
mad®
EasyLoad
INSTALLATION INSTRUCTIONS

EasyLoad

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EasyLoad

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1 Introduction

Please carefully read the manual before you install the EasyLoad. The EasyLoad is a lifting device and, therefore, it is very important that the installation instructions are followed precisely to prevent damage to the vehicle and injury to the user.

Always contact MAD should there be any doubts or issues that are unclear during the installation as well as product flaws.

1.1 Definitions

1.1.1 **Orientation of the EasyLoad**

The rear side of the EasyLoad is the side where the winch can be found.

Rear side **Front side**

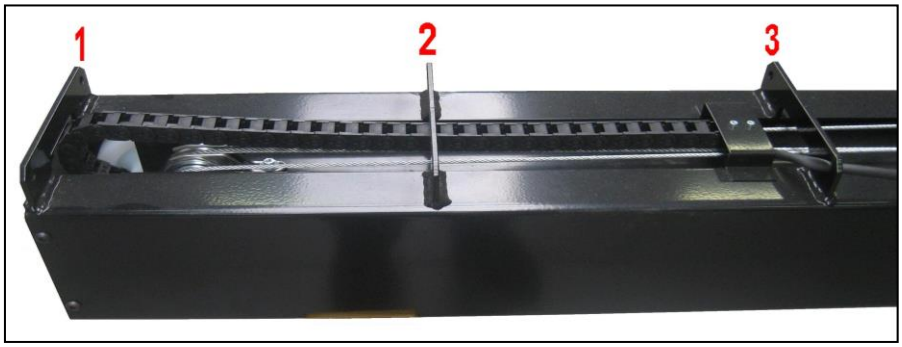
1.1.2 **Front frame** The frame in which the EasyLoad will be suspended that is installed at the area that is most at the front of the vehicle.

1.1.3 **Rear frame** The frame in which the EasyLoad will be suspended at the rear of the commercial vehicle.

1.1.4 **Symmetrical installation**

This is deemed to mean that the EasyLoad must be secured in the centre of the frame's beams. It is, however, possible to asymmetrically install the EasyLoad (i.e. not in the centre of the loading space). The advantages of this are that there is more walking room and that getting into the vehicle is easier both at the side and rear.

1.1.5 **Connection bridges** They are the vertical sheet sections on top of the EasyLoad that are used to secure the EasyLoad to the frame. The front 3 bridges can be used for this with regard to the EDF2275. This is only the first 2 with regard to the EDF1900 (shown below). The used numbering is as follows:



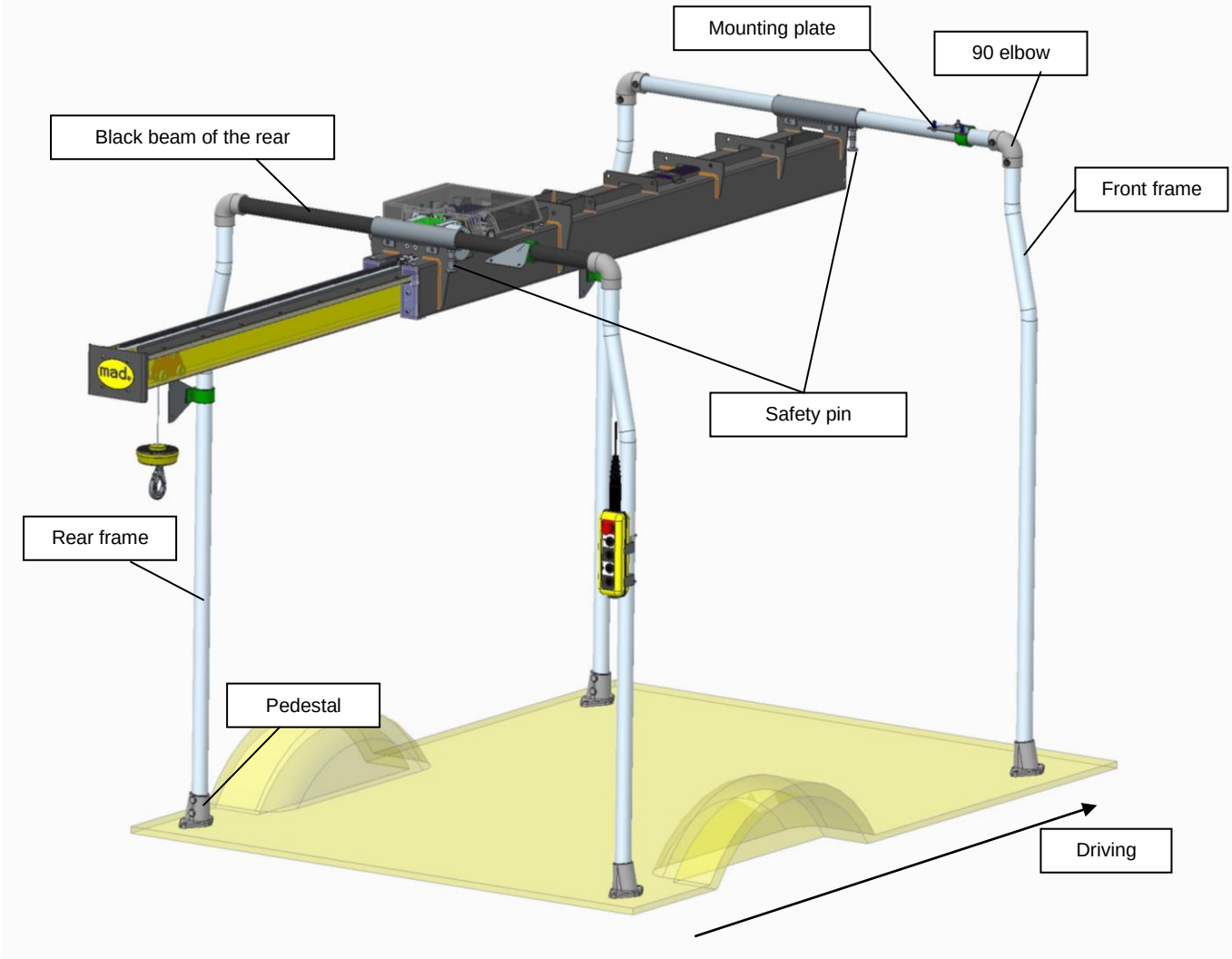
1.1.6 **Connecting pieces** Parts in the frame with which the frame tubes are interlinked or secured to the vehicle

