Heli-Max™

NOVUS UH-1D HUEY™

INSTRUCTION MANUAL

Specifications

Length:	8.27 in [210mm]	**Rotor Span:**	7.68 in [195mm]
Width:	1.93 in [49mm]	**Weight:**	2.75 oz [78g]
Height:	4.80 in [122mm]		**(**with supplied flight battery)

IMPORTANT PRECAUTIONS

- Only use the included charger with the included battery or replacement part (GPMP0410).
- Do not attempt to use this charger with NiCd or NiMH battery packs.
- Never charge in excess of 4.20V per cell.
- If the battery should become damaged, discard it. Do not attempt to use a damaged battery.
- Do not leave the charger unattended while charging. Disconnect the battery and remove input power from the charger immediately if either becomes hot! However, it is normal for the charger to get warm.
- Disconnect the battery from the charger and carefully move the battery to a fireproof location if the battery begins to swell or smoke!
- Never charge at currents greater than 1C.
- Always charge in a fireproof location.
- Never trickle charge.
- Never allow the battery temperature to exceed 150° F [65° C].
- Never disassemble or modify pack wiring in any way or puncture cells.
- Never discharge below 2.75V per cell.
- Do not allow water, moisture or foreign objects into the charger.
- Do not block the air intake holes, which could cause the charger to overheat.
- Do not place the charger or any battery on a flammable surface or near a combustible material while in use.
- Do not charge on a carpet, cluttered workbench, paper, plastic, vinyl, leather, wood, or inside an R/C model.
- Never charge inside a full-sized vehicle.
- Always disconnect the battery from the charger and the power supply from the charger when not in use.
- Do not attempt to charge a battery if it is swollen or hot.
- ALWAYS KEEP OUT OF REACH OF CHILDREN.

WARRANTY

Heli-Max™ guarantees this kit to be free from defects in both material and workmanship at the date of purchase. This warranty does not cover any component parts damaged by use or modification. **In no case shall Heli-Max's liability exceed the original cost of the purchased kit.** Further, Heli-Max reserves the right to change or modify this warranty without notice.

In that Heli-Max has no control over the final assembly or material used for final assembly, no liability shall be assumed nor accepted for any damage resulting from the use by the user of the final user-assembled product. By the act of using the user-assembled product, the user accepts all resulting liability.

If the buyer is not prepared to accept the liability associated with the use of this product, the buyer is advised to return this kit immediately in new and unused condition to the place of purchase.

To make a warranty claim, send the defective part or item to Hobby Services at this address.

Hobby Services
3002 N. Apollo Dr., Suite 1
Champaign, IL 61822
USA

Include a letter stating your name, return shipping address, as much contact information as possible (daytime telephone number, fax number, e-mail address), a detailed description of the problem and a photocopy of the purchase receipt. Upon receipt of the package the problem will be evaluated as quickly as possible.

READ THROUGH THIS MANUAL BEFORE STARTING CONSTRUCTION. IT CONTAINS IMPORTANT INSTRUCTIONS AND WARNINGS CONCERNING THE ASSEMBLY AND USE OF THIS MODEL.

Heli-Max™

TABLE OF CONTENTS

INTRODUCTION

Thank you for purchasing the Heli-Max Novus UH-1D Huey CX Helicopter. We are certain you will get many hours of enjoyment out of this model. If you should have any questions or concerns please feel free to contact us at **helihotline@hobbico.com**. For the latest technical updates or manual corrections to the Novus Helicopter visit the Heli-Max web site at:

www.helimax-rc.com

Open the "Helicopters" link, and then select the Novus UH-1D Huey CX. If there is new technical information or changes to this model a "tech notice" box will appear in the upper left corner of the page.

SAFETY PRECAUTIONS

Failure to follow these safety precautions may result in severe injury to yourself and others.

Keep your face and body as well as all spectators away from the plane of rotation of the rotors whenever the battery is connected.

Keep these items away from the rotors: loose clothing, shirt sleeves, ties, scarfs, long hair or loose objects such as pencils or screwdrivers that may fall out of shirt or jacket pockets into the rotors.

The spinning blades of a model helicopter can cause serious injury. When choosing a flying site for your Novus UH-1D Huey CX, stay clear of buildings, trees and power lines. AVOID flying in or near crowded areas. DO NOT fly close to people, children or pets. Maintain a safe pilot-to-helicopter distance while flying.

Your Novus UH-1D Huey CX should not be considered a toy, but rather a sophisticated, working model that functions very much like a full-size helicopter. Because of its performance capabilities, the Novus UH-1D Huey CX, if not operated correctly, could possibly cause injury to yourself or spectators and damage to property.

Do not alter or modify the model, as doing so may result in an unsafe or unflyable model. In a few cases the instructions may differ slightly from the photos. In those instances the written instructions should be considered as correct.

You must check the operation of the model before **every** flight to insure that all equipment is operating and that the model has remained structurally sound. Be sure to check linkages or other connectors often and replace them if they show any signs of wear or fatigue.

ADDITIONAL ITEMS REQUIRED

❏ (8) AA Alkaline cells (FUGP7308)

KIT INSPECTION

Before starting assembly, take an inventory of the Novus UH-1D Huey CX to make sure it is complete, and inspect the parts to make sure they are of acceptable quality. If any parts are missing or are not of acceptable quality, or if you need assistance with assembly, contact Product Support. When reporting defective or missing parts, use the part names exactly as they are written in the **Kit Contents** list.

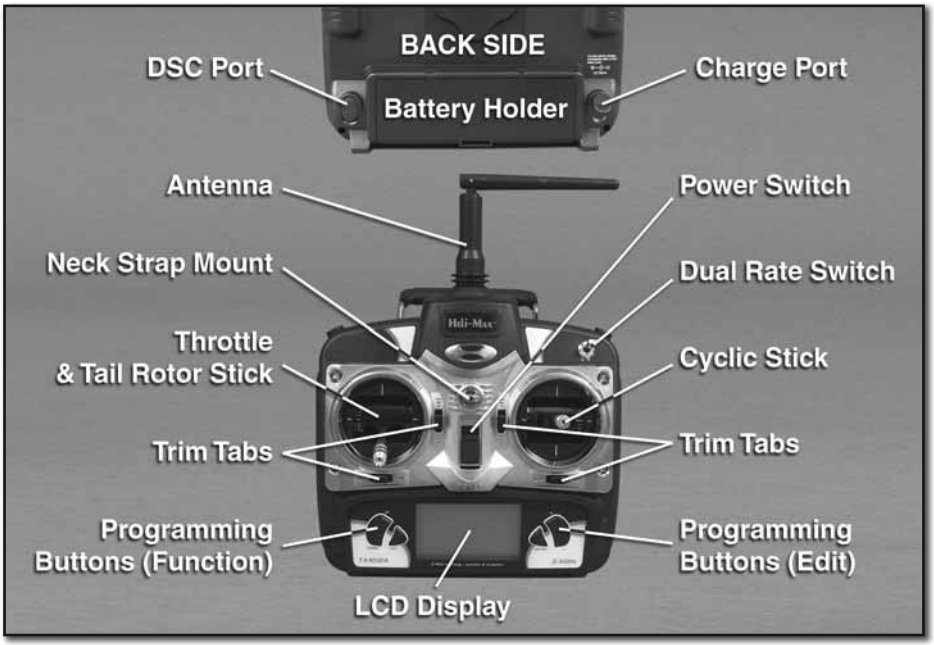
Heli-Max Product Support
3002 N. Apollo Drive, Suite 1
Champaign, IL 61822

