

# ***VORTEX EXTREME***



## **CAUTION: ELECTRICALLY OPERATED PRODUCT:**

NOT RECOMMENDED FOR CHILDREN UNDER 14 YEARS OF AGE.  
AS WITH ALL ELECTRONIC PRODUCTS, PRECAUTIONS SHOULD  
BE OBSERVED DURING HANDLING AND USE TO PREVENT  
ELECTRIC SHOCK.

## **IMPORTANT**

BEFORE ATTEMPTING TO OPERATE THIS FLYING DEVICE, ALL  
PILOTS MUST CAREFULLY READ AND UNDERSTAND INSTRUCTIONS

# Notes

# Warning!

The Vortex Extreme airplane will likely be the most exciting R/C product you will own; however, it is not a toy. Improper or careless use of this radio may result in injury to you or others, or damage to property. Do not allow young children to play with the Vortex Extreme. Like any radio controlled product, radio interference, loose connections, or dead batteries can result in complete loss of control of the device.

It is the responsibility of the pilot flying the Vortex Extreme to operate it in such a manner, that in the event of a failure, no one will be injured, nor will any damage result to property. This is accomplished by flying far enough away from other persons such that the Vortex Extreme will likely crash before it can reach anyone or anything of value. Avoid people, buildings, power lines, highways, train tracks, vehicles, trees, water, pavement, gravel, any hard surface, or any object you don't want to crash into.

Keep spinning propeller away from your hair, head, and hands or injury may occur. Do not fly if the winds are strong.

A rechargeable battery powers the product you have purchased. The battery is recyclable, and should be recycled. Do not throw it in the garbage. Contact a local electronics store for more information.

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Draganfly Innovations Inc  
2108A St. George Avenue,  
Saskatoon, SK Canada S7M-0K7  
<http://www.rctoys.com>  
Order: 1 800-979-9794  
Int: 306 955 9907  
Monday-Friday 8:30-6:00pm CST

# Important Safety Information

- The Vortex Extreme is designed for use by people over 14 years of age.
- The instruction manual and video contain important information and must be kept.
- Do not fly on dangerous grounds including areas where electrical hanging wire exist or at stair-wells.
- Only use the Ni-CD battery pack supplied with this kit, or else your Vortex Extreme could be damaged.
- Disconnect the battery after charging 3 hours or if the battery feels hot. Over charging will damage the batteries.
- Unplug the Ni-CD battery pack when not in use.
- This airplane must not be used if any damage has occurred to the electronics, wing, or fuselage that could cause the pilot to lose control.
- Do not expose the Vortex Extreme to rain or moisture.
- Do not fly if it is raining, lightning, snowing or there is more than a slight breeze.
- Do not fly more than one Vortex Extreme on the same frequency simultaneously. Interference will cause a crash.
- Keep face, eyes, fingers, etc. clear from propeller.
- Do not fly in a crowded environment (near trees, people, pets, etc.)
- To be used solely under the strict supervision of adults.
- Precision balance – do not attempt to lift objects with the Vortex Extreme.
- The Vortex Extreme is a high tech precision instrument and is vulnerable to misuse and abuse. Protecting all components is an essential part of flight maintenance.
- Only use specified spare parts recommended by the manufacturer.
- In the unfortunate event of a crash, visually inspect the wing, fuselage, and electronics.

**Warning! Do not attempt to fly before replacing damaged parts. Injury and damage to property may result.**

# Troubleshooting

PROBLEM	SOLUTION
The motor is not working.	<ul style="list-style-type: none"> <li>• Ensure that the motor is connected to the speed controller.</li> <li>• Charge Vortex Extreme battery pack fully.</li> <li>• Ensure propeller spins freely.</li> </ul>
No response from Vortex Extreme	<ul style="list-style-type: none"> <li>• Charge Vortex Extreme battery pack fully</li> <li>• Check battery pack connection</li> <li>• Charge transmitter battery pack fully.</li> <li>• Ensure that the transmitter throttle slider is in the low position before arming.</li> </ul>
Low flight times.	<ul style="list-style-type: none"> <li>• Charge Vortex Extreme battery pack fully.</li> <li>• Fly immediately after charging.</li> </ul>
The Vortex Extreme disarms itself	<ul style="list-style-type: none"> <li>• Charge Vortex Extreme battery pack fully.</li> <li>• Ensure propeller spins freely.</li> </ul>
The Vortex Extreme's motor and/or servos glitch	<ul style="list-style-type: none"> <li>• Charge Vortex Extreme transmitter pack fully.</li> <li>• Ensure transmitter antenna is fully extended.</li> <li>• Test away from power lines and fluorescent lights.</li> </ul>

