

# Handling & Lifting Equipment





Madrid • Lisbon • Genova • Antwerp Marseille • Gothenburg • Piraeus • Sankt Petesburg Buenos Aires • Dubai • Shanghai • Pusan

The World is our Business'

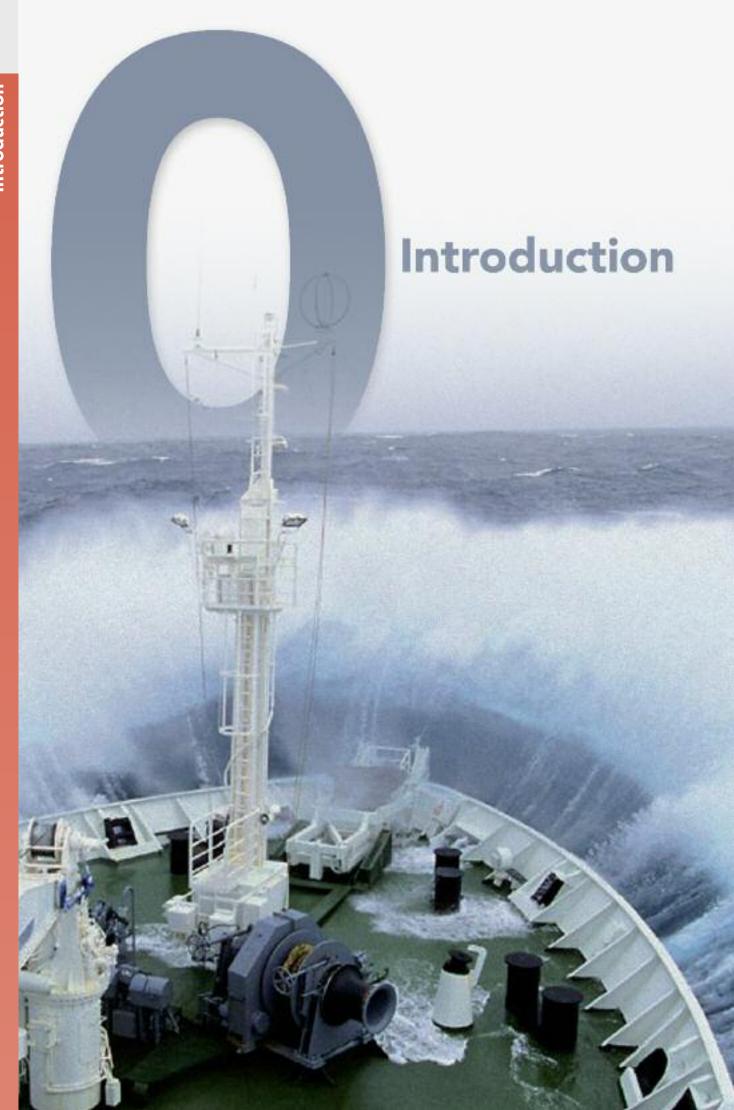


TEC CONTAINER S.A.

C/ Tajo, 19 - Pol. Ind. "Las Acacias"

28840 • Mejorada del Campo • Madrid • Spain

Tel + 34 91 302 16 38 comercial@teccontainer.com www.teccontainer.com





# Welcome

## to TEC CONTAINER S.A

We are a company based in Spain, specialized in design and production of equipment for Container Handling & Lashing, General Cargo, Wind Energy and Equipment for Personnel Security in Terminals and Ports.

- Since 1976, the year in which the company was founded, TEC CONTAINER has supplied products to more than 70 different ports in more than 40 countries all over the world.
- Since 1976, more than 350 new vessels have been originally supplied with the lashing equipment of TEC CONTAINER.
- Since 1976, more than 1500 Spreaders have been delivered to customers in more than 40 different countries, together with a variety of models of Safety Cages, Overheight Frames, Lifting Beams and tailor-made Container Handling Equipment.

For us innovation is nowadays a tradition.

## Own Design and Own Production After more than 30 Years of Experience...

## Corporate Hits

Foundation

**NV** Lash TEC (BELGIUM) 1990

TECNICAS Contentorização

(PORTUGAL)

1985

**TEC Container** (ITALY)

1989

First Expansion: New Workshop Facilities 1991

**TEC Container** FAR EAST (SINGAPORE)

#### 1992-1999

New Agents and Branches in

- South Korea
- Argentina
- Croatia
- United Arab Emirates
- Greece
- Finland
- France

## **Production**

Foundation and Begining of TEC CONTAINER Technical Office in Madrid. 1985

First Cellular guide and Fully Deck Equiped vessel is delivered by TEC. 1989

First Spreaders are designed, produced and delivered.

1984

First Own Produced Lashing Equipment. 1986

Ro-Ro Equipment is introduced in TEC's Portfolio. 2000

The Handling Equipment Branch is created.



#### 2006

Third Expansion: Capital Increase and New Partners in the Company.

#### 2009

New Agents in Turkey

#### 2012

New Agents in Panamá & Venezuela

#### 2000

Second Expansion: New Workshop Facilities

#### 2008

New Agents in the Russian Federation

#### 2010

Fourth Expansion: Brand New Factory and new offices

#### 2003

The First Safety Cages are sold to the Main Ports of Spain.

#### 2009

First Contract for Wind Energy Solutions is Signed.



#### 2005

TEC starts with the production of Roll Trailers and Goose-Necks for Ports.

#### 2012

New web for container handling: www.containerspreaders.com

TEC CONTAINER SA has become a reference for Shipowners, Shipyards, Ports and Terminals. Our clients in more than 80 countries and within a great variety of industrial sectors have awarded us their recognition for our optimal combination of leading design, quality and experience.

TEC CONTAINER SA has managed to transform and to adapt itself through these 30 years from a locally- based company focused on the Shipping industry to a diversified group with interests in a vast range of industrial sectors. Quality, constant activity in research and development of new standards and our well known customer service has taken TEC CONTAINER to the privileged position where actually occupies.

In these 30 Years TEC CONTAINER SA has created a solid net of Agents and Branches all over the world. A great part of our success is due to their qualified work.

In 2010 TEC CONTAINER will inaugurate new production facilities to reinforce our strateic plan.



## Always in the front line of innovation

## Quality

TEC CONTAINER, S.A. pursues a continual improvement of the quality of our customer service, in order to achieve the maximum level of competitiveness in the branch, based on confidence and customers integration and loyalty. The Management of TEC CONTAINER, S.A. promotes the implementation and maintainance of the QUALITY CONTROL SYSTEM based on the standard norm UNE-EN ISO 9001:2008. The Management of TEC CONTAINER, S.A establishes the basis of this QUALITY CONTROL POLICY as the principal pillars of our organization as follows:

- Guarantee of the customers' satisfaction and even the surpassing of customers' expectations, through a balance between improvement of quality and reduction of costs, making them participants in our QUALITY CONTROL SYSTEM.
- Continuous improvement of the services and the processes in TEC CONTAINER, S.A. through establishment and revision of objectives and goals.
- Active participation in the fulfillment of the objectives as a responsibility of all the personnel of TEC CONTAINER, S.A.
- The QUALITY CONTROL POLICY is annually revised and adapted to possible changes. The personnel of TEC CONTAINER, S.A. is informed about the adjustment of the QUALITY CONTROL SYSTEM continually, and the updated information is publicly available.



#### All TEC Container Lashing Products are certified by:







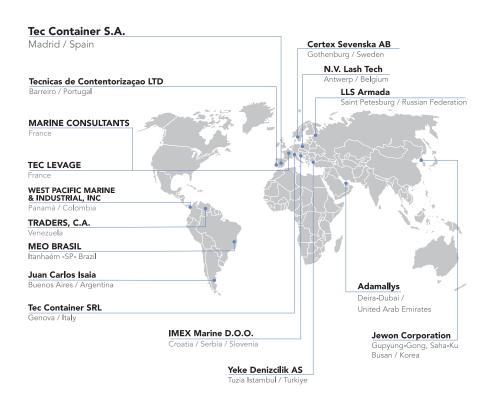














TEC CONTAINER S.A.

C/Tajo 19 & 13 • Pol. Industrial "Las Acacias" • 28840 • Mejorada del Campo Madrid (Spain)
Tef +34 91 302 16 38 • Fax +34 91 766 42 79 • teccontainer@teccontainer.com • www.teccontainer.com

## TECNICAS DE CONTENTORIZAÇÃO, LTD

Das Rabelas - Lote n° 20 Armazem 2H 2830222 Barreiro - PORTUGAL Tel. +351 21 214 84 90 Fax +351 21 214 84 99 teccontainer@gmail.com

#### N.V. LASH TECH

Oosterweelsteenweg 58 B-2030 Antwerp - BELGIUM Tel. +32 3 541 16 28 Fax +32 3 541 52 78 info@lash-tech.com

## MARINE CONSULTANTS (For Lasing Equipment)

1 rue Nungesser et Coli 94000 Créteil - FRANCE Tel. +33 (0) 1 43 39 04 70 hddrevet.marineconsultants@orange.fr

#### TEC LEVAGE

#### (For Handling Equipment)

Atelier No.2, ZA de Traon Dour 29620 Plouegat Guerrand - FRANCE Tel. +33 (0) 9 61 61 83 39 teclevage@teclevage.fr

## WEST PACIFIC MARINE & INDUSTRIAL, INC

50 Ave. 69th St. Plaza Guadalupe Building 4th floor, Suite 404, Ciudad de Panamá PANAMÁ / COLOMBIA

Tel. +00 5 0 73 02 27 50 jmantovani@westmar.com.pa

#### ions.

#### TRADERS, C.A.

Av. Bella Vista con calle Garces y Mariño Piso 1, oficina 6, Urb. Santa Irene Apartado Postal 024, Zona Postal 4102 Punto Fijo, Estado Falcón - VENEZUELA Tel. +0058 269 849 2193 / 849 2274 farroyo@tradecaexport.com

## LLS ARMADA Nab. r. Smolenka

Building 19-21 liter «B» 199048 SAINT PETERSBURG RUSSIAN FEDERATION Tel. +7 (812) 309 11 46 Fax +7 (812) 968 01 75 armadaspb1@mail.ru

#### CERTEX SVENSKA AB

Visiting adr Lundby Hamngata 26, 417 55 Gothenburg Box 8713 S-40275 - Gothenburg - SWEDEN Tel. +46 31 50 86 50 Fax +46 31 23 24 90 Mikael.Jonsson@certex.net Annika.carlstedt@certex.net Marine.goteborg@certex.net

#### TEC CONTAINER, SRL

Via Fieshi, 1/7 16121 Genova - ITALY Tel. +39 010 542 523 Fax +39 010 553 11 42 teccontainer@teccontainer.it

#### YEKE DENIZCILIK AS

Evliya Celebi Mah. Rauf Orbay Cad. Ak Is Merkezi NO:33, 34940 Tuzla Istanbul TURKIYE Tel. +90 216 446 1938 Fax +90 216 446 1939 info@yekedenizcilik.com.tr

#### -

#### JUAN CARLOS ISAIA

Viamonte, 448 - 9° piso 1053 Buenos Aires - ARGENTINA Tel. +54 11 4 311 35 18 +54 11 4 311 18 85 Fax +54 11 43 11 35 65 jcisaia@arnet.com.ar

#### **JEWON CORPORATION**

485-5, Gupyung-Dong, Saha-Ku, Busan, KOREA Tel. +82 51 261 7638 Fax +82 51 261 7628 inbox@jewonkor.com

#### ADAMALLYS

Post box 4684 • Deira - Dubai - UNITED ARAB EMIRATES
Tel. +97 14 324 33 43
Fax +97 14 324 33 45
saifuddin.hassanally@adamallys.com

#### 32

#### **IMEX MARINE D.O.O.**

Dragonja, 1 • Pula 52100 CROATIA / SLOVENIA / SERBIA

## Tel. +385 52 502 366

Fax +385 52 502 330 info@imex-marine.com

#### MEO BRASIL.

Praça Santo Antonio 323 CEP 11740-000 Itanhaém – SP BRAZIL Tel. +55 13 3426 2376 info@meo-gmbh.com

#### TEC R+D

- Do you need some special solution for moving, lifting or securing your goods?
- Are you looking for a device to make easier your loading / unloading operations?
- Are you looking for a safer perfomance in your handling operations?

In brief, do you consider that there could be another way to handle, lift, store, load and unload your goods to reduce operational time, cycles, risk and finally... costs?

