



**ElectrifiFly™**

# V-Pitch™

## Variable Pitch Prop System

These installation instructions for the V-Pitch Variable Pitch Prop System are designed specifically for use with all Great Planes FlatOut™ models. Please follow the “Firewall-Mounted Motor System” instructions in your FlatOut manual before proceeding any further.

**Additional items you will need to upgrade your FlatOut with the V-Pitch system are: One 17 oz/in micro servo, a brushless ESC with governor (ElectrifiFly's BL-12, GPMM2075) and a 5-channel micro receiver.**

### Variable Pitch Prop Specifications:

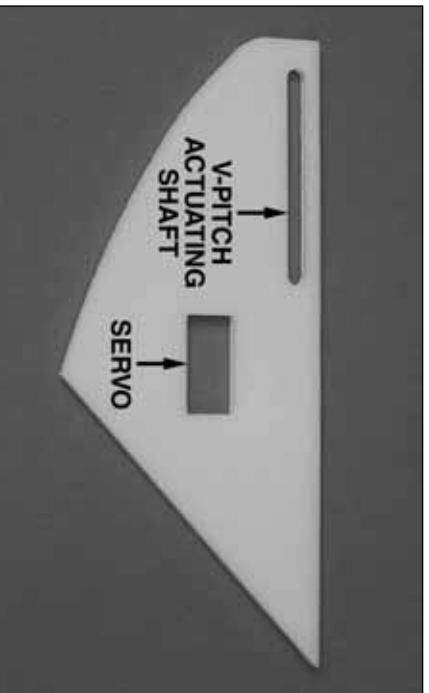
**Mechanical Design:** Push-Pull System  
**Blades (2):** Symmetrical Design, Fiber-Reinforced Nylon  
**Rotor Materials:** ABS Plastic and Aluminum  
**Control Rod Material:** Steel  
**Control Rod Dimensions:** 0.04 x 6.02 in. (1 x 153mm)  
**Ball Bearings (5):** Shielded

### Motor Specifications:

**Input Voltage:** 7.2 – 12V  
**kV Rating:** 1000 rpm/volt  
**Max. Constant Current:** 11A  
**Max. Surge Current:** 15A  
**No Load Current:** 0.65A  
**Internal Resistance:** 235 milli-ohms  
**Ball Bearings (2):** Shielded  
**Motor Diameter/Length:** 1.10 x 1.14 in. (28 x 29mm)  
**Shaft Diameter/Length:** 0.16 x 1.73 in. (4 x 44mm)  
**Total Weight (VPP and Motor):** 2.1 oz. (59.5 g)

### The following hardware is included in the V-Pitch System:

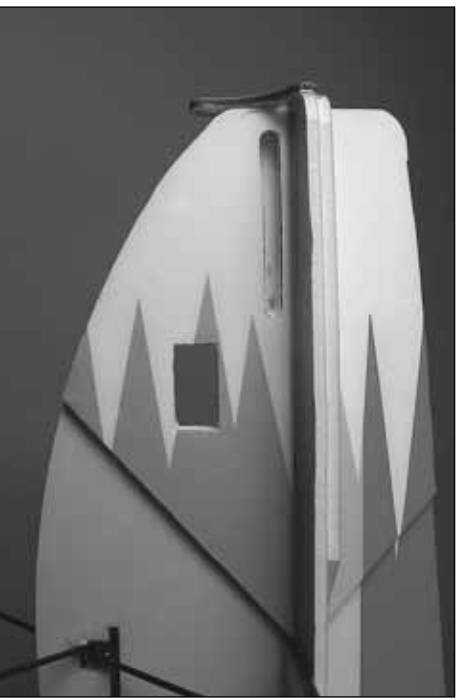
M3 x 16 bolts, hex (2, factory installed)  
M3 nuts (2, factory installed)  
M3 x 8 bolts, hex (2, factory installed)  
M3 set screws (5, factory installed)  
M3 x 5 round head bolts (3)



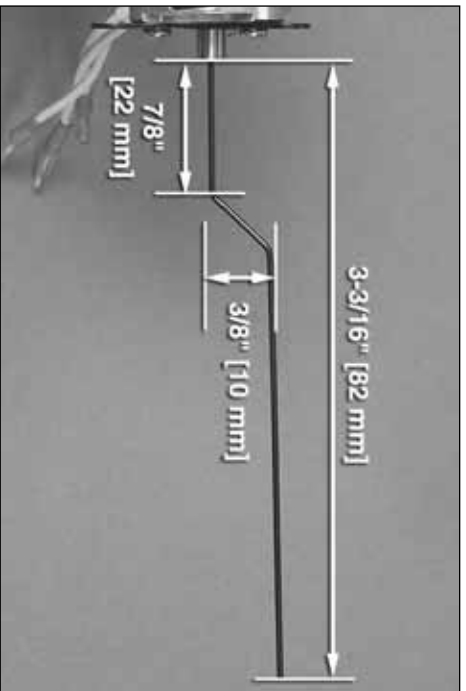
1. Locate the template for marking the servo location and the exit slot for the V-Pitch actuating shaft:



