



## Scaglia INDEVA,

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.

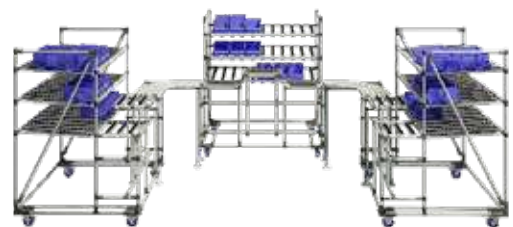
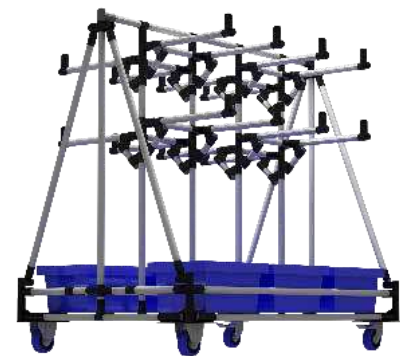


## INDEVA LEAN SYSTEM®

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.

A wide variety of applications are possible: ergonomic workplaces, trolleys and carts, flow racks, gravity conveyors and many more. INDEVA Lean System® structures are simple to design, quick to assemble and completely reusable.

INDEVA Lean System® fully supports the principles of Lean Manufacturing and Kaizen philosophy and it is the ideal tool for those companies aiming for space optimization and continuous improvement processes.



## ■ 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. 40

### ■ Monorail & Shooter

pag. 47

### ■ Parts on request

pag. 51

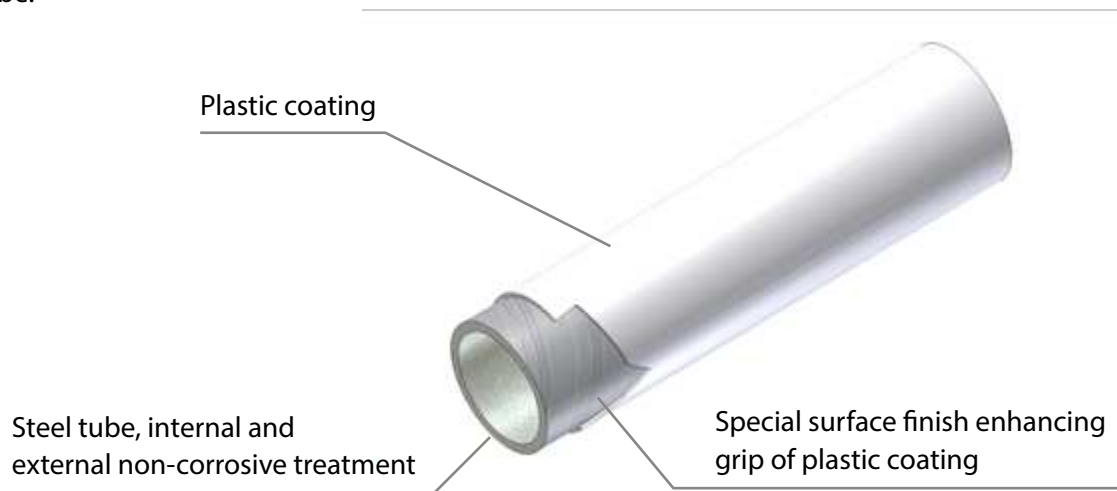
# Tubes

## 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.

Plastic coated tubes are available from stock in a wide range of standard colors, while tubes with a custom color are available on request.

