

Super Cub 750BL

INSTRUCTION MANUAL



PASS[™]
Pilot Assist Stability Software

SPECIFICATIONS

Wingspan:	750mm (29.52 inches)
Length:	520mm (20.47 inches)
Flying Weight:	210g (7.40 oz.)
Battery:	7.4V 2S 500mAh LiPo
Motor:	Brushless 2208/1800Kv
ESC:	20A Brushless
Charger:	USB 2S LiPo Charger
Gyro:	PASS (Pilot Assist Stability Software)
Transmitter:	2.4 GHz 4 channel

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GENERAL PRECAUTIONS

- Never operate your model if the transmitter battery voltage is too low.
- Always operate your model in an open area away from obstacles, people, vehicles, buildings, etc.
- Carefully follow the directions and warnings for this and any optional support equipment. (chargers, rechargeable batteries, etc.).
- Keep all chemicals, small parts and all electronic components out of the reach of children.
- Moisture causes damage to electronic components. Avoid water exposure to all electronic components, parts, etc. not specifically designed and protected for use in water.

SUPER CUB 750 BL CONTENTS



SAFETY PRECAUTIONS

Failure to use this product in the intended manner as described in the following instruction can result in damage and/or personal injury. A Radio Controlled (RC) airplane is not a toy! If misused it can cause serious bodily harm and damage to property.

Keep items that could become entangled away from the propeller, including loose clothing, tools, etc. Be especially sure to keep your hands, face, and other parts of your body away from the propeller.

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

This model is controlled by a radio signal that is subject to possible interference from a variety of sources outside your control. This interference can cause momentary loss of control, so it is advisable to always keep a safe distance from objects and people in all directions around your model, as this will help to avoid collisions and/or injury.

FCC INFORMATION

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.

Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This product contains a radio transmitter with wireless technology which has been tested and found to be compliant with the applicable regulations governing a radio transmitter in the 2.400GHz to 2.4835GHz frequency range.

The associated regulatory agencies of the following countries recognize the noted certifications for this product as authorized for sale and use: USA, UK, AU

LIPO BATTERY WARNING

IMPORTANT NOTE: Lithium Polymer batteries are significantly more volatile than the alkaline, NiCd or NiMH batteries also used in RC applications. All instructions and warnings must be followed exactly to prevent property damage and/or personal injury as mishandling of LiPo batteries can result in fire. By handling, charging or using the included LiPo battery you assume all risks associated with LiPo batteries. If you do not agree with these conditions please return the complete product in new, unused condition to the place of purchase immediately.

CHARGING LIPO BATTERY

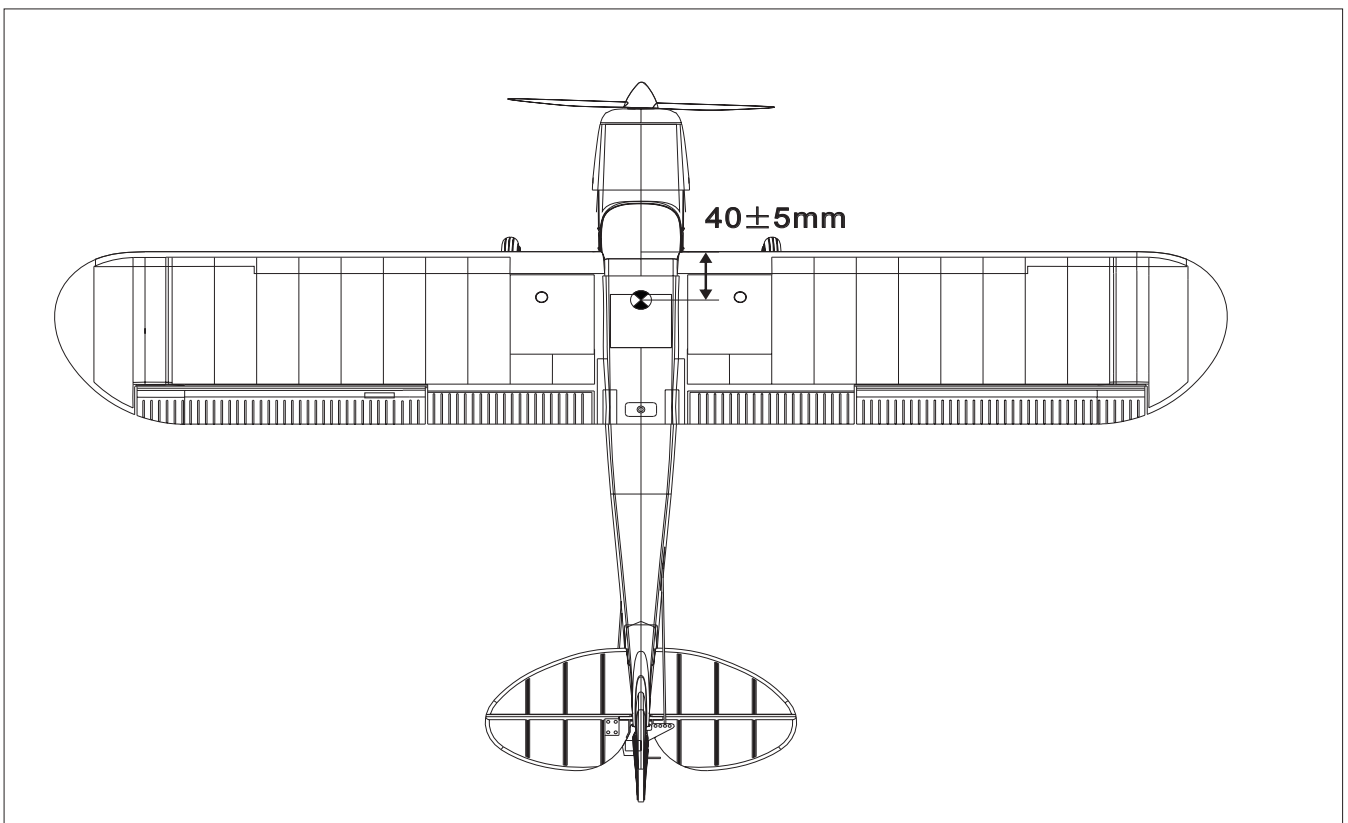
It is important to fully charge the LiPo flight battery before your first flight.

