BLADE CP™ Pro

E-flite®

Specifications

Length	20.7 in (526mm)
Height	7.1 in (180mm)
Main Rotor Diameter	20.3 in (515mm)
Tail Rotor Diameter	5.8 in (148mm)
Weight RTF with Battery	10.5 oz (298 g)
Main Motor	370 (installed)
Tail Motor	N30 (installed)
Battery	11.1V 800mAh Li-Po (included)
Transmitter	FM 6-Channel w/CCPM Mixing (included)
On-Board Electronics	FM 6-Channel Receiver and 3-in-1 Mixer/ESC/Gyro (installed)
Servos	S75 High-Speed, High-Torque (3 installed)

Table of Contents

Introduction

Based on the tried and true Blade™ CP platform, the Blade CP Pro adds the lightweight power of a 3-cell 800mAh Li-Po battery pack, the lightning quick cyclic response of Bell-Hiller mixing and CCPM control, and the upright or inverted agility of symmetrical main rotor blades. It can also be easily outfitted with a heading lock gyro and a brushless main motor power system, without the need for a new radio system or difficult modifications.

With aerobatic capability like no other RTF micro helicopter ever available in this class, the Blade CP Pro is not intended for first- or low-time helicopter pilots. We suggest either the Blade CX (for first-time pilots: EFLH1200) or the Blade CP (for low-time pilots: EFLH1100) as the Blade CP Pro is intended for experienced helicopter pilots only.

And although the Blade CP Pro is nearly ready-to-fly right from the box, please take the time to read through this manual for tips on battery safety and charging, control checks, adjustments and more.

Warning

An RC aircraft is not a toy! If misused, it can cause serious bodily harm and damage to property. Fly only in open areas, preferably at AMA (Academy of Model Aeronautics) approved flying sites, following all instructions included with your radio.

Keep loose items that can get entangled in the rotor blades away for the main and tail blades, including loose clothing, or other objects such as pencils and screwdrivers. Especially keep your hands away from the rotor blades.

Before Starting Assembly

Before starting any final assembly and preparing your Blade CP Pro for flight, remove each component from the box for inspection. Closely inspect all components for damage. If you find any damaged or missing parts, contact the place of purchase.

Note on Lithium Polymer Batteries

Lithium Polymer batteries are significantly more volatile than alkaline or Ni-Cd/Ni-MH batteries used in RC applications. All manufacturer's instructions and warnings must be followed closely. Mishandling of Li-Po batteries can result in fire. Always follow the manufacturer's instructions when disposing of Lithium Polymer batteries.

Using the Manual

This manual is divided into sections to help make final assembly and preparing for flight easier to understand, and to provide breaks between each major section.

Remember to take your time and follow all directions.

Limited Warranty Period

Horizon Hobby, Inc. guarantees this product to be free from defects in both material and workmanship at the date of purchase.

Limited Warranty & Limits of Liability

Pursuant to this Limited Warranty, Horizon Hobby, Inc. will, at its option, (i) repair or (ii) replace, any product determined by Horizon Hobby, Inc. to be defective. In the event of a defect, these are your exclusive remedies.

This warranty does not cover cosmetic damage or damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or modification of or to any part of the product. This warranty does not cover damage due to improper installation, operation, maintenance, or attempted repair by anyone other than an authorized Horizon Hobby, Inc. service center. This warranty is limited to the original purchaser and is not transferable. In no case shall Horizon Hobby's liability exceed the original cost of the purchased product and will not cover consequential, incidental or collateral damage. Horizon Hobby, Inc. reserves the right to inspect any and all equipment involved in a warranty claim. Repair or replacement decisions are at the sole discretion of Horizon Hobby, Inc. Further, Horizon Hobby reserves the right to change or modify this warranty without notice.

REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE CONSUMER. HORIZON HOBBY, INC. SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.

As Horizon Hobby, Inc. 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 this product, you are advised to return this product immediately in new and unused condition to the place of purchase.

Safety Precautions

This is a sophisticated hobby product and not a toy. 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. This product is not intended for use by children without direct adult supervision.

The product 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 assembly, setup or use, in order to operate correctly and avoid damage or injury.

Questions, Assistance, and Repairs

Your local hobby store and/or place of purchase cannot provide warranty support or repair. Once assembly, setup or use of the product has been started, you must contact Horizon Hobby, Inc. directly. This will enable Horizon to better answer your questions and service you in the event that you may need any assistance.

Questions or Assistance

For questions or assistance, please direct your email to productsupport@horizonhobby.com, or call 1-877-504-0233 toll free to speak to a service technician.

Inspection or Repairs

If your product needs to be inspected or repaired, please call for a Return Merchandise Authorization (RMA). Pack the product securely using a shipping carton. Please note that original boxes may be included, but are not designed to withstand the rigors of shipping without additional protection. Ship via a carrier that provides tracking and insurance for lost or damaged parcels, as Horizon Hobby, Inc. is not responsible for merchandise until it arrives and is accepted at our facility. Include your complete name, address, phone number where you can be reached during business days, RMA number, and a brief summary of the problem. Be sure your name, address, and RMA number are clearly written on the shipping carton.

Warranty Inspection and Repairs

To receive warranty service, you must include your original sales receipt verifying the proof-of-purchase date. Providing warranty conditions have been met, your product will be repaired or replaced free of charge. Repair or replacement decisions are at the sole discretion of Horizon Hobby.

Non-Warranty Repairs

Should your repair not be covered by warranty and the expense exceeds 50% of the retail purchase cost, you will be provided with an estimate advising you of your options. You will be billed for any return freight for non-warranty repairs. Please advise us of your preferred method of payment. Horizon Hobby accepts money orders and cashiers checks, as well as Visa, MasterCard, American Express, and Discover cards. If you choose to pay by credit card, please include your credit card number and expiration date. Any repair left unpaid or unclaimed after 90 days will be considered abandoned and will be disposed of accordingly.

Electronics and engines requiring inspection or repair should be shipped to the following address (freight prepaid):

Horizon Service Center
4105 Fieldstone Road
Champaign, Illinois 61822

All other products requiring inspection or repair should be shipped to the following address (freight prepaid):

Horizon Product Support
4105 Fieldstone Road
Champaign, Illinois 61822

Safety, Precautions, and Warnings

As the user of this product you are solely responsible for operating it in 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 interference from many sources outside your control. This interference can cause momentary loss of control so it is advisable to always keep a safe distance in all directions around your model, as this margin will help to avoid collisions or injury.

- Never operate your model with low transmitter batteries.
- Always operate your model in an open area away from cars, traffic, or people.
- Avoid operating your model in the street where injury or damage can occur.
- Never operate the model out into the street or populated areas for any reason.
- Carefully follow the directions and warnings for this and any optional support equipment (chargers, rechargeable battery packs, etc.) that you use.
- Keep all chemicals, small parts and anything electrical out of the reach of children.
- Moisture causes damage to electronics. Avoid water exposure to all equipment not specifically designed and protected for this purpose.
- Never lick or place any portion of your Blade™ CP Pro in your mouth as it could cause serious injury or even death.

Additional Required Equipment

No additional equipment is required to complete your Blade CP Pro.

Blade CP Pro RTF Contents

Item	Description
Not Available Separately	Blade CP Pro RTF Airframe
EFLH1046	6CH CCPM Pro Transmitter FM 72MHz
EFLB0995	11.1V 800mAh 3-Cell Li-Po, JST/Balance
EFLC3105	3-Cell Li-Po Balance Charger, 0.8A
EFLH1129	Mounting Accessories & Wrench
Not Available Separately	Hook and Loop Material

Battery Warnings, Guidelines and Charging

While the 11.1V 800mAh 3-cell Lithium Polymer Battery Pack (EFLB0995) included with your Blade™ CP Pro features Charge Protection Circuitry and Balance Charging via the included 3-cell Lithium Polymer Balance Charger (EFLC3105) to help ensure a safe charge every time, you MUST read the following safety instructions and warnings before handling, charging or using the Li-Po battery pack.

Note: Lithium Polymer batteries are significantly more volatile than the alkaline, Ni-Cd or Ni-MH batteries used in RC applications. All instructions and warnings must be followed exactly. Mishandling of Li-Po batteries can result in fire.

By handling, charging or using the included Li-Po battery you assume all risks associated with lithium batteries. If you do not agree with these conditions, return your complete Blade CP Pro model in new, unused condition to the place of purchase immediately.

- You must charge the included 11.1V 800mAh 3-cell Li-Po battery pack in a safe area away from flammable materials.
- Do not charge the battery when installed in the helicopter.
- Never charge the battery unattended. When charging the battery you should always remain in constant observation to monitor the charging process and react to potential problems that may occur.
- After flight, the battery must be cooled to ambient temperature before charging.
- **You MUST use the included 3-cell 11.1V Li-Po Balance Charger ONLY.** Failure to do so may result in a fire causing personal injury and/or property damage. **DO NOT use a Ni-Cd or Ni-MH charger.**

- 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, then place it in a safe, open area away from flammable materials to observe it for at least 15 minutes. Continuing to charge or discharge a battery that has begun to balloon or swell can result in a fire. A battery that has ballooned or swollen even a small amount must be removed from service completely.
- In the event of a crash, you must quickly and safely disconnect and remove the battery from the model, then place it in a safe, open area away from flammable materials to observe it for at least 15 minutes.
- Store the battery at room temperature for best results.
- When transporting or temporarily storing the battery, the temperature range should be from 40–120 degrees Fahrenheit. Do not store the battery or model in a car or direct sunlight whenever possible. If stored in a hot car, the battery can be damaged or even cause a fire.
- **Do not over-discharge the battery. Discharging the battery too low can cause damage to the pack resulting in reduced performance and duration.**

  Li-Po cells should not be discharged to below 3V each under load. In the case of the 3-Cell Li-Po packs used for the Blade™ CP Pro, you will not want to allow the battery to fall to below 9V during flight.

  The Blade CP Pro 3-in-1 control unit does not feature a voltage cutoff of any type, so we suggest that you be extremely aware of the power level of the Li-Po battery pack. If at any time the helicopter begins to require more throttle than typical to maintain hover or flight, or has lost significant power, you must land the helicopter and power the motors down IMMEDIATELY to prevent over-discharge of the Li-Po battery pack. If you continue to run the motors after noticing a loss in power, it is possible to discharge the Li-Po battery pack too far, causing permanent damage to the pack. Over-discharge of the Li-Po battery pack can result in shortened flight times, loss of power output or failure of the pack entirely.

If you have any further questions or concerns regarding the handling, charging and/or use of the included Li-Po battery pack, please contact Horizon Hobby's Product Support staff at 1-877-504-0233.

It is important that you only charge the included 11.1V 800mAh 3-cell Li-Po Battery Pack (EFLB0995) with the included 3-cell 11.1V Li-Po Balance Charger (EFLC3105). Your battery pack is equipped with special Charge Protection Circuitry and a Balance Charge Lead with connector that is only compatible with this charger. Attempting to charge the pack using another Li-Po charger or non Li-Po compatible charger could result in serious damage. Please familiarize yourself thoroughly with the warnings and guidelines (pages 7–8) before continuing.

The included 3-cell 11.1V Li-Po Balance Charger will charge a near fully discharged (not over-discharged) 11.1V 800mAh 3-cell Li-Po Battery Pack in approximately 1.0–1.5 hours. In some cases the charge time may be shorter depending on the actual amount of capacity left in the pack after a flight. **NEVER charge the battery unattended.**

Note: The Li-Po battery pack included with your Blade™ CP Pro will arrive partially charged. For this reason the initial charge may only take approximately 30–50 minutes.

The charger requires up to 1.5 Amps of 11.5–15 Volt DC input power that can be supplied from a small 12V gel cell or car battery.

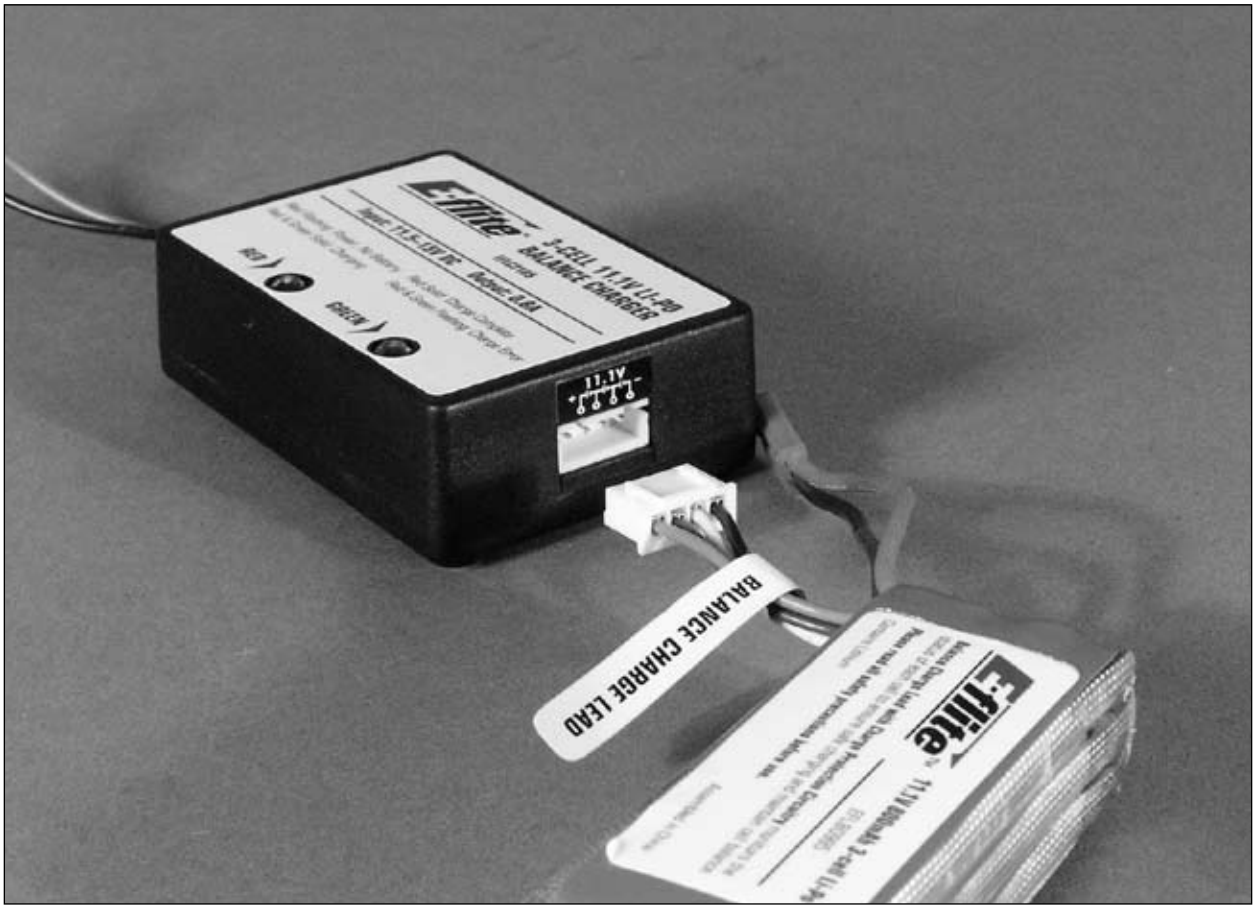
Input power for the charger can also be supplied through the use of an AC to DC adapter/power supply for convenient charging anywhere an AC outlet is available. We recommend the optional E-flite® AC to 12V DC, 1.5-Amp Power Supply (EFLC4000). **NEVER attempt to power the charger from an AC outlet without the use of a proper AC to DC adapter/power supply.**

Note: When using the AC to DC adapter/power supply, the charger is protected to prevent damage if the alligator clips touch. However, please take care to ensure that the alligator clips do not cause shorting of the battery, adapter/power supply, etc. by keeping them clear.

The charger is equipped with two LED indicators marked RED and GREEN on the label. These LEDs indicate the following (also found on the label of the charger):

- **Red Flashing LED Only**: Input power with no battery connected
- **Red and Green Solid LED**: Battery connected and charging
- **Red Solid LED Only**: Charge complete
- **Red and Green Flashing LED**: Charge error

Once you have connected the charger to a power source (Use care to ensure proper polarity when connecting the charger to the power source), its red LED will flash to indicate the charger has power and is ready to begin charging. Connect the Li-Po battery pack to the charger using the specially marked Balance Charge Lead. The connector is keyed to prevent reverse polarity connection.



When the battery is properly connected and charging normally, the red and green LED indicators will glow solid. Once the battery has been fully charged, the green LED will go out, leaving just the red LED glowing solid. The battery can now be removed from the charger and installed on the Blade™ CP Pro for flight.

Charge Errors and Indications

In the event that both the red and green LEDs flash, a charge error has occurred. Some examples of charge errors and their indications include:

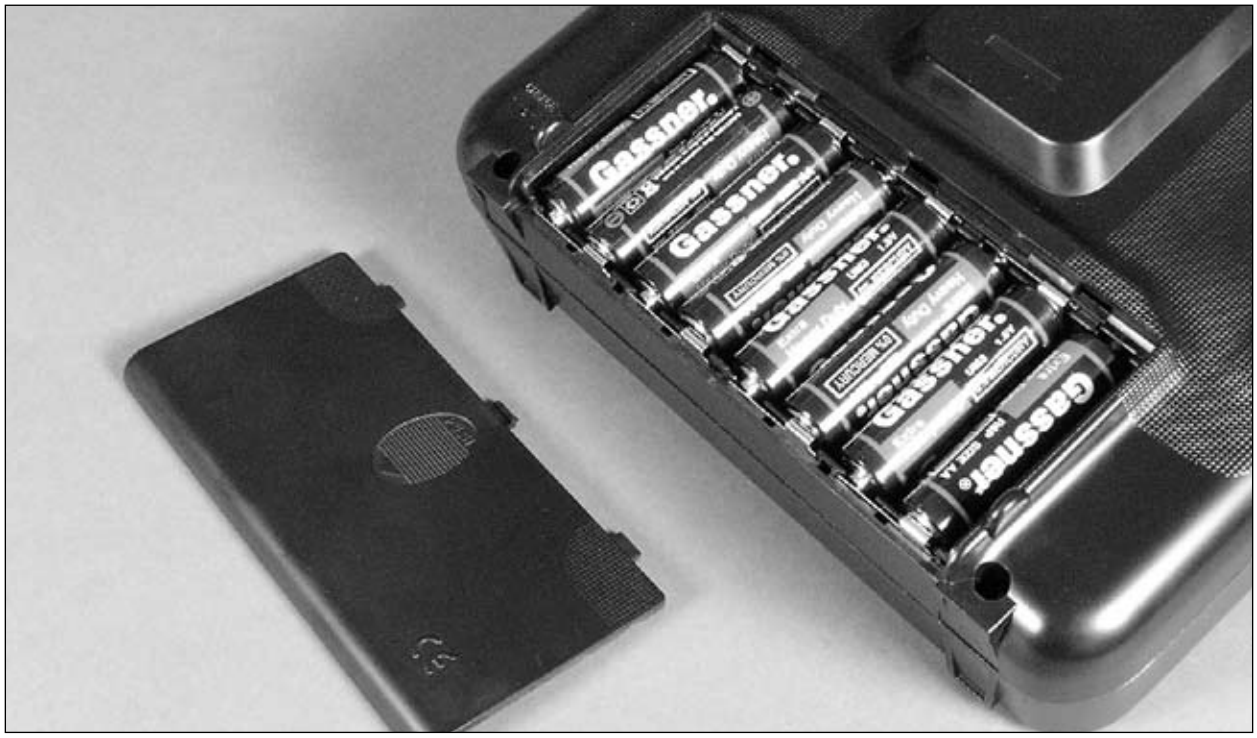
- Alternating flashing of the red and green LEDs will indicate that the charge process has been interrupted. If input power to the charger has been interrupted due to disconnection from the power source or a drop in voltage/current output from the power source, unplug the battery from the charger. Next, check to make sure that the alligator clips are firmly and properly attached to the power source or that the input power plug from the optional AC to 12V DC adapter/power supply is connected. Also be sure that the power source is providing the proper amount of voltage and current required to the charger.
- After confirming the connections and that the power source is delivering the necessary voltage and current, re-start the charge process by connecting the battery pack. Continue to monitor the charge process to ensure that no further charge errors occur.
- Simultaneous flashing of the red and green LEDs will indicate that the voltage of the Li-Po battery pack is too low to allow the charge process to begin. In this case the battery may have been over-discharged due to flying the model too long (For more information on preventing over-discharge of the Li-Po battery pack, see the guidelines section found on page 8), or that a single cell or even all cells in the battery pack may be damaged.

  If after several charging attempts you continue to see this charge error indication, you should remove the battery pack from service and replace it with a new one.

If you have any further questions or concerns regarding charge error indications, please contact Horizon Hobby's Product Support staff at 1-877-504-0233.

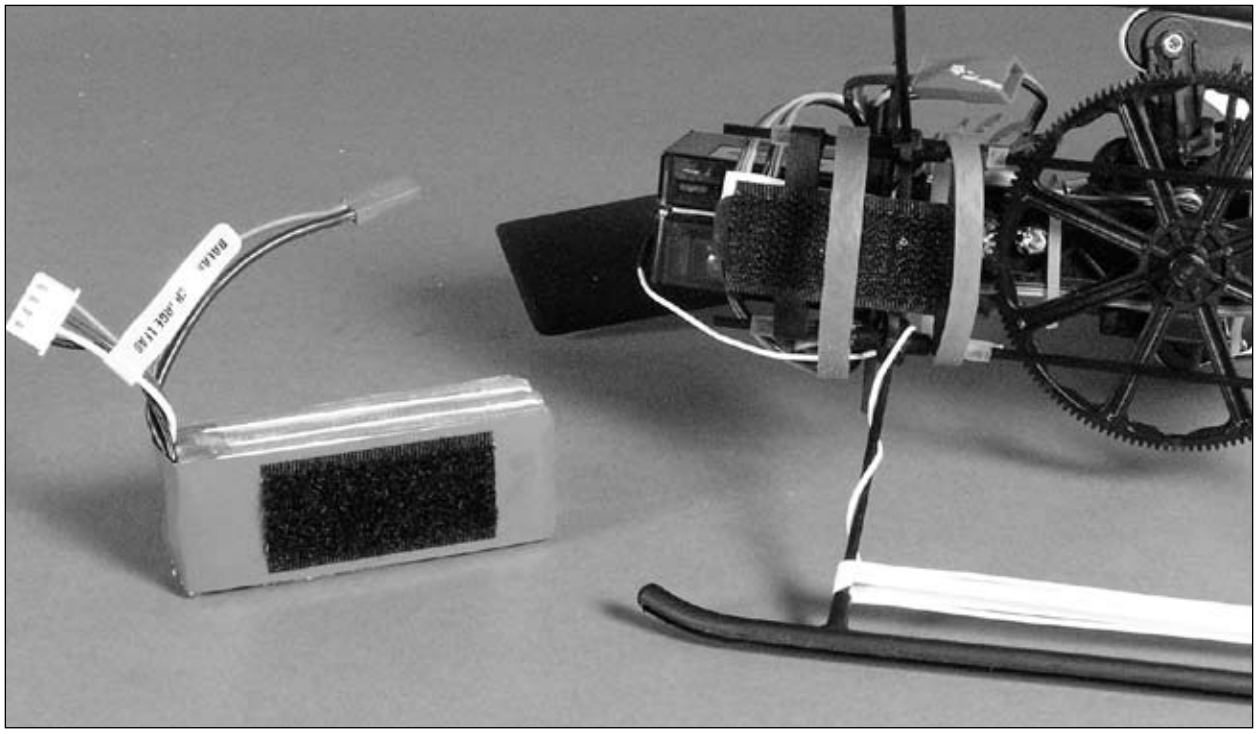
Installing the Transmitter Batteries

Install the 8 included "AA" batteries in the transmitter. Check the power level of the batteries and operation of the transmitter by switching the power switch on (upward). The status LEDs at the top of the transmitter will indicate the power level of the batteries. If at any time the status LEDs no longer show green, it will be necessary to replace the batteries with new ones.



