

## SECTION 1 - GENERAL DATA

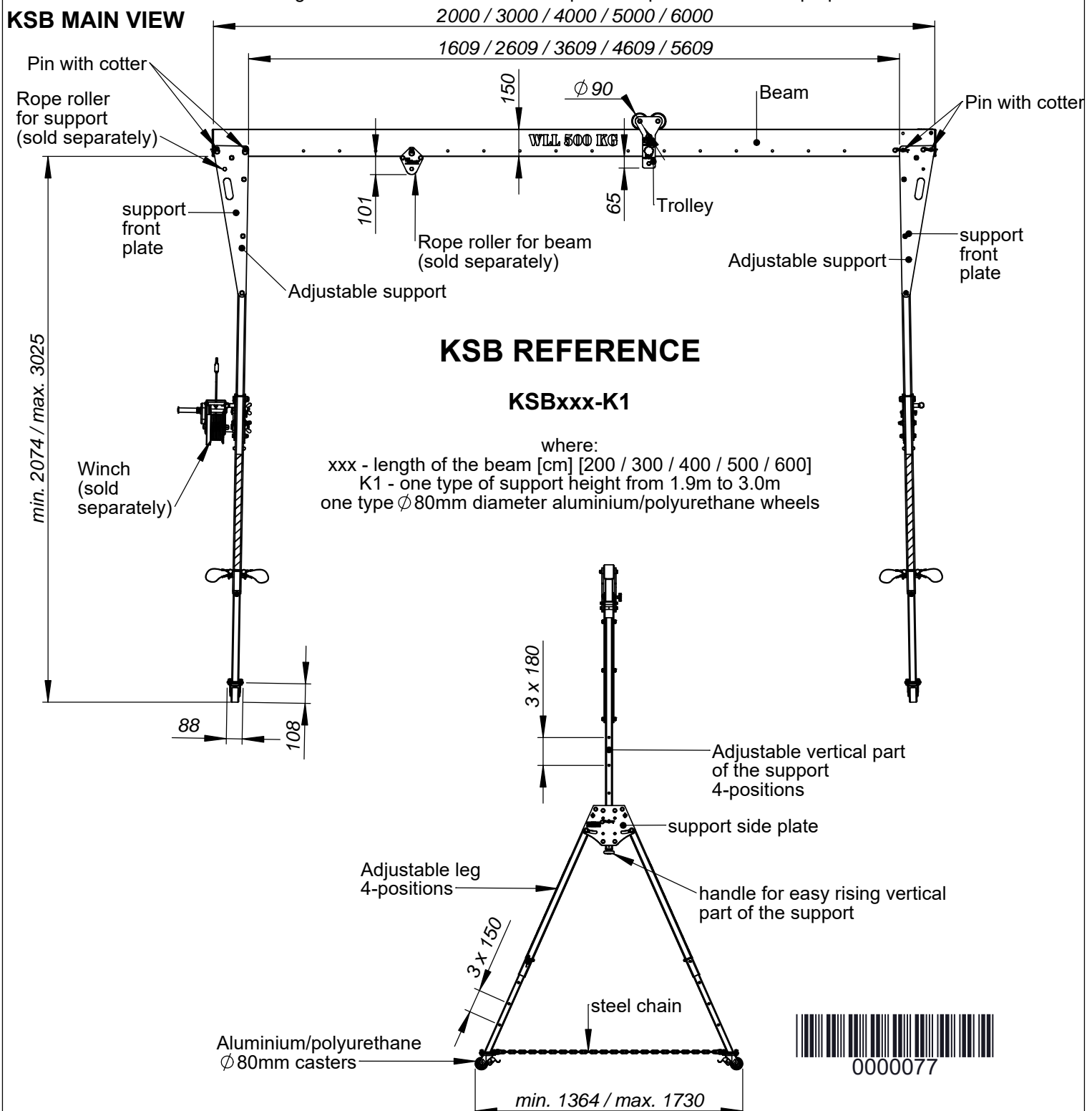
## DESCRIPTION

Compact gantry crane KSB is a complete, lightweight, portable and flexible device designed to be used in variety of applications such as drainage wells, reservoirs, wells, silos, rooftop, lift-shaft, waste water and many more. For faster device installation no additional tools are needed. KSB consist of beam and two separate supports connected using pin with cotter. KSB can be equipped with hand operated brake winch RUP502-ET or RUP507 battery chain hoist for lifting materials.

## TECHNICAL DATA

- Beam: 2 / 3 / 4 / 5 / 6 meters
- Frame height (under beam min. / max): 1.9m / 3.0m
- Working Load Limit (WLL): 500kg (beams 2, 3, 4m) / 300kg (beams 5, 6m).
- Safety factor for lifting loads: 2.1:1
- Safety factor for personal protection: 10:1
- Protection for maximum two people at the same time.
- Unit weight: 60kg (4-meter) / 53kg (3-meter) / 49kg (2-meter)
- Device can be used for lifting loads at the same time OR for personal protection/rescue purposes at the same time.

## KSB MAIN VIEW



## GENERAL SAFETY INSTRUCTION

### INSPECTION BEFORE FIRST USE

KSB device must be visually and functionally inspected before first use. Inspection must establish that all parts of the device are safe and has not been damaged by incorrect assembly, transport or storage.

Inspections are carried out by the user.

### INSPECTION BEFORE WORKING

Before each use it is obligatory to carry out a pre-use check of the equipment, to ensure that it is in a serviceable condition and operates correctly before it is used. During pre-use check it is necessary to inspect all elements of the equipment in respect of any damages, excessive wear, corrosion, abrasion, cutting or incorrect acting. Especially take into consideration:

- components visual defects,
  - test the trolleys for free movement along the beam,
  - ensure that WLL of the device is sufficient for the application and will not be exceeded.
- Inspections are carried out by the user.

### MAXIMUM LIFESPAN / PERIODIC INSPECTION

Maximum lifespan of the KSB device is unlimited but its depends on the intensity of usage and the environment of use.

Using the device in rough environment, marine, contact with sharp edges, exposure to extreme temperatures or aggressive substances, etc. can lead to the withdrawal from use even after one use.

After every 12 months of utilization, equipment must be withdrawn from use to carry out periodical detailed inspection.

Periodic inspections must only be carried out by:

FOR PERSONAL PROTECTION EQUIPMENT (PPE) : a competent person who has the knowledge and training required for personal protective equipment periodic inspections OR manufacturer OR manufacturer's authorized representative.

FOR LIFTING EQUIPMENT (NON PPE): a competent person responsible in the workplace for the interim inspection of lifting equipment.

Depending upon the type and environment of work, inspections may be needed to be carried out more frequently than once every 12 months.

During periodic inspection will be established admissible time of the device use till next periodic inspection.

The result of the periodic inspection must be recorded in Identity Card.

Regular periodic inspections are the essential for equipment maintenance and the safety of the users which depends upon the continued efficiency and durability of the equipment.

During periodic inspection it is necessary to check the legibility of the equipment marking.

### MAINTENANCE / STORAGE / REPAIR

If during the inspection any defects or damages are detected KSB device should be immediately withdraw from the use.

Do not change the device design, repair or replace elements included in the kit.

When using the device, protect it against mechanical, chemical and thermal damage. Do not use a damaged or malfunctioning

parts. Clean a dirty device with a damp cloth. Store the device indoors, away from moisture and sources of heat.

### WITHDRAWAL FROM THE USE

Device must be withdrawn from use immediately when any doubt arise about its condition for safe use and not used again until confirmed in writing by equipment manufacturer or his representative after carried out the detailed inspection.

