

MOTORIZED RETRACTABLE WAREHOUSES

LOGISTIC
SOLUTIONS



PVC WAREHOUSES WITH A 10 MT TO 24 MT SPAN



ASSEMBLY, USE AND MAINTENANCE MANUAL

EC DECLARATION OF CONFORMITY

(Machine Directives 98/37/EC, Enclosure II part A)

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AS THE MANUFACTURER KOPRON DECLARE THAT THE NEW EQUIPMENT DESCRIBED HEREIN AS:

Motorized retractable warehouse:

model	
serial number	
year of manufacture	

IS IN COMPLIANCE WITH THE FOLLOWING EC DIRECTIVES AND RELEVANT UP-DATINGS:

- MACHINE DIRECTIVES 98/37/EC
- LOW TENSION DIRECTIVES 73/23/EC
- ELECTROMAGNETIC COMPATIBILITY DIRECTIVES 89/336/EC.

IT IS FORBIDDEN TO OPERATE THE MACHINERY DESCRIBED IN THIS DECLARATION, BEFORE HAVING CAREFULLY READ THE INSTRUCTIONS CONTAINED IN THIS MANUAL.

The technical manufacturing file of the structure is kept in Kopron at the above address.

Gorgonzola

The Chairman
Paolo Luigi Vergani

.....

LEGISLATIVE STANDARDS REGARDING THE STRUCTURE

The structure is made according to the following standards in force:

- Law 05/NOVEMBER/1971 N 1086 - Standard regulating the use of reinforced concrete, either normal or prestressed and with metal structure.
- D.M.LL.PP. 14/FEBRUARY/1992 - Technical standards regulating the works carried out in reinforced concrete and prestressed and for metal structure.
- D.M.LL.PP. 09/JANUARY/1996 - Technical standards for calculations, works and testing of the structures in reinforced concrete normal and prestressed and for metal structures.
- D.M.LL.PP. 16/JANUARY/1996- Technical standards regarding 'general criteria for safety checks on constructions and loads and overloads'.
- MINISTERIAL MEMORANDUM LL.PP. 04/JULY/1996 N 156AA.GG./STC - Instructions on how to apply the technical standards Istruzioni regarding 'general criteria for safety checks on constructions and loads and overloads' as mentioned above.
- CNR - UNI - 10011 JUNE 1988 - Steel Costruction - Instructions for calculation, construction, testing and maintenance.

In addition if required:

- D.M.LL.PP. 16/JANUARY/1996 - Technical standards for building in earthquake zones.
- LEGGE 02/FEBRUARY/1974 N 64 - Detailed provisions for building in earthquake zones.

Regulations for specific needs of the zone of construction issued by local authorities must be considered.

EC STANDARDS

LIST OF SAFETY REQUIREMENTS AND OF THE STANDARDS APPLIED

REQUIREMENTS	EN STANDARDS
1.1 GENERAL REMARKS	
1.1.1 DESCRIPTION	EN 292.1
1.1.2 PRINCIPLES ON SAFETY INTEGRATION	EN 292.1- EN 292.2
1.1.3 MACHINE DESIGN FOR TRANSPORT	EN 292.1- EN 292.2- EN 294
1.2 CONTROLS	
1.2.1 SAFETY AND RELIABILITY OF CONTROL SYSTEMS	EN 292.1- EN 292.2- EN 60204/1- EN 418
1.2.2 CONTROL DEVICES	EN 292.1- EN 292.2- EN 60204/1- EN 418
1.2.3 START UP	EN 292.1- EN 292.2- EN 60204/1- EN 418
1.2.4 EMERGENCY AND STOPPING DEVICE	EN 292.2 (3.7)- EN 418 - EN 60204/1
1.2.6 SUPPLY CIRCUIT FAILURE	EN 292.1 (4.9)- EN 292.2 (3.6)- EN 418 EN 60204/1
1.2.7 CONTROL CIRCUIT FAILURE	EN 292.1 (3.16) EN 292.2 (3.7)-EN 418 EN 60204/1
1.2.8 SOFTWARE	EN 292.1(3.16-3.16-3.17) EN 292.2 (3.7) - EN 418 EN 60204/1
1.3 SAFETY MEASURES AGAINST MECHANICAL RISKS	
1.3.1 STABILITY	EN 292.1- EN 292.2
1.3.4 RISK OF CRUSHING	EN 292.1 (4.2.1) EN 292.2 (3.2) EN 349 - EN 294
1.3.5 RISK OF CUTTING	EN 292.1 (4.2.1-4.2.2)- EN 292.2 (3.2) EN 349 - EN 294
1.3.6 RISK OF ENTRAPPING	EN 292.1 (4.2.1-4.2.2)- EN 292.2 (3.2) EN 349 - EN 294
1.3.7 RISKS DUE TO SURFACE AND EDGES	EN 292.1 (4.2.)- EN 349 - EN 294
1.3.8 PREVENTION AGAINST MOVING ELEMENTS	EN 292.1 (4.2.2) EN 292.2 (3.8) EN 349 EN 294
1.3.9 CHOICE OF A PREVENTION AGAINST MOVING ELEMENTS	EN 292.1 (4.2.2) EN 292.2 (3.8) EN 349 - EN 294

EC STANDARDS

1.4 EC STANDARDS REQUIREMENTS FOR PROTECTION

- | | | |
|-------|---------------------|---|
| 1.4.1 | GENERAL REQUIRMENTS | EN 292.1 -EN 292.2 EN 294- EN 349
EN 418 |
|-------|---------------------|---|

1.5 SAFETY MEASURES AGAINST OTHER RISKS

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|-------|--|--|
| 1.5.1 | RISKS DUE THO ELECTRICAL ENERGY | EN 292.1 (4.3)- EN 292.2 (3.9-3.4)
EN 60204/1 |
| 1.5.2 | LIQUID LEAKAGE | EN 292.2 (4.2.1)- EN 294 |
| 1.5.3 | RISKS DUE TO TEMPERATURE | EN 292.1 (4.4)-EN 292.2 (3.6.3)
EN 563 |
| 1.5.4 | HEALTH RISKS OF NOISE EXPOSURE | EN 292.1 (4.5)-EN 292.2 (3.6.3)
EN 23741-EN 23742 |
| 1.5.5 | RISKS DUE TO WRONG HUMAN
MANOEUVRES | EN 292.1 (4.9)- EN 292.2 (3.6.3)
EN 418 -EN 60204/1 |
| 1.5.6 | RISKS DUE TO TEMPORARY LACK OF
SAFETY MEANS | EN 292.1 (3.22)- EN 292.2 (4.2)
EN 294 |
| 1.5.8 | RISK OF FALL, SLIPPING OR TRIPPING | EN 292.1 (4.2.3)- EN 292.2 (6.2.4)
EN 349 -EN 457 |

1.6 MAINTENANCE

- | | | |
|-------|------------------------------------|-----------------------------------|
| 1.6.1 | MACHINE MAINTENANCE | EN 292.1 - EN 292.2 |
| 1.6.2 | ENERGY SUPPLY SOURCE
INSULATION | EN 292.1 - EN 292.2 EN 60204/1 |
| 1.6.3 | OPERATOR INTERVENTIONS | EN 292.1 - EN 292.2 EN 294 EN 349 |

1.7 SIGNALLING

- | | | |
|-------|------------------------|--|
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EN 60204/1 |
| 1.7.3 | WARNING OF OTHER RISKS | EN 292.1 (5 - 6) |
| 1.7.4 | MARKING | 98/37 EEC |
| 1.7.5 | INSTRUCTIONS FOR USE | 98/37 EEC - CEE93/44 EEC
93/68 EEC |

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- WAREHOUSE FROM 20 MT TO 24 MT

DRWG. N° 0130

In case the retractable warehouse has special equipment, specific manuals will be provided in addition to this one. These manuals must be carefully read order to assure a correct and safe handling of the product.

All drawings ad diagrams besides technical, mechanical and electrical characteristics described in this manual, can be modified at any time. We shall provide updating the manual as soon as possible.

Kopron S.p.A.

INTRODUCTION

This manual is a guide for installers, users and maintenance personnel as well as containing information on EC directives and being useful for preventing accidents during the life cycle of the equipment from installation to dismantling.

In case instructions are not clear or should particular problems arise and not mentioned herein, please apply to our service department.

Do not take personal initiatives for interventions if instructions are not fully understood.



Buyer and personnel involved in installation and operation should read this manual of assembly, use and maintenance before using the equipment.

We would suggest to keep a copy of this manual handy in a place where it can be easily consulted.

The structure has been built according to EC Directives and to what has been declared in the Certificate of Conformity.

Page 2 shows a facsimile of the Certificate, the original one is sent by registered mail. Standards regulating the design and production of these structures are mentioned at page 3 of this manual.

Assembly and installation must be carried out by qualified personnel adequately equipped to operate in absolute safety condition.

A dedicated chapter on other risks will face the matter in detail.

Preventive maintenance for solving anomalies must be planned according to standard en 292.2 art. 5.5.1 which require only **specialized personnel** to carry out interventions.

Personnel handling the structure must have full knowledge on how to operate it, on improper use and on particular risks and protection measures.

To have another copy of the manual you may contact our service department at the following address, specifying the serial number and year of construction of the product.

A marking plate is positioned on the front part of the framework (see Chap. 1.3 - Unit II) which contains all the necessary data Kopron needs:

 **KOPRON** S.p.A.

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20064 Gorgonzola – (MI)

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KOPRON S.p.A. have the right to update or improve the manual without affecting the validity of this version.

Some important points have been highlighted by using symbols explained on next page.

INTRODUCTION

SYMBOLS



DANGER - NOTICE

This sign indicates serious danger which must not be underestimated in order not to risk people's health and safety.



CAUTION

This sign indicates the requirement to be careful on how to move and act in order not to risk people's health and safety and cause economical damages



IMPORTANT

This sign indicates technical information and important regulations to pay attention to.



ECOLOGY

Remarks regarding ecology



PROHIBITION

If instructions contained in this manual are not strictly followed and original spare parts are not used, or in case ordinary maintenance or non authorized interventions are carried out Buyer will take his own responsibilities and guarantee will no longer be valid

Kopron S.p.A.

CHAPTER 1

DESCRIPTION

1.1 DESCRIPTION OF THE STRUCTURE

A retractable warehouse consists of metal profiles covered with a fabric, and is designed to cover areas for different purposes in compliance with standards regulating the use of this type of warehouse.

The main characteristic of this type of structure is that it is not permanent, but retractable, in other words it can be extended in order to cover the area it has been created for, and then be folded back to closed position.

The structure is built with either square or rectangular steel tubes which go through hot galvanization process to resist against the effects of weather.

It can therefore be installed in any all areas also with difficult weather and also near sea sites, resisting against corrosion.

The structure is made of different parts assembled together either by bolting or electro-welding the joints. Both ways are effective and give the required stiffness to the structure.

The work is carried out either in workshops or in building yards.

The retractable structure, made of several frames connected to one another, is mounted on wheels sliding on tracks.

Opening/closing movements are regulated by a motor through chain transmission.

1.2 IMPROPER USE

The retractable structure can be used for many purposes.

It is easy and quick to assemble, it can be used on working sites where you need to shelter machinery and equipment.

The structure must not be used for purposes different from the ones indicated.

In case the buyer needs to use the structure in a special way he will have to first inform Kopron S.p.A. who must authorize such a use and suggest the actions to undertake.



The location where the structure will be placed is of utmost importance to determine the type of structure necessary according to the climate or to other environmental conditions.

Controls have been designed in order to prevent risks to the operator.
To keep safety conditions no changes must be carried out to the electric system.



In case buyer makes an improper use of the structure he will totally take his own responsibilities and guarantee will no longer be valid.

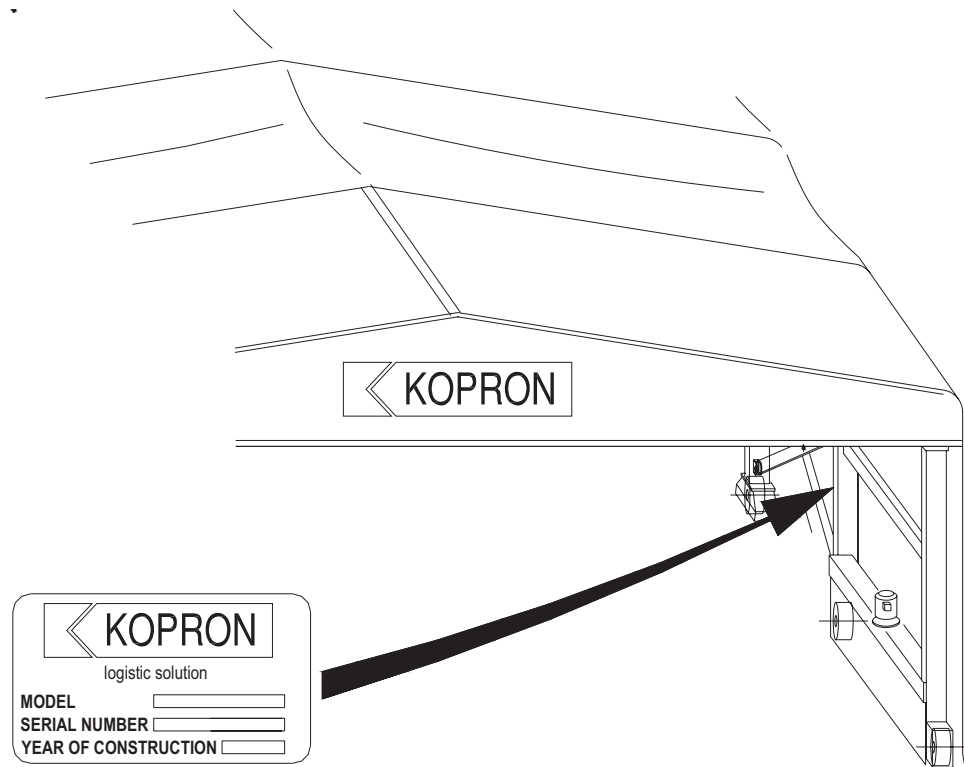
1.3 EC IDENTIFICATION PLATE



Marking plate of the product is permanently placed near the second post on the right. The data in the marking plate must be legible, and must be often cleaned.

In case it gets damaged or becomes no longer legible, it must be replaced in compliance with the EC Machines Directives.

For requesting another plate please mention the data contained in the Certificate of Conformity sent by registered mail to Customer.



CHAPTER 1**IDENTIFICATION AND CONTROL OF THE MATERIAL****1.1 PREAMBLE**

Warehouses with a span from 10 to 24 mt are delivered with arches disassembled and posts already provided with wheels.

The arch is the carrying structure of the warehouse made of two trusses, a connecting boom and, if necessary, of the vertical and diagonal ties.

The whole structure is assembled with anchoring bolts and all components are perforated before being galvanized.

Pantograph bars connect the arches to one another and are supplied already assembled on the posts.

The covering consists of a special fabric.

For instructions regarding assembly of the cover please go to Unit IV.

Unit IV also describes the assembly of sliding curtains, if any, in the front and rear part of the warehouse.

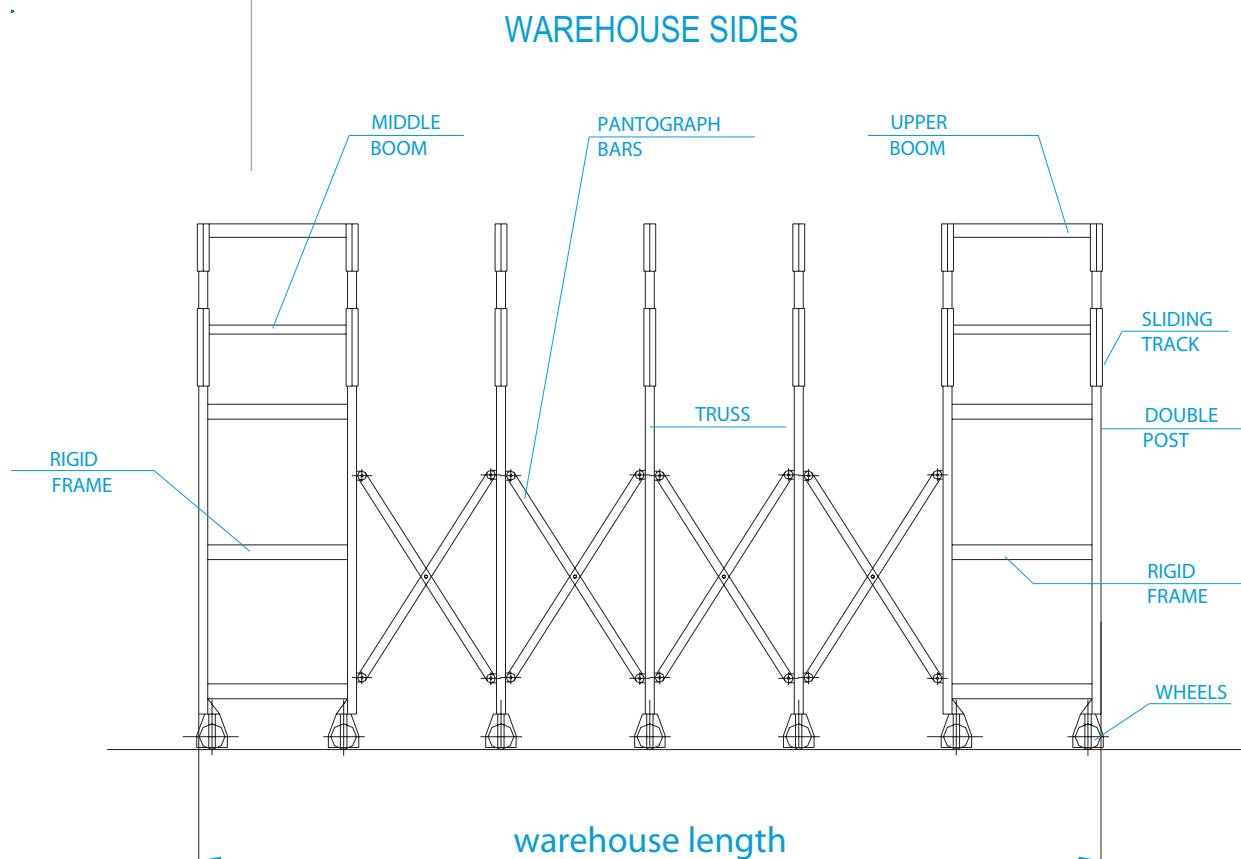
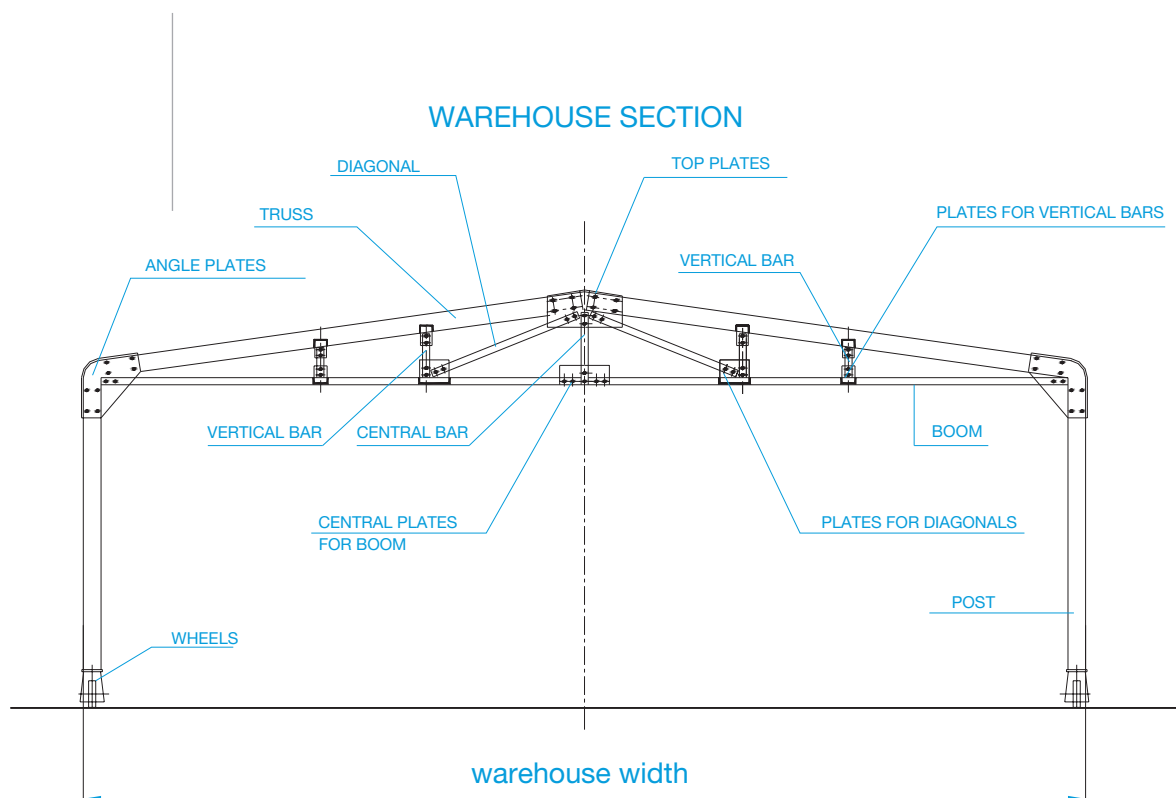
1.2 IDENTIFICATION AND CONTROL OF THE MATERIAL

Along with delivery, besides transport documents, you may also find:

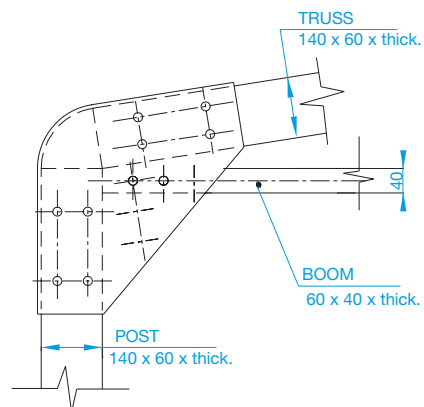
- packing list including the number of bolts necessary for assembly.
- data regarding the warehouse such as width, length, height ecc.
- drawings of the structure.
- drawings of the fabric detailing the colour and the positioning of the writings.
- drawings of the sliding curtains for the front and rear part of the warehouse.
- drawings for the laying of the tracks.
- drawings for positioning of the micro-switches and their activation ground brackets.