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



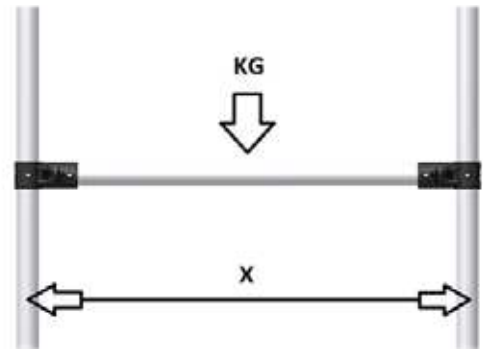
## Dimensions and specifications

- **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



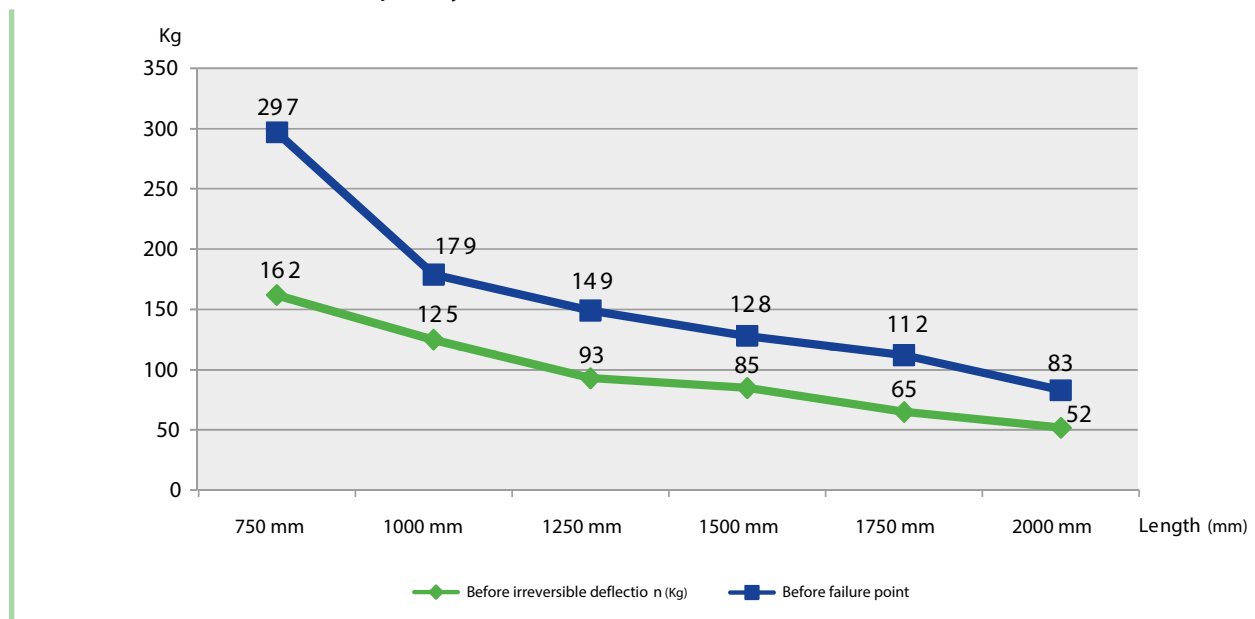
## Bending strength of tube

Load capacity tests have been run on an H shaped structure

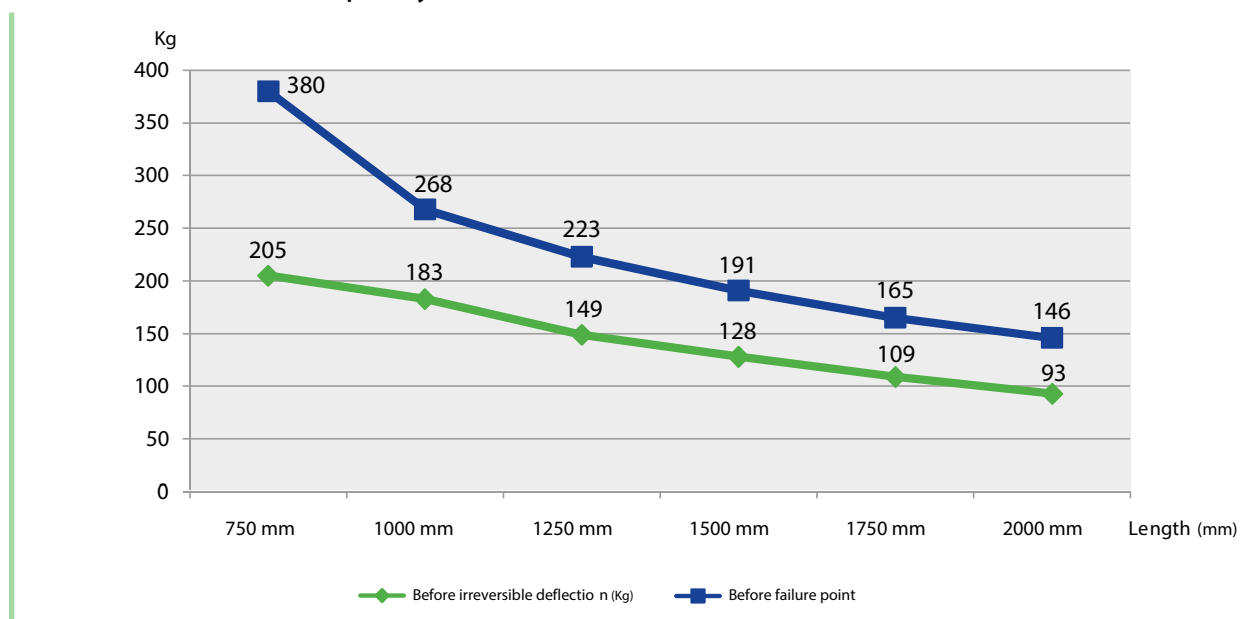


Experimental conditions—H-shaped structure

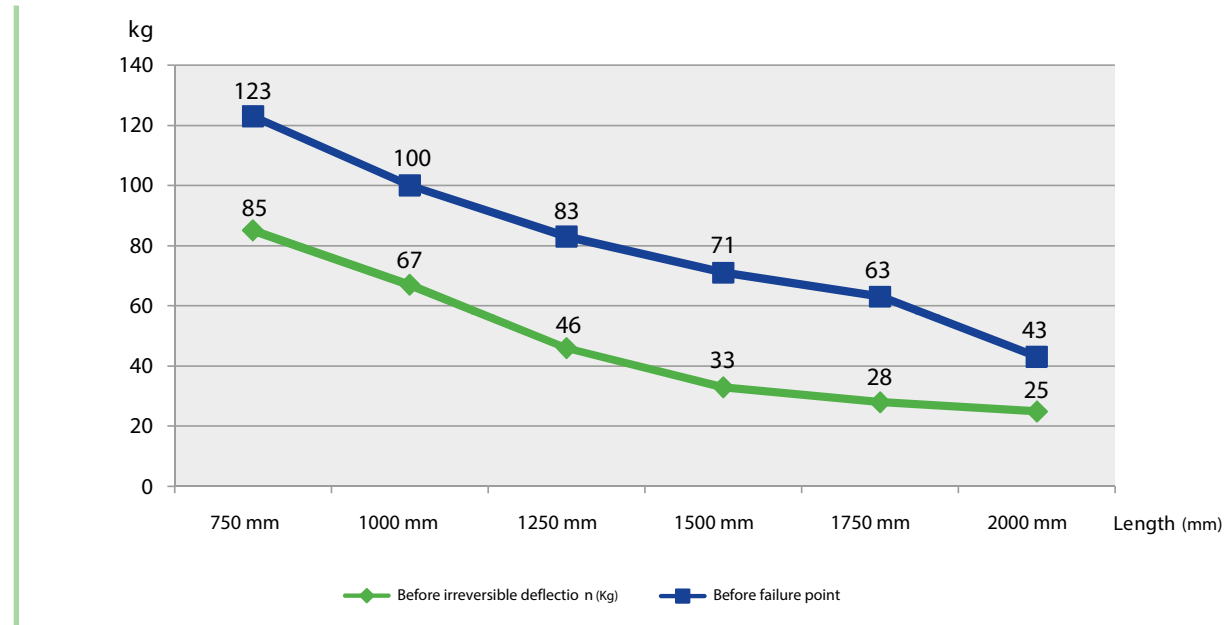
### Max concentrated load capacity of a tube with 2 mm wall thickness



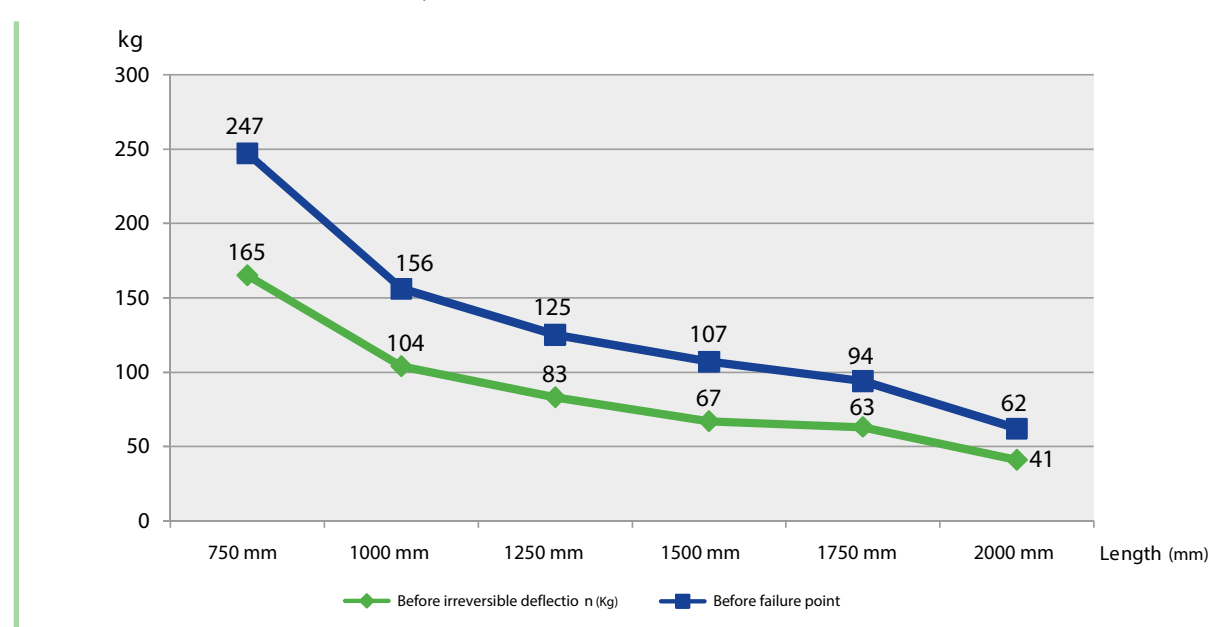
### Max distributed load capacity of a tube with 2 mm wall thickness



