

SONIC WAKE™

36-INCH SELF-RIGHTING DEEP-V BRUSHLESS RTR

PRB08032

Owners Manual • Bedienungsanleitung • Manuel de l'utilisateur • Manuale dell'utente



Battery and Charger Not Included

NOTICE

All instructions, warranties and other collateral documents are subject to change at the sole discretion of Horizon Hobby, LLC. For up-to-date product literature, visit <http://www.horizonhobby.com> and click on the support tab for this product.


MEANING OF SPECIAL LANGUAGE

The following terms are used throughout the product literature to indicate various levels of potential harm when operating this product:

WARNING: Procedures, which if not properly followed, create the probability of property damage, collateral damage, and serious injury OR create a high probability of superficial injury.

CAUTION: Procedures, which if not properly followed, create the probability of physical property damage AND a possibility of serious injury.

NOTICE: Procedures, which if not properly followed, create a possibility of physical property damage AND little or no possibility of injury.

 **WARNING:** Read the ENTIRE instruction manual to become familiar with the features of the product before operating. Failure to operate the product correctly can result in damage to the product, personal property and cause serious injury.

This is a sophisticated hobby product and NOT a toy. It must be operated with caution and common sense and requires some basic mechanical ability. Failure to operate this Product in a safe and responsible manner could result in injury or damage to the product or other property. This product is not intended for use by children without direct adult supervision. Do not use with incompatible components or alter this product in any way outside of the instructions provided by Horizon Hobby, LLC. This manual contains instructions for safety, operation and maintenance. It is essential to read and follow all the instructions and warnings in the manual, prior to assembly, setup or use, in order to operate correctly and avoid damage or serious injury.

Age Recommendation: Not for children under 14 years. This is not a toy.

Safety Precautions and Warnings

As the user of this product, you are solely responsible for operating in a manner that does not endanger yourself and others or result in damage to the product or the property of others.


- When handling and/or transporting your boat, always pick up the boat from the front, keeping all moving parts pointed away from you.
- Always keep a safe distance in all directions around your model to avoid collisions or injury. This model is controlled by a radio signal subject to interference from many sources outside your control. Interference can cause momentary loss of control.
- Always operate your model in open spaces away from full-size vehicles, traffic and people.
- Always carefully follow the directions and warnings for this and any optional support equipment (chargers, rechargeable battery packs, etc.).
- Always keep all chemicals, small parts and anything electrical out of the reach of children.
- Always avoid water exposure to all equipment not specifically designed and protected for this purpose. Moisture causes damage to unprotected electronics.
- Never place any portion of the model in your mouth as it could cause serious injury or even death.
- Never operate your model with low transmitter batteries.

Water-Resistant Boat with Waterproof Electronics

Your new Horizon Hobby boat has been designed and built with a combination of waterproof and water-resistant components to allow you to operate the product in calm, fresh water conditions.


While the entire boat is highly water-resistant, it is not completely waterproof and your boat should NOT be treated like a submarine. The various electronic components used in the boat, such as the ESC, servo(s) and receiver are waterproof, however, most of the mechanical components are water-resistant and require additional maintenance after use.

Metal parts, including the bearings, pins, screws and nuts, propeller, rudder, rudder mounts, prop struts, as well as the contacts in the electrical cables, will be susceptible to corrosion if additional maintenance is not performed after running in wet conditions. To maximize the long-term performance of your boat and to keep the warranty intact, the procedures described in the **WET CONDITIONS MAINTENANCE** section must be performed regularly.

 **CAUTION:** Failure to exercise caution while using this product and complying with the following precautions could result in product malfunction and/or void the warranty.

General Precautions

- Read the **WET CONDITIONS MAINTENANCE** procedures and make sure that you have all the tools you will need to properly maintain your boat.
- Not all batteries can be used in wet conditions. Consult the battery manufacturer before use. Caution should be taken when using Li-Po batteries in wet conditions.
- Most transmitters are not water-resistant. Consult your transmitter's manual or the manufacturer before operation.
- Never operate your transmitter or boat when lightning is present.
- Salt water is very conductive and highly corrosive. If you choose to run your boat in salt water, immediately rinse the boat in fresh water after each use. Operating your boat in salt water is at the sole discretion of the modeler.

 **CAUTION:** Always keep hands, fingers, tools and any loose or hanging objects away from rotating parts.

- Remove the battery pack(s) and dry the contacts. If you have an air compressor or a can of compressed air, blow out any water that may be inside the recessed connector housings.
- Remove all moving parts. Dry and lubricate parts after every 30 minutes of operation or if the boat becomes submerged.

NOTICE: Never use a pressure washer to clean your boat.

Wet Conditions Maintenance

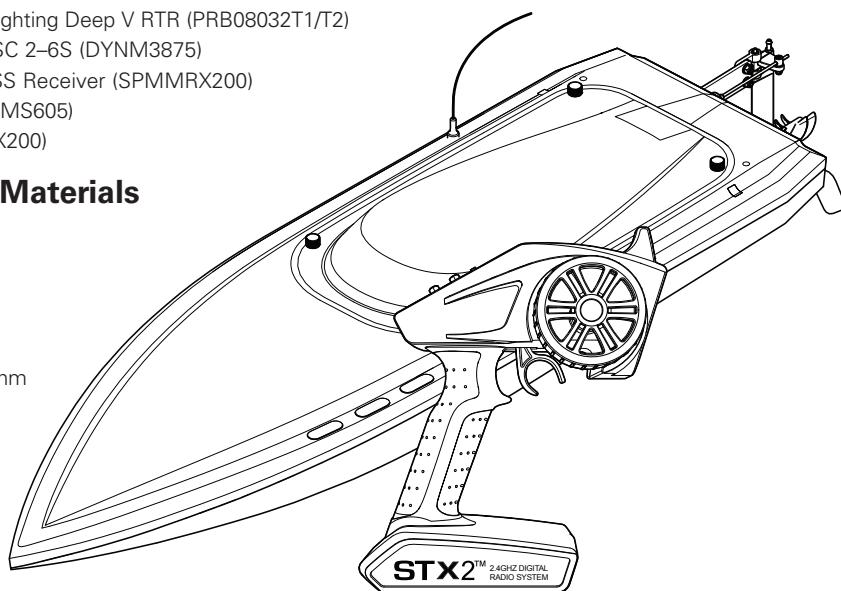
- Drain any water that has collected in the hull by removing the drain plug or canopy and tilting the boat in the appropriate direction to drain the water.
- Use an air compressor or a can of compressed air to dry the boat and help remove any water that may have gotten into small crevices or corners.
- Spray the bearings, fasteners and other metal parts with a water-displacing light oil or lubricant.
- Let the boat air dry before you store it. Water (and oil) may continue to drip for a few hours.

Box Contents

- Pro Boat® Sonicwake™ 36-Inch Self-Righting Deep V RTR (PRB08032T1/T2)
- Dynamite® 120A Brushless Marine ESC 2–6S (DYNM3875)
- Spektrum™ Marine 2-CH 2.4 GHz FHSS Receiver (SPMMRX200)
- Spektrum™ 9KG Waterproof Servo (SPMS605)
- Spektrum™ STX2 2-CH Radio (SPMSTX200)

Recommended Tools and Materials

- Needle nose pliers
- Paper towel
- Rubbing alcohol
- Open-end wrench: 10mm (2)
- Nut driver: 4mm, 5.5mm, 8mm
- Hex wrench: 1.5mm, 2mm, 2.5mm, 3mm
- Clear tape (DYNM0102)
- Pro Boat® Marine Grease and Gun
- Hook and Loop Tape Set, WP (4pcs)
- Clean towels
- CA or Epoxy Glue
- Ball driver: 2.5mm



Specifications

Length 36 in. (914.4mm)

Beam (width) 11 in. (279.4mm)

Hull Material Polycarbonate

Batteries 7.4V 50C LiPos (sold separately)
11.1V 50C LiPos (sold separately)
are required to operate the boat.

