



Powered by
Torqeedo

Owner's Manual
Hobie Inflatable Kayak Motor Kit

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This operating manual will help you use your Hobie evolve safely and efficiently. All information is given according to our latest knowledge. Content is subject to technical changes.



• Indicates a danger or a procedure that may cause injury and property damage.



• Indicates a danger or a procedure that may cause property damage.



Introductions

Dear Customer,

Thank you for choosing the Hobie evolve. As a member of the Hobie family, you are now on the road to pure adventure in electric boating. This owner's manual is designed to help you get maximum enjoyment from your new Hobie evolve. But more important, it is designed to help you use it safely.

We are delighted that you have chosen our motor. Your Hobie evolve is powered by the Torqeedo 402 motor and is state-of-the-art in terms of motor, battery, and propeller technology. It has been designed and manufactured with the utmost care and with a special focus on comfort, user-friendliness, and safety, and has been extensively tested before delivery.

We hope you will enjoy this product.

Sincerely,

The logo for Hobie, featuring the word "Hobie" in a stylized, cursive script font with a registered trademark symbol (®) to the right.The logo for Torqeedo, featuring the word "torqeedo" in a bold, italicized, sans-serif font.

Conformity declaration

We, Torqeedo GmbH, with sole responsibility, declare the conformity of the Ultralight product range with the following provisions:

Small water vehicles

Electrical systems

Low-voltage direct current (DC) systems

DIN EN ISO 10133:2000

Starnberg, in March 2009

The aforementioned company holds the following technical documents available for viewing:

- Required operating manual
- Plans/software source code (EU authorities only)
- Inspection records (EU authorities only)
- Other technical documentation (EU authorities only)



Important Safety and Operating Instructions

Important safety instructions



Torqueedo motors are designed to operate safely and reliably as long as they are used according to the operating manual. **Please read this manual carefully** before you start the motor. Ignoring the instructions in this operating manual can cause damage or personal injury. Hobie Cat Company and Torqueedo accept no liability for any damage caused by actions that contradict this operating manual.

To ensure safe operation of the motor:

- Familiarize yourself with all the motor controls. For instance, you should be able to stop the motor quickly if necessary.
- Only allow adults who have been instructed on how to operate the motor or have read the operating instructions to run it.
- Never operate the motor if someone is in the water close to the boat. Stop the motor immediately if someone goes overboard.
- Always have a paddle and/or MirageDrive® on board for another source of propulsion.
- Check the status and function of the device before each tour.
- Note that the on-board computer does not include changes to currents and wind conditions in the range calculation. If you are moving with the wind or current the remaining range is calculated assuming you continue going with the wind or current. If you change direction or if wind/current change, your remaining range may be significantly lower. Therefore you should note the effects that the wind and current have on your range.
- Never use the motor as an attachment point for your kayak; never use the motor as a handle for lifting, carrying or tying to.
- Do not open the battery casing; protect the battery pack from mechanical damage.
- Do not short circuit the battery pack.
- Avoid submerging the battery pack and remote throttle for long periods of time.
- If the error code E46 is shown in the display or if you changed the fuse of the battery, the battery charge status in the display is not accurate. After a complete charge of the battery, the battery charger status displayed will be reliable again.
- The battery of your Torqueedo 403 motor has been declared a hazardous item in UN Class 9. Private transportation is not critical, but if shipped by a transport company the relevant statutory provisions must be observed.
- Keep the supplied magnetic key at least 50 cm / 20 inches away from pacemakers.
- Keep the supplied magnetic key away from magnetic information media (e.g. debit/credit cards, music cassettes, magnetic tapes etc.). The magnet integrated in the key has enough strength to render the saved data unusable.

Important operating instructions



The following is a selection of the most important instructions for handling Torqeedo motors. In addition to these instructions, please observe the complete operating instructions to prevent damage to your motor.

- Only run the motor when the propeller is under water. If it is run in the air for longer periods, the shaft sealant rings that seal the motor to the drive shaft may become damaged. If the motor is run in air for long periods, the motor itself can overheat.
- The Hobie evolve product range, the associated remote throttle, battery pack, and all electric plug-in connections are protected against dirt and water in line with protection type IP68.
- The Torqeedo 403 has an integrated protective device that switches the motor off when it reaches a particular slope of 90°. This prevents the propeller from turning if the boat capsizes or tilts.
- After use, always take the motor out of the water.
- After operation in salty or brackish water, wash all components in fresh water.
- Occasionally use contact spray to care for all cable connections. If you use the motor in salt or brackish water, we recommend applying contact spray once a month.
- You will extend the life of your battery if you do not expose it for longer than necessary to a very hot environment. In order to guarantee that the life of the battery is as long as possible, the battery should be stored for longer period of time (e.g. over the winter) at around 50 % charge and between 0 °C and +15 °C / +32 °F and +60 °F.
- Only charge the battery at environmental temperatures between 0 °C and +45 °C / +32 °F and +113 °F.
- Store the motor, battery pack and remote throttle in the waterproof travel bag only when dry. If storing the items for longer periods of time in the travel bag, do not close it so it is airtight.
- Only use the travel bag for transportation, not for shipping the motor. The motor stored in the travel bag must not be adversely affected by heavy objects.
- If the motor malfunctions an error code is shown on the display. After resolving the error the motor can be restarted out of the stop position again. In rare cases it may be necessary to switch the motor off using the "on/off" button. You will find descriptions and details in Section 9.3.
- Do not disconnect the cable connections when the propeller is turning.
- If you have a problem with your motor, please follow the instructions in this operating manual for handling warranty claims.

