

Shanghai

INDEVA
INTELLIGENT DESIGN FOR FLEXIBILITY

LEAN[®]
SYSTEM
FLEXIBLE SOLUTIONS WITH ENDLESS POSSIBILITIES

Lean Manufacturing components and applications

Scaglia INDEVA, a worldwidenetworkatyour service

Scaglia Indeva is a worldwide leader in the production of state of the art Industrial Manipulators, Automated Guided Vehicles and Lean System Components with great know-how and expertise in the design of custom Material Handling and Lean Manufacturing Solutions. Our headquarters and production unit covering an area of 15.000 square meters and employing about 150 people, are located in Val Brembilla, Italy about fifty kilometers from Milan. We are present worldwide with a network of branches, distributors and service centres.

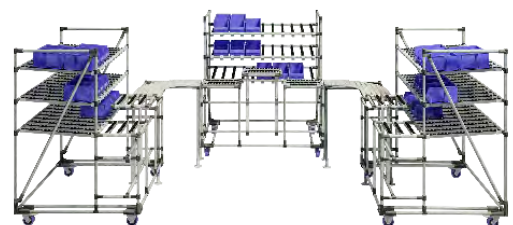
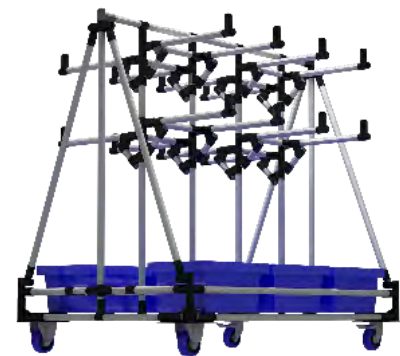


INDEVA LEAN SYSTEM[®]

INDEVA Lean System[®] (Indeva Lean System is a registered trade mark of Scaglia Indeva S.p.A.) comprises a wide range of components including abrasion resistant plastic coated steel pipes, metal joints, roller tracks and accessories. INDEVA Lean System[®] enables to design and build a variety of structures to suit the Lean manufacturing philosophy.

Applications could include ergonomic workplaces, trolleys and carts, flow racks and gravity conveyors. INDEVA Lean System[®] structures are simple to design, assemble and are flexible and completely reusable.

INDEVA Lean System[®] is the ideal tool for implementation of the Lean Production concepts and help to reach the goal of the continuous improvement "Kaizen".



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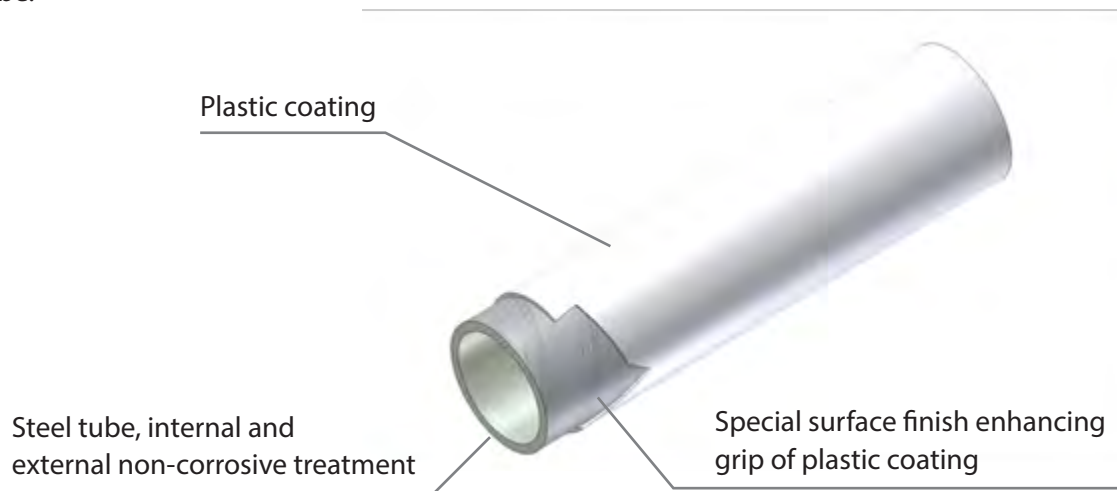
Tubes

Technical specifications

The INDEVA Lean System® tube is a steel tube with a plastic coated outer surface. The steel tube is treated internally and externally with non-corrosive treatment.

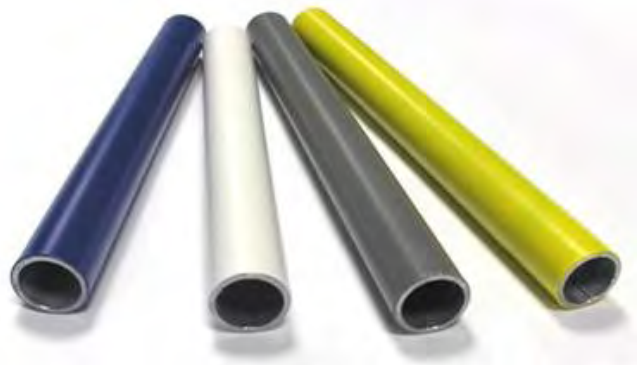
The plastic coating could be in different colors, standard colors deliverable from stock. Colors according to customer specifications can be manufactured only in quantity. A special transparent colored plastic finishing is also available.

The external surface of the tube is specially treated to ensure an enhanced grip of the plastic coating on the steel tube.



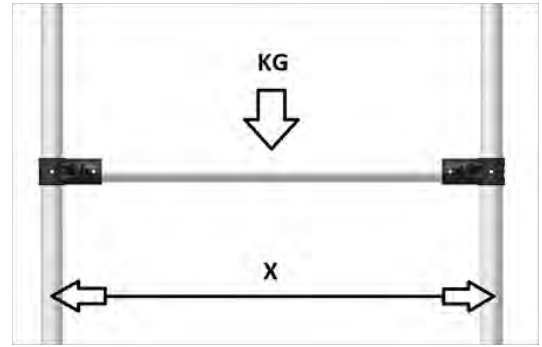
Dimensions and specifications

- Steel tube External diameter: 27 mm
thickness: 1 or 2 mm
- Finished tube External diameter: 28.6 (+0-0.2)
- Standard length 4 m
- Temperature range within 0°C and 40°C