(4) AA batteries (sold separately)
are required to operate the
transmitter.

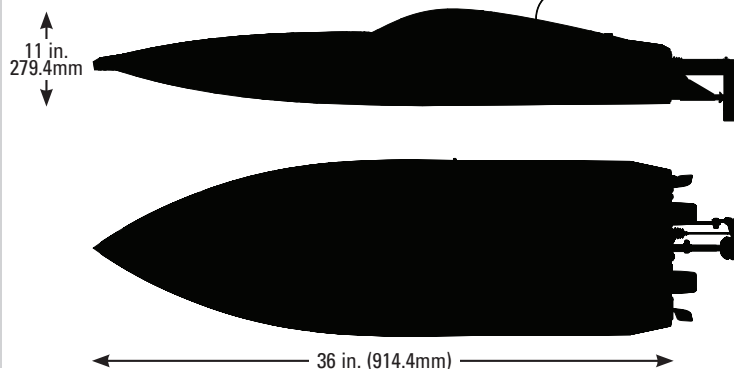
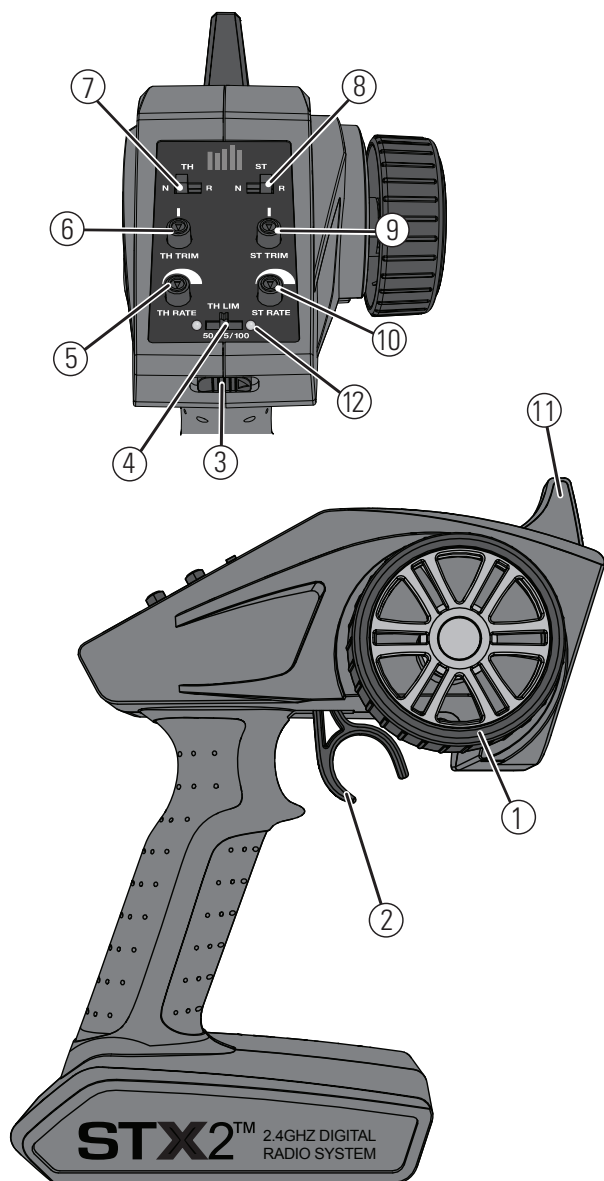


Table of Contents

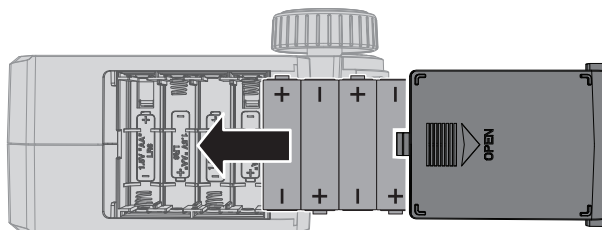
Safety Precautions and Warnings	2	Propeller Service	8
Water-Resistant Boat with Waterproof Electronics	2	Trim Tab Adjustment	8
General Precautions	2	Drivetrain Lubrication	9
Wet Conditions Maintenance	2	Water Cooling System	9
Box Contents	3	General Information	10
Recommended Tools and Materials	3	Binding	10
Specifications	3	Failsafe	10
Transmitter Controls	4	Throttle Range Calibration	10
Antenna Tube Installation	4	ESC Programming Procedure	10
Low Voltage Cutoff (LVC)	5	Electronic Speed Control (ESC) Programming	11
Battery Chemistry	5	Troubleshooting Guide	11
Battery Pack Installation	5	Limited Warranty	12
Control Check	6	Contact Information	13
Getting Started	6	FCC Information	13
When You Are Finished	6	IC Information	13
Boating Tips	7	EU Compliance Statement	13
Self-Righting	7	Instructions for Disposal of WEEE	13
Maintenance	7	Replacement Parts	50
Propeller Angle Adjustment	8	Optional Parts	51

Transmitter Controls



1. **Steering Wheel** Controls direction (left/right) of the model
2. **Throttle Trigger** Controls speed and direction (forward/brake/reverse) of the model
3. **ON/OFF Switch** Turns the power ON/OFF
4. **Throttle Limiting Switch** Adjusts the throttle limit from 50%, 75%, and 100%
5. **TH Rate** Adjusts the end point of the throttle
6. **TH Trim** Adjusts the throttle neutral point
7. **TH REV** Reverses the function of the speed control when pulled back or pushed forward
8. **ST REV** Reverses the function of the steering when the wheel is turned left or right
9. **ST Trim** Adjusts the steering center point
10. **ST Rate** Adjusts the end point of the steering
11. **Antenna** Transmits the signal to the model
12. **Indicator Lights**
 - **Solid red lights**—Indicates radio connectivity and adequate battery power
 - **Flashing red lights**—Indicates the battery voltage is critically low. Replace batteries

Installing Transmitter Batteries



This transmitter requires 4 AA batteries.

1. Remove the battery cover from the transmitter.
2. Install the batteries as shown.
3. Install the battery cover.

CAUTION: Never remove the transmitter batteries while the model is powered ON. Loss of model control, damage, or injury may occur.

CAUTION: If using rechargeable batteries, charge only rechargeable batteries. Charging non-rechargeable batteries may cause the batteries to burst, resulting in injury to persons and/or damage to property.

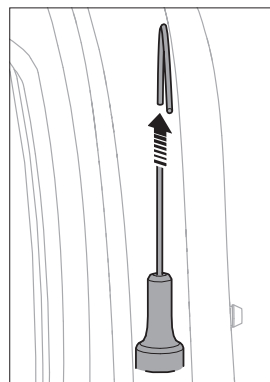
CAUTION: Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to national regulations.

Antenna Tube Installation

Install the receiver antenna in the tube as shown. Do not bend end of antenna over antenna tube and place cap over it. The antenna does not have to be outside of the tube to operate properly.

Keep the end of the antenna above the boat's waterline to get the best transmitter reception. Apply clear tape (DYNM0102), if desired.

NOTICE: Do not cut or kink the receiver antenna or damage may result.



Low Voltage Cutoff (LVC)

The factory default setting for the LVC in the ESC included with your boat is set at 3.2V per cell. Discharging a Li-Po battery below 3V per cell may damage your battery. The included ESC protects the boat battery from over-discharge using Low Voltage Cutoff (LVC). Before the battery charge decreases too much, LVC removes power supplied to the motor.

The boat drastically slows or stops completely once LVC is activated. Releasing the throttle and reapplying it will provide a limited amount of power to safely return the boat to shore. Repeated use after LVC is activated will damage the batteries.

Once LVC has been activated, the ESC status light will flash red continuously indicating that the ESC is in LVC mode.

NOTICE: Repeated operation to LVC will damage the battery.

LVC can activate prematurely if you use (1) low C-rated batteries or (2) old, worn, and/or weak batteries.

