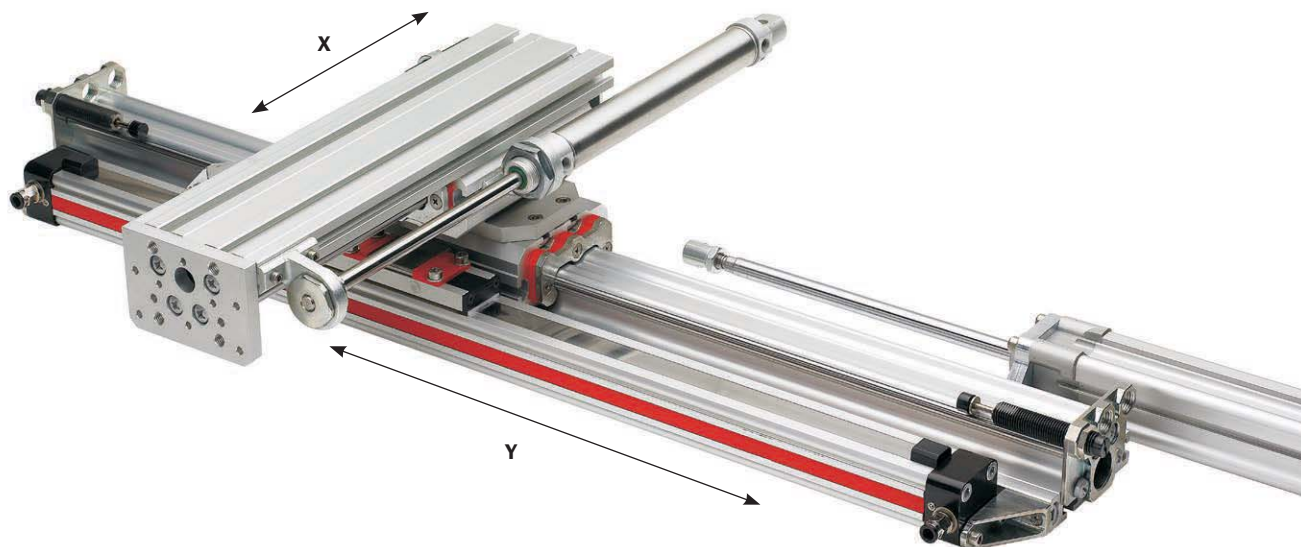


Esempio di applicazione

Manipolatore Y-X con arresto intermedio su Y, azionato da cilindri pneumatici.

Application example

Y-X manipulator with intermediate stop along Y, powered by pneumatic cylinders.

**Esempio di applicazione**

Manipolatore Y-Z tipo Pick & Place, azionato da cilindri pneumatici.

Application example

Y-Z Pick & Place manipulator, powered by pneumatic cylinders.

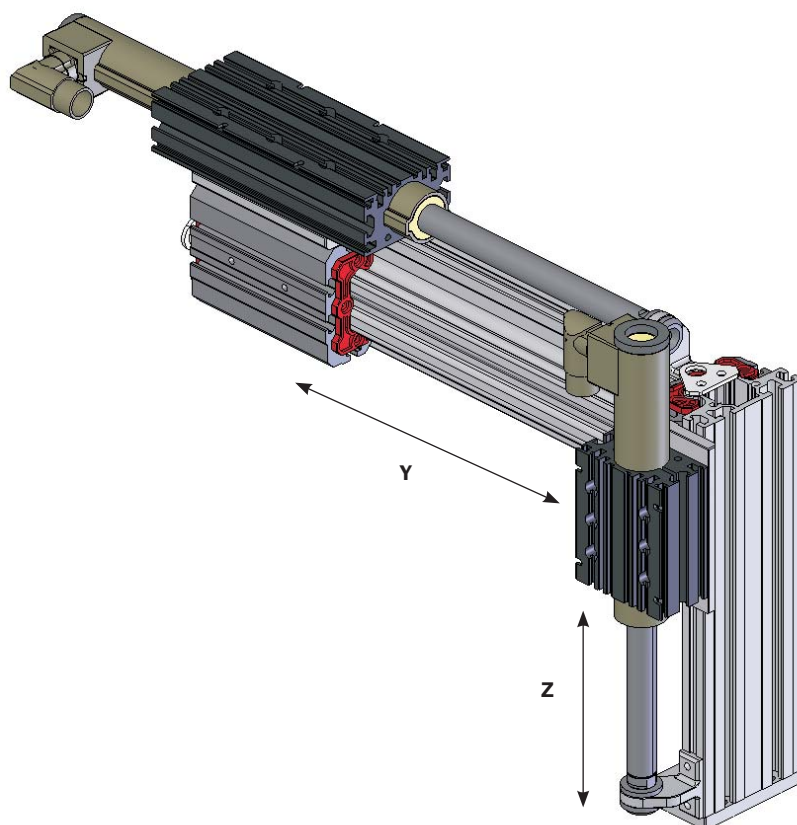


Esempio di applicazione

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

Application example

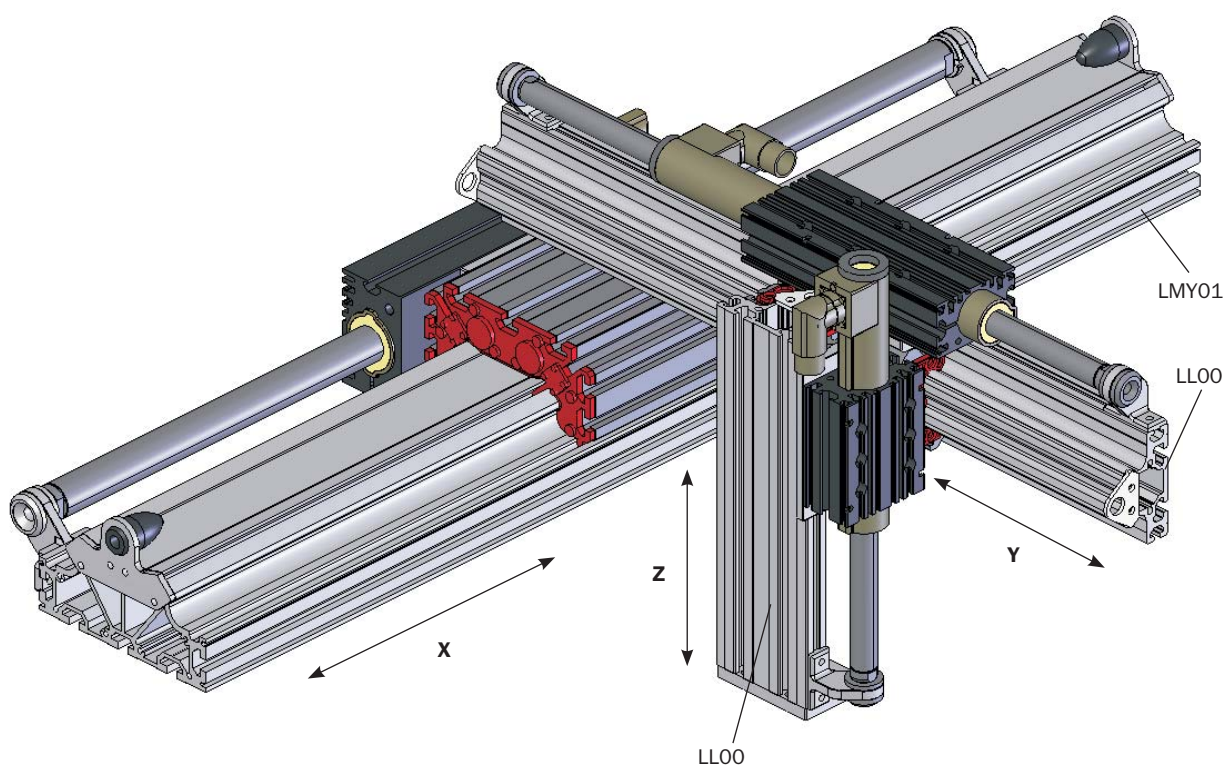
Y-Z Pick & Place manipulator, powered by linear motors.

**Esempio di applicazione**

Manipolatore X-Y-Z, azionato da motori lineari.

Application example

X-Y-Z manipulator, powered by linear motors.

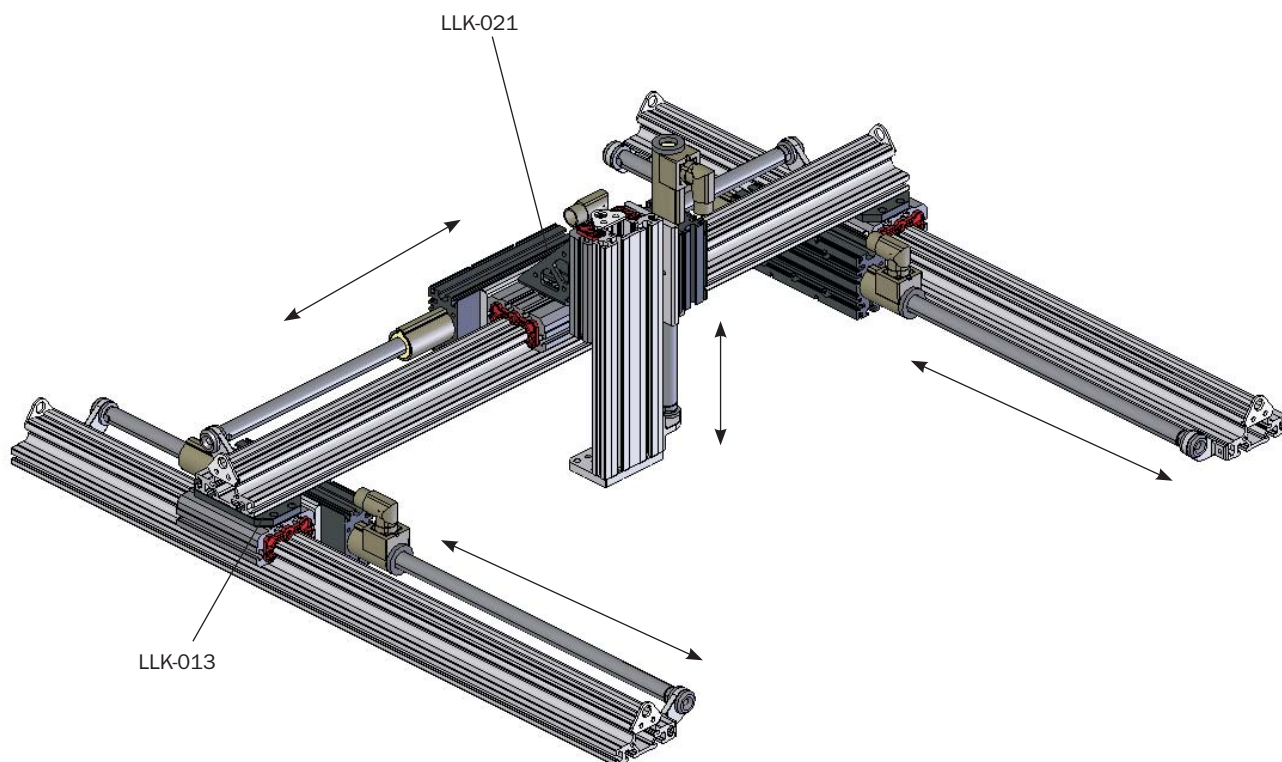


Esempio di applicazione

Portale a 3 assi, costituito da 4 guide LL, azionate da motori lineari.

Application example

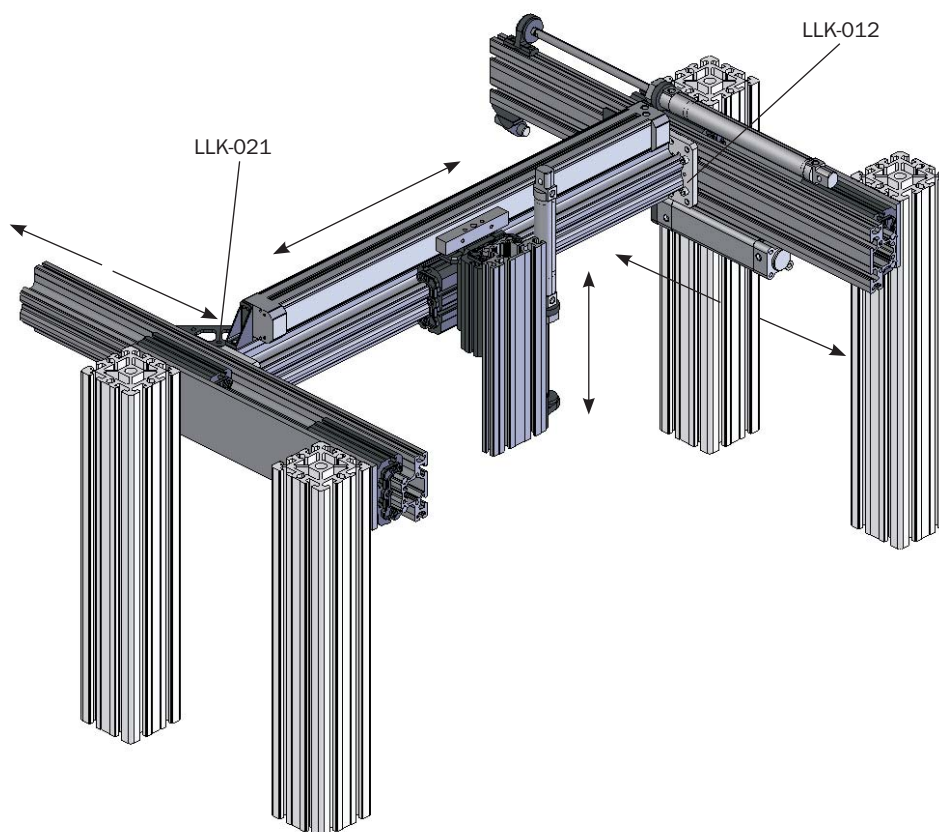
3-axis gantry, assembled with 4 LL guidances, powered by linear motors.

**Esempio di applicazione**

Portale a 3 assi, costituito da 4 guide LL, azionate da cilindri pneumatici.

Application example

3-axis gantry, assembled with 4 LL guidances, powered by pneumatic cylinders.

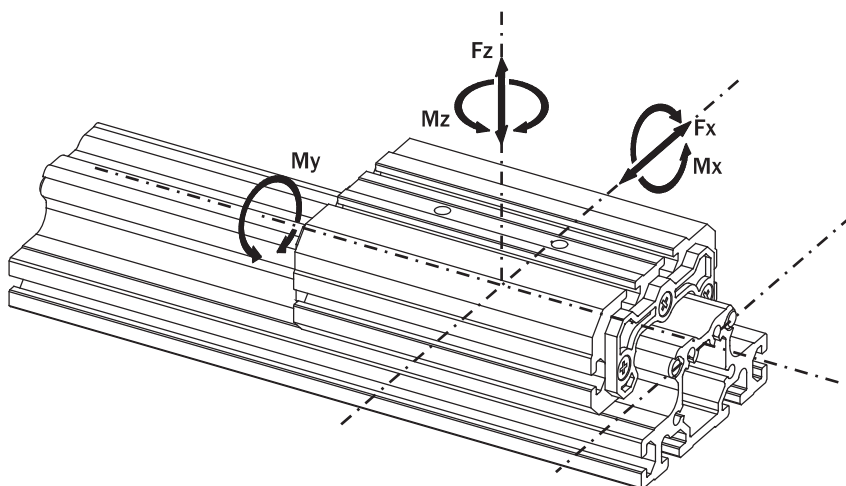


Carichi di sicurezza

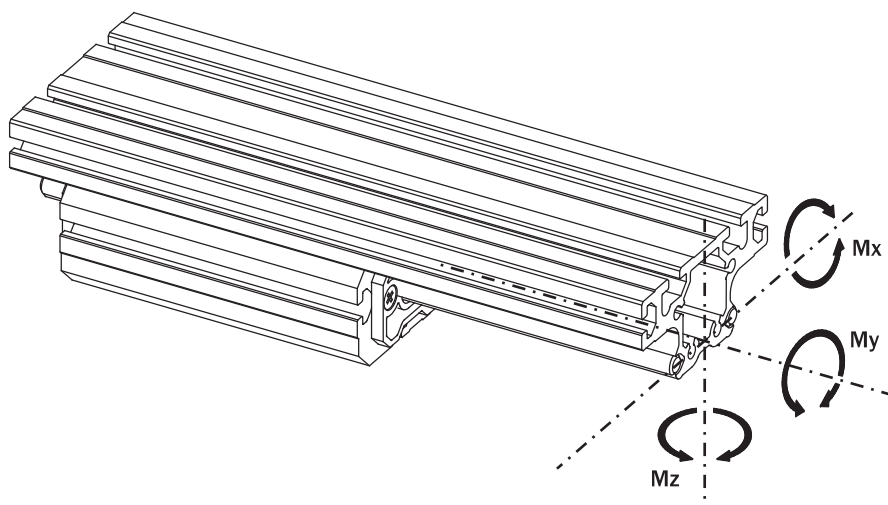
Carichi eccessivi possono danneggiare l'unità, causare difficoltà di funzionamento e compromettere la sicurezza dell'operatore. Verificare che l'indice di carico LF sia inferiore all'unità.

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.



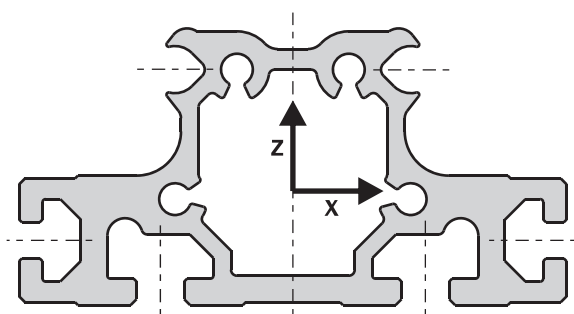
$$LF = \frac{F_x}{F_{x \max}} + \frac{F_z}{F_{z \max}} + \frac{M_x}{M_{x \max}} + \frac{M_y}{M_{y \max}} + \frac{M_z}{M_{z \max}} \leq 1$$



	max
Fx	2500 N
Fz	2500 N
Mx	56 Nm
My	50 Nm
Mz	56 Nm

Momenti d'inerzia del profilo estruso in alluminio

Area moment of inertia for the extruded aluminum profile



$I_x = 267709 \text{ mm}^4$
 $I_z = 907959 \text{ mm}^4$

Guide lineari a ricircolo di sfere / *Linear guidances with recirculating ball-bearings* 733

Codice di ordinazione / Ordering code

LL XX - XXXX

Corsa / Stroke [mm] (*)

LL00

Per cilindri ISO Ø20, Ø25, Ø32
For ISO cylinders Ø20, Ø25, Ø32



	s [mm]	m
LL00	0÷5830 (1)	1560g+4.2g/mm

LL01

Per cilindri senza stelo Ø25
For rodless cylinders Ø25



	s [mm]	m
LL01	0÷5740 (1)	1980g+4.2g/mm

LL06

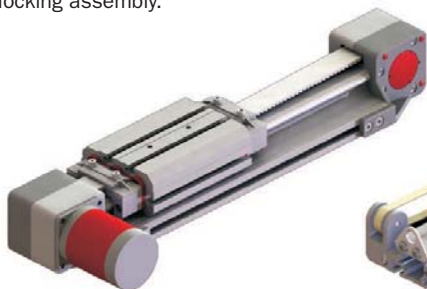
Trasmissione a omega, completa di calettatore per alberi Ø12
Omega transmission, with Ø12 shaft locking assembly



	s [mm]	m
LL06	0÷5700 (2)	3220g+4.3g/mm

LL07

Trasmissione a cinghia e pulegge, completa di calettatore per alberi Ø12
Belt drive and pulleys, with Ø12 shaft locking assembly.



	s [mm]	m
LL07	0÷1500 (2)	3660g+4.4g/mm

LL08

Con due carrelli autocentranti
With two self-centering carriers



	s [mm]	m
LL08	140÷2000 (1)	3000g+4.3g/mm

LL10

Per cilindro senza stelo Ø25 a trascinamento magnetico
For rodless cylinder Ø25 magnetically coupled



	s [mm]	m
LL10-0300	300	3600
LL10-0500	500	4550
LL10-1000	1000	6900
LL10-1500	1500	9250

(*) Per LL08 la corsa è il massimo interasse fra i due carrelli.

- (1) E' possibile ordinare lunghezze di guida con step di 1mm.
(2) E' possibile ordinare lunghezze di guida con step di 100mm.

La lunghezza totale della guida è la somma della corsa utile e dell'ingombro della corsa zero:

170mm per LL00;
260mm per LL01;
265mm per LL06;
220mm per LL07;
210mm per LL08;
170mm per LL10.

La lunghezza totale della guida deve essere inferiore a 6000mm. 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 non sono forniti.

(*) For the LL08 the stroke is intended like the maximum interaxis between the two carriers.

- (1) It is possible to order any guidance length in 1mm steps.
(2) It is possible to order any guidance length in 100mm steps.

The total length of the guidance is the sum of the carrier travel plus the zero stroke length:

170mm for LL00;
260mm for LL01;
265mm for LL06;
220mm for LL07;
210mm for LL08;
170mm for LL10.

The total length of the guidance must be lower than 6000mm. 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.

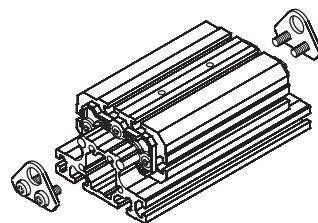
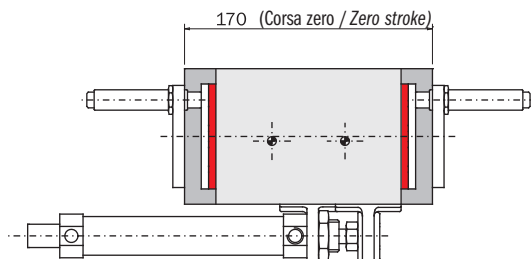
They are sold in single packages, not assembled with the guidance.

The cylinders are not supplied.

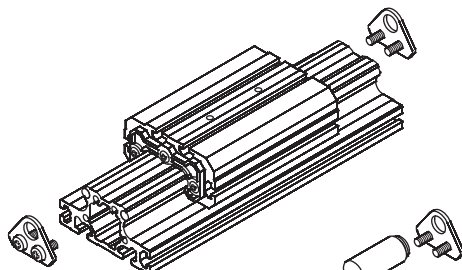
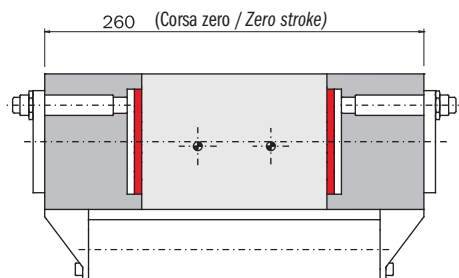
Le parti fornite con ciascun codice di ordinazione sono qui evidenziate.

The parts supplied with the ordering codes are here highlighted.

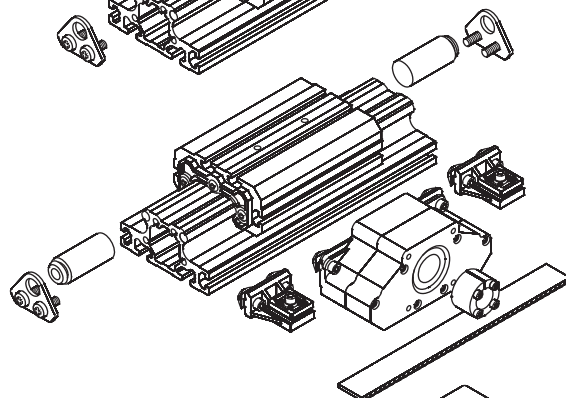
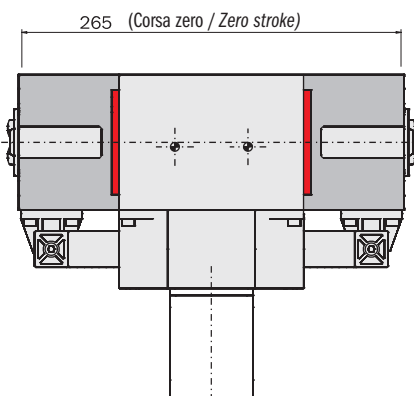
LL00



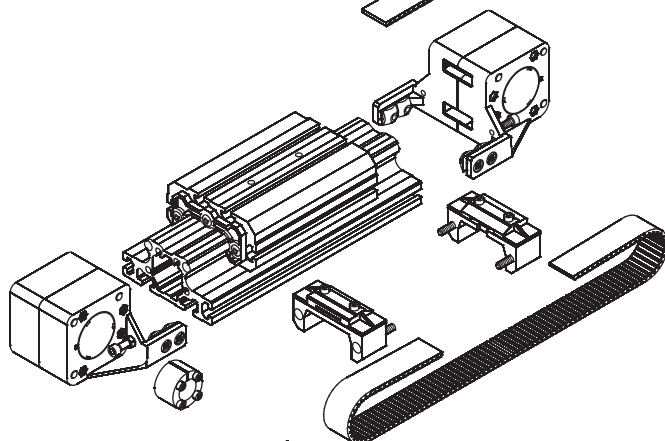
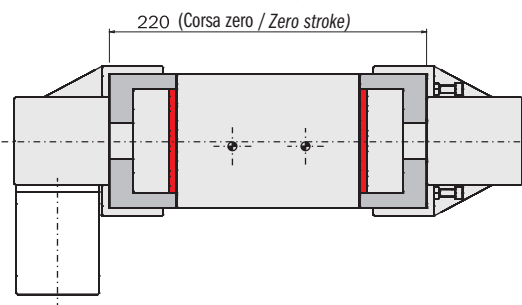
LL01



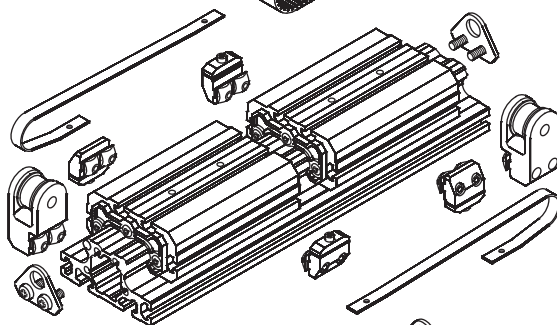
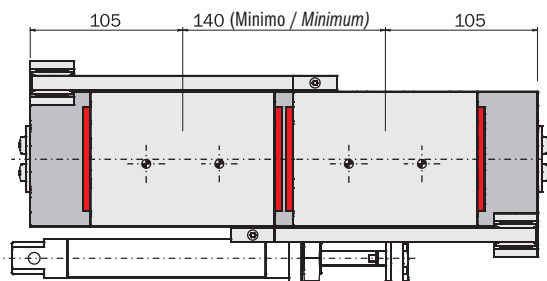
LL06



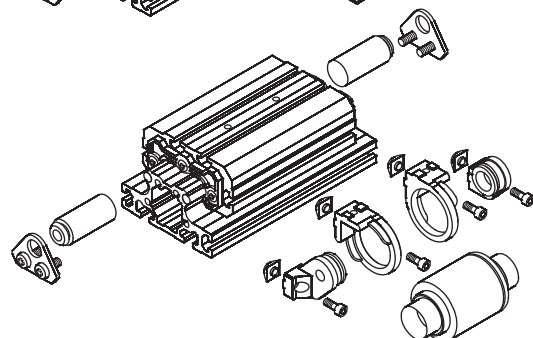
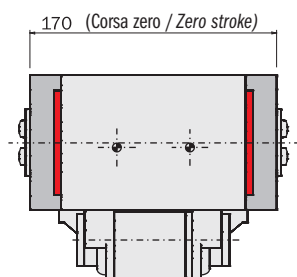
LL07



LL08



LL10

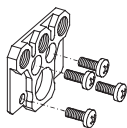


Kit opzionali / Optional kits

Testata per fissaggio deceleratori, sensori induttivi di finecorsa o grani di fermo

End plate for the fastening of shock-absorbers, end stroke grub screws and inductive sensors

- LLK-008



Grano di fermo

End stroke grub screw

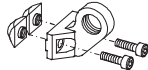
- LLK-024



Staffa fissaggio deceleratori o grani di fermo

Bracket for the side fastening of shock-absorbers, or end stroke grub screws

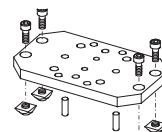
- LLK-007
- LLK-020
- LLK-025
- LLK-026



Interfaccia di montaggio per il carrello

Mounting interface plate for the carrier

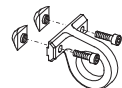
- LLK-013



Staffa per fissaggio cilindro ISO 6432 Ø20 / Ø25

Cylinder holder Ø20 / Ø25

- LLK-002



Cilindro ISO 6432 Ø20 / Ø25 (non fornito)

ISO 6432 cylinder Ø20 / Ø25 (not supplied)

Terminale per cilindro Ø25 e Ø32

End block for cylinder rods Ø25 and Ø32

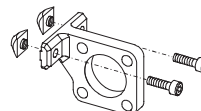
- LLK-016



Anello per fissaggio cilindro ISO 15552 Ø32

Cylinder holder Ø32

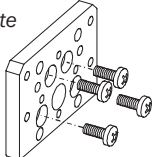
- LLK-019



Testata di trascinamento

End interface plate

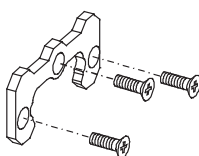
- LLK-012



Protezione in acciaio per il carrello

Steel plate for the carrier

- LLK-004



Cilindro ISO 15552 Ø32 (non fornito)
ISO 15552 cylinder Ø32 (not supplied)

Deceleratore idraulico

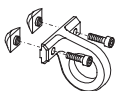
Shock-absorber

- SPM25MC1SB
- PM25MC-2SB-SP22039

Anello per giunto cilindro ISO

Cylinder holder

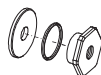
- LLK-002 (Ø20 / Ø25)
- LLK-018 (Ø32)



Giunto per cilindro ISO

Cylinder rod bolt

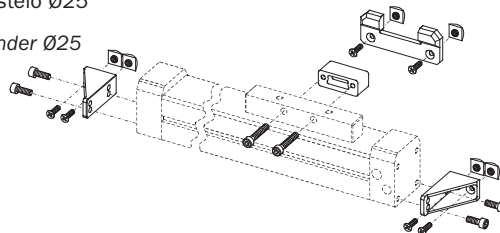
- LLK-003 (Ø25 / Ø32)
- LLK-017 (Ø20)



Kit fissaggio cilindro senza stelo Ø25

Fastening kit for rodless cylinder Ø25

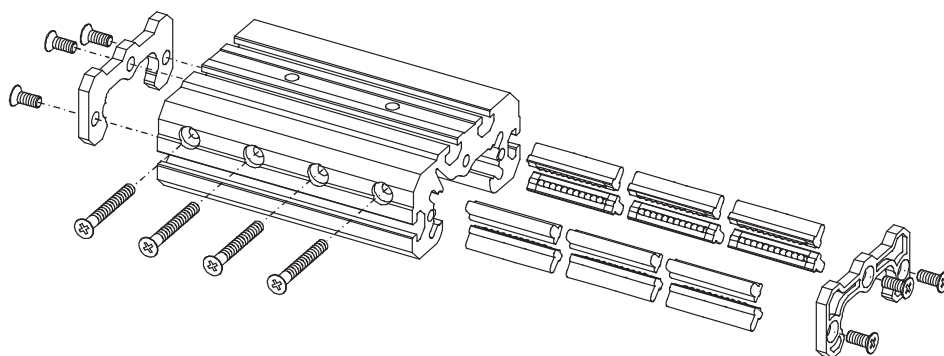
- LLK-005 (Origa)
- LLK-006 (Festo)
- LLK-022 (Ultraline)
- LLK-023 (Norgren)



LLK-001

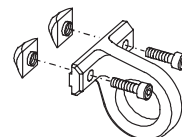
Carrello addizionale
Additional carrier

(832 g)

**LLK-002**

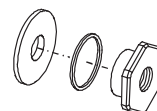
Anello per fissaggio cilindro Ø20 / Ø25
Cylinder holder Ø20 / Ø25

(93 g)

**LLK-003**

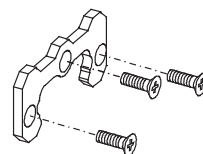
Giunto M10x1.25 per stelo cilindro Ø25 / Ø32
Rod bolt M10x1.25 for cylinder Ø25 / Ø32

(57 g)

