

Heli-Max®

1SQ™



***1SQ 2.4GHz RTF/Tx-R
Instruction Manual***



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INTRODUCTION

Thank you for purchasing the Heli-Max 1SQ Quadcopter. 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, visit the Heli-Max web site at: **www.helimax-rc.com**

Open the “Helicopters” link, and then select the 1SQ Quadcopter. 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

Follow these safety precautions when operating this or any model helicopter.

- 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 1SQ Quadcopter, 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 1SQ Quadcopter 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 1SQ Quadcopter, 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.
- 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.



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® **ADDITIONAL ITEMS REQUIRED**

- ❑ For Tx-R: Tactic AnyLink and your helicopter transmitter

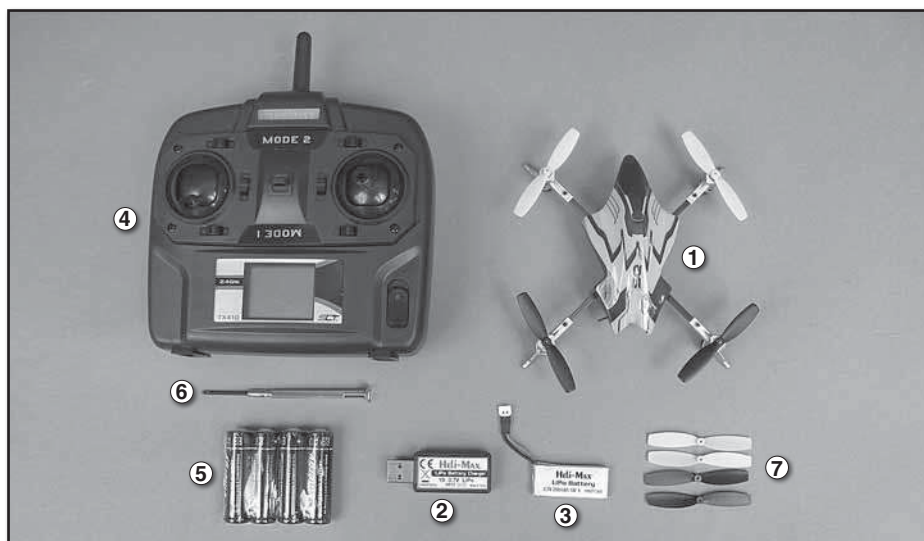
Heli-Max® **KIT INSPECTION**

Before starting assembly, take an inventory of the 1SQ Quadcopter kit. If any parts are missing, damaged, or defective, 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

Heli-Max® **KIT CONTENTS**



- | | | |
|-------------------|--------------------------------|-----------------|
| 1. Quadcopter | 4. Transmitter (RTF only) | 7. Spare Blades |
| 2. USB Charger | 5. AA Batteries (4) (RTF only) | |
| 3. Flight Battery | 6. Screwdriver | |



Your new 1SQ Quadcopter uses SLT protocol. This means that with the simple addition of the Tactic AnyLink™, you can enjoy your new machine with nearly “any” helicopter radio.

AnyLink Heli Tx Compatibility Chart		Required Cable
Futaba®	6EXH or EXP, 6J, 7C, 8FG, 8J, 9C, 10C, 12FG	<i>INCLUDED</i>
	6H, 8U, 9Z	<i>TACM0003</i>
	12Z, 14MZ, 18MZ	<i>TACM0007*</i>
Hitec®	Eclipse 7 (72MHz)	<i>TACM0003</i>
	Aurora 9	<i>TACM0004</i>
	Eclipse 7 (2.4GHz)	<i>TACM0005*</i>
JR®	All heli transmitters with trainer jack	<i>INCLUDED</i>
Spektrum®	DX6, DX6i	<i>INCLUDED</i>
	DX7s, DX8, DX10t, DX18	<i>TACM0005*</i>
Graupner®	MX-16	<i>INCLUDED</i>

*Includes a rechargeable 6.6V LiFe battery. LiFe-compatible charger required.



WARNING: AnyLink must be in Normal Mapping (1 Beep) when Futaba or Hitec transmitters are used with Tx-R aircraft. If using Spektrum, JR, or Graupner transmitters, AnyLink must be in Alternate Mapping (2 Beeps). (See AnyLink manual.)

Use the following guide as a setup. Once you feel comfortable, fine tune to your liking.