Kit Breakdown

1. Hobie evolve Mirage Well Assembly
2. Prop Alignment Tool
3. Throttle
4. Magnetic Key
5. Battery
6. Miscellaneous Small Parts
 - a. Power Cable Thru-Hull Fitting w/ Backing Plate
 - b. Hole Cover Plate
 - c. Throttle Cable Mounting Backing Plate
 - d. Gasket Pack (3 Pieces)
 - e. Screws for Thru Hull Fittings (QTY 4 #10 Sheet Metal Screws)
 - f. Ram® Mounting Arm
 - g. Throttle Mounting Plate
 - h. Tube of PVC Glue
 - i. Mounting Padeyes (4) and Battery Hold Down Assembly
 - j. Wire End Caps (4 Pieces)
 - k. Throttle Cable
 - l. Power Cable Extension
 - m. Cable Storage Bag
 - n. 9/64" Allen Key (Not shown here)

Tools Required:

Phillips Head Screwdriver
Electric Drill
1/8" Drill Bit
3/4" Drill Bit
1-3/4" Hole Saw



Throttle and Battery Mounting

Gluing Instructions

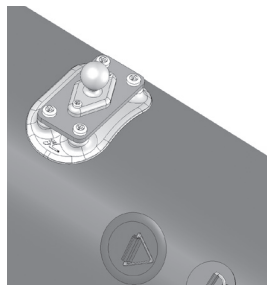
There are some parts in this kit that will need to be glued to the kayak. Follow the instructions below as a guideline for PVC gluing procedures on all the parts.

1. Clean the surfaces that are to be glued to with a window cleaner or alcohol. Once clean, make sure that the surface is dry.
2. Locate the part that you want to mount by just placing it on the kayak in the place that you want to glue it. Once you are happy with the location, trace a pencil line on the kayak around the part.
3. Apply a thin covering of the provided PVC glue on the surface of the part that is being glued to the kayak
4. Apply a thin covering of the PVC glue on the kayak inside of the line that you traced where the part will be glued.
5. Allow both of the surfaces to air dry for 2-3 minutes before attaching them together.
6. Apply the part to the glued area on the kayak and apply pressure to bond the two surfaces together. If you apply some heat with a hairdryer it will help activate the bonds quicker so that you won't have to hold it. Allow at least 12 hours for the parts to bond together before using.

Throttle Mount Installation

To mount your throttle to the side tubes, you will be using the provided Ram mounting system attached to accessory mounting patch which is glued down. The ball mount allows you to easily remove and adjust the position of your throttle with almost infinite adjustability.

Glue the throttle mount on the right tube of the kayak within a comfortable arms reach. If you are not familiar with PVC adhesion, follow the instructions noted above.



Running the Wires and Battery Installation

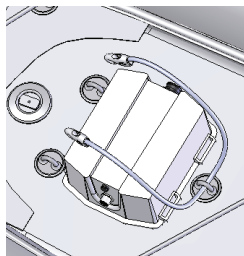
For some of our inflatable kayaks, you have two options on how to run the wires for the motor. If you have an i12S or and i14T Hobie inflatable, you can run your cables and store your battery internally since you have a bow storage area. If you have an i9S or choose to not drill any holes in your firewall of your i12S or i14T, you can keep the battery and wires on the deck. The following instructions will go through both setups.

On Deck Installation

If you are doing an install where you are placing the battery and cables on the deck, you do not need to drill any holes in the firewall. Follow the instructions below on how to attach any new pieces to hold the battery and cables in place.

Battery Hold Down Bungee®

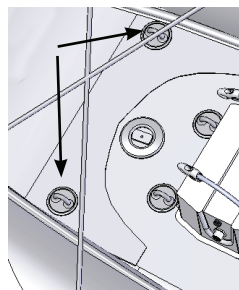
1. The best place to place the battery when in use is behind the seat. Place the battery behind the seat in the position that you prefer.
2. Locate the battery hold down Bungee and two of the loose padeye patches in the kit. Place them on the kayak in the positions as shown in the image to the right. Note that the bungee will pass over the battery and hook to the padeyes, holding the battery in place. Mark the location of the padeyes with a pencil and glue in place as noted in the instructions on page 10.



