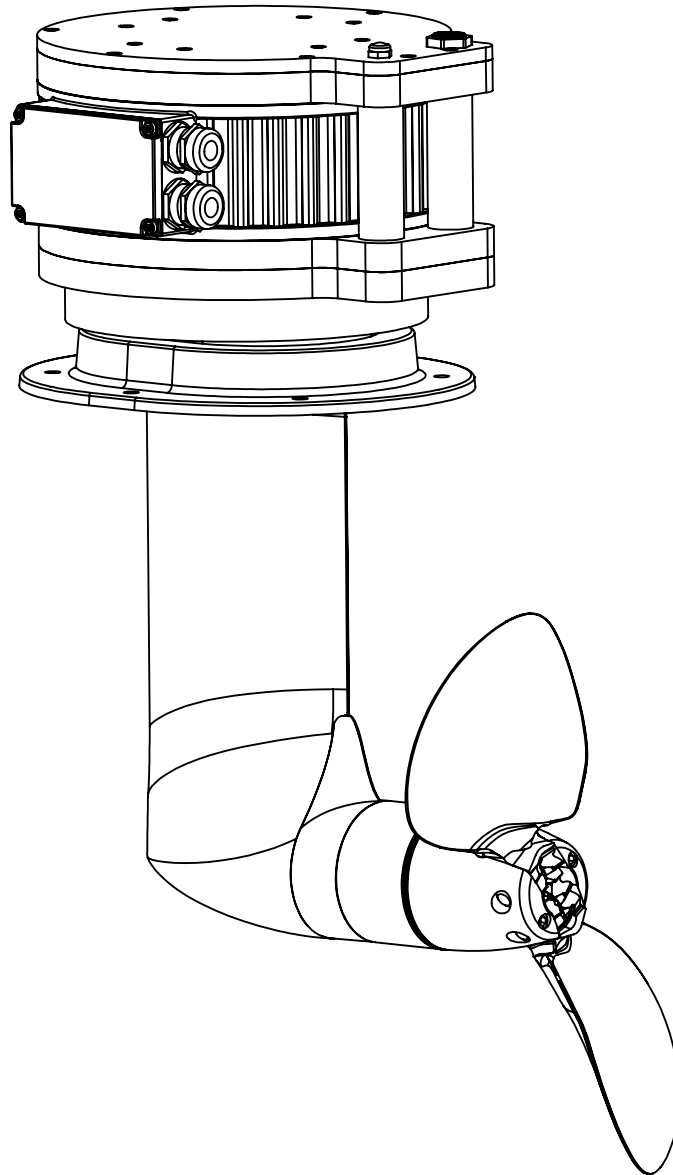


OCEANVOLT



Oceanvolt SD8.6 saildrive

Installation manual

English (v1.1)

Table of Contents

Oceanvolt SD8.6 saildrive	1
1. Important safety information.....	3
2. Contents of the package.....	4
3. Planning the installation	5
3.1 Position of drive	6
4. Installation the drive and motor.....	7
5. Installing other components.....	11
5.1 Installing the motor controller	11
5.2 Installing the connection box and data gateway.....	11
5.3 Installing the throttle lever.....	12
5.4 Installing the display.....	12
5.5 Installing batteries and chargers	13
5.6 Installing the main switch and fuse	13
5.7 Connecting the wires and cables.....	14

