



**MANUFACTURING COMPONENTS FOR
CRANES AND LIFTING EQUIPMENT**
**COSTRUZIONE COMPONENTI
PER APPARECCHI DI SOLLEVAMENTO**

PIZZAMIGLIO SRL

Sede legale, amministrativa e attività produttive:
Registered office, head office and operating base:

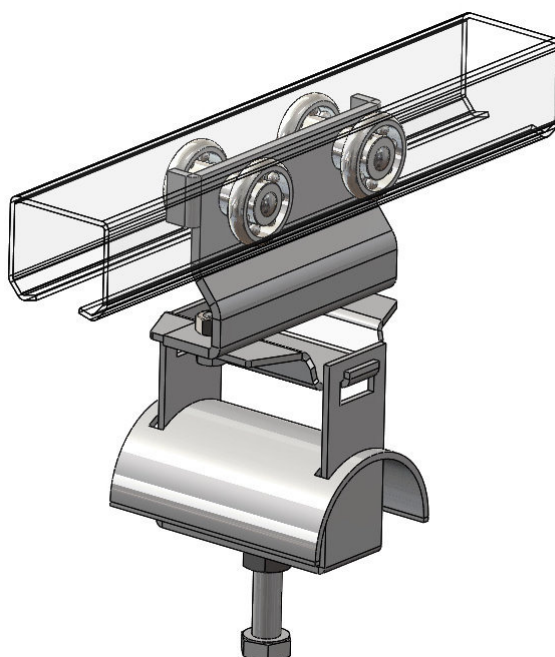
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Festoon trolleys for cables or tubes on MIGNON C-RAIL





PIZZAMIGLIO SRL

manufacturing components for cranes and lifting equipment

COMPANY PROFILE



Our surplus values are experience and the passion for the prestige of quality.

We look forward to measuring against the market and test what we are able to do. Our yearn for growing is evident through our courage not to choose the easiest way, but rather to pursue ambitious goals.

Pizzamiglio company was born to answer the need for bridge crane components already present on the market, moreover it aims at developing them and improving their quality.

Our organization blends together the founder's experience and the enthusiasm of the new generation in a dynamic team. We boast an exiguous staff turnover and our youngest workers are always supported so they can get to know the secrets of mechanics, a field which is constantly improving. In this way, they have the opportunity to learn to spot the faults and think about possible remedies; understand the problems and invent new solutions. The result is the creation of products manufactured following tradition, but with the care and flexibility of an agile modern business.

Our mission is to fully satisfy the customer providing high quality products and customized solutions in a fast and flexible way through our professionally fulfilled workers.

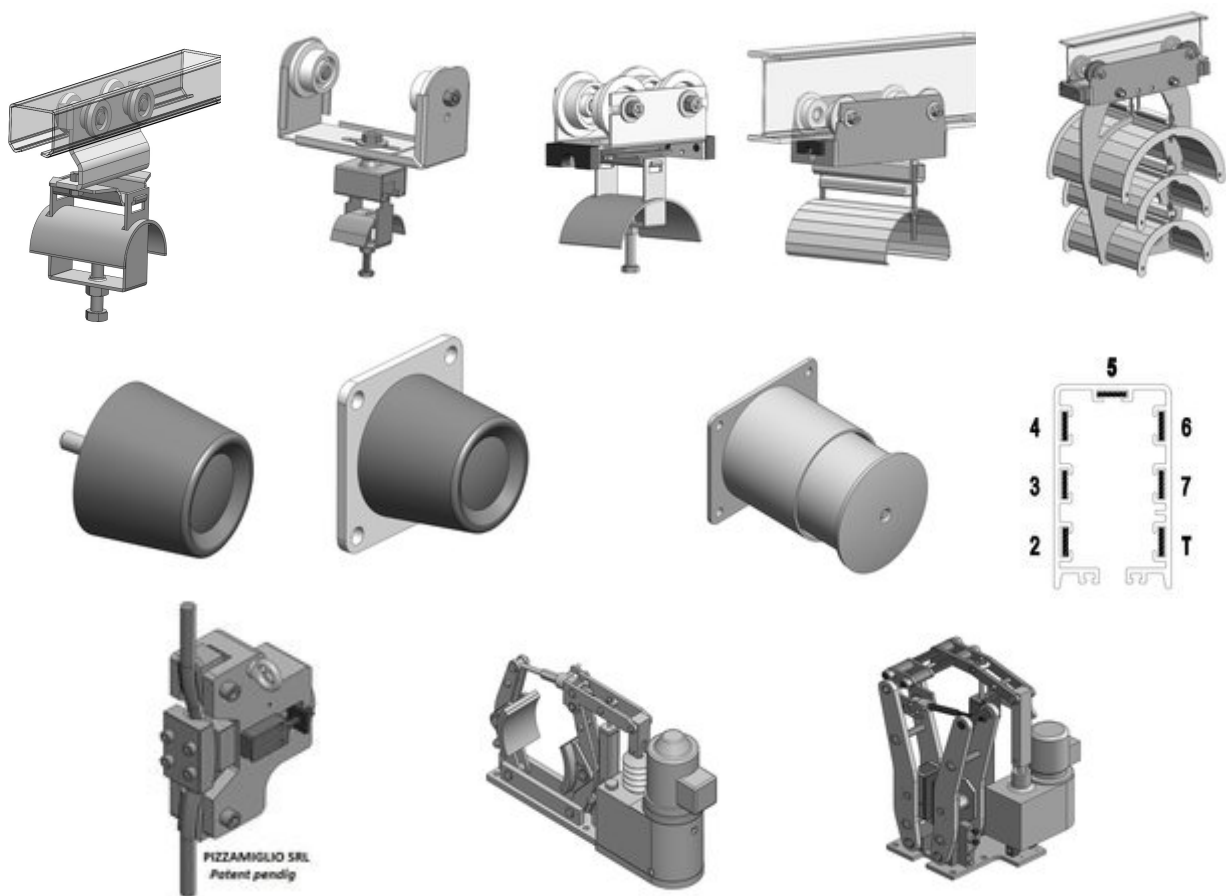
The result is the good repute of a business which is at the leading edge in its sector and invests its one-off experience legacy in the new generation.

Our business makes use of the most advanced technologies and equipment both in design and production. Pizzamiglio products are widely appreciated especially for their quality and reliability and their use is therefore widespread in the national market.

Our manufacturing plant in Valeggio, province of Verona, in the North-East of Italy, is the tangible and gratifying fruit of an unique constant growth path: a spacious indoor area which includes the workshop and well-provided and rationally organized warehouse. Next to these facilities, a bright building houses the counting house, the administrative office and the technical department.

Production range:

- Feeding festoon system “Olivares” for bridge-cranes, jib cranes, and similar.;
- **Feeding festoon system “Mignon” for bridge-cranes, jib cranes, and similar;**
- Feeding festoon system “Adjustable seires”, “Moulded series”, “Heavy series” sliding on IPE/IPN beams for bridge-cranes, jib cranes, and similar.;
- Feeding festoon system “Feston series” and “Feston Two series” for overhead cranes in steel industry;
- Electro-hydraulic drum brakes according DIN 15435 standard;
- Couplings and brake drums for brakes;
- Spare parts for brakes DIN standard;
- Electro-hydraulic disk brakes;
- Crane load limiters;
- Anti collision systems;
- Metallic buffers;
- Rubber buffers;
- Bus-bar system “Trolley AQ” for overhead cranes, made by pvc profile and continuous copper strips.



