

FUN IS ALL THE RAGE
RAGE RC

TORRENT

450BL

INSTRUCTION MANUAL



A Unique RC Jet Boat Adventure!

Specifications:

Hull Length:	16.25" (413mm)
Overall length:	18.25" (463.5mm)
Width:	5.5" (140mm)
Height:	4.5" (114mm)
Running Weight:	27 oz. (765g)
Motor:	2218/3500Kv brushless
Battery:	3S 11.1V 2200mAh LiPo
Charger:	2-3S 800mA Balancing
Transmitter:	2.4GHz, 2-channel
Servo:	17g waterproof proportional
On-Board Electronics:	2.4GHZ Receiver and 30A ESC with Reverse

OVERVIEW

The Rage RC Torrent 450BL is a great boat for racing across your local pond or even up your local stream due to its unique jet boat power system. The jet boat functionality also allows for tight turns in both directions and outstanding maneuverability. The Torrent relies on a 3500Kv brushless motor for efficient power and the included 3S 11.1V 2200mAh LiPo battery pack provides long run-times. Like most other Rage RC boats, if the Torrent 450BL ever capsizes, the self-righting feature flips the boat back to right side up, so you can easily bring the boat back to shore. Plus, the unique power system functions without an exterior prop, which adds an element of safety.

The Torrent 450BL is an RTR (Ready-To-Run) boat with a durable ABS hull that arrives pre-printed in your choice of two brightly printed trim schemes that provide great visibility on the water. The Torrent also comes out of the box 100% factory-assembled with a 2-channel, 2.4GHz proportional radio system that features a waterproof 17-gram servo for precise steering control and a 30A Waterproof ESC for linear throttle feel. In addition to the onboard battery, also included is a powerful 2S to 3S 800mA AC balancing charger. Even the AA batteries for the transmitter are included, so you can run your Torrent 450BL across your local pond or even up your local stream within minutes of opening the box!

TABLE OF CONTENTS

Overview	2
Quick Start Guide	3
Contents Photo	3
Safety Precautions	4
Age Recommendations.....	4
Battery Safety Precautions	4
Charging Instructions.....	6
Battery Installation	6
Transmitter Functions.....	7
Dual-Rate Functions	8
Servo Reverse Switch.....	8
Steering Trim	8
Receiver Connection and Binding.....	8
Throttle Control	9
Steering Control	9
Checking the Radio System and Getting Started	10
When Finishing Running	10
Boating Tips	11
Self-Righting Operation	11
Motor Care	11
Troubleshooting	12
Replacement Parts List	14
Limited Warranty.....	15

QUICK START GUIDE

If you're an experienced RC driver, this list will give you all the information you need to get started driving your new boat as quickly as possible. If this is your first RC vehicle, it is strongly recommended that you read the ENTIRE manual before you attempt to operate your new boat.

Before Boating

- Place the AA batteries in your transmitter and turn it on using the switch on the left side of the unit.
- Install your fully charged battery in the boat. Make sure you use hook and loop on your battery to securely attach it to the hook and loop at the bottom of the boat's hull.
- Make sure the transmitter throttle trigger and trim are centered.
- Connect the battery plug to the ESC plug inside the boat.
- Make sure the boat is bound to the transmitter. If not, bind the boat to the transmitter using the binding instructions in this manual.
- Make sure all controls – rudder and throttle – move freely and are turning in the correct direction. If not, refer to the “Checking The Radio System” section in this manual.
- Adjust the steering rate on your transmitter, as desired.
- Find a safe and open boating area.
- Plan a safe boating route for the water and wind conditions.

After Boating

- Always unplug the battery from the ESC before turning off your transmitter to make sure the boat cannot be controlled by another device.
- Remove the battery pack from the boat.
- Make sure the outside of the boat and inside of the hull are completely dried out before storing your boat. Keep the hatch off the boat during storage to ensure that mold and mildew are not allowed to grow and damage the components.
- Repair any damage or wear to the boat before running it again.
- Make note of lessons learned from each operation of the boat – including trimming needed, and water and wind conditions.



WARNING

Please make sure you read the entire instruction manual to become familiar with the features of the Torrent 450BL before operating. Failure to operate this product correctly can result in damage to the product or personal property – and even cause serious injury.

Please understand that this is a sophisticated hobby product and is not a toy. It must be operated with caution and common sense. Note that it does require some mechanical ability to correctly operate this product. Failure to operate 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 attempt to disassemble or operate with incompatible components or make changes to the product without the approval of Rage R/C.

