

Heli-Max™



COMANCHE

INSTRUCTION MANUAL

CX

Specifications

Length: 12.5 in [318mm]

Width: 2.7 in [69mm]

Height: 6.3 in [160mm]

Rotor Span: 10.6 in [270mm]

Weight: 5.1 oz [145g]

(with supplied flight battery)

- Only use the included charger with the included battery or replacement part (GPMP0407).
- 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 the battery. 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 2.5V 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.

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.

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Thank you for purchasing the Heli-Max Comanche 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 Comanche CX visit the Heli-Max web site at:

www.helimax-rc.com

Open the “Helicopters” link, and then select the Comanche 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.

CAUTION: Be aware that the Comanche CX operates on the same frequency band as larger R/C models. If flying your Comanche CX within five miles of an R/C site, there is a real possibility that you could be operating your model on the same frequency (channel) as another R/C pilot. If this happens, a crash will result—with the person flying the more expensive model suffering the greater loss (and having greater potential for property damage or injury). The best thing to do is to join an R/C club and fly at the site where frequency control measures will be in effect. If you insist on flying elsewhere, **always be aware of your proximity to R/C flying sites.**

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 Comanche 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.

1. Your Comanche 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 Comanche CX, if not assembled and operated correctly, could possibly cause injury to yourself or spectators and damage to property.

2. You must assemble the model **according to the instructions**. 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.

3. You must correctly install all R/C and other components so that the model operates correctly on the ground and in the air.

4. 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.

5. If you are not an experienced pilot or have not flown this type of model before, we recommend that you get the assistance of an experienced pilot in your R/C club for your first flights. If you're not a member of a club, your local hobby shop has information about clubs in your area whose membership includes experienced pilots.

We, as the manufacturer, provide you with a top quality, thoroughly tested helicopter and instructions, but ultimately the quality and flyability of your finished model depends on how you build it; therefore, we cannot in any way guarantee the performance of your completed model, and no representations are expressed or implied as to the performance or safety of your completed model.

Remember: Take your time and follow the instructions to build a safe and enjoyable model.

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ADDITIONAL ITEMS REQUIRED

- ❑ (8) AA Alkaline cells (SANP3500 AA 4-pack x2)

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ORDERING REPLACEMENT PARTS

Replacement parts for the Heli-Max Comanche CX are available using the order numbers in the **Replacement Parts List** on page 15. The fastest, most economical service can be provided by your hobby dealer.

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KIT INSPECTION

Before starting assembly, take an inventory of the Comanche 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

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KIT CONTENTS



1. Helicopter
2. Battery

3. Charger
4. Transmitter

Install Batteries in the Transmitter

❑ Remove the battery cover from the back of the transmitter, remove the battery box and install eight (8) “AA” batteries into the battery box. Double-check the polarity of each battery before placing the battery box back into the transmitter and replacing the battery cover.

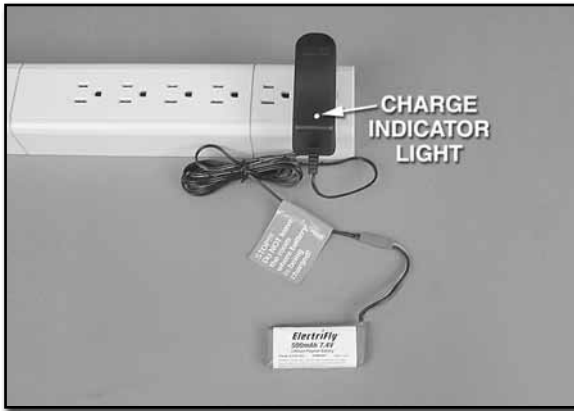


❑ Turn on the transmitter using the power switch as shown and verify that the LED indicator glows solid red. Turn the transmitter off for now. If the LED indicator did not light then remove the battery box and verify that the polarity of the batteries is correct.