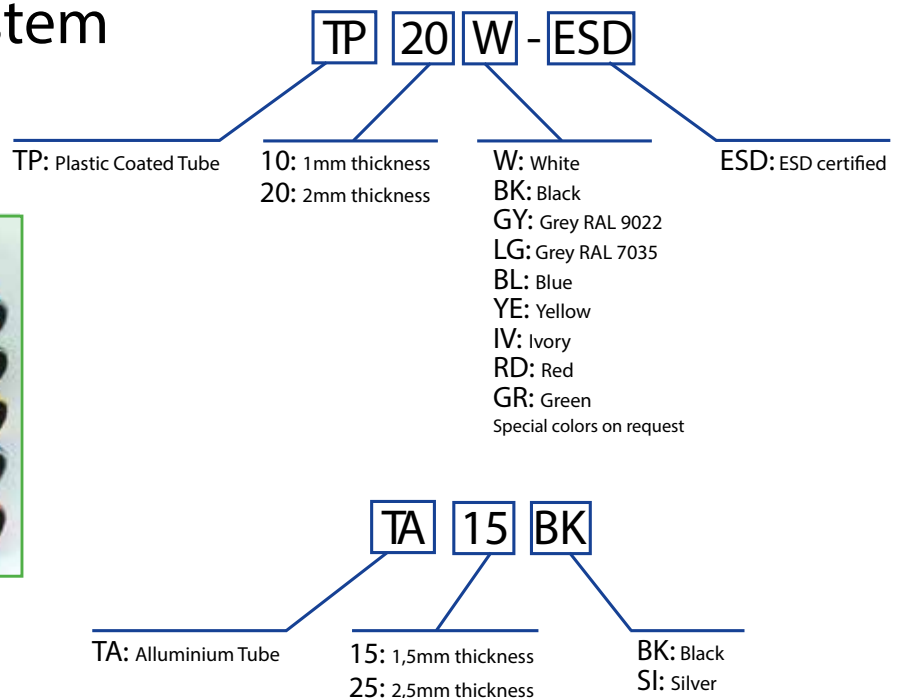
## Max concentrated load capacity of a tube with 1 mm wall thickness



## 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                  |  |             |            |                 |            |        |
|                  | Green                |  |             |            |                 |            |        |
|                  | Black                |  |             |            |                 |            |        |
|                  | RAL color on request |  |             |            |                 |            |        |
| ESD Tubes        | Black                |  |             |            |                 |            |        |
|                  | Light Grey           |  |             |            |                 |            |        |
| Alluminium Tubes | Black anodized       |  |             |            |                 |            |        |
|                  | Silver anodized      |  |             |            |                 |            |        |



# Metal Joints

## Technical specifications

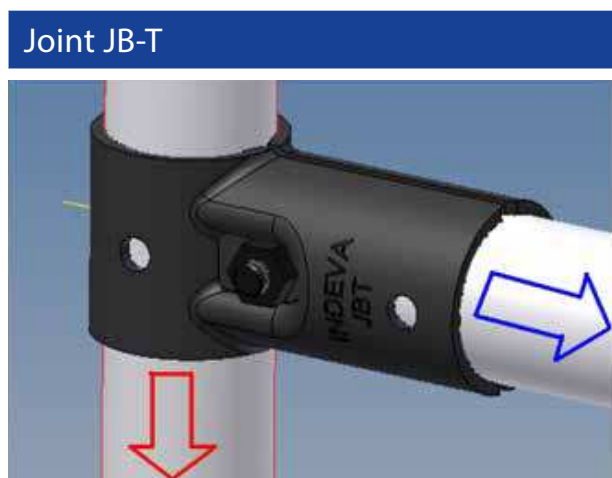
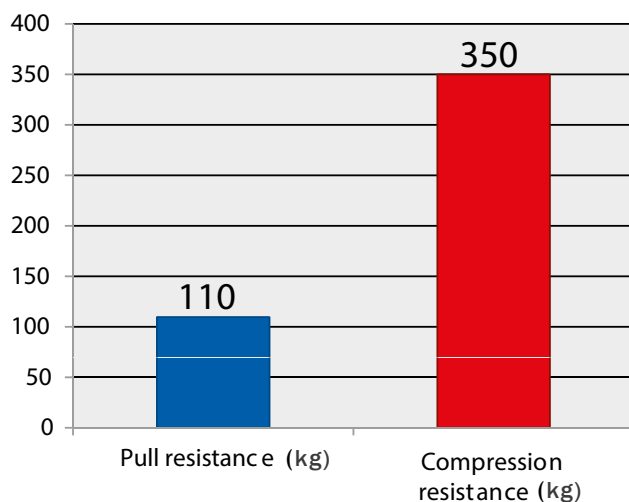
INDEVA Lean System® metal joints are made of steel 2.5 mm thickness. Non-corrosive coating (standard black color) is applied. To ensure maximum holding strength, the joints are shaped with a special gripping profile.

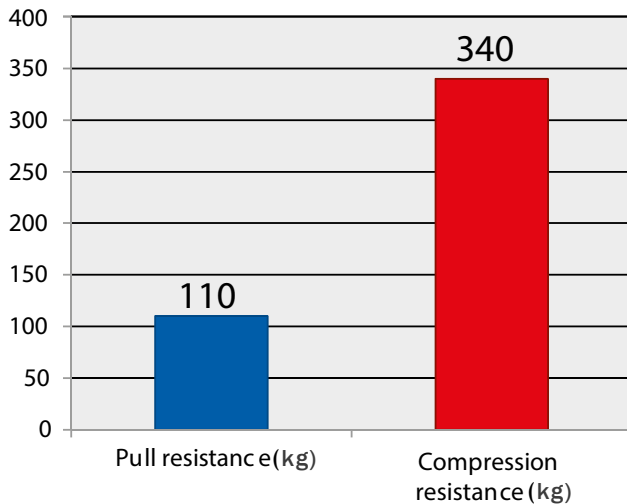
A hole facilitates the possible application of holding screws.