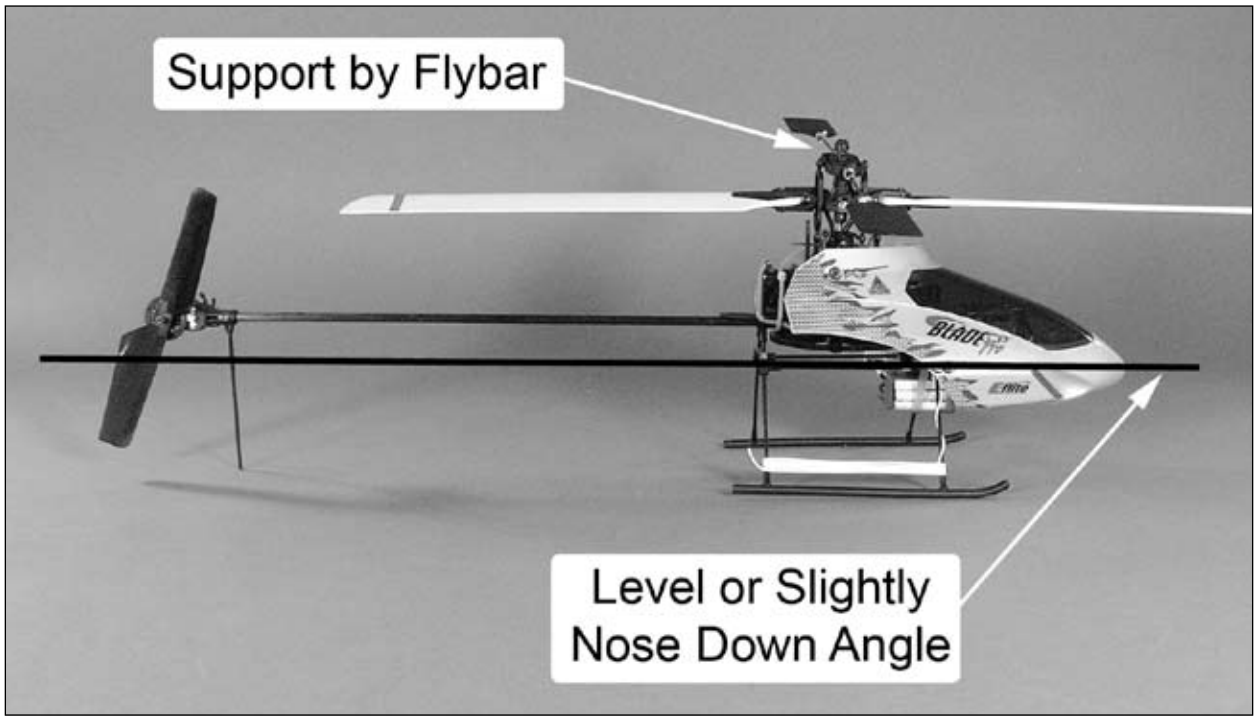
Installing the Flight Battery

Use the included hook and loop material for mounting the Li-Po battery pack. We suggest installing the “loop” (fuzzy) material on the battery pack and the “hook” material on the battery support. You should also use the included rubber bands for the most secure attachment of the battery to the helicopter.



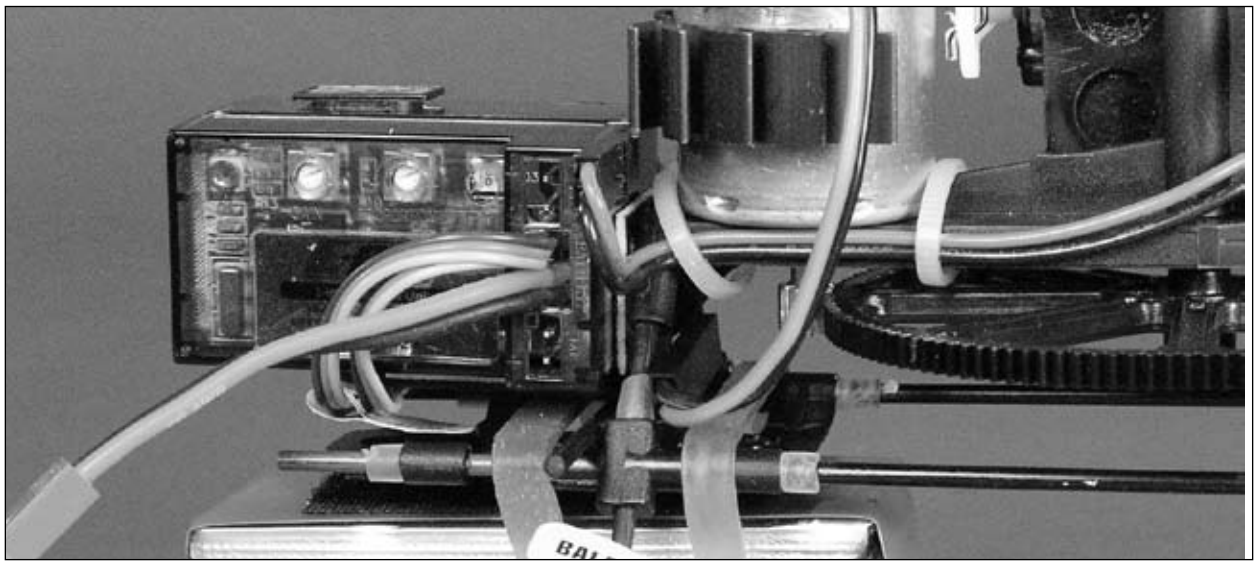
Center of Gravity

Once the battery has been properly installed and secured, you will need to check the helicopter's center of gravity. With the canopy installed, lift the helicopter by the flybar with the flybar positioned perpendicular to the tail boom. Slide the battery support and battery forward or rearward as required to achieve a slightly nose down or perfectly level helicopter position. You should always check the CG of your Blade™ CP Pro before flying, especially if you are switching between different sizes and types of battery packs.

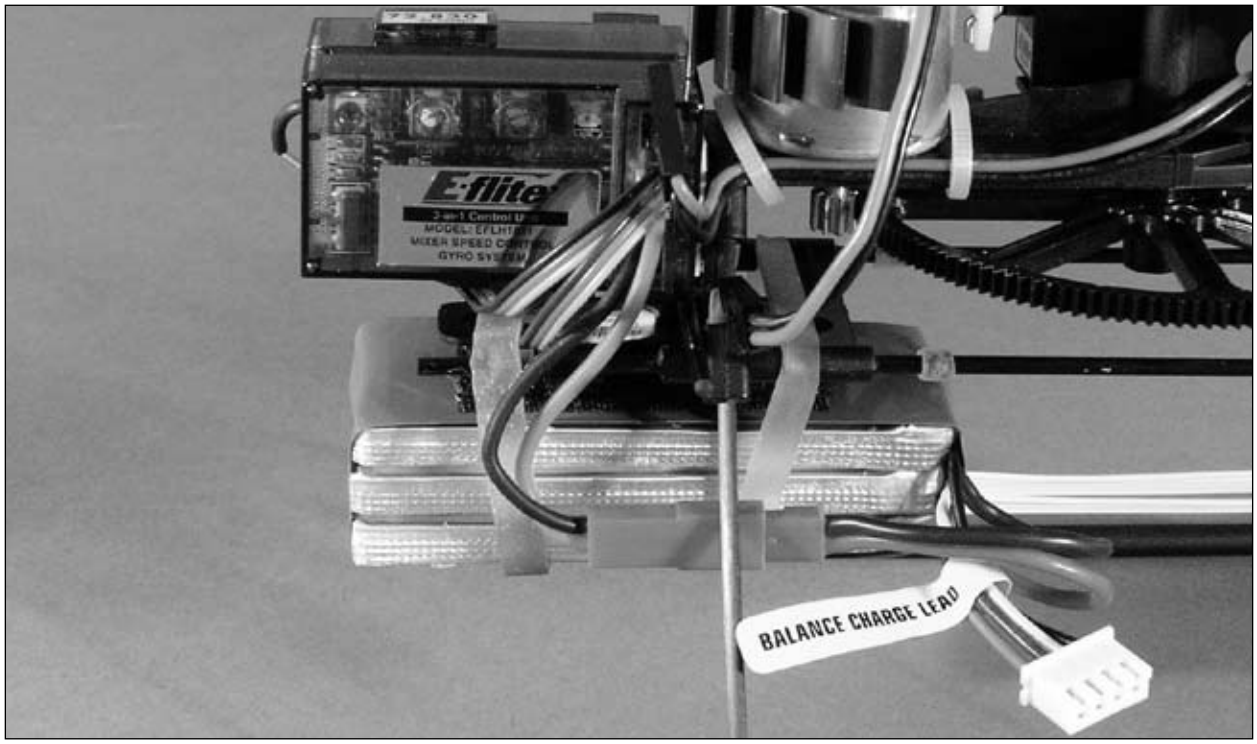


Control Test

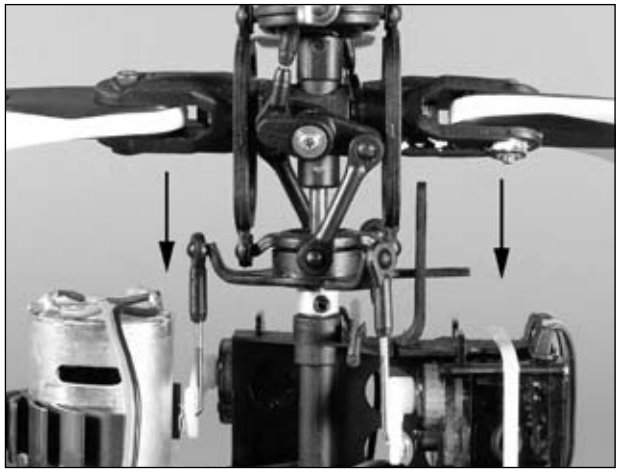
Although each Blade CP Pro model is test flown at the factory, it is a good idea to test the controls prior to the first flight to ensure none of the servos, linkages or parts were damaged during shipping and handling. **Before proceeding, unplug both the main and tail motor wires from the 3-in-1 control unit making note of their direction and polarities for proper re-installation after the control test is complete.** It is not safe to perform the control test with the main or tail motors plugged into the 3-in-1 control unit after power up.



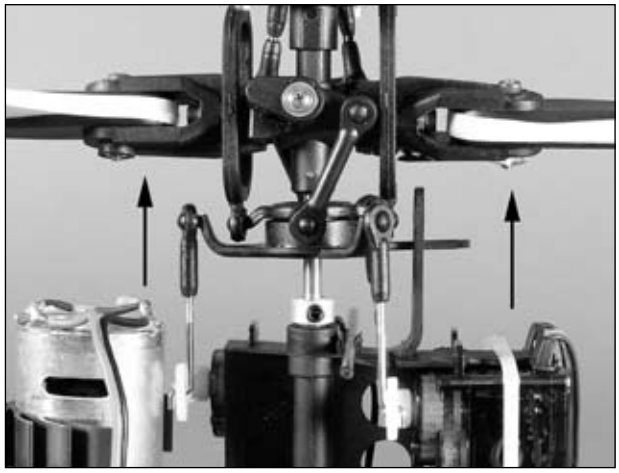
Turn the transmitter on first and lower the throttle stick and trim completely. Then, plug the battery into the battery lead of the 3-in-1 unit.



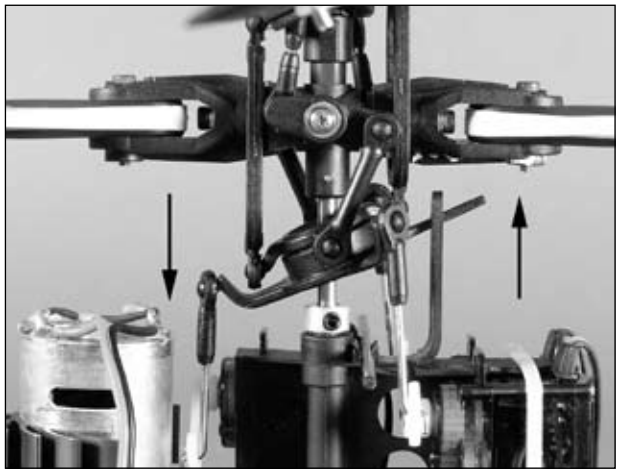
Position the helicopter to view it from the left or right side. Move the left-hand stick up and down to check the collective pitch control. When the stick is pushed up, the swashplate should lower, increasing the pitch of the main blades.



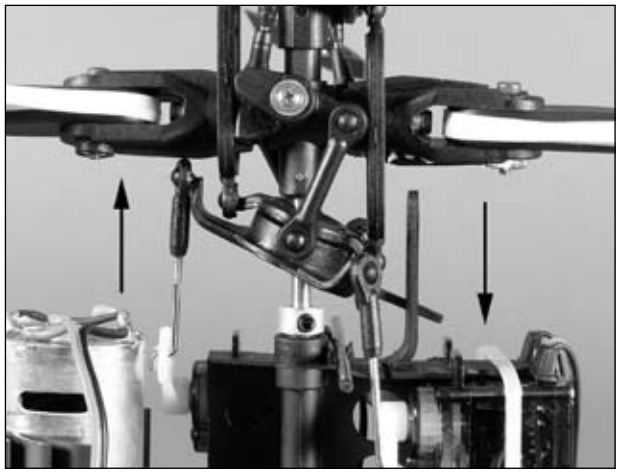
With the stick pulled back down, the swashplate should raise, decreasing the pitch of the main blades.



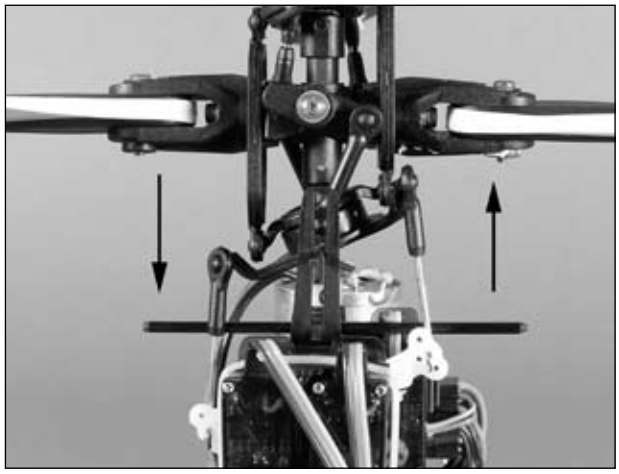
Again viewing the helicopter from the left or right side, move the right-hand stick forward and aft to check elevator pitch control. When the stick is pushed forward, the swashplate should also tilt forward.



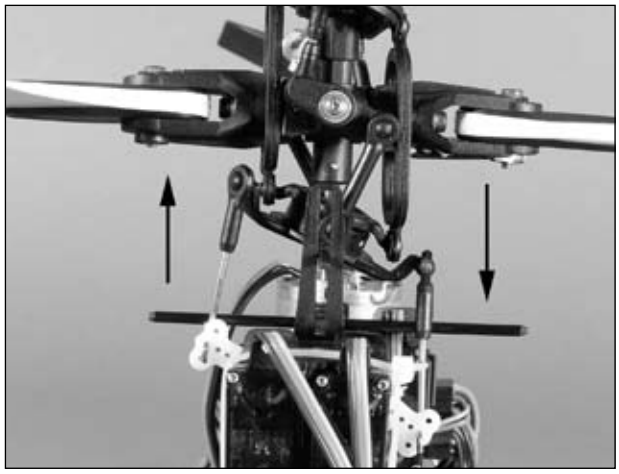
With the stick pulled back, the swashplate will tilt toward the rear.



While viewing the helicopter from the rear (tail boom toward you), move the right-hand stick left and right to check aileron roll control. When the stick is pushed to the left, the swashplate should also tilt left.



With the stick pushed right, the swashplate will tilt to the right.



If at any time during the test the controls do not respond properly, double-check the servo reversing switches on the transmitter. They should be positioned as follows:

AIL – NOR
ELE – REV
THR – NOR
RUD – REV

If the controls still do not respond properly after ensuring the servo reversing switch positions are correct, you may also check the servo connections to the receiver. These should be positioned as follows (when viewing the helicopter from behind):

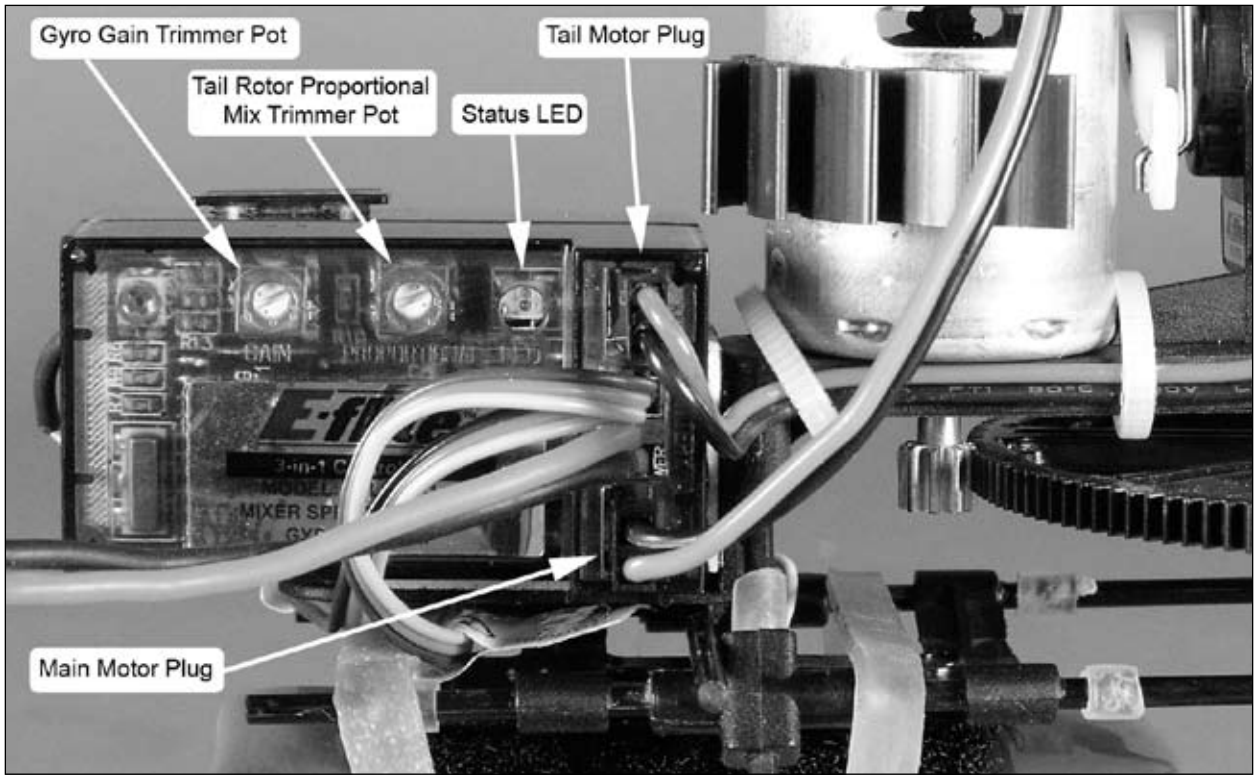
Channel 1 – Right-hand rear “aileron” servo
Channel 2 – Forward “elevator” servo
Channel 6 – Left-hand rear “pitch” servo

Once you have confirmed proper reversing switch and servo connection locations, all controls should be functioning properly. If you do encounter any problems with your Blade™ CP Pro responding properly to the transmitter, do not fly. Call Horizon’s Product Support staff at 1-877-504-0233.

If you have confirmed proper control operation of your Blade CP Pro, reconnect the main and tail motor wires to the 3-in-1 unit, taking care to keep the proper polarity and location of each as they were before the test. The tail motor plug should be installed into the upper output slot of the 3-in-1 control unit with the positive lead to the top. The main motor plug should be installed into the lower output slot with the positive lead to the bottom. Please see the photo found on page 20 for reference.

3-in-1 Control Unit Description, Arming and Adjustment

The unique 3-in-1 Control Unit installed on your Blade™ CP Pro is a lightweight combination of main motor and tail motor mixer, main motor and tail motor electronic speed controls and piezo gyro. The 3-in-1 unit also contains a gyro gain trimmer pot, proportional tail rotor mix trimmer pot and status LED.



While each Blade CP Pro model is test flown at the factory with adjustments made to both the gain and proportional trimmer pots, further adjustment to these trimmer pots may be required based on the performance of the battery used, or preference and flying style of the pilot. However, before any changes to the trimmer pots are made, test flights will need to be conducted. Use the following check list for your first and all subsequent flights:

The following are tips for use and adjustment of your 3-in-1 unit to achieve the best performance of your Blade CP Pro.

- **Each time before you fly you must ALWAYS turn on the transmitter power first before connecting the flight battery to the 3-in-1 unit. Never connect the flight battery to the 3-in-1 unit before first powering on the transmitter. Never turn off the transmitter before disconnecting the flight battery from the 3-in-1 unit first. Also, be certain to fully extend the transmitter antenna before flight.**

Note: The antenna exiting the receiver will be coiled around the landing skid struts. We have made many successful flights indoors and out (some nearly out of sight) with the antenna coiled this way and did not experience any problems with performance of the radio system. If you are tempted to uncoil this antenna, please be sure to route it safely away from all moving parts and electronic items. Remember, due to the relatively small size of the Blade CP Pro, you will not want to fly it very far away from yourself in order to keep proper orientation.

- **Both the throttle (left-hand) stick and throttle trim MUST be in their lowest possible position in order for the 3-in-1 unit to arm. The "Idle Up" flight mode switch must also be in the "Normal" position with the switch toggled toward the back of the transmitter for the unit to arm.**

- If this is the first test flight, or a test flight following repairs, you will also want to center the rudder, aileron and elevator trims.
- Once confirming the transmitter has been turned on and has an adequate level of battery power as displayed by the LEDs at the top of the transmitter, it is now safe to plug the flight battery to the 3-in-1 unit.
- **With battery power applied, the 3-in-1 unit status LED will blink red, then blink green. It is extremely important that during this time of calibration the helicopter is not moved or swayed in order for the gyro to properly initialize.** If the helicopter was moved or swayed during this time, unplug the flight battery and repeat the initialization process.
- When the status LED becomes solid green, the unit is armed and ready for flight. Use caution as both the main and tail rotors will now run with throttle stick input. For safety, once the unit is armed, the main and tail motors will not run with the throttle stick and trim in their lowest positions. Do not advance the throttle stick until you are clear of the rotor blades and ready to fly.

Note: If the status LED does not become solid green, please review the following:

- If after blinking red the status LED becomes solid red, you have a positive Radio Frequency (RF) link between the transmitter and receiver/3-in-1 unit, but the throttle stick and throttle trim may not be in their lowest possible positions. Check to be sure that both the throttle stick and throttle trim are in their lowest possible position and the status LED should blink green then become solid green indicating the unit is armed and ready for flight. Proceed to the next step of the checklist once the unit is armed.
- If after blinking red the status LED continues to flash from green to red, you do not have a positive RF link between the transmitter and receiver/3-in-1 unit. First, check to be sure that the transmitter has been powered on and has an adequate level of battery power. If the transmitter was indeed powered on, power both the transmitter and 3-in-1 unit down, then check that the crystal in the transmitter and the crystal in the receiver are properly seated and secured in their mounts. Once you have confirmed the crystals are properly seated and secured, turn on the transmitter and then connect the flight battery to the 3-in-1 unit. The 3-in-1 unit should now arm normally.