The USB charger can be powered by the USB port on your computer or a wall plug USB port. Plug the charger into a suitable USB port and then plug the flight battery into the charger. A red light will illuminate during charging. When the charge is complete the red light will go out.

CAUTION: ONLY CHARGE THE FLIGHT BATTERY WITH THE INCLUDED USB LIPO CHARGER OR A SUITABLE LITHIUM BATTERY CHARGER. NEVER ATTEMPT TO CHARGE A LIPO BATTERY WITH A CHARGER THAT IS NOT SPECIFICALLY MADE FOR USE WITH LITHIUM BATTERIES.



CENTER OF GRAVITY



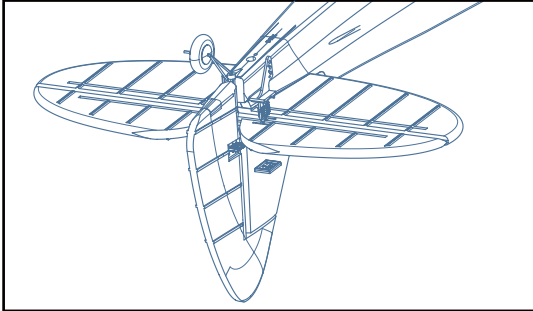
The center of gravity (CG) for the Super Cub 750 BL is a point that is 40mm + or - 5mm back from the leading edge of the wing where it meets the fuselage. Maintaining the correct CG is critical to optimal flight performance. A plane with too aft a CG (tail heavy) will be very pitch sensitive and difficult to control. If the CG is too far forward (nose heavy) the plane will be too pitch stable and not responsive enough.

With the supplied battery installed in the battery box the Super Cub's CG will automatically be in the correct location. If a different battery is used or repairs have been made to the airframe the CG should be checked again and the weight adjusted to achieve the correct CG.

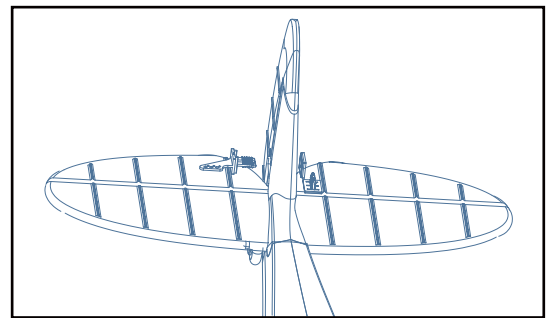
FINAL ASSEMBLY

The Super Cub 750 BL requires some assembly to prepare the plane for flight.

1. Insert the landing gear wire into the slot at the front of the battery box. Fasten the two supplied screws (bag A) to secure the gear as shown using the included Phillips-head screwdriver.