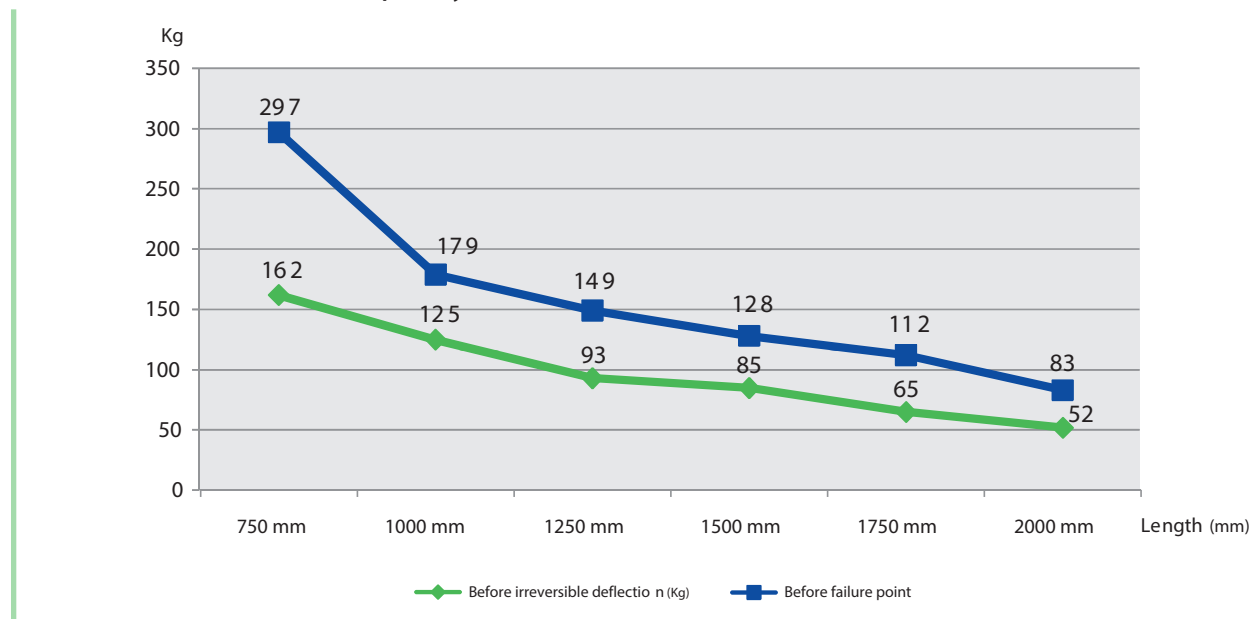
Bending strength of tube

Load capacity tests have been run on an H shaped structure

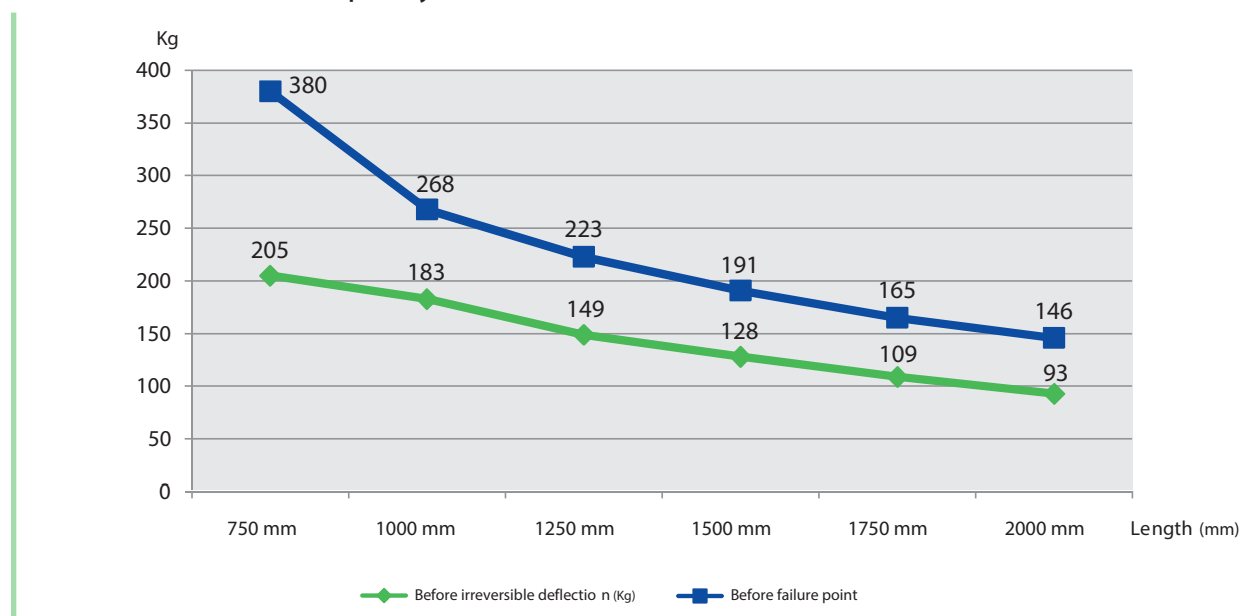


Experimental conditions—H-shaped structure

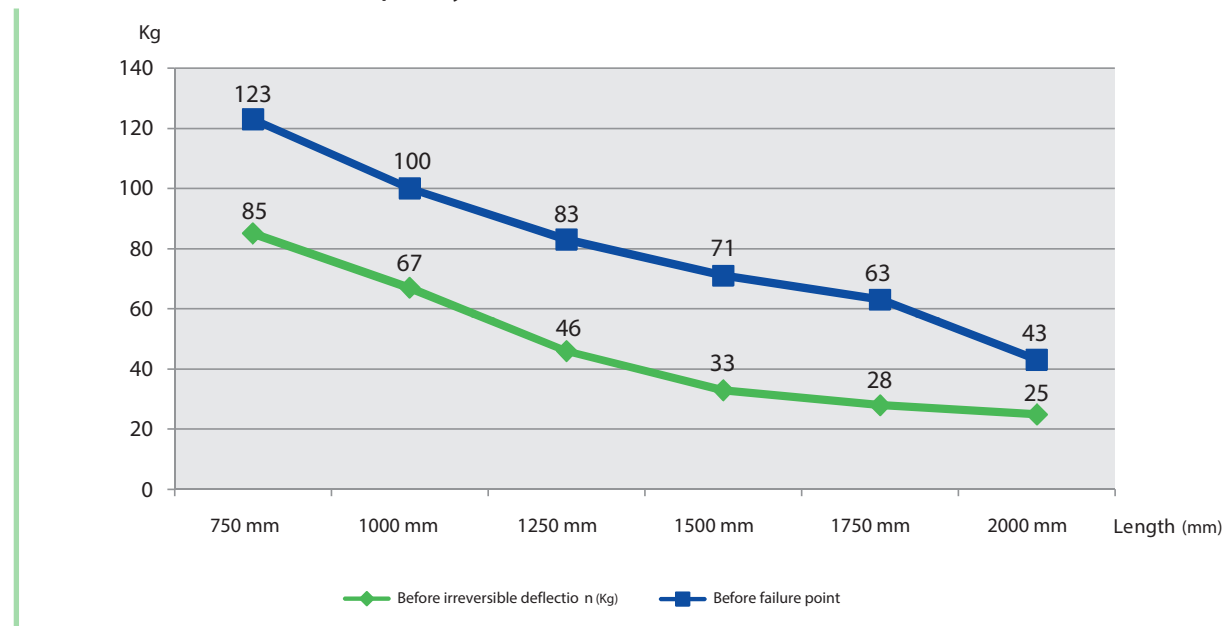
Max concentrated load capacity of a tube with 2 mm wall thickness



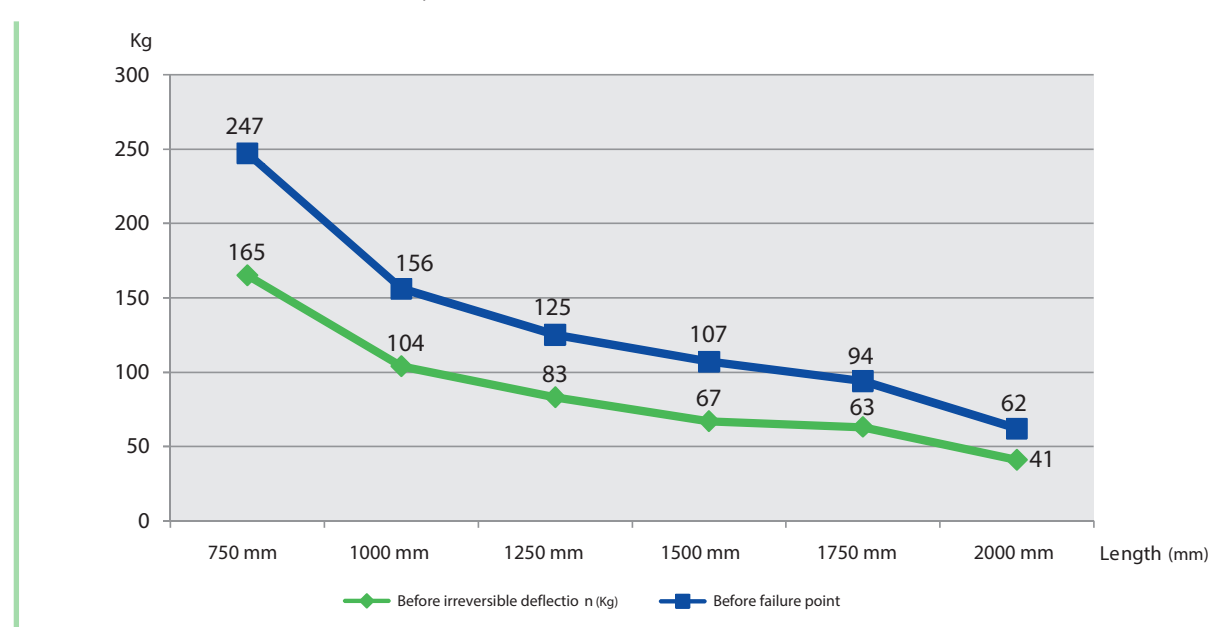
Max distributed load capacity of a tube with 2 mm wall thickness



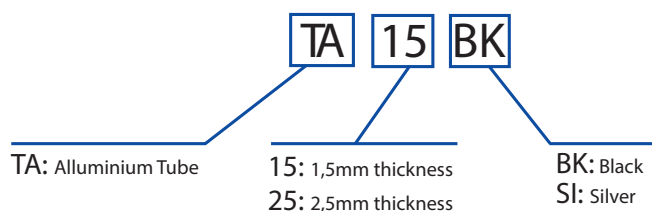
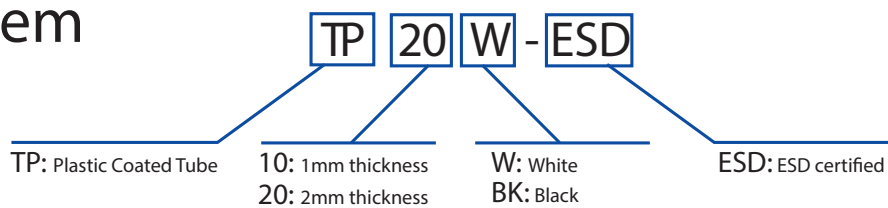
Max concentrated load capacity of a tube with 1 mm wall thickness



