

G R O U P  
*Scaglia*  
1838

**INDEVA**<sup>®</sup>  
INTELLIGENT DEVICES FOR HANDLING

**LEAN**<sup>®</sup>  
**SYSTEM**

FLEXIBLE SOLUTIONS WITH ENDLESS POSSIBILITIES

Lean Manufacturing components and applications

## Scaglia INDEVA, a worldwide network at your 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.

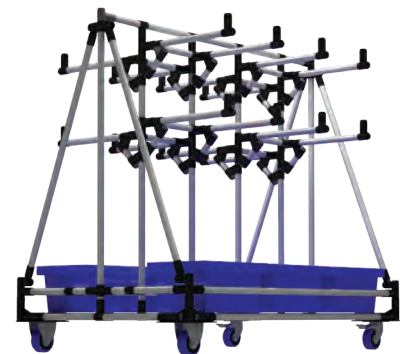


## INDEVA LEAN SYSTEM<sup>®</sup>

INDEVA Lean System<sup>®</sup> (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<sup>®</sup> 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<sup>®</sup> structures are simple to design, assemble and are flexible and completely reusable.

INDEVA Lean System<sup>®</sup> is the ideal tool for implementation of the Lean Production concepts and help to reach the goal of the continuous improvement “Kaizen”.



## ■ Summary

### ■ Tubes

Technical specifications \_\_\_\_\_ pag. 5

Tubes Coding system \_\_\_\_\_ pag. 8

### ■ Metal joints

Technical specifications \_\_\_\_\_ pag. 9

Standard joints \_\_\_\_\_ pag. 11

### ■ Roller tracks

Technical specifications \_\_\_\_\_ pag. 17

Roller tracks & Plastic guides \_\_\_\_\_ pag. 19

### ■ Support Accessories

\_\_\_\_\_ pag. 22

### ■ Plastic Accessories

\_\_\_\_\_ pag. 24

### ■ Plates

\_\_\_\_\_ pag. 27

### ■ Screws & Bolts

\_\_\_\_\_ pag. 29

### ■ Wheels & Support

\_\_\_\_\_ pag. 33

### ■ Steel Square Base

\_\_\_\_\_ pag. 39

### ■ Monorail & Shooter

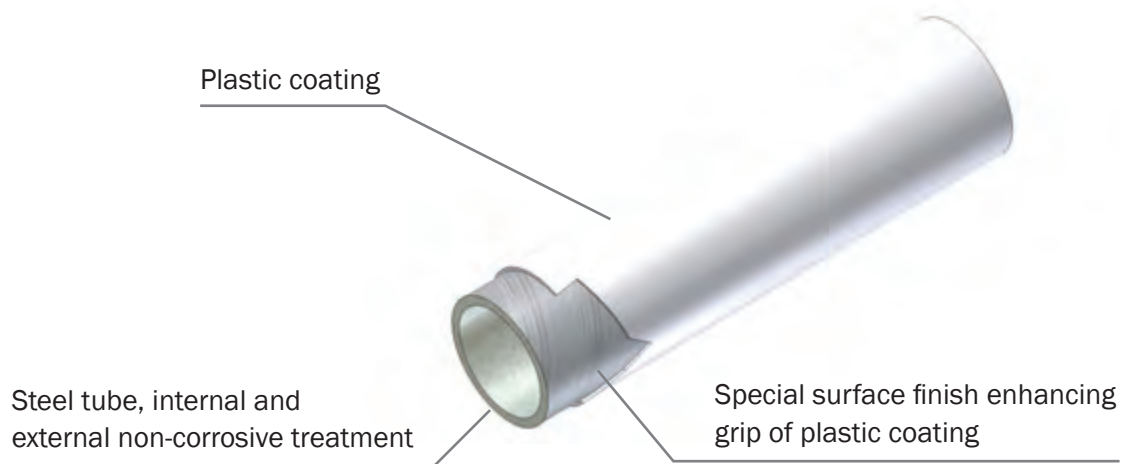
\_\_\_\_\_ pag. 44

## 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.

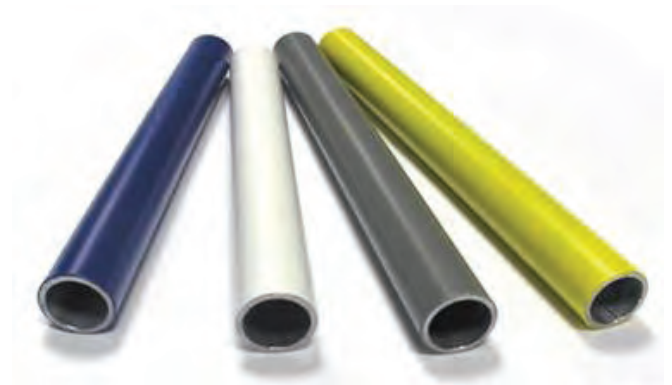
The plastic coating could be in different colors, standard colors deliverable from stock. Colors according to customer specifications can be manufactured only in quantity. A special transparent colored plastic finishing is also available.

