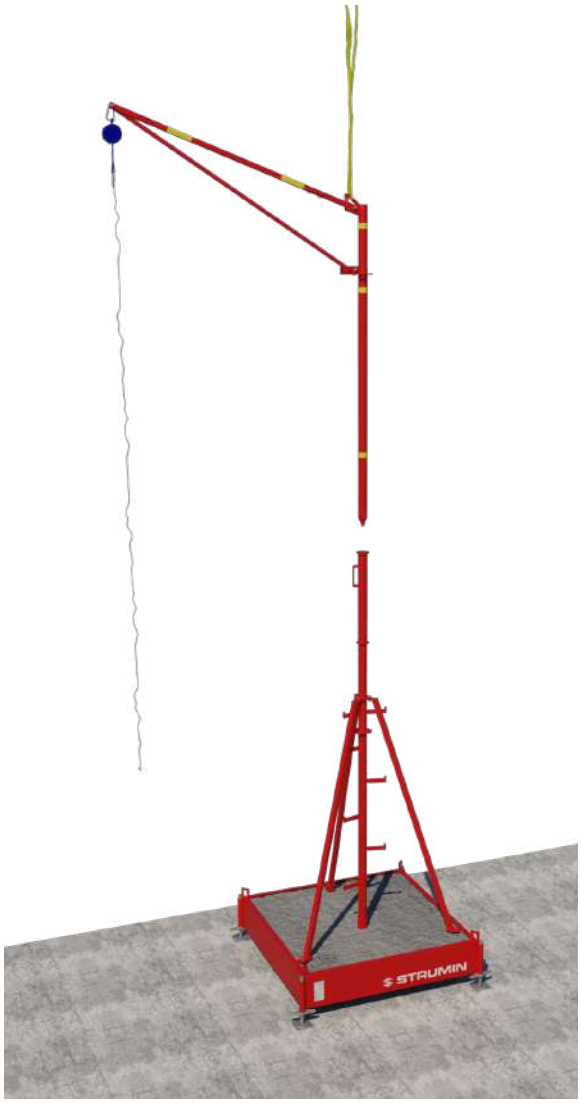
THE "HIGH GALLOW" SECURITY SYSTEM
Model: "until 2023" and "2024"

TECHNICAL CHARACTERISTICS and INSTALLATION INSTRUCTIONS

Option 1: High gallow on a large ballast socket



Model: until 2023

Model: 2024 r.

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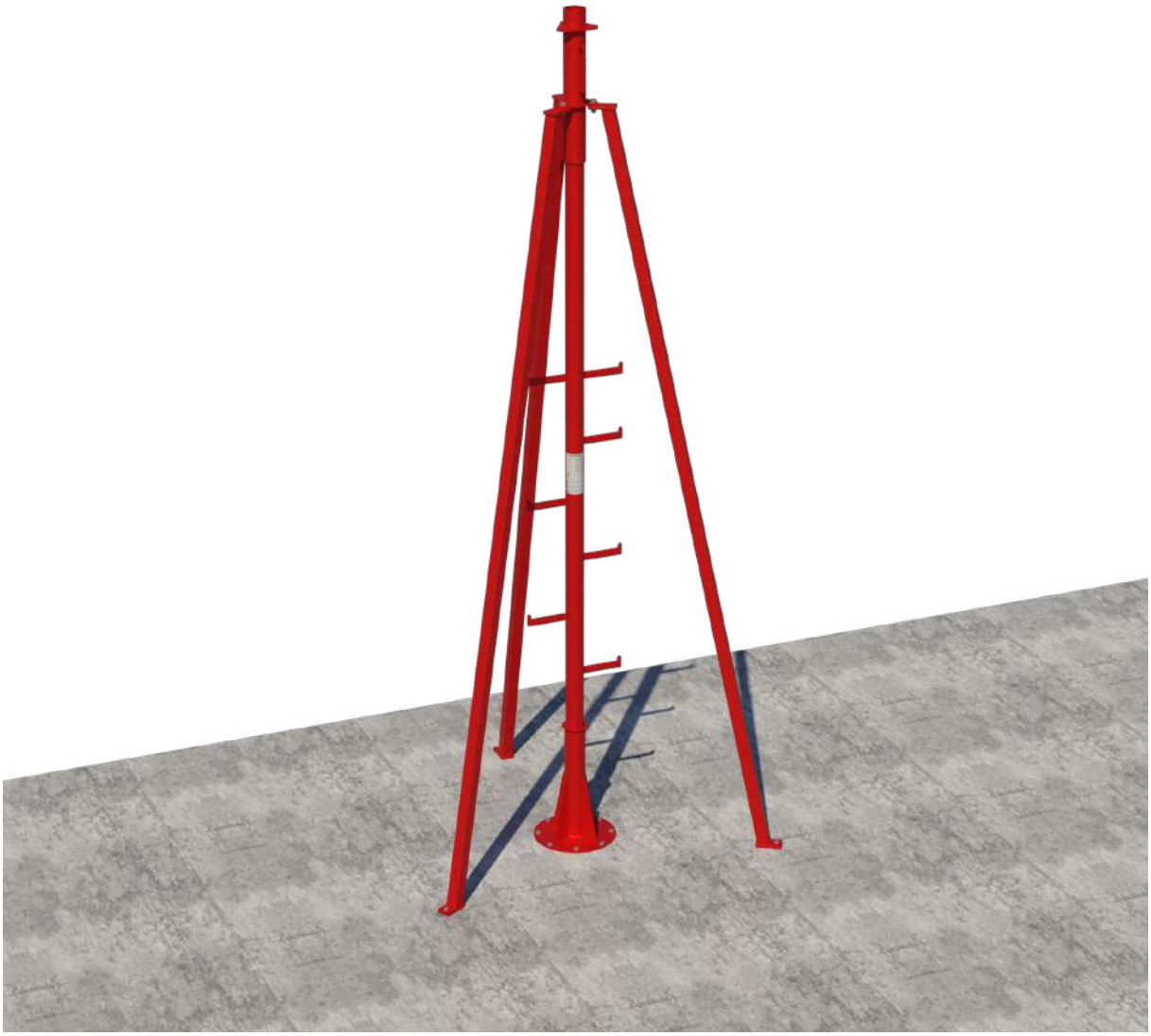
THE "HIGH GALLOW" SECURITY SYSTEM
Model: "until 2023" and "2024"

TECHNICAL CHARACTERISTICS and INSTALLATION INSTRUCTIONS

Option 1: High gallow on a ceiling socket



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1.0 TECHNICAL CHARACTERISTICS, GENERAL DESCRIPTION OF THE BELAY SYSTEM.

The "High Gallow" Belay System is a steel structure consisting of several basic parts.:

- "GALLOW" BELAY DEVICE
- 3.4M HIGH ADAPTER
- LARGE BALLAST SOCKET
- CEILING SOCKET (MOUNTING OPTION)
- SELF-BLOCK DEVICE

The fall protection system can come in two configurations, which are presented below. Gallow on a ballast socket and gallow on a ceiling socket.
The use of a specific solution depends on the individual conditions occurring on the construction site.

Anti-corrosion protection of the elements is provided by a paint coating system.