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 final assembly, setup, or use.

SAFETY PRECAUTIONS

- As the owner and user of this product, you are solely responsible for operating it in a manner that does not endanger yourself and others or result in damage to the product or property.
- Never attempt to swim to retrieve a stalled RC boat.
- Never operate your boat while standing in water.
- Never operate your boat in the presence of swimmers.
- Keep a safe distance in all directions around your boat to avoid possible collisions or injury. This boat is controlled by a radio signal that is subject to interference from many outside sources and could result in a momentary loss of control.
- Always avoid water exposure to all equipment not specifically designed and protected for this purpose. Moisture can cause damage to unprotected electronics.
- Make sure to keep all chemicals, small parts and anything electrical out of the reach of children.

AGE RECOMMENDATIONS

This product is not a toy. Not for use by children under 14 years of age.

BATTERY SAFETY PRECAUTIONS

Important Note: Lithium Polymer (LiPo) batteries are more volatile than the alkaline, NiCd and NiMH batteries used in other RC applications. All instructions and warnings must be followed exactly to prevent possible personal injury or damage to property, including by fire.

- Always charge your LiPo battery in a safe area away from any flammable materials.
- Never charge the LiPo battery unattended at any time. When charging the battery you should always remain in constant observation of the battery to monitor the process and react immediately to potential problems you observe.
- After discharging the battery during the running of the boat you must allow it to cool to ambient room temperature before attempting to recharge. Also, it is NOT recommended that you completely discharge the battery before charging. It is safe to charge partially discharged batteries when using an appropriate LiPo charger.

- For charging the battery you must use only a suitably compatible LiPo battery charger. Failure to do so may result in a fire causing property damage and/or personal injury. DO NOT use a NiCd or NiMH charger to charge a LiPo battery.
- If, at any time during the charge or discharge process, the battery begins to “balloon” or swell, discontinue charging or discharging immediately! Quickly and safely disconnect the battery before placing it in a safe, open area away from flammable materials for observation for at least 15 minutes. Continuing to charge or discharge a battery that has started to “balloon” or swell can result in a fire. Important note: A battery that has “ballooned” or swollen even a small amount must be removed from service immediately and completely.
- Never discharge a LiPo battery below 3V per cell.
- Always disconnect a battery from the ESC when the product is not in use.
- Avoid continually operating the battery to LVC (Low Voltage Cutoff) as this could result in damage to the battery.
- Store the battery partially charged (approximately 50% charged or 3.85V per cell) at room temperature (approximately 68° to 77° Fahrenheit) in a dry area for best results.
- When transporting or temporarily storing the battery, the temperature range should be between 40° F to 100° F. Do not store the battery or boat in a hot car or in direct sunlight whenever possible or the battery could be damaged or even catch fire.
- LiPo cells should not be discharged to below 3.0V each. In the case of the 3-cell, 11.1V battery recommended for the Torrent 450BL, you should not allow the voltage to fall below 9.0V during operation.
- Do not over-discharge the LiPo battery, which could result in reduced power, lower run times or complete failure of the battery.

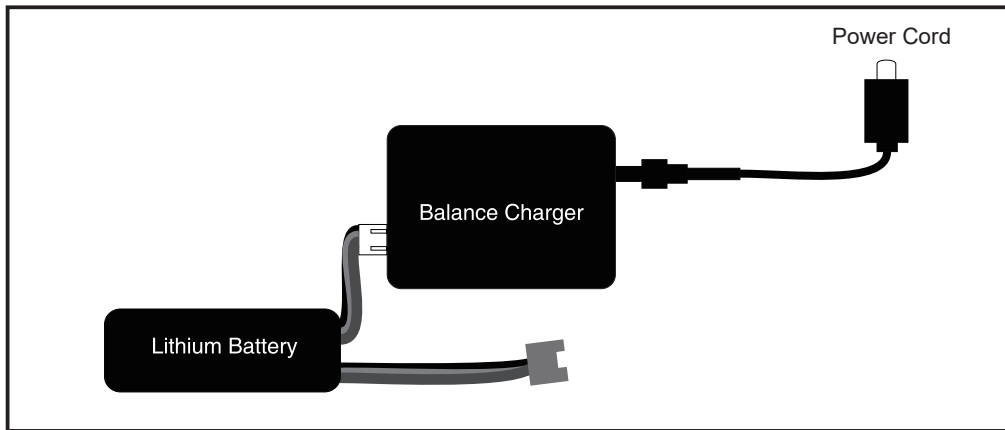
NOTE: The included ESC features a “soft” LVC (Low Voltage Cutoff) that smoothly reduces power to the motor (regardless of your throttle position) to let you know that the voltage to the battery is near the 9.0V minimum and avoid damage to your battery.