### TRANSPORT

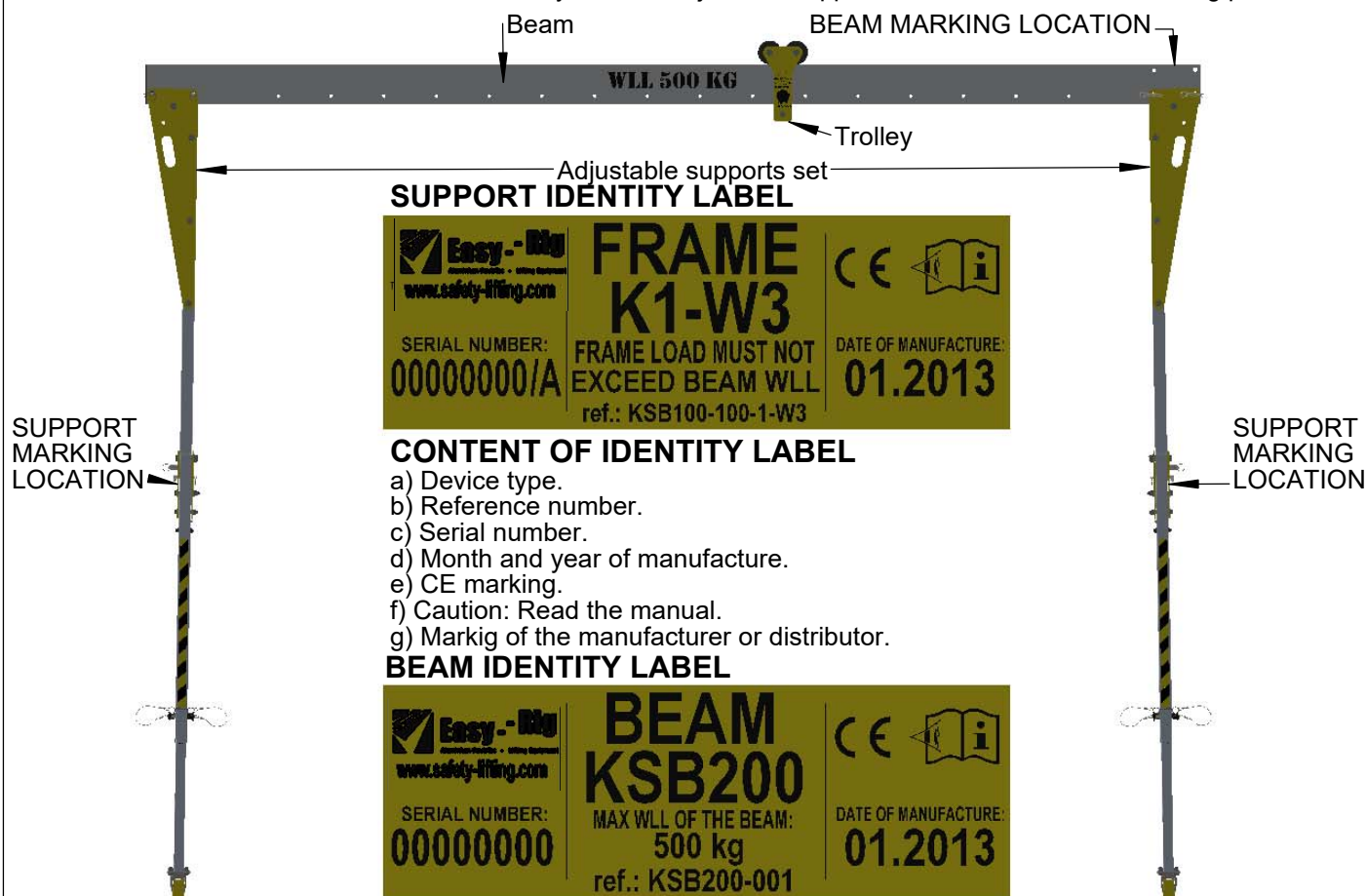
The device should be transported in packaging protecting it from damage or getting wet, e.g. bags made of impregnated fabric or in steel / plastic / waterproof wooden cases or boxes.

### GENERAL PRECAUTIONS

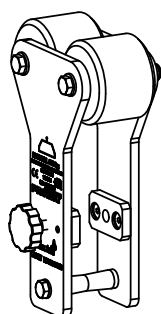
- KSB device must be installed in accordance with this instruction manual.
- KSB device can be used in the temperature range from -20 C to +50 C.
- Position KSB device on a flat, hard and stable surface, free of loose materials, such as rocks, debris etc.
- During rescue operation lifting/lowering loads IS NOT allowed.
- Before any lifting operation all wheel brakes MUST BE locked.
- Check the stability of the load attached to the internal trolley attachment point or cable, on which it is hoisted, to prevent accidental detachment of any of the elements.
- Device can be used for lifting and lowering loads weighing up to WLL indicated on the beam at the same time OR for personal protection/rescue purposes at the same time.
- Do not use a KSB device contrary to its intended use.
- **KSB device can be moved under load only when a competent person or authority approves a risk assessment and method statement for a particular reason.**
- **Risk assessment and method statement must consider additional loading in "wet lift" situation.**
- Beam must be positioned horizontally during any lifting operation.
- Avoid working where user may swing and hit an object or where lines may cross or tangle with that of another worker in the area.
- It is forbidden to use the kits in which the KSB device is included, in which the operation of any component disrupts the operation of other components.
- In case of any doubts as to the condition and usage of this device, please contact the manufacturer of the device.

## KSB BASIC EQUIPMENT / KSB MARKING

Basic version of KSB device consist beam, trolley and two adjustable supports connected to the beam using pin with cotter.



## KSB ACCESSORIES

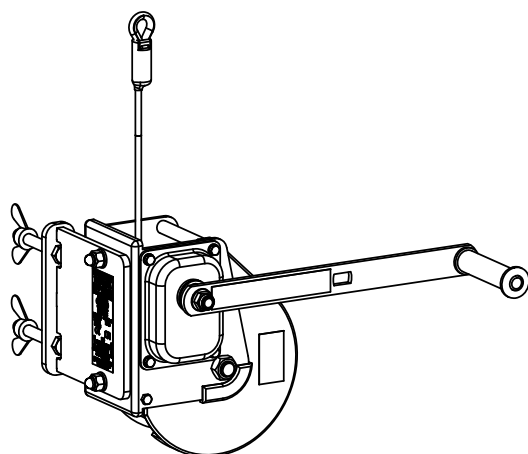


### TROLLEY ref. KSB100-320

Made of aluminium alloy, stainless steel and polyamide parts. Position locking using small knob. Trolley should be installed on the beam before supports installation.



## KSB WINCH ACCESSORIES



### BRAKE WINCH ref. RUP502-ET-xx,

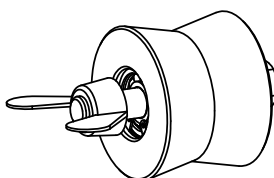
where: xx - length of the rope [20 / 25meters]  
Winch with automatic brake system built-in crank mechanism. Installed to the support side plate using wing-nuts.



Month and year of the manufacturer's next inspection. Don't use the device after this date.

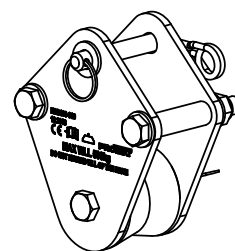
Attention: Before the first use mark the date of inspection (date of first use + 12 months, e.g. first use 01.2013 - mark inspection 01.2014).

"Next inspection label" placed near identity label.



### ROPE ROLLER FOR SUPPORT ref. KSB100-330

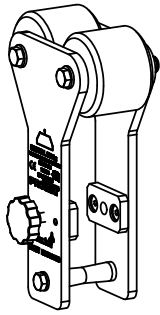
Made of polyamide and galvanized steel. Provides working rope guidance when RUP502-ET brake winch is used. Installed to the support using bolt with wing-nut. Installed between support front plates.



### ROPE ROLLER FOR BEAM ref. KSB100-310

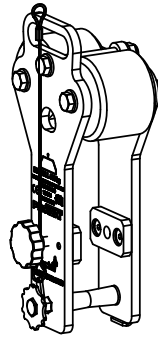
Made of reinforced aluminium alloy, stainless steel and polyamide parts. Provides working rope guidance when RUP502-ET brake winch is used. Installed to the beam using bolt with cotter pin.

## KSB ACCESSORIES



### **TROLLEY (NOT REMOVABLE)** **ref. KSB100-320**

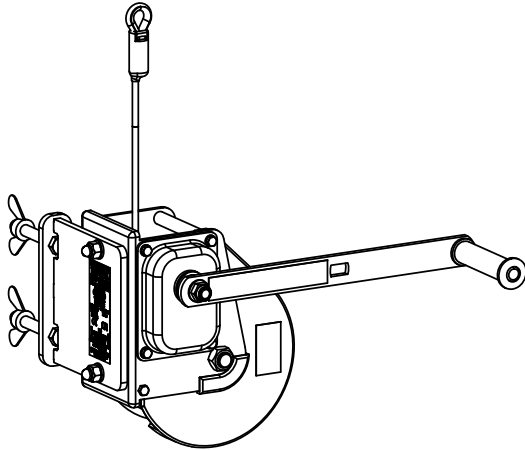
Made of aluminium alloy, stainless steel and polyamide parts. Position locking using small knob. Trolley should be installed on the beam before supports installation.



### **TROLLEY (REMOVABLE)** **ref. KSB100-350-000**

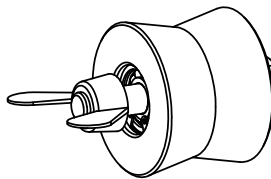
Made of aluminium alloy, stainless steel and polyamide parts. Position locking using small knob. Trolley can be install/remove on the beam any time (removable axle).