**LLK-004**

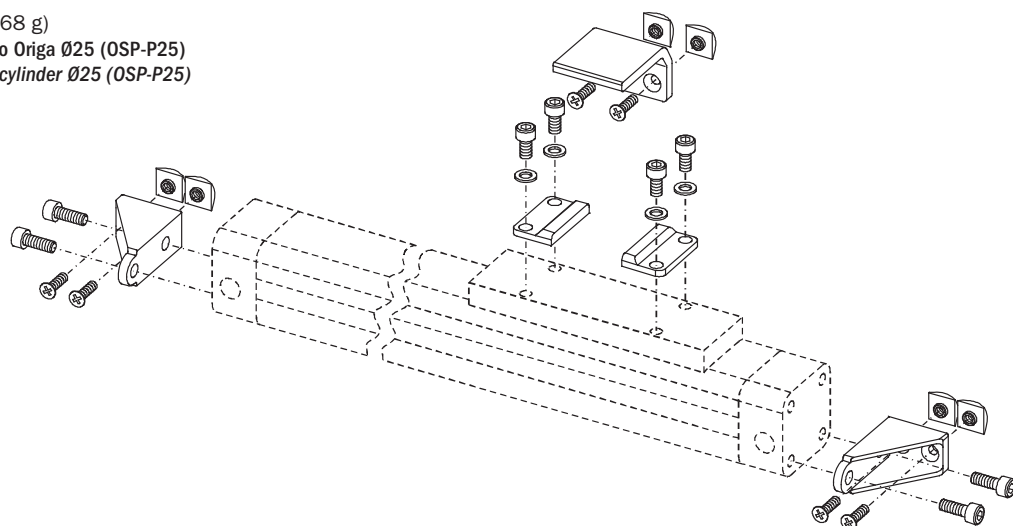
Protezione in acciaio per il carrello
Steel plate for the carrier

(59 g)

**LLK-005**

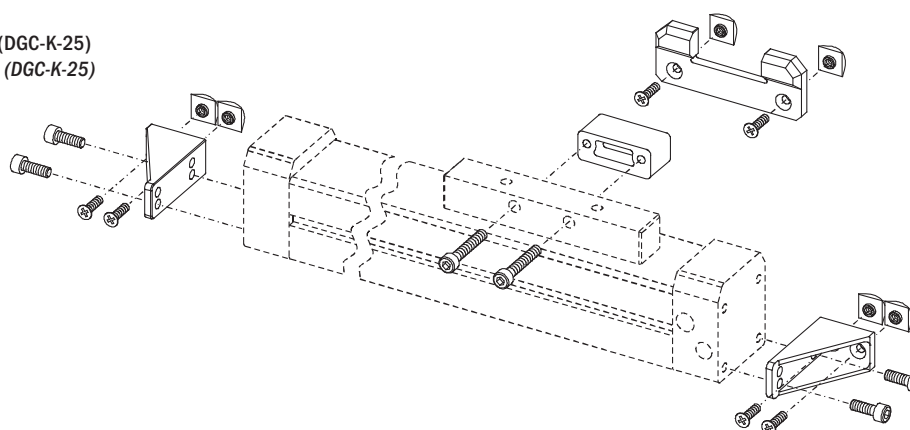
Kit fissaggio cilindro senza stelo Origa Ø25 (OSP-P25)
Fastening kit for Origa rodless cylinder Ø25 (OSP-P25)

(268 g)

**LLK-006**

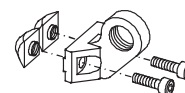
Kit fissaggio cilindro senza stelo Festo Ø25 (DGC-K-25)
Fastening kit for Festo rodless cylinder Ø25 (DGC-K-25)

(314 g)

**LLK-007**

Staffa filettata M14x1.5 per il fissaggio laterale di deceleratori o grani di fermo per cilindri Ø20 e Ø25
Threaded bracket (M14x1.5) for the side fastening of shock absorbers or end stroke grub screws for cylinders Ø20 and Ø25

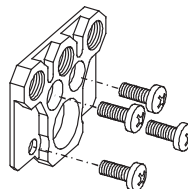
(69 g)



LLK-008

(137 g)

Testata
End plate

**LL25-09**

(5 g)

Dado a T M4 per cava 6 (1 pezzo)
M4 T-nut for slot 6 (1 piece)

**LL25-10**

(9 g)

Dado a T M6 per cava 8 (1 pezzo)
M6 T-nut for slot 8 (1 piece)

**VITE-243**

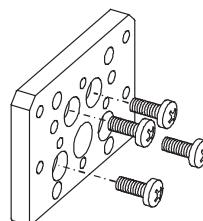
(7 g)

Dado a T M6 intercambiabile Bosch per cava 8 (1 pezzo)
M6 T-nut Bosch interchangeable for slot 8 (1 piece)

**LLK-012**

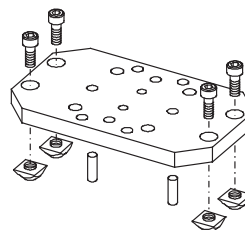
(137 g)

Testata di trascinamento
End interface plate

**LLK-013**

(262 g)

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

**LL25-23**

(5 g)

Dado a T M5 per cava 6 (1 pezzo)
M5 T-nut for slot 6 (1 piece)

**LLK-015**

(16 g)

Riduzione porta-sensori M14x1.5 / M8x1 (1 pezzo)
Sensor holder adaptor M14x1.5 / M8x1 (1 piece)

**LLK-016**

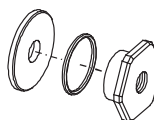
(24 g)

Terminale M10x1.25 per stelo cilindro Ø25 / Ø32 (1 pezzo)
End block M10x1.25 for the rod of a cylinder Ø25 / Ø32 (1 piece)

**LLK-017**

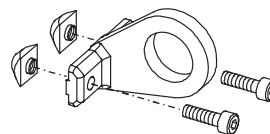
(57 g)

Giunto M8 per stelo cilindro Ø20
Rod bolt M8 for cylinder Ø20

**LLK-018**

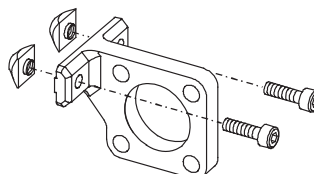
(130 g)

Anello fissaggio giunto per cilindro Ø32
Rod bolt holder for cylinder Ø32

**LLK-019**

(172 g)

Anello per fissaggio cilindro Ø32
Cylinder holder Ø32

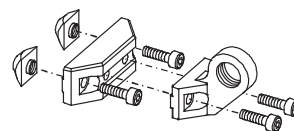


LLK-020

(96 g)

Staffa filettata M14x1.5 per il fissaggio laterale di deceleratori o grani di fermo per cilindro Ø32

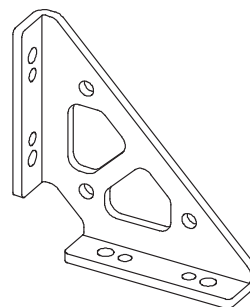
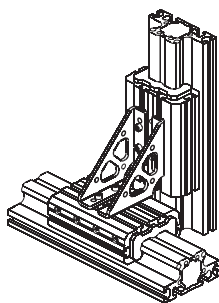
Threaded bracket (M14x1.5) for the side fastening of shock absorbers or end stroke grub screws for cylinder Ø32

**LLK-021**

(170 g)

Squadra di fissaggio (1 pezzo)

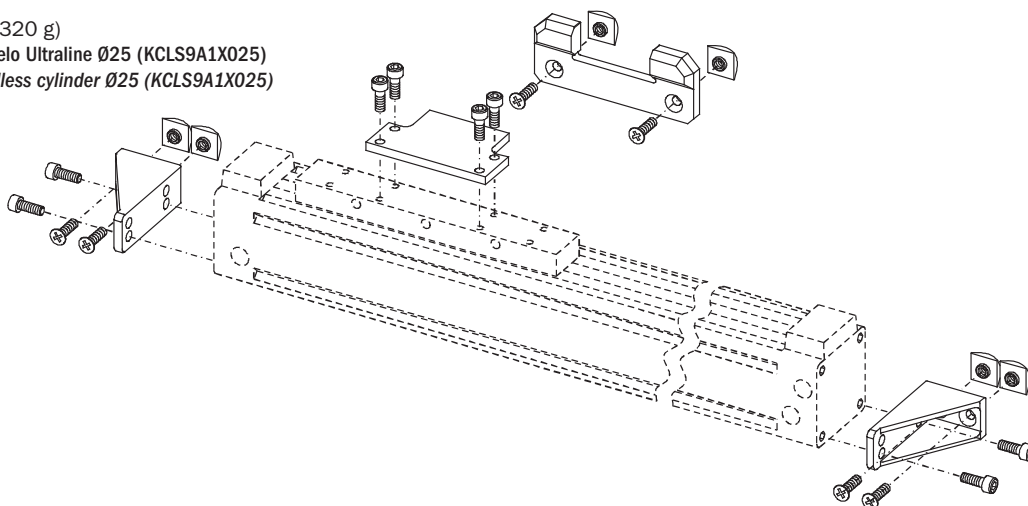
90° mounting bracket (1 piece)

**LLK-022**

(320 g)

Kit fissaggio cilindro senza stelo Ultraline Ø25 (KCLS9A1X025)

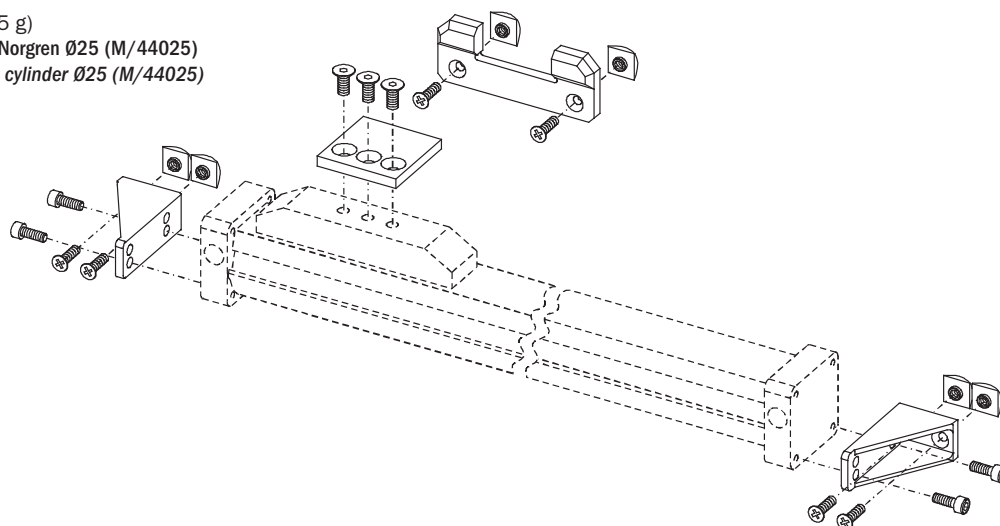
Fastening kit for Ultraline rodless cylinder Ø25 (KCLS9A1X025)

**LLK-023**

(315 g)

Kit fissaggio cilindro senza stelo Norgren Ø25 (M/44025)

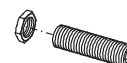
Fastening kit for Norgren rodless cylinder Ø25 (M/44025)

**LLK-024**

(55 g)

Grano di fermo

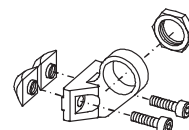
End stroke grub screw

**LLK-025**

(72 g)

Staffa Ø15 per il fissaggio laterale di deceleratori o grani di fermo per cilindri Ø20 e Ø25

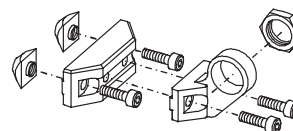
Bracket Ø15 for the side fastening of shock absorbers or end stroke grub screws for cylinders Ø20 and Ø25

**LLK-026**

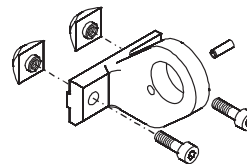
(100 g)

Staffa Ø15 per il fissaggio laterale di deceleratori o grani di fermo per cilindro Ø32

Bracket Ø15 for the side fastening of shock absorbers or end stroke grub screws for cylinder Ø32



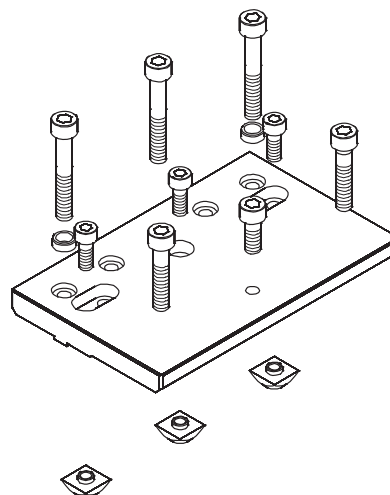
LLK-027 (100 g)
Anello per giunto slider LinMot PL01-20
Bracket for slider bolt for LinMot PL01-20



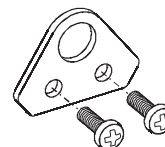
LLK-028 (60 g)
Giunto per slider LinMot PL01-20
Slider bolt for LinMot PL01-20



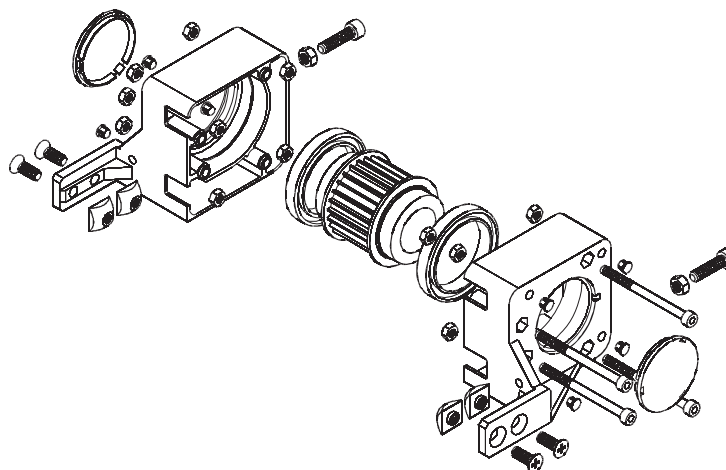
LLK-029 (280 g)
Piastra di interfaccia per flangia LinMot PF02-37
Interface plate for LinMot flange PF02-37



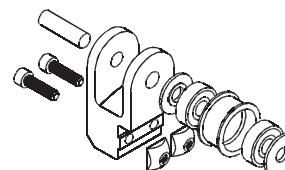
LLK-031 (30 g)
Piastra per fine corsa d'emergenza
Emergency stopper plate



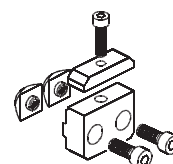
LLK-034 (800 g)
Puleggia per trasmissione a cinghia
Pulley for belt drive



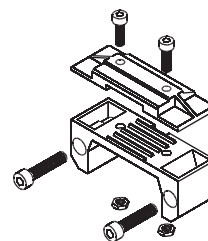
LLK-035 (135 g)
Rinvio per autocentraggio pinza
Transmission wheel for self-centering gripper



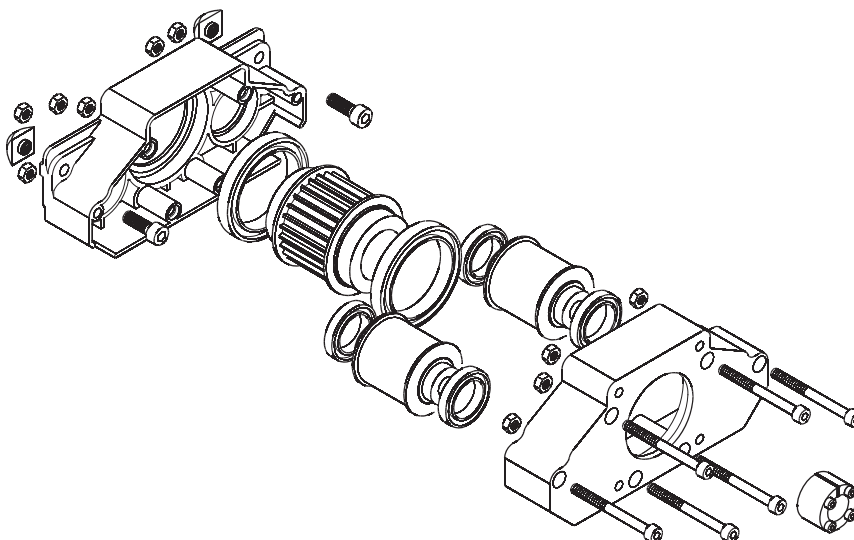
LLK-036 (35 g)
Blocca cinghia per autocentraggio pinza
Belt clamp for self-centering gripper



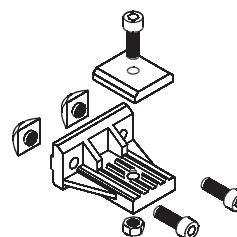
LLK-037 (135 g)
 Blocca cinghia per trasmissione a cinghia
Belt clamp for belt drive



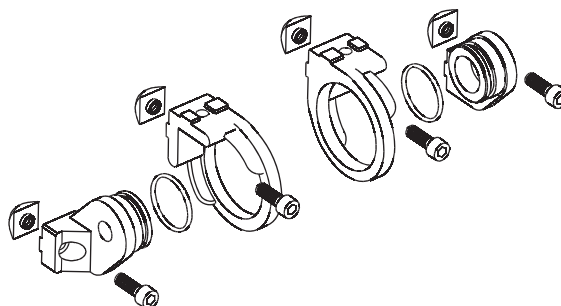
LLK-038 (950 g)
 Gruppo pulegge per trasmissione a omega
Pulleys assembly for omega transmission



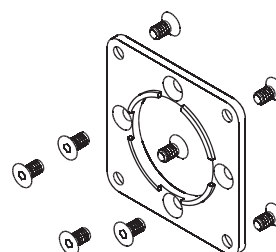
LLK-039 (100 g)
 Blocca cinghia per trasmissione a omega
Belt clamp for omega transmission



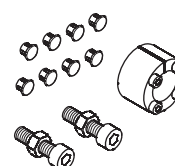
LLK-040 (275 g)
 Kit di fissaggio per cilindro senza stelo a trascinamento magnetico LPK-039
Fastening kit for magnetically coupled rodless cylinder LPK-039



LLK-041 (25 g)
 Interfaccia per riduttore epicicloidale
Adapter plate for planetary gear



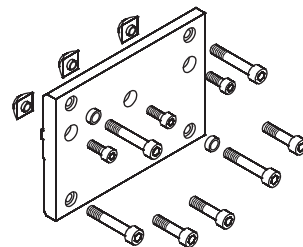
LLK-042 (35 g)
 Calettatore, tensionatore e tappi per LL07
Locking assembly, belt tensioner and plugs for LL07



LLK-043

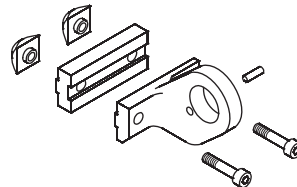
(380 g)

Piastra di interfaccia per flangia LinMot PF01-48 (per guida Gimatic LL01)
 Interface plate for LinMot flange PF01-48 (for Gimatic LL01 guidance)

**LLK-044**

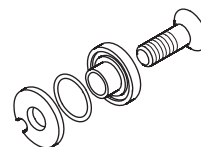
(120 g)

Anello per giunto per slider LinMot PL01-48 (per guida Gimatic LL01)
 Bracket for slider bolt for LinMot PL01-48 (for Gimatic LL01 guidance)

**LLK-045**

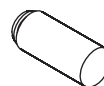
(55 g)

Giunto per slider LinMot PL01-48 (per guida Gimatic LL01)
 Slider bolt for LinMot PL01-48 (for Gimatic LL01 guidance)

**LLK-046**

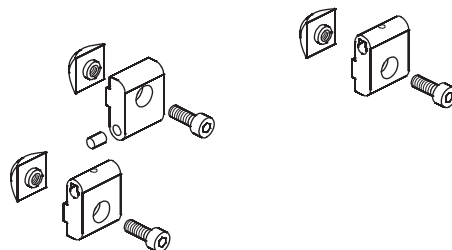
(8 g)

Ammortizzatore in gomma
 Rubber stopper

**LLK-050**

(30 g)

Staffe per sensori
 Sensor brackets

**LL25-97**

(3 g)

Dado ad innesto M4 per cava 6 (1 pezzo)
 M4 rhombus T-nut for slot 6 (1 piece)

**LL25-98**

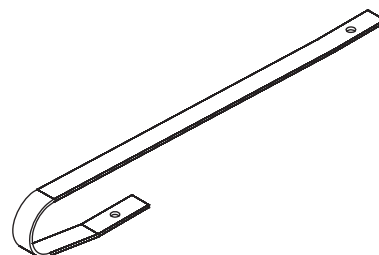
(6 g)

Dado ad innesto M6 per cava 8 (1 pezzo)
 M6 rhombus T-nut for slot 8 (1 piece)

**LP23-54**

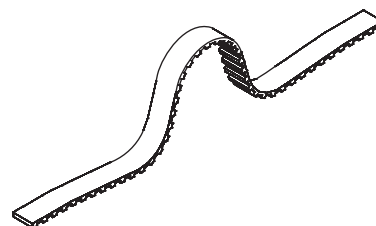
(20 g/m)

Cinghia piana per LL08
 Flat belt for LL08

**LL25-108**

(90 g/m)

Cinghia dentata per LL06
 Timing belt for LL06

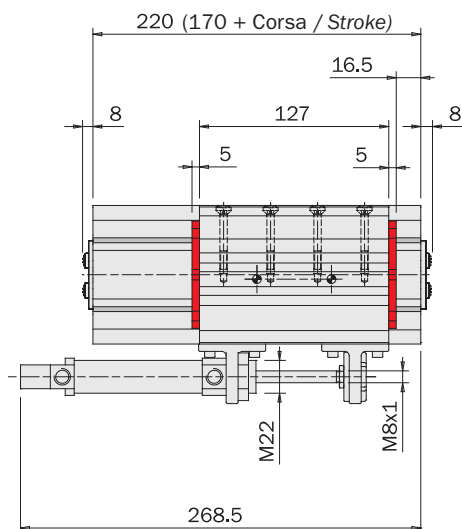
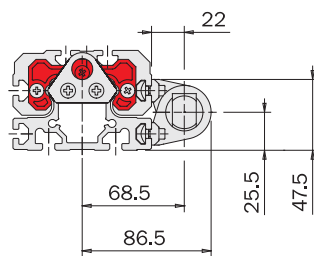
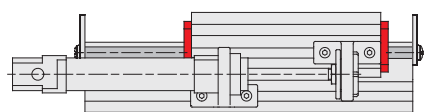
**LM-111**

(90 g/m)

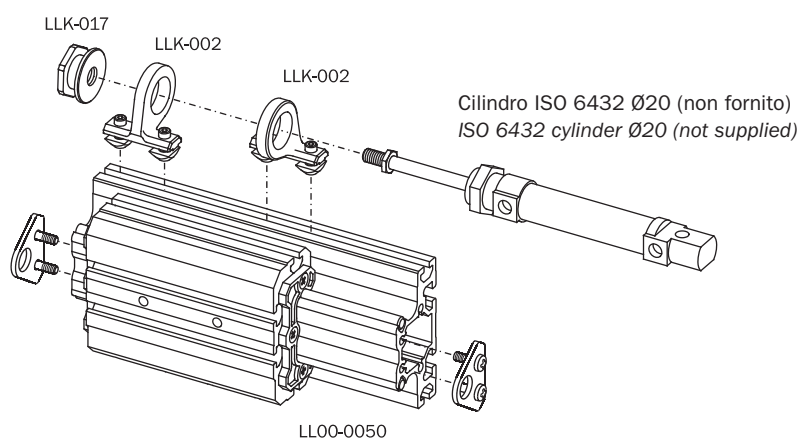
Cinghia dentata per LL07
 Timing belt for LL07

Esempio: Slitta di alesaggio 20mm (cilindro ISO 6432) e corsa 50mm

Example: Slide with 20mm piston bore (ISO 6432) and 50mm stroke



FIRST ANGLE PROJECTION



(A)

Avvertenza

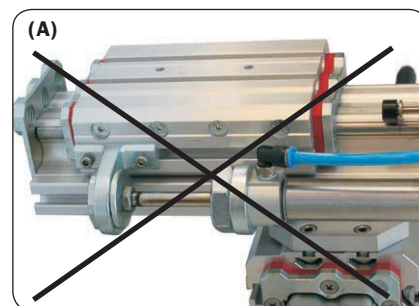
Il lato del carrello con le viti di regolazione si flette, quando si fa le registrazione del precarico.

Quindi si deve evitare di collegare il cilindro, o altri componenti che necessitino di un posizionamento preciso, su quel lato.

Caution

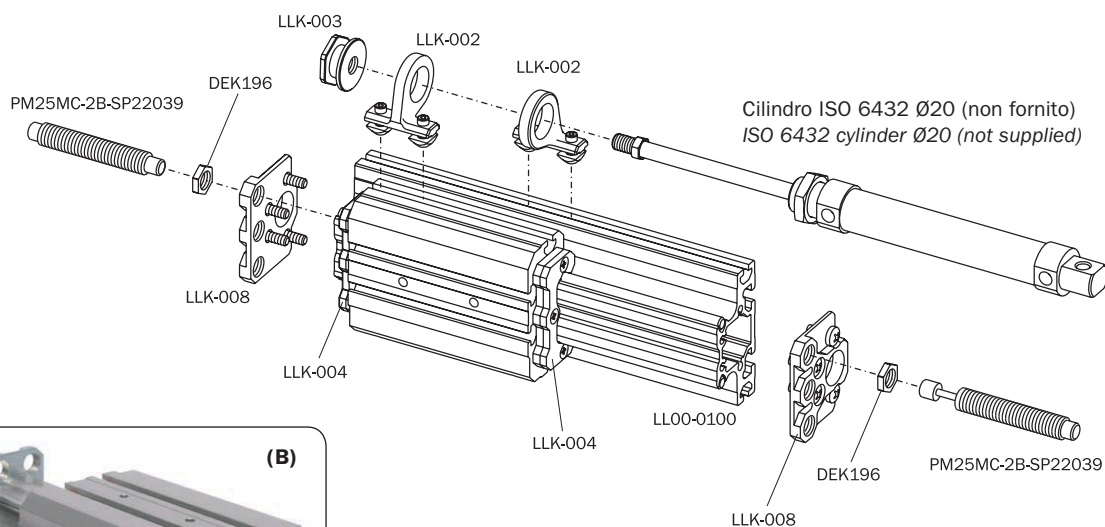
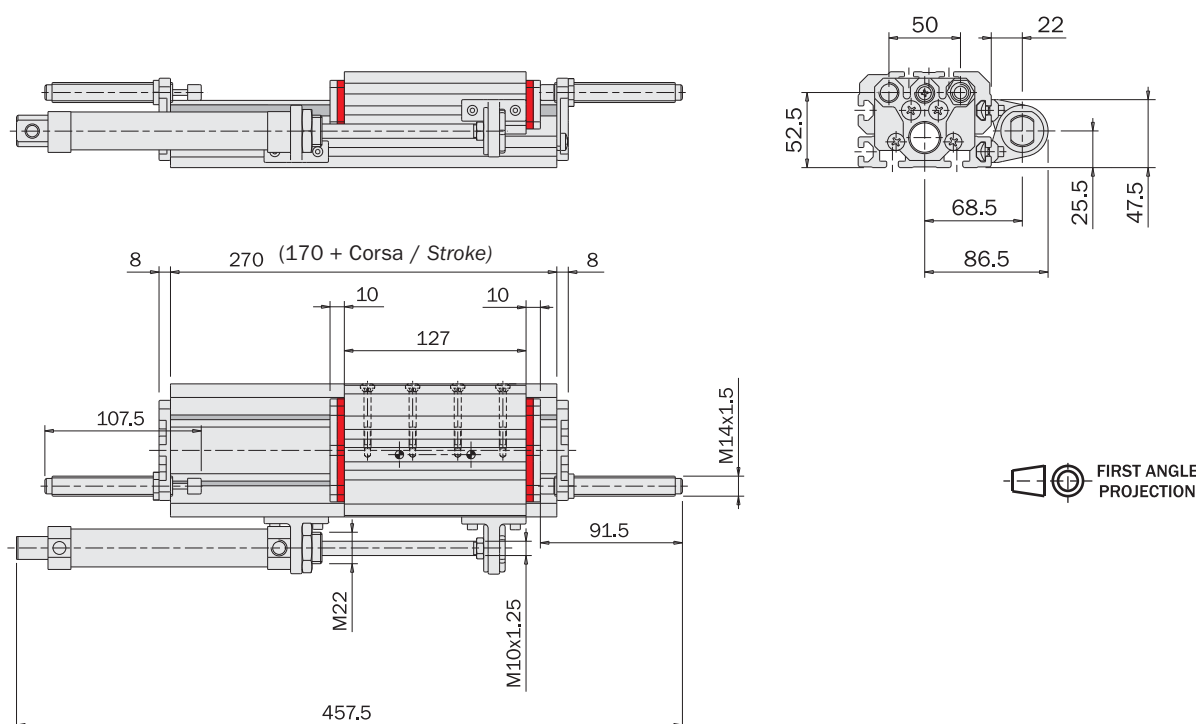
The side of the carrier with the adjustment screws bends, when the preload is set.

Thus, the cylinder, or other parts needing a precise positioning, should not be mounted on that side.



Esempio: Slitta di alesaggio 25mm (cilindro ISO 6432) e corsa 100mm, con deceleratori idraulici sulle testate

Example: Slide with 25mm piston bore (ISO 6432) and 100mm stroke, with hydraulic shock-absorbers on the end plates



(B)

(B)

Avvertenza

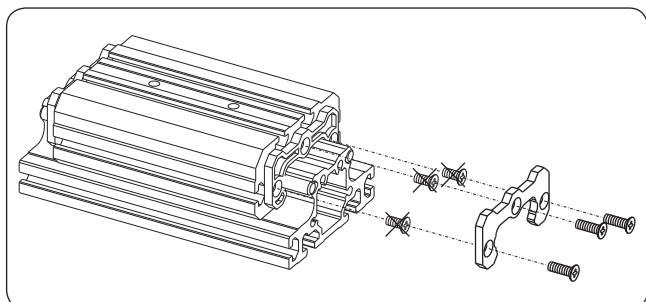
La protezione di plastica rossa non deve essere rimossa, quando si applica la protezione in acciaio LLK-004, che fa da riscontro per il deceleratore.

Si devono rimuovere solo le sue tre viti corte, per poi fissare insieme entrambe le protezioni con le viti lunghe fornite nel kit LLK-004.

Caution

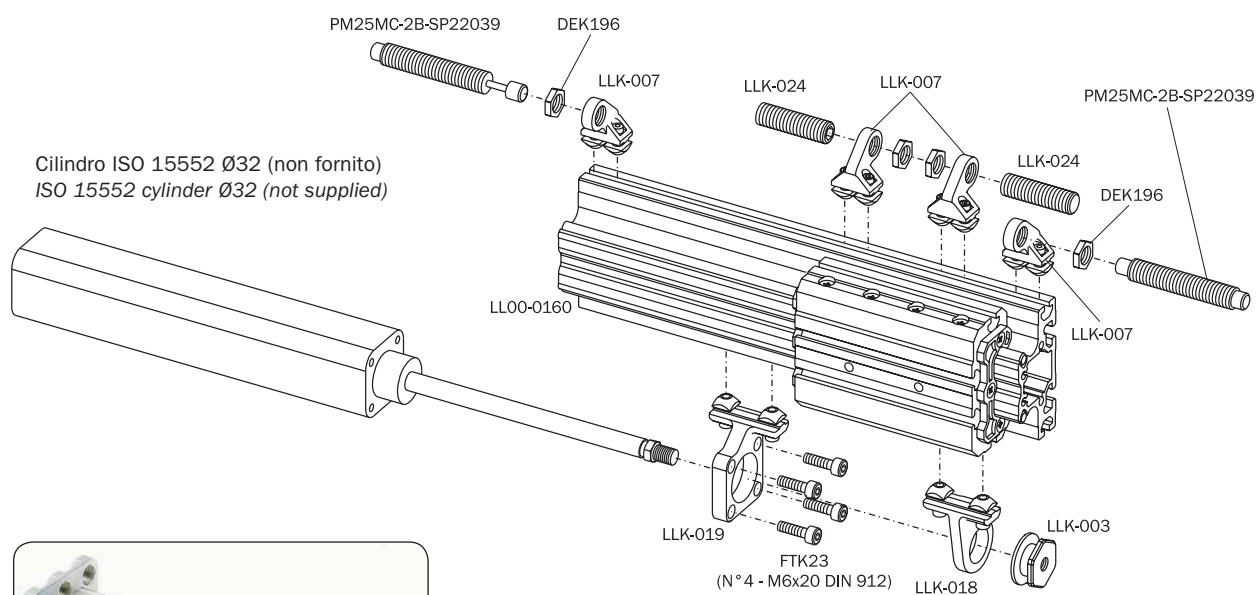
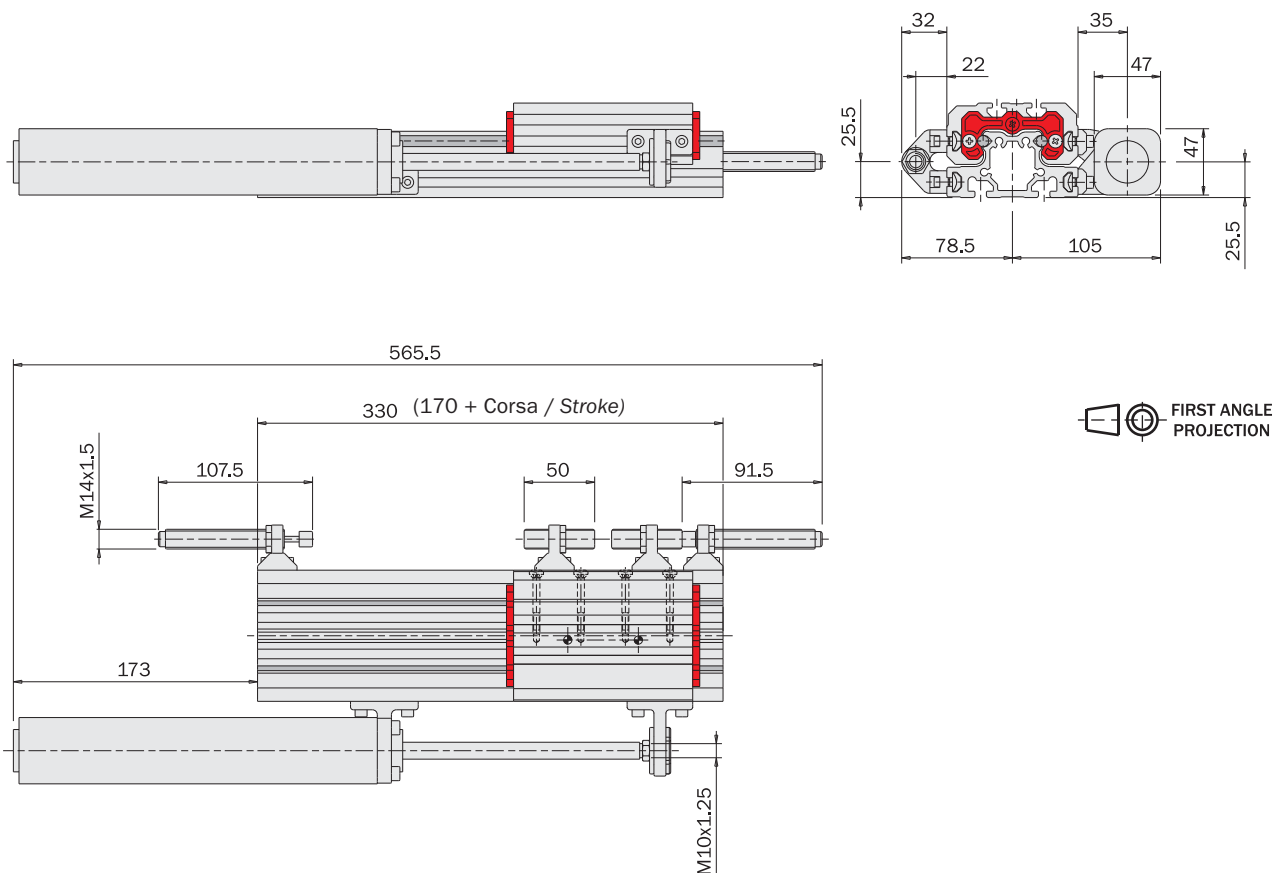
The red plastic cover must not be removed, when the steel plate LLK-004 (working against the shock-absorber) is used.