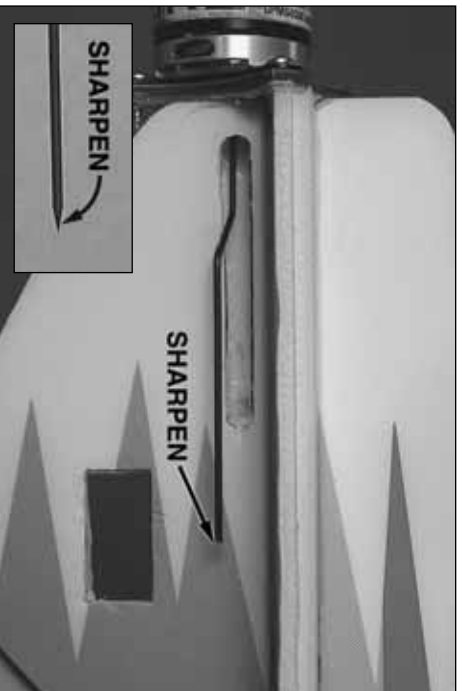
2. Place the template directly over the bottom fuselage doubler that is required for the **Firewall-Mounted** installation. Trace the template with a fine marker or pen accordingly. Only trace the template on one side of the plane.



3. With a sharp hobby knife, cut the servo slot completely through both sides of the fuselage as shown. Cut the slot for the servo actuating shaft only on the side you traced as shown.



- ❑ 6. Locate one servo arm and a z-bend from your FlatOut parts tree. Clip the z-bend through the servo arm. Next, press the shaft into the z-bend as shown. After you have firmly pressed the shaft into the z-bend, apply a drop of foam safe CA to keep the shaft from slipping out.



- ❑ 4. Cut the shaft to length as shown above, but be sure that the blade holders are completely neutral (not pitching forward or backward) when doing this step. Also, bend a slight angle in the shaft to allow for it to exit the fuselage as shown. Next, take a sanding bar or a piece of sandpaper and sharpen the end of the shaft before you install the motor.



- ❑ 7. Install your servo into the slot as shown with a few drops of foam safe CA.

**The installation is now complete. Please precede with the radio set-up instructions on the next page before you attempt to fly the V-Pitch unit.**

**For models other than the Great Planes FlatOuts, similar mounting methods might apply to your model. Refer to your model manufacturer for details.**

**V-PITCH REPLACEMENT PARTS:**

- GPMG4490 ..... Replacement Blades (2)
- GPMG4491 ..... Optional Carbon Fiber Blades (2)
- GPMG4492 ..... Replacement Shaft w/2 Ball Bearings
- GPMG4493 ..... Spinner/Collar
- GPMG4494 ..... Screw and Nut Set
- GPMG4495 ..... Blade Holder w/Ball Bearings
- GPMG4496 ..... Blade Holder Hub

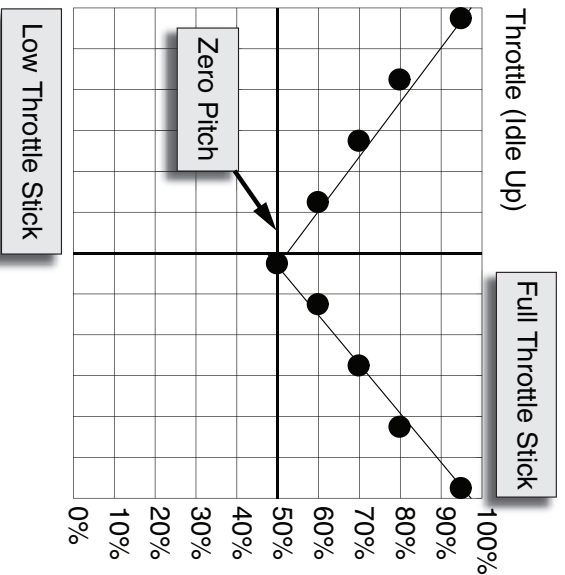
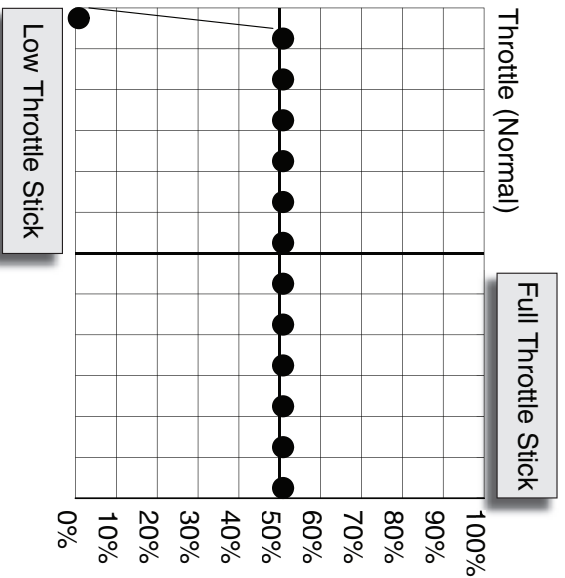


