



Mounting instructions

Hybrid Pro 600

Concrete Barrier

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1 General information

1.1 Information about these instructions

These operating instructions provide important information on handling the equipment. All technical data in these instructions have been developed or compiled with the greatest of care. Errors cannot however be excluded. We therefore feel obliged to point out that neither guarantee nor any legal responsibility nor any sort of liability can be accepted for consequences as a result of incorrect data. We are always glad to be informed of any errors. Adherence to the specified safety instructions and handling instructions is a precondition for safe work. In addition, it is mandatory to observe the local accident prevention regulations and general safety requirements applicable at the location where the equipment is used.

Carefully read through the operating instructions before beginning any work!

It is a constituent component of the product and must be kept carefully available in the immediate vicinity of the equipment at all times for the personnel. If you sell or subcontract this product, it is essential to hand over these instructions as well. The figures in this manual are not necessarily true to scale in order to show details better and can vary slightly from the actual configuration.

1.2 Explanation of symbols

1.2.1 Symbols used in these operating instructions

Warning instructions Warning instructions are identified by symbols. They are also prefaced with signal words that indicate the extent of the hazard.

- It is essential to follow all instructions!
- Always act cautiously during all work in order to avoid accidents, injury to personnel and material damage!

DANGER!



... indicates imminent danger that can lead to death or to serious injury if it is not avoided.

WARNING!



... indicates a possible dangerous situation that can lead to death or serious injury if it is not avoided.

CAUTION!



... indicates a possible dangerous situation that can lead to minor or slight injury if it is not avoided.

ATTENTION!



... indicates a possible dangerous situation that can lead to material damage if it is not avoided.

Tips and recommendations

NOTE!



... highlights useful tips and recommendations as well as information for more efficient and troublefree operation.

Special safety instructions

To draw attention to particular dangers, the following symbols are used in connection with safety instructions in these operating instructions. The hazardous areas on the equipment are also specially marked by these symbols.

WARNING!**Quetschgefahr!**

... indicates life threatening situations due to crushing.

Non-compliance with the safety instructions can result in very serious injuries or even death.

All work must only be carried out by specialists.

1.3 Limitation of liability

All data and instructions in this manual were compiled in accordance with the applicable standards and regulations, the state-of-the-art and our many years of know-how and experience.

The manufacturer accepts no liability for damages due to:

- non-compliance with the manual
- non-designated use
- deployment of untrained personnel
- unauthorized alterations
- technical modifications
- use of non-approved spare parts

The actual scope of delivery can vary from the explanations and illustrations described here for special versions, the purchase of additional order options, or due to latest technical changes.

In addition, the obligations agreed in the procurement contract, the General Terms & Conditions and the delivery conditions of the manufacturer and the legal regulations in force at the time of the contract conclusion apply.

Warranty

The manufacturer guarantees the functionality of the applied technology and the declared performance parameters.

The warranty period begins from the point in time of the free-of-defects acceptance.

Wearing parts

Wearing parts are all components that come into immediate contact with the material to be worked on or processed.

These components are excluded from the guarantee and claims for defects if this involves damage due to wear.

1.4 Warranty conditions

The warranty conditions are included in the separate sales documents.

Generally valid:

Alterations and technical modifications which have not been certified by Adolf Nissen Elektrobau void all warranty claims

1.5 Spare parts

WARNING!**Risk of injury due to incorrect spare parts!**

Incorrect or defective spare parts can lead to damage, malfunction or complete failure and can greatly compromise safety.

For this reason:

- Only use original spare parts!

Original spare parts can be purchased directly from the manufacturer (for the address, see last page).

1.6 Customer service

For technical information, please contact our Customer Service.

Instructions on the regionally responsible contact partner can be obtained at any time per telephone, fax, e-mail or via the Internet (for the address, see last page).

In addition, our employees are constantly interested in any new information and experience that result from the application and that may be valuable for improving our products.

1.7 Copyright protection

This manual is only intended for personnel who are engaged with the equipment. The manual must not be handed over to third parties without the written approval of the manufacturer.

NOTE!