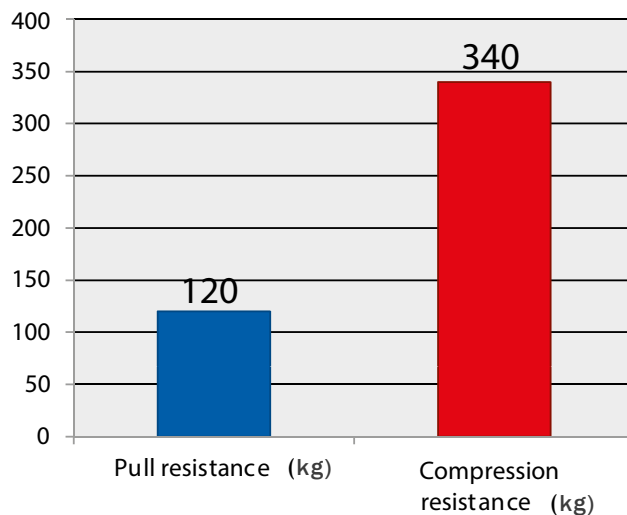
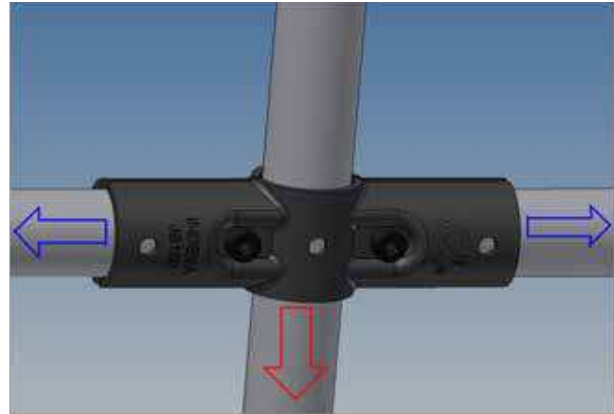
## Joints holding strength

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

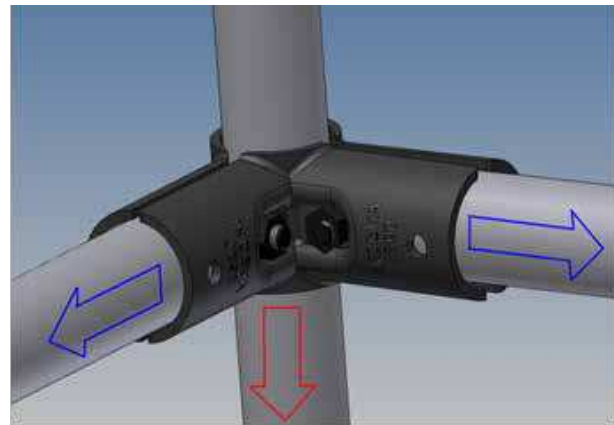




Joint JB-180



Joint JB-90 + JB-270



Assuming a safety factor equal to 2, use of INDEVA Lean System<sup>®</sup> 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<sup>®</sup> 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. |
|   |                     |         |
| JBX   | Cross over joint    | 50 pcs. |
|    |                     |         |
| JB1   | Dual pipe joint     | 50 pcs. |
|   |                     |         |

# Metal Joints

JBA1

Swivel head T joint

50 pcs.



JBA2

Swivel head double joint

50 pcs.



JBA3

Swivel tail joint

50 pcs.



JB30

30 deg joint

50 pcs.



JB45

45 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.



JBS2

Multipurpose joint slide

50 pcs.



JBS3

Parallel joint, 2 slide

50 pcs.



# Metal Joints

JBS4

Parallel joint, 1 slide

50 pcs.



JBT

T joint

50 pcs.



JBT2

33mm T shaped joint

50 pcs.



JBH

Multipurpose joint

50 pcs.



JBHA

Multipurpose joint A

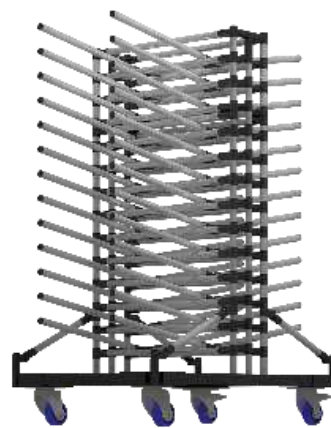
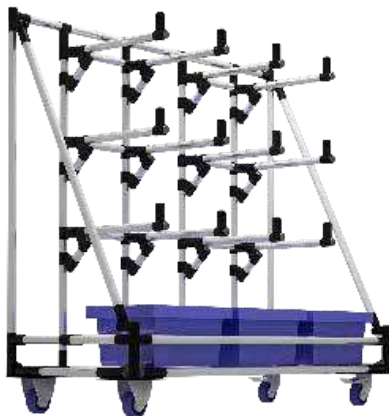
50 pcs.