If your 3-in-1 unit will not arm after following the guidelines as listed above, contact Horizon Hobby's Product Support staff at 1-877-504-0233.

- Once you have placed the helicopter in a safe place to fly, free of obstructions, and are clear of the rotor blades, you can safely power up the model.

Note: If this is your first test flight, the model should not be flown indoors unless it is in a very large area such as a gym. Until you have properly trimmed, adjusted and become familiar with the handling of the Blade™ CP Pro, we suggest your first and any subsequent test flights be made outdoors in calm air only.

- Advance the throttle stick slowly, just until both the main and tail rotor blades begin to spin. Note the direction that the main and tail rotor blades spin. The main rotor blades should spin clockwise when viewed from the top, with the tail rotor blade spinning counterclockwise when viewed from the right-hand side of the helicopter. If either set of rotor blades is operating in the wrong direction, unplug the battery, and then simply reverse its motor wire plug polarity on the 3-in-1 unit.

- Once the tail rotor has begun to spin, and before lifting off, it is best to check that the tail rotor is responding properly to transmitter inputs. When inputting a slight amount of right rudder, the tail rotor rpms should increase, pushing the nose of the helicopter to the right. If you are on carpet, grass, or an otherwise uneven surface, be very careful not to allow the helicopter to catch the vertical tail support or tail rotor blade when testing the tail rotor control on the ground or during liftoff.
- If both rotor directions are correct, and the tail rotor is responding properly to rudder inputs, you can now lift your Blade™ CP into hover to check gyro gain and tail rotor proportional mix.

Note: The throttle trim can be used to adjust the throttle and collective pitch values for a given throttle stick position. For example, raising the throttle trim will allow the model to hover at a lower throttle stick position.

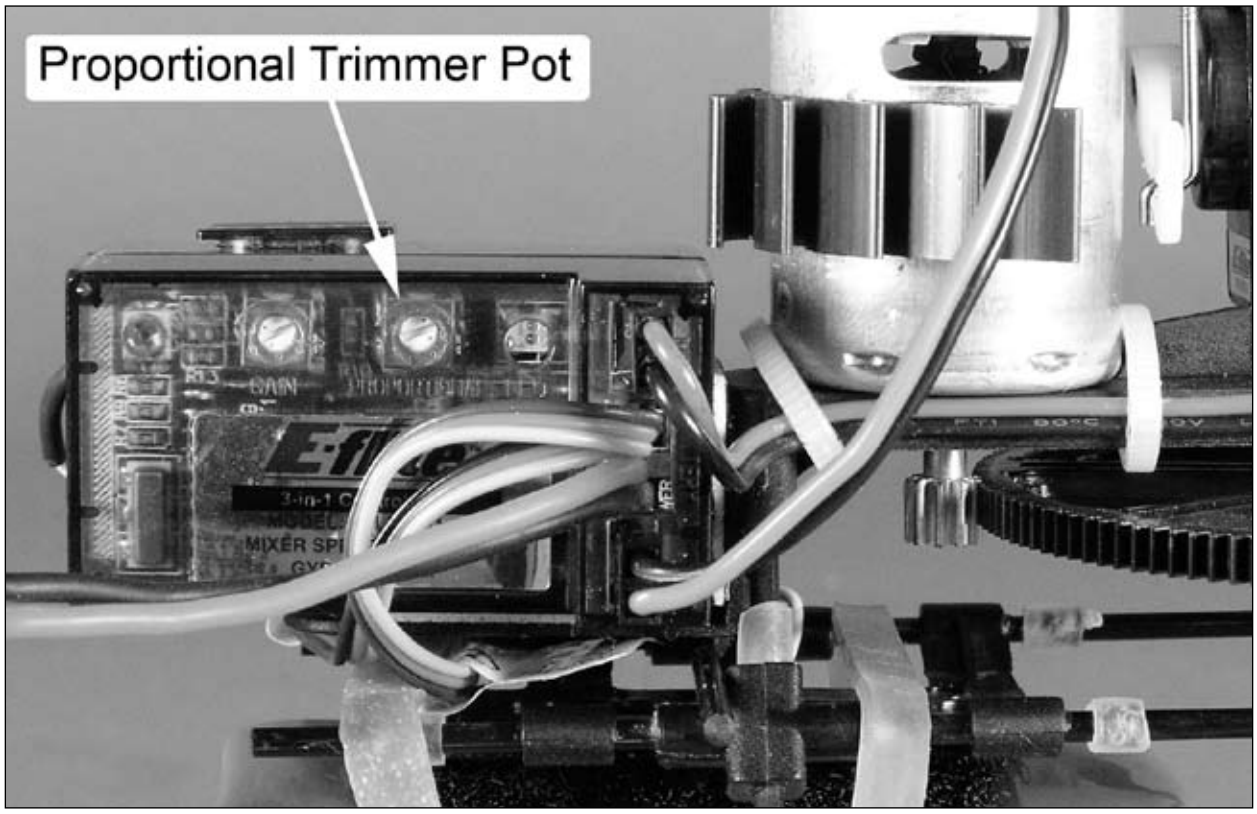
If you find your model will not lift off the ground with the throttle stick in the highest position, increasing the throttle trim will add collective pitch. (You can also increase the pitch of the blades by adjusting the Pitch Control Links. See the "Pitch Curve Adjustments" section on page 30 of this manual for more information.)

Note: While the 3-in-1 control unit main motor and tail motor ESCs are readily capable of handling all in-flight power loads, and even brief momentary bursts beyond these typical loads, they can be damaged if excessive amounts of current are pulled through them for an extended period of time. This period of time may vary depending on conditions, so it is best to keep any momentary overloads as short as possible in order to prevent damage to the 3-in-1 ESCs.

In the event of a crash, regardless of how minor or major, you MUST throttle back both the main and tail motors as quickly as possible. If a crash occurs when flying in Normal Mode (with the throttle trim increased any amount beyond the lowest setting), you will need to lower the throttle/collective stick AND throttle/collective trim immediately to prevent damage to the ESCs. If a crash occurs when flying in the Idle Up flight mode, you will need to switch back to Normal Mode while also lowering the throttle/collective stick and trim immediately to prevent damage to the ESCs.

Tail Rotor Proportional Mix Trimmer Pot Description and Adjustment

After establishing a stable hover, you will first want to adjust the tail rotor proportional mixing. The “proportional” trimmer pot adjusts the amount of tail motor to main motor mixing.



- In hover, with the rudder trim centered and no rudder input, note which direction the nose of the helicopter is trying to spin. If the nose of the helicopter is spinning to the left, you will want to increase the amount of tail motor to main motor mixing. By turning the proportional trimmer pot clockwise (+), you increase the tail motor/rotor rpm for a given main motor/rotor rpm. This increase in tail motor/rotor rpm will help to push the nose of the helicopter to the right when in hover.

  If the nose of the helicopter is trying to spin to the right in hover, decrease the tail rotor proportional mix by turning the proportional trimmer pot counterclockwise (-).

Note: You must always power down the 3-in-1 control unit before making adjustments to the proportional mix trimmer pot. Any changes made to the trimmer pot will not take effect until the 3-in-1 unit is initialized and re-armed.

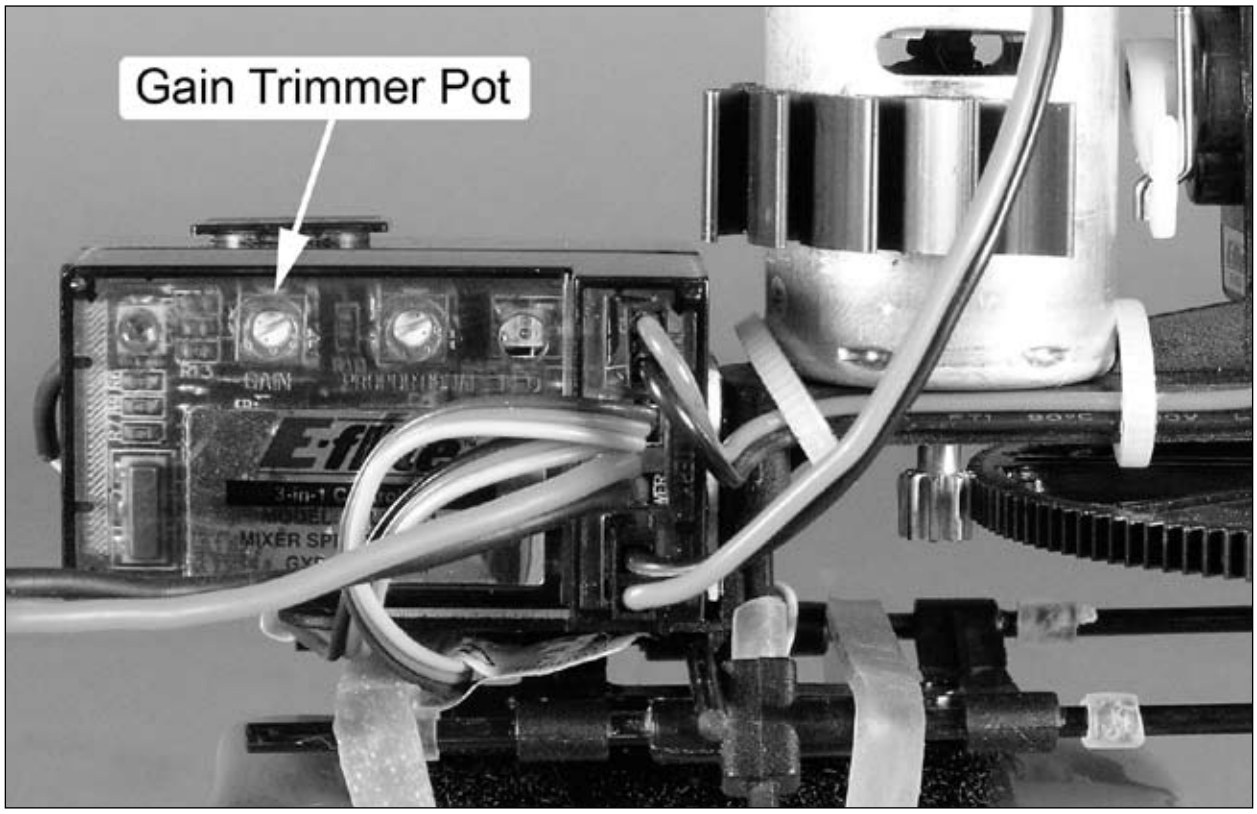
- As the battery output voltage decreases throughout the flight, it may be necessary to make small trim adjustments to the rudder in order to keep the nose of the helicopter straight. Usually a few clicks of right rudder may be required, and no further adjustment of the proportional trimmer pot will be necessary.

  Note: More experienced pilots may choose to adjust the proportional mix to better hold the tail during aggressive climb outs and aerobatics rather than in hover only.

- The amount of tail rotor proportional mix required may vary depending on the performance of a given flight battery. For example, when switching from lower capacity and/or discharge rate capable packs to higher capacity and/or discharge capable packs, some small adjustments to the proportional mix may be required. To help prevent the need for additional adjustment of the proportional mix when switching between battery packs, we suggest using the same make, model and performance packs only.

Gyro Gain Trimmer Pot Description and Adjustment

The “gain” trimmer pot adjusts the gain setting value of the piezo gyro used to aid in keeping the tail of the helicopter straight while flying.



- Pilots interested most in hovering-type maneuvers with very little forward flight and aerobatics may choose to have the gain set as high as possible (without making the tail twitch quickly from side to side), keeping the tail of the helicopter very solid during flight. Do note, however, that high or excessively high gyro gain settings will result in accelerated tail motor wear and reduced life.
- Pilots interested most in fast forward flight and aerobatics may prefer a somewhat lower gyro gain setting that allows for more control of the tail in flight.

Note: For more “locked-in” tail performance all around, we recommend the installation of an optional Heading Lock type gyro as outlined in the “Optional Heading Lock Gyro Installation and Setup” section of this manual found on pages 40–47.

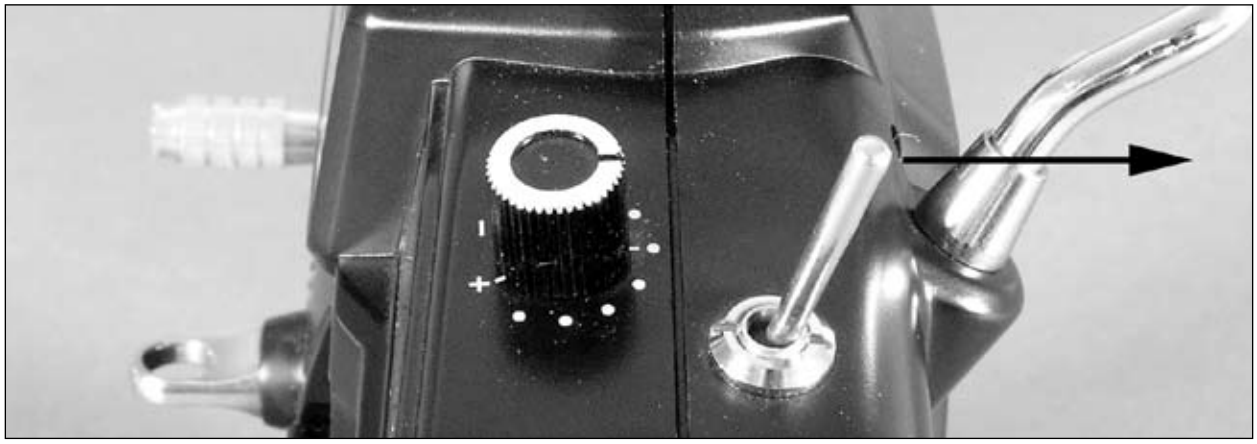
- To increase the gyro gain, simply turn the trimmer pot clockwise (+). Dial the trimmer pot counterclockwise (-) to decrease gyro gain. The gain value is set too high if the tail of the helicopter twitches quickly from side to side. This gain value can also be set too low, allowing the tail of the helicopter to feel “loose” in flight. Take your time adjusting the gyro gain, finding the right amount to best suit your style of flying, noting that the amount of gyro gain value required may also vary based on the type and performance of the chosen flight battery.

Note: When adjusting the gyro gain trimmer pot, the changes will take effect without the need to power down and re-arm the 3-in-1 unit. Please exercise extreme caution when adjusting the gyro gain trimmer pot with the model armed to prevent personal injury or damage to the model.

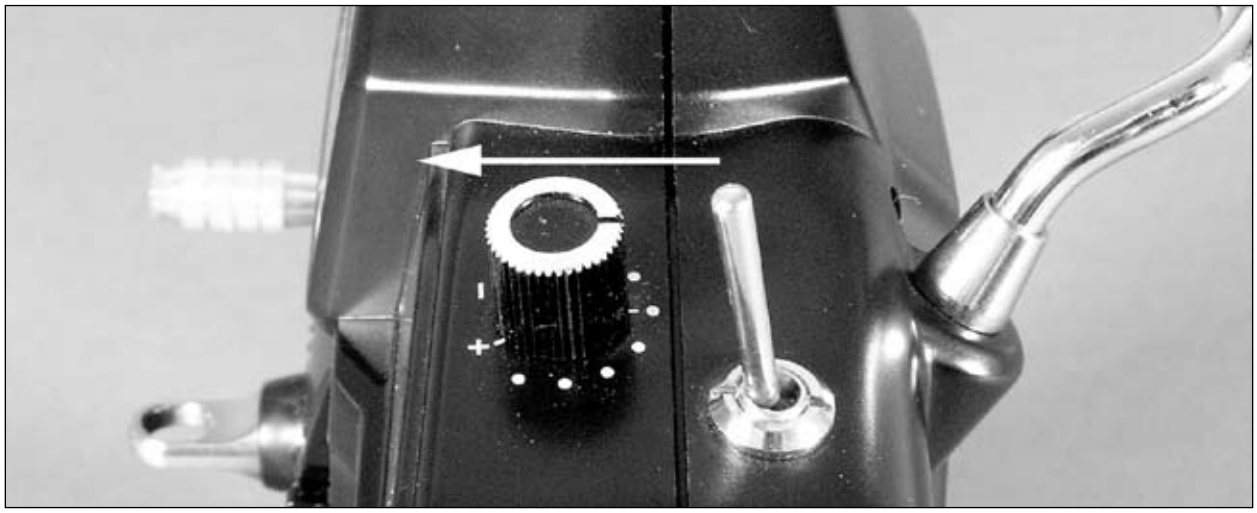
Normal and Idle Up Flight Modes

The 6-channel FM transmitter included with your Blade™ CP Pro features servo reversing and CCPM mixing, as well as an “Idle Up” flight mode switch. This switch allows the pilot to toggle between “Normal” and “Idle Up/Stunt (aerobatic)” flight modes during flight.

When the “Idle Up” switch is toggled toward the rear of the transmitter, the Blade™ CP Pro will be flying in “Normal Mode.” In this flight mode, the throttle curve is linear from 0% to 100%, with a pitch range of approximately -1 degree to +12 degrees. (See page 31 for additional data and graphics relating to the throttle and pitch curves preset for your Blade CP Pro.) This is the preferred flight mode for general hovering and gentle forward flight.



When the “Idle Up” switch is toggled toward the front of the transmitter, the Blade CP Pro will be flying in the “Stunt (aerobatic)” flight mode. In this flight mode, the throttle curve will be “V” or “Flat-Line” shaped from 100% to 100% with approximately 50% to 100% throttle at mid-stick (the mid-stick throttle percentage value will depend on where the “Idle Up Throttle Curve Midpoint Adjustment” knob is set, as outlined on pages 27–29). The pitch range will then be approximately -12 to +12 degrees (See pages 31–32 for additional data and graphics relating to the throttle and pitch curves pre-set for your Blade CP Pro). This flight mode is preferred for aggressive forward flight and aerobatics, as well as inverted flying.



Note: When in the Idle Up/Stunt flight mode, even with the throttle stick all the way down, the blades and motors will continue to spin. You must use the Normal flight mode to safely turn off the motors. For safety, the 3-in-1 unit will not arm if the flight battery is plugged in and the flight mode switch is in the Idle Up/Stunt position.

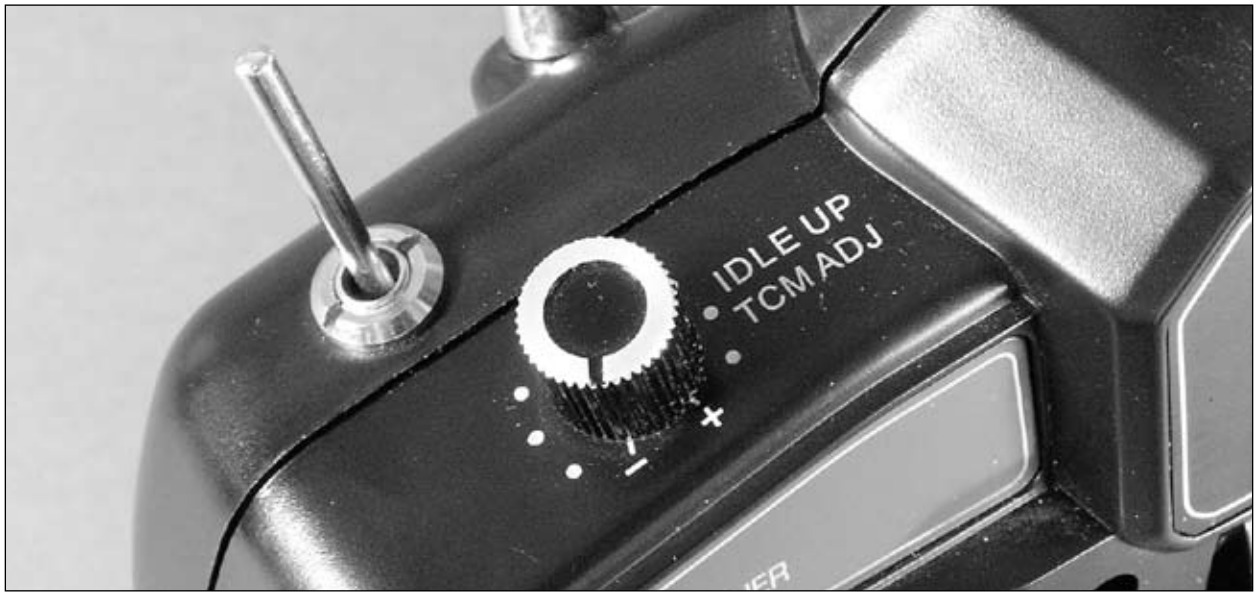
When switching between Normal and Idle Up/Stunt flight modes, it is best to do so in the air while hovering. The throttle and pitch curves of each flight mode have been optimized to transition smoothly around hover. Please be sure to never switch into the Idle Up/Stunt mode without having powered the main and tail motors up in Normal mode first. The abrupt start could cause damage to the gears, motors or possibly even the 3-in-1 unit.

Idle Up Throttle Curve Midpoint Adjustment Knob Description and Adjustment

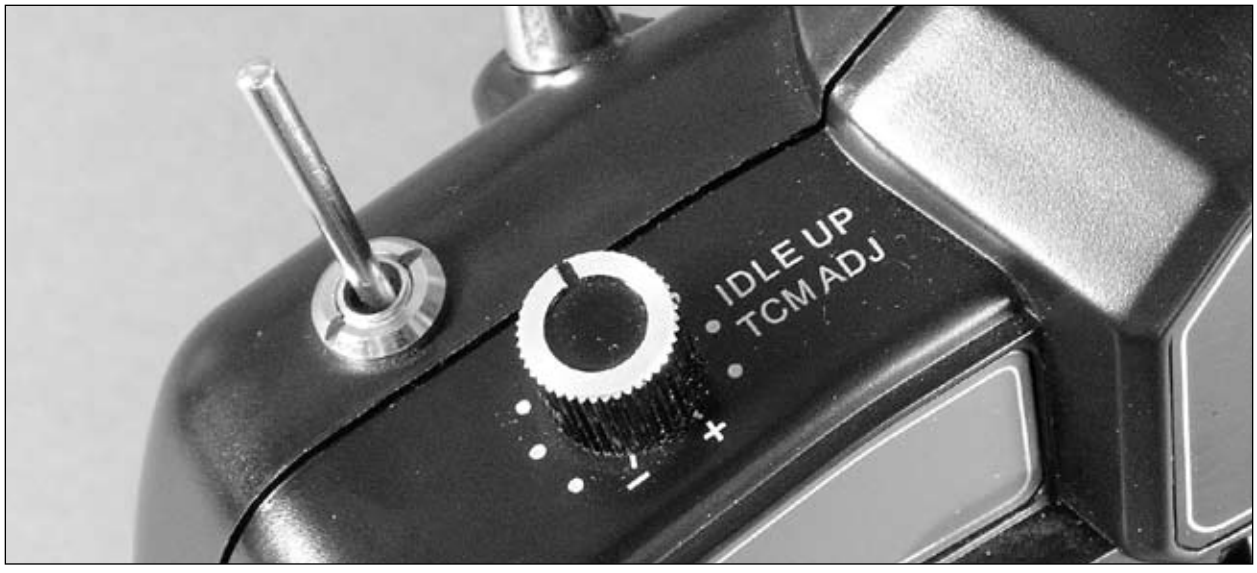
The transmitter included with your Blade™ CP Pro is equipped with an “Idle Up Throttle Curve Midpoint Adjustment” knob (labeled as “Idle Up TCM ADJ”) on the top left panel, just ahead of the “Trainer” switch.