Wire Bag Padeyes

The wire bag is the black zipper bag included in this kit. Since there is a length of cable, the bag allows you to put the coiled up wire inside of the bag to help keep things organized. There are two padeyes in the kit which are glued to the kayak and provide two locations that the bag can be clipped to.

1. The best place to the wire bag padeyes use is behind the seat near where you are locating the battery. Mock up the location of the bag on your kayak and try different locations. We recommend that the padeyes are located so that they are on the floor of the kayak.



2. Once you find a position that you like, mark the location of the padeyes with a pencil and glue them down as noted in the gluing instructions on page 10.

3. Once you run all of the cables to the motor and throttle, you will see how much extra cable length you have. You can coil up the extra cable inside of the zipper bag to keep your deck free of excess cable.



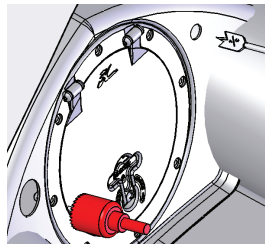
Thru Firewall Cable Installation

Thru the Firewall Installation

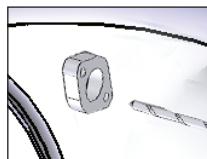
1. Start the installation by inflating your kayak.

2. Pick two locations on your firewall, one for the power cable and one for the throttle cable. Use some of the pieces provided to see how the large the hole will be and where the mounting screws go to make sure you have adequate room for everything. You will want to install the plugs as high up as possible so that when you drill the holes you are away from the tubes inside the kayak and reduce the risk of poking a hole in the side tubes.

3. When you have chosen the location of the power cable (we recommend on the left side of the hatch), drill a 1-3/4" hole in the firewall. A hole saw works best, but other cutting methods can be used if care is exercised. Be very careful and take your time to prevent puncturing the tubes on the inside of the firewall.

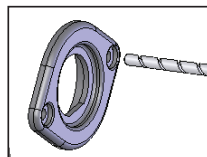


4. Pick the location for the throttle cable (we recommend on the right side of the hatch), and drill a 3/4" hole in the firewall. Once again, be very careful and take your time when making the hole.



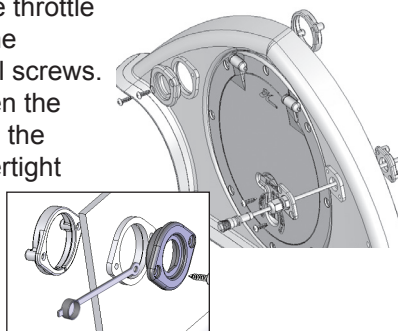
5. Place the small diamond shaped gasket centered over the 3/4" hole you just drilled. Use the smaller two holes in the gasket as a guide to mark and drill two 1/8" holes.

6. Now place the thru hull fitting for the power cable onto the 1-3/4" hole you drilled and use the two out holes as a guide to make and drill two 1/8" holes.

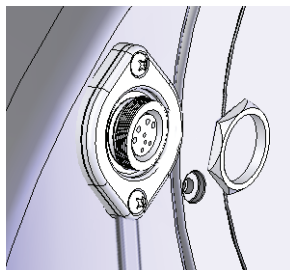


7. Thru bolt the mounting plates for the throttle and power cable to the firewall using the provided backing plate and sheet metal screws. Make sure the gasket is placed between the firewall and the part that is mounted on the outside of the firewall to provide a watertight seal.

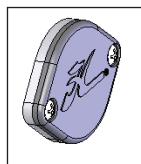
Be sure to place one of the cable caps underneath the top plate so that a screw passes through the hole on the lanyard.



8. Now take the power cable extension and insert the end with the “flat” on one side of the cable end through the thru-hull fitting. Make sure that the flat is lined up and the cable end is all the way in. Use the nut to tighten the assembly together.



9. If you decide at some point that you no longer want to have the power plug port, you can use the provided cap in this kit to cover the hole.

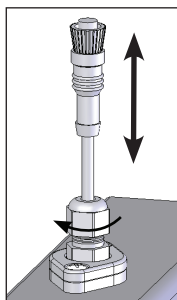


Throttle Cable Gland Function

You will notice that there is a taller hex nut-shaped part mounted to the throttle cable mounting plate. This part is called a “cable gland”. This allows you to easily change your cable length that is available to attach the throttle.

1. For more cable, turn the cable gland counterclockwise enough so that it loosens its grip on the cable and you can pull out more length.

2. Once you have the desired length, turn the cable gland clockwise to hold the cable and to provide a seal around the cable and prevent water leaks.



3. If you are not using the motor and don't want cable lying around the deck, you can follow the same gland operation and feed the cable into the hull all the way to the plug.

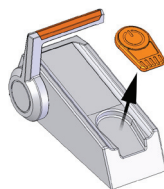
Battery

If you are doing the through the firewall installation, you can put the battery inside of the forward storage area on the i12S and i14T. To get the battery inside the hatch, you have to insert it diagonally and maneuver it in.