1. Important safety information



DANGER: This symbol warns about risk of personal injury



CAUTION: This symbol warns about risk of damaging the system

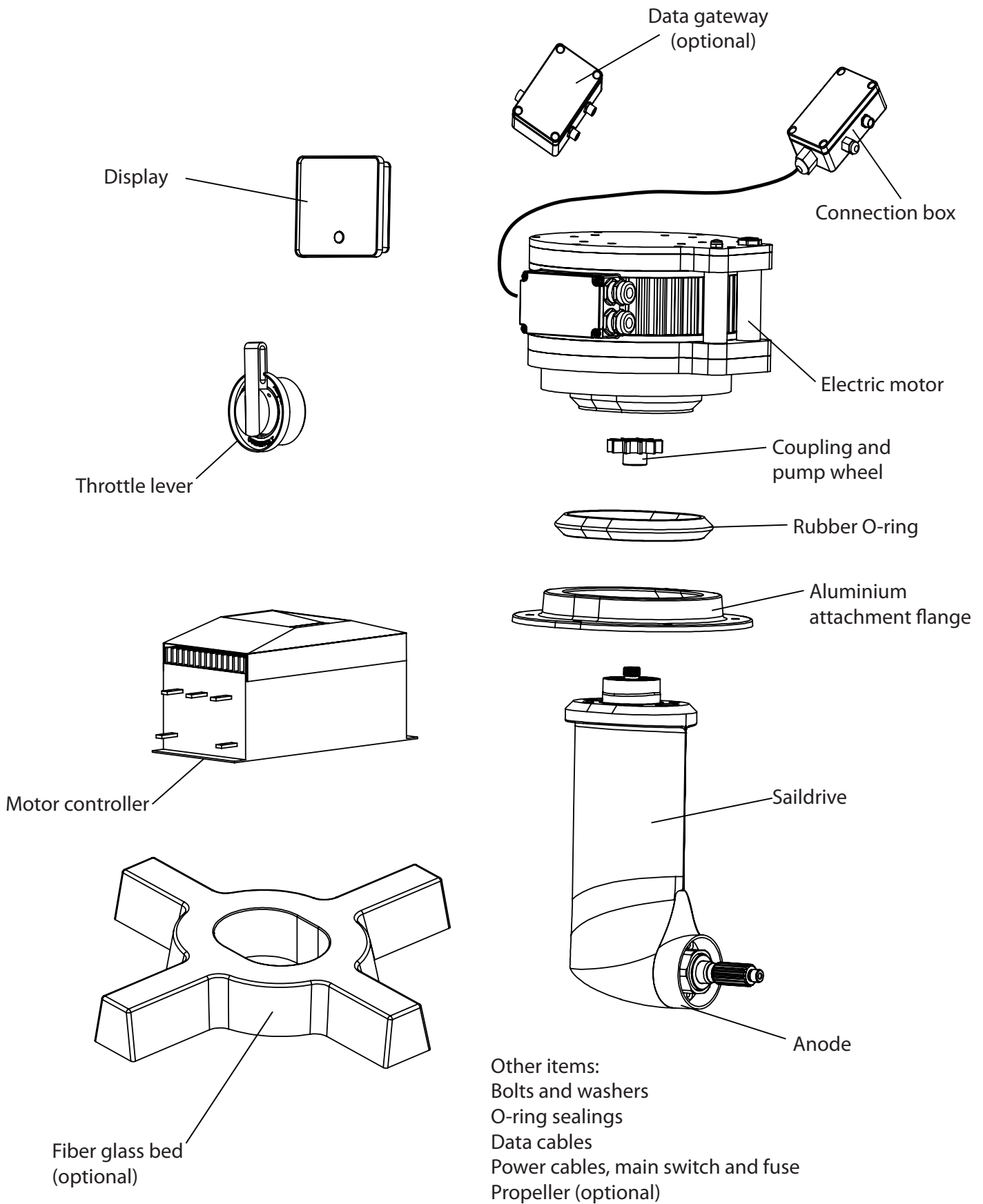


DANGER: This symbol warns about risk of electric shock

This product is designed to operate safely and reliably as long as it is used and installed according to the installation and operating manual. Please read these documents carefully before starting to operate the system. Ignoring these instructions can cause severe damage to property or personal injury. Oceanvolt Ltd accepts no liability for any damage caused by actions that contradict to this installation manual.

Modifications to the watercraft hull must be performed professional boat builders.

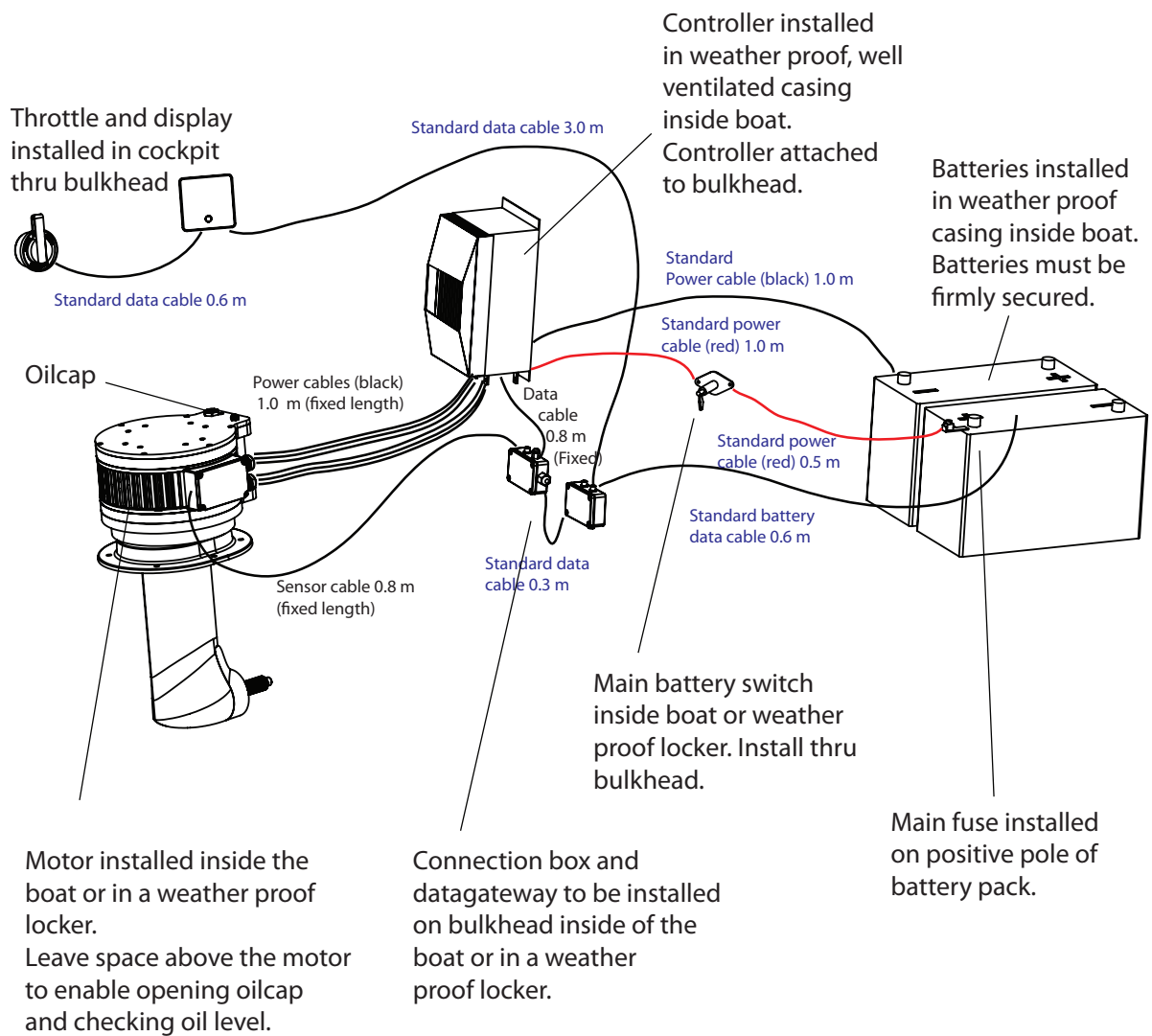
2. Contents of the package



3. Planning the installation

To plan a successful installation you need to take into account:

- 1) How different components have to be protected from water.
- 2) Length of standard cables (cables with text marked blue may be ordered separately to different lengths).
- 3) Secure attachment of the components.