Remove only its three short screws and then fasten both the plastic and steel protections, with the longer screws, supplied in the kit LLK-004.



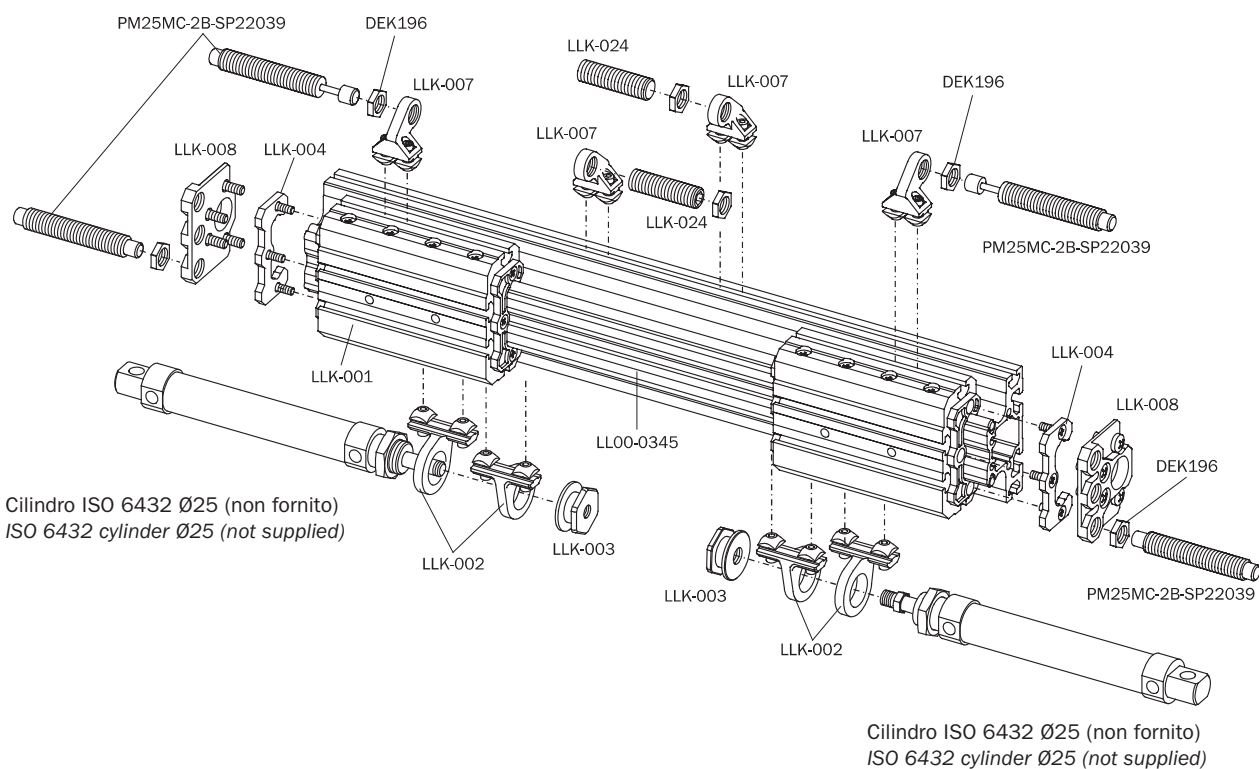
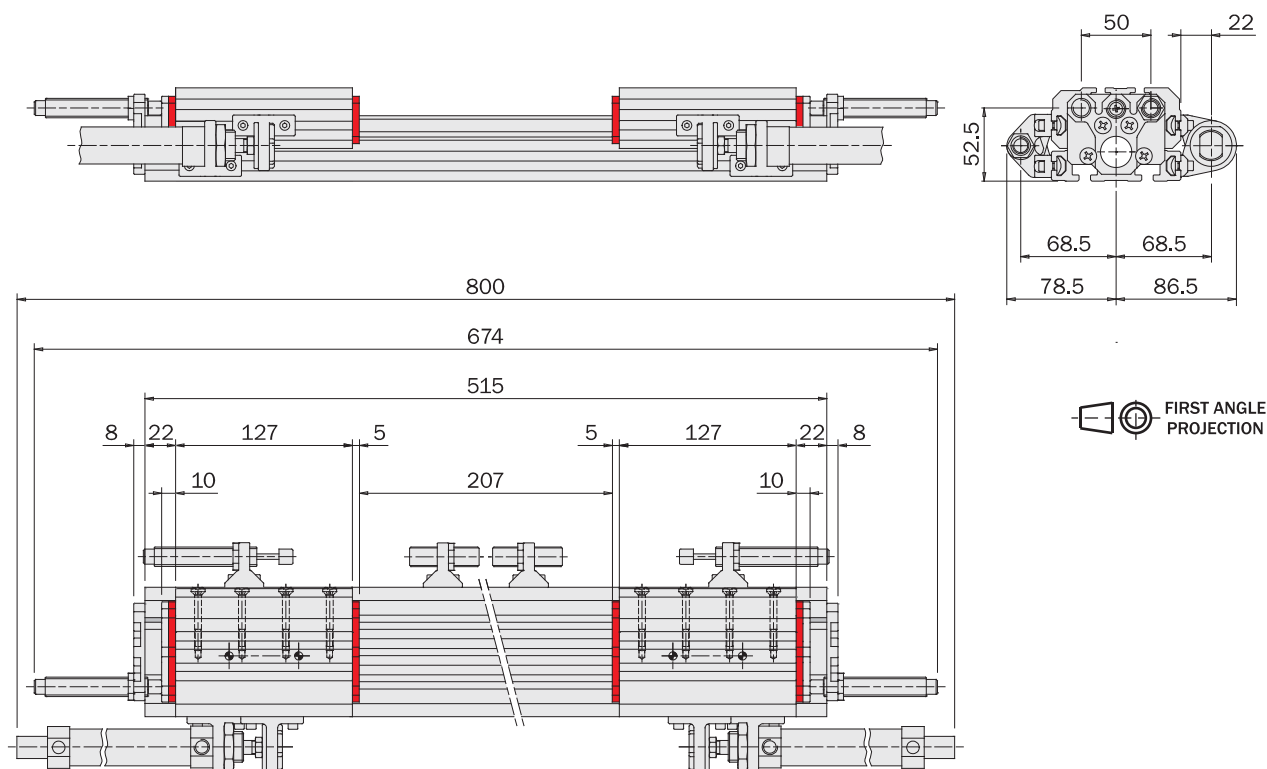
Esempio: Slitta di alesaggio 32mm (cilindro ISO 15552) e corsa 160mm, con deceleratori idraulici sul fianco

Example: Slide with 32mm piston bore (ISO 15552) and 160mm stroke, with hydraulic shock-absorbers on one side



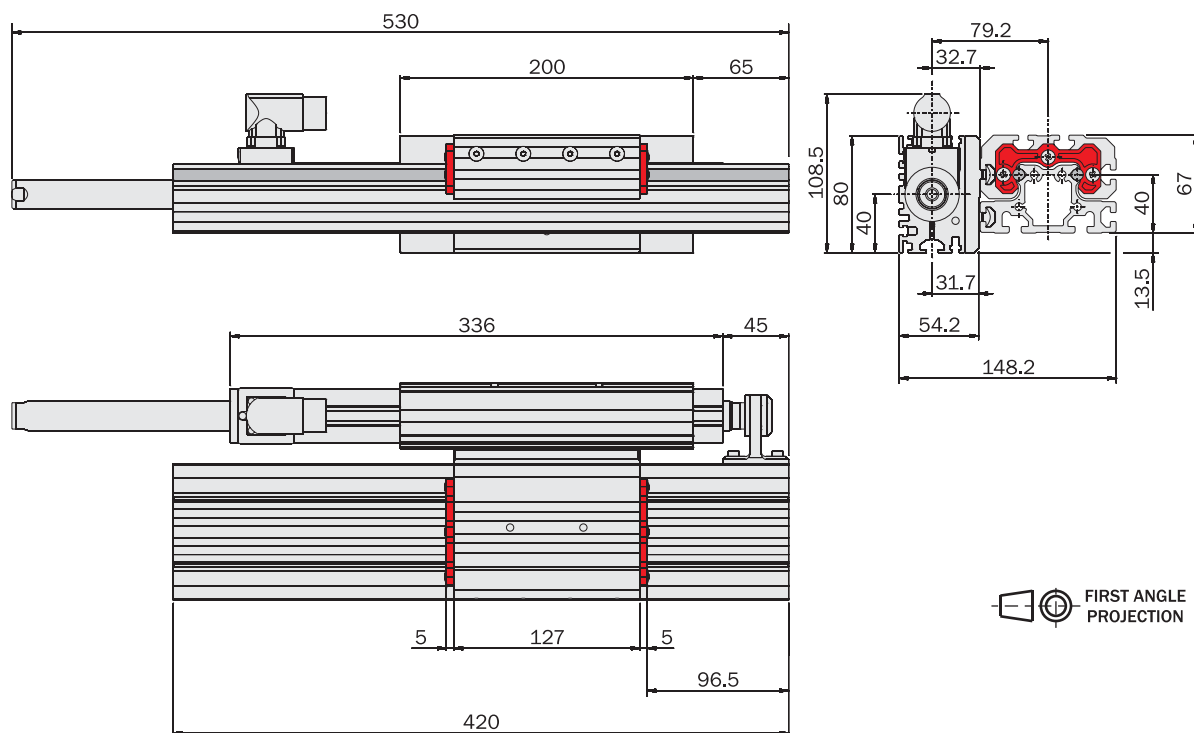
Esempio: Due slitte indipendenti sullo stesso asse di alesaggio 25mm (cilindro ISO 6432) e corsa 2x100mm, con deceleratori idraulici

Example: Two independent slides on the same profile with 25mm piston bore (ISO 6432) and 2x100mm stroke, with hydraulic shock-absorbers

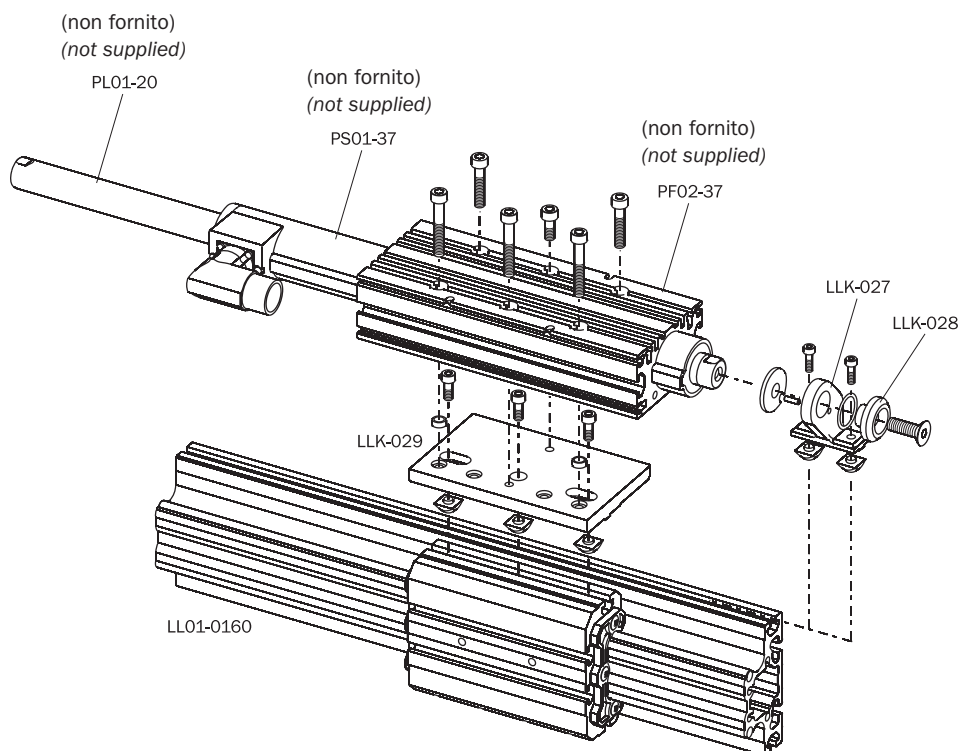


Esempio: Slitta di corsa 160mm azionata da motore lineare LinMot.

Example: Slide, 160mm stroke, powered by a LinMot linear motor.



FIRST ANGLE PROJECTION



Kit di fissaggio per cilindro senza stelo

Kit for fastening rodless cylinder

LLK-005 + Origa OSP-P25



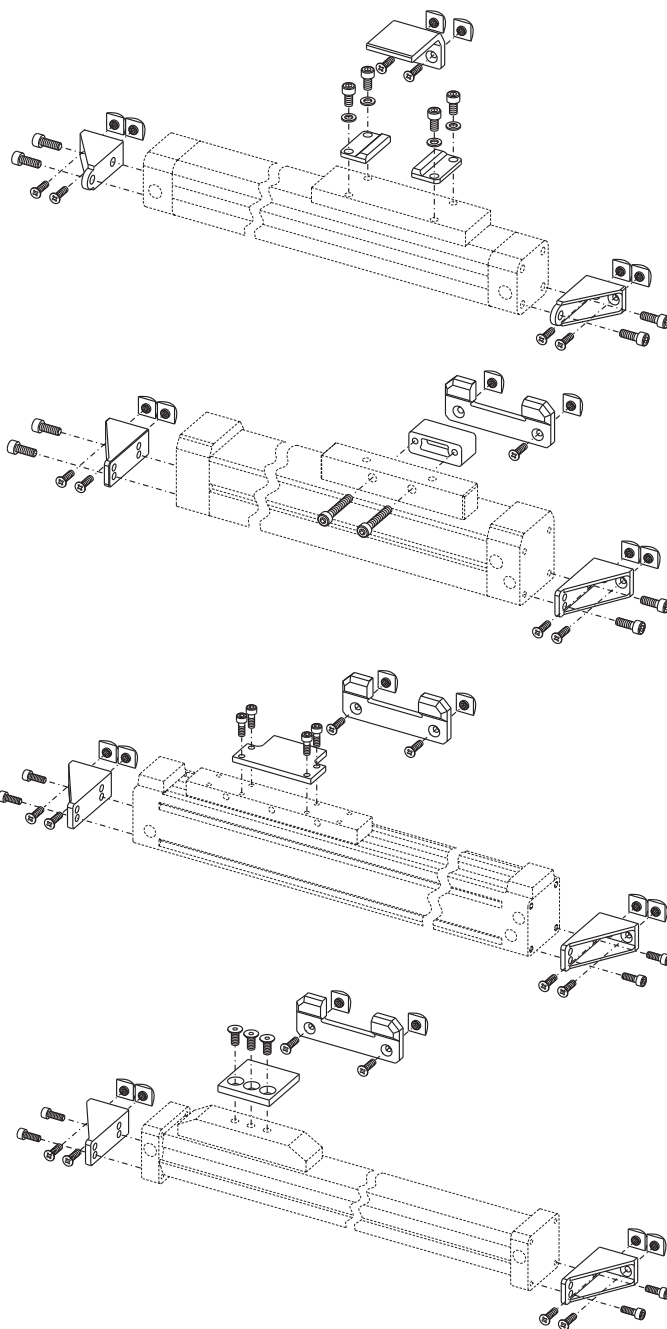
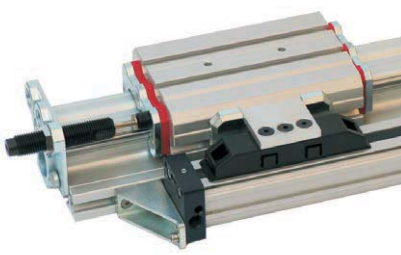
LLK-006 + Festo DGC-K-25



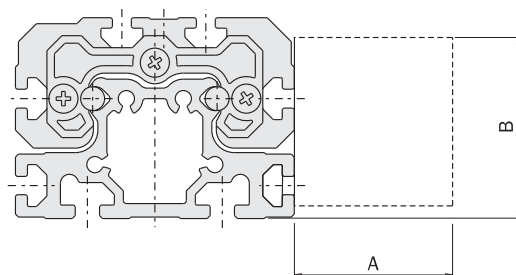
LLK-22 + Ultraline KCLS9A1X025



LLK-023: Norgren LINTRA M/44025

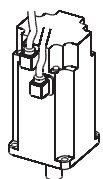
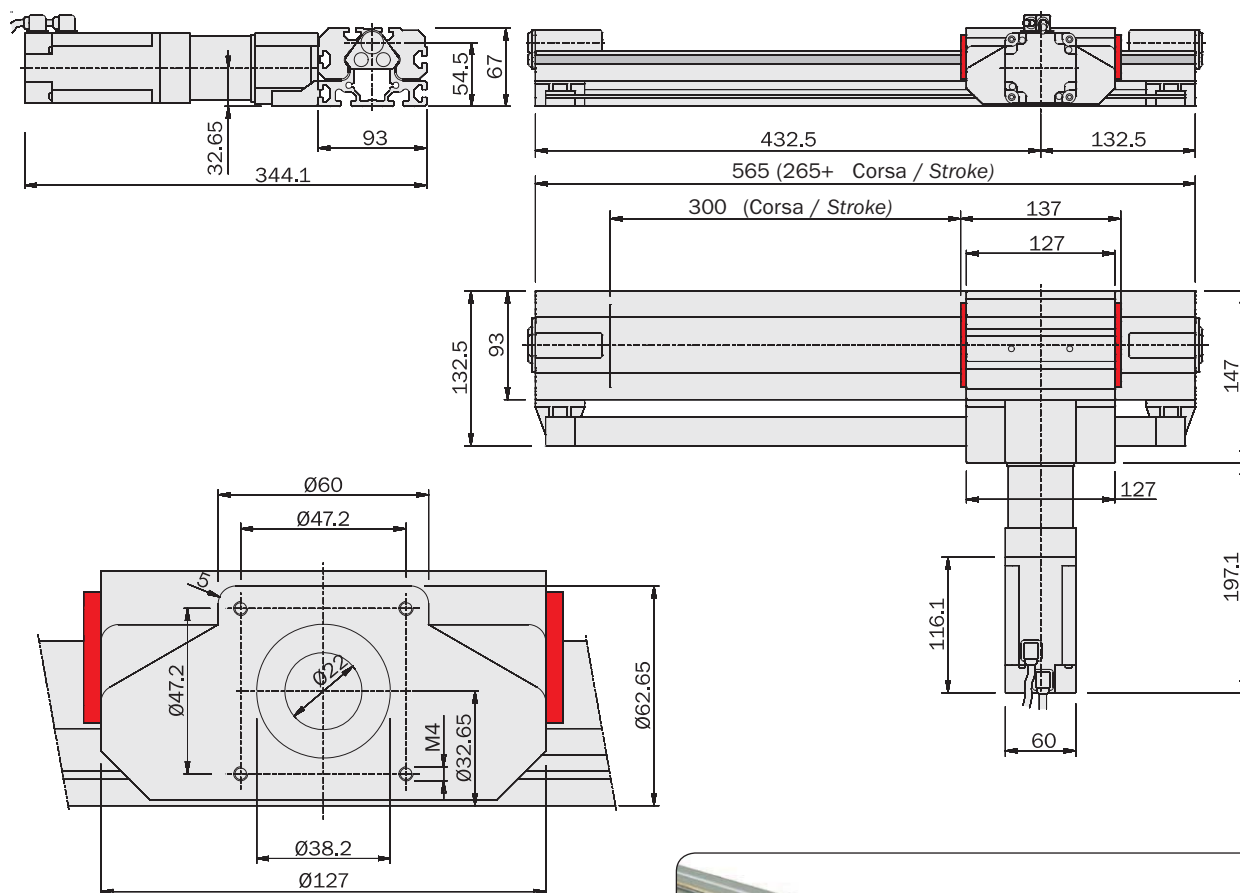


	A	B
Origa OSP-P25 + LLK-005	48 mm	65 mm
Festo DGC-K-25 + LLK-006	52 mm	65 mm
Ultraline KCLS9A1X025 + LLK-022	52 mm	65 mm
Norgren Lintra M/44025 + LLK-023	52 mm	65 mm

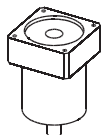


**Esempio: Slitta con trasmissione ad omega
(corsa 300mm) azionata da motoriduttore**

**Example: Slide with omega transmission (300mm
stroke) powered by servomotor and gear reducer**



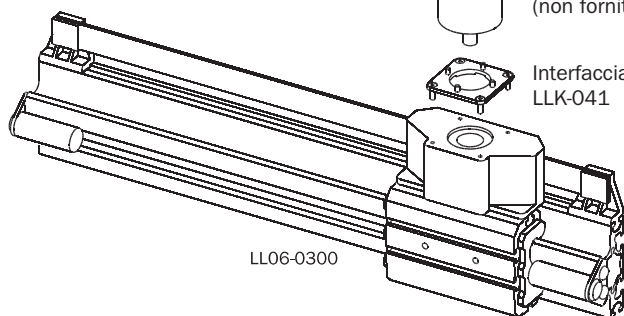
Motore Mitsubishi
Mitsubishi motor
HF-KE23BW1-S100 (200W)
(non fornito) / (not supplied)



Riduttore Tecnoingranaggi
Tecnoingranaggi gear reducer
LC050.1.5.12'.14.30.50.70
(non fornito) / (not supplied)



Interfaccia / Interface
LLK-041

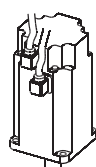
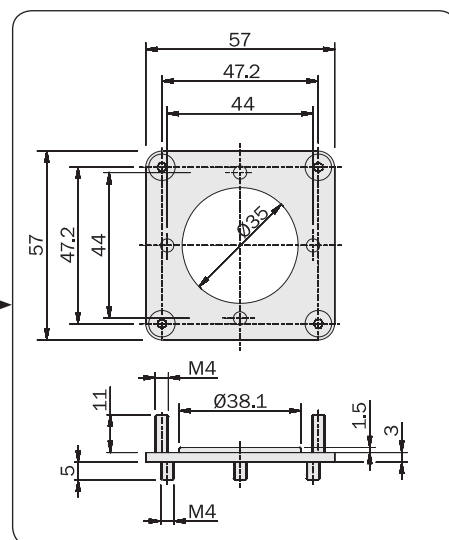
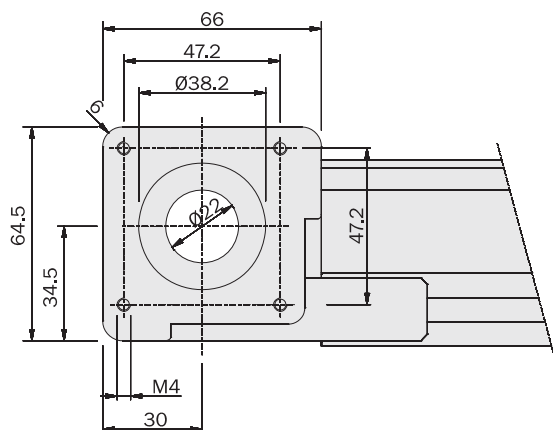
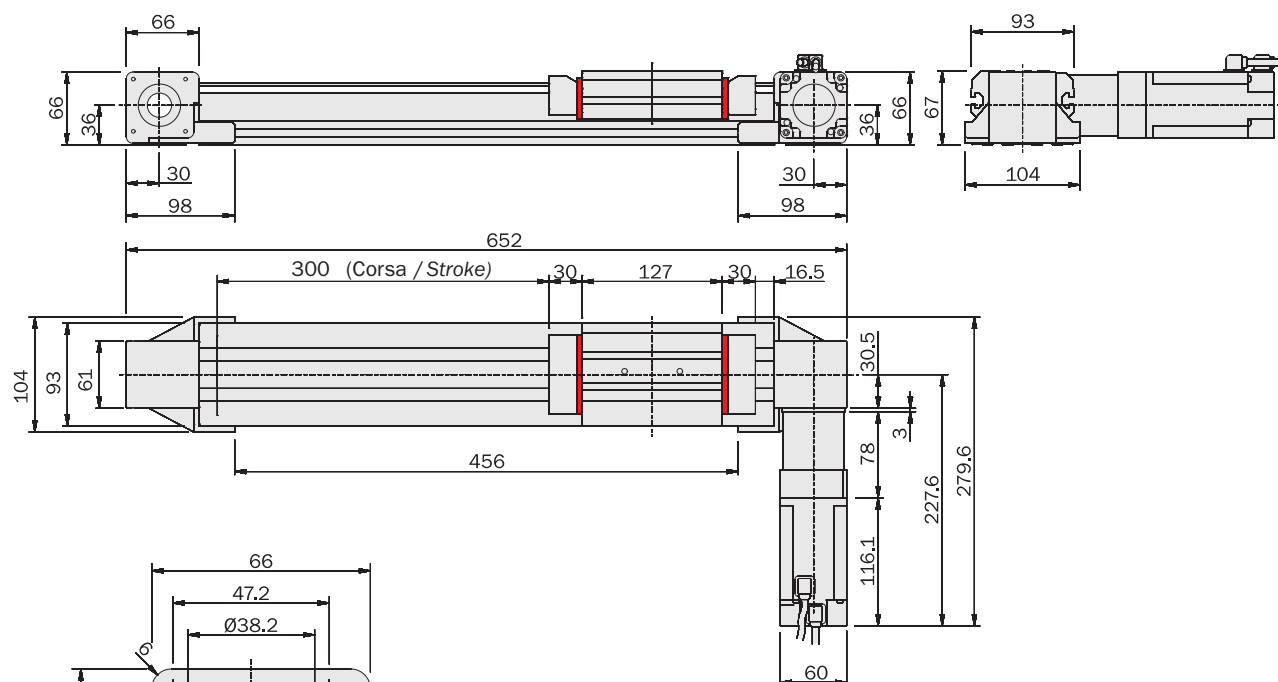


LL06-0300

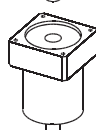
Cinghia Belt	T5-25
Carico ammesso sulla cinghia Allowable tensile load on the belt	1960 N
Diametro calettatore Lock unit diameter	12 mm
Coppia per serraggio calettatore Locking set installation torque	1.2 Nm
Corsa per ogni rotazione puleggia Stroke per pulley revolution	130 mm
Inerzia pulegge Pulleys inertia	57 Kgmm ²
Massa del carrello Carrier mass	1.77 kg
Attrito del carrello Carrier friction	30 N
Carico dinamico dei cuscinetti (C) Bearings dynamic load rate (C)	4940 N
Carico statico dei cuscinetti (Co) Bearings static load rate (Co)	3450 N
Velocità massima Maximum speed	2 m/s
Ripetibilità Repeatability	±0.1 mm

**Esempio: Slitta con trasmissione a cinghia
(corsa 300mm) azionata da motoriduttore**

**Example: Slide with belt drive (300mm stroke)
powered by servomotor and gear reducer**



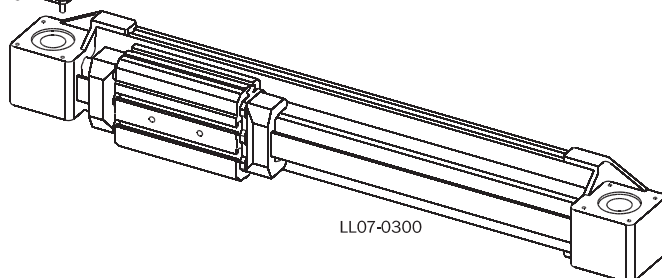
Motore Mitsubishi / Mitsubishi motor
HF-KE23BW1-S100 (200W)
(non fornito) / (not supplied)



Riduttore Tecnoingranaggi
Tecnoingranaggi gear reducer
LC050.1.5.12'.14.30.50.70
(non fornito) / (not supplied)



Interfaccia / Interface
LLK-041

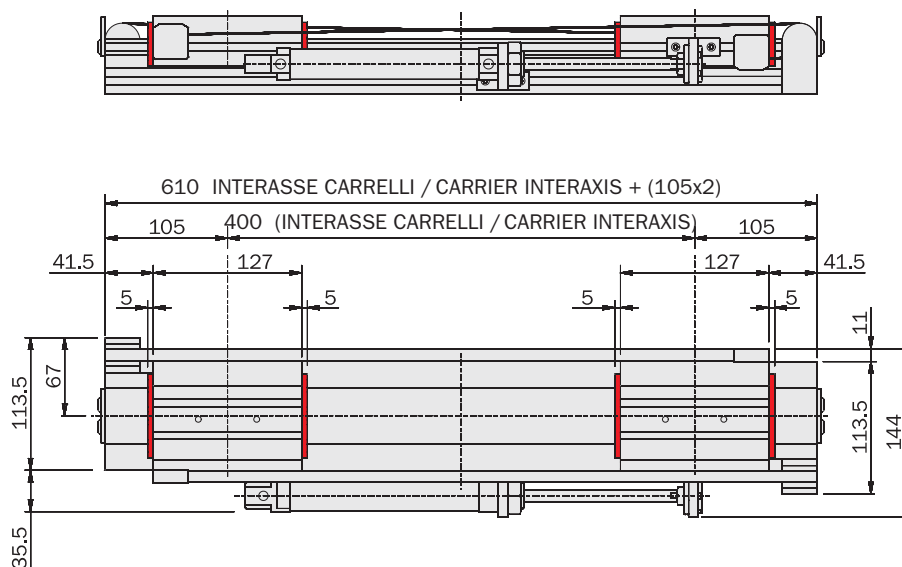


LL07-0300

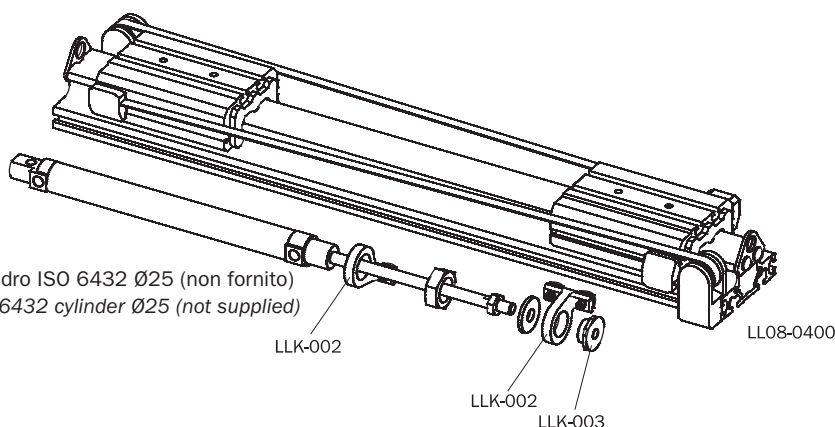
Cinghia Belt	AT5-25
Carico ammissibile sulla cinghia Allowable tensile load on the belt	1840 N
Diametro calettatore Lock unit diameter	12 mm
Coppia per serraggio calettatore Locking set installation torque	1.2 Nm
Corsa per ogni rotazione puleggia Stroke per pulley revolution	130 mm
Inerzia pulegge Pulleys inertia	78 Kgmm ²
Massa del carrello Carrier mass	1.09 kg
Attrito del carrello Carrier friction	24 N
Carico dinamico dei cuscinetti (C) Bearings dynamic load rate (C)	4940 N
Carico statico dei cuscinetti (Co) Bearings static load rate (Co)	3450 N
Velocità massima Maximum speed	2 m/s
Ripetibilità Repeatability	±0.1 mm

