

BLADE™ CP+



E-flite®
ADVANCING ELECTRIC FLIGHT

Specifications

Length.....	20.7 in (526mm)
Height.....	7.1 in (180mm)
Main Rotor Diameter.....	20.8 in (528mm)
Tail Rotor Diameter.....	5.8 in (148mm)
Weight with Battery.....	10.5 oz (298 g)
Main Motor.....	370 (installed)
Tail Motor.....	N30 (installed)
Battery.....	3S 11.1V 800mAh Li-Po (included)
Charger.....	DC Li-Po balancing charger (included)
Transmitter.....	FM 6-channel with CCPM (included)
On-Board Electronics.....	FM 6-channel receiver plus 3-in-1 mixer/ESC/gyro (installed)
Servos.....	7.5-gram S75 Sub-Micro (3 installed)

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Introduction

The Blade™ CP+ is the perfect “next step” for anyone who’s mastered the basics of heli flight with a coaxial heli like the Blade CX (EFLH1200) or Blade CX2 (EFLH1250), and is ready for a model capable of more advanced maneuvers. It’s also an excellent choice for experienced pilots looking for the best in ready-to-fly micro helicopter performance.

The Blade CP+ includes all the impressive features of the original Blade CP, like CCPM and collective pitch, plus a number of new features and accessories that further enhance its flight performance for low-time and experienced pilots alike. The included, optional-use training gear set adds stability while also providing support and cushioning to prevent tip-overs and rotor blade strikes for newer pilots. The 3S 11.1V 800mAh Li-Po battery pack offers a significant boost in power and duration over the Ni-MH batteries found in other similar class models, and the included, optional-use symmetrical main rotor blades allow you to perform advanced aerobatics like loops, rolls and inverted flight without the need for a single hop-up. The separate receiver and advanced 3-in-1 control unit are plug-and-play compatible with brushless power systems and heading lock gyros so you can further enhance the capabilities of your Blade CP+ when you’re ready to take performance to the next level.

And although the Blade CP+ 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 before making your first flight.

Warning

An RC helicopter 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.

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.

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.

Warranty Period

Horizon Hobby, Inc., (Horizon) warrants that the Products purchased (the “Product”) will be free from defects in materials and workmanship at the date of purchase by the Purchaser.

Limited Warranty

(a) This warranty is limited to the original Purchaser ("Purchaser") and is not transferable. REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE PURCHASER. This warranty covers only those Products purchased from an authorized Horizon dealer. Third party transactions are not covered by this warranty. Proof of purchase is required for warranty claims. Further, Horizon reserves the right to change or modify this warranty without notice and disclaims all other warranties, express or implied.

(b) Limitations- HORIZON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCT. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE REQUIREMENTS OF THE PURCHASER'S INTENDED USE.

(c) Purchaser Remedy- Horizon's sole obligation hereunder shall be that Horizon will, at its option, (i) repair or (ii) replace, any Product determined by Horizon to be defective. In the event of a defect, these are the Purchaser's exclusive remedies. Horizon 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. 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 Horizon. Return of any goods by Purchaser must be approved by Horizon before shipment.

Damage Limits

HORIZON SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCT, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY. Further, in no event shall the liability of Horizon exceed the individual price of the Product on which liability is asserted. As Horizon 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.

Law: These Terms are governed by Illinois law (without regard to conflict of law principals).

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 directly. This will enable Horizon to better answer your questions and service you in the event that you may need any assistance. For questions or assistance, please direct your email to productsupport@horizonhobby.com, or call 877.504.0233 toll free to speak to a service technician.

Inspections or Repairs

If this 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 is not responsible for merchandise until it arrives and is accepted at our facility. A Service Repair Request is available at www.horizonhobby.com on the "Support" tab. If you do not have internet access, please include a letter with your complete name, street address, email address and phone number where you can be reached during business days, your RMA number, a list of the included items, method of payment for any non-warranty expenses and a brief summary of the problem. Your original sales receipt must also be included for warranty consideration. Be sure your name, address, and RMA number are clearly written on the outside of the shipping carton.

Warranty Inspection and Repairs

To receive warranty service, you must include your original sales receipt verifying the proof-of-purchase date. Provided 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 the repair will be completed and payment will be required without notification or estimate of the expense unless the expense exceeds 50% of the retail purchase cost. By submitting the item for repair you are agreeing to payment of the repair without notification. Repair estimates are available upon request. You must include this request with your repair. Non-warranty repair estimates will be billed a minimum of ½ hour of labor. In addition you will be billed for return freight. Please advise us of your preferred method of payment. Horizon 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. Please note: non-warranty repair is only available on electronics and model engines.

Electronics and engines requiring inspection or repair should be shipped to the following address:

Horizon Service Center
4105 Fieldstone Road
Champaign, Illinois 61822

All other Products requiring warranty inspection or repair should be shipped to the following address:

Horizon Product Support
4105 Fieldstone Road
Champaign, Illinois 61822

Please call 877-504-0233 with any questions or concerns regarding this Product or warranty.

Additional Safety Precautions and Warnings

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

This model is controlled by a radio signal that is subject to 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 model 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+.

Blade CP+ RTF Contents

Item	Description
Not Available Separately	Blade CP+ RTF Airframe
EFLH1044A	6-Channel CCPM Transmitter, FM 72MHz
EFLB0995	3S 11.1V 800mAh Li-Po, JST/Balance
EFLC3105	3-Cell 11.1V Li-Po Balancing Charger, 0.8A
EFLH1128	Training Gear Set
EFLH1129	Mounting Accessories & Wrench
EFLH1147B	Symmetrical Main Blade Set
Not Available Separately	Hook and Loop Material
Not Available Separately	8 "AA" Batteries



Preparing for the First Flight Checklist

Please note this checklist is not intended to be a replacement for the content included in this instruction manual. Although it can be used as a quick start guide, we strongly suggest reading through this manual completely before proceeding.

- Remove and inspect contents
 - Charge the flight battery
 - Install the 8 included "AA" batteries in the transmitter
 - Install the flight battery in the helicopter (once it has been fully charged)
 - Check the Center of Gravity of the helicopter
 - Test the controls
 - Install the included Training Gear Set (strongly recommended if this is your first collective-pitch equipped helicopter model)
 - Familiarize yourself with the controls
 - Find a suitable area for flying
-

Flying Checklist

Please note this checklist is not intended to be a replacement for the content included in this instruction manual. Although it can be used as a quick start guide, we strongly suggest reading through this manual completely before proceeding.

- Always turn the transmitter on first
- Plug the flight battery into the 3-in-1 control unit
- Allow the 3-in-1 control unit to arm properly
- Fly the model
- Land the model
- Unplug the flight battery from the 3-in-1 control unit
- Always turn the transmitter off last

Battery Warnings and Guidelines

While the 3S 11.1V 800mAh Lithium Polymer Battery Pack (EFLB0995) included with your Blade™ CP+ features Charge Protection Circuitry and Balance Charging via the included 3-Cell 11.1V Lithium Polymer Balancing 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+ model in new, unused condition to the place of purchase immediately.

- You must charge the included 3S 11.1V 800mAh 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 Balancing 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 become 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 and approximately ½ charge (3.8V per cell; 11.4V for a 3S battery pack) 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 catch 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 3S Li-Po packs used for the Blade™ CP+, you will not want to allow the battery to fall to below 9V during flight.

The Blade CP+ 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 during flight. 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 877-504-0233.

Battery Charging

It is important that you only charge the included 3S 11.1V 800mAh Li-Po Battery Pack (EFLB0995) with the included 3-Cell 11.1V Li-Po Balancing 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 9–10) before continuing.

The included 3-Cell 11.1V Li-Po Balancing Charger will charge a near fully discharged (not over-discharged) 3S 11.1V 800mAh Li-Po Battery Pack in approximately 1.2–1.5 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+ 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 by the optional AC to 12V DC, 1.5-Amp Power Supply (EFLC4000) for convenient charging anywhere an AC outlet is available. **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 one another. 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.



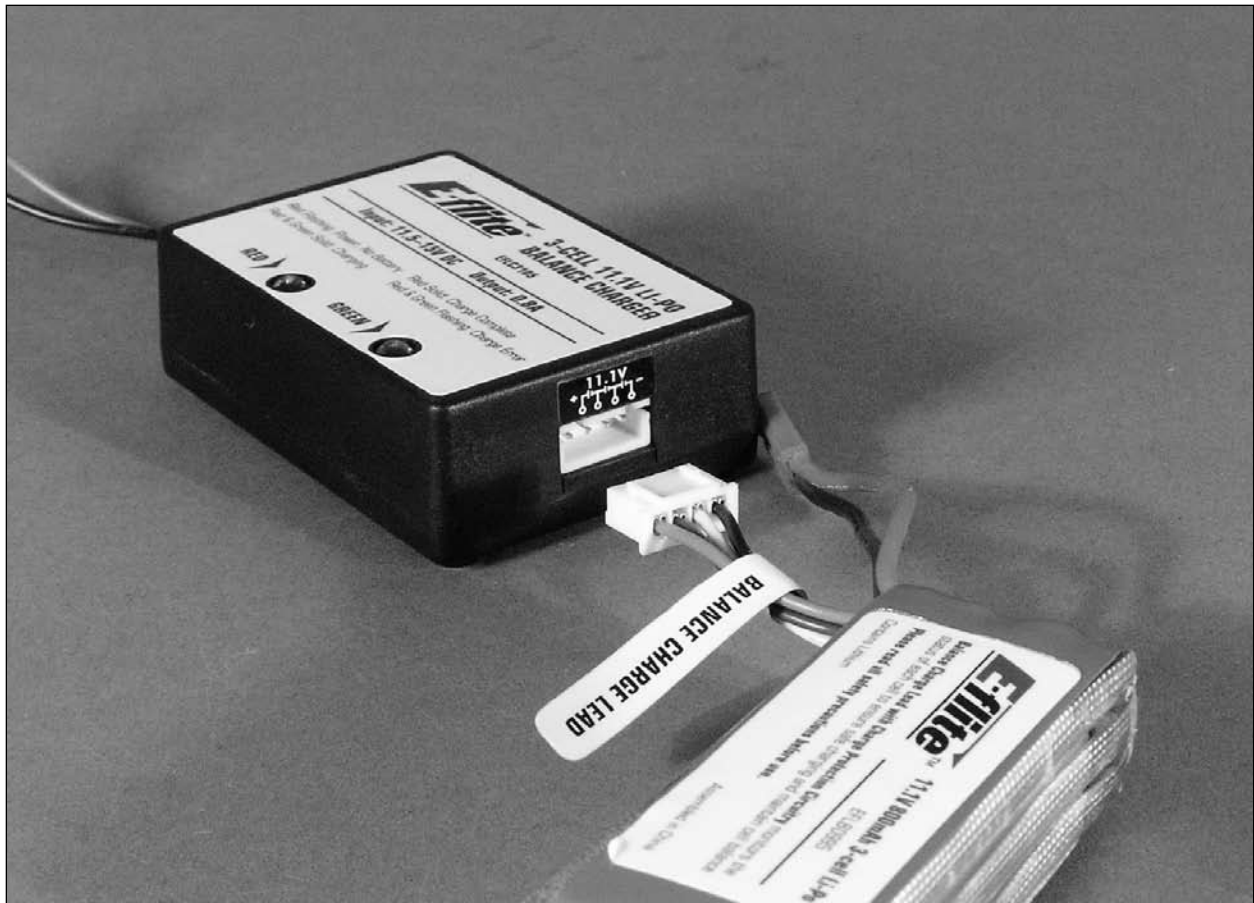
Input power for the charger can also be supplied from a small 12V gel cell or car battery.



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 exiting the battery pack and the connector labeled with 11.1V on the charger. 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 into the Blade CP+ 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 input power plug from the AC to 12V DC adapter/power supply is connected or that the alligator clips are firmly and properly attached to the power source. 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.

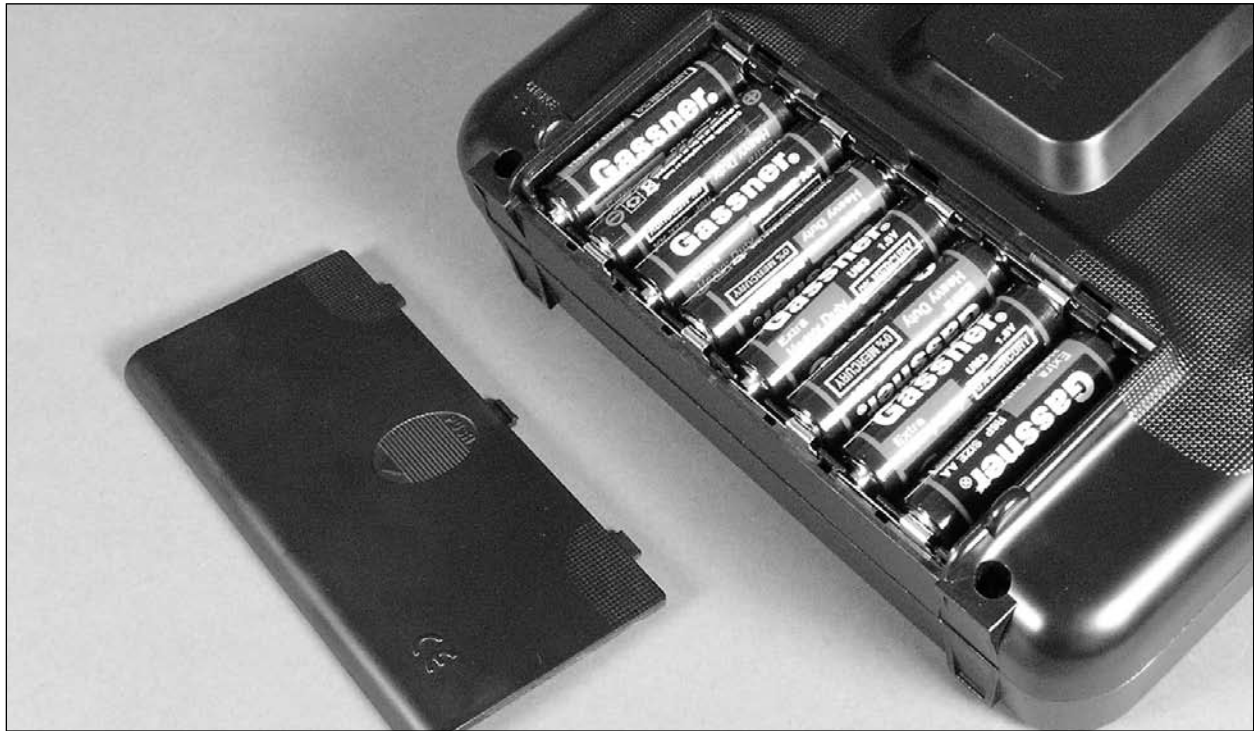
- Simultaneous flashing of the red and green LEDs will indicate that the voltage of the Li-Po battery pack is too low to allow the charge process to begin. In this case the battery may have been over-discharged due to flying the model too long (For more information on preventing over-discharge of the Li-Po battery pack, see the guidelines section found on page 10), 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 877-504-0233.

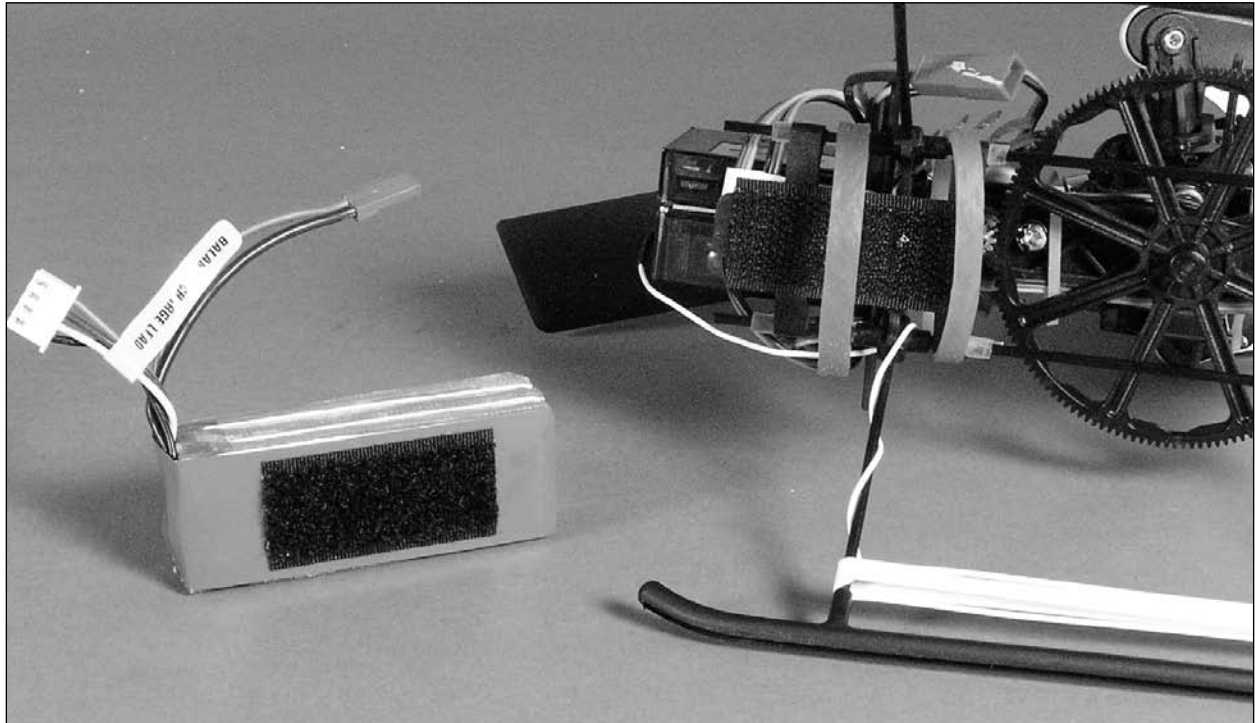
Installing the Transmitter Batteries

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.