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



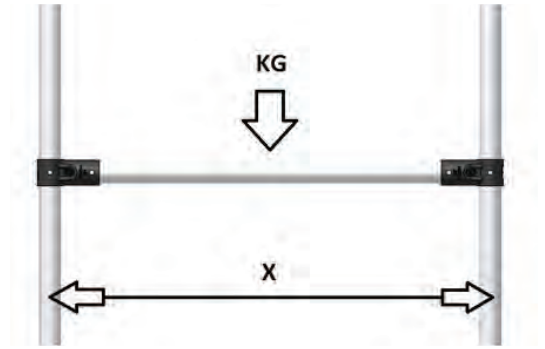
## Dimensions and specifications

- **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



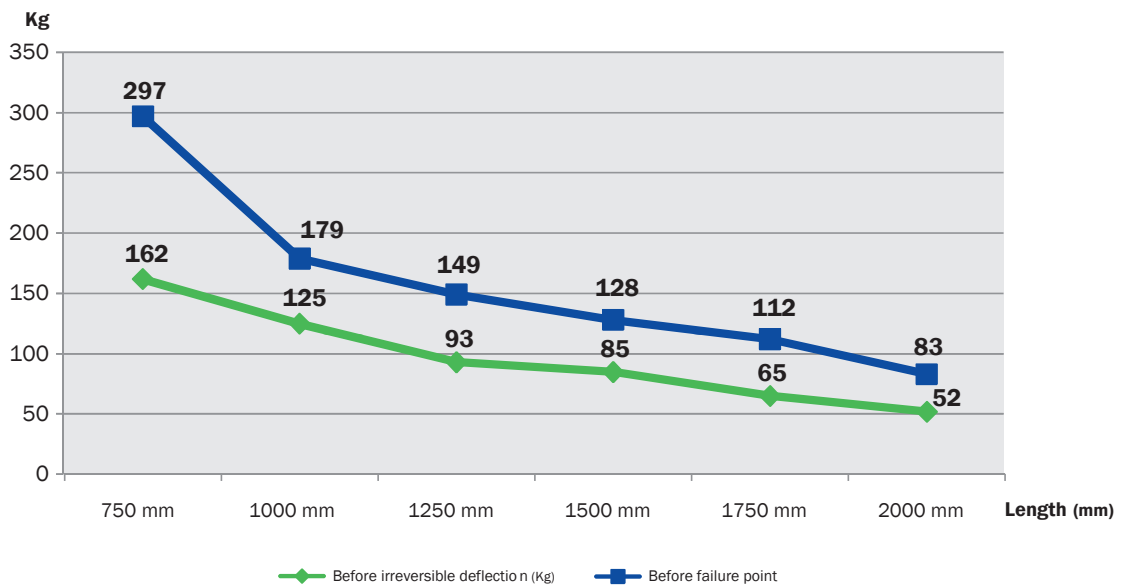
## Bending strength of tube

Load capacity tests have been run on an H shaped structure

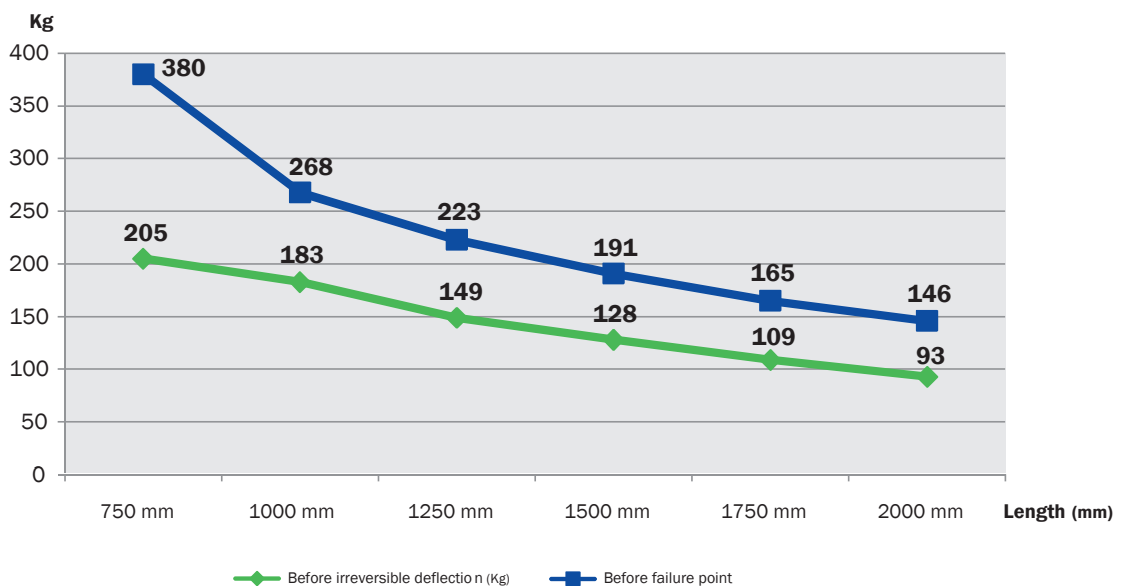


Experimental conditions – H-shaped structure

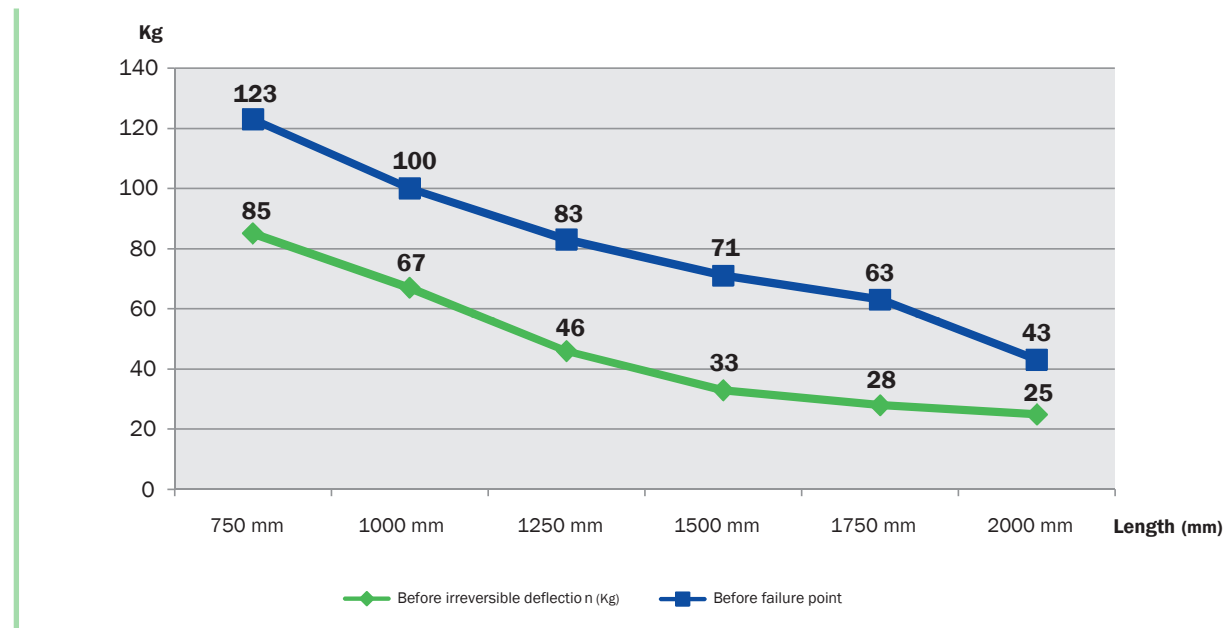
### Max concentrated load capacity of a tube with 2 mm wall thickness



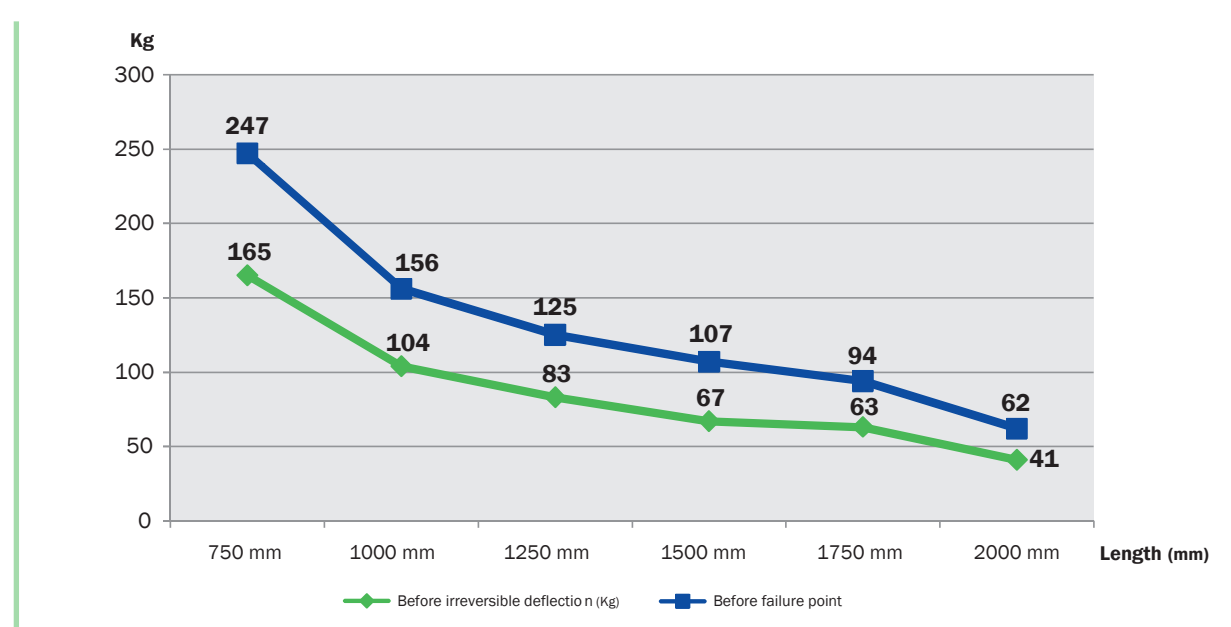
### Max distributed load capacity of a tube with 2 mm wall thickness



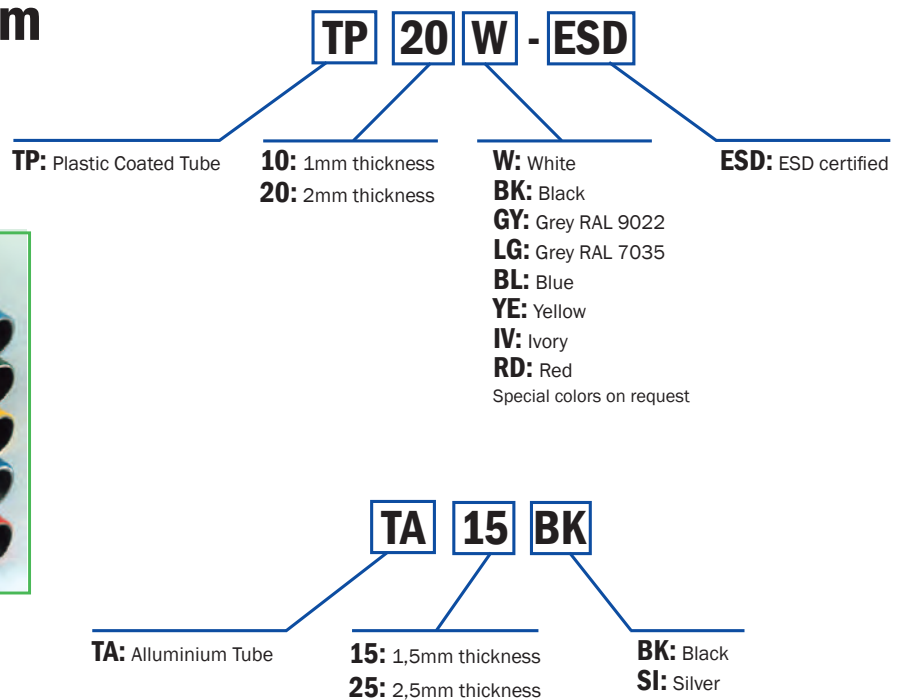
### Max concentrated load capacity of a tube with 1 mm wall thickness



### 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	Ø 28,6 X 2	Ø 28 X 1,5	Ø 28 X 2,5	
			620 g/m	1239 g/m	340 g/m	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.

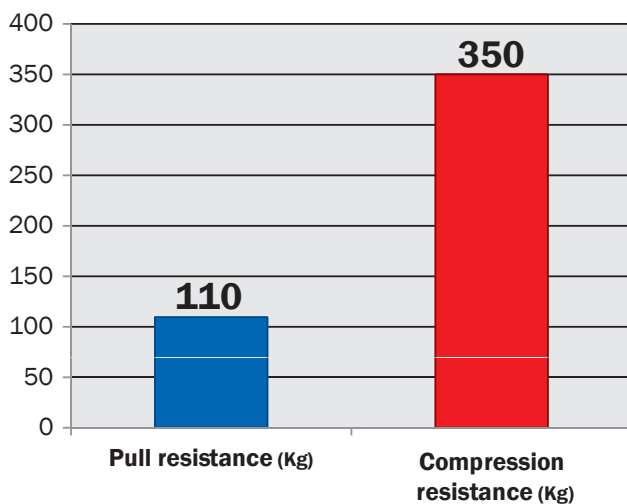
A hole facilitates the possible application of holding screws.