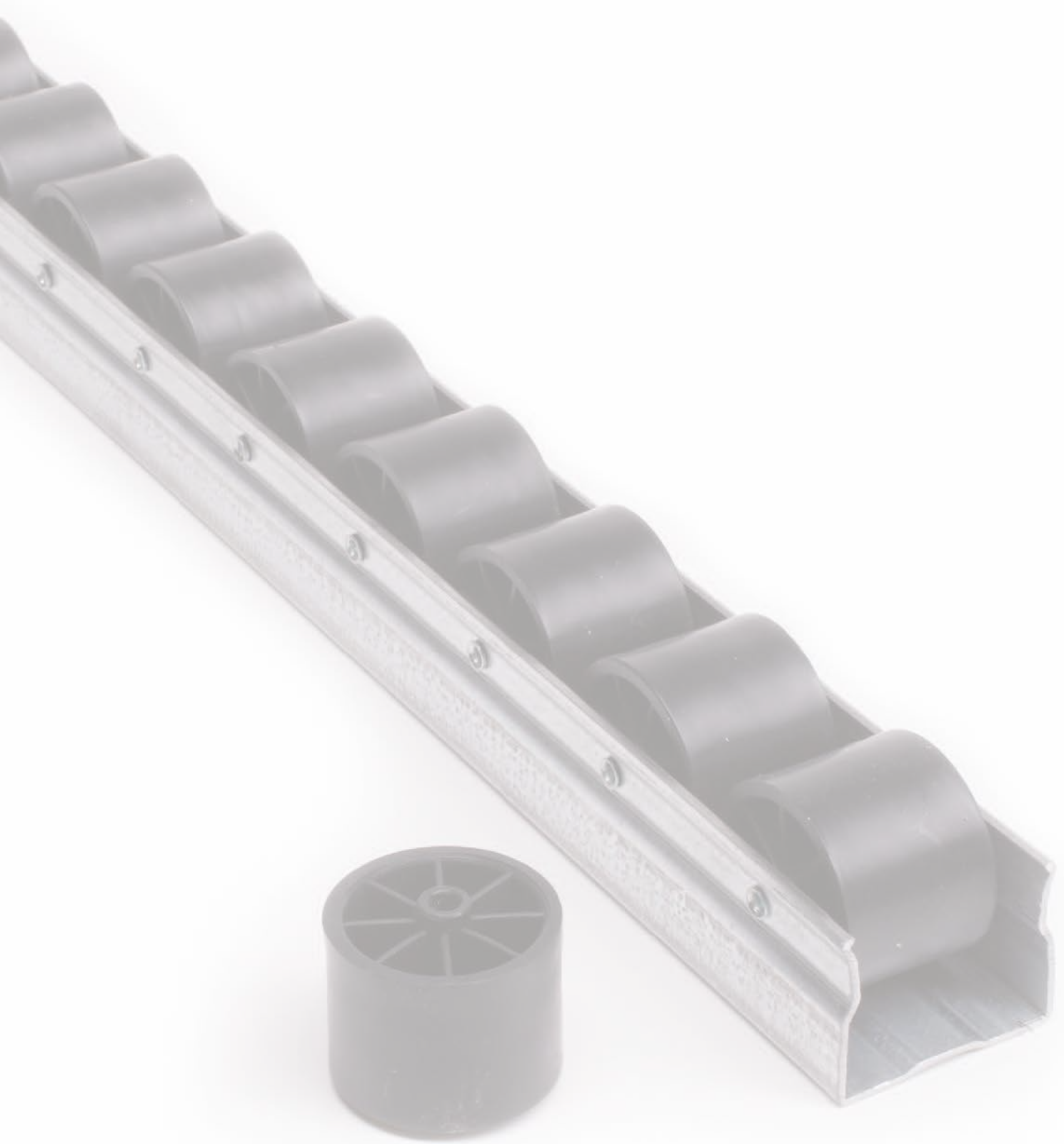
JBHB

Multipurpose joint B

50 pcs.





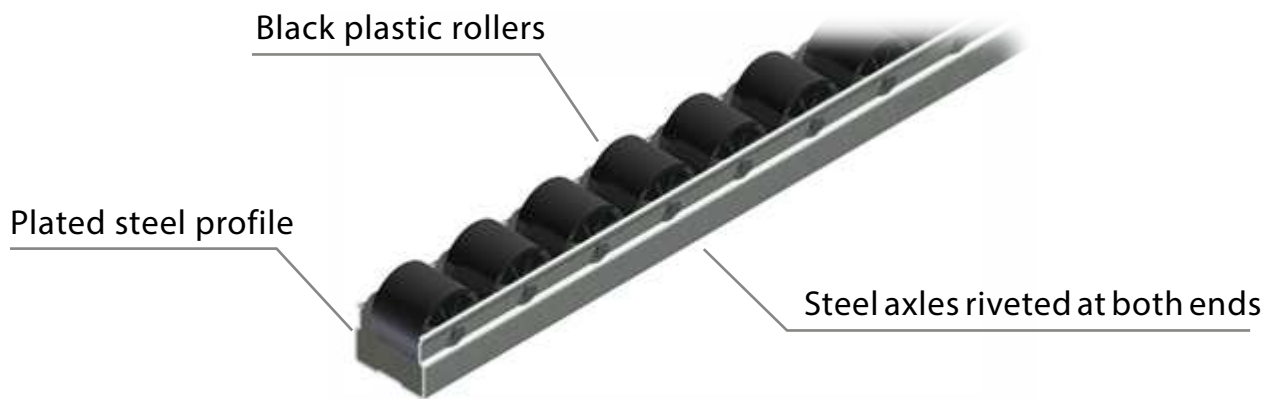




# Roller Tracks

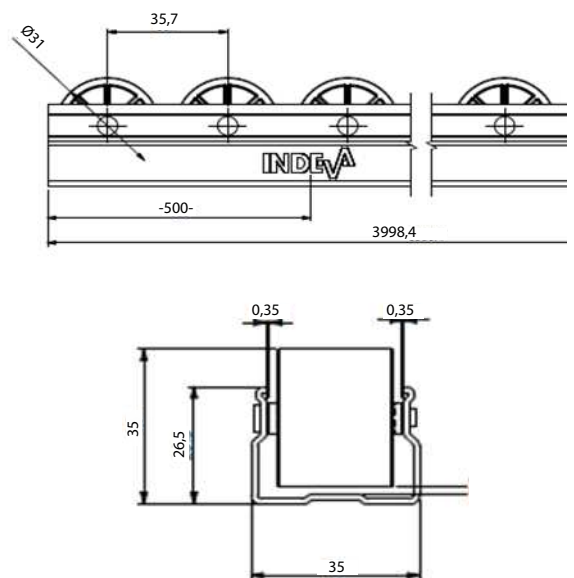
## Technical specifications

The INDEVA conveyor track is used for the assembly of flow racks and gravity conveyors for handling 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

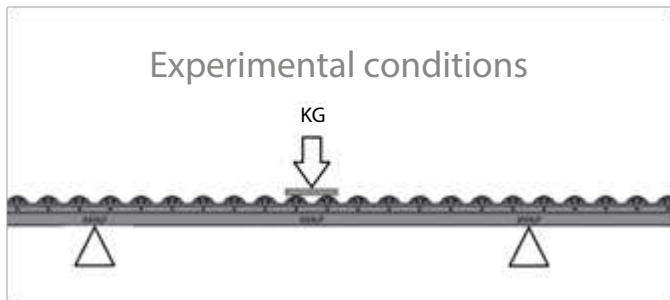


## Roller Load capacity

The test has been run placing a load on the roller and increasing the load weight until permanent deformation of the roller occurred. Permanent deformation has been experienced at 150 kg. The sliding smoothness has no changes with loads up to 30 kg.



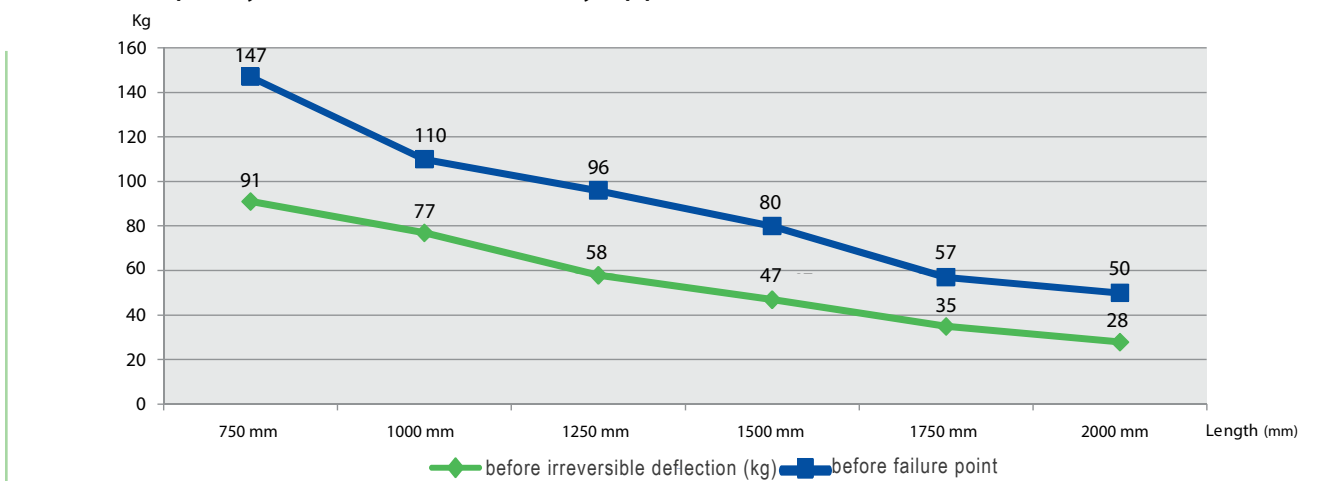
## Bending strength of roller track



A force has been centrally applied on two rollers of a track resting on two supports positioned one at each side of the two rollers at equal distance. The weight value of the load that would permanently deform the track and that would break the track has been measured.