The contents, data, texts, drawings, photographs and other illustrations are copyright-protected and are subject to industrial property protection.

Any improper use will be liable to prosecution.

Reproduction in of any shape or form - in whole or in part - and the utilisation and/or disclosure of its contents are not allowed without a written declaration of consent from the manufacturer. Violation will lead to claims for damages.

All other rights are reserved.

2 Safety

Dieser Abschnitt gibt einen Überblick über alle wichtigen Sicherheitsaspekte für einen optimalen Schutz des Personals sowie für den sicheren und störungsfreien Betrieb.

Bei Nichtbeachtung der in dieser Anleitung aufgeführten Handlungsanweisungen und Sicherheitshinweise können erhebliche Gefahren entstehen.

2.1 Responsibility of the operator

The equipment is designed for use in the industrial sector. Consequently, the operator of the equipment is liable for the legal obligations of safety at work.

Apart from the safety at work instructions in these operating instructions, the safety, accident prevention and environmental protection regulations in force for the field of application of the equipment must be observed.

In particular, the operator must:

- inform himself of the applicable industrial safety regulations.
- carry out a risk assessment to determine any additional dangers that result from the special working conditions at the place of use of the equipment.
- convert the necessary conduct requirements for operation of the equipment at the place of use into operating instructions.
- regularly check that the operating instructions created by him are up to date with the current state of the regulations during the entire period of use of the equipment.
- update the operating instructions - as necessary - to new regulations, standards and operating conditions.
- clearly delegate the responsibilities for installation, operation, maintenance and cleaning of the equipment.
- ensure that all employees who are involved on or with the equipment have read and understood the operating instructions. In addition, he must train the personnel at regular intervals in how to deal with the equipment and inform them of the possible dangers.
- provide the prescribed and recommended protective gear to the personnel charged with carrying out the work.

The operator is also responsible for ensuring that the equipment

- is always in a technically perfect condition.
- is maintained according to the specified maintenance intervals.
- and that all safety installations are checked regularly for completeness and functionality.

2.2 Personnel requirements

2.2.1 Qualifications

WARNING!

Risk of injury due to insufficient qualification!



Improper handling can lead to considerable injury to personnel and damage to material.

For this reason:

- Only allow activities to be carried out by suitably qualified personnel.

The following qualifications for different fields of activity are named in the operating instructions:

Instructed personnel

- have been instructed by the operator on the tasks assigned to them and on the potential dangers of improper conduct.

Specialist personnel

- are in a position to carry out the work assigned to them as a result of their technical training, know-how and experience as well as knowledge of the current regulations and are able to independently recognise and avoid possible dangers.

Only persons who can be expected to reliably carry out their work are sanctioned as personnel. Personnel whose ability to react is affected, for example, by drugs, alcohol or medications will not be tolerated.

- When selecting personnel, observe the regulations regarding age and vocation-specific regulations applicable at the place of use.

2.2.2 Unauthorized persons

WARNING!

Danger to unauthorized persons!



Unauthorized persons who do not fulfil the requirements described here are not aware of the dangers in the working area.

For this reason:

- Keep unauthorized persons away from the working area.
- In case of doubt, speak to these persons and expel them from the working area.
- Interrupt the work as long as unauthorized persons are present in the working area.

2.3 Personal protective gear

When dealing with the steel barrier especially in public road traffic, personal protective gear must be worn in order to minimise health hazards.



For this reason:

- Before all work, properly put on the respective protective gear as described and wear it during the work.
- It is also essential to follow all signs affixed in the working area regarding personal protective gear.

Basic rules regarding clothing

Protective gloves



to protect the hands from abrasion, grazes, punctures or deeper injuries as well as against contact with hot surfaces

Safety footwear



to protect against heavy, falling parts and slipping on slippery surfaces.

Safety helmet



to protect against parts and materials either falling or flying around.