#### TEC CONTAINER R+D Department is ready to help you.

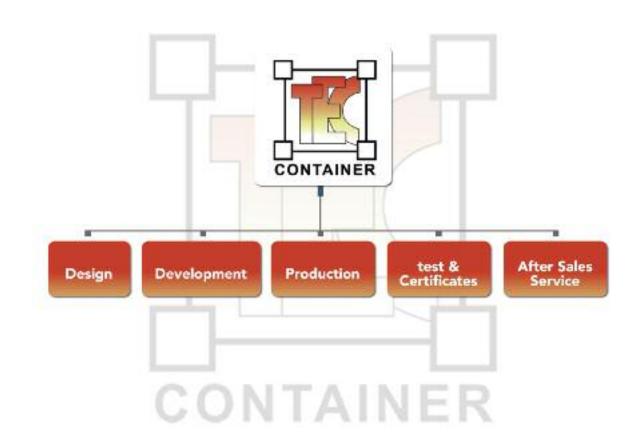
TEC CONTAINER designs and produces exactly what our customers require. We have invented tailor-made solutions for hundreds of customers. We boast an extensive catalogue of handling solutions.

We believe that service has to be linked with the special "added value". For us, TEC CONTAINER starts in our R+D projects. For more than 30 years now we have been in constant contact with our clients, assisting them and solving their necessities. Our goals: To increase our clients' productivity and reliability using cutting-edge technology.

All our products are supported by:

- TEC & CE Certificate
- Other Certificates
- Service Manuals and Instructions.
- Informative Plates
- Spare parts Guides.
- Manteinance Guides.

Please contact the R+D Department in tecnico@teccontainer.com



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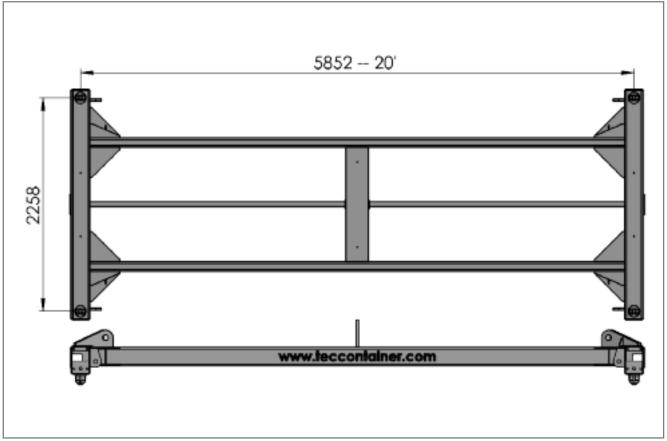


# Handling Equipment for Containers

- 1.1. Standard Semiautomatic Spreaders
- 1.2. Non Standard Semiautomatic Spreaders
- 1.3. Special Spreaders
- 1.4. Optional Equipment

# 1 .1 Semiautomatic Spreaders

### BA-008: Semiautomatic Spreader for 20' Containers



**BA-008** has become a classic as a solution in the container handling for vessels and small Terminals.

More than 1.000 units sold all over the world.

Available from SWL = 20 Tn to 32 Tn.

GL Drawing approval.

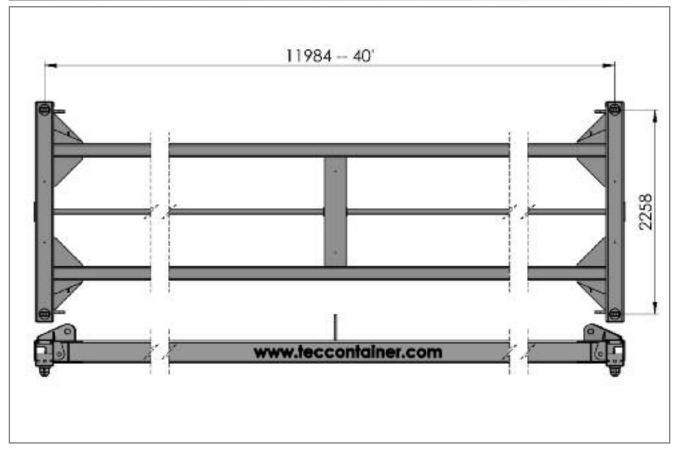
Any Classification Society load test available.

CE Certificate.

Check Page 26 for optional equipment.



### BA-009: Semiautomatic Spreader for 40' Containers





**BA-009** has become a classic as a solution in the container handling for vessels and small Terminals.

More than 1.000 units sold all over the world.

Available from SWL = 20 Tn to 42 Tn.

GL Drawing approval.

Any Classification Society load test available.

CE Certificate.

Check Page 26 for optional equipment.

# 1 .1 Semiautomatic Spreaders

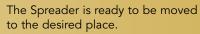
#### Semiautomatic Spreaders: Use & Maintenance Instructions

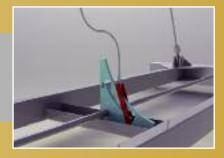


## Position 1: OPERATION START

- Wires are Loose.
- Twistlocks are in longitudinal position: OPEN.
- Triangle is in OPEN position.









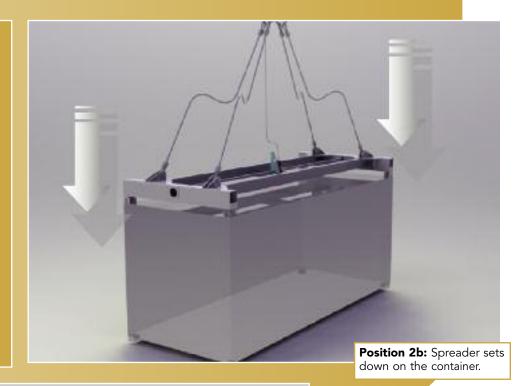
#### **Semiautomatic Spreaders:** Use & Maintenance Instructions

**2**a



Crane starts elevation

**2**b



#### **Position 2b: BEFORE LIFTING**

- Wires are loose.
- Twistlocks are in longitudinal position: OPEN.
- Triangle is in open position.

# 1 .1 Semiautomatic Spreaders

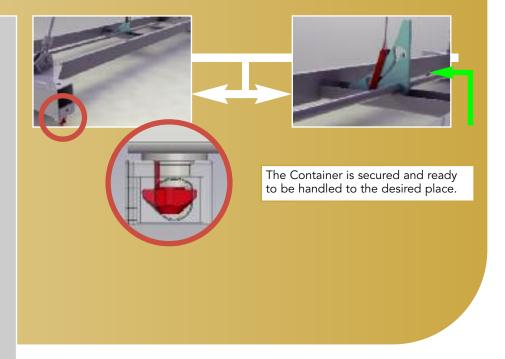
#### Semiautomatic Spreaders: Use & Maintenance Instructions

3



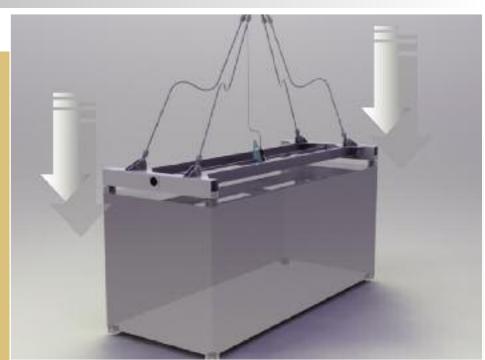
#### Position 3: CRANE STARTS ELEVATION SPREADER CLOSES THE CONES

- Wires are tight.
- Twistlocks rotate to TRANSVERSAL position: LOCKED.
- Triangle is in CLOSED position.



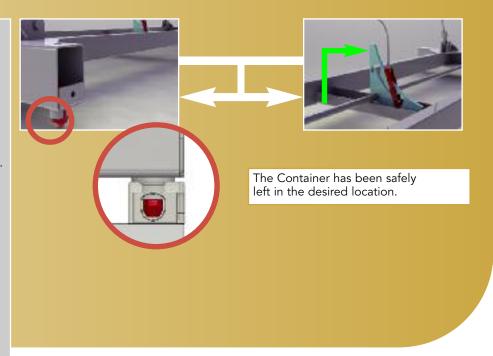
#### Semiautomatic Spreaders: Use & Maintenance Instructions

4



#### Position 4: CRANE FINISH ELEVATION SPREADER OPENS THE CONES TO RELEASE THE CONTAINER

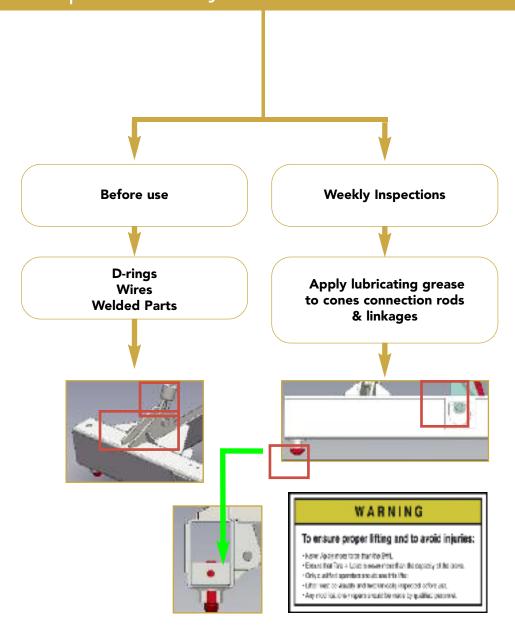
- Wires are loose.
- Twistlocks rotate back to the initial position: OPEN.
- Triangle is back to the OPEN Position.



## 1 1 Semiautomatic Spreaders

Semiautomatic Spreaders: Use & Maintenance Instructions

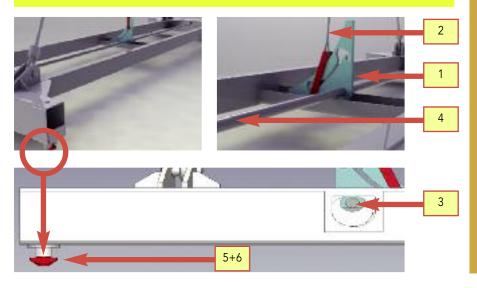
# TEC Container light Spreaders require a very low maintenance



### **BA-008:** Semiautomatic Spreader for 20' Containers



1 MAIN TRIANGLE	CARTELA DE MANDO	BA-009-6-1 / BA-008-6-1
2 SLIDING + NYLON ROPE	CORREDERA + CUERDA	N/A
3 STEERING SWIVEL ARM	BIELA	BA-018-4-1
4 MAIN ROD 45x4.5	TUBO CENTRAL 45x4.5	N/A
5 SECURITY PIN SET	CONJUNTO PIN DE SEGURIDAD	BA-008-200
6 TWISTLOCK	CONO	BA-018-3-4
7 WIRES SET	CONJUNTO DE CABLES	BA-008CB // BA-009CB



## PREVENTIVE MAINTENANCE REQUIRED:

#### Slings:

- Revise the lead bush.
- Revise the thimbles.
- Check for cuts in the external slings.
- Check for deformation of the upper rings.
- Check for deformation of the pins and the housings of the pins.
- Revise the state of the pin bolts.

#### Structure:

- Revise the welds.
- Check for possible points of corrosion.
- Check for deformations or strikes.

#### Mechanism:

- Clean the housing of the Twistlocks regularly.
- Lubricate the Twistlocks.
- Tighten the bolts from the nut to the Twistlocks.
- Check the state of the connecting rods.
- Tighten the bolts of the main actuator tube to the mechanisms of the heads.
- Check the state of nylon rope.
- Tighten the slide of the triangle.
- Lubricate the triangle in the sliding area.
- Tighten the bolts connecting the triangle to the main actuator tube.
- Make sure there are no external objects in the heads.
- Lubricate the areas in which the main actuator tube connects with the cross beams of the structure.