Charging the Flight Battery

WARNING!! ALWAYS ensure that the charge indicator light is green before connecting the flight battery to the charger.

ALWAYS unplug the battery from the charger when the charge process is complete. If the battery is left connected, the charger will discharge the battery, possibly damaging the battery or charger.



❑ Ensure that the flight battery is not connected to the charger and plug the charger into an AC outlet. The indicator light on the charger should illuminate solid green, indicating that the charger is ready. If the indicator light is any color other than green, then please ensure that the charger is connected to an active AC outlet.

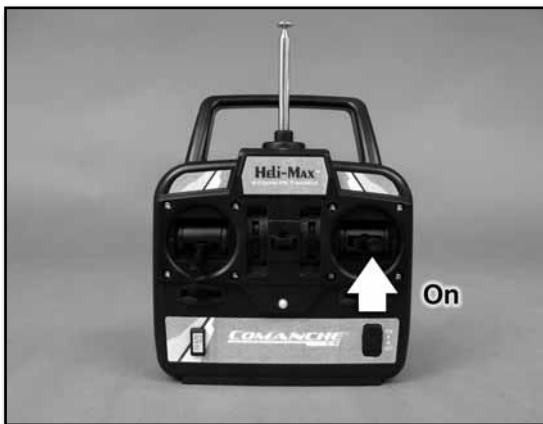
❑ Plug the battery into the charger and the indicator light will turn red. Once the charge process is complete the indicator light will turn green again. The charging process may take up to four hours.

The flight pack used to power the Comanche CX contains protective circuitry. If you experience any difficulties while charging or using the battery, please allow the battery to rest for two hours as this will allow the protection circuit to reset. This reset process is expected after a crash has occurred. If this issue re-occurs during normal use, please contact technical support for further assistance.

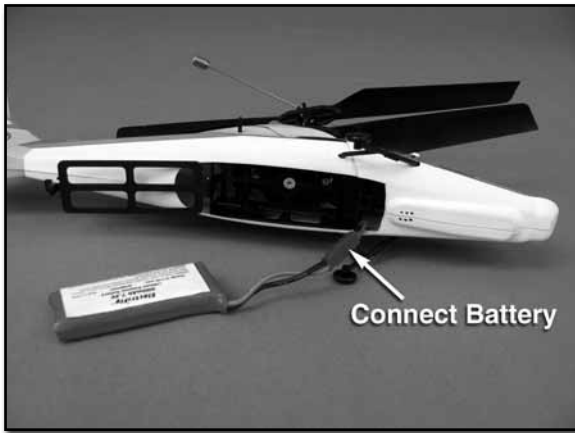
Electric Motor Warning

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



❑ Always turn the transmitter on first and then extend the transmitter antenna.



With the Comanche CX sitting still on its side, plug the battery into the E-Board. The Comanche CX will need to sit still for 10 seconds so the gyro can initialize and determine center. If the Comanche CX is moved during this initialization, the gyro will not operate properly.

Install the Battery



□ Once the 10 second initialization has completed open the battery door and insert the battery into the battery compartment. Close the battery door and place the connector and extra wiring into the fuselage.

Always step 15 feet away from the Comanche CX before operating the throttle. Do not hold onto the model and run it up.

A safe start is built into the Comanche CX that prevents the motor from activating unless the collective stick has been lowered to its 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.

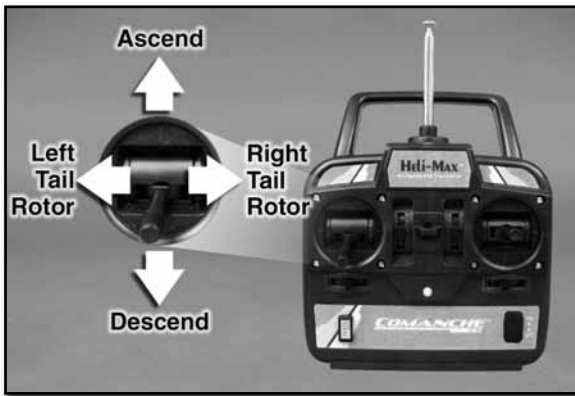
Range Check

Ground check the operational range of your radio before the first flight of the day. For safety reasons, unplug the main motor so power cannot be applied to the main rotor blades. With the transmitter antenna collapsed and the receiver and transmitter on, you should be able to walk at least 50 feet away from the model and still have control. Have an assistant stand by your model and while you work the controls, tell you what the servos are doing. If the controls do not