Max distributed load capacity of a tube with 1 mm wall thickness



Tubes Coding system



Classification			Coated Tube		Alluminium Tube		Lenght
Item	Color		Ø 28,6 X 1 620 g/m	Ø 28,6 X 2 1239 g/m	Ø 28 X 1,5 340 g/m	Ø 28 X 2,5 540 g/m	
Coated Tubes	White						4 m
	Grey						
	Light Grey						
	Blue						
	Ivory						
	Yellow						
	Red						
	Black						
	Black anodized						
	Silver anodized						
	RAL color on request						
ESD Tubes	Black						
	Light Grey						

Metal Joints

Technical specifications

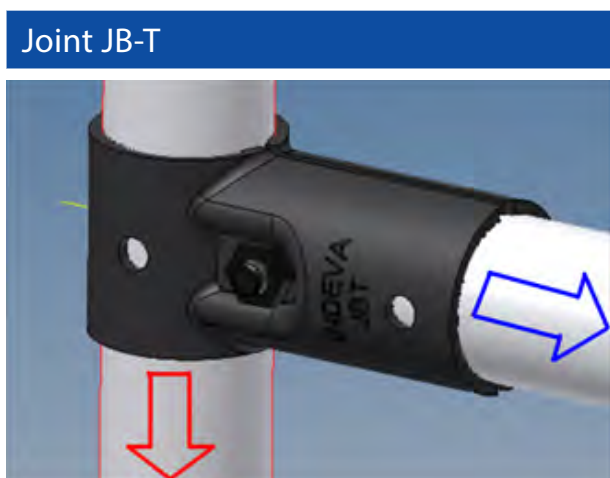
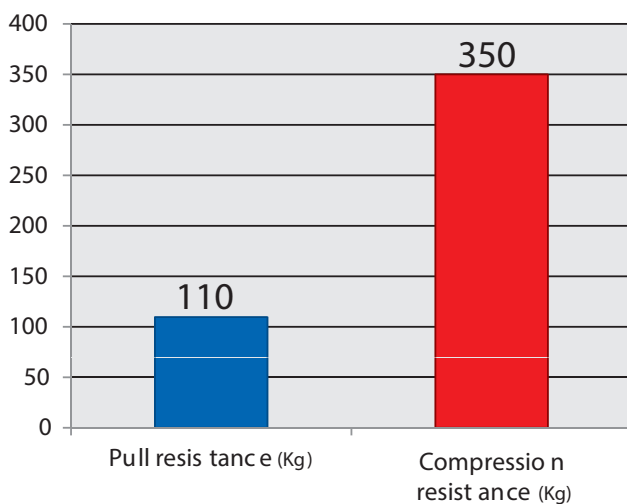
INDEVA Lean System® metal joints are made of steel 2.5 mm thickness. Non-corrosive coating (standard black color) is applied. To ensure maximum holding strength, the joints are shaped with a special gripping profile.

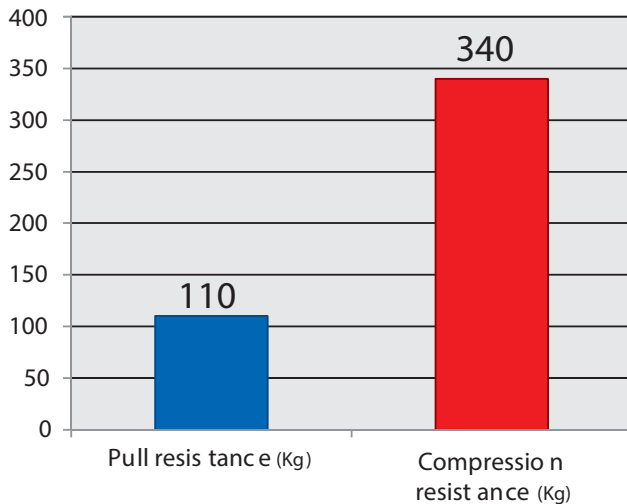
A hole facilitates the possible application of holding screws.



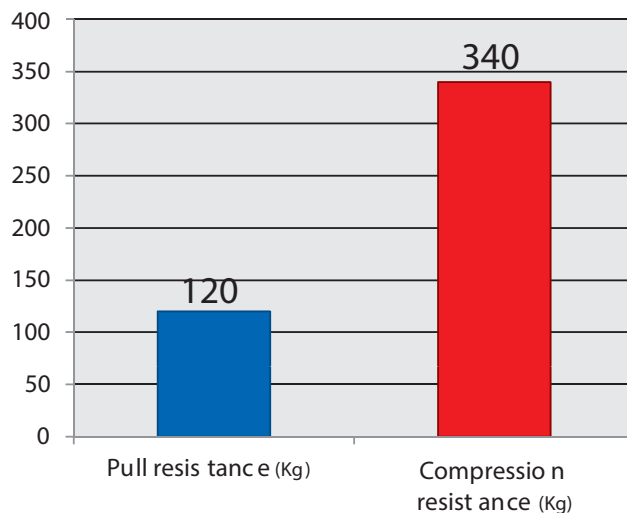
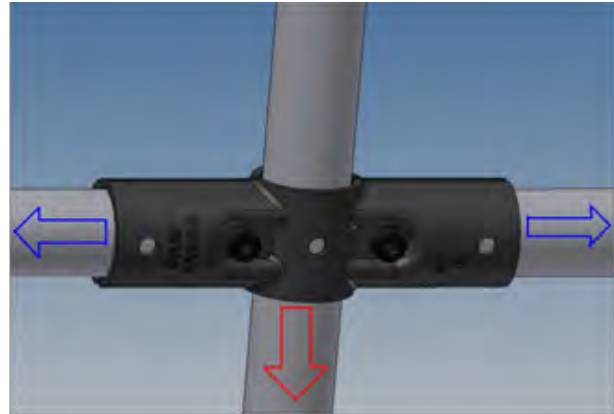
Joints holding strength

Test have been run using a special traction/compression testing machine in our factory. Joints are routinely tested to ensure constant quality and results.

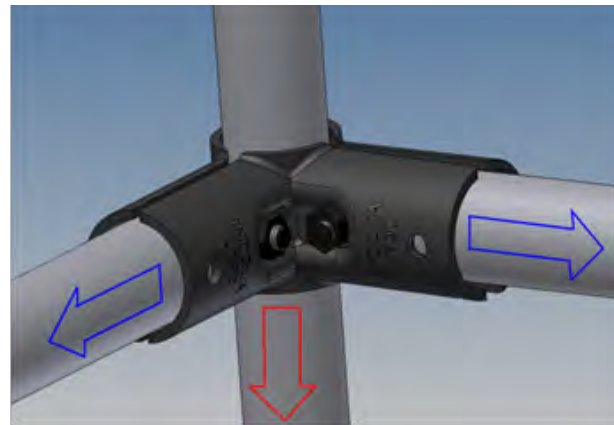




Joint JB-180



Joint JB-90 + JB-270



Assuming a safety factor equal to 2, use of INDEVA Lean System® Joints is recommended with a maximum load of 150 kg (compression). The use of joints with a load applied as traction is improper and not recommended.

Reusability of metal joints

Experimental conditions

A compression force has been applied until when the joints slide along the tube. The same couple of joints have been reused on a new tube and with new screw and bolt. Again a force has been applied until sliding. The test has been conducted for different typology of joints.

Result

Until 10 times no significant changes of the holding strength has been registered. After 10 trials the test has been stopped. It can be said that INDEVA Lean System® joints can be reutilized at least 10 times without changes in the holding strength.

Standard joints

All metal joints are available in black color (JBxxx) and ESD (JWxxx)



JB90	Inner joint 90 deg	50 pcs.
 		
JB180	Flat joint 180 deg	50 pcs.
 		
JB270	Outer joint 270 deg	50 pcs.
 		
JB T	T joint	50 pcs.
 		
JBX	Cross over joint	50 pcs.
 		

JBA1

Swivel head T joint

50 pcs.



JBA3

Swivel tail joint

50 pcs.



JBH

Multipurpose joint

50 pcs.



JB1

Dual pipe joint

50 pcs.



JBA2

Swivel head double joint

50 pcs.



JB45

45 deg joint

50 pcs.



JB30

30 deg joint

50 pcs.



JB60

60 deg joint

50 pcs.



JB90R

90 deg joint round shaped

50 pcs.



JBS1

T shaped sliding joint

50 pcs.



JBS3

Parallel joint, 2 slide

50 pcs.



JBS4

Parallel joint, 1 slide

50 pcs.



JBT2

33mm T shaped joint

50 pcs.



JB12

Parallel joint 33mm

50 pcs.



JB13

Parallel joint 28mm/33mm

50 pcs.