**Esempio: Pinza autocentrante
(interasse: 400mm) azionata da cilindri
ISO 6432 alesaggio 25mm**

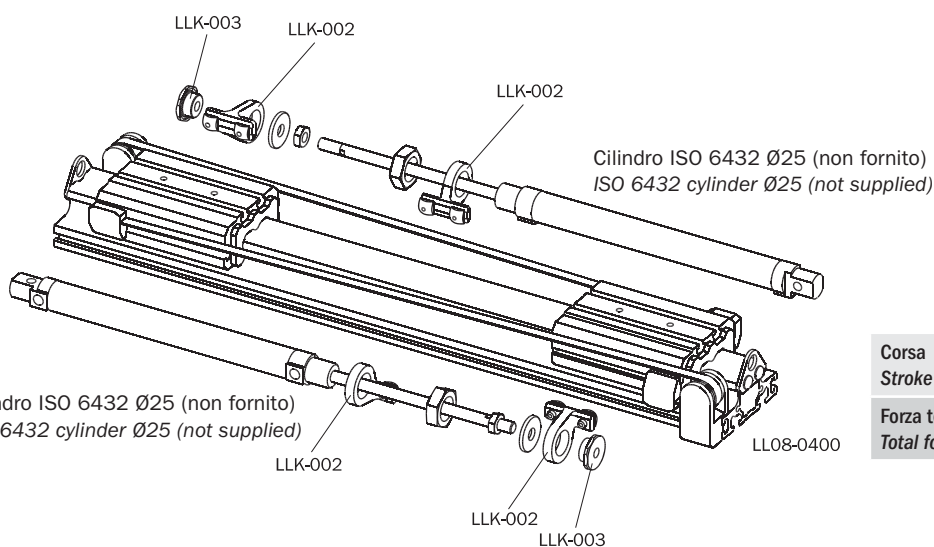
**Example: Selfcentering gripper
(interaxis: 400mm) powered by 25mm
ISO 6432 cylinders**



FIRST ANGLE
PROJECTION



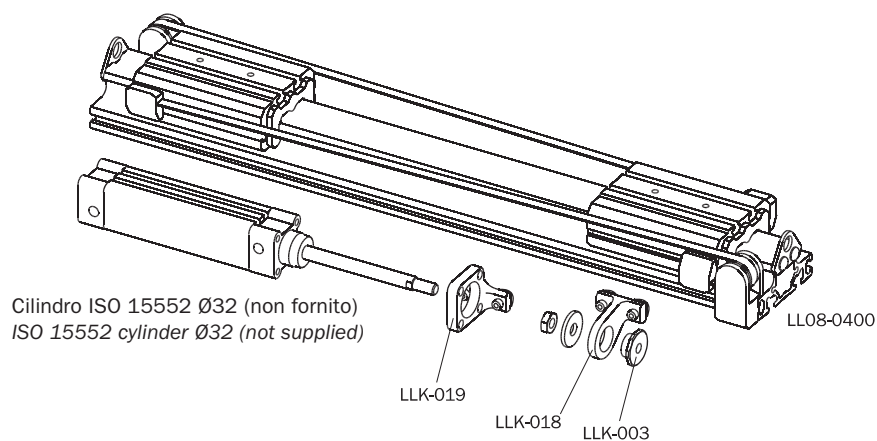
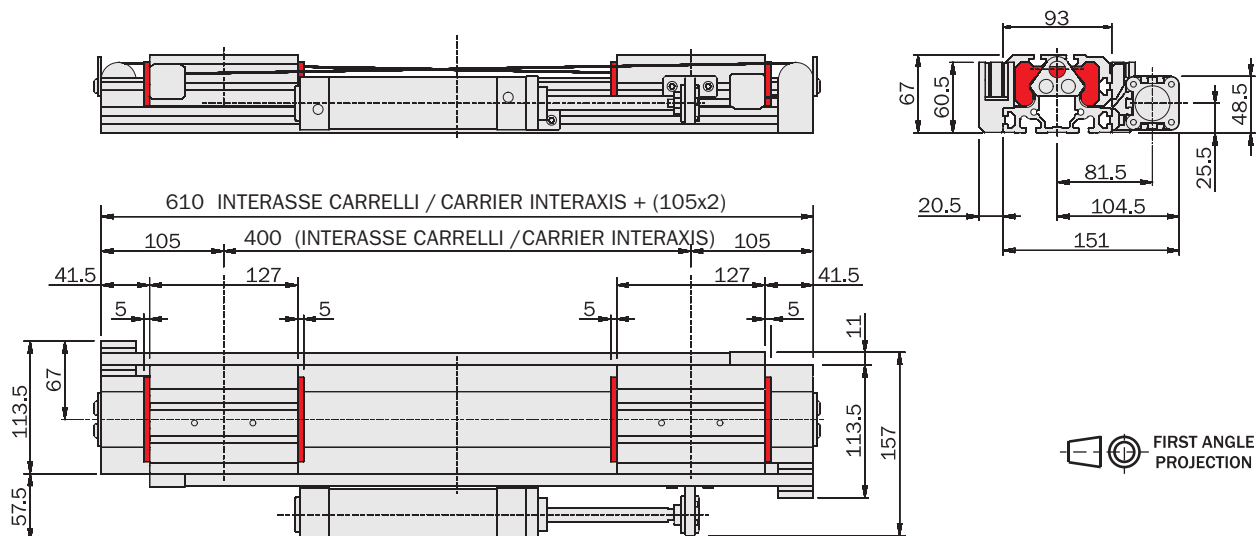
Corsa Stroke	2x130 mm
Forza totale a 6 bar Total force at 6 bar	250 N



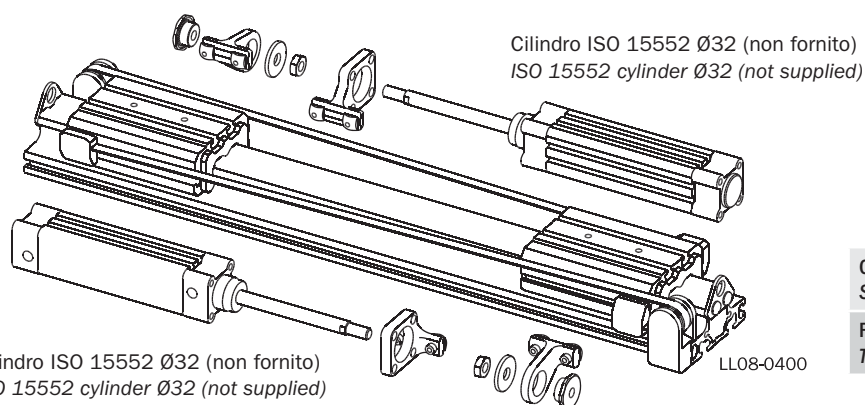
Corsa Stroke	2x130 mm
Forza totale a 6 bar Total force at 6 bar	500 N

Esempio: Pinza autocentrante
(interasse: 400mm) azionata da cilindri
ISO 15552 alesaggio 32mm

Example: Selfcentering gripper
(interaxis: 400mm) powered by 32mm
ISO 15552 cylinders



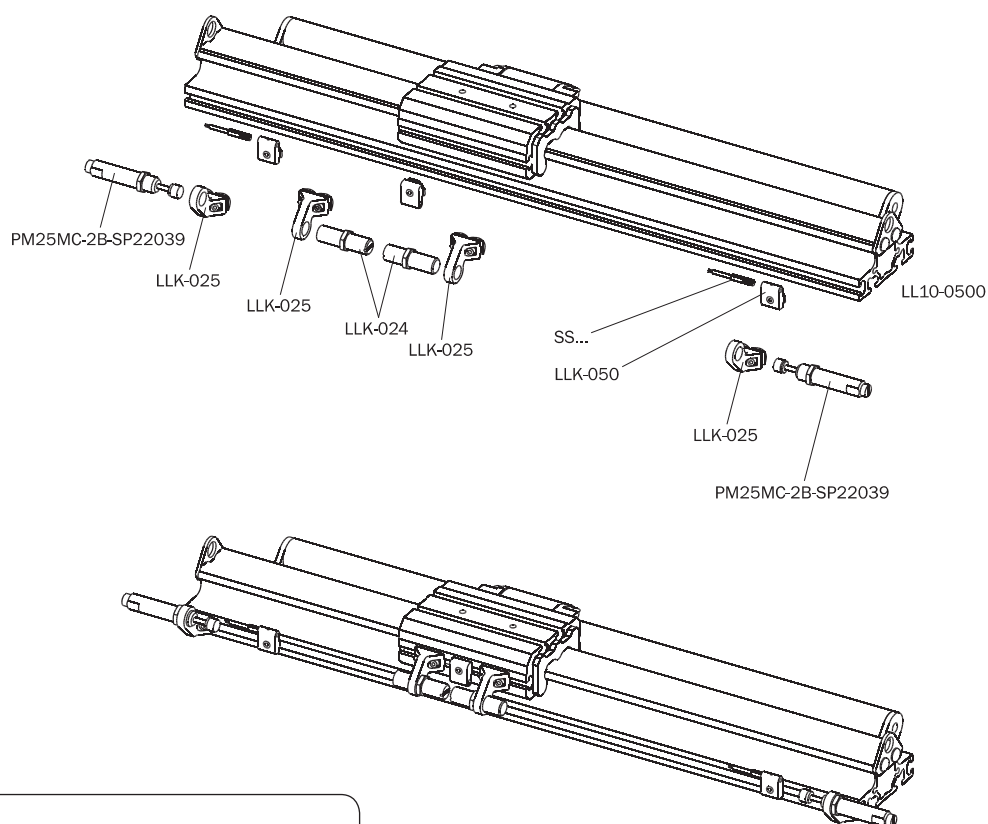
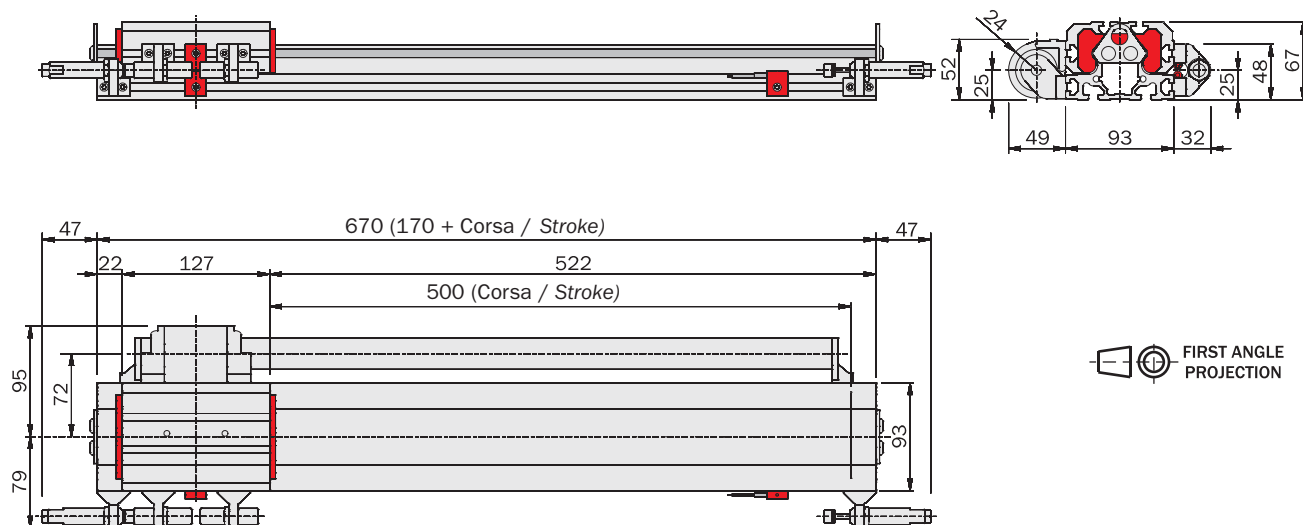
Corsa Stroke	2x130 mm
Forza totale a 6 bar Total force at 6 bar	400 N



Corsa Stroke	2x130 mm
Forza totale a 6 bar Total force at 6 bar	800 N

Esempio: Attuatore pneumatico (alesaggio 25mm, corsa 500mm) a trascinamento magnetico, con deceleratori idraulici e kit sensori

Example: Pneumatic actuator (piston bore: 25mm, stroke: 500mm) magnetically coupled, with hydraulic shock-absorbers and sensor brackets



Avvertenza
La pressione massima di utilizzo è 5bar

Caution
Maximum working pressure is 5bar

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.

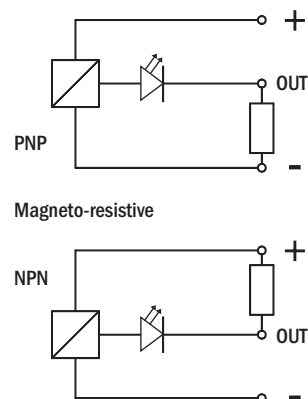
I sensori utilizzabili sono:



Sensors

The operating position can be checked by one or more magnetic sensors (optional), that detect the position by a magnet. Therefore a near big mass of ferromagnetic material or intense magnetic fields may cause sensing troubles.

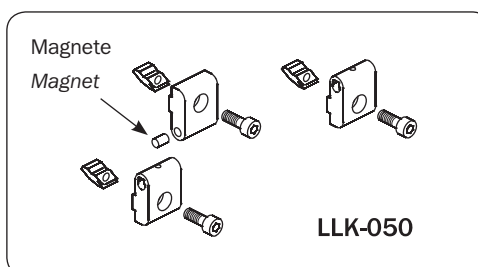
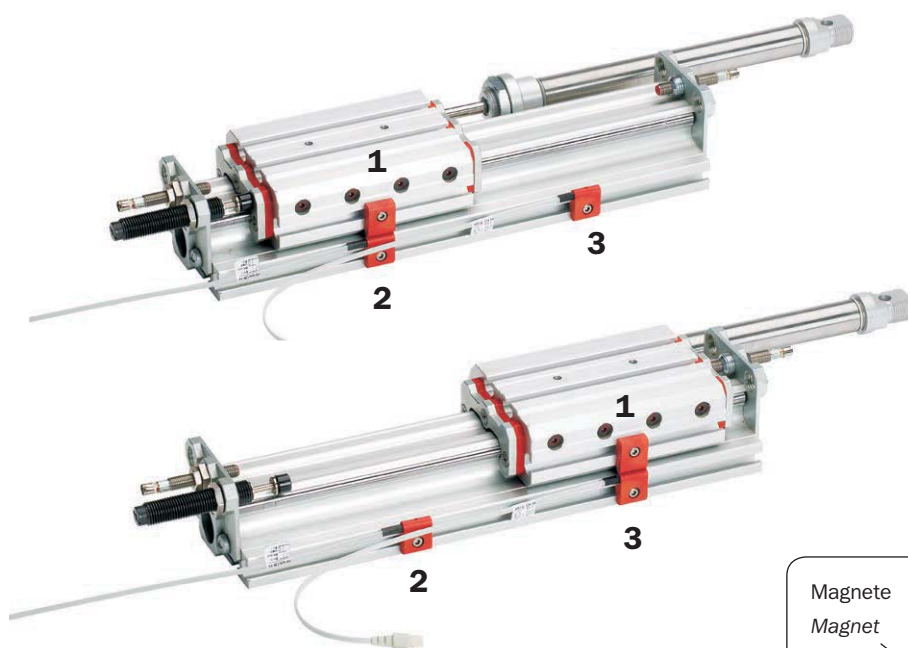
Use sensors:



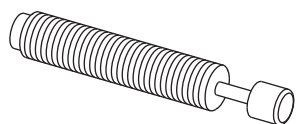
			LL...
SS4N225-G	PNP	cavo 2.5m / 2.5m cable	☑
SS4M225-G	NPN	cavo 2.5m / 2.5m cable	☑
SS3N203-G	PNP	Connettore M8 / M8 snap plug connector	☑
SS3M203-G	NPN	Connettore M8 / M8 snap plug connector	☑

Per montare 2 sensori è necessario il kit LLK-050.

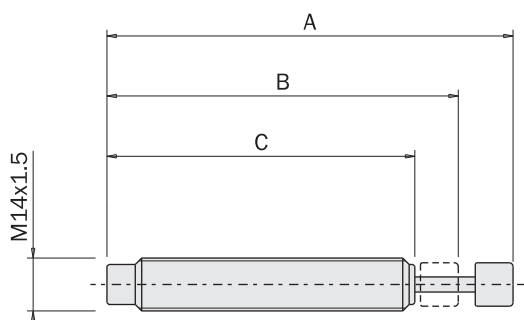
One kit LLK-050 is necessary to mount two sensors.



Deceleratori

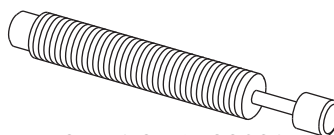
**SPM25MC-1B-SP21365B**

- Peso / Weight: 67 g



	A	B	C
SPM25MC-1B-SP21365B	92.5 mm	79 mm	70 mm
PM25MC-2B-SP22039	107.5 mm	91.5 mm	81.5 mm

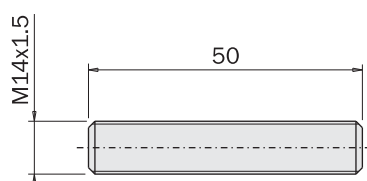
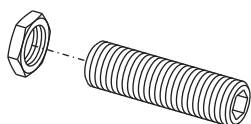
Shock-absorbers

**PM25MC-2B-SP22039**

- Peso / Weight: 75 g

**LLK-024****Fermo meccanico rigido M14x1.5x50**

- Peso: 55 g

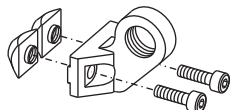
**LLK-024****End stroke grub screw M14x1.5x50**

- Weight: 55 g



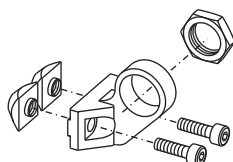
Staffe di fissaggio per deceleratori o fermi meccanici

Brackets for shock-absorbers or end stroke grub screws



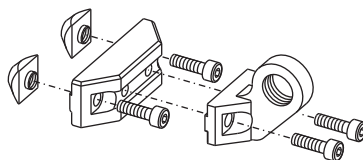
LLK-007

- Peso / Weight: 69 g



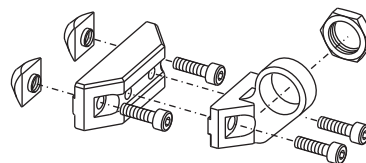
LLK-025

- Peso / Weight: 72 g



LLK-020

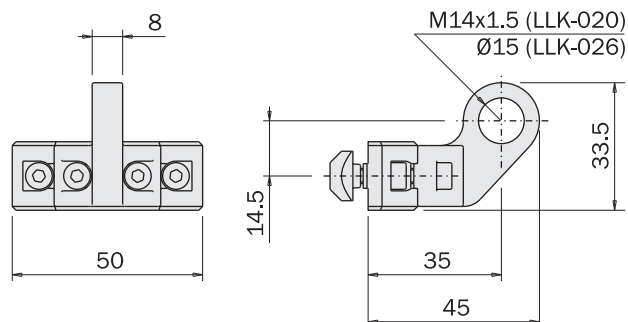
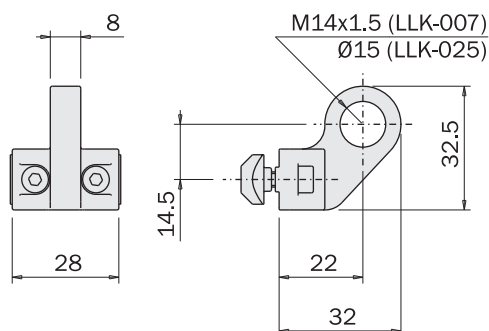
- Peso / Weight: 96 g



LLK-026

- Peso / Weight: 100 g

Dimensioni (mm) / Dimensions (mm)



Esempio di utilizzo / Application example

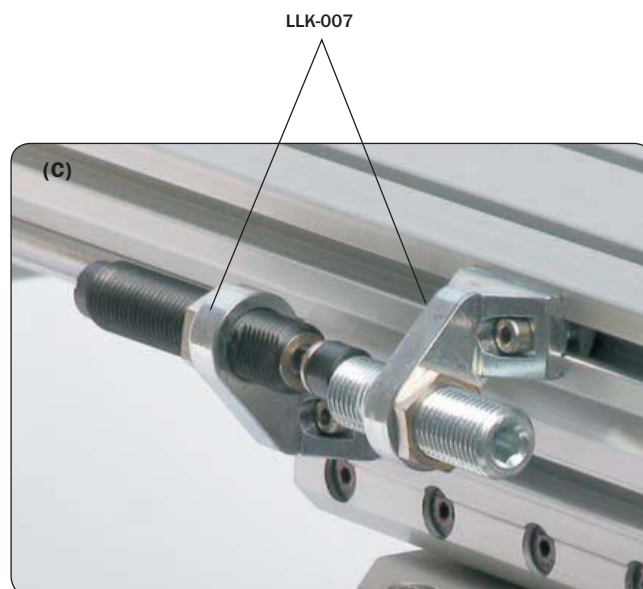
(C)

Avvertenza

Quando si utilizzano le staffe filettate (LLK-007 o LLK-020) sul lato del carrello con le viti di regolazione, è possibile che si verifichi il disallineamento mostrato in figura. Le staffe senza filetto (LLK-025 o LLK-026) consentono il recupero del disallineamento.

Caution

When the threaded brackets (LLK-007 or LLK-020) are used on the side of the carrier with the adjustment screws, the misalignment showed in the photo is possible. The brackets without thread (LLK-025 or LLK-026) avoid this problem.



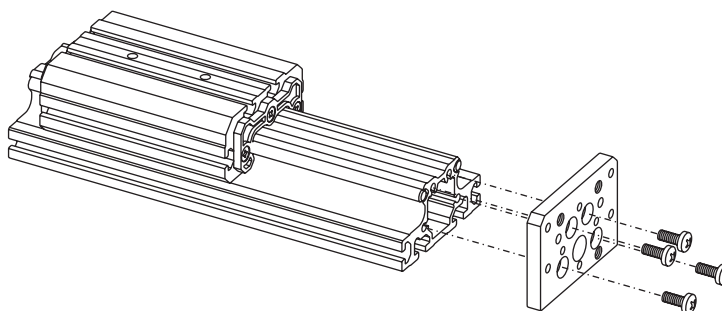
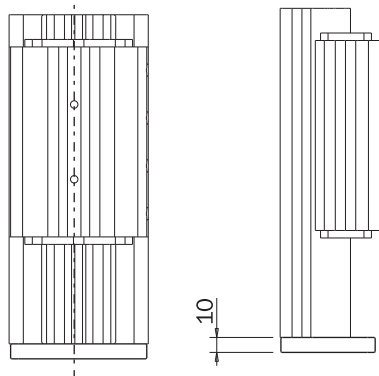
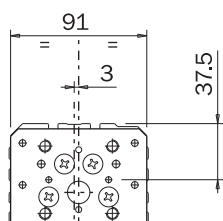
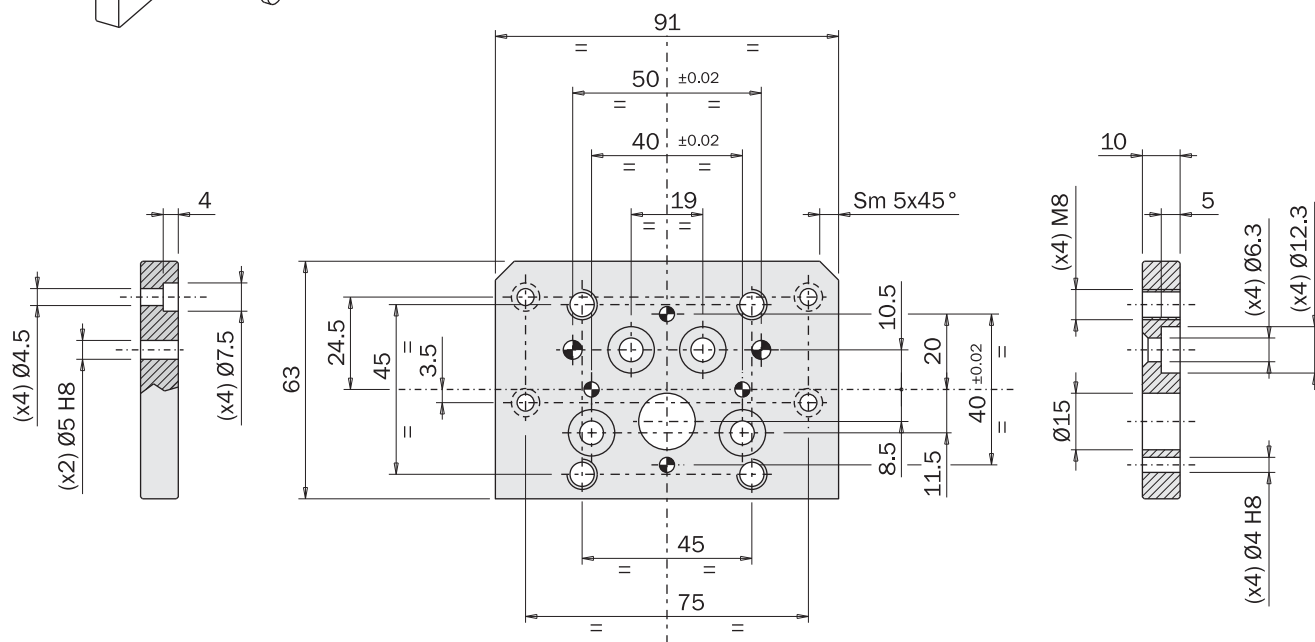
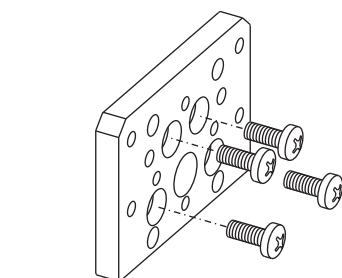
LLK-012

Testata di trascinamento

Va fissata all'estremità del profilo in alluminio, con le quattro viti autofilettanti fornite e serve per il montaggio diretto di un'altra guida LL, oppure di un attuatore rotante R32/3.

Può essere utile anche per fissare altri componenti.

Peso: 137 g



 FIRST ANGLE
PROJECTION

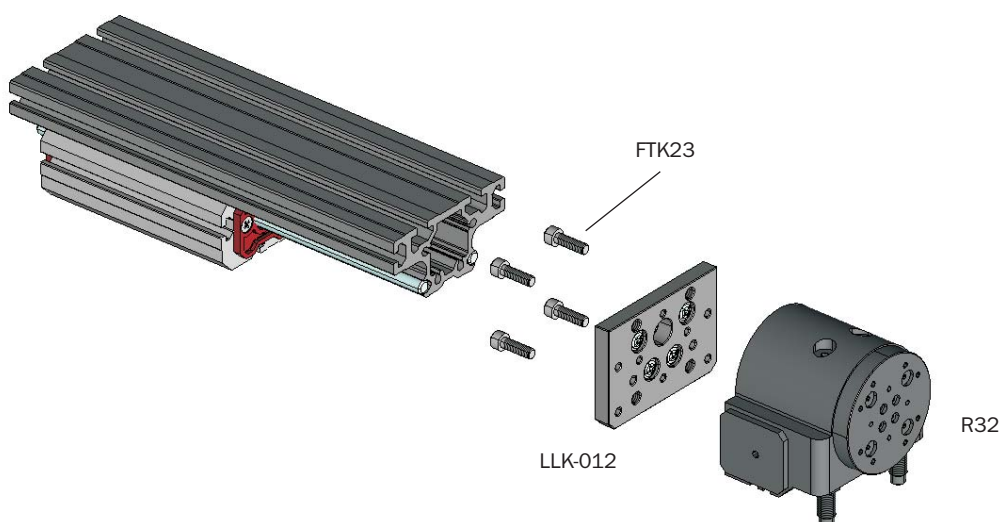
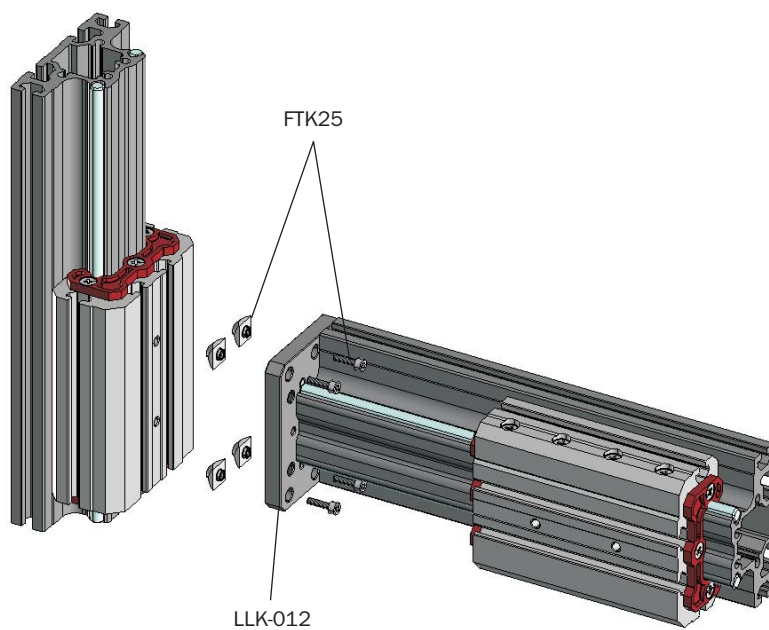
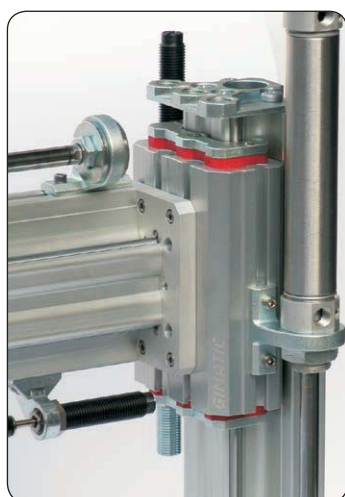
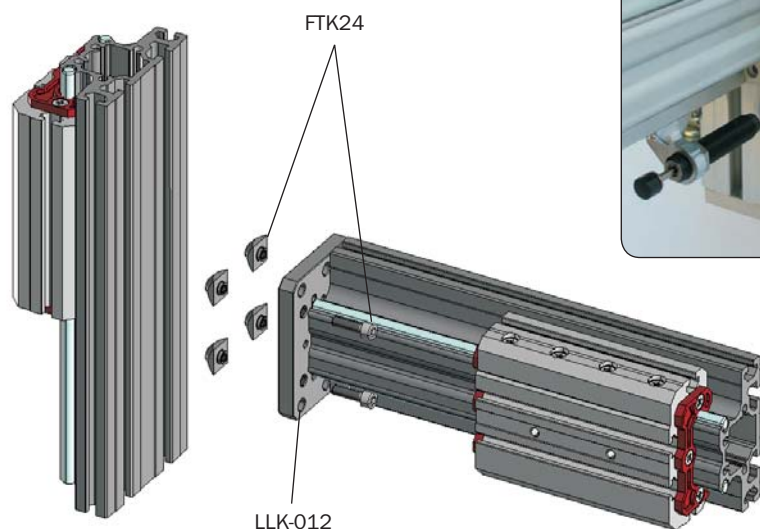
LLK-012

End interface plate

It must be fixed at the end side of the aluminium profile, by four screws (supplied) and it makes possible to mount directly a second LL guidance, or a R32/3 swiveling unit.

It can be used also to mount other components.

Weight: 137 g



LLK-013**Interfaccia di montaggio**

Va fissata all'estremità del profilo in alluminio, o al carrello, e serve per il montaggio diretto di un'altra guida LL, oppure di un attuatore rotante R32/3, o attuatore lineare M25.

Può essere utile anche per fissare altri componenti.