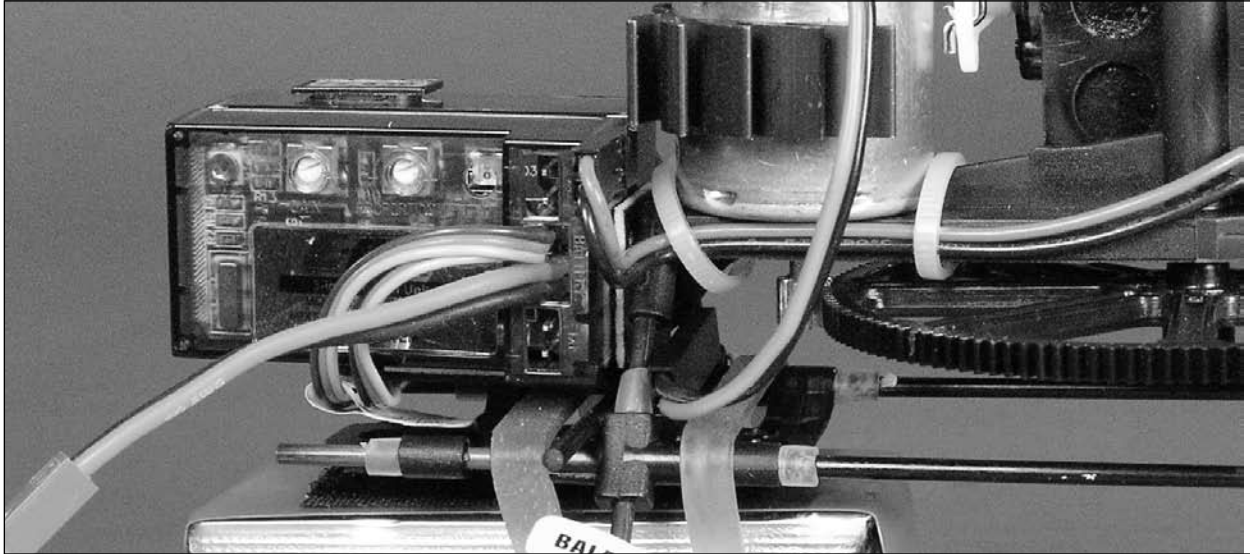
Center of Gravity

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+ before flying, especially if you are switching between different sizes and types of battery packs.



Control Test

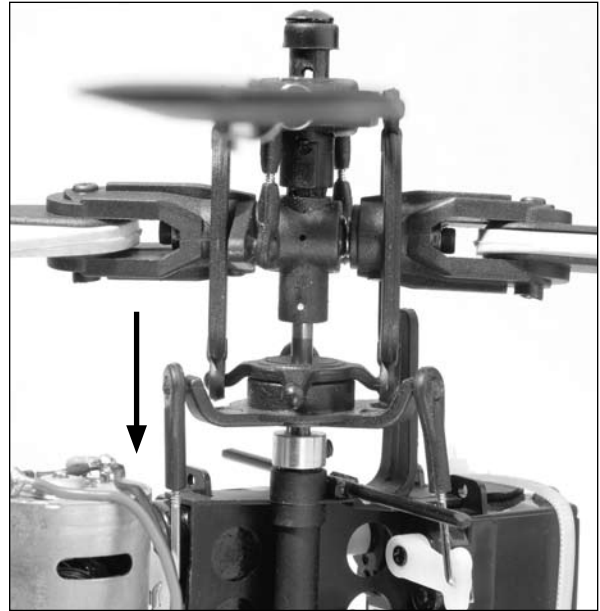
Although each Blade CP+ model is test flown at the factory, it is a good idea to test the controls prior to the first flight to ensure none of the servos, linkages or parts were damaged during shipping and handling. **Before proceeding, unplug both the main and tail motor plugs from the 3-in-1 control 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 motor plugs connected to the 3-in-1 control unit after power up.



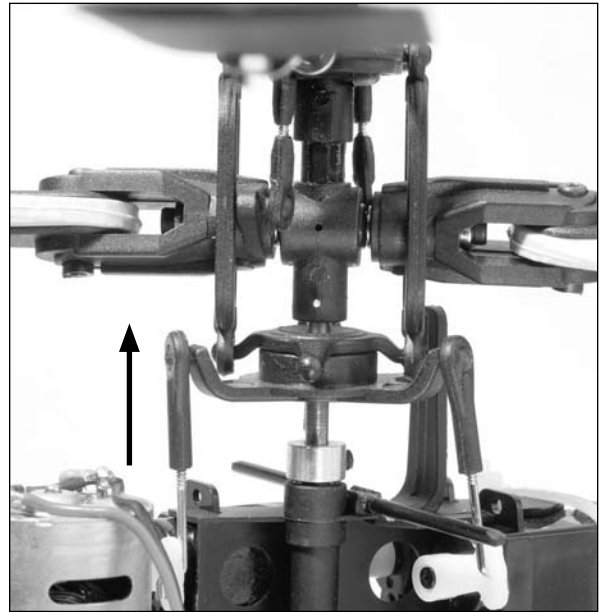
Turn the transmitter on first and lower the throttle stick and trim completely. Then, plug the battery into the battery lead of the 3-in-1 unit.



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.



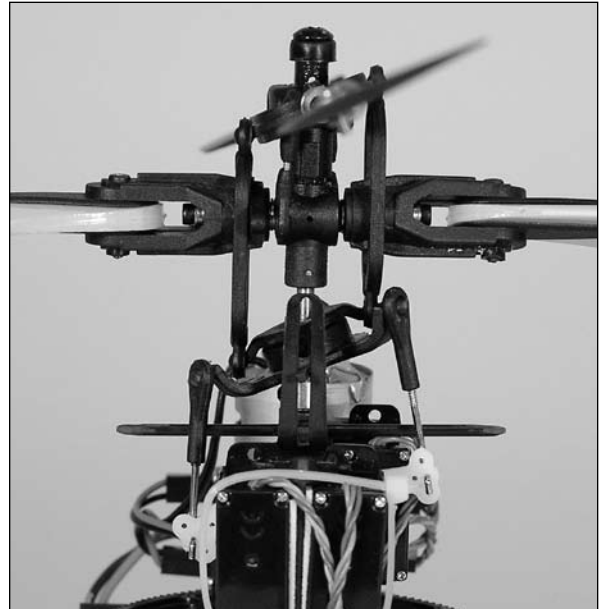
Again viewing the helicopter from the left or right side, move the right-hand stick forward and aft to check elevator pitch control. When the stick is pushed forward, the swashplate should also tilt forward.



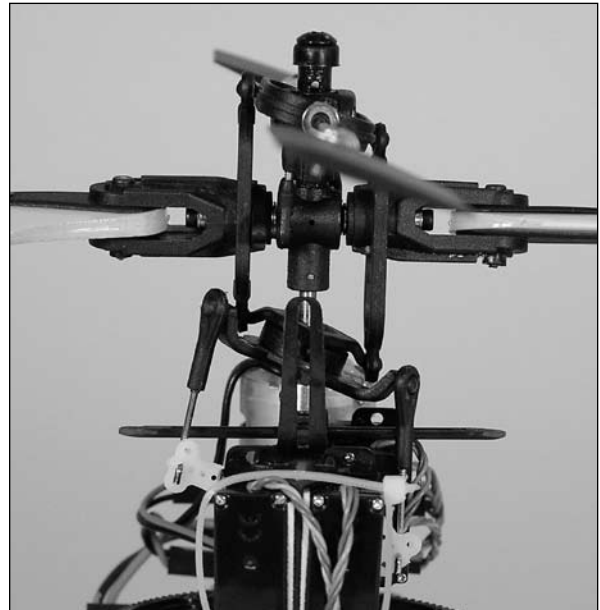
With the stick pulled back, the swashplate will tilt toward the rear.



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

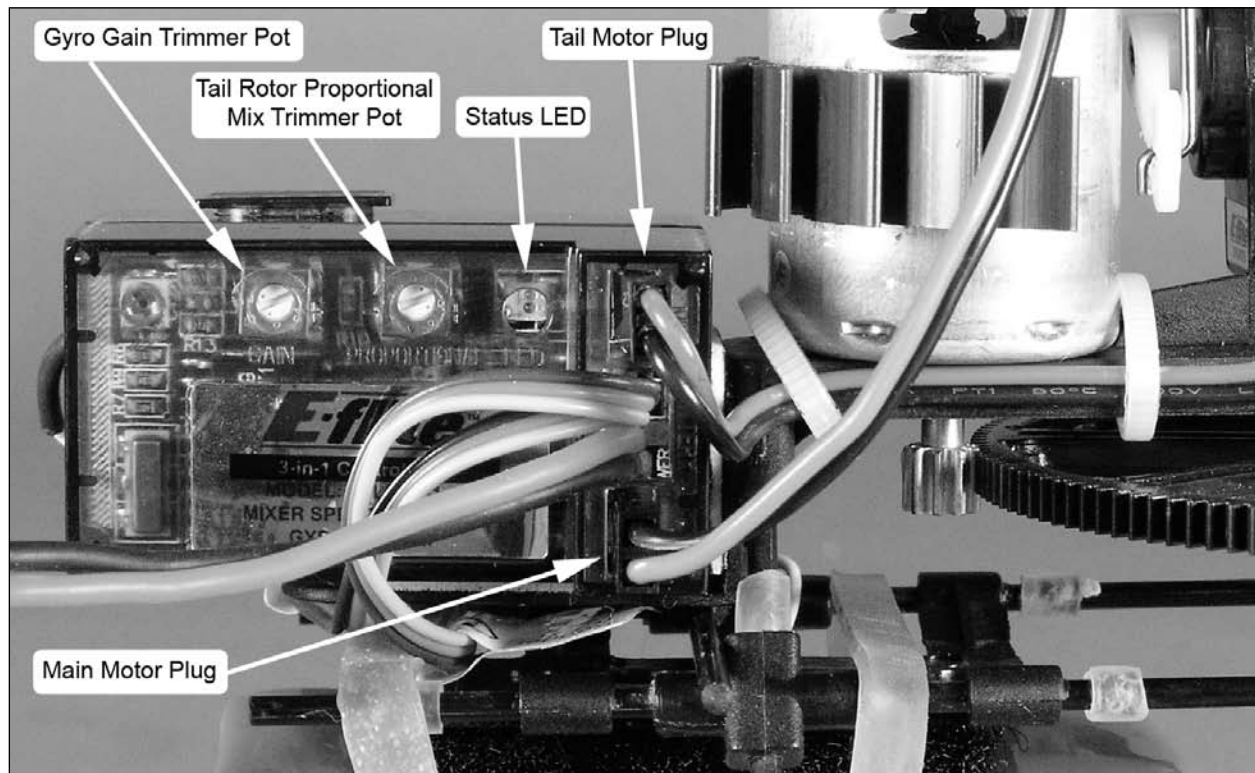
Channel 6 – Left-hand rear “pitch” servo

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+ 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+, unplug the flight battery from the 3-in-1 unit and reconnect the main and tail motor plugs 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 23 for reference.

3-in-1 Control Unit Description, Arming and Motor Control Test

The unique 3-in-1 Control Unit installed on your Blade CP+ 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+ model is test flown at the factory with adjustments made to both the gain and proportional trimmer pots, further adjustments 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 checklist contains the steps you must follow to ensure proper arming and operation of the 3-in-1 unit as well as proper motor response:

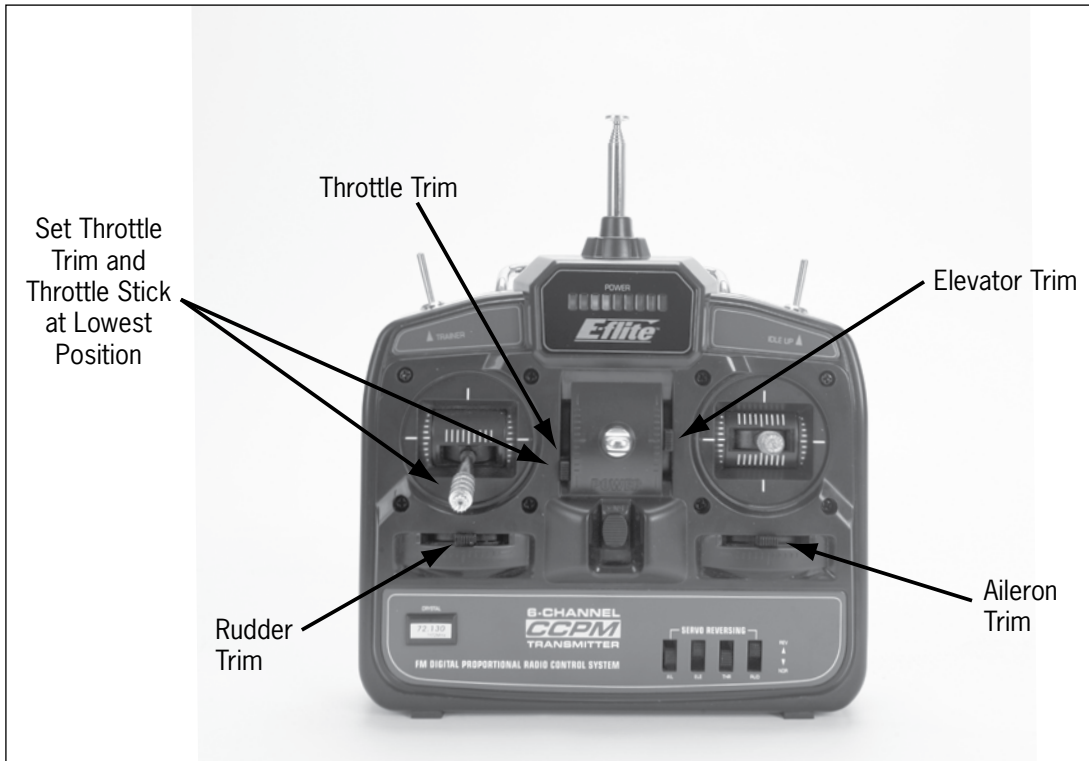
- Each time before you fly you must ALWAYS turn on the transmitter power first before connecting the flight battery to the 3-in-1 unit. Never connect the flight battery to the 3-in-1 unit before powering on the transmitter first. After each flight, be sure that you never turn off the transmitter before 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+, 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. (see pages 37–38 for more information)

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.



- ❑ After confirming that 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 connect 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.