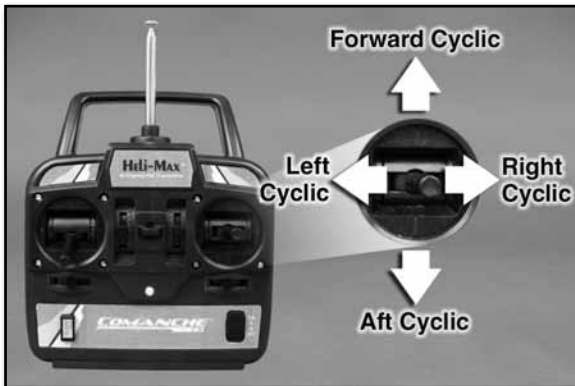
respond correctly, **do not fly!** Find and correct the problem first. Look for loose servo connections or broken wires, corroded wires on old servo connectors, poor solder joints in your battery pack or a defective cell or a damaged receiver crystal from a previous crash.

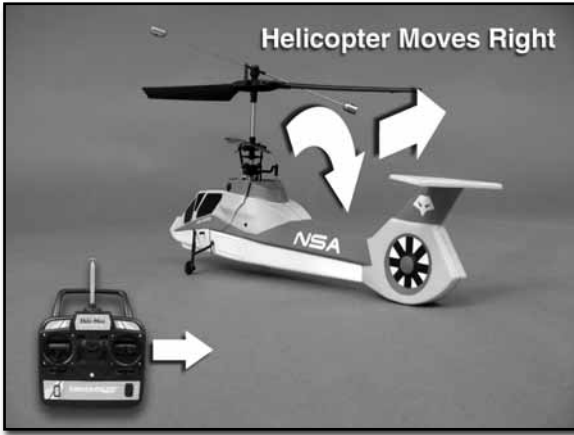


Transmitter Controls

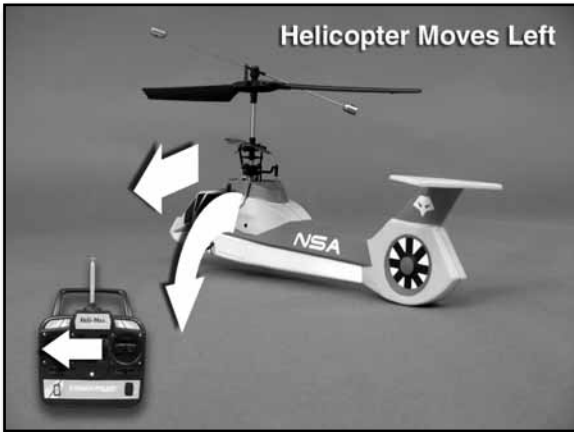


All controls described as follows are with the tail pointing directly toward you. This is the best way to start since it keeps the control inputs oriented the same. Once you start getting comfortable you can work on side hovering and nose-in.

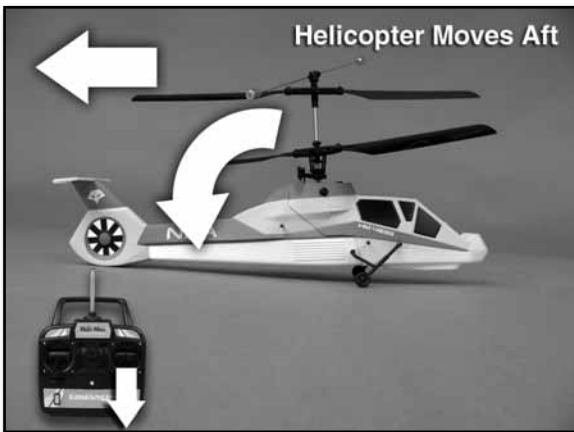




Moving the cyclic stick right will cause the helicopter to tilt right and it will start moving that direction.