Setup Note: Only adjust the listed parameters and keep all other functions inhibited. Make sure your swash is setup for a 90 deg system (H-1).

		channel 1	channel 2	channel 3	channel 4
Futaba®	Reverse	N	N	N	N
	Endpoint	100%	100%	100%	120%
	D/R	100/70	100/70		100/70
	Gyro*	ON - GY AVCS 38% (on some radios it will be A-38)			
		channel 1	channel 2	channel 3	channel 4
Spektrum®	Reverse	R	R	R	R
	Endpoint	100%	100%	100%	120%
	D/R	100/70	100/70		100/70
	Gyro*	ON 55%			

* The responsiveness of the Quad is dependent on the gyro setting. For some radios these settings may be too aggressive. Reduce the numbers until you feel comfortable.

Spektrum is a registered trademark of Horizon Hobby, Inc.



Connecting the **AnyLink™** module or an SLT™ compatible transmitter to your heli.

1. Turn on the transmitter. Make sure the throttle is at zero.
2. Place the transmitter close to the model.
3. Remove the canopy and locate the small black link button on the PC board.
4. Press and hold the button for 3 seconds.
5. Release and wait 3~5 more seconds. Your system is now ready!



This 1SQ Quadcopter uses a lithium polymer (LiPo) battery. Follow these precautions to insure safe and trouble free operation.

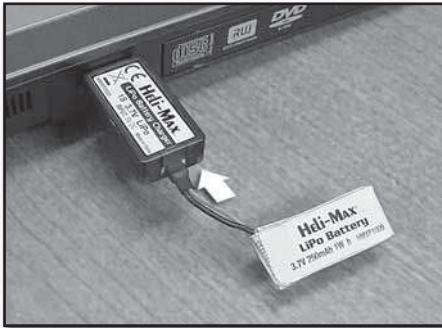
- Only use the included charger with the included battery.
- Do not attempt to use this charger with NiCd or NiMH battery packs.
- If the battery should become damaged, discard it. Do not attempt to use a damaged battery.
- Do not leave the charger unattended while charging. Disconnect the battery and unplug 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 trickle charge.
- Never allow the battery temperature to exceed 140° F [60° C].
- Never disassemble or modify pack wiring in any way or puncture cells.
- Do not allow water, moisture or foreign objects into the charger.
- 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 vehicle.
- Always disconnect the battery and remove the charger from the USB port when not in use.
- Do not attempt to charge a battery if it is swollen or hot.
- **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 keep a supply of sand accessible when charging.
Dumping sand on the battery will extinguish the LiPo chemical fire.
- ALWAYS KEEP OUT OF REACH OF CHILDREN.

CHARGING THE FLIGHT BATTERY

WARNING!! The charger supplied with the Heli-Max 1SQ Quadcopter 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 USB charger into your USB port. The *indicator light* will remain off.

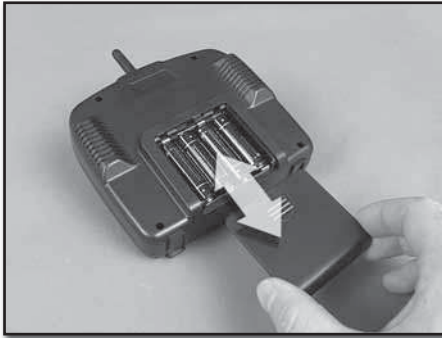


Plug the battery into the charger. The indicator light will glow solid, indicating that the battery is being charged. Once the battery is completely charged, the indicator light will flash slowly. Disconnect the battery from the charger. Under normal operating conditions, the battery may take up to 60 minutes to recharge.

NOTE: A fast flash indicates a charge error. This is typically an indication that your battery has gone bad.