Gripping profile

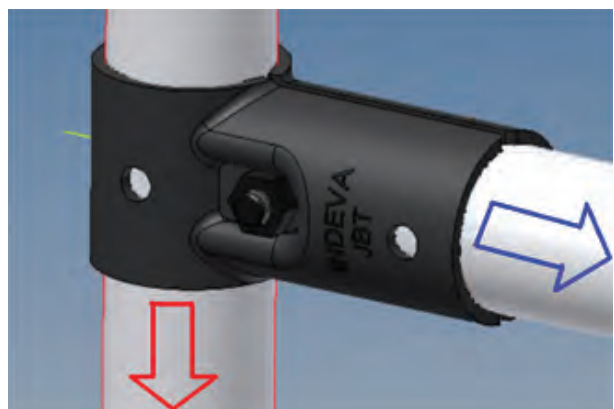


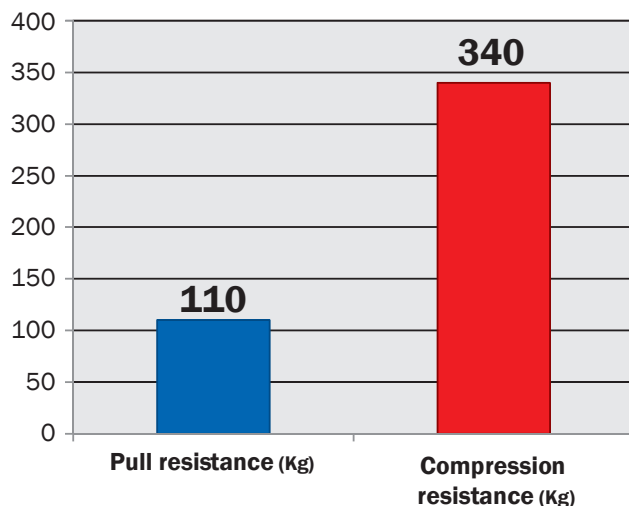
## Joints holding strength

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

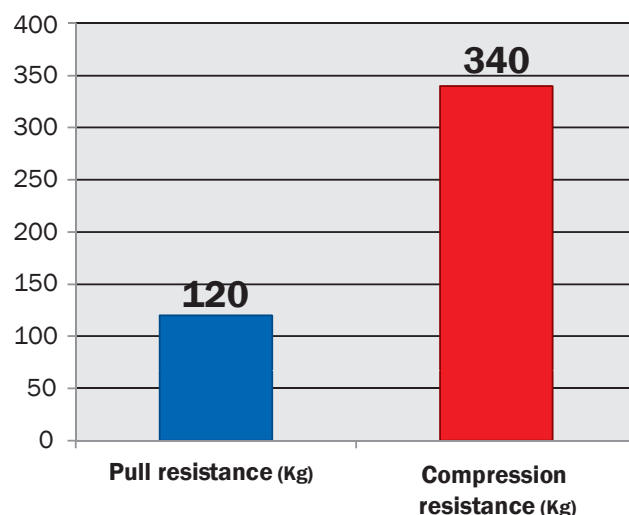
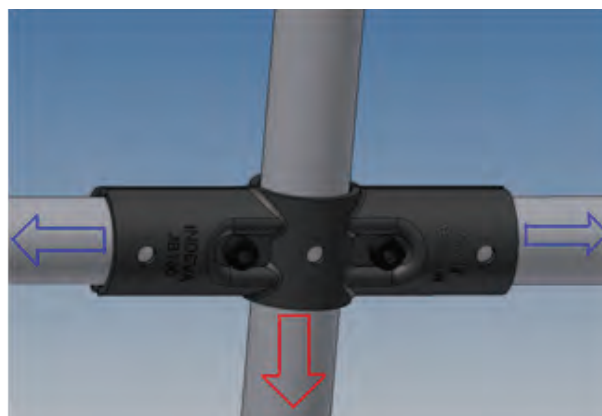


Joint JB-T

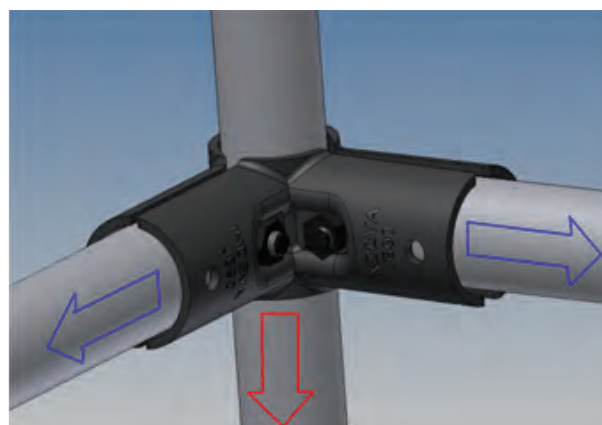




**Joint JB-180**



**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.


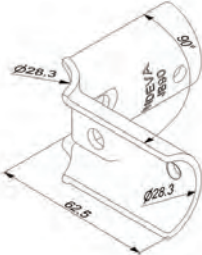


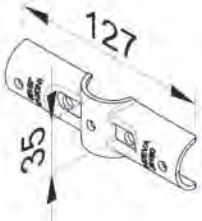


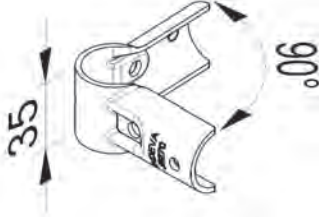


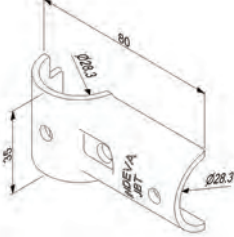


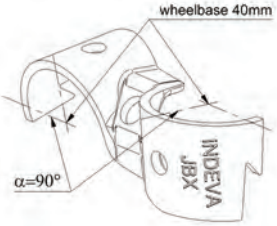

### Result

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)

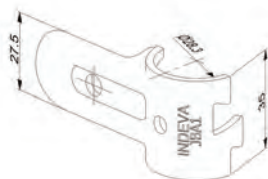


JB90	Inner joint 90 deg	50 pcs.
		
JB180	Flat joint 180 deg	50 pcs.
		
JB270	Outer joint 270 deg	50 pcs.
		
JBT	T joint	50 pcs.
		
JBX	Cross over joint	50 pcs.
		

**JBA1**

Swivel head T joint

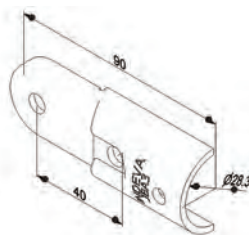
50 pcs.



**JBA3**

Swivel tail joint

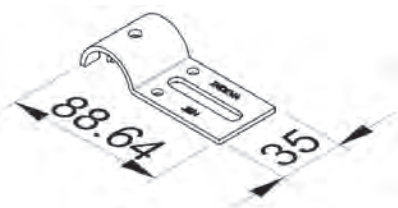
50 pcs.



**JBH**

Multipurpose joint

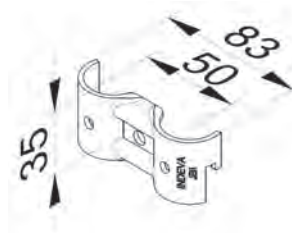
50 pcs.



**JB1**

Dual pipe joint

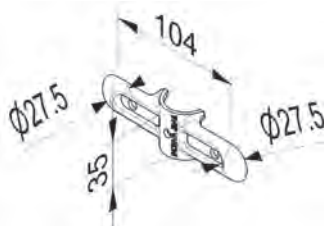
50 pcs.



**JBA2**

Swivel head double joint

50 pcs.







## JBS3

Parallel joint, 2 slide

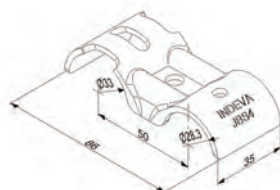
50 pcs.



## JBS4

Parallel joint, 1 slide

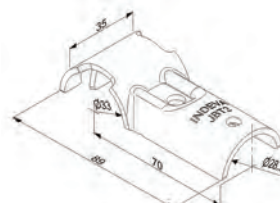
50 pcs.



## JBT2

33mm T shaped joint

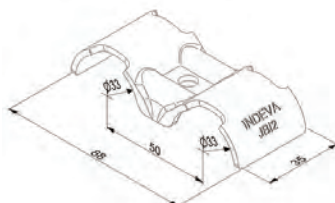
50 pcs.



## JB12

Parallel joint 33mm

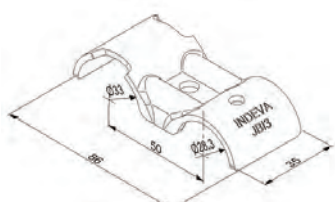
50 pcs.



