

# **BVM**

## **ULTRA BANDIT EVOLUTION**

**GO FLY GOLD**



Length: 98", Wing Span: 85"

Fuel Capacity: 4.8 Liters

For 160 to 200 N Turbine

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### **ASSEMBLY AND OPERATING MANUAL**

**Version 2**

**April 2024**

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**Vne 200 MPH    Limit Thrust to 160 – 200 Neutons**

**Equipped with HV Servos and should not be operated below 7.2 volts**

**CCU Pressure should be 75 PSI MAX**

# **BVM**

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# Ultra Bandit EVO

Assembly & Operation Manual

# Ultra Bandit EVO

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## INTRODUCTION

Thank you for purchasing the Go Fly Ultra Bandit Evo. This model represents the latest in manufacturing technology and completion for the R/C jet enthusiast. The factory has expertly crafted and thoroughly inspected all aspects of the model. Only a small amount of work is required to complete the assembly of your Bandit Evo.

This manual contains instructions for safety, operation, and maintenance. It is essential to read and follow all the instructions and warnings in the manual.

Please read the entire manual to become familiar with the processes and procedures before you begin to assemble your aircraft.

### Disclaimer

Bob Violett Models Inc. assumes no liability for the operation and use of these products. The owner and operator of these products should have the necessary experience and exercise common sense. Said owner and operator must have a valid Academy of Model Aeronautics license and a "Turbine Waiver" for operation in the U.S.A.

This is a sophisticated jet model aircraft. 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.

**Notice:** Do not use incompatible components or alter this product in any way outside of the instructions provided by BVM, Inc. The BVM Ultra Bandit Evo has been designed and flight tested around 160-200N class engines. Damage to the aircraft may result from exceeding this thrust limitation.

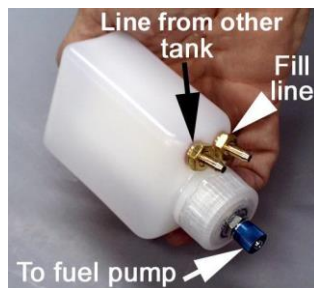
### List of BVM supplied items

- Assembly and Operating Manual Package
- Flush Mount Vent Fitting (#PS-SP-0301)
- Central Controller Instructions

### Recommended Accessories

You may have some of these products in your shop, but if not, refer to this list.

- 160 to 200N engine of your choice.
- BVM HI FLOW U.A.T. (BVM# TA-SR-1001)
- BVM Over Flow Tank (BVM# 6037)
- 12 Channel Power Safe Receiver
- (2) 7.4v Batteries 3600 mAh RX
- Safety Wire (BVM# 3030)
- Bavarian Demon Aero Cortex Pro Gyro (#V-DA-BD-Cortex Pro)
- ULTRA BANDIT Jet Foam Cradle (#K7300-65)



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### BVM Accessories Used in Demo Model

You may have some of these products in your shop, but if not, refer to this list.

- 180 Class
- BVM HI FLOW U.A.T. (BVM# TA-SR-1001)
- BVM Over Flow Tank (BVM# 6037)
- Spektrum 12 Channel Power Safe Receiver
- (2) 7.4v Batteries Pulse 3600 mAh RX (V-PLURX15-36002)
- Bavarian Demon Aero Cortex Pro Gyro (#V-DA-BD-Cortex Pro)

### Required Tools

A combination of Metric and SAE hex socket and drivers along with a small standard and Phillips head drivers will be necessary.

- 9/64" Long Ball Driver

### List of Adhesives/Lubricants needed

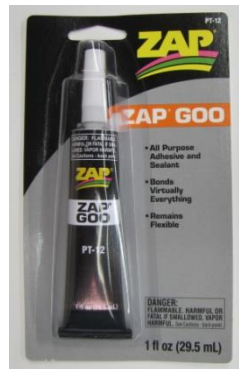
Available at BVMJets.com

- Super O-Lube BVM #5779
- Axle Super Lube BVM #5784
- Dry Lube BVM #1947
- Pacer Z-42 # PT42

### List of Adhesives/Lubricants not necessarily needed

Available at BVMJets.com

- BVM Aeropoxy # 9566
- BVM Qt Poxy # 9580
- Zap-A-Goo # PT12
- BVM Thin Lube for "O" Rings BVM# 1945



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### UNPACKING

Carefully remove items from the box. Open each package and inspect for shipping damage. After reading this entire manual, get familiar with the major kit components.

**Note:** Damaged parts must be reported to BVM within 7 days of receiving your kit. Become familiar with the work completed at the factory. It is important that you inspect and approve this work now.

Using a stand, such as the BVM Ultra Bandit Jet Foam Cradle (K7300-65) will aid in the assembly of the Ultra Bandit Evo.

### Carbon Dowel Preparation

- Use BVM Dry Lube (BVM# 1947) on the Carbon Rods to allow easier installation into the wing and tail receptacles.