The average run time—using the recommended batteries (**DYNB3810EC** or **DYNB3811EC**)—is between 3–4 minutes at non-stop, open throttle. Limited run time may indicate worn or weak batteries.

Tip: If you've installed freshly charged batteries, and LVC activates within the first minute of operation, replace your worn or weak batteries with the recommended batteries.

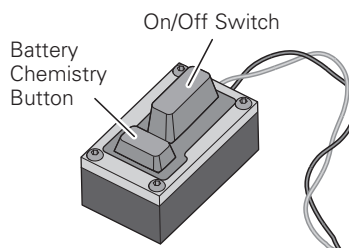
Tip: Monitor your boat battery's voltage before and after boating by using a Li-Po Cell Voltage Checker (DYN4071, sold separately).

Disconnect and remove the Li-Po battery from the boat after use to prevent trickle discharge. Charge your Li-Po battery to half capacity before storage. During storage, make sure the battery charge does not fall below 3V per cell. LVC does not prevent the battery from over-discharge during storage.

Battery Chemistry

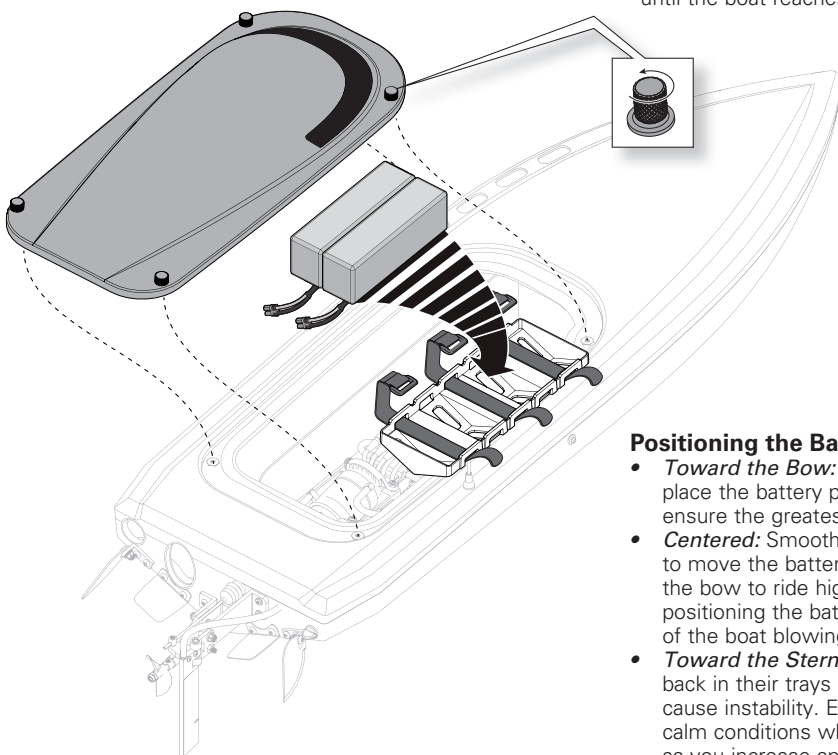
The ESC comes from the factory in Li-Po Mode. To change battery chemistry:

1. Keep the throttle at neutral and power ON the ESC.
2. Press and hold the Battery Chemistry Button on the power switch for 3 seconds. The LED flashes the current battery chemistry (red = Ni-MH or Ni-Cd; green = Li-Po).
3. Continue holding the Battery Chemistry Button for another 6 seconds. The ESC changes battery chemistry and the LED flashes the new battery chemistry.
4. Power OFF the ESC. The ESC saves the setting until it is changed.



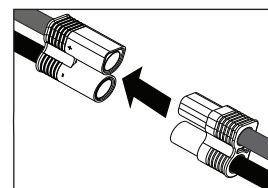
Battery Pack Installation

1. Loosen the 4 canopy screws.
2. Carefully lift the canopy from the hull.
3. Install the batteries in the battery tray.
4. Connect the battery packs to the ESC power connectors.



5. Before placing your boat in the water, secure the canopy on the hull. Apply clear tape (DYNM0102), if desired.

Tip: Begin with the batteries as far forward as possible, moving them back ½ inch (13mm) at a time toward the stern until the boat reaches maximum speed.



Positioning the Battery Packs

- **Toward the Bow:** In rough water or strong wind conditions, place the battery packs at the front of the battery trays to ensure the greatest stability.
- **Centered:** Smooth water and calm winds may allow you to move the battery packs rear-ward in the hull to allow the bow to ride higher and increase speed. Be aware that positioning the batteries farther aft increases the likelihood of the boat blowing over at speed or becoming unstable.
- **Toward the Stern:** Positioning the batteries all the way back in their trays may provide higher top speeds but can cause instability. Experiment with this position only in very calm conditions while closely monitoring the hull's attitude as you increase speed.

Control Check

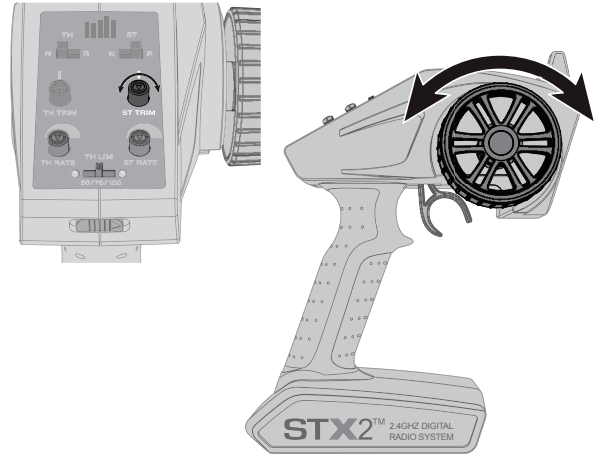
IMPORTANT: Perform a control check at the beginning of each boating session, after repair, or after installation of new batteries.

Ensure the receiver antenna is extended properly and all batteries are fully charged.

1. Power ON the transmitter and the boat.
Do not install the boat canopy.
2. Place the boat securely on the boat stand.

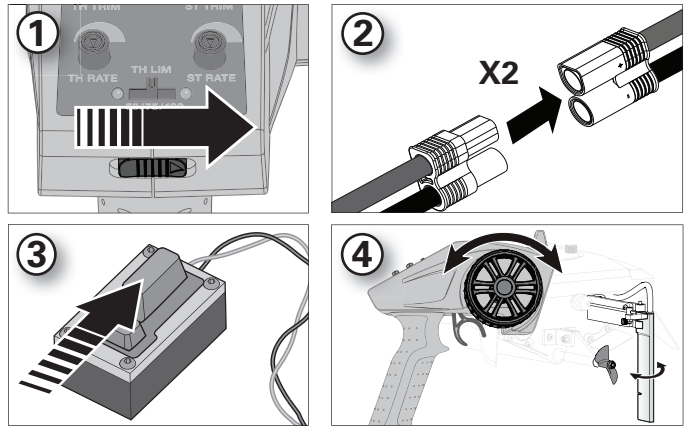
NOTICE: Do not operate the motor longer than 20 seconds without water-cooling circulation or damage may result.

3. Check steering and throttle on the transmitter.



Getting Started

1. Power on the transmitter.
2. Connect the two batteries to the EC5™ connectors on the ESC.
3. Power on the ESC switch. The ESC arming tones will sound.
4. Test the transmitter's control of the boat with the boat on the display stand.