Recommended protective gear

In addition to the prescribed personal protective gear, it is recommended to wear the following protective gear:

Reflective warning vest



or wear reflective warning clothing in order to be more clearly visible for others. In particular, wear reflective warning clothing:

- while working in the vicinity of railway tracks,
- during maintenance and when securing vehicles on public roads,
- during roadwork: all personnel who are in the vicinity of public road traffic,
- when marshalling construction traffic. Dispose the reflective warning clothing after use or have it professionally cleaned to maintain visibility.

2.4 Designated use

The equipment is designed and constructed exclusively for the intended purpose described here. The advance warning trailer is intended for the protection of persons and material and for displaying advance direction signs and hazard warnings ahead of approved construction sites in public road traffic.

WARNING!

Danger through non-designated use!



Any use that goes beyond the designated use and/or different use of the equipment can lead to dangerous situations.

For this reason:

- Only use the equipment as intended
- Strictly observe all data in these operating instructions.
- In particular, refrain from the following uses. They are considered as non-designated use:
 - Alteration, conversion or changes to the construction or individual accessory parts with the aim of changing the application or use of the equipment.

Claims of any type as a result of damage from non-designated use are excluded. All damage from non-designated use is the sole liability of the operator.

2.5 Special risks

Residual risks that were determined based on a risk analysis are listed in the following section. It is essential to follow the instructions listed here and the safety instructions in the further chapters of these instructions for use in order to reduce possible health hazards and to avoid dangerous situations.

Crushing points on moving components

WARNING!

Danger of crushing!



During operation, moving components and objects can lead to crushing, causing the most severe injuries and lasting physical harm!

For this reason:

- Do not enter the danger area during operation.
- Always carry out installation and maintenance work as well as troubleshooting measures with particular care and pay attention to crushing points.
- Wear personal protective gear to protect against crushing during all work.

Falling objects

WARNING!

Risk of injury from falling objects!



During operation, objects in the work area can fall unchecked and cause injuries.

For this reason:

- Do not enter the danger area during operation.
- Wear personal protective gear when setting up and during maintenance work or troubleshooting.

Debris and scattered objects

CAUTION!

Danger of tripping on debris and scattered objects!



Debris and scattered objects constitute slip and trip hazards and can result in significant injury.

For this reason:

- Always keep the work area clean.
- Remove objects that are no longer required.
- Indicate trip hazards with yellow and black marking tape.

Sharp edges and pointed corners

CAUTION!

Risk of injury on edges and corners!



Sharp edges and pointed corners can cause grazes and cuts to the skin.

For this reason:

- When working in the vicinity of sharp edges and pointed corners, proceed with care.
- In case of doubt, wear protective gloves.

Public road traffic

DANGER!

Danger to life from disregarding traffic regulations!



Disregarding the currently effective traffic regulations and/or a deficient technical state of the advance warning trailer MultiSign SMD can lead to accidents with the most severe injuries and even to fatal accidents.

For this reason:

- Always comply with locally applicable traffic regulations.
- Always be prepared for possible traffic accidents, in particular also for those that can be caused by third-parties.

2.6 Conduct in case of danger and accidents

- When using the steel barrier always observe the regulations applicable to public road traffic.
- When using the steel barrier always adhere to the general and specific regulations applicable to construction sites as well as local regulations for construction site protection, accident prevention and the performance of rescue measures.

In addition, the following apply as a basic principle:

Preventive measures

- Always be prepared for accidents or fire.
- Keep first aid equipment (first-aid kit, blankets, etc.) and fire extinguishers freely accessible at all times.
- Make personnel familiar with accident notification, first aid and rescue facilities.
- Keep access routes free for rescue vehicles.

If worst comes to worst: take appropriate action

- Cordon off the accident site.
- Commence first-aid measures.
- Rescue persons from the danger zone.
- Inform those responsible at the place of use.
- Alarm doctor and/or fire brigade.
- Keep access routes free for rescue vehicles.

3 Galvanising

Galvanising

In the beginning newly galvanised parts are shiny and after a short while they become tarnished and the surface becomes abrasive. This only indicates that the surface oxidises and provides an optimal corrosion protection. This change is not a defect.

Cut edges of galvanised plates can oxidise.

A brown coloration of the cut edges is not a defect.

ATTENTION!