## Vortex Extreme Parts List

Description	Price
Propeller .....	3.95
Motor .....	9.95
Landing Gear Set .....	5.95
Tail Set (horizontal and vertical) .....	9.95
Empty Fuselage .....	12.95
Main Wing .....	10.95
Tail Boom .....	8.95
Wall Charger .....	8.95
8.4V 900 NiMh mAh Battery Pack .....	19.95
Servo .....	14.95
Servo gear set.....	4.95
12V DC Quick (30min) car charger .....	14.95
Receiver (please specify channel number) .....	23.95
Electronic Speed Controller.....	16.95

**Vortex Extreme Accessory Bundle - 40% discount! (wing, tail set, battery, boom): \$29.95**

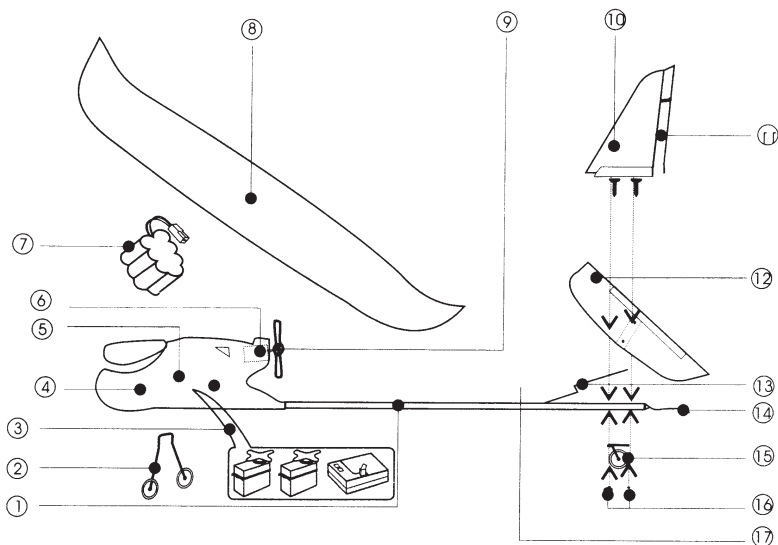
- All prices are in US funds.

- Shipping is \$7.95 on all parts by airmail. If batteries (more than one) and/or wing(s) are ordered, shipping is \$11.95 by airmail. Shipping by Airborne Ground is \$15.95. 1 - 3 day DHL shipping is available for \$19.95 as well.

- Call us at 800-979-9794 to place an order (Accessory Bundle on website, [www.rctoys.com](http://www.rctoys.com)).

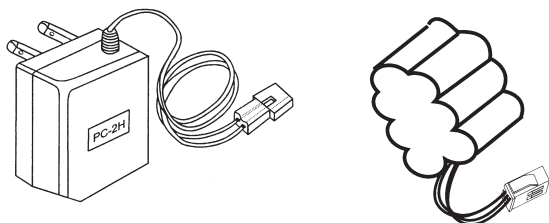
# Component List

Part #	Description
1.	Tail boom
2.	Front landing gear
3.	Servos & Receiver
4.	Foam to secure battery
5.	Start switch
6.	Motor
7.	NiMh battery
8.	Main wing
9.	Propeller
10.	Vertical fin
11.	Rudder horn
12.	Horizontal stabilizer
13.	Rudder and Elevator rods
14.	Antenna
15.	Rear wheel
16.	Vertical fin nuts
17.	Fuselage

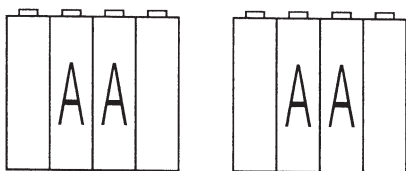


# Vortex Extreme Assembly

Charge receiver battery by plugging battery into included wall charger. Do not charge the battery unattended. Battery charging always has some risk of fire - Do not set the battery on a flammable surface. Check the battery's temperature at least twice an hour. If at any point the battery is too hot to touch, disconnect it immediately. The battery will be charged after 3 hours.