- ❑ 5. Install the V-Pitch and Rimfire motor onto the plywood firewall using (3) #4 x 3/8" wood screws (not included). Make sure the wire exits the slot correctly before tightening the screws. Apply a drop of foam safe CA to the screws to ensure they will not back out.

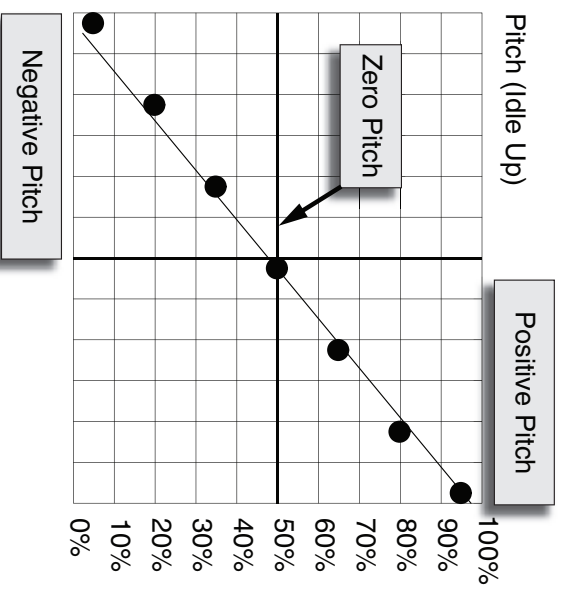
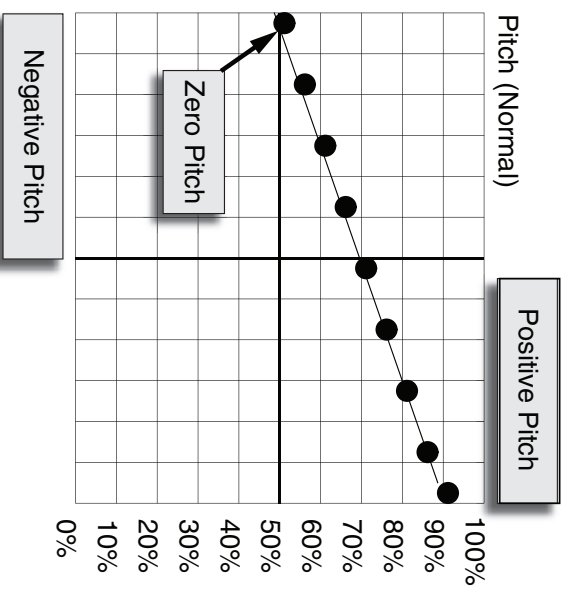
## Radio Set-Up for V-Pitch

1. When setting up your V-Pitch unit in your radio, be sure to select the radio's helicopter program. This will allow you to use pitch and throttle curves.
2. All of your channels will be as follows when using a Futaba radio:
  - Channel 1: Aileron
  - Channel 2: Elevator
  - Channel 3: ESC/Throttle
  - Channel 4: Rudder
  - Channel 5: Pitch
3. Be sure to set an "idle-up" and a "normal" flight mode in the radio that can be changed with a switch that you prefer. This will allow you to disable the V-Pitch with a switch.  
**"Normal" Mode:** Acts just like any other conventional fixed pitch aircraft.

