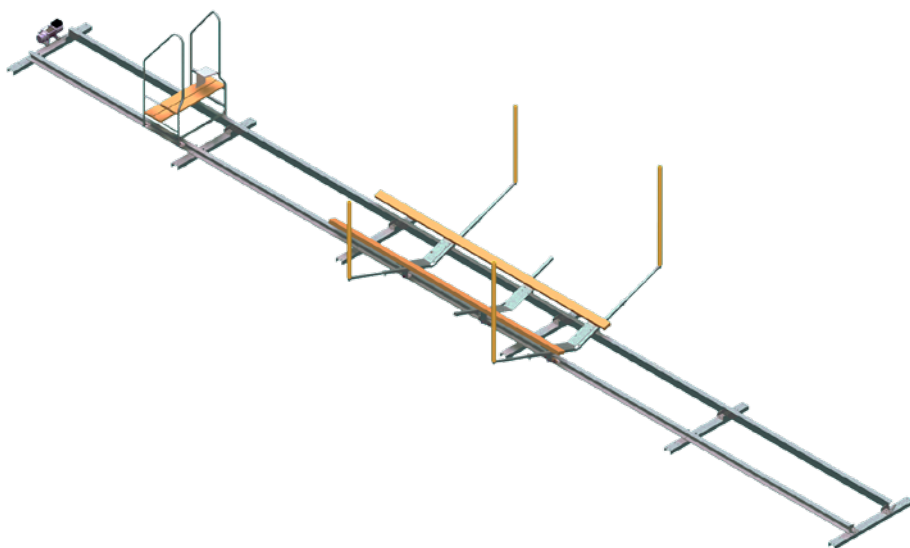


# Instruction and Operating manual



*Congratulations for purchasing an EasyBoatRoller dock! You have chosen a high-quality product which you will benefit from for a long time.*

Please read this instruction manual carefully. It includes information concerning the installation and use of the dock. Please also carefully familiarise in the safety instructions as well as the winter preparations to be carried out.

Before installing EasyBoatRoller, make sure that all the parts shown in the spare parts list and the accessories you ordered are included in the delivery.

The beams and other metal components of the EasyBoatRoller are made of hot-galvanised steel. The appearance of the galvanised surface may vary among different production batches and storage methods, and occasionally there may be significant colour differences between different components. At the factory, the beams are often stored outdoors in which case they easily darken as a result of atmospheric humidity. The varied appearance of the beams does not however affect their duration of service life.

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# INSTALLATION INSTRUCTIONS

## Preparation work

The base of EasyBoatRoller does not need to be level but EasyBoatRoller is installed by adapting to the terrain in as straight of a line as possible (see the pages 7-8). The slight variations to the declination of the terrain or unevenness do not matter because there are horizontal beams at the joints of the rails which are used to support EasyBoatRoller. In uneven or rocky terrains, you can use e.g. planks or concrete slabs, or adjustable feet that are available as an optional accessory, to provide more support. Thus, the rails are only supported at the locations of the horizontal beams, and the remaining parts can be suspended in the air.

On fine sand beaches or a soft shores, sinking of the rails must be prevented. The rails must be supported in such a way that sand or mud cannot prevent the wheels of the carriage from turning. When installing on rock, the movement of the dock is prevented by drilling attachment holes to the rock. The holes are drilled at the location of the holes at the ends of the horizontal beams, and the dock is attached to them with e.g. anchor bolts.

There must be enough steepness on the shore that the rails have an inclination of at least 7 cm/m. Otherwise, there is a risk that the carriage will not roll into the water well enough. As an accessory, a 2-way winch system is available to enable the winch pull downwards as well.

## Tools required for assembly

- 19 mm (0.75") socket wrench (installation of the rails)
- 10 mm (0.39") socket wrench (installation of the stairway's planks)
- 13 mm (0.51") socket wrench (installation of the electric winch)
- 14 mm (0.55") socket wrench
- 17 mm (0.67") socket wrench (installation of the carriage's planks)
- Cordless drill and ratchet
- 5 mm (0.2") drill bit (installation of planks of carriage)
- Spirit level
- Tape measure

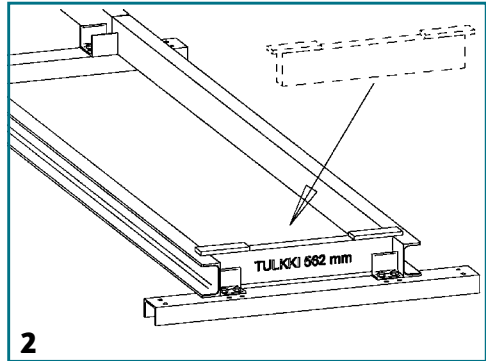
## Assembly of the rail elements

Place long planks or boards parallel with the rails close to the shoreline, on top of which you will assemble the rails. Begin assembly by connecting the bottom rail pairs that go in to the with the horizontal beams using M12x25 bolts (picture 1).



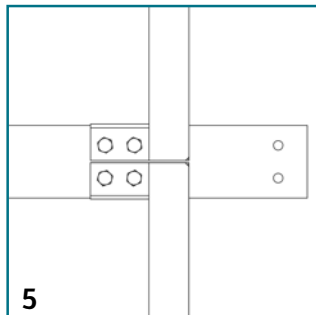
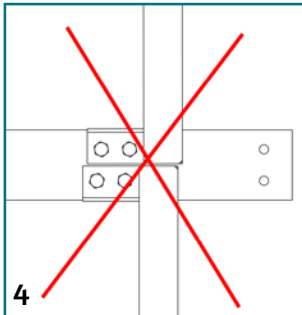
Use the supplied installation guideline in order to obtain 563 mm (22.17 in) as the distance between the rails (picture 2).

Check the cross-measure of the pair of the rails before final tightening of the bolts.



**NOTE!** Carriage stoppers are also fixed to the bottom horizontal beam (picture 3).

**IMPORTANT!** Tighten all the rail's bolts securely!

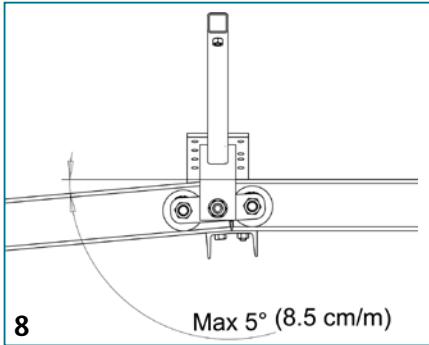


To prevent the wheels of the carriage from getting stuck at the joints of the beams, install the beams without any staggering (drawings 4 and 5).

Attach a 200 l (50 gallon) barrel or other floating element on top of the rails. Install the next rail pair and slide the rails towards the water. Continue in the same way until the entire rail has been assembled and the end of the rails that is in the water is floating in the correct place. When the rails are at the right place and aligned, detach the floating element in which case the rails will sink to the bottom. Support the rails from under the joints so that they cannot sink and they remain straight.

A transfer system for rails (no. 204117, picture 5) is also available as an accessory, which enables the rail elements to move easily.