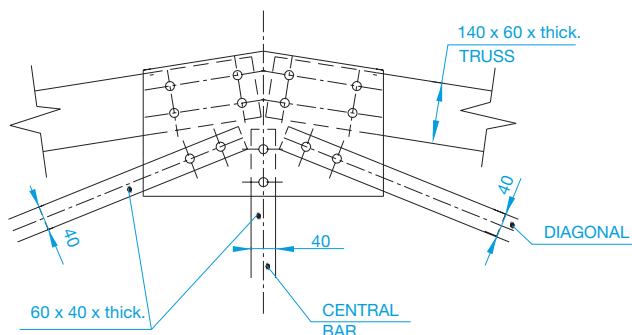
Upon receipt material must be inspected, in case of missing or damaged material, you must inform Kopron S.p.A. in writing, within seven days from receipt of material. Drawings can help you to identify the components.



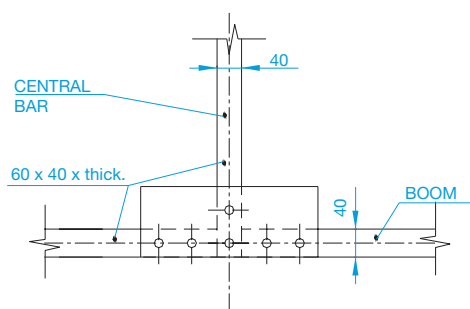
ANGLE PLATES



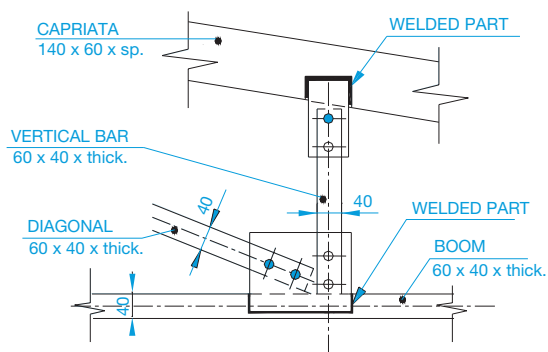
TOP PLATES



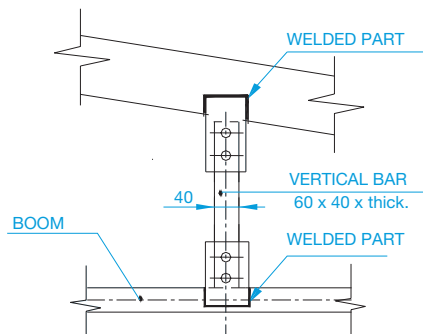
CENTRAL PLATES



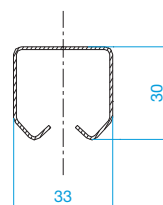
PLATES FOR DIAGONALS



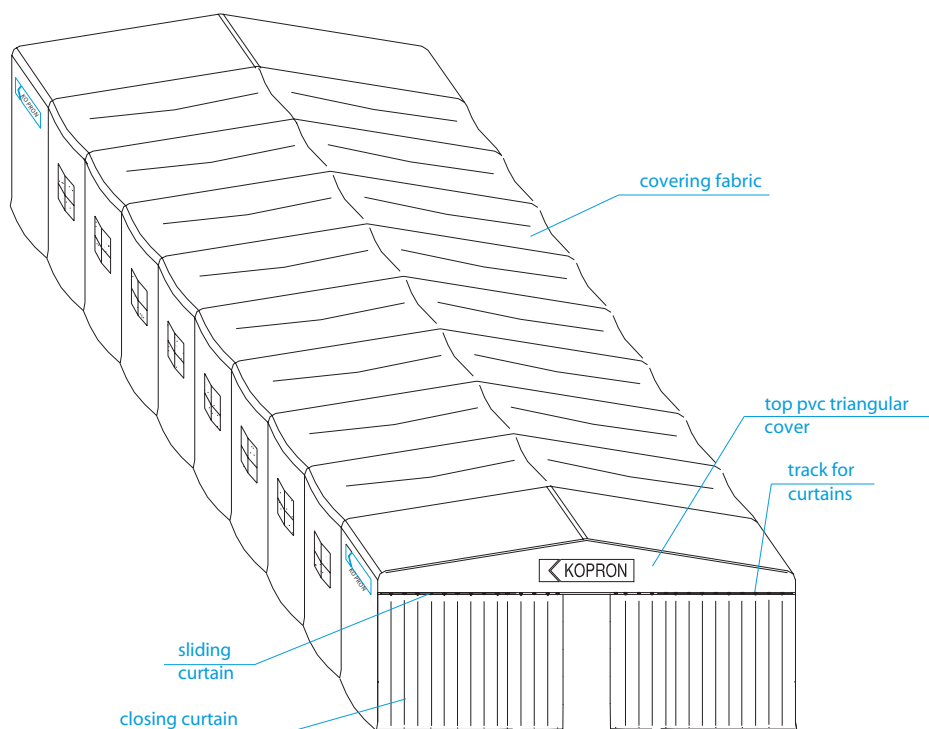
PLATES FOR VERTICAL BARS



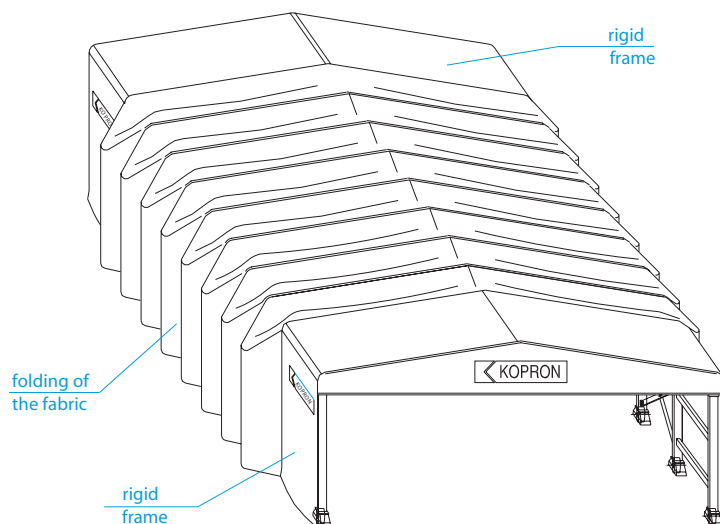
RAIL TRACK FOR SLIDING CURTAIN



assembled warehouse



folded warehouse



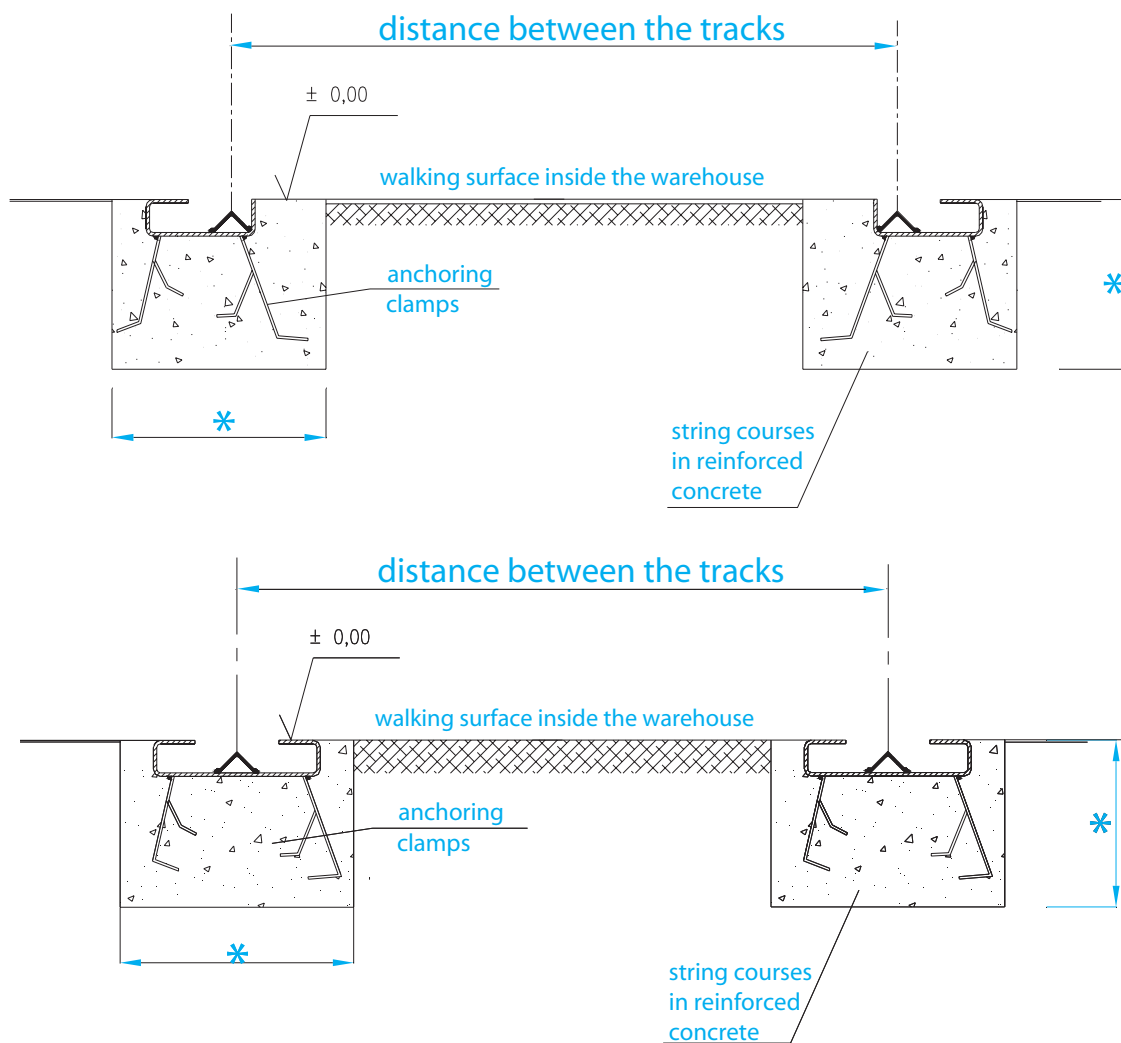
CHAPTER 1

MASONRY WORK

1.1 LAYING THE TRACKS

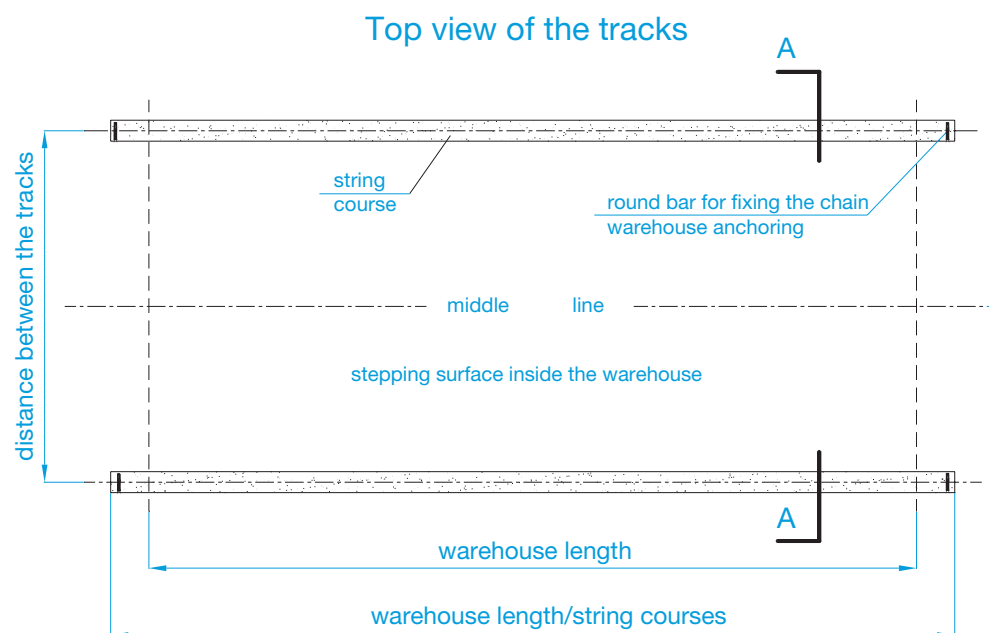
Before starting assembly make sure masonry work for the laying of the tracks has been done correctly. You can refer to the drawing which is supplied along with the material, see unit II Chap. 1.2.' Identification and control of the material'

section A-A



The following must be checked:

- the distance between the tracks
- the tracks must be parallel, you can check by measuring the two diagonals which must be equal.
- The tracks must be perfectly levelled all along the length.
- Level between the two tracks and walking surface must be the same.



Should any faults be found before starting assembly, you must contact Kopron S.p.A.



Customer will provide personally to make the string courses according to sizes calculated by qualified person who will consider the weight to carry and the characteristics of the ground.

However for any doubt or information, do not hesitate to contact Service Dpt in Kopron S.p.A. ☎ +39-02 – 92 152 751 - 📠 +39-02 – 92 152 923, indicating the model, the serial number, year of construction, these data can be found on the label (see Unit I Chapt. 1.3).

1.2 ANCHORING TO THE NEARBY STRUCTURES

Motorized retractable warehouses can also be anchored to masonry walls of nearby structures.

Indications for a correct fixing of the warehouse is shown in drawings which are supplied along with other documents (see Unit II Chapt. 1.2)

Verify if the structure carrying the warehouse has the proper characteristics to bear stress.

Verifications must be carried out by qualified personnel. Should any doubt arise do not hesitate to contact the Service Dpt in Kopron S.p.A. ☎ +39-02 – 92 152 751 - 📠 +39-02 – 92 152 923, indicating the model, the serial number, year of construction, these data can be found on the label (see Unit I Chapt. 1.3)



CHAPTER 1**INSTRUCTIONS FOR TRANSPORT**

1.1 GENERAL NOTES

The handling of the warehouse, must be assigned to trained personnel such as crane and sling operators.

Safety measures must be undertaken to guarantee the stability of the machine and of the material.

The slinging of the material must be properly done in order to prevent the material to slide or fall.

Should the operator be unable to control the way during handling of goods another person must be put beside and give help.

A necessary condition for lifting material is the perfect balancing of the goods.

Since the warehouse is moved without packing, lifting and moving must be very carefully carried out.

For safety reasons, all lifting machinery must be suitable to the weights and bulks to carry.

1.2 INSTRUCTIONS ON HANDLING

Handling must be carried out only by specialized operators in mobile cranes.

Before using the crane, verify the efficiency of the brakes and end travel devices.

Avoid swinging the goods.

Provide evacuating personnel in case the goods must be moved over the heads.

Do not leave the crane with suspended goods.

Use a ladder to reach the slings and loosen them.

1.3 LIFTING

Lifting machinery allowed : bridge cranes or mobile cranes.

Personnel requested : crane and sling operators.

Important note : it is forbidden to use forklifts for handling structural elements like posts, chains, trusses, etc.

Use a grab with four straps at least 3 meters long.

Material must be perfectly balanced before being lifted.

CHAPTER 2

INSTALLATION AND ASSEMBLY

2.1 BEFORE STARTING

Delivery of the material shall always be accompanied by an envelope containing specific drawings of the warehouse to assemble.

The envelope contains in detail:

- bill of material complete with complete the number of bolts necessary for assembly.
- Data of the warehouse: length, width, height, etc...
- Specific drawings of the warehouse.
- Drawings of the covering fabric indicating colour and positioning of the writings.
- Drawings of the closing curtains.
- Drawing for the laying of the tracks.
- Drawing for the positioning of the micro-switches.

The bill of material containing the list of bolts for assembly is important since it also indicates their positioning.



The envelope can contain both information regarding the positioning of the warehouse and commercial agreements between Kopron S.p.A. and customer. Please do not proceed without having previewed the contents of the envelope.

The assembly of the structure must be carried out as requested by the European standard EN 292.2 art. 5.5.1 by **qualified and skilled personnel**.

Personnel must be informed in advance on the job to be done and have the expertise to perform it. It must also be informed on the risks, on safety measures to be undertaken and on necessary tools to use.



For safety reasons, the assembly of the structure must be assembled in days without wind.

2.2 WAREHOUSE ASSEMBLY

Assemble the arches, leaning them on wooden stakes, before tightening the bolts make sure the arch is straight, levelled and width is perfectly within the distance of the tracks.

The drawings show for each single part to assemble the exact diameter and length of the bolts to use and it is of utmost importance to keep to such instructions in order to avoid waste of time.

Drawings are divided according to the width of the warehouse to assemble.

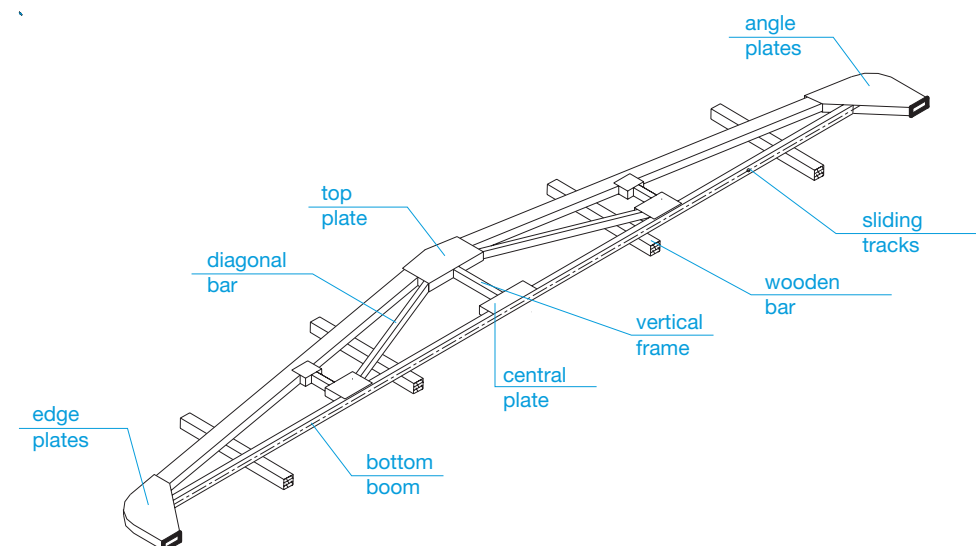
Drawings have been divided as follows:

■ Warehouse from 10 mt to 14 mt	drwg. n° 0100
■ Warehouse from 14 mt to 16 mt	drwg. n° 0110
■ Warehouse from 16 mt to 20 mt	drwg. n° 0120
■ Warehouse from 20 mt to 24 mt	drwg. n° 0130

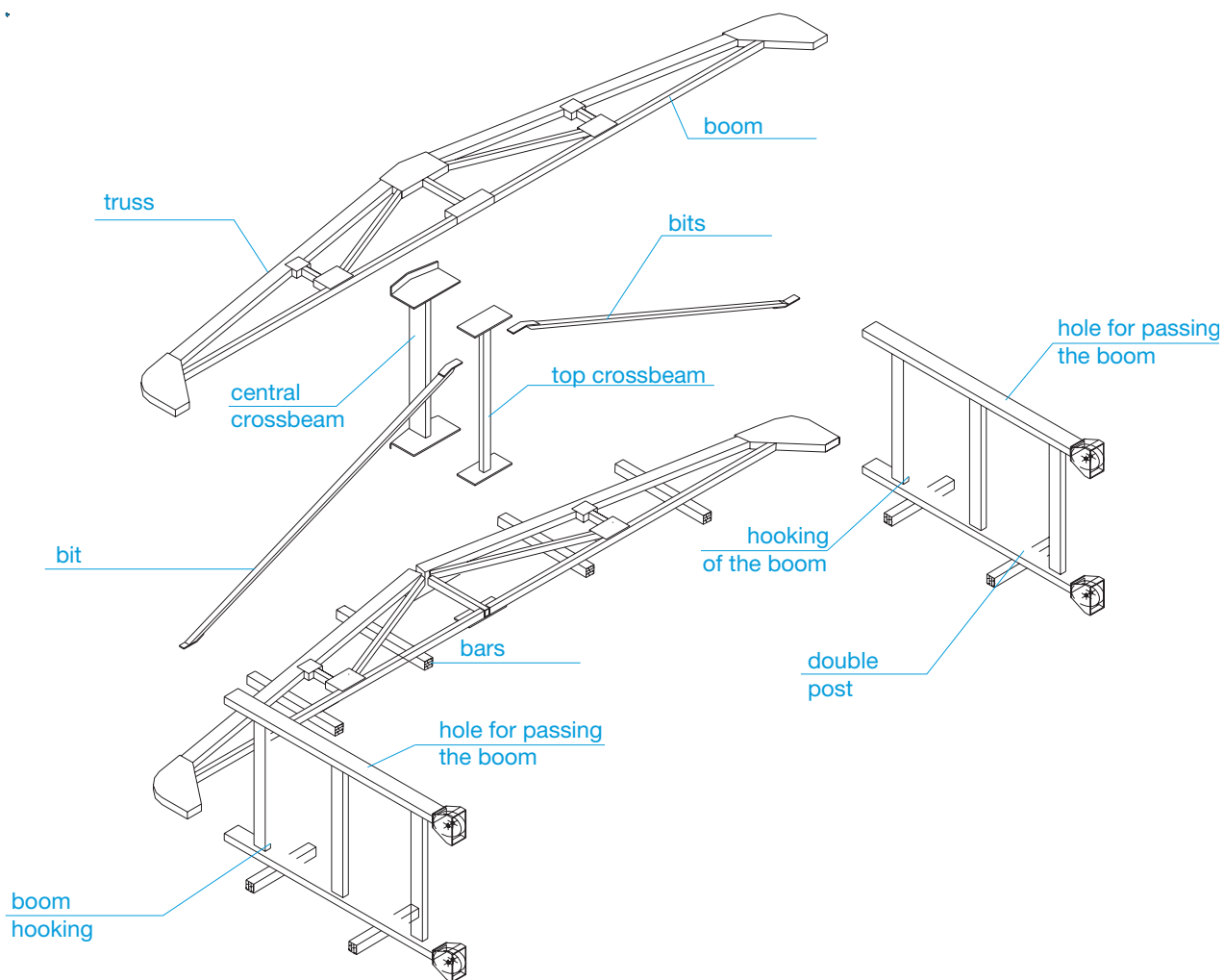


The structure to assemble is in hot galvanized steel therefore when assembling all operations which could scratch off the coating must be avoided, such as welding, drilling or special grinding.