# 1.2. Other Semiautomatic Spreaders

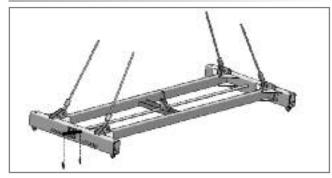
## **Index** of Special Spreaders



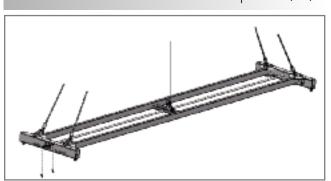
Manually Operated	Hybrid	Electric / Hydraulilc	Special Designs
For Hook Crane	Manual + Semiauto Spreaders	Automatic Operation	For Rough Conditions
For Forklift			With Rotatory movements
For Bridge Crane			With Gravity point regulation
			Twin Spreaders

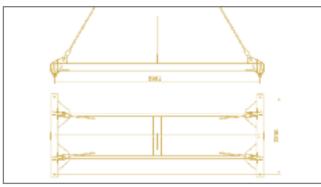


### **BA-008MS:** Manual + Semiautomatic Spreader (20')



BA-009MS: Manual + Semiautomatic Spreader (40')





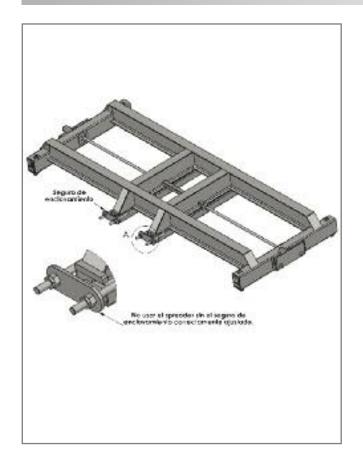
SWL available up to 32 Tons. Check Page 26 for additional accesories

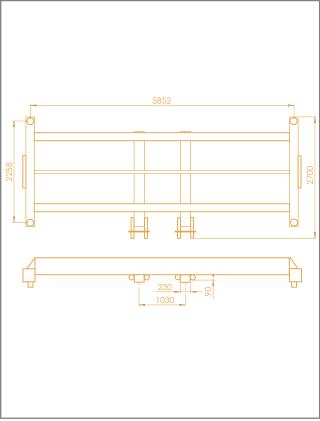
SWL available up to 40 Tons. Check Page 26 for additional accesories



# 1.3. Special Spreaders

## **BA-012G:** Manual Spreader for Forklift







Length Available for 20' & 40'.

SWL available from 15 to 28 Tons.

Forklift pockets to allow handling.

Multiple configurations according to the customer requirements.



#### BA-012F1: Spreader for Bridge Crane: 1 link





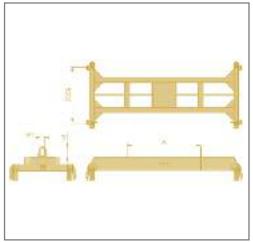
Length Available for 20' & 40'.

SWL available from 15 to 40 Tons.

Multiple configurations according to the customer requirements.

BA-012F2: Spreader for Bridge Crane: 2 link



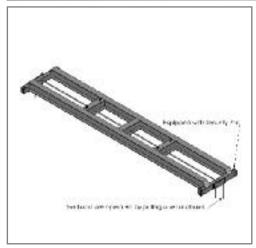


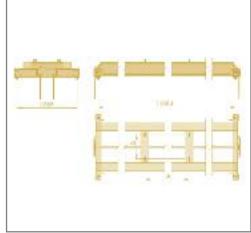
Length Available for 20' & 40'.

SWL available from 15 to 40 Tons.

Multiple configurations according to the customer requirements.

#### BA-012F4: Spreader for Bridge Crane: 4 link





Length Available for 20' & 40'.

SWL available from 15 to 40 Tons.

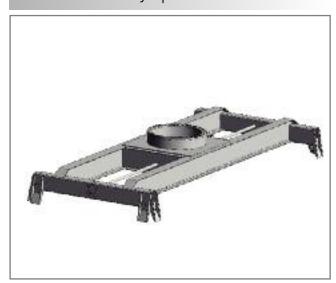
Multiple configurations according to the customer requirements.

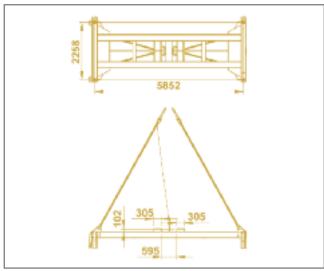
# 1.3. Special Spreaders

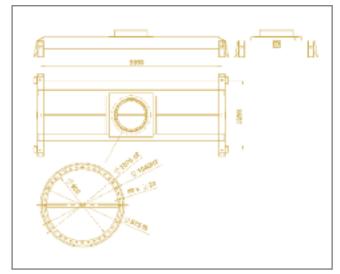
#### **BA-008N:** Spreaders for Rough Conditions



#### **BA-227:** Rotatory Spreaders







SWL available up to 32 Tons.

Length Available for 20' & 40' Fixed Guides. Special transversal beams. Wider reinforcements in all the structure.

Please contact the TEC CONTAINER technical department for multiple configurations and options.

Check Page 26 for additional accesories

SWL available up to 32 Tons.

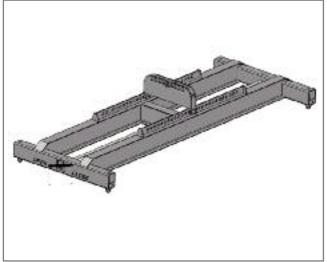
Length Available for 20' & 40' Fixed Guides. Electrically operated from the ground staff. Emergency Button and Remote Control. Lighyt Signals.

Please contact the TEC CONTAINER technical department for multiple configurations and options and more detailed information.

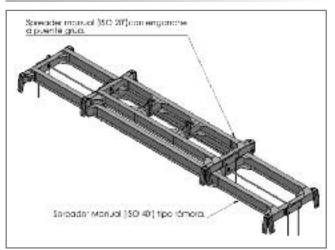
Check Page 26 for additional accesories

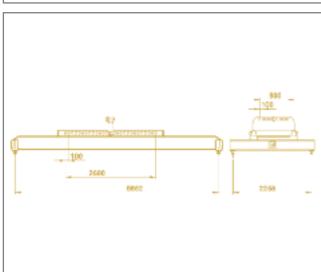


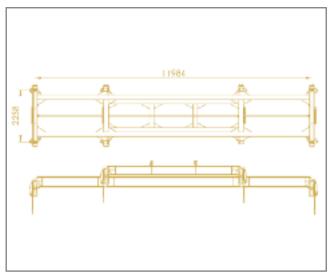
#### BA-012R: Gravity Point Regulation Spreader



## **BA-165:** Semiautomatic Spreader for Bridge Crane







SWL available up to 32 Tons.

Length Available for 20' & 40'.

It manually permits the regulation of the Gravity point to allow unbalanced loads.

Please contact the TEC CONTAINER technical department for multiple configurations and options.

Check Page 26
for additional accesories

SWL available up to 32 Tons.

Length Available for 20' & 40' Fixed Guides.

Electrically operated from the ground staff. Emergency Button and Remote Control. Lighyt Signals.

Please contact the TEC CONTAINER technical department for multiple configurations and options and more detailed information.

Check Page 26 for additional accesories

# 1.4. Optional Equipment

#### **→** 20°C DEGREES BELOW ZERO CONFIGURATION:

If the Spreader is going to be used in weather conditions -20°C it is necessary to make a special production process:

- -Material used is S355J2+N
- -Special reinforcement in critical points of the structure.
- -Transversal beams made of stronger tubes.



## SECURITY PINS:

This system increases the security of the Spreaders.

One pin besides each twistlock which blocks the open/locking movement Of those twistlocks if the spreader is not fully connected with the container to be handled.

If any Twistlock is not well fitted in the ISO Corner of the Container the spreader remains blocked, making it imposible to lock the twistlocks to avoid failures.



## GUIDES/FLIPPERS:

Very useful to facilitate approach maneuvers of the crane driver to the container.

A full range of flippers with several characteristics are available upon request.



## **▲ FORKLIFT POCKETS:**

The best way to move and store the spreader when it is not in use.

Unless indicated otherwise, all TEC CONTAINER Forklift Pockets are valid only when the spreader is not loaded. Pockets are valid only for transport purposes.



#### LOAD TEST:

All our spreaders are delivered with a CE certificate. If a third party inspection is requested TEC could provide a Bureau Veritas "LOAD Test Certificate"



**DEMOUNTABLE FOR EASY TRANSPORT:** 

All TEC CONTAINER Spreaders can be produced demountable in order to order to reduce transport cost as the spreader can be shipped in a standard ISO Container.

Clear instructions about mounting at site and tools are delivered together with the spreader.

LONG TERM GALVANIZED PROTECTION:

Spreaders from TEC CONTAINER can be delivered with extra rotection against corrosion by a hot dip galvanized coating, This extra protection guarantees an extra long life for your spreaders.

**EXTENSION CHAINS:** This is an extra chance to handle open-top containers or damaged containers with serious deformations.

**EXTRA VISIBLE SIGNS FOR CRANE DRIVERS:** Upon customers requests our spreaders can be provided with highly vissible panels to inform the driver about the position of th cones.

Different lenghts available upon customers requirements.

OPEN/LOCKED signs in any languaje upon customer request in extra luminiscent ink are provided. ALL OUR SPREADER CAN BE PAINTED WITH YOUR CORPORATIVE COLORS & LOGO **FOR FREE** 



# Overheight Spreaders

- 2.1. Overheight Frame
- 2.2. Semiautomatic & Manual Overheight Frame

# 2.1 Overheight Frame

#### BA-030E: Fully Automatic Overheight Frame

Available in 20' and 40' and Telescopic versions.

#### Triple safety system:

- Pins which detect the contact with the container.
- Sensors which detect the positions of the cones.
- Light signal clearly visible for the crane operator.

#### Totally electromechanical system:

- Fully operational inside celular guides.
- Opening and Locking directly activated from the control cabin.
- Fully programmable PLC for the safety system control.
- Switch on / off automatically.
- Low battery Indicator.
- Very easy maintenance.
- Energy supplied by gel battery: long life duration and cutting-edge technology.
- Battery charger incorporated.
- Guaranteed for use in sea environment.

All versions can be demountable for easier transportation. CE Certificate incorporated.





### BA-030E: Fully Automatic Overheight Frame





Size	Fixed 20'	Fixed 40'					
Length (Cones Center)	6.050 mm	12.190 mm					
Width	2.430mm						
Weight	2.200 Kg.	3.000 Kg.					
Free Overheight	Upon Customer requirements						
SWL	Upon Customer requirements						

- Solar battery charger.
- Extra set of security twistlocks.
- Extra set of safety lights.
- Annual safety check.
- Assembly at destination.
- Certified by any classification society.
- Complete structure in S355J2+N.
- Safety cones in 42CrMo4.
- All sensors with protection class 1P67.
- Electrical actuator stainless IP67.
- Painting Specification suitable for Sea environment.

# 2.1 Overheight Frame

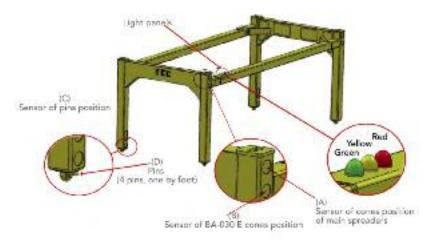
#### BA-030E: Fully Automatic Overheight Frame

- When the main spreader is on the BA-030E and introduces the twistlocks in the 4 corners and closes them the Sensor A detects it and a red light of the panel comes on.
- When the 4 pins D situated in the lower part of the BA-030E enter completely in the upper container corners a yellow light comes on which indicates "Container Contact". If one or more of the pins has not entered correctly, the cones will not close and the yellow light will not appear.
- Then, the cones close automatically, sensor B detects it and the light of the panel changes from yellow to green.
- When pins are in "D" position the cones of the BA-030E can be opened as many times as needed.

The only thing that has to be done is open / close the cones of the main spreader.

Sensor A detect its and order the open / close the BA-030E safety twistlocks.

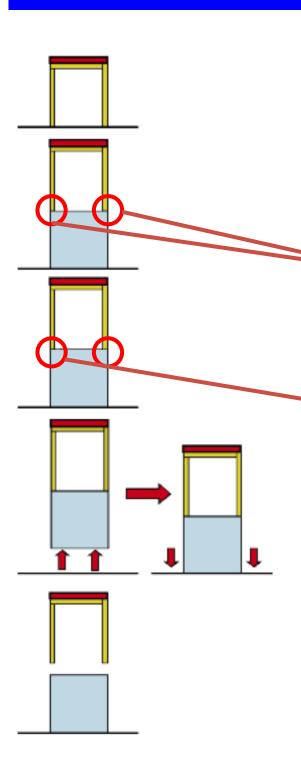




- Light is RED for OPEN CONES and GREEN for CLOSED CONES, remaining the yellow one (indicating "Container Contact") lit up during the whole process.
- After green light appears the container can be elevated in the air and moved to the designated place. When BA-030E rises at about 10 mm the sensor C of the pin D detects it and orders "Twistlocks Blocked".
- When the container is stacked over another one or on a vehicle, the pins D enter again totally. Then the situation "Container Contact" is again activated and the cones are released. The main spreader cones open, the sensors detect it and open the BA-030E cones, RED light comes on. Now, BA-030E can be elevated.
- The BA-030E can be separated from the parent spreader by just opening the spreader cones. If after 30 mi the BA-030E is not picked up, it disconnects itself.