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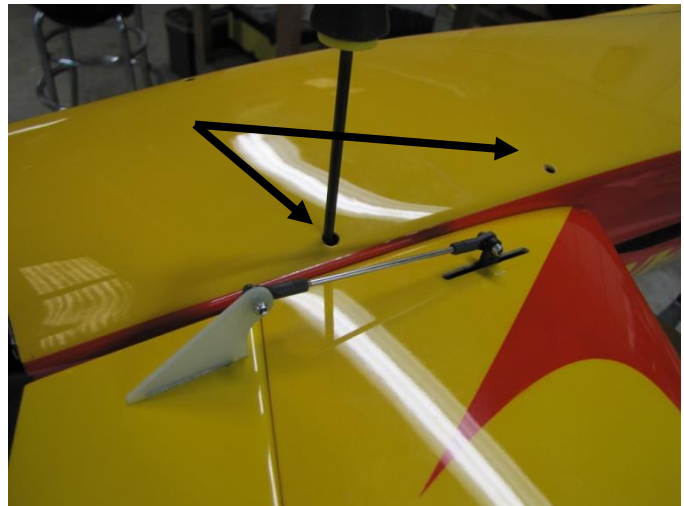
## INSTALLING TAIL SURFACES

### Install the Stabs

- Connect the servo leads and secure with servo clips or tape.
- Insert the Carbon Rods fully into the receiver brackets.



- Secure each stab by tightening the bolts with a 9/64 ball wrench.



### Install the vertical fin

- Connect the servo leads and secure with servo clips or tape.
- Insert the Carbon Rods into the receivers.



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- Secure the vertical fin by tightening the clamps bolts with a 9/64 ball wrench.

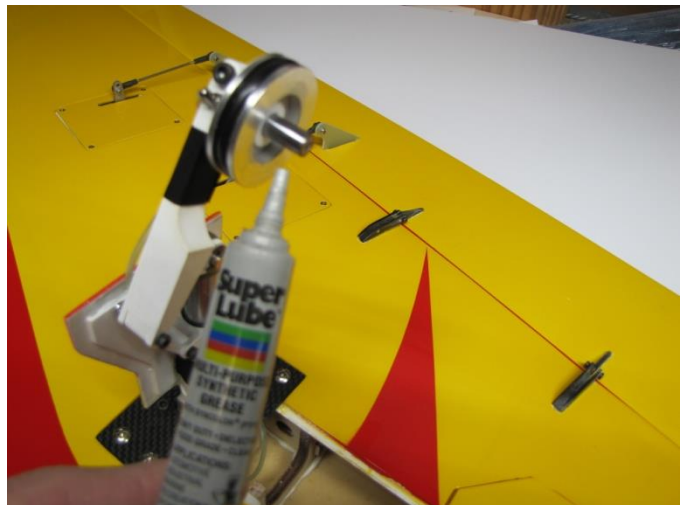


## WING PREPERATION AND INSTALLATION

- Lubricate the O'Rings with Super O-Lube (BVM# 5779).



- Lubricate the axles with Super Lube (BVM# 5784).





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- Connect the servo leads and secure with servo clips or tape.
- Insert the Carbon Rods into the receivers.



- Secure each wing by tightening the (2) clamp bolts with a 9/64 ball wrench. Front Carbon Dowel only.



### WING TANK PREPERATION

- Your Wing Tanks have a 1/4" Dowel in the front. A ply tab in the rear and the EZ Hanger in the middle.
- Using a Dremel make the hole in front so the dowel can slide through the fiberglass. The structure below already has a hole for the dowel to sit in. When this is done slot the rear of the tank to accept the ply tab. These can be glued into place using thick CA glue.



Note a small bevel on the dowel will help when installing the tanks on the wings.

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### MOUNTING THE EZ HANGER

The EZ Hanger is mounted to the tank using 2 #4 counter sunk wood screws. The tank has 2 predrilled holes where it mounts.

NOTE: There are 2 longer 4-40 bolts that come with the EZ Hanger. These will be used in the next step.

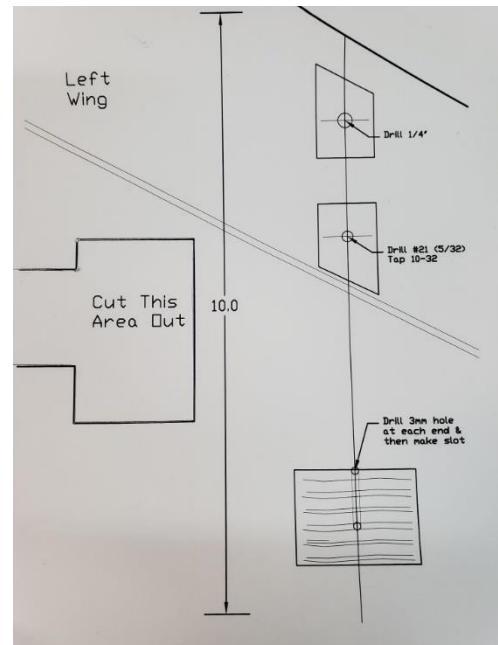


- Once the EZ Hanger is on the tank, remove the 4-40 bolt from the collar. Using your Dremel make a slot on the inside of the tank, use the longer 4-40 bolt to extend through the side of the tank and into the collar. This is what will remove your tank.