Ph: (217) 398-8970, ext. 5
Fax: (217) 398-7721
E-mail: helihotline@hobbico.com

KIT CONTENTS

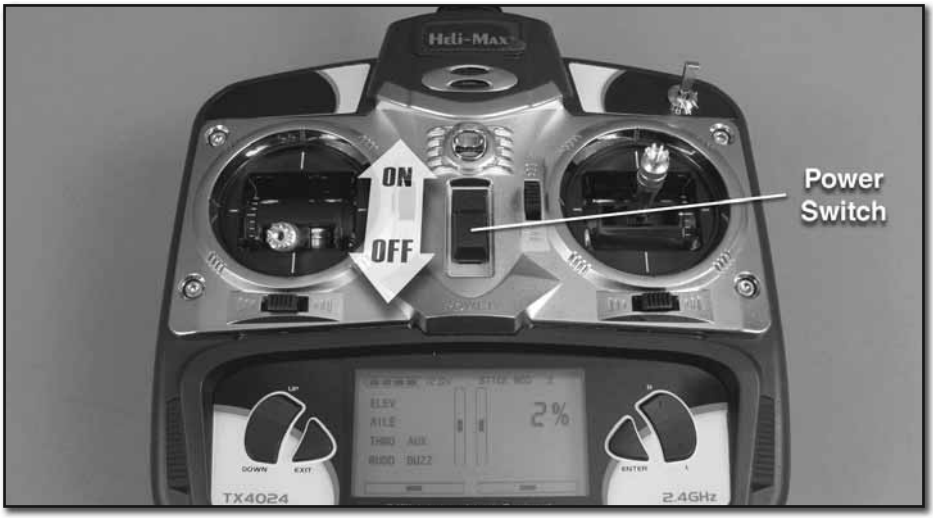
1. Helicopter
2. Flight Battery
3. Charger
4. Transmitter
5. Replacement Main Rotor Blades

TRANSMITTER FEATURES



INSTALL THE TRANSMITTER BATTERIES

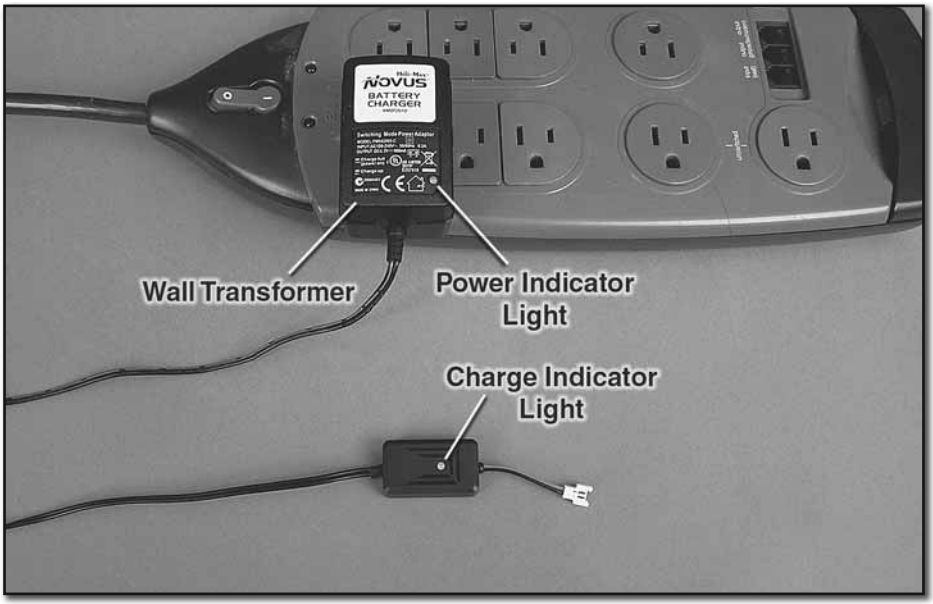
❏ Open the battery cover on the back of the transmitter, remove the battery box and install eight AA batteries into the battery box. Double check the polarity of each battery before placing the battery box back into the transmitter and closing the battery cover.



❏ Turn on the transmitter and verify that the LCD initializes. Turn the transmitter off for now. If the LCD did not initialize, remove the battery box from the transmitter and verify that the batteries were installed correctly

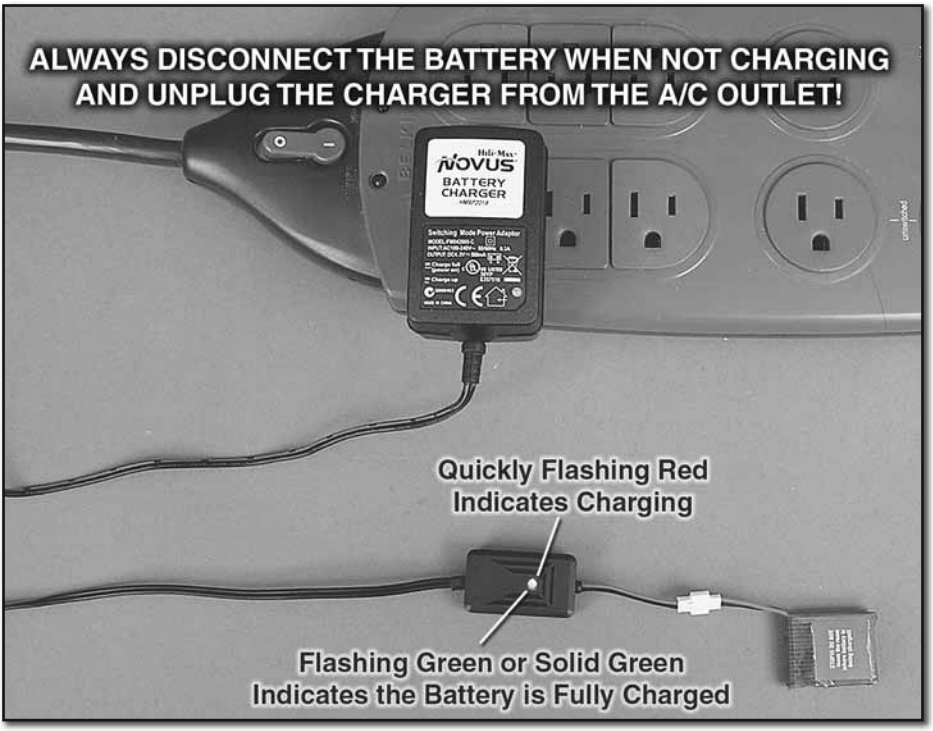
CHARGING THE FLIGHT BATTERY

WARNING!! The charger supplied with the Heli-Max Novus Helicopter contains protective circuitry. If you experience any difficulties while charging the battery, please disconnect the battery from the charger and unplug the charger from the power source. Allow the battery and charger to rest for two hours as this will allow the charge protection circuit to reset. If this issue re-occurs during normal use, please contact technical support for further assistance.



❑ Plug the wall transformer into an AC outlet. The ***power indicator light*** on the wall transformer will be green and the ***charge indicator light*** will be solid red.

WARNING!! Do not leave the battery connected to the charger if the charge indicator is solid red. This may over-discharge the battery, possibly causing damage to the battery or the charger. Once the battery has been disconnected from the charger, contact technical support immediately for further assistance.



❑ Plug the battery into the charger. The charge indicator light will start flashing red quickly; this indicates that the battery is being charged. Once the battery is completely charged, the charge indicator light will turn green (solid or flashing). Disconnect the battery from the charger. Under normal operating conditions, the battery may take up to one hour to recharge.