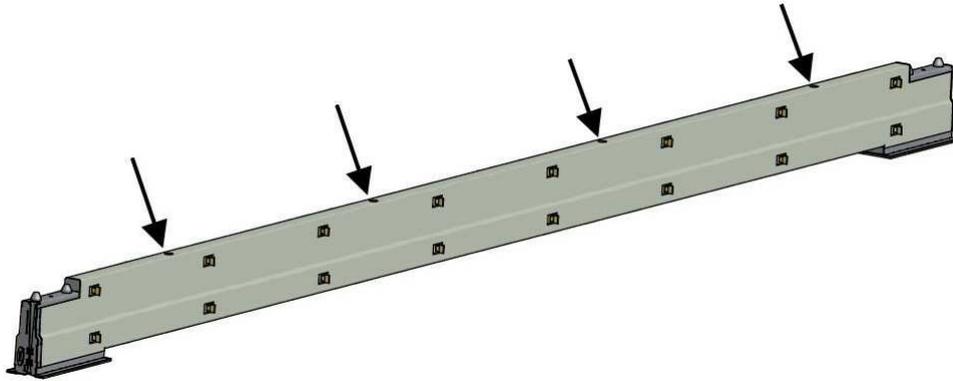
Galvanised parts do not react well to acids and chemicals.

After each use on salted roads the steel barrier trailer must be cleaned thoroughly with water.

4 Construction and function

Main element:

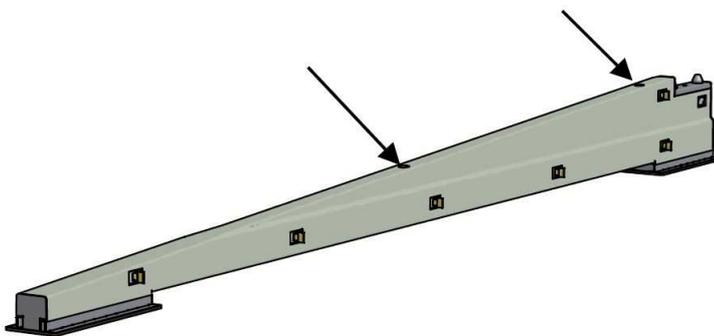
The concrete barrier consists of main elements set in a row.
Any numbers of elements can be lined up to reach the desired length of the concrete barrier.
The main elements have guides on both sides where the next element can be inserted.



4 threaded sleeves M20 are included in the main elements for a better handling. Rope loops with a thread of M20 can be screwed into these sleeves.

Lowering element 1:16:

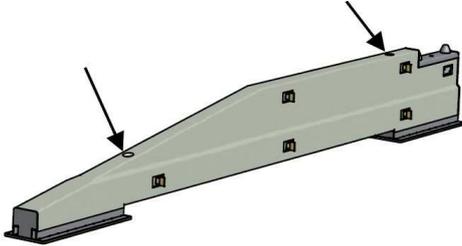
The lowering element 1:16 can be mounted at the beginning or end of the concrete barrier.
The base plate is equipped with 4 holes and can be anchored with 4 "Toge"-dowels TSM A22x155 IM 16 8.8 according to manufacturers information.



2 threaded sleeves M20 are included in the lowering elements for a better handling. Rope loops with a thread of M20 can be screwed into these sleeves.

Lowering element 1:5:

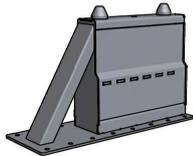
The lowering element 1:5 can be mounted at the beginning or end of the concrete barrier. The base plate is equipped with 4 holes and can be anchored with 4 "Toge"-dowels TSM A22x155 IM 16 8.8 according to manufacturers information.



2 threaded sleeves M20 are included in the lowering elements for a better handling. Rope loops with a thread of M20 can be screwed into these sleeves.

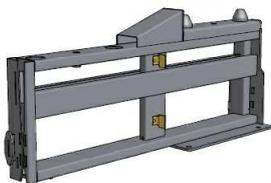
Anchoring element:

The anchoring element is fixed with 4 "Toge"-dowels TSM A22x155 IM 16 8.8 according to manufacturers information.



