

We cannot find a better presentation letter than our own clients. National and International firms, well known brands which trusted and still trust us and our products.

Leading companies which are at the head of its` corresponding sectors and industries. Because when you are in the lead, the difference between success and failure is minimum, and it is only possible to maintain leadership by looking after the last detail. That's why leaders only trust other leaders. What do you want for your firm? We offer you the best; they already have it.



























# TECHNOLEAN, THE CONTINUOUS IMPROVEMENT TOOL

In the mid of the XX Century the Kaizen concept appears in the Japanese firms, based on the elimination of non productive tasks, as well as the continuous improvement of the processes. Its` philosophy has arrived at all the production lines of the modern industry.

The supply chain of the components to the production line has converted itself into a key task in the factories. It is necessary to have dynamic systems, which allows to make changes, in an easy and fast way. The supply and manufacture of small lots is looked for. The fork lifts and big containers belong to the past.

**Quimilock** is a strategic technological partner for the Industry since more than 50 years ago. The aim has always been to proportion process improvement solutions. The experience acquired through the years is a guarantee of success. The Continuous Improvement area was created more than 20 years ago, during this time there has been a great variety of applications for the market.

**TechnoLean** is the essential tool for the application of all these concepts. It is based on a tubular system (tubes, joints, rails, guides,...) which allows the engineers to create required solutions in record time. With no design or engineering costs, no welding and with the great advantage of being reusable components. The return of the investment is guaranteed.

### **SERVICES**





### WORKSHOPS WITH THE HOSHIN TRUCK

Once the change starts, the main goal is to provide the Lean tools to adapt it to its workshops.

It is well known what to do, there are ideas to evolve, but it is needed the right tool that allows to realize, in the same moment we conceive an idea, all planned changes.

Our technicians join with yours in your workshops. We provide all the material (tubes, roller tracks, guides,...) and all together we finally shape your ideas.





### THE APPLICATION OF KAIZEN

The Quimilock's set of components and solutions are the essential tool for those companies that look for a technologic partner in the improvement of its processes. Tubes, roller tracks, descent guides, joints, castors and other accessory components are manufactured in our production plants, using materials of new generation, achieved thanks to the experience obtained throughout the years.





### **PRACTICAL TRAINING**

In our seminars, theoretical concepts in Continuous Improvement are treated, followed by practices and assemblies of real applications:

- Training the Lean Manufacturing basics
- Designing solutions
- Practices and assembly of structures examples
- Training at Quimilock's facilities
- On-site training





### **ASSEMBLY SCHOOL**

Would you like to train your technicians to perform your own internal Kaizen works? Our technical department welcomes your engineers and operators and then they are trained in the rules and assembly techniques and tips.

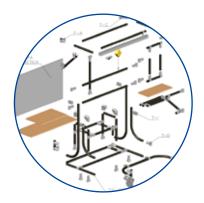


### SERIES PRODUCTION

This is the most traditional method of work. We deliver the finished product (structures, carts, tables,....)



The first step is the design of a prototype. We transform your own ideas and needs into CAD drawings. Once approved and rated, they will be manufactured. Each one of these prototypes has a plate number associated, which will be used as a reference in future fabrications. In the most complex cases, a prototype is manufactured in order to be evaluated in the field.





### PRE-ASSEMBLED KIT

This system allows you to finalize TechnoLean structures on your own. The way it works is the same employed in the production of series, with the only difference that your operators will assemble the components or kits. Do not waste time. Leave in our hands the design of the CAD structures. Once validated, we will be ready to deliver the whole components required for the assembly.





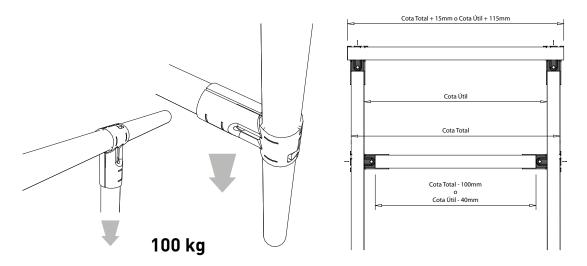
### TECHNOLEAN BULK COMPONENTS

In those cases where your technicians are well trained and experienced in the conception and assembly of TechnoLean tubular structures, you will be able to do your internal Kaizens.

The material is delivered just in time. We can't forget the fact that TechnoLean is the tool employed both for daily changes and for your Continuous Improvement projects.

## **TECHNICAL SPECIFICATIONS**

### Joint and tubes



TechnoLean tubes present both Shear and Tension Strengths for joints up to 100 kg.

### T1-400 tube (1 mm steel wall thickness)

	DISTANCE BETWEEN SUPPORTS (m)							
	0,75	1,00	1,25	1,50	1,75	2,00	2,25	2,50
Load before deflection (kg)	94,6	70,9	56,8	47,3	40,5	35,5	31,5	28,3
Load before failure (kg)	120,7	90,3	72,2	60,1	51,6	45,1	40,1	36,1

Maximum permissible loads for a T1-400 tube in deflection only

	DISTANCE BETWEEN SUPPORTS (m)								
	0,75	1,00	1,25	1,50	1,75	2,00	2,25	2,50	
Suspended load 10 kg	0,87	2,09	4,0	6,95	10,95	16,19	23,80	32,38	
Suspended load 25 kg	2,19	5,14	10,0	17,14	27,62	40,95	58,09	80,0	
Suspended load 50 kg	4,28	10,28	20,0	34,28					
Suspended load 75 kg	6,47								
Suspended load 100 kg									
Suspended load 125 kg									

Deflection in mm for a T1-400 tube suspending a central load

T2-400 tube (2 mm steel wall thickness)

	DISTANCE BETWEEN SUPPORTS (m)								
	0,75	1,00	1,25	1,50	1,75	2,00	2,25	2,50	
Load before deflection (kg)	215,2	161,7	129,1	107,1	92,2	80,6	71,7	64,5	
Load before failure (kg)	256,2	192,1	153,3	128,1	110,2	96,0	85,3	74,7	

Maximum permissible loads for a T2-400 tube in deflection only

	DISTANCE BETWEEN SUPPORTS (m)								
	0,75	1,00	1,25	1,50	1,75	2,00	2,25	2,50	
Suspended load 10 kg	0,48	1,14	2,28	3,90	6,19	9,14	13,33	18,09	
Suspended load 25 kg	1,24	2,85	5,62	9,71	15,23	22,85	32,38	44,76	
Suspended load 50 kg	2,38	5,71	11,24	19,04	30,47	45,71	65,71	89,52	
Suspended load 75 kg	3,62	8,57	17,14	28,57	45,71	68,57			
Suspended load 100 kg	4,86	11,43	22,86	39,04					
Suspended load 125 kg	6,09	14,28	28,57						

Deflection in mm for a T2-400 tube suspending a central load

TR-400 roller track

	DISTANCE BETWEEN SUPPORTS (m)								
	0,75	1,00	1,25	1,50	1,75	2,00	2,25	2,50	
Load before deflection (kg)	197,0	148,0	118,0	98,7	84,6	74,0	65,8	59,2	
Load before failure (kg)	237,0	178,0	142,0	118,0	102,0	88,8	78,9	71,0	

Maximum permissible loads for a TR-400 roller track in deflection only

	DISTANCE BETWEEN SUPPORTS (m)								
	0,75	1,00	1,25	1,50	1,75	2,00	2,25	2,50	
Suspended load 10 kg	0,3	0,7	1,3	2,3	3,6	5,4	7,6	10,5	
Suspended load 25 kg	0,7	1,7	3,3	5,7	9,0	13,4	19,0	26,0	
Suspended load 50 kg	1,4	3,4	6,5	11,3	18,0	27,0	38,0	52,0	
Suspended load 75 kg	2,1	5,0	9,8	17,0	27,0	40,0			
Suspended load 100 kg	2,8	6,7	13,0	23,0					
Suspended load 125 kg	3,5	8,4							

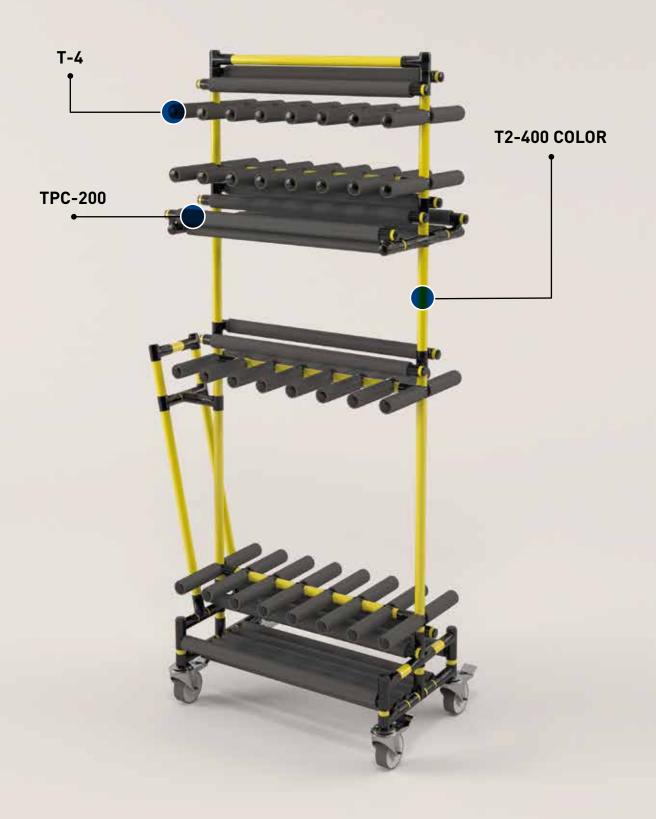
Deflection in mm for a TR-400 roller track suspending a central load

## **TUBES AND ACCESSORIES**

TechnoLean tubes are manufactured with an outer diameter of 28,6 mm. Two wall thicknesses are available: 1 mm for light/medium weight applications or light weight applications with movement and 2 mm for heavier applications, or with flowracks containing roller tracks.