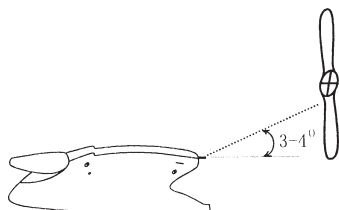
Insert eight (8) AA batteries into the transmitter. Turn on the transmitter. Both lights should be on. The batteries need replacing when the green light no longer lights up. If the light goes out while flying, you need to land promptly.



Connect the receiver battery to the connector in the airplane. Hold the red button (see #5 on component list) down for 5 seconds. This initializes the Vortex Extreme's motor. Now, when you move the throttle slider on the transmitter to the right the motor should turn.

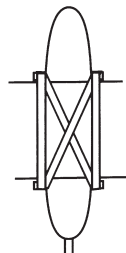
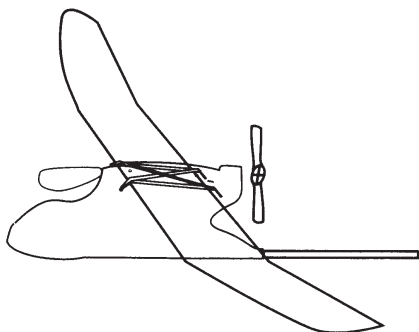
Connect the receiver battery to the connector in the airplane. To test the servos you do not need to initialize the motor. Move the right stick on the transmitter in all directions. You should hear the servos inside the fuselage moving, and should see the metal control rods moving forwards and backwards. Center the trim tabs.

- Press the propeller onto the motor shaft as far as it will go (it is held on by friction). The propeller has a 3-4 degree angle from the neutral line of the fuselage.

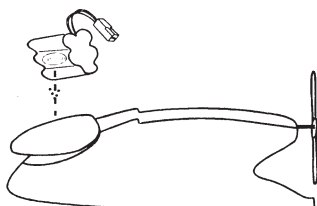


# Vortex Extreme Assembly Cont' d

- Center the wing on the fuselage and use rubber bands to hold it in place.

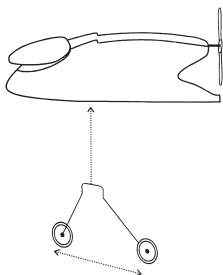


- Place the battery in the fuselage, but do not connect it until you are at the field and ready to fly.

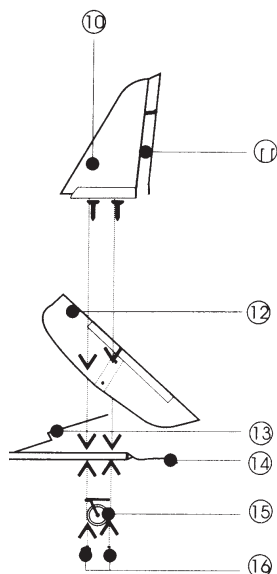
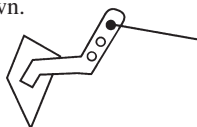


- Remove the nuts from the vertical fin's metal bolts. Push the bolts through the horizontal fin's pre-drilled holes. Next, push the bolts through the fuselage's tail boom, being careful not to cut off the antenna. Push the tail wheel onto the bolts. Finally, screw the nuts onto the bolts, securing the entire tail assembly. From top to bottom on the bolts you should have: vertical fin, horizontal fin, tail boom, tail wheel, nuts.

- Press the landing gear into the slot as far as it will go (it is held in by friction).



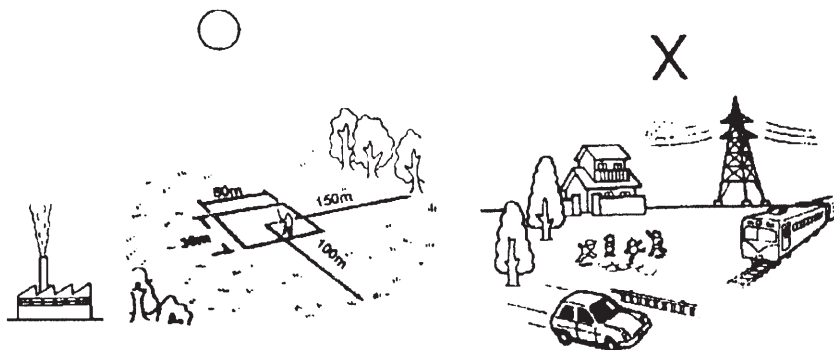
- Fit the metal control rod into the plastic arm as shown.