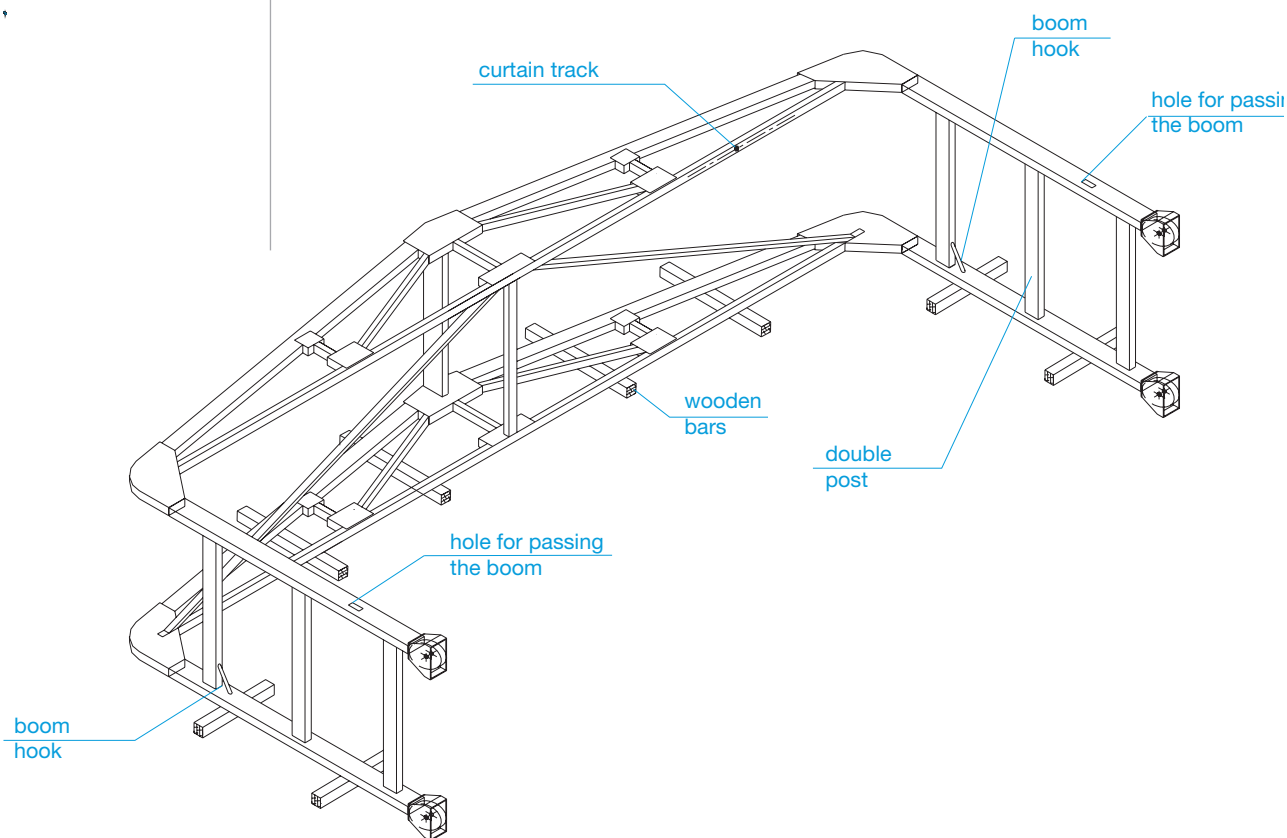
In case the protective coating is damaged this could cause corrosion.



After having assembled on ground the two arches of the front part, assemble them to the double jambs and before tightening them verify if the wheels and their distance are perfectly parallel. This can be checked by measuring the diagonals which must be equal.



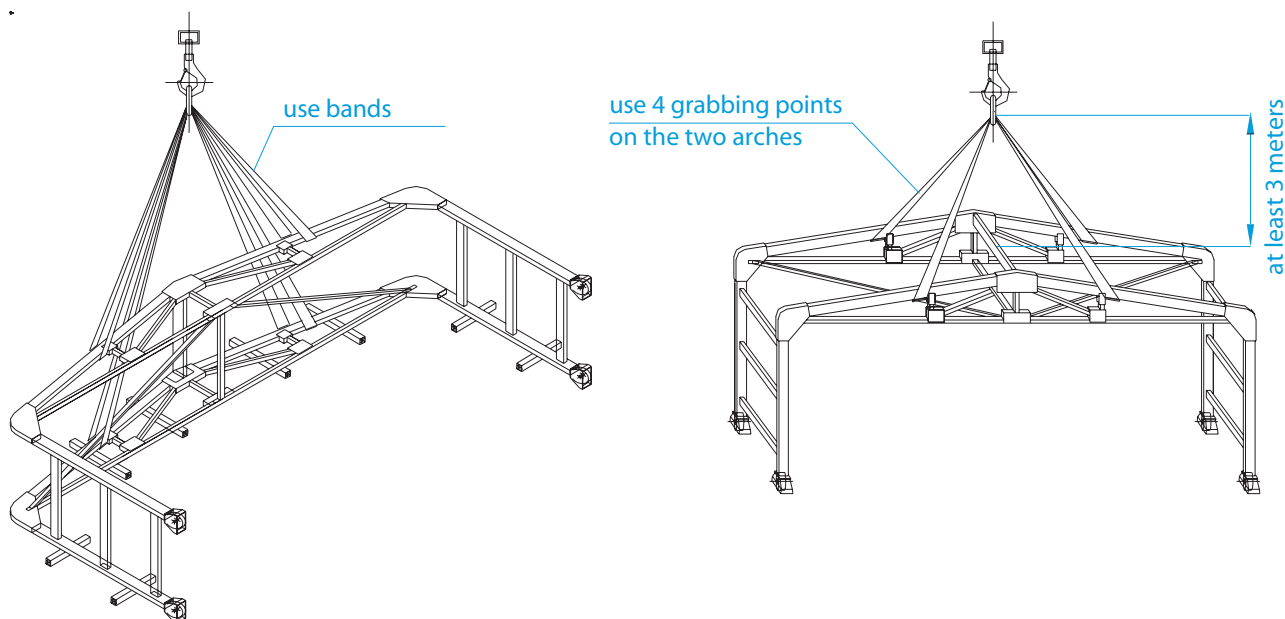
Make sure the arch provided with sliding track for the carriages of the front curtains is assembled towards the outside of the structure, while the hook of the boom is towards the inside. See Unit IV Chapt. 2.4 fig. 2a.



Wind proof brackets assembled on the wheels must be taken off for the time being and then put on again once the structure is completely lifted. See Unit IV chapt. 1.3. Lift the structure and position it on the tracks with the aid of straps as shown in the drawing.

This operation must be carried out very carefully. Straps must be applied over the first plate by the diagonals in order to allow an equal distribution of weight on the trusses.

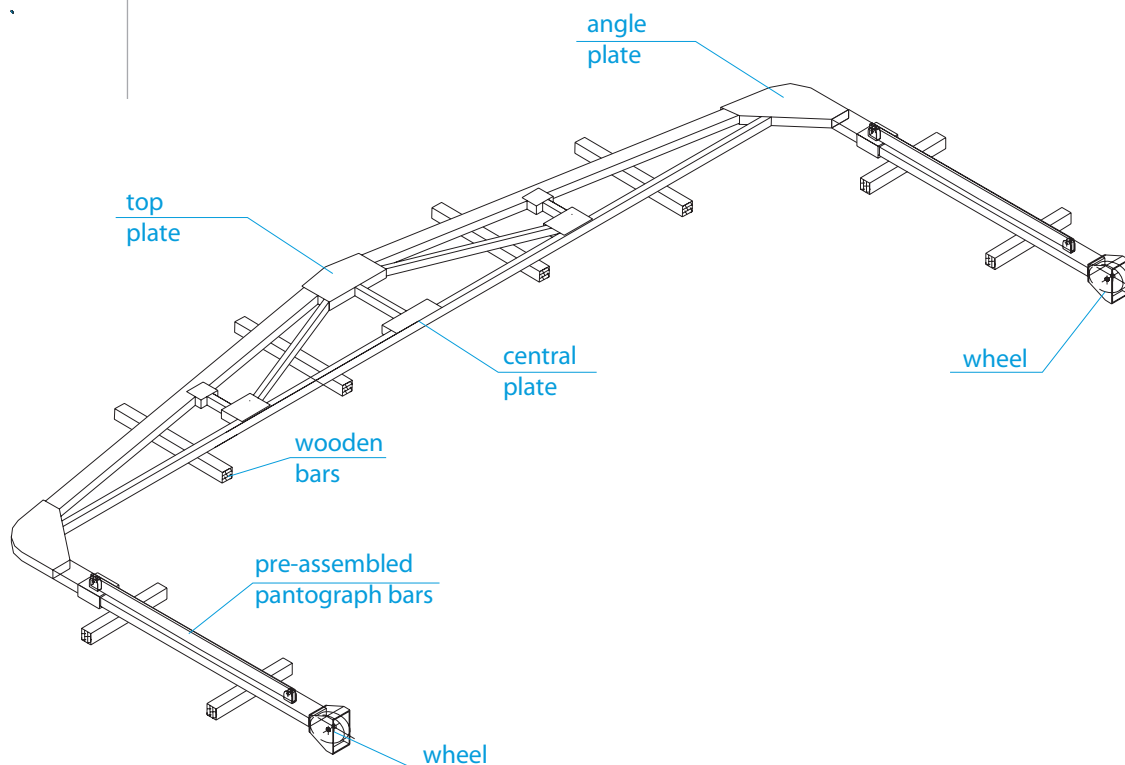
The length of the straps must enable the grab to operate at a height of at least three meters from the trusses, in order to avoid loading the structure in a wrong way.



Assemble the central arches to the posts and lay them on wooden bars, and before tightening them check if the posts are parallel and also compare both the distance between the wheels and between the tracks.

The assembly of the posts on the arches must be carried out properly in order to have the ears carrying the pantograph bars positioned correctly.

Take off the wind-proof brackets from wheels for the time being, then put them on again once the structure is completely lifted. See Unit IV Chapt. 1.3 fig. 2.



The position of the ears on the posts must be as indicated in fig. 1.

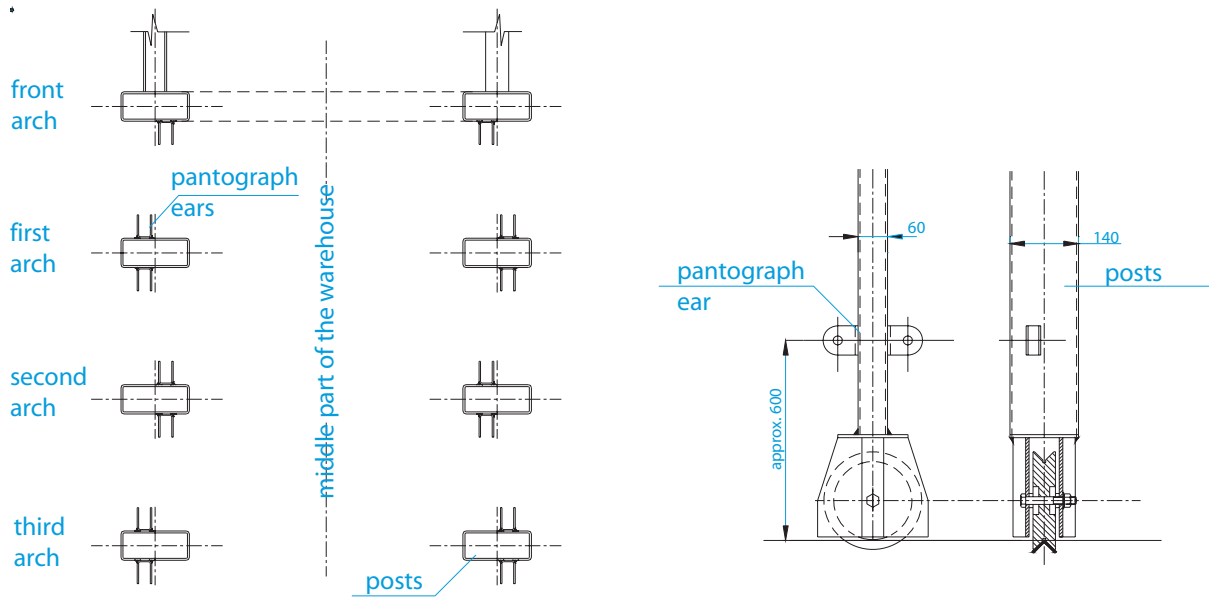


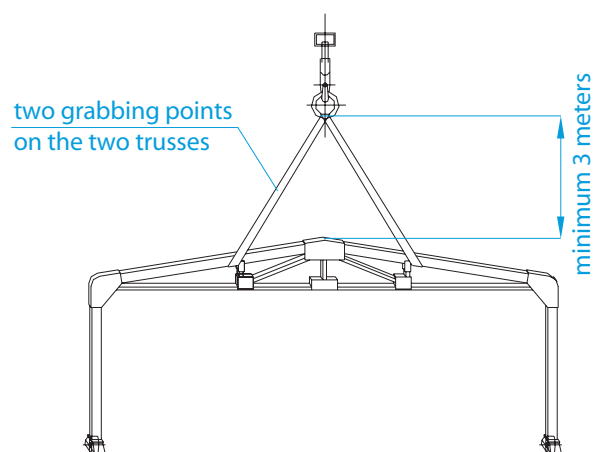
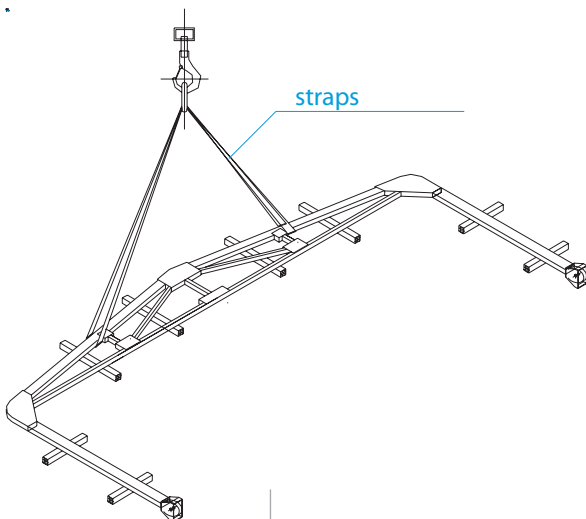
fig. 1

Lift and position the arches on the tracks slinging them with straps as indicated in the drawings.

Lifting of the arches is a delicate operation and must be carried out with care.

The straps must be placed over half the length of the truss in order to guarantee a correct distribution of weight.

The length of the straps must allow the lifting hook to operate from a height which must not be less than three meters in order to avoid incorrect loading of the structure.



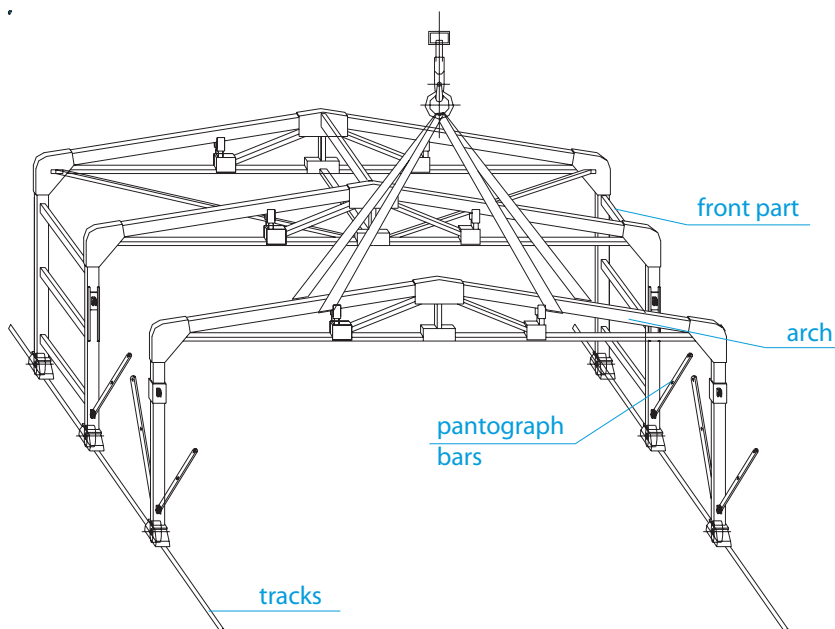
Start connecting the central arches, one after the other, either to the front or rear part joining them through pantograph bars.



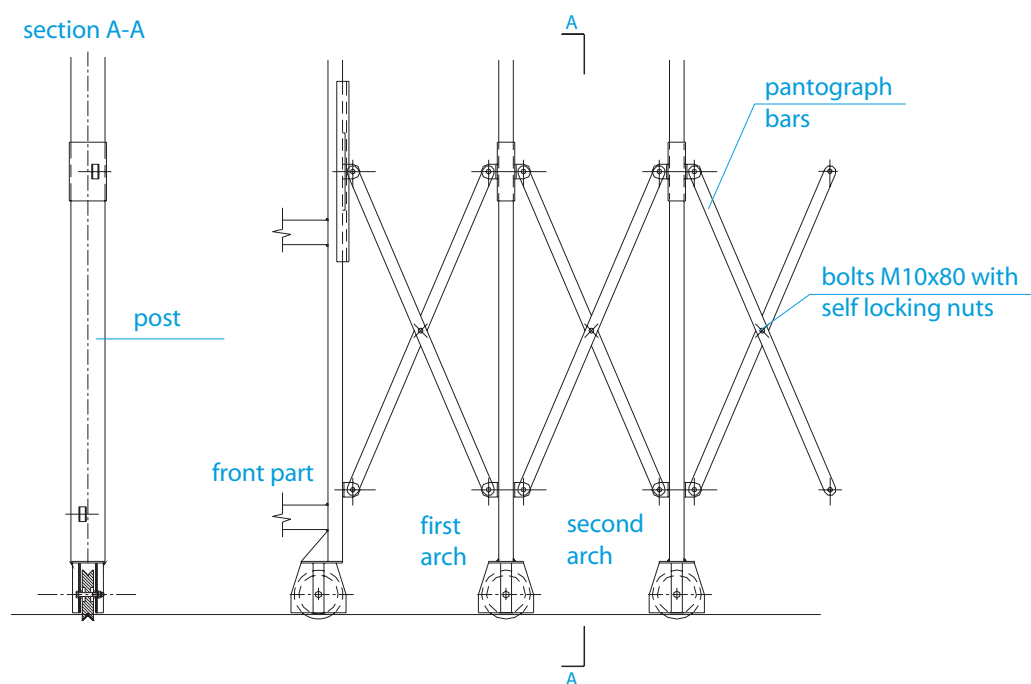
When connecting the arches make sure the ears are positioned as previously indicated in fig. 1.



During connection keep the arch always hooked to the lifting machine.



For assembling the pantograph bars use self-locking bolts in order to allow the bar joints to move.



2.3 MOTOR ASSEMBLY

The warehouse is delivered with driving wheels already inserted in the posts.

The wheels are provided with ring gears.

The transmission must be assembled, and limit switch micro switches must be positioned.

Before assembly make sure ring gears, motor pinion and chain are clean, eventually use specific detergents.

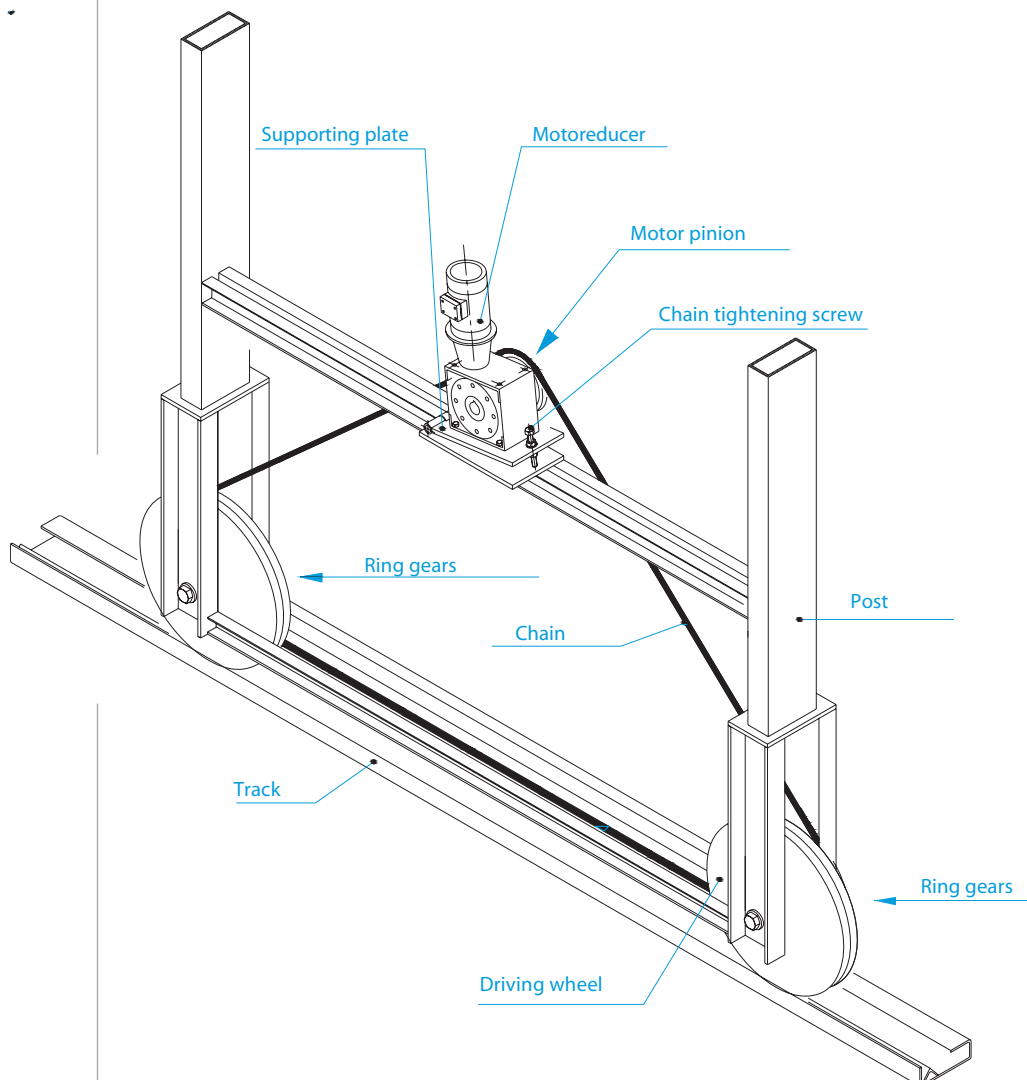
The assembly of the transmission is carried out by first fixing the support plate of the motoreducer, then the motoreducer with pinion and in the end the chain.