The most common used colours are white and grey, although tubes are available in a wide range of standard colours. We can supply them in any nonstandard colour on request.

Tubes are treated with an anticorrosion inside and outside galvanizing before receiving their thermoplastic coating in our own production plants. Higher quality steel is the result of years of experience in manufacturing and applications.



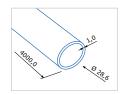


### **T1-400 WHITE**

Steel tube with 1 mm thickness and white thermoplastic coating

**Materials:** Steel tube with 28,6 mm outer diameter and 400 cm length. 1 mm steel thickness and white thermoplastic coating.

**Use:** Designed for light structures. This tube is mostly used for smaller applications: tables, flowracks, light workstations.



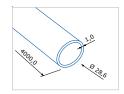


### **T1-400 GREY**

Steel tube with 1 mm thickness and grey thermoplastic coating

**Materials:** Steel tube with 28,6 mm outer diameter and 400 cm length. 1 mm steel thickness and grey thermoplastic coating.

**Use:** Designed for light structures. This tube is mostly used for smaller applications: tables, flowracks, light workstations.



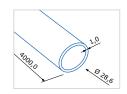




Steel tube with 28,6 mm outer diameter and 400 cm length. 1 mm steel thickness and thermoplastic coating in other colours

**Materials:** Steel tube with 28,6 mm outer diameter and 400 cm length. 1mm steel thickness and thermoplastic coating in other colours.

**Use:** Designed for light structures. This tube is mostly used for smaller applications: tables, flowracks, light workstations.







Steel tube with 1 mm thickness and ESD dissipative thermoplastic coating

**Materials:** Steel tube with 28,6 mm outer diameter and 400 cm length. 1 mm steel thickness and black ESD coating.

**Use:** Designed for light structures. This tube is mostly used for smaller applications: tables, flowracks, light workstations. Allows the discharge of static electricity in combination with ESD joints.









Steel tube with 2 mm thickness and white thermoplastic coating

**Materials:** Steel tube with 28,6 mm outer diameter and 400 cm length, 2 mm steel thickness and white thermoplastic coating.

**Use:** Used for structures with high strength and load requirements: heavy part trolleys, container flowracks and supermarkets.



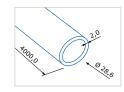
### **T2-400 GREY**



Steel tube with 2 mm thickness and grey thermoplastic coating

**Materials:** Steel tube with 28,6 mm outer diameter and 400 cm length, 2mm steel thickness and grey thermoplastic coating.

**Use:** Used for structures with high strength and load requirements: heavy part trolleys, container flowracks and supermarkets.



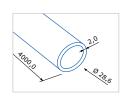
### **T2-400 COLOR**



Steel tube with 2 mm thickness and other colours thermoplastic coating

**Materials:** Steel tube with 28,6 mm outer diameter and 400 cm length. 2 mm steel thickness and thermoplastic coating in other colours.

**Use:** Used for structures with high strength and load requirements: heavy part trolleys, container flowracks and supermarkets.



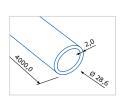
### **T2-400 ESD**



Steel tube with 2 mm thickness and ESD dissipative thermoplastic coating

**Materials:** Steel tube with 28,6 mm outer diameter and 400 cm length, 2 mm steel thickness and black ESD coating.

**Use:** Used for structures with high strength and load requirements: heavy part trolleys, container flowracks and supermarkets. Allows the discharge of static electricity in combination with ESD joints.



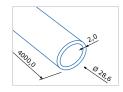
TA2-400



### Aluminium tube with 2 mm thickness

**Materials:** Aluminium tube with 28,6 mm outer diameter and 400 cm length, 2 mm thickness without thermoplastic coating.

**Use:** Used for lightweight structures, but maintaining load capacity requierments. As well as structures with ESD properties.



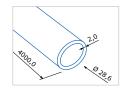
### T2-400 PD



### Pre-bent tube according to standard

**Materials:** Steel tube with 28,6 mm outer diameter and 400 cm length, 2mm steel thickness and thermoplastic coating.

**Use:** In the process of standardization of solutions, such as suitable picking, it is very usual to work with a bent tube format according to specification. Inclination and positions are standardized, but the structures can vary in width or length.

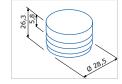


T-4

### Safety cap for tube

Materialss: Black plastic.

**Use:** This cap fits T1-400 and T2-400 tubes. It provides protection and aesthetic. Application by means of a mallet.





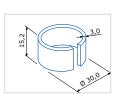


**T-2B** 

Leveling ring for boards

Materials: Black plastic.

**Use:** Used on support tubes of surfaces, such as boards.









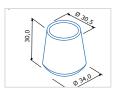
GF-1

#### Rubber foot for tube

Materials: Black plastic.

**Use:** It provides protection and aesthetic for users on tube feet. Safety

function. Light pressure fitted.





### **TPF-200**

#### Foam tube protection

Materials: Grey cellular polyethylene foam.

**Use:** Tubes in contact with sensitive components are protected by protective foam. Length: 200 cm. Inner diameter: 30 mm. Outer diameter: 56 mm.







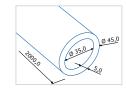
### **TPC-200**

### Rubber tube protection

Materials: Black rubber.

**Use:** Tubes in contact with sharp edged or very hard components are protected by protective rubber. Length: 200 cm. Inner diameter: 35 mm.

Outer diameter: 45 mm.







### TTT

### Transparent PVC tube protection

Materials: Transparent PVC.

**Use:** The tubes that will be in contact with sharp edged or very hard components. Are protected by a PVC transparent coating. 200 cm longitude. Inner diameter: 34 mm. Outer diameter: 44 mm.





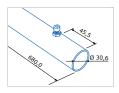


**TI-10** 

### Intermediate tube junction

Materials: Steel with black zinc coating finish.

**Use:** Extension function for two tubes secured by pressure with screws. It allows to design bases with adjustable length.







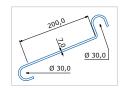
### TH-200

Wire for 200 mm board

Materials: Steel with white zinc coating finish.

**Use:** It allows the application of board picking or mobile fastenings.

Length: 200 mm.







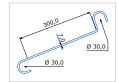
### TH-300

Wire for 300 mm board

Materials: Steel with white zinc coating finish.

**Use:** It allows the application of board picking or mobile fastenings.

Length: 300 mm.







### TH-400

Wire for 400 mm board

Materials: Steel with white zinc coating finish.

**Use:** It allows the application of board picking or mobile fastenings. Length: 400 mm.







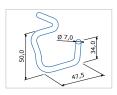


GL-1

### Safety hook for height adjustments

Materials: Steel with white zinc coating finish.

**Use:** Applied on drilled tubes at different heights in order to regulate the position of slide-type connections (T-Vx).



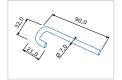


### GL-2

### Safety hook for height adjustments

Materials: Steel with white zinc coating finish.

**Use:** Applied on drilled tubes at different heights in order to regulate the position of other tubes or platforms.





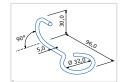


### G-I

### 90º Hook

Materials: Steel with white zinc coating finish.

**Use:** Directly on tubes or monorail trolley. Orthogonal position to the same tube or conveying direction.





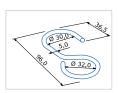


### G-P

#### Flat hook

Materials: Steel with white zinc coating finish.

**Use:** Directly on tubes or monorail trolley. Aligned position to the same tube or conveying direction.





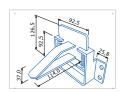
### **SH-1**



### Spring end stop for shooter

Materials: Steel with black zinc coating finish.

**Use:** This component is used as an end stop for gravity roller tracks. Activated by contact with another external element, usually a tube of another structure. Retention flange has a limited vertical movement by the action of two springs. Fix to the structure is performed by eight T-H joints together on two distinct tubes.







## **ROLLER TRACKS AND ACCESSORIES**

Roller tracks are designed for the **movement of boxes and containers** when safety and impact resistance are required. They are the basis of replenishment areas.

TechnoLean roller tracks respond to these requirements by offering **increased resistance** per wheel (19 kg), great density (112 wheels per 400 cm) and riveted with reinforced steel (3,20 mm diameter).



### Roller tracks and accessories

### TR-400

### Standard roller track



**Materials:** Reinforced steel profile. Black plastic wheels and galvanized steel rivets. Roller track length: 400 cm. Wheels per rail: 112. Wheel diameter: 32 mm. Weight supported per wheel: 19 kg.

**Use:** The reinforced steel profile is used for the descent of containers of single parts in supply zones. The support at the ends is performed by T-M connectors and tube intermediate support is required when used length exceeds 150 cm.





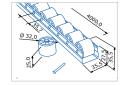
### **TR-400 ESD**

### Dissipative standard roller track



**Materials:** Reinforced steel profile. ESD black plastic wheels and galvanized steel rivets. Rail length: 400 cm. Wheels per rail: 112. Roller diameter: 32 mm. Weight supported per wheel: 19 kg.

**Use:** The reinforced steel profile is used for the descent of containers of single parts in supply zones. The support at the ends is performed by T-M connectors and tube intermediate support is required when used length exceeds 150 cm. It allows the discharge of static electricity in combination with ESD joints, connectors and tubes.