## JB13

Parallel joint 28mm/33mm

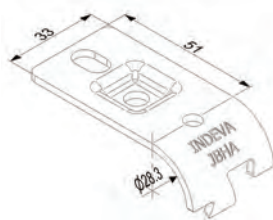
50 pcs.



## JBHA

### Multipurpose joint A

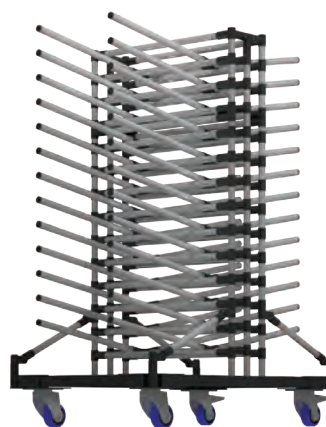
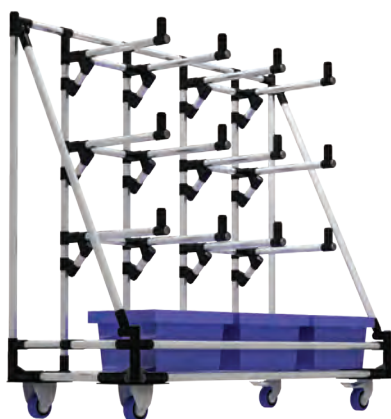
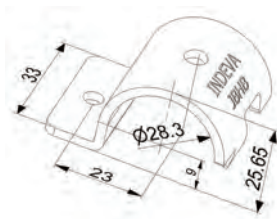
50 pcs.

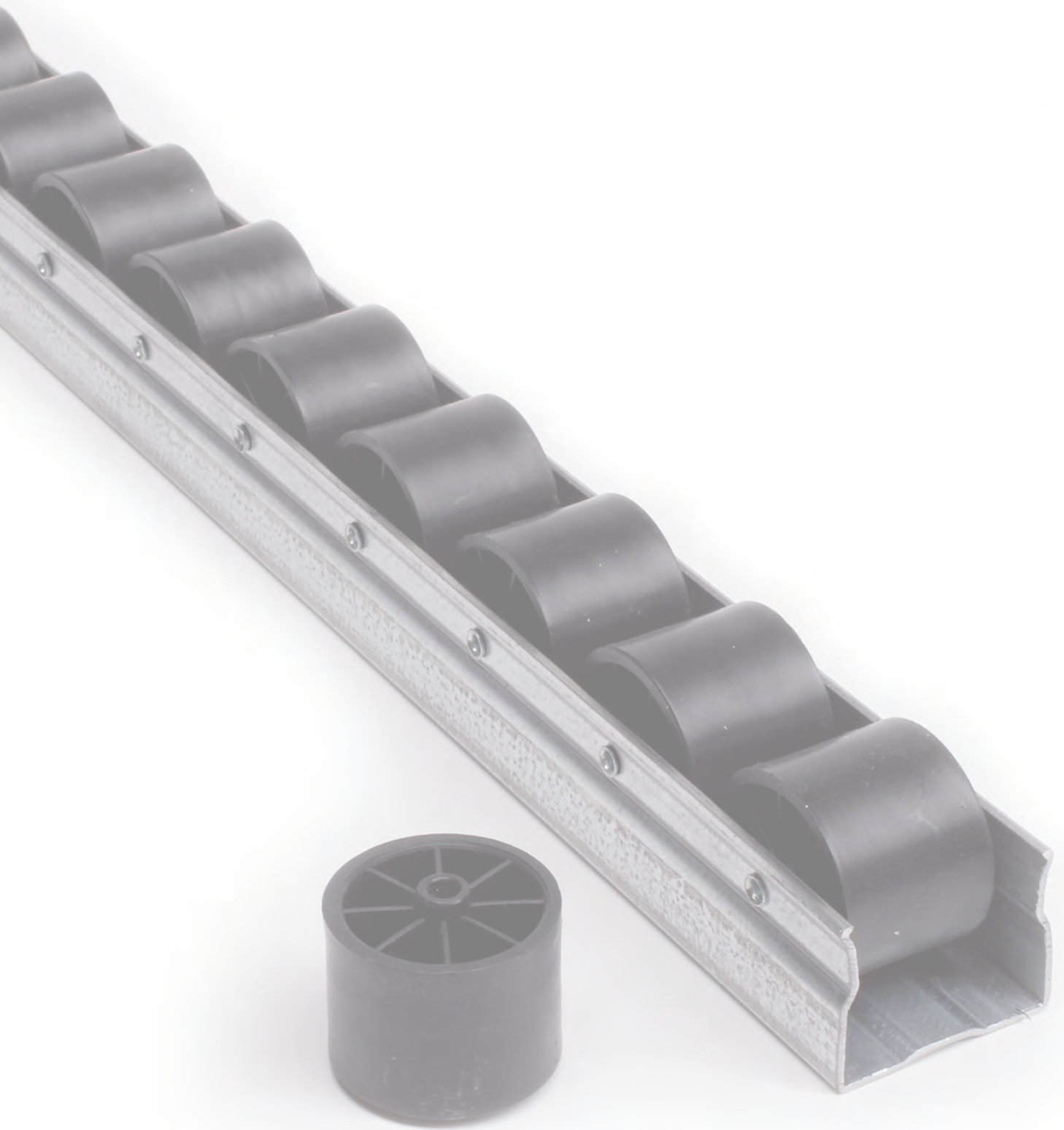


## JBHB

### Multipurpose joint B

50 pcs.



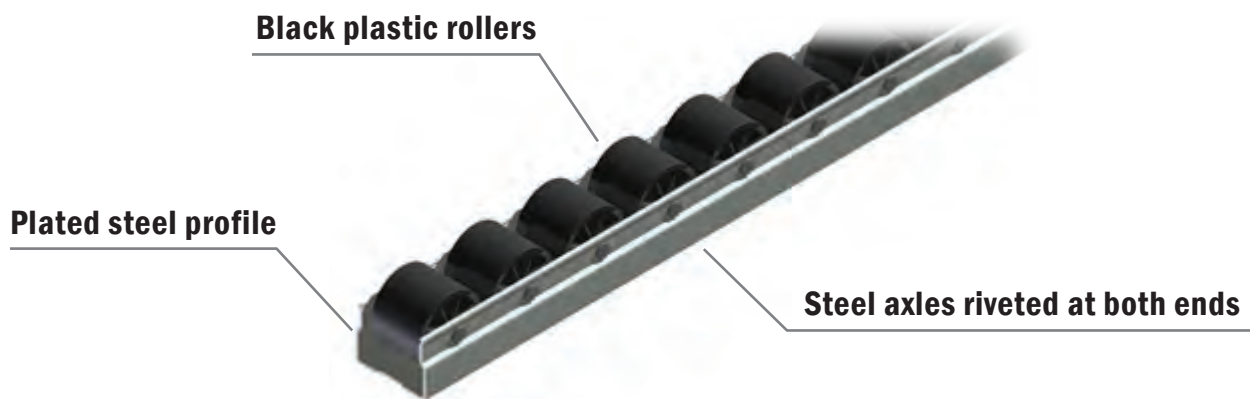




# Roller Tracks

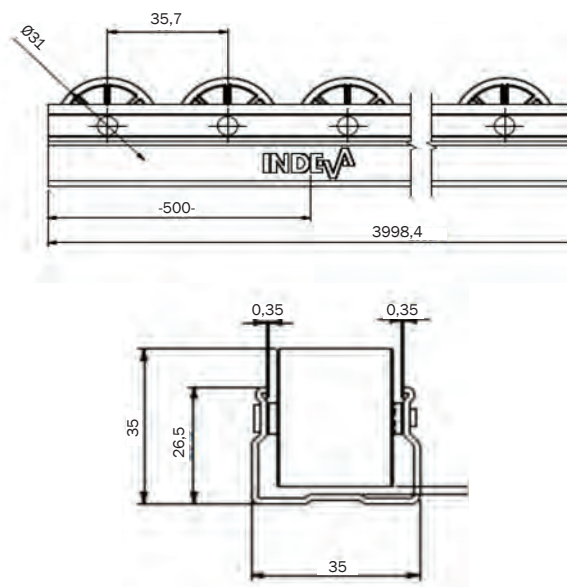
## Technical specifications

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



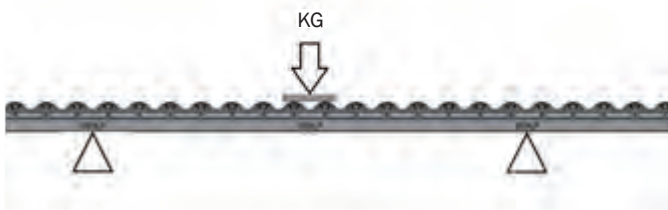
## Roller Load capacity

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.