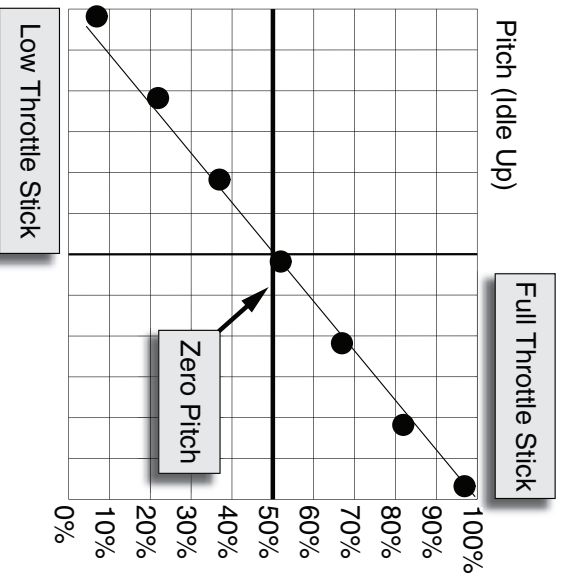
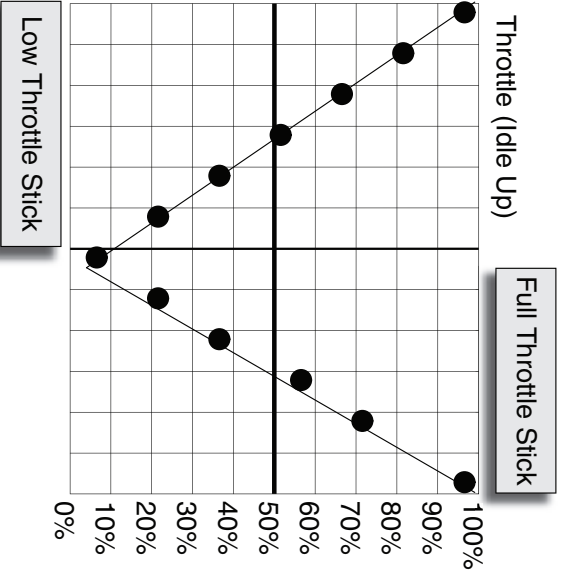
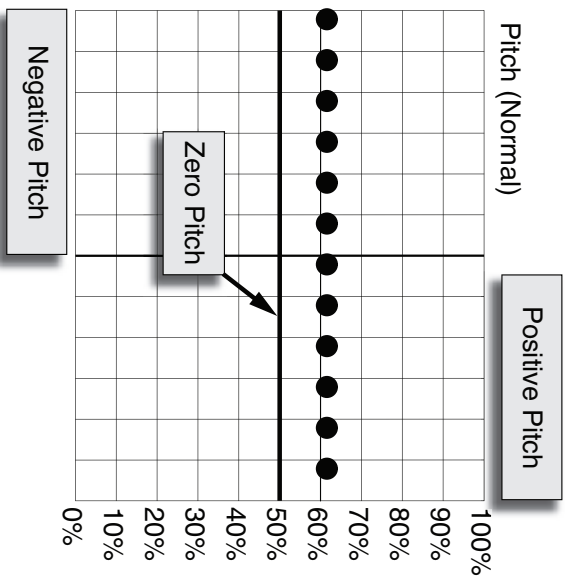
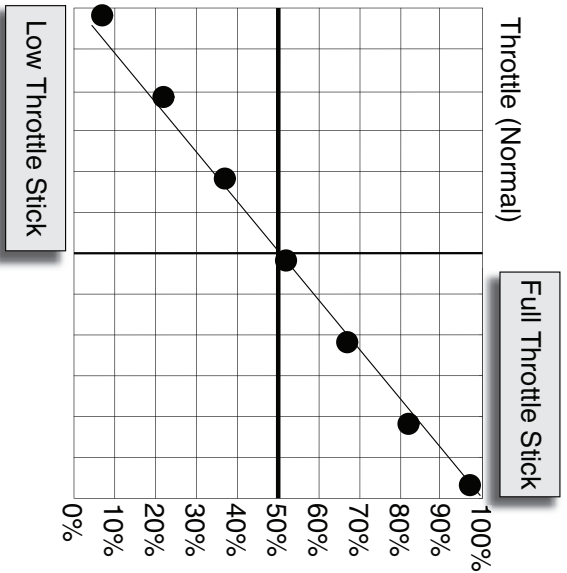
### With Governor Mode Set in the ESC:



4. Before you go any further, unplug all 3 motor wires from the ESC so you can adjust the ATV (end point) on the pitch channel in the radio. Set the pitch ATV to maximum travel for positive and negative pitch.
5. Please see the illustrations for setting up your radio's pitch and throttle curves when using your V-Pitch with and without governor mode. Keep in mind that these are just starting points. You will need to fine tune each point per your airplane and flying preferences.



**Without Governor Mode Set in the ESC:**



***For replacement items or support on this or any other ElectrifiFly item, please contact:***

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