This knob allows you to adjust the midpoint value of the throttle curve when in the Idle Up/Stunt flight mode, from approximately 50% power to 100% power. It has no affect on the throttle curve in the Normal flight mode, or on the endpoints of the throttle curve in the Idle Up/Stunt flight mode.

When the knob is in the lowest, most counterclockwise position (-), the midpoint of the throttle curve in the Idle Up/Stunt flight mode will be approximately 50%.



When the knob is in the middle position, pointing directly toward the back of the transmitter, the midpoint of the throttle curve in the Idle Up/Stunt flight mode will be approximately 75%.



When the knob is in the highest, most clockwise position (+), the midpoint of the throttle curve in the Idle Up/Stunt flight mode will be approximately 100%.

The unique benefit of this knob is that it offers you the ability to adjust the main rotor head speed, and in turn the collective and cyclic control response, of the model between the endpoints of the throttle curve when in the Idle Up/Stunt flight mode. Typically, a higher main rotor head speed will result in quicker, more aggressive collective and cyclic control response.

For example, when you have the knob in the lowest, most counterclockwise position, the main rotor head speed in hover (and during transition from positive to negative pitch, and vice-versa) will be lower than it is when at the top or bottom of the throttle/collective stick range. This is generally preferred when hovering (right-side-up or inverted) in calm conditions, as it will help to keep the main rotor head speed down and provide for smoother, less aggressive collective and cyclic response. It will also help to prevent “over-speeding” of the main rotor blades during fast descents.

When you have the knob in the highest, most clockwise position, the main rotor head speed in hover (and during transition from positive to negative pitch, and vice-versa) will be similar to when you are at the top or bottom of the throttle/collective stick range. This is generally preferred when flying in breezy conditions, and for the quickest, most aggressive collective and cyclic response. It is also helpful when performing aerobatics like loops, rolls, flips and more as it will help to maintain more consistent main rotor head speeds. This also allows for more consistent tail holding power because the main to tail motor mixing changes will be minimized throughout the entire throttle/collective stick range.

With the stock, 370 brushed motor power system, we recommend that those pilots interested most in aggressive aerobatics fly with the Idle Up TCM ADJ knob set to provide full power at mid-stick. This further enhances the aerobatic capabilities of the Blade™ CP Pro and allows you to perform flips and near-stationary rolls that are not generally possible with the midpoint set to a lower level of power. It also improves handling and tail holding power throughout all other aerobatic maneuvers.

Note: The ESC in the 3-in-1 used to control the main motor has been calibrated for a narrower range of throttle operation. For this reason, it will not be necessary to set the Idle Up TCM ADJ knob much beyond approximately 1/4 travel in order to achieve 100% throttle at mid stick. This is not a problem and there is no adverse affect for having the knob adjusted to beyond approximately 1/4 travel, though it is not necessary. The status LED indicator on the 3-in-1 will turn solid red when full power has been achieved.

When using the optional, 370 brushless power system (as seen in the "Optional Brushless Main Motor Power System Installation and Setup" section found on pages 48–56), we recommend adjusting the Idle Up TCM ADJ knob to provide the best overall combination of main rotor head speed and collective/cyclic response depending on your preferred style of flying, similar to as noted for the stock bushed 370 power system. However, please note that while it is possible to fly with the midpoint set to approximately 100% throttle when using the optional brushless power system, care must be taken during flight to prevent over speeding of the main rotor blades, especially during fast descents.

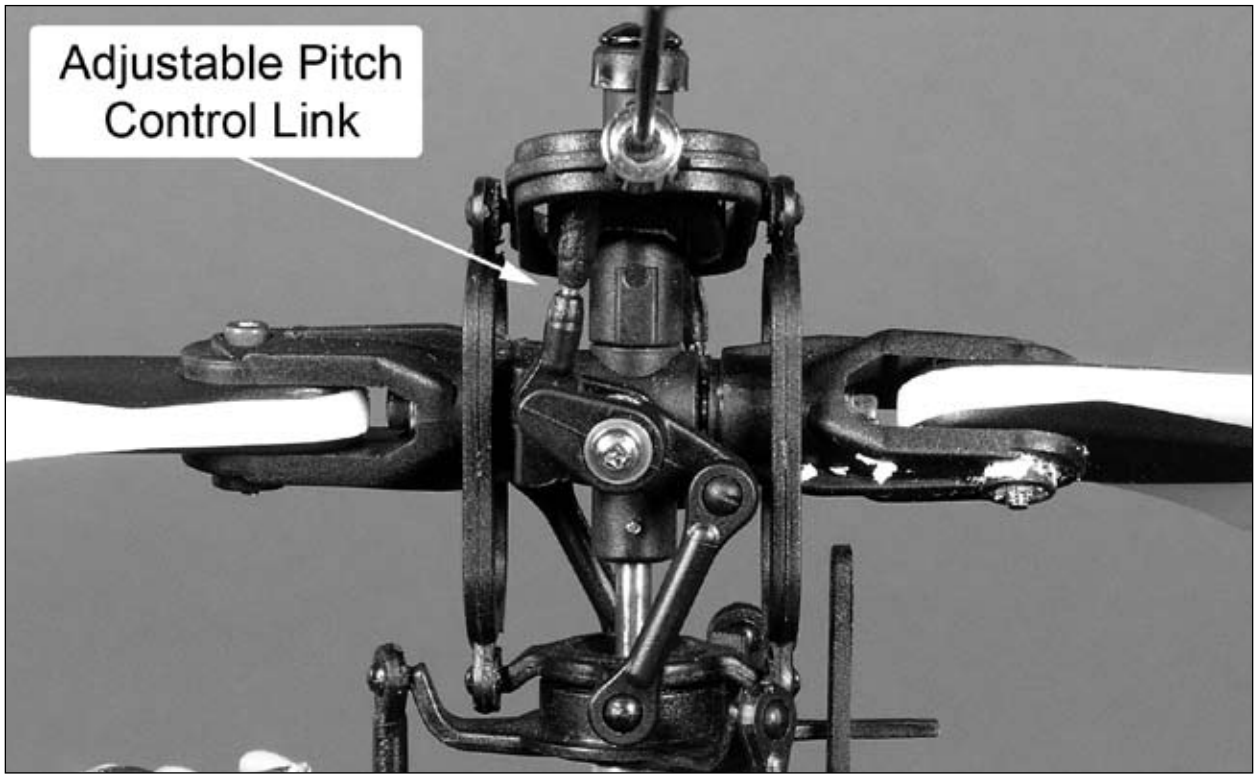
Note: Some brushless ESCs may also be calibrated with a narrower range of throttle operation and could achieve 100% throttle before the Idle Up TCM ADJ knob reaches full travel. This is not a problem and should have no adverse affect on flight performance.

Please see the "Programmed Throttle and Pitch Curves for the Idle Up/Stunt Flight Mode" section found on pages 31–32 for more information regarding adjustment of the Idle Up TCM ADJ knob.

Pitch Curve Adjustments

The pitch curves have already been factory set in the transmitter for both Normal and Idle Up/Stunt flight modes. These curves have been tested and optimized for the best overall performance in either flight mode.

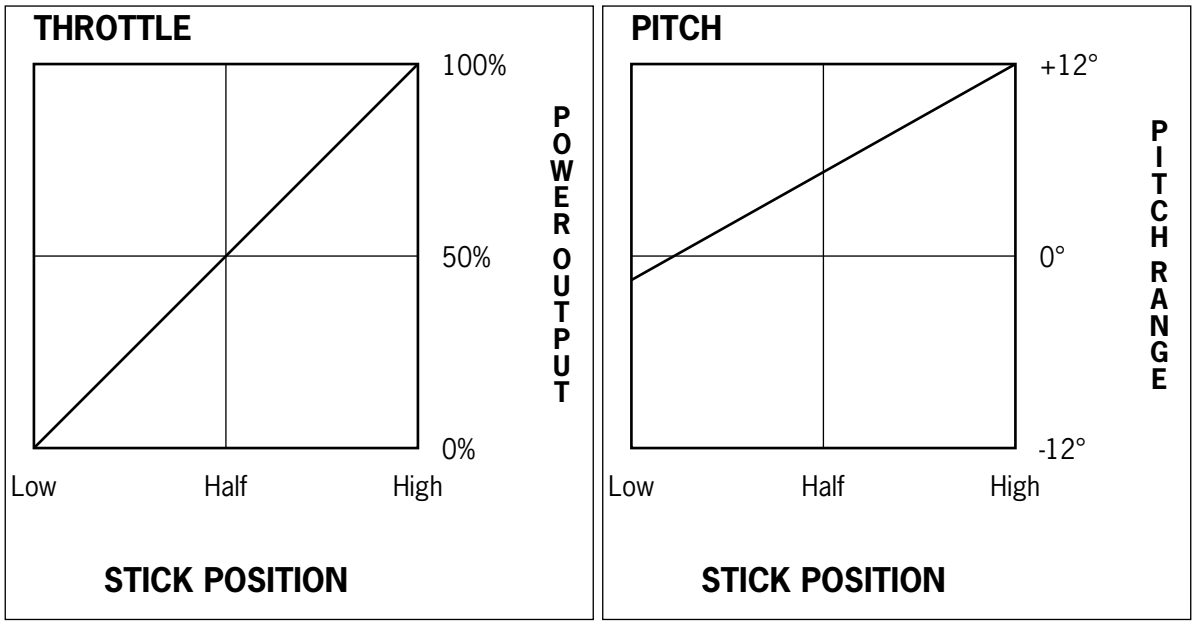
Although the curves have already been factory set, minor changes to the pitch curves can also be made by adjusting the Pitch Control Links. Lengthening both Pitch Control Links by equal amounts will increase the pitch of both blades for a given throttle/collective stick position. Shortening both Pitch Control Links by equal amounts will decrease the pitch of both blades for a given throttle/collective stick position.



In general, we would recommend that you adjust the Pitch Control Links so that the blades are at 0 degrees of pitch when in the Idle Up/Stunt flight mode with the throttle/collective stick in the middle position. This will help to ensure that you have an equal amount of positive and negative pitch travel when in the Idle Up/Stunt flight mode, and that your curves more closely match those shown in the “Programmed Throttle and Pitch Curves” sections of this manual (pages 31–32).

Programmed Throttle and Pitch Curves for the Normal Flight Mode

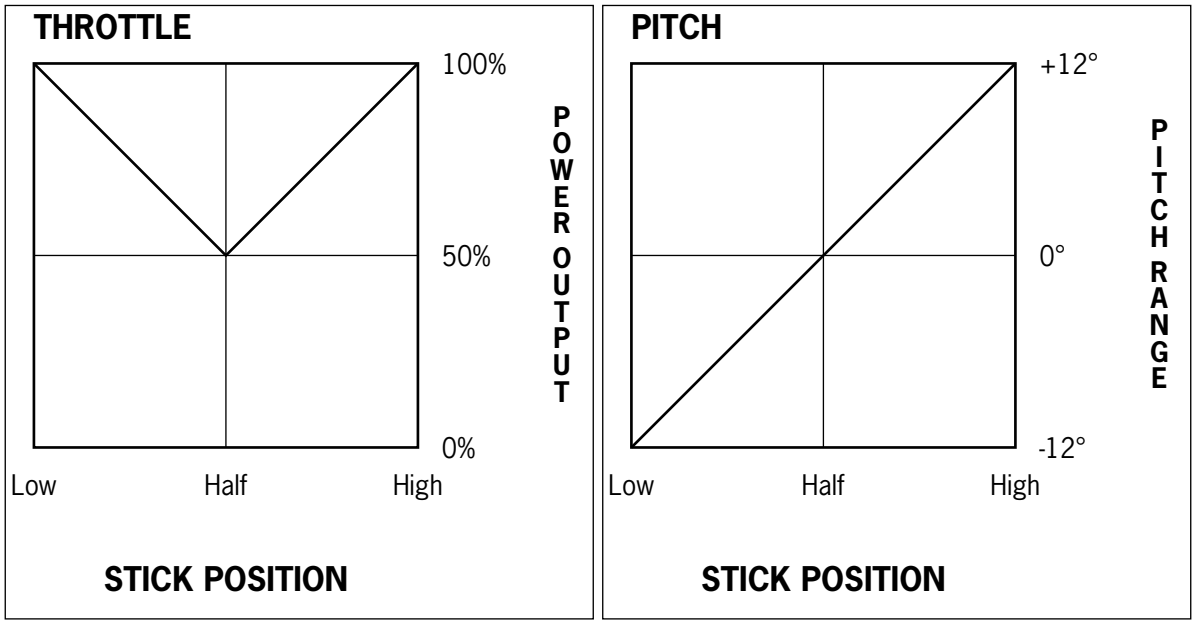
Right from the box, your Blade™ CP Pro transmitter has been programmed for the following throttle and pitch curves in the normal flight mode:



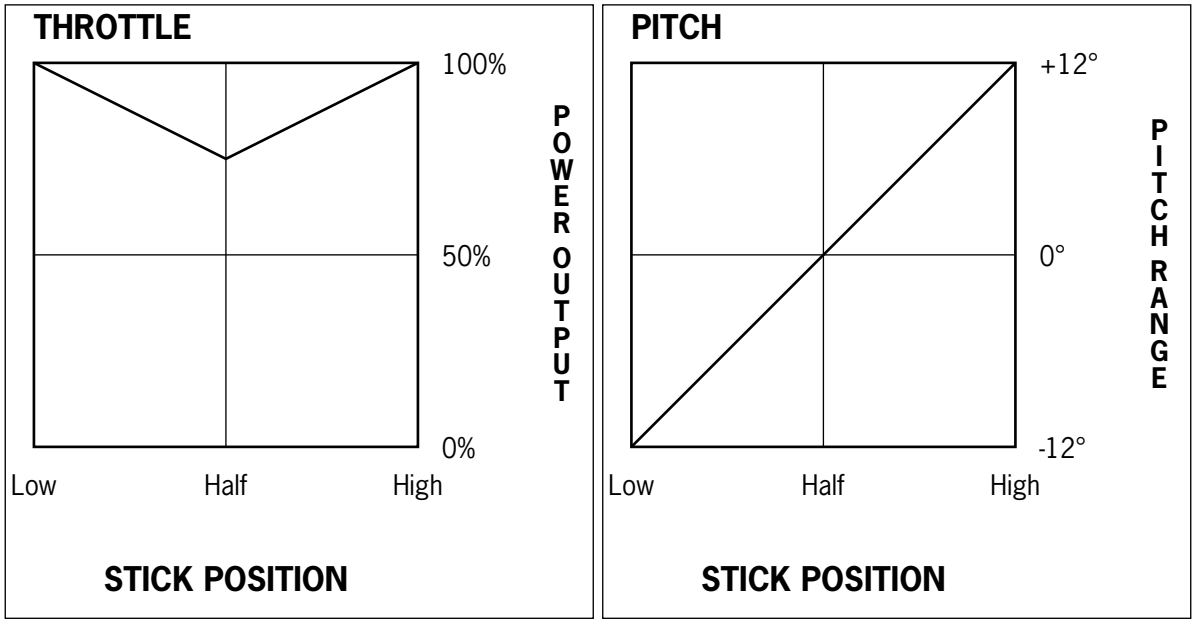
Programmed Throttle and Pitch Curves for the Idle Up/Stunt Flight Mode

Right from the box, your Blade CP Pro transmitter has been programmed for the following throttle and pitch curves in the Idle Up/Stunt flight mode:

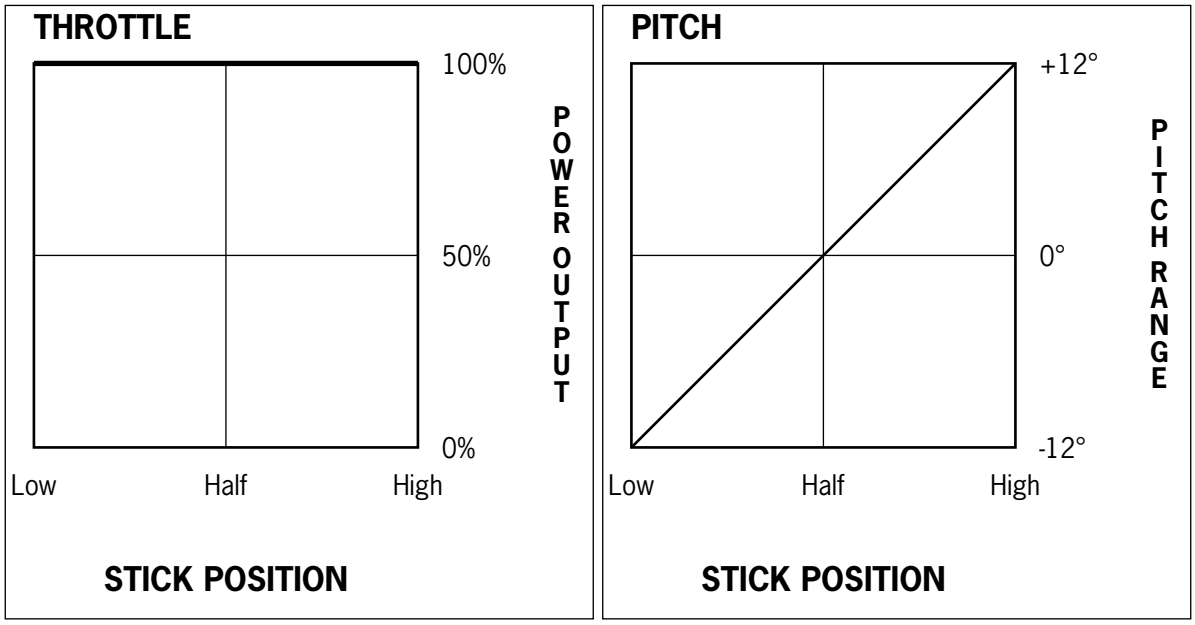
With the Idle Up TCM ADJ knob in the lowest, most counterclockwise position.



With the Idle Up TCM ADJ knob in the middle position.



With the Idle Up TCM ADJ knob in the highest, most clockwise position.



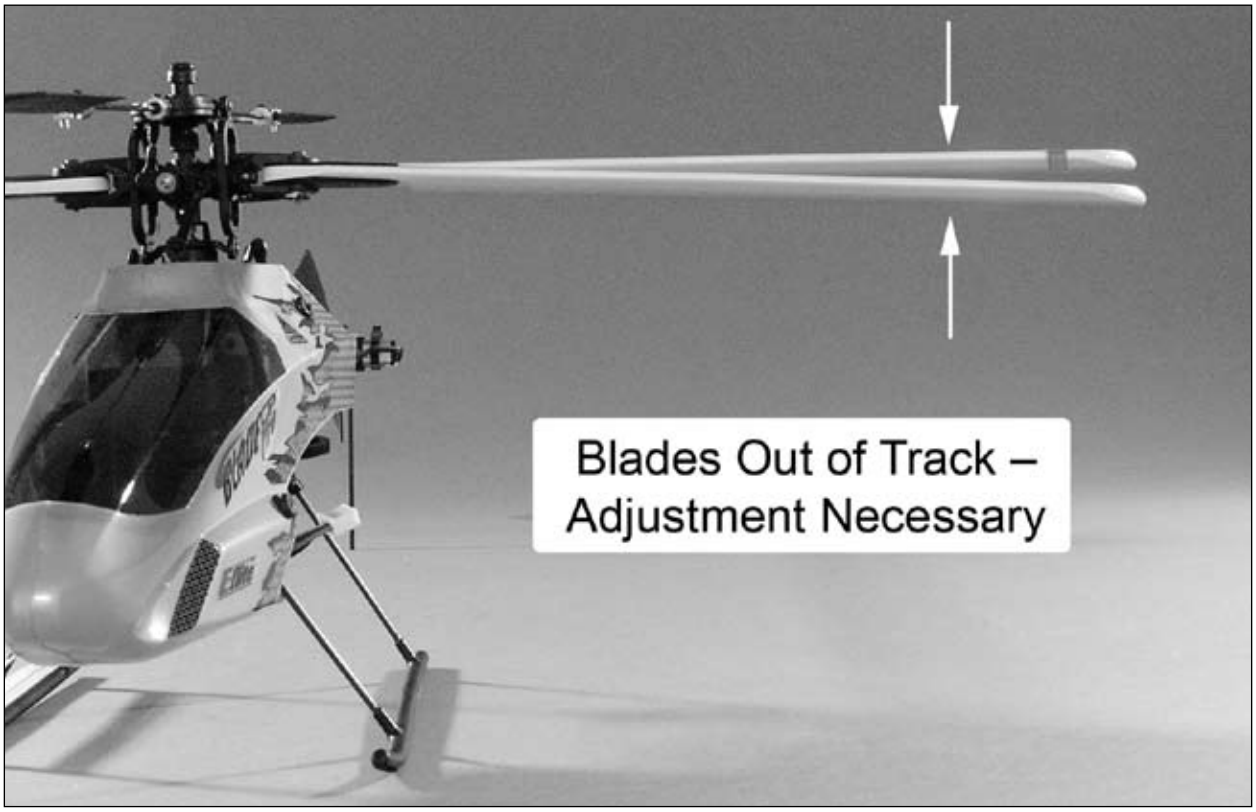
Main Rotor Blade Tracking Adjustment

Caution: Be sure to maintain a safe distance from the helicopter (10–15 feet) when tracking the main rotor blades.

Blade tracking is a critical element to the flight performance of just about any helicopter, including the Blade™ CP Pro. Main rotor blades that are out of track may cause vibration, instability, and loss of power due to increased drag. Although each Blade CP Pro model is test flown with blades tracked at the factory, minor adjustments to blade tracking may be required after blade changes, repairs, or pitch curve adjustments.

For checking main rotor blade tracking and making adjustments, please read the following tips:

- **Before proceeding with the test flight of a new model, or any model to which changes or repairs have been made, be certain that the main rotor blades have been properly installed and secured. The main blades should be tightened so they can pivot in the blade grip when moderate pressure is applied. Never allow the main blades to swing freely in their grips.**
- Following the proper initialization and arming procedure previously outlined in the "3-in-1 Control Unit Description, Arming and Adjustment" section, bring the main rotor blades of your Blade CP Pro up to speed. You can check the blade tracking either on the ground or in the air at eye level. It might be a good idea to have an assistant on hand to help sight the blades. **Again, be certain to maintain a safe distance of 10–15 feet from the helicopter when checking the tracking of the main rotor blades.**
- Once the main rotor blades have been brought up to speed, note which blade is running low and which blade is running high (by the colored tracking tape).



- You can then power the helicopter down and increase the pitch of the low blade by turning its Pitch Control Link end out one half to one-full turn at a time. Or, you can decrease the pitch of the high blade by turning its Pitch Control Link end in one-half to one full turn at a time.

Note: The blade you choose to raise or lower when adjusting tracking will depend on the head speed of the model. For example, if the head speed in hover is low, you should lower the high blade.