Optional cable lengths:

Power cables between batteries and motor controller: **0.5-5.0 m**

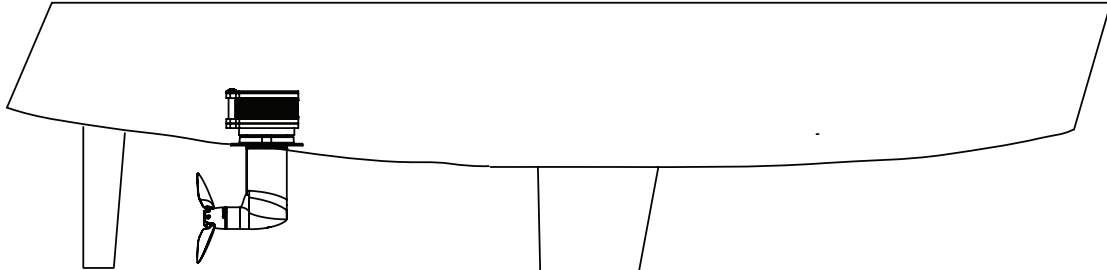
Data cables: **0.3m, 0.6m, 3.0m, 5.0m and 10m**



CAUTION: When using other power cables than those supplied by Oceanvolt Ltd make sure they are of adequate quality and thickness. Cable terminals must be firmly attached to the cable.

3.1 Position of drive

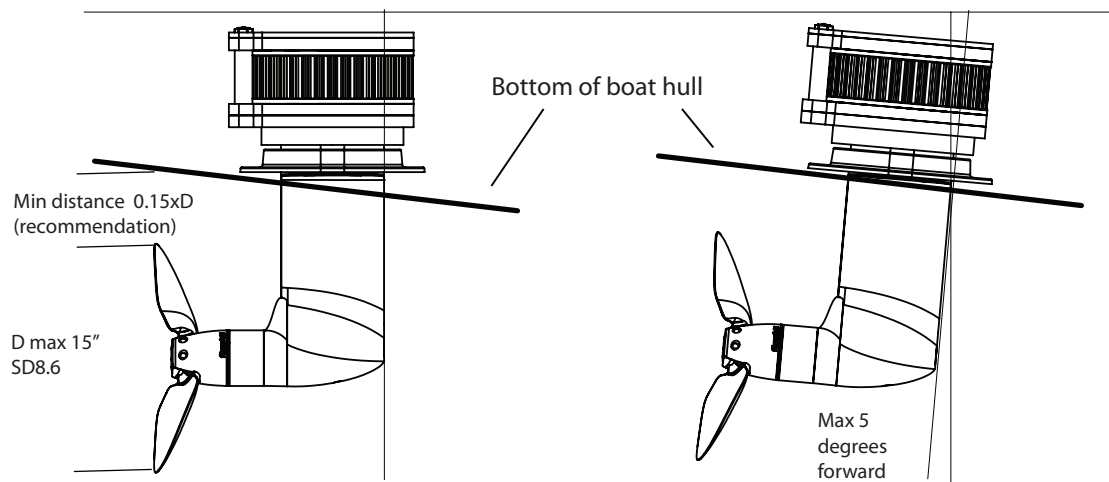
The correct position of drive ensures the function of the system and the safety of the vessel.



The drive should preferably be positioned behind the keel.



If the drive or propeller is the lowest part of the boat there is a risk of extensive flooding if the boat hits a ground. In an installation like this the motor should be installed in a watertight compartment that limits the flooding in case of an accident.



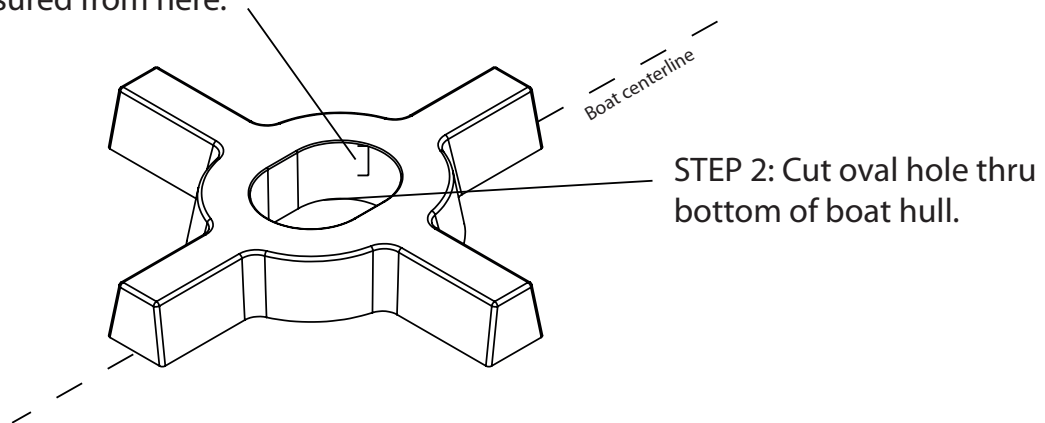
The drive may also be installed more along the boat hull.

4. Installing the drive and motor

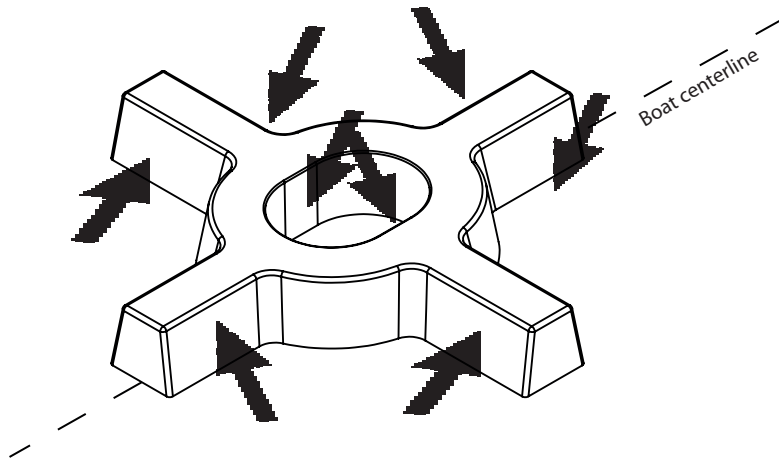
STEP 1. Cut the fiberglass bed to match the shape of the boat hull.