JBHA

Multipurpose joint A

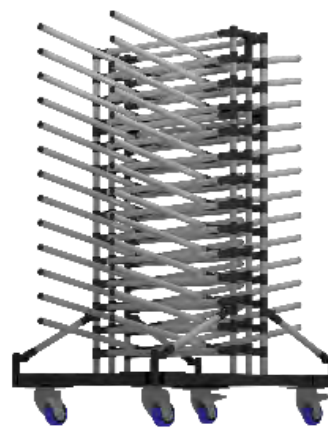
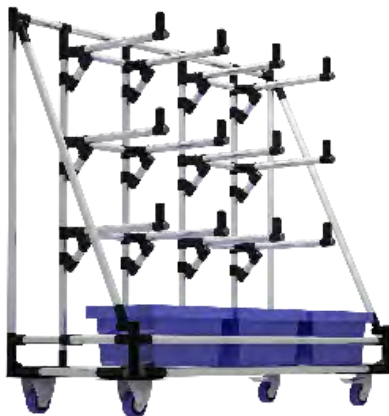
50 pcs.

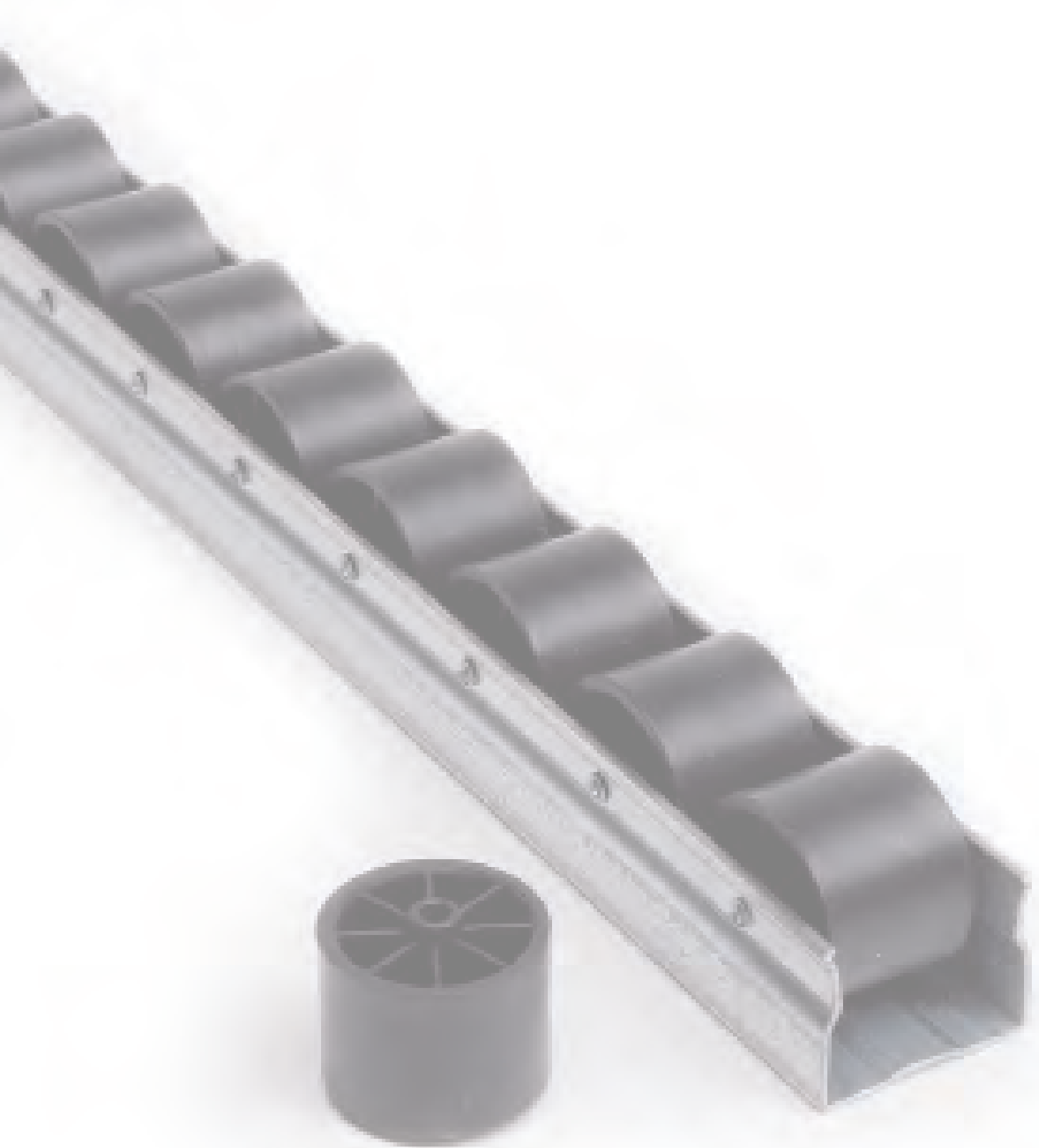


JBHB

Multipurpose joint B

50 pcs.

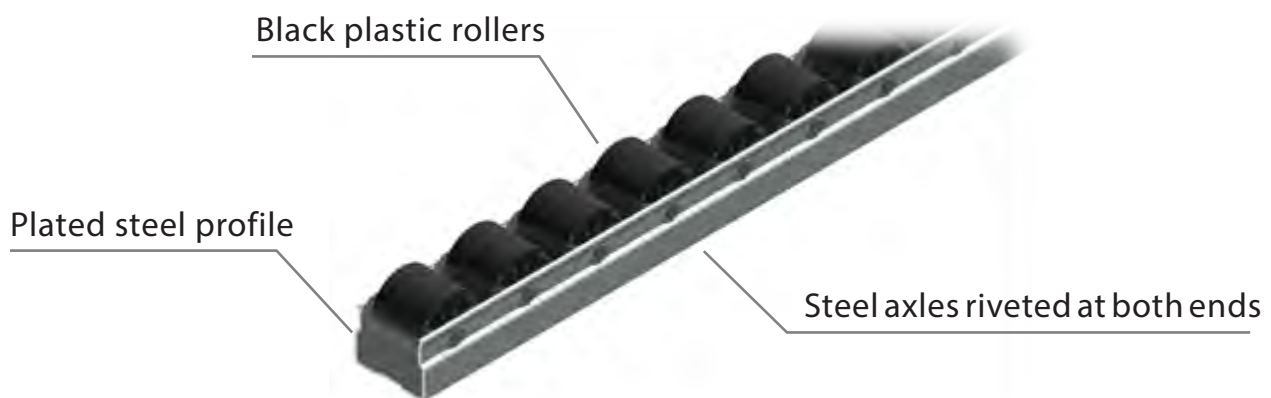




Roller Tracks

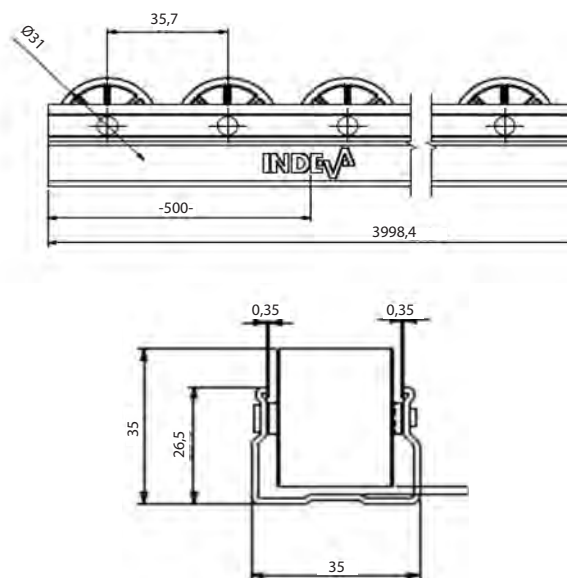
Technical specifications

The INDEVA conveyor track is used for the assembly of flow racks and gravity conveyors for the handling of boxes and packages in a reliable and maintenance-free way. The INDEVA conveyor track is made of a plated steel profile with rollers mounted by means of steel axles riveted at both ends for higher resistance.



Dimensions and specifications

- Plated steel profile thickness 1.25 mm, height 26.5 mm, width 35 mm
- Total height 35 mm
- Roller diameter 31 mm, high load capacity (max. 150 kg.)
- Centre of Rollers distance 35.7 mm
- Steel axle diameter 3.75 mm
- Track length 4 meters
- Use within the temperature range 0°C and 40°C

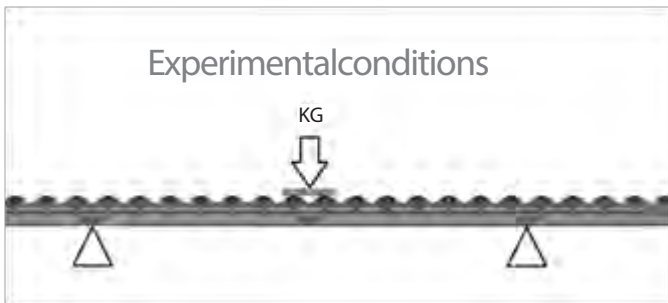


Roller Load capacity

The test has been run applying a load on the roller until permanent deformation of the roller itself. Permanent deformation has been experienced at 150 kg. The sliding smoothness has no changes up until a load of 30 kg.