#### BA-030E: Fully Automatic Overheight Frame

## SPREADER OVERHEIGHT FRAME (REF TEC BA- 030E) STANDARD WORKING CYCLE



## 1 STARTING OF THE OPERATION

The system starts operating when the main spreader closes the twistlocks in the upper comers of BA-030E. In this moment the main spreader can be transported to the containers which will be manipulated.

## 2 STARTING OF THE LOADING:

2.1. The BA-030E detects the contact with the container and starts the mode: "Total Contad with Container / Twistlocks open".

Twistlocks remain open till receiving a command from the main spreader.

2.2. The main spreaders sends command to close the twistlocks and BA030E starts mode: "Total contact with container / Twistlocks closed"

Twistlocks remain dosed.

From this moment on the main spreader can be lifted and BA - 030E pases to mode: "Container Loading"

## 3 LIFTING AND END OF LOADING:

The main spreader is positioned. The BA-030E detects it and passes to mode: "Total contact with container / Twistlocks closed", in stand-by awaiting further instructions

## 4 END OF OPERATING

The main spreader sends a command to open the twistlocks. BA-030E starts mode: "Total Contact with Container / Twistlocks open". In this moment the BA-030E is disconnected from the container and can be transported to a new position by the spreader.

# 2.1 Overheight Frame

## BA-030ET: TELESCOPIC Fully Automatic Overheight Frame



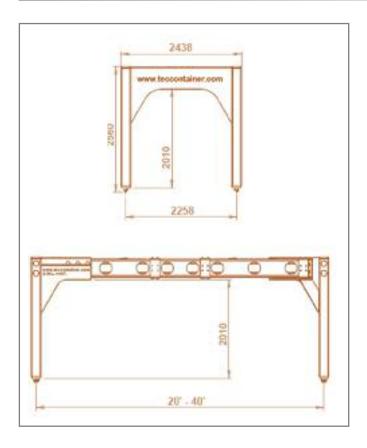








### BA-030ET: TELESCOPIC Fully Automatic Overheight Frame





The main features of the Overheight Spreader (BA-030ET) It is a universal model which works with all the existing spreaders, both crane and reachstacker.

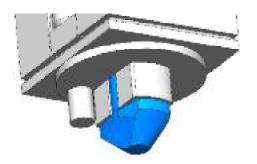
- The master spreader need not be modified because the **BA-030ET** fits to all the models.
- The OPEN and CLOSE orders are transmitted directly by the operator of the crane / reachstacker through their control devices.
- Triple safety system:
  - Pins which detect the contact with the container.
  - Sensors which detect the positions of the Twistlocks.
  - Light signal clearly visible for the crane operator.
- Fully Apt for cellular guides.
- System fully programmable and adaptable to customer needs.
- Automatic switch on / off system.
- Low battery indicator.
- Version with solar panel batteries and alternatively, a standard battery charger version with standard settings to be used in areas with few hours of daylight.
- Free overheight space upon request.
  For further information please contact us in the email teccontainer@teccontainer.com

# 2.2 Semiautomatic & Manual Overheight Frame

#### BA-030H: Semiautomatic Overheight Frame

The BA-030H is an overheight frames for lifting ISO CONTAINERS and flat-racks withoversize loads.

It can be picked up by any main spreader capable of picking ISO containers of all types of equipment i.e. Ship to Shore Cranes, Gantry Cranes, Rubber Tyred Gantry Cranes, Reachstackers, etc without any need of modification of it or extra attachments.



#### **Security System**

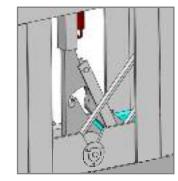
There are four safety pins, installed in all four legs of the spreader, which:

- 1.- Prevent accidental unlocking of cones while under load.
- 2.- Avoid locking/unlocking operation as long as twisltolocks are not correct sitted in the corner castings of the container.

#### Semiautomatic Mechanism

The BA-030H is a spraeder which locks/unlocks its twistlocks itself thanks to up & down movements of the crane with no need of manual operation of stevedores.

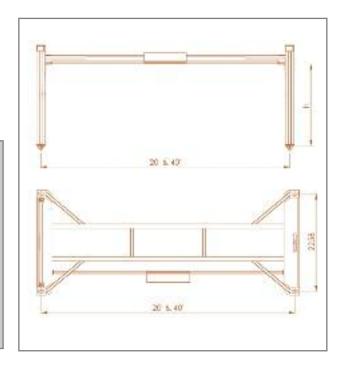
Therefore, there is no internal electrical power or external hydraulic power installed in.





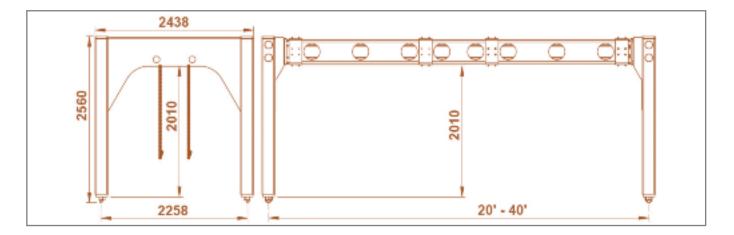
#### **Technical Data**

- Structure made of structural steel S-355 J2+N.
- Twistlocks are made of high strength steel F-1252.
- -SWL = 60T
- "h" = free height. Upon customer's requirements.
- Net weight:
  - 20' Spreader = 2200 Kg
  - 40' Spreader = 3000 Kg
- Painting suitable for sea environment.





## BA-030M: Manual Overheight Frame



#### **FULLY MANUAL OPERATED SYSTEM:**

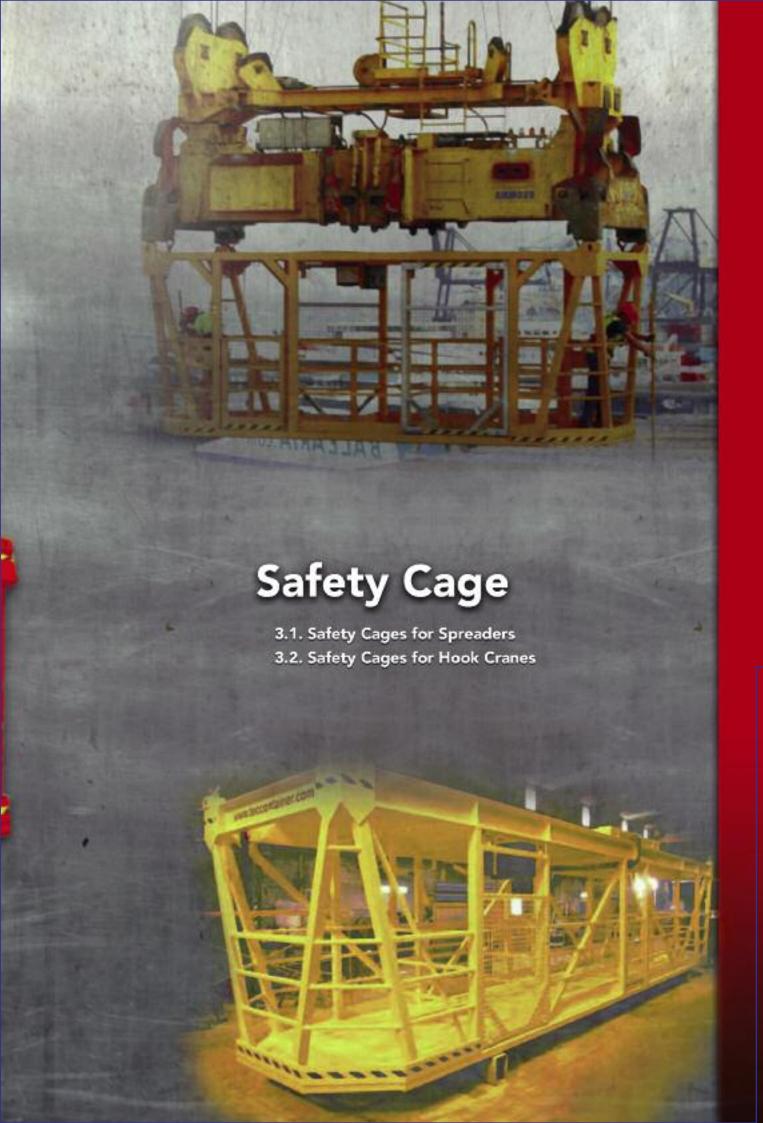
- Double lock / unlock independent per side.
- Security devices in every leg.
- Mechanical signals swl under customer requirement.
- Free height under customer requirement.
- Can be delivered demountable for an easier transport.
- Telescopic or fixed versions available.







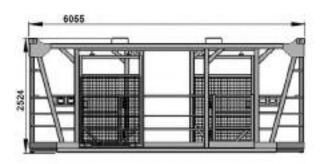


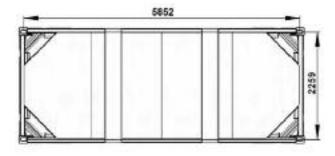


# 3.1 Safety Cages for Spreaders

#### **BA-185L**: STEVEDORING SAFETY CAGE







### (Common to all TEC Safety Cages)

- Identical Dimensions to a 20' I.S.O. container to allow Storage & Transport.
- Tare 3.500 Kg.
- Maximum Working Load = 6.000 Kg.
  - 4 persons / complete working equipment (1.000 Kg).
  - 2 Containers for Lashing Material (2.500 kg / each).
- Maximun Weight (Tare Included) 9.500 Kg.



### (Common to all TEC Safety Cages)

- Double Safety System:
  - Automatic: Through the Twistlocks of the spreader.
  - Manual: Using a safety Quick Hook & Chain from the interior of the cage.
- Safety Railing in the Complete Perimeter and internal handhold at 150 mm from outside the Safety cage.
- Completely covered Ceilling except in the comers, which remain opened to enable fitting of manual couplings of cage to the Spreader.

"The world is our business'



#### **BA-185L**: STEVEDORING SAFETY CAGE





The Sliding doors have height enough to prevent falling down of Twistlocks during the stowing process.



Doors for the stevedors have an automatic system to mantain them closed while hanging form the crane.

### (Common to all TEC Safety Cages)

- 150 mm high Toe Recess along the whole perimeter.
- Non-sliding floor with dram spots.
- 2 doors, one on each side, with opening towards the interior, spring closesystem and automatic locks.
- 4 ISO holes for Personnel Hamesses near Safety Cage Doors.
- Neoprene-lined hooks to place 4 actuator poles for Twistlocks.
- Top-embedded locker to maintain the Security Hamesses while not in use.
- Safety instructions in most common Languages.



Fall-Prevention Equipments can be fitted to 8 Lashing Eyes placed behind the working positions below the ceiling of the cage.

# 3.1. Safety Cages for Spreaders



### **BA-185L: For Intense Stevedoring Purposes:**

- 2 storage containers for Twistlocks that can be loaded and unloaded by a Fork-lift.
- 4 Doors, 2 in each side of the Safety Cage. 2 for workers and 2 in order to load and unload the containers with a standard forklift.



### **BA-185B: The Best for Internal Transport:**

- Complete open Space inside the Safety Cage.
- 2 Doors for stevedores.
- Fully Rubber Floor for extra safety.



# BA-185A: Combined Solution for Difficult Access Areas:

- 4 Doors for stevedores. 2 in the long side and 2 in the short side of the cage.
- Fully Rubber Floor for extra safety.



#### BA-185(40ft): The Best solution to Reduce Time:

- 4 Doors in the long Side of the Cage.
- 2 Containers to keep Twistlocks during Stevedores duties.



#### **BA-185L**: STEVEDORING SAFETY CAGE

# SAFETY CAGE BA-185L INSTRUCTIONS FOR USE

# While operating the safety cage, the following actions MUST be ALWAYS performed:

Radio operator is in contact with crane operator and makes sure this contact is maintained while the spreader is connected to the cage.

#### Connecting spreader to cage:

- A) Close the Twistlocks of the spreader.
- B) Secure 4 fitting points with safety chains and hooks from inside the cage.

#### Radio operator duties:

- √ Cheks if all the material loaded is duly fitted and lashed into the corresponding containers and fitting points.
- √ Assures that the total maximun work load (5.000 Kg + 4 persons with their complete working equipment) is not exceed. The total weight of the cage, including the self weight, must not exceed 9.500 Kg.
- √ Checks that the maximun load by container in its respective cell does not exceed 2.500 Kg and that they are duly secured.
- $\checkmark$  Checks that the working tools are duly secured.
- √ Checks that all doors are closed and recured.
- $\checkmark$  Checks that operators wear fall-prevention and personal protection equipment.
- Advises to the crane operator that lifting can be started. Crane operator asks for confirmation. If everything is correct, radio operator gives permission for lifting to be started.