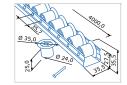
### **TRL-400**





**Materials:** Reinforced steel profile. Black plastic wheels and galvanized steel rivets. Roller track length: 400 cm. Wheels per rail: 112. Wheel diameter: 24 mm. Lateral stop diameter: 35 mm.

**Use:** The roller tracks with lateral stop are used for the decent of containers which are guided by the rollers themselves, avoiding the use of guides. The support at the end is performed by T-M connectors in those cases where the length used is higher than 150 cm.





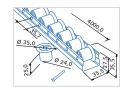
### TRL-400 ESD

#### Dissipative Roller tracks with lateral stop



**Materials:** Reinforced steel profile. ESD black plastic wheels and galvanized steel rivets. Rail length: 400 cm. Wheels per rail: 112. Roller diameter: 24 mm. Lateral stop diameter: 35 mm.

**Use:** The roller tracks with lateral stop are used for the decent of containers which are guided by the rollers themselves, avoiding the use of guides. The support at the end is performed by T-M connectors. Allows the discharge of static electricity combining with conectors, joints and ESD tubes.







### Roller tracks and accessories

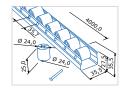
### **TRM-400**

### Intermediate rail, to combine with TRL-400



**Materials:** Reinforced steel profile. Black plastic wheels and galvanized steel rivets. Roller track length: 400 cm. Wheels per rail: 112. Wheel diameter: 24 mm.

**Use:** The intermediate roller track is used between two TRL-400. So as to increase the stability of the containers guided, in case of larger dimensions or weights. The support on the ends are made by T-M conectors. And requiers intermediate supports on the tubes in case the length used is higher than 150 cm.





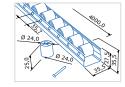
### **TRM-400 ESD**

#### Intermediate EDS rail, to combine with TRL-400 ESD



**Materials:** Reinforced steel profile. ESD black plastic wheels and galvanized steel rivets. Rail length: 400 cm. Wheels per rail: 112. Roller diameter: 24 mm.

**Use:** The intermediate roller track is used between two TRL-400 ESD. So as to increase the stability of the containers guided, in case of larger dimensions or weights. The support on the ends are made by T-M conectors. Allows the discharge of static electricity combined with connectors, joints and ESD tubes.





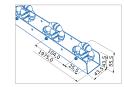
### **ROM-50**

### Omni roller track with 50mm wheels



**Materials:** Reinforced steel profile. Reinforced black plastic wheels. Length: 100 cm.

**Use:** Suitable for workstations where side direction flow is required. Fixing to the structure is realized by means of universal T-H connector. Wheel diameter: 50 mm.





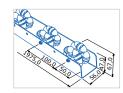
#### **ROM-60**



Omni roller track with 60 mm wheels

**Materials:** Reinforced steel profile. Reinforced black plastic wheels. Length: 100 cm.

**Use:** Suitable for workstations where side direction flow is required. Fixing to the structure is realized by means of universal T-H connector. Wheel diameter: 60 mm.





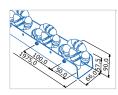
### Roller tracks and accessories

### **ROM-80**

Omni roller track with 80 mm wheels

Materials: Reinforced steel profile. Reinforced black plastic wheels. Length: 100 cm.

Use: Suitable for workstations where side direction flow is required. Fixing to the structure is realized by means of universal T-H connector. Wheel diameter: 80 mm.



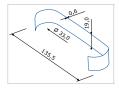


### F-TR

Brake for TR-400 roller track

Materials: Black coating steel sheet.

Use: Brakes are placed on the roller tracks whenever it is desired to reduce the containers descending speed.







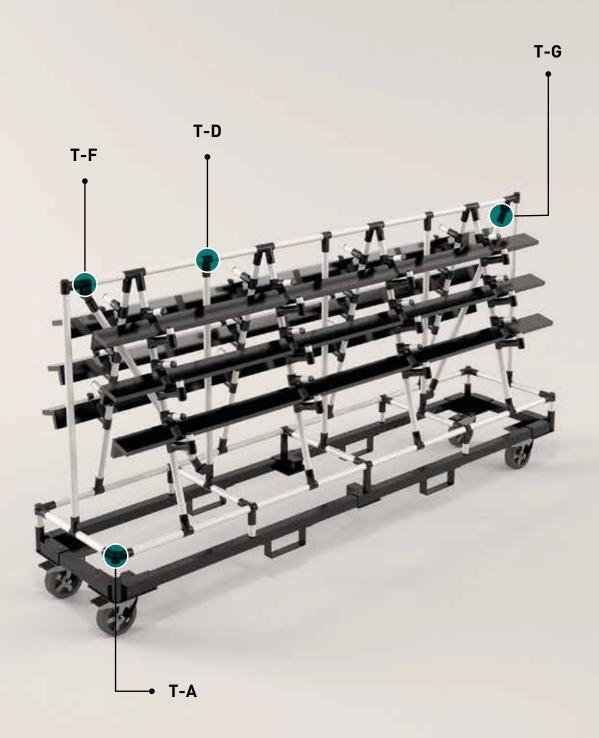


## **JOINTS AND ACCESSORIES**

The TechnoLean joints are manufactured using automatic processes, which guarantees quality and reliability. Their basic function is the attachment of the tubes.

The 2,5 mm thickness provides them with a great resistance, to sliding and tearing forces.

All of the joints have an anticorrosive coating. A black zinc coating is used for the standard pieces and a White zinc coating for the ESD pieces. Both are prepared with a Crome base with the most modern technology, free of elements harmful to health.



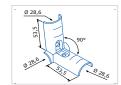


T-A

### 90° Inner tube joint

Materials: Steel with black zinc coating finish.

**Use:** Combined with T-A, T-B and T-C joints to make connections using two S1 or S4 (micro-encapsulated) screws.





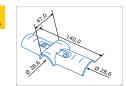


### T-B

### 180° Long tube joint

Materials: Steel with black zinc coating finish.

**Use:** Combined with T-A (2) and T-B (1) joints to make connections using two S1 or S4 (micro-encapsulated) screws.





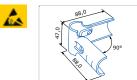


### T-C

### 90° Outer tube joint

Materials: Steel with black zinc coating finish.

**Use:** Combined with one T-A joint to make connections using two S1 or S4 (micro-encapsulated) screws.





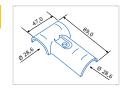


### T-D

### Standard tube joint

Materials: Steel with black zinc coating finish.

**Use:** Combined with another T-D joint to make connections using one S1 or S4 (micro-encapsulated) screw.







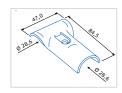




**T-DT**Standard tangential tube joint

Materials: Steel with black zinc coating finish.

**Use:** Combined with another T-DT joint to make connections using one S1 or S4 (micro-encapsulated) screw.





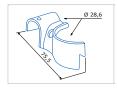


T-E

Crossover tube joint at 90°

Materials: Steel with black zinc coating finish.

**Use:** Combined with another T-E joint to make connections using one S1 or S4 (micro-encapsulated) screw.





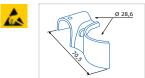


T-ET

Tangential crossover tube joint

Materials: Steel with black zinc coating finish.

**Use:** Combined with another T-ET joint to make connections using one S1 or S4 (micro-encapsulated) screw. Used as a guiding system.







T-F

Free union joint

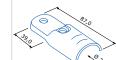
Materials: Steel with black zinc coating finish.

**Use:** Combined with another T-F joint to make connections using one S1 or S4 (micro-encapsulated) screw. The angle between tubes is achieved by two T-G joints.











### T-G



### Free union joint for tube end

Materials: Steel with black zinc coating finish.

**Use:** Combined with another T-G joint to make connections using one S1 or S4 (micro-encapsulated) screw. The angle between tubes is achieved by two T-F, T-K or T-T joints.



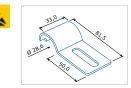


### T-H

### Multifunction joint

Materials: Steel with black zinc coating finish.

**Use:** Combined with another T-H joint to make connections using one S1 or S4 (micro-encapsulated) screw or another screw depending on desired functionality.







#### T-L

### Union joint for parallel tubes

Materials: Steel with black zinc coating finish.

**Use:** Combined with another T-I joint to make connections using one S1 or S4 (micro-encapsulated) screw. Paired running joints are used as reinforcement or structures coupling.







### T-J

### Compact tube joint

Materials: Steel with black zinc coating finish.

**Use:** Combined with another T-J joint to make connections using one S1 or S4 (micro-encapsulated) screw.

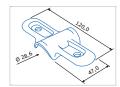
















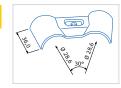
### Free double union joint

Materials: Steel with black zinc coating finish.

**Use:** Combined with another T-K joint to make connections using one S1 or S4 (micro-encapsulated) screw. The angle between tubes is achieved by four T-G joints.









**T-L 30** 

30° Fixed angle joint

Materials: Steel with black zinc coating finish.

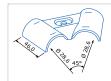
**Use:** Combined with another T-L 30 joint to make connections using one S1 or S4 (micro-encapsulated) screw. Used to make braces (clamping straps) and board support.















Materials: Steel with black zinc coating finish.

**Use:** Standard reference for angles between tubes. Combined with another T-L 45 joint to make connections using one S1 or S4 (micro-encapsulated) screw. Used to make braces (clamping straps) and board support.



A



T-L 60



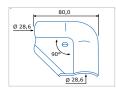
60° Fixed angle joint

Materials: Steel with black zinc coating finish.

**Use:** Combined with another T-L 60 joint to make connections using one S1 or S4 (micro-encapsulated) screw. Used to make braces (clamping straps) and board support.