# Preparing for First Flight

Choose a field to fly in. It must be devoid of obstacles, people, property, trees, and water. You will want at least 75 yards of completely open field, and more is preferable.



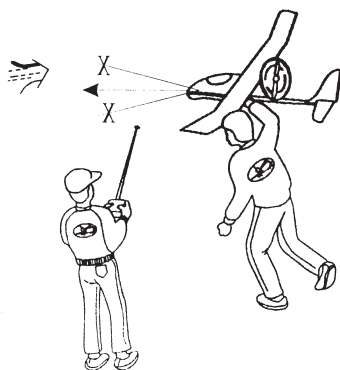
When picking a day to fly, your primary concern should be wind. First flights should be performed when there is almost no wind.



Too windy!!

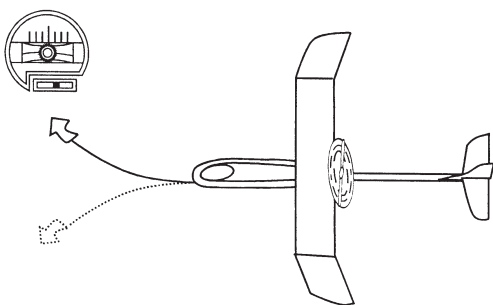
**You have to be able to perform and react when the plane is in the air. Don't attempt your first flight until you know how to:**

- **Hand launch:** Hold in full throttle and push the Vortex Extreme away from you with medium strength in a flat line. Do not throw the Vortex Extreme! Do not push it upwards or downwards. A controlled, level with the ground push is best.

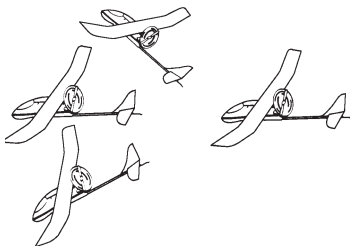


# Preparing for First Flight Cont'd

- **Trim the Vortex Extreme:** If the Vortex Extreme is always trying to turn left, move the right trim tab to the right, and vice versa.



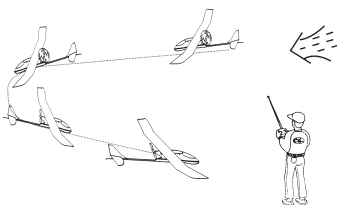
- **Turn the Vortex Extreme:** Move the right stick to the left to make a left turn, and vice versa. You should be able to turn the Vortex Extreme by moving the right stick halfway to its limit. Too much stick movement will cause a crash.



- **Fly in a straight and level line:** To do this the wings must be level and the throttle must be in the correct position on the transmitter. Use small movements with the right stick to hold the wings level, and experiment with the elevator to find out where it must be for level flight.

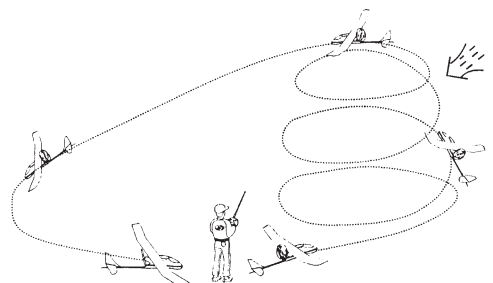
- **Gain altitude:** Hold the wings level with the right stick and use full throttle.

- **Land:** Hold the wings level and use a small amount of throttle to slowly lose altitude. A slow, gentle, and level-winged descent into the ground will result in the best landing.



- If you think you are ready to do all of these things, you can learn to fly the Vortex Extreme.

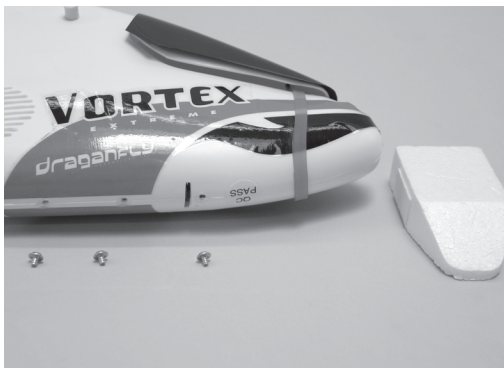
- If you can do all of these things, you can fly the Vortex Extreme!