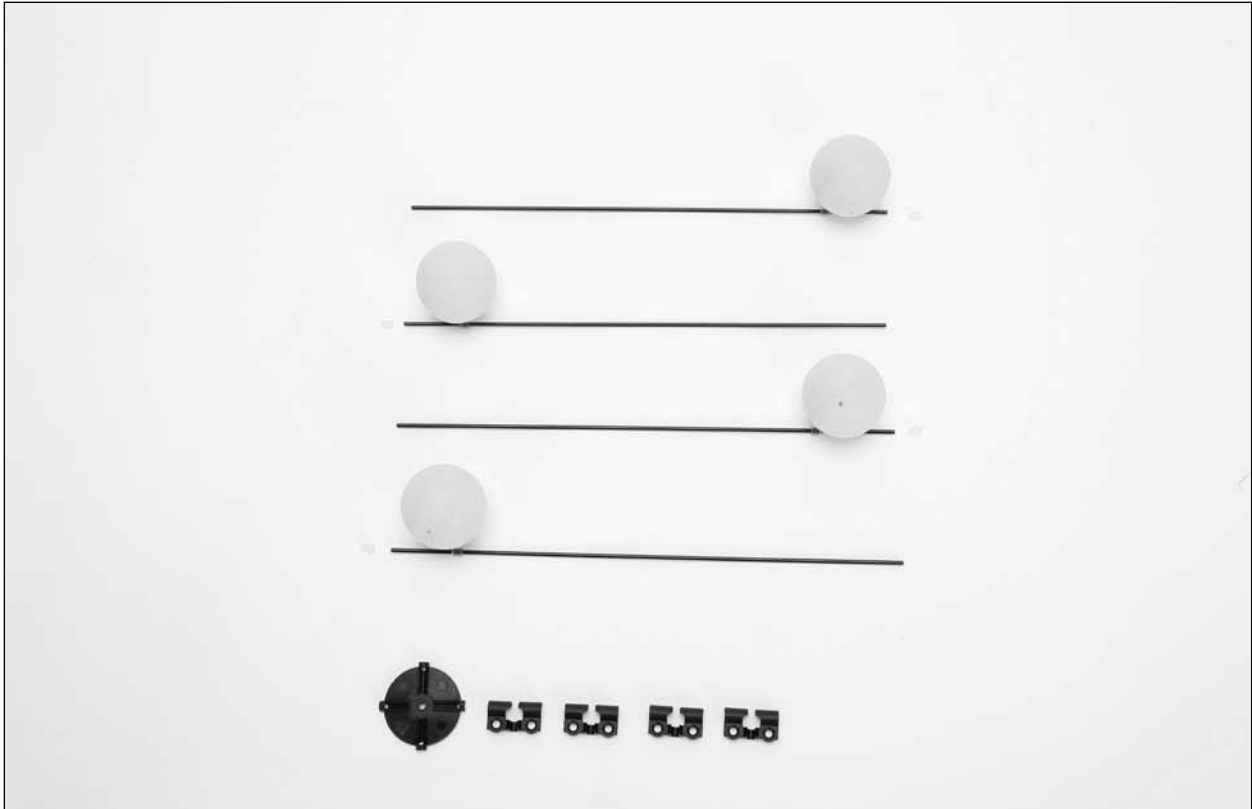
- Once you have placed the helicopter in a safe area, free of obstructions, and are clear of the rotor blades, you can safely begin to power up the model.**
- Advance the throttle stick slowly, just until both the main and tail rotor blades begin to spin. Note the direction that the main and tail rotor 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, 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.
- After confirming that both rotor blades are rotating in the correct directions, and the tail rotor is responding properly to rudder inputs, you can now lift your Blade CP+ is ready for flight. However, please be sure to review the following sections of the manual BEFORE proceeding with the first flight.

Installing the Training Gear

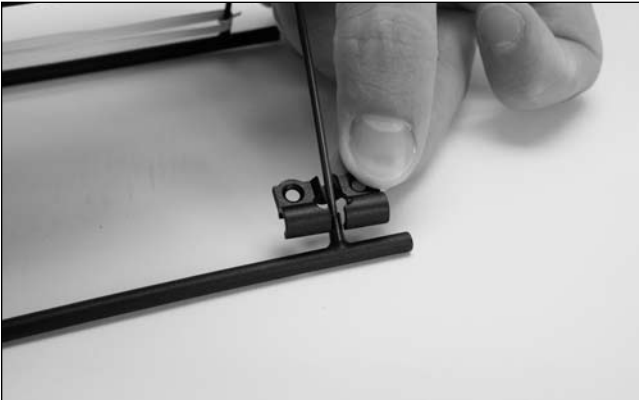
If the Blade CP+ is your first single-rotor and/or collective-pitch equipped helicopter model, we suggest that you install the included Training Gear Set before making your first flight. The training gear helps to further increase the stability of the model while also providing added support and cushioning to prevent tip-overs and damage to the model from abrupt landings.

Installing the training gear takes only a few minutes following these steps:

- The Training Gear Set includes four plastic balls, four tubing keepers, four training gear rods, four training gear rod-to-landing skid attachments and one training gear rod mounting base.



- Locate the four training gear rod-to-landing skid attachments. These are the black plastic parts with two relatively large holes in them. Slip the attachments around the landing gear struts (the “legs” that join the landing skids to the frame) from the inside, then snap the clips into place on the skids. Rotate the attachments until they are resting against the landing strut-to-landing skid joint.



- After installing all four attachments, locate the four training gear rods and rod mounting base. Note that the rod mounting base has four channels into which the training gear rods will mount. The “open” side of these channels will face upward toward the bottom of the helicopter when properly installed.

- Carefully pass each of the rods through the holes in the attachments on the landing skids and into the channels on the base. The rods will pass through the front holes of the forward attachments, and the back holes of the rear attachments. You may find it necessary apply some light pressure to the rods, base and landing skids when installing all four rods in the base. This is typical, however, take care to not pull the landing struts out of their mounts in the frame and to not damage any of the parts.

Once all four rods are installed, note that the landing skids may be pulled slightly inward under their pressure. This is also typical as the pressure helps to keep the training gear in place.



- Install one plastic ball on the exposed end of each rod. Then, slide one tubing keeper over the end of each rod to prevent the ball from sliding off. Adjust the position of the tubing keepers that were factory-installed on each rod until they are just touching each plastic ball. The tubing keepers should then be positioned so that the ball can spin freely on the rod, without too much movement side-to-side between the keepers.

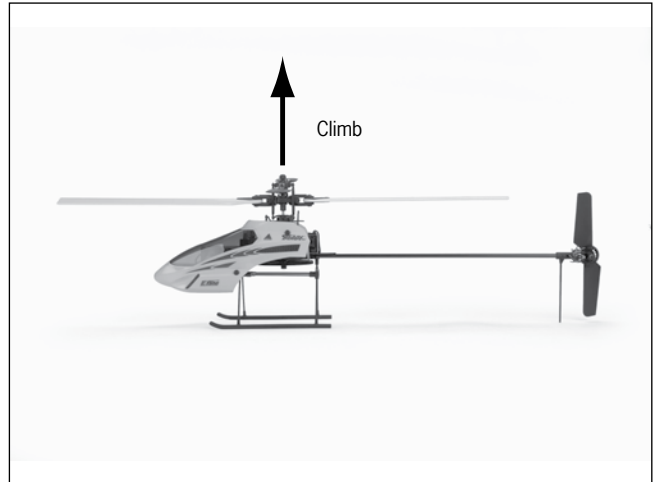
Your Blade CP+ is now ready for flight with the training gear installed.



Understanding the Controls

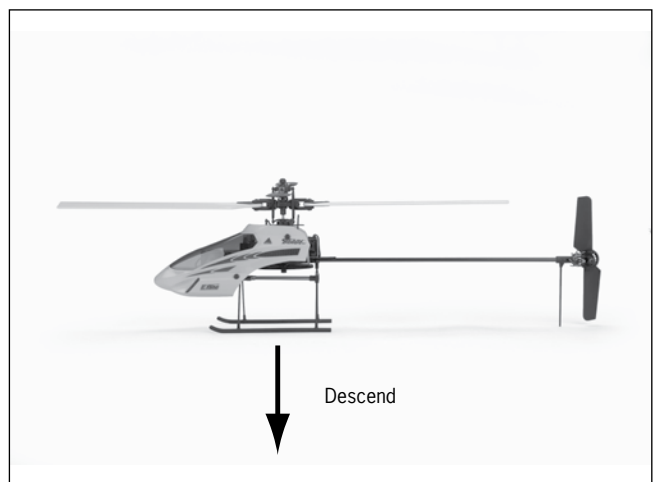
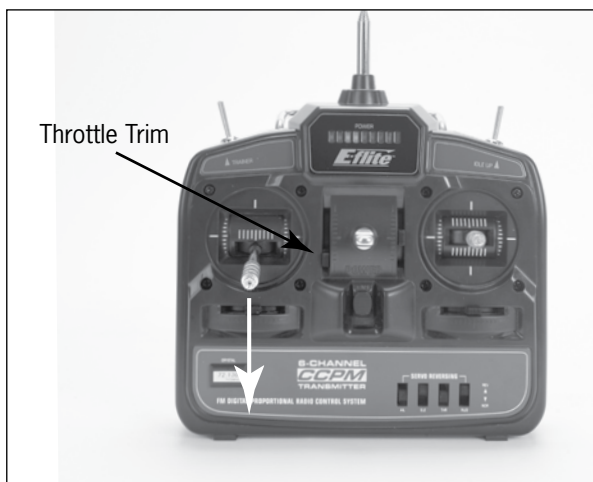
If you are not familiar with the controls of your Blade CP+, please take a few minutes to familiarize yourself with them before attempting your first flight.

The left-hand stick on the transmitter controls both throttle/collective pitch (climb/descend) and rudder (yaw left/right). When the left-hand stick and throttle trim lever are in their lowest positions, the main rotor blades will not spin. Advancing the stick upward will increase the speed and pitch of the main rotor blades. Increasing the speed and pitch of the main rotor blades will cause the model to climb.



Decreasing the speed and pitch of the main rotor blades by lowering the left-hand stick will cause the model to descend.

NOTE: When you are in the "Idle Up" flight mode (as outlined on pages 37–38), lowering the left-hand stick will actually cause the speed of the main rotor blades to increase while also increasing the amount of negative pitch the main rotor blades can offer. This allows the model to be flown inverted and to perform aerobatics like loops and rolls when the optional-use symmetrical rotor blades are installed.

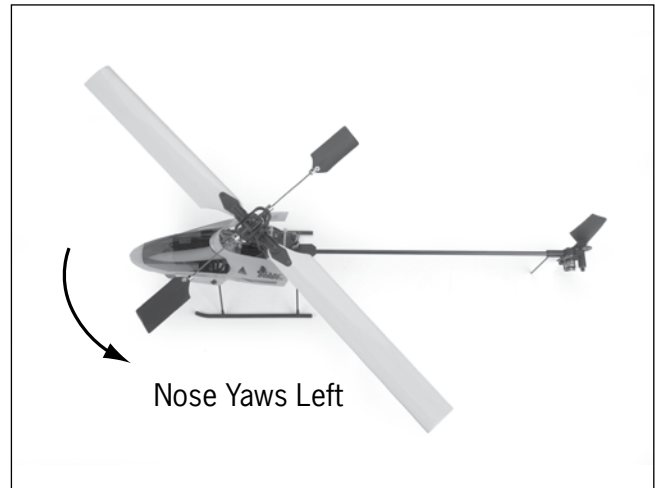


After lifting the model off the ground you can balance the throttle by carefully moving the left-hand stick up and down so that the model will hold a stationary hover without climbing or descending.

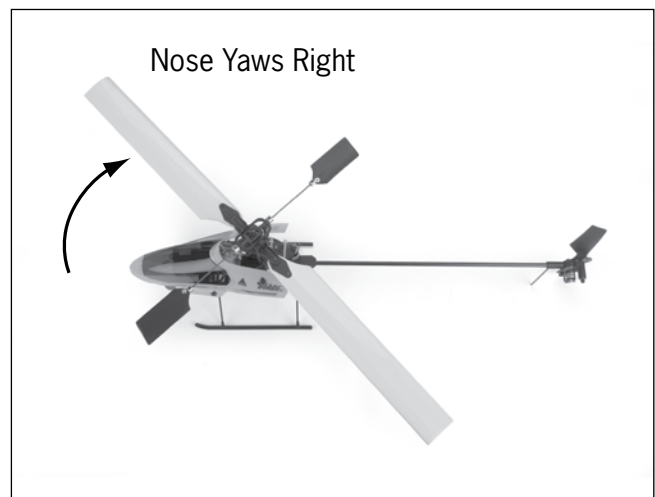
Note: You can also use the throttle trim to adjust the throttle/collective pitch value for a given stick position. For example, raising the throttle trim will allow the model to hover at a lower throttle stick position. However, if you do raise the throttle trim, you **MUST** remember to lower it (and the throttle stick) to the lowest possible position **IMMEDIATELY** in the event of a crash or rotor blade strike.

Failure to lower the throttle trim (and throttle stick) to its lowest possible position immediately in the event of a crash could result in damage to the main motor ESCs in the 3-in-1 unit, which may require replacement of the 3-in-1 unit.

Moving the left-hand stick to the left will turn (yaw) the nose of the helicopter to the left about the axis of the main shaft. This is accomplished by decreasing the speed/rpm of the tail rotor blade.

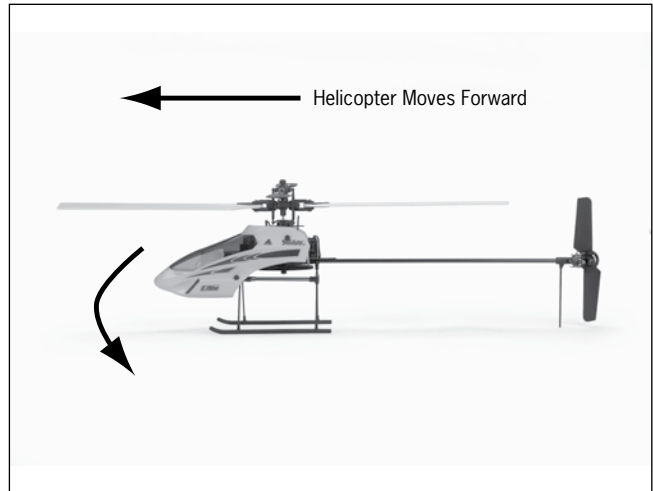


Moving the stick to the right will turn (yaw) the nose of the helicopter to the to the right about the axis of the main shaft. This is accomplished by increasing the speed/rpm of the tail rotor blade.

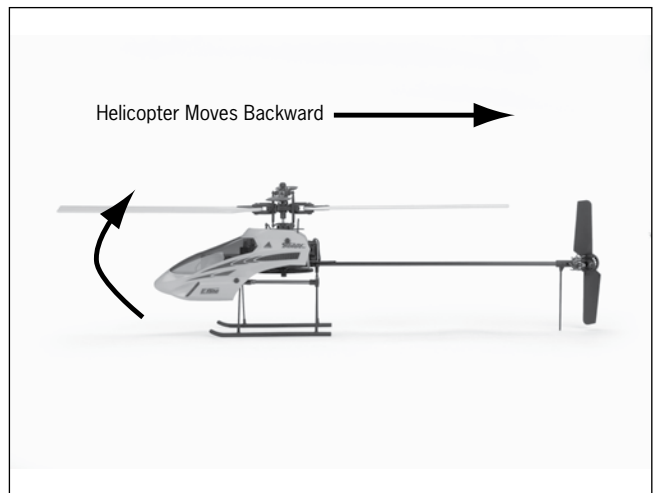


The rudder trim can be used to help keep the nose of the helicopter from rotating to the left or right when in hover with no rudder stick input. For example, if the nose of the helicopter drifts to the right when in hover, add left rudder trim until the nose stays as close to straight as possible. Also note that further adjustments to the rudder trim can be made using the Main Motor Proportional Mix Trimmer Pot as outlined on page 35.

The right-hand stick controls both elevator (pitch fore/aft) and aileron (roll). Pushing the stick forward will pitch the nose of the helicopter downward, allowing the helicopter to be flown forward.

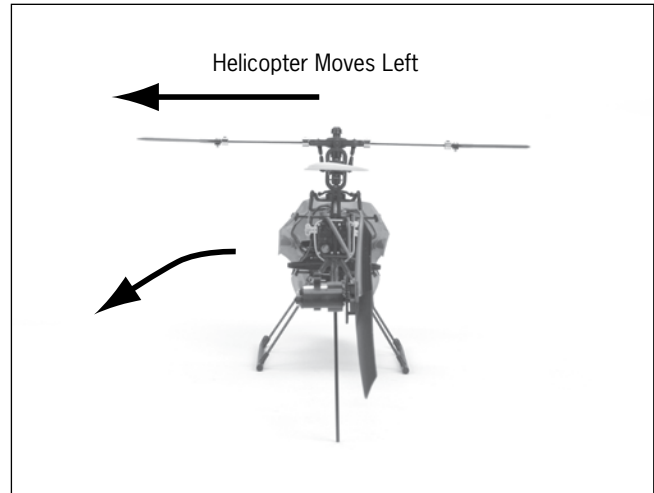


Pulling the stick backward will pitch the tail of the helicopter downward, allowing the helicopter to be flown backward.