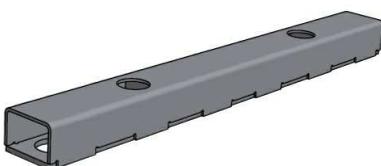
Transition element Hybrid Pro 600 to Steel Pro 500:

The concrete barrier Hybrid Pro 600 and steel barrier Steel Pro 500 can be connected with each other with a transition element so that a smooth transition is guaranteed. The base plate is equipped with 4 holes and can be anchored with 4 "Toge"-dowels TSM A22x155 IM 16 8.8 according to manufacturers information.



Connector element:

The single elements are secured among each other with a connector element. The tube pins of the elements suit in the corresponding holes of the connector elements and fix these. The connector elements are mounted with 2 screws M20x40-8.8 (tightening torque: 210 Nm).



5 Mounting

DANGER!



It is strictly forbidden to stay under a suspended load!
Align the elements only from the side!
Mount the element always with 2 persons!

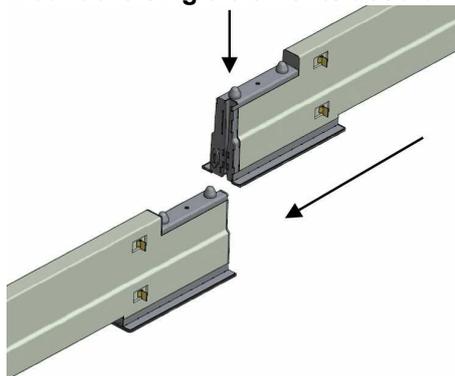
WARNING!

Danger of crushing!

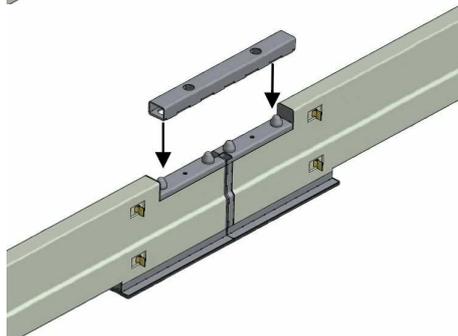


Danger of crushing during transport and mounting of the concrete barrier!

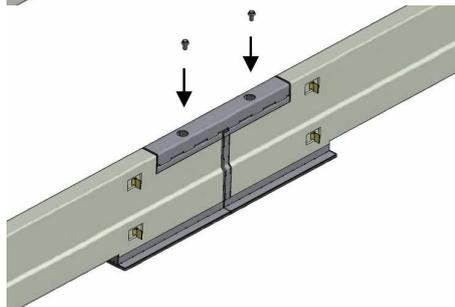
Mount the single elements according to the following principle:



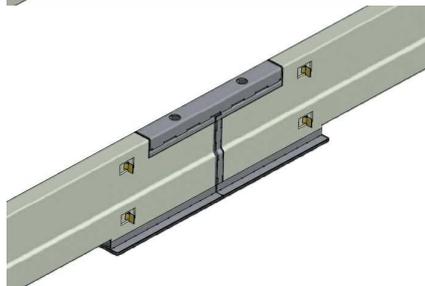
Screw the rope loops M20 (for lifting the elements) into the present threaded sleeves.
Insert the crane hook and lift the elements (use a suitable traverse).
Lift the elements, insert them carefully from above into the guide of the still positioned element and let it down slowly.
Take care of a horizontal position of the element at the crane when it is inserted into the guides.



After having set down the elements the connector element has to be set over both elements.
Take care that the holes fit properly over the tube pins of the elements.



Mount the connector element with 2 screws (M20x40-8.8).
The tightening torque of the screws must be 210 Nm!



NOTE!

The lowering and anchoring elements must be mounted according to the required protection class!

Disassembly of the elements:

Proceed in reverse order to disassemble the elements.

6 Tested structure length

Certain protection classes have specific minimum structure lengths which must be observed in order to guarantee the function of the concrete barrier:

Length for requirement **T3**: 180m (15 elements)

Length for requirement **H1**: 144m (12 elements)
In addition to the structure length a starter anchoring is needed.
Use a suitable anchoring element!