When You Are Finished

1. Power off the ESC.
2. Power off the transmitter.
3. Disconnect and remove the battery from the boat.

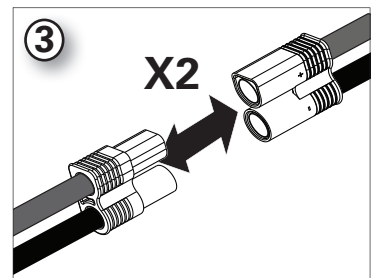
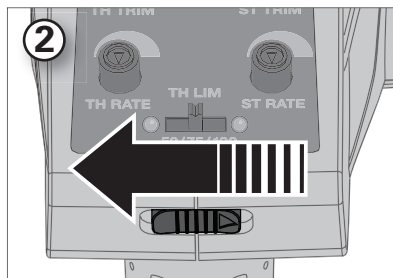
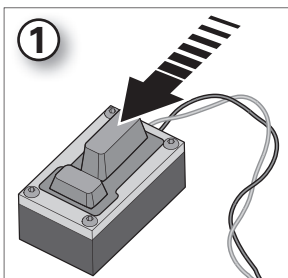
Tip: Always remove the canopy before storage or moisture may allow mold and mildew to grow in the boat.

4. Drain water from inside the hull using the drain plug.
5. Fully dry the inside and outside of the boat, including the water cooling lines and jacket around the motor. Carefully dry all battery, motor and receiver connectors by removing one at a time and reinstalling.
6. Remove the hatch before storing your boat.

7. Repair any damage or wear to the boat.
8. Lubricate the flex shaft using Pro Boat® Marine Grease (DYNE4200 or DYNE4201).
9. Note the lessons learned from the trimming of your boat, including water and wind conditions.

NOTICE: When you are finished boating, never leave the boat in direct sunlight or in a hot, enclosed area such as a car. Doing so can damage the boat.

NOTICE: Using a larger propeller, or one with more pitch than the one included (on 6S [22.2v]), may damage the electronics and battery packs.



Boating Tips

During the first run, we recommend calm wind and water conditions to ensure that the boat is properly set up. Maximum speeds of 50 MPH/+ can be achieved once you have set up the boat for your specific conditions. Top speed will also be determined by the battery's ability to efficiently deliver power to the motor via the ESC.

Consult local laws and ordinances before choosing a location to pilot your boat.

1. Carefully place the boat in the water.
2. Operate the boat at slow speeds near the shoreline. Avoid objects in the water at all times. When the boat is moving forward, ensure water flows out of the coolant outlet.
3. Once you are comfortable operating the boat at slow speeds, it is safe to operate the boat farther from the shore at higher speeds.
4. Bring the boat back to shore when the motor starts to pulse.

NOTICE: Never operate your boat in less than 12 inches (30.5 cm) of water.



CAUTION: Never attempt to retrieve a downed boat by swimming. If you need to retrieve your boat from the water, use fishing equipment or another boat.

NOTICE: When running at full speed in choppy water, the propeller may exit and re-enter the water repeatedly and very quickly, subjecting the propeller and drive shaft to some stress. Frequent stress may damage the propeller and drive shaft.

In rough water and windy conditions, consider:

- mounting the batteries further forward for added stability
- adjusting the struts downward to prevent the boat from overturning

Avoid boating near:

- watercraft
- people (swimming areas, fishing areas)
- stationary objects
- waves and wakes
- rapidly moving water
- wildlife
- floating debris
- overhanging trees
- vegetation

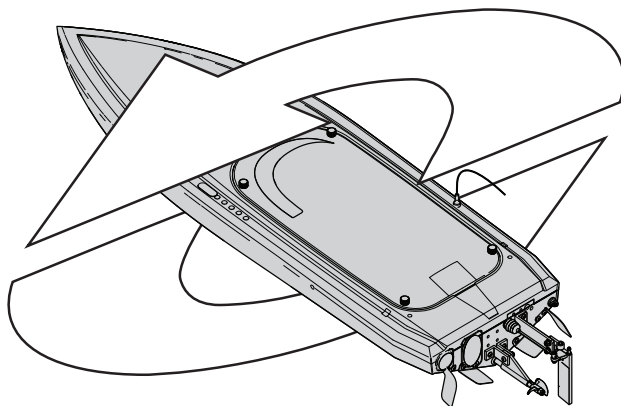
Self-Righting

The self-righting feature uses a water ballast system. The ballast works as a controlled breach in the hull. As the ballast fills with water, the weight of the water forces the boat to sink, while the air trapped inside the hull causes enough buoyancy to right the boat.

The boat will self-right automatically, using water ballast.

Once the boat is upright, it will lean to one side. Apply full throttle. The trapped water will be forced out of the ballast tanks by the boat's forward momentum.

IMPORTANT: Applying throttle during the self-righting process may prevent the boat from turning over.



Maintenance

Propeller Angle Adjustment

Raising the propeller strut increases speed, but also decreases steering response and increases cavitation. Lowering the drive strut increases steering response, but also increases steering sensitivity and decreases speed.



WARNING: Never attempt to adjust the propeller strut with the propeller installed or while the boat is powered on. Severe bodily harm can occur.

Use two metric rulers to adjust the propeller strut:

1. Remove the batteries and ensure the boat is powered off.
2. With the canopy off, set the boat upside down taking care not damage the boat's finish.

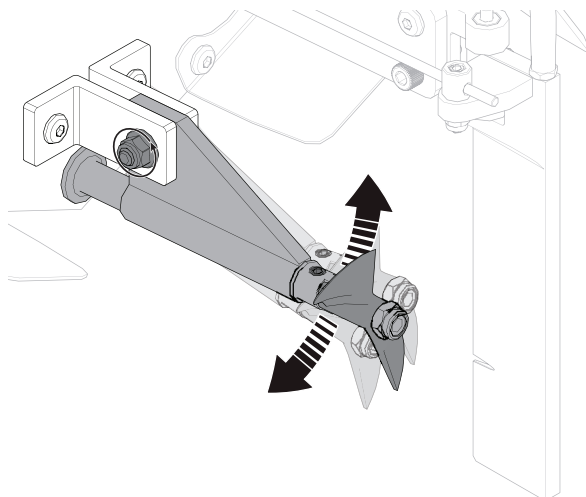
3. Place a ruler along the keel so that it extends past the boat's transom parallel to the propeller strut.
4. Using a second ruler, measure the distance between the ruler from Step 2 and the propeller strut's furthest point. Record this distance.
5. Use a 2.5mm hex driver and a small adjustable hex wrench (Crescent wrench) to loosen the bolt holding the propeller strut to the propeller strut bracket.

Tip: Loosen the nut $\frac{1}{4}$ turn or less. Leave some resistance between the strut and the bracket to allow the strut to hold its position during the adjustment.

Propeller Angle Adjustment, continued

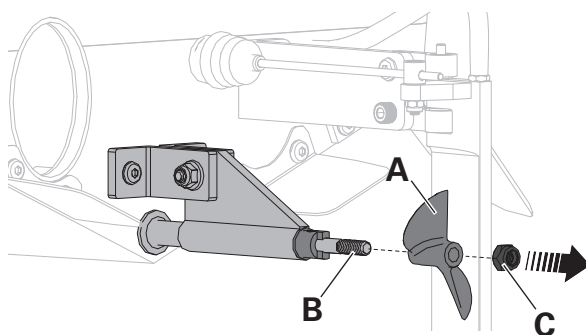
- Position a ruler along the keel of the boat so that it extends past the boat's transom. Adjust the prop angle.
- Position a second ruler across the first ruler, forming a 90° angle against the propeller strut.
- Measure and record the distance between the second ruler and the propeller strut, at the propeller strut's furthest point from the hull.
- Retighten the strut bolt.

Tip: Keep a log of the strut adjustments, water conditions, and battery weight/sizes that may have required strut adjustment.



Propeller Service

- Use an 8mm nut driver to loosen the nut (A) from the driveshaft (B).
- Remove the nut and propeller (C) from the driveshaft.
- Inspect the propeller for any damage or wear and replace as necessary.
- Assemble in reverse order. Correctly align the propeller with the drive dog on the driveshaft.



Trim Tab Adjustment

The trim tabs come installed from the factory to stabilize the boat as it rides across the water. They are set for consistent performance and stability in most water conditions. However, you can tune out chime walk or porpoise effect by adjusting the trim tabs so they are at least 1–1.5 mm below the ride surface of the boat.