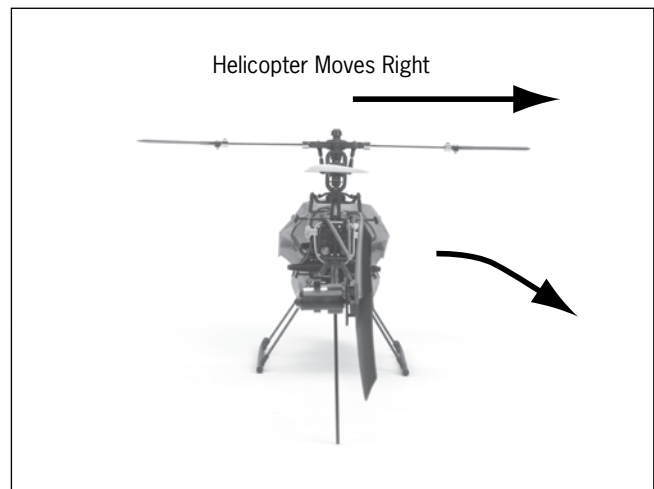


The elevator trim can be used to help keep the helicopter from drifting forward or backward when in hover with no elevator stick input. For example, if the helicopter drifts forward when in hover, pull the elevator trim downward until the helicopter hovers as level as possible with no forward drifting.

Moving the stick to the left will roll the helicopter to the left, allowing the helicopter to be flown to the left.



Moving the stick to the right will roll the helicopter to the right, allowing the helicopter to be flown to the right.



The aileron trim can be used to help keep the helicopter from drifting left or right when in hover with no aileron stick input. For example, if the helicopter drifts to the right when in hover, add left aileron trim until the helicopter hovers as level as possible with no drifting to the right.

Once you have become familiar with the controls of the helicopter, you are almost ready to fly.

Choosing a Flying Area

When you are ready for your first flight, you will want to select a large, open area that is free of people and obstructions. Until you have properly trimmed, adjusted and become familiar with the handling of the Blade CP+, we suggest that your first and subsequent test flights be made outdoors in CALM air only.

While it is possible for the Blade CP+ to be flown indoors, we suggest that it only be in a very large indoor facility such as a gym that is also free of people and obstructions. The Blade CP+ is not intended to be flown in small indoor areas or facilities where it may only be possible to fly a coaxial helicopter like the Blade CX or Blade CX2.

Flying the Blade CP+

Having followed the proper 3-in-1 control unit arming procedure, confirmed proper control of the servos and motors, and found a suitable flying area, your Blade CP+ is ready for flight.

- Slowly raise the throttle stick, increasing the speed of the main rotor blades until the model begins to lift off. Do not raise the throttle stick too quickly as the model could climb too fast causing you to lose control or make contact with objects above.
- Lift the model off the ground just a few inches and concentrate on balancing the left-hand (throttle) stick position so that the model holds a steady hover altitude. In some cases it may be best to make a few short “hops” to an altitude of just a few inches until you become familiar with the control inputs and trim settings required to maintain a steady hover and altitude.

As you will find, the Blade CP+ requires minor throttle/collective pitch adjustments to maintain its altitude in hover. Remember to keep these adjustments as minimal as possible as large adjustments could result in a loss of control and/or a possible crash.

Note: 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 39 of this manual for more information.

- While attempting to establish a low-level hover, you can also check to see if any trim adjustments are required to help keep the Blade CP+ from constantly drifting in various directions. If you find the helicopter constantly drifts without any directional control input, it will be best to land the model before making any adjustments to the trim levers. Additional details regarding the location and function of the trim levers can be found on pages 29–32.

If the nose of the helicopter is drifting to the left or right, you will need to adjust the rudder trim. You can also adjust the Tail Rotor Proportional Mix if you experience any difficulties in trimming nose drift with the rudder trim lever only. Please see page 35 for more information regarding Tail Rotor Proportional Mix Trimmer Pot adjustment.

If the helicopter is drifting forward or backward, you will need to adjust the elevator trim.

If the helicopter is drifting to the left or right, you will need to adjust the aileron trim.

Continue to make trim adjustments until the helicopter can hover at a low altitude with very little drifting and directional control input. If the Blade CP+ is your first single-rotor and/or collective pitch helicopter model, it may be best to have the help of an experienced helicopter pilot to trim the model for you before making your first flight.

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.

Note: If you find that your model “jumps” either upward or downward when in a hover, with little to no control input, you may need to adjust the overall pitch curve so that it is better matched to the throttle curve for smoother response. By decreasing the length of both adjustable pitch control links by approximately one-half to one full turn, it will lower the pitch of the rotor blades for a given throttle/collective stick position. This will allow the model to hover at a higher headspeed (main rotor blade RPM), offering a smoother, more stable feel and a pitch curve that is better matched to the throttle curve.

- Once you have the Blade CP+ properly trimmed and maintaining a stable low-level hover, practice using the rudder, elevator and aileron controls to get a feel for how the helicopter responds to control inputs. Remember to keep the control inputs as minimal as possible to prevent over-controlling the helicopter, especially when in hover.

- After becoming comfortable with hovering the Blade CP+ at low-levels of altitude just a few inches off the ground, you can transition to hovering and flying the helicopter at higher altitudes of approximately three to four feet. At these higher altitudes you will be able to get a feel for the flight characteristics of the Blade CP+ when it is flying out of “ground effect.”
- Don’t be afraid to set the helicopter down on the ground quickly by lowering the throttle when approaching walls or other obstacles to help prevent main rotor blade strikes. Also, the included Training Gear Set will help to further prevent damage to the helicopter in the event that you must make an abrupt landing to avoid walls or other obstacles when it is installed.
- If at any time during flight you feel like the helicopter is drifting out of control, it is best to return all controls to neutral and to lower the throttle stick and trim completely. This will help to reduce the amount of damage that may be caused in the event of a crash.
- **IN THE UNFORTUNATE EVENT OF A CRASH OR ROTOR BLADE STRIKE, NO MATTER HOW MINOR OR MAJOR, YOU MUST LOWER BOTH THE THROTTLE (LEFT-HAND) STICK AND THROTTLE TRIM TO THEIR LOWEST POSSIBLE POSITION AS QUICKLY AS POSSIBLE TO PREVENT DAMAGE TO THE ESCS OF THE 3-IN-1 UNIT.**

Failure to lower both the throttle stick and throttle trim to their lowest possible positions in the event of a crash could result in damage to the main motor ESCs in the 3-in-1 unit, which may require replacement of the 3-in-1 unit.

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.

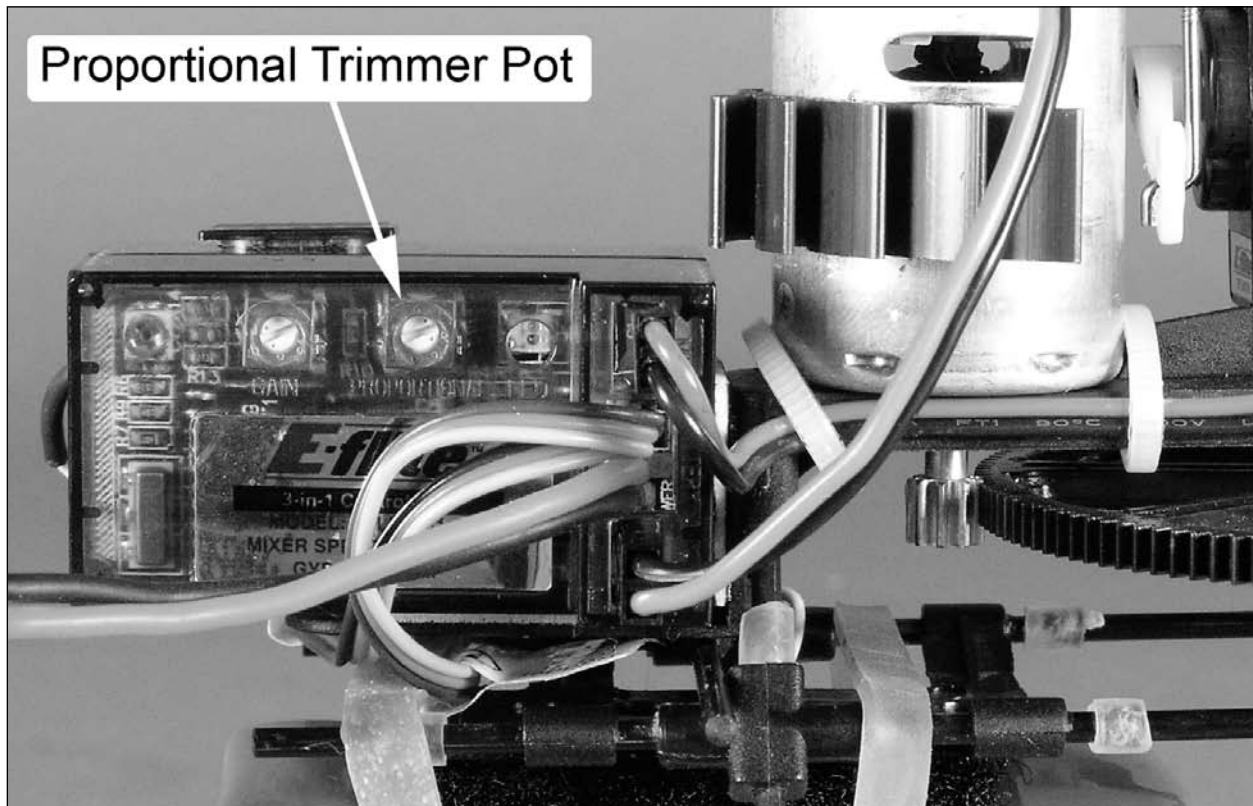
Note: Crash damage is not covered under warranty.

- It is extremely important when hovering and flying the Blade CP+ to be 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 the ability to maintain hover or flight due to significant loss of 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.

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.

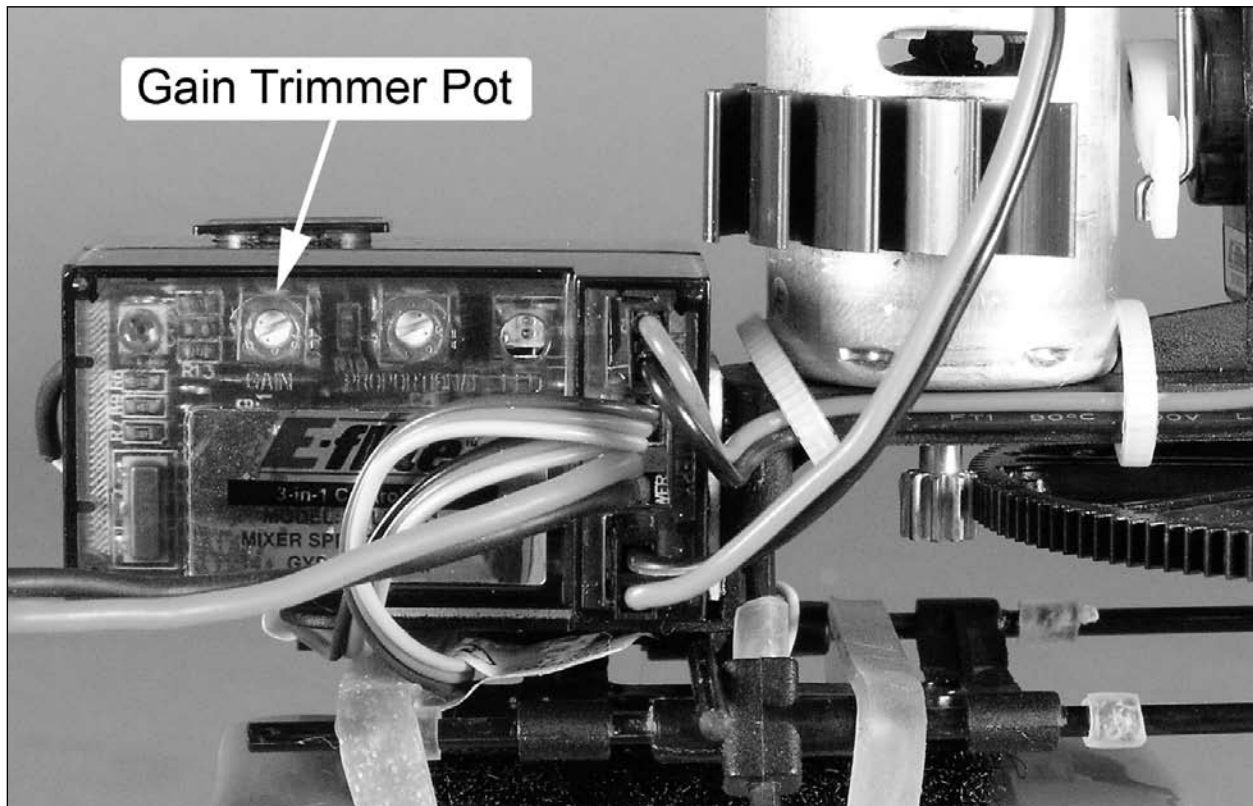
- As the battery output voltage decreases throughout the flight, it may be necessary to make small trim adjustments to the rudder in order to keep the nose of the helicopter straight. Usually a few clicks of right rudder may be required, and no further adjustment of the proportional trimmer pot will 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 46–51.

- 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.

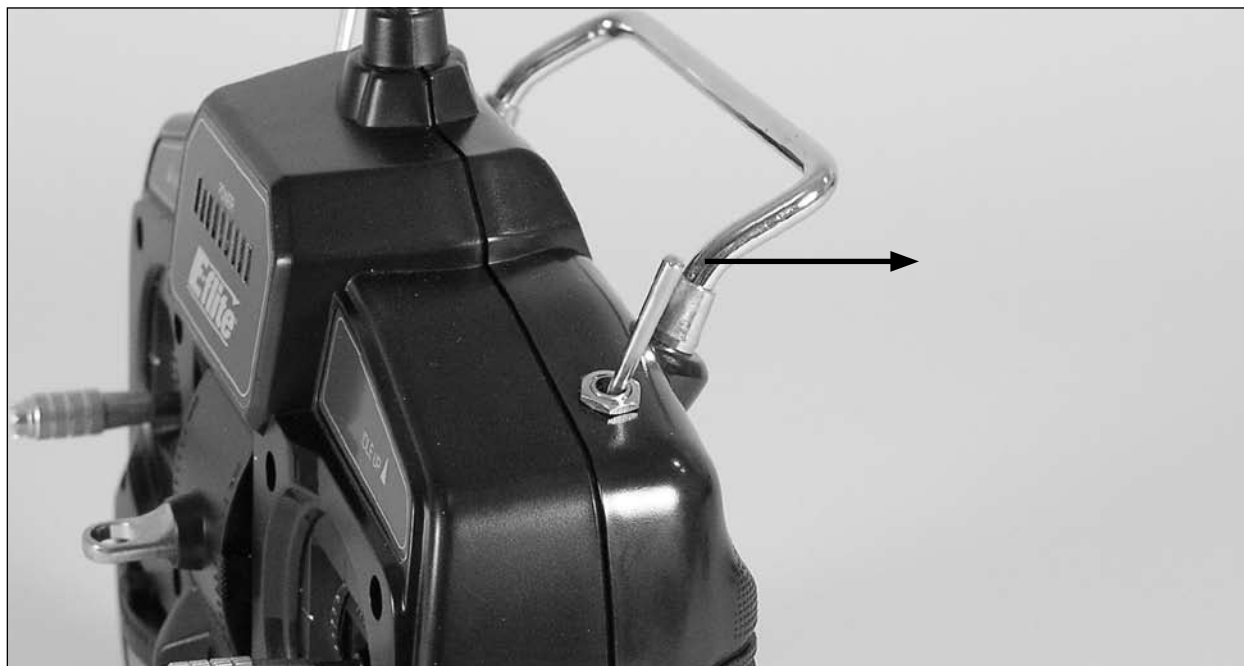
Note: When adjusting the gyro gain trimmer pot, the changes will take effect without the need to power down and re-arm the 3-in-1 unit. Please exercise extreme caution when adjusting the gyro gain trimmer pot with the model armed to prevent personal injury or damage to the model.

Normal and Idle Up Flight Modes

The 6-channel FM transmitter included with your Blade CP+ 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 "stunt" (aerobatic) flight modes during flight.