Charge Indicator Light		
Fast Flashing Red	The battery is being charged.	* Once the battery has been disconnected from the charger contact technical support for further assistance.
Green (Solid or Flashing)	The battery is fully charged.	
***Slow Flashing Red**	A time-out has occurred.	
***Solid Red** with Battery Connected	The battery voltage is too low or the charger is not powered.	
Solid Red without Battery Connected	The charger is ready.	

LITHIUM BATTERY HANDLING & USAGE

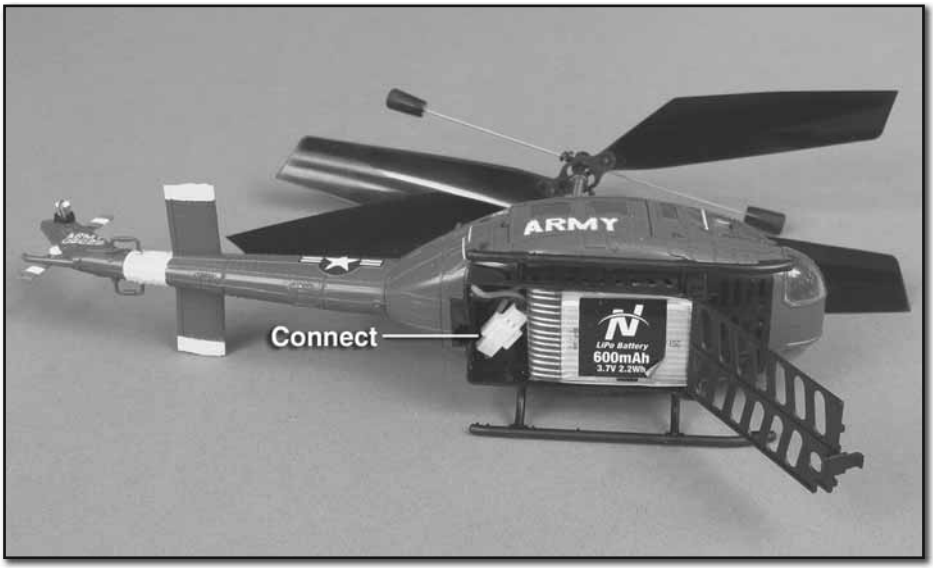
WARNING! Read the entire instruction sheet included with this battery. Failure to follow all instructions could cause permanent damage to the battery and its surroundings, and may cause bodily harm!

- **Land your model immediately when the battery begins to lose power. Recharge the battery before attempting another flight.** A dangerous situation can occur when attempting to recharge an over-discharged battery!
- ALWAYS charge the battery inside a fireproof container placed in a fireproof location clear of combustible materials. Failure to do so can result in property damage and/or bodily harm!
- ALWAYS keep charging batteries within eyesight. Leaving the battery unattended is dangerous!
- ALWAYS keep a supply of sand accessible when charging. Dumping sand on the battery will extinguish the LiPo chemical fire.
- NEVER use anything EXCEPT a LiPo approved charger.
- NEVER charge over 4.20V per cell.
- NEVER charge at currents greater than 1C.
- NEVER charge through the “To ESC” or “DISCHARGE” lead.
- NEVER trickle charge, or allow the battery to discharge below 2.75V per cell.
- NEVER allow the battery temperature to exceed 140° F [60° C].
- NEVER disassemble or modify the pack wiring in any way or puncture cells.
- ALWAYS KEEP OUT OF REACH OF CHILDREN.

ELECTRIC MOTOR WARNING

Electric motors are very dangerous. Do not work on the model while the flight battery is plugged in as interference may cause the main rotor blades to spin, possibly causing injury to yourself.

TURNING THE MODEL ON



❑ Place the helicopter on its side and open the battery compartment door. Connect the flight battery and place the battery in the compartment as shown.

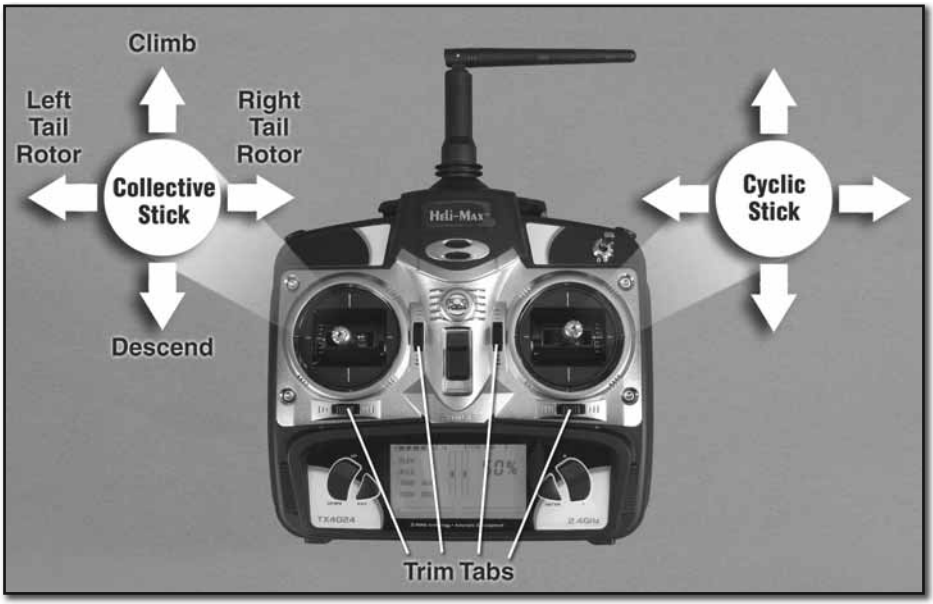
❑ Carefully place the extra wiring into the battery compartment and close the battery door. Place the helicopter onto a flat surface and proceed to the next step.

❏ Your Novus helicopter uses a 2.4GHz system that requires linking the transmitter to the receiver when the unit is powered up. With the transmitter turned **off**, connect the flight battery to the helicopter. Then place the model on a flat surface and turn the transmitter on. You will notice that the trim tab indicators are moving and the navigation lights on the helicopter remain solid. This is an indication of the linking process. Allow the helicopter to remain still and do not move the transmitter sticks during the linking process.

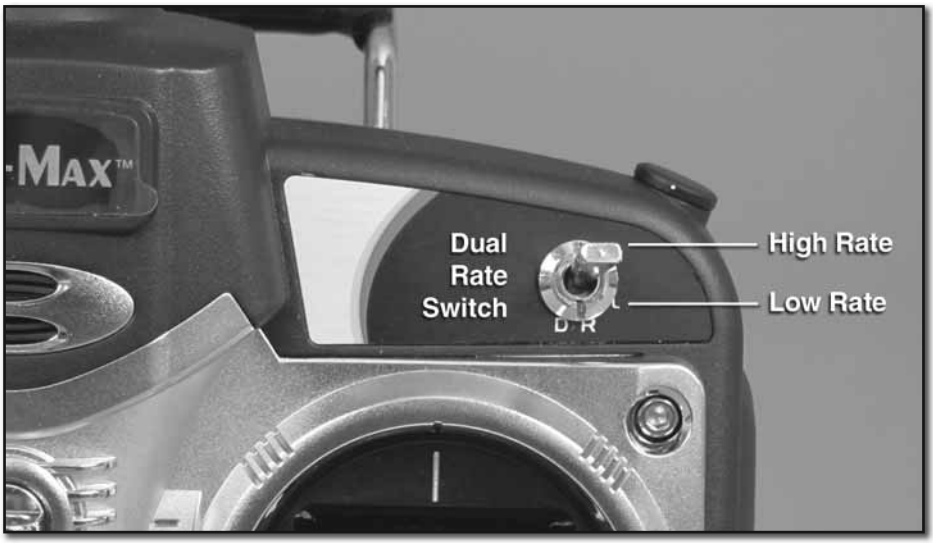
❏ Two loud tones will be emitted from the transmitter. Continue to allow the helicopter to remain still. After a couple of seconds the navigation lights will begin flashing rapidly. This indicates that the binding process is taking place. The tail navigation light will stop flashing and the anti-collision beacon on top of the helicopter will begin operating. This indicates that the transmitter and helicopter have bound properly and the helicopter is now ready for flight. Always step 15 feet [4.5m] away from the Novus Helicopter before operating the throttle.