Hobie evolve Mirage Well Installation

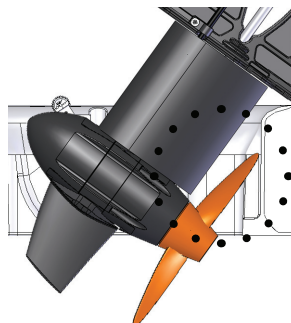
Drive Installation

1. Before installing the drive, make sure that the power cable is disconnected and the safety key is off the throttle pad.



2. If the prop is turned sideways, manually turn it so that the blades are straight up and down. Please note that there is a precision fit of the motor to the well, so it requires that you follow the procedures below carefully to get the motor to fit properly.

3. Angle the motor drive back and install so that the propeller blade sits in the rear area in the well.



4. With the prop in the aft area of the well, rotate the motor forward into the well and push it down. It will be a snug fit through the hole.

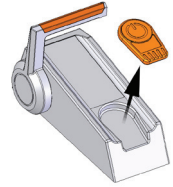
5. Once the motor passes through the well, lower the spine into the well locking system in. Make sure that it is dropping in straight and not crooked.



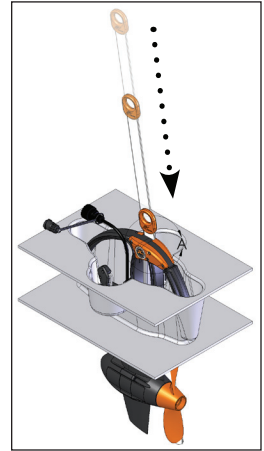
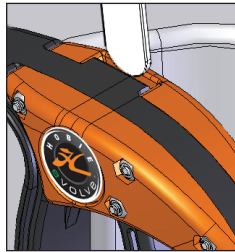
5. Once the motor is locked into place, try to rock it back and forth a little to make sure it is secure. A small amount of rocking is normal.

Drive Removal

1. Before handling the motor, make sure that the power cable is disconnected and the safety key is off the throttle pad.

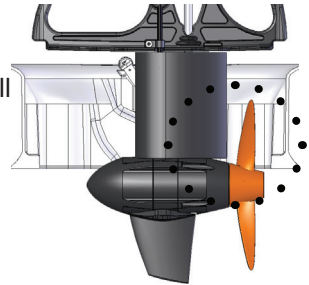


2. Slide the Prop Alignment Tool through the top slot on the drive and allow it to go all the way down. This tool will turn the propeller into the up/down configuration for removal.

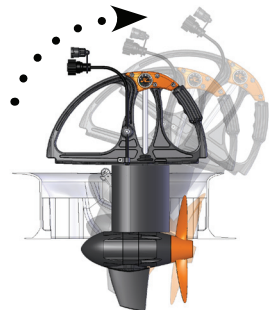


3. Remove the Prop Alignment Tool from the drive and unclick the drive locking levers

4. Pull the motor straight up and get the propeller up through the bottom and located in the rear area of the well. The propeller blade will fit into the pocket area in the back of the well.



5. With the propeller in the after area of the well, rock the drive back and rotate it out of the well.



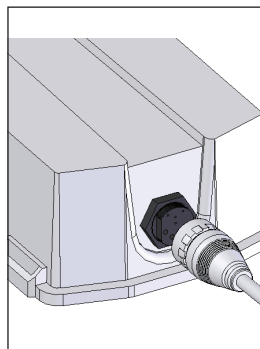
Time to Hit the Water

These steps will help guide you through the setup that is needed to get you going on the water.

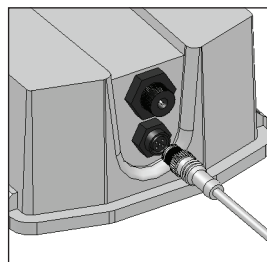
Before Heading Out

1. Make sure that the magnetic key is not on the throttle pad.

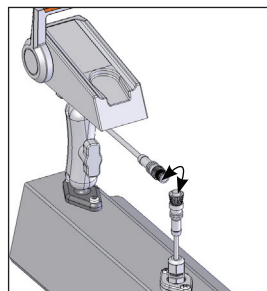
2. Place your battery in the kayak and attach the power cord extension. To attach the connector, mate the cord fitting to the battery and twist lock the connections together. You will not be able to twist the connections together until the plugs are oriented and seated together correctly. When the battery is resting, make sure that the top is facing up to ensure that the GPS gets a good signal. Do not cover the battery with metallic objects or those containing metal.



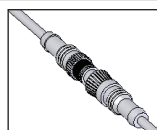
3. Connect your throttle cable extension to the battery. There is a guide in the connector which only allows it to connect in a certain orientation. **MAKE SURE THAT THE THREADS ARE GOING TOGETHER CORRECTLY TO PREVENT THEM FROM CROSS-THREADING.** If it isn't going together, check to see that the threads are lined up properly and are free of any sand or other debris.