### MOUNTING THE TANKS

- Using the cardstock supplied cut out the card tool to fit around the carbon flex plate. Tape the template to the wing. Using the drill sizes on the template drill the wing accordingly.



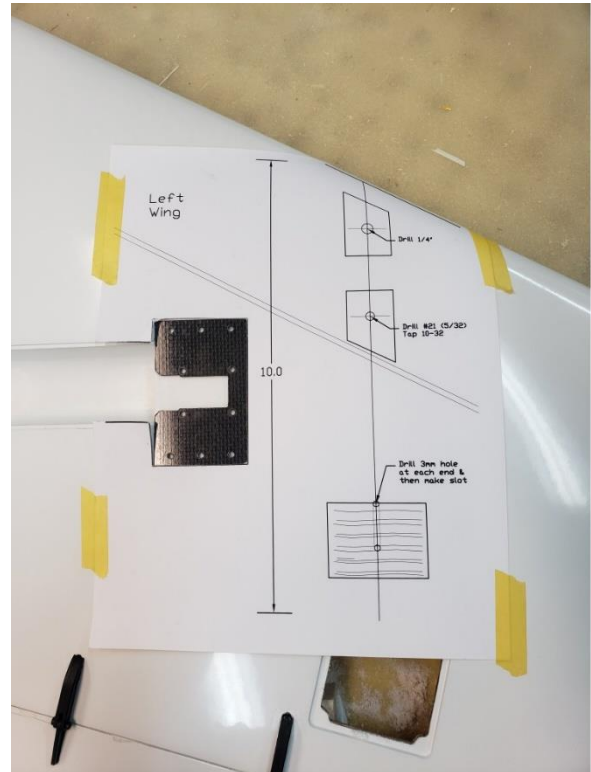
# Ultra Bandit EVO

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- With the template still on the wing mark the slot at the rear of the template and slot the wing with a 1/8 carbide cutter.

The center hole gets tapped for a 10-32 stud.  
This is what holds your tank to the wing.

NOTE: A small drop of thin CA will harden the threads and put tension on the stud.



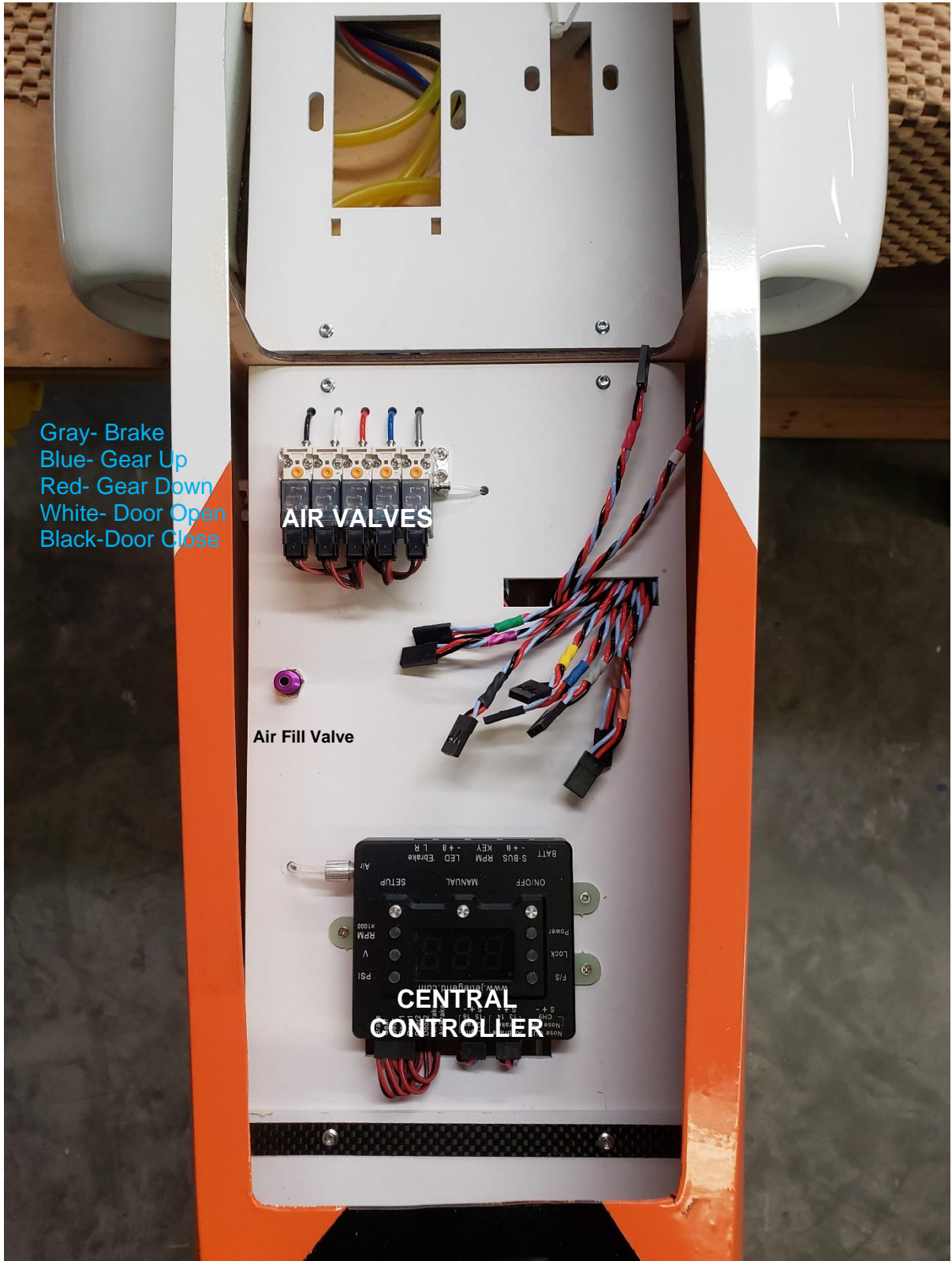
When done it will look like this.