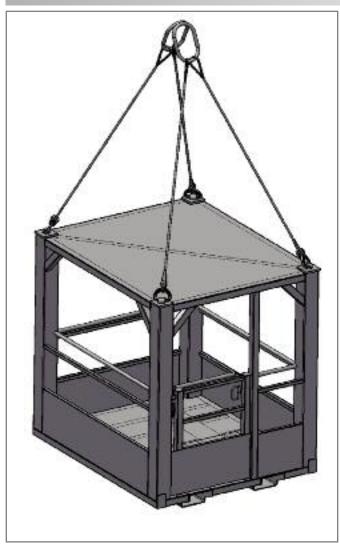
Once the final position is reached, the crane operator announces the end of the movement asks for confirmation and when receivec, gives permission to start work. Same process is repeated at the return of the personnel cage.

### Disconnecting personnel cage from spreader:

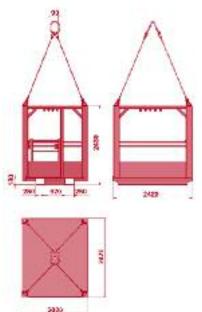
✓ Radio operator notifies to crane operator that opening and unlifting of Twistlocks can be performed. Carne operator asks for confirmation, and if everything is corrrect, proceeds to open the Twistlocks.
 ✓ Manual disconnection of the safety chains and hooks.

# 3.2. Safety Cages for Hook Cranes

# **BA-164 G**: Safety Cage (2,4x2)







Reference	Sizes S x W x L (mm)	Load Capacity (Kg)	People Capacity max.	<b>Weight</b> (Kg)
BA-164 G (2,4x2)	2.400 x 2.020 x 2.430	750	5	1.600



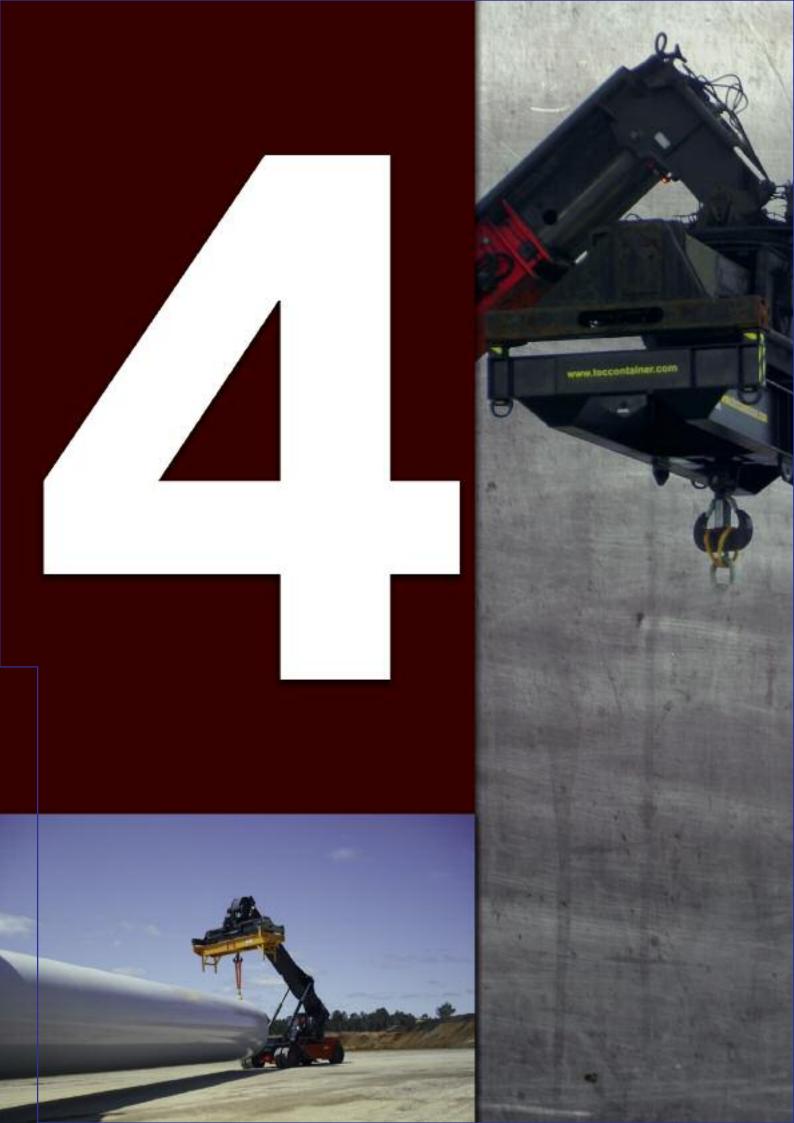
# **BA-164 B**: Safety Cage (1,4x1)







Reference	Sizes S x W x L (mm)	Load Capacity (Kg)	People Capacity max.	<b>Weight</b> (Kg)
BA-164 B (1,4x1)	1.500 x 1.000 x 2.200	300	2	350

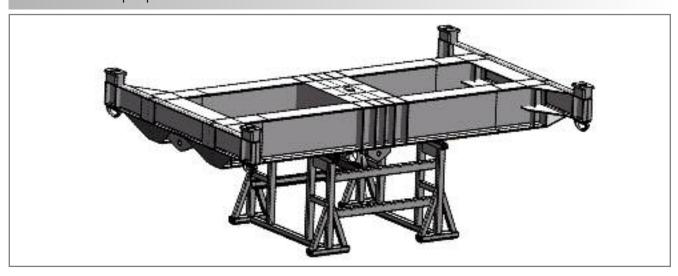






# 4.1 Equipment for Crane + Spreaders

### **BA-110**: Multipurpose Frame





Frame to convert any Spreader into a Fully operational multipose tool.

Available in a full range of measures.

Available up to SWL = 80 Tons.

Available with a special bed prepared to leave the frame when is it unused.

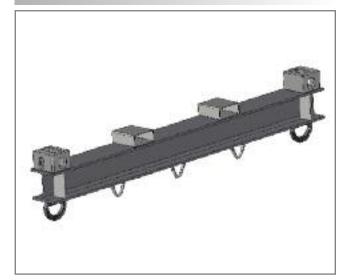






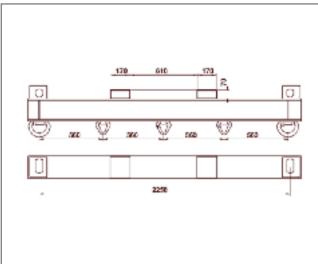
# 4.1 Equipment for Crane + Spreaders

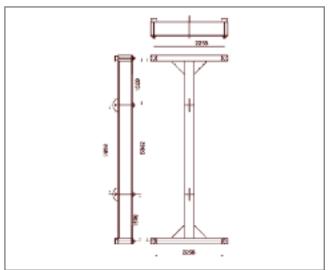
### BA-182: Beam for Spreader



### BA-126: Fream for Spreaders







The best idea to convert a standard Spreader into a multipurpose frame.

Using 2 X **BA-182**, one in each short side of the spreader, the result is a multipurpose Spreader ready to admit any load configuration.

Below D-Rings under customer requirements. Up to SWL = 20 Ton.

Optional Forklift Pockets for easy transportation.



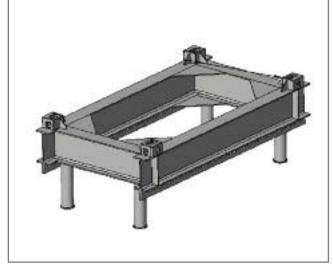
Another idea to convert a standard Spreader into a multipurpose frame.Below D-Rings under customer requirements. Up to SWL = 40 Ton.

Available for 20' & 40'.

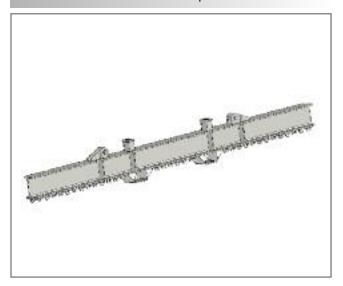
Optional Forklift Pockets for easy transportation.

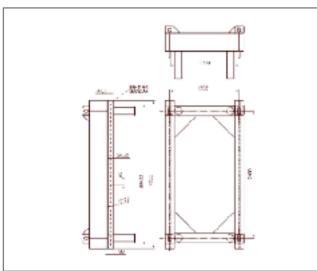


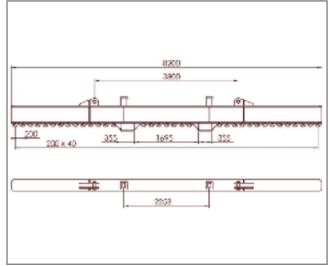
### **BA-114:** Frame for Multiple Shackles



### BA-203: Frame for Multiple Shackles









Another idea to convert a standard Spreader into a multipurpose frame.

Using 2 X **BA-203**, one in each short side of the spreader, the result is a multipurpose Spreader ready to admit any load configuration.

Configuration of the Lower Links for shackles under customer requirements.

From 6 to 8 meters long & SWL up to 36 Tons.

Another idea to convert a standard Spreader into a multipurpose frame.

Configuration of the Lower Links for shackles under customer requirements. SWL up to 20 Tons.

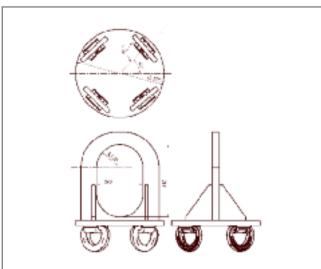
# 4.2. Equipment for Crane + Hook

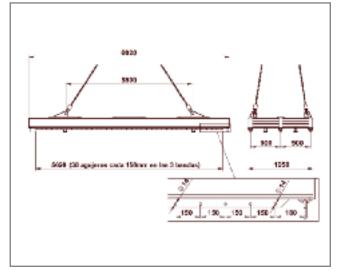
### BA-120: Multilink



**BA-213:** Multipurpose Frame for Cranes







It converts the single hook into a multiple link tool.

Available in a full range of measures.

Available up to SWL = 80 Tons.

Multiple configurations according to the customer requirements.

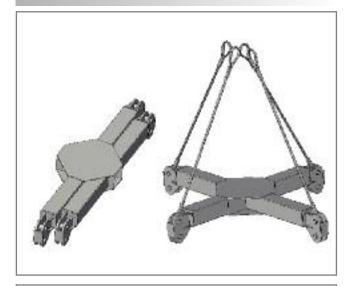


Multiple links in the lower part for shackles and chains. 32 links every 200mm in the lower part of the 3 beams.

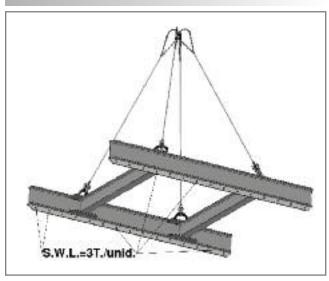
It is a very versatile tool with a all-purpose use for general cargo. Available for 16Tons and 24Tons configurations.

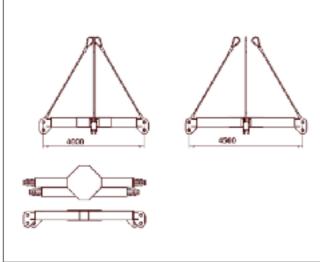


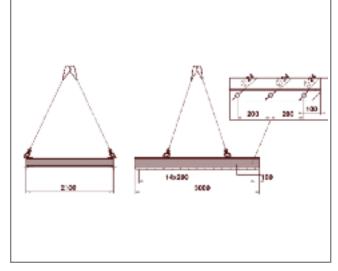
### BA-129: Demountable Lifting Frame



**BA-220:** Lifting Frame for Crane + Hook







Also knows as Folding frame or Scissors Frame. It has 2 main positions:

- First, folded to reduce the trasnport costs.
- Second, working position to ensure a robust design of up to 100 Tons.

Available versions from SWL = 20Tons untill 100 Tons.

Multiple configurations according to the customer requirements.

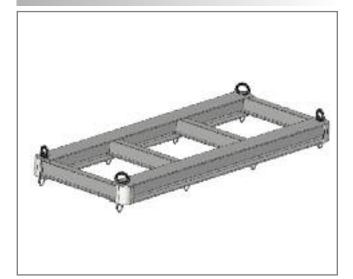
It converts the single hook into a multiple link tool.