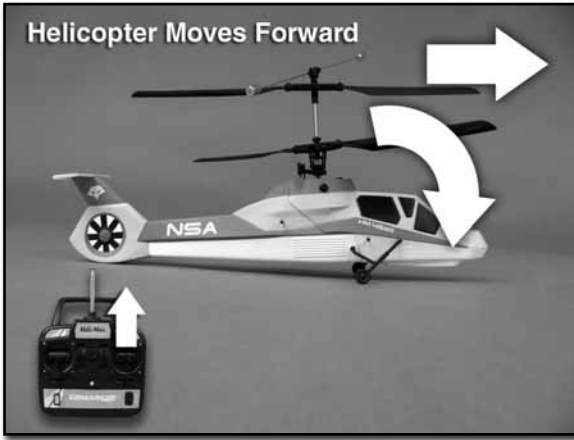


Moving the cyclic stick left will cause the helicopter to tilt left and start moving in that direction.



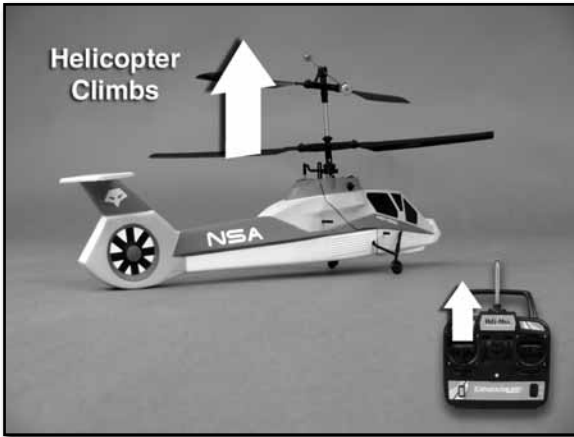
Moving the cyclic stick backwards (towards you) will cause the helicopter to tilt backwards and start moving that direction.

Helicopter Moves Forward



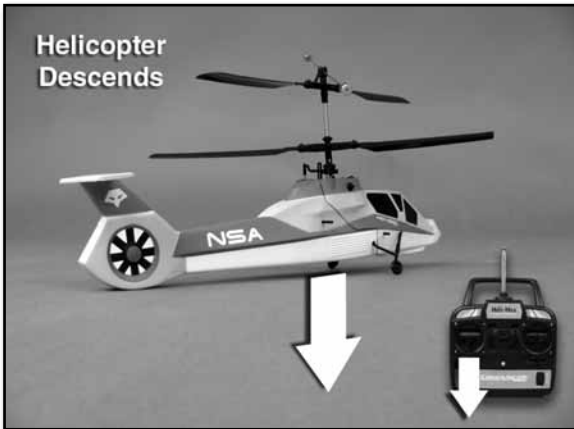
Moving the cyclic stick forward (away from you) will cause the helicopter to tilt forward and start moving that direction.

Helicopter Climbs

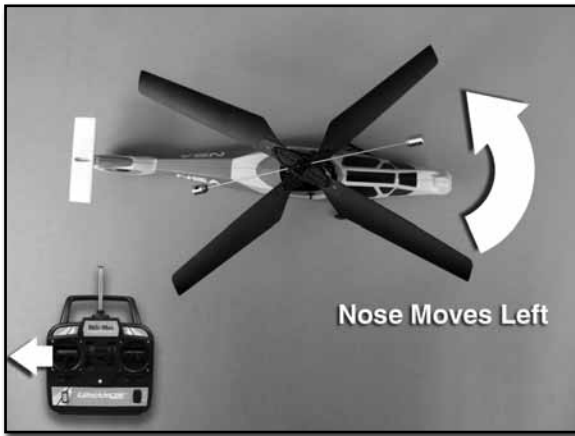


Moving the collective stick up (away from you) will cause the helicopter to climb higher.