SUMMARY

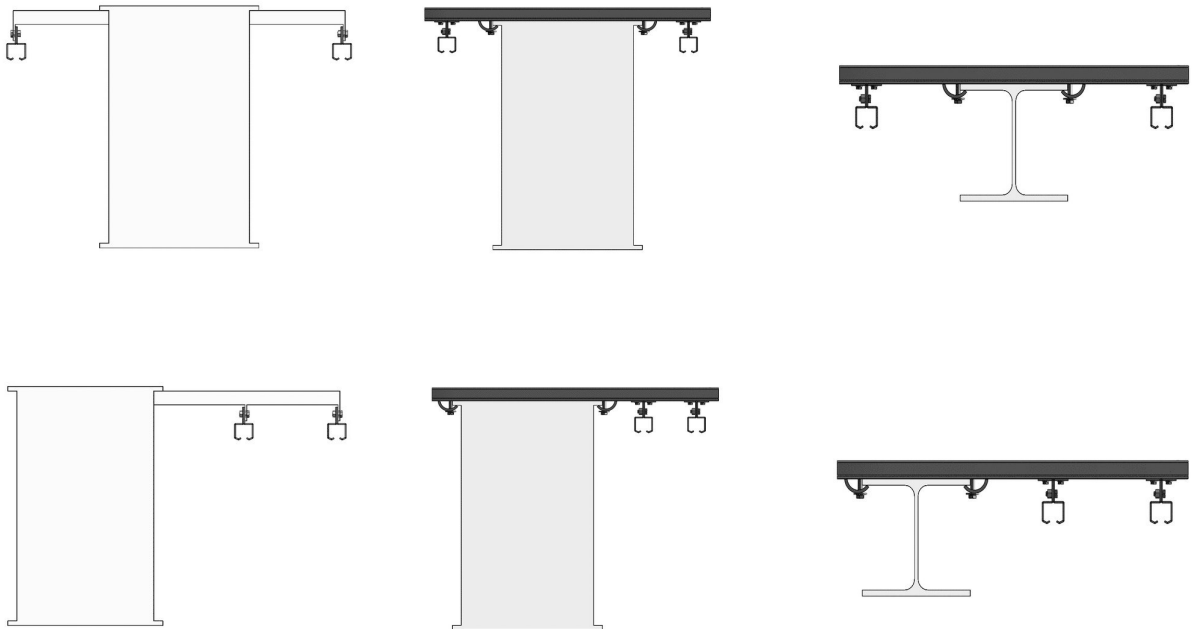
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PRODUCT DESCRIPTION

Installations equipped with flat or round cable trolleys are preferably used to feed mobile plants. Pizzamiglio srl manufactures two kind of C-Rails for trolleys: "Olivares" and "Mignon". The difference between the two models is in the dimension and consequently in the payload. This catalog refers to the "Mignon" series.

The advantages of feeding a mobile plant through festoon cables on sliding trolleys are: eliminating possible contacts with live electrical parts; simple installation; possibility to arrange flat or round electrical cables or tubes for transporting fluids, i.e. water, compressed air, gas, etc..

Trolleys slide inside the C-rail, which must be installed parallel to the bridge or to the sliding rail of the machine/equipment. The C-rail must be properly supported by welded existing brackets, as an alternative it can be possible to use our standard brackets kits. The C-rail and the components of the trolleys are made in galvanized steel. Components and fasteners are made in galvanized steel.

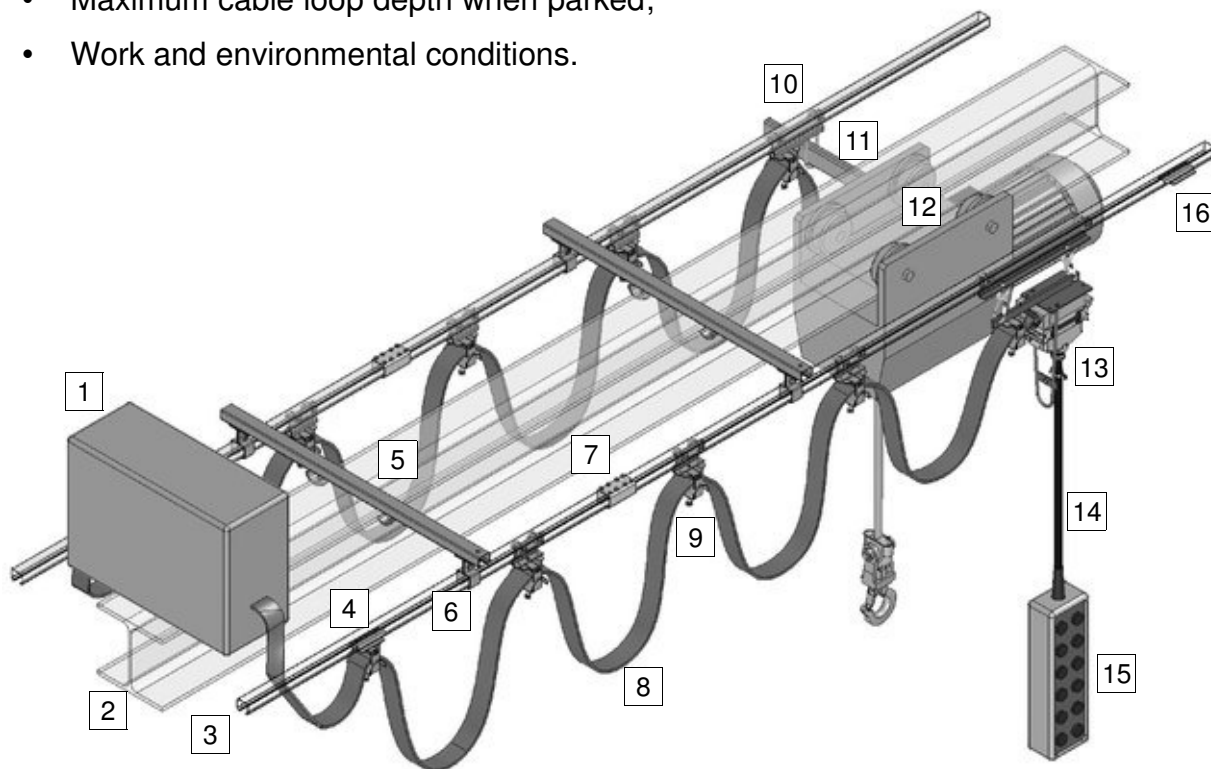


FLAT CABLE LINE COMPOSITION

The necessary components for creating a festoon can change in accordance to the application. Following we introduce two sample solutions for a bridge crane having flat cable festoon to feed the hoist sliding along the bridge and of a flat cable festoon to connect an independent hanging and sliding control unit.

The necessary information to determine the components for a festoon line are the following:

- Total line's length;
- Maximum parking space;
- Cable list and complete details;
- Maximum cable loop depth when parked;
- Work and environmental conditions.