Links of 24mm diam every 200mm in both lower beams.

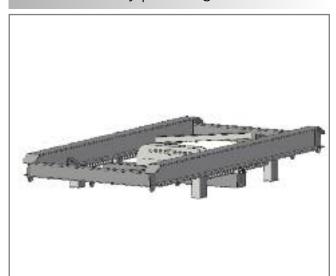
Available up to SWL = 20 Tons.

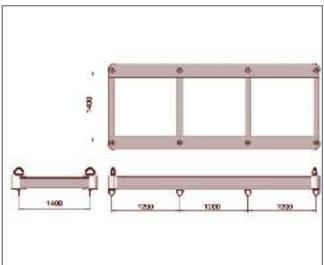
# 4.2. Equipment for Crane + Hook

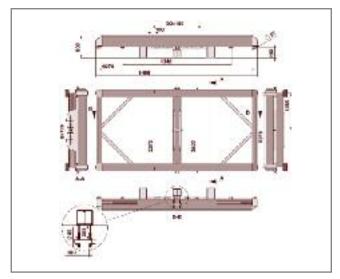
### **BA-168:** Muntipurpose frame for Crane + Hook



### BA-223: Gravity point Regulator Frame









It converts the single hook into a multiple purpose frame. Available up to SWL = 20 Tons.

Multiple configurations according to the customer requirements.

This frame has a easy but powerfull regulator of the Gravity Point.

Very usefull when lifting unbalanced loads.

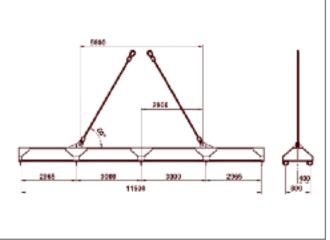
The user can compensate and modify the gravity point sideways and headways.

Available up to SWL = 20 Tons.

# **BA-130**: Multipurpose Beam







The estandar TEC CONTAINER Lifting Beam.

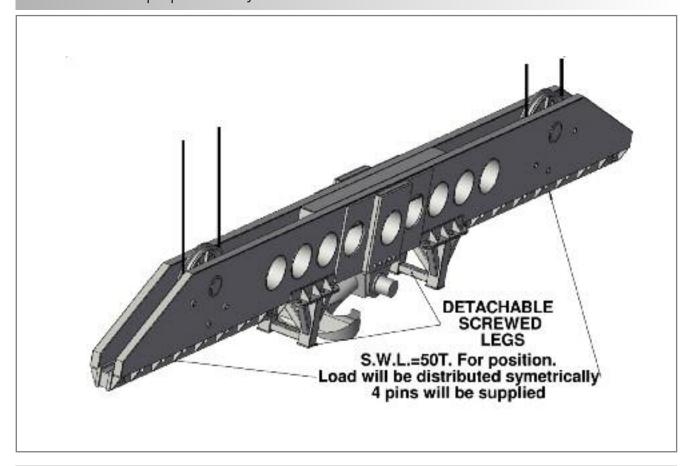
A must for General Cargo Handling.

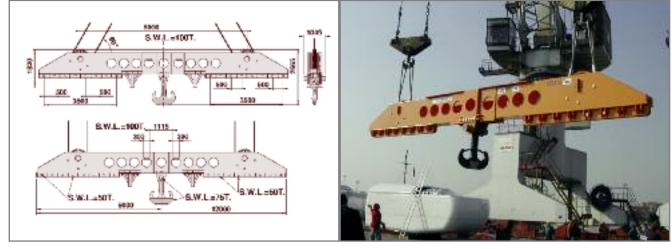
Available from SWL = 16 Tons up to 45 Tons.

Available from 6m to 12m wide.

# 4.3.Beams

### BA-175 G: Multipurpose Heavy Beam





One of most powerful and most multifunctional beam produced by TEC CONTAINER.

Ready to be used with one single crane or two tandem cranes.

Ready to be used with the central lower doble hook or holes for shackles up to 50 Tons each.

Available from SWL = 75 Tons in central hook or 100 Tons in the lateral holes.



### BA-187: Modular Beam



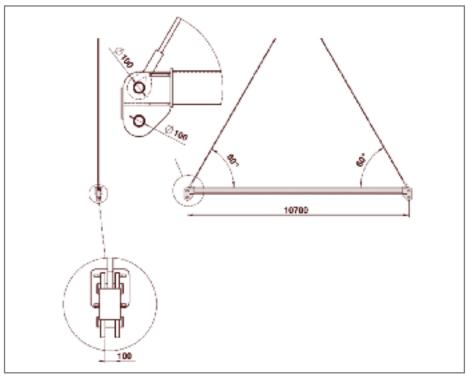
The easiest way to have multiple beams using one simpe idea.

One central body + 2 lateral heads with different links under customer requirements.

Valid for single / tandem cranes.

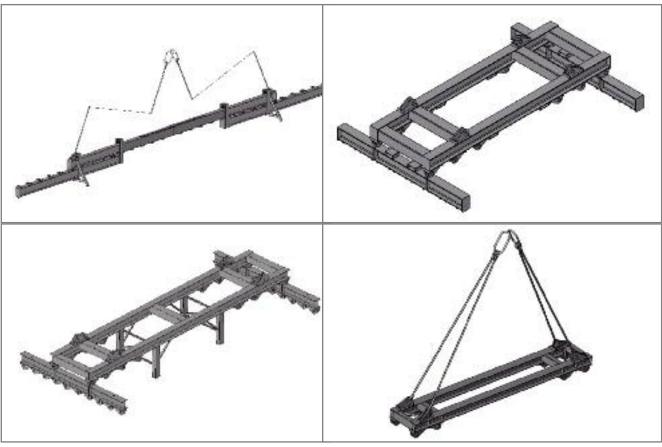
Length and SWL of each beam can be made under customer requirements.

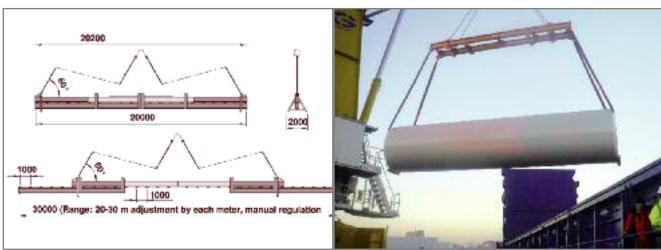
Up to 100 Tn SWL.



# 4.3.Beams

## BA-190: Heavy Duty Beam





**BA-190** is a complete Range of Heavy Beams and frames.

Valid for single / tandem cranes.

The small model is SWL 30 Tons while the Biggest of the family is 100 Tons.

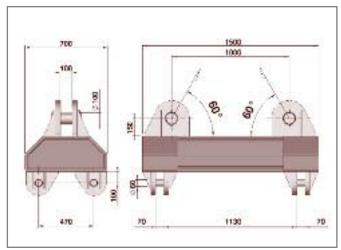
Available as well in telerscopic versions.

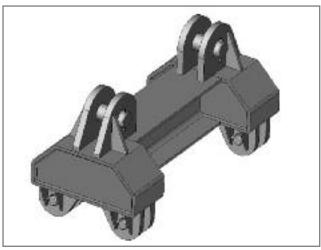
Length and SWL of each beam can be made under customer requirements.



# BA-189: Small Beam / Heavy Loads







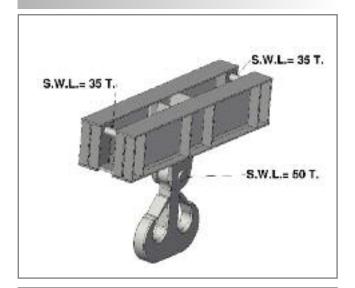
One of the TEC CONTAINER Smallest beams.

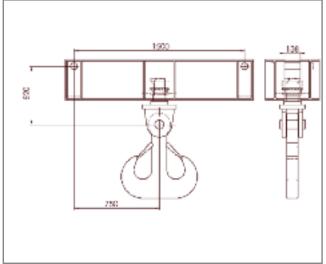
At the same time one of the most Powerful.

Length and SWL of each beam can be made under customer requirements.

# 4.3.Beams

#### **BA-186:** Beam for Tandem Cranes





The Best solution to join two cranes into one single beam.

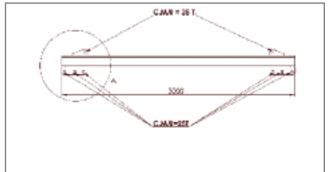
Two cranes, in tandem mode, join its forces using this single beam.

Length and SWL of each beam can be made under customer requirements.

Already produced range of model with SWL from 20 Tons to 50 Tons.

### BA-197: Heavy Loads Beam







Another versatile range of products.

Due to the lifting lower holes, the **BA-197** permits gravity point regulation if the loads are not balanced.

Length and SWL of each beam can be made under customer requirements.

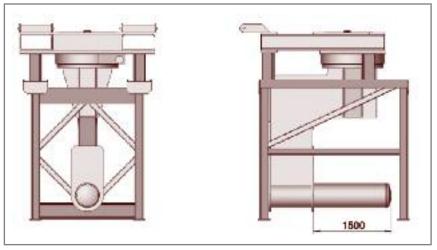
# 4.4. Equipment for Forklift

CONTAINER

"The world is our business"

### BA-141: Rotatory C-Hook for Foklift







Universal Link for almost any forklift.

Up to 360° movements to both sides to ease loading  $\mbox{\prime}$  unloading operations.

SWL of the C-Hook under customer requirements.

Able to handle Coils up to 40 Tons and 1500mm wide.

When not in use, the BA-141 remains in a bed also provided.

# 4.4. Equipment for Forklift

#### BA-172C: Boat Loader for Forklift



This attachment allows any truck to put in and to take out of water boats easily.

No major modifications or works have to be done in the

No major modifications have to be done in the Forklift.

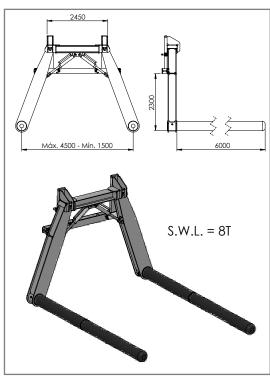
Hydraulic activation from the cockpit.

Galvanized for total protection.

The arms open & close to adapt to any sleeve boat.

The arms are lined with neoprene to prevent any damage to the boat.

Major measures and SWL under customer requirements.





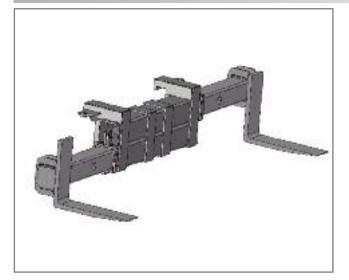


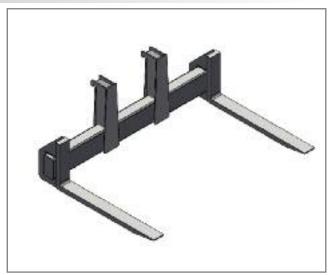


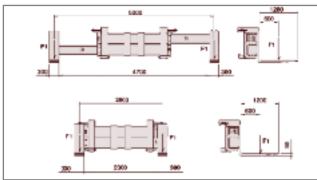




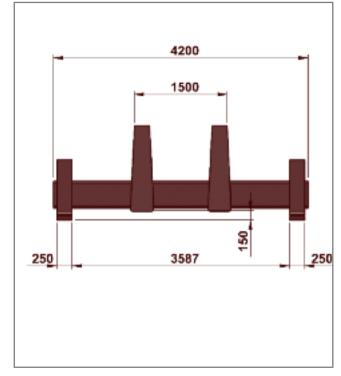
### BA-137 A,BA-137 B: Forks + Attachment











Universal Link for almost any type or forklift.

Your simple forklift can be converted into a more powerful machine.

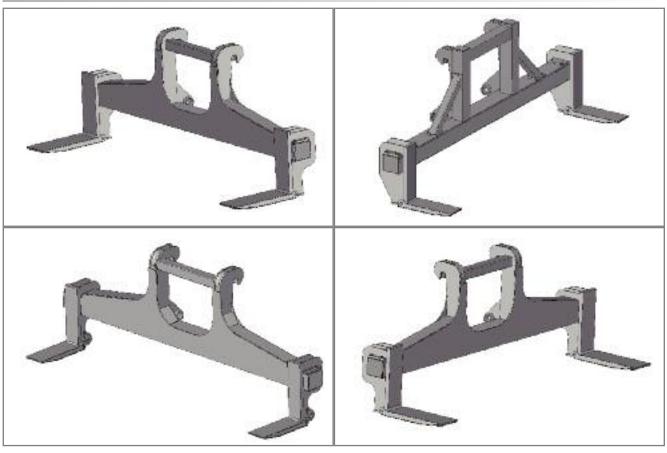
Available in Telescopic version.