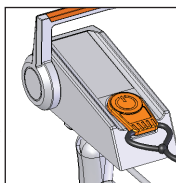
4. Attach your throttle to the ball mount on the kayak using the RAM attachment arm. Once you have the throttle at the desired adjustment, tighten up the side knob.



5. Connect the cable coming out from the throttle to the throttle extension cable.



6. Lock the motor unit into the well as instructed earlier in the manual and connect the power cord to the bulkhead power port on the firewall (if you installed that option) or just connect it to the extension cable you ran from the back of the boat.



7. Place the magnetic key on the throttle pad and turn the display on.

8. While close to shore, give the motor some power to make sure everything is working properly and that you acknowledge the current battery charge status.

Coming into Shore

1. As you come into shore, be sure to reduce your speed. Remove the key off the throttle pad and use the prop alignment tool to rotate the propeller into the correct position. Remove the drive before running aground.

2. Unhook all of the throttle and power connections and place the protective caps over the ends of the plugs. **MAKE SURE THAT THE CONNECTIONS ARE DRY PRIOR TO INSTALLING THE CAPS.** Spray some contact spray (example; WD-40®) on the terminals from time to time.

3. **REMOVE BATTERY FROM HULL DURING TRANSPORTATION OR TURNING OVER THE KAYAK.**

4. If you are using the motor in salt or brackish water conditions, rinse all the equipment with fresh water.

Operating Elements

This section covers technical information about some of the componentry of your electric motor kit. It is important that you read this information to become familiar with and have a good general knowledge of all the parts included in this kit.

BATTERY PACK

About your Battery

The battery pack is equipped with high performance lithium manganese batteries, also known as LIMA cells. The LIMA cells have a self-discharge of under 1% per month at 20 °C / 70 °F, have stable cycles, and no memory effect. The lithium battery can be used at environmental temperatures from -20 °C to +60 °C / -4 °F to +140 °F.

A controller with several functions to protect and care for your battery is integrated in the battery pack. The controller, among other functions, protects the battery from fully discharging and overcharging by controlling the charging current.

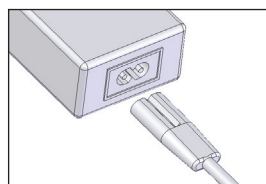
The capacity of the battery pack changes over time. To adjust the capacity indicator we recommend completely emptying the fully charged battery once a year at average speeds.

The battery pack has a 20 A safety fuse. Open the marked cover in the battery's base to exchange the fuse. When closing the cover ensure that the cover and seal sit properly (label to the outside).

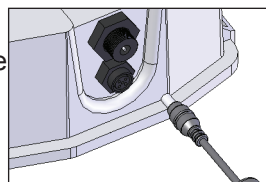
Charging

The charging unit supplied charges the evolve battery pack in approximately 8 hours (from 0% to full charge). When charging at high environmental temperatures (> 35 °C / > 95 °F) longer charging times may occur as the controller is equipped with a temperature-dependent charging power "off" switch which ensures a proper and gentle charging of the cells. To charge your battery:

1. Plug the cable end that plugs to the wall into the charger junction box which has the cable end to connect to the battery. There are two sets of wall plug cords in this kit and should be used according to the plug shape that adapts to your wall socket.



2. Connect the charging unit to the battery and the power supply. To do so remove the motor cable (if attached) on the battery pack and use the same jack for charging.



3. You can charge the battery pack with the throttle still plugged in. If the remote throttle is connected, you can turn on the display and view the current charging status in percent with “charging” being displayed in the top most field on the display.



- The battery is protected from water penetration (IP68).
- Use the Torqeedo 402 battery exclusively with the evolve motor.
- Only use the power supply unit supplied or one authorized by Torqeedo to charge the battery pack.
- Only charge the battery at environmental temperatures between 0 °C and 45 °C / +32 °F and +115 °F.



- Protect the battery pack from mechanical damage. If the housing of the battery is damaged, do not use the battery.
- Do not short circuit the battery pack.
- Avoid submerging the battery pack for long periods of time.
- The LIMA battery cells only catch fire if they are exposed to temperatures over 300 °C / 570 °F. This is an important advantage over other lithium based battery systems. If this should occur try to put the battery in a location where it will not cause damage. If this is not possible, keep a safe distance or cover the battery with sand or other dry, non-flammable materials.

Caring for the Battery

You will extend the lifespan of your battery if you do not expose it to hot environments for longer than necessary. In order to guarantee the longest possible lifespan of the battery, if you store it for a long period of time (e.g. over the winter), it should be charged to around 50% and stored between 0 °C and +15 °C / 32 °F and +60 °F.

REMOTE THROTTLE

Controlling Speed and Direction

You can adjust the speed and propeller rotation direction by moving the remote throttle. Forward movement of the remote throttle means the kayak moves forward, backward movement of the remote throttle means the kayak moves backwards. Please note that reverse movement does not have the same thrust as going forward. The middle position (neutral) corresponds to the stop position.