## KSB WINCH ACCESSORIES



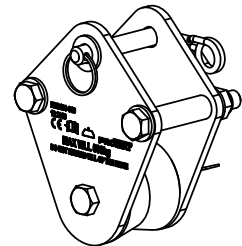
### **BRAKE WINCH**

**ref. RUP502-ET-xx,**  
where: xx - lenght of the rope [20 / 25meters]  
Winch with automatic brake system built-in crank mechanism. Installed to the support side plate using wing-nuts.



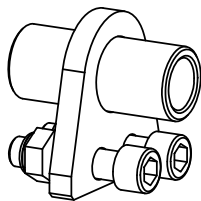
### **ROPE ROLLER FOR SUPPORT** **ref. KSB100-330**

Made of polyamide and galvanized steel. Provides working rope guidance when RUP502-ET brake winch is used. Installed to the support using bolt with wing-nut. Installed between support front plates.



### **ROPE ROLLER FOR BEAM** **ref. KSB100-310**

Made of reinforced aluminium alloy, stainless steel and polyamide parts. Provides working rope guidance when RUP502-ET brake winch is used. Installed to the beam using bolt with cotter pin.



### **BATTERY CHAIN HOIST HOLDER**

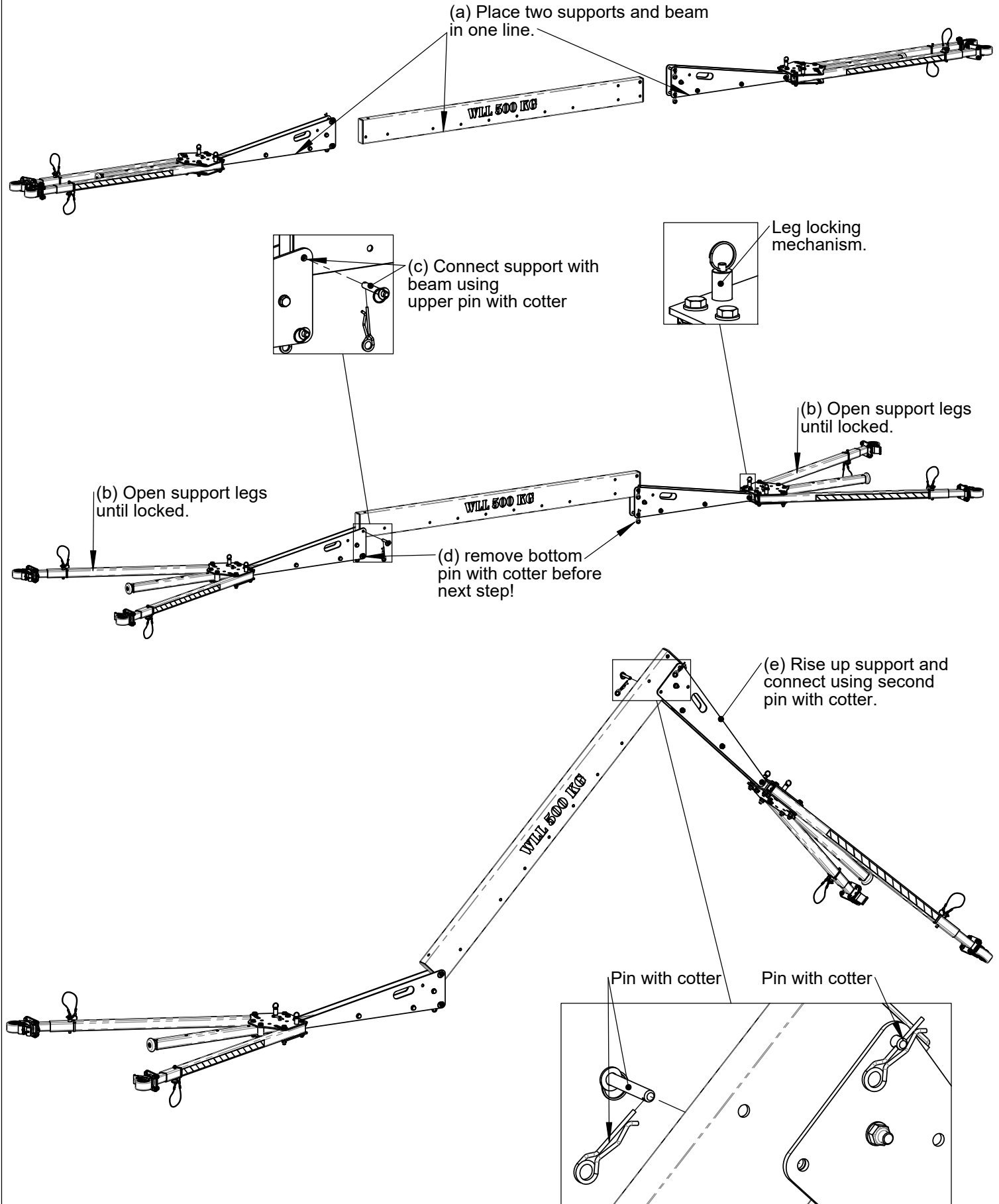
**Ref: KSB100-352-003**

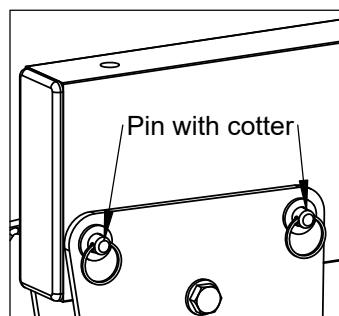
Made of stainless steel. Using for KSB100-350-000 removable trolley connection with RUP507 battery chain hoist RUP507.

## SECTION 2 - DEVICE INSTALLATION

KSB device should be installed by minimum one person equipped with hard hat, protective footwear and gloves. Device should be deployed on flat and stable ground.

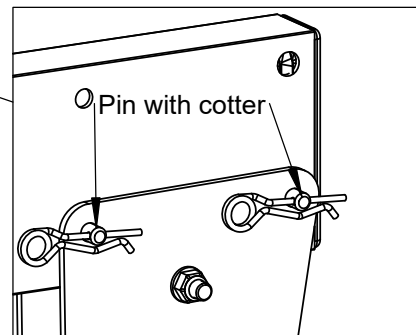
### 1. RAISING/LOWERING DEVICE





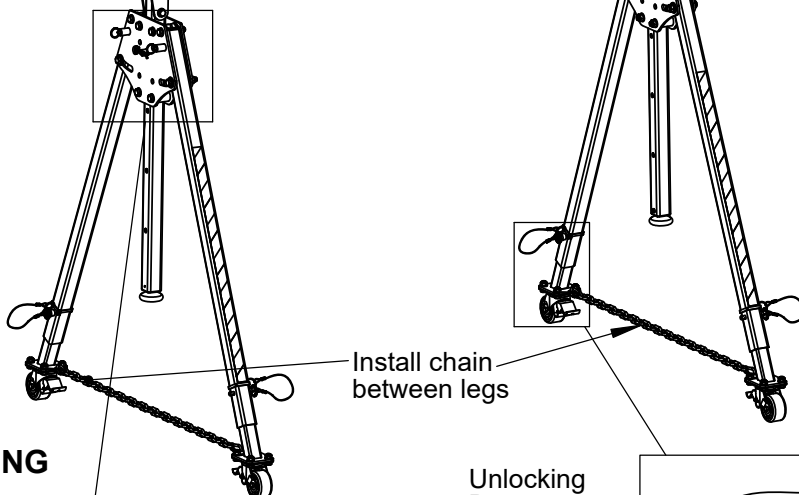
Pin with cotter

Rise up the beam and secure connection between supports and beam with pin and cotter



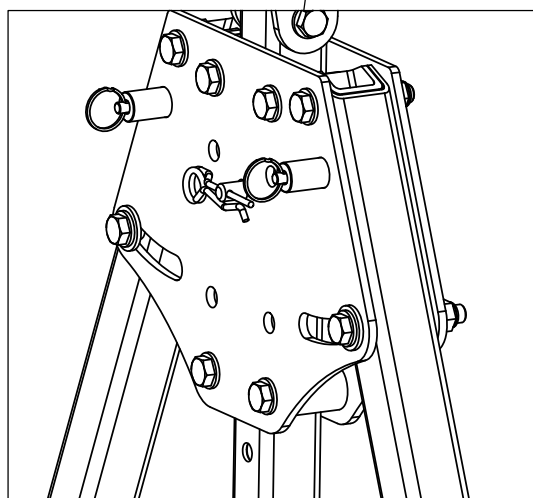
Pin with cotter

**WARNING!**  
All Pins  
MUST BE  
secured using cotter!



Install chain between legs

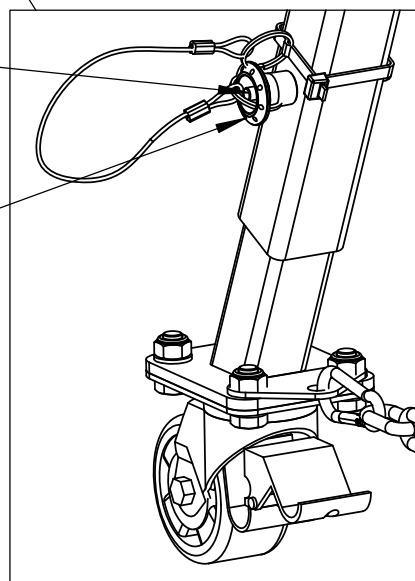
## 2. HEIGHT ADJUSTING



Adjusting height using vertical part of the support.  
4 positions, 180mm spacing.  
Remove Cotten and Pin.  
Adjust height.  
Secure connection using Cotten and Pin again.