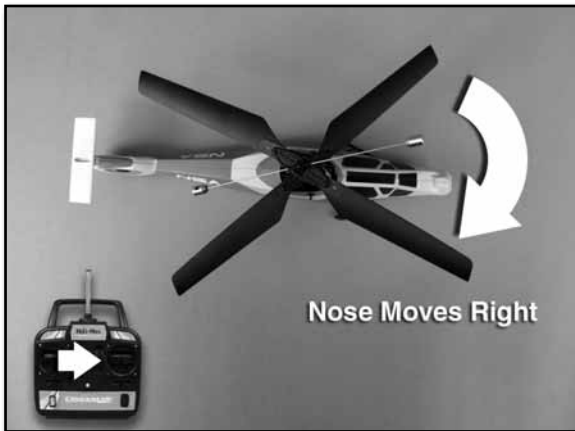
Helicopter Descends



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 Comanche CX is an extremely lightweight model helicopter. Taking that into consideration, you should only fly the Comanche CX indoors or in calm wind.

Takeoff

Slowly add power and observe the model. If you feel it needs trimming do so before lift off. You will quickly find that model helicopters never allow you to return the sticks to center. Just position the stick as needed to maintain a steady hover.

You will notice the cyclic controls lag behind your inputs. This is perfectly normal and something you get the feel for with time. It's normal to drift around a little in a hover until you get used to flying the model. The cyclic controls on the Comanche CX 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. This can take some practice and 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 solid hover and slowly decrease power until the helicopter settles onto the ground.

Basic Maneuvers

Once you get 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 and turning back and fly back to the other side in straight lines. Once you get that down you can try rotating the helicopter around 360 degrees 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. 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 you improve you'll remain nose-in for longer periods of time.

GOOD LUCK AND GREAT FLYING!



Replacement parts for the Heli-Max Comanche 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.

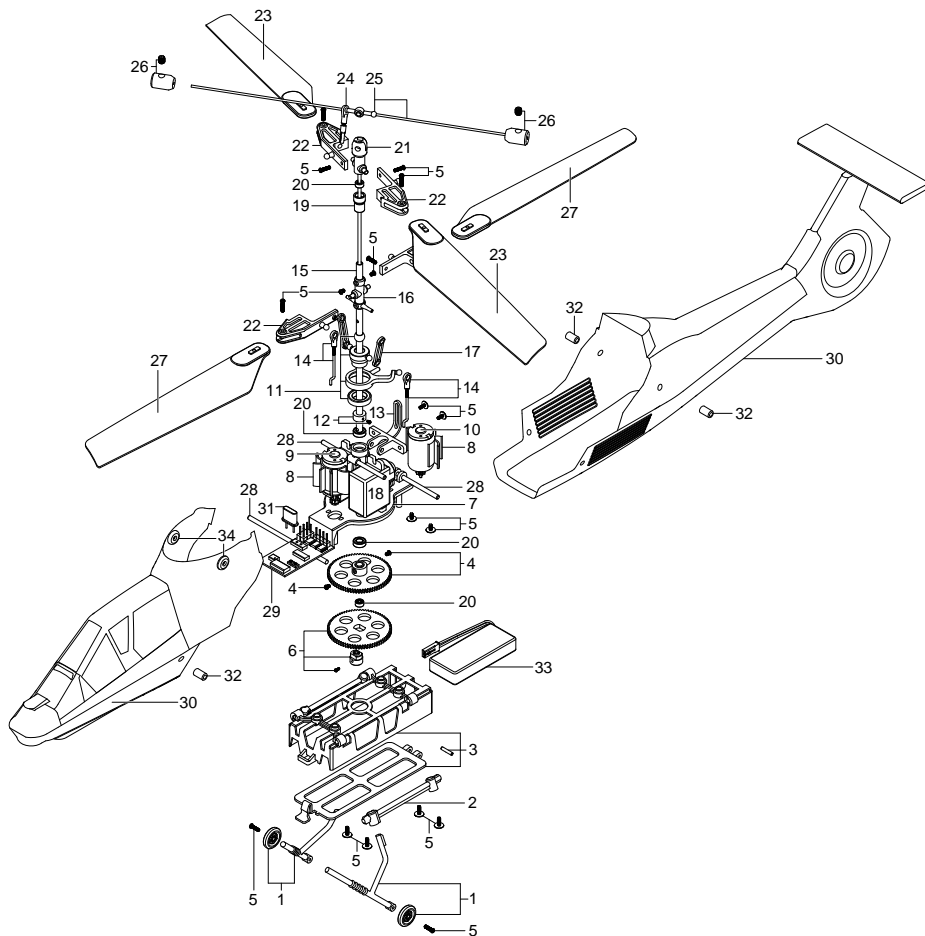
If additional assistance is required for any reason contact Product Support by e-mail at helihotline@hobbico.com, or by telephone at (217) 398-8970.