Magnetic Key

The remote throttle is equipped with a magnetic key that operates as an on/off safety function. The motor only works if you place the magnetic key on the proper location on the remote throttle control. If the magnetic key is removed the motor stops. You can only start the motor again if you first replace the magnetic key and then move the remote throttle to the central (stop) position.


Remote Throttle Button Layout

The remote throttle is equipped with an on-board computer with an integrated display and three buttons below the screen.

Turning the Display On

Press the “on/off”  button for 1 second to switch the motor on. Pressing the button again for 3 seconds switches the motor off again. You can switch the motor off in any operating mode. If there is no activity for one hour the motor switches off automatically. Press the button again to switch it back on.

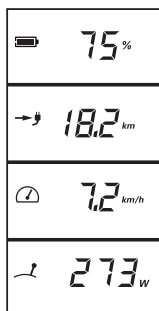
Changing the Display Units

1. Press and the  button.
2. You will first be able to select the units in which the remaining range is displayed. By pushing the middle button in the center of the display you select between kilometers, miles, nautical miles, and hours.
3. Choose your unit selection by pressing “setup” again.
4. You then enter the speed indicator setting. You can choose between kilometers per hour, miles per hour, and knots. Again, select the units with the center button and confirm your selection and leave the “setup” menu again by pressing the “setup” button.

Calibrating the Throttle

The middle button is used for calibration. If the display shows a relevant error message you can recalibrate the motor with the help of this button. You will find details on the error codes and calibration instruction near the error code table.

Display in Normal Operation



Battery charge status in percent remaining

Remaining range at current speed and battery status

GPS Calculated Ground speed

Power consumption in Watts

Other Indicators



Drive slowly: Is displayed when the battery capacity is less than 20%.

Charging: Is displayed when charging.



The GPS module integrated into the battery pack searches for satellite signals to determine the position and speed. If no GPS signal is received within 5 minutes the display switches in the second field from “remaining range at current speed” to “remaining time at current speed”. In addition, a clock icon is displayed. If the remaining duration is more than 10 hours it is indicated in whole hours. If it is less it is shown in hours and minutes.



This icon is displayed if the remote throttle must be placed in the central (stop) position. This is necessary before starting off.



Is displayed if the temperature of the engine or battery is too high. The motor automatically decreases the input power.

Error: If an error occurs the error icon and a two-digit code are displayed in the bottom field. The code shows the component causing the error and the error itself. You will find details about the error codes later in this manual.

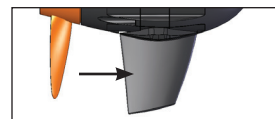
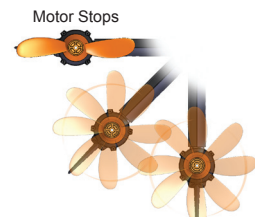
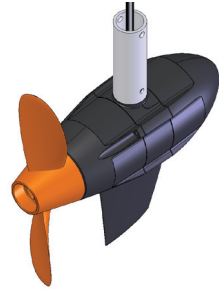
Operating Elements

PYLON

The pylon is the lower motor unit that contains the motor and the electronic control system which generate the propulsion. Several protective functions are programmed into the pylon.