Results are in following table.

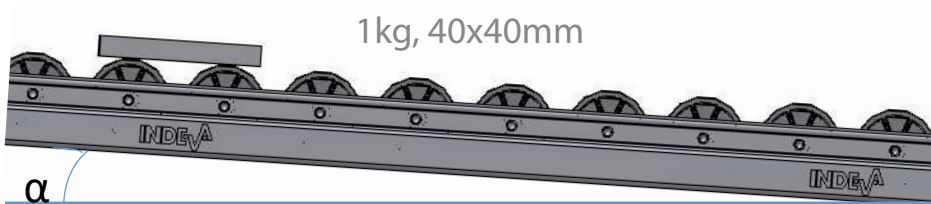
### Max load capacity on two rollers centrally applied



## 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

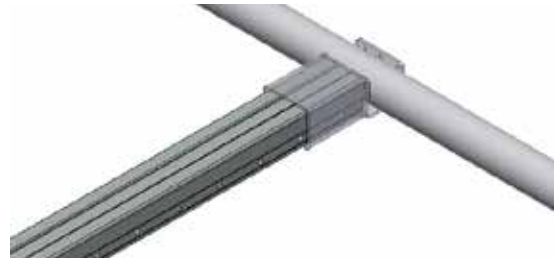
L = 4 m.



U400

U-profile for board support

L = 4 m.

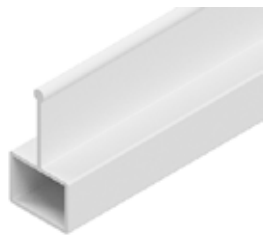


# Roller Tracks

**RGC40W**

Central guide white (400)

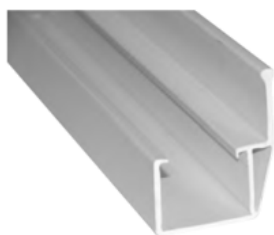
L = 4 m.



**RGL1040W**

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

L = 4 m.



**RGL4040W**

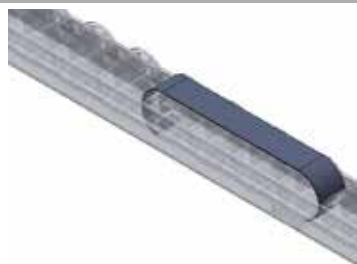
Lateral side guide white (400x40x10). Shoulder 40mm

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

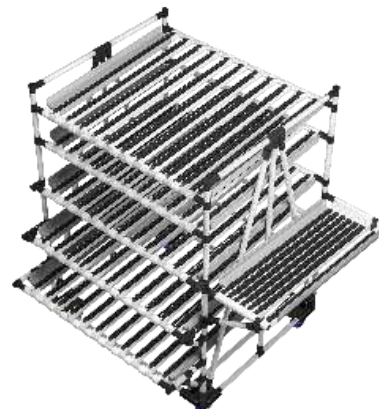
L = 1 m.



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

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

50 pcs.



# Plastic Accessories



CP

Inner cap



LB2H

Label holder support (for LB2S model)



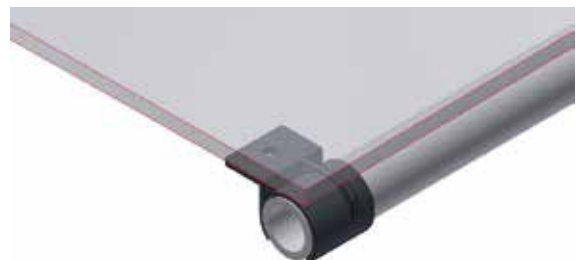
SLB

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

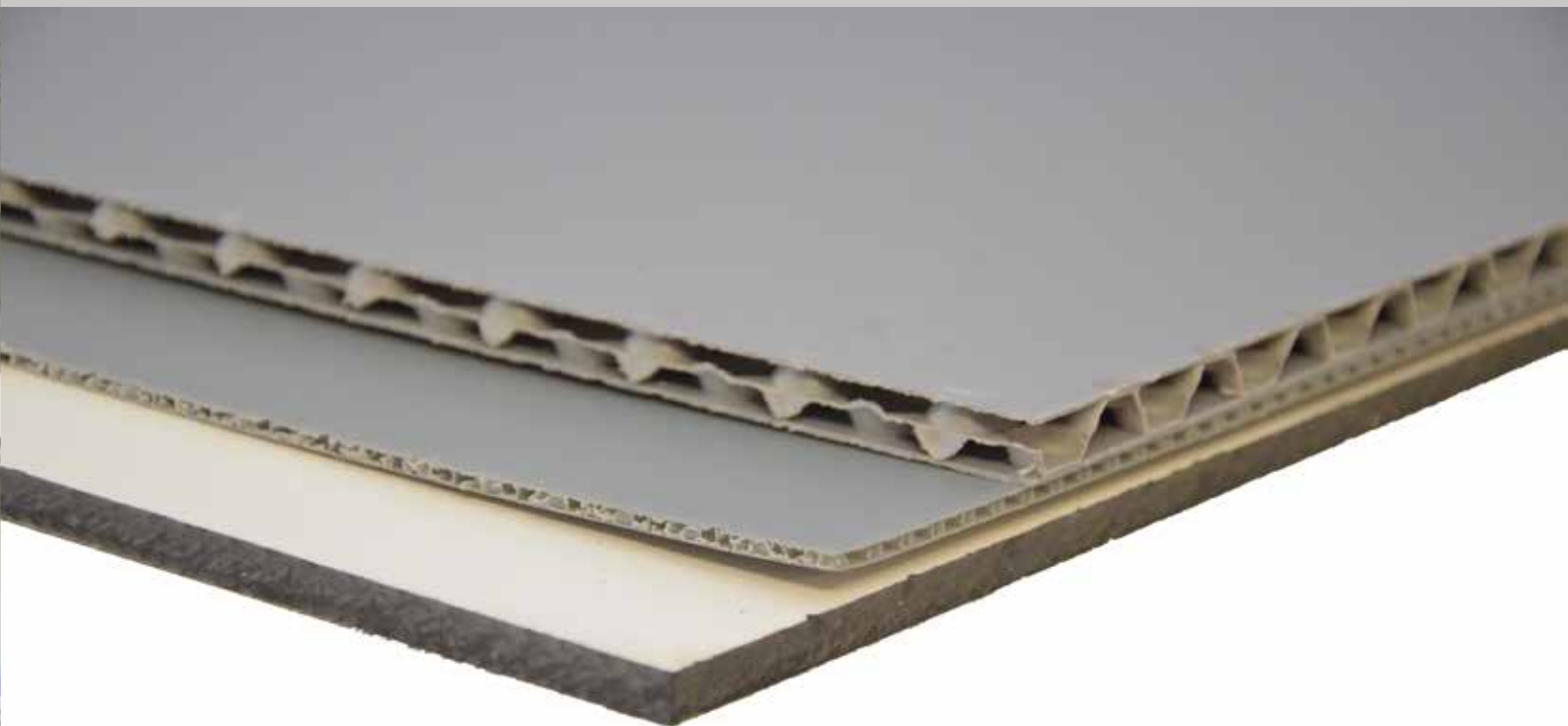
Foam tube protection




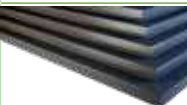

L = 2 m.