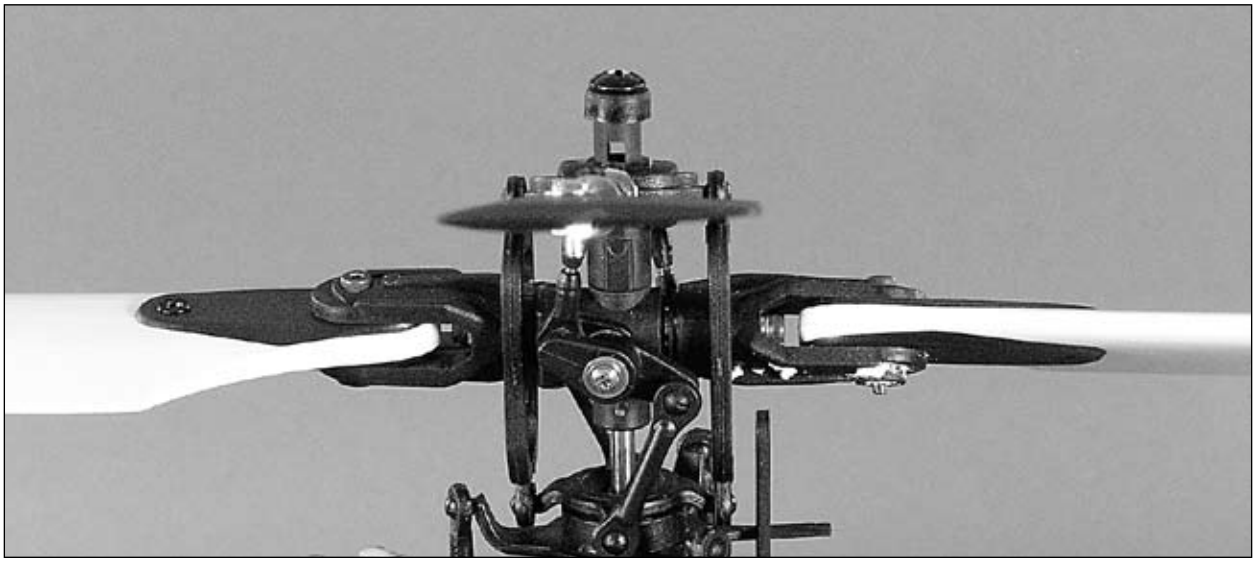
Typically, not much adjustment should be necessary to properly track the main rotor blades. If significant adjustments are required, be sure to double-check the length of both pitch control links (they should be close to the same length) and also check the blades for warps or twists. In most cases, you should be able to get both blades tracking perfectly in the same plane. However, due to the small size of the pitch links and threaded rods it may not always be possible to achieve absolutely perfect blade tracking. Don't worry, as the helicopter should still perform well as long as the blade tracking is adjusted as closely as possible.

Flybar Paddle Tracking Adjustment

While main blade tracking is a critical element of flight performance, proper flybar paddle tracking and positioning is also important in maintaining proper control response and vibration-free operation.

For checking flybar paddle tracking, positioning and making adjustments, please read the following tips:

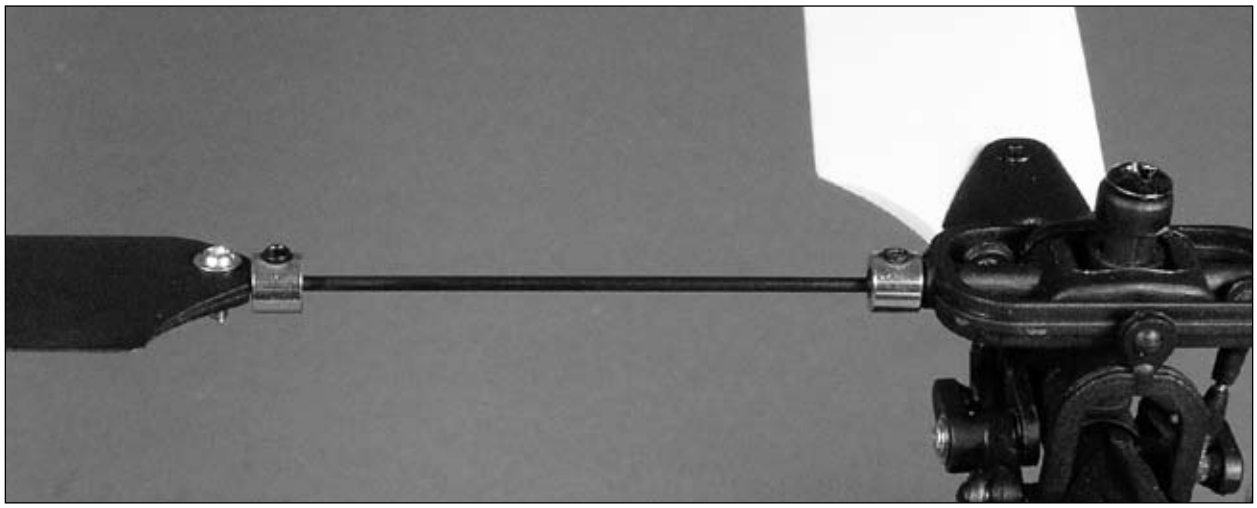
- First, be certain that both flybar paddles are equally spaced from the ends of the paddle control frame.
- Next, be certain that both flybar paddles are parallel to the paddle control frame.
- If you have made certain that both flybar paddles are parallel to the paddle control frame, they should now be parallel to one another. If they are not, take your time making adjustments in order to ensure that both flybar paddles are positioned parallel to one another and the paddle control frame.



- Once you have positioned the flybar paddles correctly following the steps above, be certain they are firmly secured using the included screws, washers and hex nuts.

Flybar Weights, Head Dampening Shims and Fine-Tuning Cyclic Response

Right out of the box, your Blade™ CP Pro is equipped with flybar weights that are secured in their outermost position against the flybar paddles.

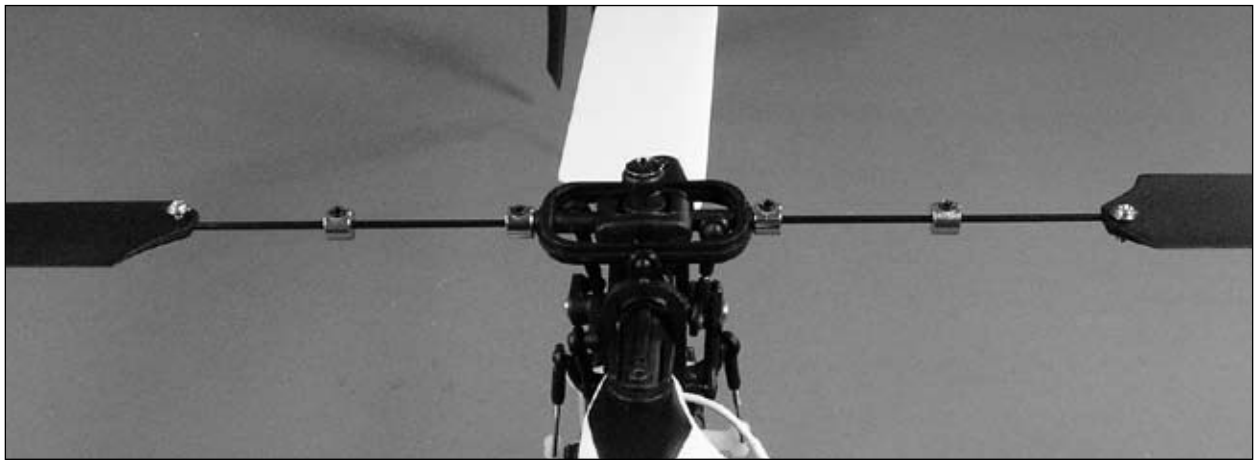


In this position, the weights help to provide added stability by increasing the amount of cyclic input required to overcome the gyroscopic force of the flybar paddles. In general, flying with the weights in this position will still provide quick and aggressive cyclic response, but with reduced sensitivity (especially when in hover), when compared to having them positioned closer to the head/main shaft on the flybar. We suggest that you make your first flights with the flybar weights in this position before making any adjustments.

If, after the first few flights, you feel as though the cyclic response is too quick or aggressive, we recommend the addition of one more weights on each side of the flybar, next to the weights that were already installed. Additional weights are available separately in packs of two (EFLH1165). With the added weights, the cyclic response will be noticeably less responsive and aggressive.

If, after the first few flights, you would prefer to have even quicker and more aggressive cyclic response, you can reposition the flybar weights so that they are closer in to the head/main shaft on the flybar. It is usually best to move the weights in only a small distance at a time before making each subsequent test flight, until you find the position at which you prefer the cyclic response most.

Note: It is important that the weight(s) on each side of the flybar be positioned at a distance equal from the head/main shaft in order to prevent imbalance that could lead to vibration in the rotor head.



Dampening of the rotor head (main rotor blades) can also be adjusted in order to fine-tune the cyclic response of your model. In general, stiffer dampening will result in quicker cyclic response. The dampening of your Blade™ CP Pro has been set to provide a good balance of cyclic response and stability right out of the box, and we suggest that you make your first flights with this amount of dampening before making any changes.

If, after the first few flights, you would prefer to have even quicker and more aggressive cyclic response, you can stiffen the rotor head dampening by adding shims between the O-Ring and Step Washer on each side of the Center Hub (See the "Exploded View" drawing and parts listing on pages 60–61 for reference). Head Dampening Shims are available separately in packs of eight (EFLH1144), however, you should install only one shim per side at a time before making each subsequent test flight, until you find the dampening at which you prefer the cyclic response (and stability) most.

Note: You must always install an equal number of shims on each side of the center hub.

Note: If you install too many shims, and the dampening becomes too stiff, the helicopter can wobble and shake in flight. Take care when making testing flights after adding shims to prevent crashing the model as a result of a wobble or shake. Typically, we find that using 1–2 shims per side with the stock 370 brushed main motor power system works well. More shims per side can cause the wobble and shake. If running a power system that is capable of producing higher rotor head speeds, like the optional 370 brushless power system, you can sometimes add even more shims before encountering the wobble and shake. Again, exercise extreme care when test flying the model after adding shims.

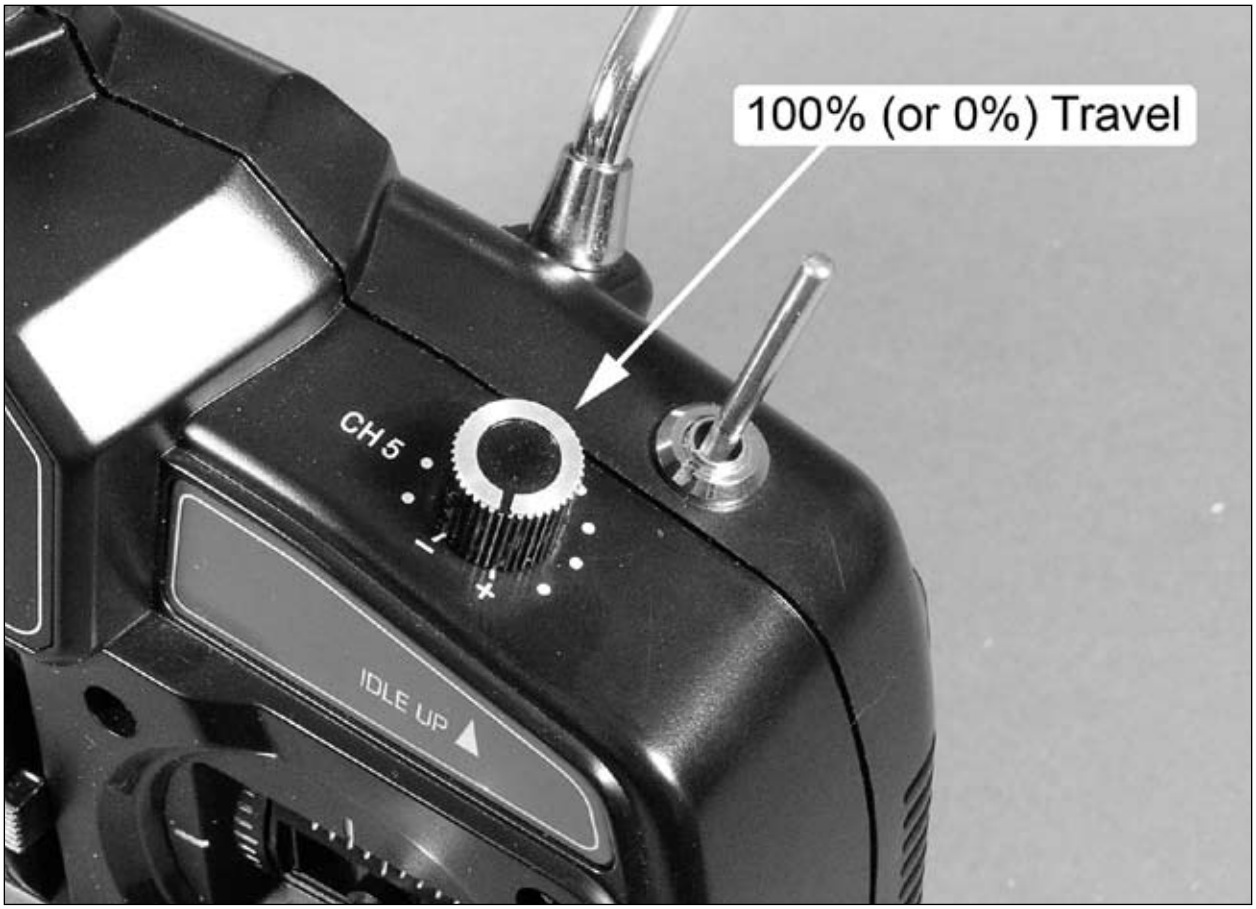
Channel 5 Knob Description and Function

The transmitter included with your Blade™ CP Pro is equipped with an optional-use “Channel 5” knob (labeled as “CH 5”) on the top right panel, just ahead of the “Idle Up” flight mode switch.

This knob allows you to control function of the transmitter’s 5th channel. This channel remains un-used for flying the Blade CP Pro, however, it is available for use in controlling a variety of potential optional features including actuation of an additional servo, electronic components or even for setting the gain of a gyro remotely from the transmitter (when using an optional heading lock gyro equipped with this feature, as shown in the “Optional Heading Lock Gyro Installation and Setup” section found on pages 40–47). It allows full proportional control of the 5th channel from approximately 0–100% travel.

Although no servo reversing is available for this channel, the knob can be operated in either direction for control. You can use either the most clockwise (+) or most counterclockwise (-) position for 0 or 100% travel, and you will achieve approximately 50% travel with the knob in the middle position, pointing directly to the rear of the transmitter.


50% Travel
CH 5
IDLE UP


100% (or 0%) Travel
CH 5
IDLE UP

Optional Heading Lock Gyro Installation and Setup

A unique feature of the Blade™ CP Pro is that it allows you to install an optional "Heading Lock" type gyro to further enhance the holding performance and response of the tail, without the need for difficult modifications or an alternative radio system. While the stock "Standard Rate" type gyro contained in the 3-in-1 control unit performs well for many types of flying, a heading lock gyro offers superior tail holding power that helps to maintain heading throughout even the most aggressive aerobatic maneuvers.

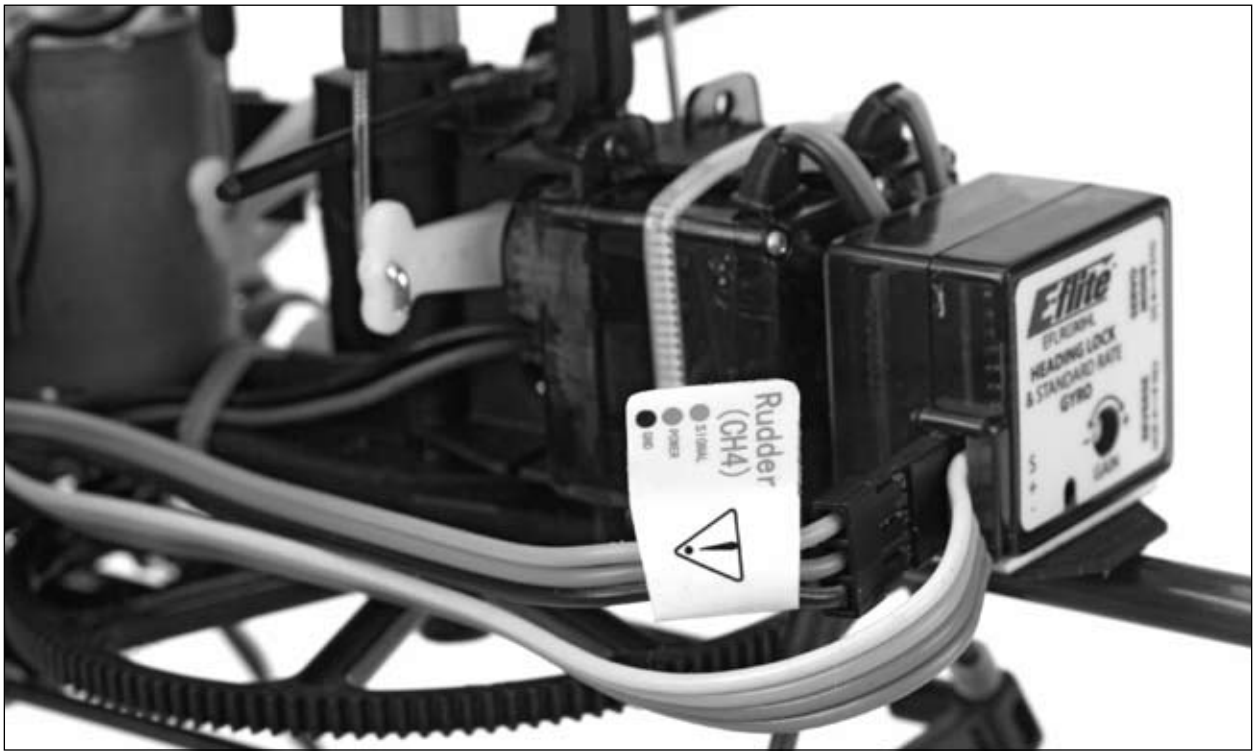
When installing a heading lock type gyro, we recommend the E-flite® G90 Sub-Micro Heading Lock gyro (EFLRG90HL). The G90 gyro weighs only 9.0 grams (.32 oz), and features a very small footprint that makes mounting it on the gyro mounting plate quick and easy. It also offers the ability to control the gain setting (in either Standard Rate or Heading Lock modes) remotely from the Blade CP Pro's included transmitter by using the 5th channel, and is an excellent choice when looking for the best in tail and heading lock performance.

Note: The following steps outline the installation and setup of the G90 gyro, but can also be used as reference for many other heading lock type gyros. However, we do recommend that you review the manual included with your chosen gyro first before proceeding with installation and setup of the gyro in your Blade CP Pro.

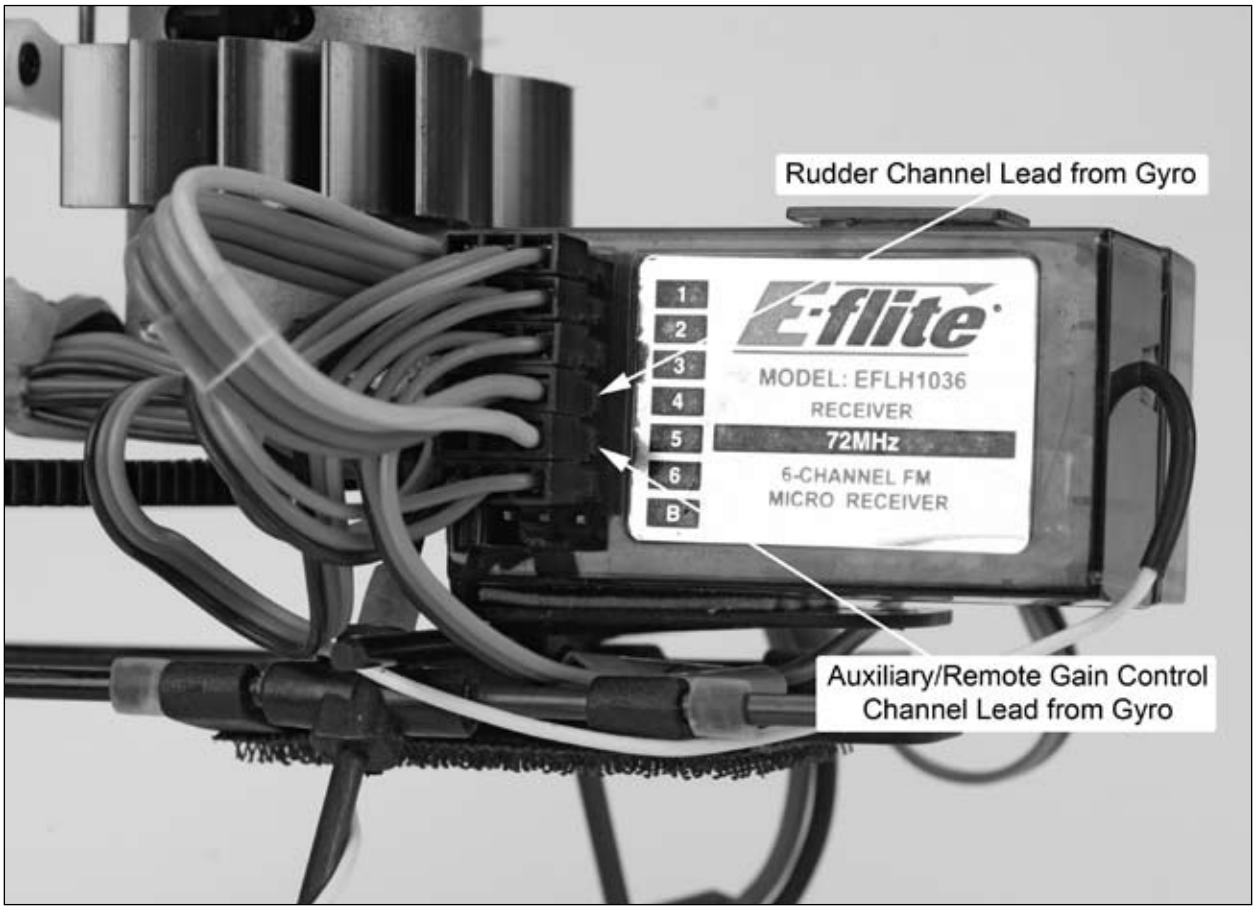
- Install the gyro using its included foam mounting tape (or the foam mounting tape found in the Blade CP Pro's included "Mounting Accessories & Wrench" package) on the gyro mounting plate found just behind the rear servos. Be sure to orient the gyro so that you can easily access the gain setting adjustment pot (if not using the remote gain setting control option) and any necessary reversing or other setting switches.

Note: It is extremely important to ensure that the gyro is mounted securely so that it will not come loose in flight. Also, be sure that the gyro case does not come in contact with the servos or any other parts of the helicopter.

- Remove the 3-in-1 control unit's rudder channel lead (marked with a small label) from channel 4 of the receiver, and plug this lead into the servo connector of the gyro. Then, plug the rudder channel lead of the gyro into channel 4 of the receiver, ensuring proper orientation and polarity direction of the wire leads.