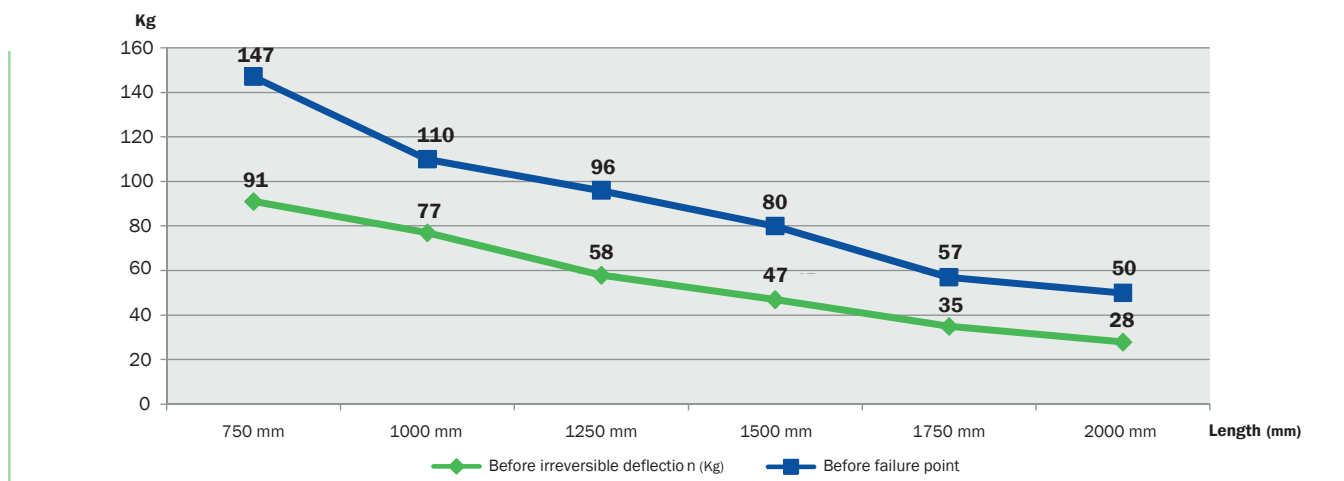
## Bending strength of roller track

### Experimental conditions



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.

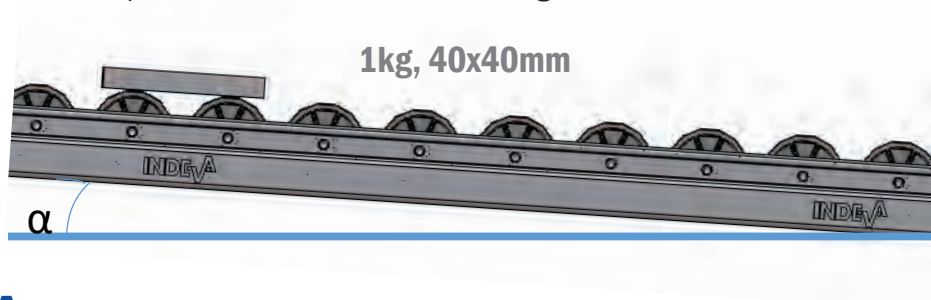
### Max load capacity on two rollers centrally applied



## 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

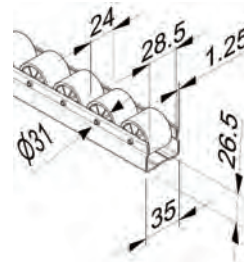
The box starts moving at  $\alpha=1.5^\circ$ , high speed is reached at  $\alpha=2.5^\circ$  inclined up until when the box starts moving.

## Roller tracks & Plastic Guides

**R400**

Roller track-Heavy duty-400cm

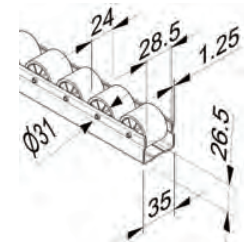
L = 4 m.



**R400-ESD**

Roller track-Heavy duty-400cm ESD

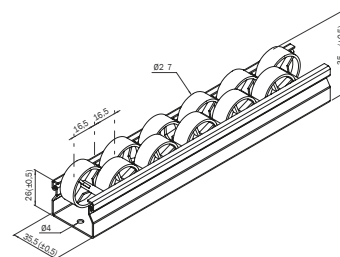
L = 4 m.



**R400D**

Roller track-Double-400cm

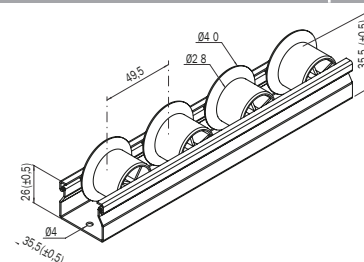
L = 4 m.



**RS400**

Roller track-Sided rollers-400cm

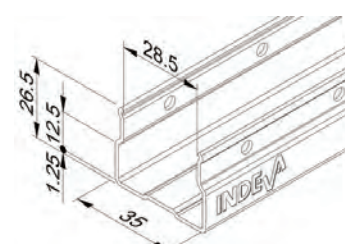
L = 4 m.



**U400**

U-profile for board support

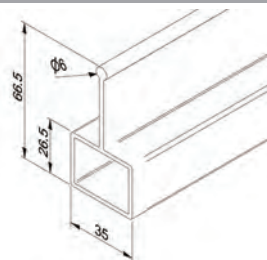
L = 4 m.



## RGC40W

Central guide white (400)

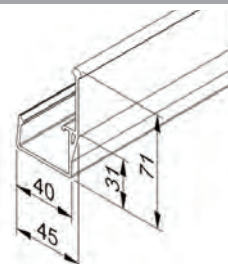
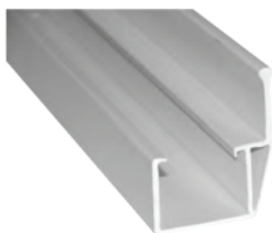
L = 4 m.



## RGL1040W

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

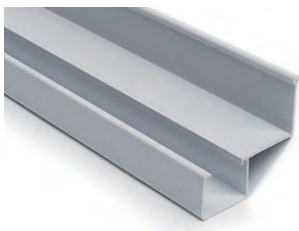
L = 4 m.



## RGL4040W

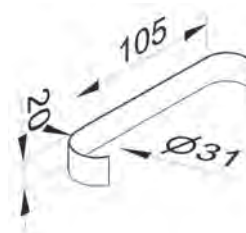
Lateral side guide white (400x40x10). Shoulder 40mm

L = 4 m.



## RBK

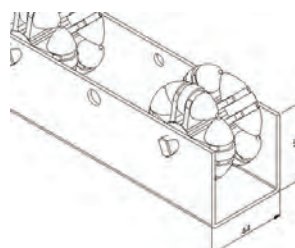
Roller track brake strip mod. R400



## RD50

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

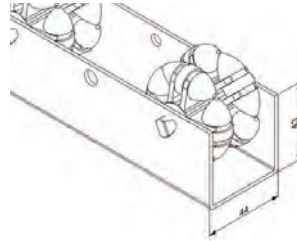
L = 1 m.



## RD60

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

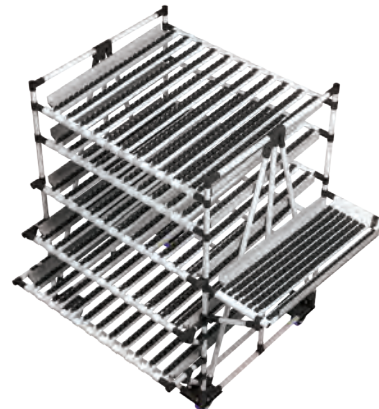
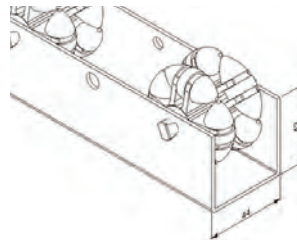
L = 1 m.



## RD80

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

L = 1 m.



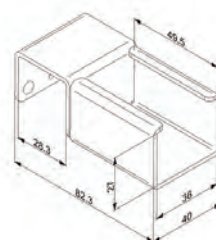


# Support Accessories

**JR**

**Roller track bracket**

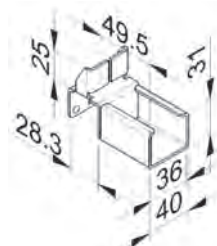
50 pcs.



**JRS**

**Roller track bracket with straight stop**

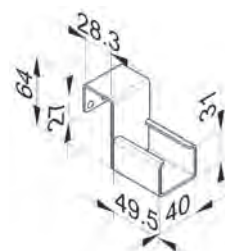
50 pcs.



**JRL**

**Roller track bracket with drop stop**

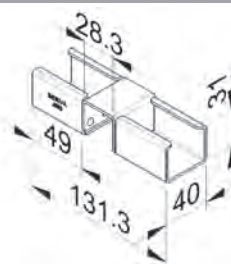
50 pcs.



**JRD**

**Roller track union bracket**

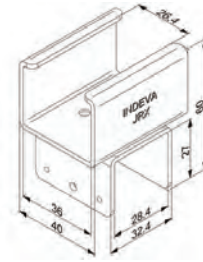
50 pcs.



**JRX**

**Cross over roller track bracket**

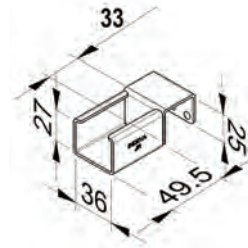
50 pcs.