7 Transport / Delivery

Upon arrival immediately check the delivery for completeness and transport damages. If you register visible transport damages, proceed as described below:

- Do not accept delivery or only accept it with reservation.
- Record the scope of damages on the transport documents or on the carrier's note of delivery.
- Initiate a complaint.

NOTE!



Make a claim for every defect as soon as it is recognised. Claims of damages can only be made within the applicable warranty period.

8 Storage

When not in use store the concrete barrier under the following conditions:

- Do not expose to aggressive media.

9 Maintenance

9.1 Safety

Basics:

WARNING!

Risk of injury through improperly carried out maintenance work



Improper maintenance can lead to severe injury to personnel or material damage. For this reason:

- Before beginning work, make sure there is sufficient space for installation.
- Ensure orderliness and cleanliness at the installation location! Loose components and tools that are lying on top of one another or scattered about are sources of accidents.
- If components were removed, make sure the new components are correctly installed, install all attachment elements again and follow the tightening torque specification for screws.

Personnel:

- Unless otherwise specified, maintenance work can be carried out by the operator.

Personal protective gear:

As a basic principle, during the servicing, wear:

- Protective gloves
- Anti-skid safety footwear

For maintenance work at the place of use, the following protective gear is also recommended:

- Reflective warning vest

9.2 Maintenance work

Cleaning:

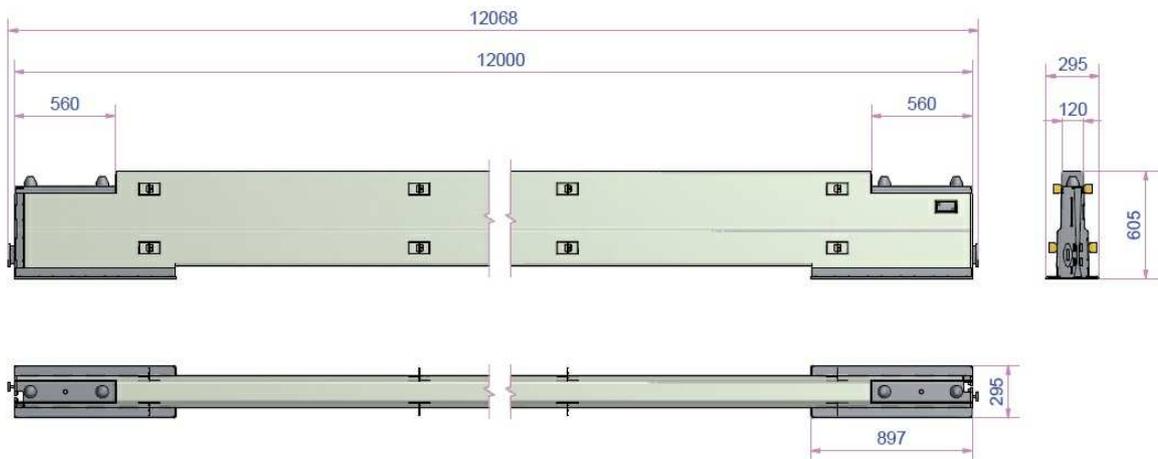
Clean the concrete barrier after use!

Make sure:

- Do not use aggressive cleaning agents or detergents.
- Only clean the concrete barrier with clear water.
- Dispose of cleaning cloths and residue environment-friendly and observe applicable local regulations