Before tightening the components make sure the two ring gears of the motor are perfectly aligned.

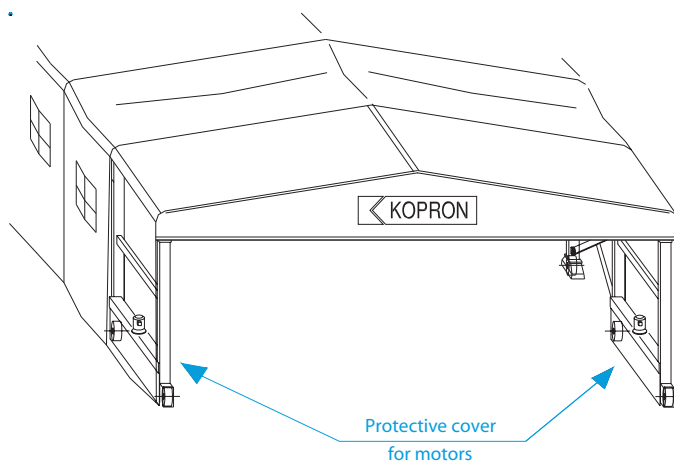
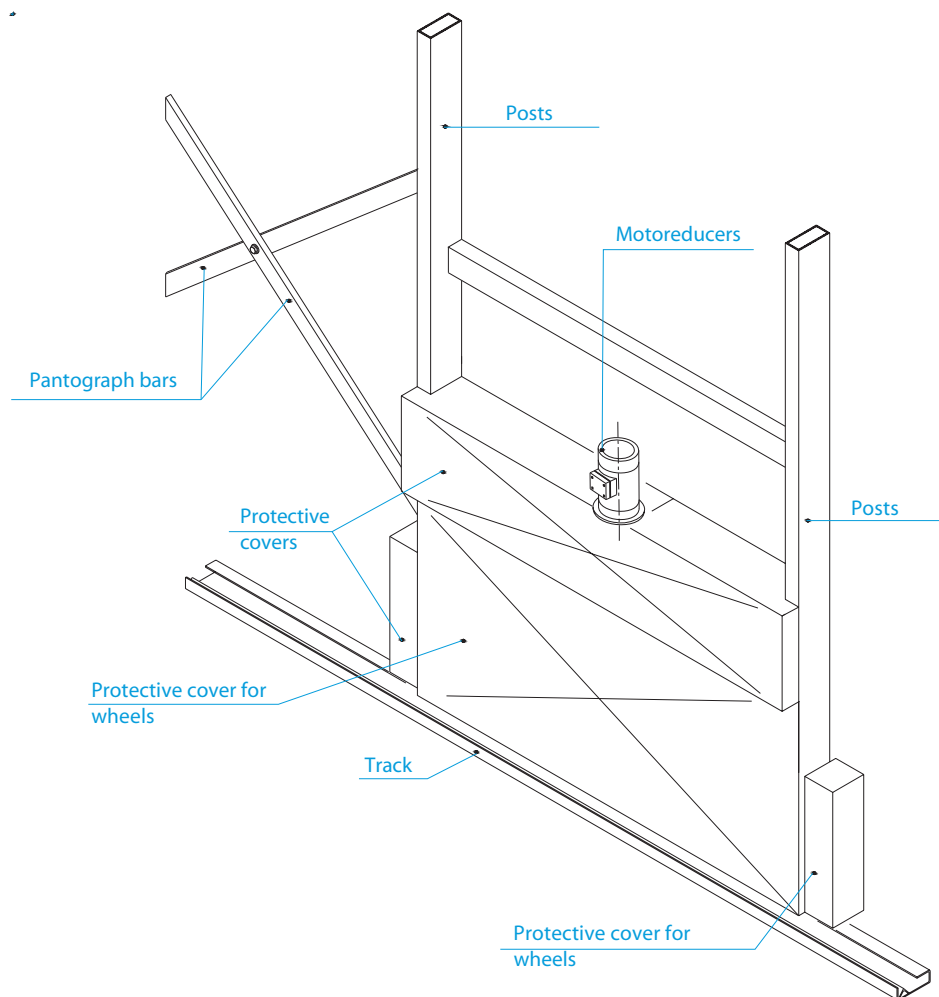
Once the components are fixed, tighten the chain with the screw.

Position the activation ground brackets and the limit switches with the aid of the drawing delivered along with the other documents see unit II Chapt. 1.2.

In the end provide lubricating the chain with molykote grease.



Once the transmission has been assembled and well functioning, position the protective casings of the transmission and of the wheels.



2.4 ANCHORING INSTRUCTIONS

After having assembled the structure it must be tightened and anchored to the tracks as follows: re-assemble the wind-proof brackets, taken off previously, on the wheels as shown in the drawing.

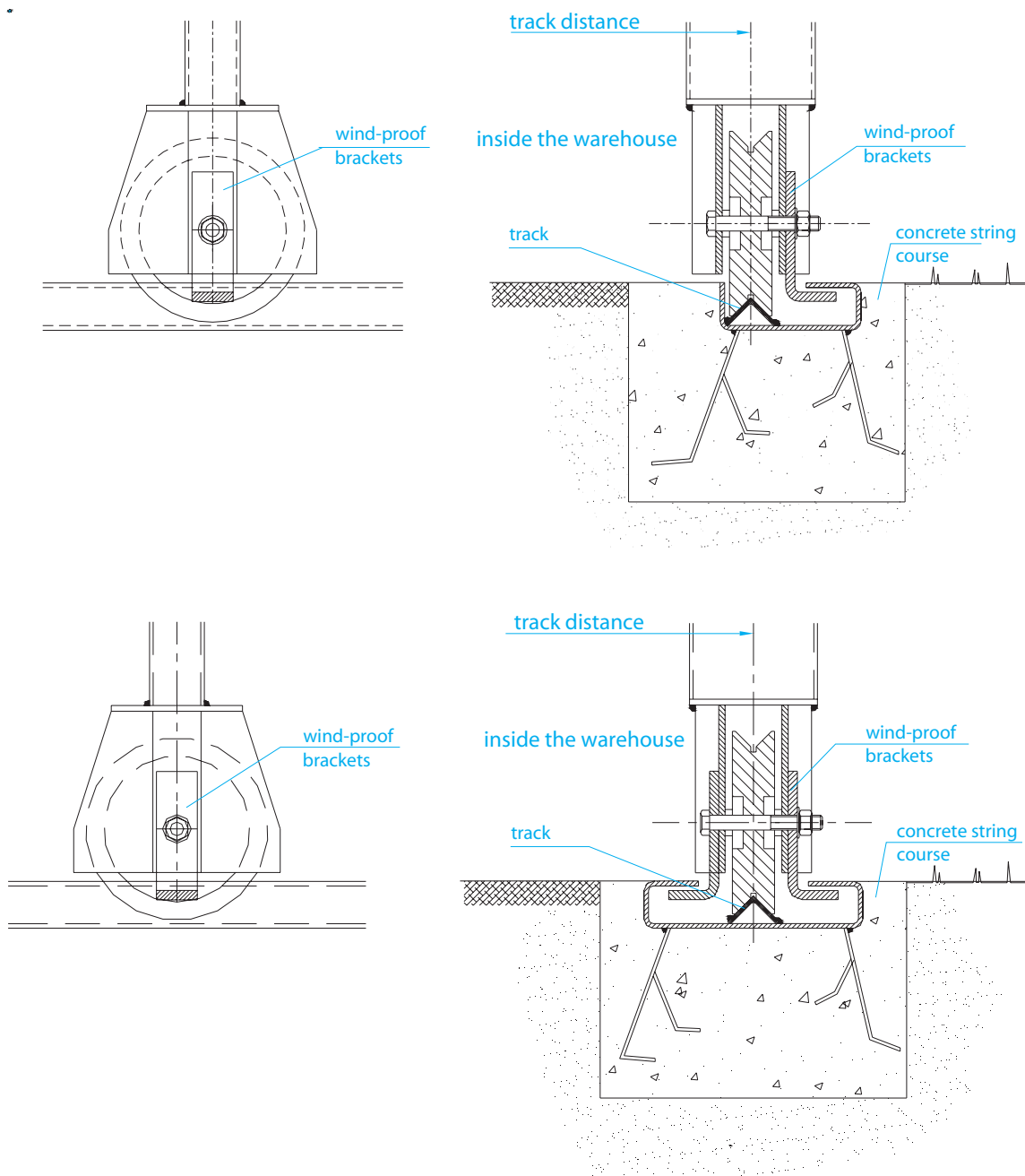
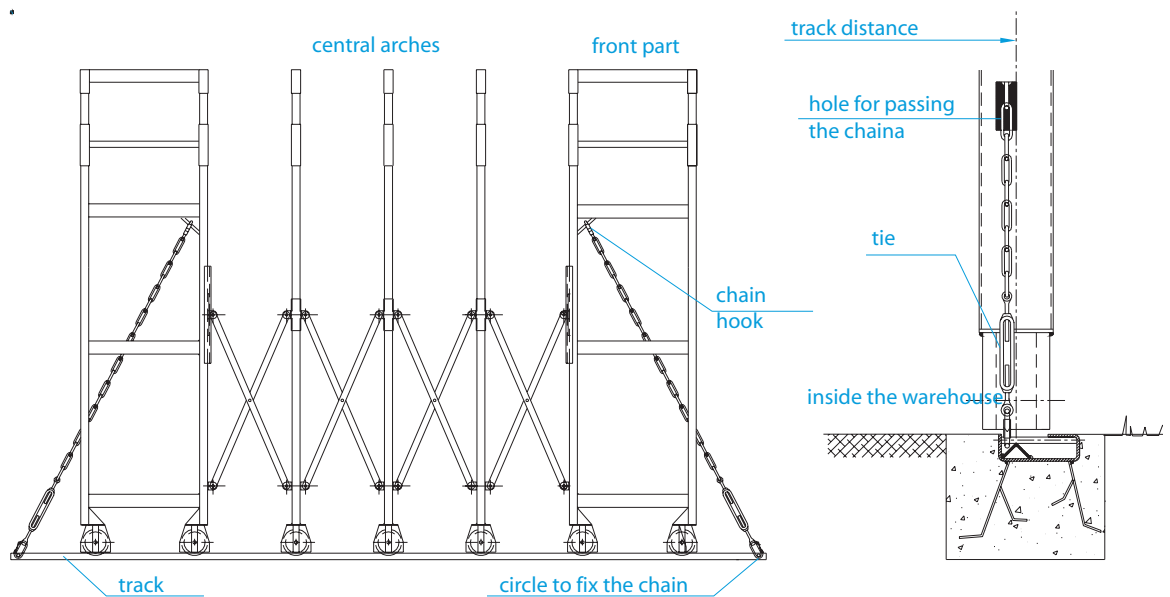
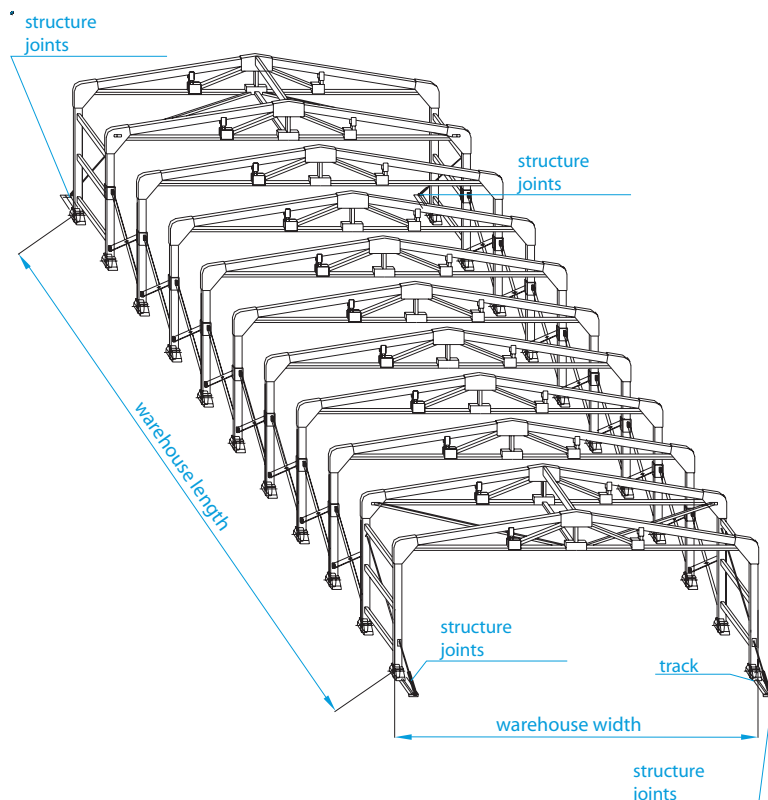


fig. 2

Only after having assembled the wind-proof brackets, carry on with the tightening of the structure.

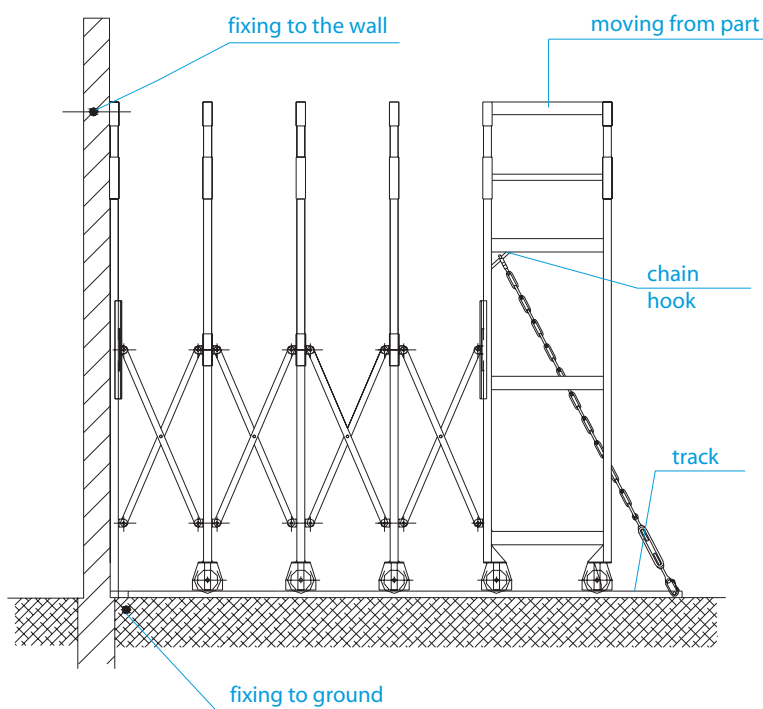
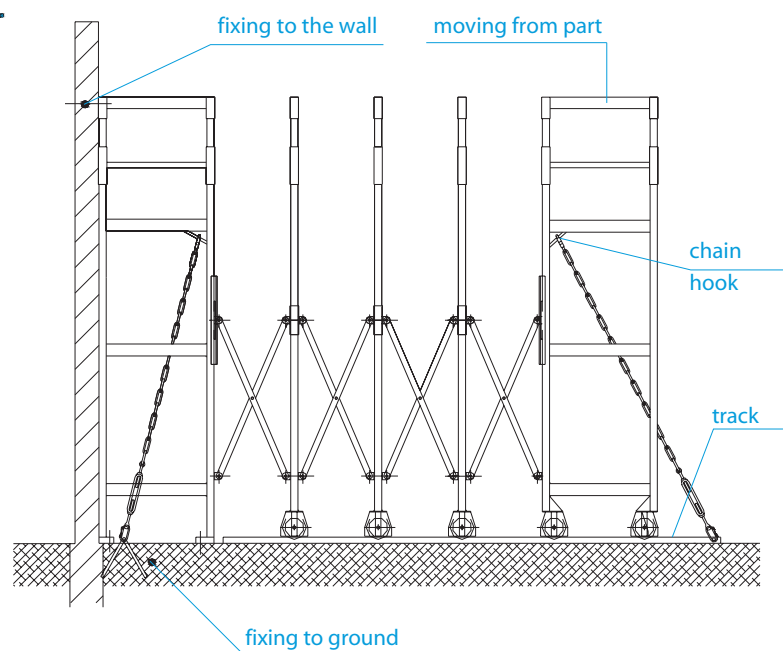


Assemble the 4 chains at the 4 corners of the warehouse connecting them with a shackle at the sides of the two front parts near the tallest cross member where a ring is welded on. Pass the chains through the holes of the jambs. Fix to the rings welded at the edges of the tracks, the tie rods placed at the heads of the chains with shackles, and start tensioning the structure. Stretch it until you reach the total length, which is indicated on the specific drawings of the warehouse (see Unit I Chapt. 1.2 'Identification and control of the material').



Motorized retractable warehouses can be anchored, to the tracks or to masonry walls nearby as indicated in the two following drawings.

Correct instructions on how to fix the warehouse is indicated in the drawings provided along with the other documents (See Unit II Chapt. 1.2)



Verify that the structure, the warehouse is anchored to, is strong enough to bear the stress the warehouse creates. A qualified technician must carry out proper tests. For information please apply to Kopron S.p.A. ☎ 02 - 92 152 756 - 📠 02 - 92 152 923, indicating the model, serial number, year of construction; these data are on the EC marking plate (see Unit I, Chapt. 1.3)

2.5 ASSEMBLY OF THE COVERING FABRIC

After having anchored and tightened the structure as described in Unit III, you may start assembling the covering fabric.

The assembly of the fabric must be carried out during days without strong wind.

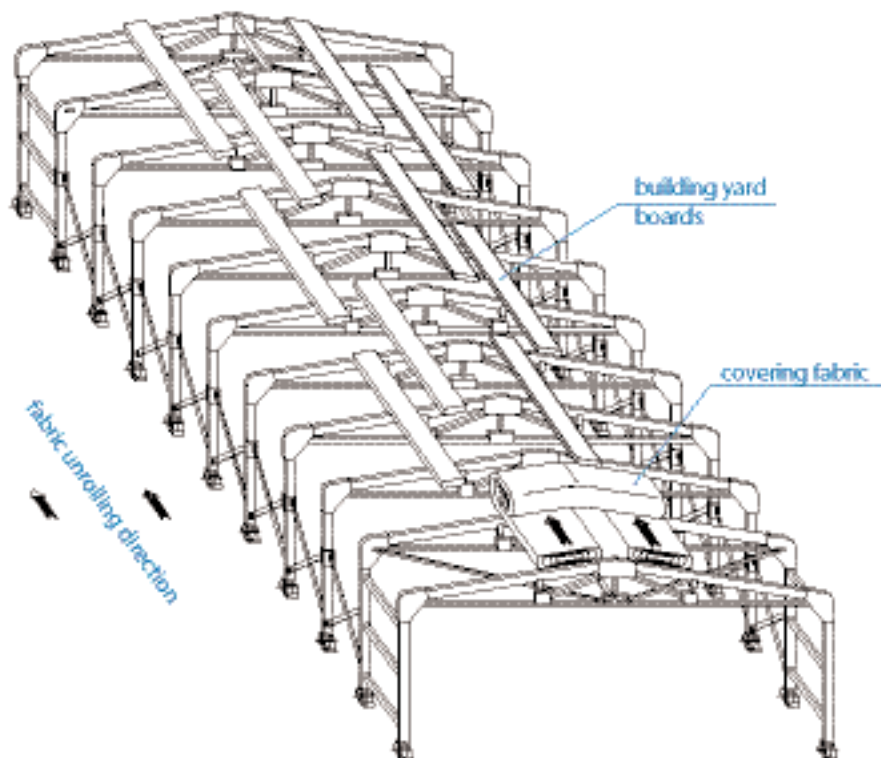
In the envelope containing documents for assembly you may also find the drawing of the fabric (see chapt. 1.2 'Identification and control of the material')

This drawing must contain useful information regarding the total height, the length of the pitches and of the parts of the warehouse, plus the number and position of the belts.

To obtain good results when stretching the fabric, you must position it properly on the structure, making sure that the highest point of both the fabric and the structure perfectly match. This will enable an even covering of the fabric all around the sides and pitches of the warehouse, and the correct positioning of the belts.

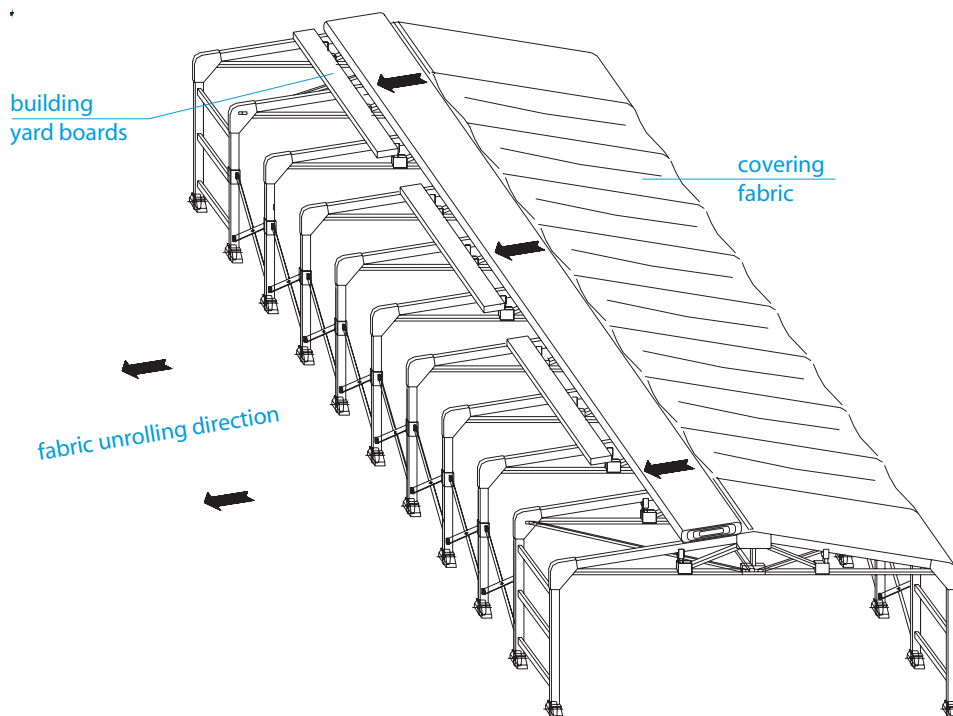
Along with the goods there is a drawing showing how to unroll the fabric correctly once positioned on the structure.