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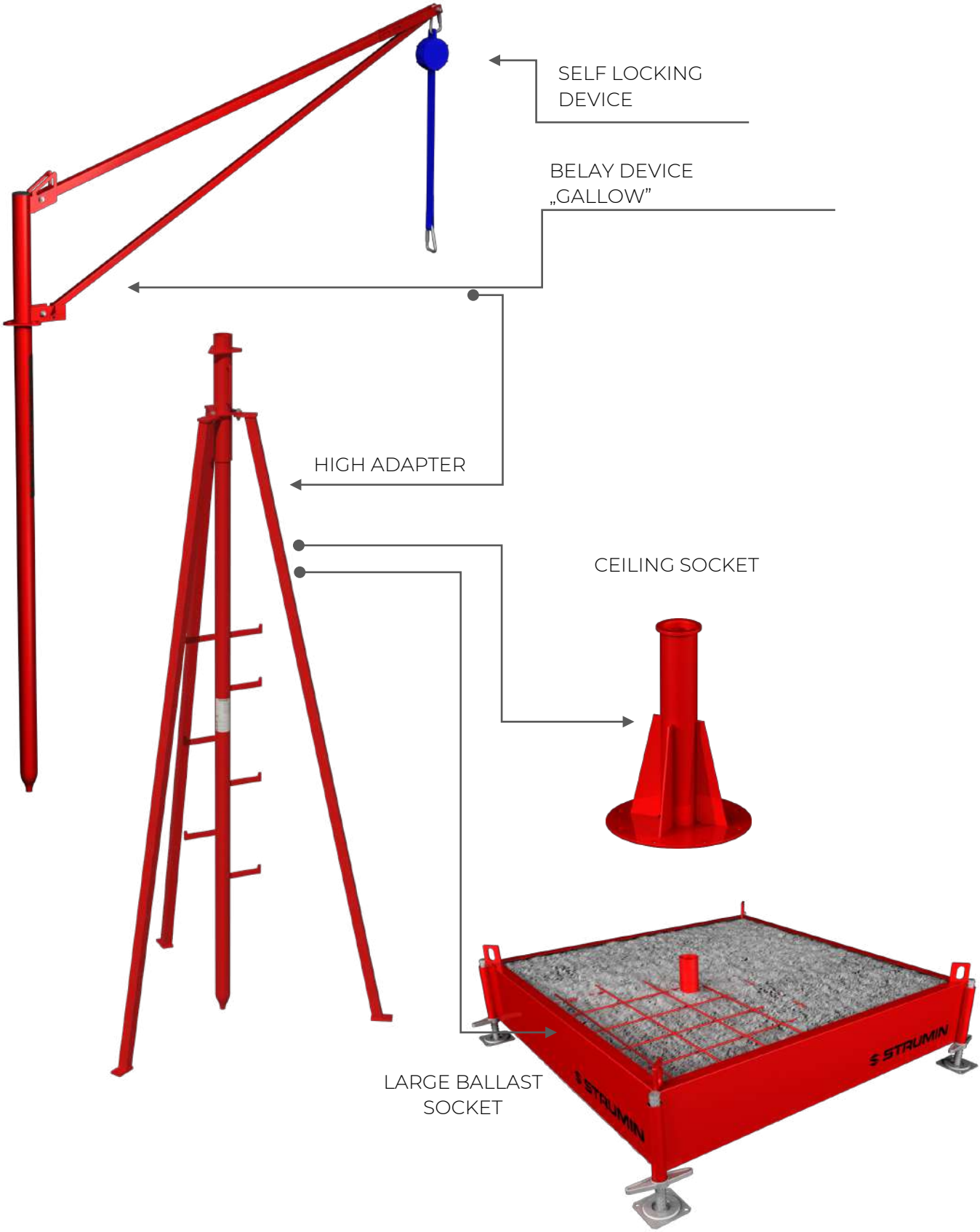
1.1 CONSTRUCTION OF THE BASIC BELAY SYSTEM.



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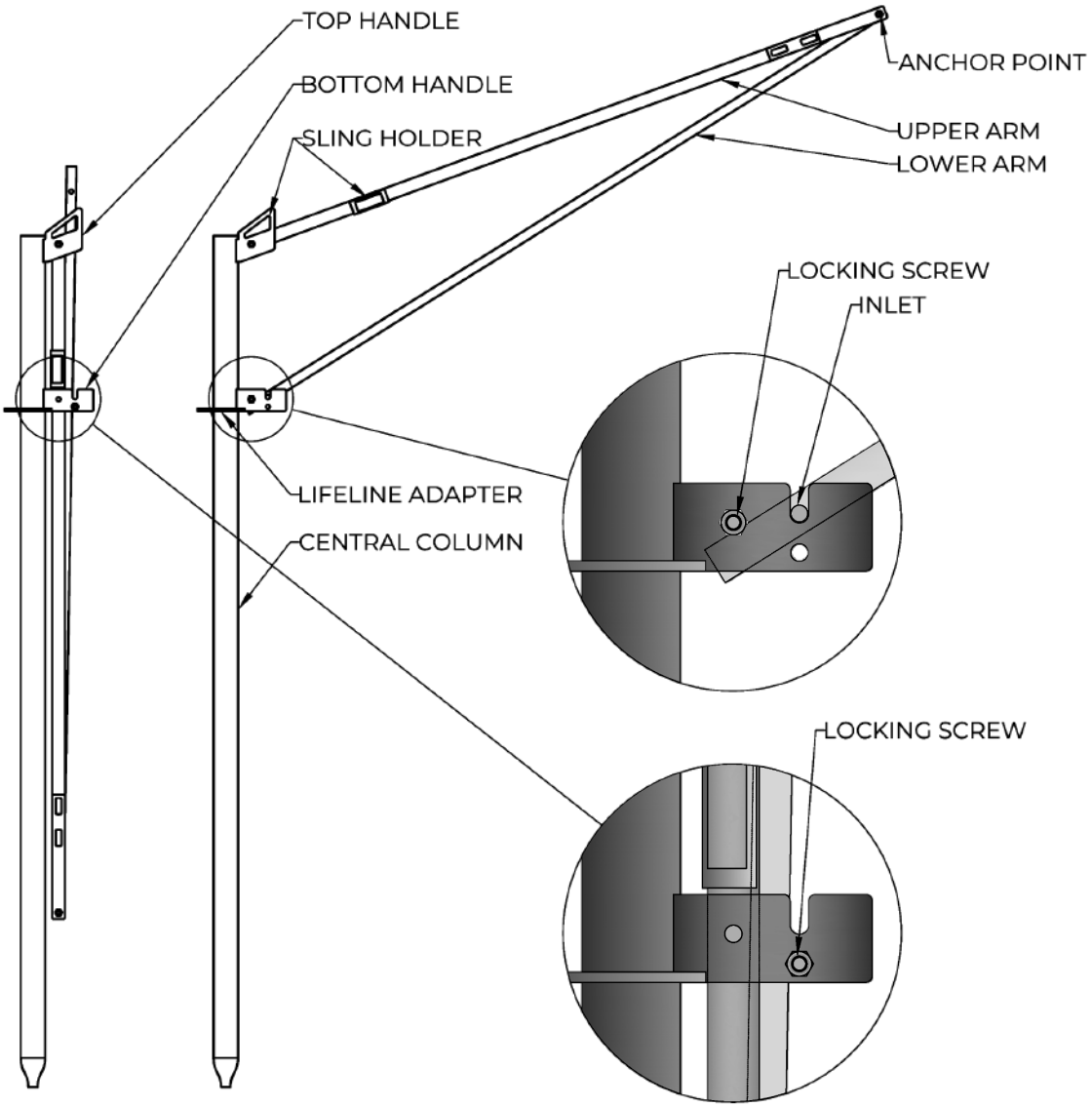
1.2 BASIC BELAY DEVICE

The device consists of a main pole with an intercepting arm attached.
It is secured against opening by a locking screw M12.
It locks the intercepting arms when the device is being transported and locks the lower arm when the arm is opened. During operation, the locking screw must be installed in the lower holder of the device..