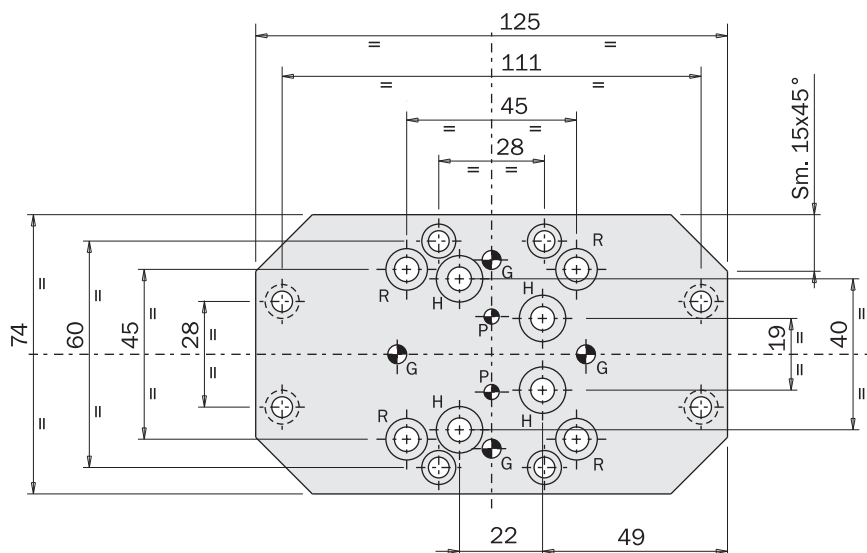
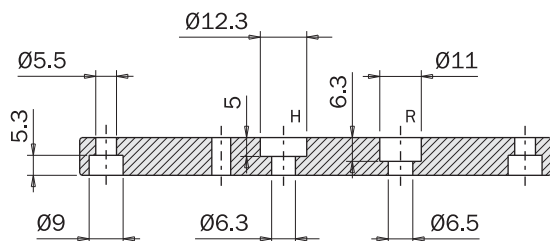
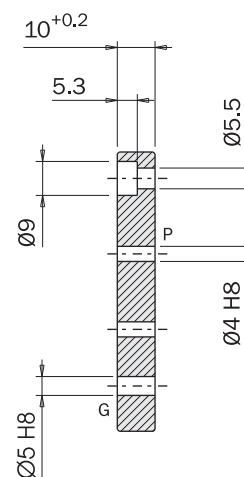
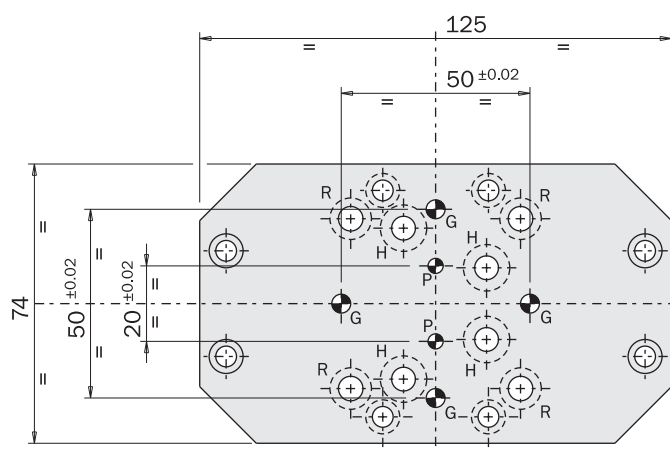
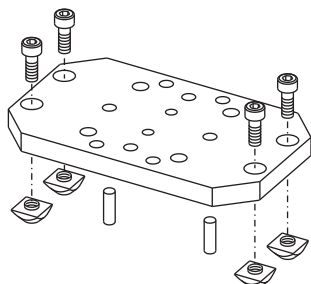
Peso: 262 g

LLK-013**Mounting interface plate**

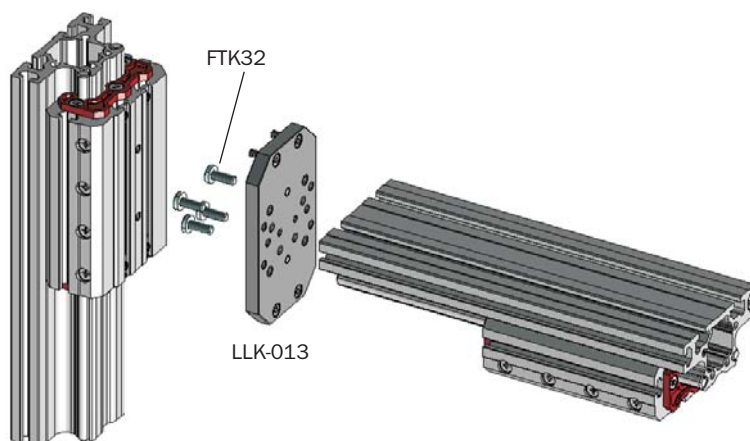
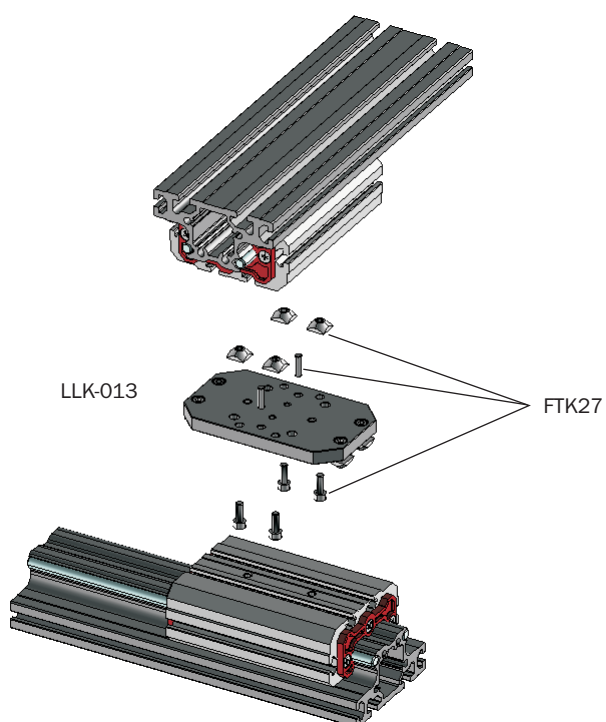
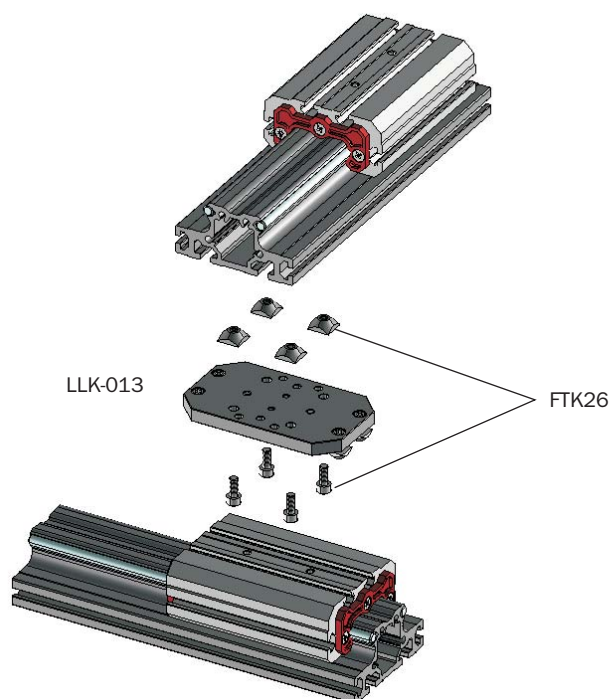
It must be fixed at the end side of the aluminium profile, or on the carrier and it makes possible to mount directly a second LL guidance, or a R32/3 swiveling unit, or a linear actuator M25.

It can be used also to mount other components.

Weight: 262 g

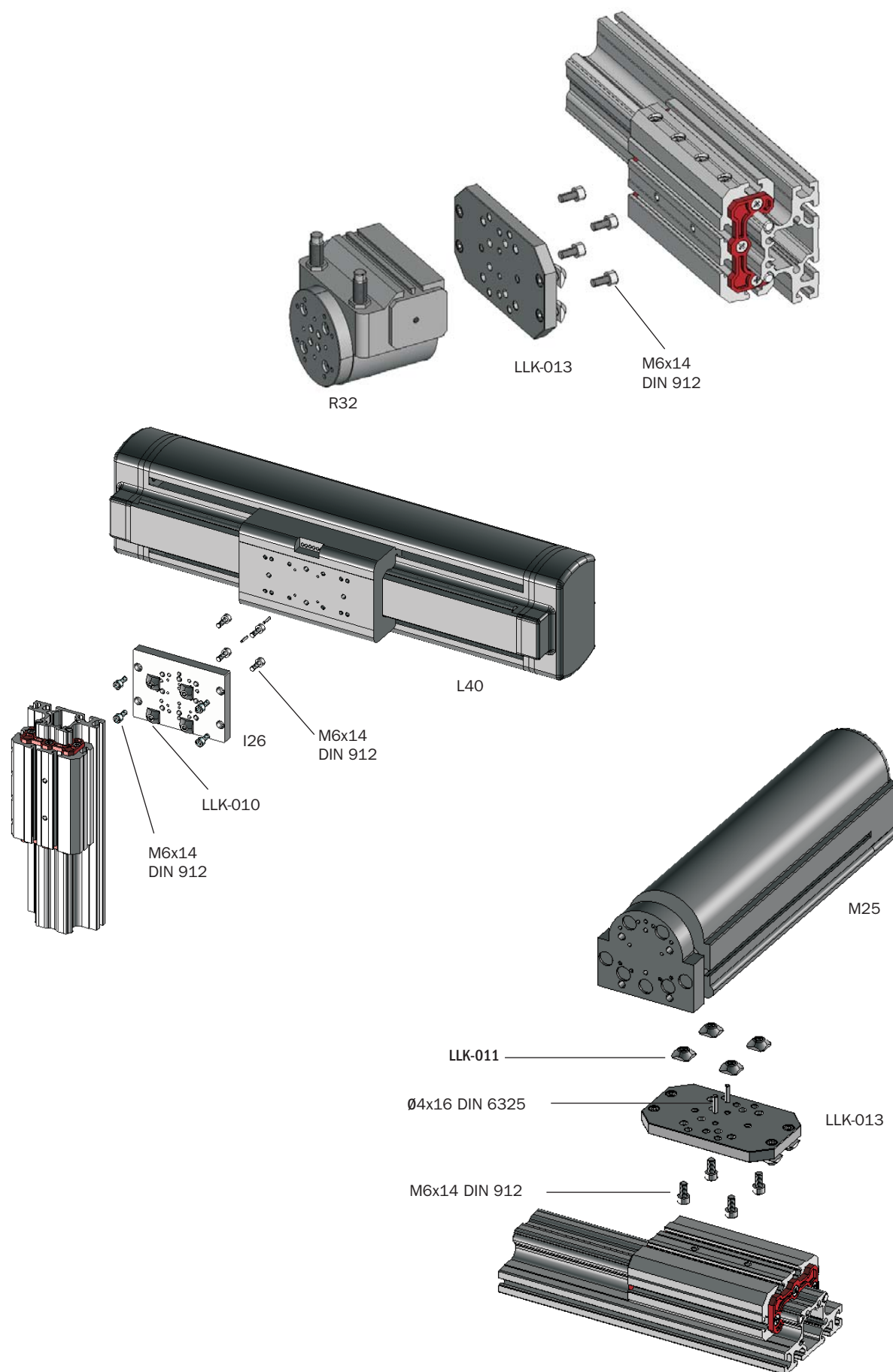


FIRST ANGLE
PROJECTION



Assemblaggio con altri componenti Gimatic

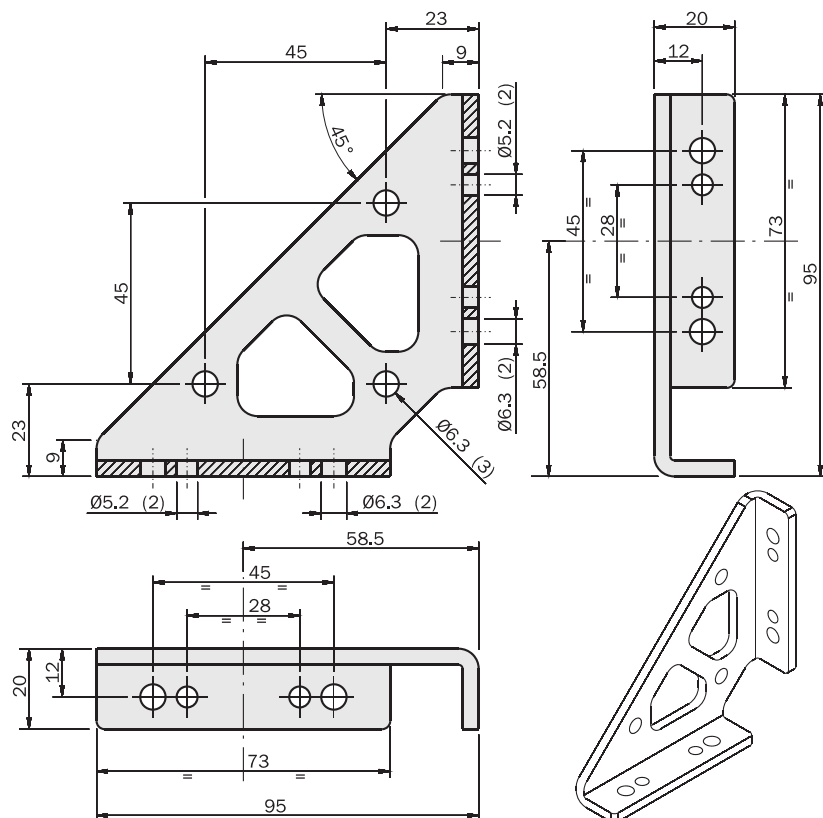
Matching other Gimatic components



LLK-021**Squadra di fissaggio**

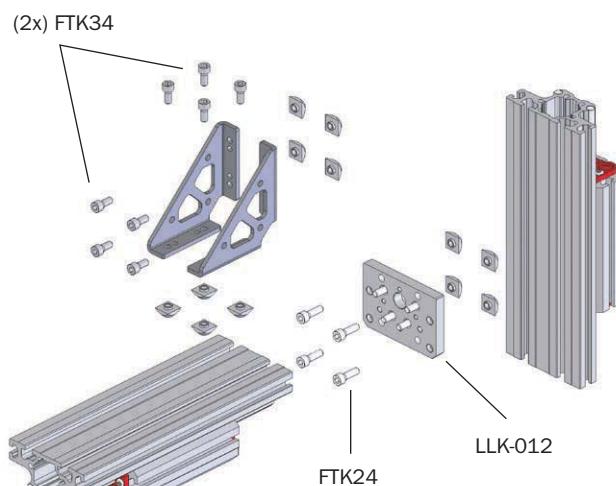
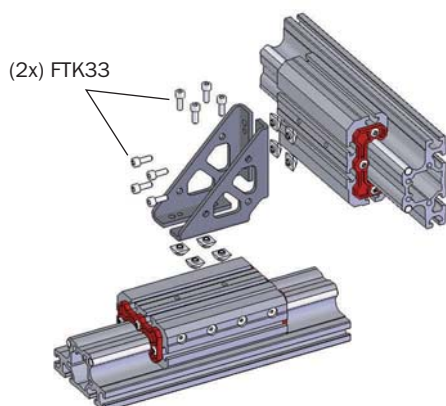
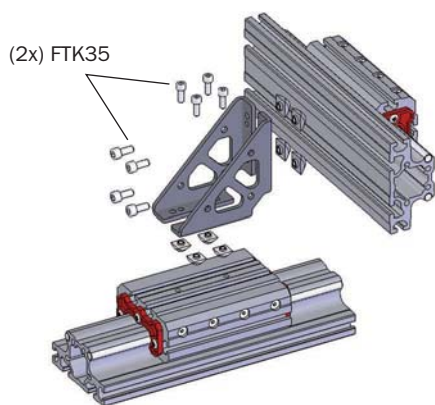
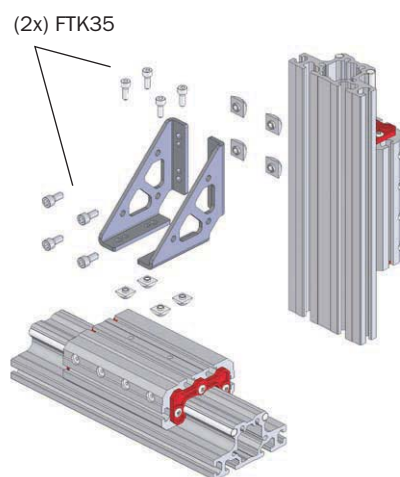
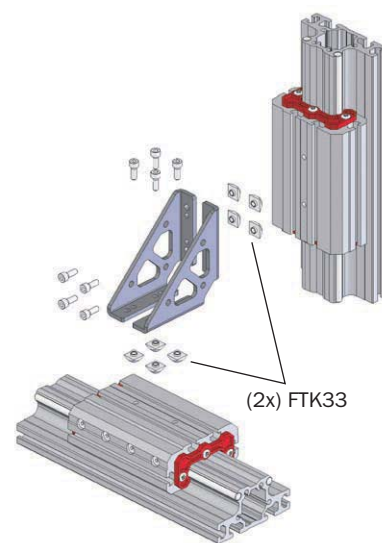
Viti e dadi forniti a parte: codici FTK...

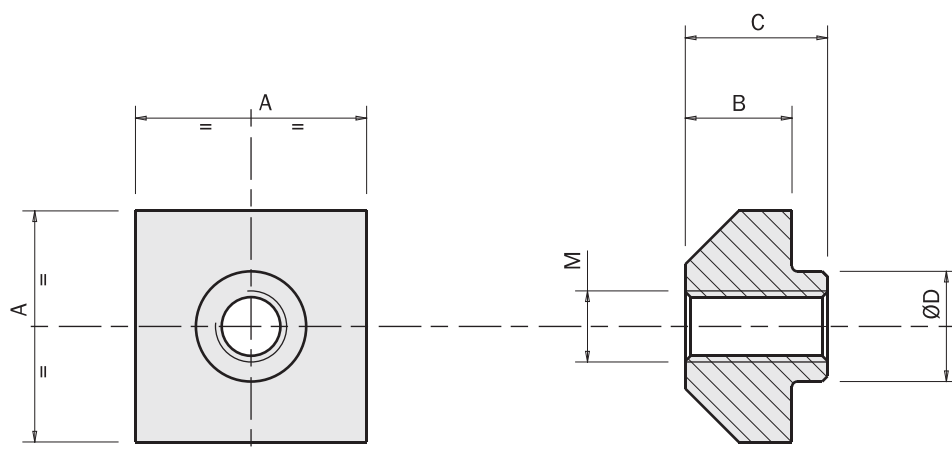
Peso: 170 g

**LLK-021****90° mounting bracket**

Nuts and screws are supplied apart: codes FTK...

Weight: 170 g



Dadi di fissaggio**Nuts for fastening**

	A	B	C	ØD	M	Cava / Slot	Peso / Weight
LL25-09	13	6	8	Ø6.2	M4	6	5 g
LL25-10	16	7.3	9.8	Ø8	M6	8	9 g
VITE-243	16	6.3	8.3	Ø8	M6	8	7 g
LL25-23	13	6	8	Ø6.2	M5	6	5 g

LLK-031**Fine corsa d'emergenza**

La piastrina LLK-031 serve come fine corsa d'emergenza, per evitare la fuoriuscita del carrello.

La si può anche utilizzare per fissare un ammortizzatore di gomma (LLK-046).

Nelle unità dotate di serie della piastrina LLK-031, le barre in acciaio non sono cianfrinate nel profilo in alluminio.

Quindi, se la piastrina viene rimossa, si deve sempre montare una delle piastre (LLK-008 o LLK-012) che fanno da contenimento per le barre in acciaio.

Peso: 30 g

LLK-031**Emergency stop plate**

The end plate LLK-031 is an emergency stopper, to avoid the carrier going out of the rail.

It can be used also to mount a rubber damper (LLK-046).

In the units assembled in factory with the end plate LLK-031, the steel bars are not caulked in the aluminium profile.

Therefore, if the end plate is removed, one of the plates LLK-008 or LLK-012 must be mounted, to hold the steel bars in their housing.

Weight: 30 g

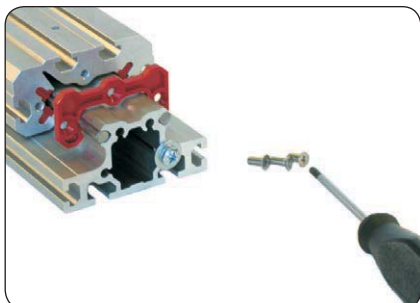


Lubrificazione

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.

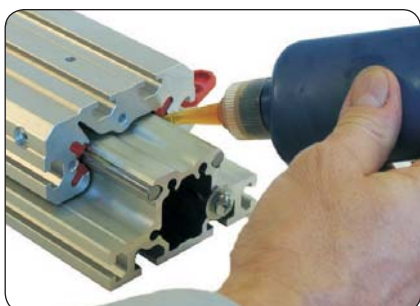
Lubrication

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 (tre viti)

Remove the three 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

Guide lineari a ricircolo di sfere serie LM

- Sistema di guida a ricircolo di sfere.
- Diverse possibilità di montaggio con dadi a T.
- Vari kit opzionali per il montaggio di accessori.
- Qualsiasi lunghezza fino a 6000 mm è possibile.
- E' possibile montare più di un carrello per ogni profilo.

Linear guidances with recirculating ball-bearing series LM

- Recirculating ball-bearing guide system.
- Several mounting options with T-nuts.
- Optional kits for accessories.
- Available in any length up to 6000 mm.
- More than one carrier can be fitted to each rail.

LMX

Cave a T per il fissaggio
T-nut grooves for fastening

LMY

Barre in acciaio temprato
Hardened steel bars

Cave a T per il fissaggio
T-nut grooves for fastening

Spine temprate
Hardened pins

Cartuccia a ricircolo di sfere
Recirculating ball bearing

Il carrello è ricavato da un estruso di alluminio nel quale sono previste le sedi per le cartucce a ricircolo di sfere e le cave a T per i vari fissaggi.

La particolare forma permette l'azzeramento del gioco e la registrazione del precarico tramite le viti di regolazione.

L'assemblaggio completo del carrello, il montaggio sulle barre, la registrazione e la prima lubrificazione sono effettuati in fabbrica.

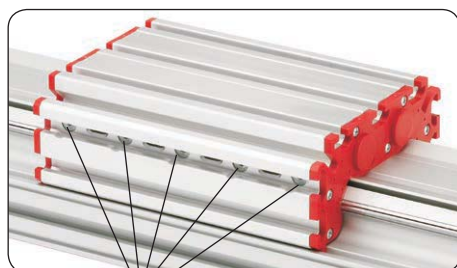
Sulla guida lineare possono essere montati due o più carrelli, a richiesta, per aumentare la capacità di carico, oppure per avere due o più slitte comandabili in modo indipendente.

The carrier is made from an aluminium extruded profile, in which the housings for the recirculating ball bearings and the T-nut grooves are located.

Thanks to the carrier special profile, with adjustment screws, it is possible to set the carrier backlash to zero and to adjust the correct bearing preload.

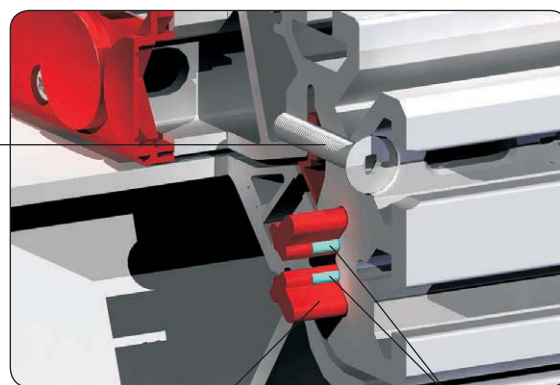
The carrier assembling, the mounting on the bars, the preloading and the first lubrication are made in Gimatic.

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.



Viti di regolazione
Adjustment screws

Vite di regolazione
Adjustment screws



Cartuccia a ricircolo di sfere
Recirculating ball bearing

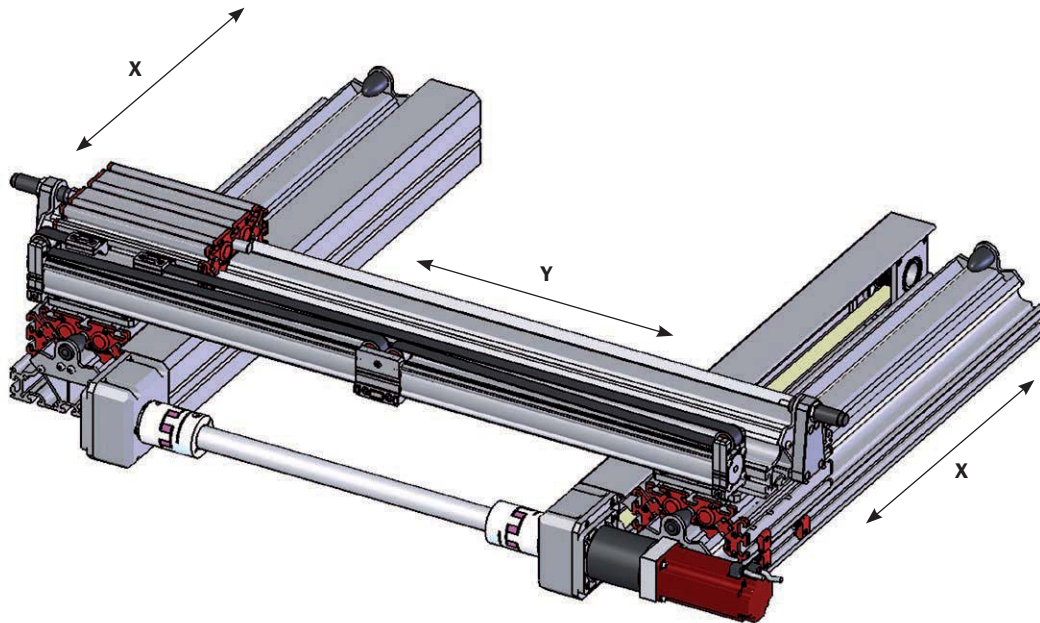
Spine temprate
Hardened pins

Esempio di applicazione

Pallettizzatore X-Y elettrico-pneumatico con albero di sincronizzazione.

Application example

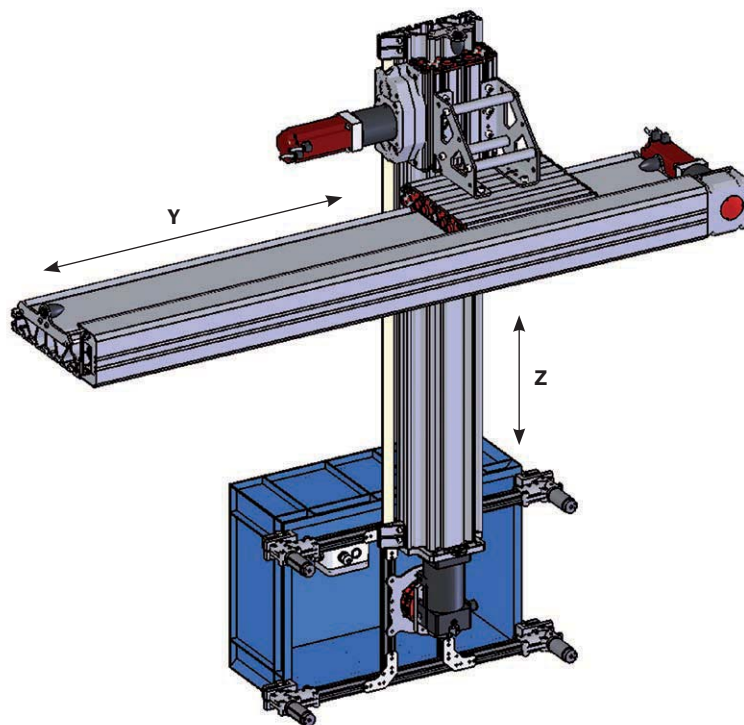
X-Y electric-pneumatic palletizer with line shaft.

**Esempio di applicazione**

Manipolatore Y-Z elettrico a portale.

Application example

Y-Z electric gantry manipulator.



Codice di ordinazione / Ordering code

LMY

X	X
---	---

 -

X	X	X	X
---	---	---	---

Corsa (mm)
Stroke (mm)Per cilindri ISO Ø40 e Ø50 e per cilindri senza stelo Ø32
For ISO cylinders Ø40 and Ø50 and for rodless cylinders Ø32

01

0÷5700 ⁽¹⁾Con cilindro pneumatico e trasmissione a cinghia
With pneumatic cylinder and belt drive

03

0300
0500
0800
1000
1500
2000Forza a 6 bar
Force at 6 bar

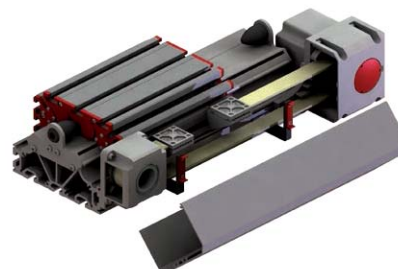
350 N

Trasmissione a omega, completa di calettatore per alberi Ø16
Omega transmission, with Ø16 shaft locking assembly

06

0÷5700 ⁽²⁾Con trasmissione destra a cinghia e pulegge,
completa di calettatore per alberi Ø16
With right belt drive and pulleys, with Ø16 shaft locking
assembly

07D

0÷2700 ⁽²⁾Con trasmissione sinistra a cinghia e pulegge, completa di
calettatore per alberi Ø16
With left belt drive and pulleys, with Ø16 shaft
locking assembly

07S

0÷2700 ⁽²⁾(1) E' possibile ordinare lunghezze di guida con step di 1mm.
(2) E' possibile ordinare lunghezze di guida con step di 100mm.(1) It is possible to order any guidance length in 1mm steps.
(2) It is possible to order any guidance length in 100mm steps.

Consultare il fornitore per lunghezze fuori standard.

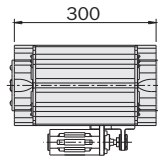
Consult factory for special lengths.

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

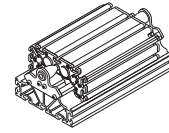
The parts supplied with the ordering codes are here highlighted.

Ingombro della corsa zero (mm) e peso (g/mm)
Zero-stroke length (mm) and weight (g/mm)

LMY01



6100g + 11.06g/mm



LMY03-0300

11350g

LMY03-0500

14000g

LMY03-0800

18000g

LMY03-1000

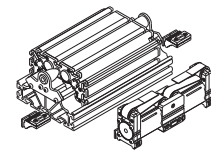
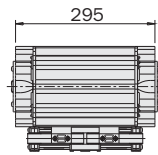
20600g

LMY03-1500

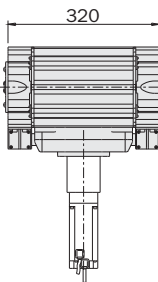
27200g

LMY03-2000

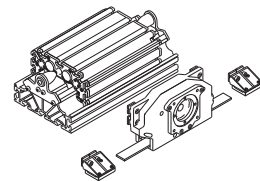
33800g



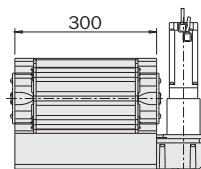
LMY06



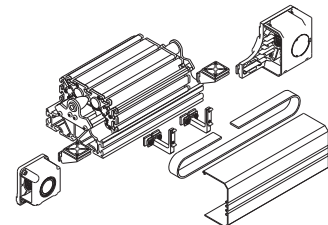
9000g + 11.15g/mm



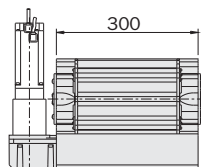
LMY07D



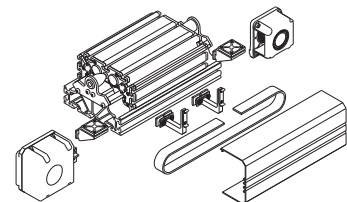
9400g + 13g/mm



LMY07S



9400g + 13g/mm



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 guidance.

The cylinders, the motors and gear reducers are not supplied.

Codice di ordinazione / Ordering code

LMX XX - XXXX

Corsa (mm)
Stroke (mm)

Per cilindri ISO Ø40 e Ø50 e per cilindri senza stelo Ø32
For ISO cylinders Ø40 and Ø50 and for rodless cylinders Ø32

01

0÷5600 ⁽¹⁾

Con cilindro pneumatico e trasmissione a cinghia
With pneumatic cylinder and belt drive

03

0300
0500
0800
1000
1500
2000

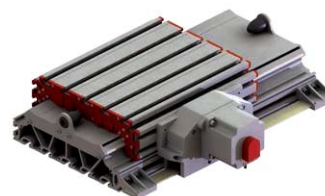
Forza a 6 bar
Force at 6 bar

350 N



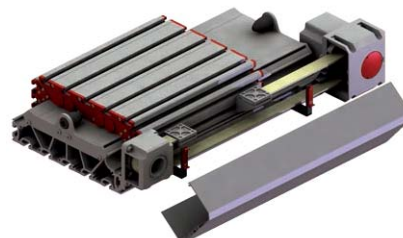
Trasmissione a omega, completa di calettatore per alberi Ø16
Omega transmission, with Ø16 shaft locking assembly

06

0÷5600 ⁽²⁾

Con trasmissione destra a cinghia e pulegge,
completa di calettatore per alberi Ø16
With right belt drive and pulleys, with Ø16 shaft locking
assembly

07D

0÷2600 ⁽²⁾

Con trasmissione sinistra a cinghia e pulegge, completa di
calettatore per alberi Ø16
With left belt drive and pulleys, with Ø16 shaft
locking assembly

07S

0÷2600 ⁽²⁾

(1) E' possibile ordinare lunghezze di guida con step di 1mm.
(2) E' possibile ordinare lunghezze di guida con step di 100mm.

Consultare il fornitore per lunghezze fuori standard.

(1) It is possible to order any guidance length in 1mm steps.
(2) It is possible to order any guidance length in 100mm steps.

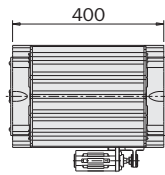
Consult factory for special lengths.

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

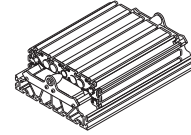
The parts supplied with the ordering codes are here highlighted.