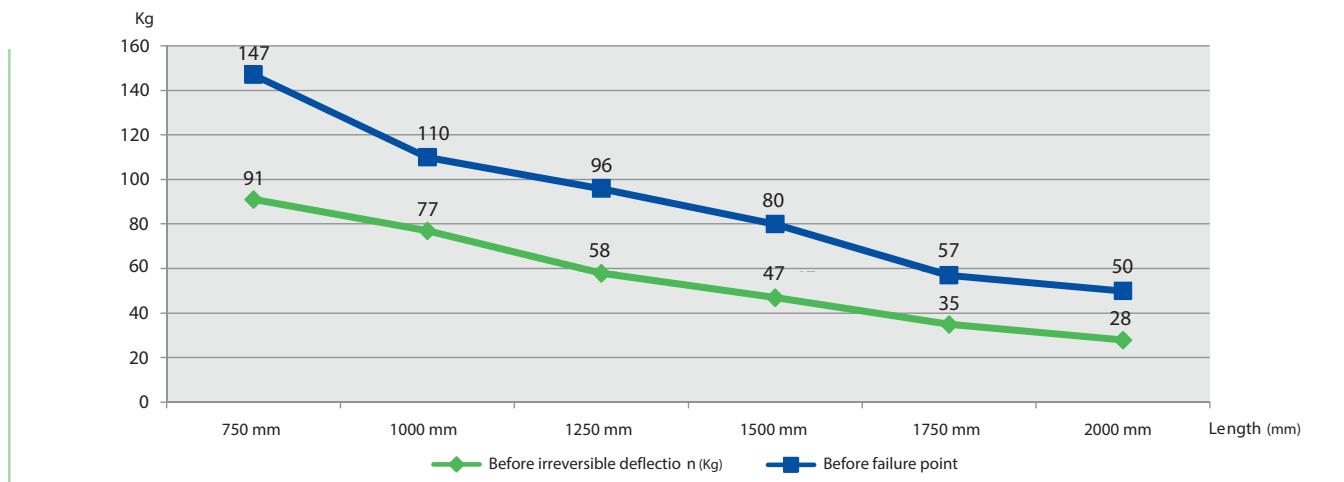


Bending strength of roller track



A force has been centrally applied on two rollers of a track resting on two supports positioned at different distance. The value of the load that would permanently deform the track and that would break the track has been measured. Results are in following table.

Max load capacity on two rollers centrally applied



Sliding smoothness

Experimental conditions

Test has been run measuring the minimum angle at which a box (weight 1 kg) with rigid bottom (dimensions 40x40mm) starts sliding on a roller track. From the horizontal position the roller track has been progressively inclined up until when the box starts moving.



Result

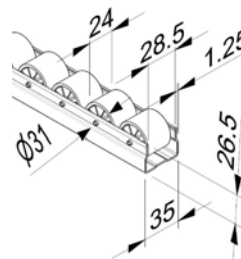
The box starts moving at $\alpha=1.5^\circ$, high speed is reached at $\alpha=2.5^\circ$ inclined up until when the box starts moving.

Roller tracks & Plastic Guides

R400

Roller track-Heavy duty-400cm

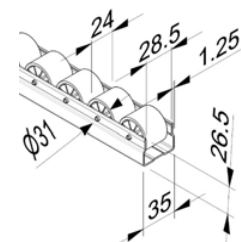
L = 4 m.



R400-ESD

Roller track-Heavy duty-400cm ESD

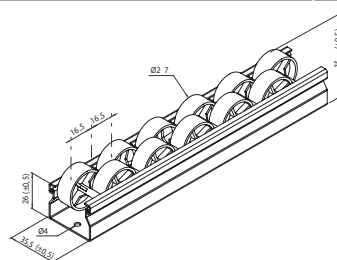
L = 4 m.



R400D

Roller track-Double-400cm

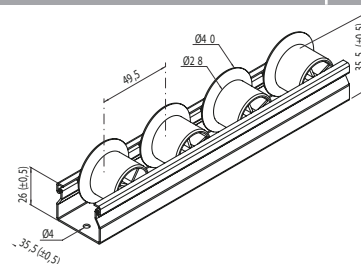
L = 4 m.



RS400

Roller track-Sided rollers-400cm

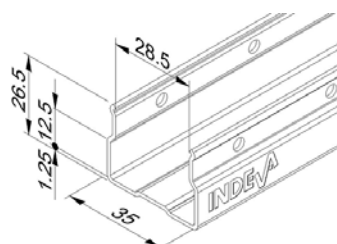
L = 4 m.



U400

U-profile for board support

L = 4 m.

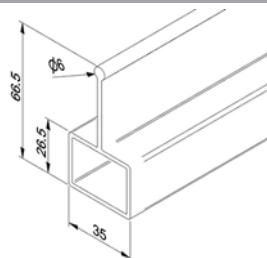
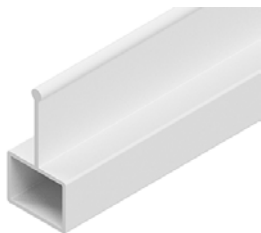


Roller Tracks

RGC40W

Central guide white (400)

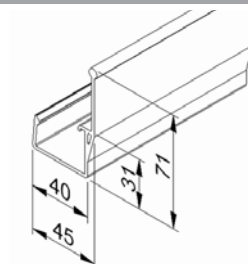
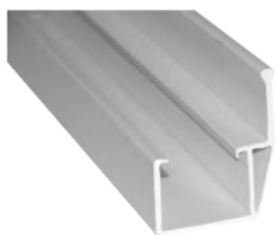
L = 4 m.



RGL1040W

Lateral side guide white (400x10x40). Shoulder 10 mm

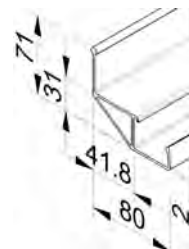
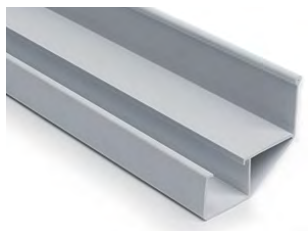
L = 4 m.



RGL4040W

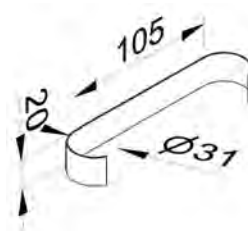
Lateral side guide white (400x40x10). Shoulder 40mm

L = 4 m.



RBK

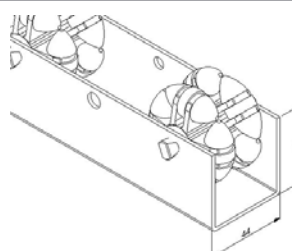
Roller track brake strip mod. R400



RD50

Multi directional roller track (roll diameter mm. 50)-100cm

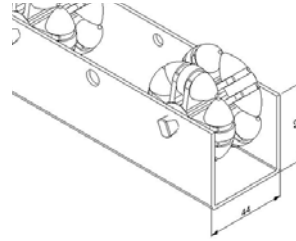
L = 1 m.



RD60

Multi directional roller track (roll diameter mm. 60)-100cm

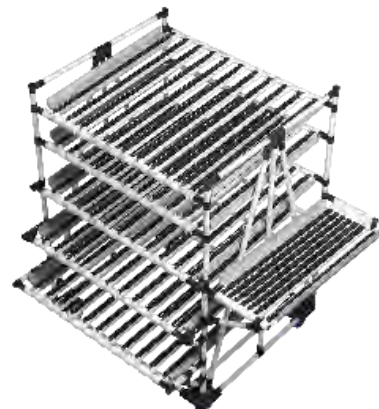
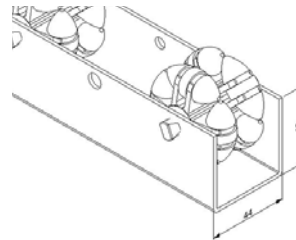
L = 1 m.



RD80

Multi directional roller track (roll diameter mm. 80)-100cm

L = 1 m.

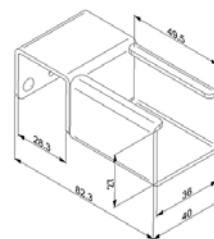


Support Accessories

JR

Roller track bracket

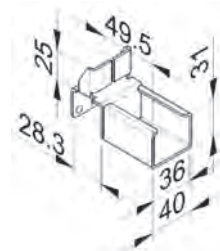
50 pcs.



JRS

Roller track bracket with straight stop

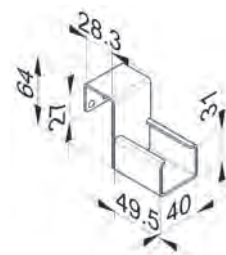
50 pcs.