Comanche CX Replacement Parts List

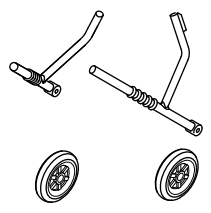
#	Stock #	Description
1	HMXE7955	Landing Gear Set
2	HMXE7929	Landing Gear Mounts
3	HMXE7204	Battery Box
4	HMXE8031	Upper Rotor Gear
5	HMXE7332	Screw Set
6	HMXE8030	Lower Rotor Gear
7	HMXE7938	Main Frame
8	HMXM2013	Motor Heat Sink
9	HMXG8017	Front Main Motor
10	HMXG8018	Rear Main Motor
11	HMXE8523	Swashplate
12	HMXE8522	Outer Shaft Collar
13	HMXE7939	Servo Mount
14	HMXE8534	Servo Pushrods
15	HMXE8532	Outer Rotor Shaft
16	HMXE8564	Lower Rotor Head
17	HMXE8533	Main Blade Control Link
18	HMXM2012	Servos with Arms
19	HMXE8525	Inner Shaft Collar
20	HMXE8828	Ball Bearing Set
21	HMXE8565	Inner Rotor Shaft
22	HMXE8329	Blade Grips
23	HMXE8327	Upper Rotor Blades
24	HMXE8527	Flybar Link Control
25	HMXE8529	Flybar Assembly
26	HMXE8528	Flybar Weights
27	HMXE8328	Lower Rotor Blades
28	HMXE7398	Fuselage Mount Post

- 29 HMXM2010 E Board Rx/Esc/Gy
- 30 HMXE7399 Fuselage Comanche CX
- 31 HMXM2011 X-Tal Ch 36
- 31 HMXM2014 X-Tal Ch 40
- 31 HMXM2015 X-Tal Ch 42
- 31 HMXM2016 X-Tal Ch 44
- 31 HMXM2017 X-Tal Ch 54
- 31 HMXM2018 X-Tal Ch 56
- 32 HMXE7407 Fuselage Secure Tubes
- 33 GPMP0407 LiPo Battery
- 34 HMXE7391 Canopy Grommets (2)