Pedestal,

90° elbow,

Attaching device,

1.2 Overview



2 General safety instructions

2.1 Carefully read all instructions before use.

2.2 The EasyLoad must have been installed by an organisation with sufficient expertise and in accordance with the supplied vehicle-specific installation overview for the frame. The installation overview forms an integral part of these installation instructions.

2.3 Have any damage repaired by an expert. The guarantee will be null and void should incompetent repairs and modifications be performed to the EasyLoad.

2.4 ALWAYS use the handbrake and ensure that the loading space is completely empty.

2.5 The weight of the EasyLoad demands that it be lifted into the vehicle and placed at the correct installation height by using a lifting device.

2.6 If such a lift is not available, the EasyLoad must be lifted and/or moved by at least 4 people.

2.7 ALWAYS use straps to prevent injury and/or damage if the EasyLoad is being installed in the frame without using a lifting device. Uniformly pull the straps in turn when lifting. Always keep the EasyLoad horizontal.

2.8 Always try to keep the hoisting cable under tension when installing the EasyLoad by freely suspending the weight above the hoist hook. This will ensure that the cable does not buckle and/or run off the guided wheels.

2.9 ALWAYS place the EasyLoad on trestles or two beams and NEVER directly on the floor/vehicle floor. This may damage the hoisting cable.

2.10 When drilling in the vehicle, ensure that there are no wires behind the panel. If there are wires, try to move or remove them temporarily.

2.11 Remove any sharp edges and apply an anti-corrosion product after drilling.

2.12 Also ensure that cabling is not clamped or damaged when tightening bolts.

3 Installing the frame

3.1 General points for attention

3.1.1 When determining the frame dimensions, the following has been assumed:

3.1.1.1 A 12 mm thick wooden floor. If there is no wooden floor or if a different thickness has been used, this may mean that the length of the frame tubes must be modified and/or the difference in height must be rendered.

3.1.1.2 A vehicle without furnishings and fittings and/or panelling except for the aforementioned wooden floor. For example, the optional protection around the wheel housing may lead to the frame position having to be adjusted.

3.1.1.3 A location of the frame that is the furthest towards the rear in the commercial vehicle. In some cases it may be desirable to place the frame somewhat more inwards to ensure that you end up closer to the drop end when the full 1200 mm extension is not required.

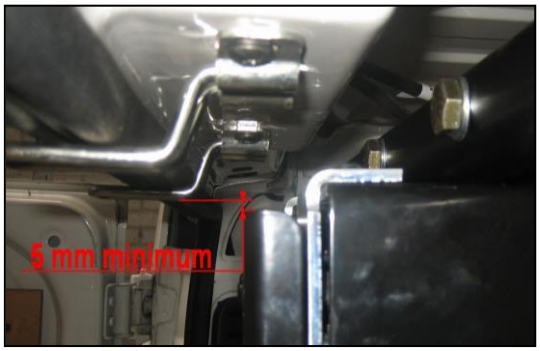
3.1.2 If the length of the frame tubes must be adjusted, implement a new marking after sawing to determine whether the tube is sufficiently slid into the connecting

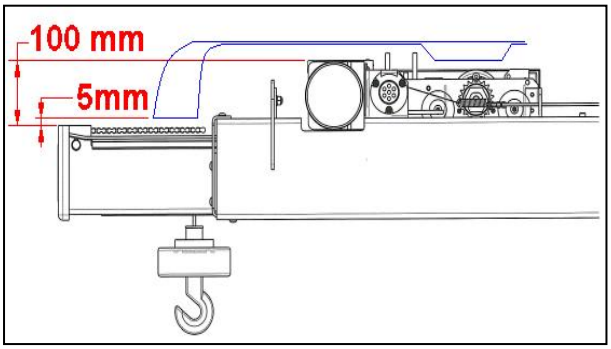
piece. A line or scratch must be put at “x” mm from the new cut. Where “x” is:

- 35 mm, if the tube slides into a connecting piece with one socket head screw.
- 75 mm, if the tube slides into a connecting piece with two socket head screws.