With the switch toggled toward the rear of the transmitter, the Blade CP+ will be flying in "normal mode." In this flight mode, the throttle curve is linear from 0% to 100%, with a pitch range of 0 degrees to +10 degrees. (See Page 40 for additional data and graphics relating to the throttle and pitch curves preset for your Blade CP+.) 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+ will now be flying in the “stunt (aerobatic)” flight mode. In this flight mode, the throttle curve is “V” shaped from 100% to 100% with 50% throttle at mid-stick, and a pitch range of -10 to +10 degrees (See page 40 for additional data and graphics relating to the throttle and pitch curves pre-set for your Blade CP+). This flight mode is preferred for forward flight, aerobatics and inverted flying (requires installation of the included symmetrical main blades).



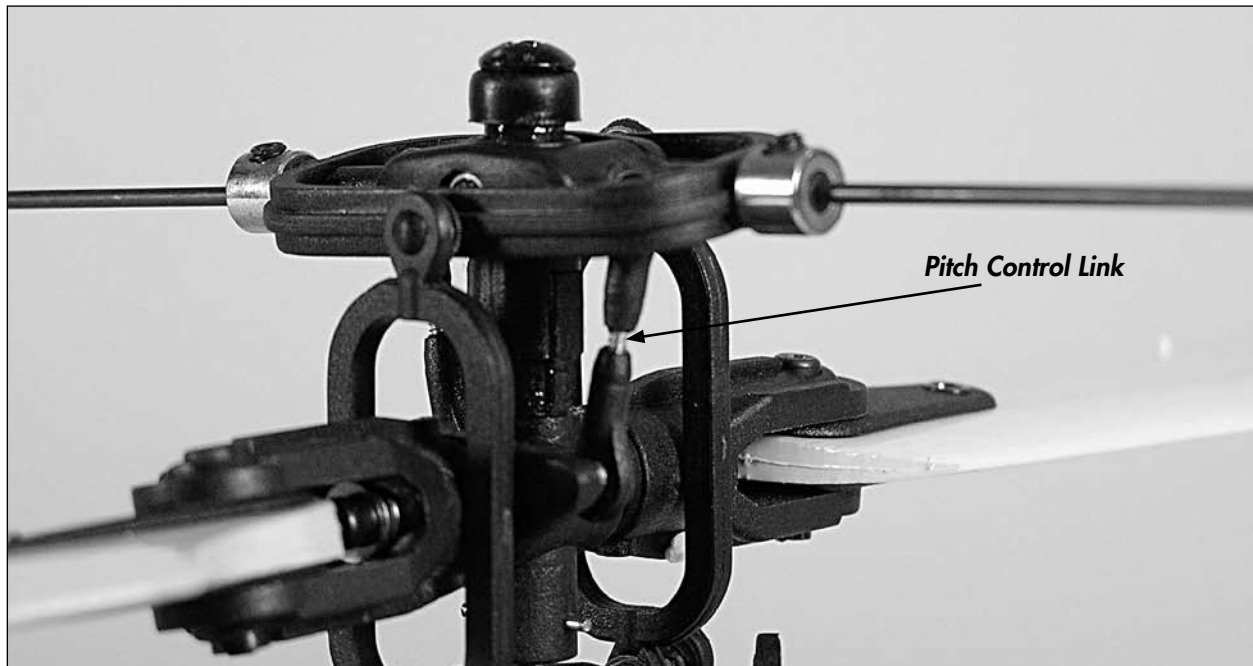
Note: When in stunt mode, even with the throttle stick all the way down, the blades and motors will continue to spin. You must use the normal flight mode to safely turn off the motors. For safety, the 3-in-1 unit will not arm if the flight battery is plugged in and the flight mode switch is in the stunt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

When switching between normal and 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 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.

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.

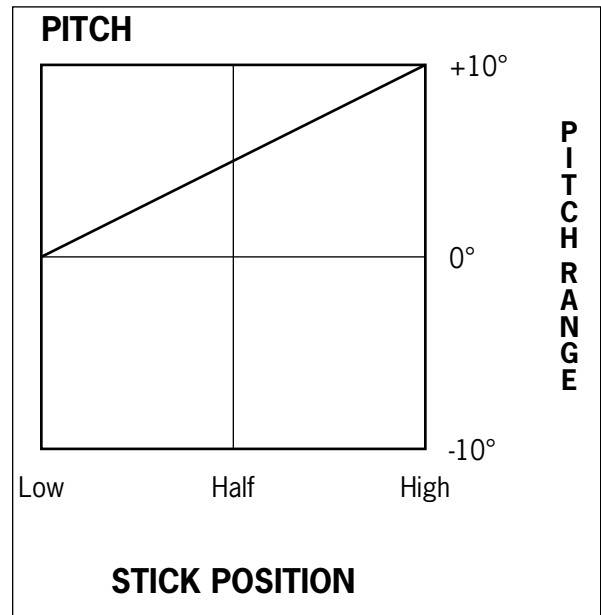
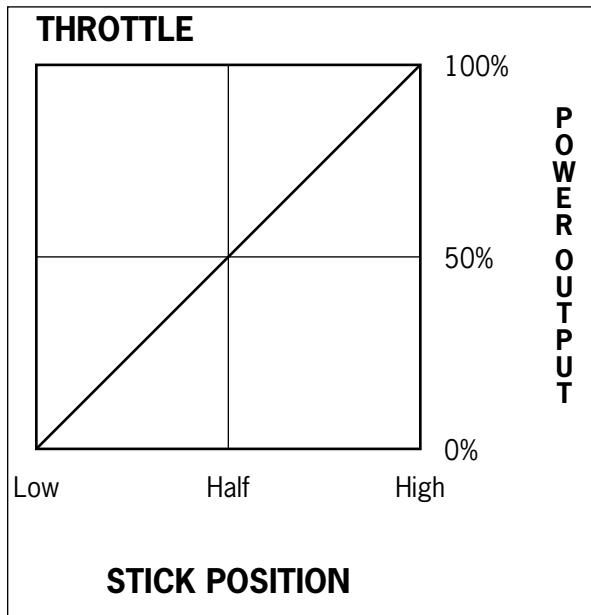
Although the curves have already been factory set, minor changes to the pitch curves can also be made by adjusting the Pitch Control Links. Lengthening both Pitch Control Links by equal amounts will increase the pitch of both blades for a given throttle/collective stick position. Shortening both Pitch 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" section of this manual (page 40).

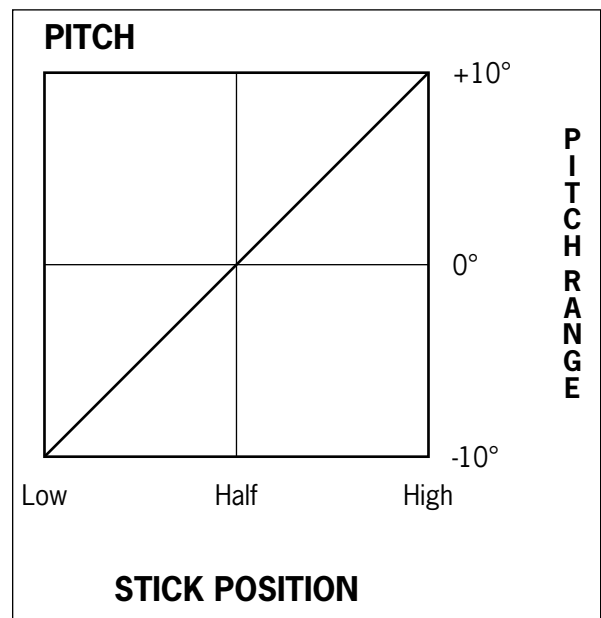
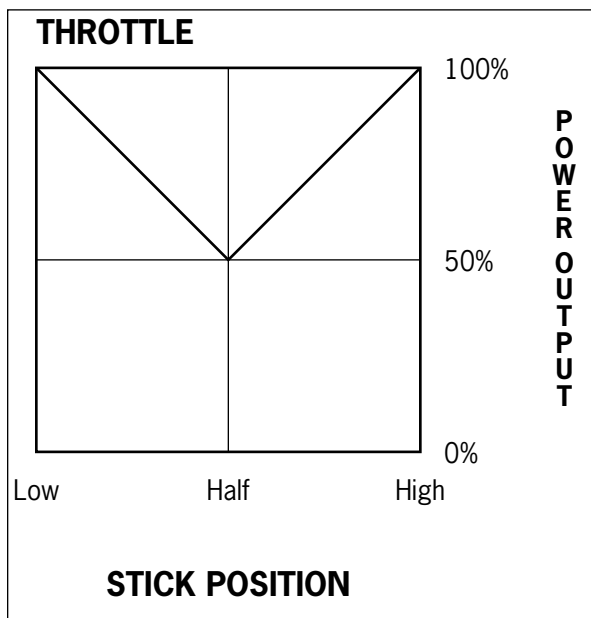
Programmed Throttle and Pitch Curves for the Normal Flight Mode

Right from the box, your Blade CP+ 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 transmitter has been programmed for the following throttle and pitch curves in the idle up (stunt) flight mode:



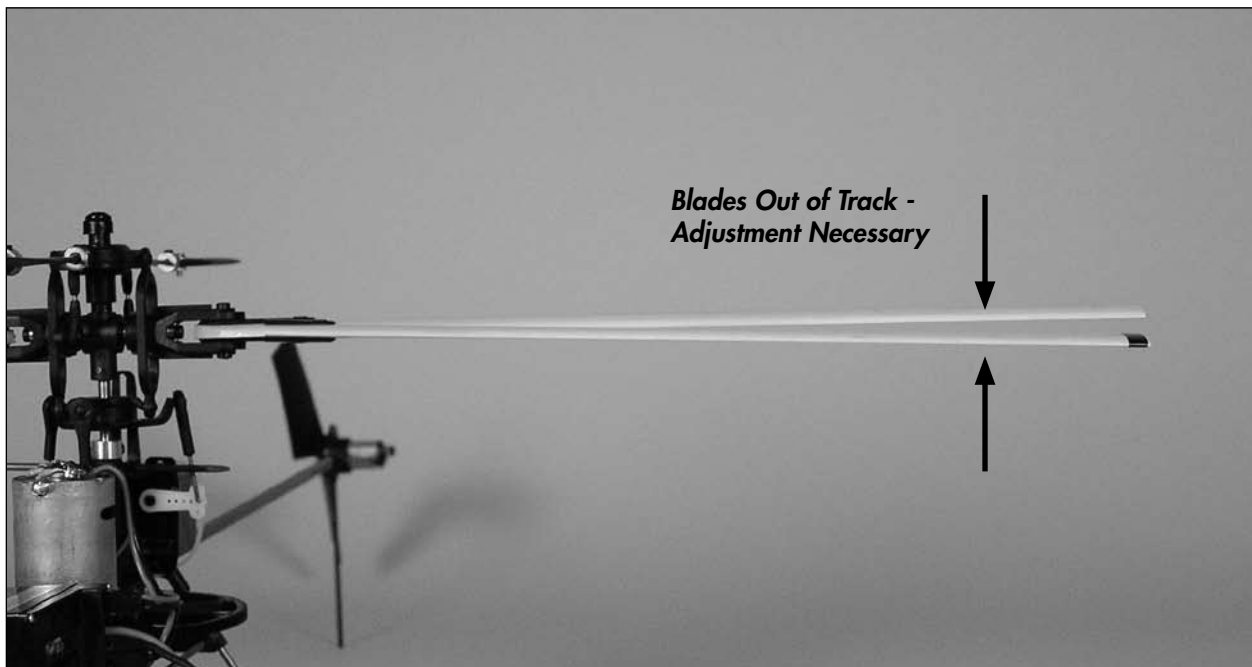
Main Rotor Blade Tracking Adjustment

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+. Main rotor blades that are out of track may cause vibration, instability, and loss of power due to increased drag. Although each Blade CP+ 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+ 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.



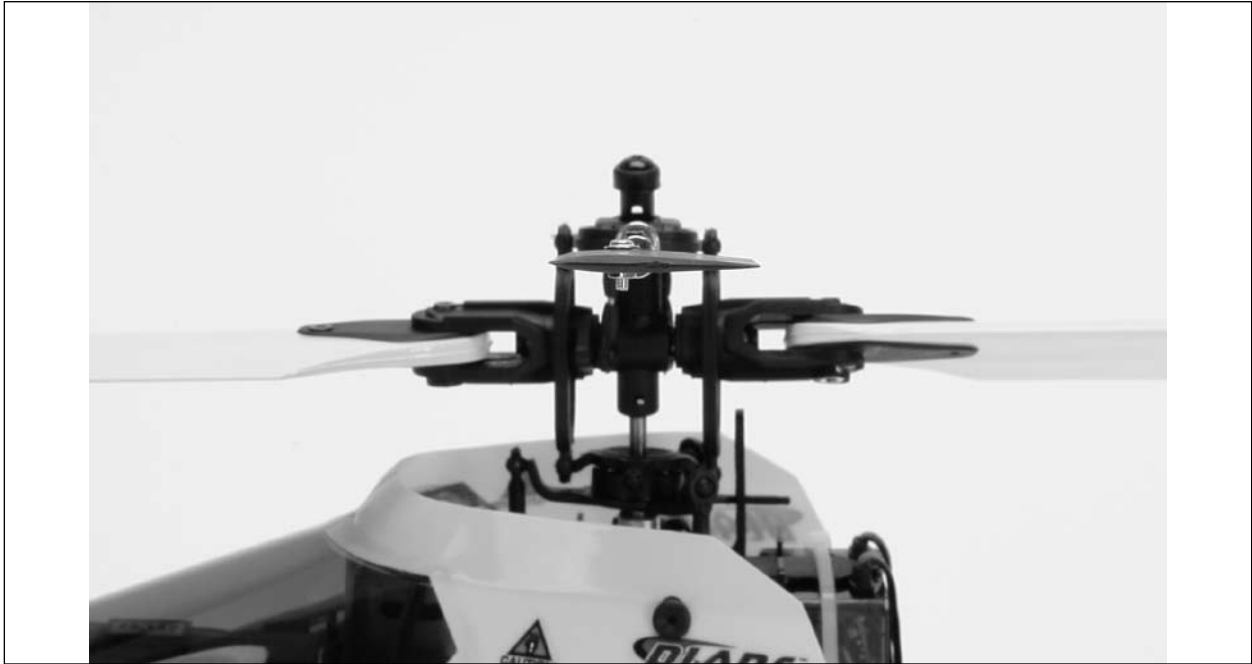
Typically, not much adjustment should be necessary to properly track the main rotor blades. If significant adjustments are required, be sure to double-check the length of both pitch control links (they should be close to the same length) and also check the blades for warps or twists. In most cases, you 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:

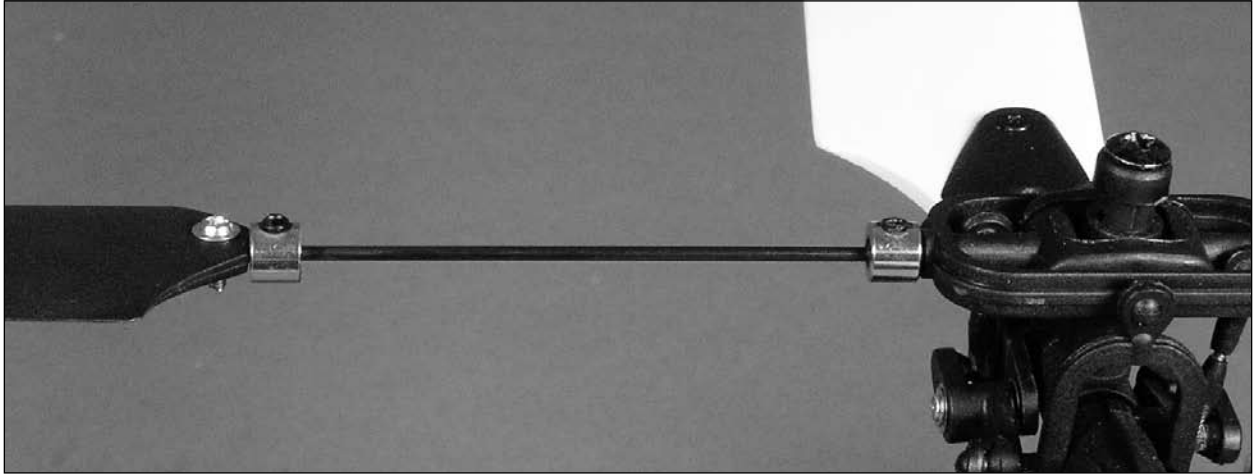
- First, be certain that both flybar paddles are equally spaced from the ends of the paddle control frame.
- Next, be certain that both flybar paddles are parallel to the paddle control frame.
- If you have made certain that both flybar paddles are parallel to the paddle control frame, they should now 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+ is equipped with flybar weights that are secured in their outermost position against the flybar paddles.