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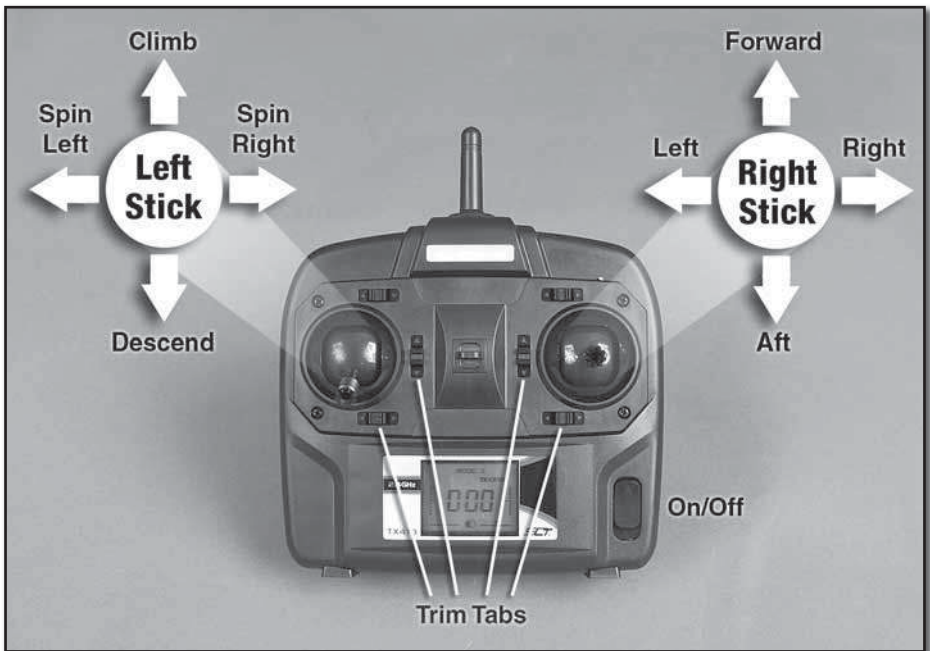
INSTALL THE TRANSMITTER BATTERIES



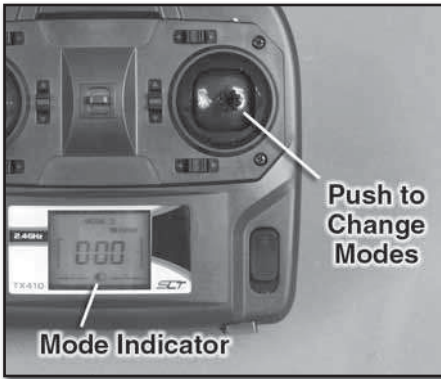
- ❑ Carefully remove the battery door and install four AA batteries. Double check the polarity of each battery. Slide the battery cover back into place.

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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.

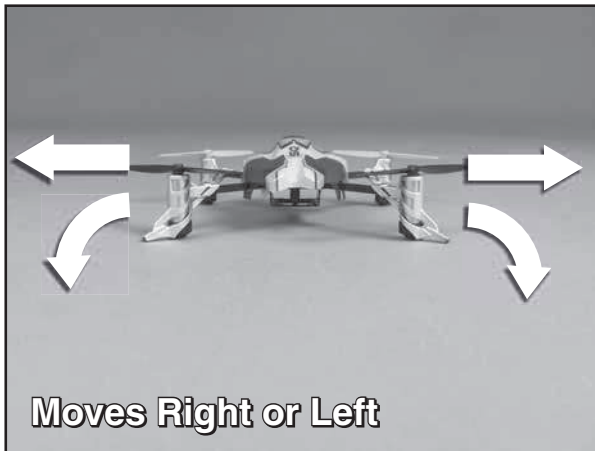


The TX410 has two flight modes that control how aggressive the Quad feels during flight. The expert mode is good for outdoors and beginner mode is good for indoors or smooth precise flying.

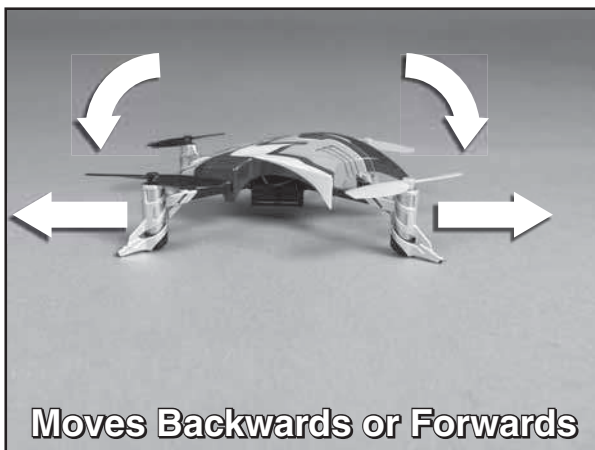
Adjust the mode rates by pushing and holding the right stick, then moving the throttle to read between 30 and 40, then let go of the right stick. Note: the low rate will always be approximately 75% of the high and is not adjustable independently.