Start positioning the fabric on one of the front parts as shown in the drawing.



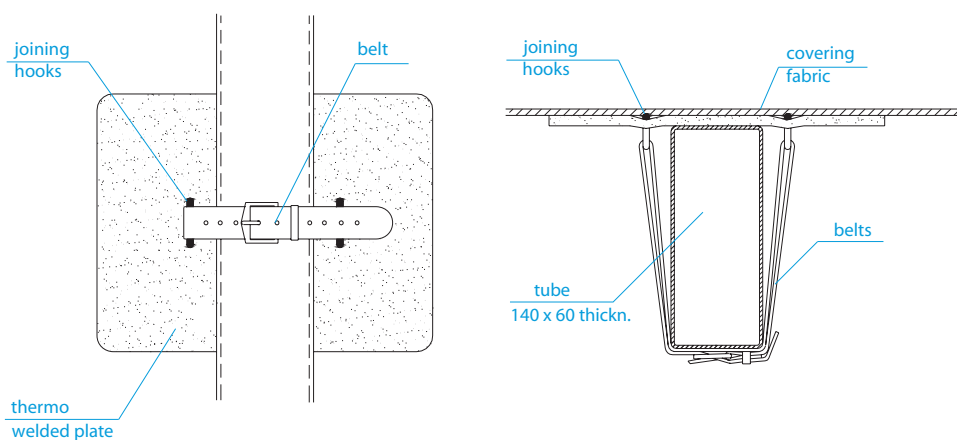


While you unroll the fabric from one front part to the other, with the aid of boards as shown in the drawing, tie the belts around the upper plates.

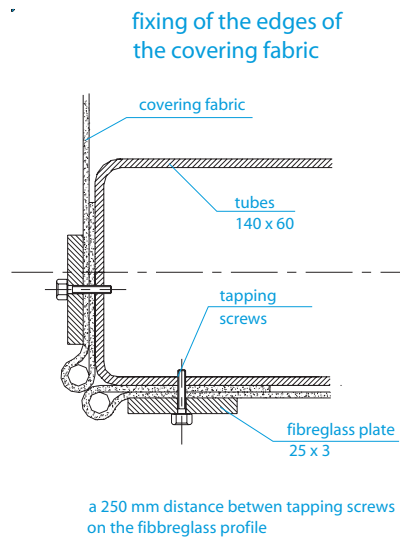


After having stretched the fabric and verified the warehouse sides are evenly covered, tie the belts starting from above the trusses downwards.

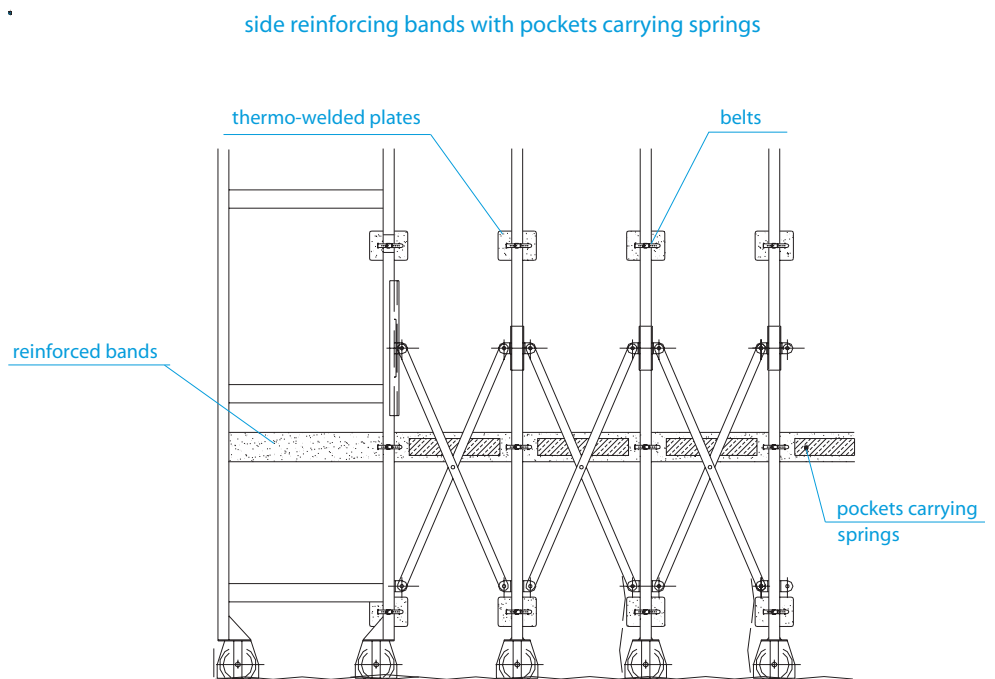
fixing of the fabric with belts



Fix outside the edges of the fabric to the bars with the aid of fiber-glass stripes and tapping screws which are supplied along with the material.
Distance between screws must not exceed 250 mm.

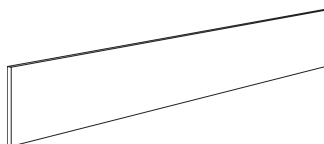


The assembly of the fabric must be completed by also positioning the springs which allow the folding/unfolding movements of the warehouse sides.
The sides of the warehouse all along the length have reinforcing bands, equipped with inside pockets containing the springs.



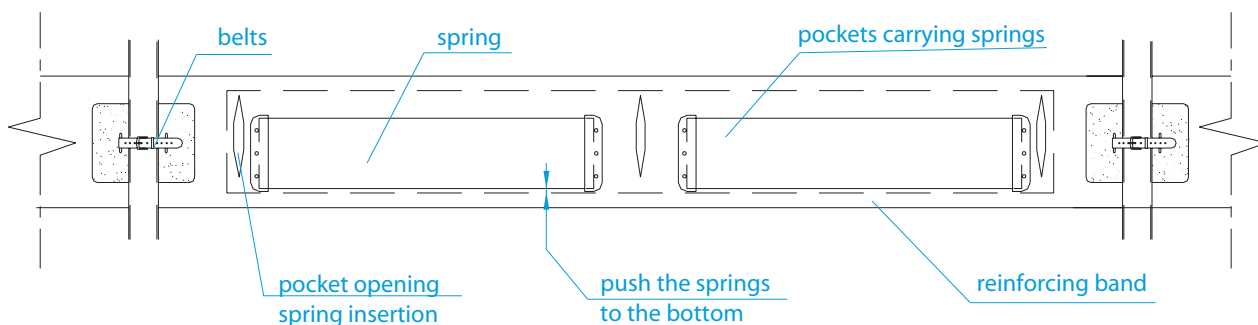
The springs consist of a band in plastic 100 mm long, 0,8 mm large and are cut without the plastic protection edges. These are then assembled as shown in the drawing.

plastic springs



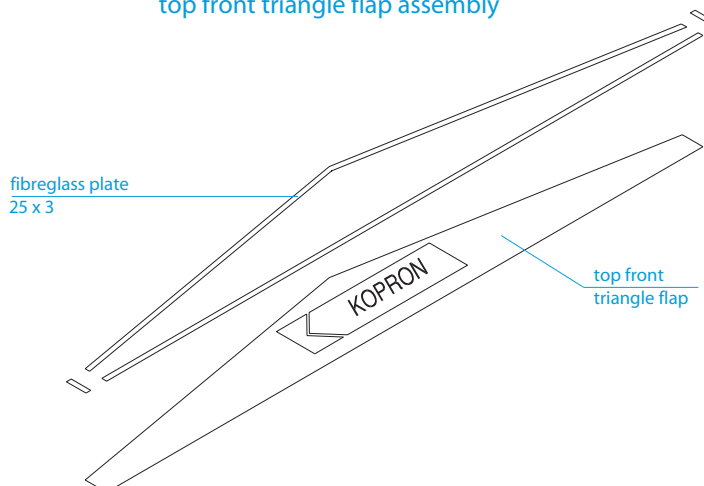
Introduce the springs with protection edges inside the pockets through the three openings they have. Once the springs are inside the pocket they must be pushed to the bottom as shown in the drawing.

positioning of the springs in the pockets



Provide assembling the top front triangle flap with the fibreglass strips and tapping screws which are supplied along with the material. The distance between one screw and the other must not exceed 250 mm.

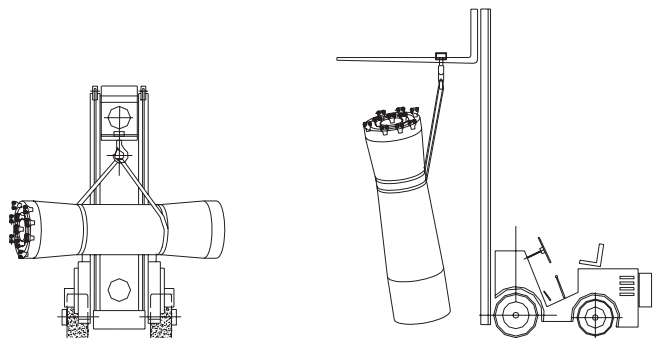
top front triangle flap assembly



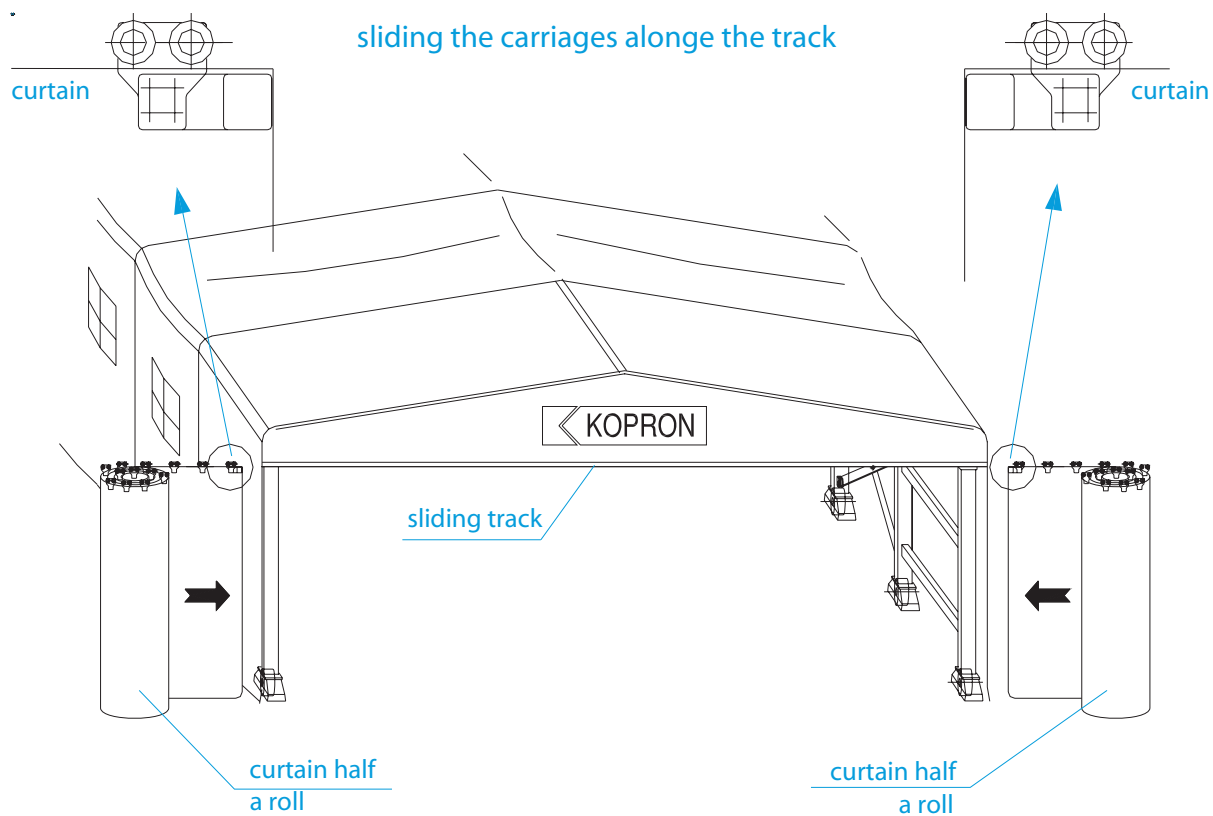
2.6 ASSEMBLY OF THE CLOSING CURTAINS

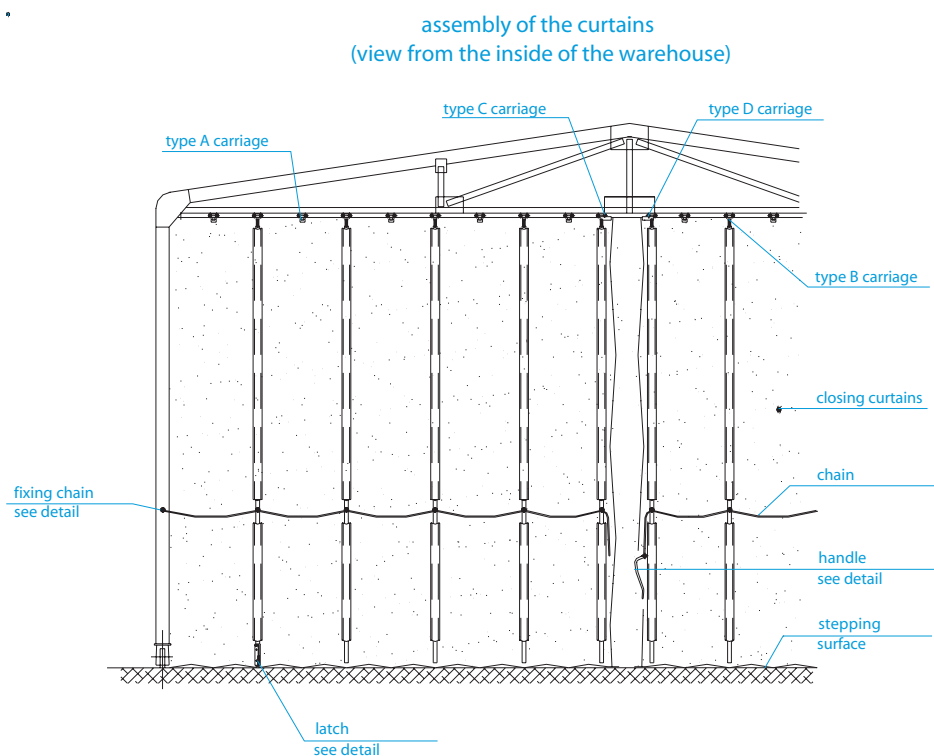
Curtains are supplied in rolls, each roll consists of half a curtain, first operation consists in unrolling partially the curtain to identify the ends.

moving and lifting half a curtain

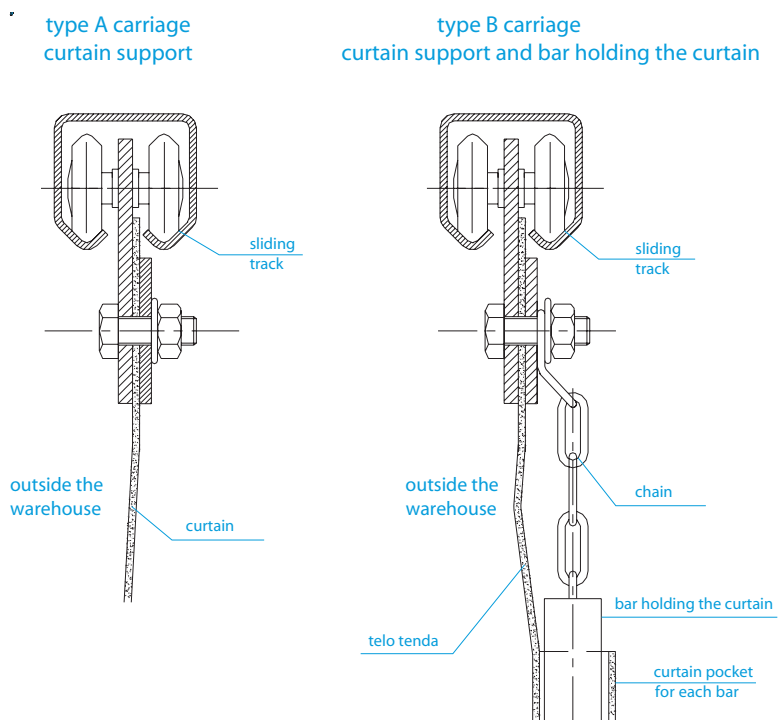


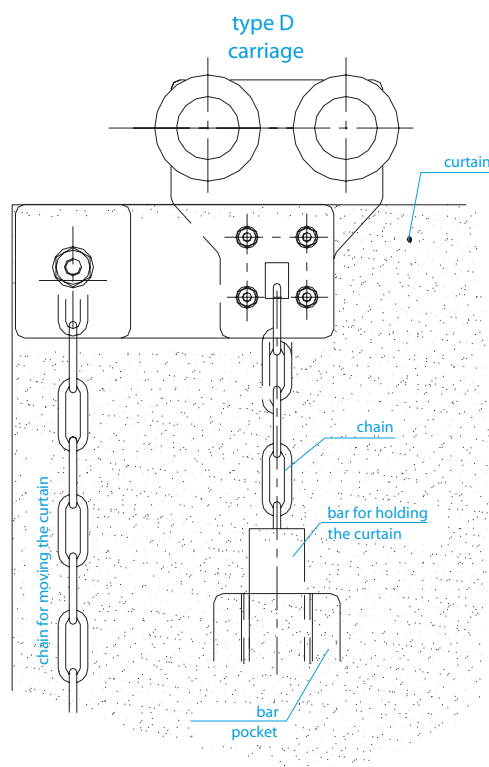
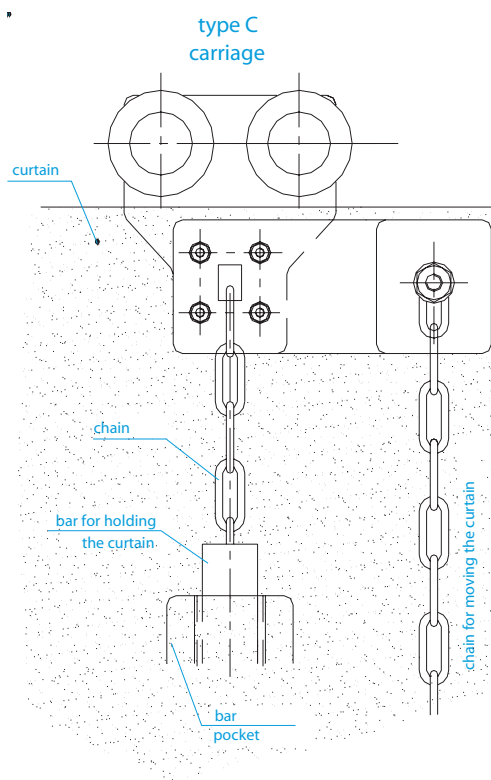
Once the end with carriages has been identified, start sliding them along the track.





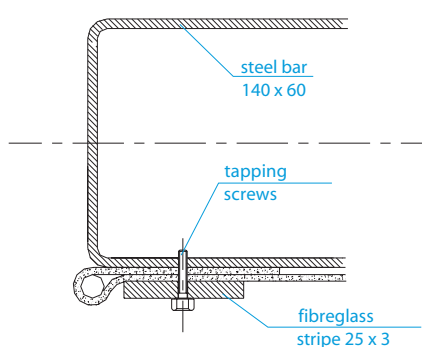
In order to avoid mistakes during assembly, make sure the bars holding the curtains are turning towards inside the warehouse.





Once the two half curtains have been assembled shut them towards the centre, then fix the external edge of the curtain to the bars with a fibreglass plate and tapping screws.

fixing of the external edge of the curtain



distance between self-screws on fibreglass stripe approx. 250 mm

Lock the ends of the sliding track in order to avoid the carriages to run off during the opening of the curtain.