Heli-MAX™ **EXPLODED VIEW**

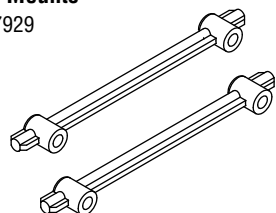


Landing Gear
 PART # HMXE7955
 EVPL # 01



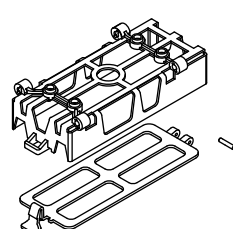
1 set

Landing Gear Mounts
 PART # HMXE7929
 EVPL # 02



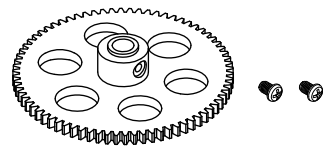
2 pcs

Battery Box
 PART # HMXE7204
 EVPL # 03




1 set

Upper Rotor Gear
 PART # HMXE8031
 EVPL # 04



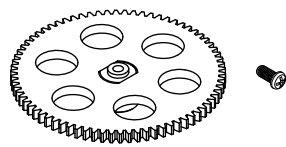
1 set

Screw Set
 PART # HMXE7332
 EVPL # 05



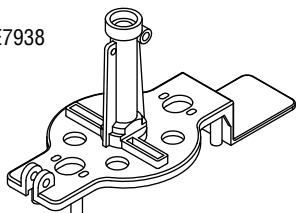
1 set

Lower Rotor Gear
 PART # HMXE8030
 EVPL # 06



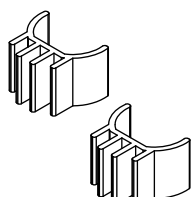
1 set

Main Frame
 PART # HMXE7938
 EVPL # 07



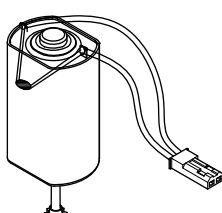
1 pc.

Heat Sink
 PART # HMXE2013
 EVPL # 08



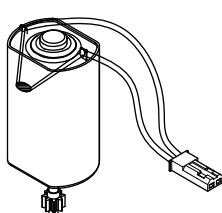
2 pcs

Front Main Motor
 PART # HMXG8017
 EVPL # 09



1 set

Rear Main Motor
 PART # HMXG8018
 EVPL # 10

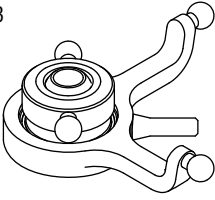


1 set

Swashplate

PART # HMXE8523

EVPL # 11

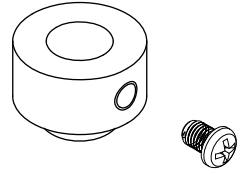


1 set

Outer Shaft Collar

PART # HMXE8522

EVPL # 12

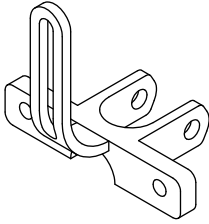


1 set

Servo Mount

PART # HMXE7939

EVPL # 13

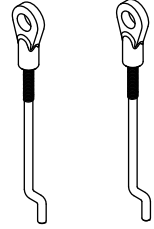


1 pc.

Pushrod

PART # HMXE8534

EVPL # 14

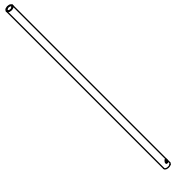


2 set

Outer Rotor Shaft

PART # HMXE8532

EVPL # 15

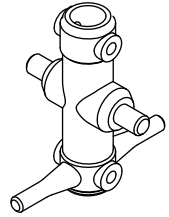


1 pc.

Lower Rotor Head

PART # HMXE8564

EVPL # 16

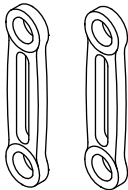


1 pc.

Main Blade Control Link

PART # HMXE8533

EVPL # 17

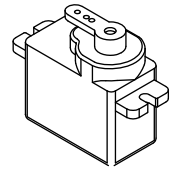


2 pcs

Servo

PART # HMXM2012

EVPL # 18

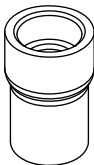


1 pc.