# Ultra Bandit EVO

## Assembly & Operation Manual

### EQUIPMENT BOARD LAYOUT





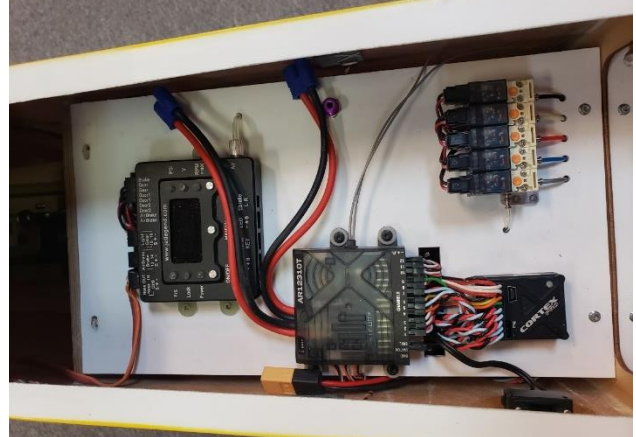
# Ultra Bandit EVO

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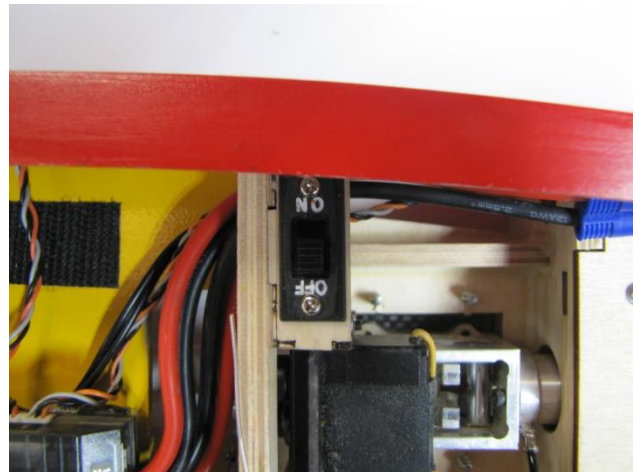
### Mounting the RX

- Mount your receiver in the following location.

NOTE: Follow your radio manufacture recommendations for RX mounting.



You can install the Receivers ON/OFF switch in the provided mount and install it in a location easiest for you.



### Mounting the Gyro

Use the space aft of the Receiver to mount the Gyro of your choice. Use the 2-sided adhesive tape provided by the Gyro manufacture to adhere the gyro in place. Follow the manufacture guidelines to connect to the receiver.



# Ultra Bandit EVO

## Assembly & Operation Manual

### Wiring The Model

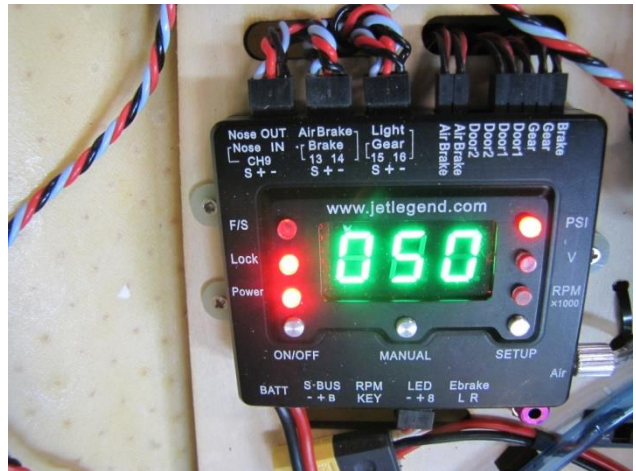
Servo Wire Color Codes		
Throttle		NA
Rudder		Blue
Elevator	Left	Green
Elevator	Right	Purple
Aileron	Left	Orange
Aileron	Right	Yellow
Flap	Left	Brown
Flap	Right	Grey
Brake		Red/White
Steering		Black



### Central Control Unit

Follow the instructions in the Central Control Unit Manual that was provided along with this manual.