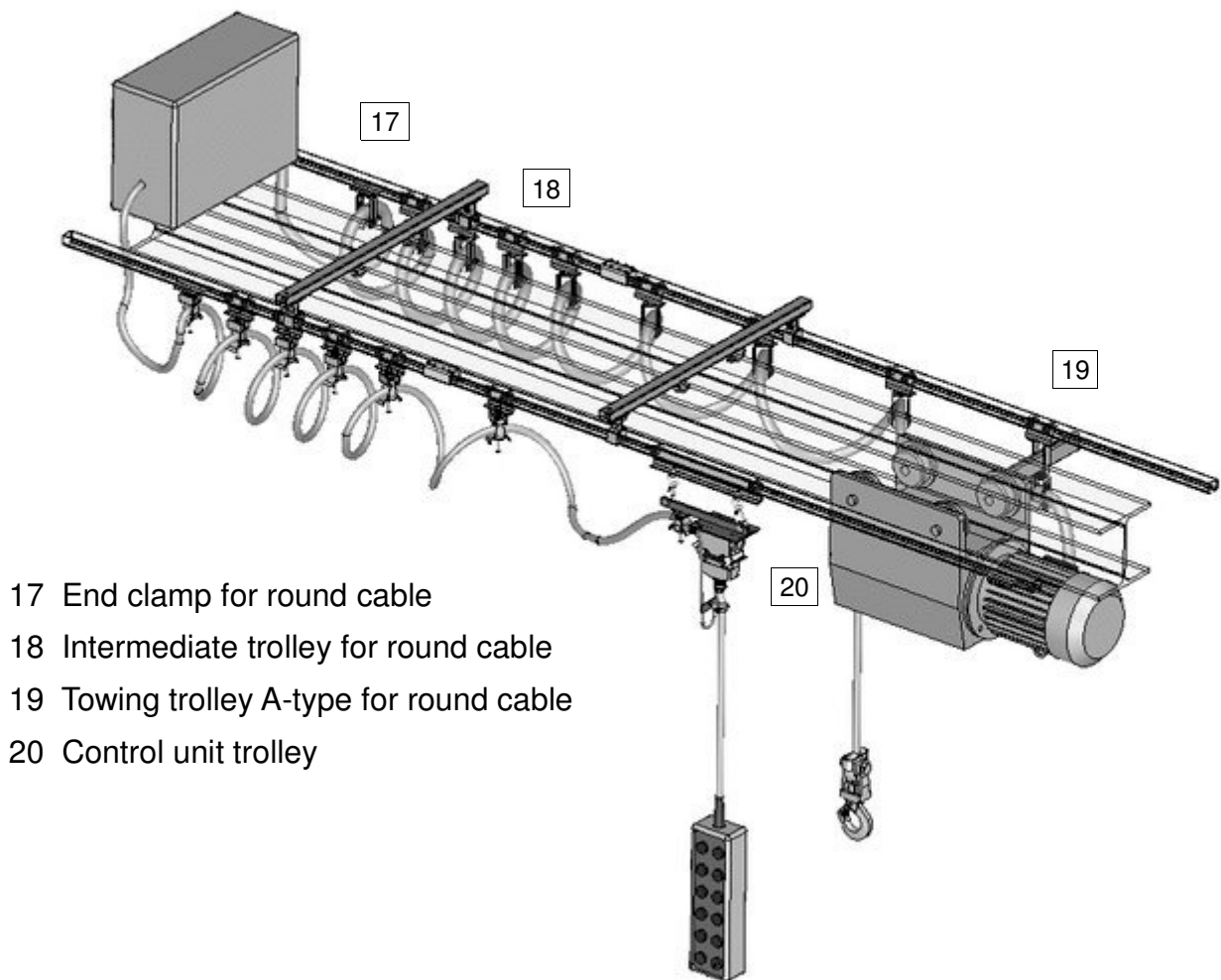


- | | |
|---------------------------------|--------------------------|
| 1 Control cabinet | 10 Towing trolley B-type |
| 2 Beam or box beam | 11 Towing arm |
| 3 C-Rail | 12 Hoist |
| 4 End clamp | 13 Control unit trolley |
| 5 Supporting bracket | 14 Self supporting cable |
| 6 Hanger for vertical fastening | 15 Switch panel |
| 7 Joint | 16 End stop |
| 8 Flat cable | |
| 9 Intermediate trolley | |

FESTOON ROUND CABLE LINE OR TUBE LINE COMPOSITION

The necessary components to create a festoon with round cables or tubes are similar to those used for flat cable ones. The only difference is the possibility for the saddles to rotate in order to make installation of cables or tubes in spiral easier.

Following we introduce two sample solutions for a bridge crane having round cable festoon to feed the hoist sliding along the bridge and of a round cable festoon to connect the control unit hanging and sliding.



- 17 End clamp for round cable
- 18 Intermediate trolley for round cable
- 19 Towing trolley A-type for round cable
- 20 Control unit trolley

In case of round cables or tubes, the saddle allows them to turn in a spiral when parked.

Moving the hoist or the switch panel, the turns will separate and the saddles will partially rotate in order to follow their natural movement.

Moving the hoist or the control unit, the turns will separate and the saddles will partially rotate in order to follow their natural movement.

In order to reduce the twisting stress on the cable or tube, we do suggest to consider a 1/3 longer tube size compared to the C-rail size, in addition to the necessary lengths to reach the electrical panel or the hoist.

COMPONENTS CHOICE

To select the components needed for festoon creation it is necessary to act as follows:

- Determine the bars quantity;
- Calculate the joints quantity;
- Calculate the hangers quantity (or brackets kits);
- Determine the cable length and the bights number;
- Determine intermediate trolleys kind and quantity;
- Determine the kind of end clamp;
- Choose the towing trolley or the control unit trolley, and eventual end stop.

The Mignon series C-Rail is available in 4-meter long bars. It is necessary to use a sufficient number of bars in order to cover the bridge length served by the trolley. Each bar must be connected to the other through a joint.

The C-Rail can be supported by horizontal hangers, ready to be fixed to the arms previously welded on the structure. We recommend supporting the C-rail at least every two meters along the way and at least every meter in the parking area, where all the trolleys will gather.

The festoons for hoist and control unit feeding can be placed on the same side of the beam or on the opposite sides. The second solution is preferable, because arms will be shorter and less stressed, while even the towing arm could be shorter.

As an alternative to the welded arms, supporting brackets for C-rail are also available. Special vertical hangers are needed.

The subsequent step is to determine the festoon cable length: it is necessary to consider the total length of the bridge plus 15%, because even if the festoon will be completely stretched, the cable must not be tensioned. The cable length will be even longer, because it will be necessary to add the fixed parts of cables that from the festoon will reach the connections.

Afterwards, it will be necessary to calculate the number of the bights by dividing the cable length (excluding the fixed parts to connections) for each bight's width, which is equal to the double height size of the same.

In order to determine the best intermediate trolley, it is necessary to consider the dimensions of the cables creating the festoon and their position on the saddle. Round cables or tubes must be bundled together, possibly introduced in a tube or, at least, fixed together in a unique body and installed as a spiral choosing one of the turning saddle trolleys having the right size to contain them by checking the M factor.

Flat cables can be placed side by side or superimposed. In this second case, we suggest to place the thinnest cable directly on the saddle and the thicker ones above. In this way, the bending ray will be wider for the thicker cables. To this purpose, it is important to verify the minimum bending ray indicated by the cable's manufacturer in order to avoid that a too high stress will cause a rapid damage or conductors' interruption.

Once the optimal saddle width has been settled for flat cable (M factor) and its diameter (L factor), it will be necessary to determine the trolley's length (O factor). To reach this result it

will be enough to consider the L factor and add twice the thickness of the superimposed cables. The trolley's length must be higher than this last result, so that the cables will not touch each other during the trolley's movements. Important note: the Mignon serie includes only 80mm long intermediate trolleys, therefore the superimposed cable thickness must be lower than 15 mm.

In case of round cable trolleys (or tube), it will not be necessary to calculate the appropriate length, since they will be installed as a spiral and the saddle will partially rotate when parking.

The choice of nylon wheeled or ball bearing trolleys will depend on cable bight's weight, use regularity and work environment.

The quantity of necessary intermediate trolleys will be obtained considering the number of bights excluding the first, because it will be mounted an end clamp.

The festoon start extremity, corresponding to cables inlet, will be an end clamp, without wheels, having the same saddle of the intermediate trolleys.

The hoist feeding festoon will include a towing trolley. This special trolley is different from the intermediate ones because includes an opening for the towing bar protruding from the hoist. This opening can consist in a separate element screwed on the trolley (type A) or in a ring welded on the trolley (type B). Further details on those two alternatives are indicated in the section specially dedicated to the towing trolleys. Those products are more stressed, therefore we suggest to choose ball bearing intermediate trolleys, except in cases where the environment doesn't allow to.

The last step in choosing the festoon components is checking that the parking space of the trolley placed beside the end clamp will be compatible to the available space. If this won't occur, it will be necessary to re-calculate considering less intermediate trolleys and higher bights, or a different cables arrangement on the saddle, that could allow to settle bights having lower diameter and shorter trolleys.

The choice criteria in case of components for feeding festoon on a bridge crane's rail ways is the same as the hoist festoon.

The control unit festoon needs a special trolley created in order to support the control unit (pendant switch panel) and self supporting cable's weight. The control unit's cable can be equipped with a junction box where it is possible to house the connection clamps between flat cable and the round self supporting one. As an alternative it can be possible to choose a third model equipped with quick connector, making also the subsequent maintenance operations much easier.

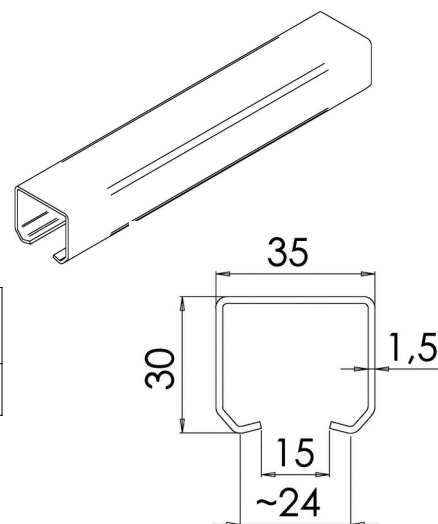
The control unit's festoon must always end with an end stop, preventing the control unit trolley to come out from the opposite side where the end clamp is installed. On the contrary, there is no need to install end stop on the trolley's festoon, because the towing trolley is led by the towing arm, preventing it to come out from the C-Rail.

All dimensions and measures in this publication are expressed in mm except specific indication.