- Material:..... structural steel, varnished
- Weight: ..... 35 kg
- Height: ..... 3,3 m
- Width (opened device): ..... 2,06 m
- Width (closed device): ..... 0,2 m



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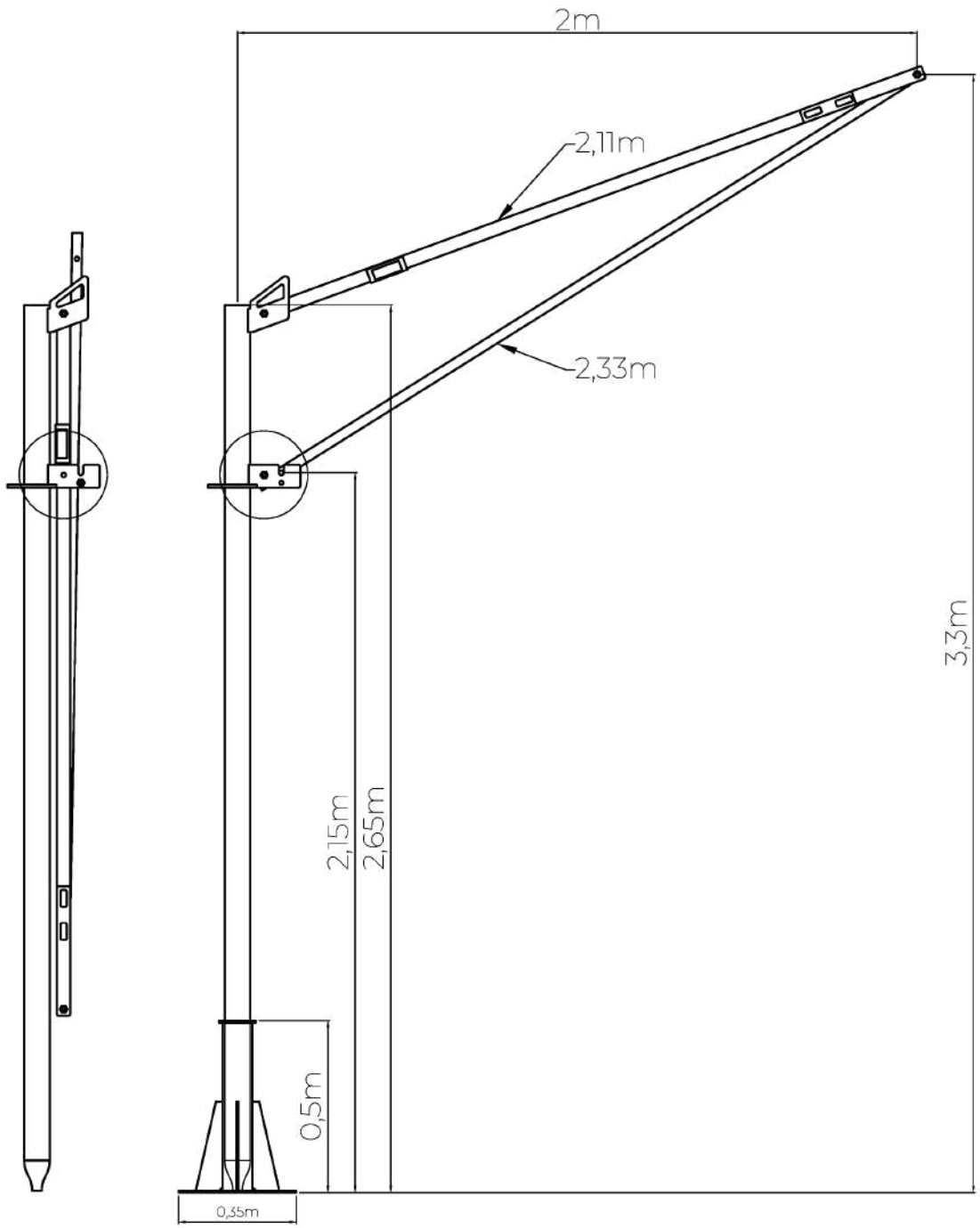
BASIC BELAY DEVICE – MAIN DIMENSIONS



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1.3 CEILING SOCKET.

SOCKET fastened to the ground with concrete screws Ø12

The required minimum anchoring force is: Q = 10 kN and the minimum recommended anchoring depth is 100 mm.
The socket requires the use of 8 screws.

Material:	varnished steel
Weight:	18 kg
Height:	0,5 m
Diameter:	0,35 m

Cooperates with:
Basic belay device,
Life Line Pole,
Socket positioner.
High adapter 3,4m

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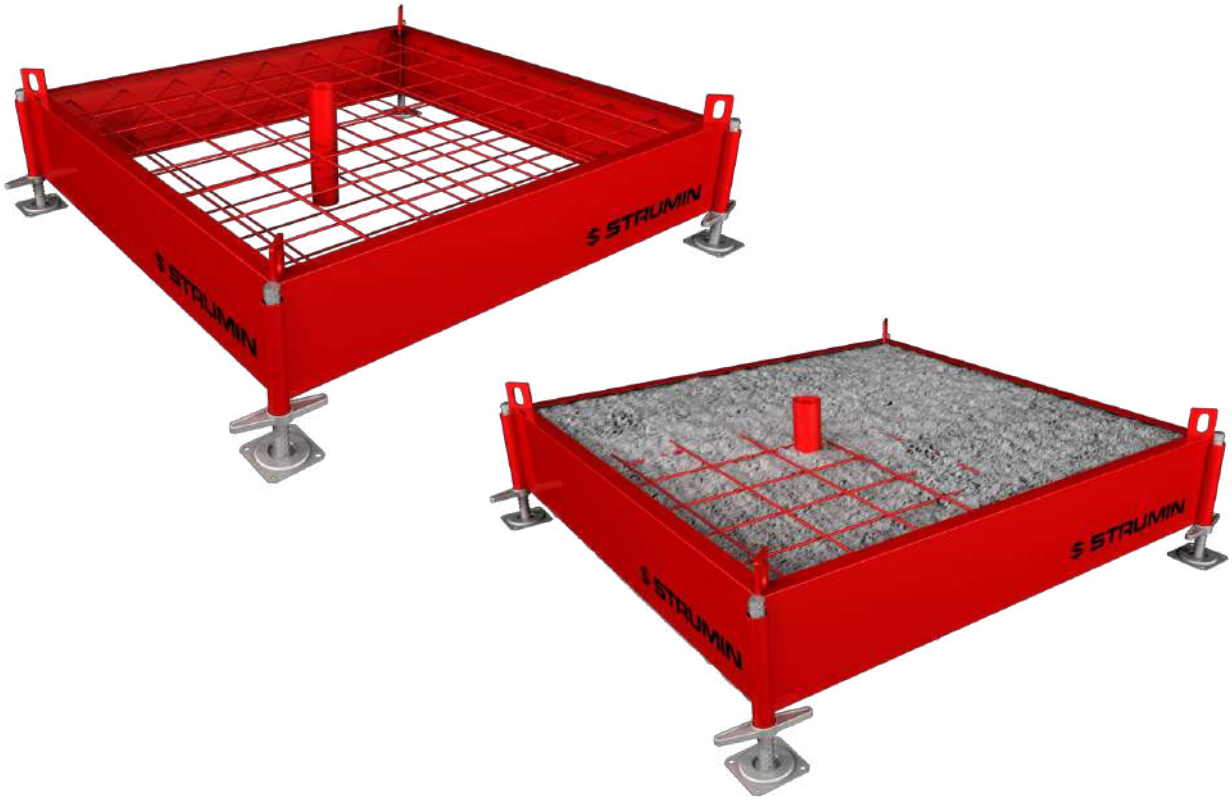
1.4 LARGE BALLAST SOCKET.