Unlocking Button

Mounting pin

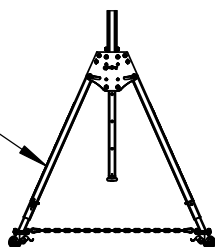


Adjusting height using telescopic legs.  
4 positions, 150mm spacing.  
Press unlocking button inside Mountin Pin head and remove it.  
Adjust leg length.  
During adjusting change chain length using snap hook.  
Secure connection with Mounting Pin again.

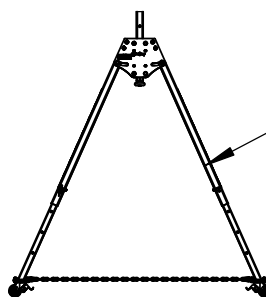
## WARNING!

**All parts must be extended at the same height!**  
**The beam must be horizontal to the floor!**

Leg fully retracted



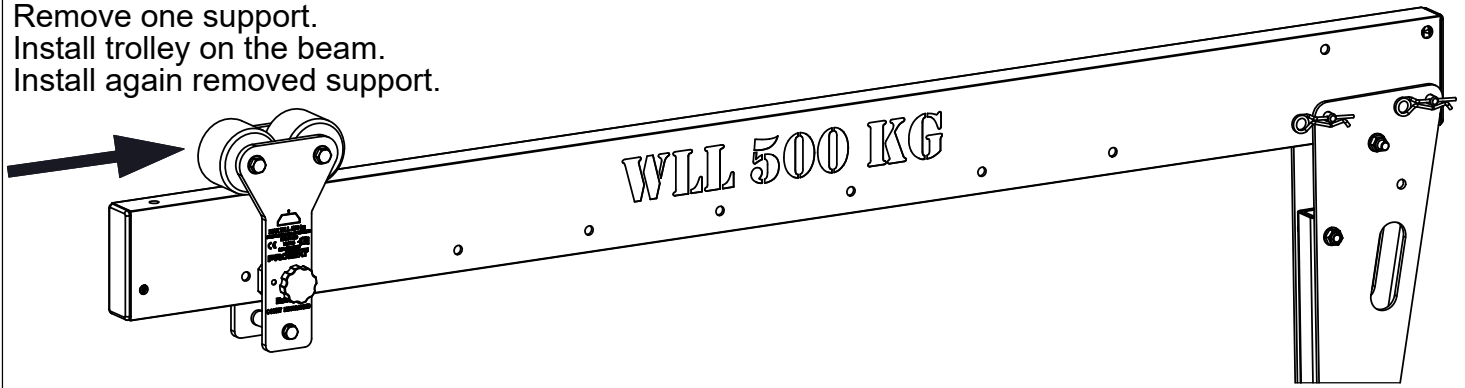
Leg fully extended



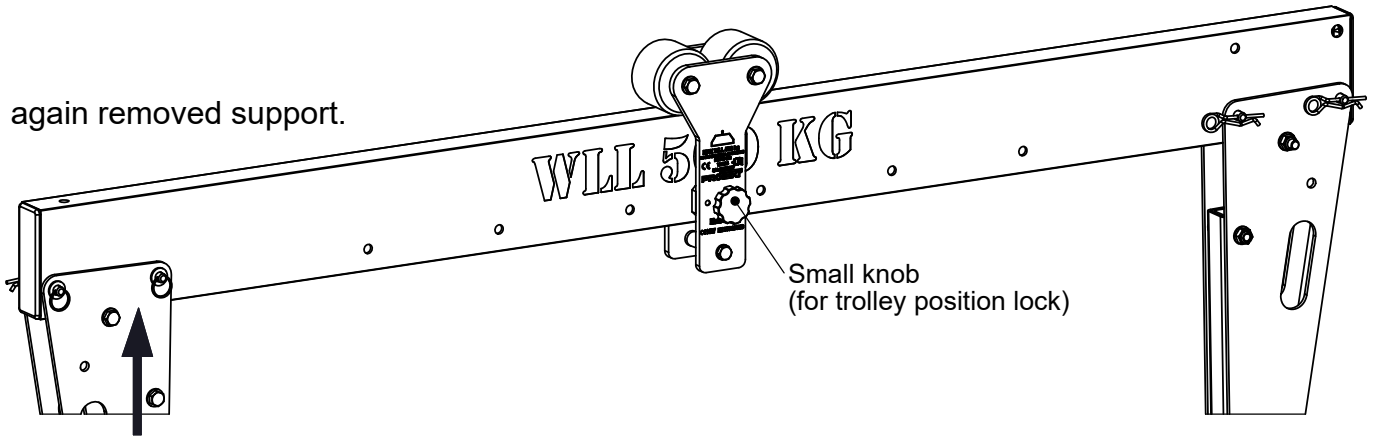
**Chain between legs must be always stretched!**

### 3. TROLLEY INSTALLATION

Remove one support.  
Install trolley on the beam.  
Install again removed support.



Install again removed support.

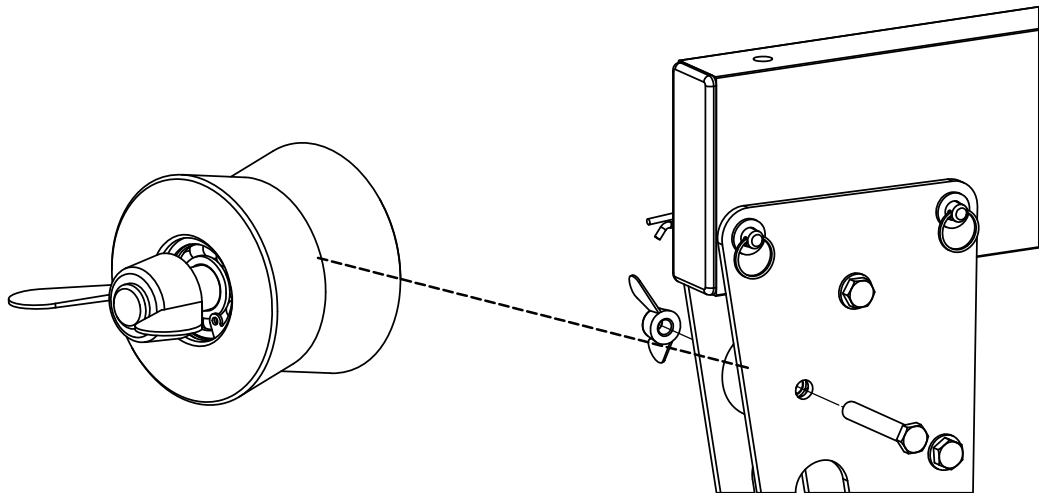


### 4. ROPE ROLLERS INSTALLATION

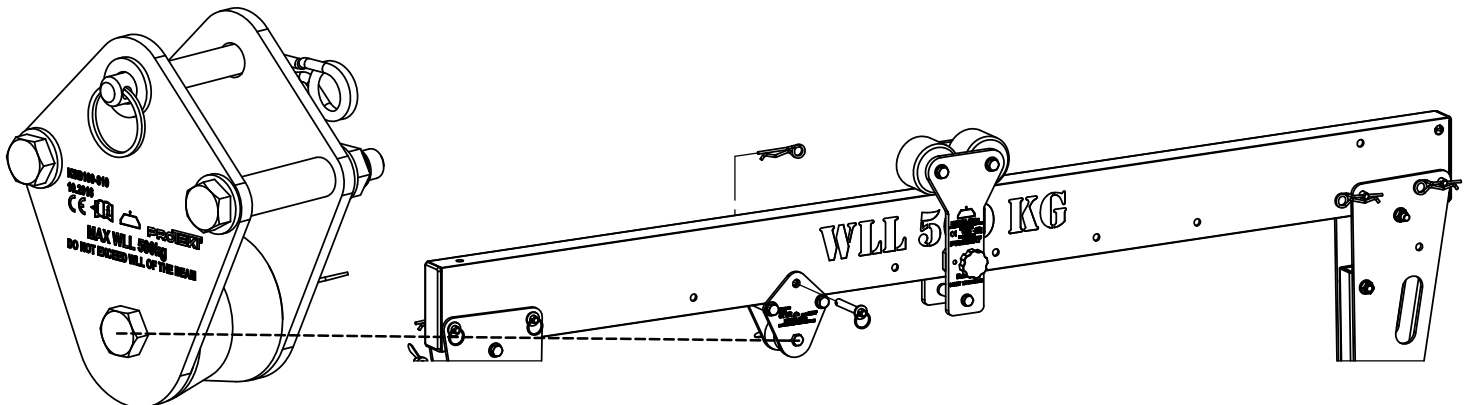
KSB device can be used with brake winch. For winch rope guidance two types of rope rollers should be used:

- KSB100-330 - rope roller for support
- KSB100-310 - rope roller for beam

4.1. Rope roller for support KSB100-330 should be installed between two support front plates using bolt and wing nut.

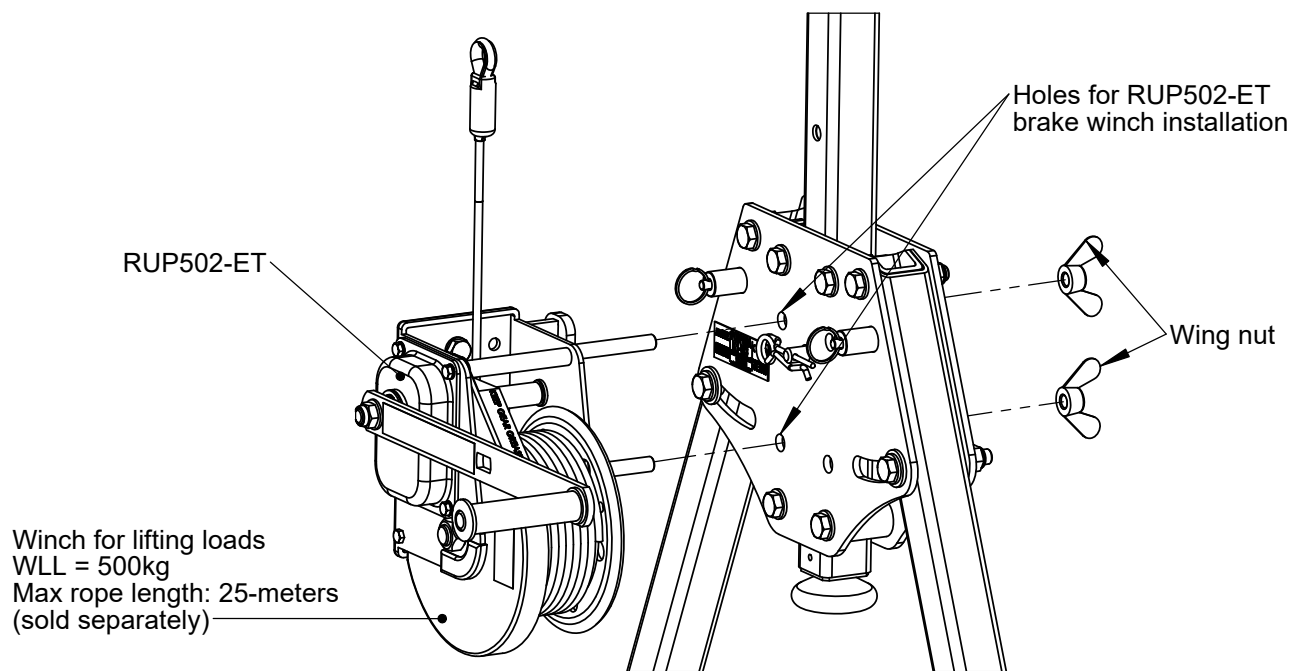


4.1. Rope roller for beam KSB100-330 should be installed in one hole in the beam using KSB100-180 bolt and cotter pin.



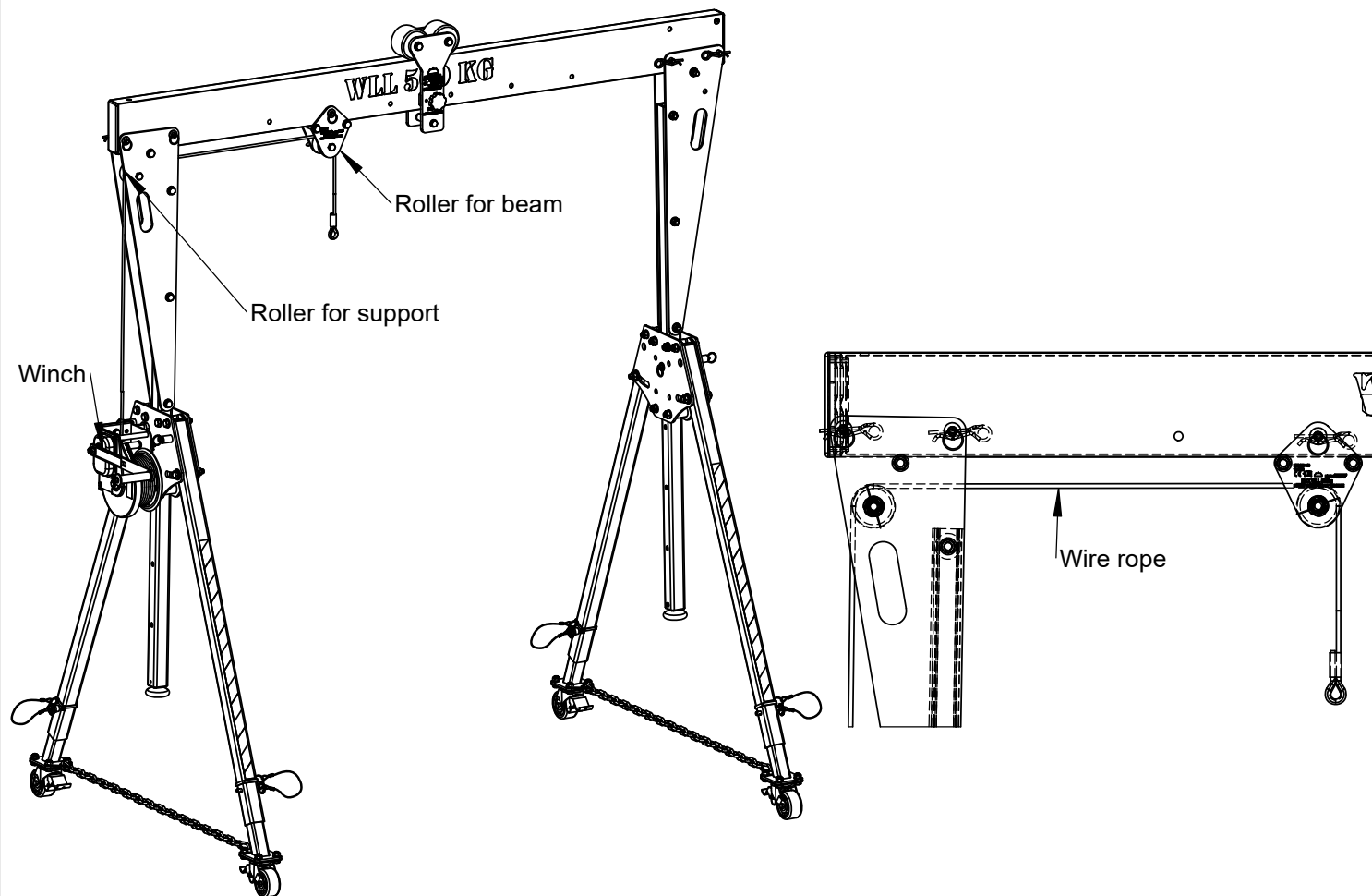
## 5. BRAKE WINCH INSTALLATION

KSB device can be used with brake winch RUP502-ET which can be installed in two holes in support side plate.