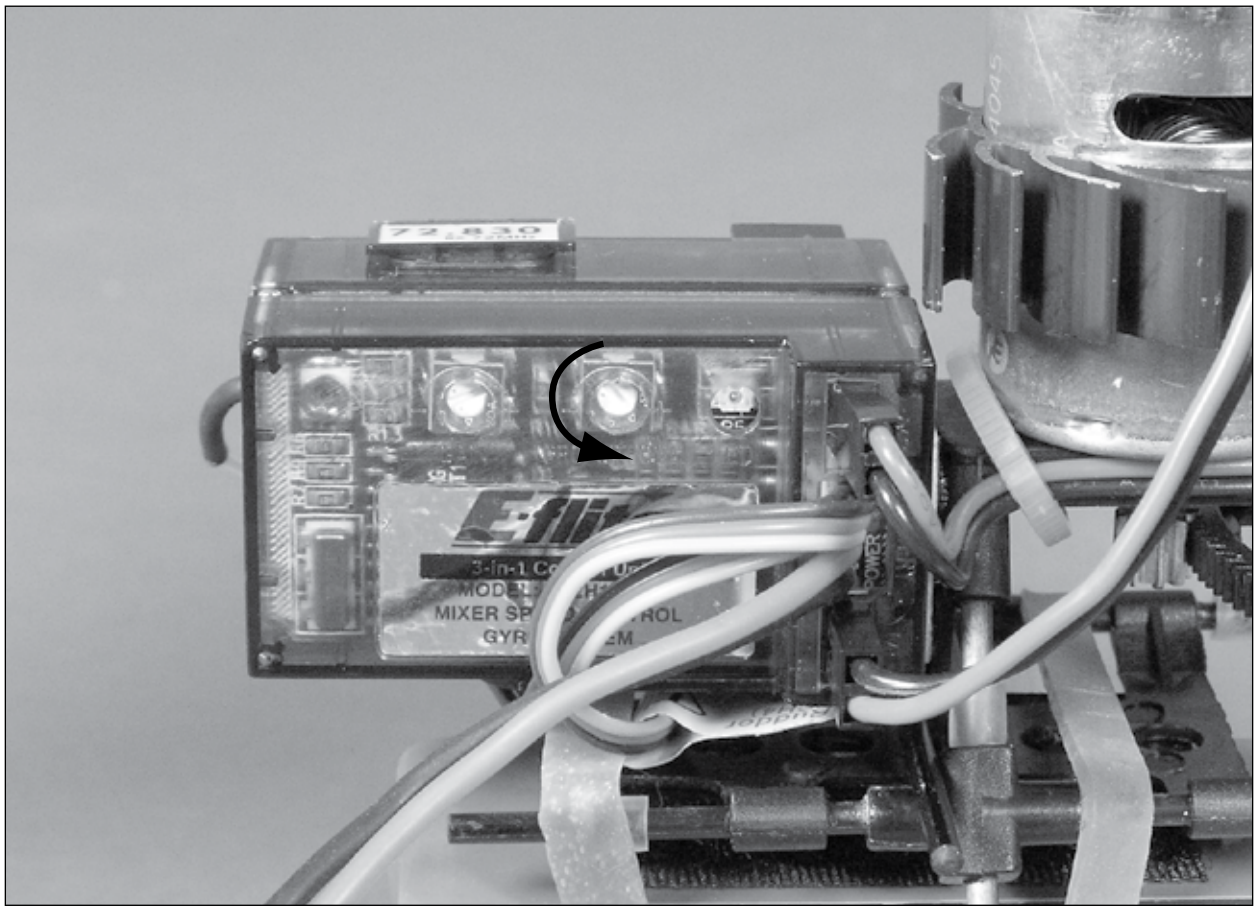


- If you will be using the remote gain control option for setting the gyro mode and gain from the transmitter, plug the gyro's auxiliary (AUX) lead into channel 5 of the receiver. Be sure that the lead is oriented properly so that it is plugged into the "signal" (like the orange wire on the servo leads) side of the receiver's pins.



Note: It is important to secure the 3-in-1 rudder, gyro rudder and auxiliary channel leads so that they can not come in contact with the pinion and main gear, servo arms or motor case. We suggest using the cable/zip tie wraps included in the "Mounting Accessories & Wrench" package to secure the leads to the main frame.

- **In order to ensure proper operation and the best possible performance of the heading lock gyro, it will be necessary to disable the standard rate gyro and mixer in the 3-in-1 control unit. This is accomplished by turning the proportional mix trimmer pot on the 3-in-1 to the lowest, most counterclockwise position (-). No adjustment of the gyro gain trimmer pot on the 3-in-1 control unit is necessary.**



- Now that you have completed installation of the heading lock gyro, it will be necessary to set and adjust the gyro and transmitter for proper response.
- If you are using the G90 gyro, please set it to the following:

  Reverse – REV (Reversed)

  Servo Mode – STD (Standard)

Note: You must be certain that the G90 gyro is set to "Standard" servo mode to ensure proper response and performance of the gyro. If it is set to "Digital" servo mode, the electronic speed control and tail motor will not respond properly to inputs from the gyro or transmitter.

- If you are using a gyro other than the G90, be sure to follow the instructions included with the gyro to ensure that it has been set properly.

Once you have set the reversing and servo mode for the gyro, it will be necessary to confirm that the settings are correct before proceeding with test flights and adjustment of the gyro mode and gain settings. To check for proper response of the tail motor/rotor to gyro and transmitter inputs, please refer to the following:

- First, for added safety during the test, disconnect the main motor power lead from the 3-in-1 control unit, noting the polarity so that you can reinstall it properly following the test.

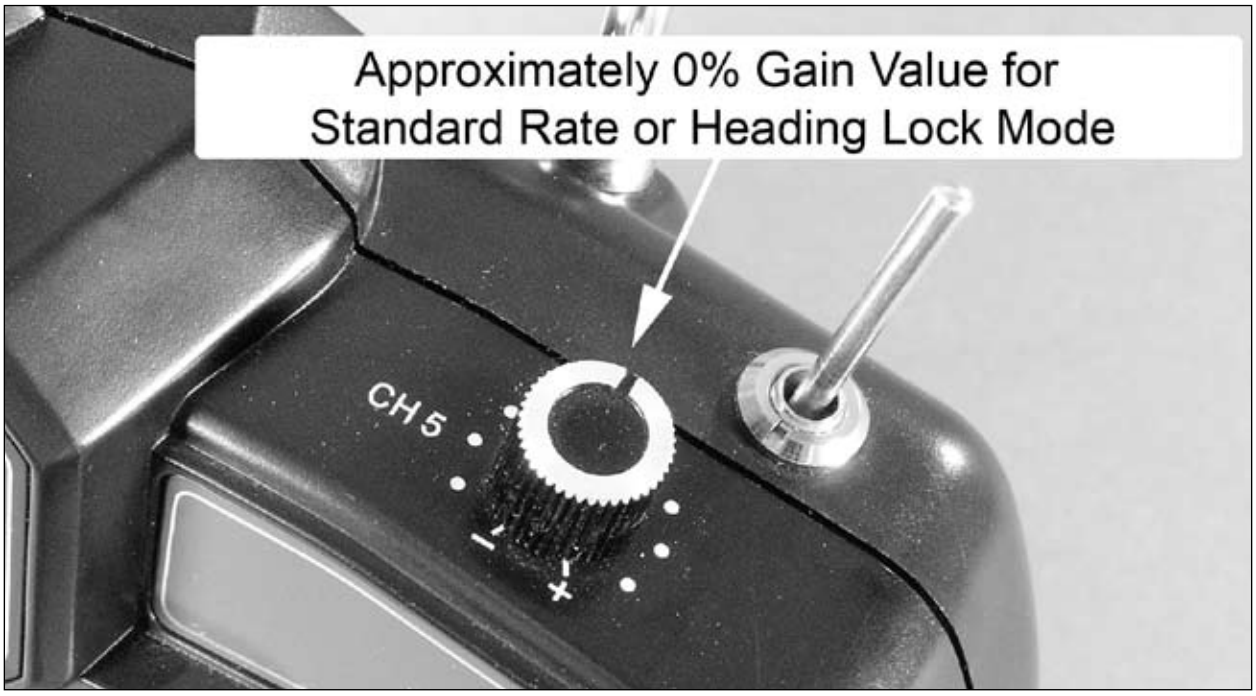
- Next, power on the transmitter, then the plug the battery pack into the battery lead of the 3-in-1 control unit. Allow time for the 3-in-1 control unit to initialize properly. Also, be sure to allow the gyro to initialize properly, as outlined in its manual. If you are using the G90 gyro, the blue status LED should illuminate solidly just before the status LED of the 3-in-1 unit becomes solid green. This will indicate that the gyro and 3-in-1 control unit are ready for the test.
- After securing the helicopter and ensuring that all objects are free and clear of the tail rotor blades, and also reconfirming that the main motor power lead has been disconnected from the 3-in-1 control unit, advance the throttle/collective stick on the transmitter to approximately 1/3–1/2 travel. Use caution, as the tail motor may begin to spin the tail rotor blade.
- Now it is best to check that the tail motor/rotor is responding properly to transmitter inputs. When inputting a slight amount of right rudder, the tail rotor rpms should increase (to push the nose of the helicopter to the right). When inputting a slight amount of left rudder, the tail rotor rpms should decrease or stop entirely. If the tail motor/rotor is not responding properly, use the Servo Reversing switch located on the front of the transmitter to reverse the direction of response.
- Once confirming that the tail motor/rotor is responding properly to transmitter inputs, it will also be necessary to confirm that it is responding properly to inputs from the gyro. After again securing the helicopter and ensuring that all objects are free and clear from the tail motor, and that the throttle is set to approximately 1/3–1/2 power, quickly twist the nose of the helicopter to the left. If the tail motor/rotor is responding properly to inputs from the gyro, the rpms will increase, to counteract the nose twisting to the left, in order to bring the nose back to the right. When quickly twisting the nose of the helicopter to right, the rpms should decrease or stop entirely. If the tail motor/rotor is not responding properly, use the Reverse switch located on the gyro to reverse the direction of response.
- After confirming that the tail motor/rotor is responding properly to inputs from the gyro and transmitter, disconnect the battery from the 3-in-1 control unit, power down the transmitter and re-install the main motor power lead into the 3-in-1 noting proper polarity for correct operation.

Now that you have confirmed proper response of the tail motor/rotor to gyro and transmitter inputs, it is time to proceed with initial adjustments of the gyro mode and gain setting, and to conduct test flights.

- **If you are using the G90 gyro, and have chosen not to utilize the remote mode and gain setting control option, set the gain setting adjustment pot on the gyro to a value of approximately 50% before conducting the first test flight after installing the gyro. This gain setting adjustment pot on the gyro is the same pot that you will use for adjusting the gyro gain value after conducting test flights.**

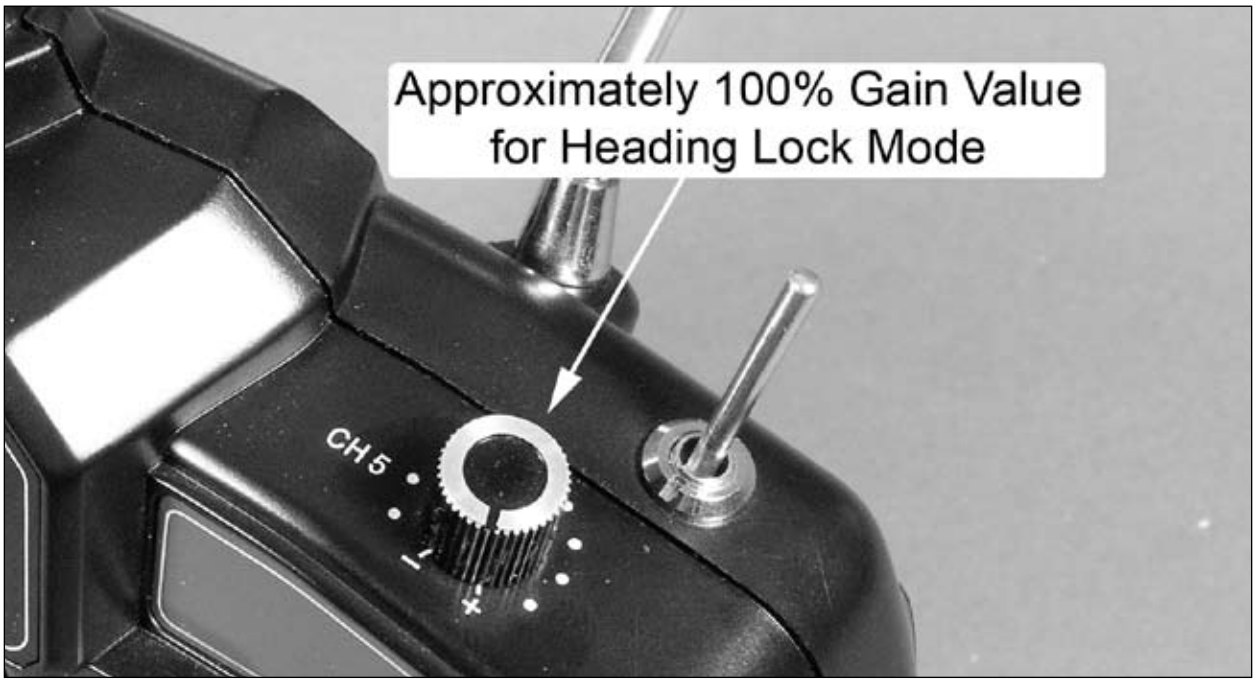
- If you are using the G90 gyro, and have chosen to utilize the remote mode and gain setting control option, you will need to use the Channel 5 knob on the transmitter for setting the mode type and gain value, as outlined in the following steps:

When the Channel 5 knob is in the middle position, pointing directly to the rear of the transmitter, the gain setting value will be approximately 0% for either the Standard Rate or Heading Lock modes. This point will be used for reference only as it is not generally preferred to fly with the gyro gain setting at a value that is so low.



When the Channel 5 knob is rotated counterclockwise (-) from the middle position, the gyro will be in the Standard Rate mode. This mode is the same as offered by the 3-in-1 control unit's stock gyro. When the knob is rotated full counterclockwise, the gain setting value will be approximately 100%. Other gain setting values from approximately 0–100% are also available depending on where the knob is set between the middle and full counterclockwise positions.

When the Channel 5 knob is rotated clockwise (+) from the middle position, the gyro will be in the Heading Lock mode. This is the mode that is preferred for use after installing the heading lock type gyro. When the knob is rotated full clockwise, the gain setting value will be approximately 100%. Other gain setting values from approximately 0–100% are also available depending on where the knob is set between the middle and full clockwise positions.



We recommend that you set the Channel 5 knob in the position that provides a gain setting value of approximately 50% in the Heading Lock mode before conducting the first test flight after installing the gyro. You will then use the Channel 5 knob on the transmitter for adjusting the gyro gain value after conducting test flights.

Note: It is important that you do not accidentally change the position of the Channel 5 knob between and during flights once you have found the gain setting value that provides the best tail/heading lock performance.

- Once you have made initial adjustments of the gyro gain setting, you will be ready to conduct the first test flight using your new gyro. After making the initial test flight, take your time adjusting the gyro gain setting value prior to subsequent test flights in order to find the best possible performance. The goal, when using a Heading Lock type gyro, is to find the highest gain setting value at which the tail of the helicopter will not twitch quickly from side to side in all areas of flight (including fast forward flight and descents).

Note: Although you should now be using a Heading Lock type gyro to help better maintain tail and heading lock performance during flight, it may be necessary to make small adjustments to the rudder trim setting on the transmitter in order to prevent "drifting" of the nose/tail of the helicopter. The amount of trimming required may vary depending on the gyro used and flying conditions.

Now that you have properly installed and configured a heading lock gyro on your Blade™ CP Pro, you will note a significant improvement in the ability for the tail motor power system to maintain heading and position throughout all areas of flight. Do note, however, that the tail motor power system does still have some limitations in its performance envelope and that you should take your time when learning these limits. In general, these limitations do not impact the majority of maneuvers the Blade CP Pro is capable of, and you will find the performance of the tail motor power system, when combined with the heading lock gyro, is very good overall.

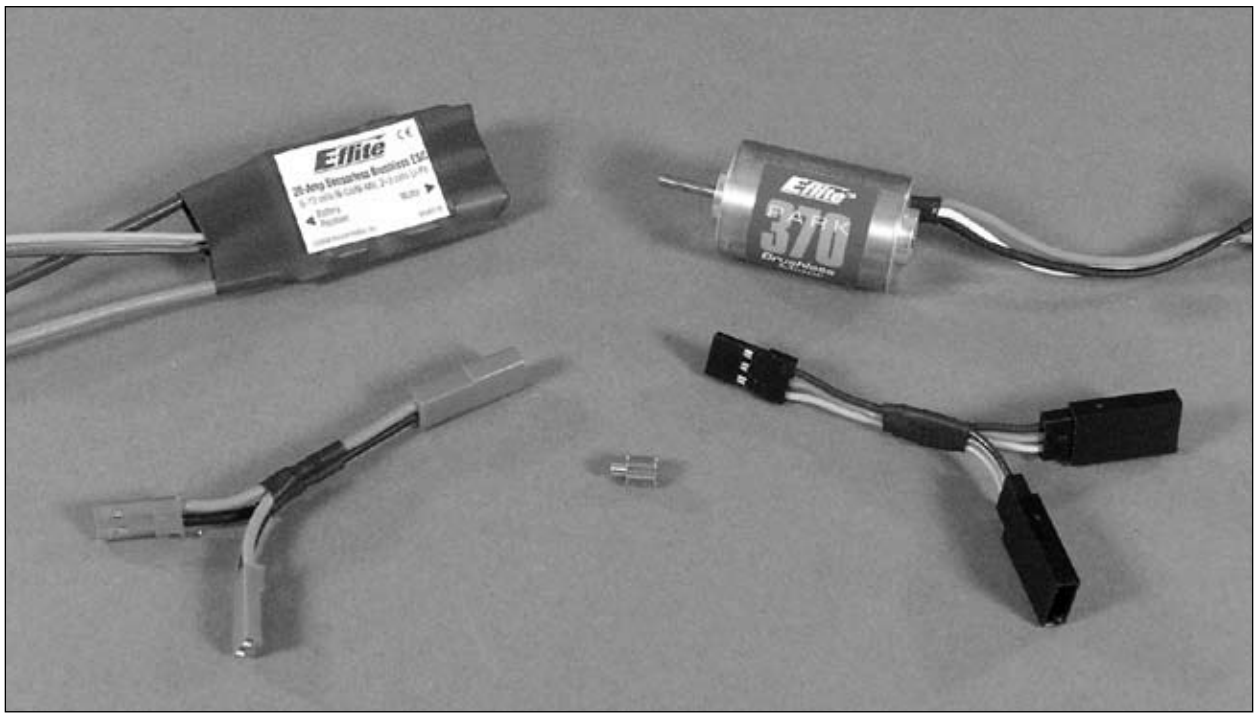
Optional Brushless Main Motor Power System Installation and Setup

The Blade™ CP Pro's separate 6-channel FM receiver and 3-in-1 control unit allow you the option of upgrading to a brushless main motor power system, without the need for difficult modifications or a new radio system. An optional brushless main motor power system can provide added power and/or duration when compared to the stock brushed main motor power system, and is an excellent choice for those interested in maximizing the performance and aerobatic potential of their model.

Note: When installing a brushless main motor power system, we also highly recommend the installation of an optional heading lock type gyro to help maximize performance of the tail due to the added torque and performance the brushless main motor will provide.

We have tested a wide variety of motor types, in a wide range of Kv (rpm/v) values, and gear ratio combinations in the Blade CP Pro. While many combinations offered a noticeable improvement in power or duration when compared to the stock brushed motor, we found the following recommended power system combination (and required supporting accessories) to provide the best balance of added power while also maintaining good flight duration when using the included 3-cell 800mAh Li-Po battery pack:

Item	Description
EFLA228	JST Female/2 JST Male Parallel Y-Harness
EFLA311B	20-Amp Brushless ESC
EFLM1000	Park 370 Brushless Inrunner Motor, 4100Kv
EFLM1912	Heat Sink, 20x20mm (optional)
EFLM1949	Pinion Gear, 8T 0.5 Module 2mm ID
EFLRYH3	3″ Y-Harness

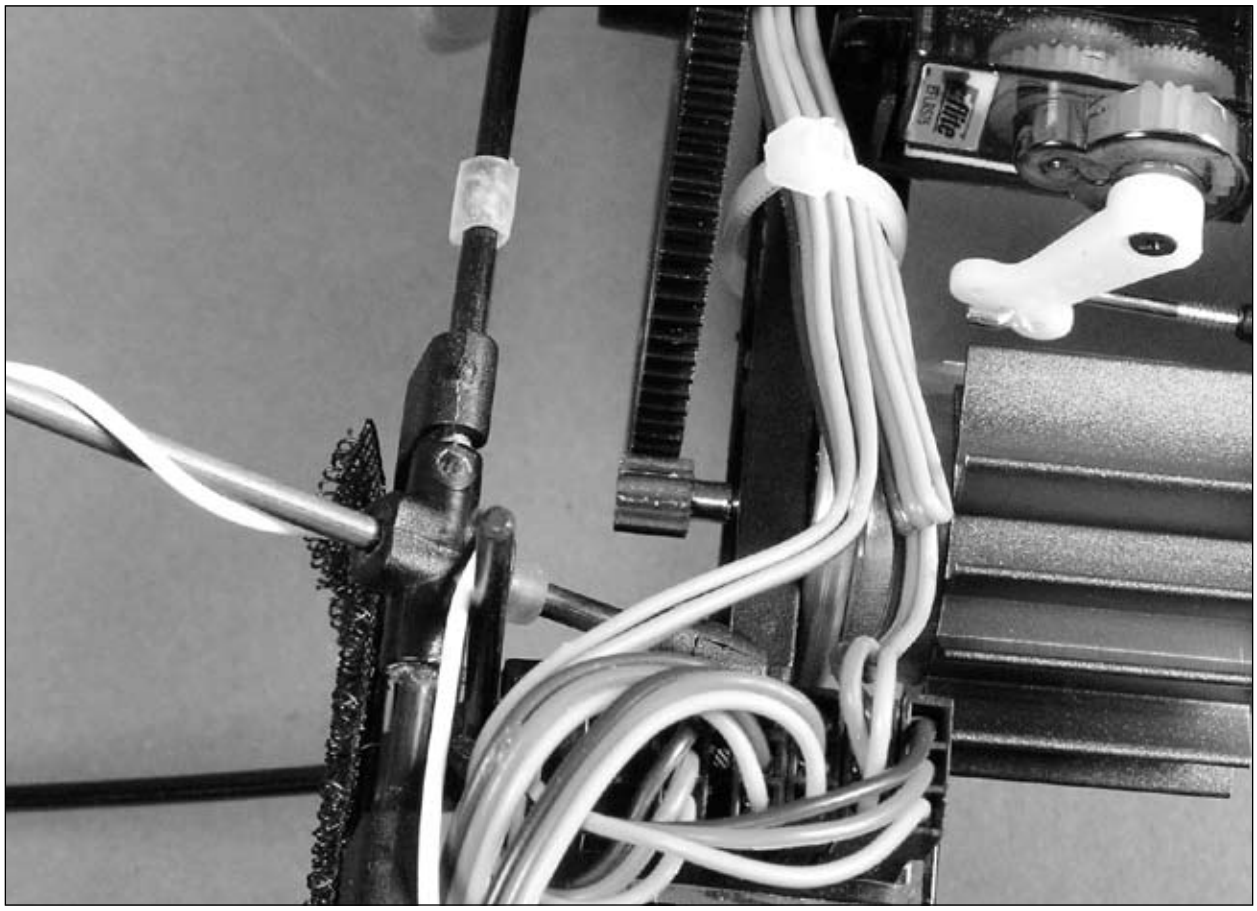


The following steps outline installation and setup of the recommended optional brushless power system:

- In order to provide the most secure motor mounting, and proper clearance for the forward bearing cup in the main frame, it will be necessary to install the Park 370 brushless motor's (EFLM1000) included "Adapter Ring."
- After installing the adapter ring, it will then be necessary to remove the stock brushed main motor from the main frame in order to trial fit the brushless motor to check for proper placement of the pinion on the brushless motor's shaft.