It serves as ballast to fix the safety devices and in this case replaces the ground, i.e. a concrete slab, poles or walls. It can also be used on the ground, in which case the adjustable feet must be properly supported to avoid sinking and deviation from the level. The ballast socket is offered as a steel formwork for self-pouring with concrete on the construction site.

It is equipped with four adjustment points with feet that make it easier to level it on any surface. It also has four attachment points for the crane sling.

Material:.....	Stal konstrukcyjna lakierowana
Formwork weight:	90 kg
Ballast weight with concrete:	2,100 kg
Height:	0.55 m
Width:	1.85m
Depth:	1.85 m

Cooperates with:
Basic Belay device,
Height adapter "150",
High gallows adapter
Life Line Pole.



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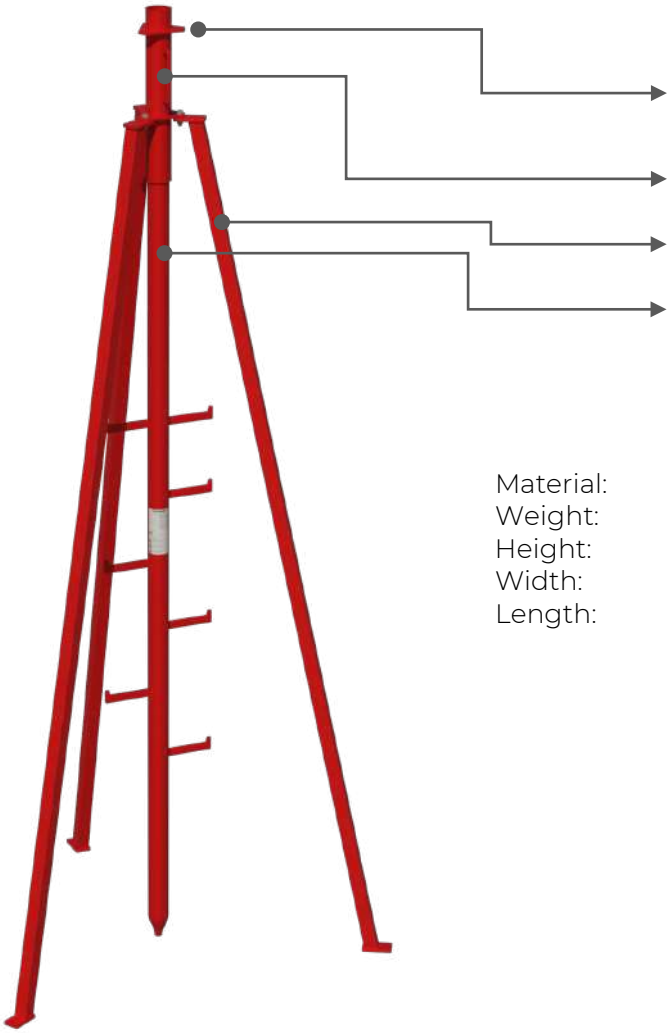
1.5 HIGH GALLOWS ADAPTER.

Depending on the needs and choice of the working place, a High Gallows Adapter can be used, whose task is to raise the Anchor Point of the belay device so that it is as high as possible above the anchor point of the safety harness.
During work, the SECURITY DEVICE can be placed at the working level (e.g. on any floor) or at ground level. The choice of option depends on the working environment, the individual requirements of the Ordering Party and the O&M guidelines.

HIGH ADAPTER is mounted in the Large Ballast Socket or in the Ceiling Socket.
The central pole has rungs to facilitate the attachment of the Gallows (Basic Safety Device).
The upper socket of the high adapter is equipped with two rosettes for attaching side supports.
Fixing the Buttons to the Rosette should be done using three M12x40 screws.
Fastening the buttresses to the ground or to the concrete ballast should be done using concrete screws (see point 1.6).



Material:	Painted steel
Weight:	40 kg
Height:	3.5 m
Width:	1.5 m
Length:	1.35 m

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1.6 CONCRETE SCREWS.

Characteristic:
- concrete self-tapping screw,
- Ø12 thread diameter,
- Ø10 diameter of the rod,
- Ø10 diameter of the drilled hole in beton,
- galvanized,
- 100mm length,
- fastened with an impact wrench (key number 15),

Cooperates with:
Ceiling socket,
Side socket,

1.7 SELF-LOCKING DEVICE.

Characteristic:

- a self-locking device,
- fall arrest device,
- with a 3.5 m, 6 m nylon tape,
- aluminum housing,
- 1 automatic rotary carabiner with a fall indicator,
- 1 steel carabiner Ref. 981.
- The device complies with the EN 360 standard

Cooperates with:
Basic Belaying Device.

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2.0 ASSEMBLY INSTRUCTIONS

2.1 INSTRUCTIONS FOR ASSEMBLY OF THE CEILING SOCKET

The ceiling socket is installed using eight HUS 10x100 concrete screws.
In the substrate, drill holes Ø10 to a depth of ~ 16 cm.
The substrate in which the drillings are performed should ensure the pull-out strength with a force of Q = 10 kN, and the minimum anchorage depth should be 10 cm.
Using an impact driver, attach the screws to the concrete, securing the socket to the ground.
The required minimum anchoring force is: Q = 10 kN and the minimum recommended anchoring depth is 10 cm.

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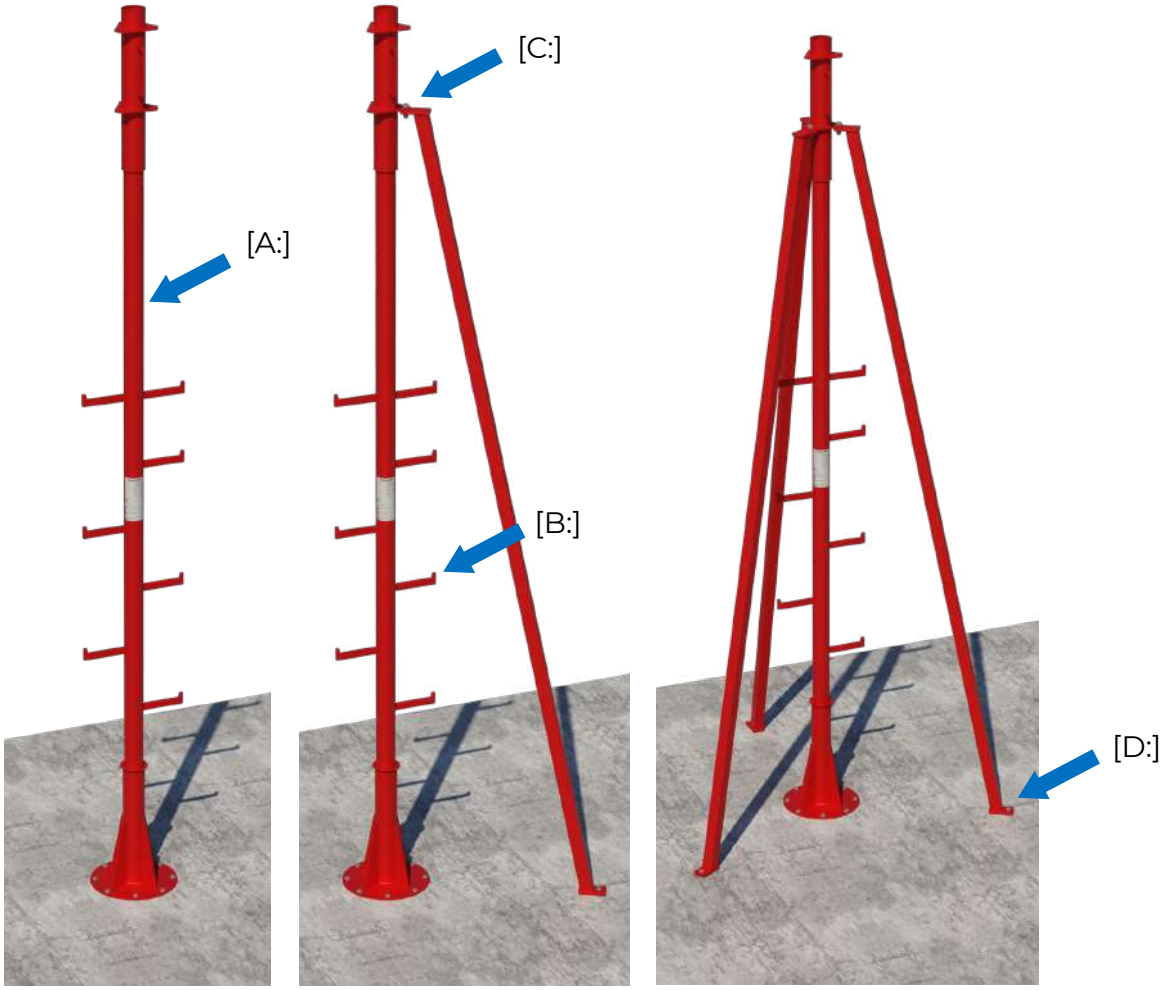
2.2 INSTALLATION INSTRUCTIONS FOR THE HIGH ADAPTER ON A CEILING SOCKET (explained on the High Adapter, model version: "from 2024")