2. Install the control horn to the elevator by inserting the horn from the bottom of the elevator in the position designated by the indentation in the foam. Slide the control horn retainer in place on the upper surface of the elevator and push until firmly in place.



3. Install the control horn to the rudder by inserting the horn on the right side of the rudder in the position designated by the indentation in the foam. Slide the control horn retainer in place on the opposite surface of the rudder and push until firmly in place.

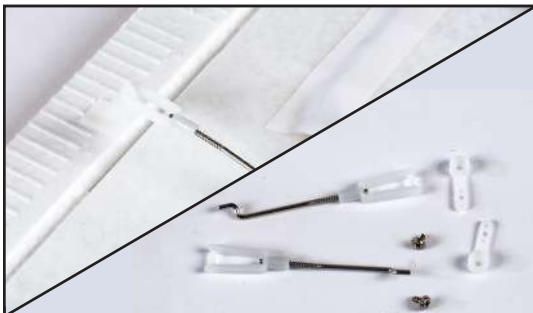


4. Place the elevator in position on the fuselage with the rudder pushrod above the elevator.

5. Place the rudder in position by inserting the retaining posts through the holes in the elevator. Screw in position by inserting the screws (bag B) from the underside of the fuselage and screwing with the included Phillips screwdriver.

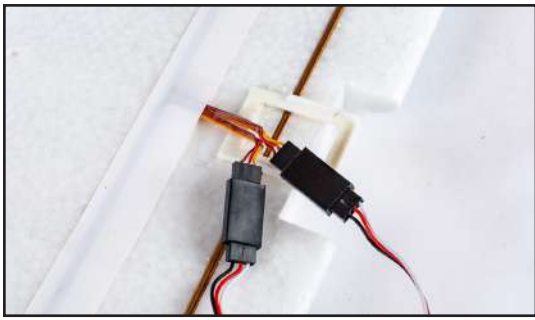


6. Install the aileron control horns to the ailerons in the same way as the elevator and rudder control horns. They should be on the bottom of the wing with the holes facing the servo. Then locate the bag with the 2 aileron pushrods and the aileron servo control arms shown in the photo to the left.



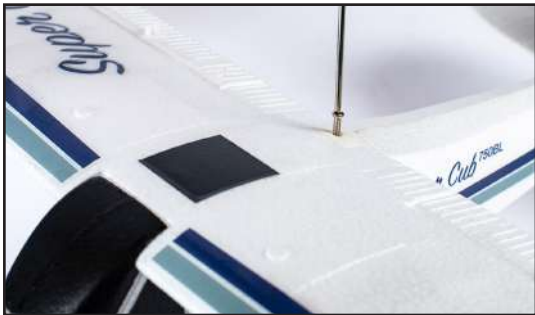
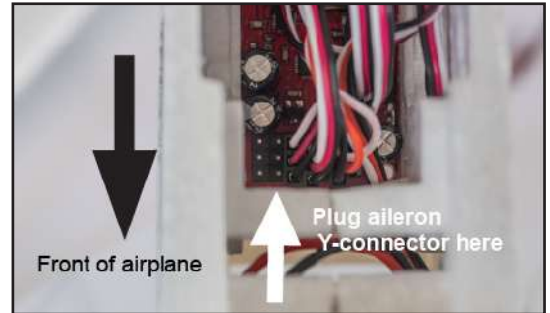
7. Install the aileron servo control arms to the aileron servos with the control arms as shown in the photo to the right. Install the aileron pushrods to the servos and connect the clevis to the aileron control horn.





8. Locate the Y-connector and plug it into the 2 aileron servo control wires on the wing. Make sure that the connectors are plugged in with the correct polarity. Check the photo to the left.

9. Place the wing above the fuselage and plug the aileron Y-connector into the control board as shown in the photo to the right. Plug onto the pins closest to the other servo plugs. Make sure to maintain correct polarity with the white wire to the rear of the aircraft.



10. Place the wing in position on the top of the fuselage, making sure that the aileron servo wires are completely inside the fuselage, and screw into position with single screw (bag C) as shown to the left.

11. Install the propeller by first threading a single 3mm nut all the way onto the motor shaft. Then slip the prop onto the shaft followed by the large washer and the 3mm Nyloc nut. Tighten until snug and then slide the spinner onto the shaft to complete. You might need to carefully grip the shaft with needle nose pliers to prevent it from turning while tightening prop nut.



TRANSMITTER DETAILS



PLEASE NOTE: Install the 4 supplied AA batteries into the battery compartment located on the back of the transmitter, under the battery hatch cover. Make sure that the batteries are installed with correct polarity per the diagram inside the battery compartment.