However, even before the LVC takes place, if you find that more than typical throttle is needed to power the boat you should drive it back to yourself and disconnect the battery immediately to avoid over-discharge. It is NOT recommended that you continue to drive the boat after LVC occurs or permanent damage to the battery could occur leading to reduced power and run times with future use. Note that operation of the battery is NOT covered under warranty.

It is also not recommended that you continually run the battery to the “soft” LVC with each operation. You should be aware of the power level of the battery each time you drive the boat and as soon as you find that it requires more throttle than normal to maintain speed you should drive the boat back to yourself and disconnect the battery immediately. Continually running the battery to the soft LVC can cause permanent damage to the battery, so it is best to keep track of your run time and discontinue use prior to reaching the soft LVC.

Important Note: Do not leave the battery connected to the ESC unless you are ready to run the boat. If the battery is left connected when it is not in use, it will become over-discharged and the battery will become damaged and unusable.

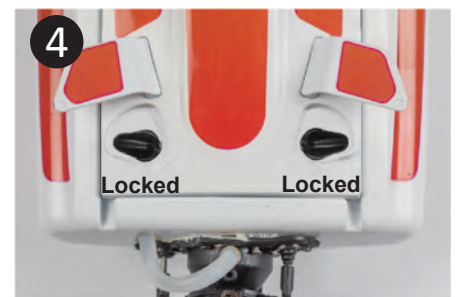
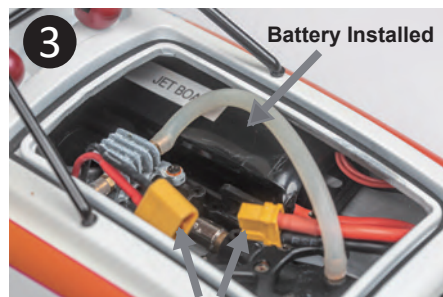
CHARGING INSTRUCTIONS



- First, plug the included balance charger into the power cord and plug the power cord into a compatible AC outlet. The green lights on the charger should then turn on.
- Connect the balance lead on the battery to the 3-cell port on the side of the balance charger.
NOTE: While the white connectors are 'keyed' to minimize the risk of a reverse polarity connection, if you force the connection, it is possible to connect with the incorrect polarity potentially causing damage to the battery and/or charger.
- When the connectors are properly aligned for correct polarity, connecting them should require only a moderate amount of pressure to achieve the 'click' that indicates a secure connection.
- When the battery is connected to the charger securely and with the proper polarity, the LED indicators will turn from green to red.
- During the charge process, the red LED indicators will glow.
- It should take approximately 2.5 hours to charge a fully discharged battery.
- When the battery is fully charged, the red LED indicator lights will turn to green. You can disconnect the battery from the charger as it is now fully charged and ready for use.