STEP 2: Cut a hole thru the bottom of the boat hull.

STEP 1: Leave 20-60mm of height measured from here.



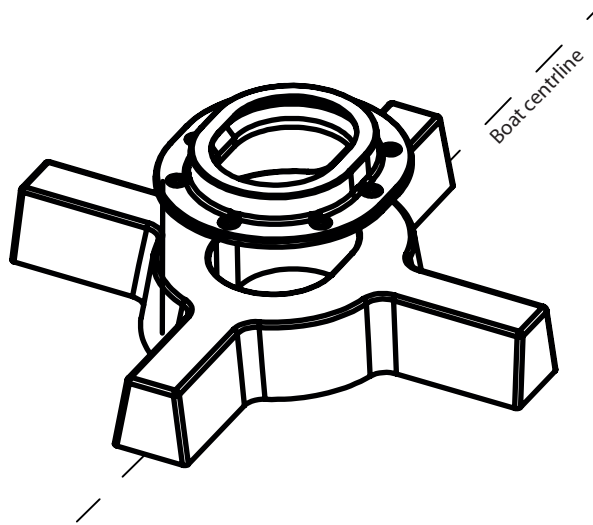
STEP 3. Laminate the bed to the boat hull from all sides as indicated by the arrows in the picture below.



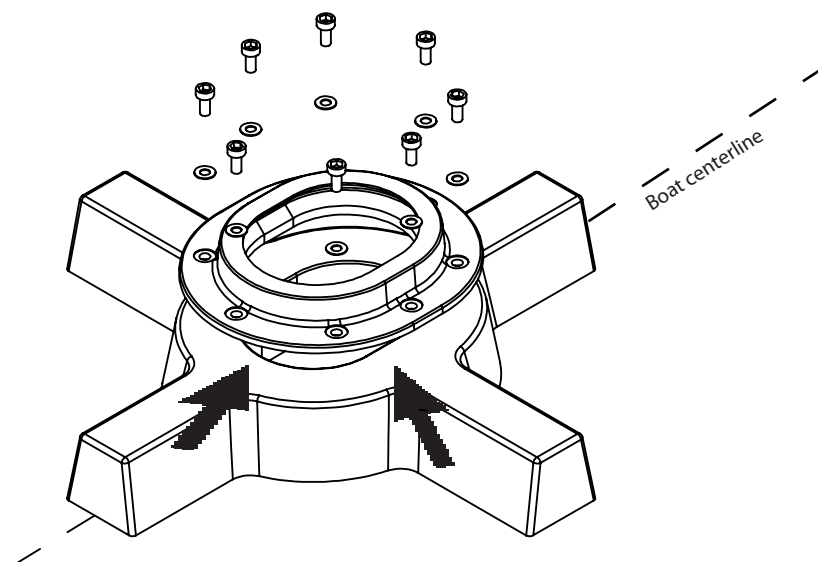
DANGER: Fiberglass modifications to the watercrafts should be made by professional boat builders!

STEP 4. Attach the aluminum flange to the boat hull.

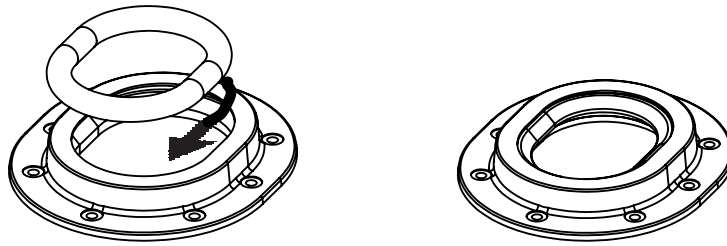
Drill 8.5mm holes to the fiberglass bed, which is laminated to the hull. Make sure that the aluminum flange is positioned centered against the fiberglass bed. Use a M10 tap to make thread into the aluminum insert which is laminated inside the fiberglass bed.



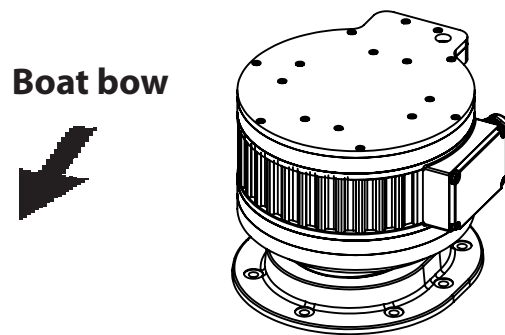
STEP 5. Use the supplied M10 hex bolts and washers to attach the aluminum flange to the fiberglass bed. Apply marine sealant (Sikaflex 292 or similar quality) between the fiberglass bed and aluminum flange to ensure a watertight seal in the area indicated by the arrows.



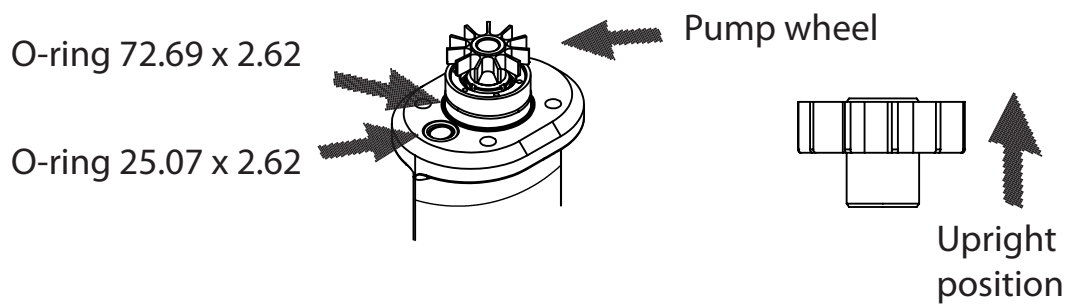
STEP 6. Insert the rubber O-ring to the aluminum flange



STEP 7. Lift the motor on top of the O-ring. Make sure that the motor sits horizontally on the O-ring

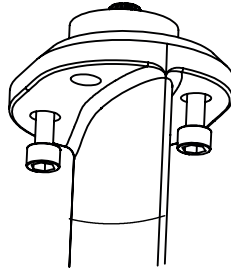


STEP 8. Place the pump wheel coupling on the shaft of the saildrive and put the supplied O-rings in place.