**JR33**

**Roller track bracket 33mm**

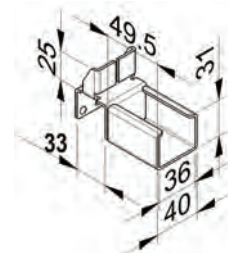
50 pcs.



**JRS33**

**Roller track bracket with stop 33mm**

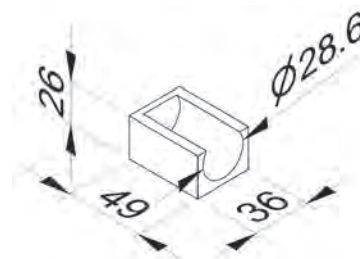
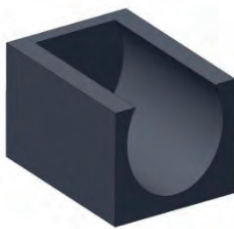
50 pcs.



**JRA**

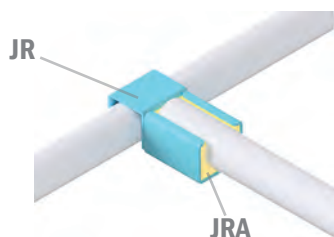
**Adpter for tube support (to be used with JR-JRS-JRL-JRD-JRX)**

50 pcs.



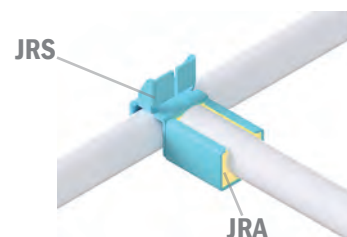
**JR + JRA**

**Example**



**JRS + JRA**

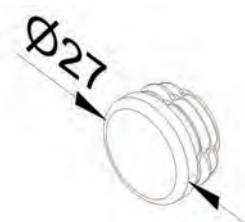
**Example**



# Plastic Accessories

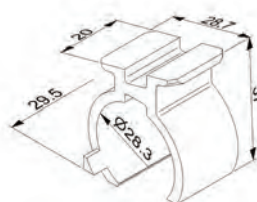
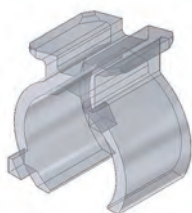
CP

Inner cap



LB2H

Label holder support (for LB2S model)



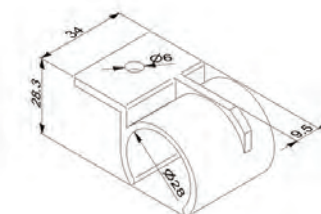
SLB

Sleeve for JBS joints


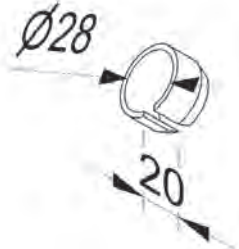

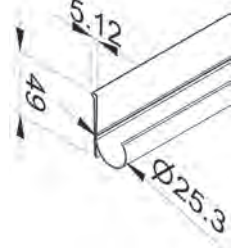

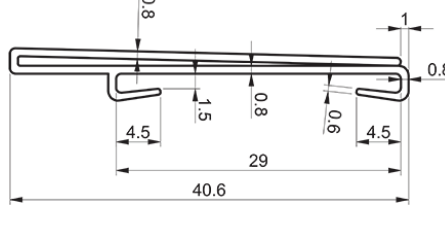

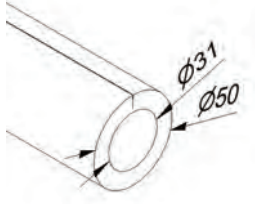

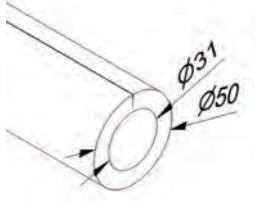


PLH

Plastic ring for plates



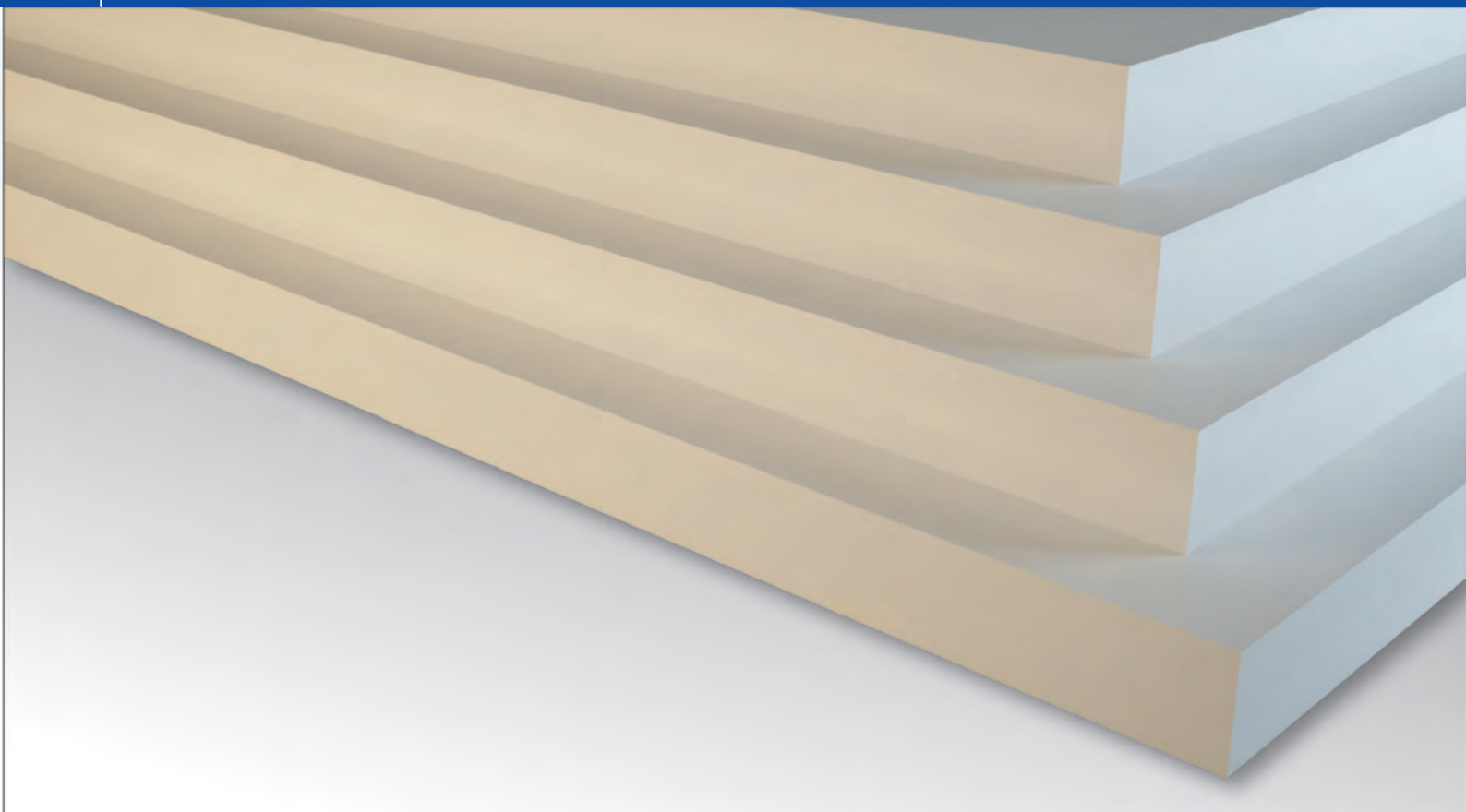







CV	Plastic taper edge	
		
LB1	Name case	L = 2 m.
		
LB2S40	Label stripe H mm. 40 (to be used with LB2H)	L = 2 m.
		
P200RBK	Rubber tube protection	L = 2 m.
		
P100GY	Foam tube protection	L = 2 m.
		