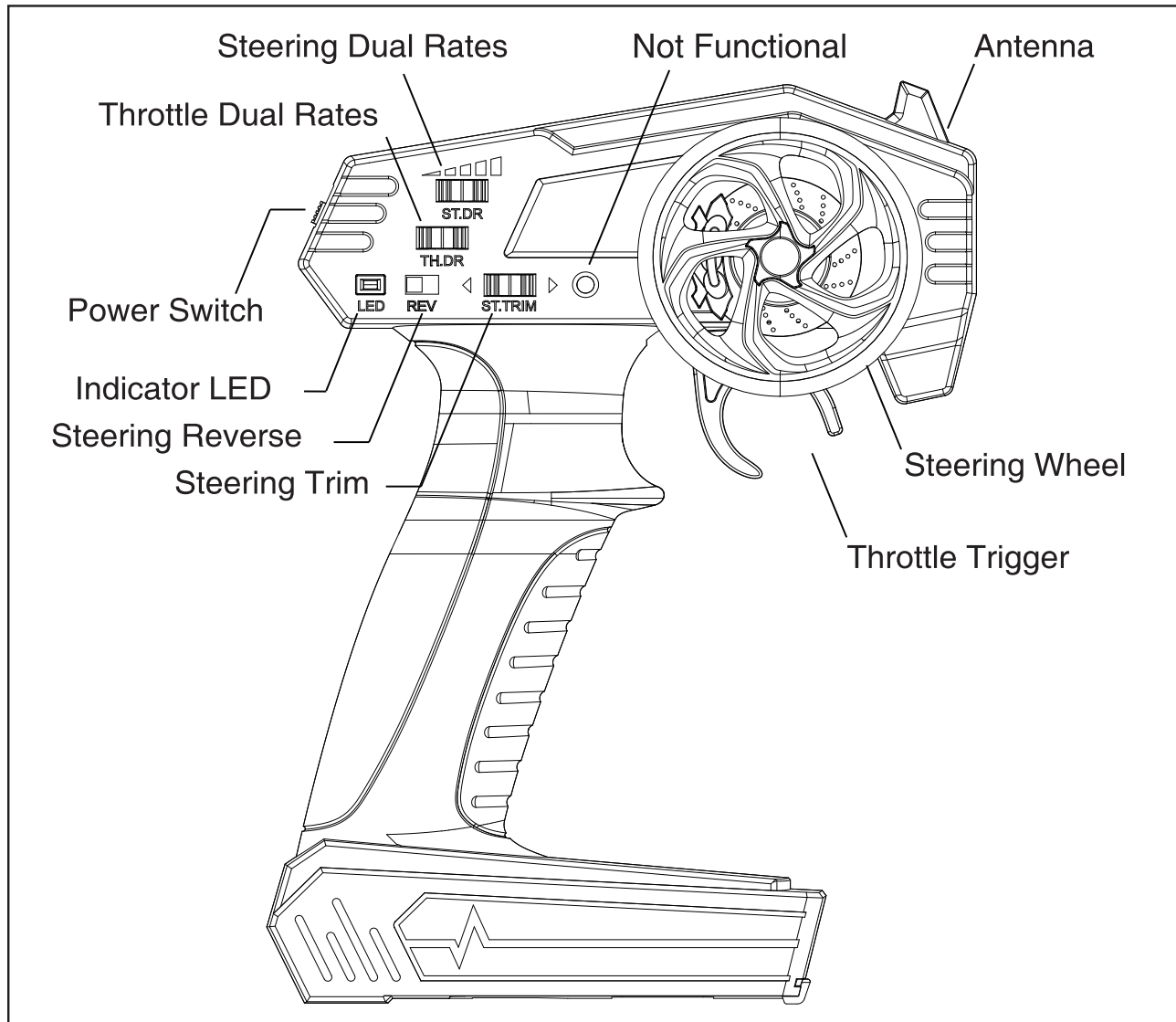
CAUTION: Do not store the lithium battery fully charged.

BATTERY INSTALLATION



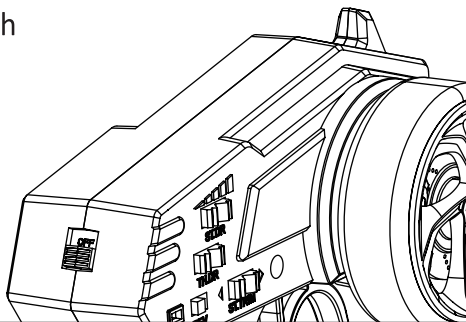
1. To unlock the hull cover latches, move them to the positions shown above in photo labeled 1.
2. Lift the hull cover to access the components inside the hull.
3. Plug the battery connector to the ESC connector and place the battery inside the hull as shown in the photo labeled 3.
4. Put the hull cover back in place and turn the latches to lock as shown above in the photo labeled 4.

TRANSMITTER FUNCTIONS



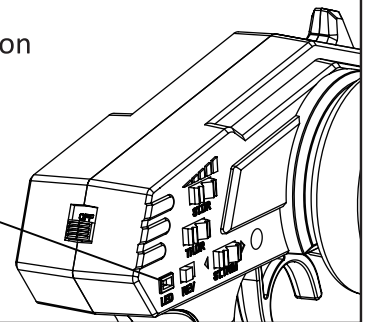
ON/OFF SWITCH

Slide the switch up for ON and down for OFF

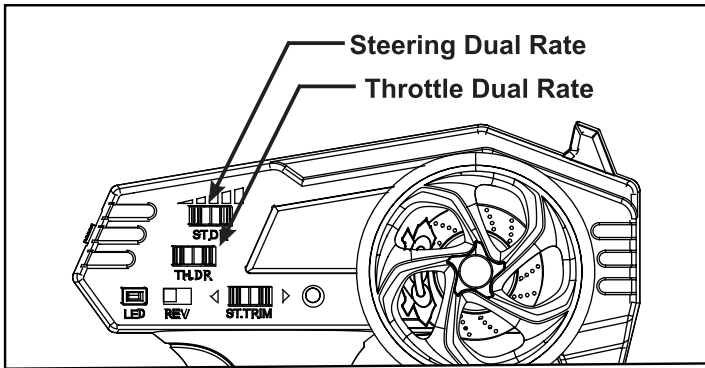


BATTERY LED MONITOR

Solid red:
Battery is in good condition (above 4.3V).
Flashing red:
Battery is at low voltage. Replace batteries (below 4.3V).