On models equipped with two carriage axles/v-frames (VR-500, VR-700, VR-1000 and VR-2000), joints can be placed at an angle according to picture 9.



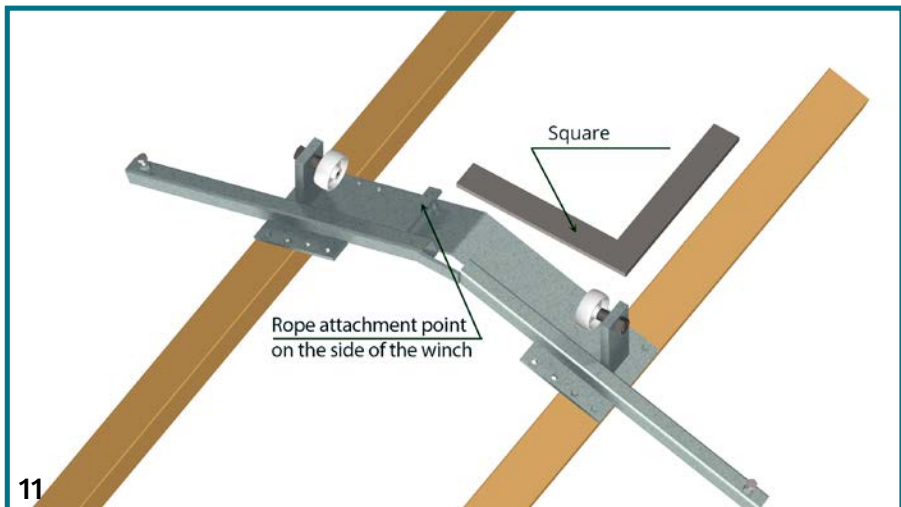
Finally, you can confirm the sideways level of the rails by using a spirit level.



## Assembly and installation of the carriage

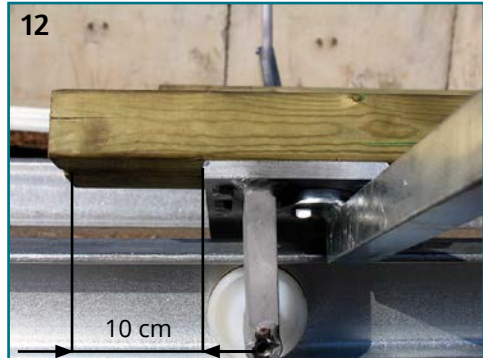
Before the assembly of the carriage, please see the pages 12-13, so that the possible need to heighten the carriage etc. are taken into account.

The easiest way to assemble the carriage is upside down as shown in picture 11. The v-frames are attached to the planks with lag bolts (10x50 mm) (pre-drill with a 5 mm drill so that the planks do not split). Place the top v-frame on the side of the stairs in such a way that the rope attachment point is on the side of the winch attachment point. Fix the planks in place with e.g. screw clamps before attaching the planks. Use a bracket as a guide. Check the carriage's cross-measure before tightening the screws.

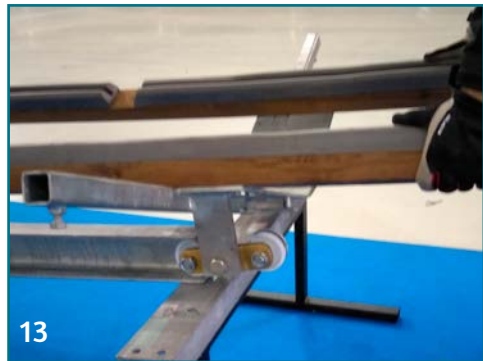


The planks of the carriage can be installed to the inner or outer holes according to the shape of the boat's hull, taking into account the raised boards etc., so that they are fixed at the same location on both sides. In most cases, the best place for the planks is at the outer holes. The planks are placed in the inner holes only if the boat or its hull is particularly narrow.

Attach the planks about 10 cm over the v-body on the motor side (picture 12). The v-body on the winch side is attached so that it is placed on a flat area of the boat's hull, before the bow of the boat begins to curve up (see the picture 14).



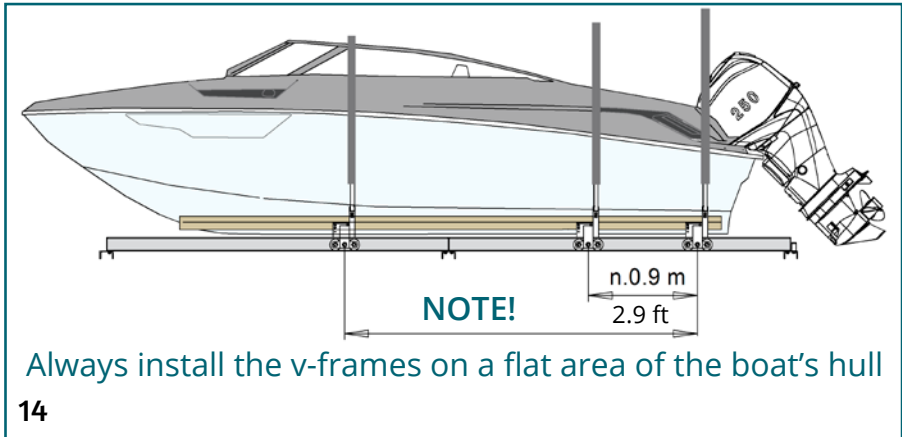
When the carriage has been assembled, push the carriage's v-bodies from the top of the rails in to place so that the wheels go in to the U-beams (picture 13). **Prevent the carriage from sliding into the water during the installation!**



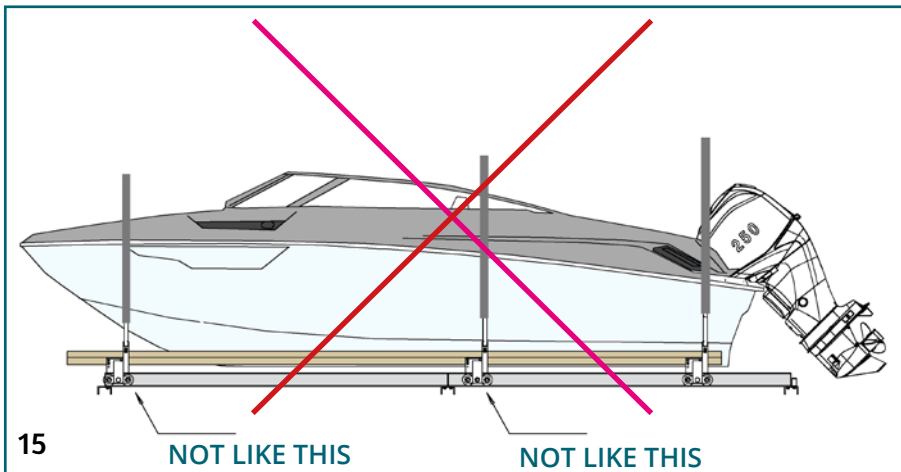
If the front v-frame is attached to the planks of the carriage too far forward, the planks will bend from the weight of the boat. In this case, move the front v-frame backwards.