T-L 90

90° Fixed angle joint

Materials: Steel with black zinc coating finish.

**Use:** Combined with another T-L 90 joint to make connections using one S1 or S4 (micro-encapsulated) screw.







T-S

Adapting joint to aluminium profile

Materials: Steel with black zinc coating finish

**Use:** Combined with another T-S joint for making unions, using S1 or S4 (micro-encapsulated) screws. Or other screws according to functionality. Used for attaching tubes to external components.





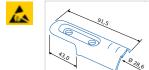


T-T

Angle joint for tube end

Materials: Steel with black zinc coating finish.

**Use:** Combined with another T-T joint to make connections using one S1 or S4 (micro-encapsulated) screw. Enables the free or fixed articulation of the end of two tubes by adding two T-G joints more.





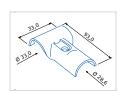


**T-D2** 

90° Over-joint joint

Materials: Steel with black zinc coating finish.

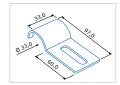
**Use:** Combined with another T-D2 joint to make connections using one S1 or S4 (micro-encapsulated) screw. It is positioned over other joints to achieve the same functionality as T-D reference.

















Materials: Steel with black zinc coating finish.

**Use:** Combined with another T-H2 joint to make connections using one S1 or S4 (micro-encapsulated) screw or another screw depending on desired functionality. It is positioned over other joints to achieve the same functionality as T-H reference.





**T-V1** 

90° sliding joint

Materials: Steel with black zinc coating finish.

**Use:** Combined with another T-V1 joint to make connections using one S1 or S4 (micro-encapsulated) screw. The support on the tube is made with a T-7 reference.







**T-V2** 

Multifunction sliding joint

Materials: Steel with black zinc coating finish.

**Use:** Combined with another T-V2 joint to make connections using one S1 or S4 (micro-encapsulated) screw. The support on the tube is made with a T-7 reference.







**T-V3** 

Double hinge joint

Materials: Steel with black zinc coating finish.

**Use:** Combined with another T-V3 joint to make connections using one S1 or S4 (micro-encapsulated) screw. The support on the tube is made with two T-7 references.

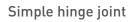












Materials: Steel with black zinc coating finish.

**Use:** Combined with another T-V4 joint to make connections using one S1 or S4 (micro-encapsulated) screw. The support on the first tube is made with a T-7 reference and direct support on the second one.



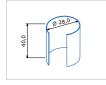


### ADP1

Adapter for 28 mm tube

Materials: Black plastic.

**Use:** Used between TechnoLean joints (28,6 mm diameter) and 28 mm diameter tubes. Provides support for external systems based on tubes.







**T-7** 

Sliding joint accessory

Materials: Black plastic.

Use: Combined with another T-V1, T-V2, T-V3 and T-V4 joints is used

to allow joints to slide smoothly over the tubes.





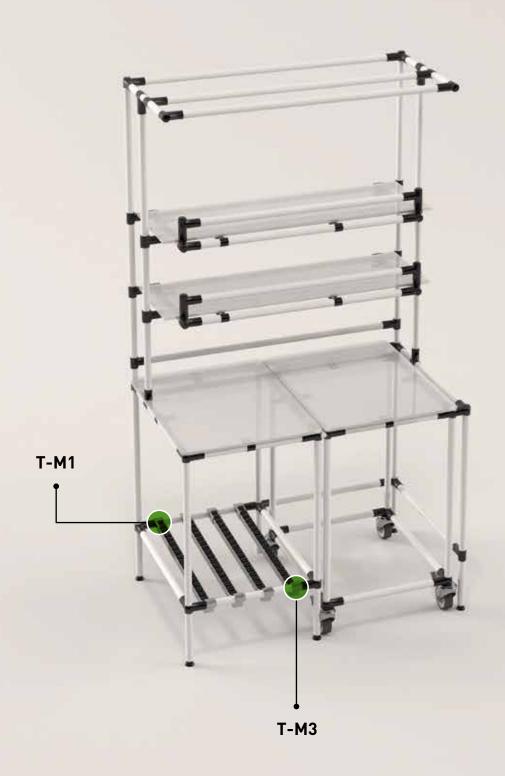




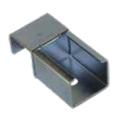
# **CONNECTORS**

The basic function of the connectors is the attachment of the roller rails to the tubular structure. The edge-based shape and the large size of the connectors are optimum for high load and force capacity.

All of the connectors have an anticorrosive coating, composed of white zinc coating.



#### **Connectors**

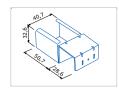


**T-M1** 

#### Standard connector without end stop

Materials: ASteel with white zinc coating finish.

**Use:** Used to support roller track or guide on tube without end stop. Secured to the tube with a S2 grub screw.





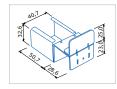


**T-M2** 

#### Standard connector with low end stop

Materials: Steel with white zinc coating finish.

**Use:** Used to support roller track or guide on tube, with 20 mm end stop. Secured to the tube with a S2 grub screw.





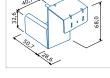


**T-M3** 

#### Standard connector with high end stop

Materials: Steel with white zinc coating finish.

**Use:** Used to support roller track or guide on tube, with 30 mm end stop. Secured to the tube with a S2 grub screw.





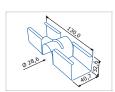


T-M4

#### Bridge between two roller tracks

Materials: Steel with white zinc coating finish.

**Use:** Used to support roller track or guide on tube, with intermediate support. Bridge function even with small angle changes.











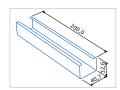
**T-M5** 

#### Direct bridge type connector

Materials: Steel with white zinc coating finish.

Use: Used to reuse TR-400 roller track scraps in order to obtain a

longer roller track.







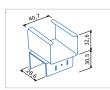
#### T-M6R

#### Intermediate support type connector

Materials: Steel with white zinc coating finish.

Use: Used to support roller track or guide on tube, with guiding

anchored function. Secured to the tube with a S2 grub screw.







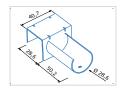
#### **T-M8**

#### Connector between tubes without end stop

Materials: Steel with white zinc coating finish.

Use: Connection between two tubes at 90° without end stop. Secured

to the tube with a S2 grub screw.







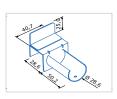
T-M8S

#### Connector between tubes with low end stop

Materials: Steel with white zinc coating finish.

Use: Connection between two tubes at 90°, with 20 mm end stop.

Secured to the tube with a S2 grub screw.





#### **Connectors**

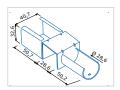


T-M10

Roller track-tube bridge connector

Materials: Steel with white zinc coating finish.

**Use:** Used to support roller track or guide on tube with intermediate support. Light pressure fitted.





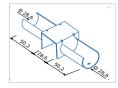


**T-M12** 

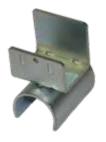
Tube-tube bridge connector

Materials: Steel with white zinc coating finish.

**Use:** Used to support two tubes on another tube with intermediate support. Light pressure fitted.





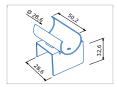


T-M13

Tangential support connector

Materials: Steel with white zinc coating finish.

**Use:** Used for guiding with tube. Also used to connect two tubes tangentially at 90°. Secured to the tube with a S2 grub screw.







T-M14

Rotating connector

Materials: Steel with white zinc coating finish.

**Use:** Used to enable a rotating functionality of two round tubes, with non-blocking twist. Secured to the tube with a S2 grub screw.











**T-M15** 

#### Connector between tubes with high end stop

Materials: Steel with white zinc coating finish.

**Use:** Connection between two tubes at 90° with 30 mm end stop.

Secured to the tube with two S2 grub screws.



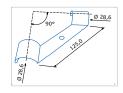


#### **T-M17**

#### Board corner connector

Materials: Steel with white zinc coating finish.

**Use:** Support of board corners. Fixing the piece to the board will be done with a non supplied screw. The position of the board base will be exactly at the position of the axes of the horizontal tubes that support it. Light pressure fitted.





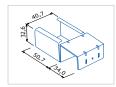


#### T33-M1

#### Connector without stop, mounted upon another joint

Materials: Steel with white zinc coating finish.

**Use:** Used for mounting a rail or guide upon a joint, mainly at the entrance of a container. Does not have stop. Is mounted by using an S2 grub screw.





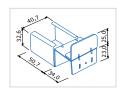


#### T33-M2

#### Connector with the stop at a low position

Materials: Steel with white zinc coating finish.

**Use:** Used for mounting a rail or guide upon a joint, the stop function with 20 mm height. Is mounted by using an S2 grub screw.



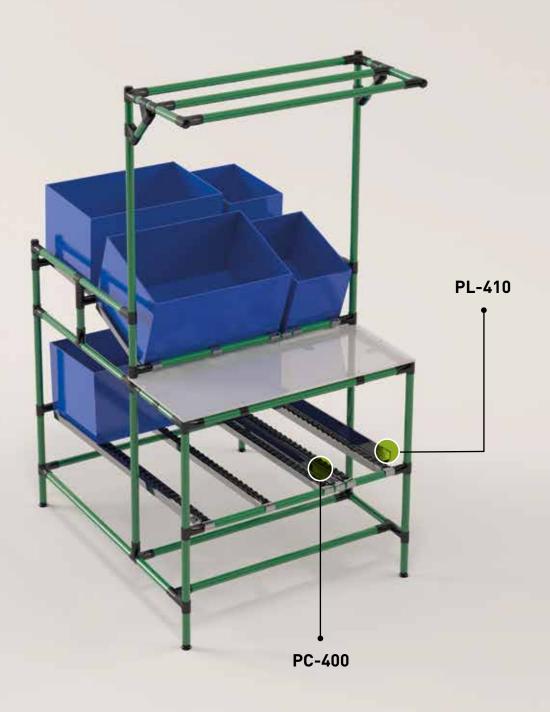


# **DESCENT GUIDES**

The guides are the plastic components used for the correct sliding of containers or pieces upon the rails. Their function is to provide a downhill path, avoiding that the elements that come down could detain or jam themselves.