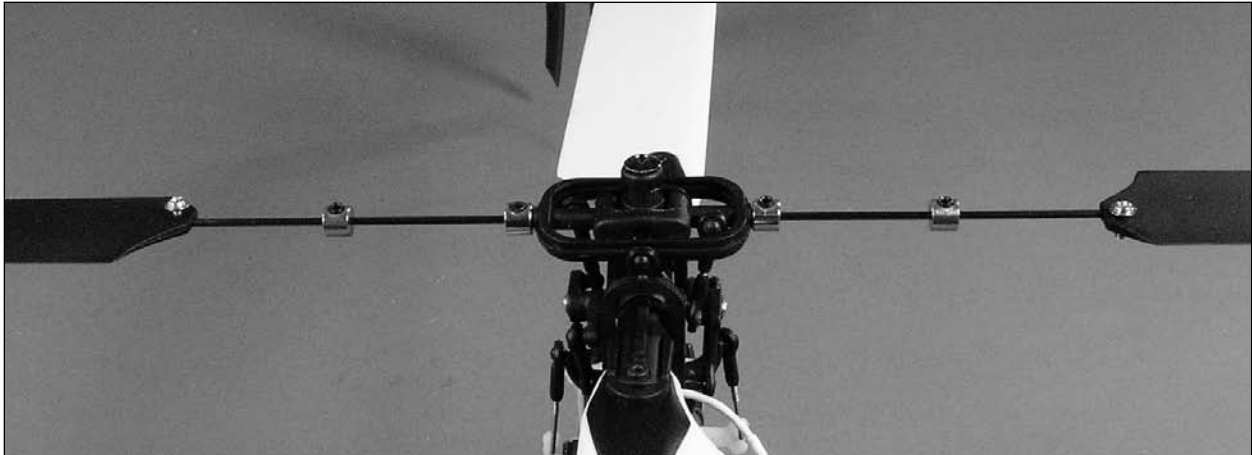
In this position, the weights help to provide added stability by increasing the amount of cyclic input required to overcome the gyroscopic force of the flybar paddles. In general, flying with the weights in this position will still provide good cyclic response, but with reduced sensitivity (especially 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, we recommend the addition of one or 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 installed, the cyclic response will become noticeably less responsive.



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+ 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 64–65 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.

In stock form, the Blade CP+ is equipped with Hiller-only mixing. This means that all cyclic inputs are directly output from the swashplate to the flybar paddle control frame. As a result, all cyclic inputs are fed directly to the flybar paddles, resulting in cyclic control response. However, because only the paddles are receiving the cyclic inputs from the swashplate, there is a limit to the amount of cyclic control response possible.

If you’re interested in even quicker and more aggressive cyclic response, install the optional Bell Mixer Upgrade Kit (EFLH1170). This kit includes all of the parts required to add Bell mixing to the rotor head of your Blade CP+ in just a few minutes time. Bell mixing allows cyclic inputs to be fed to the main rotor blades. The end result is Bell-Hiller mixing, which means that both the main rotor blades and flybar paddles are being fed cyclic inputs directly from the swashplate. This results in a significant increase in cyclic control response, allowing you to perform even the most aggressive aerobatic maneuvers.

Optional Symmetrical Main Rotor Blade Installation

Your Blade CP+ is equipped with a set of flat bottom main rotor blades (EFLH1147A) right from the box. These rotor blades offer the most possible lift for positive pitch (upright) maneuvers, and the longest flight durations when hovering and performing upright forward and backward flight.

However, also included in the box is a set of optional-use symmetrical main rotor blades (EFLH1147B). These blades feature a fully symmetrical airfoil that offers the same amount of lift when the model is flown upright or inverted in the "Idle Up" flight mode and the appropriate amount of pitch is used. Use of the symmetrical rotor blades will allow you to perform aerobatic maneuvers such as loops, rolls and inverted flying.

Installation of the symmetrical main rotor blades takes just a few minutes. Use the 1.5mm hex wrench included in the Mounting Accessories & Wrench bag to remove the main rotor blade mounting bolt and nut from each blade grip. Remove the flat bottom main rotor blades and replace them with the symmetrical main rotor blades. Be sure that the thicker section of the symmetrical rotor blades (the leading edges) are to the front when the rotor blades spin in the clockwise direction (when viewed from above).

Optional Heading Lock Gyro Installation and Setup

A unique feature of the Blade CP+ 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's an excellent choice when looking for the best in tail and heading lock performance.



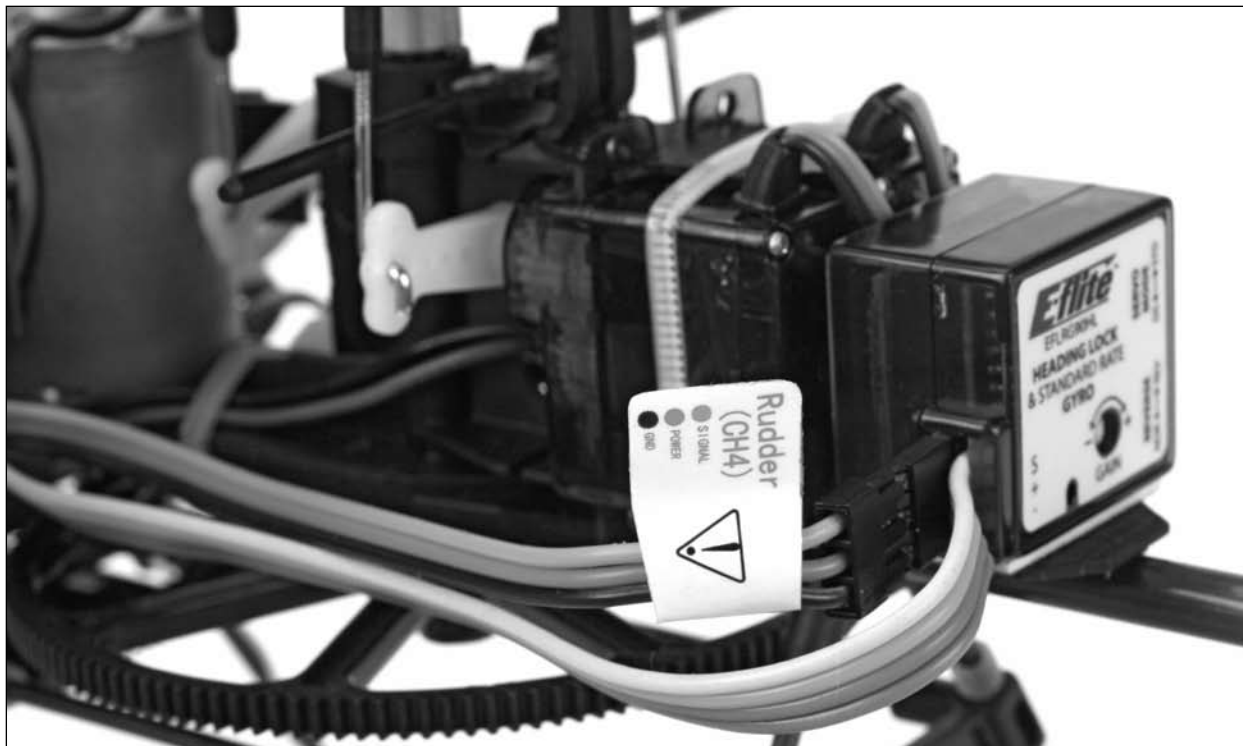
Note: The following steps outline the installation and setup of the G90 gyro, but can also be used as reference for many other heading lock type gyros. However, we do recommend that you review the manual included with your chosen gyro first before proceeding with installation and setup of the gyro in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

- Install the gyro using its included foam mounting tape (or the foam mounting tape found in the Blade CP+'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 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.



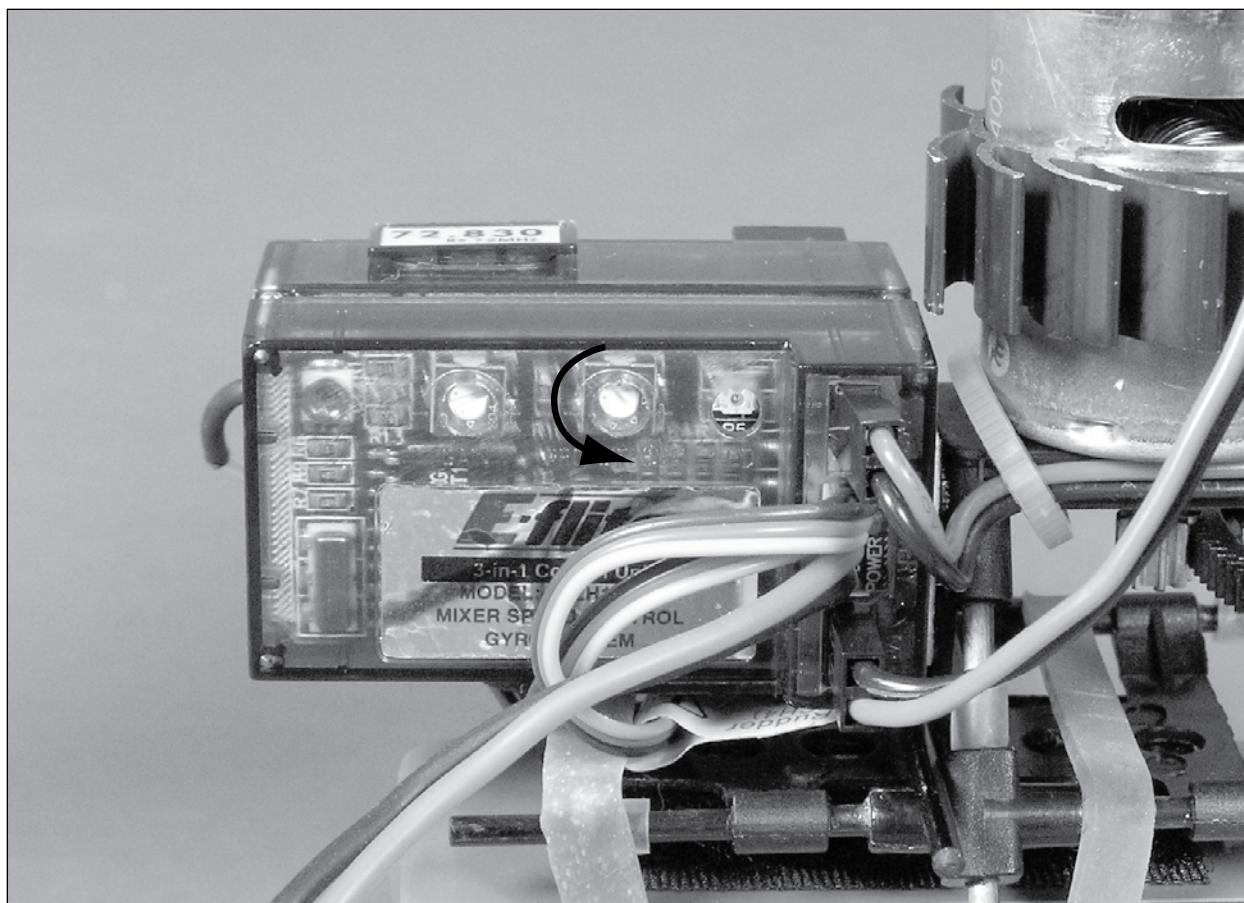
- Remove the 3-in-1 control unit's rudder channel lead (marked with a small label) from channel 4 of the receiver, and plug this lead into the servo connector of the gyro. Then, plug the rudder channel lead of the gyro into channel 4 of the receiver, ensuring proper orientation and polarity direction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



- Because the transmitter included with your Blade CP+ does not offer proportional control of the fifth channel, it will not be possible for you to use the remote gain control option of the G90 for setting the gyro mode and gain from the transmitter. This means that the gyro's auxiliary (AUX) lead and connector will not be plugged into the receiver, so it will be necessary for you to secure the lead and connector so they can not come into contact with any moving parts on the helicopter.

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 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 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, 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.



- 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+, 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+ 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.

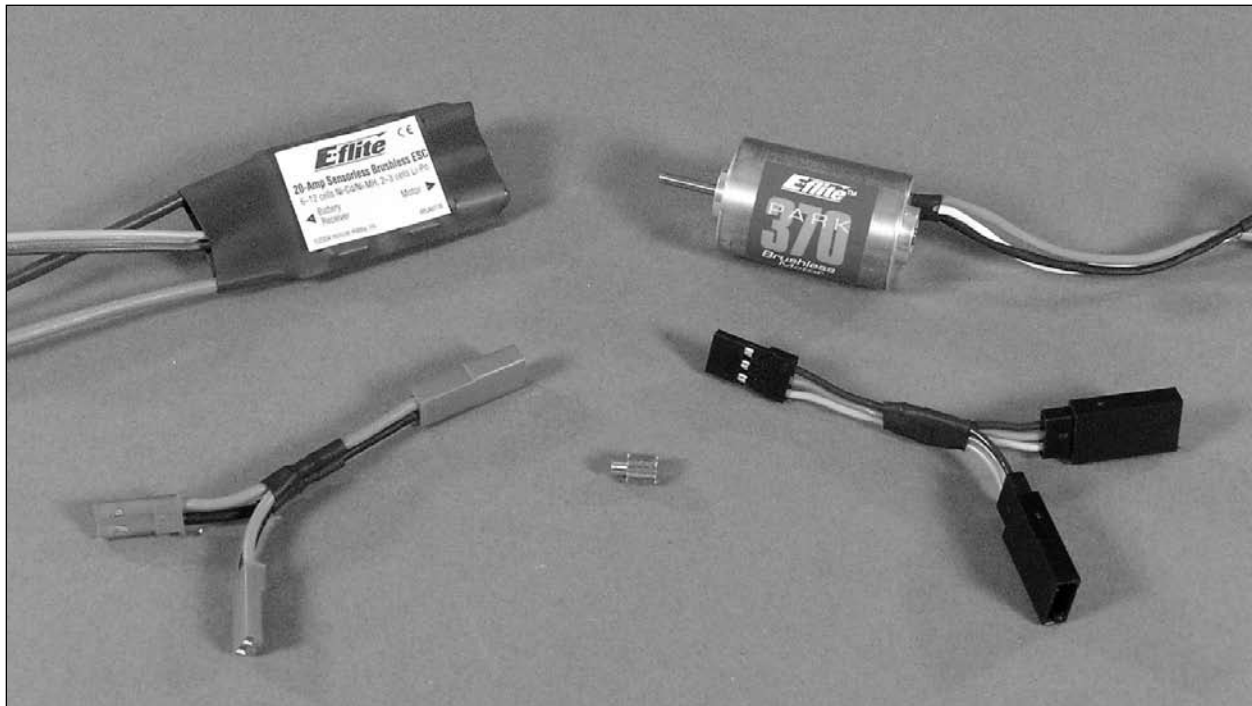
Optional Brushless Main Motor Power System Installation and Setup

The Blade CP+'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

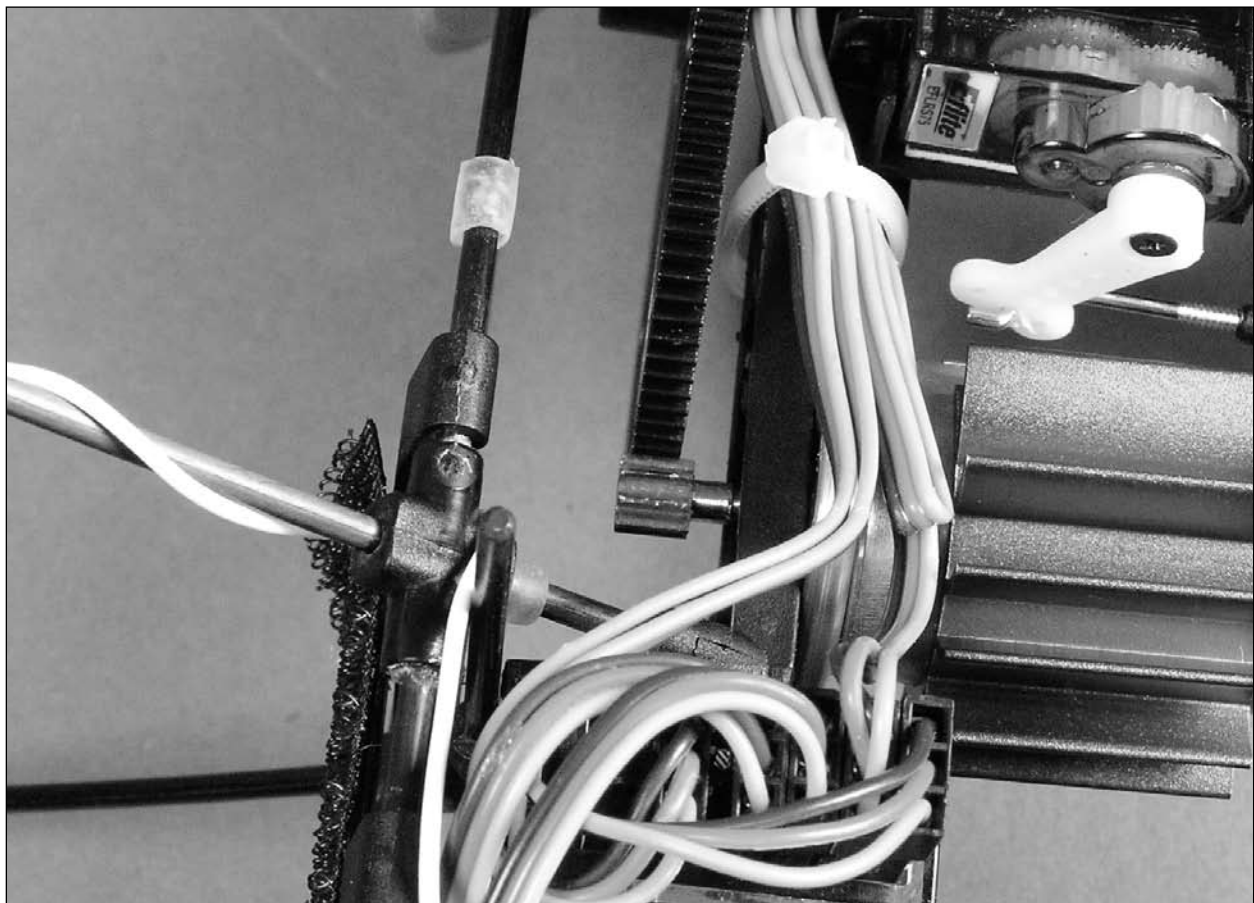


The following steps outline installation and setup of the recommended optional brushless power system:

- 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.