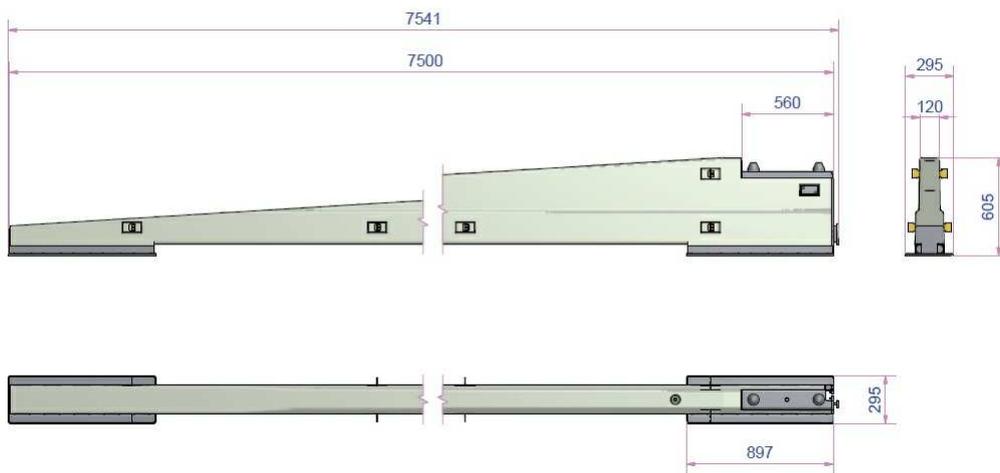
10 Technical Data

Main element:



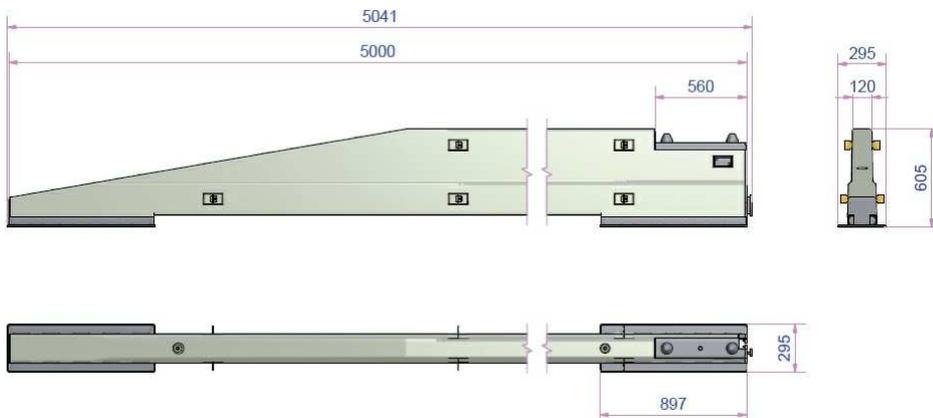
Weight: 2300 kg ± 100

Lowering element 1:16



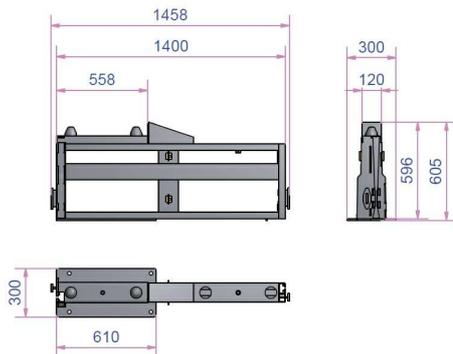
Weight: 950 kg ± 100

Lowering element 1:5



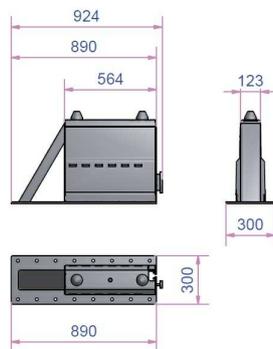
Weight: 800 kg ± 100

Transition element Concrete Barrier Hybrid Pro 600 - Steel Barrier Steel Pro 500



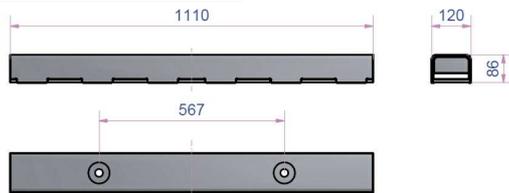
Weight: 68 kg ± 5 kg

Anchoring element:



Weight: 85 kg ± 5 kg

Connector element:



Weight: ca. 22 kg ± 2



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Subject to technical modifications!

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Printed: 03.04.2013