Your Novus helicopter has a safe start feature built in that prevents the motor from activating unless the collective stick has been lowered to the lowest position. If the motor won't run and turn the main blades, please make sure the collective stick is all the way down and leave it there for a couple of seconds. Then try moving the stick up slowly.

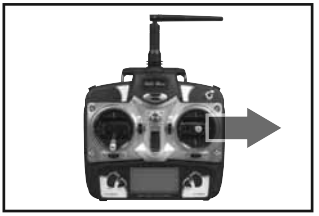
TRANSMITTER CONTROLS



All controls are described with the tail pointing directly toward you. This is the best way to fly in the beginning since it keeps the control inputs oriented the same direction. Once you start getting comfortable you can work on side hovering and nose-in.

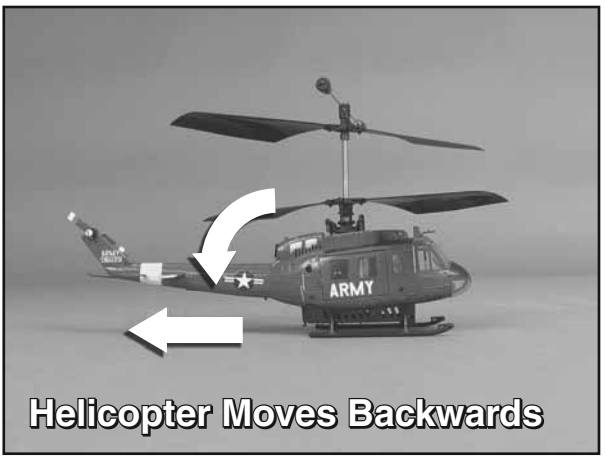


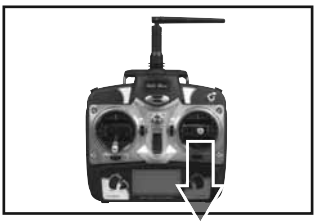
The dual rate switch provides dual control rates for the cyclic and tail rotor controls. Please use the low rate until you become accustomed to your Novus.



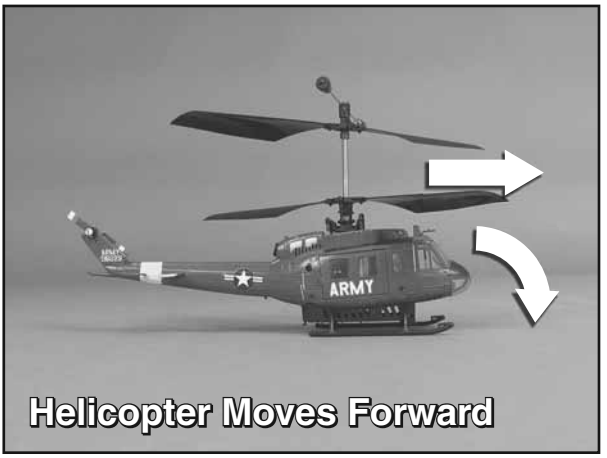
Moving the **cyclic stick right** will cause the helicopter to tilt right and start moving that direction.

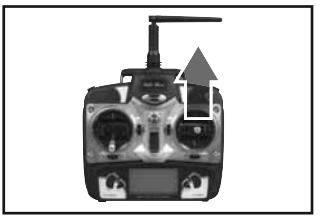
Moving the **cyclic stick left** will cause the helicopter to tilt left and start moving that direction.



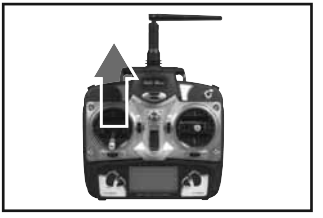


Moving the **cyclic stick backwards** (towards you) will cause the helicopter to tilt backwards and start moving that direction.

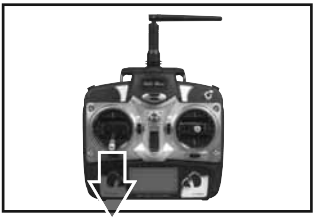




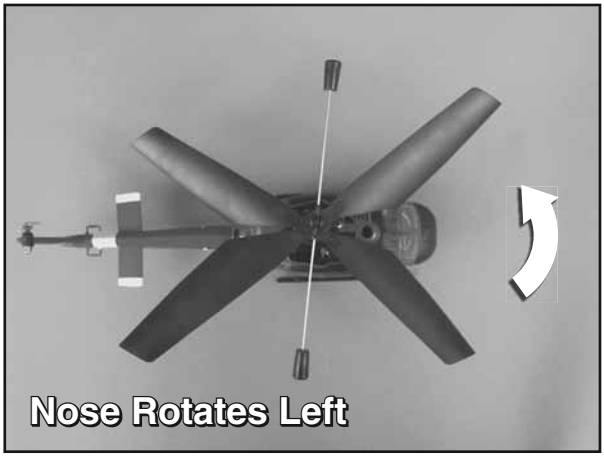
Moving the **cyclic stick forward** (away from you) will cause the helicopter to tilt forward and start moving that direction.

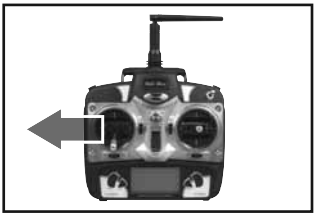


Moving the **collective stick up** (away from you) will cause the helicopter to climb higher.

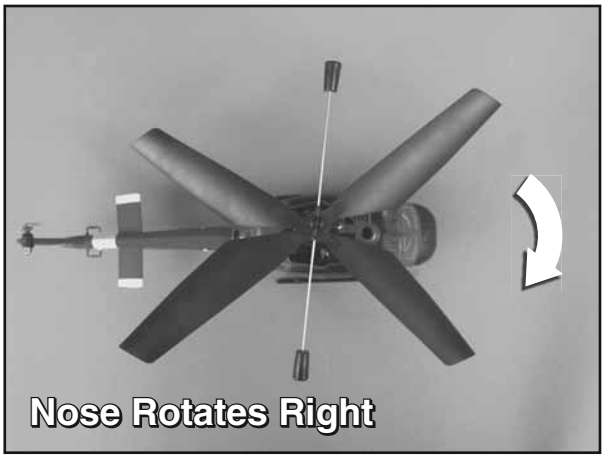


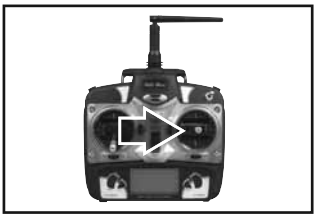
Moving the **collective stick down** (towards you) will cause the helicopter to descend.