## 6. WINCH WIRE ROPE INSTALLATION

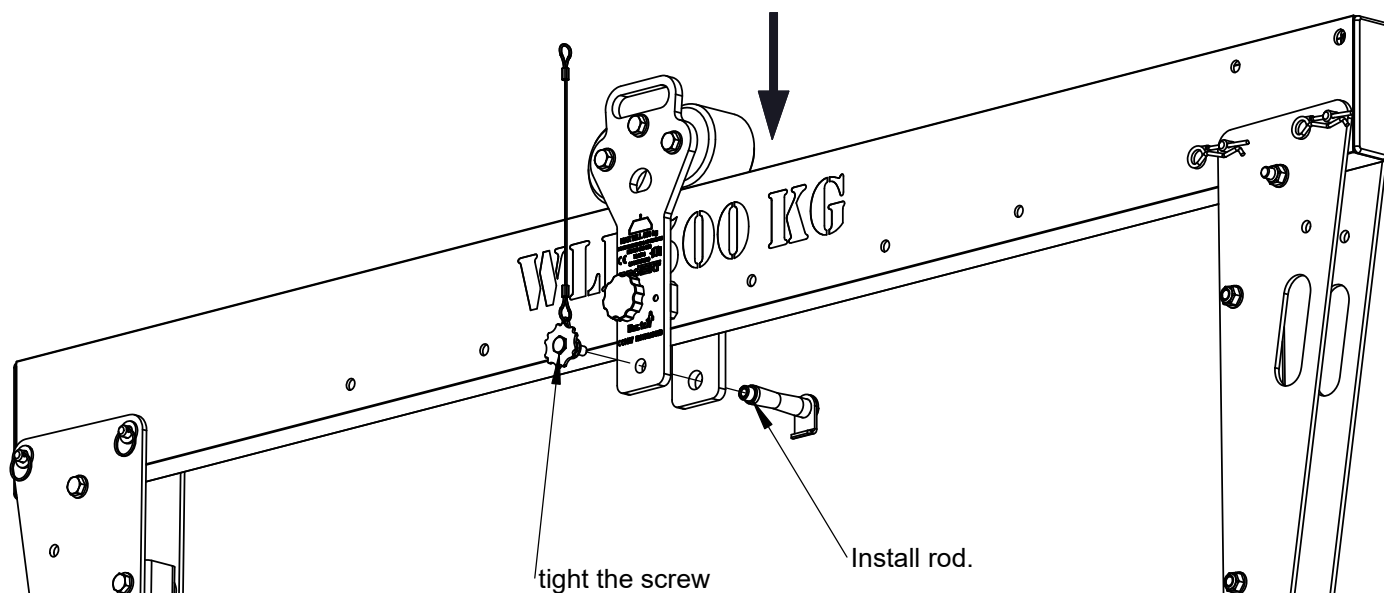
Wire rope from RUP502-ET device should be guided through rope rollers (described in Section 2 Point 4). Do not pull the wire rope through the trolley.





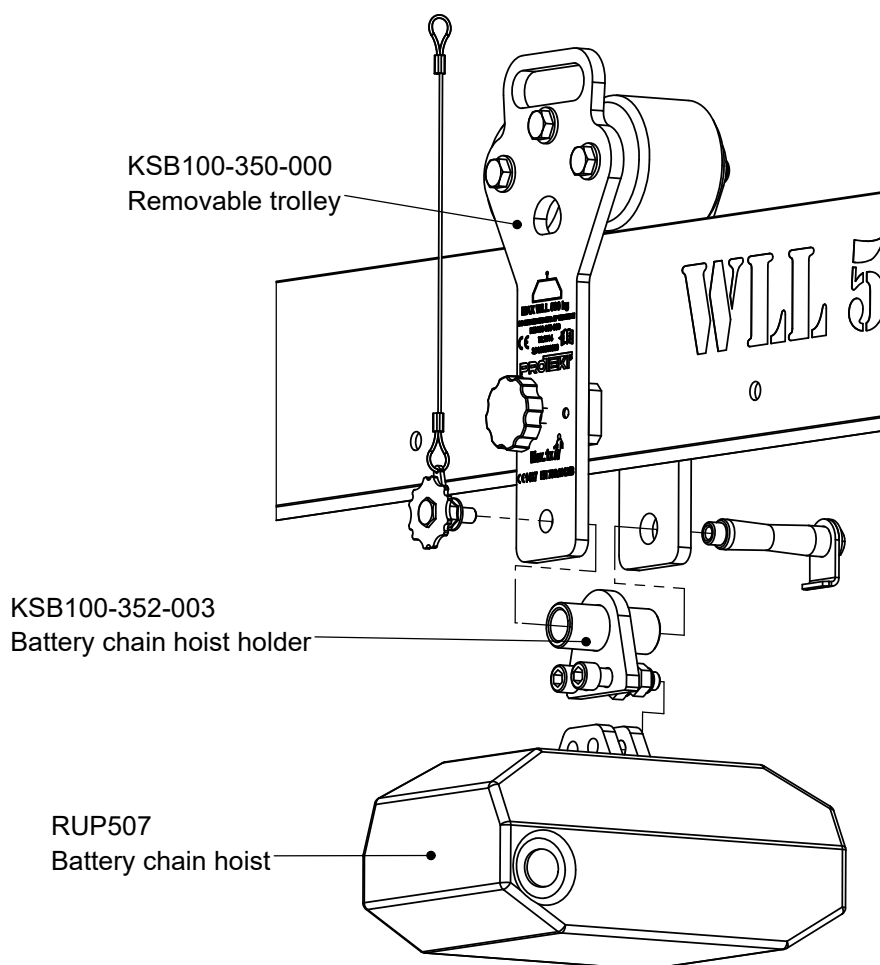
## 7. KSB100-350-000 REMOVABLE TROLLEY INSTALLATION

KSB device can be equipped with removable trolley which can be install/remove on the beam without support remove.



## 8. RUP507 BATTERY CHAIN HOIST INSTALLATION

Battery chain hoist RUP507 can be install to the removable trolley KSB100-350-000 using KSB100-352-003 connector.



## SECTION 3 - LIFTING LOADS

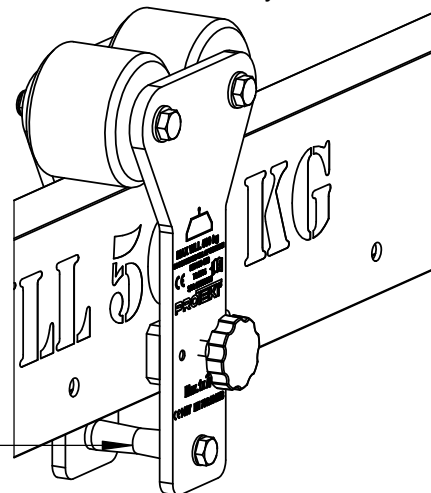
Trolley KSB100-320 and KSB100-350-000 can be used with KSB device for lifting loads up to Working Load Limit (WLL) indicated on the beam. One beam can be equipped with more than one trolley. Loads suspended on several trolleys **MUST NOT** exceed WLL indicated on the beam.

### DEVICE LOAD CARRYING CAPACITY

The load hoisted by the KSB device may be connected to the external trolley attachment point using chain hoists or other lifting devices with appropriate load carrying capacity. External trolley is installed on the beam. Maximum operating carrying capacity of the device is indicated on the beam. **DO NOT** exceed Working Load Limit (WLL) indicated on the beam.

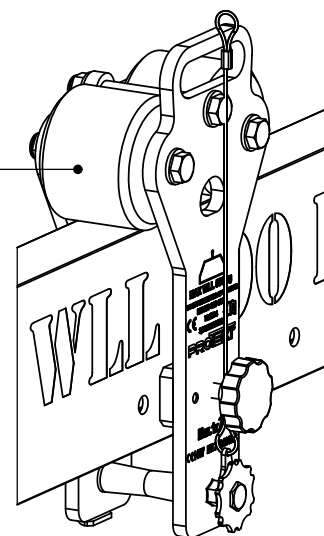
#### KSB100-320 TROLLEY

ATTACHMENT POINT FOR LIFTING LOADS  
UP TO WLL INDICATED ON THE BEAM



#### KSB100-350-000 REMOVABLE TROLLEY

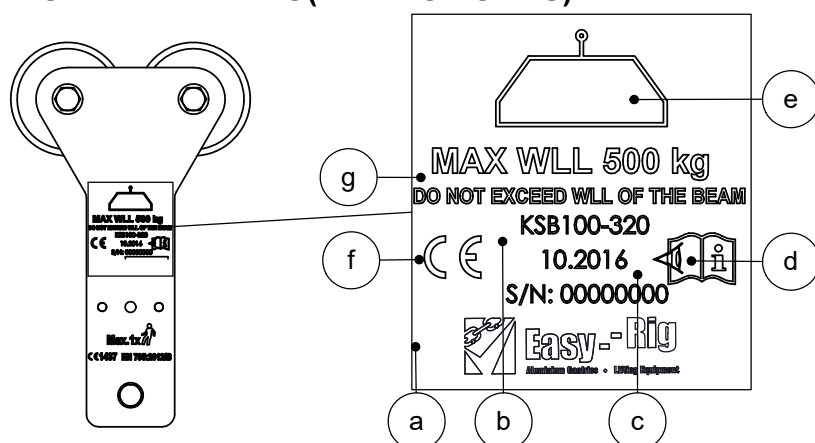
ATTACHMENT POINT FOR LIFTING LOADS  
UP TO WLL INDICATED ON THE BEAM



### GENERAL PRECAUTIONS FOR LIFTING LOADS

- Each lifting operation must be properly planned and the weight of the load to be lifted must be known by the operator.
- The operator must ensure that the additional lifting equipment (e.g. hoists, chains) are properly attached and not expose him or other personnel to danger.
- **Working Load Limit (WLL) indicated on the beam MUST NOT be exceeded.**
- Do not allow load to swing.
- Avoid side loads. Lift loads only when load chain is stretched in the vertical position between load and attachment point of lifting device.
- Do not lift or transport loads while personnel are in the danger zone.
- Personnel **SHOULD NOT** stand or pass under a suspended load.
- Suspended load **MUST NOT** be left unattended for a long period of time.
- **BEFORE** starting lowering the load **ALWAYS** make sure that personnel are not stand or pass under the load.
- The use KSB device with other devices (such as devices for lifting and lowering loads) must be in accordance with the instruction for use of these devices.