Ingombro della corsa zero (mm) e peso (g/mm)
Zero-stroke length (mm) and weight (g/mm)

LMX01



11800g + 16.4g/mm



LMX03-0300

18150g

LMX03-0500

21850g

LMX03-0800

27450g

LMX03-1000

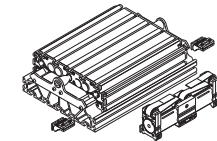
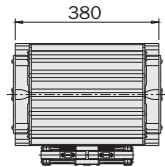
31150g

LMX03-1500

40400g

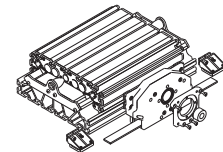
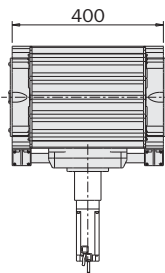
LMX03-2000

49700g



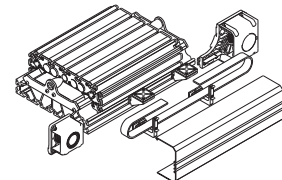
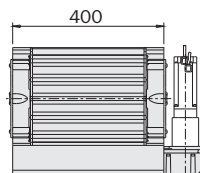
LMX06

14700g + 16.5g/mm



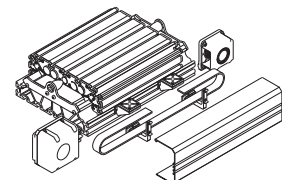
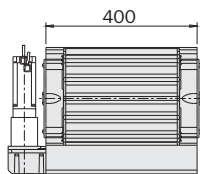
LMX07D

15100g + 18.2g/mm



LMX07S

15100g + 18.2g/mm



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.

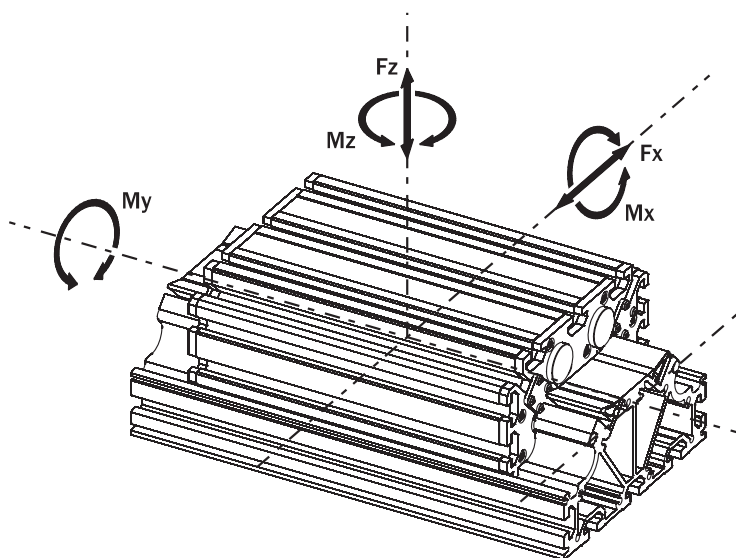
There are also several optional interfaces and kits with the brackets to mount the cylinders, the end stroke stoppers, the shock-absorbers and the sensors. They are sold in single packages, not assembled with the guidance.
The cylinders, the motors and gear reducers are not supplied.

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.

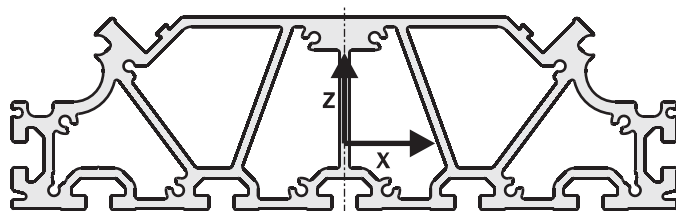


	max LMY	max LMX
Fx	4000 N	6000 N
Fz	4000 N	6000 N
Mx	150 Nm	300 Nm
My	200 Nm	500 Nm
Mz	150 Nm	300 Nm

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

Momenti d'inerzia del profilo estruso in alluminio

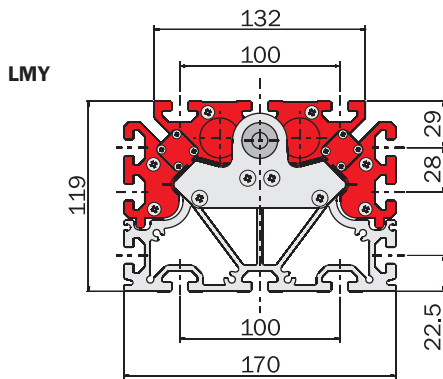
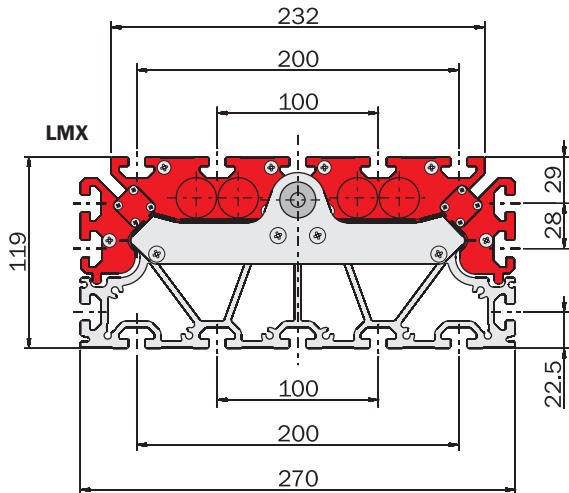
Area moment of inertia for the extruded aluminum profile



LMY
 $I_x = 2373134 \text{ mm}^4$
 $I_z = 9228665 \text{ mm}^4$

LMX
 $I_x = 4092646 \text{ mm}^4$
 $I_z = 36395012 \text{ mm}^4$

Dimensioni (mm) / Dimensions (mm)



Dadi a "T"

Le cave sono tutte uguali.

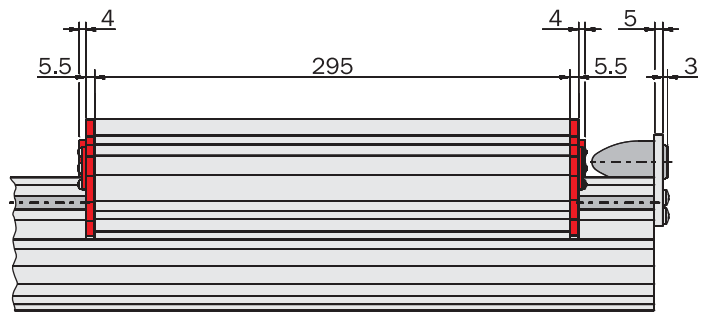
I dadi utilizzabili hanno due filetti diversi (M6 o M8).

T-nuts

All the grooves have the same dimensions.

The T-nuts have two different threads (M6 or M8).

Dado / Nut	
M6	LM-019
M8	LM-037



Calcolo del peso

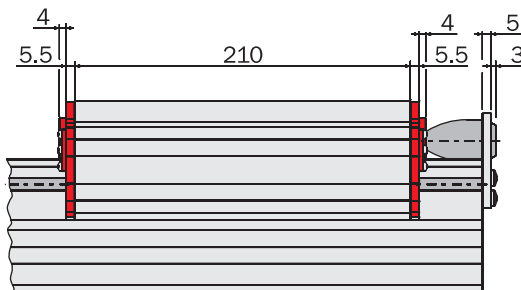
Ogni carrello completo pesa 4.76 kg.

La guida (profilo in alluminio più barre in acciaio) pesa 16.4 kg/m.

Weight calculation

The weight of the carrier is 4.76 kg.

The weight of the guidance (alu profile plus steel bars) is 16.4 kg/m.



Calcolo del peso

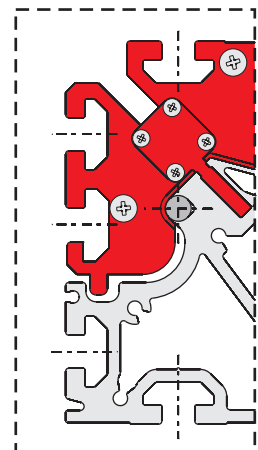
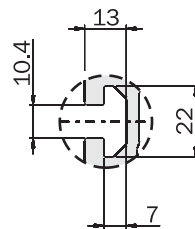
Ogni carrello completo pesa 2.51 kg.

La guida (profilo in alluminio più barre in acciaio) pesa 11.06 kg/m.

Weight calculation

The weight of the carrier is 2.51 kg.

The weight of the guidance (alu profile plus steel bars) is 11.06 kg/m.



Esempio di applicazione

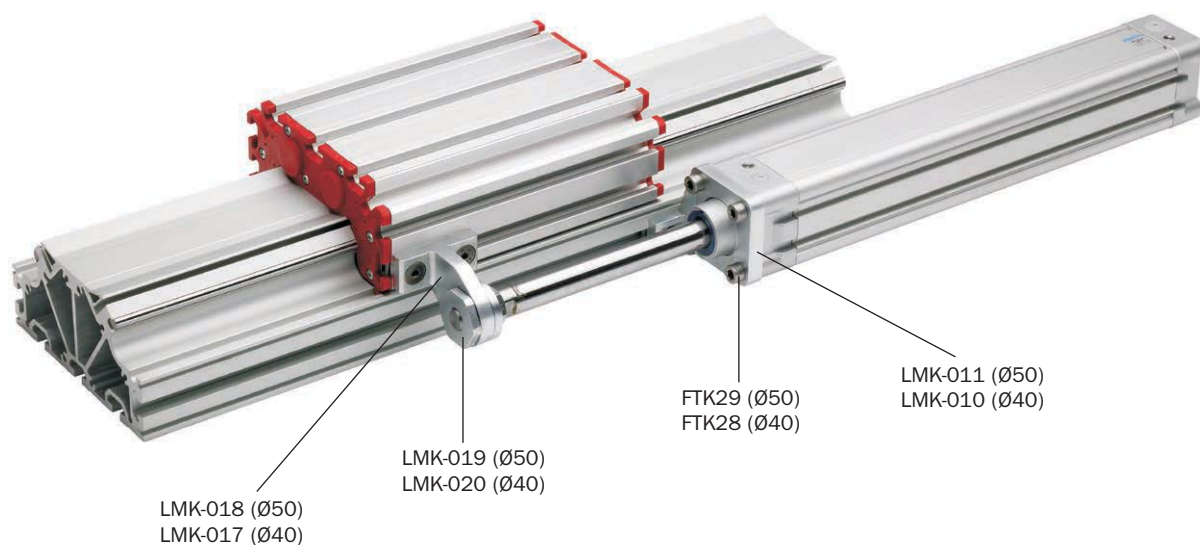
La guida lineare LMY01 (e la LMX01) può essere azionata da un cilindro pneumatico ISO 15552 di alesaggio 50 mm (o 40 mm).

Gimatic fornisce le staffe di ancoraggio.

Application example

The linear guidance LMY01 (and the LMX01) can be powered by an ISO 15552 pneumatic cylinder with piston bore 50 mm (or 40 mm).

Gimatic supplies the brackets.

**Esempio di applicazione**

La guida lineare LMY01 (e la LMX01) può essere azionata da un cilindro pneumatico senza stelo di alesaggio 32 mm. Gimatic fornisce le staffe di ancoraggio per i cilindri più diffusi.

Application example

The linear guidance LMY01 (and the LMX01) can be powered by a pneumatic rodless cylinder with piston bore 32 mm. Gimatic supplies the brackets for the most well known cylinders.



Esempio di applicazione

La guida lineare LMY03 (e la LMX03) è dotata di un azionamento pneumatico di alesaggio 40 mm ed una trasmissione a cinghia che raddoppia la corsa.

Application example

The linear guidance LMY03 (and the LMX03) is provided with a pneumatic actuator (40 mm piston bore) and a belt drive to double the carrier stroke.



Forza a 6 bar
Force at 6 bar

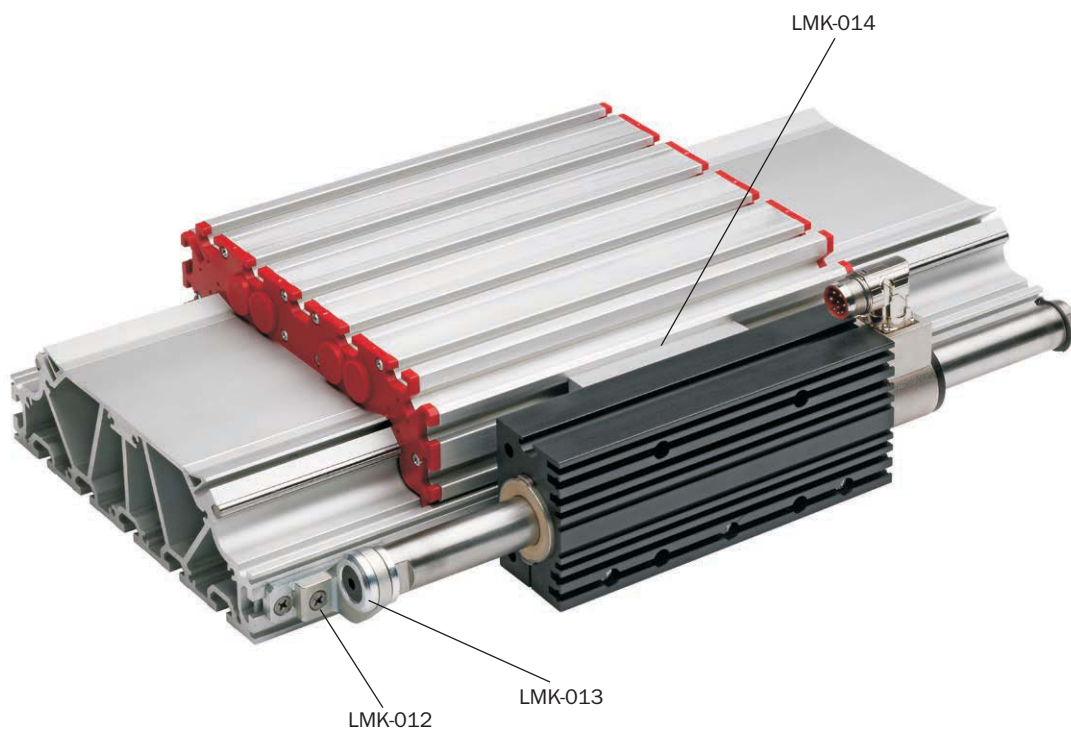
350 N

Esempio di applicazione

La guida lineare LMX01 (e la LMY01) può essere azionata da motori lineari.
Gimatic fornisce le staffe di ancoraggio.

Application example

The linear guidance LMX01 (and the LMY01) can be powered by linear motors.
Gimatic supplies the brackets.



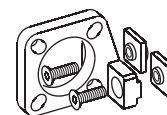
LMK-014

LMK-012

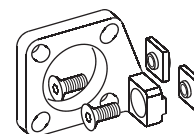
LMK-013

Kit opzionali / *Optional kits*

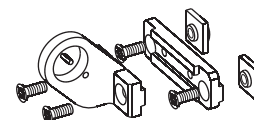
LMK-010 (240 g)
Anello per fissaggio cilindro Ø40
Cylinder holder Ø40



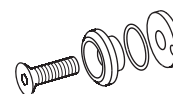
LMK-011 (400 g)
Anello per fissaggio cilindro Ø50
Cylinder holder Ø50



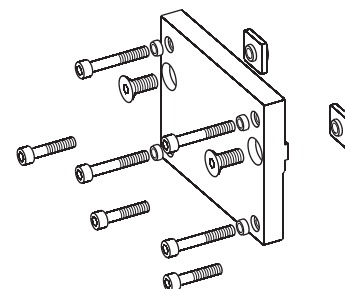
LMK-012 (300 g)
Anello per giunto slider LinMot Ø28
Bracket for LinMot Ø28 slider bolt



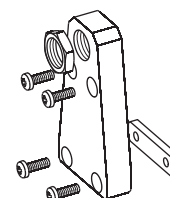
LMK-013 (95 g)
Giunto per slider LinMot Ø28
LinMot slider bolt Ø28



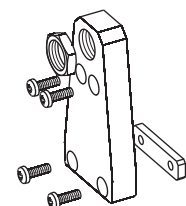
LMK-014 (530 g)
Piastra d'interfaccia per statore LinMot PF01-48
Interface plate for LinMot stator PF01-48



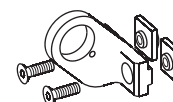
LMK-015 (220 g)
Supporto deceleratore per guida LMX
Shock-absorber bracket for LMX guidance



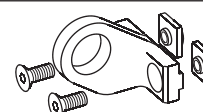
LMK-016 (220 g)
Supporto deceleratore per guida LMY
Shock-absorber bracket for LMY guidance



LMK-017 (180 g)
Anello per fissaggio giunto cilindro Ø40
Rod bolt holder for cylinder Ø40



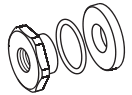
LMK-018 (270 g)
Anello per fissaggio giunto cilindro Ø50
Rod bolt holder for cylinder Ø50



Kit opzionali / *Optional kits*

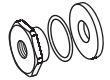
LMK-019 (110 g)

Giunto per stelo cilindro Ø50
Rod bolt for cylinder Ø50



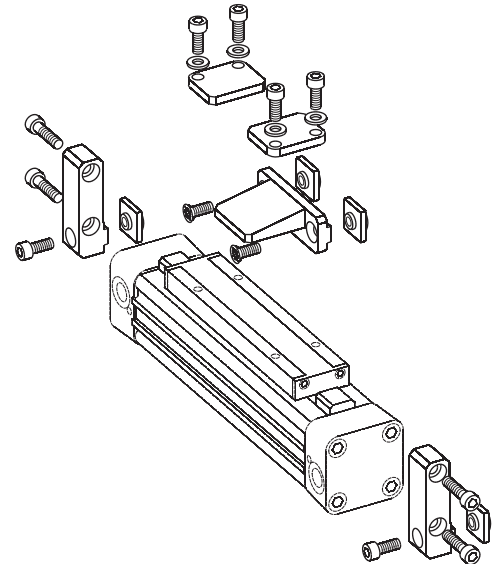
LMK-020 (55 g)

Giunto per stelo cilindro Ø40
Rod bolt for cylinder Ø40



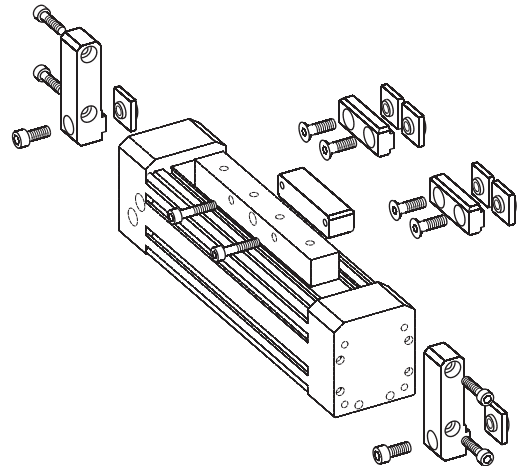
LMK-021 (680 g)

Kit fissaggio cilindro senza stelo Origa Ø32 (OSP-P32)
Fastening kit for Origa rodless cylinder Ø32 (OSP-P32)



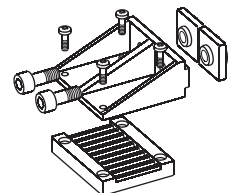
LMK-022 (660 g)

Kit fissaggio cilindro senza stelo Festo Ø32 (DGC-K-32)
Fastening kit for Festo rodless cylinder Ø32 (DGC-K-32)



LMK-023 (200 g)

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



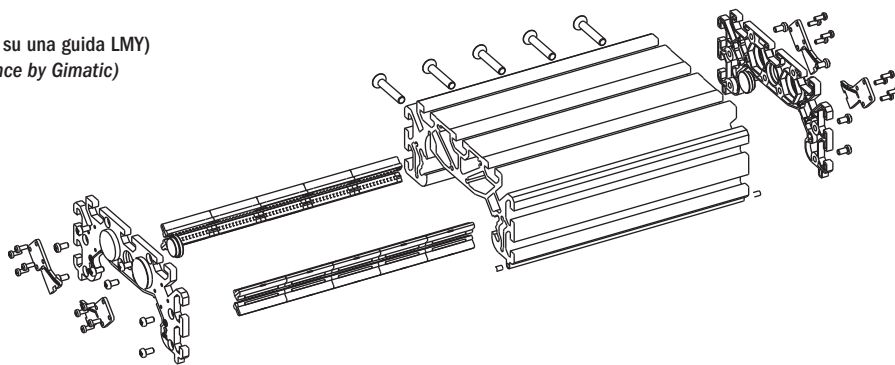
Kit opzionali / *Optional kits*

LMK-025

(2510 g)

Carrello supplementare (montato da Gimatic su una guida LMY)

Additional carrier (mounted on a LMY guidance by Gimatic)

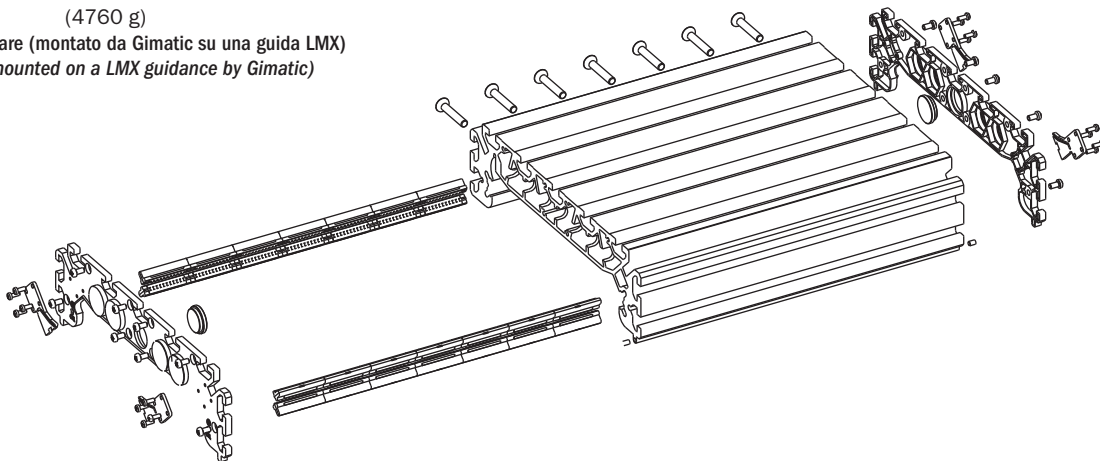


LMK-026

(4760 g)

Carrello supplementare (montato da Gimatic su una guida LMX)

Additional carrier (mounted on a LMX guidance by Gimatic)



LMK-027

(40 g)

Battuta di fine corsa per deceleratori su LMX

End stroke button for shock-absorbers on LMX

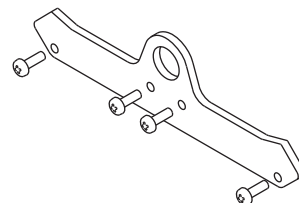


LMK-028

(245 g)

Testata per LMX

End plate for LMX

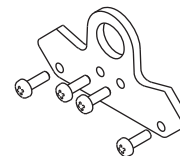


LMK-029

(140 g)

Testata per LMY

End plate for LMY

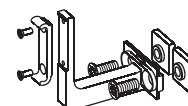


LMK-032

(110 g)

Supporto carter (con cilindro)

Cover bracket (with cylinder)

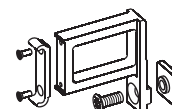


LMK-033

(100 g)

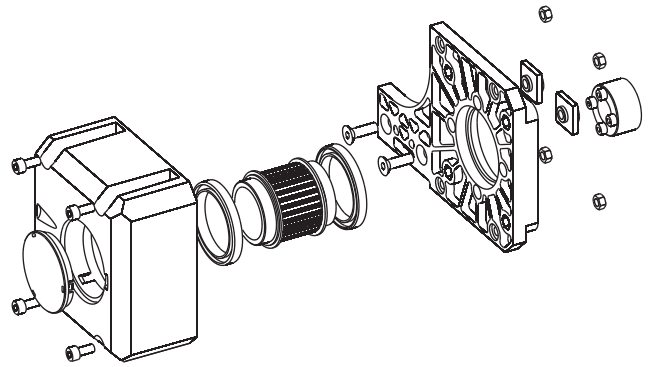
Supporto carter (con catena)

Cover bracket (with energy chain)

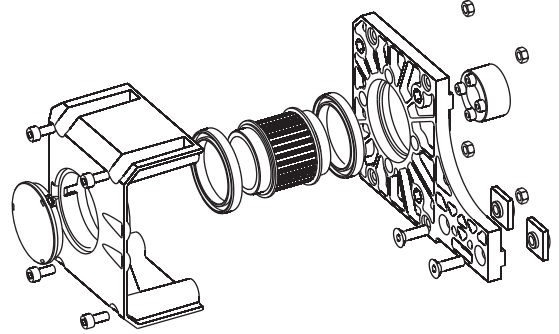


Kit opzionali / Optional kits

LMK-034D (1540 g)
Puleggia motrice destra AT5-25
Pulley AT5-25 for right motor



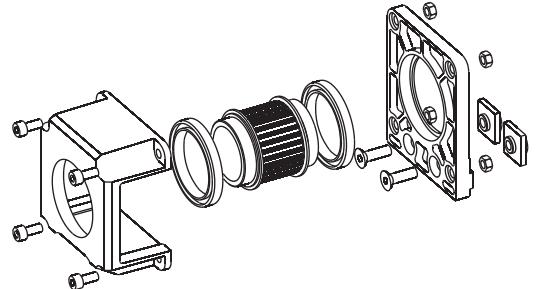
LMK-034S (1540 g)
Puleggia motrice sinistra AT5-25
Pulley AT5-25 for left motor



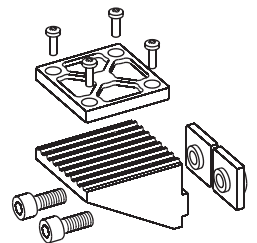
LMK-035 (25 g)
Battuta di fine corsa per deceleratori su LMY
End stroke button for shock-absorbers on LMY



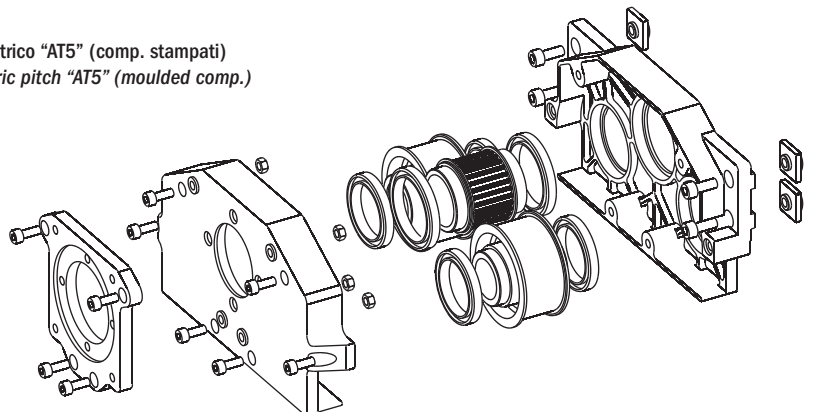
LMK-036 (650 g)
Puleggia di rinvio AT5-25
Idle pulley AT5-25



LMK-037 (200 g)
Bloccaggio per cinghia dentata AT5-25
Clamp for AT5-25 belt



LMK-038 (2420 g)
Sottogruppo puleggia dentata trasmissione "omega" p. metrico "AT5" (comp. stampati)
Subassembly of "omega" transmission toothed pulley metric pitch "AT5" (moulded comp.)



Kit opzionali / *Optional kits*

LMK-039

(15 g)

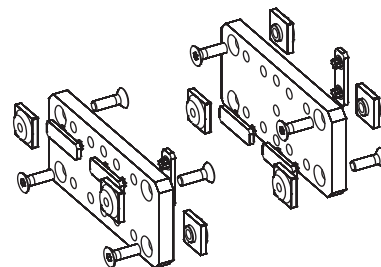
Ammortizzatore in gomma
Rubber stopper



LMK-040

(590 g)

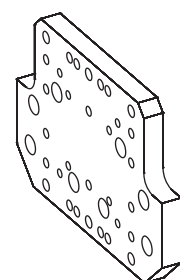
Sottogruppo interfaccia guide LMX/LMY
Subassembly of interface for guidances LMX/LMY



LMK-041

(600 g)

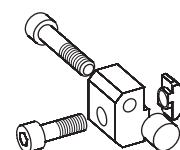
Sottogruppo interfaccia LM/LL/RBT
Subassembly of interface LM/LL/RBT



LMK-042

(70 g)

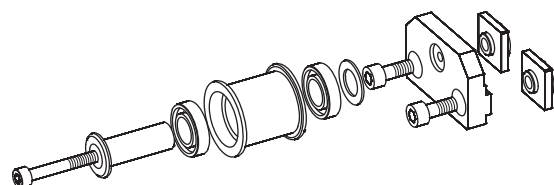
Sottogruppo regolatore tensione cinghia dentata
Subassembly of belt tension regulator



LMK-043

(135 g)

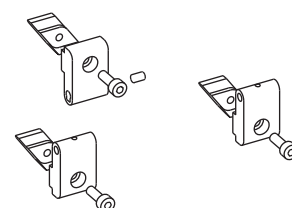
Sottogruppo tenditore
Subassembly of tightener



LMK-044

(60 g)

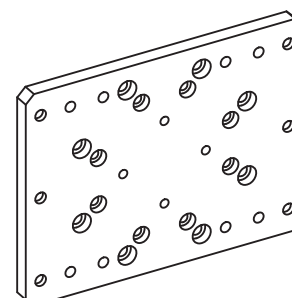
Staffe per sensori
Sensor bracket



LMK-045

(550 g)

Interfaccia di montaggio
Mounting interface plate

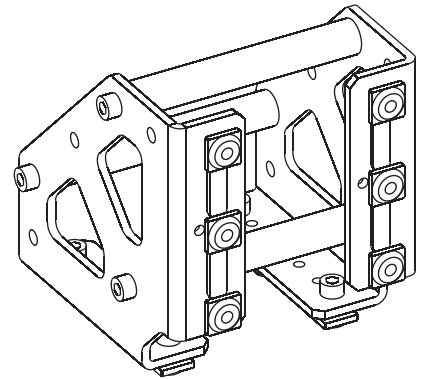


Kit opzionali / *Optional kits*

LMK-046

(2700 g)

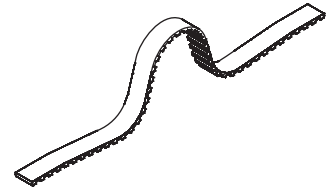
Squadra di fissaggio
90° mounting bracket



LM-111

(90 g/m)

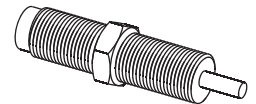
Cinghia dentata per LL06 - LL07 - LMX06 - LMX07 - LMY06 - LMY07
Timing belt for LL06 - LL07 - LMX06 - LMX07 - LMY06 - LMY07



MC225M

(150 g)

Deceleratore idraulico (M20x1.5)
Shock-absorber (M20x1.5)



LM-019

(15 g)

Dado a T M6 per cave LM (1 pezzo)
M6 T-nut for LM slots (1 piece)



LM-037

(15 g)

Dado a T M8 per cave LM (1 pezzo)
M8 T-nut for LM slots (1 piece)



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.

Remove 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.

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.

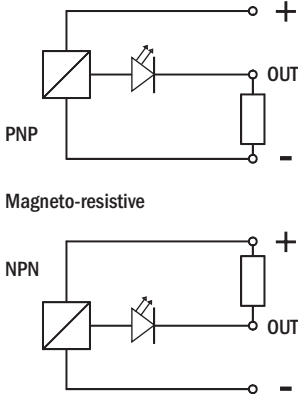
I sensori utilizzabili sono:



Sensors

The operating position can be checked by one or more magnetic sensors (optional), that detect the position by a magnet. Therefore a near big mass of ferromagnetic material or intense magnetic fields may cause sensing troubles.

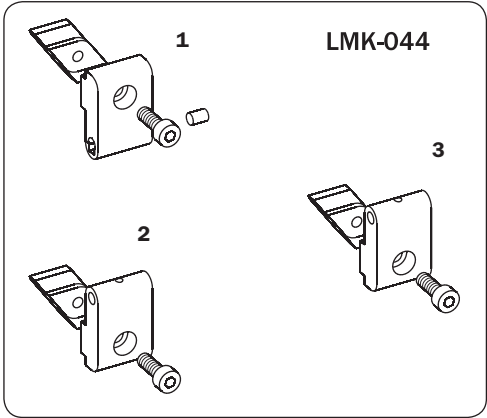
Use sensors:



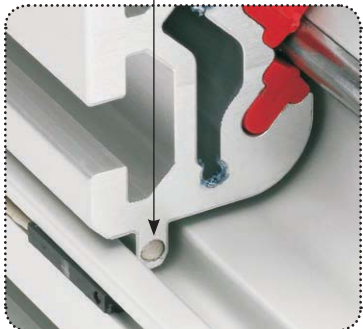
			LM...
SS4N225-G	PNP	cavo 2.5m / 2.5m cable	☒
SS4M225-G	NPN	cavo 2.5m / 2.5m cable	☒
SS3N203-G	PNP	Connettore M8 / M8 snap plug connector	☒
SS3M203-G	NPN	Connettore M8 / M8 snap plug connector	☒

Per montare 2 sensori è necessario il kit LMK-044.