Note: Before removing the stock brushed main motor, we suggest that you check the gear mesh of its 9-tooth pinion and the main drive gear, in multiple places on the main drive gear, for reference. This is approximately how you will want to set the pinion and main gear mesh after installing the brushless motor and the 8-tooth pinion.

- Once the stock brushed main motor has been removed from the frame, temporarily install the Park 370 brushless motor. Then, using the 8-Tooth Pinion Gear (EFLM1949) and main gear for reference, mark the shaft of the motor (using a marker or tape) at the point to which the pinion gear should be press fit onto the shaft to provide adequate gear tooth contact of the pinion and main gear. It is important to install the pinion on the motor shaft so that it will always offer full contact with the main gear teeth in order to promote the best power transfer and to prevent uneven and/or accelerated gear wear.



- After confirming the point to which the pinion gear should be press fit onto the motor shaft, remove the motor from the frame. Then, following the instructions included with the motor, install the pinion on the motor shaft. The motor is now ready to install in the helicopter.

- Next, install the motor in the main frame using the mounting screws and washers removed from the stock brushed main motor. It is a good idea to apply a small amount of threadlock compound (like “blue” Loctite) to the threads before installing the screws. If possible, be sure to mount the motor so that the leads exiting the rear of the case are positioned as close to the main shaft as possible in order to help provide better clearance for the canopy. Do not tighten the mounting screws entirely until after the next step.

Note: Do not use the screws included with the brushless motor for mounting as they do not offer adequate thread length for secure installation.

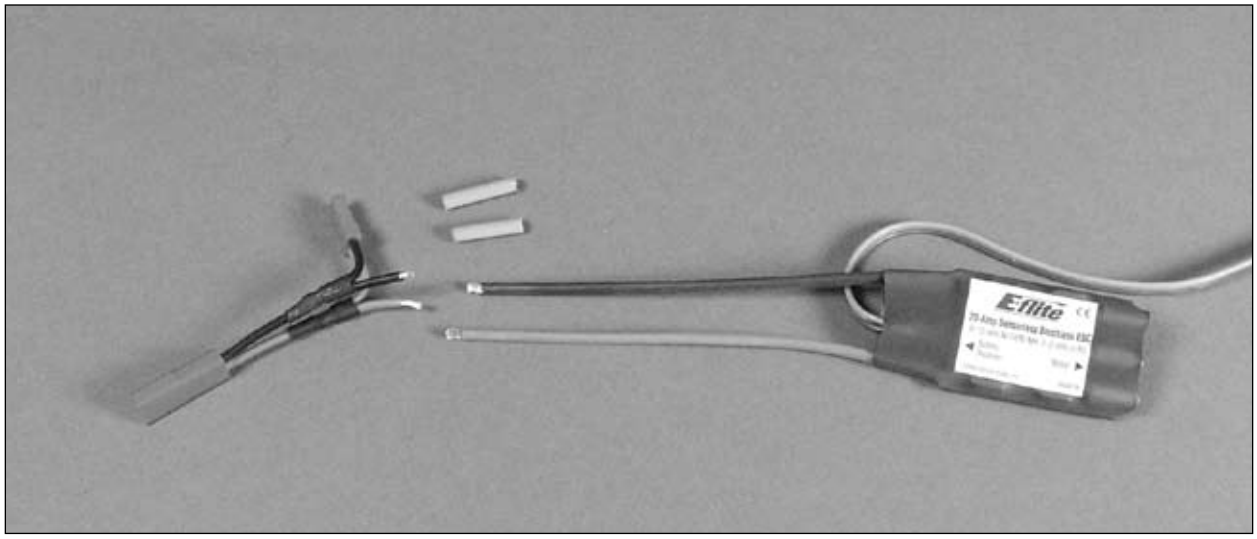
- Take your time to set the gear mesh between the pinion and main gear properly. Then, tighten the mounting screws securely.

Note: It is very important to set the gear mesh so that it is smooth with no binding. Be certain to check the mesh as multiple points on the main gear in order to find the position in which to secure the motor for the best gear mesh overall. Remember, if the gear mesh is set too loose or too tight, at any point on the main gear, it may strip the gear and/or could cause a significant loss in power.

- After completing installation of the brushless motor, we also suggest that you install the 20x20mm Heat Sink (EFLM1912). Be sure to follow the instructions included with the heat sink for proper installation.

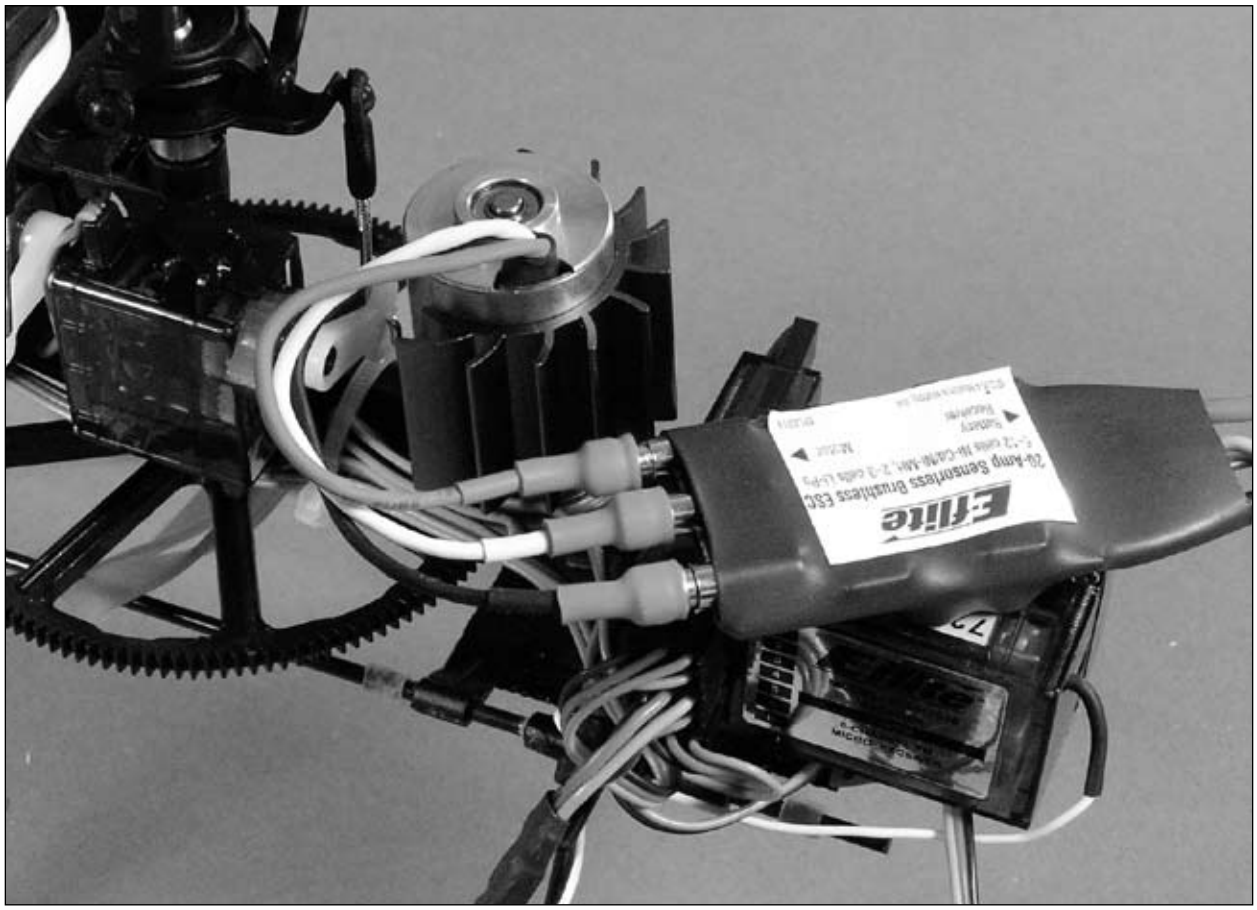
- Next, it will be necessary to prepare the 20-Amp Brushless ESC (EFLA311B) for installation. For these steps you will also need the JST Female/2 JST Male Parallel Y-Harness (EFLA228). This Y-harness will be used to provide power to both the 3-in-1 control unit and brushless ESC from the Li-Po battery pack.
- Because the ESC does not include a battery connector, you will need to solder the Y-harness directly to its battery power leads. To do this, remove one of the Y-harness' JST male connectors from its wire leads, as close to the end of the connector as possible. Then, strip the ends of the remaining wire leads so that they can be soldered to the ESC's battery power leads.

Note: It is extremely important to be sure that you remove one of the JST male connectors and not the JST female connector. It is also critical that you maintain proper polarity (positive-to-positive and negative-to-negative) when soldering the leads together, while also using shrink-tubing to insulate the joints in order to prevent shorting.

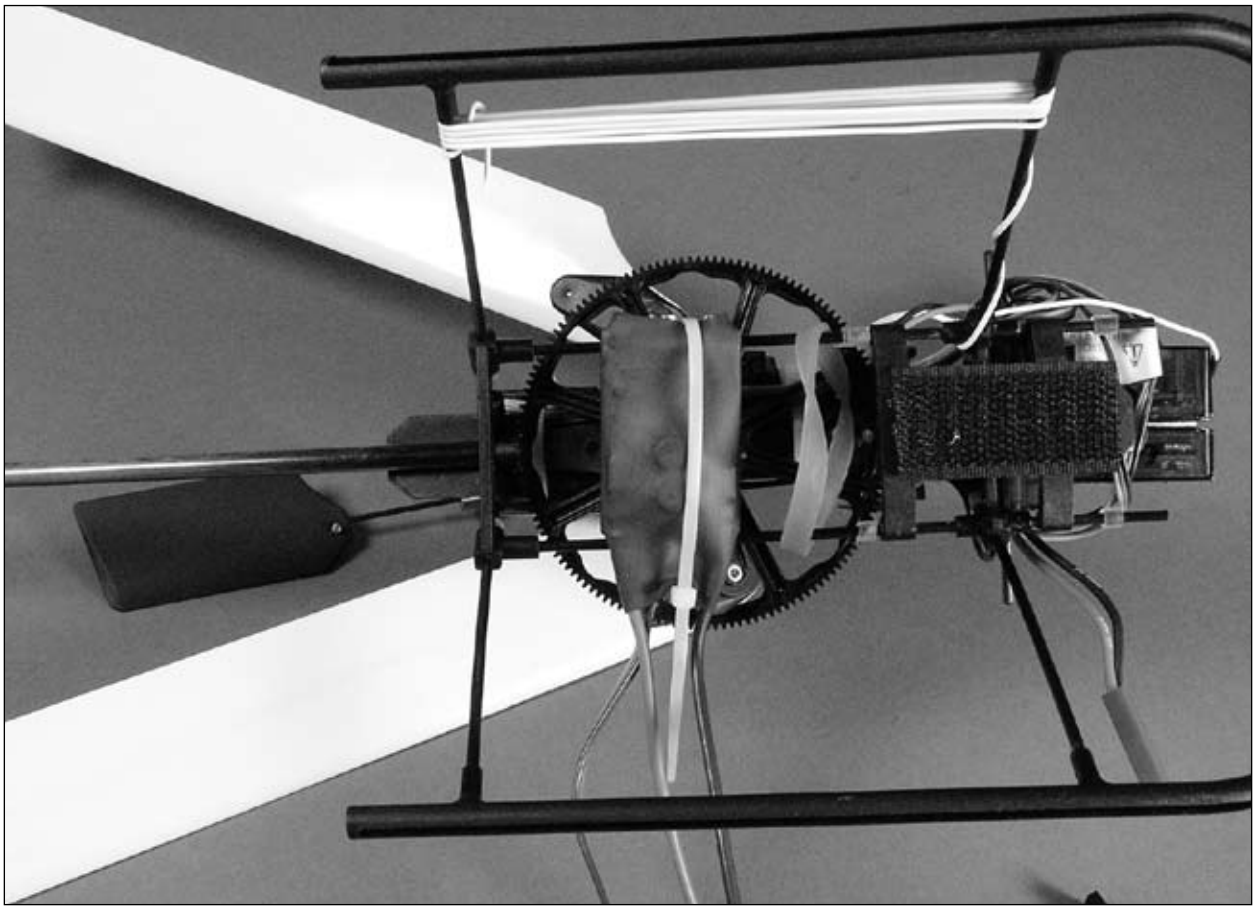


- Once the Y-harness has been connected to the ESC's battery power leads, and the joints have been properly insulated, you can now proceed with installation of the ESC on the helicopter. There are a few places in which the ESC can be mounted on the helicopter, including the following:

Just ahead of the motor (and heat sink), above the receiver and 3-in-1 control unit. If choosing to mount the ESC in this location, be sure it is mounted with all wire leads as far from the receiver and antenna as possible, while also providing adequate clearance for the canopy. It will also be best to mount the ESC so that the power FETs (the side of the ESC with the label) are mounted toward the top of the helicopter. In some cases it might also be helpful to use a small block of balsa wood or foam, along with the foam mounting tape and cable/zip tie wraps included in the "Mounting Accessories & Wrench" package, to mount the ESC.



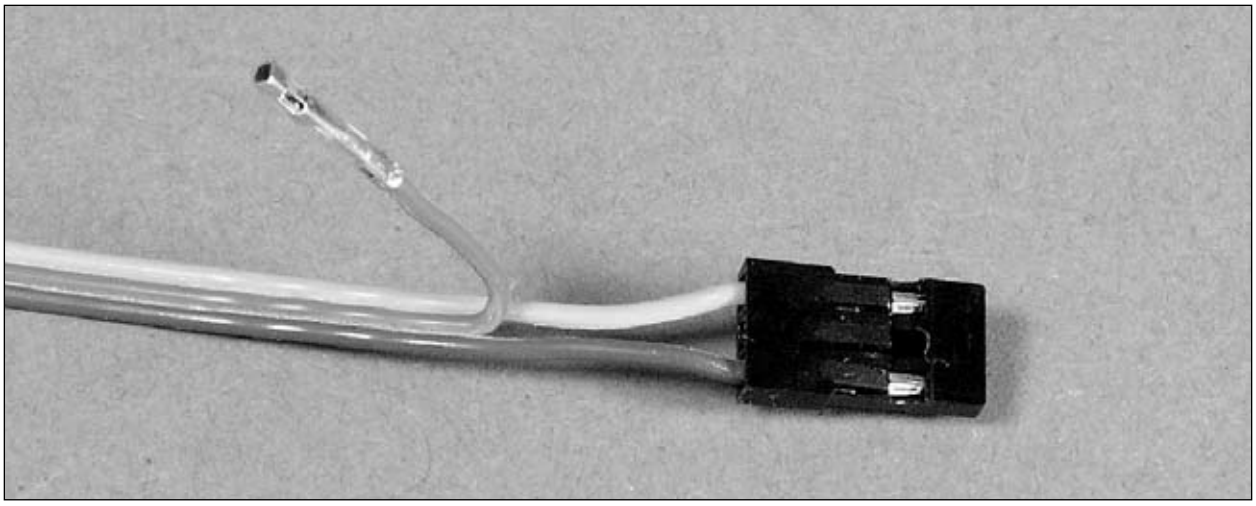
To the bottom of the battery/lower frame support rods, just below the main gear and behind the battery support/mount. Use some small strips of foam mounting tape on the rods, and a long cable/zip tie wrap (included in the "Mounting Accessories & Wrench" package), to secure the ESC in this location. Be sure to also secure the receiver and battery power leads away from the gears and any other moving parts. Then, depending on the length of the motor leads, it may also be necessary to make up some short motor wire lead extensions (using approximately 1.5"–2.0" of wire and the connectors included with the ESC) to connect the motor to the ESC.



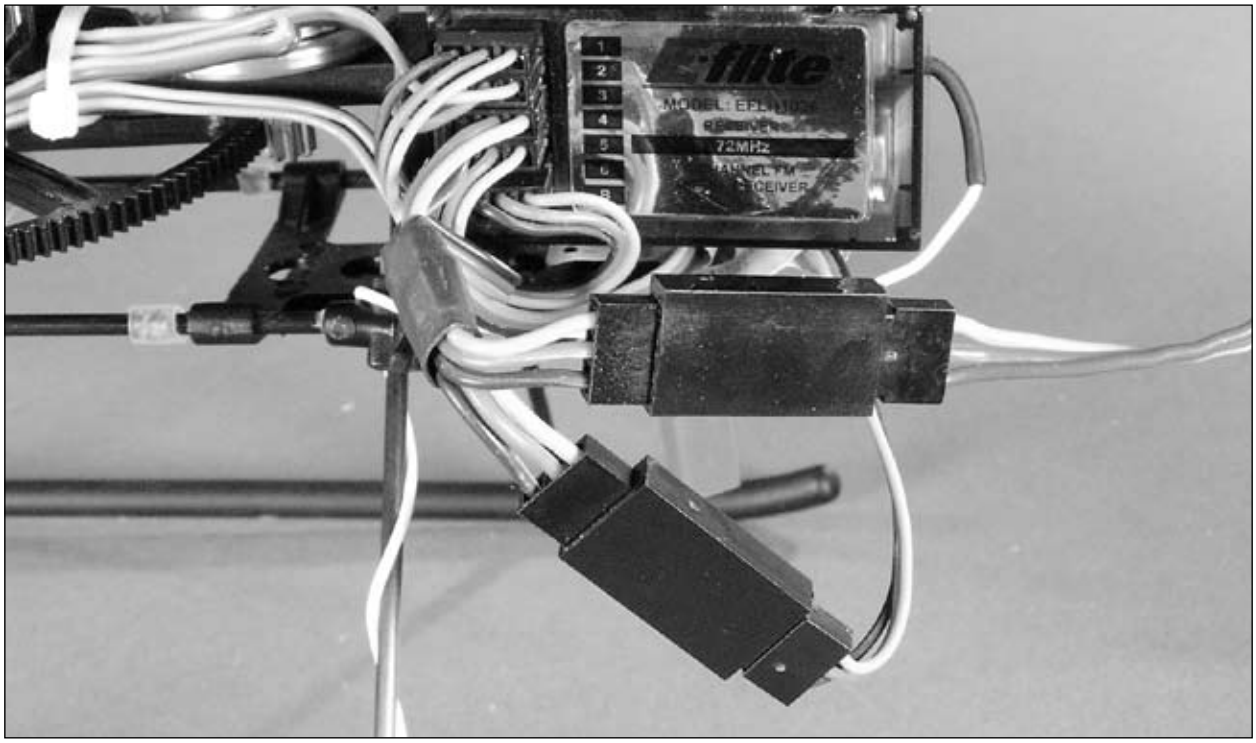
- After securing the ESC in its mounting position, connect the motor wire leads to the connectors on the ESC. The order of the wire leads in the connectors is not too important at this time, as any two of them can be reversed if the motor does not spin in the proper direction after testing its operation.

- Because the receiver and servos will receive power from the 3-in-1 control unit, it will now be necessary to disable the BEC power of the brushless ESC before connecting it to the receiver. To do this, it will be necessary to remove the red (positive) lead and connector from the plastic housing that goes to the receiver, then to insulate it properly to prevent shorting. Use a small screwdriver or knife blade (and extreme care to prevent injury) to lift the plastic tab that secures the connector in the plastic housing, then slide it out the back end of the housing. Use tape or shrink tubing to insulate and secure the exposed connector.

Note: It is extremely important to disable the BEC of the brushless ESC in order to prevent damage to the other electronics. Remember, BEC power is already supplied to the receiver and servos through the 3-in-1 control unit throttle and rudder leads.



- Now that BEC power of the brushless ESC has been disabled, connect its receiver lead to one of the female connectors of the 3" Y-Harness (EFLRYH3). Next, connect the Throttle (Channel 3) receiver lead of the 3-in-1 control unit to the remaining female connector of the 3" Y-harness. Then, connect the male connector of this Y-harness to Channel 3 (Throttle) of the receiver.



- To complete installation and wiring hook-up of the brushless ESC, connect the remaining JST male connector of the battery power lead Y-harness to the female JST connector of the 3-in-1 control unit. Be sure to then secure the battery power leads of the brushless ESC and 3-in-1 so that they cannot come into contact with the gears or any other moving parts, and so that you can readily access the remaining JST female connector for connecting the battery pack.

Now that you have completed installation of the optional brushless power system, it will be necessary to check that the ESC is set properly to ensure maximum performance, and that the motor is operating in the correct direction. Before proceeding with these checks, however, unplug the tail motor wires from the 3-in-1 control unit making note of their direction and polarity for proper re-installation after the checks are complete. Also, remove the main rotor blades and mounting bolts/nuts from the main blade grips to help ensure safety. Then, follow these steps (if using the E-flite® 20-Amp ESC):

- Turn the transmitter on first and advance the throttle stick to full power. Then, after placing your hand on the rotor head and securing the helicopter so that it will not be able to move and that you can quickly disconnect the battery if power to the motor is applied, plug the battery into the battery lead Y-harness connected to the 3-in-1 control unit and brushless ESC. You should then hear the beep to signal power up of the brushless ESC, followed by an additional beep to indicate that the ESC has entered the programming mode.

Note: Exercise extreme caution and care when programming the brushless ESC with the motor pinion gear meshed properly to the main gear. Although the ESC is equipped with safe power-on software and should not apply power to the motor, you must still be very careful. If, at any time, power to the motor is applied and the rotor head begins to spin, unplug the battery immediately to prevent any damage to the model and electronics, or even personal injury.

- Follow the instructions included with the ESC to set the programming for the brake and voltage cutoff to the following:

  Voltage Cutoff – Auto Li-Po ON

Note: With the voltage cutoff programming set to Auto Li-Po ON, a soft cutoff of motor power (usually noticeable as a quick "pulsing" of motor power under load) will occur when the voltage of the 3-cell Li-Po battery pack reaches 9V under load. This is generally preferred in most cases, however, you can disable the Auto Li-Po soft cutoff entirely by setting the voltage cutoff programming to Auto Ni-Cd/Ni-MH ON. In this mode, soft cutoff of motor power will not occur until approximately 5.0V under load, even when using a 3-cell Li-Po battery pack for power. However, this means you must exercise extreme care to prevent over-discharging the Li-Po battery pack during flight.

Brake – OFF

Note: It is extremely important that the motor brake programming of the ESC is disabled in order to prevent damage to the main gear and other components.

Once you have confirmed that the ESC's programming for the voltage cutoff and braking is correct, disconnect the battery from the power leads. You will now need to also confirm that the motor is operating in the correct direction.

- Turn the transmitter on first and lower the throttle stick and trim completely. Then, plug the battery into the battery lead Y-harness connected to the 3-in-1 control unit and brushless ESC. You should then almost immediately hear beeps from the brushless ESC to indicate that it is armed and ready for use.

Note: The brushless ESC will almost always arm before the 3-in-1 control unit. This is extremely important to remember because the main motor will then run if the throttle stick is advanced, even if the 3-in-1 has yet to arm. Be certain to exercise extreme caution when waiting for the 3-in-1 control unit to arm, especially if the brushless ESC has already been armed.

- Once the brushless ESC has armed properly, you have placed the helicopter in a safe place free of obstructions, and are clear of the flybar paddles, you can safely power up the model to check operating direction of the motor.
- Advance the throttle stick slowly, just until the flybar paddles begin to spin, and note the direction. The flybar paddles should spin clockwise when viewed from the top. If they are operating in the wrong direction, unplug the battery, then simply reverse the order of any two of the brushless motor leads where they connect to the ESC. Then, repeat the test to confirm that the flybar paddles (and motor) are operating in the correct direction before proceeding.