C-RAIL AND ACCESSORIES

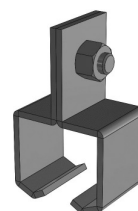
GALVANIZED C-RAIL TYPE MIGNON

Item	Description	Mass [kg/m]	Price
OLI0102	C-rail from roll forming, in 4 m bars	1,250	€



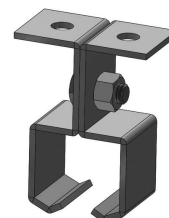
HORIZONTAL FASTENING HANGER

Item	Description	Mass [kg]	Price
OLI0103	Hanger with hole for horizontal C-rail fastening <u>with bolt</u>	0,110	€
OLI0104	Hanger with hole for horizontal C-rail fastening <u>without bolt</u>	0,125	€



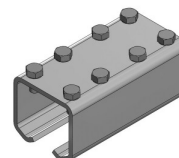
VERTICAL FASTENING HANGER

Item	Description	Mass [kg]	Price
OLI0105	Hanger with holes for vertical C-rail fastening with bolt	0,100	€



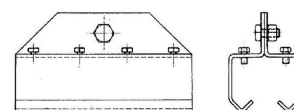
JOINT

Item	Description	Mass [kg]	Price
OLI0106	C-rail joint	0,200	€



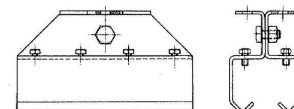
HANGING JOINT FOR HORIZONTAL FASTENING

Item	Description	Mass [kg]	Price
OLI0107	Horizontal fastening C-rail hanging joint	0,370	€



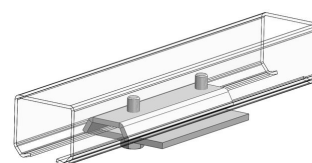
HANGING JOINT FOR VERTICAL FASTENING

Item	Description	Mass [kg]	Price
OLI0108	Vertical fastening C-rail hanging joint with bolt	0,380	€



END STOP

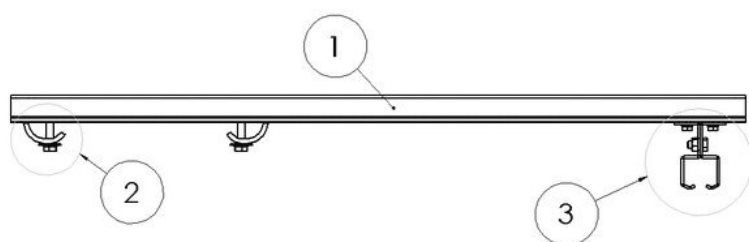
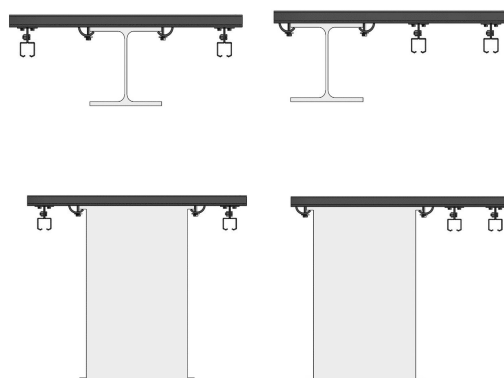
Item	Description	Mass [kg]	Price
OLI0109	End stop for C- Rail	0,050	€



The c-rail is represented only in order to clarify the use of the component.

BRACKETS FOR MIGNON C-RAIL

By using some pieces of c-rail Mignon ① and two bent stirrups ② is possible to achieve brackets useful to supporting the c-rails for the sliding of the trolleys in order to obtain the wanted configuration. In this case instead the standard hangers described on the previous page, you must use one or two hangers with platelet ③ item OLI0105B



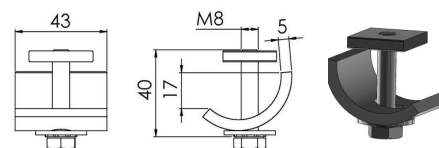
① C-RAIL MIGNON PIECES

Item	Description	Mass [kg]	Price
SL9070	Bracket sized L=350mm from Mignon C-rail carrying capacity 35kg	0,437	€
SL9069	Bracket sized L=450mm from Mignon C-rail carrying capacity 30kg	0,563	€
SL9068	Bracket sized L=550mm from Mignon C-rail carrying capacity 25kg	0,688	€
SL9067	Bracket sized L=650mm from Mignon C-rail carrying capacity 20kg	0,813	€
SL9066	Bracket sized L=800mm from Mignon C-rail carrying capacity 15kg	1,000	€



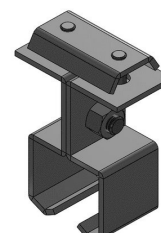
② BENT STIRRUPS FOR BRACKET FASTENING

Item	Description	Mass [kg]	Price
SL9073	Bent stirrups with square platelet and screw useful for the fastening of the bracket (for brackets made in Mignon c-rail)	0,120	€



③ VERTICAL HANGER WITH PLATELET

Item	Description	Mass [kg]	Price
OLI0105B	Vertical hanger with platelet, screws and bolt for bracket (for brackets made in Mignon c-rail)	0,116	€



FLAT CABLE FESTOON

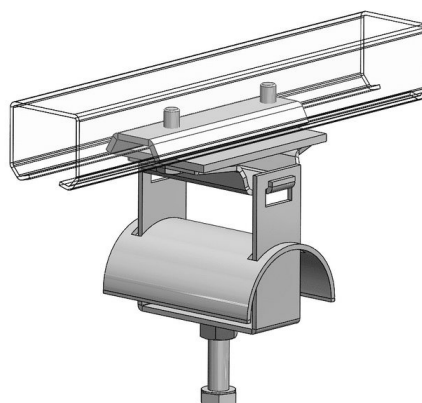
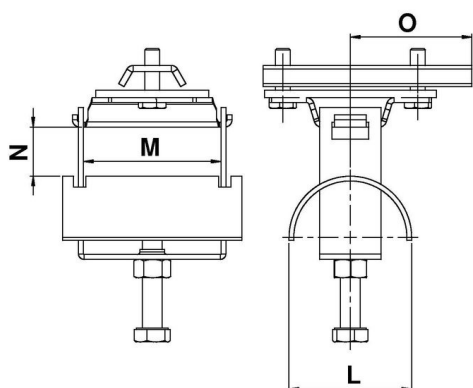
END CLAMP

for flat cable with central screwed saddle

Max load:

15 kg per saddle

Item	M	L	N	O	Mass [kg]	Price
OLI0114	25	50	15	50	0,180	€
OLI0115	42	50	15	50	0,260	€
OLI0116	55	50	15	50	0,300	€
OLI0117	80	50	15	50	0,380	€

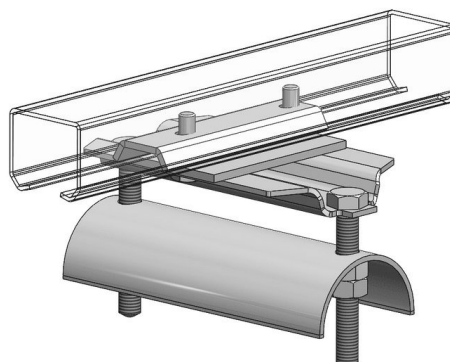
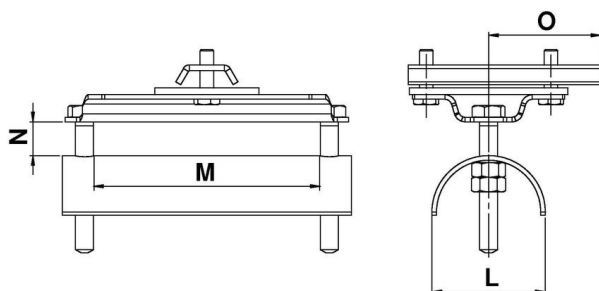


The c-rail is represented only in order to clarify the use of the component.

END CLAMP

for flat cable with double screws saddle

Item	M	L	N	O	Mass [kg]	Price
OLI0118	100	50	15	50	0,450	€



The c-rail is represented only in order to clarify the use of the component.

INTERMEDIATE TROLLEY

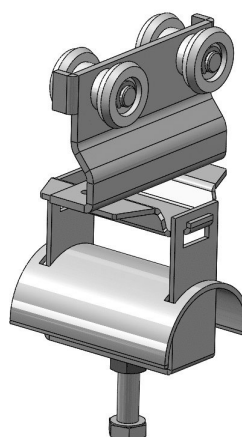
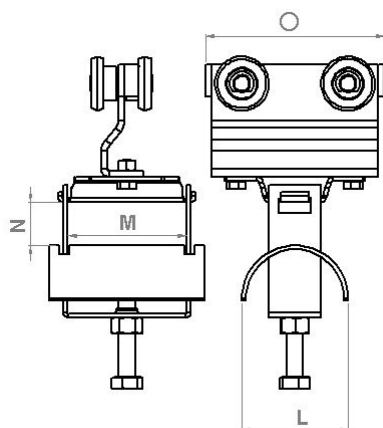
for flat cable with central screwed saddle

Item	M	L	N	O	Wheel type	Mass [kg]	Price
OLI0131	25	50	15	80	Bearing	0,320	€
OLI0132	42	50	15	80	Bearing	0,400	€
OLI0133	55	50	15	80	Bearing	0,440	€
OLI0134	80	50	15	80	Bearing	0,520	€
OLI0131N	25	50	15	80	Nylon	0,270	€
OLI0132N	42	50	15	80	Nylon	0,350	€
OLI0133N	55	50	15	80	Nylon	0,390	€
OLI0134N	80	50	15	80	Nylon	0,470	€