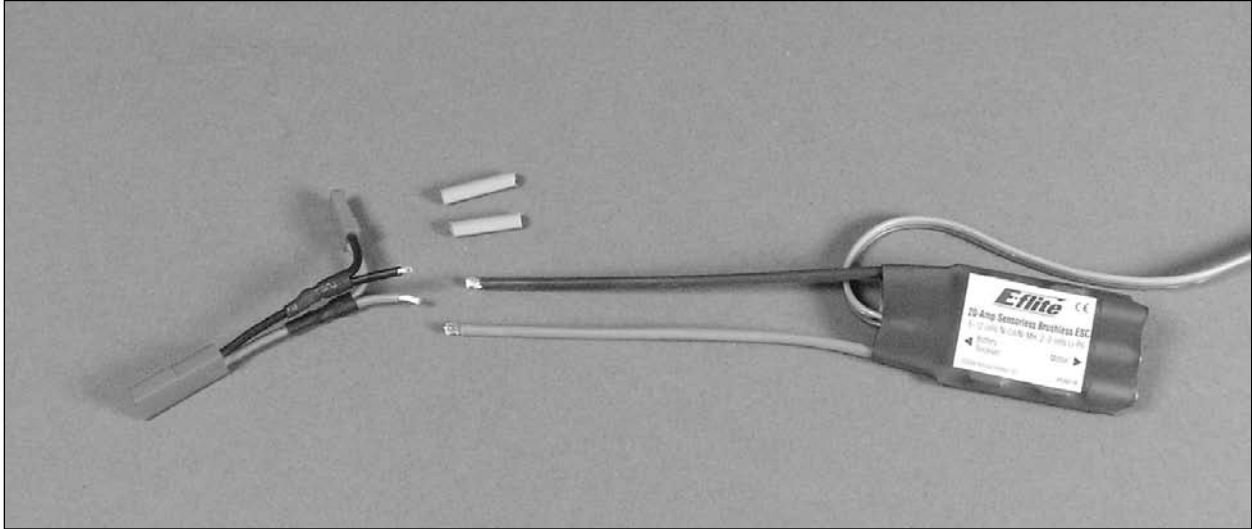
- Next, install the motor in the main frame using the mounting screws and washers removed from the stock brushed main motor. It is a good idea to apply a small amount of threadlock compound (like "blue" Loctite) to the threads before installing the screws. If possible, be sure to mount the motor so that 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.
- 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.

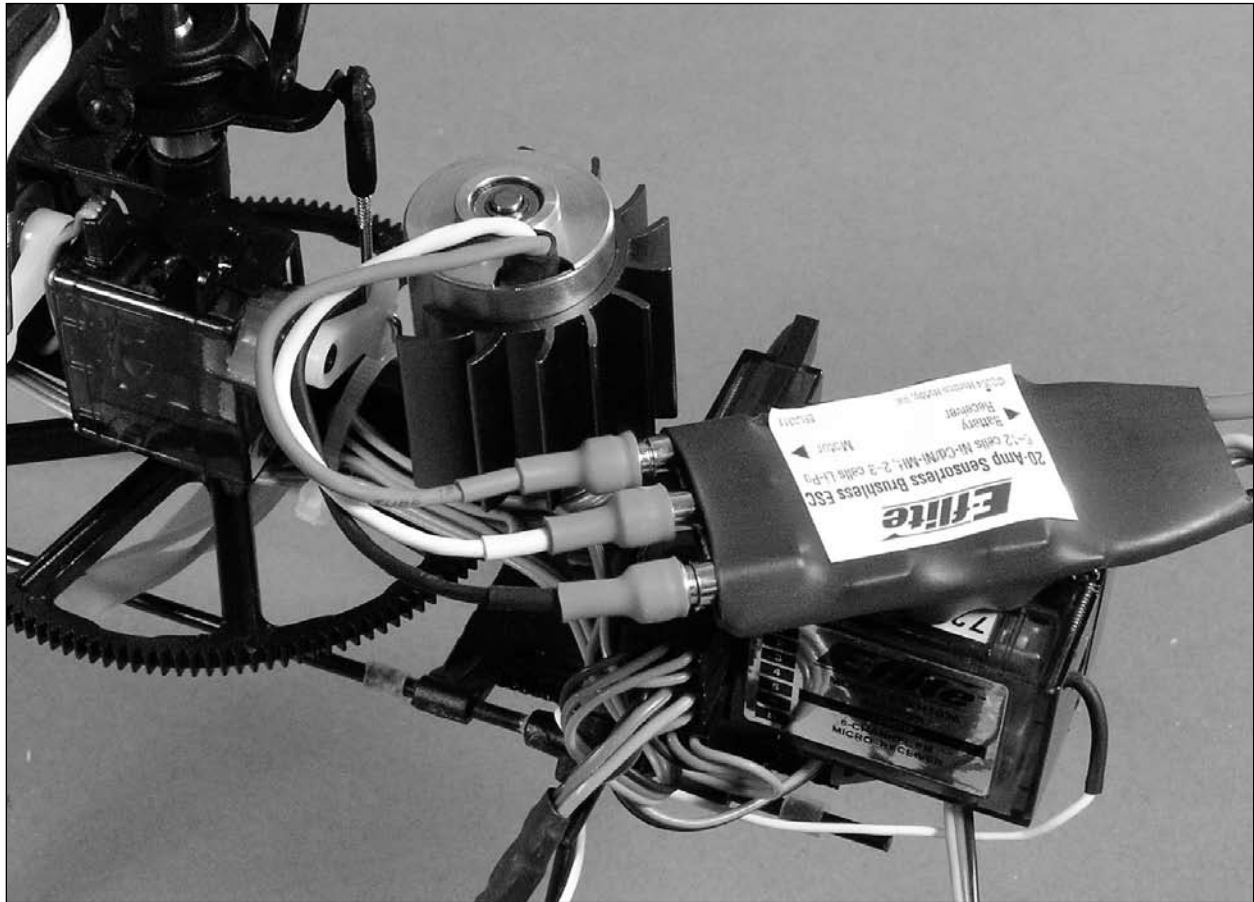
- Because the ESC does not include a battery connector, you will need to solder the Y-harness directly to its battery power leads. To do this, remove one of the Y-harness' JST male connectors from its wire leads, as close to the end of the connector as possible. Then, strip the ends of the remaining 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.

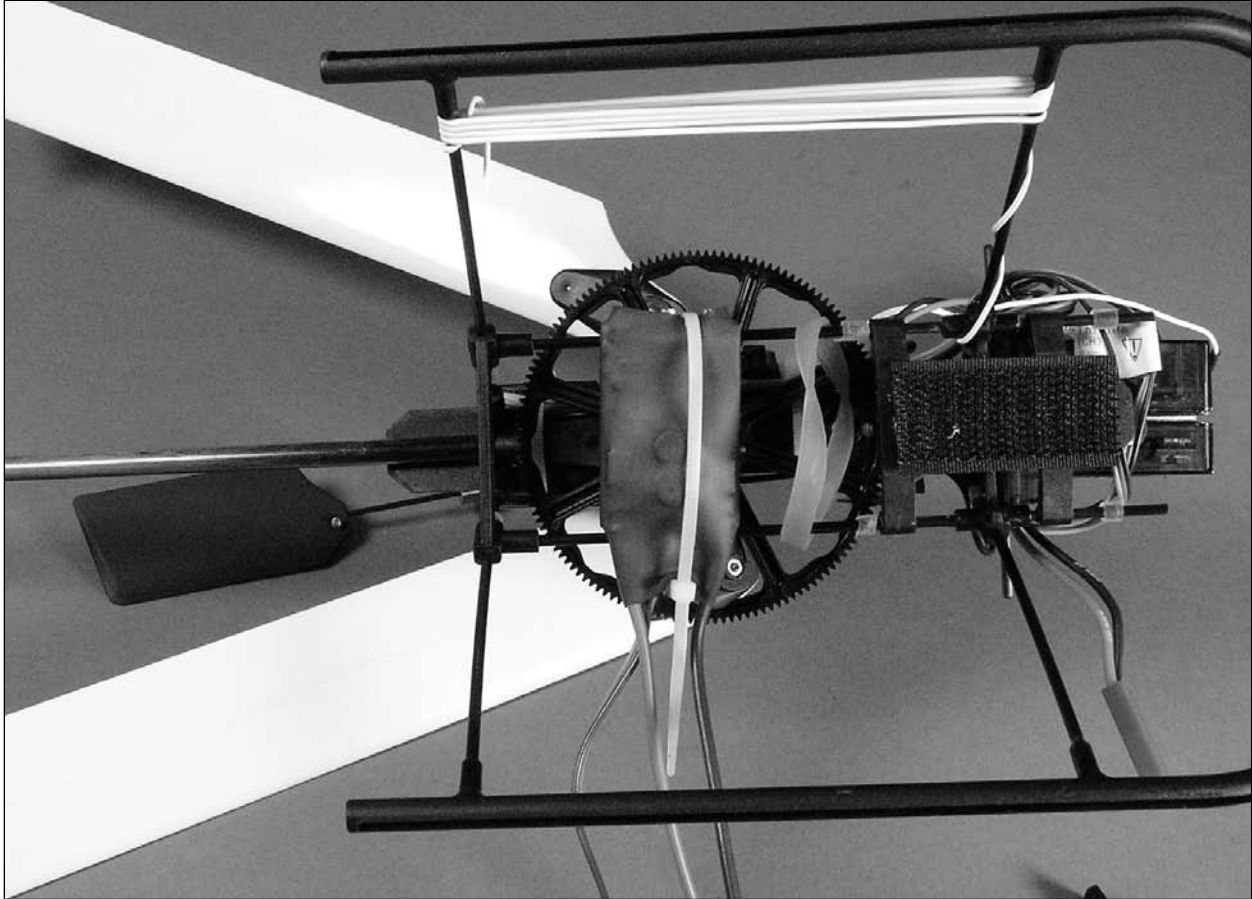


- Once the Y-harness has been connected to the ESC's battery power leads, and the joints have been properly insulated, you can now proceed with installation of the ESC on the helicopter. There are a few places in which the ESC can be mounted on the helicopter, including the following:

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.



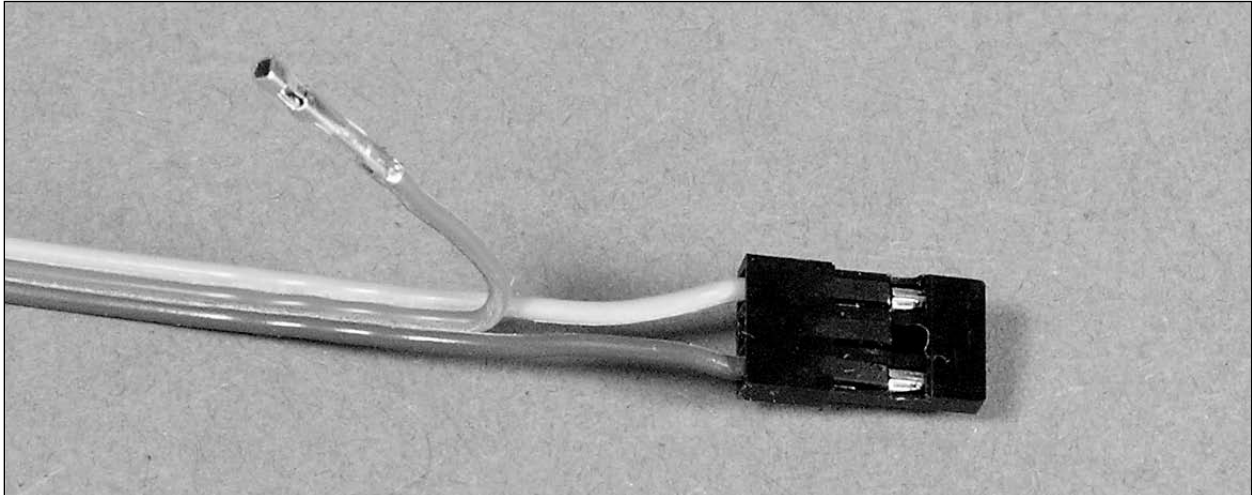
To the bottom of the battery/lower frame support rods, just below the main gear and behind the battery support/mount. Use some small strips of foam mounting tape on the rods, and a long cable/zip tie wrap (included in the "Mounting Accessories & Wrench" package), to secure the ESC in this location. Be 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.



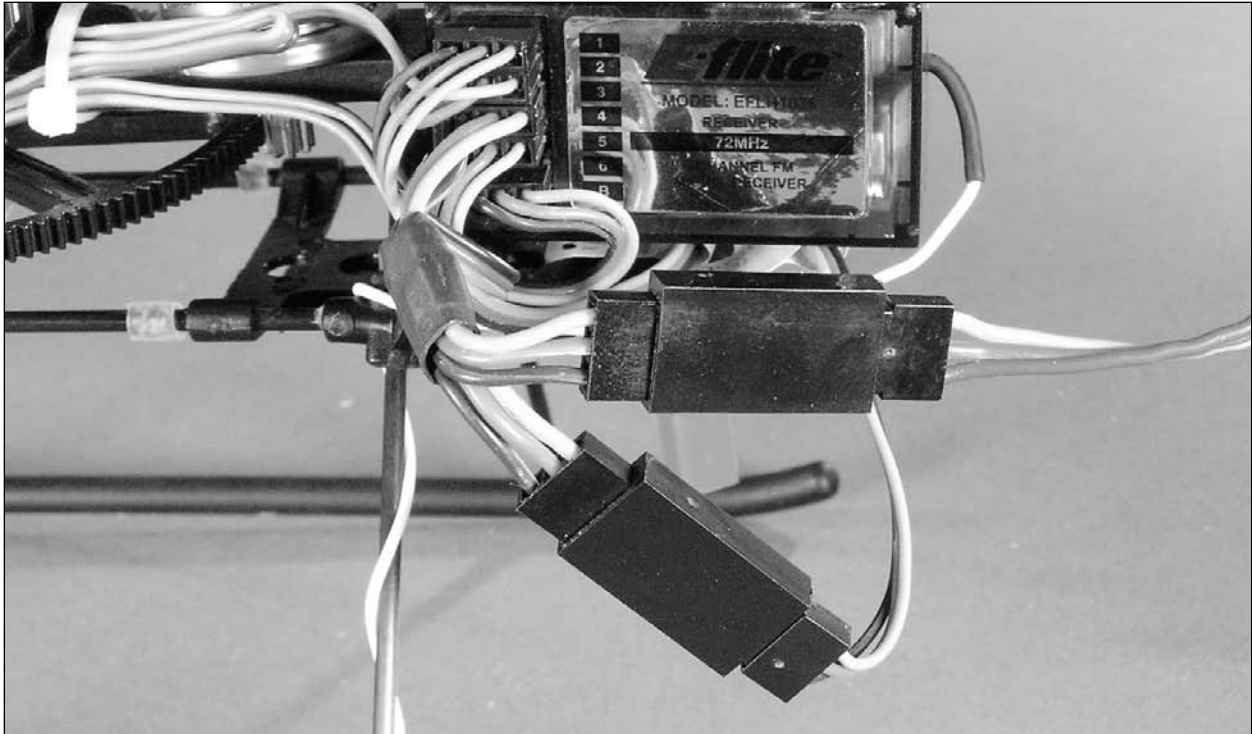
- After securing the ESC in its mounting position, connect the motor wire leads to the connectors on the ESC. The order of the wire leads in the connectors is not too important at this time, as any two of them can be reversed if the motor does not spin in the proper direction after testing its operation.