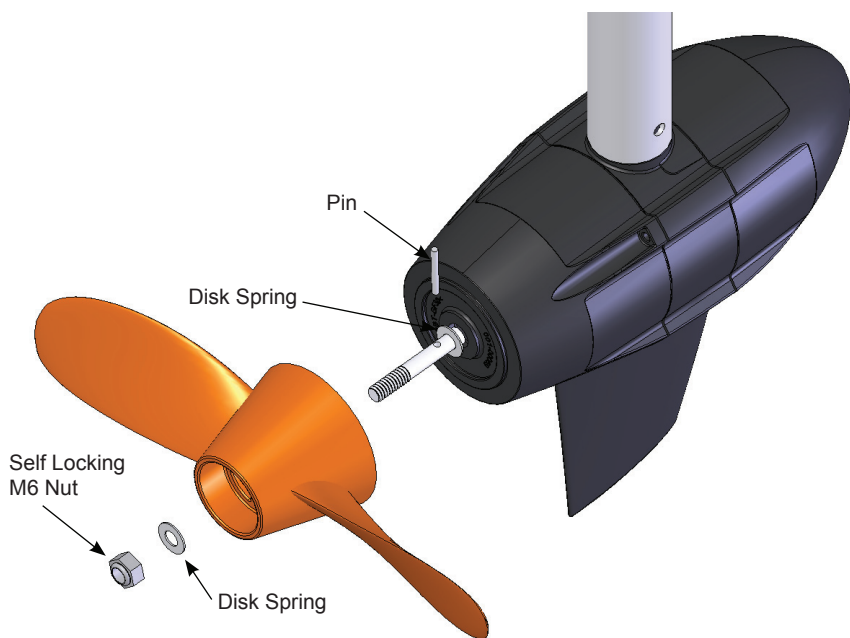
Protective Functions

1. Temperature protection: If the motor overheats, the motor control system reduces the output of the drive until a temperature equilibrium is established between generated and disposed heat. Above a critical temperature the motor stops and the display shows error code E02 or E08.
2. Blocking protection: If the propeller is blocked or stuck, the motor would normally consume too much power. In this case, the motor is switched off within a few hundredths of a second to protect the electronics, motor winding, and propeller. After removing the blockage you can switch the motor on again. If there is a blockage the display shows error code E05.
3. Cable break protection: If the connection cable is damaged, i.e., if the connection to the remote throttle, battery or motor is broken, the motor will stop or not start. An error code starting with E3 and containing another number is shown on the display.
4. Location sensor: The Ultralight has an integrated protective device that switches the motor off when it is beyond a particular slope (90°). This prevents the propeller from turning if the boat capsizes or tilts further.
5. Throttle control: The propeller rev change responds slowly to protect mechanical drive components and avoid short-term power peaks.
6. Fin: The fin supports steering movements and protects the propeller from hitting obstacles underwater.



Propeller Replacement

1. Disconnect the cable between the motor and battery.
2. Loosen and unscrew the central nut on the propeller.
3. Pull the propeller from the motor shaft.
4. Pull cylinder pin from the motor shaft and remove the disk spring from the motor shaft.
5. Connect the cable between the motor and battery. Allow the motor to run slowly and check whether the shaft is turning unevenly at the shaft sealing ring. Contact Torqeedo Service if the shaft is damaged or uneven.
6. Once again, disconnect the cable between the motor and battery. Place a disk spring onto the motor shaft. Note the direction of the disk spring: The inside rim of the disk spring must be in contact with the motor housing. Insert the new cylinder pin centrally to the motor shaft.
7. Place the propeller onto the motor shaft and turn the propeller so that the cylinder pin is aligned with the groove in the propeller.
8. Place a disk spring onto the motor shaft behind the propeller. Note the direction of the disk spring: The outside rim of the disk spring needs to be in contact with the propeller.
9. Tighten the central nut on the propeller using a 10mm socket wrench. **TIGHTEN THE NUT UNTIL IT IS SNUG!**



Troubleshooting and Care Instructions

Fault Codes		
Display	Cause	What to do
E02	Engine overheating	Motor can be used again after a short wait (about 10 minutes). Contact Torqeedo Service.
E03	Motor tilted during operation	Motor can be used again after tilting it down and pressing on/off.
E04	Motor put into operation while tilted	Motor can be restarted from the stop position after being tilted down.
E05	Motor/propeller blocked	Loosen blockage and turn propeller one revolution by hand.
E06	Voltage in motor too low	Low battery charging status. Motor can be used again slowly from the stop position.
E07	Motor Overcurrent	Continue at low output. Contact Torqeedo Service.
E08	Circuit board overheating	Motor can be used again after a short wait (about 10 minutes). Contact Torqeedo Service.
E21	Remote Throttle calibration defective	Re-Calibrate Throttle by: 1. Press the middle button for 10 seconds. The display will show "cal up". 2. Press remote throttle control to full gas then press the middle button. 3. The display shows "cal stp". Return remote throttle control to central position then press the middle button. 4. The display shows "cal dn". Press the remote throttle control to full reverse position then press middle button.
E22	Magnetic sensor defective	Re-calibrate (refer to E21)
E23	Value range false	Re-calibrate (refer to E21)
E30	Motor communication error	1. Check the motor cable's plug-in connection. 2. Check the motor cable for damage. 3. Check the fuse on the underside of the battery. If applicable replace the fuse. If the fuse is replaced, the information display will not show correct data until the battery is fully charged again.
E32	Remote throttle control communication error	Check the remote throttle control cable's plug-in connection. Check the cable.
E33	General communication error	Check the plug-in connections and cables. Switch the motor off and on again.
E41,42	Incorrect charging voltage	Check whether the power supply unit used has an output voltage between 10 V and 20V. If necessary contact Torqeedo Service.
E43	Battery empty	Charge battery. Motor can be used again slowly from the stop position if necessary.
E45	Battery overcurrent	Switch motor off and on again. The information display will not show correct data after this error occurred. The battery needs to be fully charged to reset the information system.

Fault Codes cont.		
Display	Cause	
E46	Battery operating temperature error	Battery cells outside operating temperature between -20°C and +65°C/ -4°F and +150°F. The motor can be used again when the temperature has stabilized.
E48	Charging temperature error	Charging will continue when the cell temperature is between 0°C and +45°C / +32°F and +115°F.
Other Error Codes	Defects	Contact Torquedo Services and notify them of the error code.