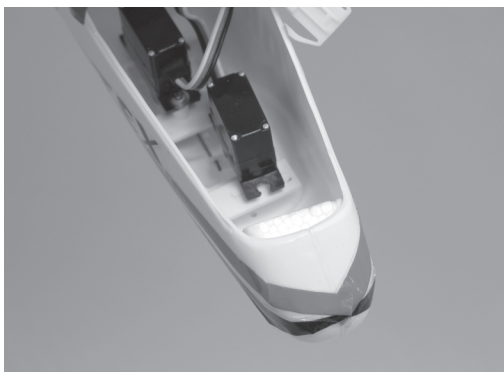
# Servo and Tailboom Replacement

To remove and replace the servo, follow steps 1-8. To remove and replace the tail boom, follow steps 1-7 and 9-20.

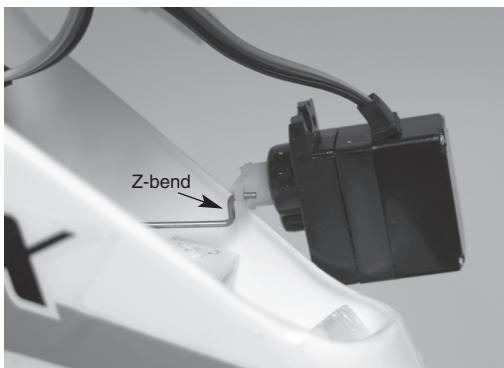
1. Remove foam battery holder
2. Remove three bottom screws. You should keep the servo mount as far forward as possible, for ease of access. When possible, lift it up and out of the canopy.



3. Unscrew the front servo's front screw (don't remove rear screw).

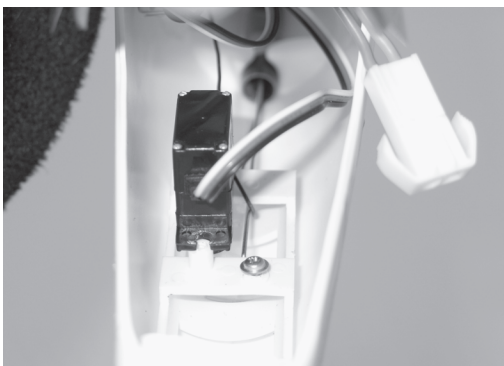


4. Pull servo out through the canopy.
5. Maneuver servo off the metal control rod's Z-bend.



# Servo and Tailboom Replacement Cont' d

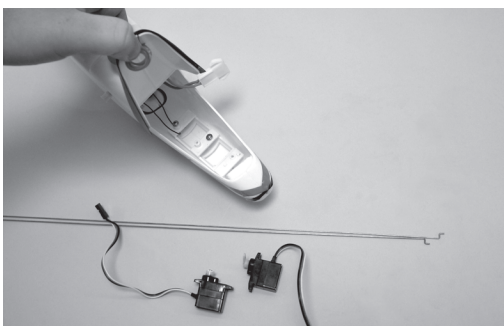
6. Repeat for rear servo.
7. Disconnect servos from receiver.
8. Replace faulty servo, re-install following steps in reverse order.



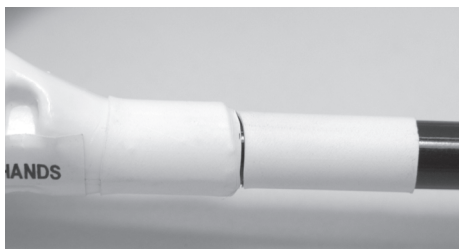
9. Unscrew bolt holding in the tail boom at rear of fuselage.



10. Pull out metal control rods through their slots in the rear of the tail boom.
11. Untie antenna where it sticks out of rear of tail boom, and pull antenna out the front of the fuselage.

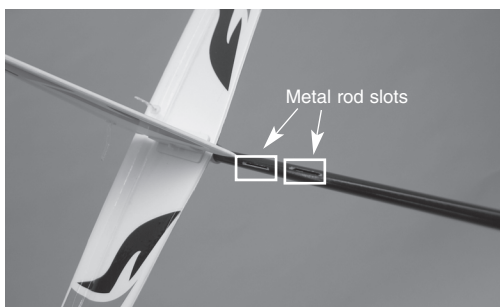


12. Pull and twist tail boom out of fuselage after slicing white boot where it connects tail boom to fuselage. This step requires moderate force.