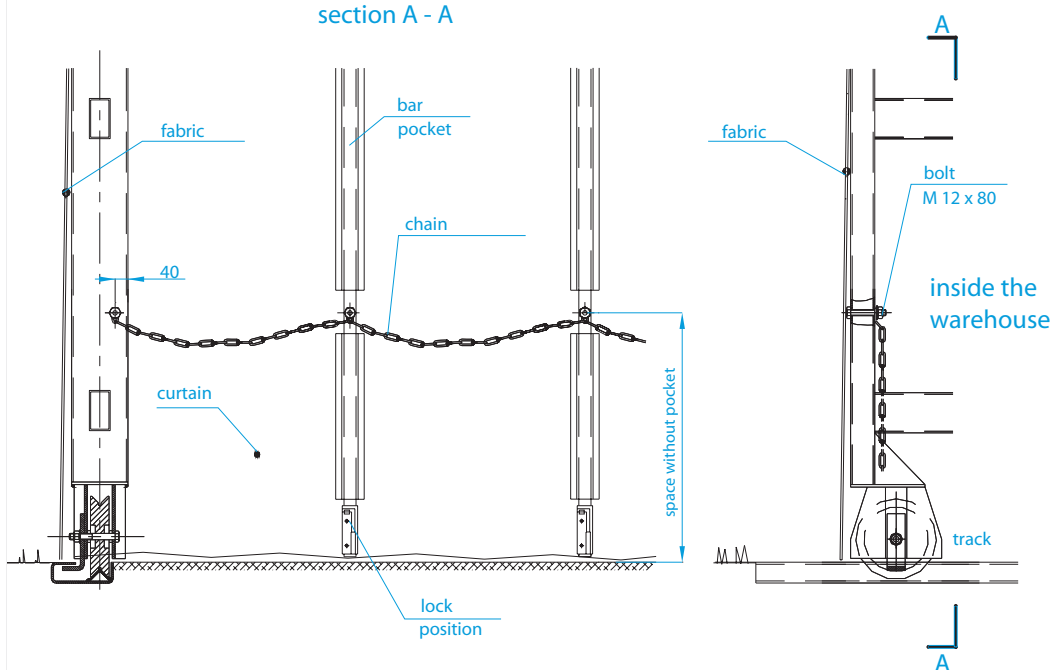
Then assemble the locking system which can be chosen among the following:

CHAIN LOCKING

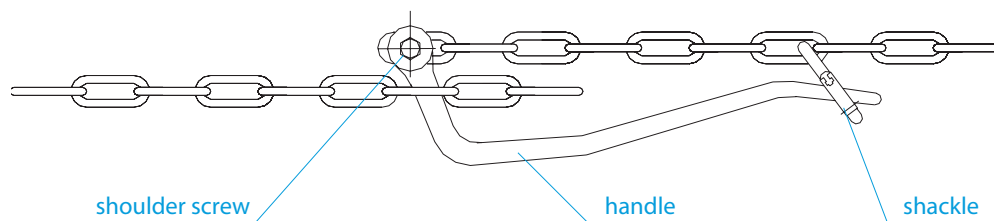
Fix one end of the chain to the right post making a hole and using a bolt M 12 x 80.
Stretch the chain and fix it with bolts to the curtain bars on the right.
Repeat the operation for the left side.
At one end of the chain assemble the locking handle.

assembly of chain and locks in detail

section A - A



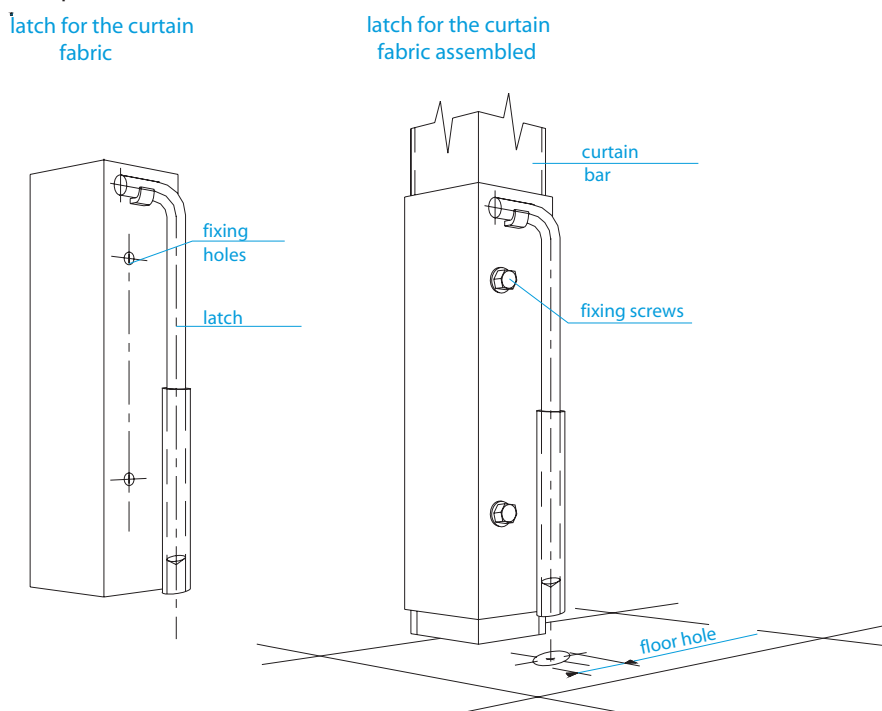
detail of the handle and curtain closing chain



LATCH CLOSING

For each bar holding the curtain you may have a lock to be assembled by fastening two bolts.

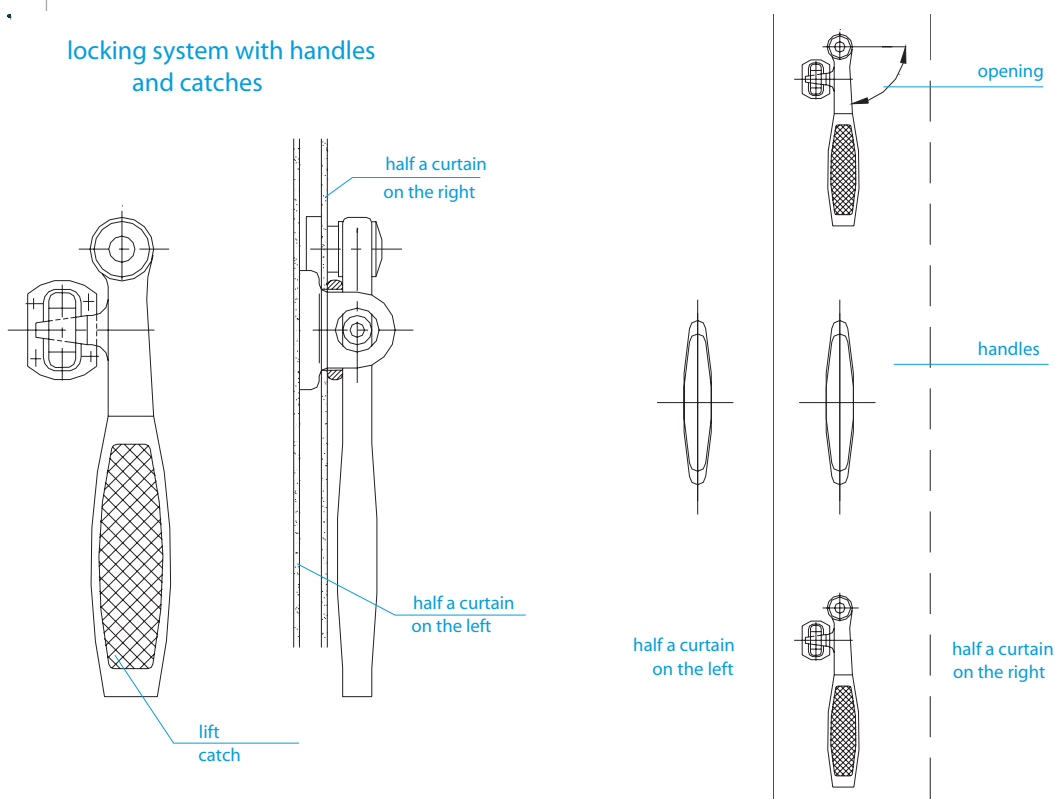
Once the two half curtains closed at the center, mark the holes to be done on the floor then perforate.



LOCKING SYSTEM WITH HANDLES AND CATCHES

The following drawing shows a type of lifting catch and double handle. Catches and handles can be different from the one shown in the drawing. This locking system can be either positioned inside or outside the curtain.

locking system with handles and catches



2.7 ELECTRIC SYSTEM

The components of the electric system are supplied disassembled and must be assembled according to the drawing which shows where to position the system on the structure.

Carry out the connection with the aid of the electric diagram, making sure to connect the grounding of each unit. All units must be connected to the ground collector with a cable.

When connecting the electric panel make sure that the voltage of the line corresponds to the voltage of the system, taking into account that voltage sudden changes must keep within a range of 10%.

The electric system is a three-phase system and the value indicated is on a label positioned on the door of the electric panel.

The connection of the three-phase voltage is carried out by connecting the line directly to the terminals of the general switch.

The connection of the ground cable is carried out by connecting the terminal duly highlighted and put nearby the general switch.



The system must be connected to a proper supply line provided with general switch, thermal magnetic switch and differential set at 30 mA.

The cables, provided by Customer, must have a nominal section with a length which must be able to bear the amperes absorbed by the power installed (data relevant to the power installed are on the electric diagram).



Supply cables must be wrapped in an IP54 protection covering.

The electric connection must be carried out by qualified personnel as required by standard EN 292.2 Art. 5.5.1.

Once the electric panel is connected check the rotation direction of the motors with the relay switch.

In case the system has been connected with the wrong rotation, disconnect supply and start connection again.



For this operation there must be technical personnel who may identify the supply line and assist the sectioning group.

Insert the controls to check the functioning.

Check the efficiency of the limit switch.

Verify the efficiency of the safety buttons, safety devices and of the acoustic and light alarms.

For these operations use the electric diagram.

Last thing you must check is the absorption of all the motors by verifying the value carried on the tag, and the correspondence on the circuit breaker.



Before starting to check electrical parts, make sure the general switch has been correctly connected and that the system is duly connected to ground.

This check must be carried out with the aid of technical personnel of the plant.

2.8 LIST OF TOOLS AND EQUIPMENT

In order to carry out installation with ease and in safety the following tools and equipment may be used:



- Aerial platform
- Plumb line, wire for tracing, pencils, laser level, level and ruler of about 2 m
- Laser level
- Drill complete with steel inserts.
- Churn drill complete with inserts for reinforced concrete.
- Grinder
- Saw for metal with set of blades.
- Clamps
- Control panel and sockets suitable for construction sites, complete with general switch, thermal magnetic switch and differential set at 30 mA.
- Extension wires with sockets and plugs, for single phase supply 220 V and three phase 380 V.
- Fixed ladder 2.5 m long with adding elements to reach a total extension of 9 meters. mobile trestle
- Tool box with keys, screwdrivers, pliers, hammers, etc...
- Electrician bag complete with tester and ampere meter
- Portable welding machines for electrodes diameter 3mm
- Safety tools, safety belts, goggles, helmets, protection gloves against cuts and scratches, safety shoes, opto-isolators.
- First aid box
- Cabling must be provided by Buyer



Tools must be all according to EC safety standards.



Motorized retractable warehouses cannot operate in areas exposed to danger of fire or explosion.

In case of wind you must not move the warehouse, in order to avoid considerable damages.



Also in case of snow deposited on the covering fabric the structure must not be moved. Before moving the structure provide removing the snow.

CHAPTER 3

START UP

3.1 START UP

Verify that the wheels move freely, that the assembly operations haven't created any damages and remove dirt from the wheel cases.

It is of utmost importance to remove material obstructing the tracks and interfering with a correct sliding of the wheels.



Do not lubricate the tracks.

Adjust the micro-switches which regulate the complete opening and closing of the warehouse.

Verify there are no obstacles on the sides of the warehouse which could prevent a correct folding of the fabric.

In the end test the correct functioning of the safety devices, by also using warning signs.



3.2 INSTRUCTIONS ON MAINTENANCE AND CORRECT USE

Strictly keep to the following instructions for a correct maintenance and use of the retractable structure.

- In case of wind, if there are front curtains, these must be carefully shut from the inside with the chain well tightened. The locks must be fitted into the ground and the curtains well hooked to one another.

In case personnel is not present (at night or during weekends), the front curtains must be closed.



- In case of wind or snow make sure the anchoring chains are not loose and tighten them. It is forbidden under these weather conditions to move the structure in order to avoid big damages.



- The belts must be time to time checked. These belts besides fixing the fabric to the steel parts are of utmost importance for keeping the trusses firm and still. In case of damages the belts must be immediately replaced.

For safety reasons we suggest to replace the belts completely every two years.



- In case of damages or accidental ripping of the fabric, you must immediately repair it through vulcanization, in order to avoid wind to widen the hole jeopardizing the stability of the structure.



- The structure is calculated according to UNI Standards which regulate this kind of covering, in order to keep it from falling due to wind thrust and/or snow load. Therefore it is of the Buyer's interest to make sure the structure is always in perfect order, by checking time to time the posts, trusses, chains, and tie rods, in case they have been accidentally damaged by trucks, forklifts and so on. In case of damages these parts must immediately be replaced. Particular attention must be given to both chains and posts, in case they are not perfectly straight this could seriously impact on the stability of the structure and cause a fall under great stress.



- The covering fabric, when correctly stretched over the structure must not show any slackening parts inside which could retain water. As time goes by the characteristics of the fabric deteriorate due to pollution which may cause the slackening of it, in this case the fabric must be replaced.



According to standards regarding Safety, the tools to be used must be:

- a) Correctly installed according the manufacturer's instructions.
- b) Used correctly.
- c) Go regularly through maintenance.

In case of improper use of the product the guarantee will no longer be valid and Customer will be liable for any damage caused to people or things.

CHAPTER 4

INSTRUCTIONS FOR USE

4.1 CONTROLS AND SIGNAL LIGHTS

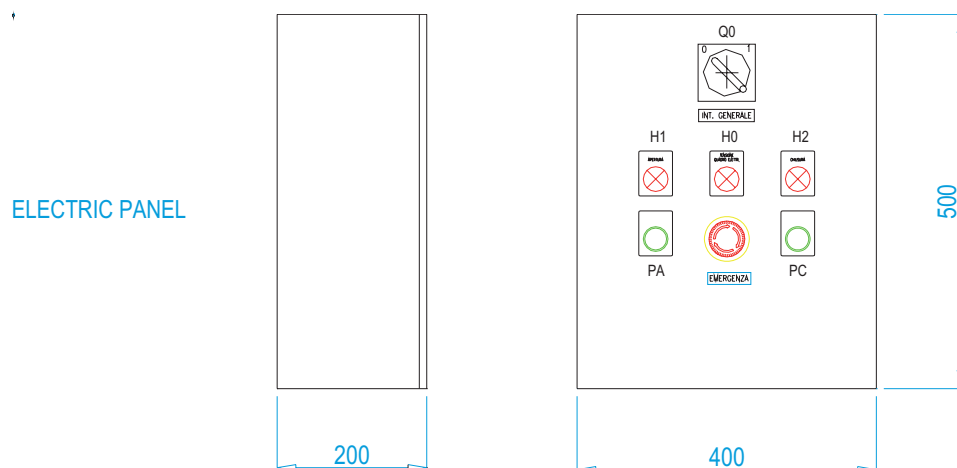
Controls for moving the warehouse are the following:

- General switch on the control panel Q0.
- Signalling light H0, white colour. The control panel is provided with power supply.
- Press PA button, and keep it pressed, press at same time button PA1 keeping it pressed as well, this will trigger the opening of the warehouse.
In case either one button or the other is released, the movement will stop.
- To close the warehouses press button PC and PC1 keeping them both pressed.
In case either one button or the other is released, the movement will stop.
- Signalling light H1, colour green warns on the opening/folding back of the warehouse.
- Signalling light H2, colour green warns on the closing/stretching out of the warehouse.
- Acoustic and light signal H, warns on the movements of the warehouse.
- Safety button PEM, a mechanical latching button, immediately stops any movement. The functioning of the controls is shown in Chap. 4.3 'Guide to conduction'.

The electric system has a remote control with the following buttons:

- To open the warehouse press buttons PA1 and PA on the electric panel, keeping them both pressed.
In case either one button or the other is released, the movement will stop because the motion is the 'dead man' type.
- To close the warehouses press button PC1 and PC on the electric panel, keeping them both pressed.
In case either one button or the other is released, the movement will stop.
- Safety button PEM, a mechanical latching button, immediately stops any movement. The functioning of the controls is shown in Chap. 4.3 'Guide to conduction'.

The configuration of the electric panel is the following:



CHAPTER 4

Use

4.2 GUIDE FOR SAFE HANDLING

The opening/closing movements of the warehouse can cause risks for personnel operating nearby, therefore it is important to engage only qualified people.

Personnel operating the warehouse must be perfectly aware of the instructions contained in this manual, and duly trained.

Before moving the warehouse, anchoring devices, like chains, tie rods etc. must be removed, and you must make sure that the tracks are clean and free as explained in Unit IV Chapt. 3 'Start up'.

In case there are curtains on the front part, they must be opened and fixed to the posts in order to avoid any interference to movements.

Verify there is no material or objects interfering with the folding movements of the fabric.



Besides it must also be checked that around or inside the warehouse there are no people exposed to risks during moving operations.

Switch the electric panel on.

Moving manoeuvres must be carried out by two operators which act simultaneously on both the button on the electric panel and on the remote control. Limit switches stop the manoeuvres.

An acoustic light signal warns on the movements of the warehouse.

Once the moving is over switch the electric panel off and provide anchoring the structure to ground.



In case of wind you must not move the warehouse, the structure could incur in very serious damages.

Do not move the structure in case of snow deposited on the fabric.

Snow should be removed before any operation.

4.3 USE OF STOP BUTTONS

The movements of the warehouse can be stopped by either one or the other safety red buttons positioned on the electric panel and on the remote control, marked by the standard yellow label placed underneath with STOP written on it.

To start moving again the safety button must be pulled.

4.4 PARTICULAR RISKS AND SAFETY MEASURES

The opening/closing movements of the warehouse can cause risks for personnel operating nearby.

In order to reduce risks the following measures have been taken:

Moving of the warehouse must be controlled by two operators.

Controls must be kept pressed, in case of release of either one or the other button, moving stops immediately.

The position of the controls must be at a safe distance from the moving of the warehouse. In order to avoid danger from squeezing or cutting, motors are kept in a proper cowl.

The position of the controls must allow the operators to easily check the side facing the control area. It also enables to have proper vision on all the dangerous spots.

Both control panel and remote control are provided with mechanical latching safety button which immediately stops the movements. In order to continue you must pull the button.

To open the door of the electric panel you must use special keys, and the general switch for power supply must be off.

An acoustic light signal warns on the movements of the warehouse.

Should power supply suddenly miss movements will stop immediately since the motors used are the self-braking type.

Personnel must be informed about other risks they could incur if getting too close to the warehouse while moving.

No machinery or material must be placed along the length of the structure interfering with the visibility of the structure.

Operators must always in any case make sure that nobody is nearby the moving areas either inside or outside the structure.

Operator should use protection clothing like leather gloves, safety shoes and helmets according to EC standards.

Same standards require the warehouse to carry warning signs.



4.5 FIRE PREVENTION

The warehouse does not necessarily have to be built in an area with particular fire prevention measures.

In case of fire on the electric panel and on the system you must use proper products to extinguish it.



Motorized retractable warehouses cannot operate in areas classified dangerous for fire or explosion.

CHAPTER 5

ANOMALIES, MAINTENANCE AND REPAIR

5.1 ANOMALIES, CAUSES E REMEDIES

The following are the possible anomalies, le loro cause e i rispettivi rimedi.

ANOMALIES	CAUSES	REMEDIES
H0 signalling light off	No power supply Burnt bulb Transformer Fuse FA1 Auxiliary Fuse FA2	Verify if se any interruptions on the power supply line Replace Replace Replace
Non functioning motors	One or more emergency buttons are pressed Activation of the Q1, Q2 magnetothermic protection of the motors Remote control switch damaged Auxiliary relays KA1-2 damaged Limit swithces either on or damaged.	Deactivate Reactivate (See notes end of chapter) Replace Replace Verify
Continuous interventions of the the Q1 e Q2 magnetothermic protection	more amperes requested	There could be dirt to be removed from the tracks, or no lubrication on the pantograph bars. The magnetothermic protection is not correctly calibrated. (see notes end of chapter) Motor connection not correct. Shortcircuit on the power supply cables. Voltage dropping on the three-phase line. Contact Kopron Service Dpt.
Chain transmission is noisy or bouncing	The lightening of the chain is insufficient No grease on the chains	Provide tightening the chain Apply Molykote grease



In case of activation of the thermic protecton of the motor, you must wait 30 seconds before connecting it manually.

ANOMALIES, MAINTENANCE AND REPAIR

In case of frequent interventions you must verify the absorption of the motor, compare it with the tag and verify the tightness of the thermal part which normally should be 10% more than what is stated on the tag of the motor.

In case of interventions to remove an anomaly must be carried out by qualified personnel as requested by European standards.

To obtain further information or to request an intervention contact our Service Dpt.:

KOPRON S.p.A.

Via I° Maggio s.n. - Gorgonzola – Milano - Italy

☎ 0039-02 – 92 152 753 📠 0039-02 – 92 152 923

5.2 PLANNED INSPECTIONS

The frequency of the inspections listed herebelow has been studied out for warehouses which go through opening and closing manoeuvres every day. Otherwise inspections can be planned differently.

Weekly frequency

- Verify the functioning of the emergency buttons.
- Verify that the wheels roll easily with no interference of dirt.
- Verify that the sliding tracks and holding profiles are duly cleaned (do not lubricate the tracks)
- Verify the functioning of the signalling lights.
- Verify the completeness of the micro-switches of the limit switch.
- Verify the belts which fix the the fabric to the structure, in case any are damaged they must be immediately replaced.

To increase safety of the structure replace the belts every two years.

Quarterly frequency

- Check noise level of the bearings of the motors.
- Check noise level of all the equipment.
- Verify the completeness of the activation ground brackets of the micro-switches of the limit switch.

5.3 PREVENTIVE MAINTENANCE**Weekly frequency**

- Clean tracks and profiles from dirt.(Do not lubricate the tracks)

Monthly frequency

- Check the tightness of the transmission chain, eventually provide tightening by means of tie rods at the bottom of the motoreducers.
- Grease the chains, ring gears and pinions with Molykote grease.
- Fasten the bolts of the motoreducer.

Quarterly frequency

- Check and eventually adjust the activation ground brackets and careful inspection of the status of the micro-switches of the limit switches.
- Grease the hinging and sliding points of the pantograph bars with molykote grease

Yearly frequency

- Check and fasten all the bolts and nuts of the warehouse.
- Check and fasten the bolts used for assembly.
- Check lubricating level of the motoreducers.
- Grease the hinging and sliding points of the pantograph bars with molykote grease
- Check noise level of the motoreducers.
- Check the completeness of the pinions, gear wheels and chains.

Biennial frequency

- The belts fixing the fabric to the structure operate on plates welded to the fabric. Breaking strength of the belts is 350 kg and must be checked weekly, and immediately replaced in case of damages.
Every two years they must be totally replaced.

Annual maintenance of the electric system

- The electric panel can be cleaned with a vacuum cleaner and a brush.
- Check the tightness of the contacts of the contactor.
- Check tightness of all the lugs and clamps.
- Check cables and tightness of the connections to the equipment.
- Check electric absorption of the motors and eventually calibrate the circuit breakers
- Check and test the ground circuits.
- Check status and efficiency of the emergency button.
- Functional checking of the safety devices of the electric plant.



Retractable warehouses do not require particular cleaning intervention, besides the the fabric which can be cleaned with water and soap.



Interventions on anomalies must be carried out, according to European standards, by qualified personnel.
Keep to what is specified in Chapt. 6.3 'Notes on maintenance'.

5.4 INSTRUCTIONS FOR LUBRICATION**Monthly frequency**

- Greasing of the chains, ring gears and pinions of the motors with Molykote grease.

Quarterly frequency

- Greasing of the hinging points and sliding points of the pantograph bars with Molykote grease.

5.5 NOTES ON TOOLS TO BE USED

Normal workshop tools can be used to carry out maintenance and repair operations. No special tools are required.



For all operations to be carried out at a certain height use safety stairs, trestles, aerial platforms and safety belts.

For the electric part, a tester plus an ammeter are sufficient.

CHAPTER 6

INSTRUCTIONS ON SAFETY

6.1 GENERAL NOTES



Opening and closing movements of the warehouse can create risks for safety. Operators must be informed about the risks.

The management of the Company must recommend personnel to strictly keep to safety measures.

Personnel must have full visibility of the sides of the structure without interference of any machinery or material.