Storage and care instructions

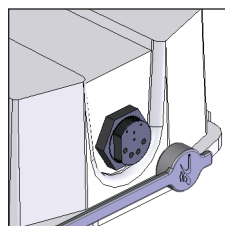
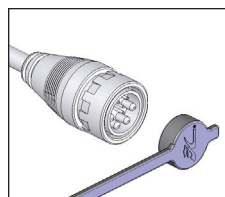
Corrosion protection

Materials were chosen with a high level of corrosion-resistance. All of the materials used in the evolve are, as with most leisure maritime products, classed as “seawater resistant”, not “seawater-proof”.

- After use you should always remove the motor from the water. The tilting mechanism can be used for this.
- After operation in salty or brackish water, wash all components in fresh water.
- Store the motor, battery pack, and remote throttle in the waterproof travel bag only when dry. If storing the items for longer periods of time in the travel bag, do not close it so it is airtight.
- Treat all cable connectors with contact spray (WD-40) once a month.
- Check the cable regularly for damage.
- Ensure that the motor's individual parts are dry before stowing them in the travel bag.
- Do not bend the cable and tackle line around sharp edges.
- Only use the travel bag for transportation, not for shipping the motor. The motor stored in the travel bag may be affected by heavy objects.

Connector Caps

Included with this kit are caps that can cover all of the wire connectors. Placing the caps over the ends of the wires will prevent any water or debris from collecting in the electrical contact area when the ends are not connected together. **MAKE SURE THAT THE CAPS AND CONNECTORS ARE CLEAN AND DRY PRIOR TO INSTALLING OVER THE CONNECTORS.** The lanyards on the caps are for attaching them to features on your kayak or around the cables themselves. The larger circular cap is designed for the battery and exposed plug that goes on the thru hull fitting. The lanyard loop will fit over top of the plug.



Warranty

Warranty Registration

Your warranty registration card is completed online and should be submitted to Hobie Cat Company within 30 days of the date of purchase. Please visit our website www.hobiecat.com and go to "Warranty Registration" under "Company Support".

If you have problems with your evolve, contact your dealer first. If you need further assistance, contact Hobie Cat Company. To help process any warranty problems, it is important to complete your warranty card for our records.

Warranty Process

Adhering to the following warranty process is a prerequisite to the satisfaction of any warranty claim. Before dispatching any apparently faulty goods, it is imperative to coordinate the delivery with your Hobie dealer. If necessary, you can find Hobie Cat Company contact details on the back of this manual. We are unable to receive products which we have not been notified of and will therefore refuse delivery.

To obtain warranty services, within **30 days** of discovering the problem take your Hobie evolve, along with proof of purchase (sales receipt), to the authorized Hobie dealer from whom you purchased your evolve unless you have moved or are traveling. In that case, take it to the nearest authorized Hobie dealer.

For returning the motor to Hobie Cat Company, we recommend keeping the original Torqeedo packaging. If this is no longer available, packaging will be provided, but is not included in the warranty. ***Please note that Lithium Batteries are NOT TO BE SHIPPED without proper authorization and packaging provided by Hobie Cat Company or Torqeedo.***

Extent of Warranty

The warranty ends **two years** after the date the product was delivered to the final purchaser. Products that are used commercially or by public authorities - even if only temporarily - are excluded from this two-year warranty. In these cases, the statutory warranty applies.

Hobie Cat Company, Hobie Cat Australasia, Hobie Kayaks Europe and Torqeedo guarantee the final purchaser of a Hobie evolve powered by Torqeedo that the product is free from material and manufacturing defects during the period stated above. The manufacturer will indemnify the final purchaser for any expense for the repair of a material or manufacturing defect.

Hobie Cat Company decides whether defective parts are repaired or replaced. Distributors and dealers who repair Torqeedo motors have no authority to make legally binding statements on behalf of Hobie Cat Company or Torqeedo.

Normal wear and tear and routine servicing are excluded from the warranty.

This Warranty Does Not Cover

- Normal wear and discoloration
- Damage caused by abuse or failure to perform normal maintenance
- Damage caused by alterations or modifications
- Damage caused by hitting submerged objects or beaching without retracting the motor
- Transportation of parts to Hobie Cat Company or its dealers
- Any engine used as a rental or placed in commercial services of any kind
- Any other consequential damages, incidental damages, or incidental expenses, including damage to property
- Damage caused by failure to follow procedures outlined in this manual
- Damage caused by storing the motor in the water (ex. on a mooring)
- Previous services or repairs were not carried out by firms authorized by Torqeedo, or non-original parts were used

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you.

Implied Warranty

Any implied warranties, including implied warranty of merchantable and fitness for a particular purpose, shall be no longer than the duration of this express warranty. Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.

Hobie Cat Company makes no express warranties in addition to this Limited Warranty. Hobie Cat dealers have no authority to make any warranties on behalf of Hobie Cat Company in addition to or inconsistent with those stated herein.

To the extent any provision of this warranty is prohibited by Federal, State or Municipal law and cannot be preempted, it shall not be applicable. This warranty gives you specific legal rights. You may have other rights, which vary from state to state.

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Huskisson, New South Wales Australia

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