Max load:

12 kg per trolley
with nylon wheels

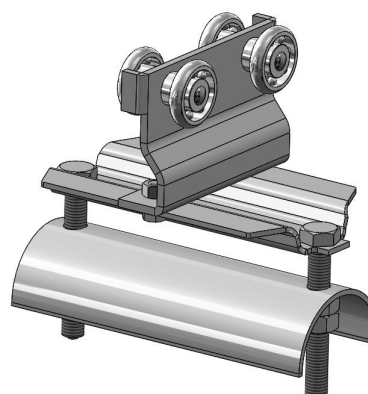
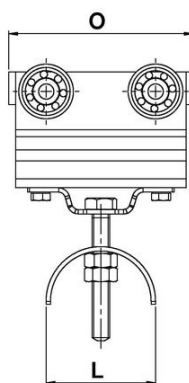
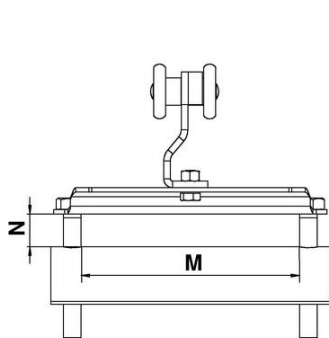
15 kg per trolley
with bearing wheels



INTERMEDIATE TROLLEY

for flat cable with double screws saddle

Item	M	L	N	O	Wheel type	Mass [kg]	Price
OLI0135	100	50	15	80	Bearing	0,580	€
OLI0135N	100	50	15	80	Nylon	0,530	€



TOWING TROLLEY A-TYPE

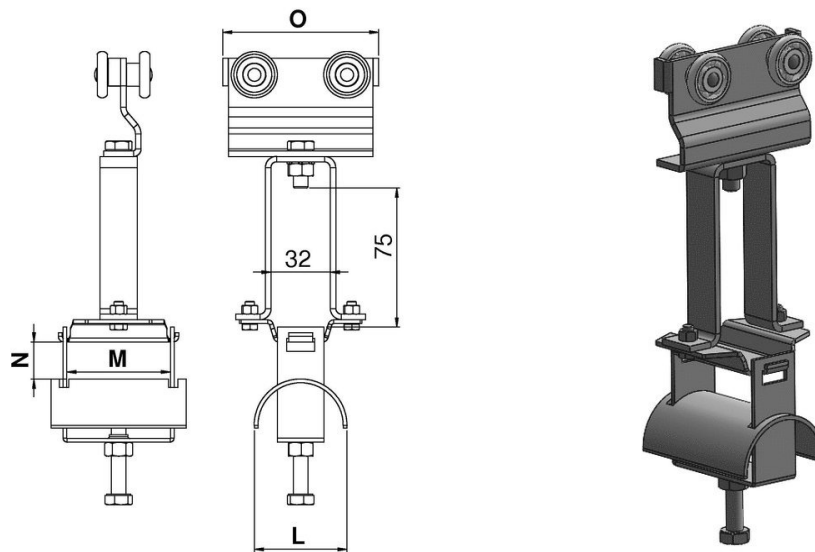
for flat cable with central screwed saddle

Item	M	L	N	O	Wheel type	Mass [kg]	Price
OLI0158	25	50	15	80	Bearing	0,430	€
OLI0159	42	50	15	80	Bearing	0,510	€
OLI0160	55	50	15	80	Bearing	0,550	€
OLI0161	80	50	15	80	Bearing	0,630	€

Max load:

12 kg per trolley
with nylon wheels

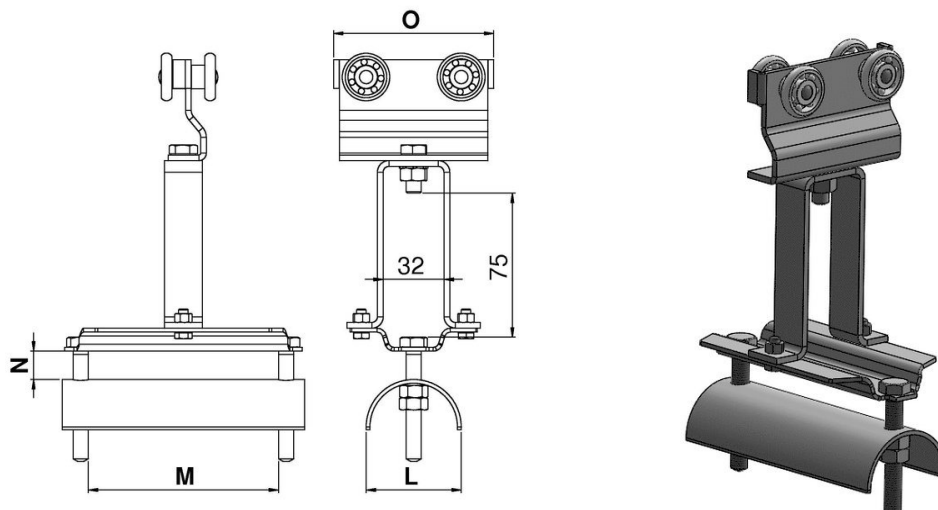
15 kg per trolley
with bearing wheels



TOWING TROLLEY A-TYPE

for flat cable with double screwed saddle

Item	M	L	N	O	Wheel type	Mass [kg]	Price
OLI0162	100	50	15	80	Bearing	0,690	€



TOWING TROLLEY B-TYPE

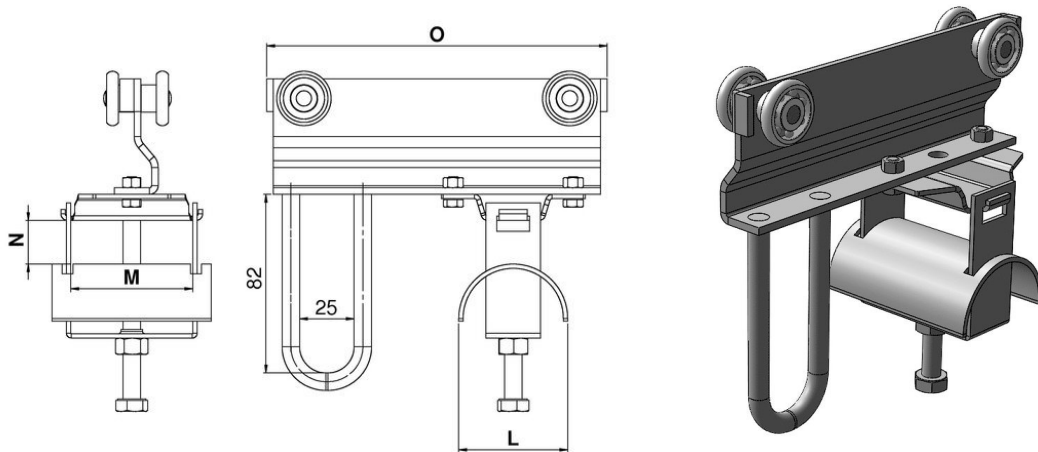
for flat cable with central screwed saddle

Item	M	L	N	O	Wheel type	Mass [kg]	Price
OLI0181	25	50	15	150	Bearing	0,510	€
OLI0182	42	50	15	150	Bearing	0,590	€
OLI0183	55	50	15	150	Bearing	0,640	€
OLI0184	80	50	15	150	Bearing	0,710	€

Max load:

12 kg per trolley
with nylon wheels

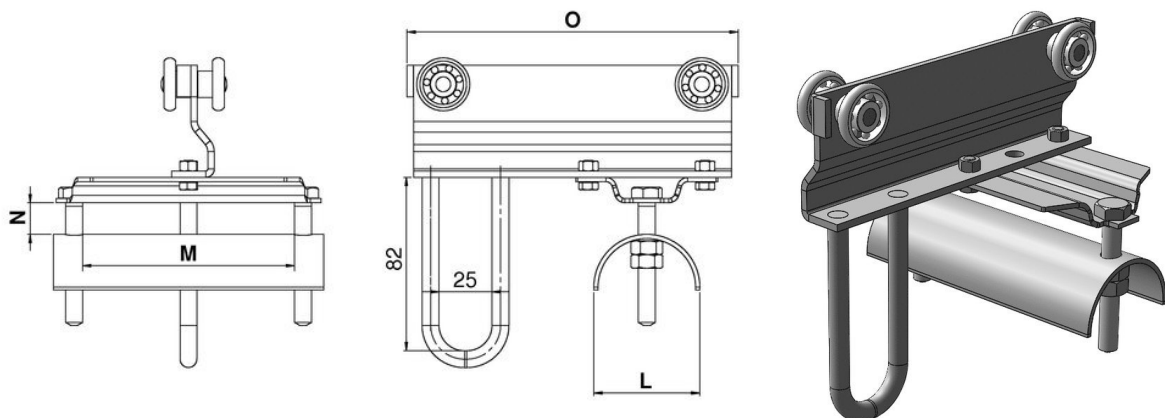
15 kg per trolley
with bearing wheels



TOWING TROLLEY B-TYPE

for flat cable with double screwed saddle

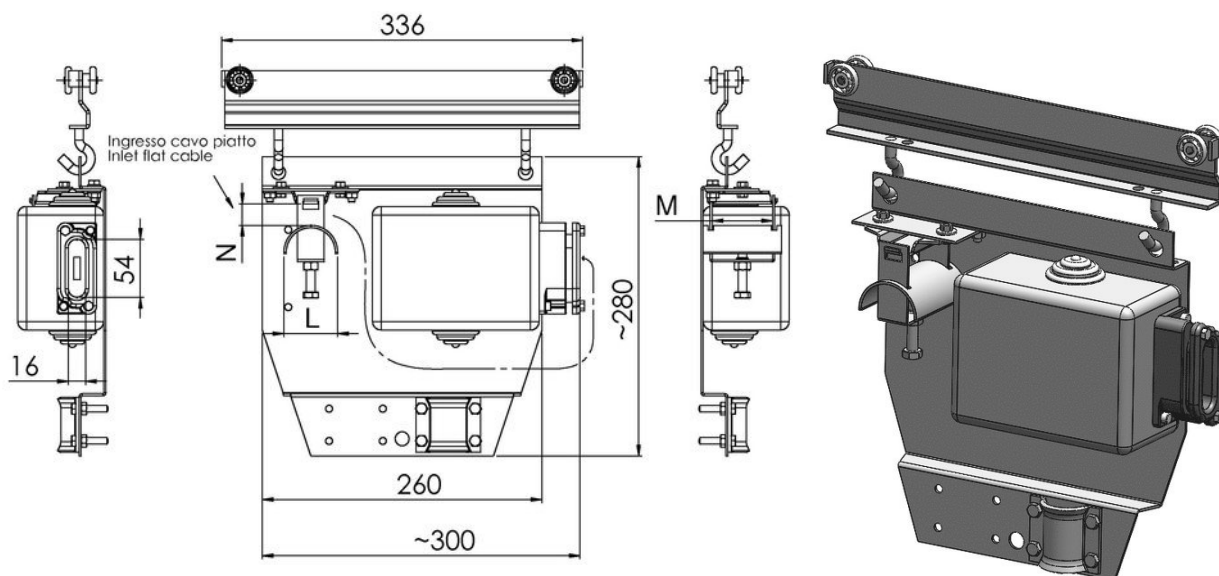
Item	M	L	N	O	Wheel type	Mass [kg]	Price
OLI0185	25	50	15	150	Bearing	0,780	€



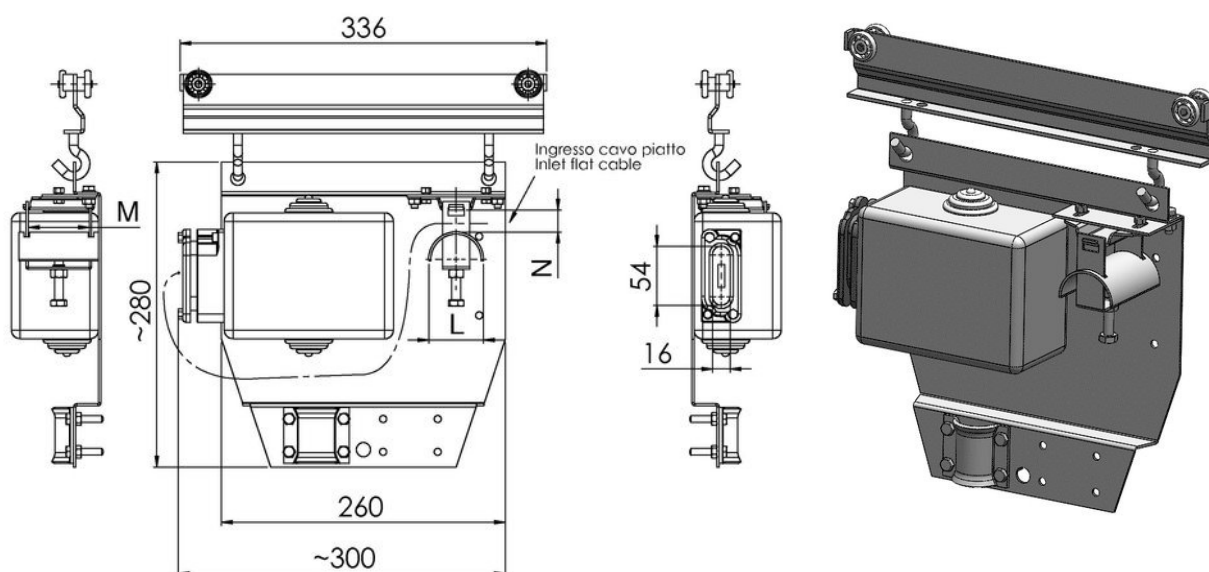
CONTROL UNIT TROLLEY WITH JUNCTION BOX max load 15 kg

with inlet cable gland for flat cable and outlet cable gland for round cable. Junction box internal dimension: 153x110x66mm

Item	M	L	N	O	Wheel type	Inlet flat cable	Mass [kg]	Price
OLI0198S	55	50	15	-	Bearing	from LEFT side	2,670	€

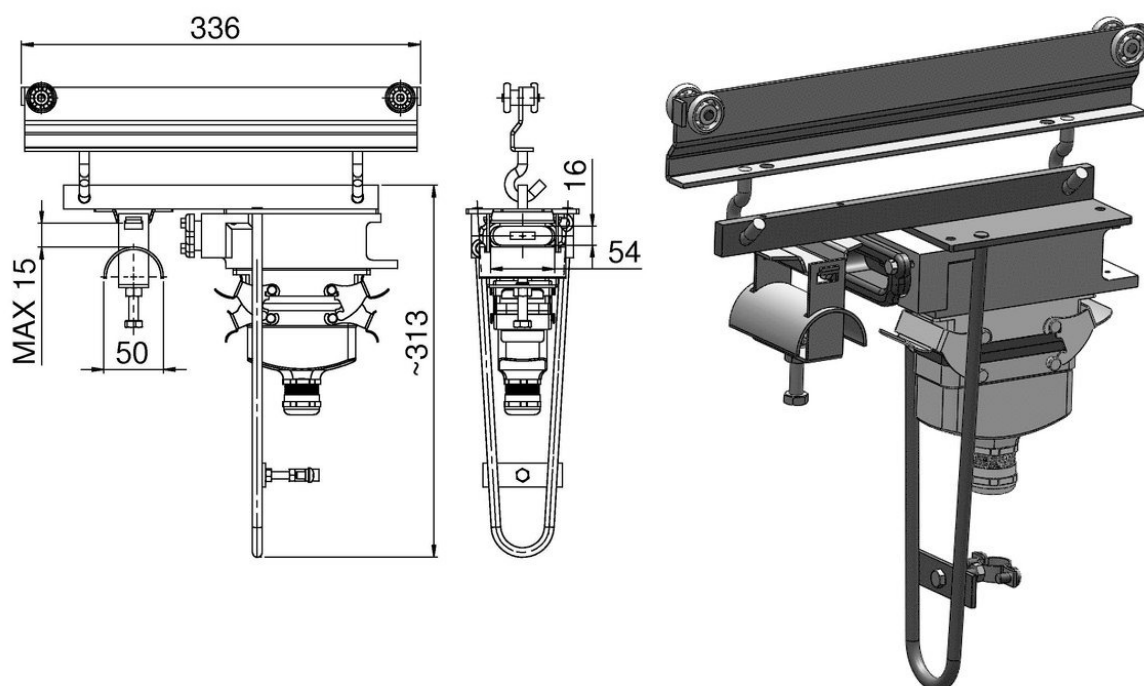


Item	M	L	N	O	Wheel type	Inlet flat cable	Mass [kg]	Price
OLI0198D	55	50	15	-	Bearing	From RIGHT side	2,670	€