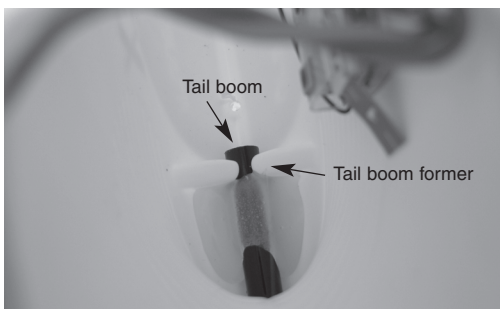


# Servo and Tailboom Replacement cont' d

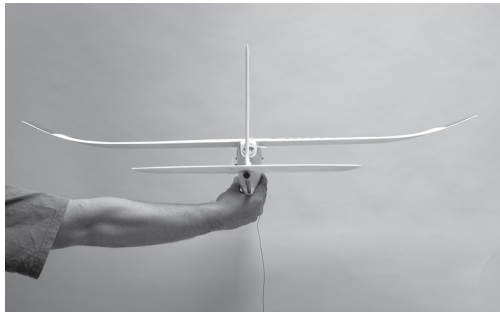
13. Temporarily put the vertical and horizontal fins on the new tail boom. Make sure the slot for the metal control rods are on the top side of the boom.



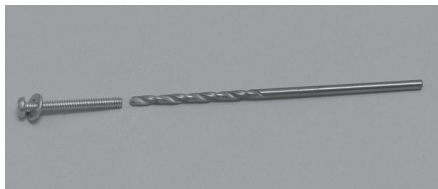
14. Push the new tail boom into the fuselage. The front of the tail boom should be about 1/4" past the tail boom former.



15. Visually align the vertical fin with the fuselage, and the horizontal fin with the main wing.



16. Drill a hole through the tail boom.



# Servo and Tailboom Replacement cont' d

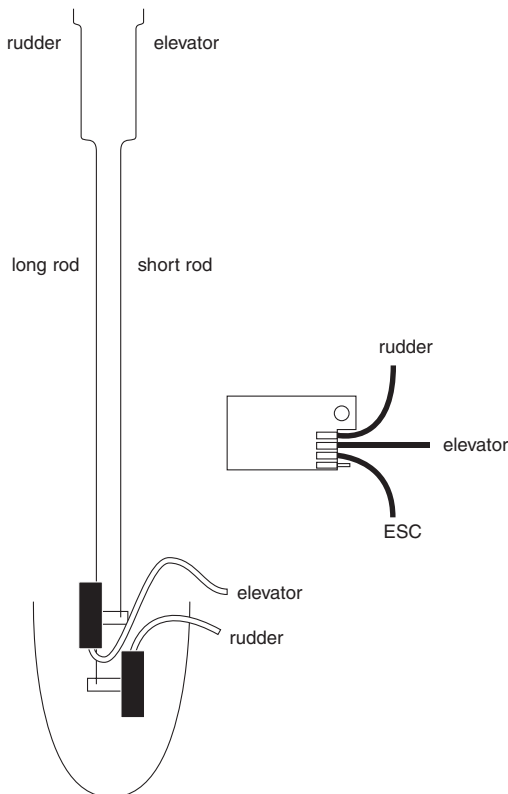
17. Remove the vertical and horizontal fin. Push the antenna through the tail boom (we recommend going through the canopy), and retie the knot. Tip: Hold plane by canopy, let tail boom hang straight down, straighten antenna as much as possible, and help gravity pull the antenna through by gently pushing.

18. Push the control rod through the tail boom, into the fuselage.

19. Screw in the tail boom bolt.



20. Follow steps 1-7 in reverse order to re-assemble Vortex completely (Rear servo first: Z-bend on servo arm, servo in servo mount, front screw. Repeat for front servo. Connect servos to receiver. Three servo mount screws. Foam battery holder.).



# Notes

**draganFLY**  
I N N O V A T I O N S I N C

INVENTING THE FUTURE OF RADIO CONTROLLED FLIGHT