After confirming that the brushless main motor is operating in the correct direction, and that you have disconnected the battery, reconnect the tail motor wires to the 3-in-1 control unit. Take care to keep the proper polarity and location of the wires as they were before the check, noting that tail motor plug should be installed into the upper output slot of the 3-in-1 control unit with the positive lead to the top. Then, re-attach the main rotor blades to the blade grips using the mounting bolts/nuts.

Your Blade™ CP Pro is now ready to fly with the optional brushless main motor power system. Be sure to take extra care when making the first test flights with the new power system as it will offer a significant improvement in performance over the stock brushed main motor power system. Also, be sure to take your time to re-adjust the Tail Rotor Proportional Mix and Gyro Gain Trimmer Pots (or the gain setting value if using a heading lock type gyro), as well as the Idle Up TCM ADJ knob, to find the best possible performance with the brushless power system.

Optional Spektrum Radio System Installation and Setup

The Blade CP Pro's included FM 72MHz radio system performs well in a variety of flight conditions and allows you to perform even the most aggressive aerobatic maneuvers right out of the box. Crystal sets are also available for using this system on 6 different channels in the 72MHz band (17, 19, 21, 50, 52 and 54). But because this system utilizes a receiver that is separate from the other on-board electronics, it can also be readily changed to an alternative radio system that may offer more advanced programming features, such as dual rates, exponential, mixing and more, to allow you to further fine-tune the performance of your model.

When choosing an alternative radio system for controlling your model, we recommend a Spektrum DSM (Digital Spectrum Modulation) equipped DX6 Park Flyer System (SPM2460). The DX6 transmitter offers 6-channels, programmable dual rates, exponential, CCPM, revolution mixing, 10-model memory and more. The included AR6000 6-channel receiver weighs only 7.0 grams (.25 oz) and features Spektrum's patent-pending DuaLink™ system that employs two of the 2.4GHz band's 80 channels in a unique protocol that delivers a redundant, ultra-reliable RF link. Best of all, because the DX6 system operates on 2.4GHz, glitching and range impairment from motor, ESC, servo and mechanical RF "noise" will be a thing of the past.

For more information on Spektrum, the DX6 system and installation and setup of this system in your Blade CP Pro, please visit www.horizonhobby.com.

GENERAL

1) I will not fly my model aircraft in sanctioned events, air shows or model flying demonstrations until it has been proven to be airworthy by having been previously, successfully flight tested.

2) I will not fly my model higher than approximately 400 feet within 3 miles of an airport without notifying the airport operator. I will give right-of-way and avoid flying in the proximity of full-scale aircraft. Where necessary, an observer shall be utilized to supervise flying to avoid having models fly in the proximity of full-scale aircraft.

3) Where established, I will abide by the safety rules for the flying site I use, and I will not willfully or deliberately fly my models in a careless, reckless and/or dangerous manner.

4) The maximum takeoff weight of a model is 55 pounds, except models flown under Experimental Aircraft rules.

5) I will not fly my model unless it is identified with my name and address or AMA number on or in the model. (This does not apply to models while being flown indoors.)

6) I will not operate models with metal-bladed propellers or with gaseous boosts, in which gases other than air enter their internal combustion engine(s); nor will I operate models with extremely hazardous fuels such as those containing tetranitromethane or hydrazine.

RADIO CONTROL

1) I will have completed a successful radio equipment ground range check before the first flight of a new or repaired model.

2) I will not fly my model aircraft in the presence of spectators until I become a qualified flier, unless assisted by an experienced helper.

3) At all flying sites a straight or curved line(s) must be established in front of which all flying takes place with the other side for spectators. Only personnel involved with flying the aircraft are allowed at or in front of the flight line. Intentional flying behind the flight line is prohibited.

4) I will operate my model using only radio control frequencies currently allowed by the Federal Communications Commission. (Only properly licensed Amateurs are authorized to operate equipment on Amateur Band frequencies.)

5) Flying sites separated by three miles or more are considered safe from site-to site interference, even when both sites use the same frequencies. Any circumstances under three miles separation require a frequency management arrangement, which may be either an allocation of specific frequencies for each site or testing to determine that freedom from interference exists. Allocation plans or interference test reports shall be signed by the parties involved and provided to AMA Headquarters. Documents of agreement and reports may exist between (1) two or more AMA Chartered Clubs, (2) AMA clubs and individual AMA members not associated with AMA Clubs, or (3) two or more individual AMA members.

6) For Combat, distance between combat engagement line and spectator line will be 500 feet per cubic inch of engine displacement. (Example: .40 engine = 200 feet.); electric motors will be based on equivalent combustion engine size. Additional safety requirements will be per the RC Combat section of the current Competition Regulations.

7) At air shows or model flying demonstrations, a single straight line must be established, one side of which is for flying, with the other side for spectators.

8) With the exception of events flown under AMA Competition rules, after launch, except for pilots or helpers being used, no powered model may be flown closer than 25 feet to any person.

9) Under no circumstances may a pilot or other person touch a powered model in flight.

Replacement Parts List

EFLH1300.....Blade CP Pro RTF Electric Micro Heli
EFLB0995 .....11.1V 800mAh 3-Cell Li-Po, JST/Balance
EFLC3105.....3-Cell Li-Po Balancer Charger, 0.8A
EFLH1017.....FM Crystal Set CH17, 72.130: BCP/P
EFLH1019.....FM Crystal Set CH19, 72.170: BCP/P
EFLH1021.....FM Crystal Set CH21, 72.210: BCP/P
EFLH1031.....3-in-1 Control Unit, Mixer/ESC/Gyro: BCPP
EFLH1036.....6-Channel Micro Receiver FM 72MHz, Neg Shift: BCPP
EFLH1045.....Transmitter Antenna: BCP/P
EFLH1046.....6-Channel CCPM Pro Transmitter FM 72MHz: BCPP
EFLH1050.....FM Crystal Set CH50, 72.790: BCP/P
EFLH1052.....FM Crystal Set CH52, 72.830: BCP/P
EFLH1054.....FM Crystal Set CH54, 72.870: BCP/P
EFLRS75 .....7.5 Gram Sub-Micro S75 Servo
EFLRS751 .....Gear Set: S75
EFLRS752 .....Case Set: S75
EFLH1110B....370 Motor w/9T 0.5M Pinion: BCP/P
EFLH1115.....Bearing 3x6x2.5mm (2): BCP/P
EFLH1118.....Vertical Tail Support: BCP/P
EFLH1119.....Tail Motor w/8T 0.5M Pinion: BCP/P
EFLH1120.....Tail Rotor Drive Gear & Shaft Set: BCP/P
EFLH1121.....Bearing 2x6x3mm (2): BCP/P
EFLH1122.....Tail Rotor Blade: BCP/P
EFLH1129.....Mounting Accessories & Wrench: BCP/P
EFLH1131.....Tail Motor Heat Sink: BCP/P
EFLH1132.....Main Motor Heat Sink: BCP/P
EFLH1134.....Main & Tail Motor Wire Set: BCP/P
EFLH1135.....Retaining Pin (6): BCP/P
EFLH1136.....Canopy Mount & Grommet Set: BCP/P
EFLH1143.....Spindle: BCP/P
EFLH1145.....Center Hub & Spindle Set: BCP/P
EFLH1146.....Rotor Head Set: BCP/P
EFLH1147B....Symmetrical Main Blade Set: BCP/P
EFLH1148.....Paddle Control Frame: BCP/P
EFLH1149.....Flybar (2): BCP/P
EFLH1150.....Paddle Set: BCP/P
EFLH1151.....Pitch Control Link Set: BCP/P
EFLH1152.....Swashplate Set: BCP/P
EFLH1153.....Servo Pushrod Set: BCP/P
EFLH1154.....Battery Support Set: BCP/P
EFLH1155.....Main Shaft & Drive Gear: BCP/P
EFLH1156.....Landing Skid Set: BCP/P
EFLH1158.....O-Ring Set: BCP/P
EFLH1159.....Hardware Set: BCP/P
EFLH1160.....Tail Boom: BCP/P
EFLH1161.....Tail Rotor Gearbox Housing: BCP/P
EFLH1163.....Paddle Control Frame Pushrod Set: BCP/P
EFLH1164.....Main Shaft Retaining Collar: BCP/P
EFLH1165.....Flybar Weight (2): BCP/P
EFLH1167.....Main Frame: BCP/P
EFLH1171.....Bell Mixer Main Blade Grip Set: BCP/P
EFLH1172.....Bell Mixer Arm & Pushrod Set: BCP/P
EFLH1312.....Body/Canopy, Silver w/Decals: BCPP

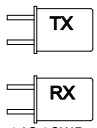
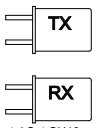
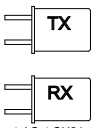
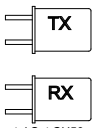
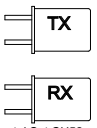
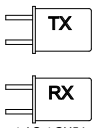
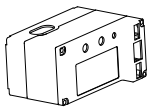
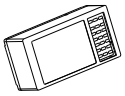
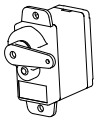
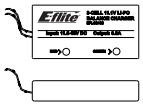
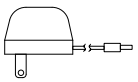
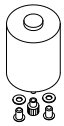
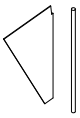
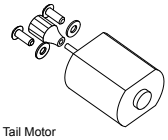
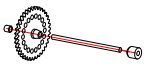
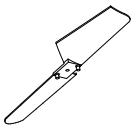
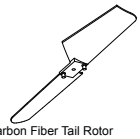
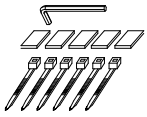
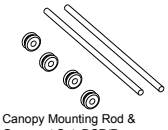
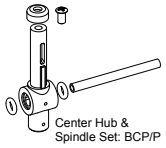
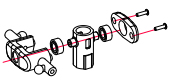
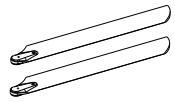
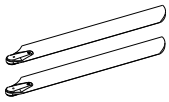
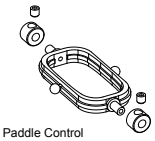
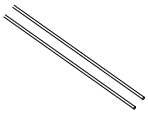
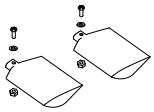
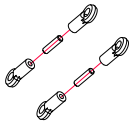
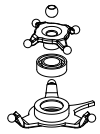
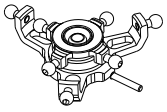
Optional Parts List

EFLC4000.....AC to 12V DC, 1.5 Amp Power Supply
EFLH1000.....Micro/Mini Helicopter Pitch Gauge
EFLH1122C ...Carbon Fiber Tail Rotor Blade: BCP/P
EFLH1144.....Head Dampening Shim (8): BCP/P
EFLH1147C ...Sym. Carbon Fiber Main Blade Set: BCP/P
EFLH1175.....Aluminum Swashplate Set: BCP/P
EFLH1176.....Complete Aluminum Rotor Head Set: BCP/P
EFLH1311.....Decal Sheet: BCPP
EFLH1313.....Body/Canopy, Yellow w/Decals: BCPP
EFLH1314.....Body/Canopy, White w/o Decals: BCP/P
EFLRG90HL....9.0 Gram Sub-Micro G90 Heading Lock Gyro

For Brushless Main Motor Power System:
EFLA228.....JST Female/2 JST Male Parallel Y-Harness
EFLA311B.....20-Amp Brushless ESC
EFLM1000 .....Park 370 Brushless Inrunner Motor, 4100Kv
EFLM1912 .....Heat Sink, 20x20mm
EFLM1949 .....Pinion Gear, 8T 0.5 Module 2mm ID
EFLRYH3 .....3" Y-Harness

Please see your favorite retailer or visit our web site (**www.E-fliteRC.com**) to find the latest in new replacement and option parts releases for your Blade™ CP Pro.

Replacement and Optional Parts

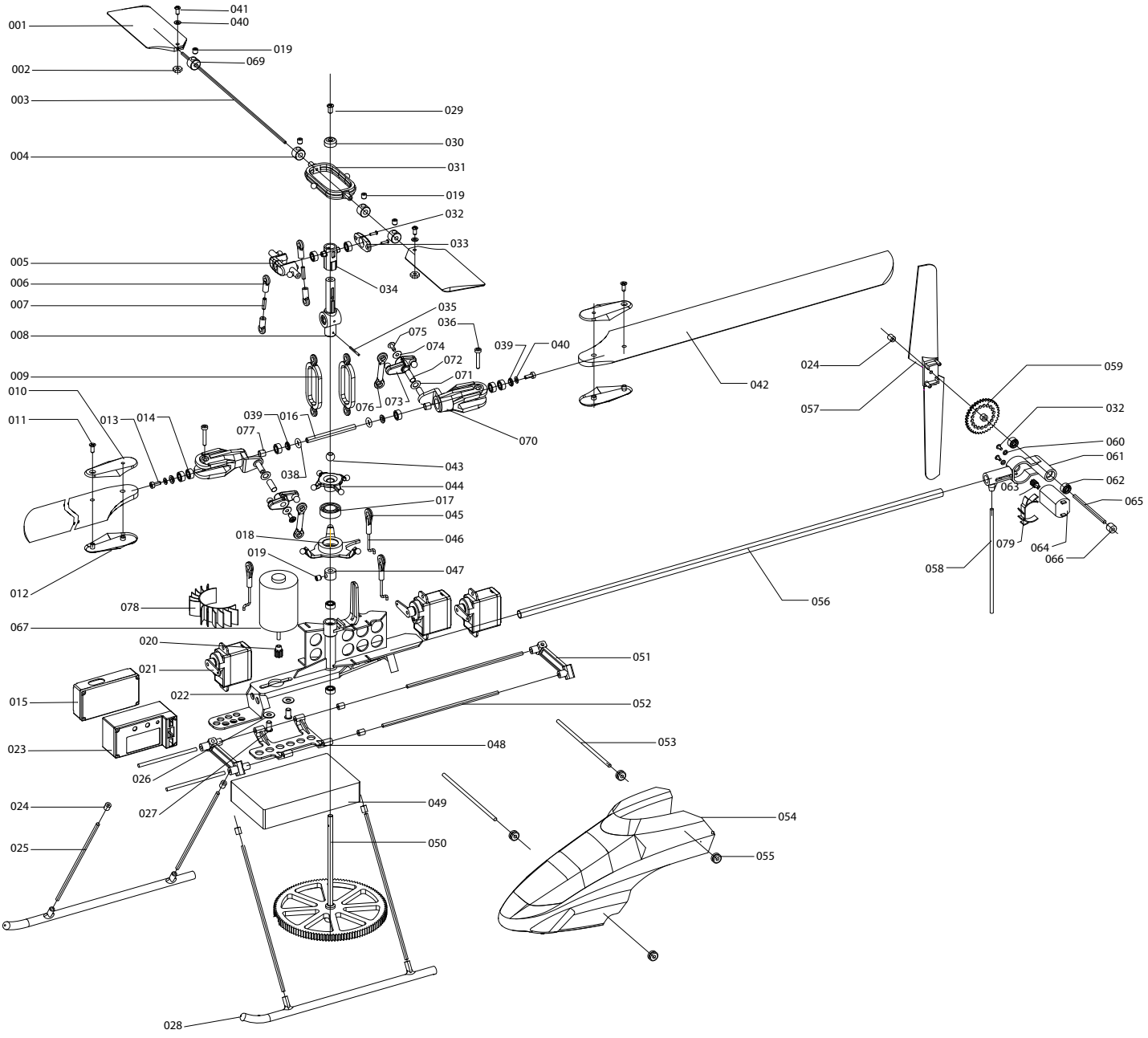
 FM Crystal Set CH17, 72.130: BCPP EFLH1017	 FM Crystal Set CH19, 72.170: BCPP EFLH1019	 FM Crystal Set CH21, 72.210: BCPP EFLH1021	 FM Crystal Set CH50, 72.790: BCPP EFLH1050	 FM Crystal Set CH52, 72.830: BCPP EFLH1052	 FM Crystal Set CH54, 72.870: BCPP EFLH1054	 3-in-1 Control Unit: BCPP EFLH1031
 6-Channel Micro Receiver FM 72MHZ, Neg Shift: BCPP EFLH1036	 7.5 Gram Sub-Micro S75 Servo EFLRS75	 Transmitter Antenna: BCPP EFLH1045	 6-Channel CCPM Pro Transmitter FM 72MHz: BCPP EFLH1046	 11.1V 800mAh 3-Cell Li-Po, JST/Balance EFLB0995	 3-Cell Li-Po Balance Charger, 0.8A EFLC3105	 AC to 12VDC, 1.5 Amp Power Supply EFLC4000
 370 Motor w/9T 0.5M Pinion: BCP/P EFLH1110B	 Bearing 3x6x2.5mm (2): BCP/P EFLH1115	 Vertical Tail Support: BCP/P EFLH1118	 Tail Motor w/8T 0.5M Pinion: BCP/P EFLH1119	 Tail Rotor Drive Gear & Shaft Set: BCP/P EFLH1120	 Bearing 2x6x3mm: BCP/P EFLH1121	 Tail Rotor Blade: BCP/P EFLH1122
 Carbon Fiber Tail Rotor Blade: BCP/P EFLH1122C	 Mounting Accessories & Wrench: BCP/P EFLH1129	 Tail Motor Heat Sink: BCP/P EFLH1131	 Main Motor Heat Sink: BCP/P EFLH1132	 Main & Tail Motor Wire Set: BCP/P EFLH1134	 Retaining Pin (6): BCP/P EFLH1135	 Canopy Mounting Rod & Grommet Set: BCP/P EFLH1136
 Spindle: BCP/P EFLH1143	 Head Dampening Shim (8): BCP/P EFLH1144	 Center Hub & Spindle Set: BCP/P EFLH1145	 Rotor Head Set: BCP/P EFLH1146	 Symmetrical Main Blade Set: BCP/P EFLH1147B	 Symmetrical Carbon Fiber Main Blade Set: BCP/P EFLH1147C	 Paddle Control Frame: BCP/P EFLH1148
 Flybar (2): BCP/P EFLH1149	 Paddle Set: BCP/P EFLH1150	 Pitch Control Link Set: BCP/P EFLH1151	 Swashplate Set: BCP/P EFLH1152	 Aluminum Swashplate Set: BCP/P EFLH1175	Servo Pushrod Set: BCP/P EFLH1153	Battery Support Set: BCP/P EFLH1154
Main Shaft & Drive Gear: BCP/P EFLH1155	Landing Skid Set: BCP/P EFLH1156	O-Ring & Tubing Set: BCP/P EFLH1158	Hardware Set: BCP/P EFLH1159	Tail Boom: BCP/P EFLH1160	Tail Rotor Gearbox Housing: BCP/P EFLH1161	Paddle Control Frame Pushrod Set: BCP/P EFLH1163
Main Shaft Retaining Collar: BCP/P EFLH1164	Flybar Weight (2): BCP/P EFLH1165	Main Frame Assembly: BCP/P EFLH1166	Main Frame: BCP/P EFLH1167	Bell Mixer Main Blade Grip Set: BCP/P EFLH1171	Bell Mixer Arm & Pushrod Set: BCP/P EFLH1172	
Body/Canopy, Silver w/Decals: BCPP EFLH1312	Body/Canopy, Yellow w/Decals: BCPP EFLH1313	Body/Canopy, White w/o Decals: BCP/P EFLH1314	Micro/Mini Helicopter Pitch Gauge EFLH1000			

Exploded View Parts Listing

Exploded View Reference Number	Description (Quantity Required)	Included In Item Number
001	Flybar Paddle (2)	EFLH1150
002	Nut (2)	EFLH1150
003	Flybar (1)	EFLH1149
004	Collar (2)	EFLH1148
005	Rotor Head Frame A (1)	EFLH1146
006	Pitch Control Link (4)	EFLH1151
007	Threaded Rod (2)	EFLH1151
008	Center Hub (1)	EFLH1145
009	Paddle Control Frame Pushrod (2)	EFLH1163
010	Main Blade Hold-Down Plate A (2)	EFLH1147B
011	Flat Head Screw (2)	EFLH1147B
012	Main Blade Hold-Down Plate B (2)	EFLH1147B
013	Socket Head Cap Screw (2)	EFLH1159
014	Bearing 3×6×2.5mm (10)	EFLH1115
015	Receiver	EFLH1036
016	Spindle (1)	EFLH1145
017	Bearing 7×13×4mm (1)	EFLH1152
018	Lower Swashplate (1)	EFLH1152
019	Setscrew (5)	EFLH1159
020	Pinion Gear (1)	EFLH1110B
021	Sub-Micro Servo (3)	EFLRS75
022	Main Frame (1)	EFLH1167
023	3-in-1 Control Unit (1)	EFLH1031
024	Silicone Tube Section (9)	EFLH1158
025	Strut (4)	EFLH1156
026	Main Motor Washer (2)	EFLH1110B
027	Main Motor Screw (2)	EFLH1110B
028	Skid (2)	EFLH1156
029	Cap Head Screw (1)	EFLH1145
030	Center Hub Cap (1)	EFLH1145
031	Paddle Control Frame (1)	EFLH1148
032	Cap Head Screw (4)	EFLH1146
033	Rotor Head Frame B (1)	EFLH1146
034	Rotor Head (1)	EFLH1146
035	Retaining Pin (1)	EFLH1135
036	Socket Head Cap Screw (2)	EFLH1159
038	O-Ring (2)	EFLH1158
039	Step Washer (4)	EFLH1171
040	Washer (4)	EFLH1171
041	Cap Head Screw (2)	EFLH1150
042	Main Blade (2)	EFLH1147B
043	Swashplate Ball (1)	EFLH1152
044	Upper Swashplate (1)	EFLH1152
045	Servo Pushrod Control Link (3)	EFLH1153
046	Servo Pushrod Threaded Rod (3)	EFLH1153
047	Main Shaft Retaining Collar (1)	EFLH1164
048	Battery Support (1)	EFLH1154
049	Battery Pack (1)	EFLB0995
050	Main Shaft & Drive Gear (1)	EFLH1155
051	Battery Support Rod Joiner (2)	EFLH1154
052	Battery Support Rod (2)	EFLH1154
053	Canopy Mount Rod (2)	EFLH1136
054	Canopy (1)	EFLH1312
055	Canopy Mount Grommet (4)	EFLH1136
056	Tail Boom (1)	EFLH1160
057	Tail Rotor Blade (1)	EFLH1122
058	Vertical Tail Support (1)	EFLH1118
059	Tail Rotor Drive Gear (1)	EFLH1120
060	Tail Motor Washer (2)	EFLH1119
061	Tail Rotor Gearbox Housing (1)	EFLH1161
062	Bearing 2×6×3mm (2)	EFLH1121
063	Tail Motor Pinion (1)	EFLH1119
064	Tail Motor (1)	EFLH1119
065	Tail Rotor Shaft (1)	EFLH1120
066	Tail Rotor Shaft Stop (1)	EFLH1120
067	Main Motor (1)	EFLH1110B
069	Flybar Weight Collar (2)	EFLH1165
070	Bell Mixer Main Blade Grip (2)	EFLH1171
071	Shim (2)	EFLH1172
072	Bushing (2)	EFLH1172
073	Bell Mixer Arm (2)	EFLH1172
074	Washer (2)	EFLH1172
075	Pan Head Screw (2)	EFLH1172
076	Bell Mixer Arm Pushrod (2)	EFLH1172
077	Bearing Spacer (2)	EFLH1171
078	Main Motor Heat Sink (1)	EFLH1132
079	Tail Motor Heat Sink (1)	EFLH1131

Please see your favorite retailer or visit our web site (**www.E-fliteRC.com**) to find the latest in new replacement and option parts releases for your Blade™ CP Pro.

Exploded View



Notes

Notes

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www.E-fliteRC.com