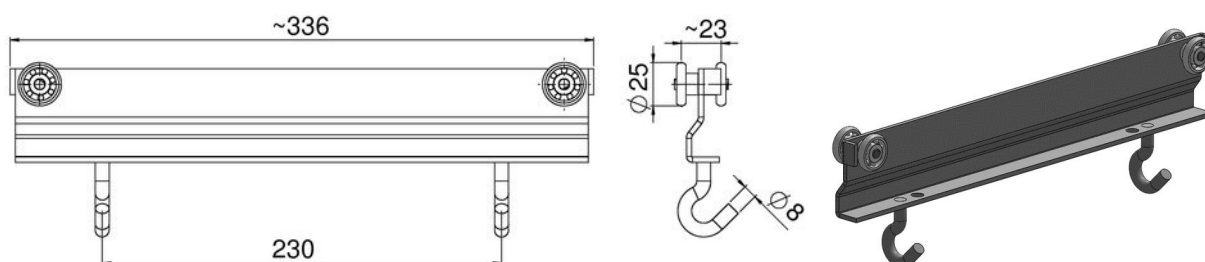
CONTROL UNIT TROLLEY WITH QUICK CONNECTOR max load 15 kg
inlet cable gland for flat cable and outlet cable gland for round cable

Item	M	L	N	Wheel type	Connector type	Mass [kg]	Price
OLI0201B	55	50	15	Bearing	16 poles	2,600	€
OLI0202B	55	50	15	Bearing	24 poles	2,700	€



SPARE PART FOR CONTROL UNIT TROLLEY
both for junction box and quick connector trolley

Item	Wheel type	Notes	Mass [kg]	Price
SL0798	Bearing	Max load 15 kg	0,700	€



ROUND CABLE FESTOON

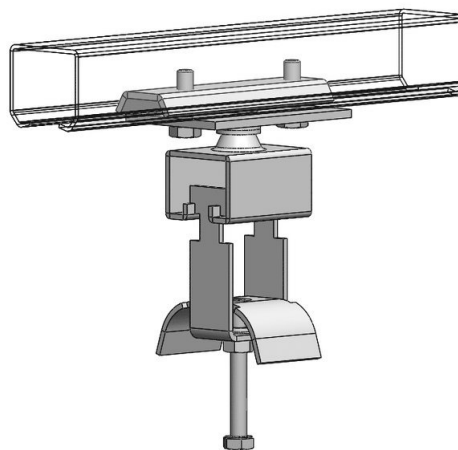
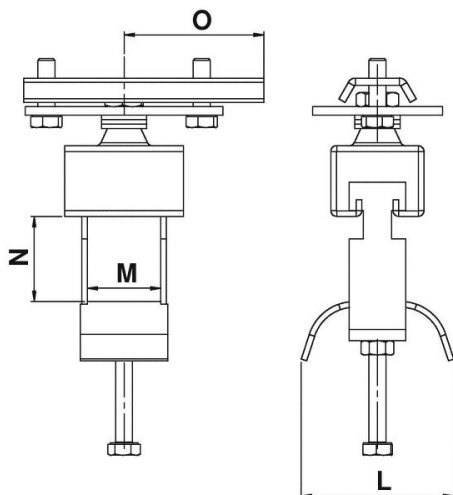
END CLAMP

for round cable with central screwed saddle

Max load:

15 kg per saddle

Item	M	L	N	O	Mass [kg]	Price
OLI0110	25	50	35	50	0,240	€

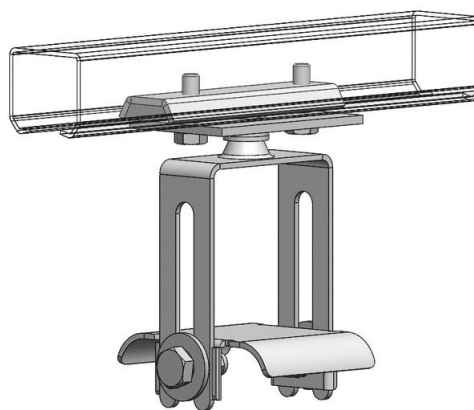
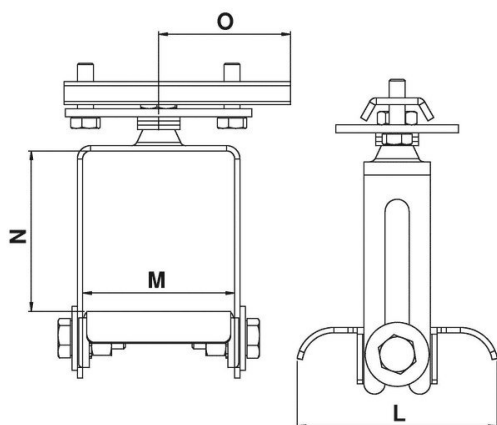


The c-rail is represented only in order to clarify the use of the component.

END CLAMP

for round cable with double fork saddle

Item	M	L	N	O	Mass [kg]	Price
OLI0111	38	70	60	50	0,230	€
OLI0112	55	75	60	50	0,270	€
OLI0113	80	100	70	50	0,450	€



The c-rail is represented only in order to clarify the use of the component.

INTERMEDIATE TROLLEY

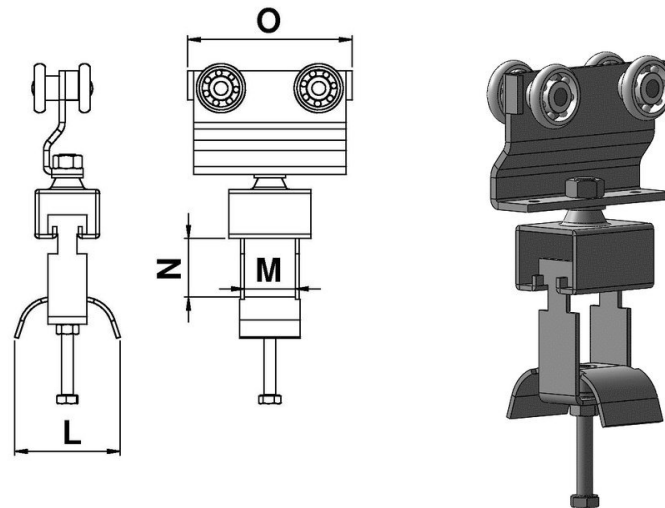
for round cable with central screwed trolley

Item	M	L	N	O	Wheel type	Mass [kg]	Price
OLI0119	25	50	35	80	Bearing	0,370	€
OLI0119N	25	50	35	80	Nylon	0,320	€

Max load:

12 kg per trolley
with nylon wheels

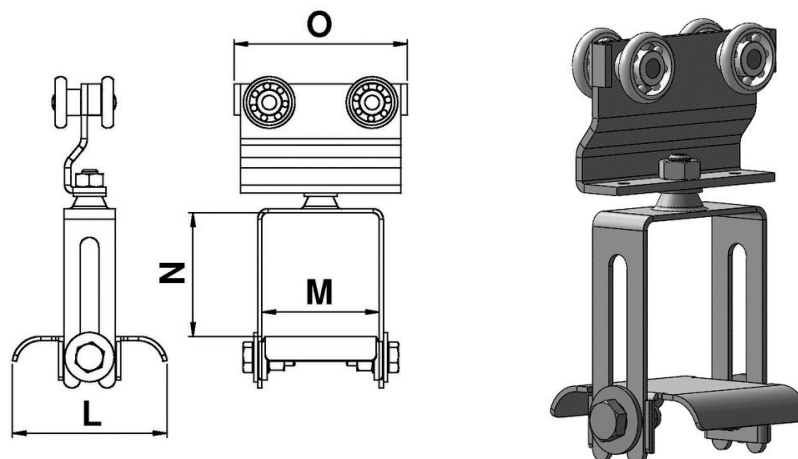
15 kg per trolley
with bearing wheels



INTERMEDIATE TROLLEY

for round cable with double fork saddle

Item	M	L	N	O	Wheel type	Mass [kg]	Price
OLI0120	38	70	60	80	Bearing	0,360	€
OLI0121	55	75	60	80	Bearing	0,390	€
OLI0122	80	100	70	80	Bearing	0,570	€
OLI0120N	38	70	60	80	Nylon	0,310	€
OLI0121N	55	75	60	80	Nylon	0,340	€
OLI0122N	80	100	70	80	Nylon	0,520	€



TOWING TROLLEY A-TYPE

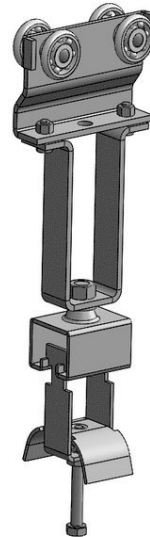
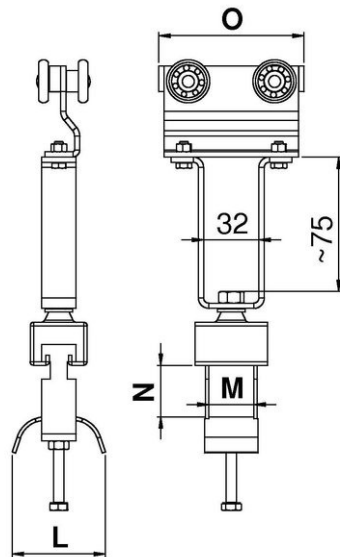
for round cable with central screwed saddle