## Carriage with three axles

(Model VR-3500)



Install the v-frames equipped with wheels according to picture 14. The distance between the outermost v-bodies is within the flat area of the boat's hull. Place the middle v-body approx. 1/4 from the rearmost v-body to the front v-body.



## Heightening the carriage

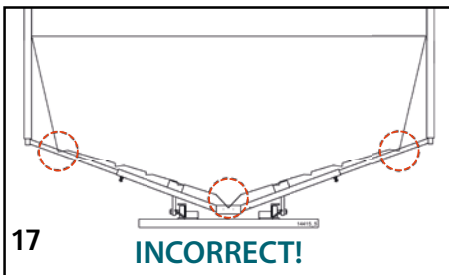
### Taking into account the shape of the boat's hull

Heightening of the carriage is needed in the following situations:

- the shape of the bottom of the boat is steep (the keel comes close to the ground level)
- the chines of the boat are wide
- the v-angle of the bottom of the boat is very small at the back of the boat

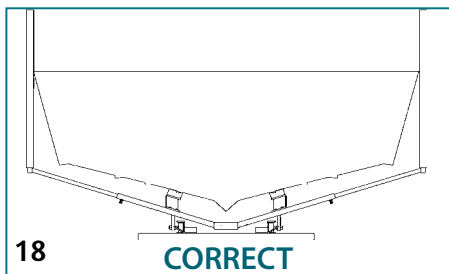


When heightening, a heightening set made of steel (100, 200 or 300 mm) that is available as optional accessory, is used.



#### INCORRECT:

The keel of the boat **MUST NOT** touch the v-body, nor the side guides the chines!

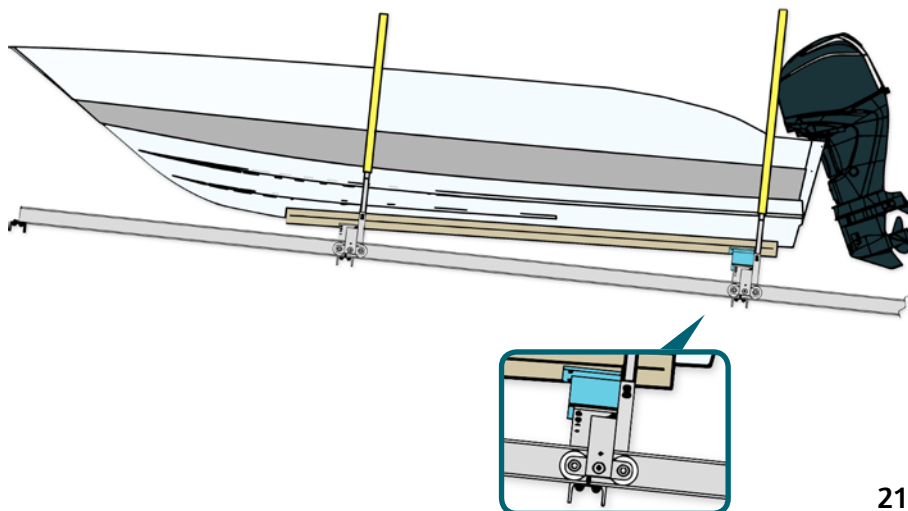
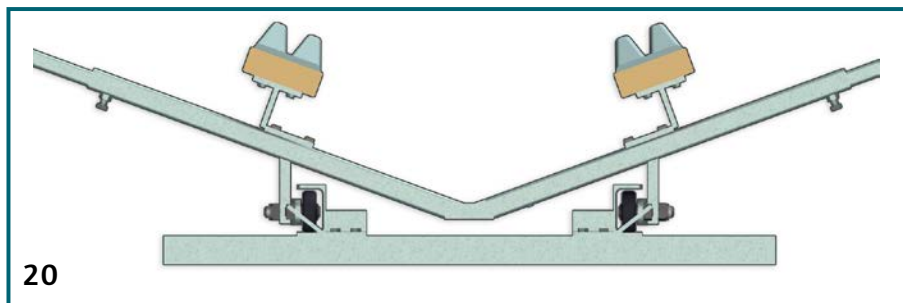


#### CORRECT:

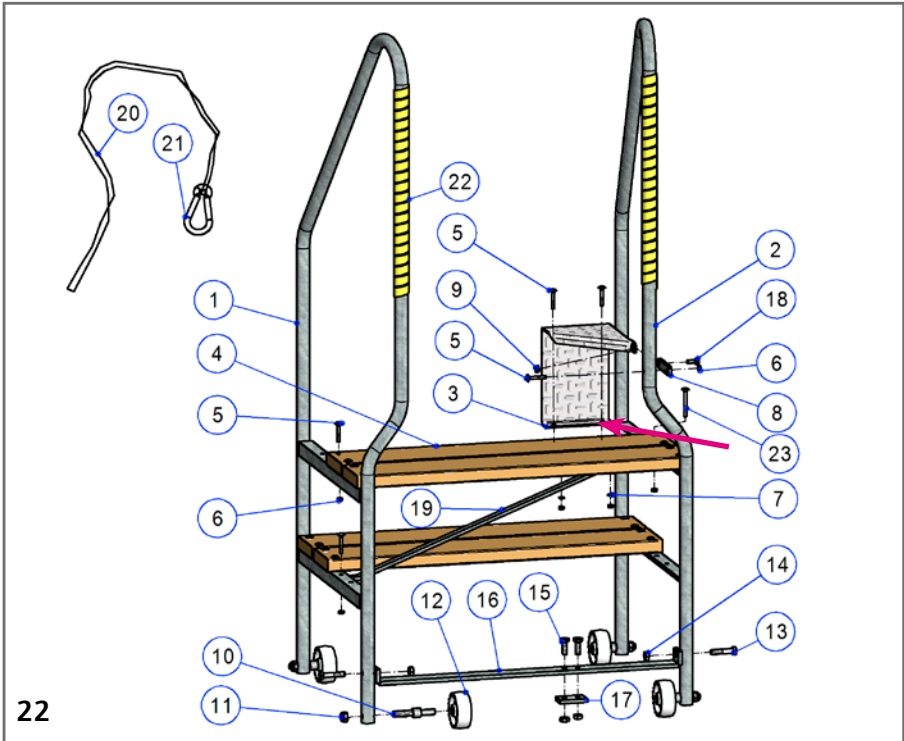
The boat has been lifted with the heightening blocks sufficiently high.

## Heightening the rear of the carriage at a steep shore

If the slope of the shore is more than 10 cm/ meter, we recommend an optional heightening set (100 mm, 200 mm or 300 mm), which is installed on the end of the carriage on the water side. The boat gets into a better position when the rear of the carriage is heightened.