### TROLLEY MARKING(LIFTING LOADS)



### CONTENT OF EXTERNAL TROLLEY MARKING:

- Marking of the manufacturer or distributor.
- Model symbol / reference number.
- Month and year of manufacture / Serial number.
- Caution: read the manual.
- Device for lifting loads.
- CE marking.
- Maximum Working Load Limit notice.

## SECTION 4 - PERSONAL PROTECTION

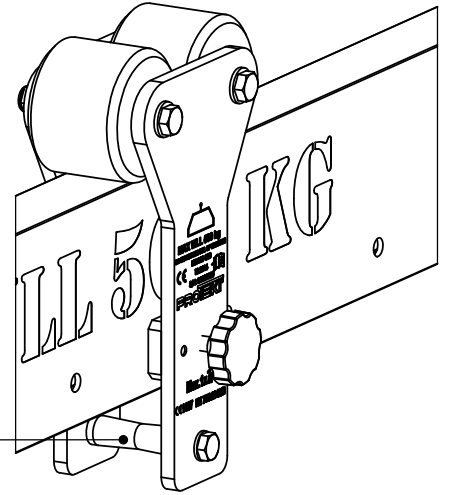
KSB with trolley KSB100-320 can be used as a temporary anchorage according to EN 795/B and TS 16415/B. KSB device provides protection for maximum two people at the same time.

### **RULES FOR PERSONAL PROTECTION:**

1. ONE trolley can be used by ONE person at the same time.
2. Maximum TWO people can be attached to the available attachment points at the same time.
3. Trolley used for personal protection should ONLY be used for personal fall protection equipment and NOT for lifting equipment.

### **KSB100-320 TROLLEY**

ATTACHMENT POINT FOR PERSONAL PROTECTION  
one person (EN 795/B)



### **GENERAL PRECAUTIONS FOR PERSONAL PROTECTIVE EQUIPMENT (PPE)**

- AVOID working where the user may swing and hit an object or where lines may cross or tangle with that of another worker in the area.
- Fall arrest and rescue systems used with this device MUST MEET applicable EN standards requirements (EN 795 for anchor devices; EN 362 for connectors; EN 361 for full body harnesses; EN 360 for retractable type fall arresters; EN 1496 for rescue lifting devices; EN 1497 for rescue harnesses; EN 341 for descender devices).
- The Maximum Arrest Force (MAF) to which a user of a Fall Arrest System (FAS), who wears a full body harness, is exposed during an arrest of his/her fall is limited by law 6 kN in EU. The system used to protect user against fall from height must include fall protection equipment reducing the Maximum Arrest Force, acting on the user while arresting the fall, to maximum value of 6kN (e.g. fall safety energy absorber with lanyard or retractable fall arrester).
- Make sure that device is installed in a upright position on a flat, stable and hard surface. The surface must support the load.
- DO NOT use KSB device for more than two people at the same time.
- It is recommended that the device should be transported and installed by minimum one person.
- The anchor device or anchor point for the fall arrest system should always be positioned, and the work carried out in such a way, as to minimize both the potential for falls and potential fall distance. The anchor device/point should be placed above the position of the user. The shape and construction of the anchor device/point shall not allowed to self-acting disconnection of the equipment. Minimal static strength of the anchor device/point is 12 kN. It is recommended to use certified and marked structural anchor point complied with EN 795.

### **THE ESSENTIAL PRINCIPLES OF USE OF PERSONAL PROTECTIVE EQUIPMENT**

- Personal Protective Equipment (PPE) shall only be used by a person trained and competent in its safe use.
- PPE must not be used by a person with medical condition that could affect the safety of the equipment user in normal and emergency use.
- A rescue plan shall be in place to deal with any emergencies that could arise during the work.
- It is forbidden to make any alterations or additions to the equipment without the manufacturer's prior written consent.
- Any repair shall only be carried out by equipment manufacturer or his certified representative.
- PPE shall not be used outside its limitations, or for any purpose other than that for which it is intended.
- PPE should be a personal issue item.
- Before use ensure about the compatibility of items equipment assembled into fall arrest system. Periodically check connecting and adjusting of the equipment components to avoid accidental loosening or disconnecting of th components.
- It is forbidden to use combinations of items of equipment in which the safe function of any one item is affected by or interferes with the safe function of another.
- It is essential for the safety of the user that if the product is re-sold outside the original country of destination the reseller shall provide instruction for use, for maintenance, for periodic examination and for repair in language of the country i which the product is to be sold.
- A full body harness (conforming EN 361) is the only acceptable body holding device that can be used in a fall arrest system.
- On full body harness use only attaching points marked with big letter "A" to attach a fall arrest system.
- It is obligatory to verify the free space required beneath the user at the workplace before each occasion of use the fall arrest system, so that, in the case of a fall, there will be no collision with the ground or other obstacle in the fall path. The required value of the free space should be taken from instruction manual of used equipment.
- There are many hazards that may affect the performance of the equipment and corresponding safety precautions tha have to be observed during equipment utilization, especially:
  - trailing or looping of lanyards or lifelines over sharp edges,
  - any defects like cutting, abrasion, corrosion,
  - climatic exposure,
  - pendulum falls,
  - extremes of temperature,
  - chemical reagents,
  - electrical conductivity.

## INSPECTION

Before each use of personal protective equipment it is obligatory to carry out a pre-use check of the equipment, to ensure that it is in a serviceable condition and operates correctly before it is used.

During pre-use check it is necessary to inspect all elements of the equipment in respect of any damages, excessive wear, corrosion, abrasion, cutting or incorrect acting, especially take into consideration:

- in full body harnesses and belts - buckles, adjusting elements, attaching points, webbings, seams, loops;
- in energy absorbers - attaching loops, webbing, seams, casing, connectors;
- in textile lanyards or lifelines or guidelines - rope, loops, thimbles, connectors, adjusting elements, splices;
- in steel lanyards or lifelines or guidelines - cable, wires, clips, ferrules, loops, thimbles, connectors, adjusting elements;
- in retractable fall arresters - cable or webbing, retractor and brake proper acting, casing, energy absorber, connector;
- in guided type fall arresters - body of the fall arrester, sliding function, locking gear acting, rivets and screws, connector, energy absorber;
- in connectors - main body, rivets, gate, locking gear acting;
- in tripods - legs, safety pins, eye bolts, feet, chain, connecting elements.

## PERIODIC INSPECTION

After every 12 months of utilization, personal protective equipment must be withdrawn from use to carry out periodical detailed inspection. The periodic inspection must be carried out by a competent person who has the knowledge and training required for personal protective equipment periodic inspections. The periodic inspection can be carried out also by the manufacturer or his authorized representative. In case of some types of the complex equipment e.g. some types of retractable fall arresters the annual inspection can be carried out only by the manufacturer or his authorized representative.

During this inspection will be established admissible time of the device use till next manufacturer's inspection.

The result of the inspection must be recorded in Identity Card.

Regular periodic inspections are the essential for equipment maintenance and the safety of the users which depends upon the continued efficiency and durability of the equipment.

During periodic inspection it is necessary to check the legibility of the equipment marking.

## MAXIMUM LIFESPAN

Maximum lifespan of the KSB100-320 trolley is unlimited but its depends on the intensity of usage and the environment of use. Using the device in rough environment, marine, contact with sharp edges, exposure to extreme temperatures or aggressive substances, etc. can lead to the withdrawal from use even after one use.

## WITHDRAWAL FROM USE

Personal protective equipment must be withdrawn from use immediately when any doubt arise about its condition for safe use and not used again until confirmed in writing by equipment manufacturer or his representative after carried out the detailed inspection.

## WITHDRAWN FROM USE AFTER ARRESTING A FALL

Device must be withdrawn from use immediately when it have been used to arrest a fall. After that must be carried out detailed manufacturer's inspection of the tripod.

The manufacturer's inspection can be carried out by:

- manufacturer
- person recommended by manufacturer
- company recommended by manufacturer.

During this inspection will be established if the tripod can be longer used and will be define the admissible time of tripod use till next manufacturer's inspection and recorded in Identity Card.