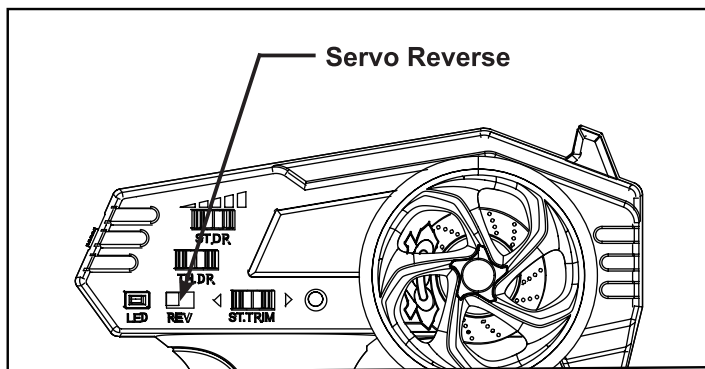
DUAL-RATE FUNCTIONS



Adjust the steering control by pressing the switch to the left or to the right. Press the switch to the right for more steering control and to the left for less steering control (beginner setting).

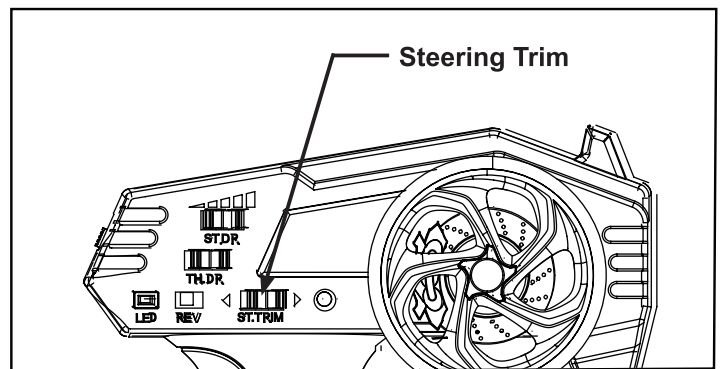
Adjust the throttle control by pressing the switch to the left or to the right. Pressing the switch to the right will give maximum throttle. Pressing the switch to the left will limit the throttle and the speed (for beginners or when running space is limited).

SERVO REVERSE SWITCH



If the direction of travel on the steering is backwards, slide the Servo Reverse Switch in the opposite direction

STEERING TRIM



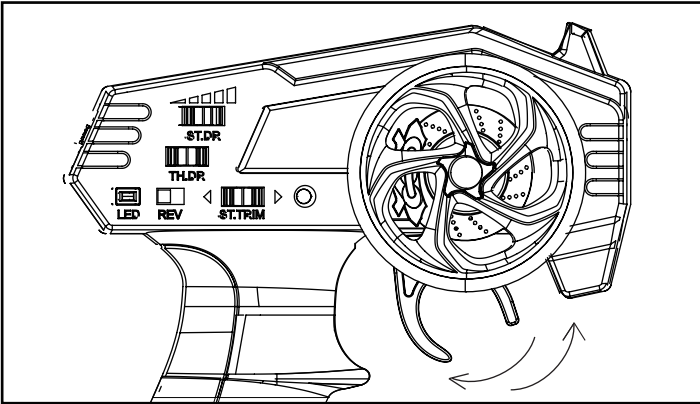
The steering trim is used if the steering is not centered when the steering wheel is in the neutral position. Holding this switch to the right or the left will adjust the steering position by small movements until it is centered when the steering wheel is in center or neutral position.