The casing protecting the transmissions should not be removed, in case it is necessary you must reassemble it immediately after maintenance.

The acoustic and light alarm in case of malfunction must be immediately adjusted.

When moving the structure, operators must avoid unstable positions, and watch out when the joints are moving.

The electric panel must not be opened. Keys for opening it must be given only to personnel in charge of the electric maintenance.

Maintenance of the structure must be entrusted to skilled and qualified personnel as required by standard EN 292.2 art. 5.5.1.

Controls have been studied out in order in order to prevent dangerous manoeuvres for both the operator and the structure.



The warehouse must carry warning signs n. 1833, 1835 and 1831 according to Standard DPR 524 DEL 8.6.82 EEC 79/640.

6.2 SAFETY ZONE NEAR THE WAREHOUSE

There are no particular dangerous zones around the warehouse when it is still, and personnel can move freely around it.

Restrictions and instructions on how to move must be issued by the company owning the structure, based upon what is being explained in this manual.

The warehouse must carry warning signs n. 1833, 1835 and 1831 according to Standard DPR 524 DEL 8.6.82 EEC 79/640.

6.3 NOTES ON MAINTENANCE

Preventive maintenance must be carried out according to standard EN 292.2 art. 5.5.1, by skilled and qualified personnel, which must know the instructions contained in this manual.

Notes regarding preventive maintenance are described in the following page.
General switch must be off. It can be locked in OFF position.

Hang a sign 'OFF FOR MAINTENANCE' on the general switch.



In case of inspections on the electric system with power supply on or with the electric panel open, two people must operate: one will keep an eye on the electric panel and the other will carry out operations.

The equipment inside the electric panel has an IP 2X protection.

This requirement provides protection against accidental contacts with solid corps exceed diameter 12 mm.



Safety standards against electricity danger are EN 292.1 (4.3), EN 292.2 ed EN 60204.1.

User must not open the electric panel, for this reason special keys are used open it. The door of the electric panel, which carries warning signs, can be opened only after general switch is off.

Also during maintenance general switch must be off carrying warning sign: 'OFF FOR MAINTENANCE'



For operations to be carried out at a certain height use either an aerial platform or a trestle to position near the working spot.

The operator must be equipped with all the safety devices according to Standards and undertake actions which guarantee his safety.

During work the technician must keep people away from dangerous areas.

6.4 OTHER RISKS

Main operation	Transport
Secondary operation	Lifting and handling.
Danger connected	Mechanical danger due to either the shape of the structure or to operations carried out.
Other risks	The operators can get bruised or fractured. Squeeze hands or feet. Manual handling of bulky or heavy material.
Prevention	Personal protection wear, gloves, safety shoes, helmets. Proper use of Lifting machines. Qualified personnel Follow specific operating instructions.
Main operation	Assembly
Secondary operation	
Danger connected	Mechanical danger due to handling. Danger from working at a height or in uncomfortable circumstances.
Other risks	Bruises, fractures, falls, cuts and abrasions.
Prevention	Personal protection wear, gloves, safety shoes, helmets, goggles, protection mask for welding and grinding operations. Safety ladder, aerial platforms, scaffolds, safety slings for operation from a height for working at a height. Limit the working area with a ribbon Qualified personnel Follow safety measures established by the Company purchasing the product. Follow specific instructions on operations. Use lifting machinery according to EC standards.

Main operation	Installation
Secondary operation	Electric Connection, adjustment of the equipment.
Danger connected	Mechanical danger due to movements of the equipment, and electric danger due to the electric connection. Danger due to connections which are carried out under difficult conditions or in lifted positions.
Other risks	Bruises, fractures, falls, dropping material.
Prevention	Personal protection wear, gloves, safety shoes, helmets, goggles, protection mask for welding and grinding operations. Safety gloves. Safety ladder, aerial platforms, scaffolds, safety slings for operation from a height for working at a height. Limit the working area with a ribbon. Qualified personnel. Follow specific instructions on operations. Use of proper tools.
Main operation	Start up
Secondary operation	Inspection and cleaning
Danger connected	Mechanical and electrical danger. Danger one can incur if inspection is carried out under difficult conditions.
Other risks	Bruises, fractures, electric shock, falls.
Prevention	Personal protection wear, gloves, safety shoes, helmets. To prevent electric danger the panel must be connected to a power supply line provided with thermal magnetic switch and residual-current device set at 30 mA. All the equipment must be connected to a ground collector with a proper cable and the collector must be connected to the three-phase/ground power supply cable. Safety gloves. Safety ladder, aerial platforms, scaffolds, slings for working at heights. Proper tools Qualified personnel Follow specific instructions on operations.

Main operation	Use
Secondary operation	Operation of the controls and their interdiction
Danger connected	Mechanical and electrical danger
Other risks	Squeezing, cutting, bruises, fractures, falls, entrapment, dragging people transiting in risk zones, and electric shocks.
Prevention	Operation is carried out by two operators. Risky zones are well visible to the two operators. Controls must be kept pressed, in case of release of either one or the other button, moving stops immediately. All the parts of the motor are contained in proper casings. Both operating positions are provided with an emergency button. An acoustic/light signal warns on the warhouse move ments. Should power supply suddenly miss, movements stop immediately thanks to the self-braking motors. Operators must be aware of the dangerous zones while operating. Use of qualified and trained personnel. Planning of preventive maintenance Warning signs must be used. Use of safety gloves, shoes and helmets. Follow operating instructions. To prevent electric danger the panel must be connected to a power supply line provided with thermal magnetic switch and residual-current device set at 30 mA. All the equipment must be connected to a ground collector with a proper cable and the collector must be connected to the three-phase/ground power supply cable. Preventive and planned maintenance. System must be provided with warning signs. Personal protection wear, gloves, safety shoes, helmets. Safety requirements provided by User for personnel subject to risks. Specific Instructions on how to operate the system and relevant controls.

Main operation	Maintenance and repairs
Danger connected	Mechanical danger during maintenance operations. Danger during maintenance operations carried out under difficult conditions.
Other risks	Bruises, fractures, falls
Prevention	Personal protection wear, gloves, safety shoes, helmets, goggles, protection mask for welding and grinding operations. To prevent electric danger the panel must be connected to a power supply line provided with thermal magnetic switch and residual-current device set at 30 mA. All the equipment must be connected to a ground collector with a proper cable and the collector must be connected to the three-phase/ground power supply cable. Proper tools Safety gloves Limit the working area platforms, scaffolds, safety slings for operation from a height for working at a height. Qualified personnel Follow specific instructions on operations..

CHAPTER 1

ACOUSTIC

1.1 NOISE PRODUCED

The noise produced by the equipment does not exceed 78 dB, measured with a sound level meter with an A-frequency weighting filter and a slow time weighting. The measuring has been carried out at a height of 1,6 meters and at a distance from the outside part of the dock leveller of 1 meter .

CHAPTER 2

ENVIRONMENTAL



2.1 DISPOSAL OF THE MOTOREDUCER OIL

Oil waste must be taken to oil waste dumps.
In case of accidental spilling of hydraulic liquids cover with sawdust before throwing it in proper bins .



2.2 DISPOSAL OF DISMANTELLED MATERIAL

Disconnect the warehouse from all the energy sources of the building.
Divide material to dispose according to type
The material used is mainly the following:

- Iron for the structures
- Plastic
- Electric components.
- Electric cables



All material must be disposed according to local regulations.



2.3 REMOVAL OF WASTE MATERIAL

Any exceeding material from assembly can be disposed along with normal waste material.

CHAPTER 1

SPARE PARTS

1.1 SPARE PARTS



Orders for spare parts must always carry the model, serial number, year of construction of the warehouse. These data are on the CE tag (see Unit I Chapt. 1.3).
In case non original parts are used, this will be classified as an improper use and guarantee will no longer be valid.

CHAPTER 1

SERVICE AND GUARANTEE

1.1 GUARANTEE

1 - Kopron S.p.A. grant a guarantee period of 12 months from delivery date except for electric and electronic parts for which there is no guarantee, these components used for production have there own guarantee, established by the relevant suppliers, which as well does not exceed 12 months from delivery.

2 - Kopron S.p.A. undertake to remove any defect due to error in design or material/production faults occuring within the terms mentioned at point 1.

3 - For each faulty part, Buyer must give Kopron written notice within eight days. Buyer will be charged with transport costs and risks plus eventual customs expenses for faulty parts as well as for the supply of parts repaired or sent for replacement.

4 - Upon request of Buyer service under guarantee can be carried out locally where the dock leveller has been assembled, in this case intervention plus expenses for travel, food and lodging will be charged to customer.

5 - Guarantee is valid only in case equipment has been correctly used according to instructions contained in the Use and Maintenance manual. Guarantee will not cover faults caused by Buyer in case of maintenance or interventions not authorized by Kopron S.p.A. in writing, or due to wear and tear. Guarantee will not cover any damages caused directly or indirectly by tools, or due to missing production.

6 - Material subject to normal wear and tear is not under guarantee.

7 - The duration of the guarantee does not exclude the obligation on behalf of Customer to stock up with spare parts as suggested by Kopron S.p.A. in due time.

8 - The obligations implied in the guarantee have nothing to do with the economical conditions agreed upon and do not authorize interruptions or changes in payment modalities.

9 - Guarantee covers only the mechanical functioning of the equipment, therefore Kopron S.p.A. will not be responsible for personal Customer expectations regarding quality or quantity of the product.

Should instructions contained in this manual not be followed strictly, or if negligence occur during maintenance, or repairs not be carried out properly, or should on original spare parts be used, this will be considered improper and will imply Buyer to take his own responsibilities plus the loss of guarantee.

Kopron S.p.A

CHAPTER 1

ENCLOSED DRAWINGS

1.1 DRAWINGS

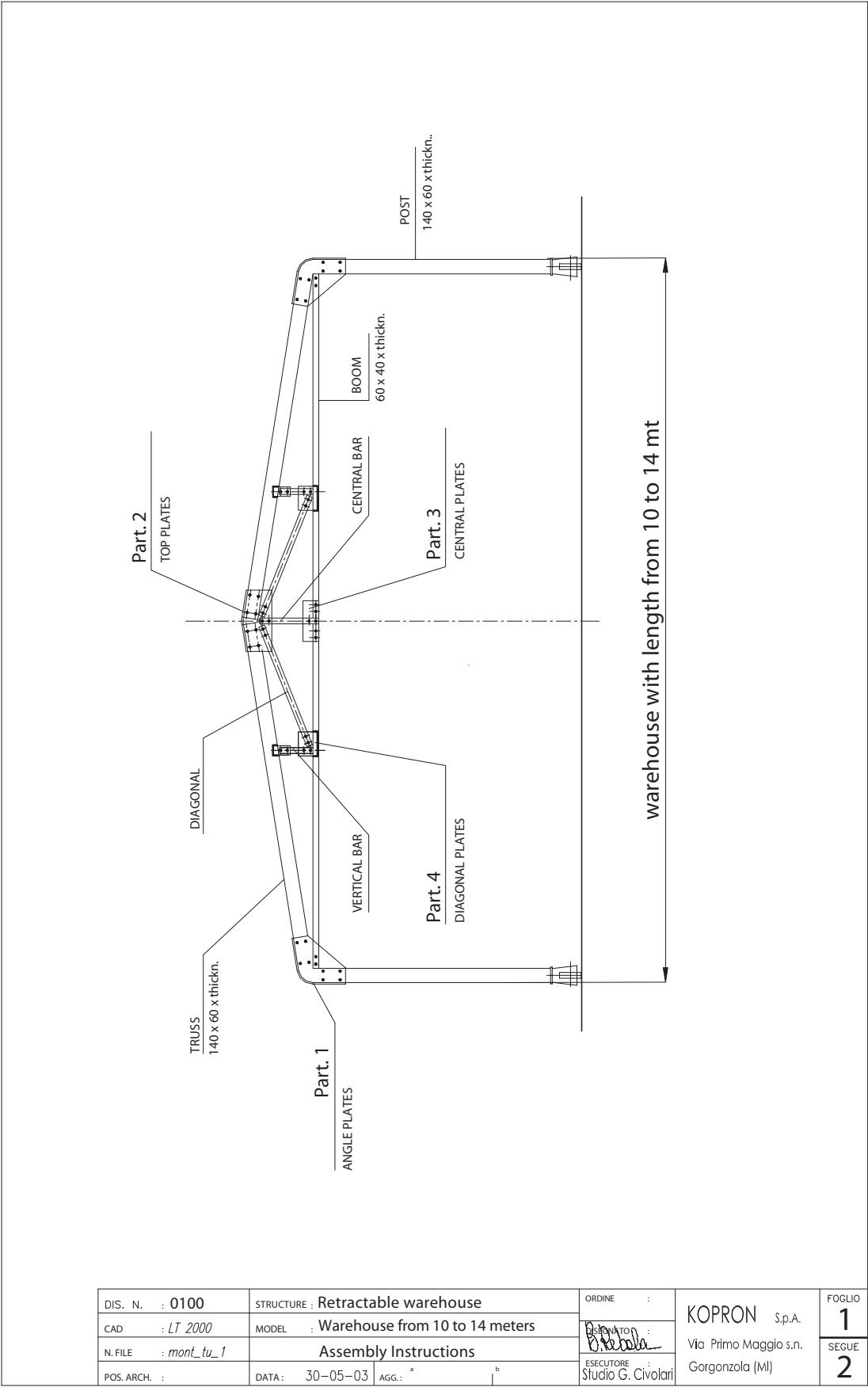
The annexed drawings refer to standard warehouses and are divided according to sizes:

■ WAREHOUSE FROM 10 MT TO 14 MT	DRWG. N° 0100
■ WAREHOUSE FROM 14 MT TO 16 MT	DRWG. N° 0110
■ WAREHOUSE FROM 16 MT TO 20 MT	DRWG. N° 0120
■ WAREHOUSE FROM 20 MT TO 24 MT	DRWG. N° 0130

Drawings show the position of the joining plates, the chain, of the diagonal and vertical tie rods in order to enable identification and assembly of the components.

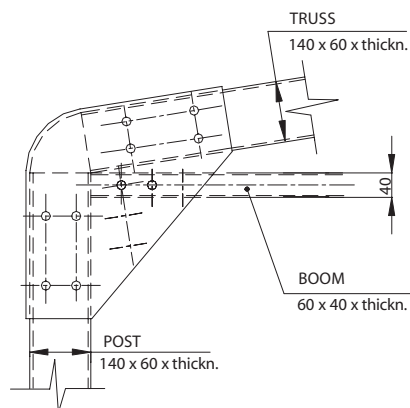
The profiles carry the width which is useful in case of order for spare parts or repairs. Drawings show for each component to assemble the exact diameter and length of the bolt to use.

It is of utmost importance to keep to instructions and avoid any waste of time.



Part. 1

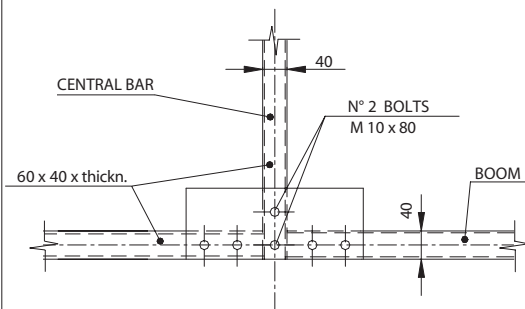
ANGLE PLATES



THE ANGLE PLATES MUST BE FIXED
WITH 10 BOLTS M 12 x 80
FOR THE BITS USE 2 BOLTS M 12 x 100

Part. 3

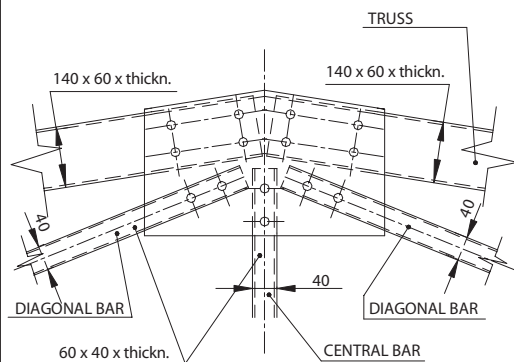
CENTRAL PLATES



THE CENTRAL PLATES MUST BE FIXED WITH BOLTS
M 12 x 80 and qty 2 M 10 X 80
FOR THE BITS 2 BOLTS M12 x 100

Part. 2

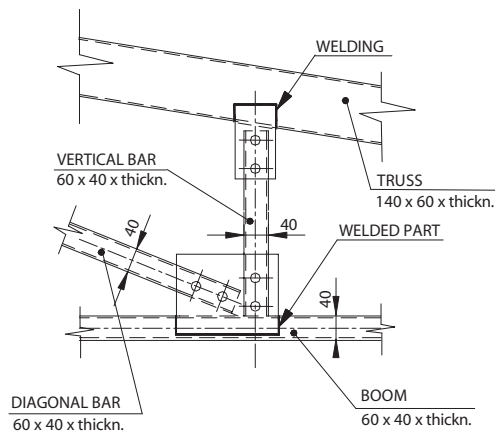
TOP PLATES



THE TOP PLATES MUST BE FIXED WITH 8 BOLTS
M 12 x 80 and 6 M 10 X 80.
BOLTS SIZE 10 x 80 ARE USED TO FIX THE
CENTRAL BAR AND THE TWO DIAGONALS

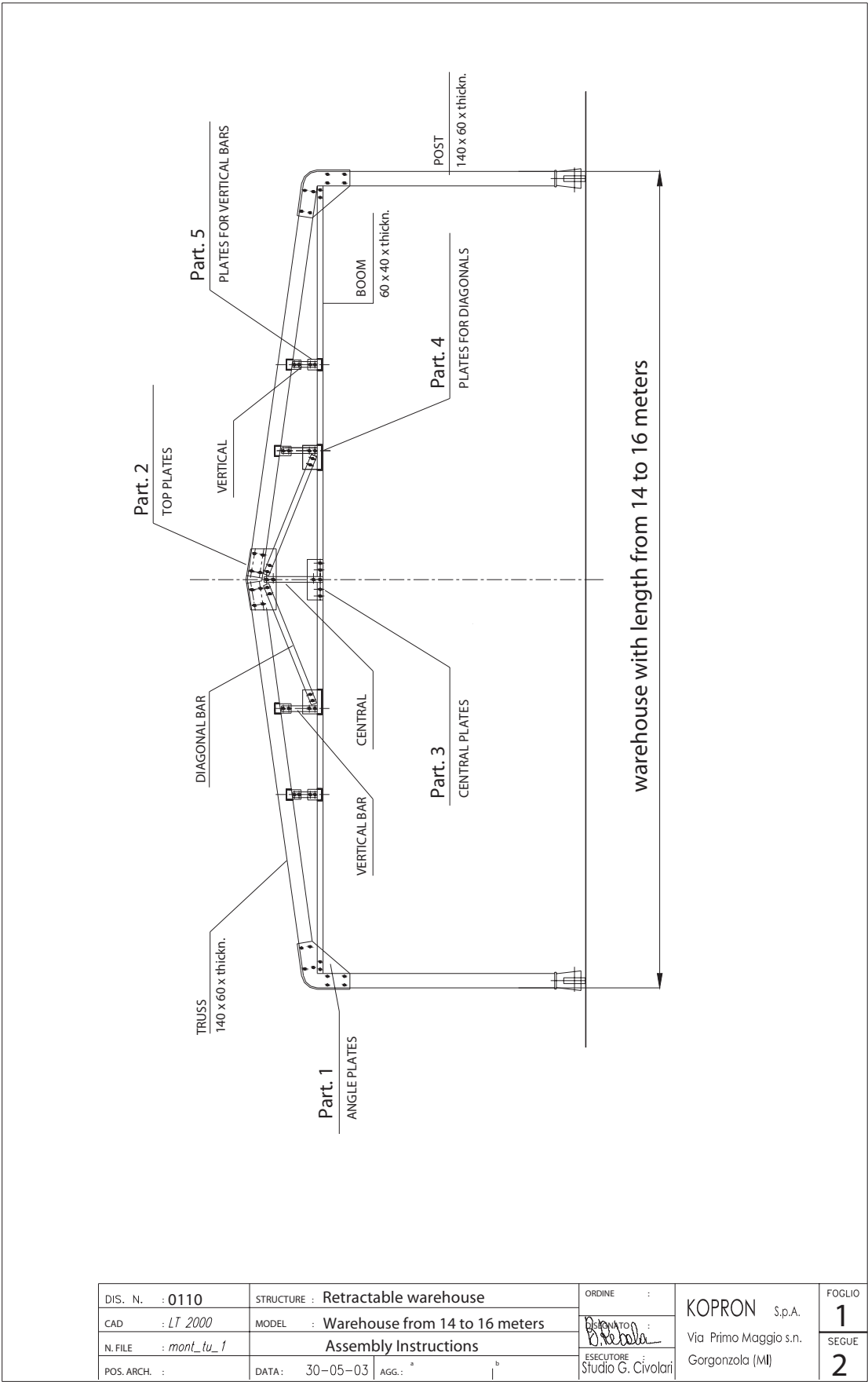
Part. 4

PLATES FOR DIAGONALS



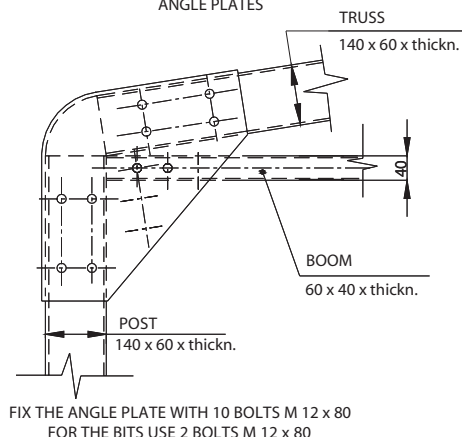
THE DIAGONALS AND VERTICAL BARS MUST BE FIXED TO
THE PLATES WELDED TO THE BOOM AND TRUSS,
WITH 6 BOLTS 10 X 80

DIS. N. : 0100	STRUCTURE : Retractable warehouse	ORDINE :	KOPRON S.p.A. Via Primo Maggio s.n. Gorgonzola (MI)	FOGLIO
CAD : LT 2000	MODEL : Warehouse from 10 to 14 meters	Disegnato :		2
N. FILE : mont_tu_1	Assembly Instruction	ESECUTORE :		SEGUE
POS. ARCH. :	DATA : 30-05-03 AGG. : a b	Studio G. Civalari		1



Part. 1

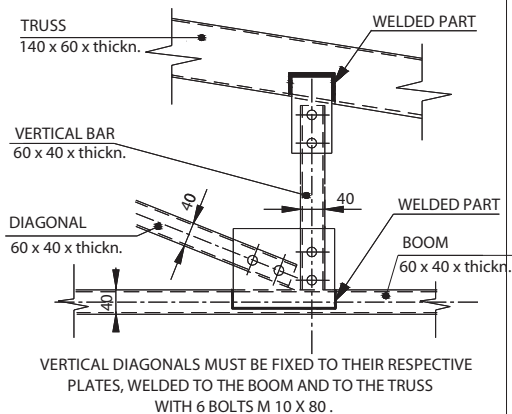
ANGLE PLATES



FIX THE ANGLE PLATE WITH 10 BOLTS M 12 x 80
FOR THE BITS USE 2 BOLTS M 12 x 80

Part. 4

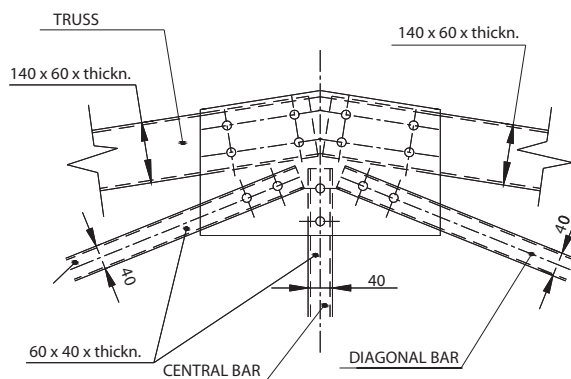
PLATES FOR DIAGONALS



VERTICAL DIAGONALS MUST BE FIXED TO THEIR RESPECTIVE
PLATES, WELDED TO THE BOOM AND TO THE TRUSS
WITH 6 BOLTS M 10 x 80.