# 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:

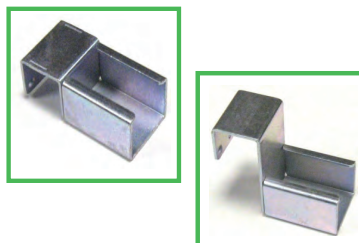


**SC2**

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-shaped nut



Application:

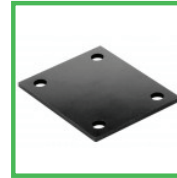


## SC5

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



Application:

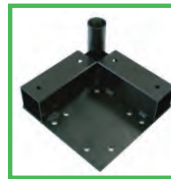


## SC7

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:

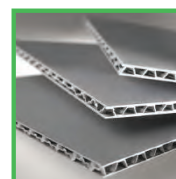


## SC10

(M6x25) Bolt and nut for panels



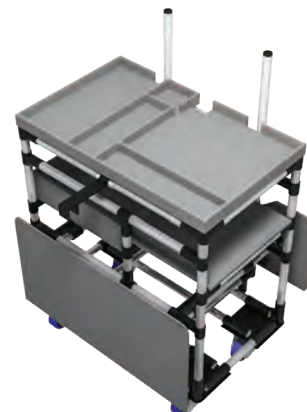
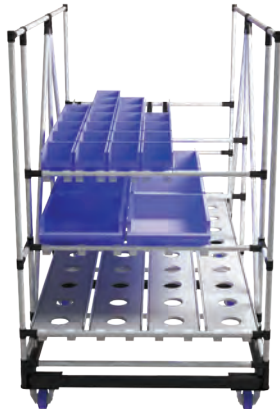
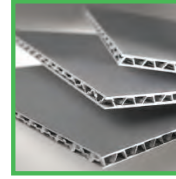
Application:



## SC11

(M6x30) Bolt and nut for panels

Application:





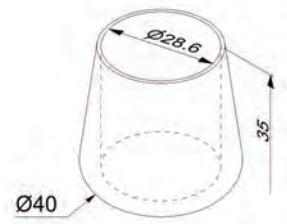




# Wheels & Support

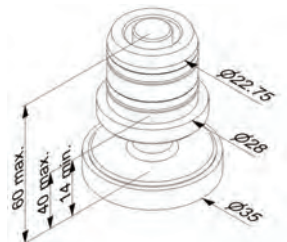
FT1

Rubber foot



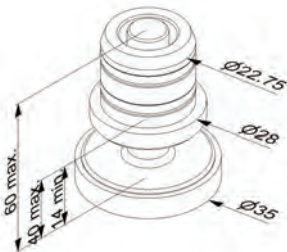
FT2

Levelling foot - threaded plastic expander



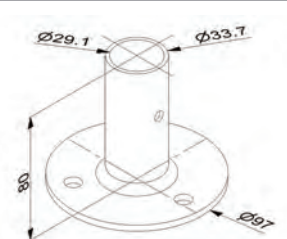
FT2H

Levelling foot - threaded aluminum expander



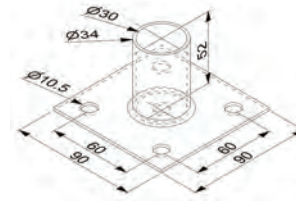
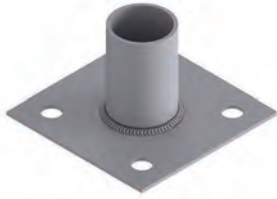
FT3

Stanchion mount foot reinforced



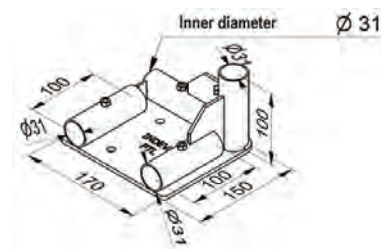
**FT4**

**Stanchion mount foot light**



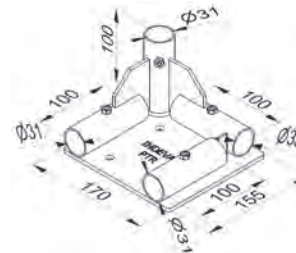
**PTL**

**Corner mount plate left**



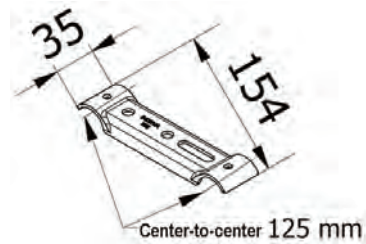
**PTR**

**Corner mount plate right**



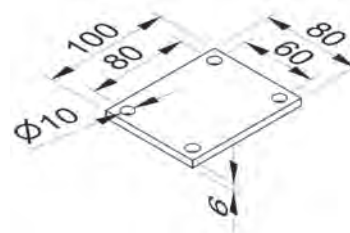
**WB**

**Castor mount bracket**



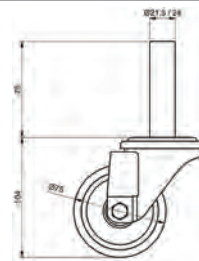
**WP**

**Castor plate**



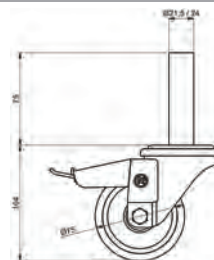
**T75**

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



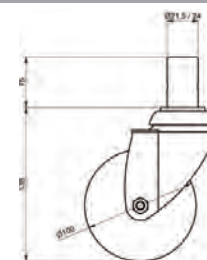
**T75B**

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



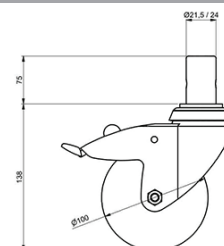
**T100**

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



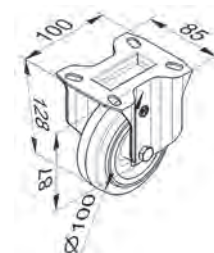
**T100B**

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



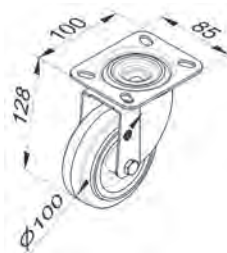
**P100**

Castor - capacity max. 150 kg. Diam 100mm



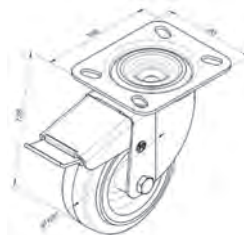
## P100S

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



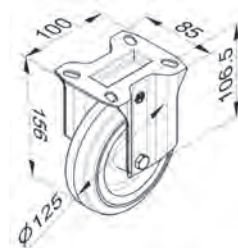
## P100SB

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



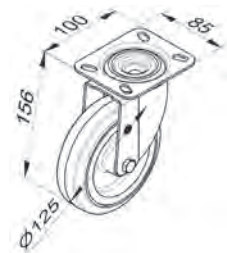
## P125

Castor - capacity max. 200 kg. Diam 125mm



## P125S

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



## P125SB

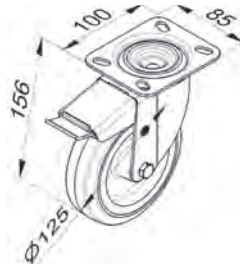
Swivel castor with brake - capacity max. 200 kg. Diam 125mm

/ pcs.



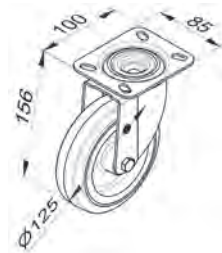
## P125YF

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



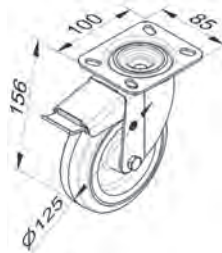
## P125SYF

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



## P125SBYF

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







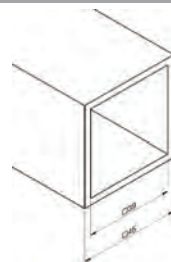
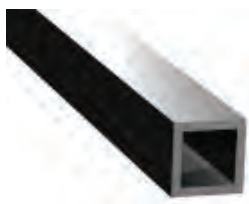
# Steel Square Base



**BQ400**

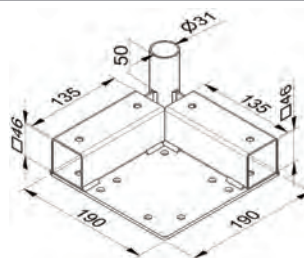
Tubular profile for Square Base

L= 4 m.