Different lenght of the forks under customer requirements.

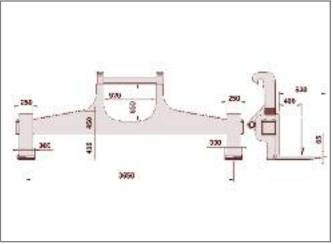
SWL of the standard version = 7 Tons.

# 4.4. Equipment for Forklift

### BA-183: Forks + Attachment







Universal Link for almost any type or forklift.

Your simple forklift can be converted into a more powerful machine.

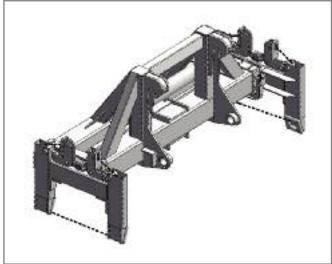
All forks are provided with anti-abrasion covering.

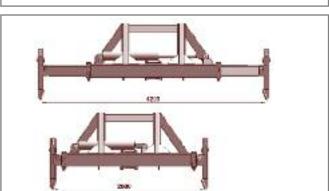
Different lenght of the forks under customer requirements.

SWL of the standard version = 12,5 Tons.



#### BA-115: Glass Loader for Forklift







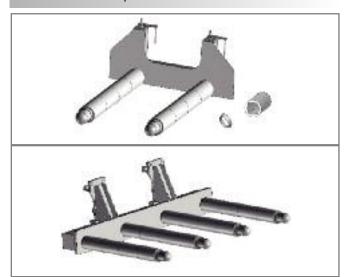
Universal Link for almost any type or forklift.

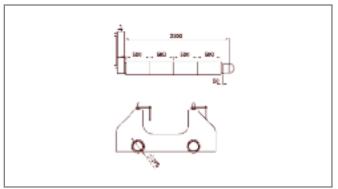
Telescopic attachment that permits handling of glass packages without any ground staff intervention.

SWL of the standard version = 14 Tons.

Multiple configurations according to the customer requirements.

### BA-138: Multiple Coil Handler







Universal Link for almost any type or forklift.

This attachment multiplies the power of a simple forklift and allows you to handle, load and unload two or more coils in every cycle.

SWL of the standard version = 14 Tons.

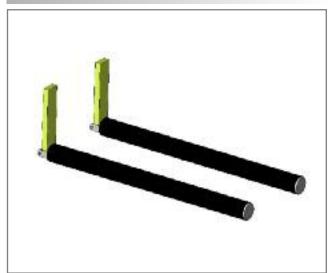
Optionally supplied with reinforced nylon protections.

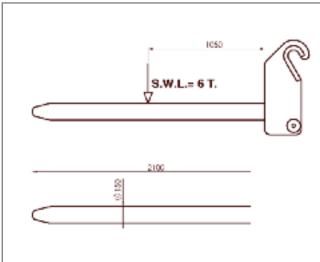
# 4.4. Equipment for Forklift

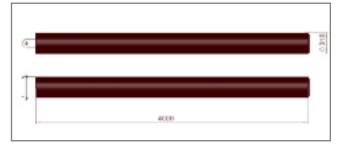
### BA-123: Simple Coil Handler



#### **BA-172:** Marina Boat Handlers









Universal Link for almost any type or forklift.

This attachment multiplies the power of a simple forklift and allows you to handle, load and unload steel coils easily.

SWL of the standard version = 6 Tons.

Multiple configurations according to the customer requirements.

Universal Link for almost any type or forklift.

Special handler for yatchs and boats.

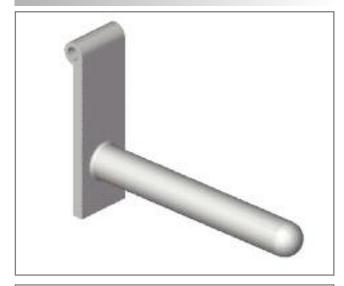
A must in any marina.

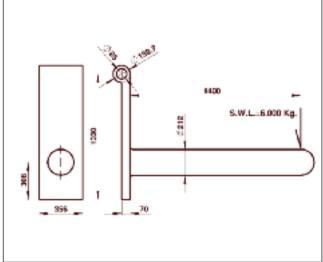
Rubber protected. Sling also provided by TEC.

SWL of the standard version = 3 Tons.



## **BA-148:** Simple Coil Handler





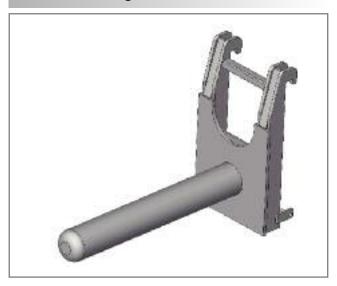
# Universal Link for almost any type or forklift.

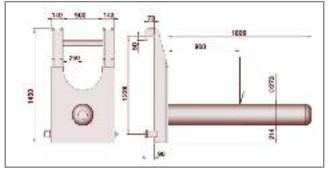
This attachment multiplies the power of a simple forklift and allows you to handle, load and unload steel coils easily.

SWL of the standard version = 6 Tons.

Multiple configurations according to the customer requirements.

### BA-149: Strong Coil Handler







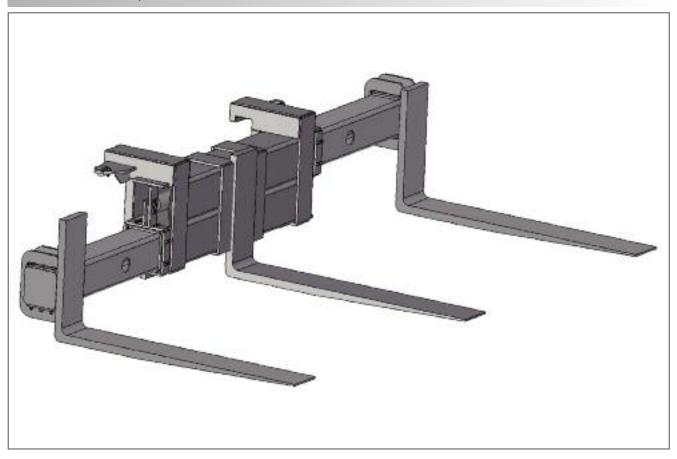
Universal Link for almost any type or forklift.

This attachment multiplies the power of a simple forklift and allows you to handle, load and unload steel coils easily.

SWL of the standard version = 30 Tons.

# 4.4. Equipment for Forklift

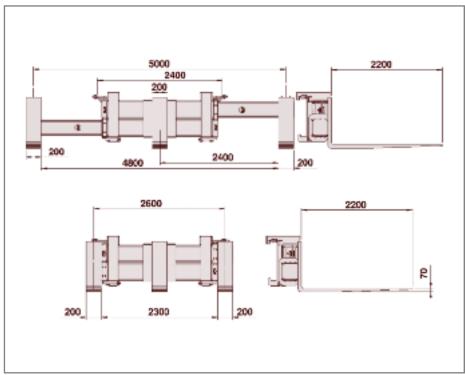
## **BA-212:** Telescopic Forks + Attachment



Universal Link for almost any type or forklift.

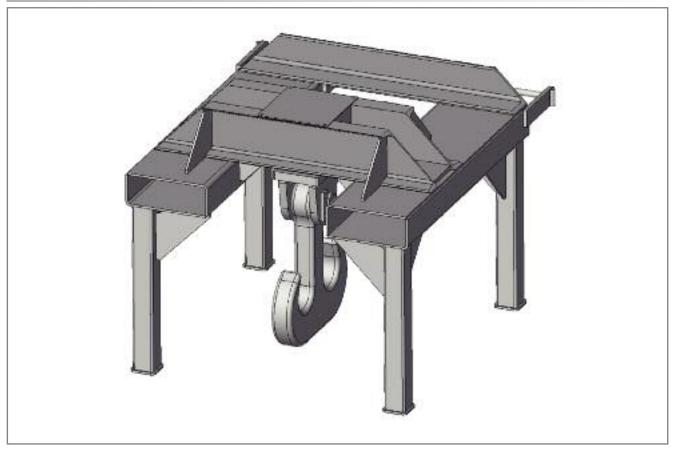
Your simple forklift can be converted into a more powerful machine.

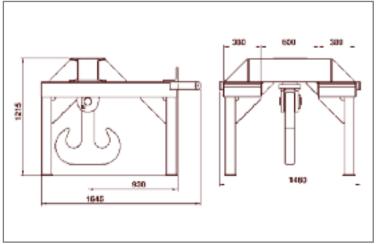
Different lenght of the forks under customer requirements SWL of the standard version = 12,5 Tons.





# **BA-153**: Multipurpose Attachment







This attachment converts your standard forklift into a powerfull general cargo machine thanks to the lower double hook.

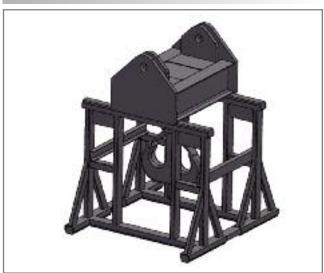
Different length of the forks under customer requirements SWL of the standard version = 32 Tons.

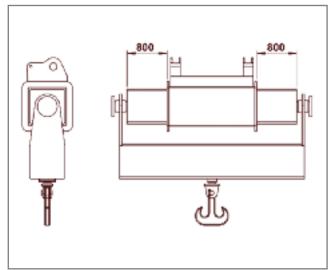
# 4.5. Equipment for Reachstaker

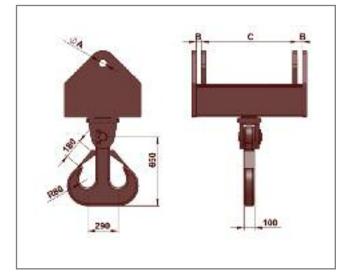
**BA-237:** Reachstacker to double Hook Converter



BA-237T50: Reachstacker to Coil Handler Converter







Universal Link for almost any reachstacker.

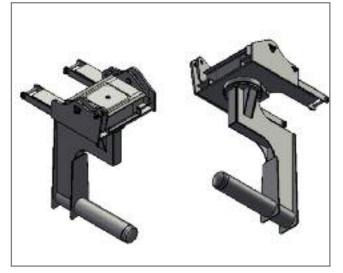
This attachment converts the Reachstacker into a General Cargo machine.

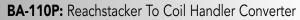
SWL of the lower double hook under customer requirements.

When not in use, the BA-237 remains in a bed also provided.

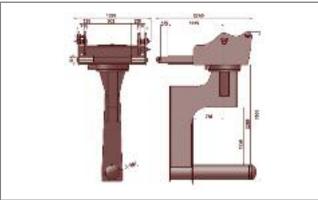


#### **BA-141:** Reachstacker to Coil Handler Converter















Universal Link for almost any reachstacker.

This attachment converts the Reachstacker into a Coil handler machine.

SWL of the C-Hook under customer requirements.

When not in use, the **BA-141M** remains in a bed also provided.

Multiple configurations according to the customer requirements.

Universal Link for almost any reachstacker.

This attachment converts the Reachstacker into a Coil handler machine.

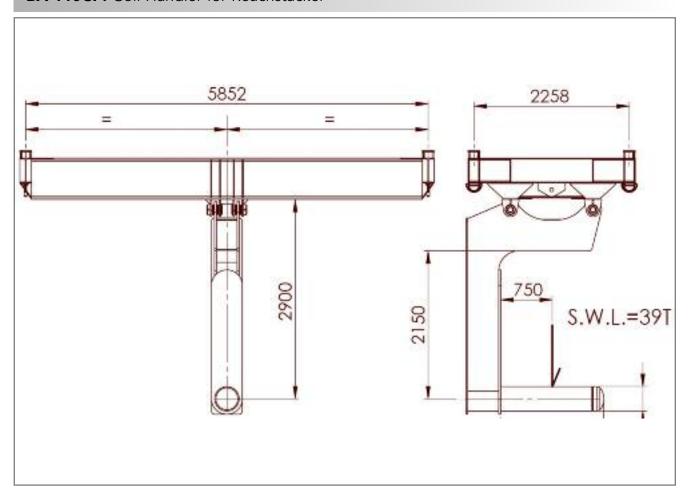
SWL of the C-Hook under customer requirements.

When not in use, the  ${\bf BA-110P}$  remains folded for an easiest store and transportation.

Multiple configurations according to the customer requirements.