## Assembly of the staircase



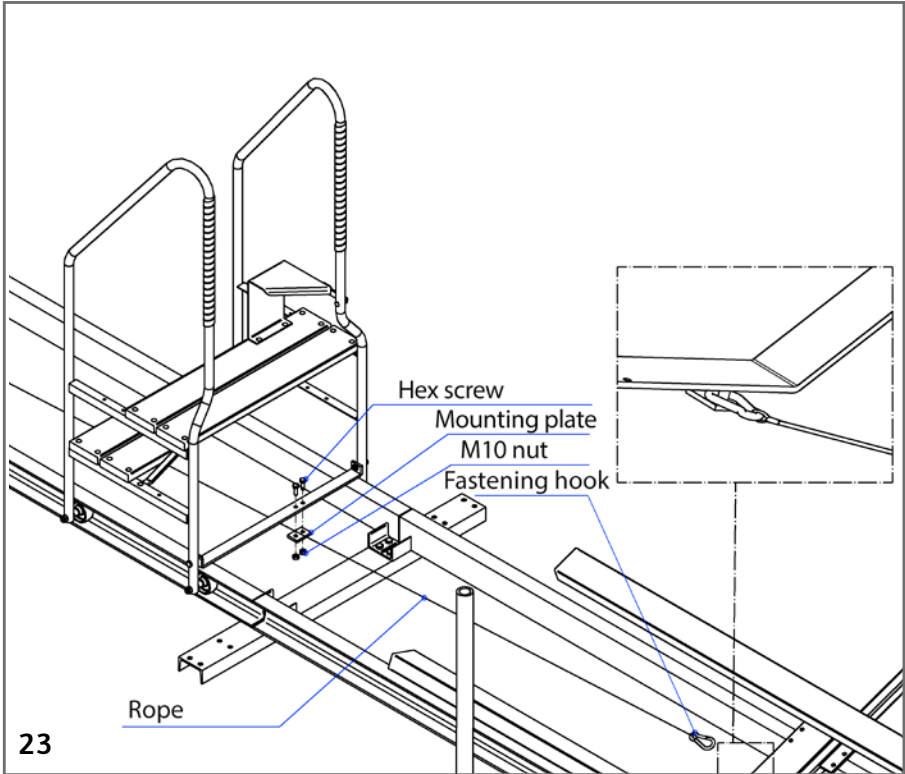
Attach the step boards lightly and put the wheels in place. The uppermost step board can be attached to the front or rear part of the stairs (see arrow) with consideration to the shape of the boat's bow.

Place the part (16) between the frame tubes and fasten the step board of that side. The space of the other side will be automatically correct when the part (16) is attached between the frame tubes. Then place the rest of the steps in place. Tighten screws in the step boards. Finally fasten the step plate (part 3) if a shape of the boat's bow allows it. Finally, attach the support bar (19).

From time to time, check that the screws have not loosened.

Nro	Part	Size	Pcs
1	Staircase frame, right		1
2	Staircase frame, left		1
3	Additional step plate		1
4	Plank, impregnated	28x120	4
5	Locking screw	M6x40	19
6	Hex nut	M6	21
7	Plate washer	M6	2
8	Socket screw		1
9	Hex nut	M8	1
10	Wheel axle		4
11	Hex nut, nyloc	M12	4
12	Wheel	PO 80/12G Polyamide	4
13	Hex screw	M10x50	2
14	Hex head nut	M10	4
15	Hex head screw, full thread	M10x40	2
16	Relay rod		1
17	Fixing plate		1
18	Hex head screw, full thread	M8x20	1
19	Support bar		1
20	Rubber tensioning rope	8x1000	1
21	Carbine hook	11x120	1
22	Cover spiral		2
23	Locking screw	M6x60	1

## Attaching the staircase to the carriage



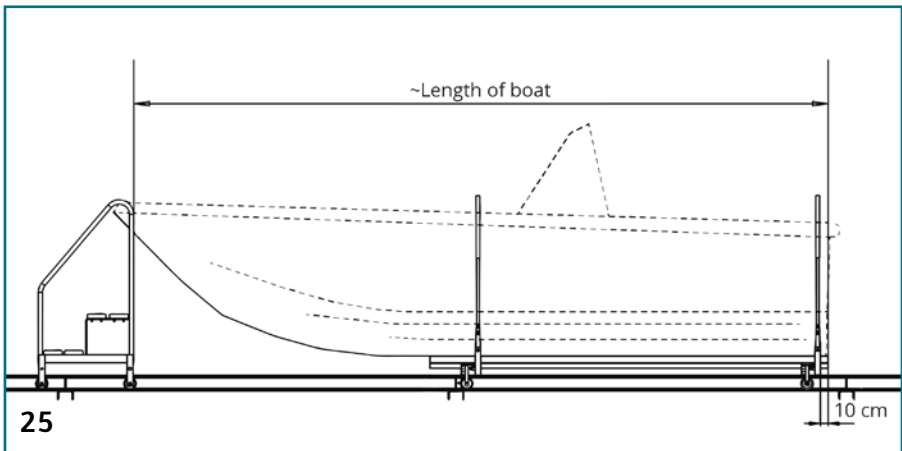


## Placing the staircase on to the rails

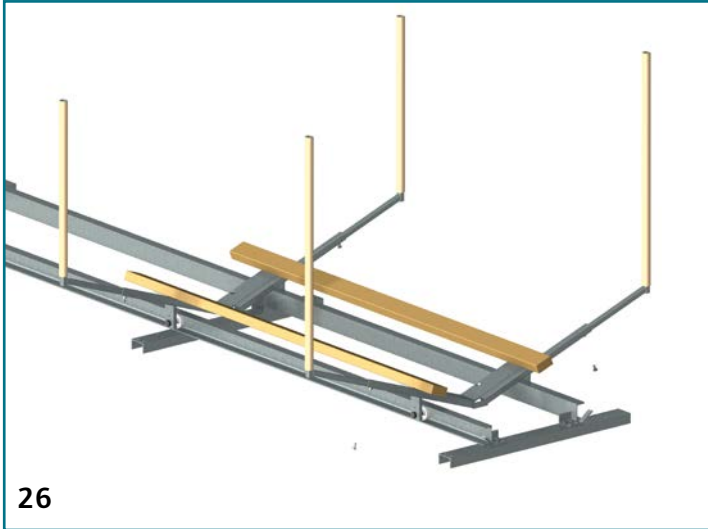
Push the wheels of the staircase from the top of the rails between the u-beams (picture 24). The distance of the stairway from the water side end of the carriage is approximately the same as a length of the boat (see the drawing 25).



Attach the rope of the winch to the staircase (see picture 23). See the more detailed location of the staircase on page 24 under "Adjustments".



## Side guides



Adjust the width of the side guides according to the width of the boat and tighten the screws.