NOTE: This has been programmed to Failsafe at 35 PSI.





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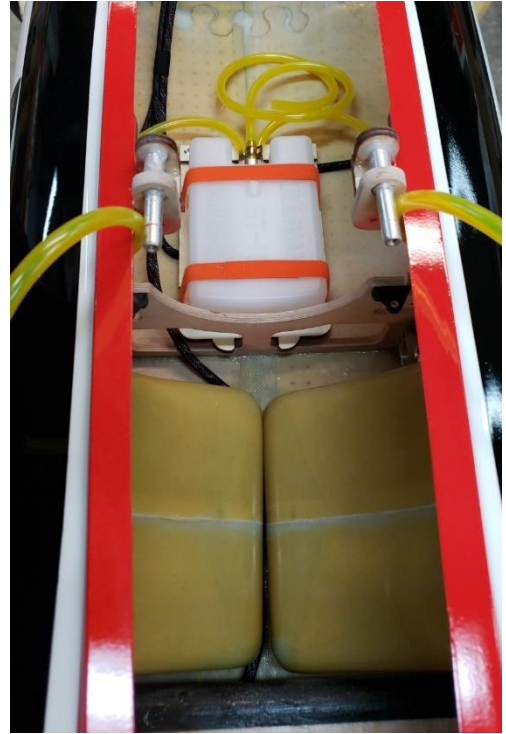
### FUEL SYSTEM

The fuel system is factory installed. Please read the "Go Fly Fuel System Check" article supplied with your manual package.

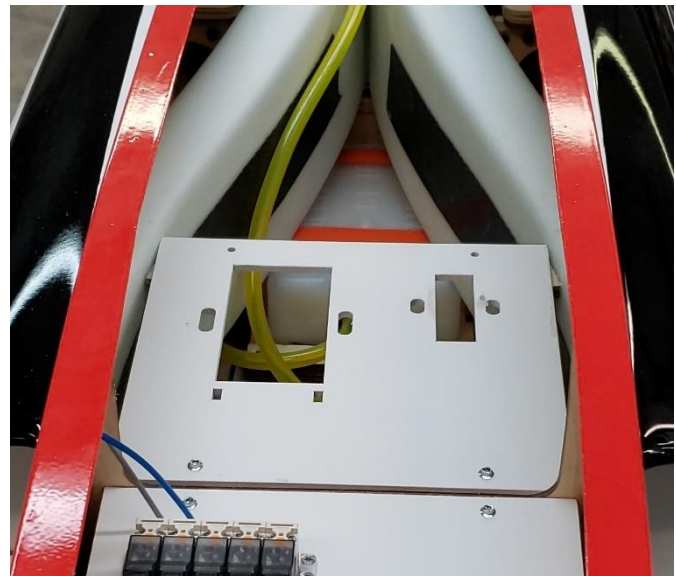
Both Main Tanks and Header tank are shown.

NOTE: We use Safety Wire inside the tanks to secure fittings and we use Spring Clamps on the outside.

This has been done for you.



- Your Bandit will have a factory installed UAT Mount that also holds the Pump and ECU.