There are two existing type of guides: The lateral guides are attached upon the rails and usually are placed on both sides of the sliding path. The central guides are used to separate all the interior sliding paths.

Depending on the aplication made, the guides are supplied with 2 or 4 meters length.



### **Descent guides**

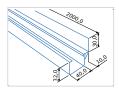


**PL-210** 

200 cm Side guide with retaining edge at 10 mm

Materials: White plastic.

Use: Assembled on roller track for guidance. Length: 200 cm. Edge height: 30 mm.





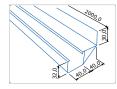


PL-240

200 cm Side guide with retaining edge at 40mm

Materials: White plastic.

Use: Assembled on roller track for guidance. Length: 200 cm. Edge height: 30 mm.







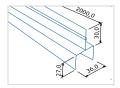
**PC-200** 

200 cm Central guide

Materials: White plastic

Use: Assembled with T-M connectors for central guidance. Length:

200 cm. Edge height: 30 mm.







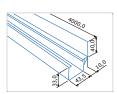
**PL-410** 

400 cm Side guide with retaining edge at 10 mm

Materials: Grey plastic.

Use: Assembled on roller track for guidance. Length: 400 cm. Edge

height: 40 mm.







### **Descent guides**

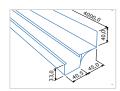


**PL-450** 

400 cm Side guide with retaining edge at 50 mm

Materials: Grey plastic.

**Use:** Assembled on roller track for guidance. Length: 400 cm. Edge height: 40 mm.





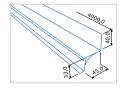


PL-450C

Reduced side guide. PL-450 version

Materials: Grey plastic.

**Use:** Assembled on roller track for guidance. Length: 400 cm. Edge height: 40 mm. It's a PL-450 guide version fixed to the roller track on one side.







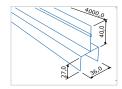
**PC-400** 

400 cm Central guide

Materials: Grey plastic.

**Use:** Assembled with T-M connectors range for central guidance.

Length: 400 cm. Edge height: 40 mm.





# LABEL HOLDERS AND ACCESSORIES

The label holders are components used for marking the references of pieces supplied in the sliding paths for containers.

They are manufactured in plastic and there exist two typologies: Lineal, which are transparent rods of 1,5 m which can be cut at the required measurement. Individual, used for one label.

How to use is always the same method. They are attached upon the tube used to support the railes, in the entrance position of the containers, as well as the exit position.



#### Label holders and accessories

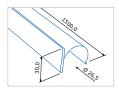


EH-150

30 mm Height label holder

Materials: Transparent plastic.

Use: Direct assembly on tube. Length: 150 cm. Label holder height: 30 mm.







#### **ES-150**

30mm Height label holder with assembly based on clamping clips

Materials: Transparent plastic.

**Use:** Assembly on tube with T-5 clamps. Length: 150 cm. Label holder height: 30 mm.





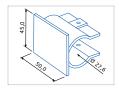
T-6A

50 mm Individual label holder

Materials: Black plastic

**Use:** Secured on tube with a S9 screw. Length: 50 mm. Label holder

height: 45 mm.







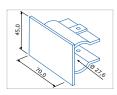
**T-6B** 

70 mm Individual label holder

Materials: Black plastic.

Use: Secured on tube with a S9 screw. Length: 70 mm. Label holder

height: 45 mm.







## Label holders and accessories



T-5

# Clamping clip for ES-150

Materials: Transparent plastic.

 $\textbf{Use:} \ \textbf{Clamping clip for ES-150 label holder.} \ \textbf{Fixed to T-M connectors to}$ 

prevent movements.



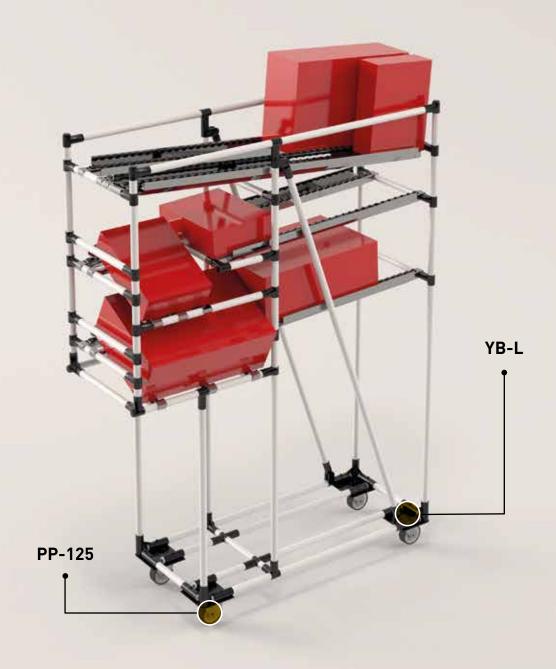


# CASTORS, FEET AND ACCESSORIES

An important factor of the conception and design of tubular solutions is the use of castors and foots. There exist multiple factors to bear in mind: Need of displacement or not, movement frequency, load capacity, manipulation method...

Usually foots are used in structures that are not going to be moved from its' working position.

Castors are essential components on elements that will change position. Depending on the type of movement and the load they will support, you can use tube fitting castors, top plate castors, or Heavy Load Castors.



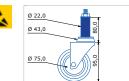


#### T-75

#### 75 mm diameter Castor for tube

Materials: Steel fork with rubber wheel.

**Use:** Embedded castor in the tube, for light weight structures. Swivel function without brake. Wheel diameter: 75 mm. Maximum supported load: 75 kg.







#### **TF-75**

#### 75 mm diameter Castor for tube with foot brake

Materials: Steel fork with rubber wheel.

**Use:** Embedded castor in the tube, for light weight structures. Swivel function with foot brake. Wheel diameter: 75 mm. Maximum supported load: 75 kg.







#### T-125

#### 100 mm diameter Castor for tube

Materials: Steel fork with rubber wheel.

**Use:** Embedded castor in the tube, for light weight structures. Swivel function without brake. Wheel diameter: 100 mm. Maximum supported load: 125 kg.







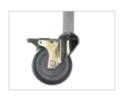
#### **TF-125**

#### 100 mm diameter Castor for tube with foot brake

Materials: Steel fork with rubber wheel.

**Use:** Embedded castor in the tube, for light weight structures. Swivel function with foot brake. Wheel diameter: 100 mm. Maximum supported load: 125 kg.









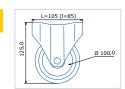


#### P-125

#### Fixed 100 mm diameter castor with top plate

Materials: Steel fork with rubber wheel.

**Use:** Top plate castor for medium and heavy structures. Fixed castor function. Wheel diameter: 100 mm. Max. supported load: 125 kg. Mounted with S3, S5 or S7 screws depending on accessories used (see castors accessories section).



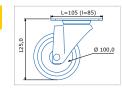


#### **PP-125**

#### Swivel 100 mm diameter castor with top plate

Materials: Steel fork with rubber wheel.

**Use:** Top plate castor for medium and heavy structures. Swivel castor function without brake. Wheel diameter: 100 mm. Max. supported load: 125 kg. Mounted with S3, S5 or S7 screws depending on accessories used (see castors accessories section).





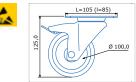


#### **PPF-125**

# Swivel 100 mm diameter castor with top plate and foot brake

Materials: Steel fork with rubber wheel.

**Use:** Top plate castor for medium and heavy structures. Swivel castor function with foot brake. Wheel diameter: 100 mm. Max. supported load: 125 kg. Mounted with S3, S5 or S7 screws depending on accessories used (see castors accessories section).





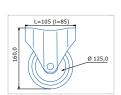


#### P-200

#### Fixed 125 mm diameter castor with top plate

**Materials:** Steel fork with elastic Nylon wheel plus elastic inter-layer rubber.

**Use:** Top plate castor for medium and heavy structures. Fixed castor function. Wheel diameter: 125 mm. Max. supported load: 200 kg. Mounted with S3, S5 or S7 screws depending on accessories used (see castors accessories section).





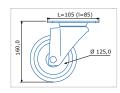


**PP-200** 

Swivel 125 mm diameter castor with top plate

**Materials:** Steel fork with elastic Nylon wheel plus elastic inter-layer rubber.

**Use:** Top plate castor for medium and heavy structures. Swivel castor function without brake. Wheel diameter: 125 mm. Max. supported load: 200 kg. Mounted with S3, S5 or S7 screws depending on accessories used (see castors accessories section).





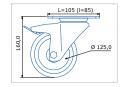


#### **PPF-200**

Swivel 125 mm diameter castor with top plate and foot brake

**Materials:** Steel fork with elastic Nylon wheel plus elastic inter-layer rubber.

**Use:** Top plate castor for medium and heavy structures. Swivel castor function with foot brake. Wheel diameter: 125 mm. Max. supported load: 200 kg. Mounted with S3, S5 or S7 screws depending on accessories used (see castors accessories section).







P-A

Standard adjustable foot

Materials: Steel screw with nut, and black plastic.

**Use:** Leveling function. Embedded nut on tube or PAM-100. Screw in or out to allow height regulation.





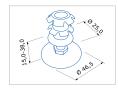


P-A ESD

ESD Standard adjustable foot

Materials: Steel screw with nut.