CONTROL FUNCTIONS

Once final assembly for the Super Cub 750 BL is completed, check to make sure that the correct direction is set for each of the control functions. First, turn on your transmitter (make sure that your throttle stick is at the bottom position) and then plug in your fully charged 2-cell flight battery. Leave the throttle stick in its off position. The motor will not be activated until the throttle stick is cycled from the bottom to the top and back to the bottom. Flip the PASS switch located on the right shoulder of the transmitter away from you, into the Assist Off position. In this position the control surfaces will only move when the sticks on the transmitter are moved. With the transmitter sticks in their neutral positions the control surfaces on the aircraft should be neutral and centered.

ARMING THE MOTOR

The left stick on the transmitter controls both the throttle and the rudder functions. When the transmitter is on and the aircraft flight battery is plugged in, the electronics will be active but the motor will not be armed. To arm the motor, cycle the throttle stick from OFF (back) to the ON (forward) position and then back to OFF. You will hear an arming tone and the next time that the throttle stick is raised the motor will start.

CONTROL MOVEMENT

Note: Perform the following control tests with the motor armed. Be careful not to raise the throttle stick during these tests as the prop will rotate. If you perform the tests with the motor not armed you run the risk of reversing the direction of servo operation. If this occurs, refer to the servo reversing directions on page 8.

With both the transmitter and the aircraft powered on and the motor armed (cycle throttle stick OFF/ON/OFF), Check the movement of the control surfaces.

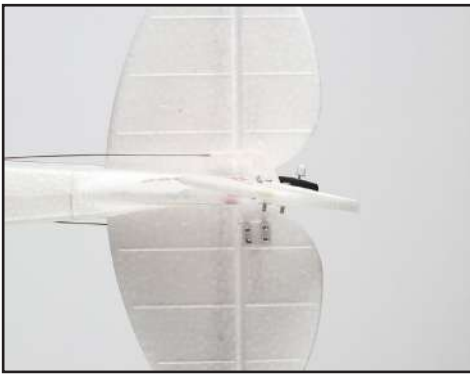


The PASS switch on the upper right of the transmitter should be in the OFF (toward back of transmitter) for these tests.

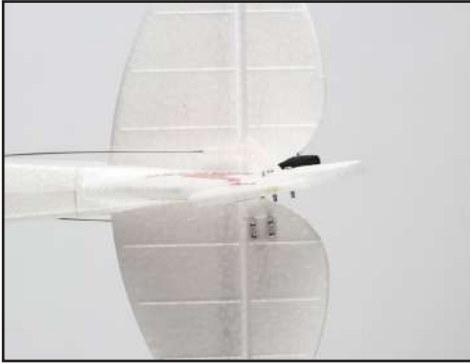
When the elevator stick is moved toward the bottom of the transmitter the elevator should move up. When in flight this will raise the nose of the airplane.



When the elevator stick is moved toward the top of the transmitter the elevator should move down. When in flight this will lower the nose of the airplane.



When the rudder stick is moved to the left of the transmitter the rudder should move left. When in flight this will yaw the tail to the right (the nose of the aircraft will move to the left).



When the rudder stick is moved to the right of the transmitter the rudder should move right. When in flight this will yaw the tail to the left (the nose of the aircraft will move to the right).



When the aileron stick is moved to the right of the transmitter the right aileron should move up and the left one move down. This will roll the wing to the right.



When the aileron stick is moved to the left of the transmitter the left aileron should move up and the right one move down. This will roll the wing to the left.

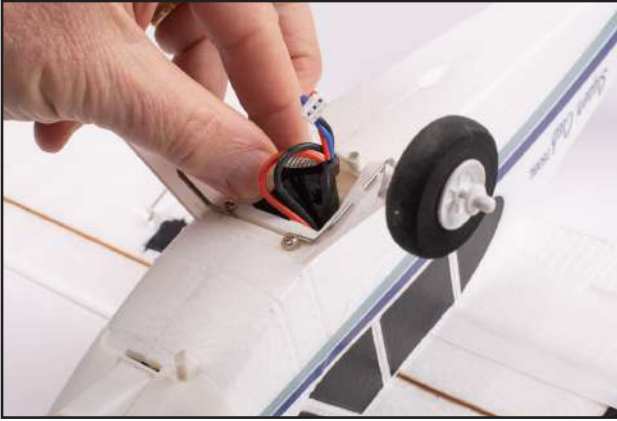
SERVO REVERSING

Please Note: This is a step that should not be required. It is included in the event that a servo has become reversed and needs to be changed. Always check the direction of travel of the control surfaces as part of your preflight safety check before every flight.