Moving the **tail rotor stick** towards the **left** will cause the helicopter nose to rotate left (counterclockwise).





Moving the **tail rotor stick** towards the **right** will cause the helicopter nose to rotate right (clockwise).

The Heli-Max Novus UH-1D Huey CX is a lightweight helicopter. Taking that into consideration, you should only fly indoors or in calm winds less than 1mph. The Novus should be flown in a large area of at least 50 feet [15.25m] square with no obstacles.

The Novus UH-1D Huey CX is lightweight and due to this it does not fly well in ground effect (air disturbance when the model helicopter is hovered below 1 foot [30cm]). The model should be flown at a minimum altitude of 1 foot [30cm] to avoid the instabilities cause by ground effect.

Crashing

If you have operated radio control models in the past then you probably already realize that it is not a matter of "if" you are going to crash, it is a matter of "when" you are going to crash. Once you realize the model is going to collide with something or crash into the ground, you should always bring the throttle stick all the way down to stop the main rotor blades from rotating. If you can remember to do this, chances are you will not damage the helicopter in the crash. The main rotor blades carry a lot of RPM and inertia during flight. Cutting the power to the main rotor blades will prevent most of the crash damage.

Takeoff

Slowly add power, observe the model and make all of the necessary corrections to keep the model level. If you feel a trim adjustment is needed, lower the throttle to idle and make trim adjustments before lifting off for the first time. You will find that model helicopters never allow you to return the sticks to center. You just need to position the stick as needed to maintain a steady hover.

You will notice the cyclic controls lag behind your inputs. This is normal and something you get the feel for with time. It's normal to drift around in a hover until you become accustomed to flying the model. The cyclic controls are fairly sensitive so only small movements are necessary.

Hovering

Once the helicopter is up in the air, simply try to hold the helicopter in one spot. If this is your first model helicopter, it will require some practice. Wind or air currents have a big effect on the stability of the helicopter as well. Be patient and slowly work forward, as trying to rush the learning process can be costly.

Landing

Level the helicopter into a steady hover and slowly decrease power until the helicopter settles onto the ground.

Basic Maneuvers

Once you become comfortable with hovering at different orientations and landing, it's time to move on to more advanced maneuvers.

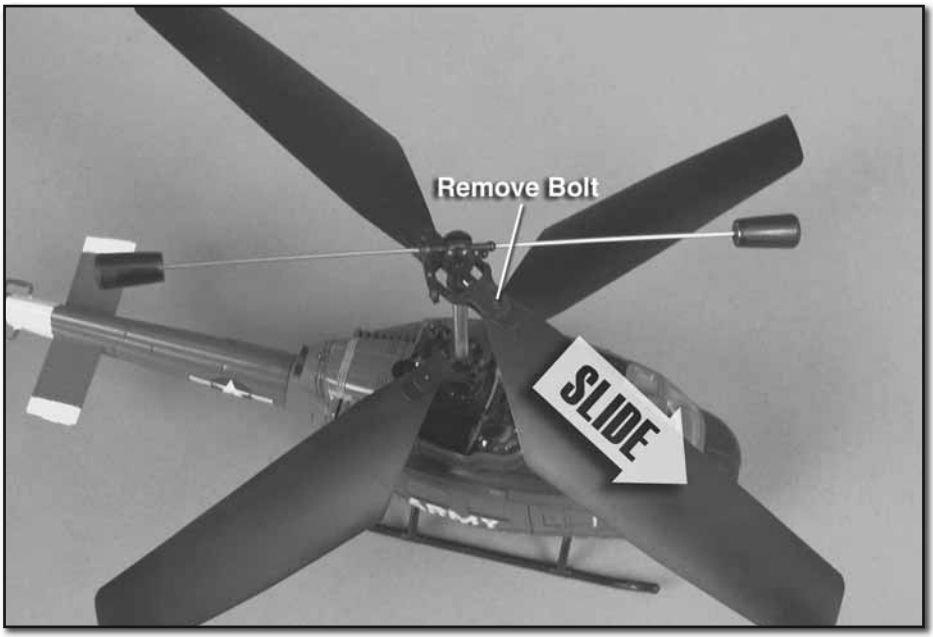
Slow Pirouettes – Add a small amount of tail rotor (left or right) and try rotating the helicopter slightly sideways and see if you can hold it there. If you feel uncomfortable, then bring the tail back toward you. Once you start getting comfortable, try moving the helicopter to the side. Then turn back and fly back to the other side in straight lines. Then work into rotating the helicopter around 360°, which is called a pirouette. The helicopter can drift during these so make sure you have plenty of room when you first start practicing.

Nose-in Hovering – After pirouettes it's time to move on to nose-in hovering. Take off and climb to 10 feet [3m]. Practice half pirouettes from tail in to nose-in hovering and try to lengthen the delay in between. This will give you a little practice nose-in and still give you a chance to get out of trouble. As your skills improve you'll remain nose-in for longer periods of time.

GOOD LUCK AND GREAT FLYING!

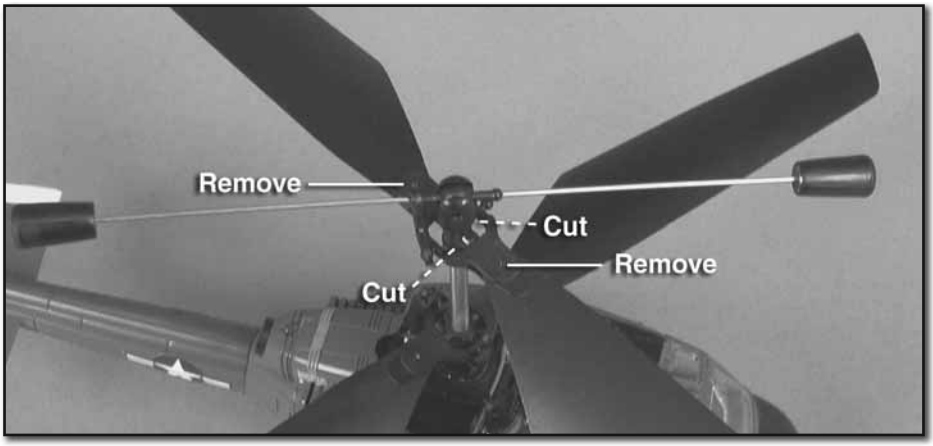
The Heli-Max™ Novus UH-1D Huey CX is an extremely small helicopter. Working on a model this size will require small tools. The DTXR0170 DuraTrax® Precision Phillips Screwdriver 00x75mm is recommended. On occasion it will be necessary to replace damaged parts after a crash. Please use this section as a guide to performing these steps.

Main Rotor Blade Replacement



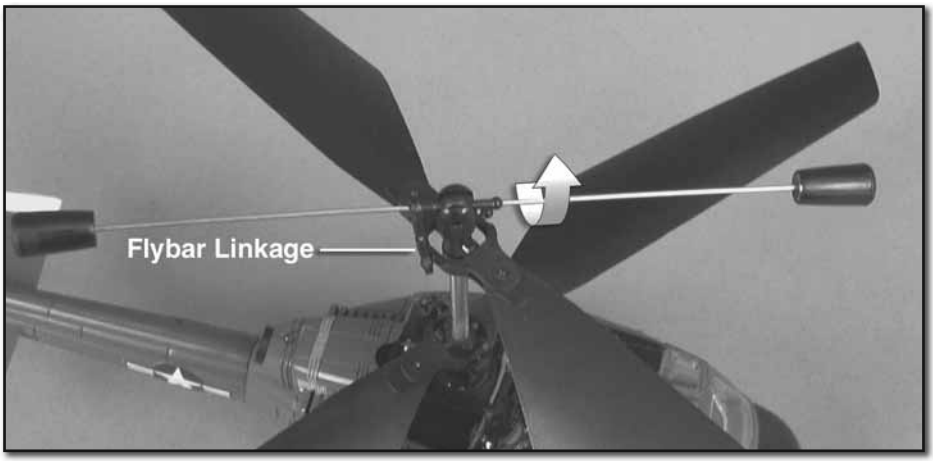
Remove the blade bolt using a #00 phillips screwdriver. After the blade bolt has been removed, slide the rotor blade out of the blade grip. Reinstall the new blade, ensuring that the holes within the blade and blade grip are aligned properly. Reinstall the blade bolt.