- 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 on the transmitter 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+ 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), to find the best possible performance with the brushless power system.

2007 Official AMA National Model Aircraft Safety Code

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

EFLH1105	Blade CP+ RTF Electric Micro Heli	EFLH1134	Main & Tail Motor Wire Set: BCP/+P
EFLB0995	11.1V 800mAh 3-Cell Li-Po, JST/Balance	EFLH1135	Retaining Pin (6): BCP/+P
EFLC3105	3-Cell 11.1V Li-Po Balancing Charger, 0.8A	EFLH1136	Canopy Mount & Grommet Set: BCP/+P
EFLH1017	FM Crystal Set CH17, 72.130: BCP/+P	EFLH1143	Spindle: BCP/+P
EFLH1019	FM Crystal Set CH19, 72.170: BCP/+P	EFLH1145	Center Hub & Spindle Set: BCP/+P
EFLH1021	FM Crystal Set CH21, 72.210: BCP/+P	EFLH1146	Rotor Head Set: BCP/+P
EFLH1031	3-in-1 Control Unit, Mixer/ESC/Gyro: BCP/+P	EFLH1147A	Flat Bottom Main Blade Set: BCP/+
EFLH1036	6-Channel Micro Receiver FM 72MHz, Neg Shift: BCP/+P	EFLH1148	Paddle Control Frame: BCP/+P
EFLH1044A	6-Channel CCPM Transmitter FM 72MHz: BCP/+	EFLH1149	Flybar (2): BCP/+P
EFLH1045	Transmitter Antenna: BCP/+P	EFLH1150	Paddle Set: BCP/+P
EFLH1050	FM Crystal Set CH50, 72.790: BCP/+P	EFLH1151	Pitch Control Link Set: BCP/+P
EFLH1052	FM Crystal Set CH52, 72.830: BCP/+P	EFLH1152	Swashplate Set: BCP/+P
EFLH1054	FM Crystal Set CH54, 72.870: BCP/+P	EFLH1153	Servo Pushrod Set: BCP/+P
EFLRS75	7.5 Gram Sub-Micro S75 Servo	EFLH1154	Battery Support Set: BCP/+P
EFLRS751	Gear Set: S75	EFLH1155	Main Shaft & Drive Gear: BCP/+P
EFLRS752	Case Set: S75	EFLH1156	Landing Skid Set: BCP/+P
EFLH1110B	370 Motor w/9T 0.5M Pinion: BCP/+P	EFLH1157	Body/Canopy, Yellow w/Decals: BCP/+
EFLH1111	Decal Sheet: BCP/+	EFLH1158	O-Ring Set: BCP/+P
EFLH1115	Bearing 3x6x2.5mm (2): BCP/+P	EFLH1159	Hardware Set: BCP/+P
EFLH1118	Vertical Tail Support: BCP/+P	EFLH1160	Tail Boom: BCP/+P
EFLH1119	Tail Motor w/8T 0.5M Pinion: BCP/+P	EFLH1161	Tail Rotor Gearbox Housing: BCP/+P
EFLH1120	Tail Rotor Drive Gear & Shaft Set: BCP/+P	EFLH1162B	Main Blade Grip Set, 3 Bearing: BCP/+
EFLH1121	Bearing 2x6x3mm (2): BCP/+P	EFLH1163	Paddle Control Frame Pushrod Set: BCP/+P
EFLH1122	Tail Rotor Blade: BCP/+P	EFLH1164	Main Shaft Retaining Collar: BCP/+P
EFLH1129	Mounting Accessories & Wrench: BCP/+P	EFLH1165	Flybar Weight (2): BCP/+P
EFLH1131	Tail Motor Heat Sink: BCP/+P	EFLH1166	Main Frame Assembly: BCP/+P
EFLH1132	Main Motor Heat Sink: BCP/+P	EFLH1167	Main Frame: BCP/+P
		EFLH1169	Crash Kit: BCP/+

Optional Parts List







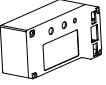





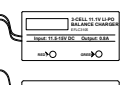
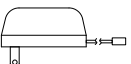



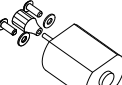
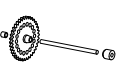

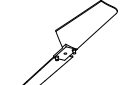

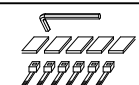


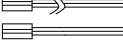

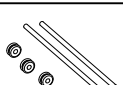


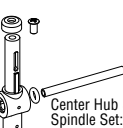
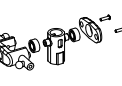
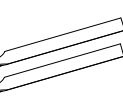
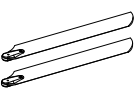
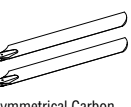
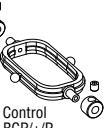
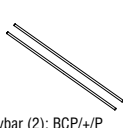
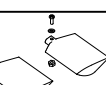
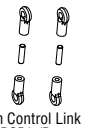
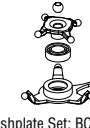

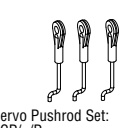


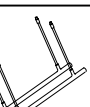





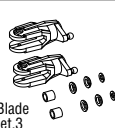
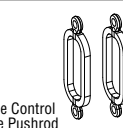


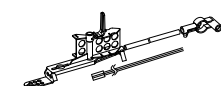
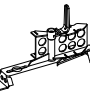
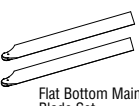

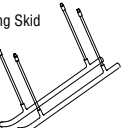
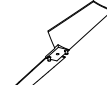
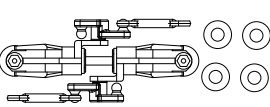

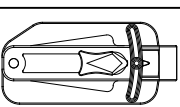
EFLC4000	AC to 12V DC, 1.5 Amp Power Supply
EFLH1000	Micro/Mini Helicopter Pitch Gauge
EFLH1122C	Carbon Fiber Tail Rotor Blade: BCP/+P
EFLH1144	Head Dampening Shim (8): BCP/+P
EFLH1147B	Symmetrical Main Blade Set: BCP/+P
EFLH1147C	Sym. Carbon Fiber Main Blade Set: BCP/+P
EFLH1170	Bell Mixer Upgrade Kit: BCP/+
EFLH1175	Aluminum Swashplate Set: BCP/+P
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+.

Replacement and Optional Parts

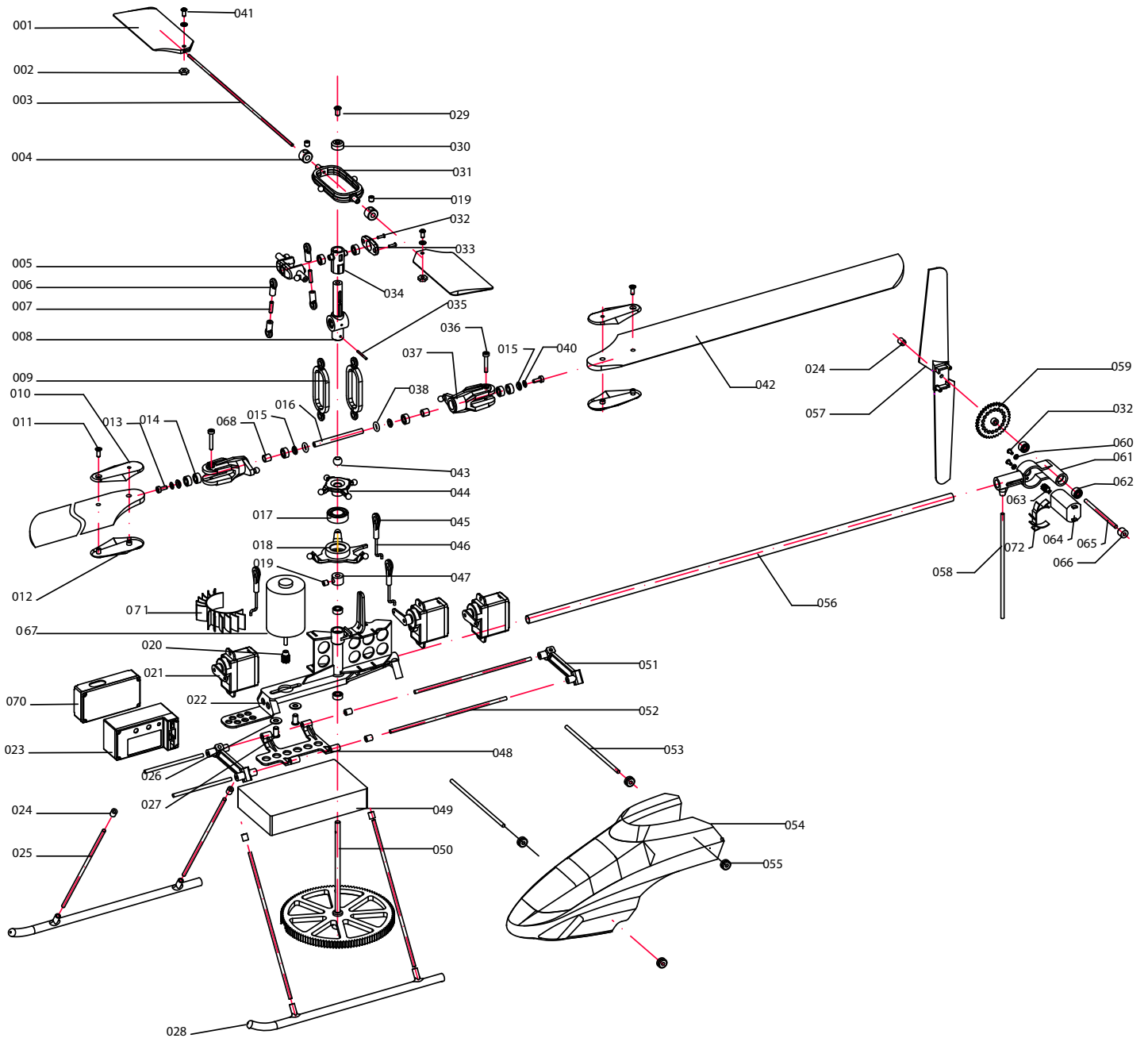
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 6-Channel Micro Receiver FM 72MHz, Neg Shift: BCP/+P EFLH1036	 7.5 Gram Sub- Micro S75 Servo EFLRS75	 6-channel CPM Transmitter FM 72MHz: BCP/+P EFLH1044A	 Transmitter Antenna: BCP/+P EFLH1045	 11.1V 800mAh 3-Cell Li-Po, JST/Balance EFLB0995	 3-Cell 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 (2): 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 Mount Rod & Grammet 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	 Flat Bottom Main Blade Set: BCP/+P EFLH0047A	 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 EFLH0050	 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	 Body/Canopy, Yellow w/Decals: BCP/+P EFLH1157	 O-Ring & Tubing Set: BCP/+P EFLH1158	 Hardware Set: BCP/+P EFLH1159	 Tail Boom: BCP/+P EFLH1160
 Tail Rotor Gearbox Housing: BCP/+P EFLH1161	 Main Blade Grip Set 3 Bearing: BCP/+P EFLH1162B	 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	 Flat Bottom Main Blade Set EFLH1169	 Flybar EFLH1169	 Landing Skid Set EFLH1169	 Tail Rotor Blade EFLH1170	 Bell Mixer Upgrade Kit: BCP/+P EFLH1170	
 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	Exploded View Reference Number	Description (Quantity Required)	Included In Item Number
001.....	Flybar Paddle (2).....	EFLH1150	037.....	Main Blade Grip (2).....	EFLH1162B
002.....	Nut (2).....	EFLH1150	038.....	O-Ring (2).....	EFLH1158
003.....	Flybar (1).....	EFLH1149	040.....	Washer (4).....	EFLH1162B
004.....	Collar (2).....	EFLH1148	041.....	Cap Head Screw (2).....	EFLH1150
005.....	Rotor Head Frame A (1).....	EFLH1146	042.....	Main Blade (2).....	EFLH1147A
006.....	Pitch Control Link (4).....	EFLH1151	043.....	Swashplate Ball (1).....	EFLH1152
007.....	Threaded Rod (2).....	EFLH1151	044.....	Upper Swashplate (1).....	EFLH1152
008.....	Center Hub (1).....	EFLH1145	045.....	Servo Pushrod Control Link (3).....	EFLH1153
009.....	Paddle Control Frame Pushrod (2).....	EFLH1163	046.....	Servo Pushrod Threaded Rod (3).....	EFLH1153
010.....	Main Blade Hold-Down Plate A (2).....	EFLH1147A	047.....	Main Shaft Retaining Collar (1).....	EFLH1164
011.....	Flat Head Screw (2).....	EFLH1147A	048.....	Battery Support (1).....	EFLH1154
012.....	Main Blade Hold-Down Plate B (2).....	EFLH1147A	049.....	Battery Pack (1).....	EFLB0995
013.....	Socket Head Cap Screw (2).....	EFLH1159	050.....	Main Shaft & Drive Gear (1).....	EFLH1155
014.....	Bearing 3x6x2.5mm (10).....	EFLH1115	051.....	Battery Support Rod Joiner (2).....	EFLH1154
015.....	Step Washer (4).....	EFLH1162B	052.....	Battery Support Rod (2).....	EFLH1154
016.....	Spindle (1).....	EFLH1145	053.....	Canopy Mount Rod (2).....	EFLH1136
017.....	Bearing 7x13x4mm (1).....	EFLH1152	054.....	Canopy (1).....	EFLH1157
018.....	Lower Swashplate (1).....	EFLH1152	055.....	Canopy Mount Grommet (4).....	EFLH1136
019.....	Set Screw (5).....	EFLH1159	056.....	Tail Boom (1).....	EFLH1160
020.....	Pinion Gear (1).....	EFLH1110B	057.....	Tail Rotor Blade (1).....	EFLH1122
021.....	Sub-Micro Servo (3).....	EFLRS75	058.....	Vertical Tail Support (1).....	EFLH1118
022.....	Main Frame (1).....	EFLH1167	059.....	Tail Rotor Drive Gear (1).....	EFLH1120
023.....	3-in-1 Control Unit (1).....	EFLH1031	060.....	Tail Motor Washer (2).....	EFLH1119
024.....	Silicone Tube Section (9).....	EFLH1158	061.....	Tail Rotor Gearbox Housing (1).....	EFLH1161
025.....	Strut (4).....	EFLH1156	062.....	Bearing 2x6x3mm (2).....	EFLH1121
026.....	Main Motor Washer (2).....	EFLH1110C	063.....	Tail Motor Pinion (1).....	EFLH1119
027.....	Main Motor Screw (2).....	EFLH1110C	064.....	Tail Motor (1).....	EFLH1119
028.....	Skid (2).....	EFLH1156	065.....	Tail Rotor Shaft (1).....	EFLH1120
029.....	Cap Head Screw (1).....	EFLH1145	066.....	Tail Rotor Shaft Stop (1).....	EFLH1120
030.....	Center Hub Cap (1).....	EFLH1145	067.....	Main Motor (1).....	EFLH1110B
031.....	Paddle Control Frame (1).....	EFLH1148	068.....	Bearing Spacer (2).....	EFLH1162B
032.....	Cap Head Screw (4).....	EFLH1146	069.....	Flybar Weight Collar (2).....	EFLH1165
033.....	Rotor Head Frame B (1).....	EFLH1146	070.....	Receiver (1).....	EFLH1036
034.....	Rotor Head (1).....	EFLH1146	071.....	Main Motor Heat Sink (1).....	EFLH1132
035.....	Retaining Pin (1).....	EFLH1135	072.....	Tail Motor Heat Sink (1).....	EFLH1131
036.....	Socket Head Cap Screw (2).....	EFLH1159			

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Exploded View





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