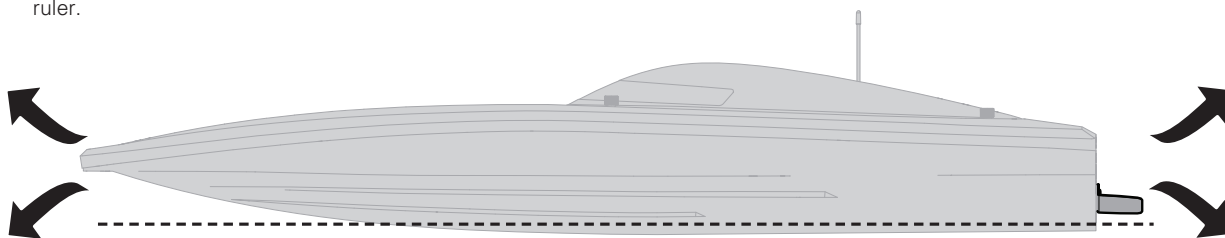
Adjusting the tabs up or down allows the boat to come in more or less contact with the water, resulting in either a smooth, planted ride or a fast, loose ride.

- Position a ruler parallel to the keel on the right side of the right trim tab, allowing the ruler to extend past the trim tab.
- To adjust the angle of the trim tab, carefully bend the tab past the ruler. Use a second ruler or depth gauge to measure how much you have bent the tab past the first ruler.

- Use a ruler to measure and record the tab bend.
- Record the position of the trim tab against the ruler's straight edge after adjusting the trim tab.
- Repeat this process on the left trim tab, ensuring the trim tab panels are either perpendicular to or parallel to the bottom of the boat.

NOTICE: The trim tabs should be the same distance above or below the boat's ride surface. Adjusting one trim tab more than the other can cause the boat to behave erratically.

NOTICE: If the boat rolls or flips at full speed, the trim tabs or turn fins may have moved or flexed. Immediately return the boat to shore for inspection.



Drivetrain Lubrication

Always replace the drivetrain parts when they are damaged or show visible wear or injury and damage may result.

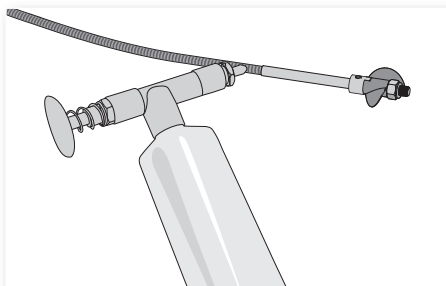
Lubricating the drive shaft is vital to the life of the drivetrain. The lubricant also acts as a water seal, keeping water from entering the hull through the stuffing tube.

Lubricate the drive shaft and all moving parts after every 20 minutes of operation.

1. In the hull, use two 10 mm open-end wrenches to loosen the motor coupler.
2. Slide the drive shaft out from the stuffing tube and drive strut at the rear of the boat.
3. Wipe the old lubricant and material from the drive shaft.

NOTICE: When lubricating the flex shaft, do not lubricate the first 20mm of the flex shaft. If grease gets into the motor coupler, it may cause the flex shaft to slip inside of the coupler, thereby damaging it and requiring replacement.

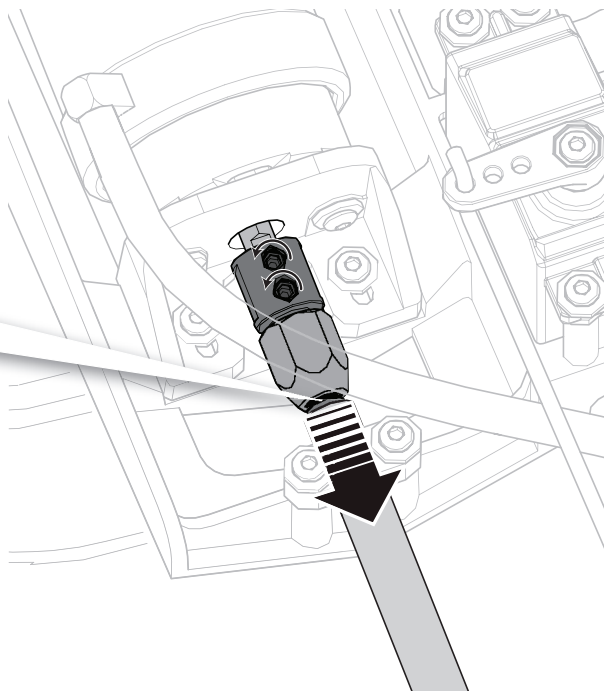
4. Carefully reinstall the drive shaft, ensuring that there is a 1–2mm gap between the propeller strut and the drive dog. This will allow space for the shaft as it shrinks under load. Without space, the drive dog could damage the aluminum propeller strut.



NOTICE: Ensure the flex shaft is installed correctly. Installing the flex shaft incorrectly may result in irreparable damage to the boat.

5. Carefully push the flex shaft into the motor coupler, making sure the grease does not carry into the coupler.
6. Tighten the coupler using two 10mm open-end wrenches.

NOTICE: Running the boat in saltwater could cause some parts to corrode. If you run the boat in saltwater, rinse it thoroughly in freshwater after each use, lubricate the drive system, and flush the coolant system.

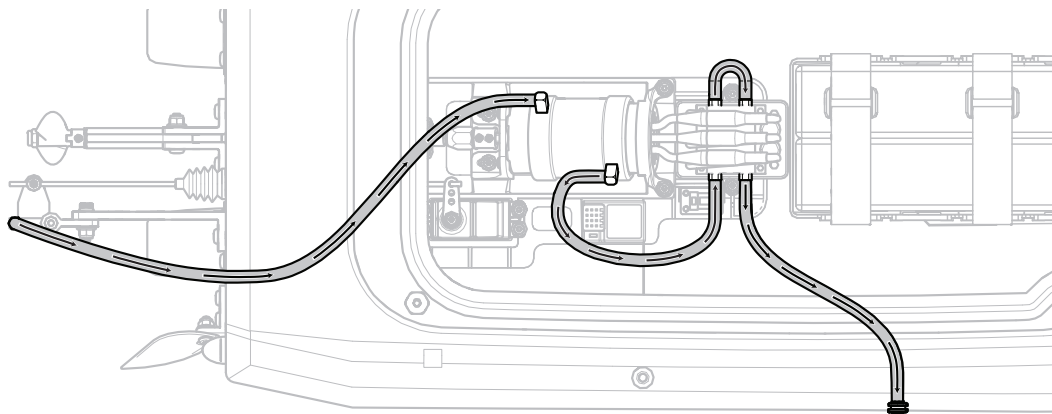


Water Cooling System

If water does not stream out of the right-side water outlet while the boat is moving forward, immediately stop the boat and clean the obstruction from the water-cooling system.

1. Disassemble and clean the water cooling system to remove blockage and prevent overheating.
2. Replace any damaged parts.

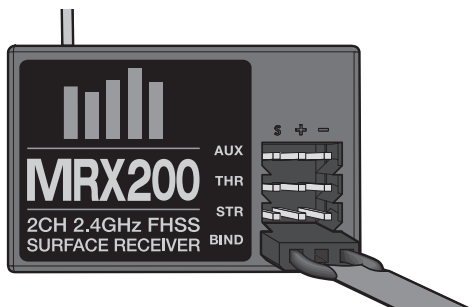
CAUTION: Running a battery with less than 11.1V will not provide enough momentum to engage the water-cooling system and will cause damage to the electronics due to excessive heat.



General Information

Binding

Binding is the process of programming the receiver to recognize the GUID (Globally Unique Identifier) code of a single specific transmitter. **The STX2® transmitter and SPMMRX200 receiver are bound at the factory.** If you need to rebind, follow the instructions below:



4. Center the ST TRIM and TH TRIM dials on the transmitter.
5. Turn the Steering Wheel to Full Right. Power ON the transmitter while holding the Steering Wheel to the Right.
6. Release the Steering Wheel when the receiver LED goes solid.
7. Remove the Bind Plug and store it in a convenient place.
8. Power OFF the ESC to save the settings.
9. Power OFF the transmitter.