Inner Shaft Collar

PART # HMXE8525

EVPL # 19

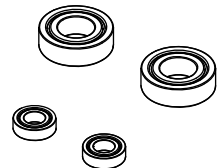


1 pc.

Bearings

PART # HMXE8828

EVPL # 20



1 set

Inner Rotor Shaft

PART # HMXE8565

EVPL # 21

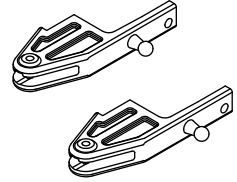


1 set

Blade Grip

PART # HMXE8329

EVPL # 22

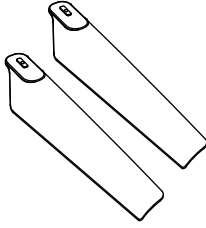


2 pcs

Upper Blades

PART # HMXE8327

EVPL # 23

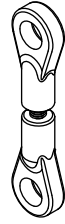


2 pcs

Flybar Link

PART # HMXE8527

EVPL # 24

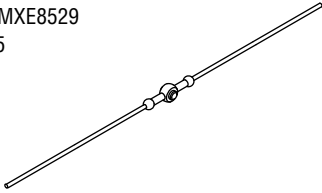


1 set

Flybar Assenbly

PART # HMXE8529

EVPL # 25

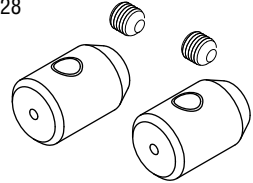


1 set

Flybar Weights

PART # HMXE8528

EVPL # 26

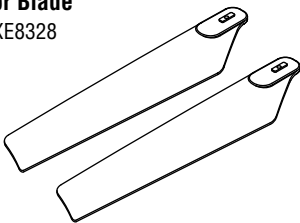


2 sets

Lower Rotor Blade

PART # HMXE8328

EVPL # 27

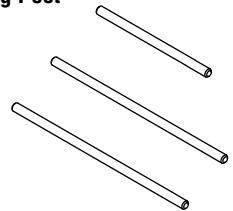


2 pcs

Fuselage Mounting Post

PART # HMXE7398

EVPL # 28

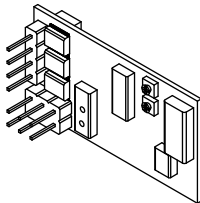


3 pcs

E-Board (RX/ESC/Gyro)

PART # HMXE2010

EVPL # 29

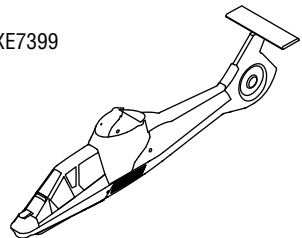


1 pc.

Fuselage

PART # HMXE7399

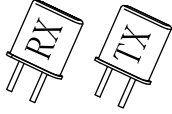
EVPL # 30



1 set

Crystal

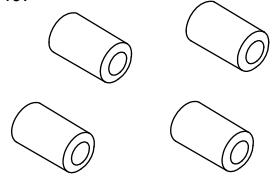
PART # HMXE2011 - Ch36
HMXE2014 - Ch40
HMXE2015 - Ch42
HMXE2016 - Ch44
HMXE2017 - Ch54
HMXE2018 - Ch56



EVPL # 31
1 set

Fuselage Secure Tubes

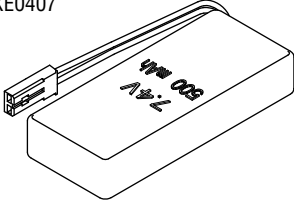
PART # HMXE7407
EVPL # 32



2 pcs

LiPo Battery

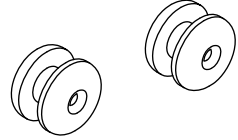
PART # HMXE0407
EVPL # 33



1 pc.

Canopy Grommets

PART # HMXE7391
EVPL # 34



2 pcs