**Use:** Leveling function. Embedded nut on tube or PAM-100. Screw in or out to allow height regulation. Used in ESD applications.







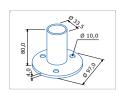




PS-M
Ground attachment foot

Materials: Steel core.

**Use:** Anchoring of tubes to the ground. Three holes for operation.



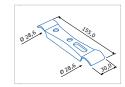


#### T-P

#### Castor tube bracket

Materials: Steel with white zinc coating finish.

**Use:** Fixes top plate castors to a pair of tubes with four S3 screws, or four S5 screws (in case you fix the PI-10 middle plate to the central parts of structures with six or more castors). Four units are required per castor.



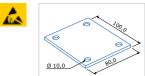


### PI-10

#### Intermediate castor tube plate

Materials: Steel with black zinc coating finish.

**Use:** Enhanced castor fix to a pair of tubes with T-P accessories. Use the same four S5 screws that secure T-P references. Reinforcing function of intermediate castors of the structures.





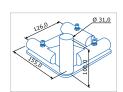


#### YB-L

#### Left corner plate

Materials: Steel with black zinc coating finish.

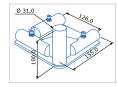
**Use:** Corner base for top plate castor. Two output tubes to the left, one tube to the right and one vertical tube. The castor is secured with four S7 screws. The tubes are secured with four S8 screws.













# Right corner plate

Materials: Steel with black zinc coating finish.

**Use:** Corner base for top plate castor. Two output tubes to the right, one tube to the left and one vertical tube. The castor is secured with four S7 screws. The tubes are secured with four S8 screws.





#### YB-I

#### Intermediate plate

Materials: Steel with black zinc coating finish.

**Use:** Intermediate base for top plate castor. One tube passes through the piece, so a great strength is achieved. In addition, two other tubes go out from the piece with parallel direction to previous tube. The castor is secured with four S7 screws. The tubes are secured with six S8 screws. This component is a reinforced version for T-P references.







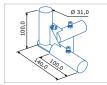
#### **PAM-100**

#### Corner joint for foot

Materials: Steel with black zinc coating finish.

**Use:** Corner base for P-A foot. One output tube to the right, one tube to the left and one vertical tube. The nut of the foot is introduced in the base by pressure.













# **HEAVY LOAD - MAXIMUM STRENGTH**

Assembly system for trolleys and milk trains based on square tube profile, together with accessories: plates, reinforced castors, towing bar and rear hook.

The corner and central plates have an output of vertical round tube, where the remaining zones of the structure will be fixed, according to required conditions. It is possible to standardize the rolling bases depending on the logistics needs and apply kaizen solutions to the central body of each trolley.



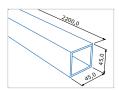


HL-220

#### Square steel tube



**Use:** 45x45 mm square tube with 2 mm wall thickness. Length: 220 cm. Can be cut to required size with the same saw used for round tube or roller track.





#### HL-P

#### Corner plate for square tube

Materials: Steel with black zinc coating finish.

**Use:** Corner plate for castor with lateral output of two square tubes and one round vertical tube. Castor secured with four S7 screws. Square tube secured with four S6 screws.



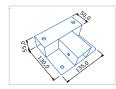


#### **HL-PI**

#### Intermediate plate for square tube

**Materials:** Steel with black zinc coating finish.

**Use:** Intermediate plate for castor, with a square tube passing through and a square transversal tube output. Square tube secured with three S6 screws. Castor secured with two of those S6 screws, and two S7 additional screws



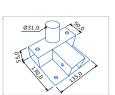


#### **HL-PIT**

# Intermediate plate for square tube with vertical output tube

Materials: Steel with black zinc coating finish.

**Use:** Intermediate plate for castor, with a square tube passing through, a square transversal output tube and a vertical round tube. Square tube secured with three S6 screws. Castor secured with two of those S6 screws, and two S7 additional screws.









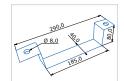
#### **HL-PF**

#### Anti-roll accessory for square tub

Materials: Steel with black zinc coating finish.

**Use:** Fixed to the square tube for guiding the fork lift tongues. Fixed

with two S6 screws.





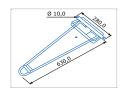
#### **HL-T500**

#### Towing bar

Materials: Steel with white zinc coating finish.

 $\mbox{\bf Use:}$  Front towing bar for square tube trolleys. Mounting plates and

screws included.





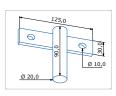
#### **HL-TR**

#### Rear hook

Materials: Steel with white zinc coating finish.

**Use:** Rear hook for square tube trolleys. Combined with the HL-T500

towing bar in assembly of supply trains.



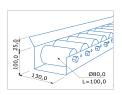


#### High resistance roller tracks with side stop



**Materials:** High resistance profile, roller diameter 80 mm with axle bearings. Length of profile, to define upon requierments. Distance between rollers: 100 mm. Roller width: 100 mm. The profile has a metalic edge on one side.

**Use:** The high resistance roller tracks allows sliding guidance of large and heavy containers. Its normally used in positions near the floor. Disposes of a side metalic edge, so as to guarantee the correct guidance of the containers.





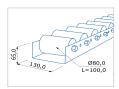
# **HL-TRM80**



#### High resistance roller tracks without side stop

**Materials:** High resistance profile, roller diameter 80 mm with axle bearings. Length of profile, to define upon requierments. Distance between rollers: 100 mm. Roller width: 100 mm.

**Use:** The high resistance roller tracks allows sliding guidance of large and heavy containers. Its normally used in positions near the floor. It is necessary in those cases where you need aditional supports for the containers, as well as the two side tracks HL-TR80.





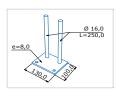


#### **HL-PTS80**

Leg support for high resistance roller tracks

Materials: Set made of steel.

**Use:** The foot is made by using two threaded rods. Which allows the hight regulation of the roller tracks. They are positioned at the beginning and at the end of the roller path. They have two holes which allows fastening to the ground by using concrete screws.



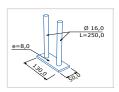


#### HL-PTM80

Central support for high resistance roller tracks

Materials: Set made of steel.

**Use:** The foot is made by using two threaded rods. Which allows the hight regulation of the roller tracks. They are placed at intermediate positions of the roller tracks. Their function is only to support, therefore they are not screwed to the ground.



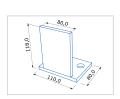


#### **HL-TOP80**

Stop for high resistance roller tracks

Materials: Set made of steel.

**Use:** The stop is made by a steel plate to avoid the advance of the product. It has two holes for screwing to the profile and the foot (HL-PTS80), so as to guarantee high resistance fastening.





HL-FR80

High resistance roller track break

Materials: Set made of steel.

**Use:** The break system is made by a mecanism which allows the detention and liberation of the containers running down the reinforced rollers. It is activated by a foot pedal at on of the ends of the roller path.



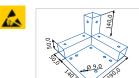


HL-A

Corner plate for square tube

Materials: Black zinc plated steel.

**Use:** Corner plate for wheel, with two lateral square tubes and one vertical square tube. Wheel fastening by using four S7 screws. Square tube security using five S6 screws.







HL-D

Intermediate plate for square tube

Materials: Black zinc plated steel.

**Use:** Corner with two lateral square tubes and one vertical square

tube. Square tube fastening by using five S6 screws.







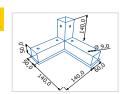
HL-E

Corner for square tube

Materials: Black zinc plated steel.

Use: Corner with two lateral square tubes and one vertical square

tube. Square tube fastening by using five S6 screws.







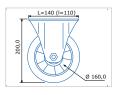
HL-C160

160 mm Fixed elastic rubber castor

Materials: Steel fork with elastic rubber wheel.

Use: Top plate castor for heavy loadings. Fixed castor function. Wheel

diameter: 160 mm. Mounted with four S7 screws.







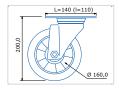
#### HL-C160P

160 mm Swivel elastic rubber castor

Materials: Steel fork with elastic rubber wheel.

Use: Top plate castor for heavy loadings. Swivel castor function. Wheel

diameter: 160 mm. Mounted with four S7 screws.





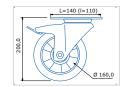


#### HL-C160F

160 mm Swivel elastic rubber castor with foot brake

Materials: Steel fork with elastic rubber wheel.

Use: Top plate castor for heavy loadings. Swivel castor function with foot brake. Wheel diameter: 160 mm. Mounted with four S7 screws.







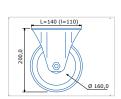
#### **HL-N160**

160 mm Fixed Nylon castor

Materials: Steel fork with Nylon wheel and polyurethane bandage.

Use: Top plate castor for heavy load structures. Fixed castor function.

Wheel diameter: 160 mm. Mounted with four S7 screws.







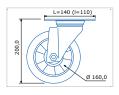
**HL-N160P** 

160 mm Swivel Nylon castor

Materials: Steel fork with Nylon wheel and polyurethane bandage.

**Use:** Top plate castor for heavy load structures. Swivel castor function.

Wheel diameter: 160 mm. Mounted with four S7 screws.





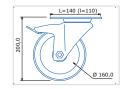


#### **HL-N160F**

160 mm Swivel Nylon castor with foot brake

Materials: Steel fork with Nylon wheel and polyurethane bandage.

**Use:** Top plate castor for heavy load structures. Swivel castor function with foot brake. Wheel diameter: 160 mm. Mounted with four S7 screws.







T-4MB

Safety cap for square tube

Materials: Black plastic.