3.1.3 The maximum height at which the EasyLoad will be suspended is in part determined by the following factors:

3.1.3.1 The height of the rear doors. Keep 5 mm between the bottom side of the rear door portal (pay attention to the door catches!) and the top side of the inner lifting arm (end cap top side) when determining the height.





3.1.3.2 The door opening must at least be located 95 mm below and the roof profile must be located on the inside side (distance of the top side of the inner lifting arm and winch 100 mm minus the previously mentioned clearance of 5 mm); see the above sketch.

3.1.4 The forces exerted on the frame of the EasyLoad must be distributed uniformly over the floor. The feet may, therefore, not be directly placed on the sheet metal if there are elevations/ribs at the location. If a wooden floor has not been installed, wood panels must be installed under the feet with dimensions of 200 x 150 x 12 mm.

3.1.5 The black, thick tube must be installed as a beam in the rear frame.

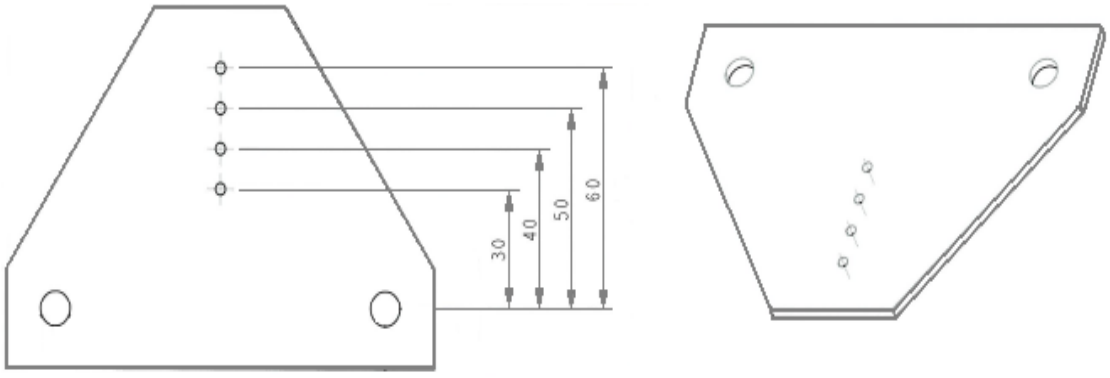
3.1.6 Always tighten the connecting elbows manually in their positions before lifting the pipes to ensure they cannot fall out during the installation and cause damage or injury.

3.2 Delivered mounting plates

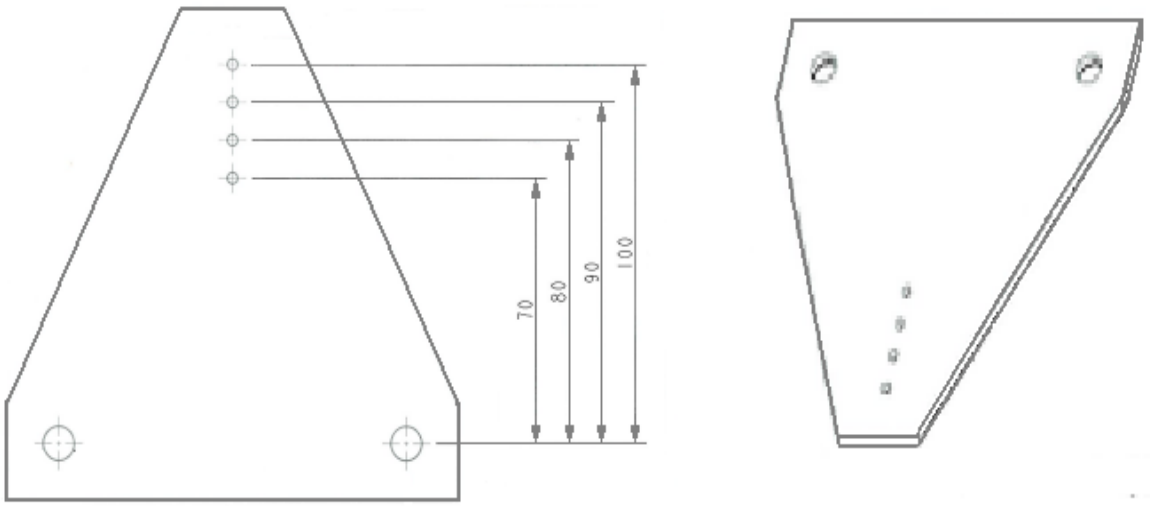
4 mounting plates are supplied with every EasyLoad as standard to be able to fix the frame to the top side of a roof member. Depending on the type of
vehicle, these will be a 90 triangular plate and/or a 130 triangular plate. The plates can also be ordered separately when installing the frame at a different position. The frame can be positioned at 4 different locations in the vehicle direction over a distance of 30 mm by using the plates. The location in the lateral direction can be freely selected by using the attaching devices.