JRL

Roller track bracket with drop stop

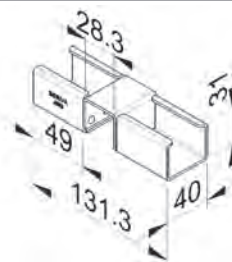
50 pcs.



JRD

Roller track union bracket

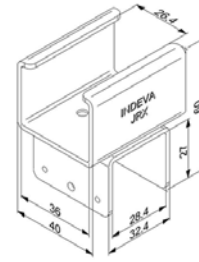
50 pcs.



JRX

Cross over roller track bracket

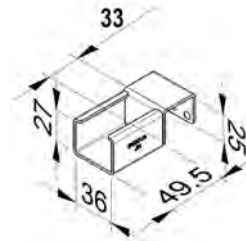
50 pcs.



JR33

Roller track bracket 33mm

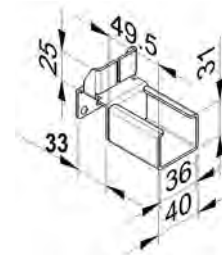
50 pcs.



JRS33

Roller track bracket with stop 33mm

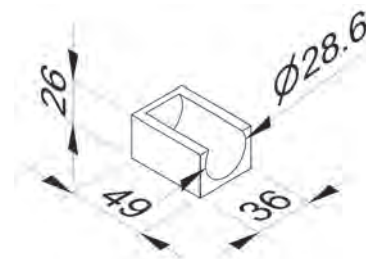
50 pcs.



JRA

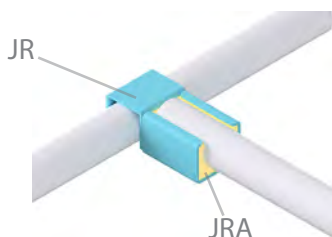
Adpter for tube support (to be used with JR-JRS-JRL-JRD-JRX)

50 pcs.



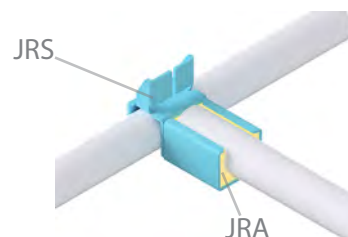
JR + JRA

Example



JRS + JRA

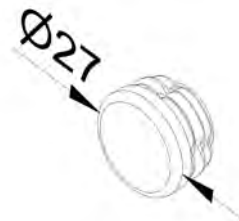
Example



Plastic Accessories

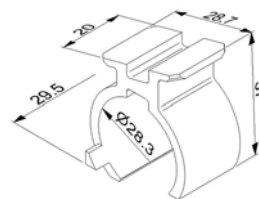
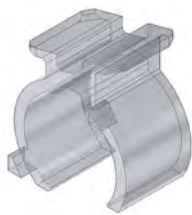
CP

Inner cap



LB2H

Label holder support (for LB2S model)



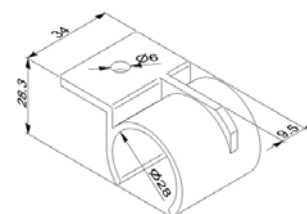
SLB

Sleeve for JBS joints



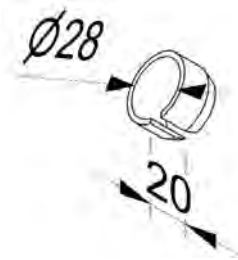
PLH

Plastic ring for plates



CV

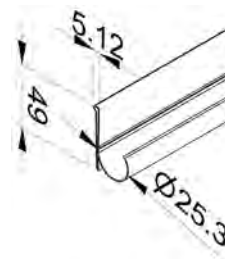
Plastic taper edge



LB1

Name case

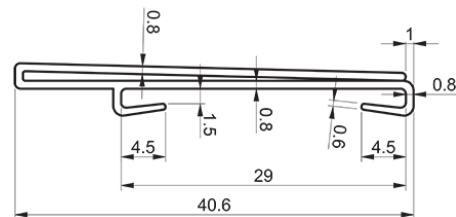
L = 2 m.



LB2S40

Label stripe H mm. 40 (to be used with LB2H)

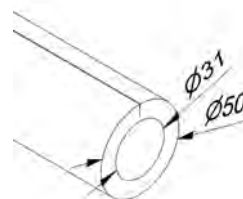
L = 2 m.



P200RBK

Rubber tube protection

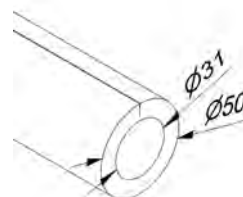
L = 2 m.



P100GY

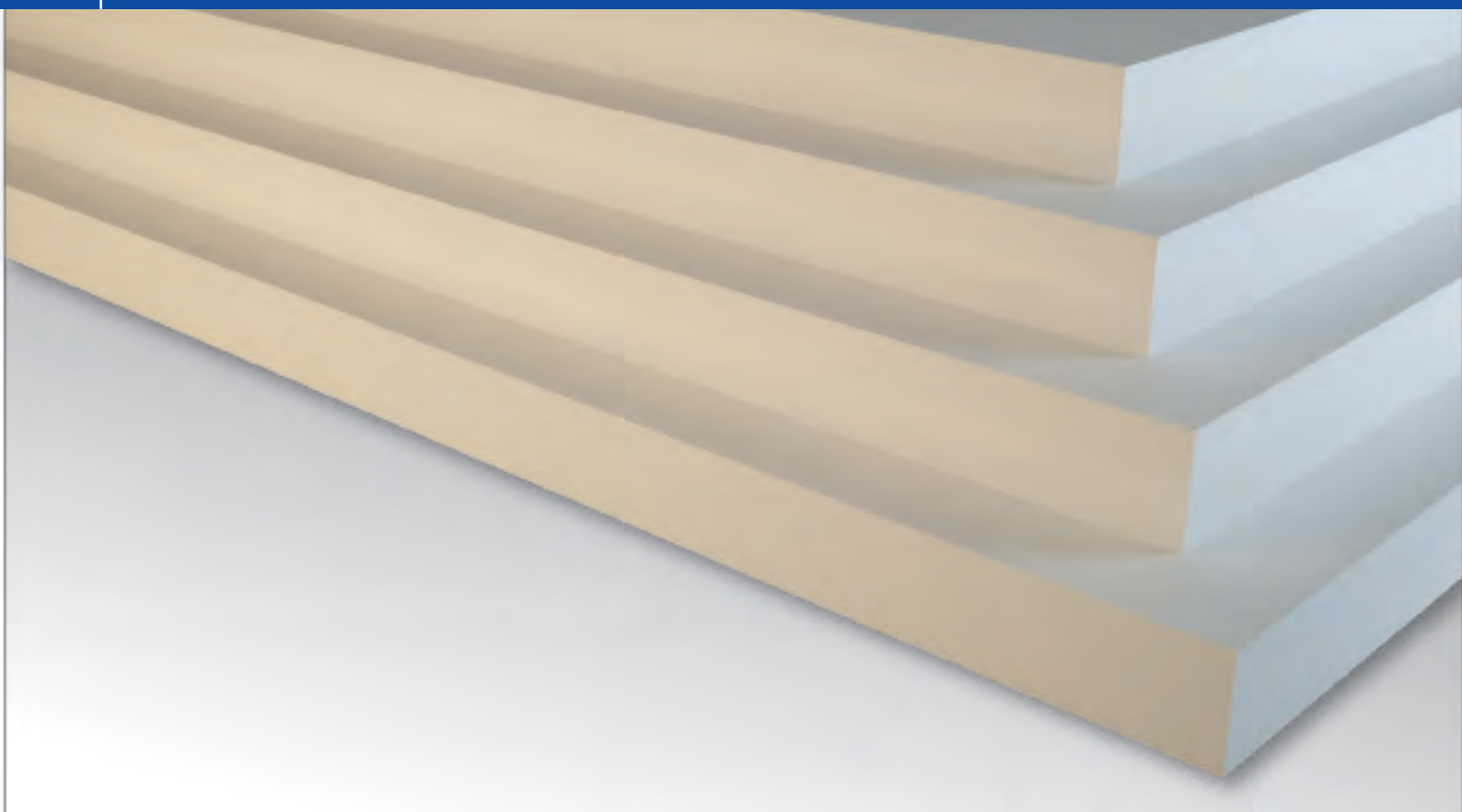
Foam tube protection

L = 2 m.