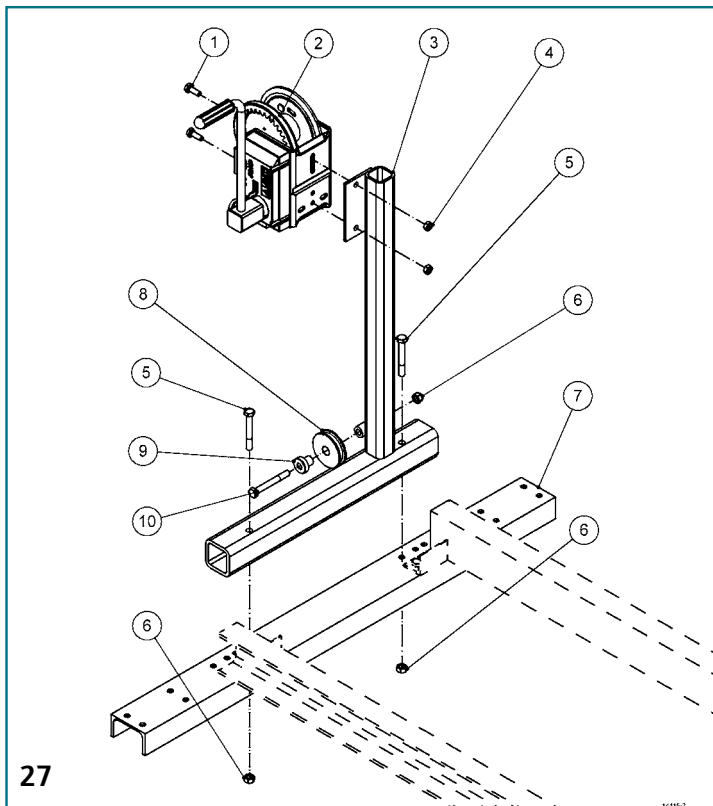
The rear guides are adjusted so that the boat can just about fit between them.

The front guides are adjusted so that they slightly touch the sides of the boat when the boat is at the right longitudinal position (the stern is level with the rear end of the carriage's planks) on the carriage.

If you have the optional third side guide unit (without wheels), it will be installed halfway between the front and rear guides.

## Installation of winches

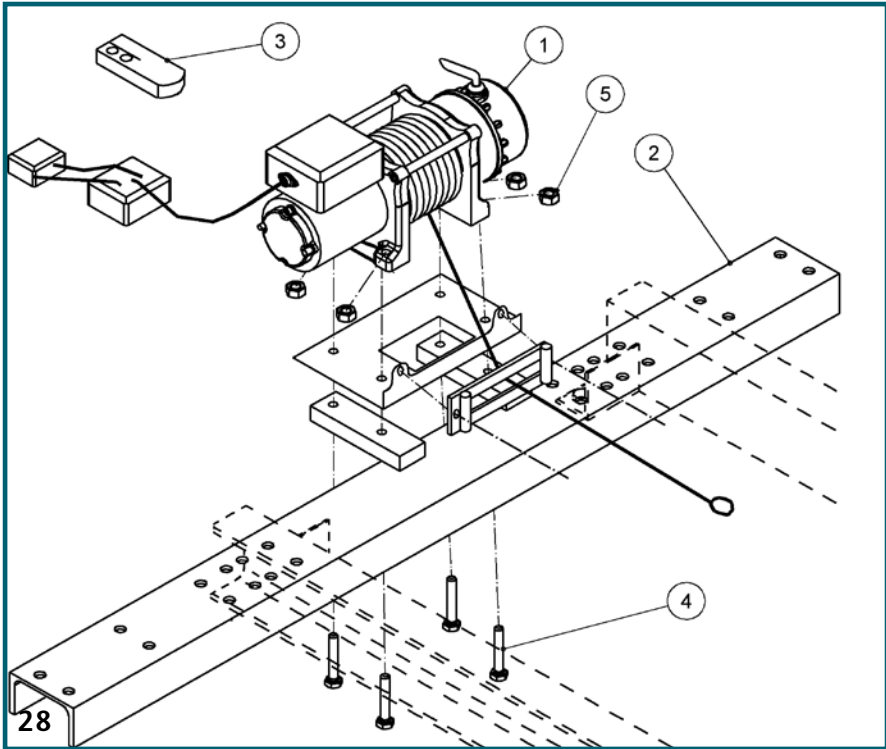
### Installation of the hand winch



Attach the mounting beam of the winch (part 3) to the horizontal beam of the top end (part 7) with two M12X90 hex screws (part 5) and two M12 nuts (part 6). Attach the spur (part 8) with the help of bushing (part 9) and the hex screw M12x100 (part 10) and lock them with the M12 nut (part 6).

Attach the winch (part 2) with the M10x30 hex screws (part 1) and lock with the M10 nuts (part 4).

## Installation of the electric winch (Warrior Ninja)



Install the mounting beam (part 2) of the electric winch (part 1) to the top end of the rails. Place the black mounting plate between the mounting beam and winch. After that, mount the fairlead to the mounting plate. Attach the winch to the mounting beam with four M8x45 screws and nuts (part 4) as shown in the picture. Part 3 is the winch's remote control.

Ensure that the winch's rope reels from the lower side of the drum. Place the protective plastic piece of the rope between the stairs' battens before attachment.

**NOTE!** The receiver of the remote control must be protected from moisture! Choose a place where it will remain dry.

Make sure that the rope is wound evenly on the drum from side to side. If the rope sinks into the lower layers, the lower rope layers are too loose on the winch drum.

**WARNING! Never turn clutch to the “CLUTCH OUT” position when the boat is in the dock! Turning the clutch causes the boat to plunge into the water uncontrollably.**

If the pull distance is long or the ascent angle is steep, ensure that the winch does not overheat. The winch has overheated, if you cannot keep your hand on the winch motor and transmission. In this case, the pull must be carried out in several phases and the winch must be allowed to cool down in between.

When the use of EasyBoatRoller ends in the autumn, protect the electric winch carefully. Take the receiver of the remote control indoors over the winter.

If the battery of the electric winch's remote control runs out, or the wireless remote control no longer works, connect the wired remote control to a power source until the fault has been rectified.

**Battery types to be used in the remote controls:**

- Warrior Ninja (standard remote control) or Trident: A23
- Winchmax Military: 2 x 2032

**NOTE, Warrior Ninja's remote control:** Always turn off the standby power of the remote control after use so that the battery does not run out too quickly.

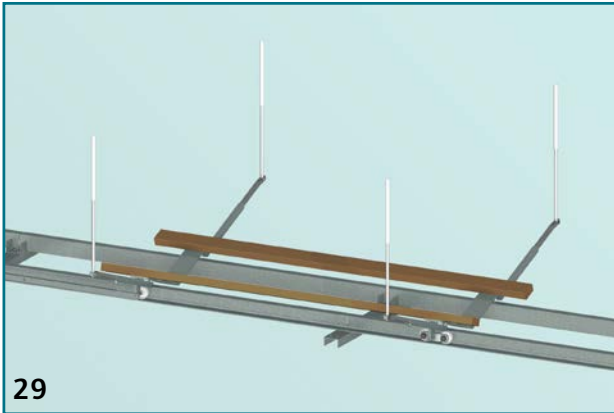
**Battery recommendations:**

- When using a maintenance charger etc.: min. 60 Ah, min. 650 A
- When using a solar panel: min. 100 Ah, min. 650 A

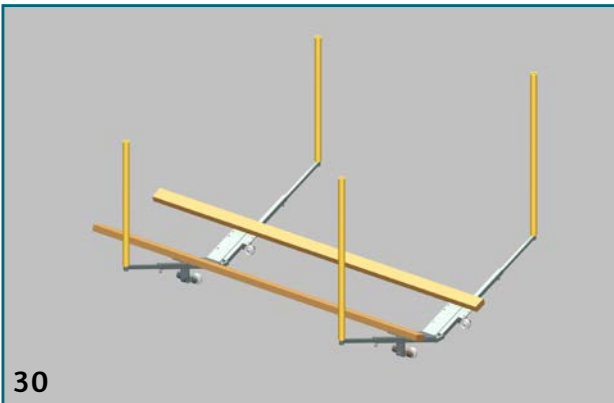
**NOTE!** The battery for the winch is not included in the delivery as standard.