The drill locations are specified in the mounting plates when drawing up the installation manual. These, however, are **indicative** because the preferences of the customer may affect the location.

3.2.1 **90 triangular plate**: distance from the frame to the roof member varies from between 30 and 60 mm.
MAD order number EM86007:



3.2.2 **130 triangular plate:** distance from the frame to the roof member varies from between 70 and 100 mm.
MAD order number EM86006



3.3 Installation of the frame

3.4.1 Place the EasyLoad on the jack or forklift at half the height of the load space.
3.4.2 Mount the two support brackets with the long extension to the right.
3.4.3 For this, use the M10 x 30 bolts at the front and the M12 x 35 bolts at the back. Remember the washers and tighten the nuts to torque (M10: 51 Nm, M12: 85 Nm).
3.4.4 Slide the black tube into the rear support bracket
3.4.5 Mount the 90-degree elbow on the left
3.4.6 Slide a fixing eye on to the right side, with the lip downwards, and then the 90-degree elbow.
3.4.7 Tighten all the Allen bolts hand-tight
3.4.8 Slide the galvanised tube into the front support bracket
3.4.9 Mount the 90-degree elbow on the left
3.4.10 Slide a fixing eye on to the right side, with the lip upwards, and then the 90-degree elbow
3.4.11 Tighten all the Allen bolts hand-tight
3.4.12 Jack the EasyLoad up to just under the roof
3.4.13 Put the leg in the foot at the left rear. Slide a fixing ring over the leg. Slide it into the 90-degree elbow.

3.4.14 Put the leg in the foot at the right rear and slide it into the 90-degree bend.
3.4.15 Make the rear frame parallel to the vehicle door frame.
3.4.16 Position the fixing eyes in front of the triangular plate (see 3.2) and determine which of the four holes needs to be drilled out to 10.5 mm. After drilling, mount the triangular plate on the fixing eye with the M10 x 30 bolt supplied, and turn the fixing eye so that the plate rests against the door frame.
3.4.17 Do this for both sides
3.4.18 On the vehicle's door frame, mark the location of the fixing points by transferring them from the triangular plate and drill 11-mm holes for the blind rivet nuts. Watch out for any wiring that runs through the frame!!

3.4.19 Treat the holes with a corrosion-resistant material and fit the supplied blind rivet nuts, 4 in total.
3.4.20 Attach the triangular plates to the door frame. Do this hand-tight so the frame can still be adjusted
3.4.21 Do this for both sides.
3.4.22 Put the leg in the foot at the left front and slide a fixing ring over the leg, sliding it into the 90-degree elbow.
3.4.23 Put the leg in the foot at the right front and slide it into the 90-degree bend.
3.4.24 Position the fixing eyes in front of the triangular plate and determine which of the four holes needs to be drilled out to 10.5 mm. After the drilling, mount the triangular plate on the fixing eye with the M10 x 30 bolt supplied, and turn the fixing eye such that the plate rests against a roof truss or stanchion.

3.4.25 On the vehicle's roof truss, mark the location of the fixing points by transferring them from the triangular plate and drill 11-mm holes for the blind rivet nuts. Watch out for any wiring that runs through the member!!

3.4.26 Treat the holes with a corrosion-resistant material and fit the supplied blind rivet nuts, 4 in total.

3.4.27 Attach the triangular plates. Do this hand-tight so the frame can still be adjusted.

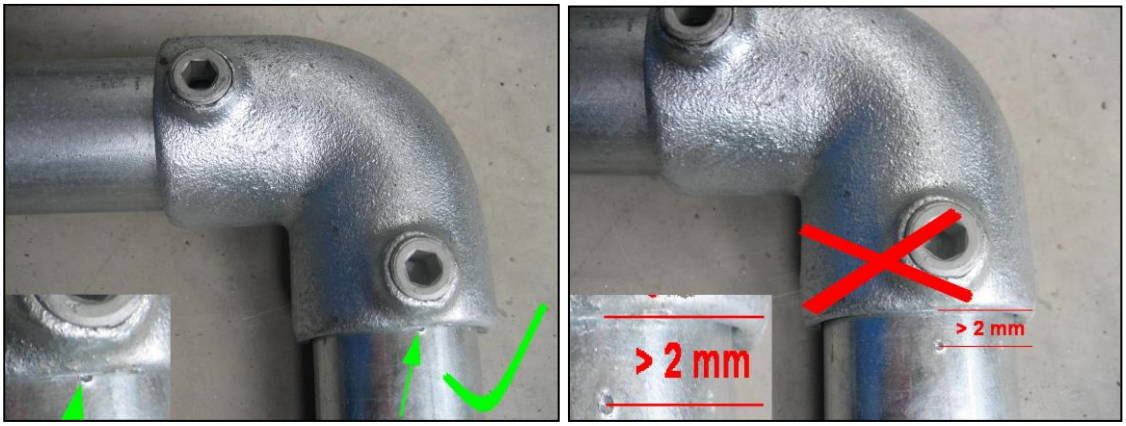
3.4.28 Do this for both sides.