One kit LMK-044 is necessary to mount two sensors.

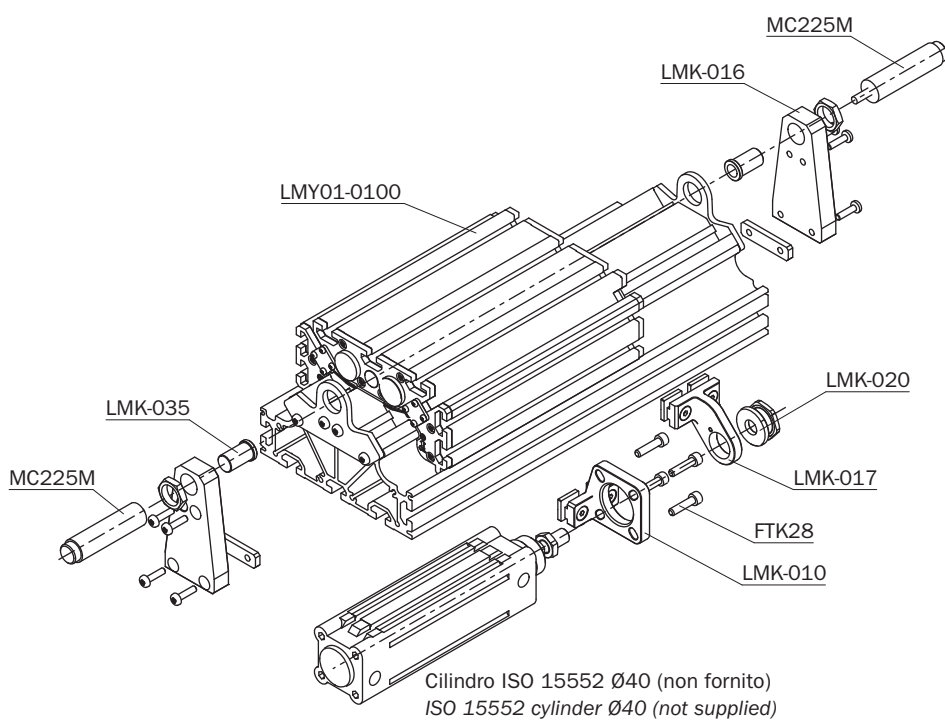
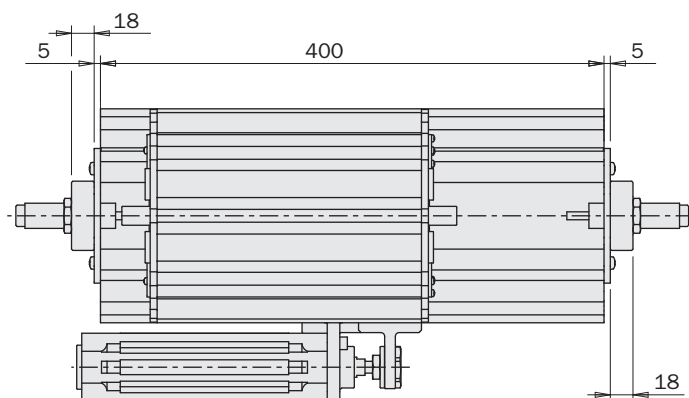
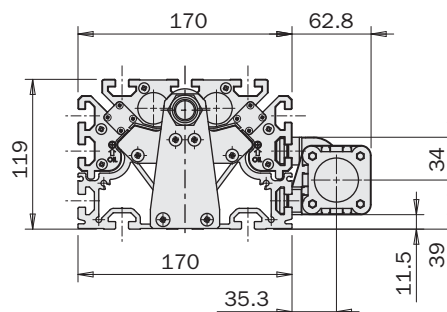
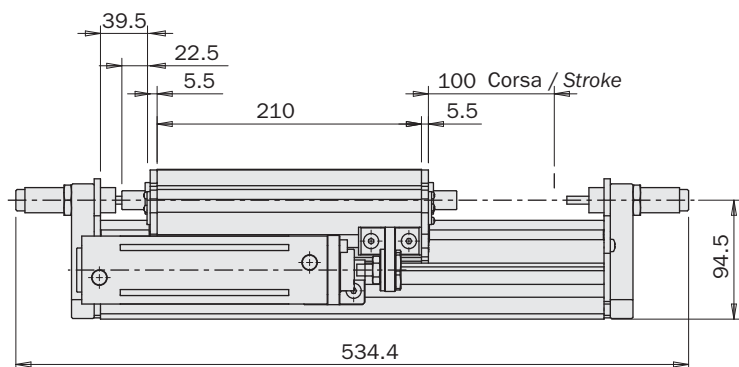


Magnete addizionale
Additional magnet



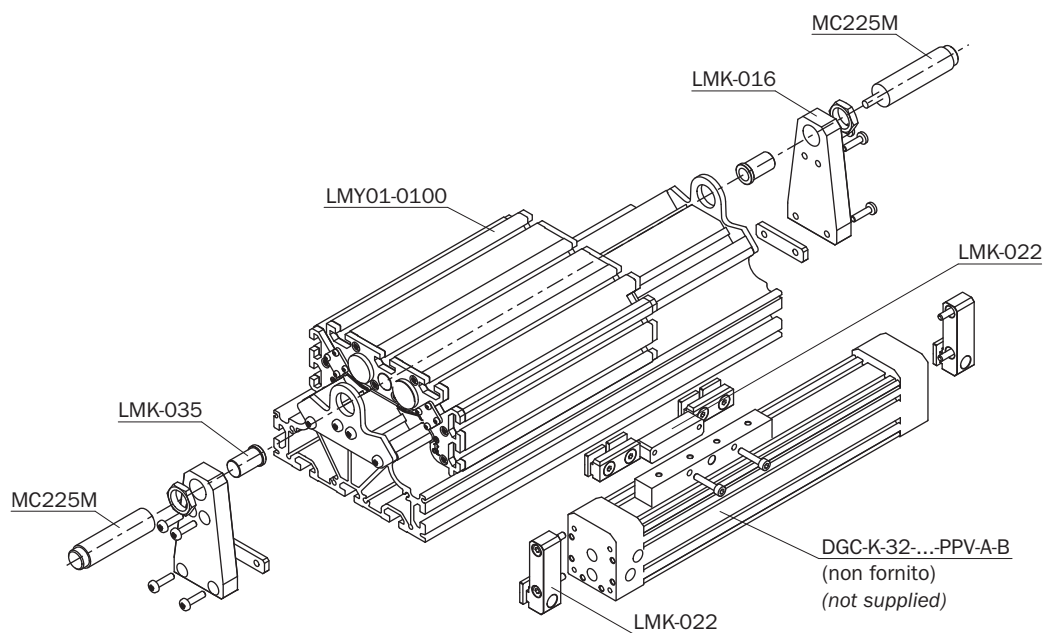
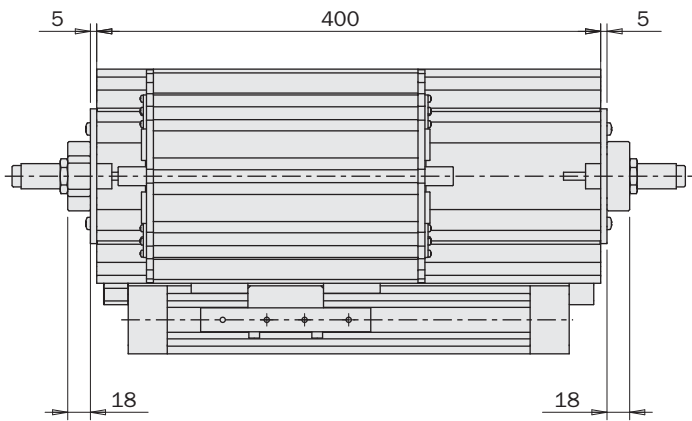
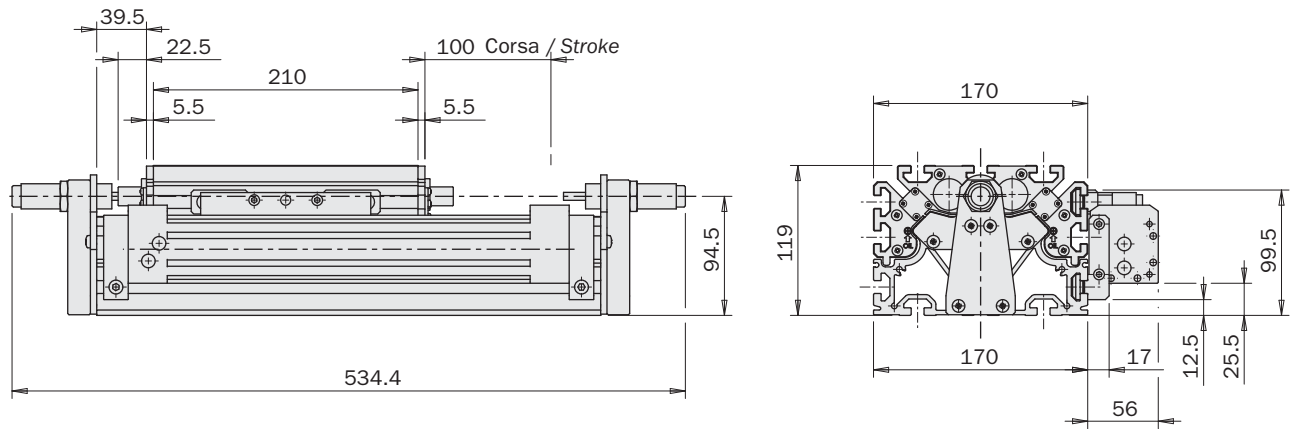
Esempio: Slitta di alesaggio 40mm (cilindro ISO 15552) e corsa 100mm, con deceleratori idraulici

Example: Slide with 40mm piston bore (ISO 15552) and 100mm stroke, with hydraulic shock-absorbers



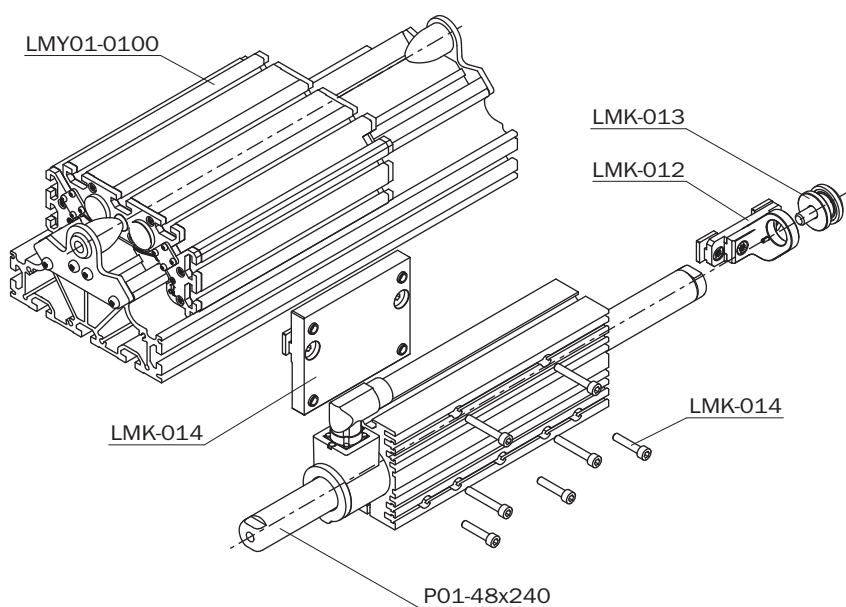
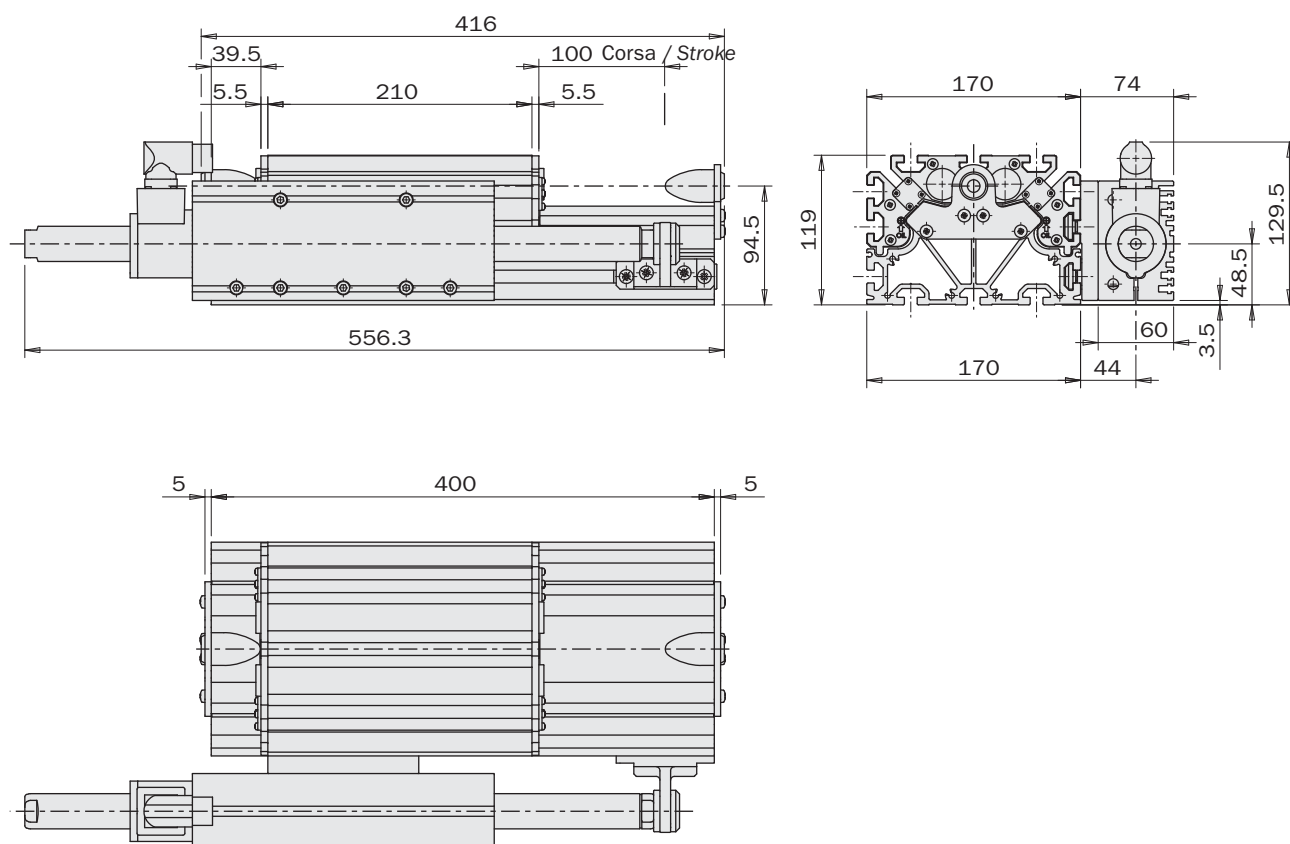
Esempio: Slitta di alesaggio 32mm e corsa 100mm, con deceleratori idraulici, movimentata da cilindro senza stelo Festo

Example: Slide with 32mm piston bore and 100mm stroke, with hydraulic shock-absorbers, powered by the Festo rodless cylinder



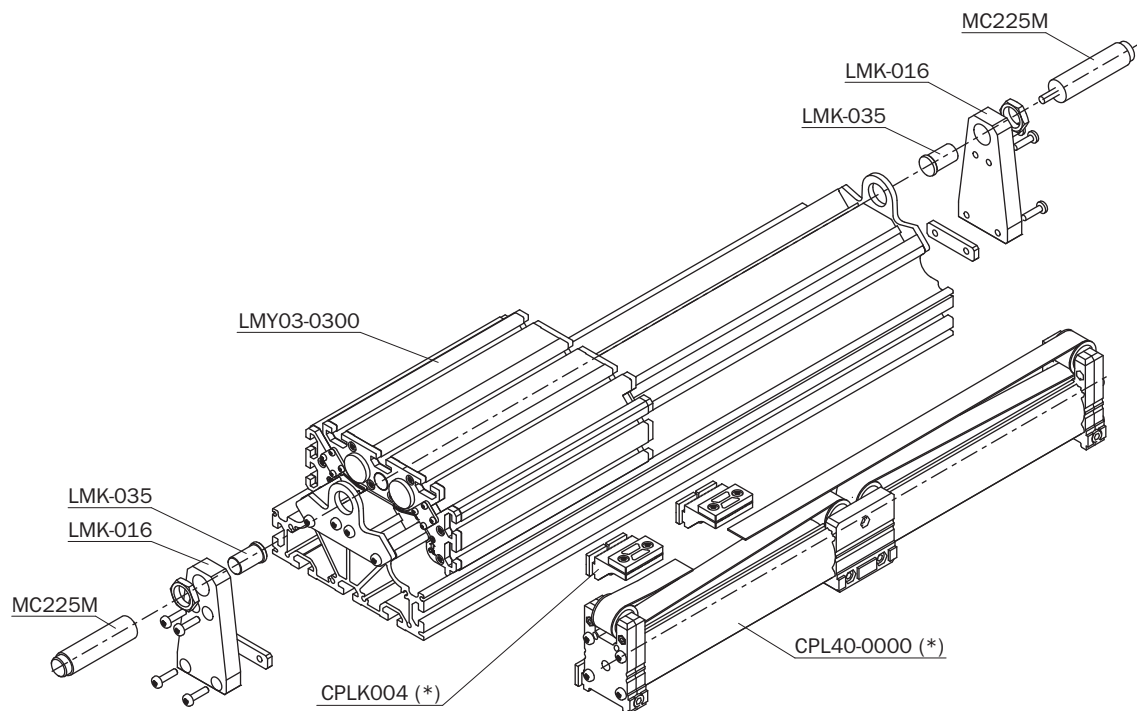
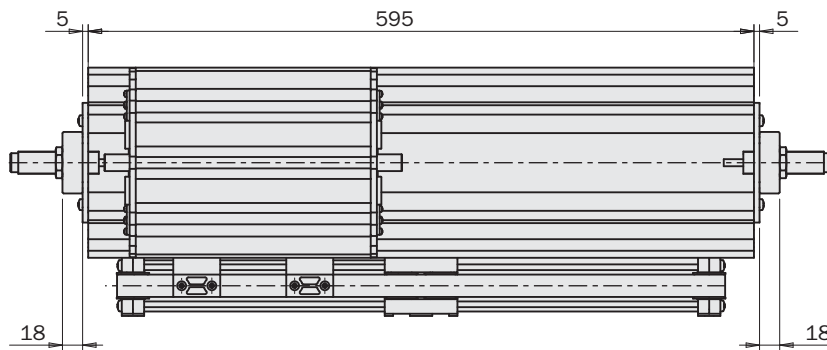
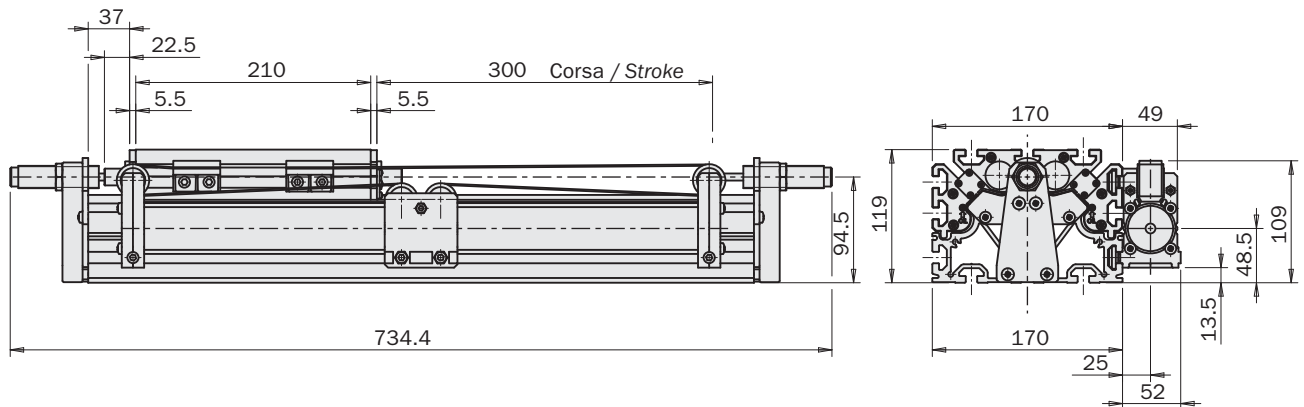
Esempio: Slitta di corsa 100mm, azionata da motore lineare LinMot

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



**Esempio: Slitta di corsa 300mm con cilindro
diametro 40mm e trasmissione 2:1**

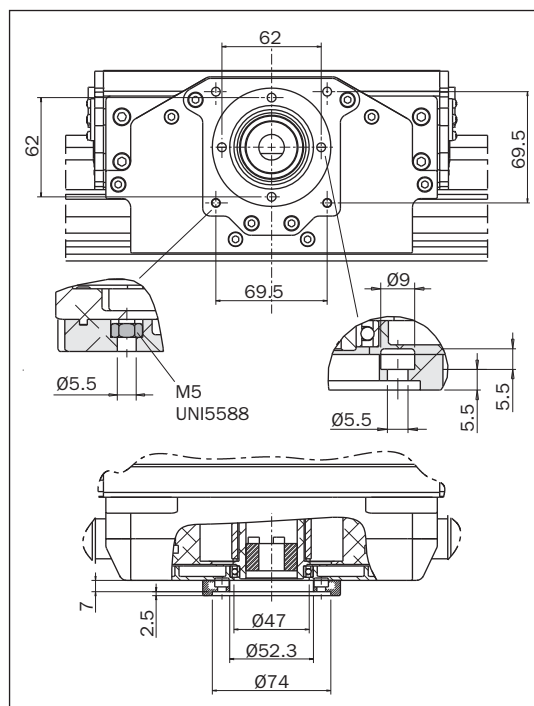
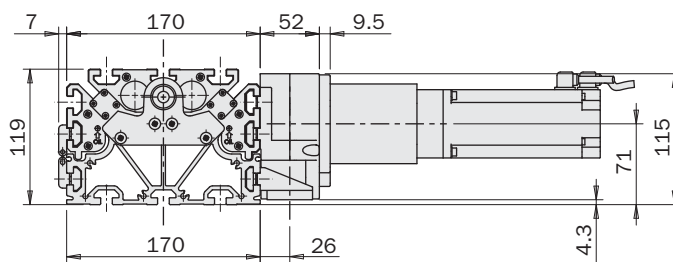
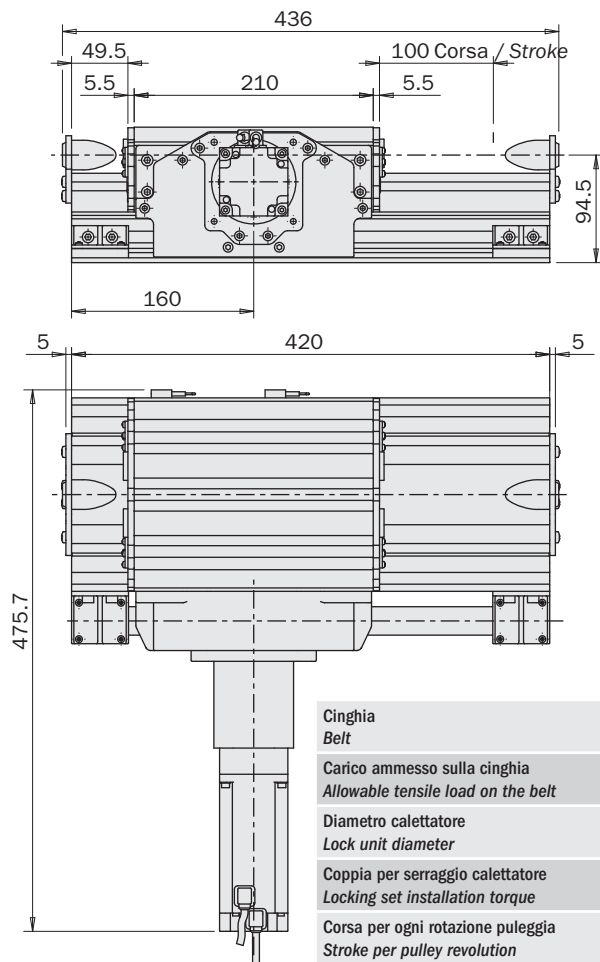
**Example: Slide, 300mm stroke, with 40mm
cylinder and 2:1 transmission**



(*)
inclusi in LMY03-...
included in LMY03-...

Esempio: Slitta di corsa 100mm con trasmissione ad omega, azionata da motoriduttore

Example: Slide, 100mm stroke, with omega transmission, powered by servomotor and gear reducer



Cinghia Belt	AT5-25
Carico amnesso sulla cinghia Allowable tensile load on the belt	1840 N
Diametro calettatore Lock unit diameter	16 mm
Coppia per serraggio calettatore Locking set installation torque	4.9 Nm
Corsa per ogni rotazione puleggia Stroke per pulley revolution	140 mm
Inerzia pulegge Pulleys inertia	300 Kgmm ²
Massa del carrello Carrier mass	4.93 kg
Attrito del carrello Carrier friction	60 N
Carico dinamico dei cuscinetti (C) Bearings dynamic load rate (C)	4940 N
Carico statico dei cuscinetti (Co) Bearings static load rate (Co)	3450 N
Velocità massima Maximum speed	2 m/s
Ripetibilità Repeatability	±0.1 mm

(*)
inclusi in LMY06-...
included in LMY06-...

(**)
non fornito
not supplied

M4x16 DIN912 INOX A2

Ø4 DIN125B INOX

HF-KE43BW1-S100 (**)

Motore Mitsubishi
Mitsubishi motor

LC070-6_14305070 (**)

Riduttore Tecnoingranaggi
Tecnoingranaggi gear reducer

M5x12 DIN912 INOX A2

LMK-038 (*)

LM-111 (*)

LMK-023 (*)

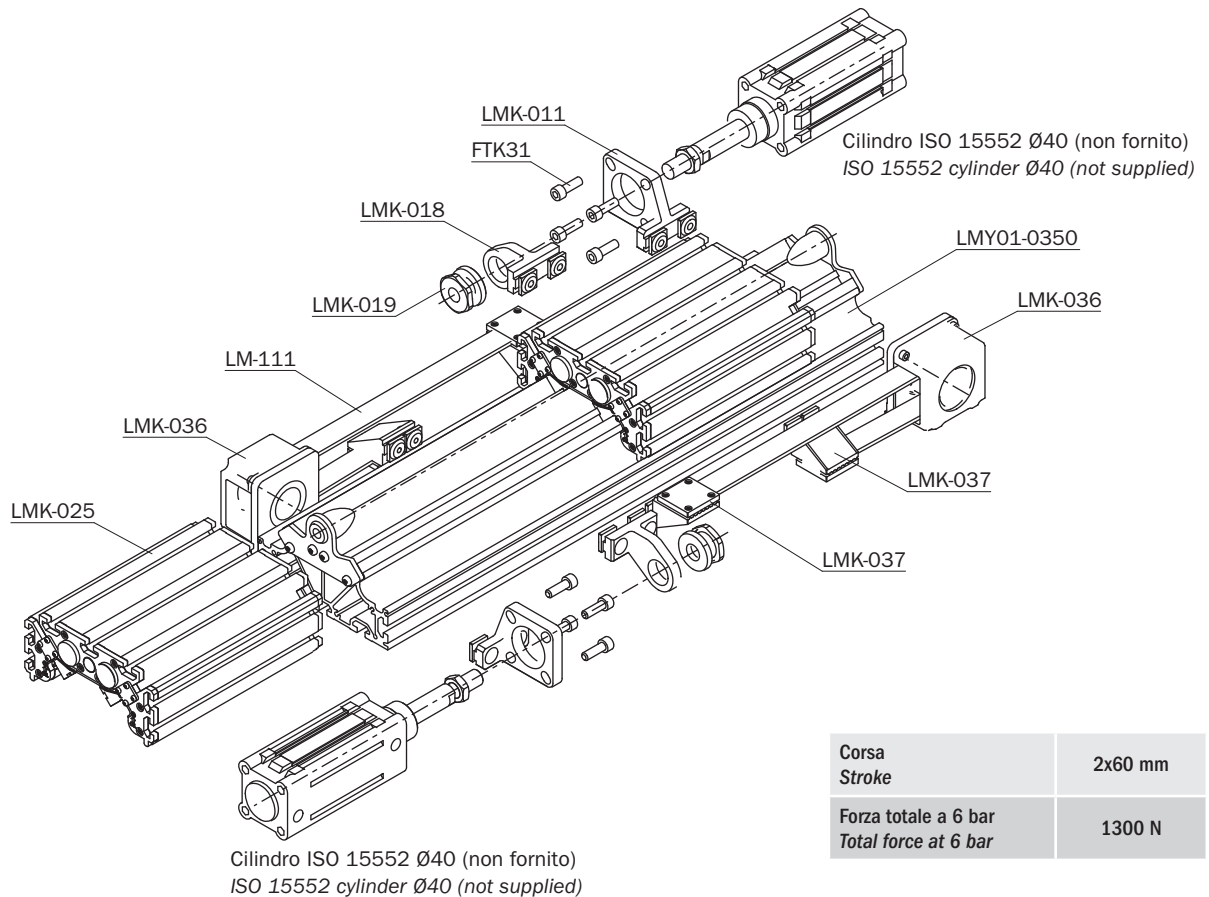
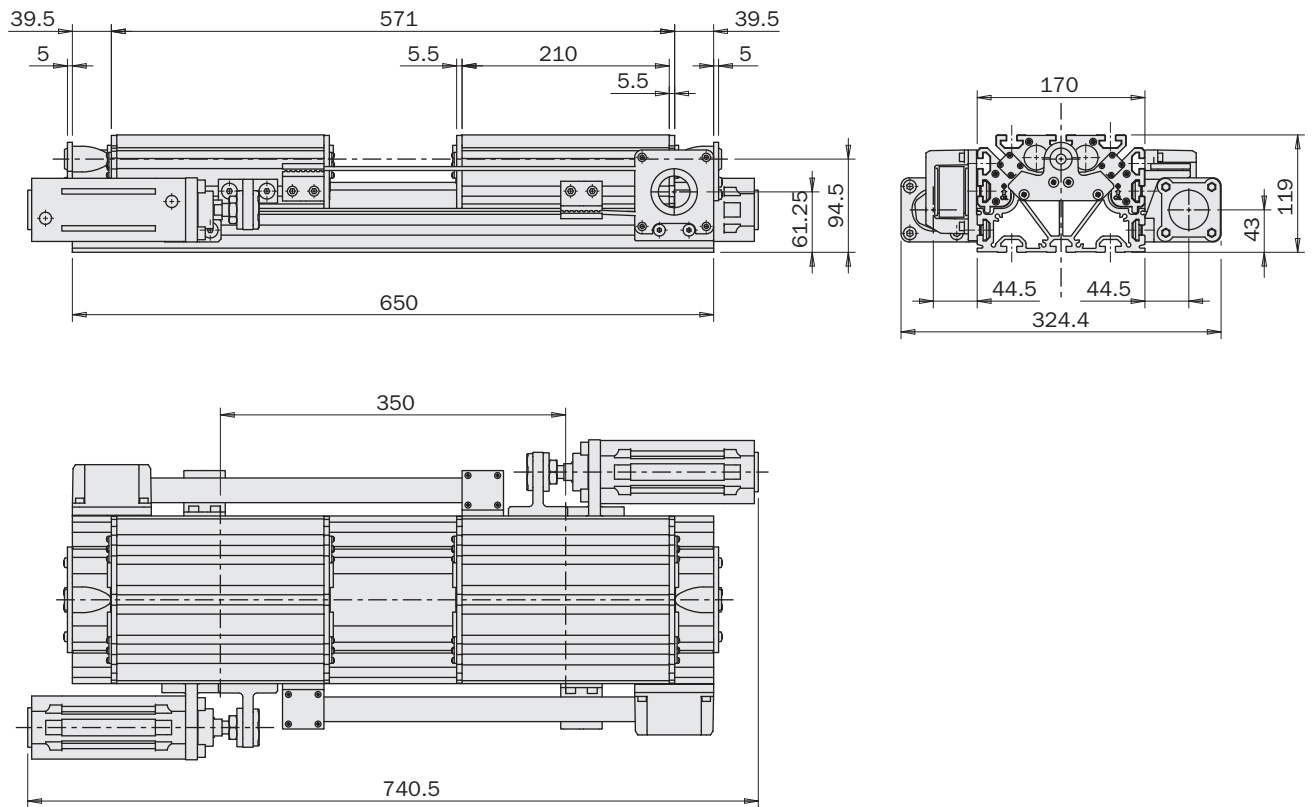
LMK-023 (*)