Part. 2

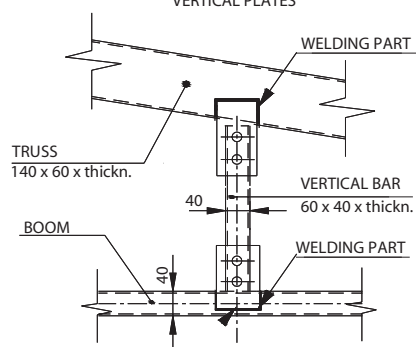
TOP PLATES



THE TOP PLATES MUST BE FIXED WITH BOLTS
Class 8.8, Stainless steel qty 8 M 12 x 80 and qty 6 M 10 x 80
WHICH MUST FIX THE CENTRE BAR AND THE TWO DIAGONALS.

Part. 5

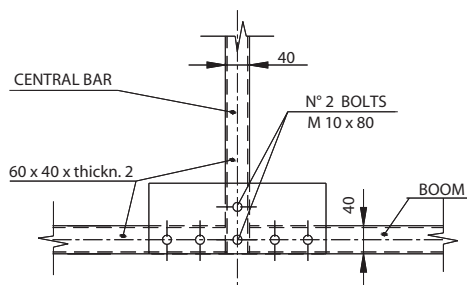
VERTICAL PLATES



THE VERTICAL BARS MUST BE FIXED TO THE PLATES,
WELDED TO THE BOOM AND TO THE TRUSS
WITH 4 BOLTS M 10 x 80.

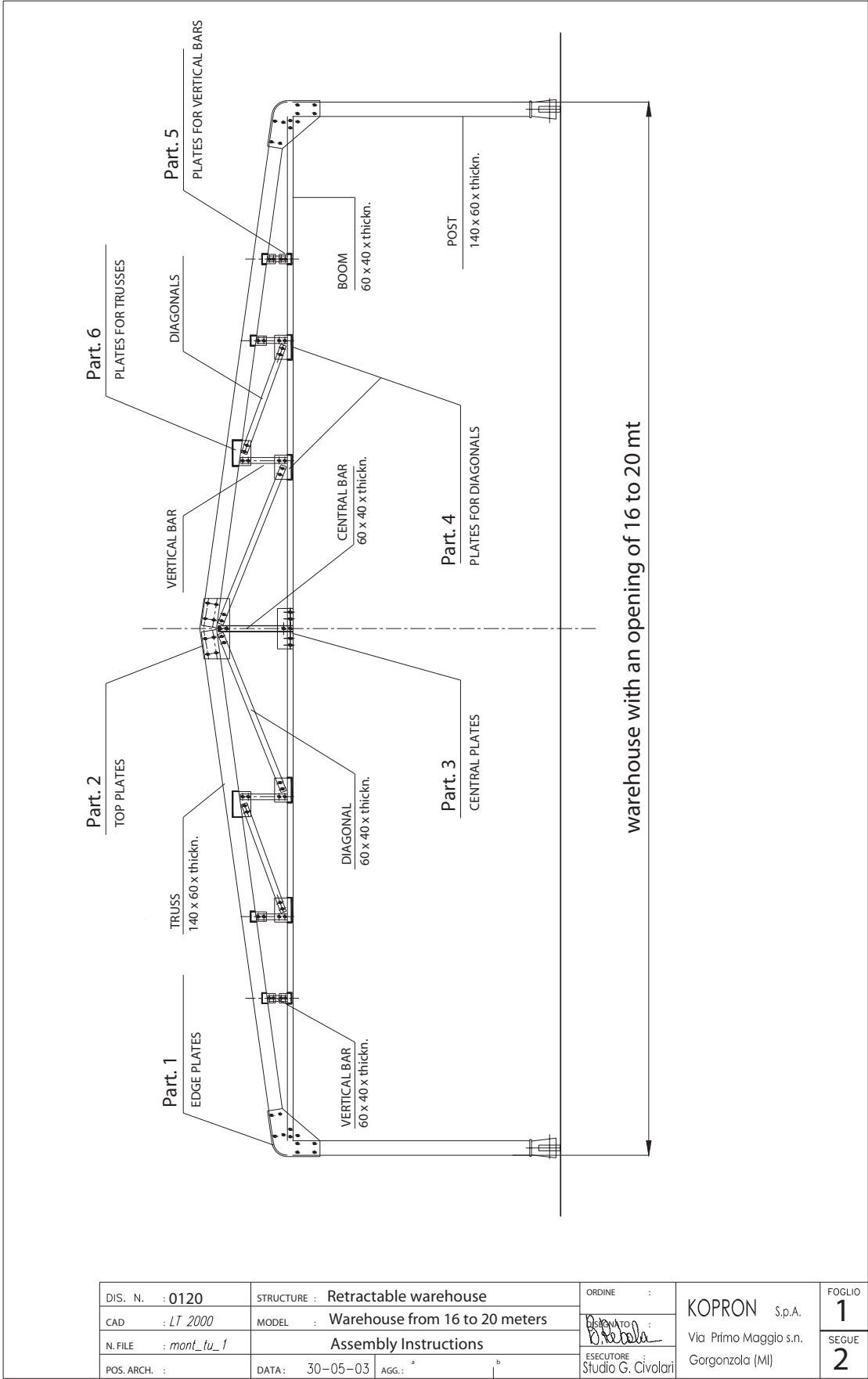
Part. 3

CENTRAL PLATES



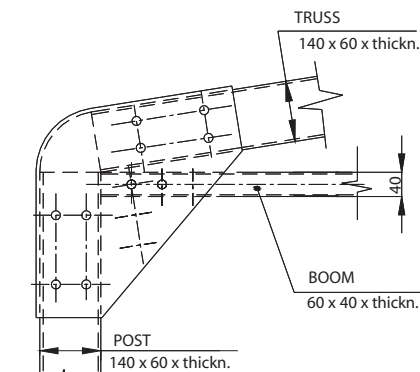
THE CENTRAL PLATES MUST BE FIXED WITH BOLTS,
Classe 8.8; 4 M 12 x 80 and 2 M 10 x 80
FOR THE BITS YOU NEED 2 BOLTS M 12 x 100

DIS. N. : 0110		STRUCTURE : Retractable warehouse		ORDINE :	KOPRON S.p.A. Via Primo Maggio s.n. Gorgonzola (MI)	FOG 22
CAD : LT_2000		MODELLO : Warehouse from 14 to 16 meters		Disegnato da : 		SEQUE //
N. FILE : mont_tu_1		Assembly Instruction		ESECUTORE : Studio G. Civalari		
POS. ARCH. :		DATA : 30-05-03	AGG. : a b			



Part. 1

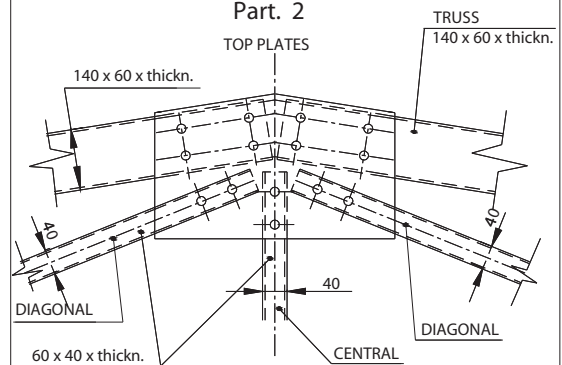
EDGE PLATES



EDGE PLATES MUST BE FIXED
WITH 10 BOLTS M 12 x 80.
THE BITS WITH BOLTS M12 x 100

Part. 2

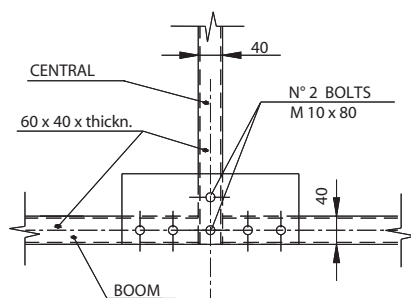
TOP PLATES



TOP PLATES MUST BE FIXED WITH
8 BOLTS M 12 x 80 and 6 BOLTS M 10 x 80 .
FOR FIXING THE CENTRAL BAR AND THE TWO DIAGONALS
USE BOLTS M 10x80

Part. 3

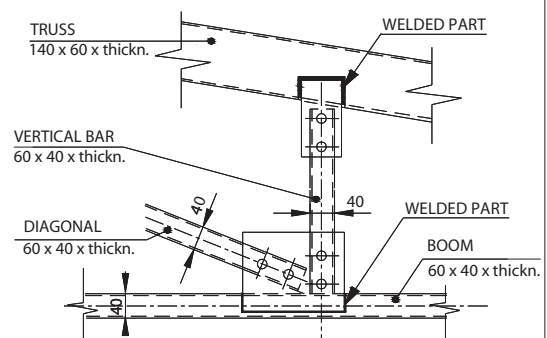
CENTRAL PLATES



THE CENTRAL PLATE MUST BE FIXED
WITH 4 BOLTS M 12 x 80 and 2 BOLTS 10 x 80.
FOR THE BITS USE 2 BOLTS M 12 x 100

Part. 4

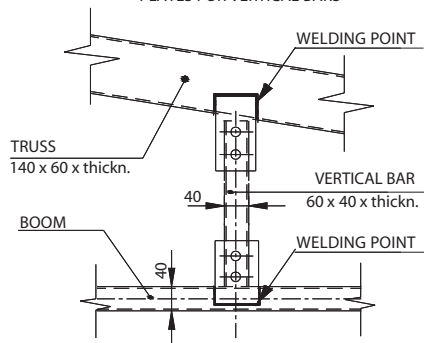
PLATES FOR DIAGONALS



DIAGONAL AND VERTICAL BARS MUST BE FIXED TO THEIR
PROPER PLATES, WELDED TO THE BOOM AND TRUSS,
WITH 6 BOLTS M 10 X 80.

Part. 5

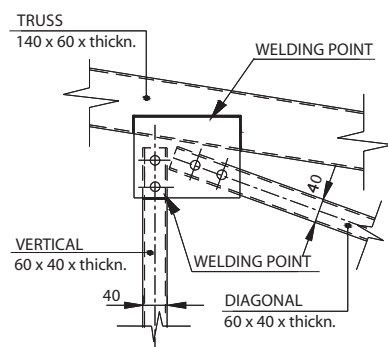
PLATES FOR VERTICAL BARS



VERTICAL BARS MUST BE FIXED TO THE PLATES,
WELDED TO THE BOOM AND TO THE TRUSS,
WITH 4 BOLTS M 10 X 80

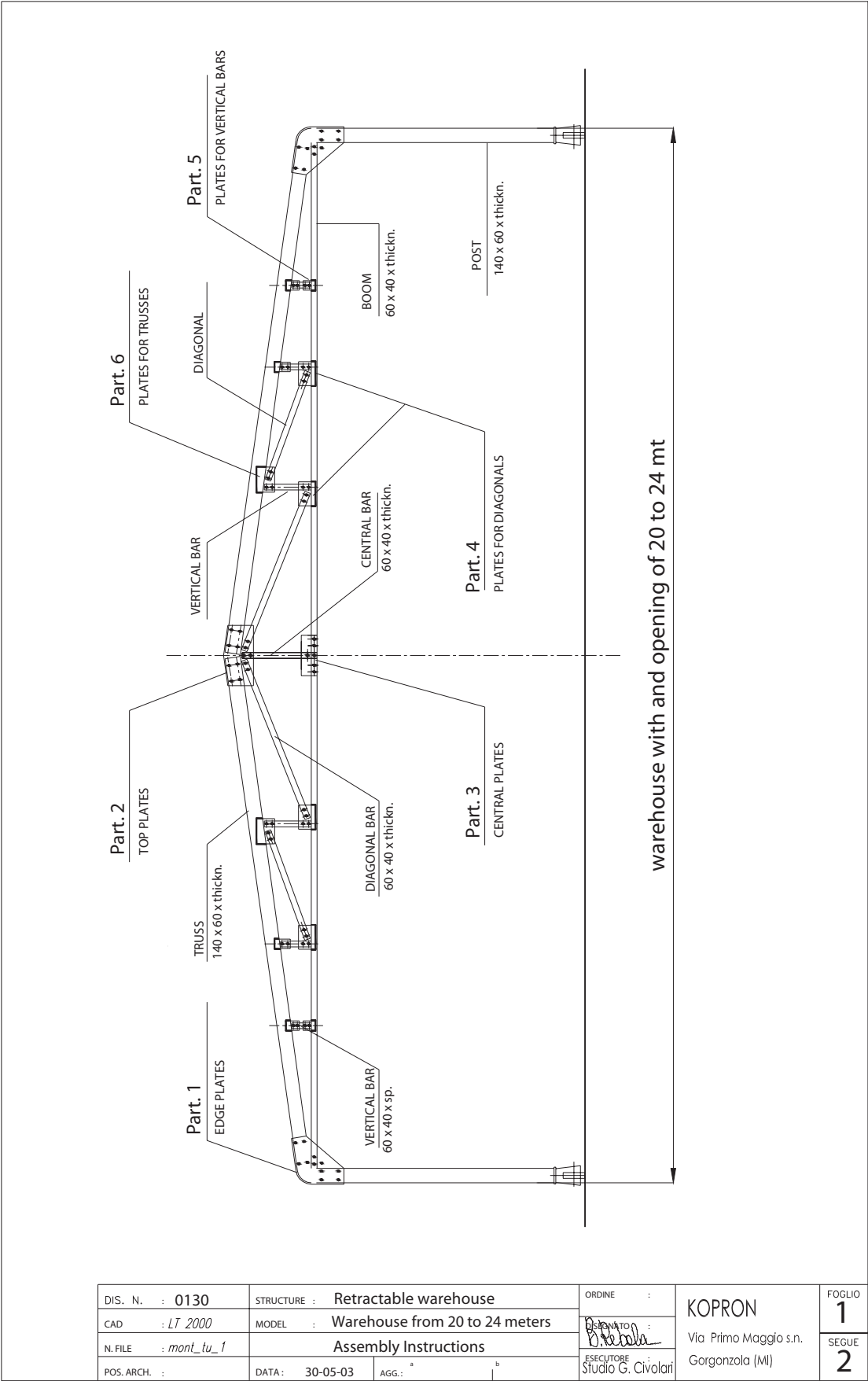
Part. 6

PLATES FOR TRUSSES



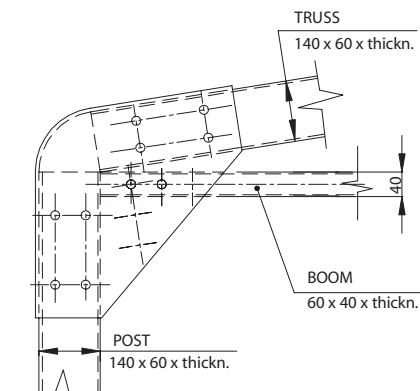
DIAGONAL AND VERTICAL BARS MUST BE
FIXED TO THE WELDED PLATES TO THE TRUSS
WITH 4 BOLTS M 10 X 80

DIS. N. : 0120	STRUCTURE : Retractable warehouse	ORDINE :	KOPRON S.p.A. Via Primo Maggio s.n. Gorgonzola (MI)	FOGLIO 2
CAD : LT 2000	MODEL : Warehouse from 16 to 20 meters	DEGNATO :		SEGUE //
N. FILE : mont_tu_1	Assembly Instructions	ESECUTORE Studio G. Civalari		
POS. ARCH. :	DATA : 30-05-03 AGG. : a b			



Part. 1

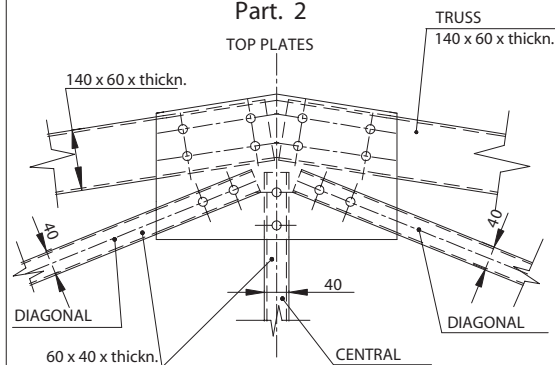
EDGE PLATES



THE EDGE PLATES MUST BE FIXED
WITH 10 BOLTS M 12 x 80
FOR THE BITS USE 2 BOLTS M 12 x 100

Part. 2

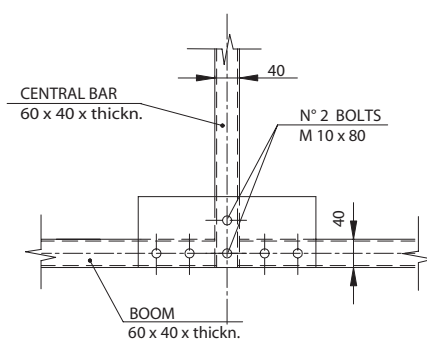
TOP PLATES



THE TOP PLATES MUST BE FIXED WITH BOLTS,
qty 8 M 12 x 80 and 6 M 10 x 80.
USE BOLTS M 10 x 80 TO FIX THE CENTRAL AND DIAGONAL

Part. 3

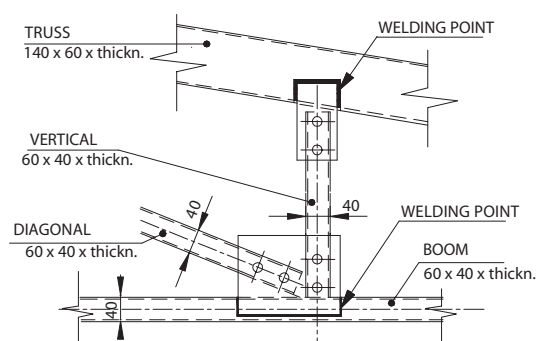
CENTRAL PLATES



THE CENTRAL PLATES MUST
BE FIXED WITH BOLTS.
Qty 4 M 12 x 80 and qty 2 M 10 x 80
FOR THE BITS qty 2 M 12 x 100

Part. 4

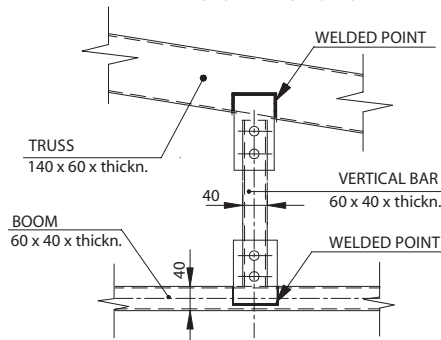
PLATES FOR DIAGONALS



VERTICAL DIAGONALS MUST BE FIXED TO THEIR RESPECTIVE
PLATES. WELDED TO THE BOOM AND TO THE TRUSS
WITH 6 BOLTS M 10 x 80

Part. 5

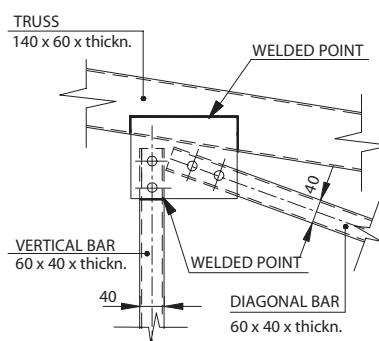
PLATES FOR VERTICAL BARS



VERTICAL BARS MUST BE FIXED TO THE PLATES
AND WELDED TO THE BOOM AND TRUSS
WITH 4 BOLTS M 10 x 80

Part. 6

PLATES FOR TRUSSES



DIAGONAL AND VERTICAL BARS MUST BE FIXED
TO THE WELDED PLATES TO THE TRUSS, WITH
4 BOLTS M 10 x 80

DIS. N. : 0130	STRUCTURE : Retractable warehouse	ORDINE :	KOPRON S.p.A.	FOGLIO 2
CAD : LT 2000	MODEL : Warehouse from 20 to 24 meters	Disegnato da :	Via Primo Maggio s.n.	SEQUE 1
N. FILE : mont_tu_1	Assembly Instructions	ESECUTORE :	Gorgonzola (MI)	
POS. ARCH. :	DATA : 30-05-03 AGG. : a b	Studio G. Civalari		



LOOKING AHEAD



Quality Management System
UNI EN ISO 9001:2008 Certified
Factory Production Control
UNI EN ISO 1090
Applicable standard
UNI EN 13241-1
UNI EN 16005
UNI EN 1398
UNI EN 3834-2

CERTIFICAZIONI CERTIFICATIONS

Kopron attraverso le certificazioni di qualità offre un'ulteriore garanzia sull'efficacia e l'efficienza dei propri prodotti.

Through certifications Kopron offer a further guarantee on efficiency and quality of their products.



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