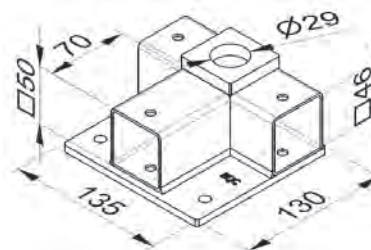
**BQ**

Corner plate for Square Base



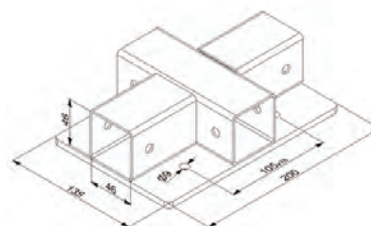
**BQC**

Intermediate plate Square Base



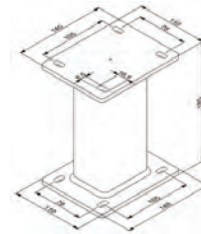
**BQX**

Square Base intersection plate



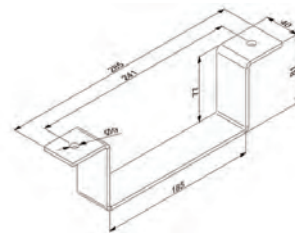
**BQFT**

Square Base foot



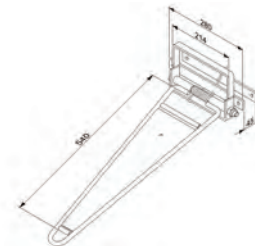
**BQFK**

Forklift bracket



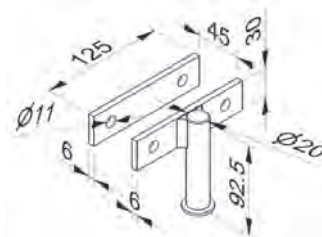
**TMF**

Tow bar



**TMR**

Tow hitch



**ADS1**

Tow bar label



**SPR**

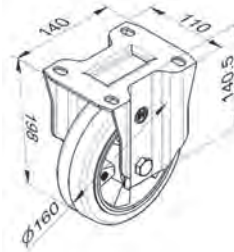
Spring





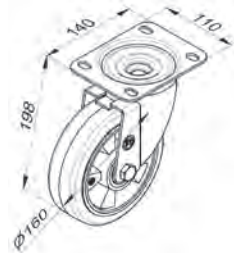
## BQ160

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



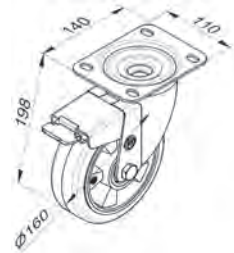
## BQ160S

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



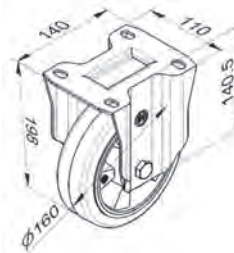
## BQ160SB

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



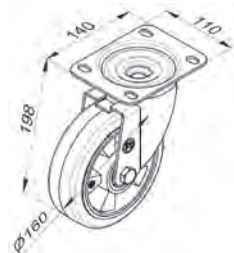
## BQ160YR

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



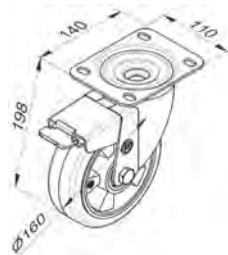
## BQ160SYR

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



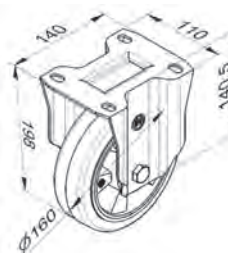
## BQ160SBYR

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



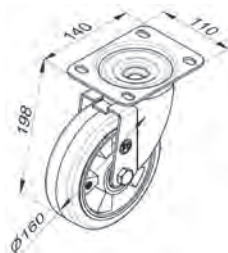
## BQ160YF

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



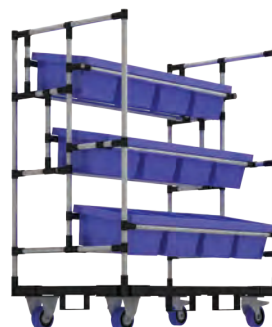
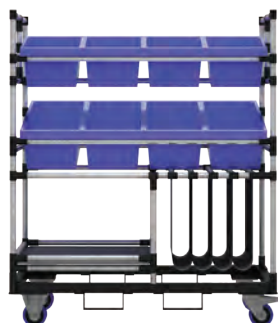
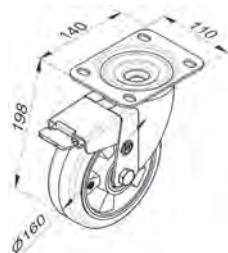
## BQ160SYF

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



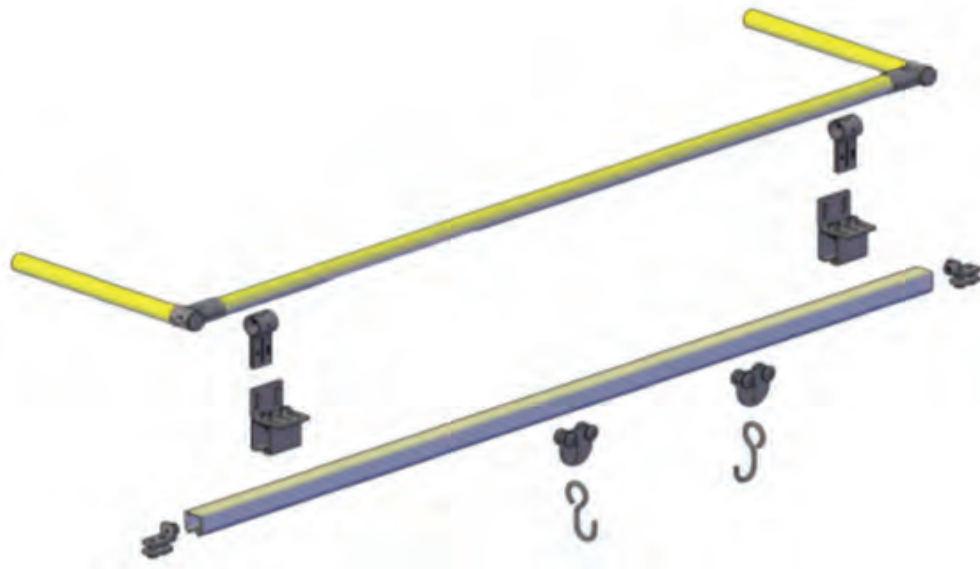
## BQ160SBYF

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





# ■ Monorail & Shooter



**MR300**

Monorail

L = 3 m.



**MRTR**

Monorail-Trolley with stoppers



**MRH**

Monorail-Hanger



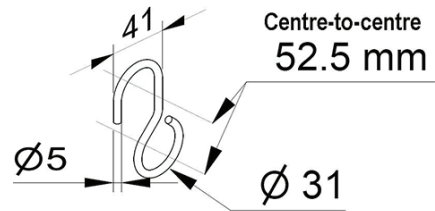
**MRE1**

Monorail-End stop



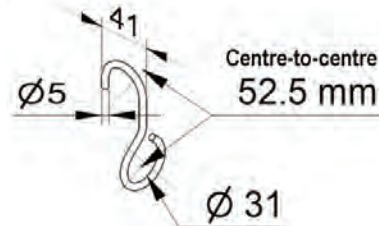
**HK1**

Hanger-Flat



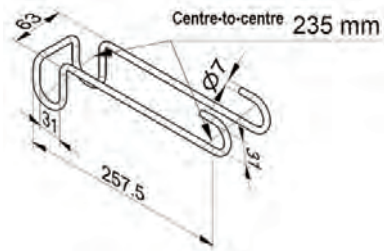
**HK2**

Hanger-90 deg



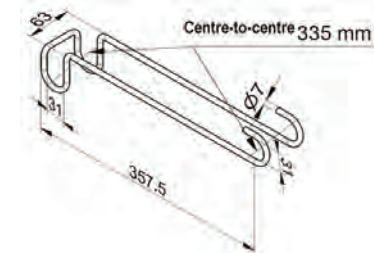
**SL200**

Presentation bridge for boxes L = 200 mm



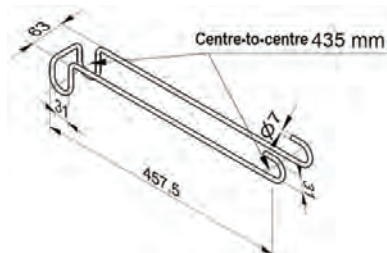
**SL300**

Presentation bridge for boxes L = 300 mm



**SL400**

Presentation bridge for boxes L = 400 mm















Scaglia INDEVA  
**Italy**

Scaglia INDEVA SpA  
Via Marconi, 42  
24012 Val Brembilla (BG) Italy  
Tel. +39 0345 59 411  
Fax +39 0345 59 500  
info@it.indevagroup.com  
www.indevagroup.com



Scaglia INDEVA  
**Germany**

Scaglia INDEVA GmbH  
Esslinger Str. 26  
D-73249 Wernau  
Tel +49 (0) 7153 55049-0  
Fax +49 (0) 7153 55049-69  
info@de.indevagroup.com  
www.indevagroup.com



Scaglia INDEVA  
**France**

Scaglia INDEVA SARL  
215 Rue Henry Barbusse  
95100 Argenteuil  
France  
Téléphone: +33 (0) 1 39 19 30 30  
Télécopieur: +33 (0) 1 39 19 63 24  
info@fr.indevagroup.com  
www.indevagroup.com



Scaglia INDEVA  
**United Kingdom**

Scaglia INDEVA Ltd  
Coney Green Business Centre, Clay Cross  
Chesterfield, Derbyshire S45 9JW  
Tel. +44 (0) 1246 25 23 33  
Fax +44 (0) 1246 25 23 34  
info@uk.indevagroup.com  
www.indevagroup.com



Scaglia INDEVA  
**Sweden**

SCAGLIA INDEVA Nordic AB  
Torbornavägen 24  
253 68 Helsingborg, Sweden  
Tel. + 46 (0) 424002460  
info@se.indevagroup.com  
www.indeva.se - www.indevagroup.com



SIT INDEVA  
**United States**

SIT INDEVA Inc  
3630 Green Park Circle  
Charlotte, NC 28217  
Tel. +1 704 357 8811  
Fax +1 704 357 8866  
info@sit-indeva.com  
www.sit-indeva.com



SIT INDEVA  
**P.R. of China**

SIT INDEVA (Shanghai) Ltd  
Scaglia Indeva Division  
Shanghai Nanhui Industrial Park  
#2 Building, No 269 YuanZhong Rd. 201300  
Tel. +86 (21) 5108 2206  
Fax +86(21) 6486 3511  
info@cn.indevagroup.com  
www.indevagroup.cn