You must rebind when:

- You want different failsafe positions (e.g. when throttle or steering reverse has been changed).
- Binding the receiver to a different transmitter.

NOTICE: Do not attempt to bind the transmitter and receiver if there are other compatible transmitters in bind mode within 400 feet. Doing so may result in unexpected binding.

1. Insert the Bind Plug in the BIND port of the receiver.
2. Connect a fully charged battery to the ESC.
3. Power on the ESC. The red receiver LED flashes, indicating the receiver is in bind mode.

Failsafe

In the unlikely event that the radio connection is lost during use, the receiver will drive the servo and ESC to their pre-programmed failsafe positions (normally no throttle and straight steering).

If the receiver is powered on before powering on the transmitter, the receiver will enter this failsafe mode. When the transmitter is powered on, normal control is resumed.

Throttle Range Calibration

1. Power on the transmitter and set the throttle TRIM dial to the center position.
2. Install the batteries in the boat and connect the batteries to the ESC.
3. With the ESC powered off, pull the throttle trigger to full throttle and press the power button on the ESC. The ESC will beep twice. The green light will flash with each beep.

4. Return the throttle to neutral. The ESC will beep once and the green light will flash once.

The calibration is complete. The ESC will arm with beeps and flashes to announce the number of battery cells it has detected. Reverse calibration is unnecessary.

ESC Programming Procedure

1. Pull and hold the Throttle Trigger to full throttle and turn the ESC on.
2. After 2 seconds a “-B-B” will sound. Wait another 5 seconds and the ESC will give a rising tone to indicate you have entered **Programming Mode**.
3. After entering Programming Mode, you will hear 4 tones in a loop indicating **Programmable Items**. Push the Throttle Trigger to full brake within 3 seconds after the tone sounds matching the programmable item you want to select.
4. After selecting a programmable item, you will hear several tones in a loop indicating **Programmable Values**. Pull Throttle Trigger to full throttle to select the value matching the tone. The ESC will give an alternating tone to indicate the item is selected.
5. Keep the trigger in Full Throttle to return to **Step 3** and continue item selection. Move the throttle stick to full brake position within 2 seconds to exit the Program Mode.

The black-shaded setting is the factory default

Programmable Items	Programmable Value				-B Single Beep B— Long Beep			
	-B	-B-B	-B-B-B	-B-B-B-B	B—	B— -B	B— -B-B	B— -B-B-B
Running Mode -B	Forward Only	Forward/ Backward						
Li-Po Cells -B-B	Auto Calc.	2s	3s	4s	5s	6s		
Low Voltage Cutoff -B-B-B	None	2.8V/Cell	3.0V/Cell	3.2V/Cell	3.4V/Cell			
Timing -B-B-B-B	0.00°	3.75°	7.50°	11.25°	15.00°	18.75°	22.50°	26.25°

Electronic Speed Control (ESC) Programming

STEP 1: Enter Program Mode

1. Power on the transmitter and set the throttle to full.
2. Connect the battery pack to the ESC. After 2 seconds, the ESC will beep twice.
3. Wait 5 seconds and the ESC will emit a musical tone.

STEP 2: Select Programmable Item

The ESC will emit four groups of beeps in a loop.

Move the throttle to neutral within 3 seconds of the tone matching the item you want to select.

Beep	Running Mode
Beep Beep	LiPo Cells
Beep Beep Beep	LVC Threshold
Beep Beep Beep Beep	Timing

STEP 3: Set Item Value

After selecting a programmable item, you will hear several tones in a loop.

1. Move the throttle to full to select the value matching the tone. The ESC will emit an alternating tone to indicate selection.
2. Keep the throttle in full to return to Step 2 and continue item selection. Move the throttle to the neutral within 2 seconds to exit the Program Mode.

STEP 4: Exit Program Mode

1. In Step 3, after hearing the alternating tone, move the throttle to neutral within 2 seconds.

–or–

2. Disconnect the battery pack from the ESC.

Troubleshooting Guide

Problem	Possible Cause	Solution
Boat will not respond to throttle but responds to other controls	Throttle channel is reversed	Reverse throttle channel on transmitter
Extra noise or extra vibration	Damaged propeller, shaft or motor	Replace damaged parts
	Propeller is out of balance	Balance or replace propeller
	Boat squeals or makes a high pitch sound when applying power to motors	Lubricate flex shafts
Reduced runtime or boat underpowered	Boat battery charge is low	Completely recharge battery
	Boat battery is damaged	Replace boat battery and follow battery instructions
	Blocking or friction on shaft or propeller	Disassemble, lubricate and correctly align parts
	Boat conditions may be too cold	Make sure the battery is warm (above 10° C [50° F]) before use
	Battery capacity may be too low for conditions	Replace battery or use a larger capacity battery
	Drive dog is too near the stuffing tube	Loosen drive shaft side of the motor coupling and move drive shaft small amount back
	Too little lubrication on drive shaft	Fully lubricate drive shaft
	Vegetation or other obstacles block the rudder or propeller	Remove vegetation or obstacles from rudder or propeller
Boat will not bind (during binding) to transmitter	Motor couplers are loose	Tighten motor couplers and ensure the coupler is free of lubrication
	Transmitter is too near boat during binding process	Move powered transmitter a few feet from boat, disconnect and reconnect battery to boat
	Boat or transmitter is too close to large metal object, wireless source or another transmitter	Move the boat and transmitter to another location and attempt binding again
	Another compatible transmitter is powered on within range of the receiver	Power off all compatible transmitters except the one you are trying to bind
	Boat battery/Transmitter battery charge is too low	Replace/recharge batteries
Boat will not connect (after binding) to transmitter	ESC switch is off	Power on ESC switch
	Transmitter is too near boat during connecting process	Move powered transmitter a few feet from boat, disconnect and reconnect battery to boat
	Boat or transmitter is too close to large metal object, wireless source or another transmitter	Move boat or transmitter to another location and attempt to connect again
	Boat battery/transmitter battery charge is too low	Replace/recharge batteries
Boat tends to dive in the water or takes on water	ESC switch is off	Power on ESC switch
	The boat hull is not completely closed	Dry out the boat and ensure the hatch is fully closed on the hull before returning the boat to the water
Boat tends to turn one direction	Center of gravity is too far forward	Move batteries back in the hull
	Rudder or rudder trim is not centered	Repair rudder or adjust rudder and rudder trim for straight running when control is at neutral
	ESC may require full throttle range calibration	Calibrate the ESC



Problem	Possible Cause	Solution
Rudder does not move	Rudder, linkage or servo damage	Replace or repair damaged parts and adjust controls
	Steering servo wire is damaged or connections are loose	Do a check of steering servo wires and connections, connect or replace as needed
	Transmitter is not bound correctly	Re-bind
	BEC of the ESC is damaged	Replace ESC
	ESC switch is off	Power on ESC switch
Controls reversed	Transmitter settings are reversed	Do the Control Direction Test and adjust controls on transmitter appropriately
Motor overheats	Blocked water cooler tubes	Clean or replace water tubes
Motor power pulses then motor loses power	ESC uses default soft Low Voltage Cutoff (LVC)	Recharge boat battery or replace battery that is no longer performing
	Weather conditions might be too cold	Postpone until weather is warmer
	Battery is old, worn out or damaged	Replace battery
Boat blows over upon acceleration	Batteries are too far back in the battery tray	Move the batteries forward to adjust the boat's center of gravity
	Struts have too much positive angle, causing the nose of the boat to lift and blow over	Adjust a more neutral or negative strut angle
	Water conditions are too choppy or windy	Adjust the struts downward to drive the bow of the boat down or move the batteries further forward for better weight distribution

Limited Warranty

What This Warranty Covers

Horizon Hobby, LLC, (Horizon) warrants to the original purchaser that the product purchased (the "Product") will be free from defects in materials and workmanship at the date of purchase.