3.4.29 Lower the jack

3.4.30 Once the exact position of the frame is established, the holes for the feet may be drilled. Before drilling, first check under the vehicle that there are no obstacles below the holes, such as: hollow spaces, fuel lines, cable looms, sliding door mechanism etc. Drill the holes first with a 3-mm drill, then enlarge them to 10.5 mm.

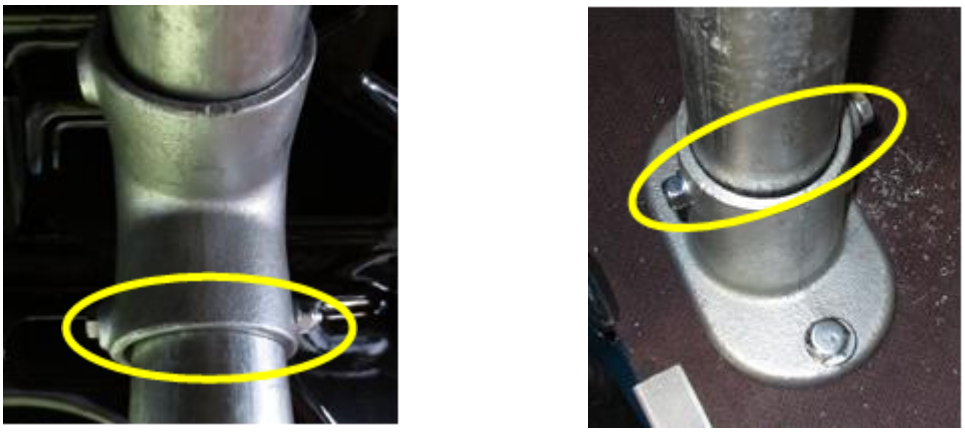
3.4.31 Fasten the feet down with the M10 x 50 bolts (torqued to 51 Nm)

3.4.32 Now align the frame properly and check that, for all connector pieces, the marking on the tube is still just visible. If the marking is more than 2 mm from the edge of the connector piece, the tube has not been inserted sufficiently, and the frame is thus weakened.



3.4.33 Now tighten all the Allen bolts in the frame to 40 Nm using a torque wrench.
If there are two Allen bolts in the connector piece, when finally tightening, ALWAYS turn the one furthest from the end first. Only tighten the second bolt once the first has been fully torqued up.

3.4.34 In the frame for the 500-kg version, the feet and elbows of the front uprights must be drilled through so they can be attached to the frame tubes using a bolt.
3.4.35 Drill an 8-mm hole through the 90° elbow and the left upright
3.4.36 Drill an 8-mm hole through the foot and the left upright and insert the M8 x 100 bolt
3.4.37 Do this for the right side too



3.5 Smear sufficient grease on the beams and check if the EasyLoad slides nicely to right and left.
3.6 Find the right place where the EasyLoad will sit when it is not in use
3.7 Mark the holes for the safety pin and drill them in the front and rear beams. Drill them carefully.
3.8 Mount both safety pins and test them to ensure they secure the beam properly.

4 Electrical connections

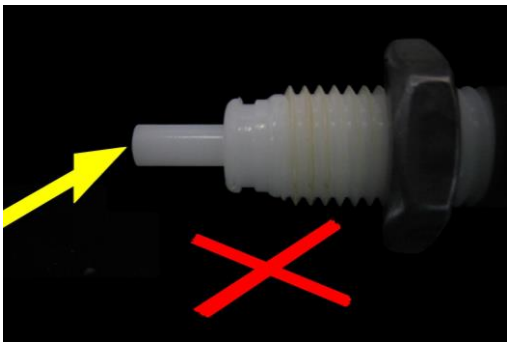
4.1 Door switch

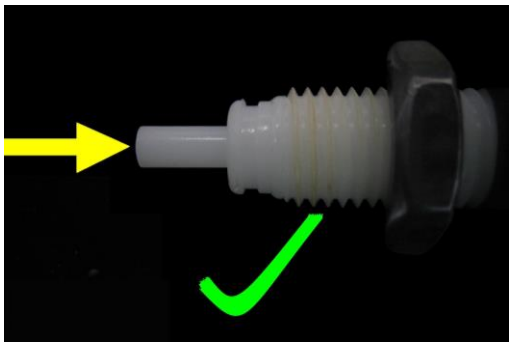
The door switch ensures that the EasyLoad is deactivated when the doors are closed. This ensures that the battery cannot go flat should the vehicle be stationary for a long period. Observe the following points for attention when installing the door switch:

4.1.1 The door switch must be installed on the rear door that is opened last to ensure that the EasyLoad cannot cause damage to the doors.