## Installation of tandem wheels

### Models VR-700, VR-1000



In VR-700 model tandem wheels are installed only to the rear axle of the carriage.



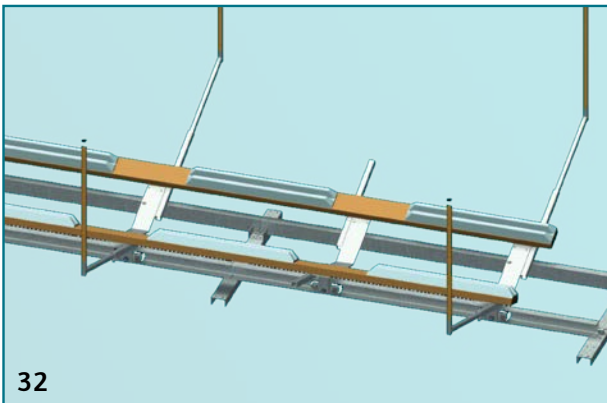
In VR-1000 model tandem wheels are installed to both carriage axles.

## Models VR-2000 and VR-3500



31

In VR-2000 model POM tandem wheels are installed to both carriage axes.

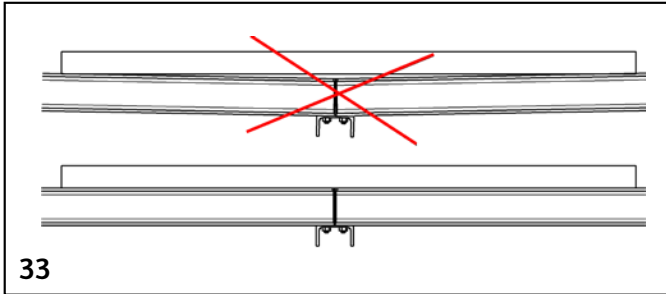


32

VR-3500 model has three carriage axes (all with POM tandem wheels).

A third set of side guides can be added to the middle axle (accessory).

## Supporting the rails



The rails should be assembled as straight as possible at the assembly stage with e.g. a guide rail. Avoid joints that sink down in particular. The straightness of the rail line is especially essential on model with three carriage axles (VR-3500).

Check the straightness of the rails and the strength of the supports you have installed under the horizontal beams.

## Adjustments

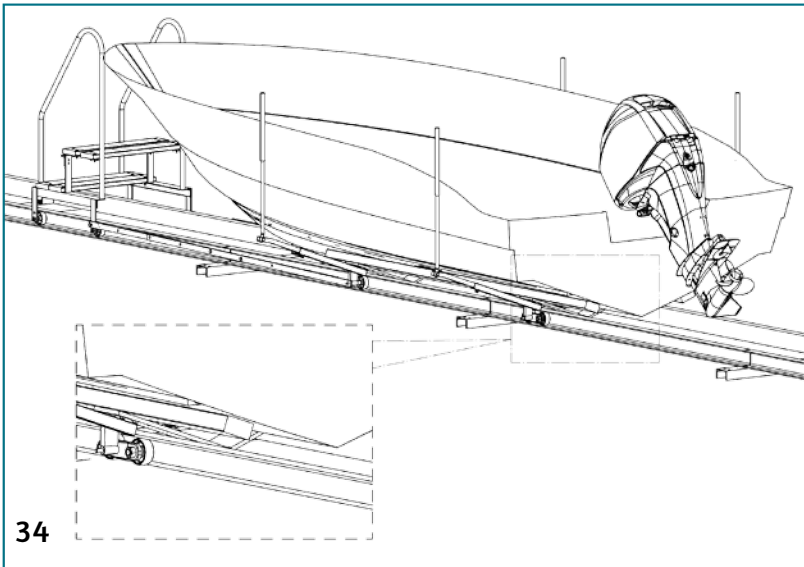
Make a rough adjustment before driving the boat into the carriage for the first time:

1. Tighten the bow step on the winch rope so that the distance of the step from the stern of the carriage is just under a meter less than the length of the boat.
2. Side guides: Adjust the side guides slightly wider than the maximum width of the boat.

Clean the rails and slide the carriage into water. Drive a boat carefully onto the planks of the carriage and check whether the bottom of the