If you find that the direction of travel of one of the servos is reversed, follow these steps to change the direction of operation.

- Turn on the transmitter but do not move the throttle stick up and down (Don't arm motor).
- Plug the flight battery into the airplane
- Hold the stick of the channel that you wish to reverse in its full throw position for 10 seconds. You will hear a beep indicating that the direction of travel has been reversed.
- PLEASE NOTE: The long 10 second hold is to prevent accidental servo reversing.
- To undo this change, repeat the above steps.

BATTERY INSTALLATION



Insert the battery into the battery box located on the bottom of the fuselage. With the throttle off (left transmitter stick all the way down), turn the transmitter on and then plug the JST (red) connector to the battery to power up the aircraft.

PILOT ASSIST STABILITY SOFTWARE (PASS)

PASS (Pilot Assist Stability Software) is incorporated into your Super Cub 750 BL. It allows the pilot to tailor the response of the airplane to his abilities. As your piloting skills grow the capabilities of the Super Cub grow with you.



Full Assist (switch toward pilot)

In this mode, the amount of roll, rate of climb, and rate of dive are limited. Self-leveling is also engaged. The reduced roll, climb, and dive angles will help keep less experienced pilots from overcontrolling the airplane. If at any time the airplane feels out of control, simply let go of the sticks and the model will return to normal flight.



Partial Assist (switch in center position)

This mode allows for additional pilot input and increases the amount of bank angle, and the climb and dive angles are not as limited. The software will still not allow for the airplane to be rolled, looped or flown inverted. As in Full Assist, the aircraft will self-level when the sticks are released.



No Assist (switch away from pilot)

In this mode all electronic stability control is turned off. The full range of aerobatic flight is possible including rolls, loops, inverted flight and snap rolls. If while first attempting these advanced maneuvers you become disoriented, simply switch to Partial or Full Assist to automatically level the aircraft and regain control.

FIRST FLIGHT

Perform a preflight check to see that the controls are moving in the correct direction. This is best performed with the PASS system set to No Assist. After the check, switch the PASS system to Partial or Full Assist and aim the aircraft into the wind. The ideal flying site needs to be about the size of a ball field and without obstacles. Smoothly advance the throttle and allow the aircraft to take off after a short roll. Gently pull back on the elevator stick to climb and initiate a turn to keep the aircraft within easy visual distance. Full throttle is not required and for learning purposes a throttle setting of 1/2 to 2/3 throttle is best. Remember that the aircraft will return to level flight if the control sticks are released. When ready for landing make your approach with the nose of the airplane pointed into the wind. Reduce the throttle to descend and allow the PASS system to aid in maintaining a gentle glide to touchdown.

CALIBRATION

The PASS system used in the Super Cub 750 BL is pre-calibrated from the factory. Recalibration is only necessary if the aircraft does not respond correctly (pitches up or down) when the PASS switch is activated. With the aircraft sitting on a level surface and the tail raised to a "wings level" attitude, follow the steps below to recalibrate the PASS system:

- Turn on the transmitter, but do not cycle the throttle channel to arm the motor.
- Plug in the flight battery to the airplane and set it on its main landing gear, prop up the tailwheel to put the airplane in a wings level flying position.
- Hold the sticks as shown in the photo for several seconds until you hear a beep. This indicates that calibration has been completed.
- Power the airplane and transmitter off and restart.



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

Item Number	Description
RGRA1500	Super Cub 750 BL RTF Airplane
RGRA1510	Fuselage
RGRA1511	Main Wing
RGRA1512	Tail Set
RGRA1513	2-Blade Propeller (2) and Spinner
RGRA1514	Painted Cowl
RGRA1515	Landing Gear
RGRA1516	Complete Decal Set
RGRA1517	Screwless Hardware Set (2 horns, 4 clevis')
RGRA1518	2208/1800KV BL Motor
RGRA1519	2.4Ghz Receiver with PASS System
RGRA1520	20A BL ESC
RGRA1521	2.4Ghz 4-Channel Transmitter
RGRA1148	Push rod set (includes clevis)
RGRA1151	9g replacement servo
RGRA1152	7.4V 2S 500mAh 20C Lipo Battery with JST
RGRA1154	USB Charger
RGRA1155	4.3g replacement servo (aileron)

LIMITED WARRANTY

Warranty Period: Rage R/C warrants that the Super Cub 750 BL ("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.

Rage R/C, an exclusive brand of:

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