IMPORTANT: This adjustment dictates

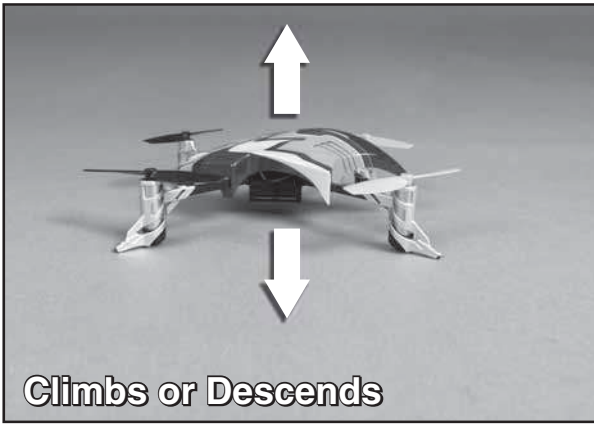
how aggressive the Quad will feel in flight. The range should only be set between 30 (mild) and 40 (hot) for normal flying. The default setting is 38. To perform flips, set the rate to 75 or higher.



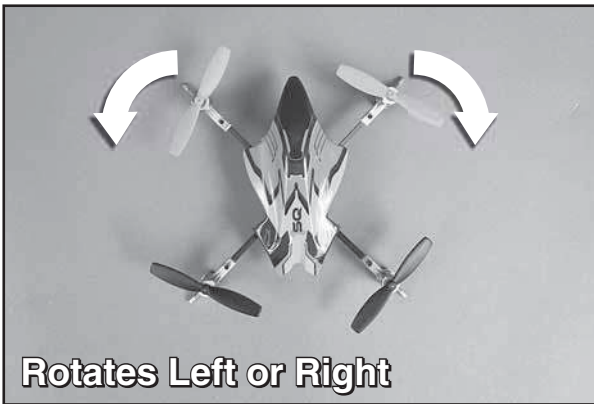
Moving the **right stick right or left** will cause the quad to tilt and start moving that direction.



Moving the **right stick forward or backward** will cause the quad to tilt and start moving that direction.



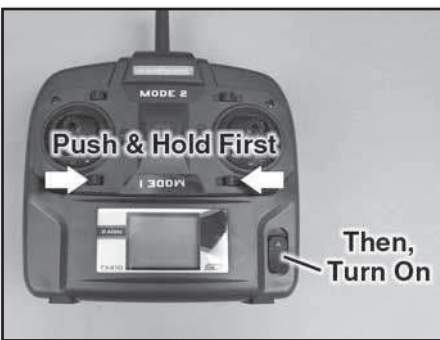
Moving the **left stick up or down** will cause the quad to climb or descend.



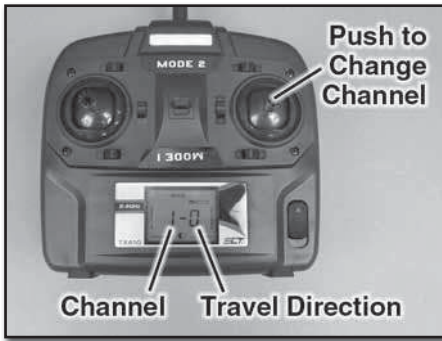
Moving the **left stick left or right** will cause the quad to rotate in that direction.

Heli-Max[®]
Heli-Max TX410 SERVO REVERSING

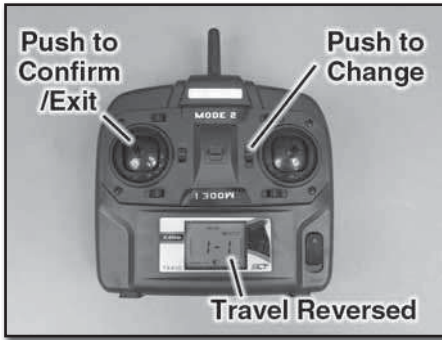
This transmitter features SLT protocol. Therefore, it will bind with other SLT receivers. In those applications, it may be necessary to reverse the servo travel direction as follows:



1. With the transmitter OFF, push and “hold” both the rudder trim and the aileron trim towards each other and then turn ON the transmitter.