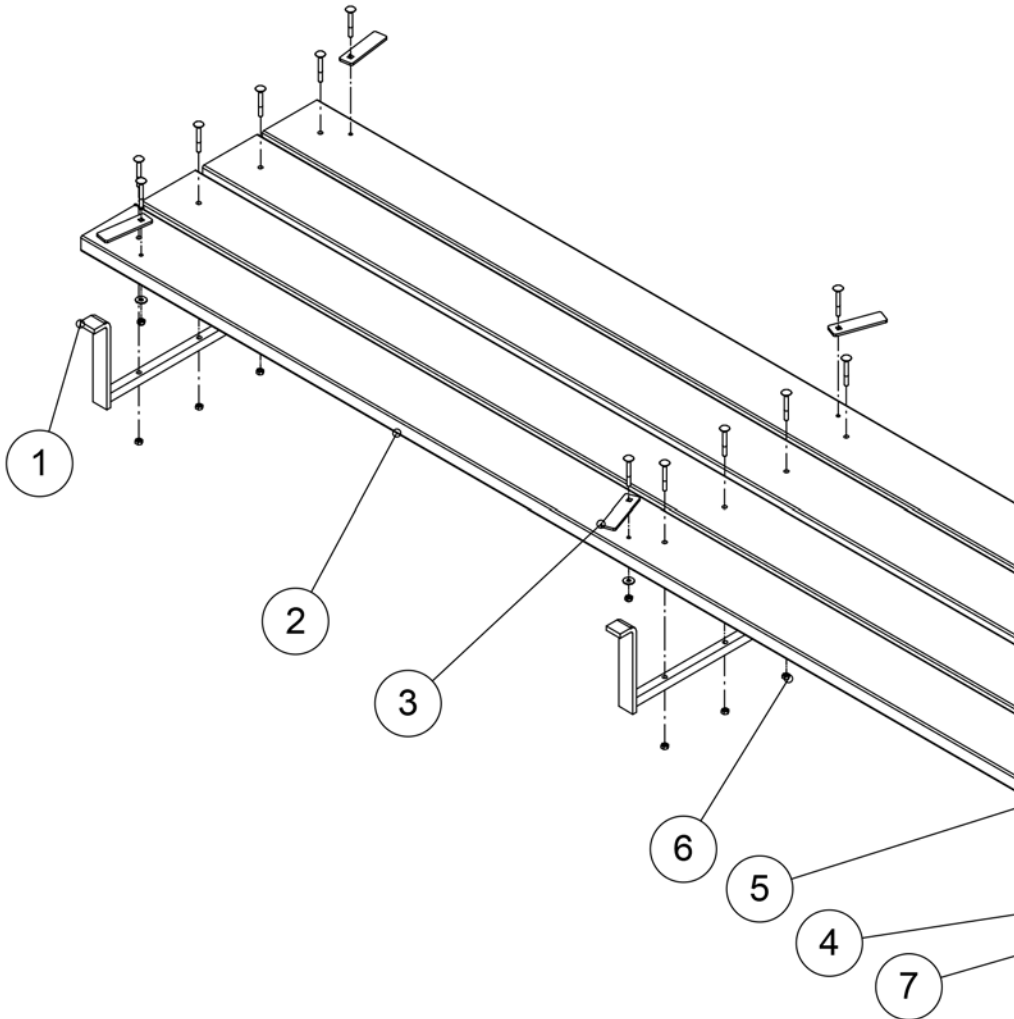


boat lands on them properly. If necessary, change the place of the planks. Also check to make sure the bottom of the boat is not damaged when you drive it onto the carriage. The outboard motor must be lifted so that it does not strike the dock. Drive the boat on top of the carriage so that the ends of the planks stay at the level of the stern or a little inside. If necessary, adjust the distance of the staircase from the bow of the boat.



Attach the boat to the staircase using a flexible rope on the railing. Attach the other end to a bollard or bow loop on the deck of the boat. **Adjust the rubber rope tight enough, so that it pulls the boat's hull against the stairway's handrails, when the boat floats on the carriage.**

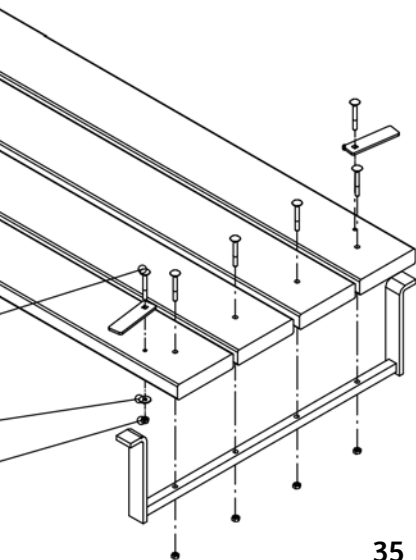
## Installation of walking platforms (accessory)



Drill three 8 mm holes in the edge planks of the walking platform for the installation of the locking plates (part 3). Drill the holes on the same side at a distance of 30 mm from the outer edge of the planks and at a distance of 100 mm from the ends of the planks. Drill the holes of the middle locking boards at a distance of 50 mm from the middle frame bar.

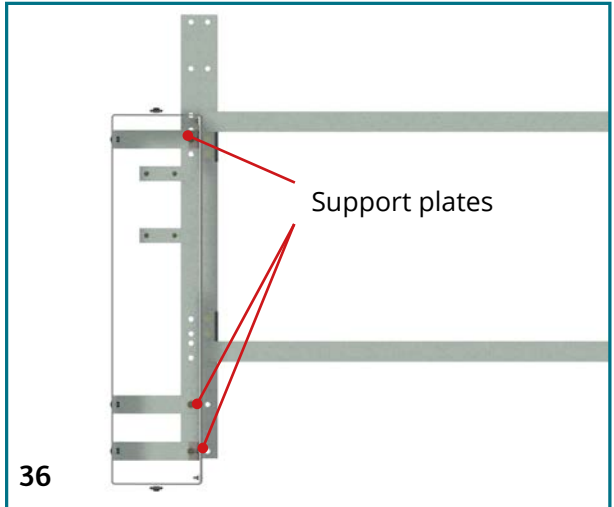
Fix the frame bars (part 1) at a distance of 50 mm from the ends of the planks and at the centre of the planks as shown in the picture. Drill 6 mm holes for the fastening screws in the boards. Use M6x60 mm lock screws (part 5) for mounting. After that put the locking plates (part 3) by using the M6x40 head screws (part 5) to the holes that have been drilled previously. Use the washer (part 4) and fasten it with a nut (part 7) so that the lock plates still go round but are as tight as possible.

Turn the lock plates away before you set down the walking platform between the rails. Then turn the locking plates below the u-beams against the frame (part 1). The locking plates are meant to prevent the walking platforms to raise so that they could not hit the carriage when the boat is moving.

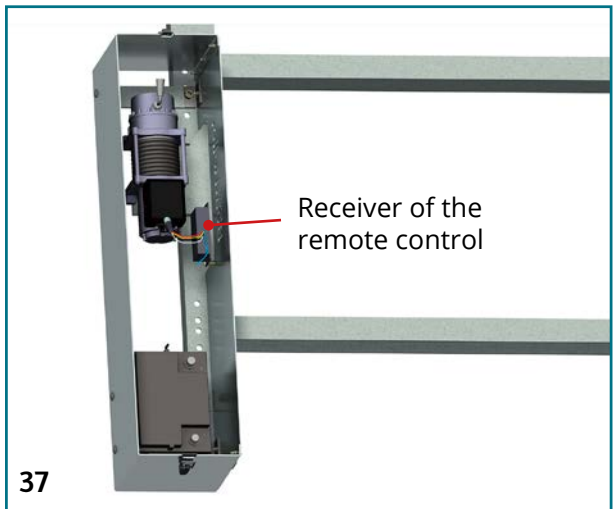


## Installation of the storage box for winch/battery (accessory)

The storage box for winch/battery is mounted with three support bars as shown in the picture.



The receiver of the **Warrior Ninja winch's** remote control is mounted to the inside of the housing with one bolt using the hole located on the front wall of the housing at the site of the opening. The receiver must have direct visibility from the boat.



The receiver of the **Winchmax Military winch's** remote control is integrated in to the solenoid box that it fixed on top of the winch.

A normal 190-mm-high battery fits inside the box.

# OPERATING INSTRUCTIONS

## Driving a boat onto the dock

Drive the boat carefully onto the carriage so that the bow of the boat touches the stairways.

Attach the flexible rope to the boat's bow in such a way that the rope pulls the boat against the stairway's handrails. The boat is ready to be winched up now.

## Lowering a boat into water

Load the boat (do not exceed the maximum carrying capacity) and lower the boat into water with the help of the winch. When the boat become free of the carriage and floats freely, stop the lowering. Remove the rope from the bow of the boat. The boat is ready to go now.

## Maintenance

It is recommended to put underwater grease into the hub of the wheels each spring at the start of the boating season. Recommended vaseline: CRC Super Adhesive Grease KP2 N-30, DIN 51502 or equivalent.