# Plates



| Item   |   | Thickness | Dimensions  | Color                |   |
|--------|---|-----------|-------------|----------------------|---|
| PVC10  |  | 10        | 1500 x 1200 | Black                |  |
| PVC19  |   | 19        |             | RAL color on request |  |
| PEHD6  |  | 6         | 2000 x 1000 | Black                |  |
| PEHD8  |   | 8         |             | RAL color on request |  |
| PEHD10 |   | 10        |             |                      |   |
| MDFW   |  | 20        | 2000 x 1000 | White                |  |
| MDFBK  |  | 10        | 2000 x 1000 | Black                |  |
| RS08W  |  | 8         | 3050 x 1300 | White                |  |
| M05GY  |  | 3         | 2400 x 2100 | Grey                 |  |
| M10GY  |   | 10        |             |                      |   |







# Bolts & Nuts

SC1

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



Application:



SC2

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



Application:



SC3

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



Application:



SC4

(M6 x 28)Socket head bolt with pre-applied threadlock function and



Application:



# Bolts & Nuts

SC5

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



Application:



SC6

(M8x65) Bolt and nut to use with WB bracket and WP plate casters



Application:



SC7

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



Application:



SC8

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



Application:



SC9

(M10x70) Bolt and nut for TMF



Application:

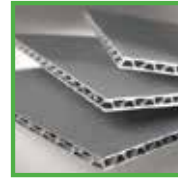


SC10

(M6x25) Bolt and nut for panels



Application:

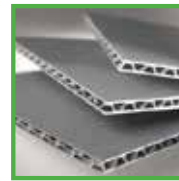


SC11

(M6x30) Bolt and nut for panels



Application:

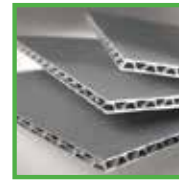


SC12

(M6x45) Bolt and nut for panels



Application:









# Wheels & Support

FT1

Rubber foot



FT2

Levelling foot - threaded plastic expander



FT2H

Levelling foot - threaded mechanical expander



FT3

Stanchion mount foot reinforced



# Wheels & Support

FT4

Stanchion mount foot light



PTS

Three pipes connection



PTL

Corner mount plate left



PTR

Corner mount plate right



WB

Castor mount bracket



WP

Castor plate



T75

Insert swivel caster - capacity max. 60 kg Diam 75mm



T75B

Insert swivel castor with brake - max. capacity 60 kg Diam 75mm



T100

Insert swivel castor - capacity max. 80 kg Diam 100mm



T100B

Insert swivel castor with brake - capacity max. 80 kg Diam 100mm



# Wheels & Support

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



**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



**P125GR**

Castor-capacity max. 300 kg Round profile. Diam 125mm



# Wheels & Support

P125SGR

Swivel castor-capacity max. 300 kg Round profile. Diam 125mm



P125BGR

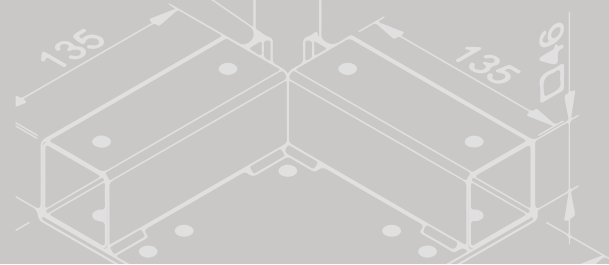
Swivel castor with brake-capacity max. 300 kg Round profile. Diam 125mm







# Steel Square Base



**BQ400**

Tubular profile for Square Base

L= 4 m.