# Ultra Bandit EVO

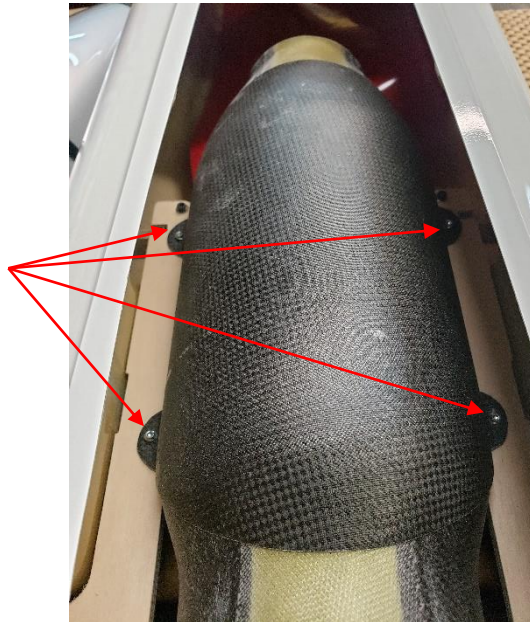
## Assembly & Operation Manual

### BYPASS REMOVAL

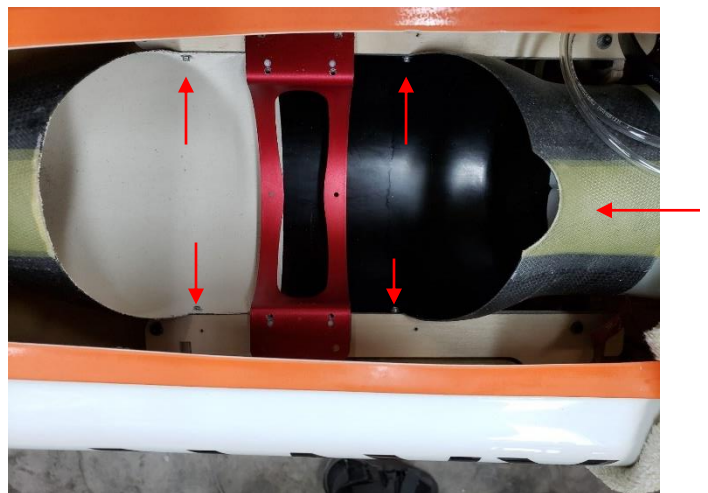
- Remove the Bypass by removing the (2) 440x 3/8 SHCS that secure the tailpipe to the bypass.
- Slide the Tailpipe towards the aft of the fuselage.



- Remove the (4) SHCS outside holding the cover down.



- Remove the (4) #2 SHCS inside the bypass.



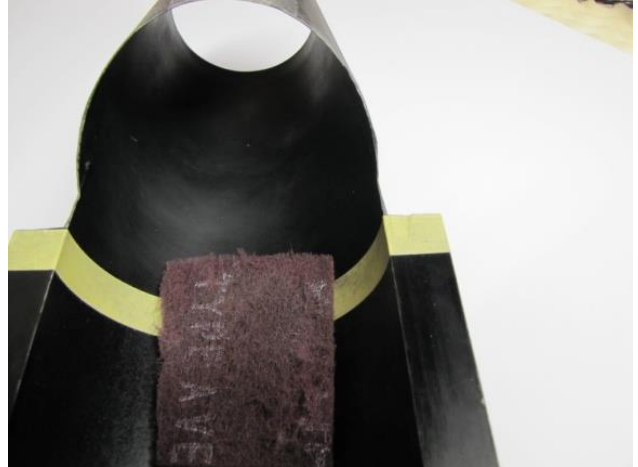
NOTE: You can radius the ByPass to allow clearance of the starter motor.

# Ultra Bandit EVO

## Assembly & Operation Manual

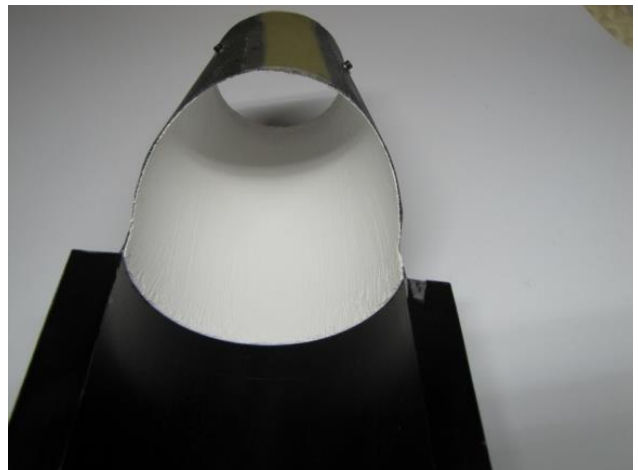
### BYPASS PREPARATION

- Tape off and scuff the aft inside portion of the bypass.



- Apply (3) coats of BVM Heat Shield to the inside of the bypass.

Note: A heat gun can be used to speed up the drying process in between coats.



Install the bypass, Turbine, and tailpipe.

### TURBINE INSTALLATION

- Sight down the tailpipe to ensure the turbine is centered.
- Mark the location of the turbine mounting holes and use your favorite mounting hardware.

NOTE: Our Demo Model uses 4 SHCS and washer for mounting.





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On some mounts it may be necessary to drill new holes to clear engine rails.

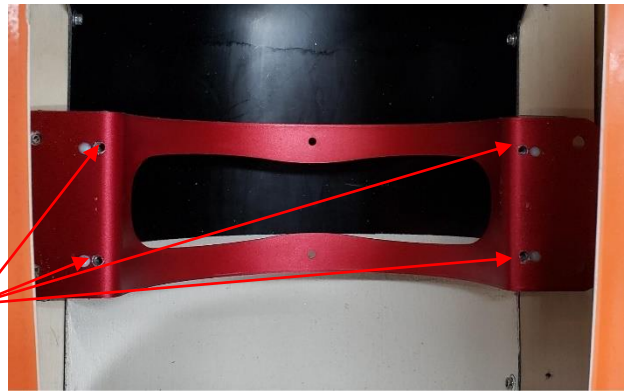
NOTE: You can also notch the rails to fit.