STEP 9ABC. Attach the saildrive to the motor from the outside of the boat and fit it against the bottom part of the motor.

STEP 9A: Use 2 bolts WITHOUT LOCKING WASHERS AND THREADLOCKER on adjacent sides to evenly tighten the saildrive to the motor.

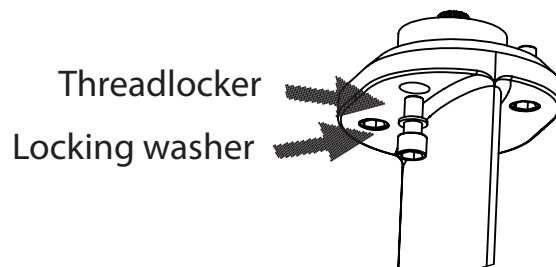


CAUTION: Tighten the bolts evenly 1/2 turn per side at time.



CAUTION: Turn the propeller shaft by hand after tightening the bolts 1/2 turns. The propeller shaft should freely turn at all times!

STEP 9B: Apply thread locker to the other 2 bolts and tighten them firmly WITH LOCKING WASHERS in place.



STEP 9C: Untighten the first 2 bolts, apply thread locker and tighten WITH locking washers.



CAUTION: Make sure that all 4 bolts have been properly tightened WITH thread locker and locking washers.

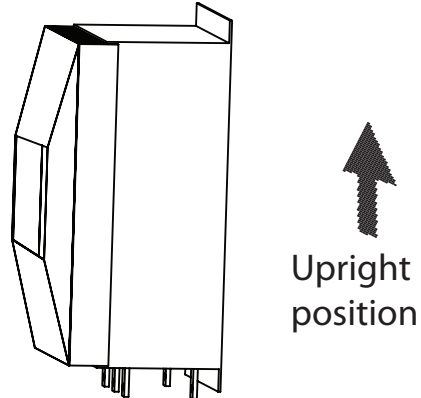
NOTE: Final tightening shall be 65 Nm on all four bolts.

STEP 10: Try to turn the propeller shaft by hand to make sure it rotates freely. (The motor will slightly resist the rotation).

5. Installing other components

5.1 Installing the motor controller

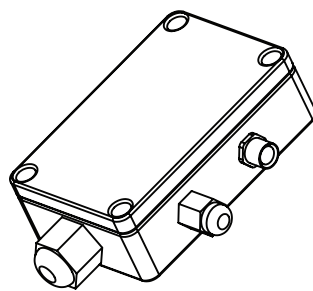
The controller should be mounted in an upright position (with cable connectors pointing downwards). To provide sufficient cooling the controller should be placed in a cool and dry place that is well ventilated. The controller is attached to a bulkhead with screws.



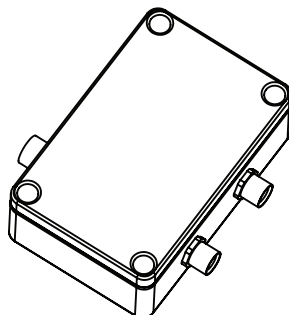
CAUTION: The controller must not be installed in the bilge or close to the floor or some other space that will gather water in case of rain or for some other reason.

5.2 Installing the connection box and data gateway

The connection box and data gateway (optional) should be placed near the controller in the same compartment. Open the box to find holes for screws. Attach the boxes to a bulkhead, then close the cover firmly.



Connection box.
(Attached to motor)

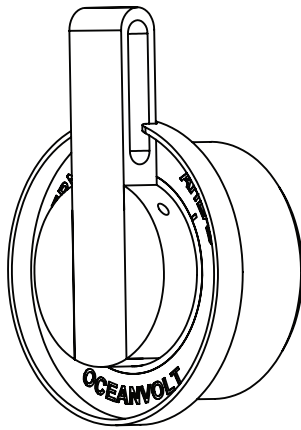


Datagateway
(Optional)

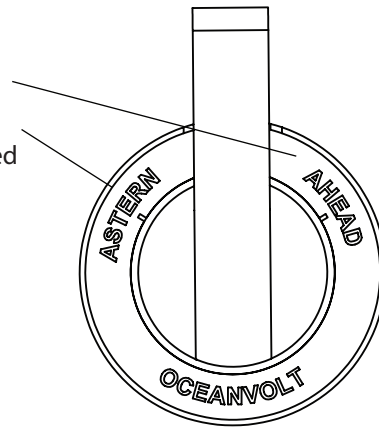
5.3 Installing the throttle lever

The throttle lever shall be installed close to the helmsman thru a longitudinal bulkhead. The position of the throttle lever shall be chosen so that the AHEAD sign on the lever points forward. The hole needed for installation has a diameter of 68-70 mm.

Insert the throttle lever to the hole and tighten it in from the opposite side of the bulkhead with the large plastic nut.

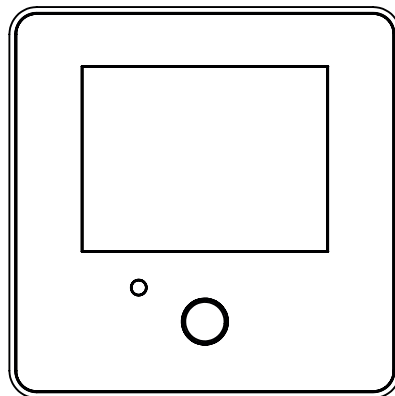


In the picture you find the standard throttle lever. On request the AHEAD and ASTERN marks can be altered and the throttle lever thus installed on the opposite side of the boat.