The planks of the carriage should be replaced if they are cracked and can damage a boat. Use the right length of screws for mounting so that they do not go through the planks and damage a boat.

Replace the steps of the stairway in time if they are damaged. Remove sand, grass and other dirt from rails as needed. Check the attachment of the rope of the winch in the v-body of the carriage.

Check from time to time that the rails are straight enough, and that the carriage effortlessly slides on the rails. Raise or fix the supports below the cross beams, if they have sunken.

## Safety

Check periodically to make sure the cross supports have not sunk or moved, and that the rails are in alignment.

Before launching and landing a boat, make sure there is nothing in the way of the wheels. If the carriage gets stuck on the rails, **do not move it by force**; find out the reason and remove the obstacle. **Winches used in EasyBoatRoller are strong and can break the device or a boat if they are used to pull a boat by force.** Make sure nobody is in front or behind or otherwise dangerously nearby whenever you are loading or lowering a boat.

Do not leave the boat supported on the dock using only the winch's rope. Tie the boat with a rope or lock in such a way that it cannot come loose even if the winch's rope fails. Never place yourself or anyone else behind the boat, when the boat is only held by the winch's rope.

Check the condition of the winch rope. In normal use, the surface of the rope becomes lint and that is not a problem. If there are broken strands in the rope, the rope must be replaced with a new one.

Tie the boat so that the wind cannot shake it, while it is on the dock.

If the winch requires maintenance, launch the boat first into water. If it is not possible, prevent the carriage from moving during maintenance.

Do not let children use the winch of the dock without supervision. Supervise the movement of children and people in poor condition from and onto the boat. Instruct adults on how to use the dock.

Do not let anyone stand in the boat while the device is being moved on the rails.

---

**Read the operating instructions of the winch.**

Do not exceed the maximum carrying capacity.

**NOTE! Never turn the release handle, if the boat is docked.**

## Preparations for the winter

EasyBoatRoller can be left in place over the winter at sheltered shores. Even in this case, it is recommended that the four mounting bolts at the joint closest to the water line are removed so that the rail can be separated in to two parts (see method 2 below). If it is a case of a large bay or otherwise challenging ice conditions, or EasyBoatRoller has been attached to rock, the part remaining in water must be removed in the autumn at the end of the boating season. The transfer kit available as an accessory facilitates the moving process.

Determine the lowest joint from the water line, which will certainly remain on dry land and safe from ice. Detach the bolts of this joint. The following can be done, for example, with the detached piece:

**Method 1:** You can pull the entire part of the rails remaining in water with a winch or transfer set to dry land for storage. In the spring, the rails are moved back into the water and put in place with, e.g. a transfer set or barrel, and connected to the rails.

**Method 2:** You can leave the detached piece of rails freely to the bottom under the ice cover, unless there is a danger that the ice can damage or move them.

**NOTE!** Always ensure that the carriage remains upright during the winter, even if you do not leave the boat on the device. The carriage must be raised high enough, so that it is not at risk of remaining in water/ice, even if the water level rises during the winter!

Ensure that no heavy snow load accumulates on top of the boat during the winter. From time to time, remove any snow from on top of the boat. Also ensure that the boat remains straight in the centre of the dock, and cannot tilt to one side.

### **The electric winch**

In the autumn when EasyBoatRoller is no longer used, take care to cover the electric winch and solenoid. Take the remote control's receiver and the remote controls indoors for the winter.

### **Preparations in the spring before boating**

If EasyBoatRoller has been in the ice over the winter, in the spring, ensure that the joints' supports have remained in place. If necessary, support them again. At the same time, check the condition of the supports, if you use timber or other decaying/consumable material as supports.

If you have detached the rails remaining in the water for the winter, remember to support the joints well in the spring after reconnecting the rails. When the connections of the rails have been supported well and the rails are as straight as possible, boating can proceed smoothly throughout the summer.

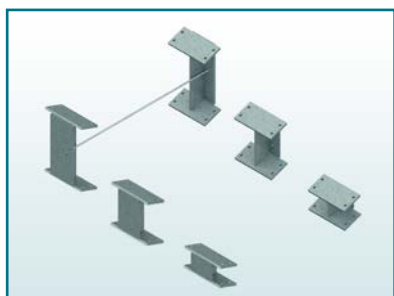


## Accessories for EasyBoatRoller



### Protection box for winch / battery

*You can fit the winch, battery, charge and electronics in the protection box, protected from rain and dirt. The box is made of aluminium and can be locked.*



### Heightening set of the sledge

100/200/300 mm - 4 / 8 / 12 in

*A heightening set is needed if the shore is steep. The raising set can be used to raise the rear end, in which case the boat is in a better position on the dock. The heightening set is also needed when the v-angle of the boat's hull is particularly steep or the keel is high. In this case, the heightening set is installed at both the front and rear axle.*



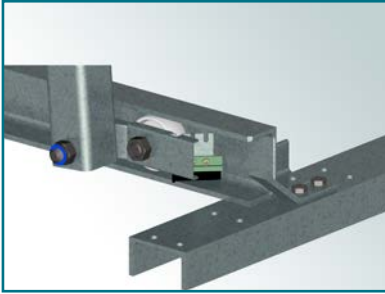
### Transfer system for rails

*The moving device facilitates the movement of rails that are in water, in cases where the rails cannot be fully left in water over the winter due to challenging ice conditions. The transfer system for rails can be used to effortlessly move 2-3 rail pairs to dry land at once. To move more than three rail pairs at once, two transfer systems are needed.*



### Adjustable support legs

*The adjustable legs facilitate the installation of the rails, particularly in uneven terrains. The adjustable legs are connected to the rails' joints, and they allow the support of the joints to be easily and accurately adjusted to the right height. The adjustable legs also allow joints that may have sunk over time to be easily lifted. The adjustable legs are manufactured in three different standard lengths.*



### Wiping brushes, 2 pcs

*Wiping brushes prevent sand, gravel and small stones from accumulating in the rails. The wipers move along with the tray wiping the rails clean.*

*NOTE! Suitable for tandem wheels (= models VR-700, VR-1000, VR-2000, VR-3500).*



### MF-44 Bumpers of the sledge planks MF-60 Bumpers of the sledge planks

*Particularly for glass fibre and plastic boat to protect the hull of the boat. Size 940x85x44 mm. Material weatherproof plastic (Bacell™). We recommend installing cushioning for the full length of the planks.*



### Solar panel + charging controller with leg

*Solar panel + charging controller for charging the battery. The package includes a 1.5-metre-high leg to fix to the dock, which can be positioned in a chosen direction. Adjustment 360 degrees. Wiring is ready to connect. Foot made of hot-dip galvanised steel.*



### Third side guide unit

*Third side guide unit for EasyBoatRoller models equipped with two carriage axles. Recommended especially for windy shores and for boats over 5 meters long.*



*Have fun boating!*

**EASY**  
**BoatRoller**

Manufacturer:

**Autorobot**  
— FINLAND OY —

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