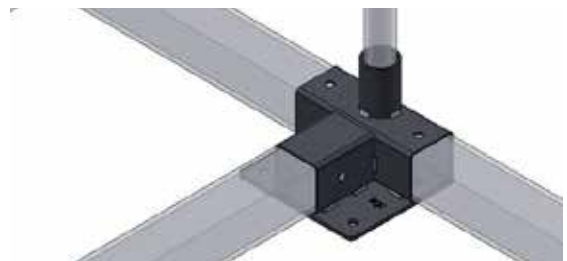
**BQ**

Corner plate for Square Base



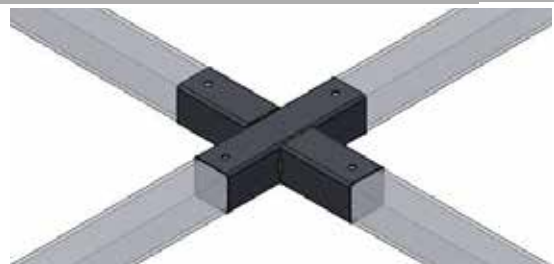
**BQC**

Intermediate plate Square Base



**BQX**

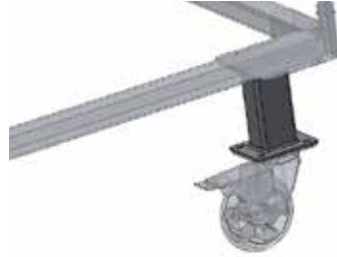
Square Base intersection plate





BQFT

Square Base foot



BQFK

Forklift bracket



TMF

Tow bar



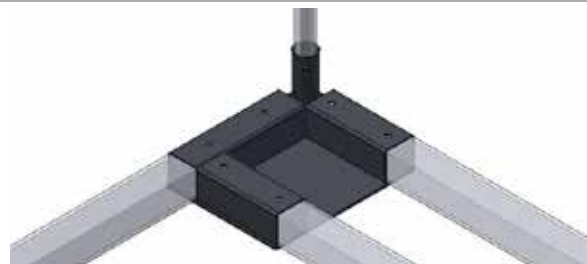
TMR

Tow hitch



STBR

Bottom-right angle plate for self-tracking base



# Steel Square Base

STBL

Bottom-left angle plate for self-tracking base



STTR

Top-right plate for self-tracking base



STTL

Top-left plate for self-tracking base



STSW

Dual Swiveling plate for self-tracking base



ADS1

Tow bar label



SPR

Spring



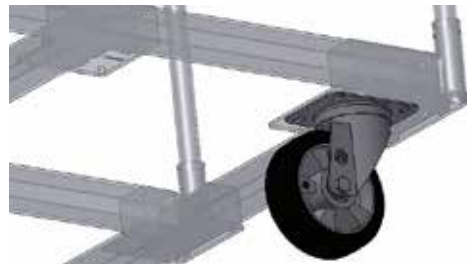
## BQ160

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



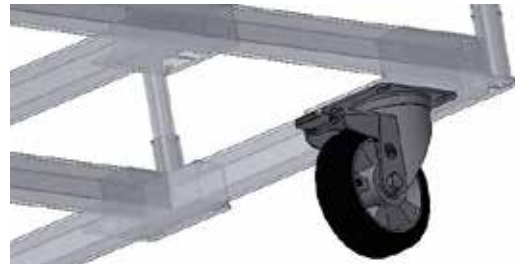
## BQ160S

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



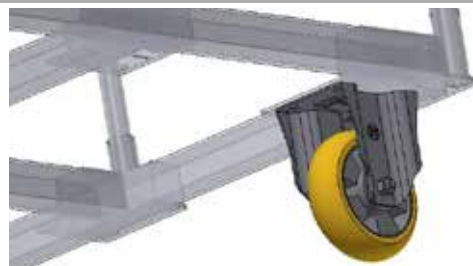
## BQ160SB

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



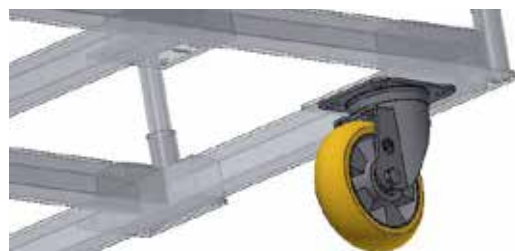
## BQ160YR

Castor Round profile - load cap.300kg-diam. 160mm



## BQ160SYR

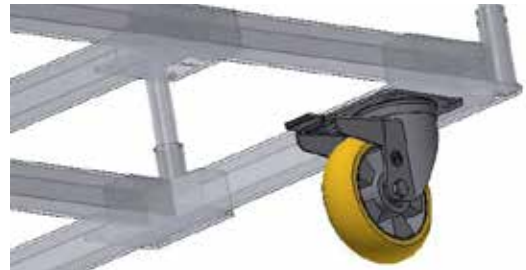
Swivel Castor Round profile -load cap. 300kg.- diam. 160mm



# Steel Square Base

## BQ160SBYR

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



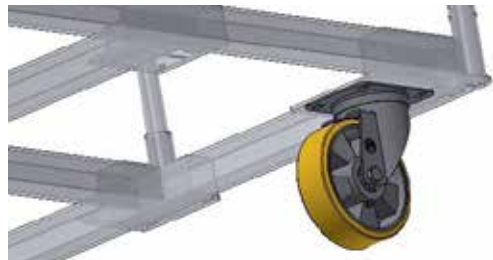
## BQ160YF

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



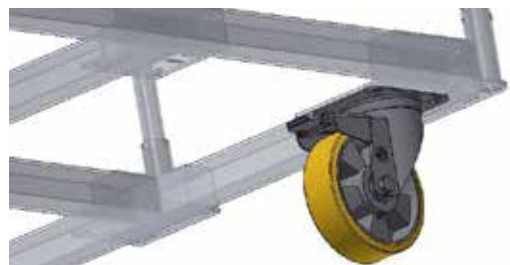
## BQ160SYF

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



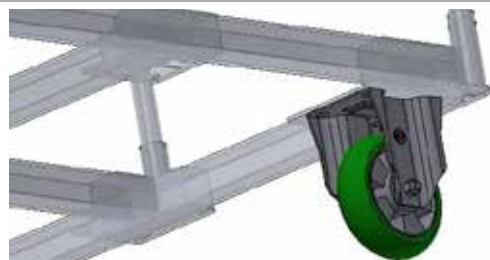
## BQ160SBYF

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



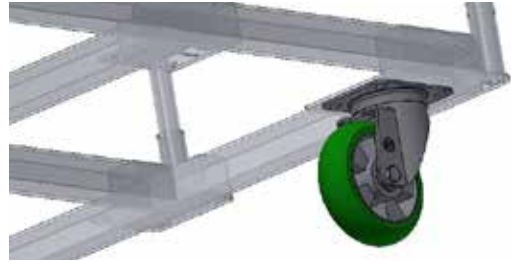
## BQ160GR

Castor-capacity max. 500 kg. Round profile. Diam 160mm



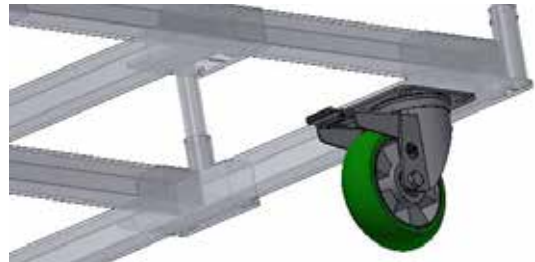
BQ160SGR

Swivel castor-capacity max. 500 kg. Round profile. Diam 160mm



BQ160SBGR

Swivel castor with brake-capacity max. 500 kg Round profile. Diam 160mm







# Monorail & Shooter



MR300

Monorail - L= 3 m



MRTR

Monorail-Trolley



MRH

Monorail-Hanger



MRE1

Monorail-End stop



MRE2

Monorail picking



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



SHSP

Shooter-Stop



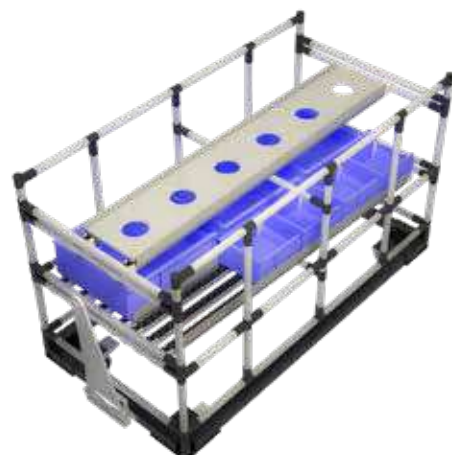
SHST

Shooter-Steering



SHSI

Shooter-Side





# Parts on request

LD300M/E

Manual/Electric lifting device



Safety guard



Directional control



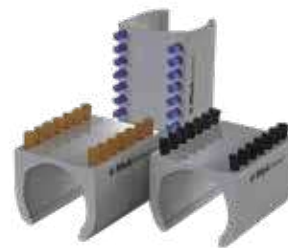
Retaining clip



Sliders



Brush



Piston gas



Floor stop























**Scaglia INDEVA**  
**Italy**

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



**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.de



**Scaglia INDEVA**  
**France**

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



**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.co.uk



**Scaglia INDEVA**  
**Sweden**

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



**SIT INDEVA**  
**United States**

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



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

SIT INDEVA (Shanghai) Ltd  
Shanghai Nanhui Industrial Park  
#2 Building, No 269 YuanZhong Rd. 201300  
Tel. +86 (21) 5108 2206 - 107  
Fax +86(21) 6486 3511  
info@cn.indevagroup.com  
www.indevagroup.cn

*Scaglia*  
1838

**INDEVA**  
INTELLIGENT DEVICES FOR HANDLING