Main Rotor Grip Replacement



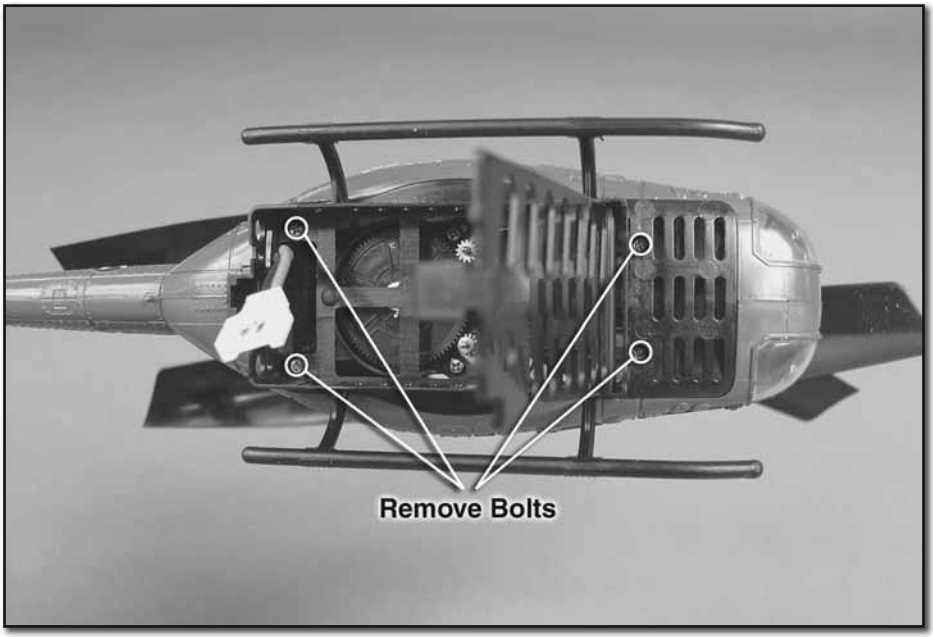
Remove both blade bolts and main rotor blades. If working on the upper rotor, remove the flybar and linkage. The only way to remove the blade grip is to cut the grip on both sides as shown. Remove the two halves. Remove the two metal pivot pins from the head block. Slide the two metal pivot pins from the center of each grip into the blade grip. Press these pins in until they are flush. Align the new blade grip on the head block and from the outside of the grip. Push the pins into the head block. Install the flybar and main rotor blades.

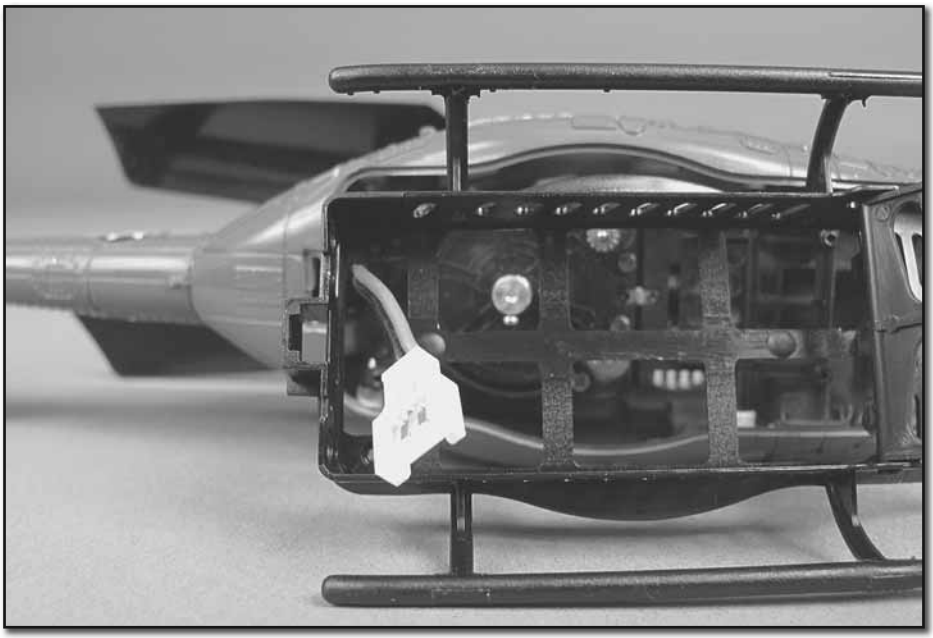
Replacing the Flybar



Remove the flybar linkage from the blade grip. Press outward on one side of the head block and simply rotate the flybar carrier from the head block. Once the flybar carrier has been removed, press the flybar weights inward and turn them 90°. Now pull them off the end of the flybar. Remove the flybar linkage from the old flybar and install the linkage onto the new flybar. Install the flybar weights onto the new flybar and slide the flybar pivot back onto the head block. Reinstall the flybar linkage.

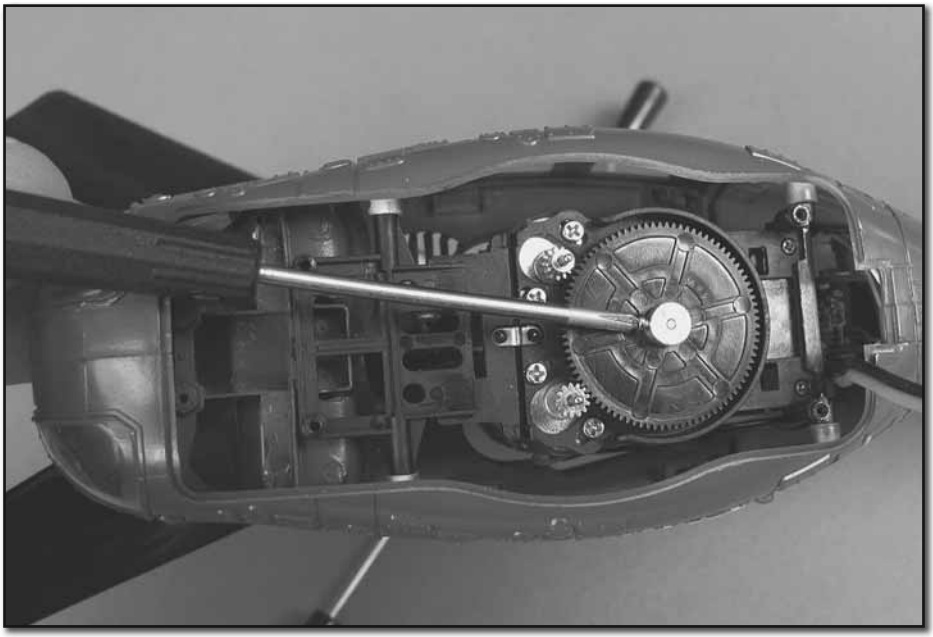
Replacing the Landing Gear





Remove the four landing gear screws and carefully remove the landing gear. Route the battery lead through the new landing gear and place the landing gear back onto the helicopter. Install the four landing gear screws.