Insert the Central Pole of the High Adapter [A:] into the previously attached Ceiling Socket.
Attach the side buttresses to the mounting rosette using M12x40 screws [C:].
The central pole is equipped with rungs [B:] enabling the user to reach a height enabling the installation of buttresses to the rosette.
The procedure for mounting the Gallows in the Upper Socket also requires climbing the rungs to a level enabling the installation of these elements.
Side buttresses should be attached to the ground using self-tapping concrete screws Ø12 [D:].
The central pole is equipped with two rosettes: upper and lower. The upper rosette is used to attach side buttresses when a large concrete ballast is used, while the lower rosette is used when a ceiling socket is used.

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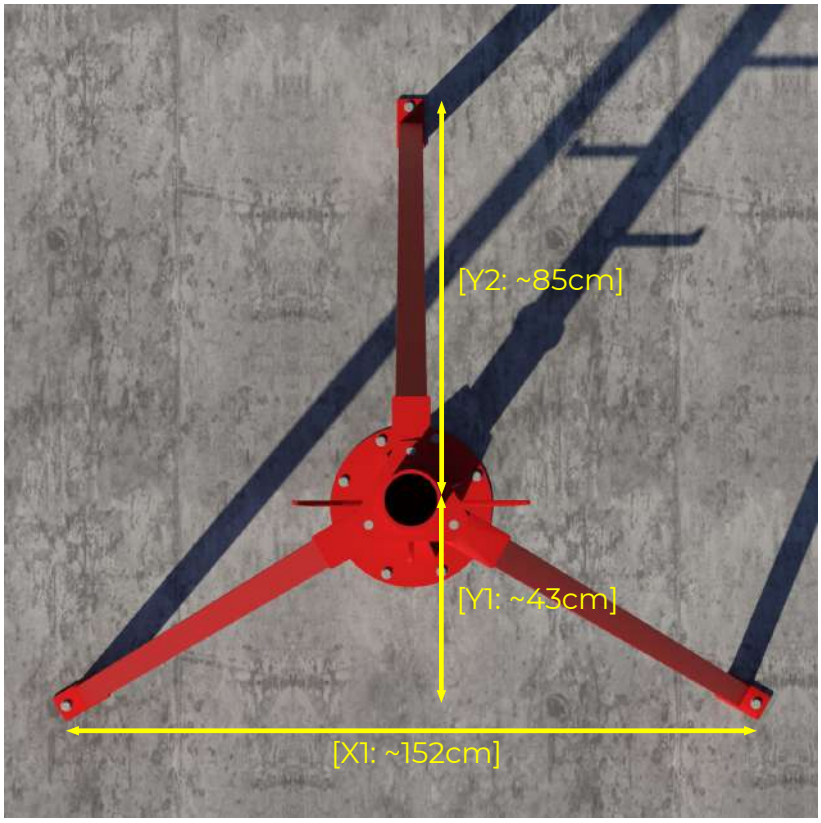
Spacing of screws for mounting in the ground.



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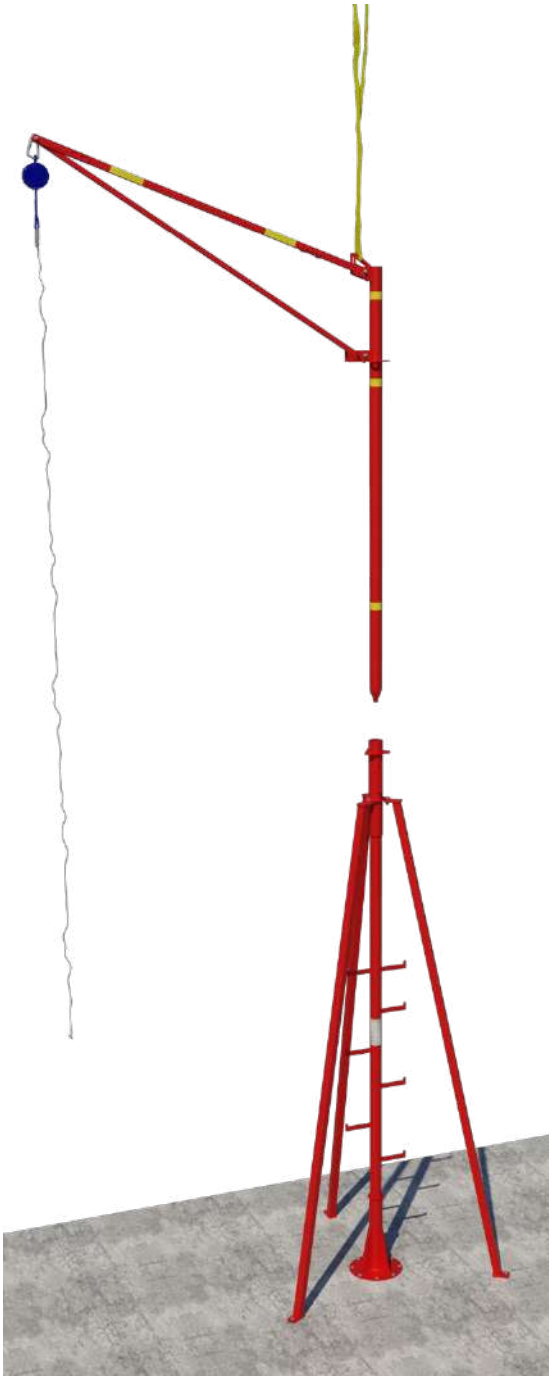
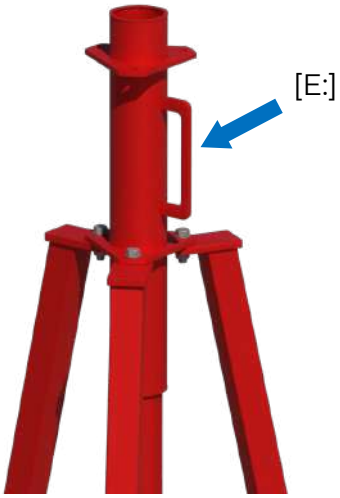
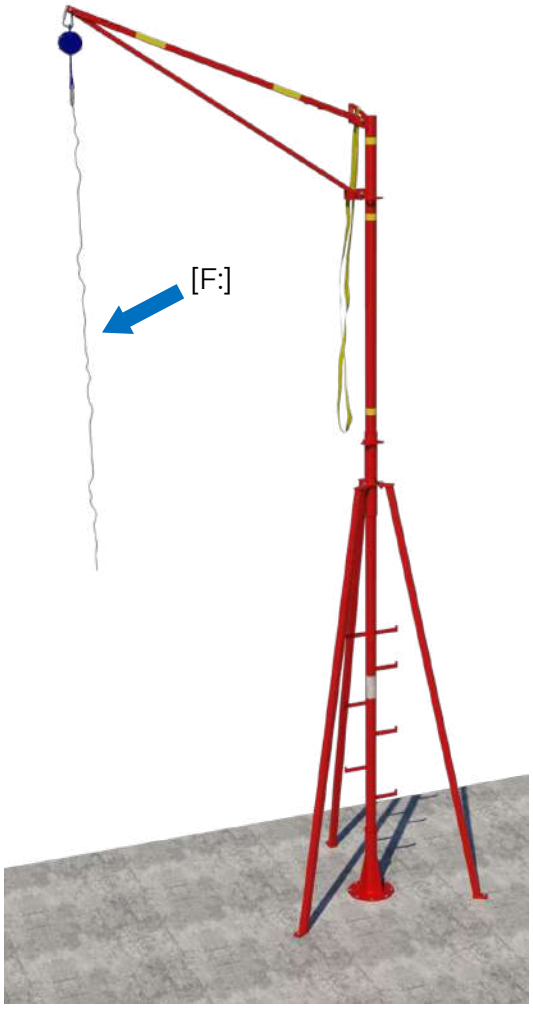