**Use:** Caps used at the ends of the HL-220 square tubes. Proportions

security and aesthetic. Application by means of a mallet.



# **FASTENERS**

An important part of the system are the screws necessary for the mounting of the components, so as to guarantee the correct application and function.

On each components description the screw is specified for its`use on the assembly.

The non use of the systems own screws can lead you to errors and loss of resistance in the applications.



#### **Fasteners**





S1 screw. M 6x28

Materials: Steel with black coating finish.

Use: Screw supplied with standard nut. Suitable for tube joints in general.









#### S<sub>1</sub>C

S1C screw, M 6x28

Materials: Steel with black coating finish.

Use: Screw supplied with T nut. Suitable for tube joints in general.







#### **S2**

S2 grub screw. M 4x5

Materials: Steel with black coating finish.

**Use:** Conical grub type screw. Suitable for fixing connectors to tube.







# **S3**

S3 screw, M8x40

Materials: Steel with black coating finish.

**Use:** Screw used for fixing top plate castors to T-P tube joints, in cases when PI-10 reinforced plate is not added. It is supplied with washer and anti-loosening nut.













#### **S4**

# Micro-encapsulated S4 screw. M 6x28

Materials: Steel with black coating finish and tightening sealant.

**Use:** Screw supplied with standard nut. Suitable for the tube connectors in general. The microencapsulated sealant provides greater resistance to the joints, providing an enhanced loosening torque. Required on heavy loads or structures with regular movements.









#### S4C

#### Micro-encapsulated S4 screw. M 6x28

Materials: Steel with black coating finish and tightening sealant.

**Use:** Screw supplied with T nut. Suitable for the tube connectors in general. The micro-encapsulated sealant provides greater resistance to the joints, providing an enhanced loosening torque. Required on heavy loads or structures with regular movements.









#### **S5**

#### S5 screw. M 8x45

Materials: Steel with coating finish.

**Use:** Screw used for fixing top plate castors to T-P joints, in cases when PI-10 plate is added. Supplied with washer and anti-loosening nut.







#### **S6**

#### S6 screw. M 8x65

Materials: Steel with coating finish.

**Use:** Screw used for fixing square tube to intermediate and corner components in the Heavy Load structures. Supplied with washer and anti-loosening nut.





#### **Fasteners**



# **S7**

S7 screw. M 8x20

Materials: Steel with coating finish.

**Use:** Screw used for fixing top plate castors to intermediate and corner components in the Heavy Load structures and to YB-L/YB-R component. It is supplied with washer and anti-loosening nut.







#### **S8**

S8 screw, M 6x12

Materials: Steel with coating finish.

**Use:** Screw used for fixing round tube to intermediate components, the corner in the Heavy Load structures and to the YB-L/YB-R component. Supplied with helical washer.







#### 59

S9 screw. M 3x35

Materials: Steel with coating finish.

**Use:** Screw used for fixing T-6A and T-6B individual label holders. Supplied with nut.







#### **S10**

S10. M 5x40 Screw

Materials: Steel with coating finish.

**Use:** Screw used as a pin upon joints on tubes which are drilled so as to increase their force resistance.









# T00LS

The system is completed with the set of tools which are the base of well made assemblies

The system is outfitted very simply. This is proven when you say that with an Allen wrench so as to fasten joints and a band saw to cut the lineal components, you can initiate the first assemblies.

In addition spare parts are available which guarantees support throughout the time.





**DEB-01** 

Tube deburring tool

Use: Hand tool for quick deburring smoothed edges of tubes.



**LAT-01** 

Allen type key for S1, S1C, S4 and S4C screws

Use: Allen key suitable for S1, S1C, S4 and S4C screws.



SAW-01

Band saw

**Use:** Band saw for workshops. Suitable for cutting the following references: round tube, square tube, roller track, label holder and guides.



**SBW-01** 

Spare blade for SAW-01

Use: Spare blade for SAW-01 band saw.



**SAW-02** 

Bench saw

**Use:** Bench saw for fixed location and heavy workload. Suitable for cutting the following references: round tube, square tube, roller track, label holders and guides.



**SBW-02** 

Spare blade for SAW-02

**Use:** Spare blade for SAW-02 band saw.



**GPW-01** 

Electric screwdriver

**Use:** Rechargeable electric screwdriver suitable for fastening S2 grub screws.

# **BOARDS AND ACCESSORIES**

Boards and profiles **are essential** in the assembly of workstations, tables and cupboards.

As other accessories, counting on them in the creation of workshops is a guarantee of success. They provide new functionality in creative solutions.



#### **Boards and accessories**

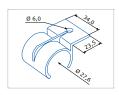


**T-9** 

#### Board holder

Materials: Black plastic.

**Use:** Placed on the upper part of the tube. The board leans of the flat surface on the holder. Includes a hole for a screw (not supplied).





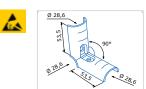


#### T-AT

#### Board base connector inside joint

Materials: Steel with black zinc coating finish.

**Use:** Combined with T-CT joint to form connections at the top of structures, which are the bases of boards. Fixed by means of two S1 or S4 screws (micro-encapsulated).





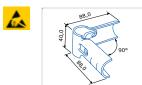


## T-CT

#### Board base connector outside joint

Materials: Steel with black zinc coating finish.

**Use:** Combined with the T-AT joint to form connections at the top of the structures, which form the bases of boards. Fixed by means of two S1 or S4 screws (micro-encapsulated).



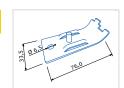




#### Lower piece of joint for boards

Materials: Steel with black zinc coating finish.

**Use:** Combined with a T-Qb joint you make a joint around the tube, so as to be able to fasten a board. For mounting both pieces it is necessary to use an M6 screw.











#### **Boards and accessories**





# T-Qb



#### Upper piece of joint for boards

Materials: Steel with black zinc coating finish.

**Use:** Combined with a T-Qa joint you make a joint around the tube, so as to be able to fasten a board. For mounting both pieces it is necessary to use an M6 screw.



# GT-600



60 cm Telescopic guide

Materials: Galvanized steel.

**Use:** Pair of telescopic guides for trays or boards support, fixing them to the tube by means of T-H joints. Bar offset length: 60 cm.



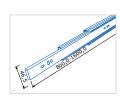
#### GT-800



80 cm Telescopic guide

Materials: Galvanized steel.

**Use:** Pair of telescopic guides for trays or boards support, fixing them to the tube by means of T-H joints. Bar offset length: 80 cm.



# **SUSPENDED SOLUTIONS**

This section englobes all the necessary for suspended pieces transport using a monorail profile.

In these cases we do not use rails for sliding, we use a monorail in the superior part of the structure, where we introduce carts with wheels so as to make the movements. As well as a complete series of accessories.

It is an advanced solution, because it allows you to not use containers of pieces for its' supply, with the consequent saving of material and time.



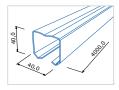
# **Suspended solutions**

M-400

#### Monorail profile 400 cm

Materials: Reinforced steel profile. Profile length: 400 cm.

**Use:** The monorail profile is used as a guide alley for carts. Where you will hang up pieces for their supply.





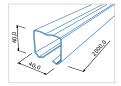


#### M-200

#### Monorail profile 200 cm

Materials: Reinforced steel profile. Profile length: 200 cm.

**Use:** The monorail profile is used as a guide alley for carts. Where you will hang up pieces for their supply.





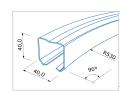


#### M-C

#### Curved monorail profile

**Materials:** Reinforced steel profile. Curved profile radius: 530 mm. Rotation angle: 90°.

**Use:** The monorail profile is used as a guide alley for carts. Where you will hang up pieces for their supply. It is useful in cases where the carts do not go straight forward. And allows you to change directions.





#### M-H

#### Attachment joint for monorail to tube

Materials: Cinc plated steel.

**Use:** You must use a couple of M-H joints, combined with a couple of T-H joints and an S7 screw, so as to fasten the monorail to a horizontal tube. The amount of unions you use, will depend on the weight of the components that will be suspended on the monorail.







# **Suspended solutions**



B-M

Monorail stop

Materials: Steel.

**Use:** It is used to close one of the ends of the monorail, which quarantees that the carts remain inside the monorail profile.





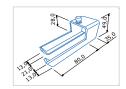


#### **B-M0**

Monorail stop with cart extraction

Materials: Zinc plated steel.

**Use:** It is used to allow the entrance and exit of the carts on the monorails`extreme. Used as a stop for the carts, ans adding the posibility of being able to withdraw them. Screw supplied for mounting on monorail.





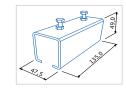


#### B-MI

Bridge connector for monorail

Materials: Zinc plated steel.

**Use:** It is used to join two sections of monorail, and help carts pass on. Allows to join the monorails M-200, M-400 y M-C. Two screws are supplied to mount on both monorail profiles.







Monorail cart with 4 steel wheels

Materials: Zinc plated steel.

**Use:** Displacement cart inside the monorail profile M-200, M-400, and M-C. Having 4 steel wheels with bearings and a hanger with holes, where you can hang the pieces to be transported. Recomended reference for transport systems where the carts will only move by gravity. Due to the great stability they have. High load capacity.





# Suspended solutions

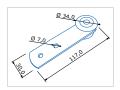
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#### CM-S

#### Monorail cart with 2 steel wheels

Materials: Zinc plated steel.

**Use:** Displacement cart inside the monorail profile M-200, M-400, ans M-C. Having 2 steel wheels with bearings and a hanger with holes, where you can hang the pieces to be transported. Recomended reference for transport systems where the carts are moved manually, and where you need a quick reply to your movements.