New mounting holes for the KingTech K-210 strap.

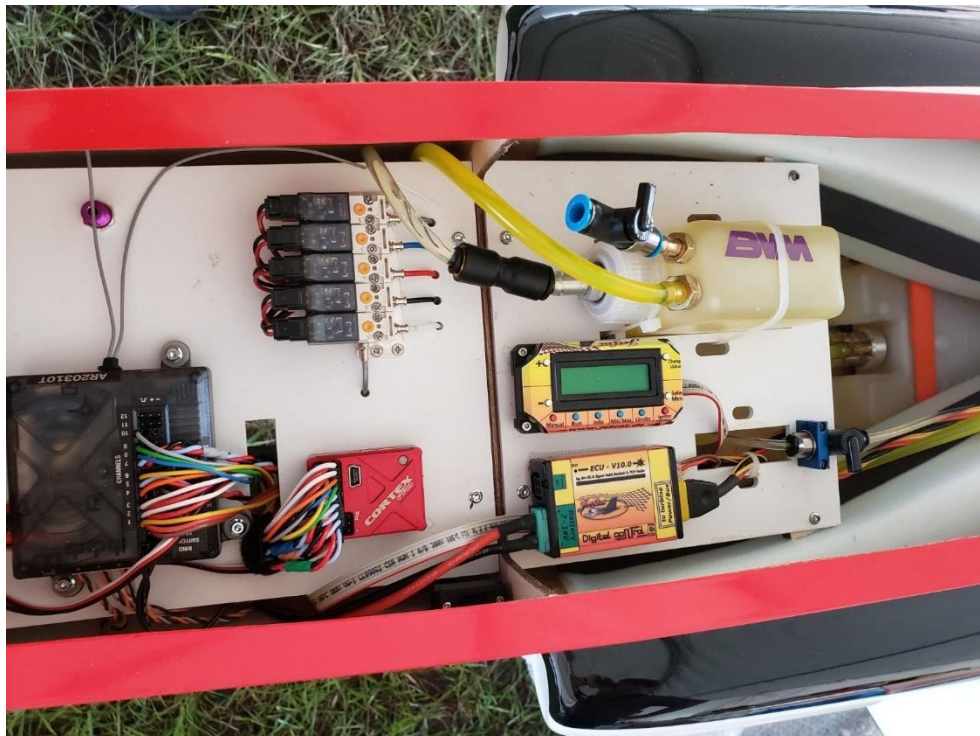
### INSTALL ENGINE ASSESSORIES

- Mount the ECU and Fuel Pump on the Equipment Board just forward of the intakes. The ECU battery is mounted on the tray in the nose area.

NOTE: Here are a few examples.



KingTech Installation



JetCat Installation

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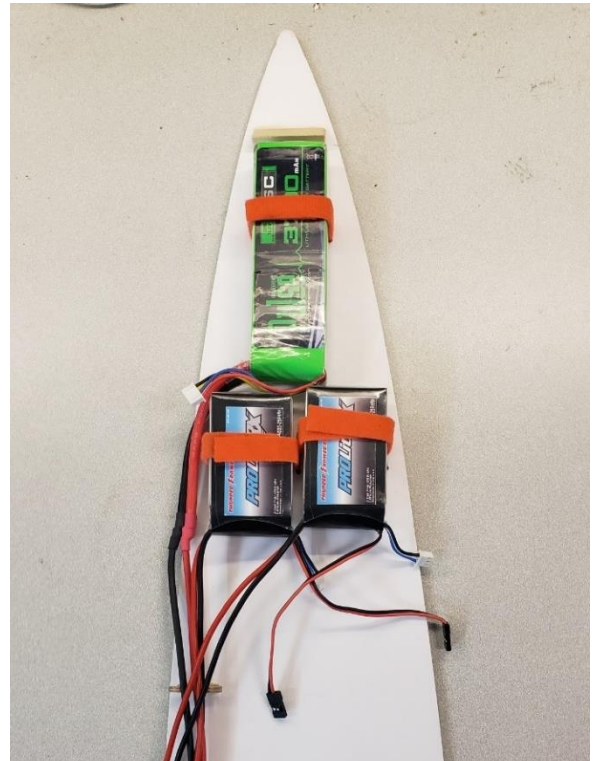
## Assembly & Operation Manual

### Mount RX and Turbine Batteries

- RX Batteries and ECU Battery shown mounted.

NOTE: Woods parts have a catalyzed sealer on them.

The BVM Demo Model balances with this configuration and 6 ounces of ballast.