Using a crane, attach the Gallows to the previously installed High Adapter in the upper socket of the adapter.
When assembling the gallows, using the rungs of the central pole, you can guide the central pole of the gallows to the adapter socket. During such a procedure, remember to be particularly careful and the installer performing such activities must be connected to a permanent anchor point [E:] (located on the upper socket of the adapter).





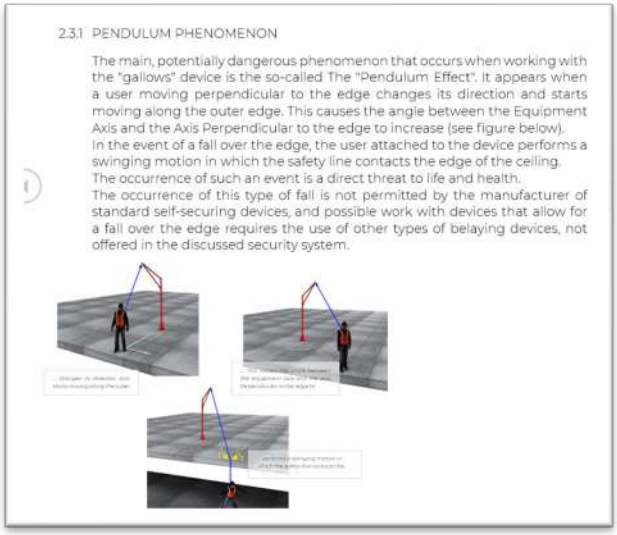
Please remember that the self-locking device should be equipped with an additional auxiliary rope [F:], used to extend the safety rope from the device so that it can be connected to the safety harness.
The gallows anchor point is located at a height of 6.4 meters, so access to it from the lower level is impossible.

The length of the safety rope of the self-locking device used depends on several factors. Firstly, it depends on the working level at which the user is located. If work takes place at "ground" level, the length of the safety rope must be greater than 6.4 m. If the height of the working level is e.g. 3 m, the length of the safety rope must be not less than the distance:

[6,4m – 3m = 3,4m].

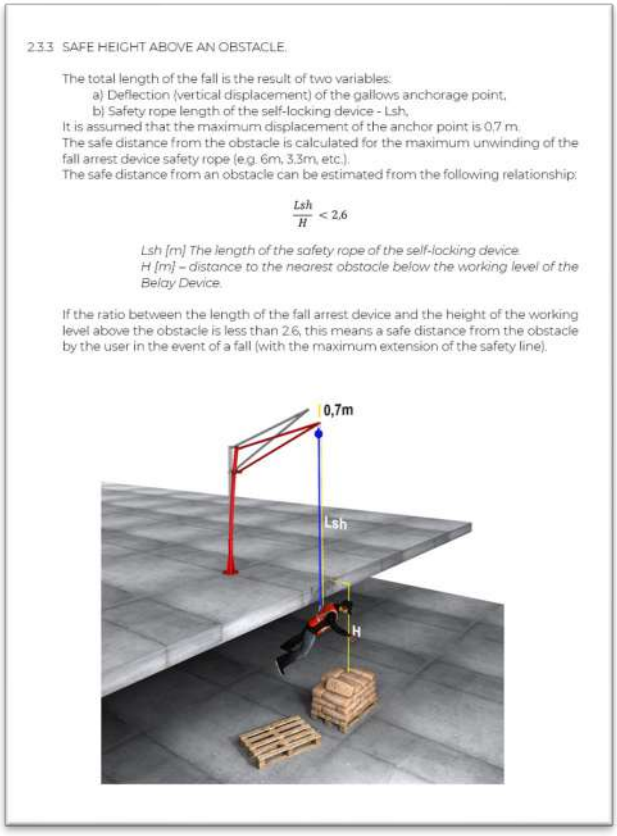
Please remember that the length of the safety rope also depends on other parameters such as the Safe Height above the obstacle and the pendulum effect. The above topics are explained in the technical documentation for the Gallows called:

THE „GALLOW" SECURITY SYSTEM
SAFE WORK AT HEIGHT



2.3.1 PENDULUM PHENOMENON

The main, potentially dangerous phenomenon that occurs when working with the "gallows" device is the so-called The "Pendulum Effect". It appears when a user moving perpendicular to the edge changes its direction and starts moving along the outer edge. This causes the angle between the Equipment Axis and the Axis Perpendicular to the edge to increase (see figure below).
In the event of a fall over the edge, the user attached to the device performs a swinging motion in which the safety line contacts the edge of the ceiling.
The occurrence of such an event is a direct threat to life and health.
The occurrence of this type of fall is not permitted by the manufacturer of standard self-securing devices, and possible work with devices that allow for a fall over the edge requires the use of other types of belaying devices, not offered in the discussed security system.



2.3.3 SAFE HEIGHT ABOVE AN OBSTACLE.

The total length of the fall is the result of two variables:
a) Deflection (vertical displacement) of the gallows anchorage point,
b) Safety rope length of the self-locking device - Lsh,
It is assumed that the maximum displacement of the anchor point is 0,7 m.
The safe distance from the obstacle is calculated for the maximum unwinding of the fall arrest device safety rope (e.g. 6m, 3.3m, etc.).
The safe distance from an obstacle can be estimated from the following relationship:

$$\frac{Lsh}{H} < 2{,}6$$

Lsh [m] The length of the safety rope of the self-locking device.
H [m] – distance to the nearest obstacle below the working level of the Belay Device.

If the ratio between the length of the fall arrest device and the height of the working level above the obstacle is less than 2.6, this means a safe distance from the obstacle by the user in the event of a fall (with the maximum extension of the safety line).