RECEIVER CONNECTION AND BINDING

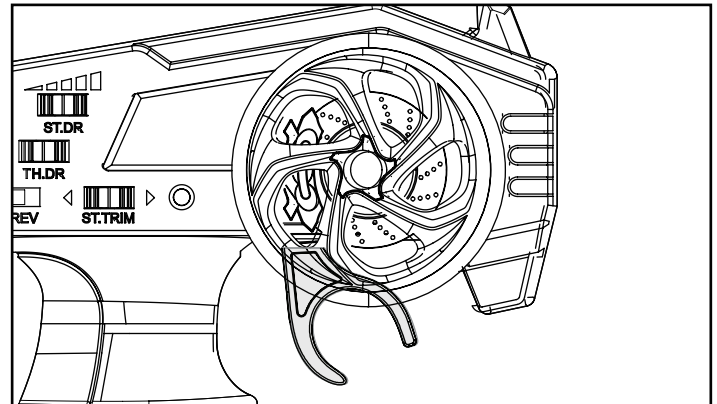
Binding is the process of programming the receiver to recognize the GUID (Global Unique Identifier) code of a single specific transmitter. When a receiver is bound to a transmitter, the receiver will only respond to that specific transmitter. If you need to rebind for any reason, please follow these steps:

1. Make sure that the transmitter is turned off.
2. Plug in the battery in the boat to power up the receiver.
3. Turn on the transmitter within 5 seconds of powering up the receiver.
4. The receiver and transmitter will auto-bind within a few seconds and you will have control over all functions and be ready to run.
5. If binding is successful, the blinking light will turn solid. If not, start the binding process again with step 1.

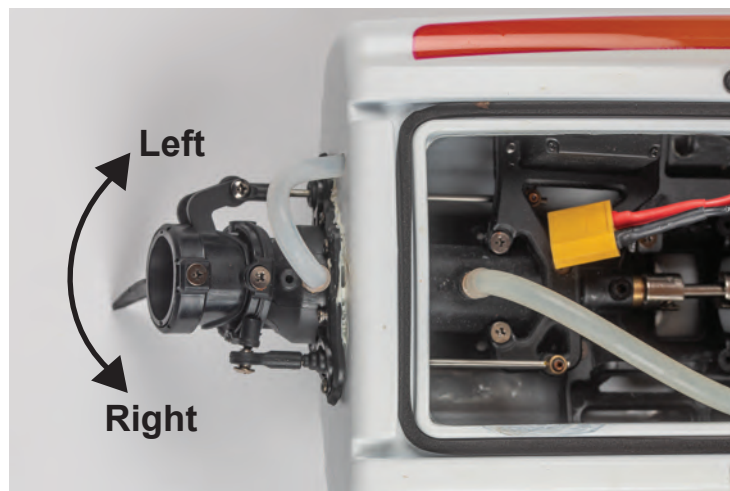
THROTTLE CONTROL



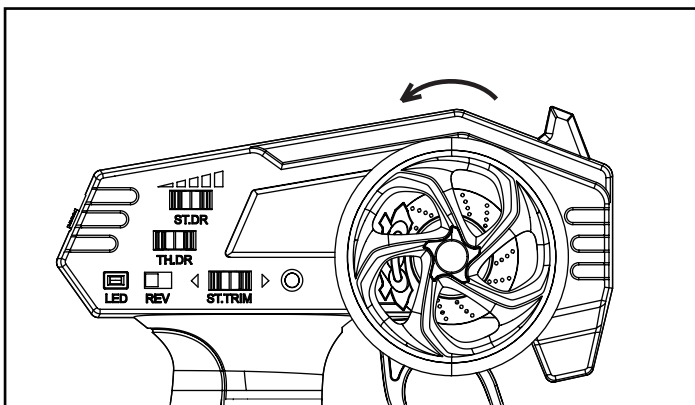
With the Torrent 450BL there is no need to arm the motor. Simply squeeze the trigger in, or towards the driver for the boat to move forward. To reverse, move the trigger away from the driver.



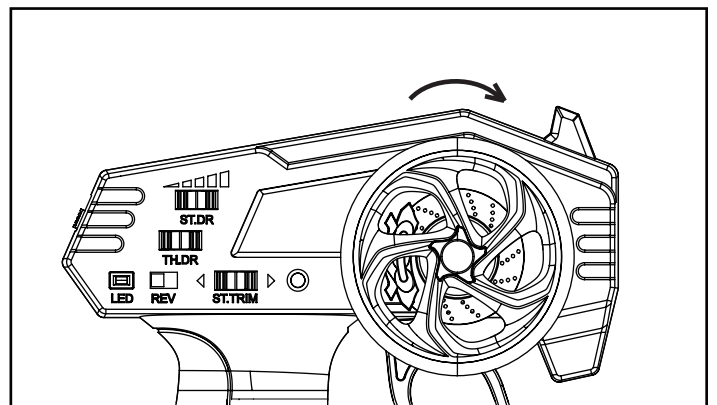
With the proportional speed control, the further you pull the trigger, the faster your boat will go. To stop, release the trigger.