Item	M	L	N	O	Wheel type	Mass [kg]	Priee
OLI0146	25	50	35	80	Bearing	0,480	€

Max load:

12 kg per trolley
with nylon wheels

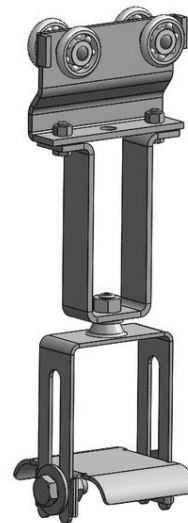
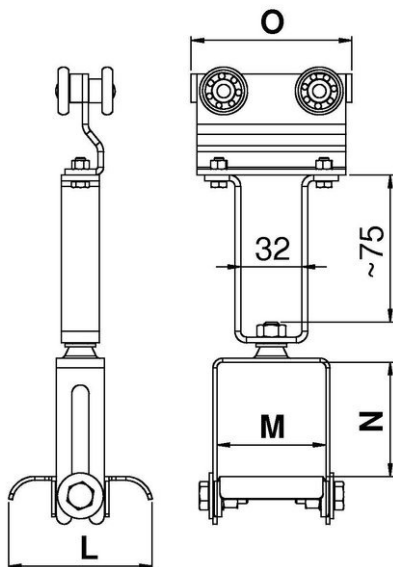
15 kg per trolley
with bearing wheels



TOWING TROLLEY A-TYPE

for round cable with double fork saddle

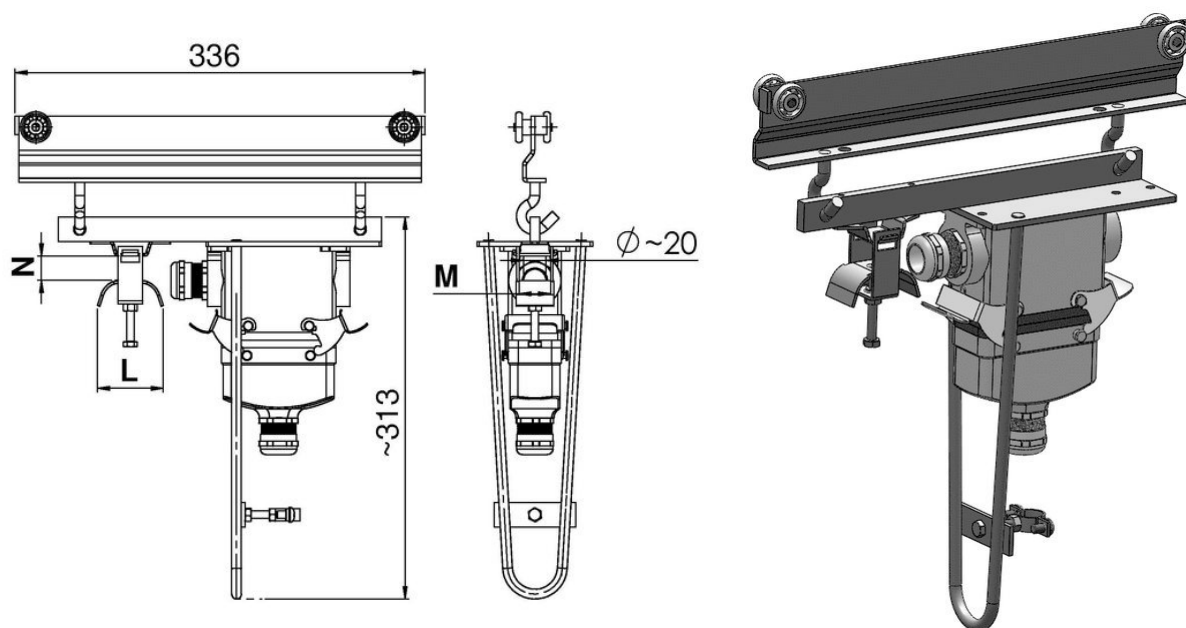
Item	M	L	N	O	Wheel type	Mass [kg]	Price
OLI0147	38	70	60	80	Bearing	0,470	€
OLI0148	55	75	60	80	Bearing	0,500	€
OLI0149	80	100	70	80	Bearing	0,680	€



CONTROL UNIT TROLLEY WITH QUICK CONNECTOR max load 15 kg

inlet and outlet cable gland for round cable

Item	M	L	N	Wheel type	Connector type	Mass [kg]	Price
OLI0199	25	50	25	Bearing	16 poli	1,850	€
OLI0200	25	50	25	Bearing	24 poli	1,950	€

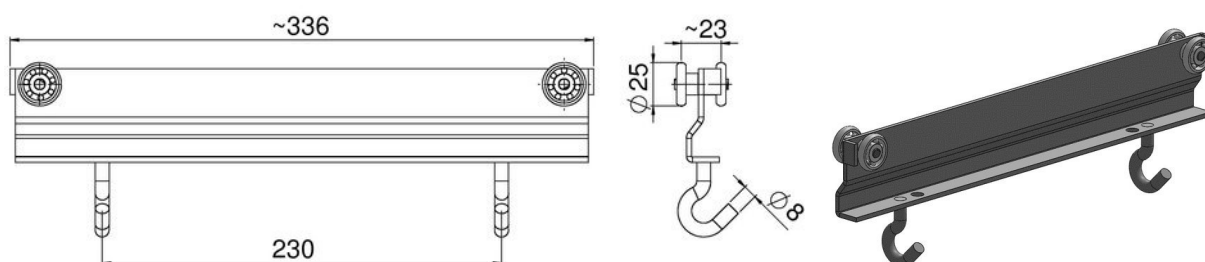


SPARE PART FOR CONTROL UNIT TROLLEY

both for junction box and quick connector trolley

(this item is the same indicated in the section dedicated to flat cable trolleys)

Item	Wheel type	Notes	Mass [kg]	Price
SL0798	Bearing	Max load 15 kg	0,700	€



INSTALLATION INSTRUCTIONS

The first step consists in positioning the brackets on the beam or fixing the hanger on the welded arms. At the beginning, do not fasten the hangers' screws in order to easily insert the C-Rail bars and positioning them by sliding.

Insert the C-Rail bars in the hangers. Position the C-Rail bars being careful that the Pizzamiglio brand is readable on the same visible side. This will ensure that the C-Rails will perfectly join without creating irregularities where the trolley could be hampered.

Install the junctions, which are slightly narrower on the bottom side. This is a design choice, adopted to ensure a very precise junction. In order to insert the joints properly, press slightly the lower corner of the C-rail. Before fastening the screws, be careful that the extremities of the C-rail are perfectly joined. Try to slide an intermediate trolley in order to assure that the junction has been well done.

Once defined the C-rail position, fasten the screws of all hangers, being careful that the C-rail is properly blocked and aligned.

At first install the stop clamp (only in control unit festoon lines) on the opposite side of the cable inlet.

Insert the towing trolley or the control unit's trolley first.

Afterwards insert all intermediate trolleys.

Install the end clamp last, by blocking it on the C-Rail. In this way, the trolley will no longer slip out the C-rail.

Place the cable on the saddles, starting from the end clamp and passing through each trolley, reaching the towing or the control unit one.

Equally distribute the cable, adjusting the bights height and fastening the saddle screws and locking nuts. The cable must be well fixed without any chance to slide among the saddles.

WARRANTY CONDITIONS

The constructor guarantees its products for a 12-months period from the delivery date. This warranty covers only the free repair and replacement of those parts that, after a careful examination of the constructor, are found to be faulty. The admissible temperature for use and storage of the trolleys is -10°C/+50°C. The warranty excludes the responsibility for direct or indirect damages. The warranty covers the defective goods and is not valid for elements broken or repaired by other companies than the constructor. The elements subject to wear (wheels, bearings, pins) are not covered by the warranty. Are also excluded by the guarantee possible damages to things or people caused by negligence, carelessness, bad or improper use of the product, incorrect installation, handling by the operator. The warranty decays also in case the spare parts used are not original. The damaged parts, even if under warranty, must be returned carriage paid. For all the other guarantee conditions, refer to the sale contract.

Pizzamiglio srl, in the constant research of production improvement reserves the right to modify its product features without prior notice. Therefore, descriptions contained in this catalogue are not binding. Verify in our website to the catalogue updates



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