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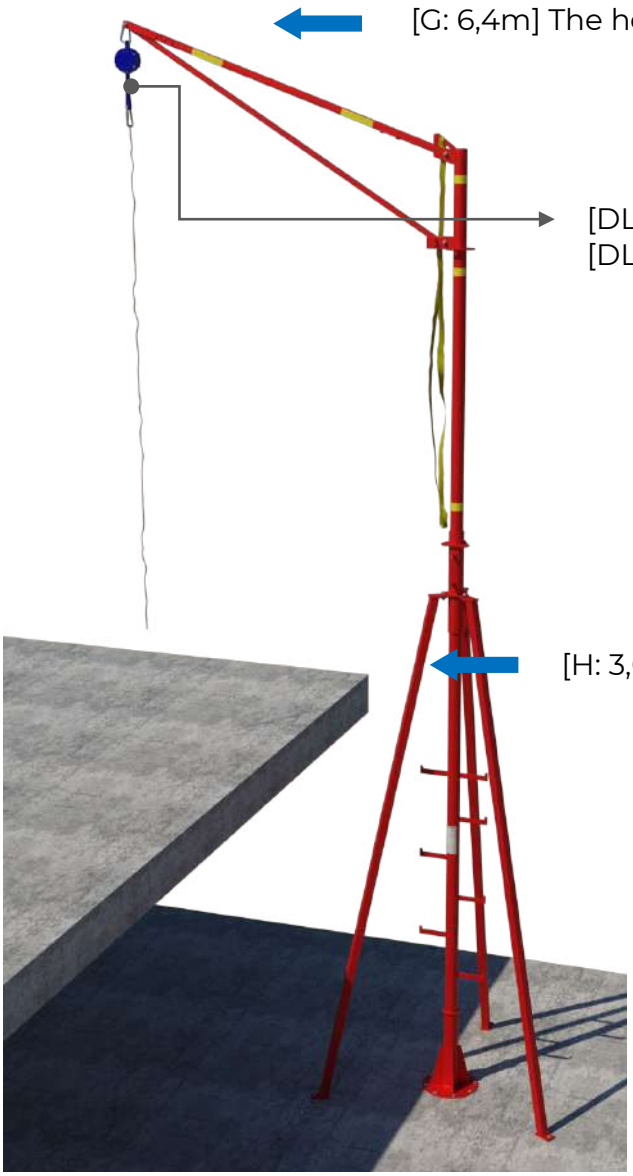

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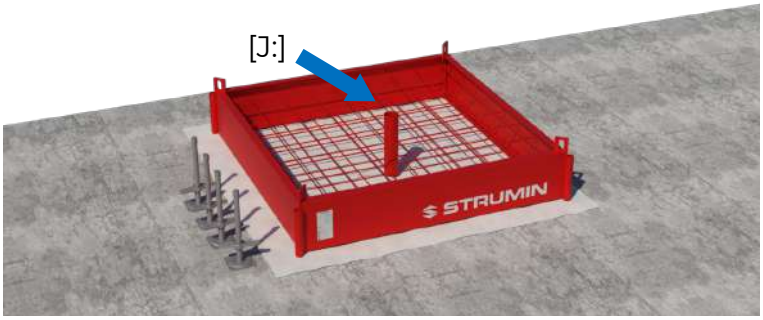
2.3 INSTALLATION INSTRUCTIONS FOR THE HIGH ADAPTER ON A LARGE BALLAST SOCKET (explained on the High Adapter, model version: "until 2023")

The large ballast formwork should be placed on an even and horizontal surface. Protect the bottom with foil. The formwork prepared in this way can be poured with concrete.
The formwork socket is secured with a plastic cap [Ɔ:], when filling the formwork with concrete, make sure that the cap is in place.



After 28 days, the concrete reaches its full strength, so after this time you can properly attach the side buttresses using concrete screws.

After this period, you can lift the finished ballast and attach adjustable scaffolding feet, which are used to later set the ballast horizontally when using the device on uneven surfaces..

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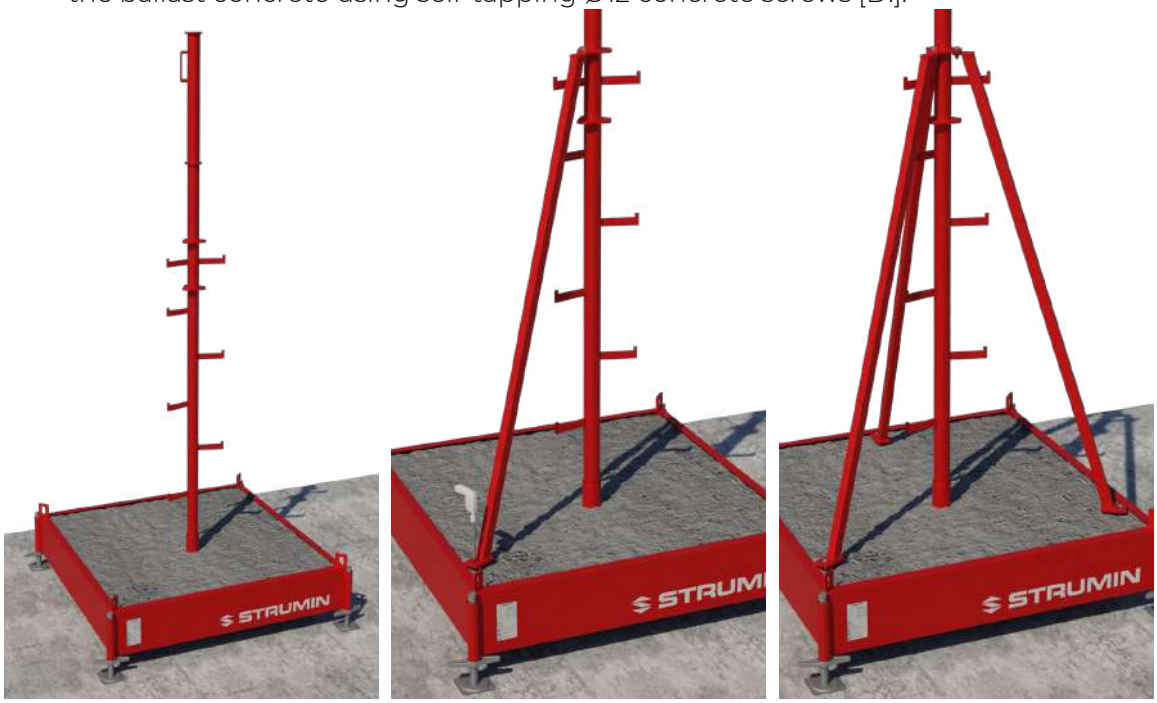
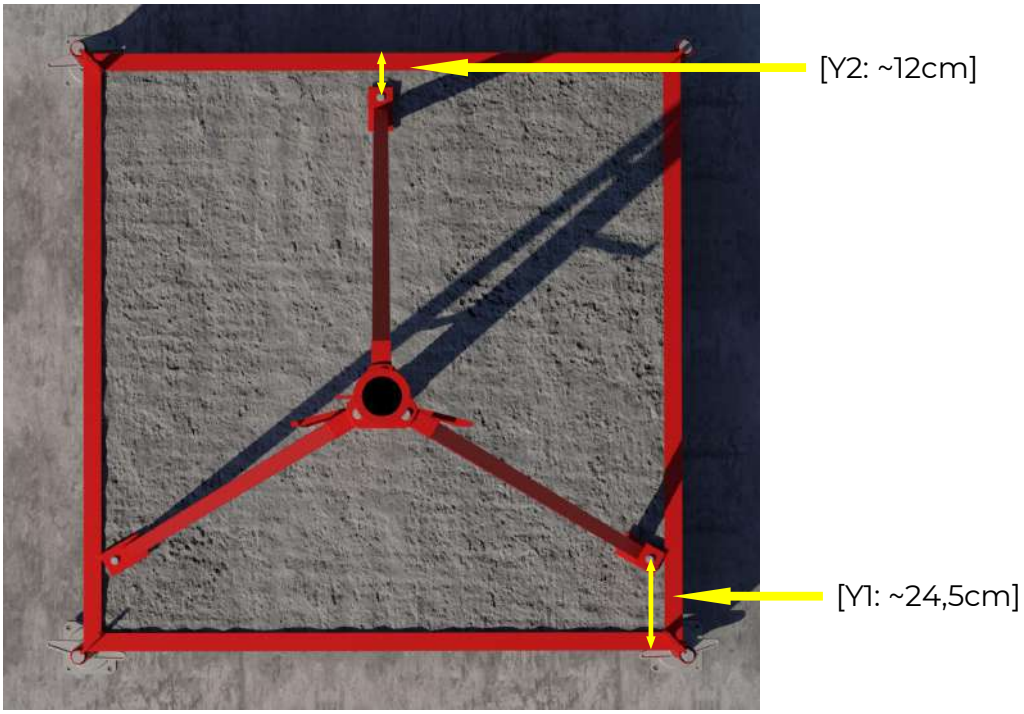
After leveling the large concrete ballast, attach the central pole of the high adapter and then screw the side buttresses to the upper rosette (M12x40 [C:] screws) and to the ballast concrete using self-tapping Ø12 concrete screws [D:].