5.4 Installing the display

The display shall be installed thru a bulkhead close to the throttle lever either indoors or in the cockpit. For measurements of the hole please refer to appendix 3.



5.5 Installing batteries and chargers

The nominal battery voltage of the Oceanvolt SD8.6 -propulsion system is 52 V. The system can be used with:

- 1) Lithium batteries: nominal voltage 52 volts (Example: 2 x Torqeedo Power 26-104 connected in series)
- 2) Lead acid batteries: nominal voltage 48 volts (Example: 4x12 V batteries connected in series)

When installing batteries in series or parallel (or as a combination) make sure that the nominal voltage of the battery pack is between 48 and 52 volts.

For assembling the battery pack and installation of batteries and chargers please refer to manuals by battery manufacturer.

To get a general view for the installation of Torqeedo batteries look appendix 1&2. For more in depth information please refer to the operation manual of the Torqeedo battery and charger.



All batteries in the pack must be identical in terms of make, type, size and age.



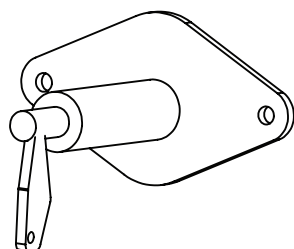
When assembling the battery pack make sure that the charge level of each and every battery is the same before connecting the power cables.



The batteries must be firmly secured to the boat to prevent them from moving in heavy seas or when the boat heels.

5.6 Installing the main switch and fuse

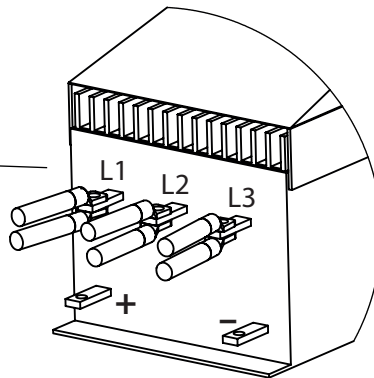
The main switch of the battery pack is installed thru a bulkhead. A fuse shall be attached between the positive pole of the battery pack and the main switch (or directly on the positive pole). For placement of the main switch and fuse please refer to appendix 2.



5.7 Connecting the wires and cables

STEP 1. Connecting the motor phase cables to the controller.

Cables coming from motor are marked with numbers 1, 2, 3. Attach them to corresponding positions on controller L1, L2, L3.



STEP 2. Data cables.

Connect the data cables of the controller, connection box, display and throttle lever (and data gateway when using Torqeedo batteries).

It is important that all cables are well protected from wear and tear and damage.



CAUTION: If the cables are installed thru a bulkhead, make sure the cables are well protected during use by installing protective sleeves. Long cables should be firmly fixed to boat interior or structures.

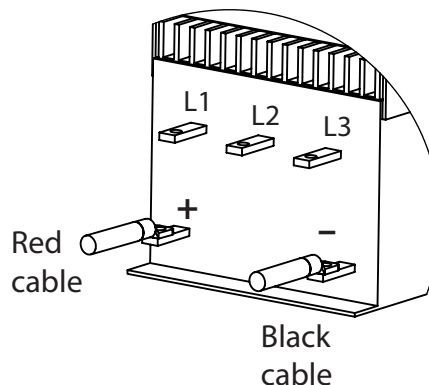


CAUTION: Do NOT connect other electronic devices/systems to the propulsion electronics (NMEA electronics for instance).

STEP 3. Battery cables to controller

1) Connect the black power cable to the negative side of the controller.

2) Connect the red power cable to the positive side of the controller.



CAUTION: Do not wear any metal jewellery when working close to the batteries or power cables.

CAUTION: Make sure that the main power switch is turned off before connecting the power cables to the controller.

7. Finalizing and testing the installation

1) Before starting up the system:

The lubrication oil must be added to the system before starting it. Please refer to the User manual to get information on suitable oil levels. Check that there are no oil leaks around the attachment bolts of the drive.

NOTE: Read the User manual properly to learn how to operate the system safely before testing the Oceanvolt SD8.6 -system.

2) Dry testing before launching the boat:



CAUTION: Running the system on dry land must not be done for extensive periods.



DANGER: Never run the system on dry land with the propeller attached as this could cause severe danger.

The system can be driven shortly and lightly on dry land to ensure that it works. Before driving the system put some lubrication oil on the propeller shaft sealing to protect it from wear and tear.

- a) Turn on the mainswitch, and check that the display turns on. (Some batteries need to be activate before using them).
- b) Activate the system according to instructions in the User manual.
- c) Slowly turn the throttle lever ahead and aster, and check that the display responds correctly. Make sure that nobody is close to the propeller shaft when starting the system.

NOTE! If there appears some problems when testing please refer to the trouble shooting section in the user guide.

3) Attaching the propeller:

Attach the propeller according to information supplied by the propeller manufacturer.