■ Plates



Item	Thickness	Dimensions	Color
PVC	10	1500 X 1200	Black 
	19		RAL color on request 
PEHD	6	1500 x 1000	Black 
	8		RAL color on request 
	10		
MDF	10	1400 X 1000	Black 
RS	8	3050 X 1300	White 
M	3	2400 X 2100	Grey 
	10		





Screws&Bolts

SC1

Socket head bolt and T-shaped nut (M6x28) for metal joints



Application:

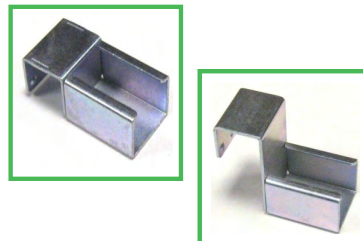


SC2

Bolt (M4x6) for JR-JRL-JRS-JR33-JRS33 brackets



Application:



SC3

Bolt and nut (M8 x 40) for use with WB and plate casters



Application:



SC4

Socket head bolt with pre-applied threadlock function and T-shape



Application:

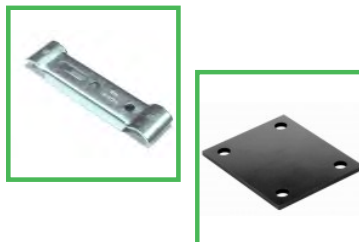


SC5

(M8x45) Bolt and nut to use with WB bracket and WP plate casters



Application:

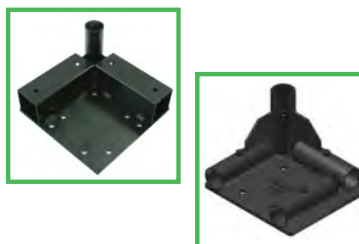


SC7

Bolt and nut (M8 x 25) for use with PTR/PTL/BQ



Application:



SC8

Socket head bolt (M6x12) for pipe clamping on PTR/PTL



Application:



SC9

(M10x70) Bolt and nut for TMF



Application:

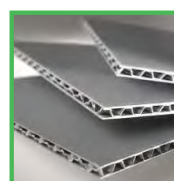


SC10

(M6x25) Bolt and nut for panels



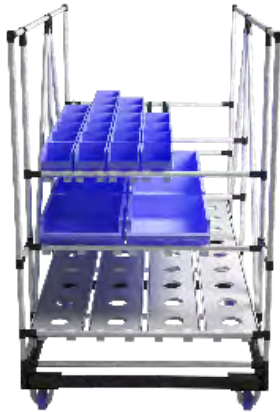
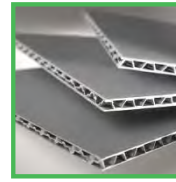
Application:



SC11

(M6x30) Bolt and nut for panels

Application:

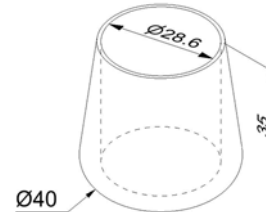




Wheels & Support

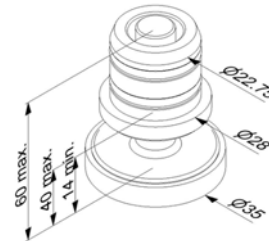
FT1

Rubber foot



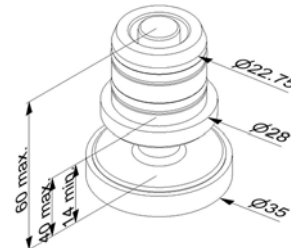
FT2

Levelling foot - threaded plastic expander



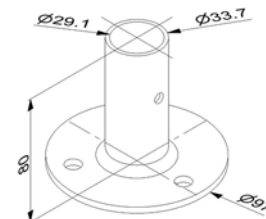
FT2H

Levelling foot - threaded aluminum expander



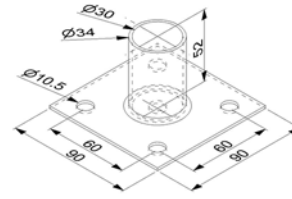
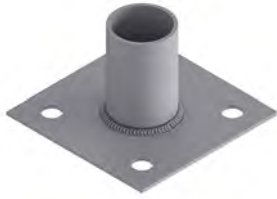
FT3

Stanchion mount foot reinforced



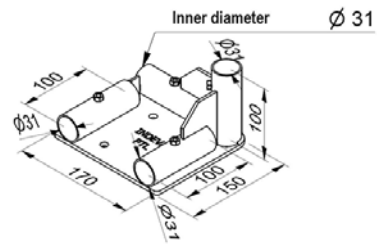
FT4

Stanchion mount foot light



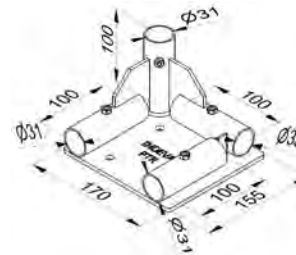
PTL

Corner mount plate left



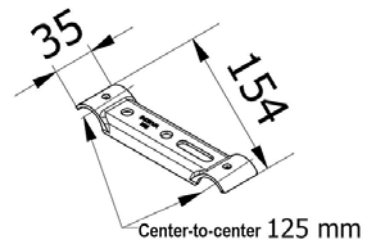
PTR

Corner mount plate right



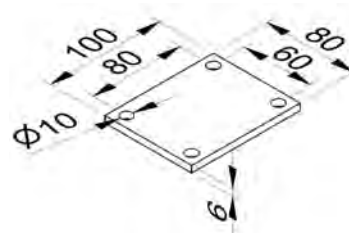
WB

Castor mount bracket



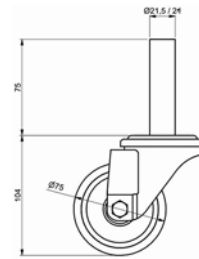
WP

Castor plate



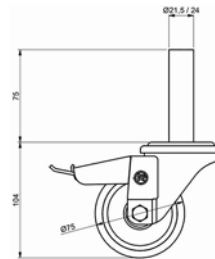
T75

Insert swivel caster - capacity max. 75 kg. Diam 75mm



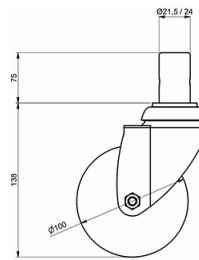
T75B

Insert swivel castor with brake - max. capacity 75 kg. Diam 75mm



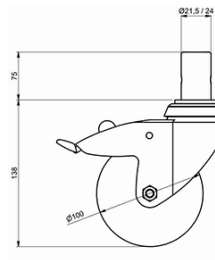
T100

Insert swivel castor - capacity max. 125 kg. Diam 100mm



T100B

Insert swivel castor with brake - capacity max. 125 kg. Diam 100mm



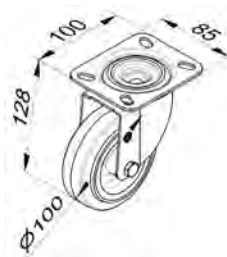
P100

Castor - capacity max. 150 kg. Diam 100mm



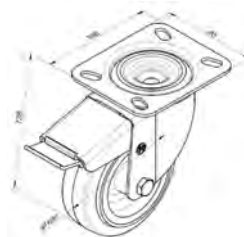
P100S

Swivel castor - capacity max. 150 kg. Diam 100mm



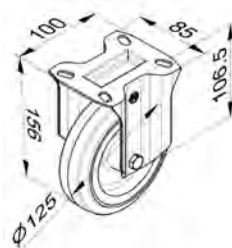
P100SB

Swivel castor with brake - capacity max. 150 kg. Diam 100mm



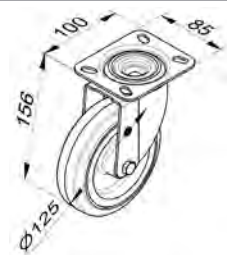
P125

Castor - capacity max. 200 kg. Diam 125mm



P125S

Swivel castor - capacity max. 200 kg. Diam 125mm



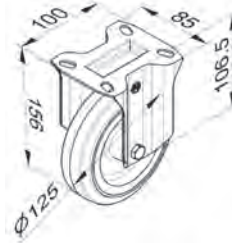
P125SB

Swivel castor with brake - capacity max. 200 kg. Diam 125mm / pcs.



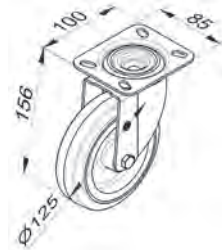
P125YF

Castor - capacity max. 220 kg. flat Profile. Diam 125mm



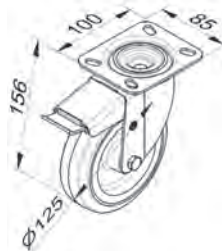
P125SYF

Swivel castor - capacity max. 220 kg. Flat profile. Diam 125mm



P125SBYF

Swivel castor with brake - capacity max. 220 kg. Flat profile. Diam 12



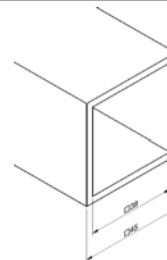
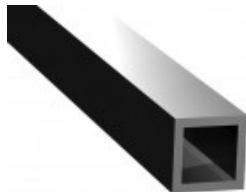


Steel Square Base

BQ400

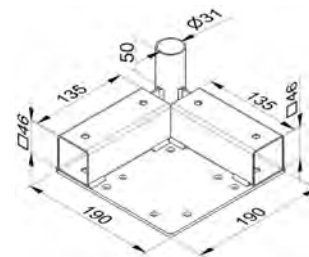
Tubular profile for Square Base

L= 4 m.