Spacing of screws for mounting in concrete.



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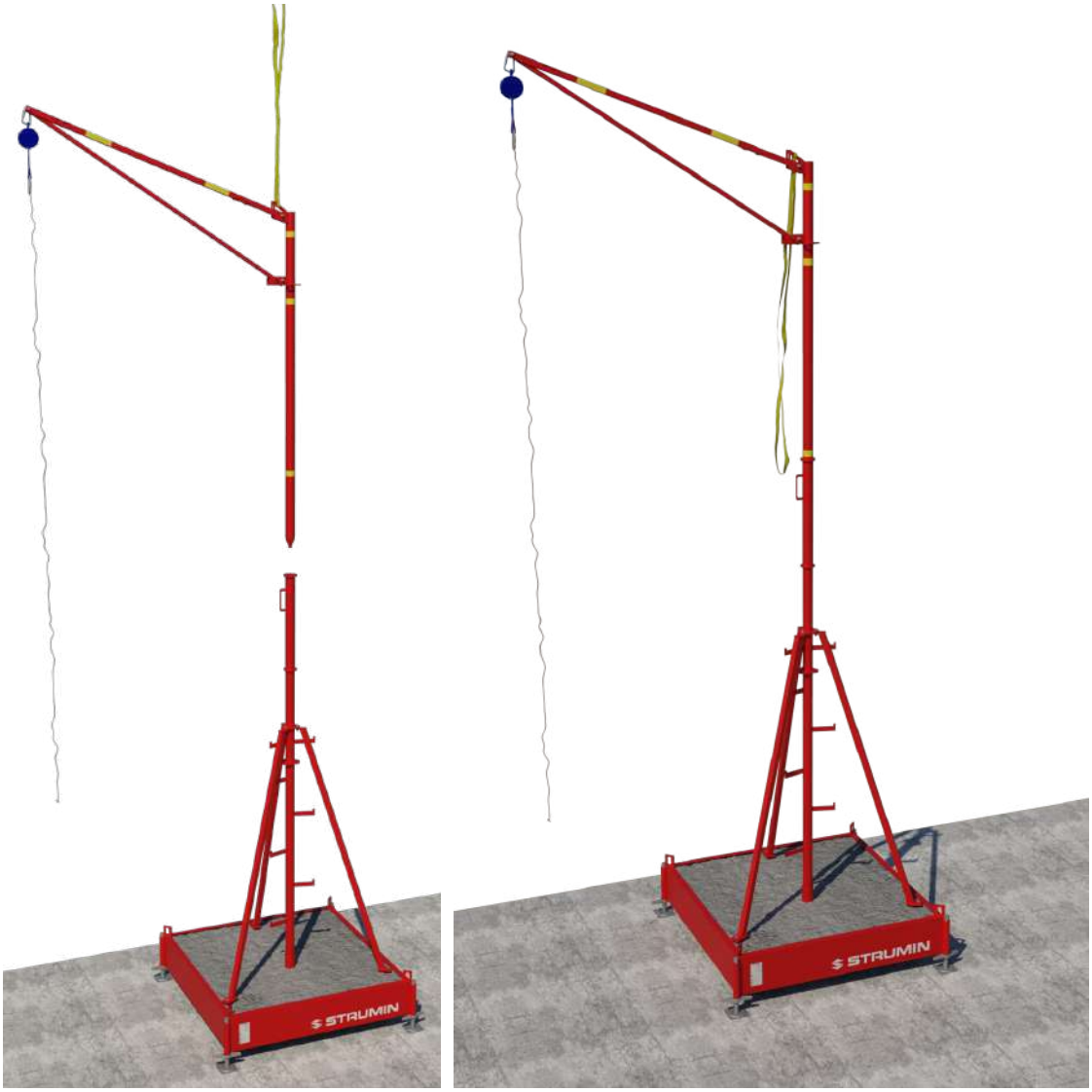
The further procedure remains the same as the gallows procedure in the high adapter mounted on the ceiling socket, and the subsequent assembly steps are presented in the illustrations below.



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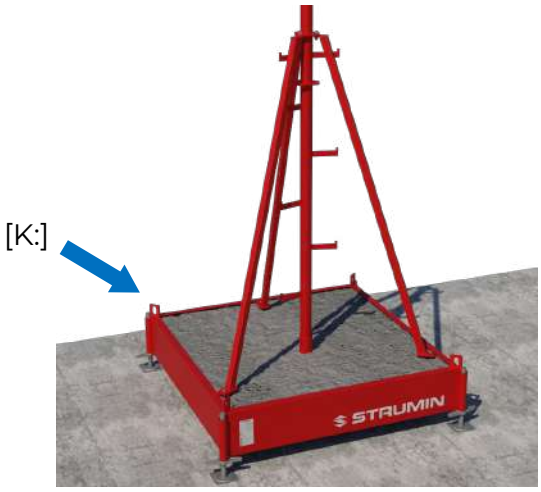
2.4 INSTRUCTIONS FOR DISMANTLING THE HIGH GALLOWS

The gallows is dismantled in the opposite direction to the assembly procedure described above (from point 2.2 and 2.3).

2.5 INSTRUCTIONS FOR MOVING THE GALLOWS BETWEEN WORKSTATIONS

The High Gallows may be moved between workstations only if the Gallows (basic safety device) is previously dismantled.
Large concrete ballast can be moved using transport handles [K:].
Concrete ballast can be transported with the high adapter attached but without the gallows attached at the top.



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DECLARATION OF CONFORMITY UE, NO: .....

1. Device of the “High Gallow” Belay System”

   (Serial No: .....),

2. Name and address of the manufacturer:
   STRUMIN Sp. z o.o. Sp.k., Aleksandrowice, ul. Tęczyńskich 2
   32-084 Morawica, NIP 513-024-97-17,

3. This declaration of conformity is issued under the sole responsibility of the manufacturer:
   STRUMIN Sp. z o.o. Sp.k,

4. Subject of the declaration: Safety System Device
   "High Gallows" defined in the Technical and Operational Documentation constituting Annex No. 1 to this declaration:
   „HIGH GALLOWS - ASSEMBLY INSTRUCTIONS - ENG.pdf”

5. The subject matter of this declaration as described in point 4 is in compliance with the relevant requirements of Union harmonization legislation:

   REGULATION (EU) 2016/425 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

6. References to the relevant harmonized standards used and in relation to which compliance is declared:

   The design of the fall protection system was carried out in accordance with applicable legal regulations and technical standards:

   EN-795:2012 - protection against falls from a height - anchor devices.

7. The subject of this declaration described in point 4 is compliant with the type based on the Factory Production Control System No. ZKP/STRUMIN/01, and supervised product inspections at random intervals.

Signature on behalf of: Kamil Strumiński, STRUMIN Sp. z o.o. Sp.k.

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