# **CM Nylon**

#### Monorail carts with 4 nylon wheels

Materials: Zinc plated steel, and nylon wheels.

**Use:** Displacement cart inside the monorail profile M-200, M-400, ans M-C. Having 4 nylon wheels with bearings and a hanger with holes, where you can hang the pieces to be transported. Recomended reference for transport systems where the carts will only move by gravity. Due to the great stability they have. High load capacity. Recomended in situations wher you wish to decrease rolling noise.







# **CM-S Nylon**

#### Monorail cart with 2 nylon wheels

Materials: Zinc plated steel, with nylon wheels.

**Use:** Displacement cart inside the monorail profile M-200, M-400, ans M-C. Having 2 steel wheels with bearings and a hanger with holes, where you can hang the pieces to be transported. Recomended reference for transport systems where the carts are moved manually, and where you need a quick reply to your movements. Recomended in situations where you wish to decrease rolling noise.





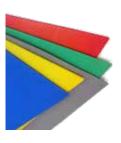


# **FLEXBOX**

The introduction of Lean Manufacturing Policies in the Company requires dynamic and efficient systems, with solutions given Just in Time. FlexBox is the essential tool for this process of creating quick solutions, suitable for each case and developed by the operators themselves.

FlexBox is a set of individual components for manufacturing supply chain boxes. The system is based on atactic polypropylene sheets (APP), profiles, corners and handles. All these components together allow to design and assembly boxes when needed.





#### QB-KP1

#### Polypropylene board

Materials: Atactic polypropylene (APP). Density: 1.200 g/m2.

**Use:** Dimensions: 150x120 cm. The development of the box is prepared according to a template generated by the application. Then is cut with a cutter tool and is ready to be assembled.



#### QB-KP2

#### Polypropylene board

Materials: Atactic polypropylene (APP). Density: 1.000g/m2.

**Use:** Dimensions: 200x150 cm. The development of the box is prepared according to a template generated by the application. Then is cut with a cutter tool and is ready to be assembled.



### **QB-ERB**

#### Right corner

Materials: Black plastic.

**Use:** Corner support on QB-LB and QB-LL profiles to fix on the board. Clamping clips for locking function. Two units per box are required.

Stackable by means of outer end stop.



#### **QB-ELB**

#### Left corner

Materials: Black plastic.

**Use:** Corner support on QB-LB and QB-LL profiles to fix on the board. Clamping clips for locking function. Two units per box are required.

Stackable by means of outer end stop.



**QB-LB** 

Top 5 mm thickness profile

Materials: Black plastic.

**Use:** This profile is adjusted to the board on the long side faces of the box. Length: 100 cm. Thickness: 5 mm. Requirement of this reference

per box depends on development.



**QB-LL** 

Top 10 mm thickness profile

Materials: Black plastic.

 $\textbf{Use:} \ This \ profile \ is \ adjusted \ to \ the \ board \ on \ the \ short \ side \ faces \ of \ the \ box. \ Length: \ 100 \ cm. \ Thickness: \ 10 \ mm. \ Requirement \ of \ this \ reference$ 

per box depends on development.



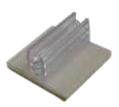
QB-G

Box handle

Materials: Black plastic.

Use: One-piece handle that is fixed by pressure in its hole for this

purpose. Two units are required per box.



QB-GD

Separators support

Materials: Transparent plastic with adhesive.

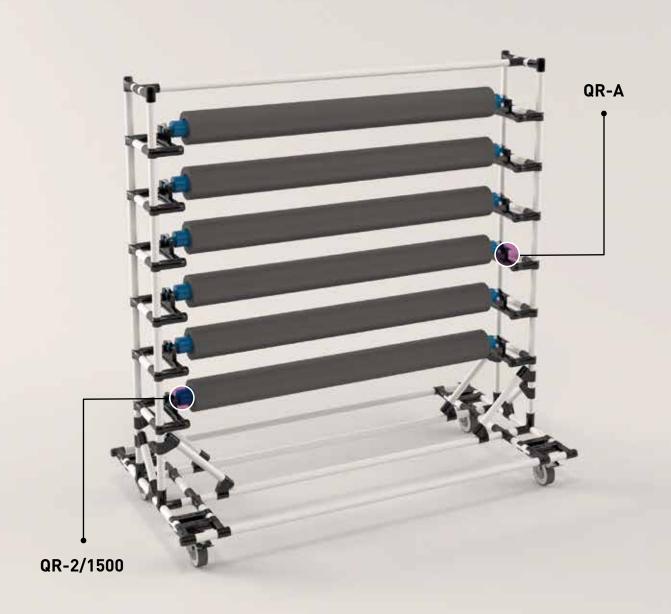
**Use:** Support for separator components of the box. Fixed by its adhesive face to the box wall or other separators. Adhesive face dimensions:

25x25 mm.

# **ROLLS SUPPORTS**

Rolls supports allow the supply of material in coils to the workstations. Each coil tube is supported by two support references and rotates through two bearings included in both ends.

Structures consist of a pair of support references and tubes with bearing rotation function. In addition to standard tube lengths, it is possible custom manufacturing. Later on it is showed one of standard tube lengths as a sample.



# **Rolls supports**

## **QR-A**





Roll support

Materials: Black coating steel.

 $\ensuremath{\mbox{Use:}}$  Individual support and tube ready to be fixed to the structure with

T-D joints. Two units per roll are needed.

# QR-2/1500





Roll tube up to 1500 mm with bearings

Materials: Steel tube with coating and two pivoting bearings.

**Use:** Tubes are manufactured according to the roll dimension and colour required. Tube thickness: 3 mm.





# **QUIMILOCK LOCATIONS**

Quimilock manufactures TechnoLean product line in Getafe facilities located in Madrid. Our production machines are equipped with state of the art technology, resulting from accumulated experience for years in components and tooling for Continuous Improvement. We have our own production lines, R&D Department and Kaizen Workshop for assembly. All this guarantees that TechnoLean product line complies with Quality Standards for Industry. It must be always on Continuous Improvement.

#### **HEAD OFFICES**

Formación,18 Polígono Industrial Los Olivos 28906 - Getafe, Madrid (Spain)

Tel: +34 914 740 300 Fax: +34 914 741 687 quimilock@quimilock.es

#### PRODUCTION PLANT

Innovación, 13 Polígono Industrial Los Olivos 28906 - Getafe, Madrid (Spain)

#### QUIMILOCK CENTRAL EUROPE

Na Pántoch 18, Logistické Centrum Bratislava - Raca 831 06 (Slovakia) Tlf: +421 238 104 849 quimilock@quimilock.sk

#### QUIMILOCK FRANCE S.A.S.

30-32, Boulevard de Sébastopol Siège Social 75004 - Paris (France) france@quimilock.com



## **Products Guide**

#### **TUBES AND ACCESSORIES**

























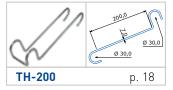


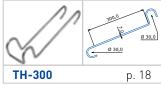


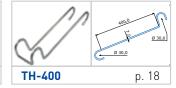






















#### **ROLLER TRACKS AND ACCESSORIES**

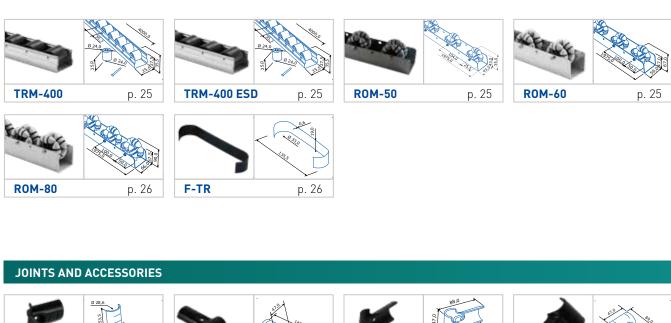














T-7

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ADP1

T-V4

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#### CONNECTORS

T-M15

PL-450



All T-M connectors in this section are conductive

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T33-M2

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T33-M1

PC-400

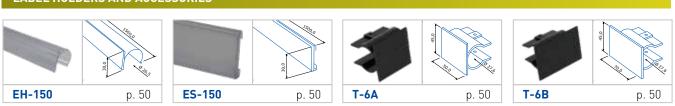
#### **LABEL HOLDERS AND ACCESSORIES**

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T-M17

PL-450C



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#### **CASTORS, FEET AND ACCESSORIES**





































#### **HEAVY LOAD - MAXIMUM STRENGTH**

















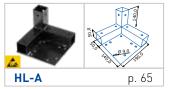




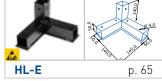


















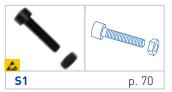




















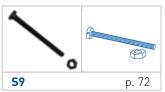














#### **TOOLS**







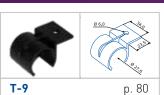








## BOARDS AND ACCESSORIES













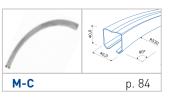










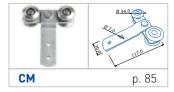


















#### **FLEXBOX**

















#### **ROLLS SUPPORTS**





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#### **HEAD OFFICES**

C/ Formación, 18 P.I. Los Olivos 28906 Getafe

#### QUIMILOCK CENTRAL EUROPE

Na Pántoch, 18, Logistické Centrum Bratislava - Raĉa 831 06

#### **PRODUCTION PLANT**

C/ Innovación, 13 P.I. Los Olivos 28906 Getafe

#### **QUIMILOCK FRANCE S.A.S**

30-32, Boulevard de Sébastopol Siège Social 75004 Paris



technolean.com quimilock.com