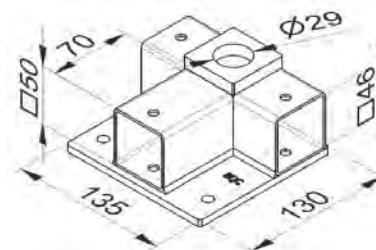
BQ

Corner plate for Square Base



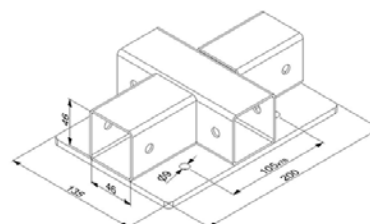
BQC

Intermediate plate Square Base



BQX

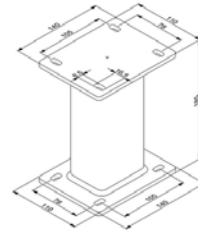
Square Base intersection plate



Steel Square Base

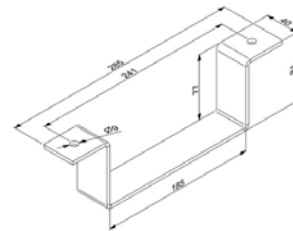
BQFT

Square Base foot



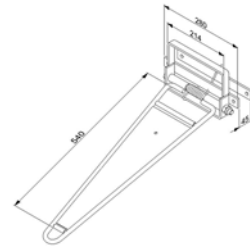
BQFK

Forklift bracket



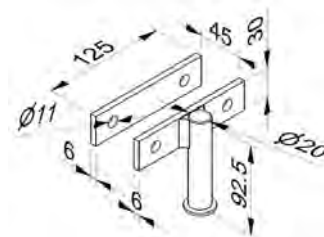
TMF

Tow bar



TMR

Tow hitch



ADS1

Tow bar label



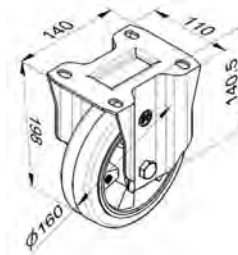
SPR

Spring



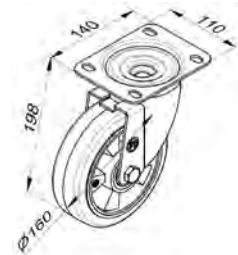
BQ160

Castor for Square Base - diam-160- load cap. 300kg.



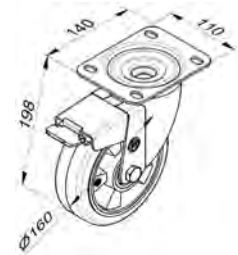
BQ160S

Swivel castor for Square Base - diam-160-load cap 300kg.



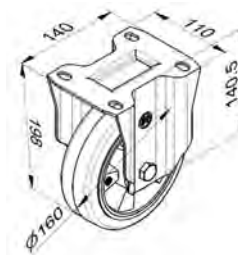
BQ160SB

Swivel castor for Square Base with brake - diam-160- load cap. 300kg.



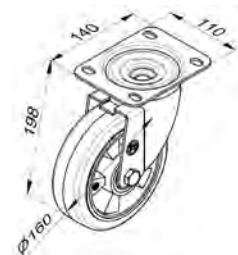
BQ160YR

Ergo-Castor low friction round profile for Square Base - diam-160-load cap.500kg



BQ160SYR

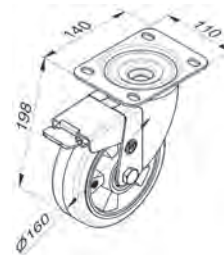
Swivel Ergo-Castor for Square Base - diam-160-load cap. 500kg.



Steel Square Base

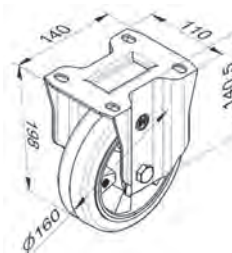
BQ160SBYR

Swivel Ergo-Castor low friction round profile for Square Base with brake - diam-160-load cap. 500kg.



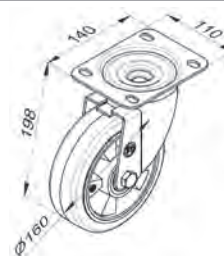
BQ160YF

Castor - capacity max. 300 kg. flat Profile. Diam 160mm



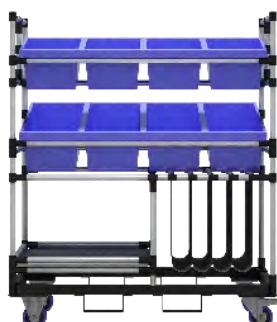
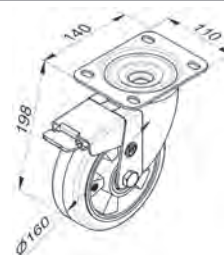
BQ160SYF

Swivel castor - capacity max. 300 kg. Flat profile. Diam 160mm



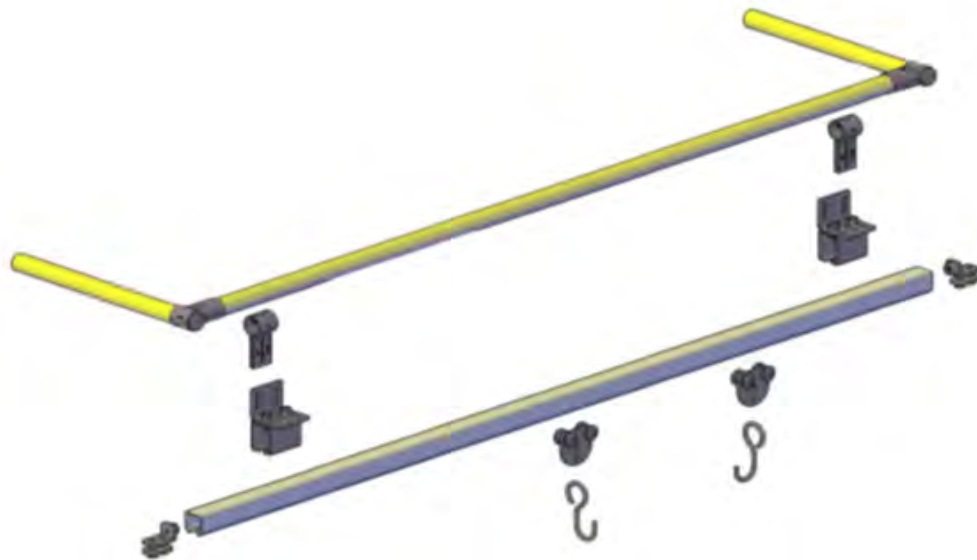
BQ160SBYF

Swivel castor with brake - capacity max. 300 kg. Flat profile. Diam 160





■ Monorail & Shooter



MR300

Monorail L = 3 m.



MRTR

Monorail-Trolley with stoppers



MRH

Monorail-Hanger



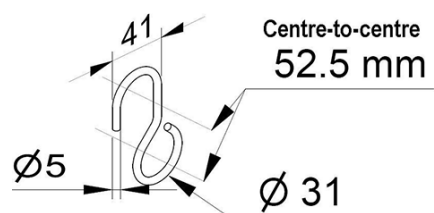
MRE1

Monorail-End stop



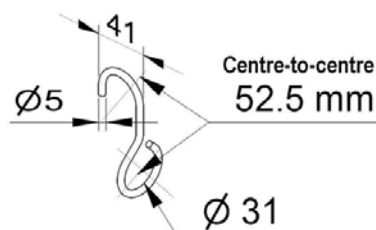
HK1

Hanger-Flat



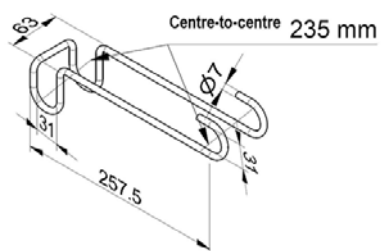
HK2

Hanger-90 deg



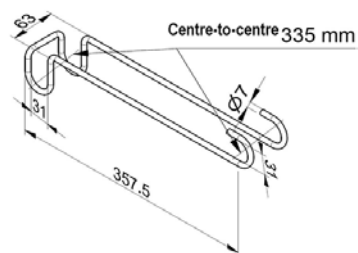
SL200

Presentation bridge for boxes L = 200 mm



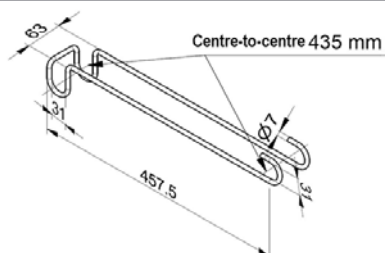
SL300

Presentation bridge for boxes L = 300 mm



SL400

Presentation bridge for boxes L = 400 mm









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