4.1.2 Do not position the door switch at a location where frequently loads pass and, therefore, were the probability of damage is great.

4.1.3 Find a location on a flat sheet metal part in the door portal on the inside of the vehicle for the switch so that the switch is pressed when the doors are closed.





4.1.4 To ensure that the service life of the switch is not affected negatively, it must be operated as much as possible in the length direction of the switch.

4.1.5 Measure the space between the door and the door portal in a closed position. It should be at least 9 mm.

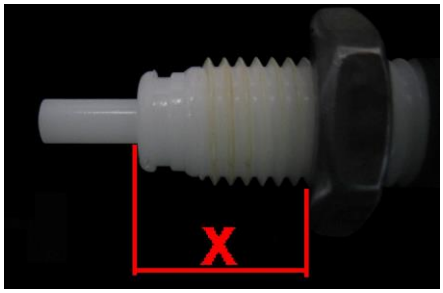
4.1.6 The delivered cable to the door switch is 2 metres long. Bear this in mind when determining the location.

4.1.7 There must be a dead space of at least 75 mm in depth behind the panel and it must be accessible from the rear side.

4.1.8 Drill a 12.5 mm hole.  Remember that there may be a cable tree behind the panel!

4.1.9 Remove any burrs and treat the hole with an anti-corrosion product.

4.1.10 Turn the steel flat nut on the switch. Use the distance measured at item 4.1.5 plus the plate thickness [=X] for the location of the nut measured from the front side of the housing (see the photo below).

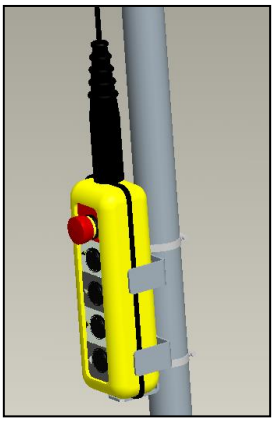


4.1.11 Install the switch from the rear side through the drilled hole.

4.1.12 Now, screw the second, plastic nut on the switch and fasten the switch.

4.1.13 Check whether the switch is pressed when the door is closed; if this is not the case, readjust the switch.

4.2 Handheld unit



The handheld unit can be kept in the bracket for this purpose. The bracket should be installed on the post of the rear frame by using the two pipe clamps. The location can be freely selected by the end user. The connecting cable is sufficiently long to fasten the support for the handheld unit on both the left and the right post even when asymmetrically installing the EasyLoad.

The connection with the EasyLoad is achieved through the 7-pole connector in the outlet next to the winch and straight on top of the EasyLoad.

Attach the spiral cable by using the tie raps on the beam of the rear frame so that it is not suspended in the door opening.

4.3 Power supply

4.3.1 General information:

The power for the EasyLoad is supplied from the vehicle's battery through a delivered power supply cable. This cable is fused with a 100 A fuse that can be found at the battery. The length of the power supply cable has been determined in a left-hand drive vehicle with corresponding battery location. The following assumptions have been made within this context:

- 4.3.1.1 A symmetric installation of the EasyLoad.
- 4.3.1.2 Frame location completely at the rear.
- 4.3.1.3 Routing of the cable tree over the side where the battery can be found.
- 4.3.1.4 Routing along the ceiling in the ledge where the roof is welded on the side wall.
- 4.3.1.5 Routing along the A post (window post) in the case of a battery in the engine compartment. The routing is along the B post (immediately behind the front door) when the battery is in the cabin.

A different power supply cable may be required with regard to a different routing or asymmetric positioning. The following lengths are available:

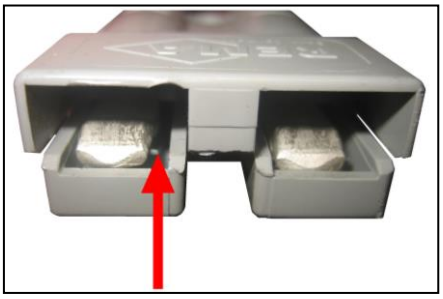
Descriptions - length	**Order number**
6-metre power supply cable	EC08008
8-metre power supply cable	EC08009
10-metre power supply cable	EC08010

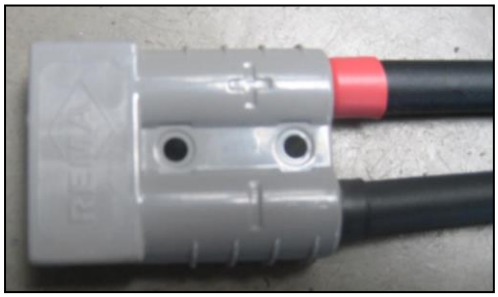
4.3.2 Installation of the power supply cable

Observe the following points for attention when installing the power supply cable:

- 4.3.2.1 Ensure that the power supply cables are not damaged by scrapping over sharp edges or along screws when being installed.
- 4.3.2.2 When the power supply cables run through or along sheet metal, additionally protect them to ensure they do not rupture.
- 4.3.2.3  Never put the power supply cables on the floor but ALWAYS along the ceiling protected by a plate or woodwork.
- 4.3.2.4 Start by installing the power supply cables on the battery side but do NOT yet connect the cables to the battery.