What is Not Covered

This warranty is not transferable and does not cover (i) cosmetic damage, (ii) damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or due to improper use, installation, operation or maintenance, (iii) modification of or to any part of the Product, (iv) attempted service by anyone other than a Horizon Hobby authorized service center, (v) Product not purchased from an authorized Horizon dealer, or (vi) Product not compliant with applicable technical regulations or (vii) use that violates any applicable laws, rules, or regulations.

OTHER THAN THE EXPRESS WARRANTY ABOVE, HORIZON MAKES NO OTHER WARRANTY OR REPRESENTATION, AND HEREBY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE REQUIREMENTS OF THE PURCHASER'S INTENDED USE.

Purchaser's Remedy

Horizon's sole obligation and purchaser's sole and exclusive remedy shall be that Horizon will, at its option, either (i) service, or (ii) replace, any Product determined by Horizon to be defective. Horizon reserves the right to inspect any and all Product(s) involved in a warranty claim. Service or replacement decisions are at the sole discretion of Horizon. Proof of purchase is required for all warranty claims. SERVICE OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE PURCHASER'S SOLE AND EXCLUSIVE REMEDY.

Limitation of Liability

HORIZON SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY, REGARDLESS OF WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR ANY OTHER THEORY OF LIABILITY, EVEN IF HORIZON HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Further, in no event shall the liability of Horizon exceed the individual price of the Product on which liability is asserted. As Horizon has

no control over use, setup, final assembly, modification or misuse, no liability shall be assumed nor accepted for any resulting damage or injury. By the act of use, setup or assembly, the user accepts all resulting liability. If you as the purchaser or user are not prepared to accept the liability associated with the use of the Product, purchaser is advised to return the Product immediately in new and unused condition to the place of purchase.

Law

These terms are governed by Illinois law (without regard to conflict of law principals). This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Horizon reserves the right to change or modify this warranty at any time without notice.

WARRANTY SERVICES

Questions, Assistance, and Services

Your local hobby store and/or place of purchase cannot provide warranty support or service. Once assembly, setup or use of the Product has been started, you must contact your local distributor or Horizon directly. This will enable Horizon to better answer your questions and service you in the event that you may need any assistance. For questions or assistance, please visit our website at www.horizonhobby.com, submit a Product Support Inquiry, or call the toll free telephone number referenced in the Warranty and Service Contact Information section to speak with a Product Support representative.

Inspection or Services

If this Product needs to be inspected or serviced and is compliant in the country you live and use the Product in, please use the Horizon Online Service Request submission process found on our website or call Horizon to obtain a Return Merchandise Authorization (RMA) number. Pack the Product securely using a shipping carton. Please note that original boxes may be included, but are not designed to withstand the rigors of shipping without additional protection. Ship via a carrier that provides tracking and insurance for lost or damaged parcels, as Horizon is not responsible for merchandise until it arrives and is accepted at our facility. An Online Service Request is available at http://www.horizonhobby.com/content/service-center_render-service-center. If you do not have internet access, please contact Horizon Product Support to obtain a RMA number along with instructions for submitting your product for service. When calling Horizon, you will be asked to provide your complete name, street address, email address and phone number where you can be reached during business hours. When sending product into Horizon,

please include your RMA number, a list of the included items, and a brief summary of the problem. A copy of your original sales receipt must be included for warranty consideration. Be sure your name, address, and RMA number are clearly written on the outside of the shipping carton.

NOTICE: Do not ship LiPo batteries to Horizon. If you have any issue with a LiPo battery, please contact the appropriate Horizon Product Support office.

Warranty Requirements

For Warranty consideration, you must include your original sales receipt verifying the proof-of-purchase date. Provided warranty conditions have been met, your Product will be serviced or replaced free of charge. Service or replacement decisions are at the sole discretion of Horizon.

Non-Warranty Service

Should your service not be covered by warranty, service will be completed and payment will be required without notification or estimate of the expense unless the expense exceeds 50% of the retail purchase cost.

By submitting the item for service you are agreeing to payment of the service without notification. Service estimates are available upon request. You must include this request with your item submitted for service. Non-warranty service estimates will be billed a minimum of ½ hour of labor. In addition you will be billed for return freight. Horizon accepts money orders and cashier's checks, as well as Visa, MasterCard, American Express, and Discover cards. By submitting any item to Horizon for service, you are agreeing to Horizon's Terms and Conditions found on our website http://www.horizonhobby.com/content/service-center_render-service-center.

ATTENTION: Horizon service is limited to Product compliant in the country of use and ownership. If received, a non-compliant Product will not be serviced. Further, the sender will be responsible for arranging return shipment of the un-serviced Product, through a carrier of the sender's choice and at the sender's expense. Horizon will hold non-compliant Product for a period of 60 days from notification, after which it will be discarded.

10/15

Contact Information

Country of Purchase	Horizon Hobby	Contact Information	Address
United States of America	Horizon Service Center (Repairs and Repair Requests)	servicecenter.horizonhobby.com/ RequestForm/	1608 Interstate Drive Champaign, Illinois 61822 USA
	Horizon Product Support (Product Technical Assistance)	productsupport@horizonhobby.com 877-504-0233	
	Sales	sales@horizonhobby.com 888-959-2306	
European Union	Horizon Technischer Service Sales: Horizon Hobby GmbH	service@horizonhobby.eu +49 (0) 4121 2655 100	Hanskampring 9 D 22885 Barsbüttel, Germany

*For the most up-to-date customer service contact information, please visit: www.horizonhobby.com/content/service-center-render-service-center

FCC Statement

FCC ID: 2A13D-SS0001 This equipment has been tested and found to comply with the limits for Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTICE: Modifications to this product will void the user's authority to operate this equipment.

IC Information

IC ID: 21682-SSTC9202 This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

CE EU Compliance Statement: Horizon Hobby, LLC hereby declares that this product is in compliance with the essential requirements and other relevant provisions of the RED and EMC Directive Directive.

A copy of the EU Declaration of Conformity is available online at: <http://www.horizonhobby.com/content/support-render-compliance>.



Instructions for disposal of WEEE by users in the European Union

This product must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of their waste equipment by handing it over to a designated collections point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or where you purchased the product.

Replacement Parts / Ersatzteile / Pièces de rechange / Pezzi di ricambio

Part #	English	Deutsch	Français	Italiano
DYNAM3875	120A BL Marine ESC 2-6S	120A bürstenloser Marine-Geschwindigkeitsregler 2-6S	Variateur ESC 120A BL 2-6 S	ESC marino 120A BL 2-6S
DYNAM3915	3674 4-pole BL Motor 1730Kv	3674 4-poliger BL Motor 1730 KV	Moteur sans balais 3674 4 pôles 1 730 Kv	Motore 3674 4 poli BL 1730 Kv
PRB28167T1	Hull	Schiffskörper	Coque	Scafo
PRB281068T1	Canopy	Verdeck	Verrière	Capottina
PRB281073T2	Hull	Schiffskörper	Coque	Scafo
PRB281074T2	Canopy	Verdeck	Verrière	Capottina
PRB281069	Rudder	Seitenruder	Gouverne de direction	Timone
PRB281070	Trim Tab and Turn Fins	Trimmkappen und Drehflossen	Volet compensateur et dérives de rotation	Correttori di assetto e alette di virata
PRB281073	Hull, Black	Schiffskörper, Schwarz	Coque, noir	Scafo, nero
PRB282055	Propeller, 1.73 x 1.6: 3/16 Shaft	Propeller, 1,73 x 1,6: 3/16 Welle	Hélice, 1,73 x 1,6 : Arbre 3/16	Elica 1,73 x 1,6: Albero 3/16
PRB282056	Flex Shaft	Flexwelle	Arbre flexible	Albero flessibile
PRB282057	Stuffing Tube	Füllrohr	Tube de remplissage	Tubo ingrassatore
PRB282058	Motor Mount	Motorhalterung	Support moteur	Montante motore
PRB286055	Propeller Strut	Propellerstange	Hauban de l'hélice	Supporto elica
PRB286056	Motor Coupler: 5mm (Motor) 4.7mm (Flexshaft)	Motorkupplung: 5 mm (Motor) 4,7 mm (Flexwelle)	Coupleur du moteur : 5 mm (moteur) 4,7 mm (arbre flexible)	Accoppiamento motore: 5 mm (motore) 4,7mm (albero flessibile)
PRB286058	Miscellaneous Hardware	Diverse Hardware	Matériel divers	Hardware vario
SPMS605	9KG Servo, WP, Metal, 23T	Spektrum S605 9KG WP-Metall-Servo 23T	Servo 9Kg à pignons métal, étanche, tête 23T	Servocomando 9kg, WP, ingranaggio in metallo, 23T
SPMMRX200	MRX200 Marine 2CH FHSS Receiver	MRX200 Marine 2CH FHSS Empfänger	Récepteur FHSS 2 canaux marin MRX200	Ricevitore marino MRX200 2 canali FHSS
SPMSTX200	STX2 2CH 2.4 GHz FHSS Radio System	STX2 2 Kanal 2,4 GHz FHSS-Funksystem	Sistema radio FHSS STX2 2 canali 2,4 GHz	Système radio FHSS STX2 2 canaux de 2,4 GHz