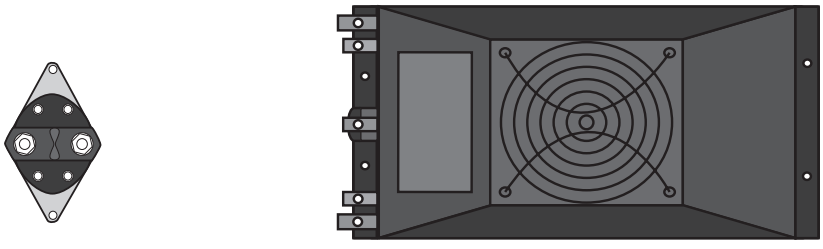
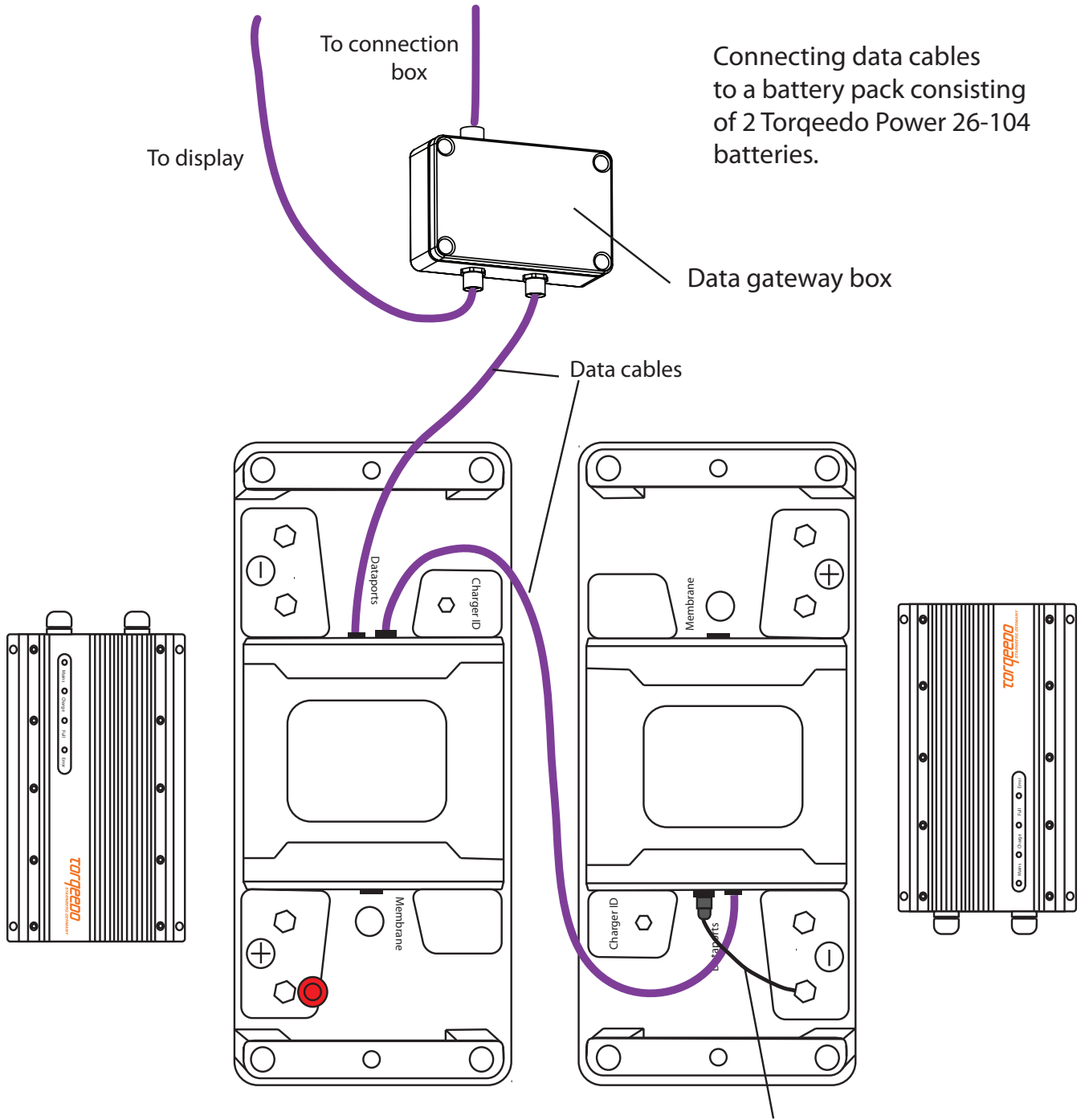
8. Oceanvolt contact details

Oceanvolt Ltd
Laivakatu 3
00150
Helsinki
Finland

<http://www.oceanvolt.com/support/>
support@oceanvolt.com

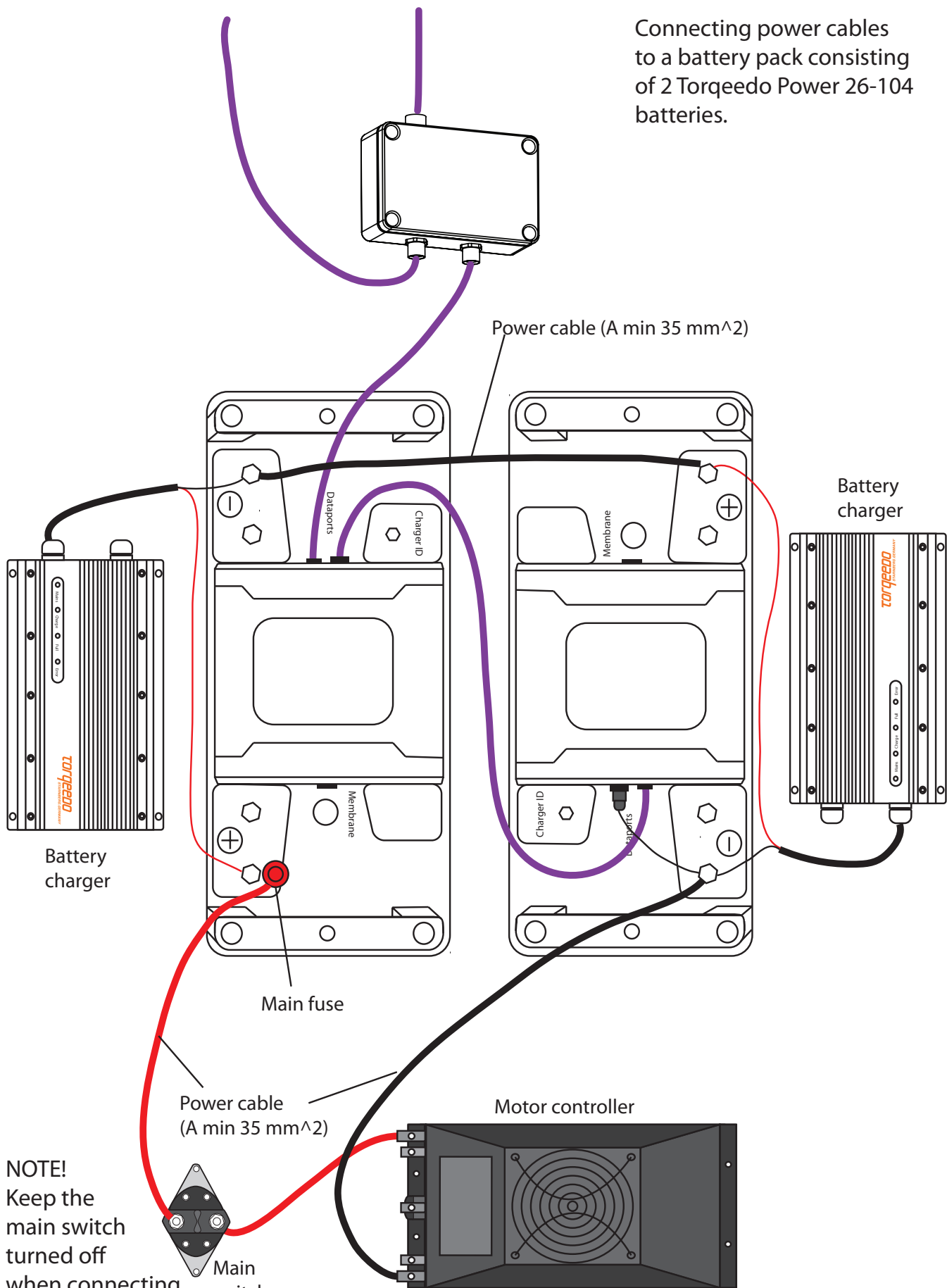
phone: +358 40 717 6336, 9:00am to 5:00pm (timezone: GMT+2)