4.3.2.5 The connector can be removed to make the leading through of the power supply cable easier. Press the small metal lip under the contact down at the front using a flat screwdriver and carefully pull on the cable.





4.3.2.6 Once the power supply cable has been installed, immediately put back the contacts in the connector if they were removed (item 4.3.2.5). The red marked cable in the “+” location.

4.3.2.7 First connect the power supply cable to the EasyLoad with the female connecter before connecting the power supply cable to the battery.

4.3.2.8 Connect the power supply cable to the battery poles.

5 End test

5.1 General information:

5.1.1 Only lift in the vertical direction and never more than 250 kg. Avoid excessive swinging.

5.1.2 Stop the lifting when there is an indication that a hoisting cable is twisted, that there is an overload situation or that there are other faults.

5.1.3 Always place the hoist hook in the top position. The hoist hook swinging may possible cause damage to the vehicle or load.

5.2 Function test:

Every EasyLoad is extensively tested and adjusted by MAD after having been assembled. All functions must be checked before the EasyLoad is lifted to ensure that faults did not occur during shipping or installation. First do this WITHOUT a load to protect the vehicle, EasyLoad and yourself. Follow the steps below:

5.2.1 Check whether the emergency stop has not been activated.

5.2.2 Close the door that operates the door switch. The EasyLoad cannot now lift, lower, retract or extend. If the EasyLoad can be operated, the door switch must be readjusted.

5.2.3 Open both rear doors and slide the EasyLoad completely out until the stop.

Emergency stop

Lifting

Lowering

Retraction

Extension

5.2.4 Allow the hook to drop until it switches off automatically. Check whether there is still a layer of cable on the winch's drum. If this is not the case, the "lower pull" must be readjusted (see the repair manual for this).

5.2.5 Hoist up the hook until it rolls out automatically. This will occur when the ring on top of the weight touches both copper strips. The foam material between the ring and weight may slightly deform when this takes place. **IMMEDIATELY** release the control button should the pull not function. In this case, allow the hook to slightly pay out and check the "pull lifting" (see the repair manual for more information on this).

5.2.6 Slide the EasyLoad completely in up to the pull.

5.2.7 Press the emergency switch. The EasyLoad can now not lift, lower, retract or extend. Should it be able to do this, contact MAD.

5.2.8 Take a weight of approximately 250 kg and repeat steps 5.2.3 to 5.2.6. Check whether there are loose parts and whether the frame has been correctly fastened and shows no deformation after lifting the load (item 5.2.5).

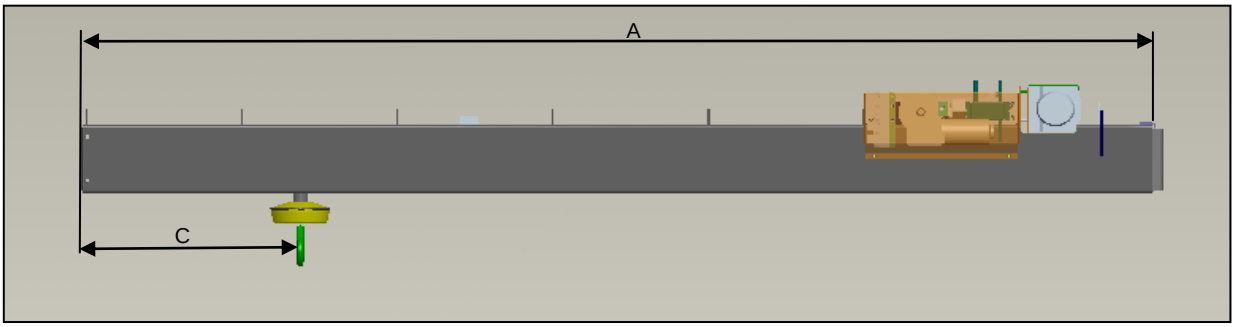
5.2.9 When parts bend or shoot away during lifting, stop immediately and first determine and/or correct the reason. When you have any doubts, contact MAD.