Replacing the Main Gear



The Novus Huey uses an inner solid main shaft and a hollow outer main shaft. To access the main rotor gears it will be necessary to remove the landing gear first. Remove the lower main gear retaining screw. The lower gear will simply drop down off the main shaft. If you need to replace the upper main gear, slide it down off the main shaft and reinstall the new gear, ensuring that the flat spot molded inside the gear aligns with the main shaft. Reinstall the lower gear, ensuring that the screw aligns with the flat spot machined on the inner main shaft.

Replacing the Main Shaft

The Novus CX uses an inner solid main shaft and a hollow outer main shaft. Remove the lower main gear retaining screw. When performing the following step please be careful not to lose any small bearings or bearing blocks. Slide the inner shaft and upper rotor head from the outer main shaft by pulling upwards. If you need to remove the lower shaft, disconnect the servo linkages from the swashplate and pull upwards. Transfer necessary parts from the old shaft to the new shaft and install following the reverse order listed above.

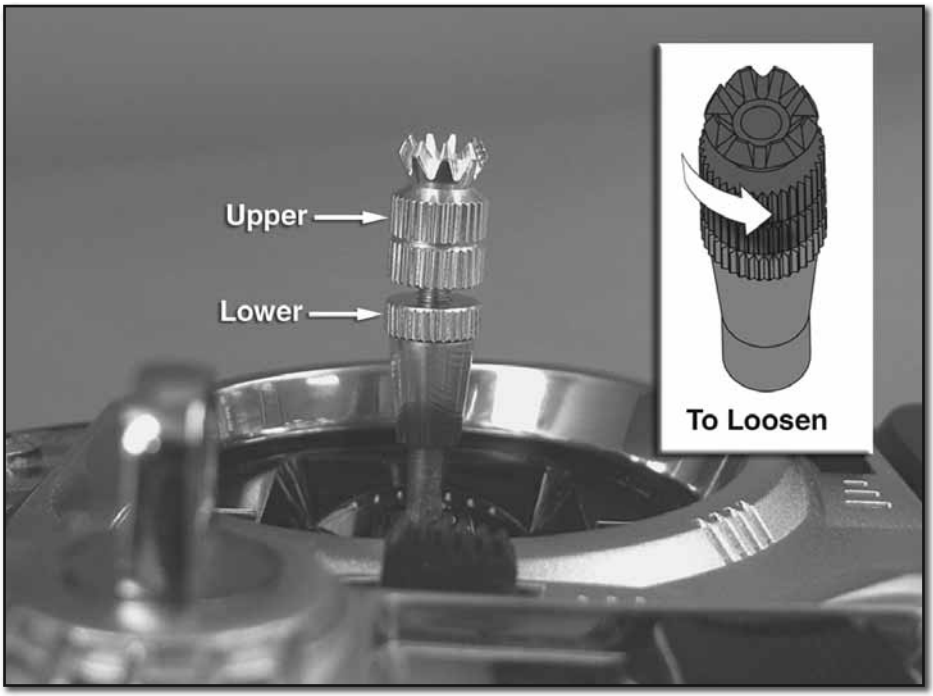
Tail Rotor Blade Replacement

Carefully pull the tail rotor from the tail motor using your fingers. Press the new tail rotor onto the shaft. Verify that the tail motor spins easily.

Transmitter Specifications:

- 2.4GHz FHSS
- 100mW Output Power
- 230mAh Current Drain
- 4 Channel Encoder
- Automatic Linking
- Requires (8) AA Alkaline Batteries (Rechargeable AA cells can be used)

Stick Length Adjustment



To adjust the stick length hold onto the lower portion of the stick and turn the upper portion counterclockwise to unlock and separate the upper stick end from the lower stick end. Rotate the upper stick end to adjust the length. Once you have the desired stick length set, hold onto the upper stick end to prevent it from rotating and tighten the lower stick against the upper stick end to lock it into position. Repeat for the other stick assembly if necessary.

PROGRAMMING YOUR TRANSMITTER

The Heli-Max TX6024 transmitter is factory set for the Novus UH-1D Huey CX helicopter. Before making any changes it is recommended to fly the model several times. If you feel a change is needed after several flights, then please feel free to make adjustments following the recommendations below.

WARNING! Setting these values incorrectly could result in a loss of control, damage to the model or possibly injury to yourself or others. Always make certain that the model is set up correctly before flying the model by checking the control directions and all other settings.

Navigating & Setting Values

Always disconnect the flight battery from the e-board before making any adjustments to the transmitter settings.

Press the [Enter] key to enter programming mode. You will notice that [STICK MOD 2] is now flashing on the display. This is the current item being edited. Pressing the [UP] key will take you to the previous function and pressing the [DOWN] key will take you to the next function. Pressing the [EXIT] key will return you back to the normal operation screen. The [UP], [DOWN] and [EXIT] keys will not change any values so feel free to navigate the menus using these three keys.

To make a change use the [L] or [R] keys to select the change and press [ENTER] to set the value for the function. This is all described in the function list.

Press the [EXIT] key to return to the normal operation screen.

Channel Reversing

The channel reversing function is used to reverse the operation of a servo. Select the channel you want to reverse and press the [L] or [R] key and the direction indication on the screen will change. To set this value you must press the [ENTER] key before exiting this function.

Aux Channel

The AUX channel can be enabled or disabled by selecting the [ON] or [OFF] respectively.

Buzzer Setting

Set to [OFF] to disable the internal speaker. Set to [ON] to enable the internal speaker.

Novus UH-1D Huey Default Settings	
STICK MOD	2
ELEV	NOR
AILE	REV
THRO	NOR
RUDD	REV
AUX	OFF
BUZZ	ON

Gyro Gain

The gyro gain is used to adjust the amount of correction that the gyro applies to the tail rotor during unintended movements. Finding the ideal gain setting will take some experimentation. If the gyro is allowing the tail to drift, then raise the gain % and test fly the model. If the tail is quickly oscillating (wagging), then lower the gain % and test fly the model. Turning the adjustment clockwise increases the gain and turning the adjustment counter clockwise decreases the gain.

ORDERING PARTS

Replacement parts for the Heli-Max Novus UH-1D Huey CX are available using the order numbers in the **Replacement Parts List** that follows. The fastest, most economical service can be provided by your hobby dealer.

To locate a hobby dealer, visit the Hobbico web site at **www.hobbico.com**. Choose “Where to Buy” at the bottom of the menu on the left side of the page. Follow the instructions provided on the page to locate a U.S., Canadian or International dealer.

Parts may also be ordered directly from Hobby Services by calling (217) 398-0007, or via facsimile at (217) 398-7721, but full retail prices and shipping and handling charges will apply. Illinois and Nevada residents will also be charged sales tax. If ordering via fax, include a Visa® or MasterCard® number and expiration date for payment.