LMY06-0100

LMK-044

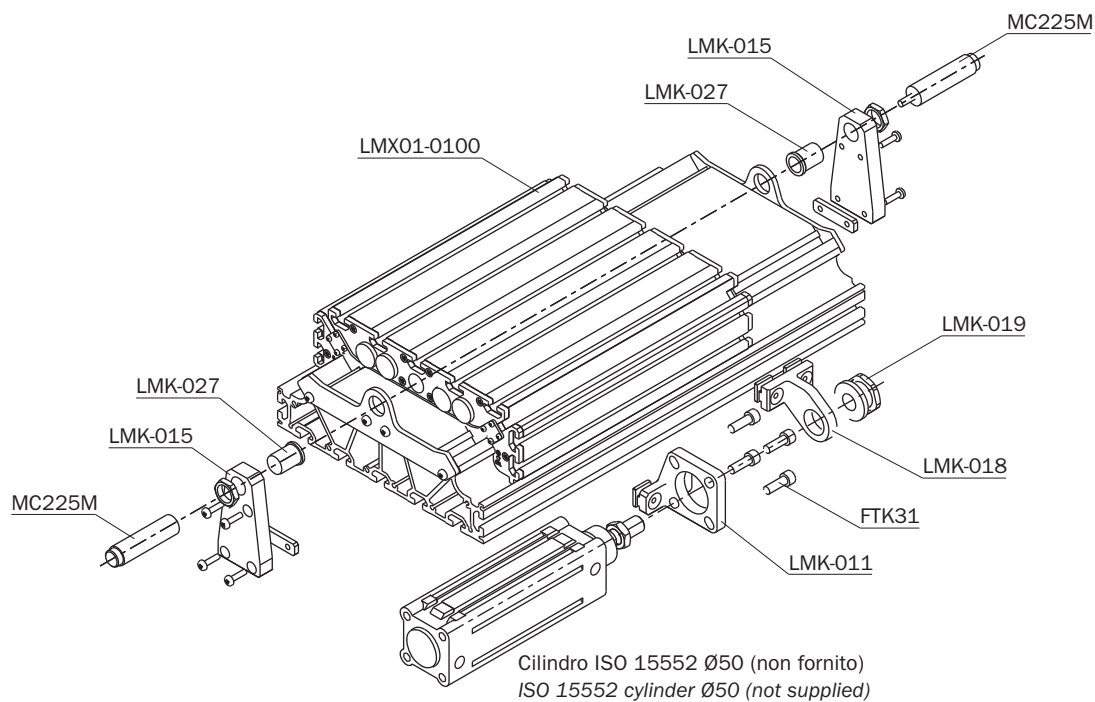
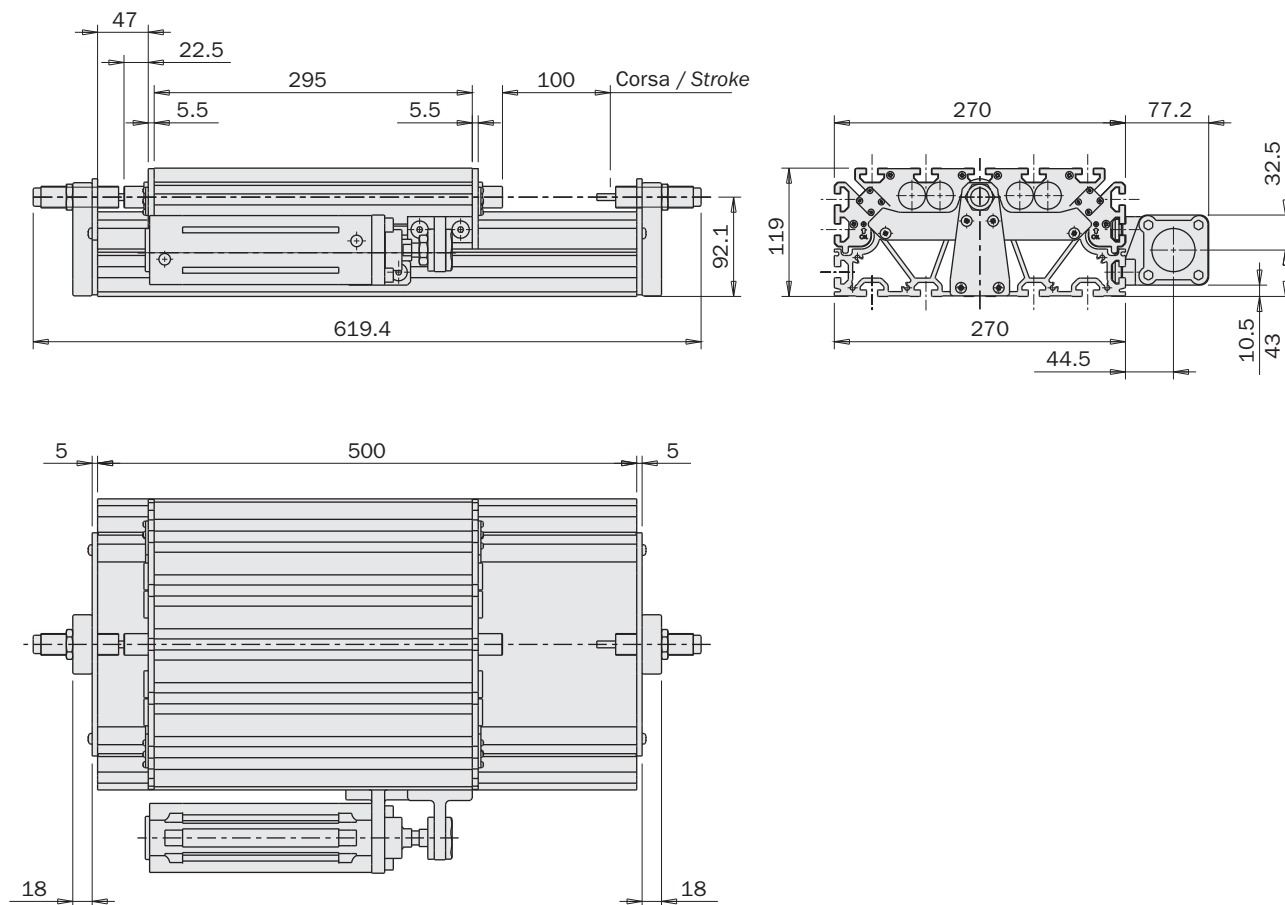
**Esempio: Pinza autocentrante (interasse: 350mm)
azionata da cilindri ISO 15552 alesaggio 40mm**

**Example: Self-centering gripper (interaxis: 350mm)
powered by 40mm ISO 15552 cylinders**



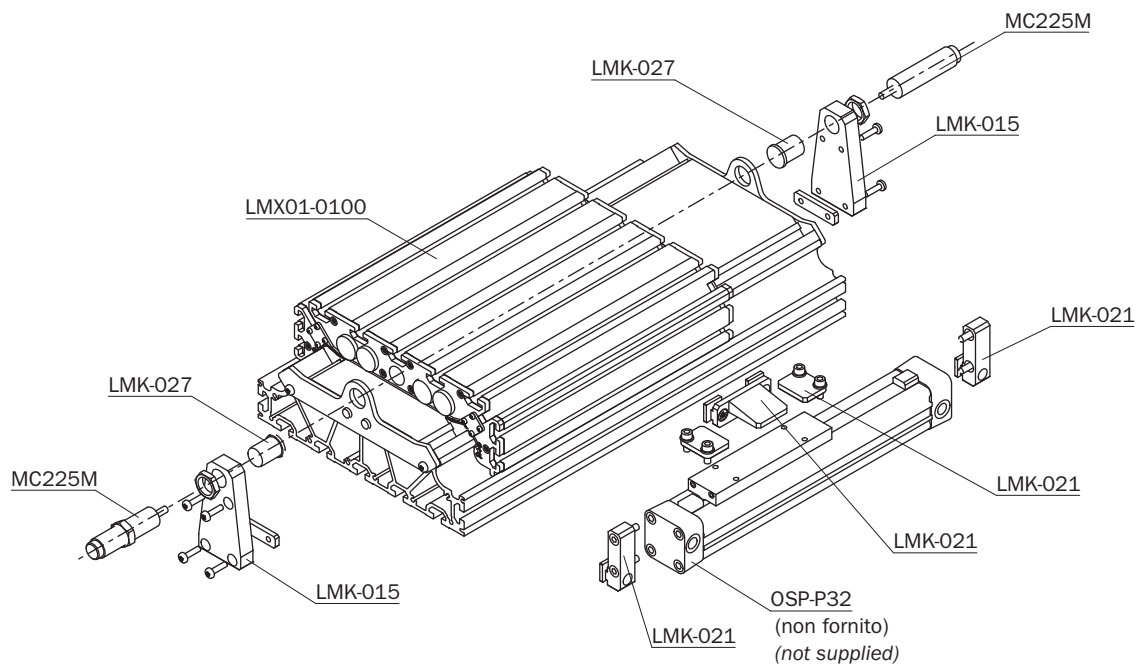
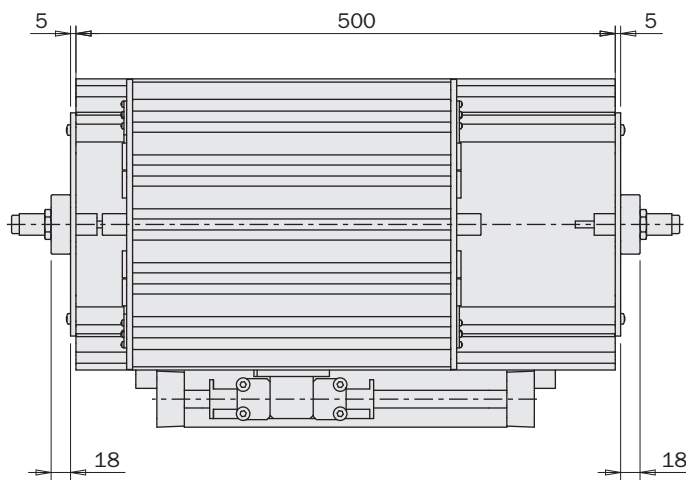
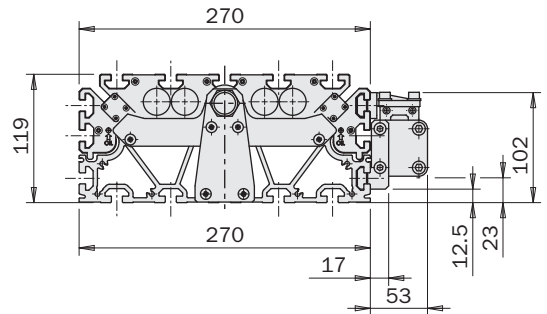
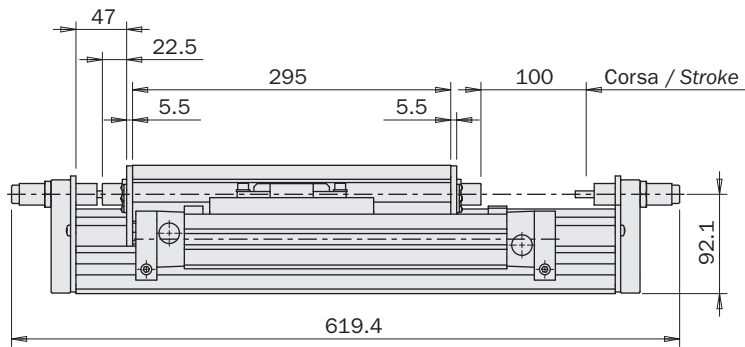
Esempio: Slitta di alesaggio 50mm (cilindro ISO 15552) e corsa 100mm, con deceleratori idraulici

Example: Slide with 50mm piston bore (ISO 15552) and 100mm stroke, with hydraulic shock-absorbers



Esempio: Slitta di alesaggio 32mm e corsa 100mm, con deceleratori idraulici, movimentata da cilindro senza stelo Origa

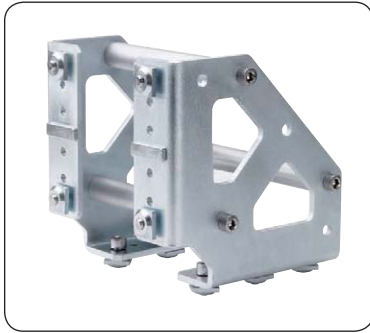
Example: Slide with 32mm piston bore and 100mm stroke, with hydraulic shock-absorbers, powered by the Origa rodless cylinder



LMK-046

Squadra di fissaggio

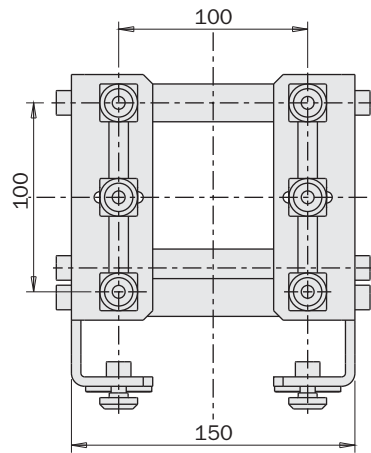
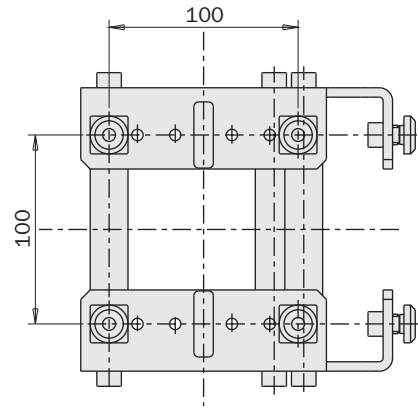
Peso: 2700g.



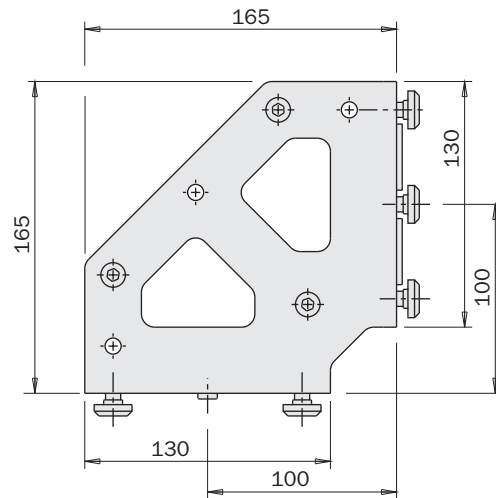
LMK-046

90° mounting bracket

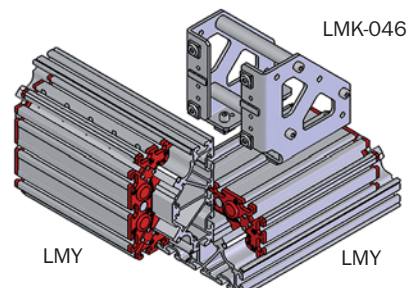
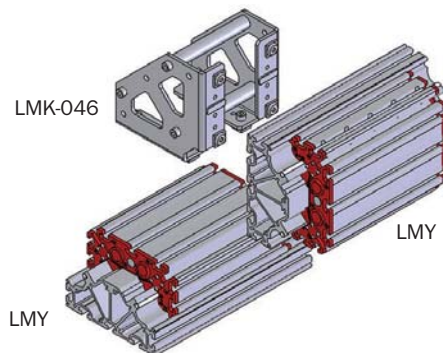
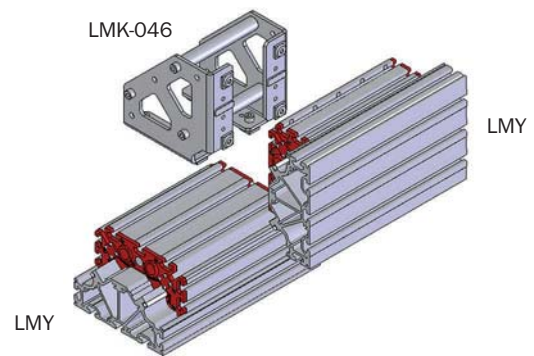
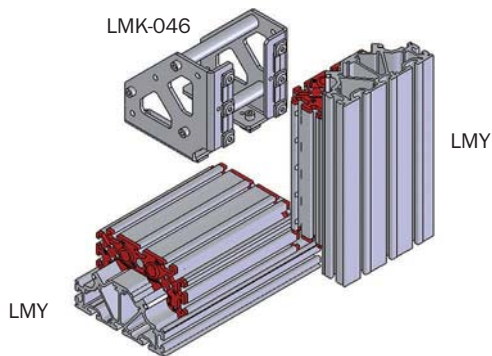
Weight: 2700g.



FIRST ANGLE PROJECTION



Esempi di applicazione / Application examples

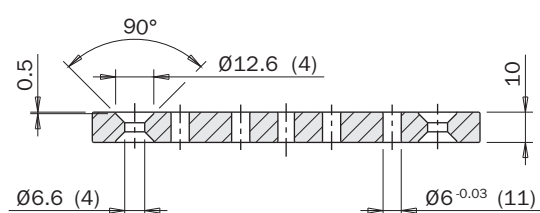
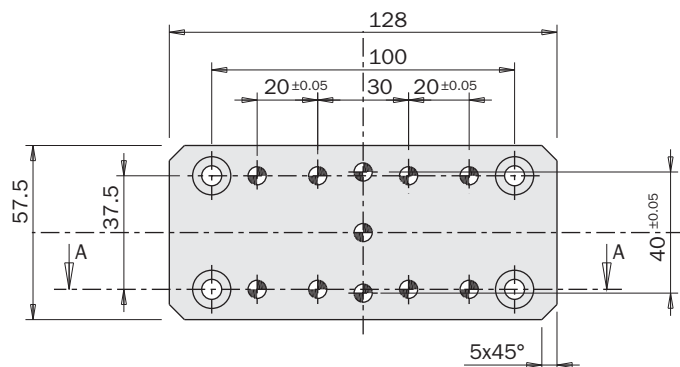


LMK-040**Sottogruppo interfaccia guide LMX/LMY**

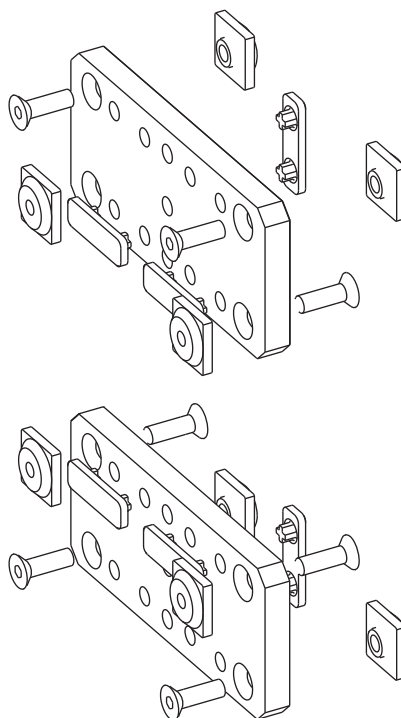
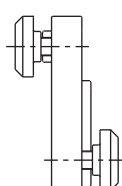
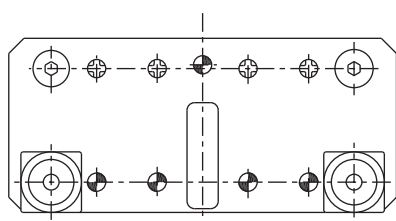
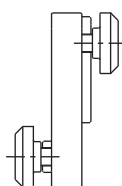
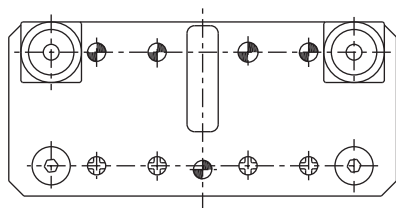
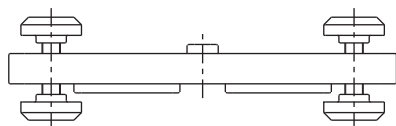
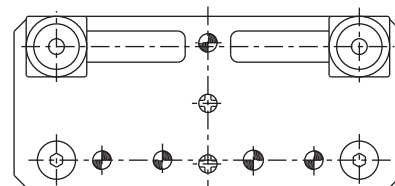
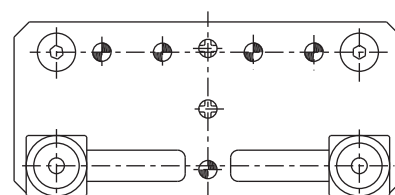
Peso: 590g.

LMK-040**Subassembly of interface for guidances LMX/LMY**

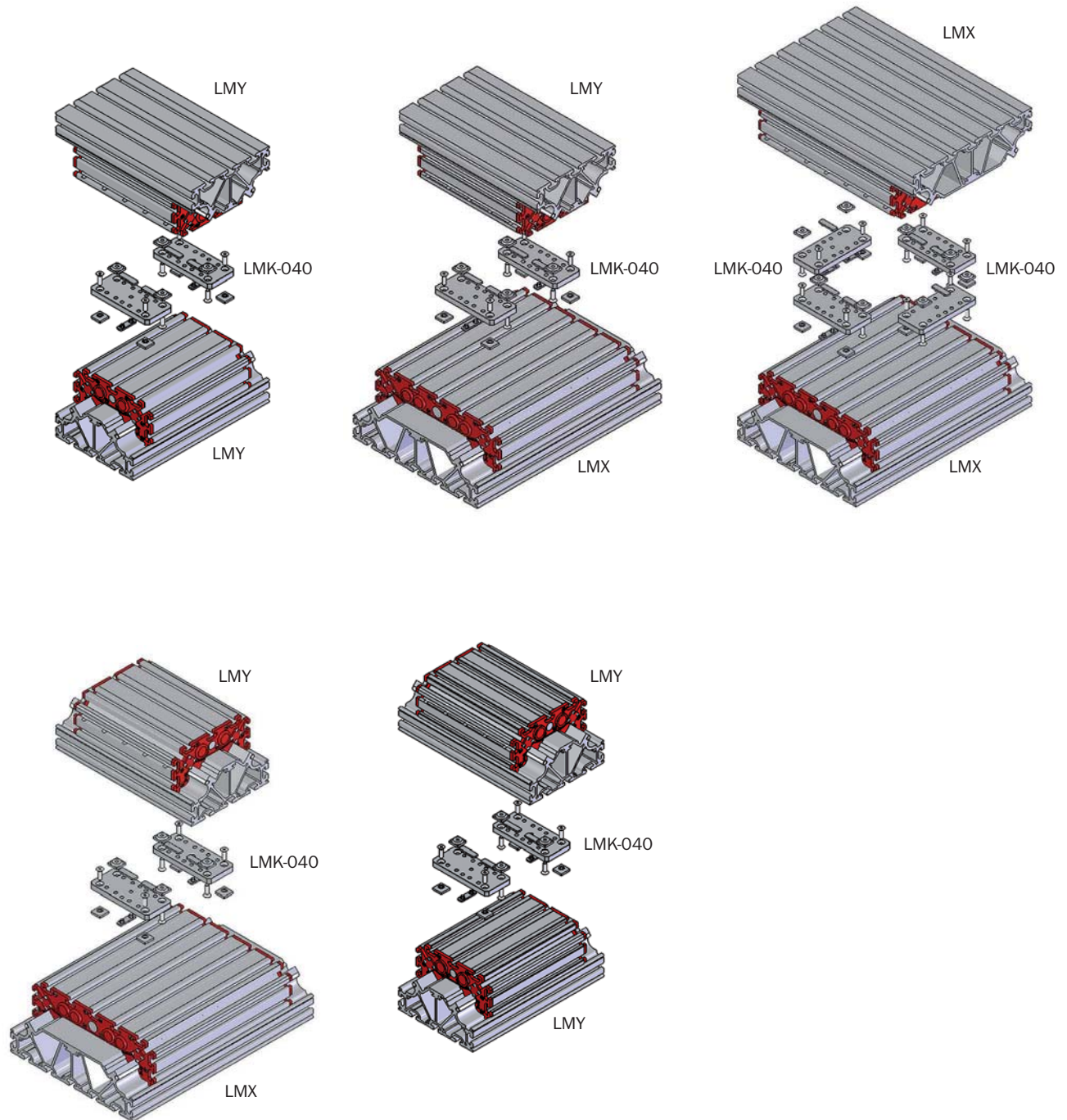
Weight: 590g.



SEZIONE A-A

FIRST ANGLE
PROJECTION

Esempi di applicazione / Application examples

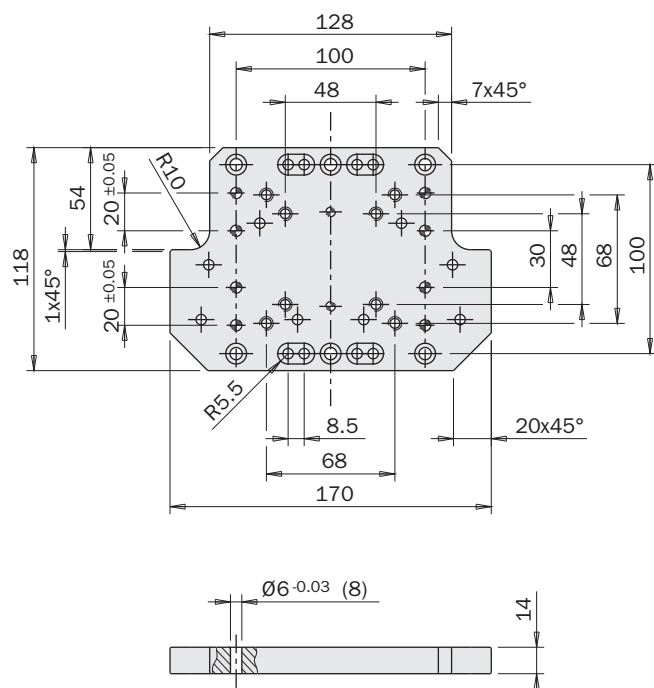
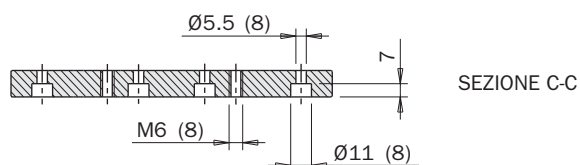
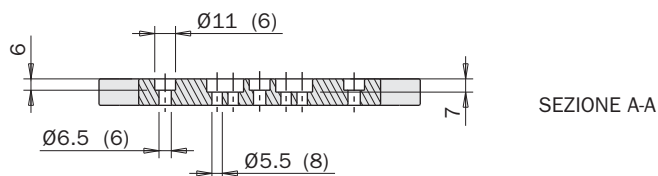
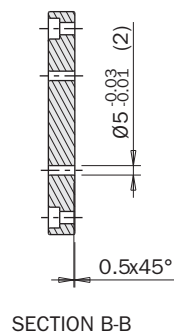
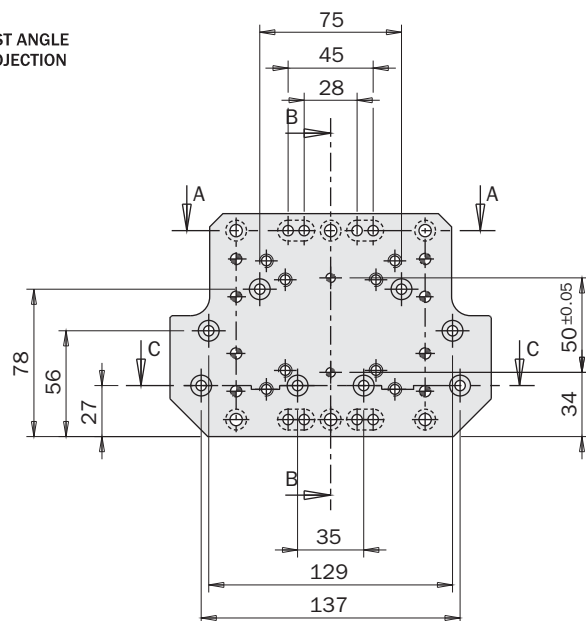


LMK-041**Sottogruppo interfaccia LM/LL/RBT**

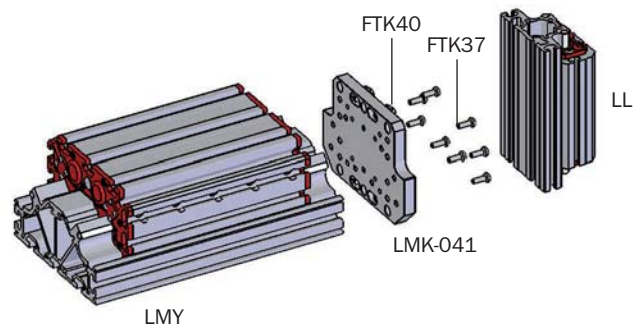
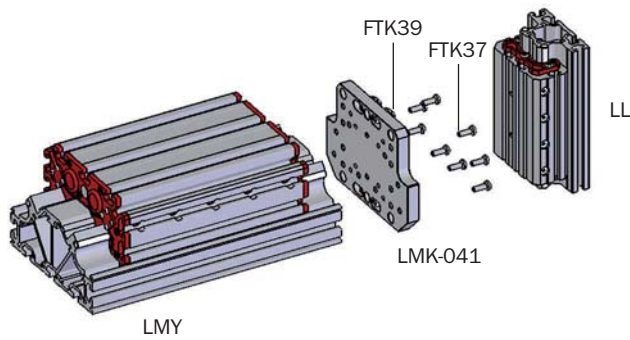
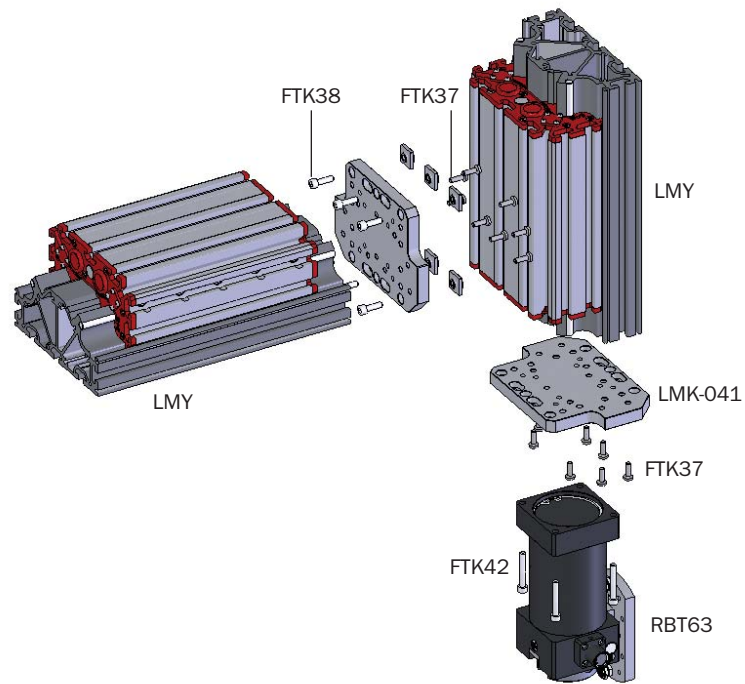
Peso: 600g.

LMK-041**Subassembly of interface LM/LL/RBT**

Weight: 600g.



Esempi di applicazione / Application examples

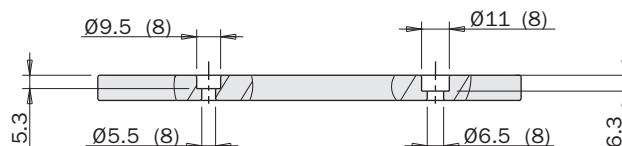
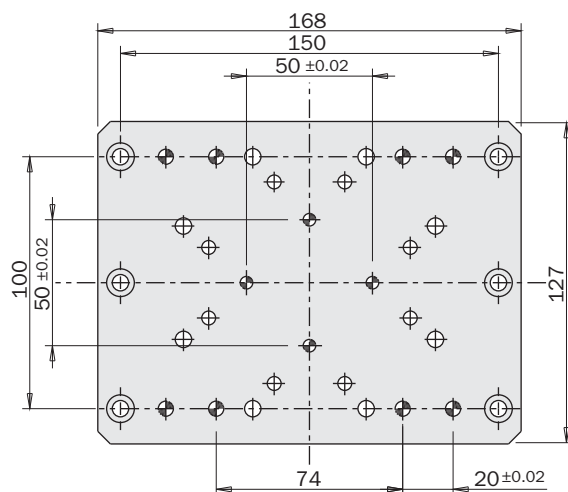
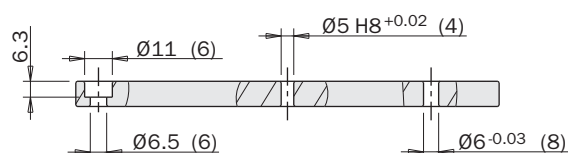
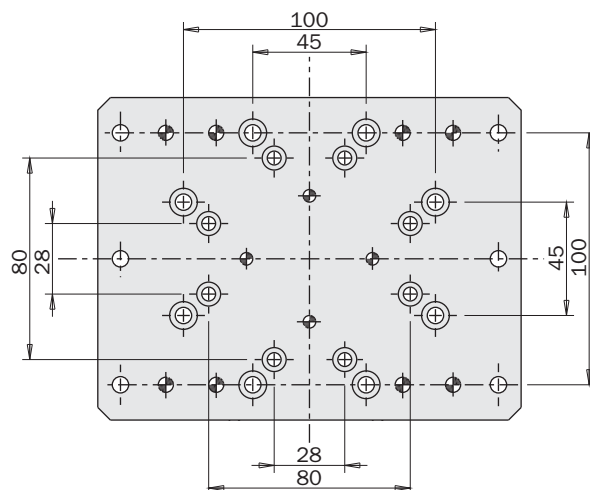


LMK-045**Interfaccia di montaggio LM/LL**

Peso: 550g.

LMK-045**Mounting interface plate LM/LL**

Weight: 550g.



Esempi di applicazione / Application examples