STEERING CONTROL



Rotate the steering wheel to the left, or counterclockwise to turn the boat to the left. If you find that you need more control, move the Dual Rate switch to the right for tighter turns.



Rotate the steering wheel to the right, or clockwise to turn the boat to the right. If you find that you need more control, move the Dual Rate switch to the right for tighter turns.

CHECKING THE RADIO SYSTEM AND GETTING STARTED

1. Power on the transmitter by turning on the switch on the left top end.
2. Connect a fully charged battery by plugging it into the ESC inside the hull.
3. Before driving, make sure the rudder moves to centered position once the battery is plugged into the ESC. If not, you will need to adjust the steering trim located on the transmitter to the left of the wheel. See the transmitter instructions earlier in this manual for directions.
4. Once the rudder is centered, make sure that it moves in the corresponding direction when the steering wheel is moved to the right or the left.
5. Once you carefully place the boat in the water, begin driving slowly as you become familiar with the operation. Stay near the shoreline at first if you are driving your boat in a pond or lake. Note that steering the boat right or left is completed by turning the steering wheel on the transmitter in the same direction you want the boat to turn. Begin with a small movement of the wheel for wider turns and progress to sharper turns as your skills increase.
6. Make sure you avoid objects in the water at all times while operating the boat.
7. To avoid LVC (Low Voltage Cutoff) drive the boat back to shore when it begins to lose speed.
8. Power off by disconnecting the battery pack and then turning off the transmitter.
9. Allow the motor, ESC, and battery pack to cool before charging or operating the boat again.



Tip: If it seems you have to use a lot of steering trim on the transmitter to have the boat drive straight, return the steering trim to neutral and mechanically center the rudder. To do this, loosen the allen screw inside the hull as shown in the photo, center the rudder, and then tighten the screw.

Notice: Always power on the transmitter before plugging in the ESC. Make sure the transmitter is NOT turned off first or the receiver may pick up stray signals from other devices and cause your boat to run out of control. Never transport the boat with the battery connected to the ESC.

WHEN FINISHING RUNNING

- First, power off the ESC by disconnecting the battery.
- Next, turn the transmitter off.
- Then, remove the battery from the boat.

Tip: Always store the boat open – with the hatch removed, so that the inside of the boat is allowed to completely dry. Excessive moisture allowed to remain in the hull can allow mold or mildew to grow and damage the components.

NOTICE: Running the boat in salt water could cause some parts to corrode. If you run the boat in salt water, make sure it is rinsed thoroughly in fresh water after each use. Because of the corrosive effects, running the boat in salt water is at the discretion of the owner and will void the boat's warranty.

BOATING TIPS

- Avoid boating near other watercraft, stationary objects, waves, wakes and other rapidly moving water. Also make sure to avoid operating the boat near wildlife, floating debris, or overhanging trees that come near the surface of the water. You should also be cautious to avoid boating in areas where there are people swimming or in park waterways and fishing areas. Before using on a pond or lake consult local laws and ordinances.
- You should only drive at maximum speeds when the water conditions are smooth and there is minimal wind. A sharp turn, wind, or waves can turn over a boat when it is moving quickly.
- When running your boat for the first time, it is recommended that you look for calm wind and water conditions so that you can learn how the boat responds to your control. When making turns, it is suggested that you decrease the throttle slightly to avoid flipping the boat over.
- Never operate your boat in less than 3 inches (8cm) of water.

SELF-RIGHTING OPERATION

If you flip your boat during high speed maneuvering, follow the steps to return your boat to upright.

- Pull the throttle trigger to full throttle momentarily. This should rock the boat back to upright and ready to resume running.
- If the boat does not return to upright on the first try, continue to use the throttle from full on to off several times until the boat rotates to upright again.

MOTOR CARE

- You can prolong motor life by preventing conditions that overheat the motor. Driving with frequent starts, stops, turns or pushing items in the water can overheat the motor. Other driving conditions like continually running at high speed or through rough water or water vegetation will also cause excessive heat and damage the motor. Make sure you avoid these situations whenever possible.
- Though the ESC is equipped with overheat protection, it does not protect the motor from overheating due to extra resistance from the driving conditions mentioned above.

CAUTION: Never retrieve your boat from the water in extreme temperatures, turbulence or without supervision.