APPENDIX 1



APPENDIX 2

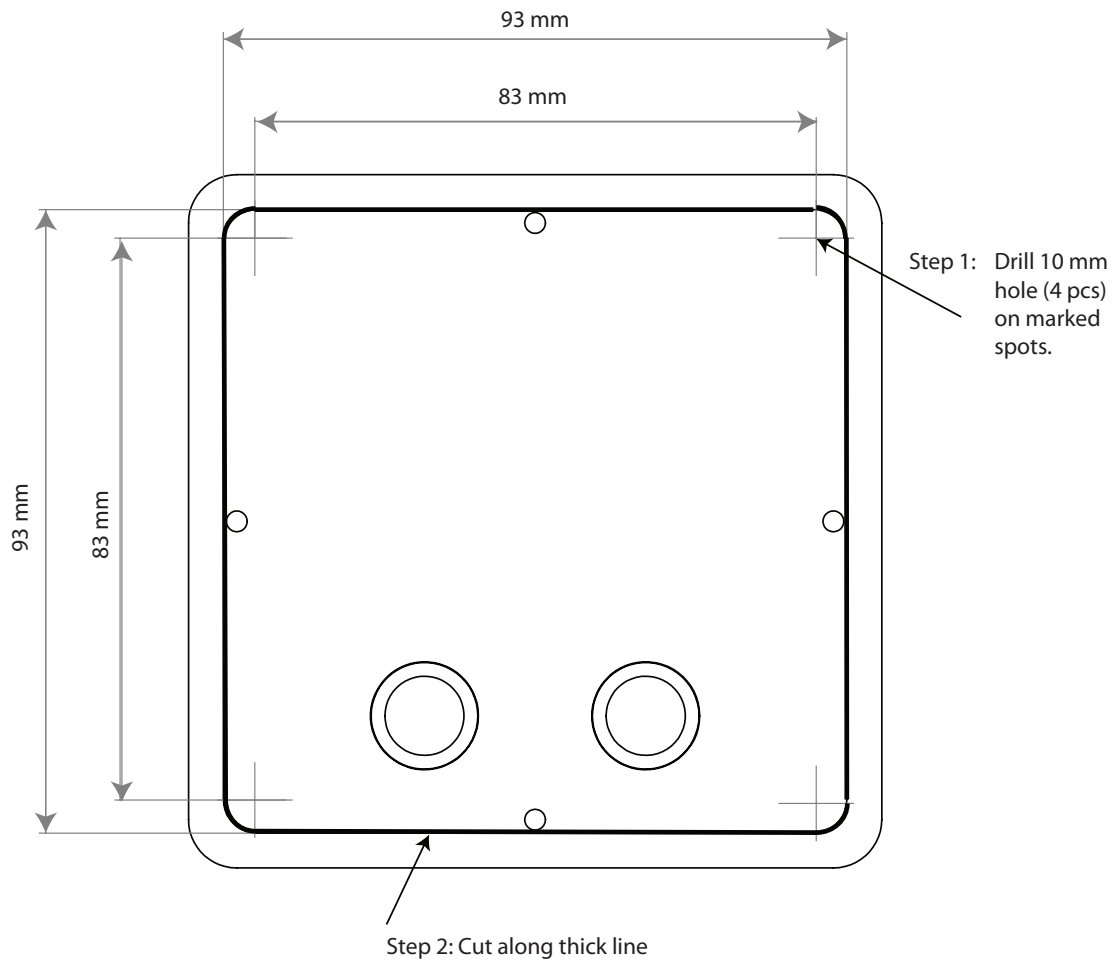
Connecting power cables to a battery pack consisting of 2 Torqeedo Power 26-104 batteries.



NOTE!
Keep the main switch turned off when connecting the cables.

NOTE! Do NOT CONNECT the power cables to the motor controller until the installation is finalized!

APPENDIX 3



NOTE! If using the printout as aid for cutting the hole always check that the measures of the pattern match the ones of the display. There is a risk of distortion due to printing.