## 4.5. Equipment for Reachstaker

#### BA-110CP: Coil Handler for Reachstacker







Ready to be used in any spreader or Rechstacker.

No modifications in the main Spreader are needed.

The BA-100CP is delivered with a Stand for easy pick up.

SWL and main measures are adaptable under customer's requirement.

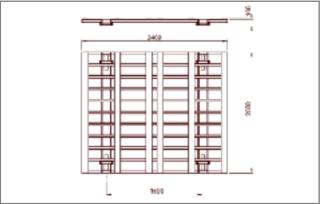
## 4.6. Pallet Handling



"The world is our business"

#### BA-226: Pallet Base + Slings







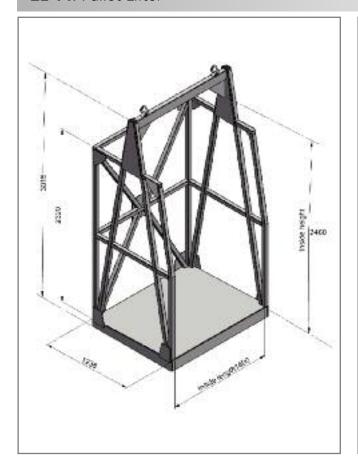
Designed for use with Slings.

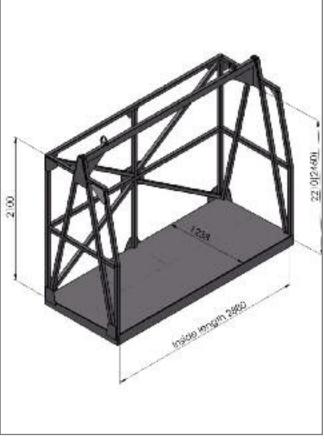
Can handle 4 Pallets of 1.5 Tons each Pallet.

SWL = 6 Tons.

## 4.6. Pallet Handling

#### **EL-14**: Pallet Lifter









Simple, Double and Quadruple Versions Available.

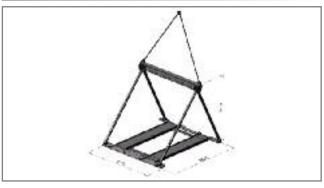
The double version is ready to lift up to 3.5 Tons.

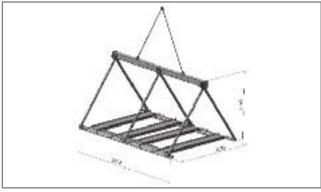
## 4.7 Car & Truck Handling

CONTAINER

"The world is our business"

#### **EL-02:** Car Lifter Type 1





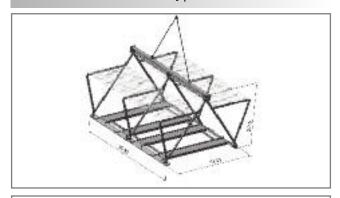
Simple, Double Versions Available.

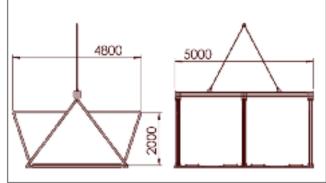
The double version is ready to lift up to 6 Tons.

The simple version is ready to lift up to 3 Tons.

Dimensions under customer request.

#### **EL-02 A:** Car Lifter Type 2





Ready to lift tow cars.

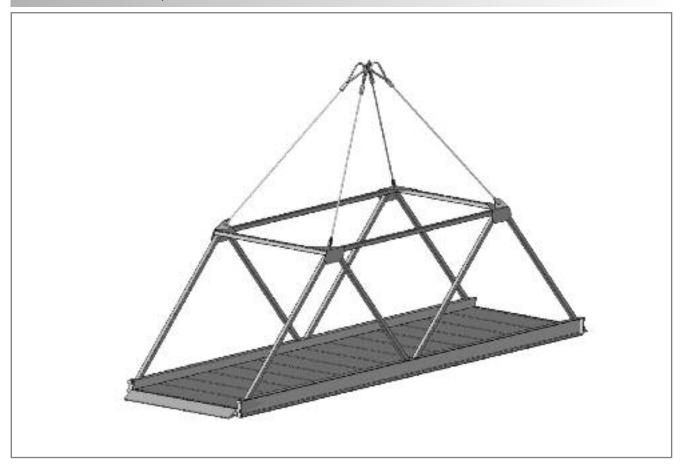
SWL = 6 Tons.

Special protections available.

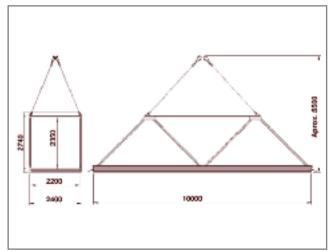


## 4.7. Car & Truck Handling

#### **EL-10:** Car Lifter Type 3







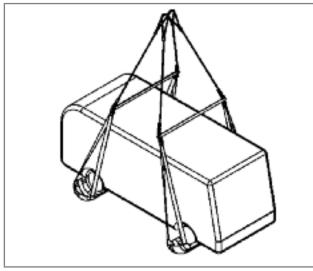
Ready to lift tow cars or small trucks.

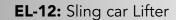
SWL = 10 Tons.

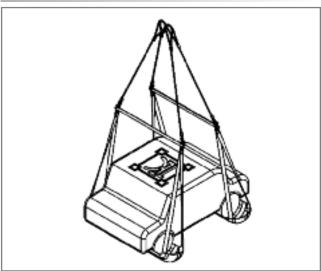


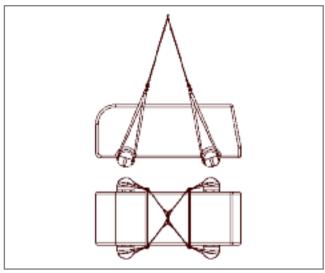


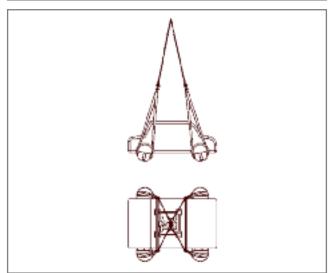
#### EL-11: Sling Bus & Truck Lifter











The cheapest solution to load & unload buses or trucks.

SWL = 20 Tons.

Dimensions under customer request.

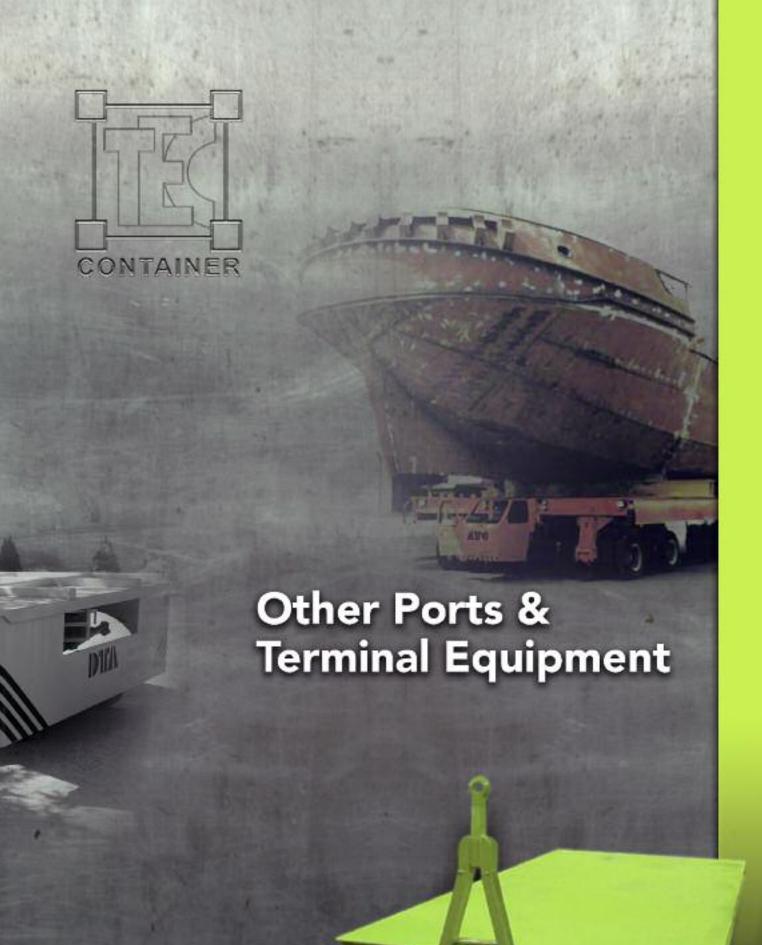
The cheapest solution to load & unload cars.

SWL = 4 Tons.

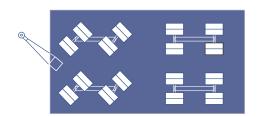


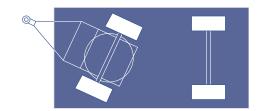


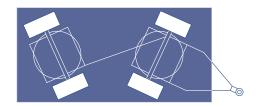


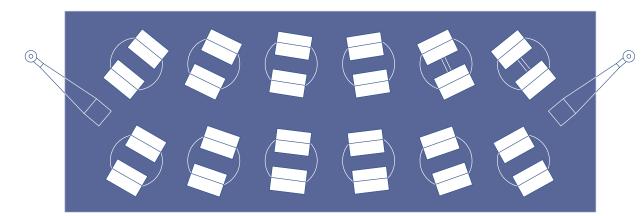


## 5.1 Industrial Trailers









DTA industrial and heavy duty trailers for payloads up to 300 tons can be towed from either a tractor or forklift. We have different type of versions depending on the turn radius and load to move as per clients requirements.

Trailers can be made with turntable steering, axel pivot steering, etc. Our trailers are robust and requires very low maintenance.



## 5 2 Special Solutions

"The world is our business"









DTA is specialized on giving reliable and taylor made transport system solutions for handling "complicated" loads. The design of our vehicles are different for each application and are manufactured according to CE standards.

Among our special solutions, we have made autoclave AGV's, vehicles with hydraulic lifting by forklift or by 5th wheel tractor, vehicles operated by induction, heavy duty transporters for working in tandem. Also, we have supplied automatic vehicles on rails with the possibility of changing to a 90° rail track.

# Other Ports & Terminal Equipment

## 5.3 Heavy Duty Transporters







Heavy Duty Transporters are mainly used to solve manoeuvrability problems in tight spaces. Due to all possible steering programs, on either one or different axles, you can achieve tight turn radious. The propulsion can be either electric (for in-plant load transports) or diesel (for long distances). DTA vehicles comply with CO2 standards.

This type of transporters might have hydraulic elevation for palletized cargos in order to optimized space as much as possible.

Other advantages from heavy duty transporters are low noise level, maximun safety for operators and for material handled and are easy to operate.

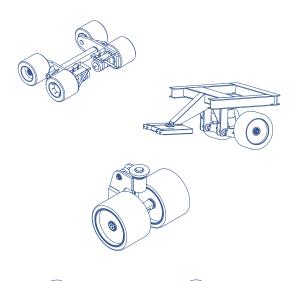




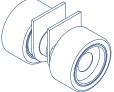
"The world is our business"















DTA is the Spanish leading designer and manufacturer of industrial vehicles for in-plant transportation, with or without self propulsion.

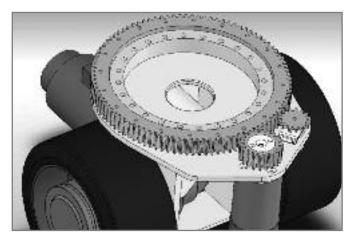
Since 1972 our vehicles are used on all type of industry like shipyards, windmills, automotive, aerospace, steelmills, ports, concrete industry, etc.

DTA employees very efficient engineers that use the best designing programs in order to meet all kind of customer requirements.

Due to our experience, we are able to offer our know-how to companies specialized in logistic services.

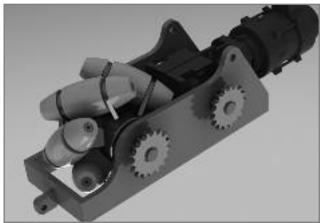
We propose you the best solution at the best price.

## 5.5 Rolltrailers









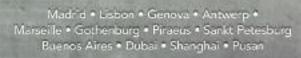




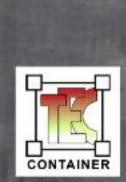




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#### TEC CONTAINER S.A.

C/Tajo, 19 - Pol. Ind. "Las Acacias"

28840 • Mejorada del Campo • Madrid • Spain
Tel + 34 91 302 16 38
comercial@teccontainer.com
www.teccontainer.com