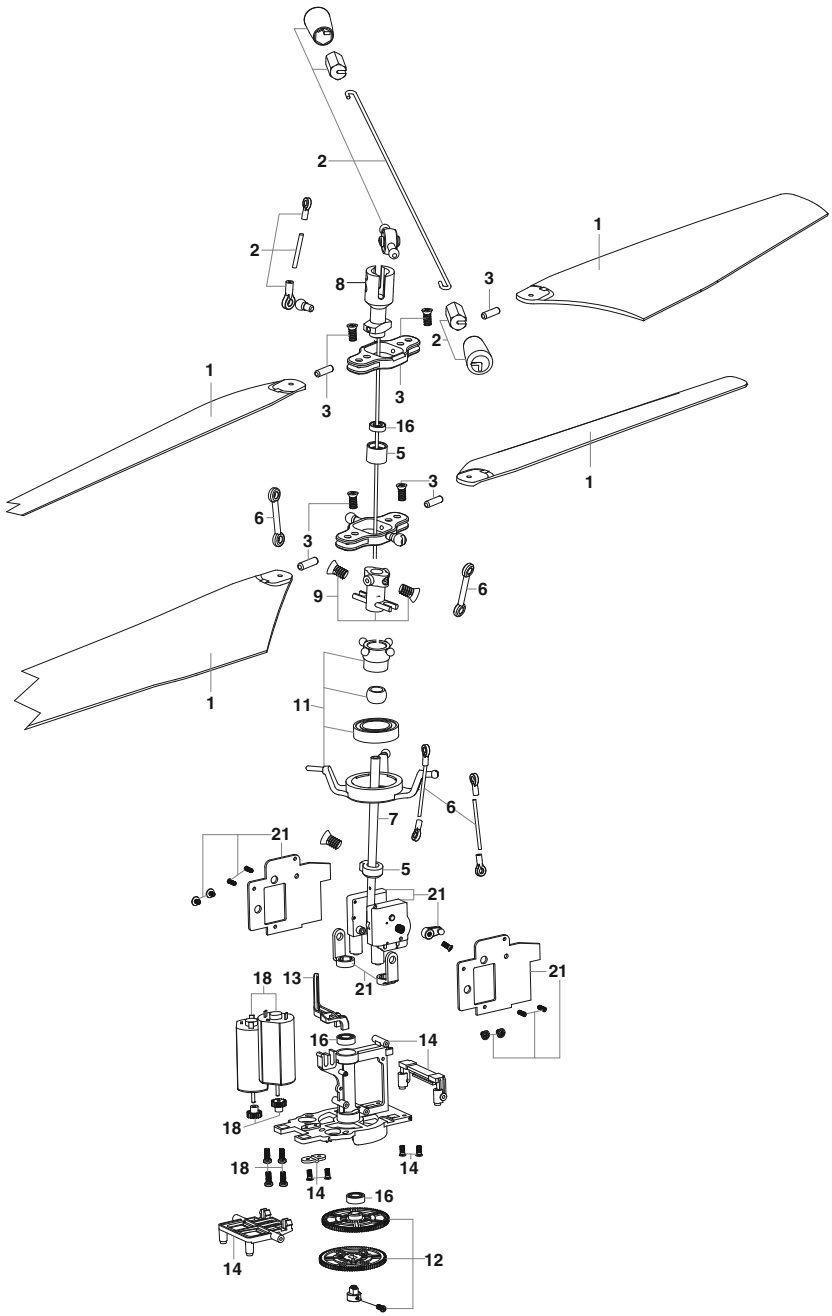
Mail parts orders and payments by personal check to:

Hobby Services
3002 N. Apollo Drive, Suite 1
Champaign, IL 61822

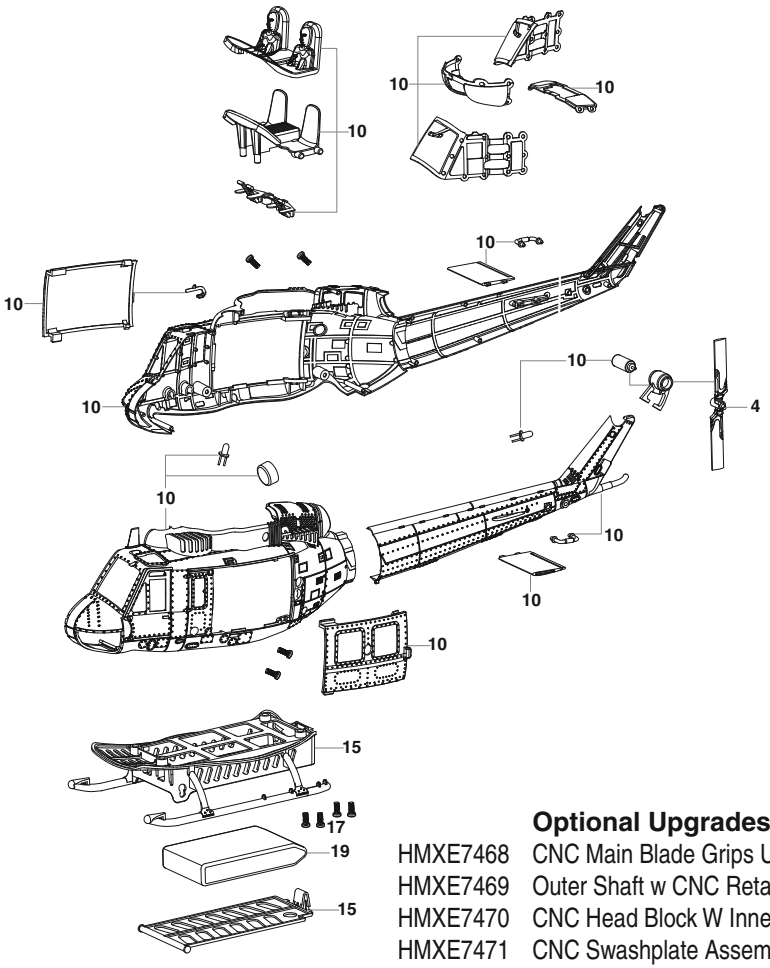
Be certain to specify the order number exactly as listed in the **Replacement Parts List**. Payment by credit card or personal check only; no C.O.D.

If additional assistance is required for any reason contact Product Support by e-mail at **helihotline@hobbico.com**, or by telephone at (217) 398-8970.

EXPLODED VIEW & PARTS LIST



	Part #	Description		Part #	Description
1	HMXE8297	Main Rotor Blades	13	HMXE7894	Swashplate Autorotation Frame
2	HMXE8536	Flybar Assembly			
3	HMXE8537	Main Blade Grips (2)	14	HMXE7895	Main Frame
4	HMXE8458	Tail Rotor Blade	15	HMXE7896	Landing Gear/Battery Mount
5	HMXE8574	Locking Sleeve Assembly			
6	HMXE8573	Rotor Head Linkage Set	16	HMXE8835	Ball Bearing Set
7	HMXE8539	Outer Main Shaft	17	HMXE7336	Complete Screw Set
8	HMXE8540	Inner Main Shaft	18	HMXG8024	Replacement Motor Set
9	HMXE8541	Lower Head Block/Blade Drive	19	GPMP0410	Battery (3.7V 600mAh)
10	HMXE7417	Replacement Fuselage	20	HMXP2019	1S LiPo Charger
11	HMXE8542	Swashplate Assembly	21	HMXM2019	E-Board Assembly
12	HMXE8040	Main Drive Gears	22	HMXJ2028	4Ch 2.4 GHz Transmitter



Optional Upgrades

HMXE7468	CNC Main Blade Grips Upper and Lower
HMXE7469	Outer Shaft w CNC Retainer Collar
HMXE7470	CNC Head Block W Inner Rotor Shaft
HMXE7471	CNC Swashplate Assembly
GPMM3150	Charge Lead Banana to HMX Micro Plug
HMXE7477	CNC Head Conversion

NOVUS

UH-1D HUEY