TROUBLESHOOTING

Problem	Possible Cause	Solution
Reduced run time or boat underpowered	Boat battery charge is low	Completely recharge battery
	Boat battery is damaged	Replace boat battery and follow battery instructions
	Vegetation or other obstacles are blocking the rudder	Remove boat from the water and remove obstacles
	Boat conditions may be too cold	Make sure battery is warm before use
	Battery capacity may be too low for conditions	Replace battery or use a larger capacity battery
Boat will not Bind (during binding) to transmitter	Transmitter is too close to 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 boat and transmitter to another location and attempt binding again
	Boat battery/Transmitter battery charge is too low	Replace transmitter batteries or charge boat battery
	Another compatible transmitter is powered on within range of the ESC	Turn off all compatible transmitters except the one you are trying to bind
Boat will not connect (after binding) to transmitter	Boat or transmitter is too close to large metal object, wireless source or another transmitter	Move boat and transmitter to another location and attempt connecting again
	Boat battery/transmitter battery charge is too low	Replace/recharge batteries
Boat tends to dive in the water or takes on water	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
	Center of gravity is too far forward	Move battery back in the hull

Problem	Possible Cause	Solution
Boat tends to turn one direction	Rudder or rudder trim is not centered	Repair rudder or adjust rudder and rudder trim for straight running when control is at neutral
	Rudder, linkage or servo damaged	Replace or repair damaged parts and adjust controls
Rudder does not move	Rudder, linkage or servo damage	Replace or repair damaged parts and adjust controls
	Wire is damaged or connections are loose	Do a check of wires and connections, connect or replace as needed
	Transmitter is not bound correctly	Re-bind receiver to the transmitter
Controls reversed	Transmitter settings are reversed	Do 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	Weather conditions might be too cold	Postpone until weather is warmer
	Battery is old, worn out or damaged	Replace battery
	Battery C rating might be too small	Use recommended battery

REPLACEMENT PARTS LIST

See your local hobby shop or place of purchase first. If unavailable, parts can be ordered direct at www.ragerc.com or call 1-866-724-3811 M-F 9:00-5:00PM Mountain Time.

Part Number	Description
RGRB1500	Torrent 450BL RTR Jet Boat, Red
RGRB1501	Torrent 450BL RTR Jet Boat, Green
RGRB1505	Preprinted Hull, Red
RGRB1506	Preprinted Hull; Green
RGRB1507	Replacement Cover; Red
RGRB1508	Replacement Cover; Green
RGRB1509	Cover Latch (2)
RGRB1510	2218/3500Kv BL Motor w/Balance Weight
RGRB1511	Motor Mount w/Screws
RGRB1512	Motor Coupler
RGRB1513	Rudder Push Rod
RGRB1514	End Cap w/Rudder
RGRB1515	17g Waterproof Servo
RGRB1516	Water Cooling Tube
RGRB1517	Jet Nozzle
RGRB1518	30A Brushless ESC (Water-Cooled) w/ Reverse
RGRB1236B	2.4GHz Auto-Bind Receiver
RGRB1242	2-3S 800mA Balancing Charger
RGRB1285	2.4GHz Transmitter
RGRB1433	11.1V 3S 2200mAh Lipo w/XT60 Connector

LIMITED WARRANTY

Warranty Period: Rage R/C warrants that the Torrent 450BL ("Product") will be free from original factory defects in materials and workmanship upon purchase ("Warranty Period").

What is Not Covered - This warranty is not transferable and does not cover (a) cosmetic damage, (b) damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or due to improper use, installation, operation or maintenance, (c) modification to any part of the Product, (d) attempted service by anyone other than a Rage R/C authorized service center, or (e) Product not purchased from an authorized Rage R/C dealer.

OTHER THAN THE EXPRESS WARRANTY ABOVE, RAGE R/C MAKES NO OTHER WARRANTY OR REPRESENTATION, AND THEREFORE DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY AND SUITABILITY FOR A PARTICULAR PURPOSE. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL MEET THE REQUIREMENTS OF THEIR INTENDED USE.

Purchaser's Remedy - Rage R/C's sole obligation and purchaser's sole and exclusive remedy shall be that Rage R/C will, at its option, either (a) service, or (b) replace, any Product determined by Rage R/C to be defective. Rage R/C 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 Rage R/C. 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 - RAGE R/C 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 RAGE R/C HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Further, in no event shall the liability of Rage R/C exceed the individual price of the Product on which liability is asserted. As Rage R/C 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 Utah 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. Rage R/C reserves the right to change or modify this warranty at any time without notice.

FUN IS ALL THE RAGE
RAGE RC

Rage R/C, an exclusive brand of:
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07/26