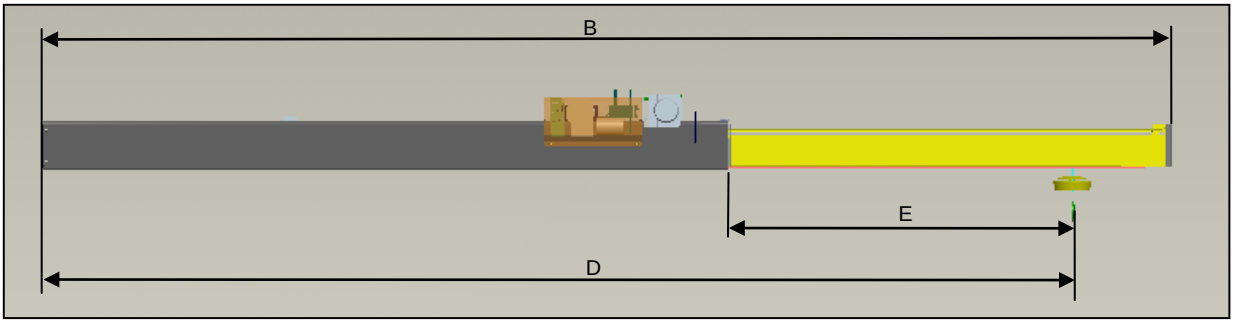
5.2.10 Increase the weight to approximately 280 kg. The EasyLoad has a protection against overloading and should now stop lifting and only lowering should now be possible. If lifting is possible, the protection has been adjusted to generously and must be readjusted (see the repair manual for more information about this).

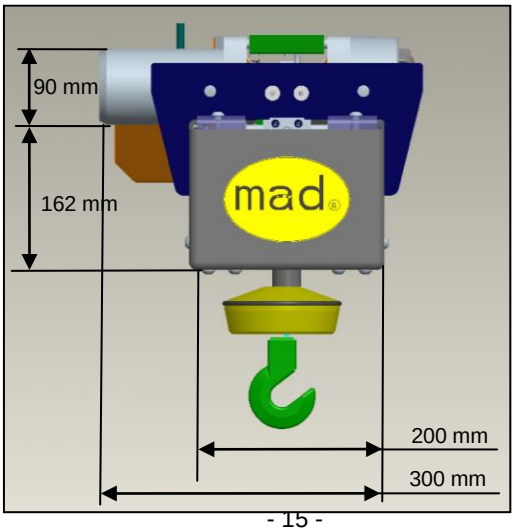
5.2.11 **Complete the installation data in the delivered EasyLoad manual in the Maintenance history. A guarantee cannot be granted unless this data is available!**

6 Technical Specifications

			EL-250-2xxx EL-500-2xxx	EL-250-1xxx
Retracted length	A	mm	2230	1830
Extended length	B	mm	3630	3230
Hook distance – at the front of the EasyLoad retracted	C	mm	610	610
Hook distance – at the front of the EasyLoad extended	D	mm	3410	2610
Hook distance retracted versus extended	D-C	mm	2800	2000
Maximum reach behind the vehicle	E	mm	1200	800
Lifting arm height in door opening		mm	160	160
Weight		kg	110/125	94
Max. lifting capacity		kg	250/500	250
Cable speed		mm/min	6000/3000	6000
Voltage		V	12/24	12
Maximum current consumption		A	100	100







7 Troubleshooting

Problem	Possible reason	Solution
Retracting and extending are slow and difficult	• Battery (nearly) spent • Mechanical fault • Slipping clutch slipping • Slipping clutch too lightly adjusted	• Charge or replace the battery • Contact the supplier. • The vehicle is positioned on a gradient that is too large (max. 3^0) • Contact a specialist
Retracting and extending not possible	• Emergency stop pressed • Control switch faulty • Door switch faulty or incorrectly adjusted • No voltage • Mechanical fault • Slipping clutch slipping • Slipping clutch too lightly adjusted	• Unlock the emergency stop • Replace the switch • Re-adjust or replace the switch • Charge or replace the battery • Check the connection of the handheld unit on the EasyLoad (connector next to the winch motor). • Door switch faulty or incorrectly adjusted • Check the control fuse (15 A at the winch motor) • Check the main fuse (100 A at the battery). • Contact the supplier. • The vehicle is positioned on a gradient that is too large (max. 3^0) • Contact a specialist
Lifting or lowering is very slow	• Battery (nearly) spent • Mechanical fault	• Charge or replace the battery • Contact the supplier.

Problem	Possible reason	Solution
Lifting and/or lowering is not possible	• Emergency stop pressed	• Unlock the emergency stop
	• Control switch faulty	• Replace the switch
	• Door switch faulty or incorrectly adjusted	• Re-adjust or replace the switch
	• Overload protection faulty or incorrectly adjusted	• Contact the supplier.
	• The hook can only be lowered	• The pull of the highest point has been reached
		• Too much weight on the hook; this may be 250 kg at most
	• The hook can only be lifting	• The pull of the lowest point has been reached
	• The hook cannot be lowered completely	• The pull of the lowest point is no longer true; contact a specialist
	• The hook does not lower smoothly	• Mechanically faulty; contact the supplier.
		• The pull of the lowest point is not correctly adjusted; contact a specialist
		• The cable has not been rolled up tightly; contact a specialist
	• No voltage	• Charge or replace the battery
		• Check the connection of the handheld unit on the EasyLoad (connector next to the winch motor).
		• Door switch faulty or incorrectly adjusted
		• Check the control fuse (15 A at the winch motor)
		• Check the main fuse (100 A at the battery).