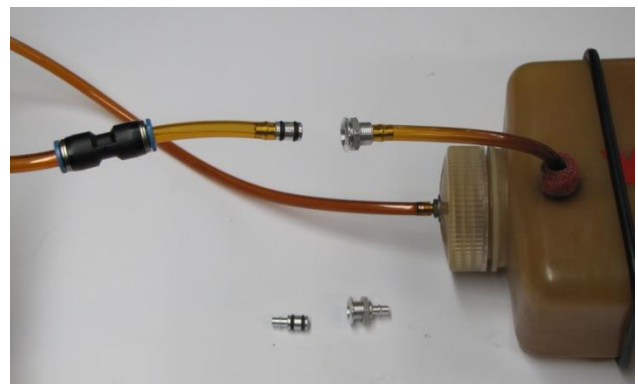
### Flush Mount Vent and Overflow System

- A flush mounted vent system is used on the fuel system. A magnetic vent plug with red "Remove Before Flight" tag and BVM Overflow/Taxi tank conversion fittings are provided. (Tank not included)



- Install the fittings to your overflow/taxi tank. Use an overflow tank while fueling to prevent spillage and to ensure fuel tanks are full before flight.

Use BVM Overflow tank Part #BVM6037



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Below, the overflow/taxi tank is connected.

The vent plug is installed.



### Center of Gravity

- Measure aft of the LE at the wing fuse joint 12", place a piece of 1/2" wide tape on the fuselage.





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### Control Surface Deflections and Expo Settings

**Note:** The BVM Demo plane is set up using the following Expo percentages. Positive values are used on Spektrum and JR radios, Futaba uses negative.

Control	High Rate Travels		Expo	D/R M	D/R L
Stab (measured at the fuse side.)	Up 1"	Down .75"	25	80%/25	50%/20
Aileron (measured at the Flap)	1.0"	1.0"	25	80%/25	50%/20
Flaps (measured at the Root)	Take Off 3/4"	Landing			
Rudder (measured at the Bot.)	L&R 1.25"		25	80%/25	50%/20

### Connecting RX wires

The wires are labeled from the factory. Follow the chart below to connect the servos.

DX18 Connection Chart						
RX Port	(1)Throttle	(2)Aileron	(3)Elevator	(4)Rudder	(5)Gear	(6)Aux1
Surface	Throttle	Right Ail	Right Elev	Rudder	Left Flap	Left Ail
RX Port	(7)Aux2	(8)Aux3	(9)Aux4	(10)Aux5	(11)Aux6	(12)Aux7
Surface	Right Flap	Gear	Left Elev	Brake	Nose Steering	Gyro

### DX18 and DX18QQ Transmitter File

The BVM Demo models are set up on Spektrum DX18 transmitters.

**Important!!! Check the directions of all flight controls before each flight.**

Switch/Lever/Trimmer	Channel	Output
Switch A	(8)Aux 3 Gear	Landing Gear, Down is Down
Switch D (Flight Modes)	Flaps	Up is Normal flight Mid Take Off Down is Landing
Switch E	Brakes	Pos 0-off, Pos 1-pulse, Pos 2-stop
L. Trim	Steering Trim/(11)Aux 6	Down for Right Steering Trim Up for Left Steering Trim
Switch F	Aileron Rates	Up (0) is High
Switch G	Gyro	Pos 0- off, Pos 1- low, Pos 2- high
Switch A	Timer	

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### First Flight Profile

Make the first flight with the gyro “off”. See also BVM article “Gyro Sense”.

### Flight Time

The BVM demo model’s transmitter timer is set for 7 min. On the first flight, land a few minutes early to check fuel consumption. Adjust the flight timer accordingly.

### Taxi Test/Engine Run Up

A taxi test should include a radio range check with the engine running at various power levels. Check that the wheel brakes are adequate, and the stopping action is without skidding or pulling left or right. Be sure to shake the aircraft and push fore and aft with the engine at half power, this will remove any trapped air bubbles in the fuel system. Check the fuel line to the engine for “no bubbles”.

### Takeoff

Begin the takeoff roll by slowly advancing the throttle. Maintain runway center while holding about 1/2 stick up elevator; the Bandit Evo will rotate when it is ready. If there is a cross wind, hold a small amount of aileron into the wind, be prepared with opposite rudder.

### Trim

Once in the air, find a medium cruise speed to set the trims. The aircraft should fly straight and level “hands off”. When the landing gear comes down, a few clicks of trim may be needed. This can be mixed in or use flight modes to trim automatically.

### Practice Approaches

Save a few minutes at the end of your first flight to practice approaches and go arounds. It is beneficial to become familiar with the low-speed handling of the aircraft.

### Landing

The landing is like most jets, “power on” during the approach. The Bandit Evo does not stall easily, it is best to land nose high, touching the main wheels first.

The majority of the first flight should be spent trimming and practicing for the first landing. Save the aerobatics and air show stuff for later flights.

### RX Battery Consumption

The average flight consumes 300 mAh. We recommend two flights and recharge. Use this data to calculate how many flights you can achieve from your system.

BVM is synonymous with “Success Jets.” It is very important to us that you are successful with our products. This extensive manual reflects our sincerity. As always, your comments and suggestions on BVM products are appreciated.

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