Optional Parts / Diverse Teile / Pièces optionnelles / Pezzi opzionali

Part #	English	Deutsch	Français	Italiano
DYN2803	Nut Driver: 5.5mm	Dynamite Steckschlüssel:5.5mm	Clé à écrou 5,5mm	Chiave per dadi: 5,5mm
DYN2805	Nut Driver: 8mm	Dynamite Steckschlüssel:8mm	Clé à écrou 8mm	Chiave per dadi: 8mm
DYN2819	5 pc Metric Hex Driver Assortment	Dynamite metrischer Inbusschlüsselsatz 1,5-4 mm (5 Stk)	Assortiment de 5 clé hexagonales métriques	Set chiavi esagonali metrici (5 pz)
DYN4071	Li-Po Cell Voltage Checker	Dynamite LiPo-Zellspannungsmessgerät	Testeur de tension d'élément Li-Po	Li-Po Cell Voltage Checker
DYN4401	GPS Speed Meter	Dynamite GPS-Geschwindigkeitsmesser	Tachymètre GPS	GPS Speed Meter
DYNB3810EC	Reaction HD 7.4V 5000mAh 2S 50C LiPo, Hardcase: EC5	Dynamite Reaction 2S 7,4V 5000mAh 50C LiPo-Akku im Hard Case m. EC5-Anschluss	Batterie Reaction Li-Po 2S 7,4V 5000mA 50C, boîtier rigide, prise EC5	Reaction HD 7,4V 5000mAh 2S 50C LiPo,Hardcase: EC5
DYNB3811EC	Reaction HD 11.1V 5000mAh 3S 50C LiPo, Hardcase: EC5	Dynamite Reaction 3S 11,1V 5000mAh 50C LiPo-Akku im Hard Case m. EC5-Anschluss	Batterie Reaction Li-Po 3S 11,1V 5000mA 50C, boîtier rigide, prise EC5	Reaction HD 11,1V 5000mAh 3S 50C LiPo,Hardcase: EC5
DYNC0073	Charge Adapter: Banana to EC5	Ladeadapter: Bananenstecker bis EC5	Adaptateur de charge : Banane vers EC5	Adattatore carica batteria: da banana a EC5
DYNC3005	Passport Duo 400W Dual AC/DC Charger	Passport Duo 400 W Duales Wechsel-/Gleichstrom-Ladegerät	Chargeur double CA/CC Passport Duo 400 W	Caricabatterie Passport Duo 400 W Dual CA/CC
DYNE4200	Grease Gun with Marine Grease 5 oz	Dynamite Fettpresse m. Marinefett 141 g	Pistolet avec graisse marine 140g	Grasso marino con pistola 5 oz
DYNE4201	Marine Grease 5 oz	Dynamite Marinefett 141 g	Graisse marine 140g	Grasso marino 5 oz
DYNF1055	Infrared Temp Gun with Laser	Infrarotmesspistole mit Laser	Détecteur infrarouge de température avec laser	Pistola misuratrice temperatura a infrarossi con puntamento laser
DYNK0300	Hook and Loop Tape Set, Waterproof 75 x 25mm 4pcs	Dynamite Klettbandset 75 x 25mm (4 Stk)	Adhésif auto-agrippant 75 x 25mm (4pcs)	Set nastro a strappo, WP 75 x 25mm 4pz
DYNM0102	Clear Flexible Marine Tape (18M)	Dynamite transparentes Marineklebeband 18 m	Adhésif Marin transparent flexible (18M)	Nastro marino trasparente flessibile (18M)
DYNT0502	Start Up Tool Set: Proboat	Dynamite Startup Werkzeugset: Pro Boat	Proboat - Set d'outils de démarrage	Start Up Tool Set: Proboat
DYNS3005	Dynamite LED Program Card	Dynamite LED Programmierkarte: Marine DYNM3875	Carte de programmation à DELs pour bateau	Dynamite scheda programmazione LED
KXSC1004	KX50D Duo 2 x 50W AC/DC Charger	KX50D Duo 2 x 50 W Wechsel-/ Gleichstrom-Ladegerät	KX50D Duo 2 x Chargeur CA/CC 50 W	Caricabatterie KX50D Duo 2 x 50W CA/CC
PRB282028	Propeller, CCW, 1.4 x 1.65: 3/16 Shaft	Propeller, CCW 1,4 x 1,65: 3/16 Welle	Hélice, CCW, 1,4 x 1,65 : Arbre 3/16	Elica, rotazione antioraria, 1,4 x 1,65: Albero 3/16
PRB282047	Propeller, 1.7 x 1.6: 3/16 Shaft	Propeller, 1,7 x 1,6: 3/16 Welle	Hélice, 1,7 x 1,6 : Arbre 3/16	Elica 1,7 x 1,6: Albero 3/16
SPM2335	DX2E ACTIVE 2CH DSMR Radio w/SR310	DX2E ACTIVE 2-Kanal DSMR Funkgerät mit SR310	Radio DX2E ACTIVE 2 canaux DSMR avec SR310	Radiocomando DX2E ACTIVE 2 canali DSMR con SR310
SPM5000	DX5R 5CH DSMR Transmitter w/SR6000T	DX5R 5 Kanal DSMR Sender mit SR6000T	Émetteur DX5R 5 canaux DSMR avec SR6000T	Trasmittente DX5R 5 canali DSMR con SR6000T
SPM6410	DX6R 6CH Smart Radio w WIFI/BT	DX6R 6 Kanal Smart-Funkgerät mit WIFI/BT	Radio intelligente DX6R 6 canaux avec WI-FI/BLUETOOTH	Radiocomando Smart DX6R 6 canali con WI-FI/Bluetooth
SPMMR4000	MR4000 DSMR 4CH Marine Receiver	MR4000 DSMR 4 Kanal Bootsempfänger	Récepteur marin MR4000 DSMR 4 canaux	Ricevitore marino MR4000 4 canali DSMR
SPMMRX200	MRX200 Marine 2CH FHSS Receiver	MRX200 Marine 2CH FHSS Empfänger	Ricevitore marino MRX200 2 canali FHSS	Récepteur FHSS 2 canaux marin MRX200
SPMSS6170	S6170 M-T / M-S Digital WP Servo	S6170 M-T / M-S Digitaler WP Servo	Servo impermeabile digitale M-S / S6170 M-T	Servo numérique étanche S6170 M-T/M-S
SPMSS6250	S6250 U-T / H-S Digital HV WP Servo	S6250 U-T / H-S Digitaler HV WP Servo	Servo numérique étanche S6250 U-T / H-S HV	Servo impermeabile digitale HV H-S / S6250 U

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