## TRANSPORTATION

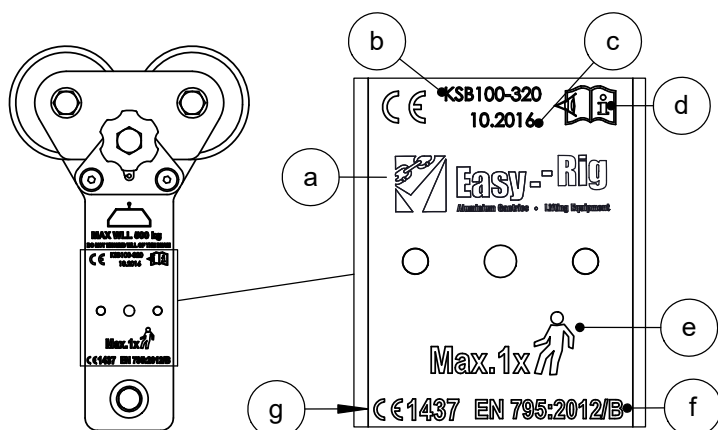
Personal protective equipment must be transported in the package (e.g.: bag made of moisture-proof textile or foil bag or cases made of steel or plastic) to protect in against damage or moisture.

## MAINTENANCE AND STORAGE

The equipment can be cleaned without causing adverse effect on the materials in the manufacture of the equipment. For textile products use mild detergents for delicate fabrics, wash by hand or in a machine and rinse in water. Plastic parts can be cleaned only with water. When the equipment becomes wet, either from being in use or when due cleaning, it shall be allowed to dry naturally, and shall be kept away from direct heat. In metallic products some mechanic parts (spring, pin, hinge, tec.) can be regularly slightly lubricated to ensure better operation. Other maintenance and cleaning procedures should be adhered to detailed instructions stated in the manual of the equipment.

Personal protective equipment should be stored loosely packed, in a well-ventilated place, protected from direct light, ultraviolet degradation, damp environment, sharp edges, extreme temperatures and corrosive or aggressive substances.

## TROLLEY MARKING(PERSONAL PROTECTION)



### CONTENT OF INTERNAL TROLLEY MARKING:

- a) Marking of the manufacturer or distributor.
- b) Model symbol / reference number.
- c) Month and year of manufacture / Serial number.
- d) Caution: read the manual.
- e) Maximum number of users permitted simultaneously.
- f) Number / year / type of the European standard.
- g) CE marking and number of the notified body controlling manufacturing of the equipment.

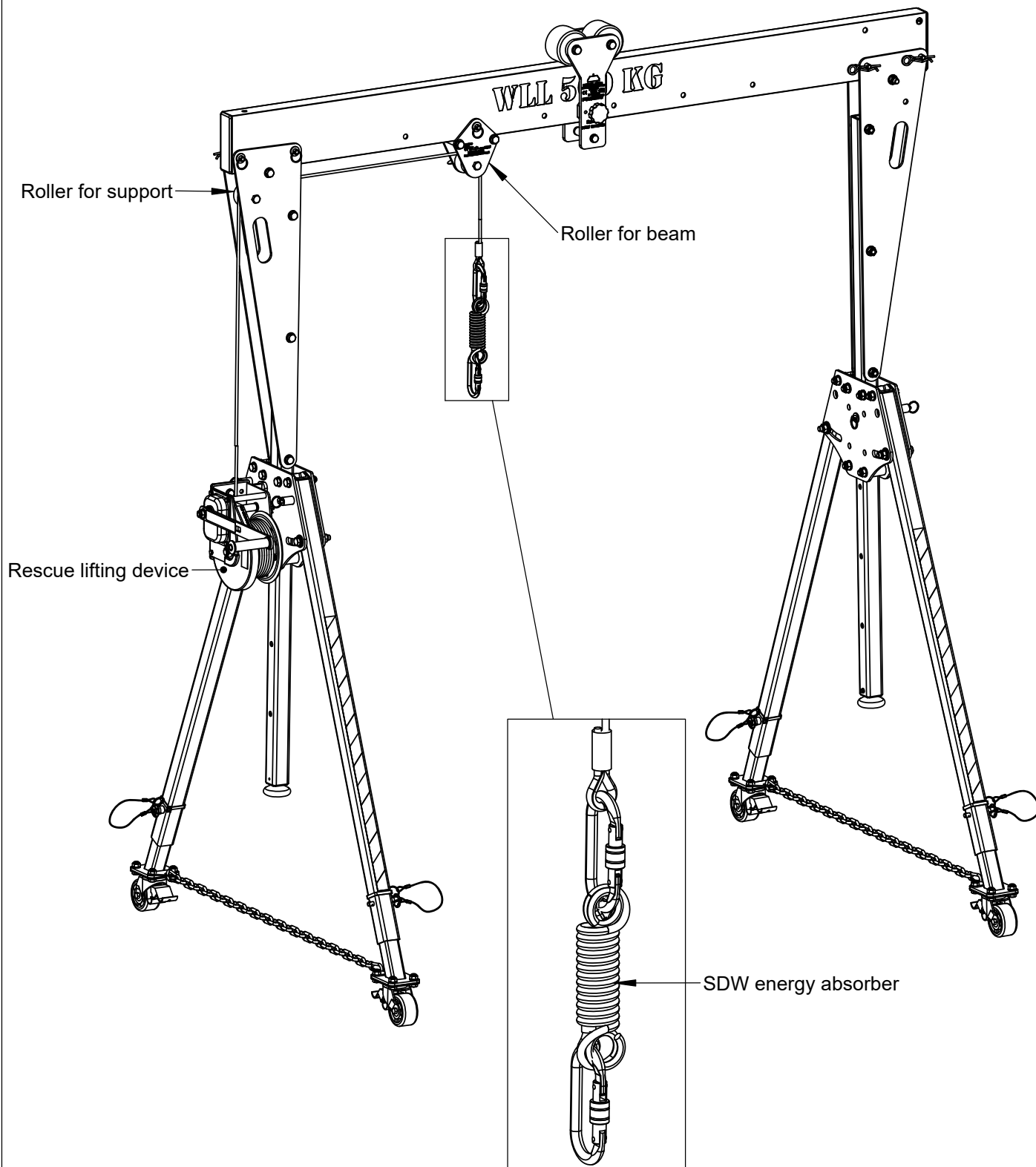
## SECTION 6 - RESCUE ACCORDING TO EN 1496/B

### GENERAL PECAUTIONS FOR RESCUE:

- Secondary fall arrest system (conforming EN 363) must be used when working with KSB and RUP 502-E.
- Fall arrest and rescue system used with this device **MUST MEET** applicable EN standards requirements (EN 795 and TS 16415 for anchor devices; EN 362 for connectors; EN 361 for full body harnesses; EN 360 for retractable type fall arresters; EN 1496 for rescue lifting devices; EN 1497 for rescue harnesses; EN 341 for descender devices).

### USAGE ASB DEVICE FOR RESCUE PURPOSES

- KSB device can be used for rescue purposes in conjunction with RUP 502-E rescue lifting device.
- RUP502-E device can be installed on supports side plates - please refer to Section 2 Points 5.
- Rescue lifting device rope installation - please refer to Section 2 Point 6.
- **Rescue lifting device MUST BE used with SDW energy absorber installed on the end of the wire rope!**
- **During rescue operation lifting/lowering loads IS NOT allowed.**



# IDENTITY CARD

IT IS RESPONSIBILITY OF THE USER ORGANISATION TO PROVIDE THE IDENTITY CARD AND TO FILL IN THE DETAILS REQUIRED. THE IDENTITY CARD SHOULD BE FILLED IN ONLY BY COMPETENT PERSON RESPONSIBLE FOR PROTECTIVE EQUIPMENT. THE IDENTITY CARD SHOULD BE FILLED IN BEFORE THE FIRST USE OF THE EQUIPMENT. ANY INFORMATION ABOUT THE EQUIPMENT LIKE: PERIODIC INSPECTIONS, REPAIRS, REASONS OF EQUIPMENT'S WITHDRAWN FROM USE SHALL BE NOTED. THE IDENTITY CARD SHOULD BE STORED DURING A WHOLE PERIOD OF EQUIPMENT UTILIZATION. DO NOT USE THE EQUIPMENT WITHOUT THE IDENTITY CARD.

**MODEL AND TYPE OF EQUIPMENT**

**REF. NUMBER**

**SERIAL NUMBER**

**DATE OF MANUFACTURE**

**DATE OF PURCHASE**

**DATE OF FIRST USE**

**USER NAME**

## PERIODIC EXAMINATION AND REPAIR HISTORY

	DATE	REASON FOR SERVICING / REPAIR	REPAIRS CARRIED OUT	NAME AND SIGNATURE OF COMPETENT PERSON	DATE OF NEXT EXAMINATION
1					
2					
3					
4					
5					
6					
7					
8					
9					