❑ 2. Let go of the trim buttons and you will see 1-1 or 1-0 displayed. The first digit is the channel number. To change the channel you want to reverse, push the right stick.



❑ 3. To reverse the travel direction, push the elevator trim button up or down so the second number changes.

❑ 4. To confirm the change and exit to normal operation, push the left stick.

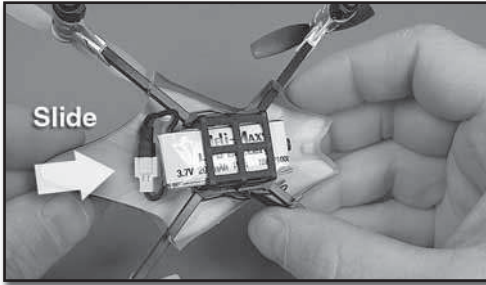
Heli-MAX® *TURNING THE MODEL ON*



❑ Move the left stick to the lowest position and then turn the transmitter on.



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.



Slide the flight battery into the battery compartment and plug in the battery.

NOTE: The quad will be “ON” at this point. Place the quad on a flat surface for 2 seconds to calibrate the TAGS.

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



The Heli-Max 1SQ Quadcopter is lightweight. Therefore, you should only fly indoors or in calm winds less than 5mph. It should be flown in a large area of at least 75 feet [15.25m] square with no obstacles.

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 rotor blades from rotating. If you can remember to do this, chances are you will not damage the quad in the crash.

Takeoff

We recommend low rates for indoor and your first flights, and high rates for outdoors. Slowly add power, observe the model and make all of the necessary corrections to keep the model level. You will notice that the quad is very responsive. Only small corrections are needed to maintain a steady hover. With the TAGS system, no trimming is needed.

Hovering

Once the quadcopter is up in the air, try to hold the quadcopter in one spot. If this is your first model quadcopter, it will require some practice. Wind or air

currents have a big effect on the stability of the quadcopter. Be patient and try to anticipate where the quadcopter will move. **Remember: Small corrections!**

Landing

From a steady hover, slowly decrease power until the quad settles onto the ground.

Basic Maneuvers

Pirouettes – Add a small amount of left stick (left or right) to rotate the quad. Rotating the quad 360° is called a pirouette.

Forward Flight – From a hover, point the nose away from you and push the right stick forward. (Small movements!) To stop, pull back slightly to slow down and then move the stick to center. During flight, you may have to add or reduce throttle to maintain a constant altitude.

Flips – To perform flips, first adjust the mode rate (see page 9) to 75 (this is gyro gain if using another heli radio). The quad will be extremely agile, so be careful for normal flying. Perform flips at higher altitudes to give you room to recover. Push full power and move the right stick full in any direction. Hold until the quad is upright and then move the stick as needed to stabilize the machine. We found 75 is a good starting point for larger and easier to control flips. You can move up from there if you want quicker flips. However, the faster the flips the harder it is to recover. Have fun!

GOOD LUCK AND GREAT FLYING!



Replacement parts for the Heli-Max 1SQ 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 Heli-Max web site at www.helimax-rc.com. Choose “Where to Buy” at the bottom of the page.

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	Hobby Services
and payments by	3002 N. Apollo Drive, Suite 1
personal check to:	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.

Key No.	Part No.	Part Name
1	HMXE2175	Rotor Blades 1SQ (2 black and 2 orange)
2	HMXE2176	1SQ Canopy
3	HMXE2177	Motor Boom Set (includes two assemblies for Right Front and Left Rear) Clockwise rotation
4	HMXE2178	Motor Boom Set (includes two assemblies for Left Front and Right Rear) Counter-clockwise rotation
5	HMXE2179	Frame Battery Holder
6	HMXE2180	Control Board Dampeners
7	HMXM2041	TAGS 3-1 Control Board 1SQ
8	HMXP1009	250mAh 1S LiPo Battery
9	HMXE2181	Screw Set 1SQ
10	HMXE2182	Motor Covers 1SQ (2 pieces)
11	HMXE2183	Foot Pads 1SQ (4 pieces)
	HMXJ2024	410 SLT Transmitter
	HMXP2023	USB Charger 1SQ

Problem: *Flies with poor power or buzzes.*

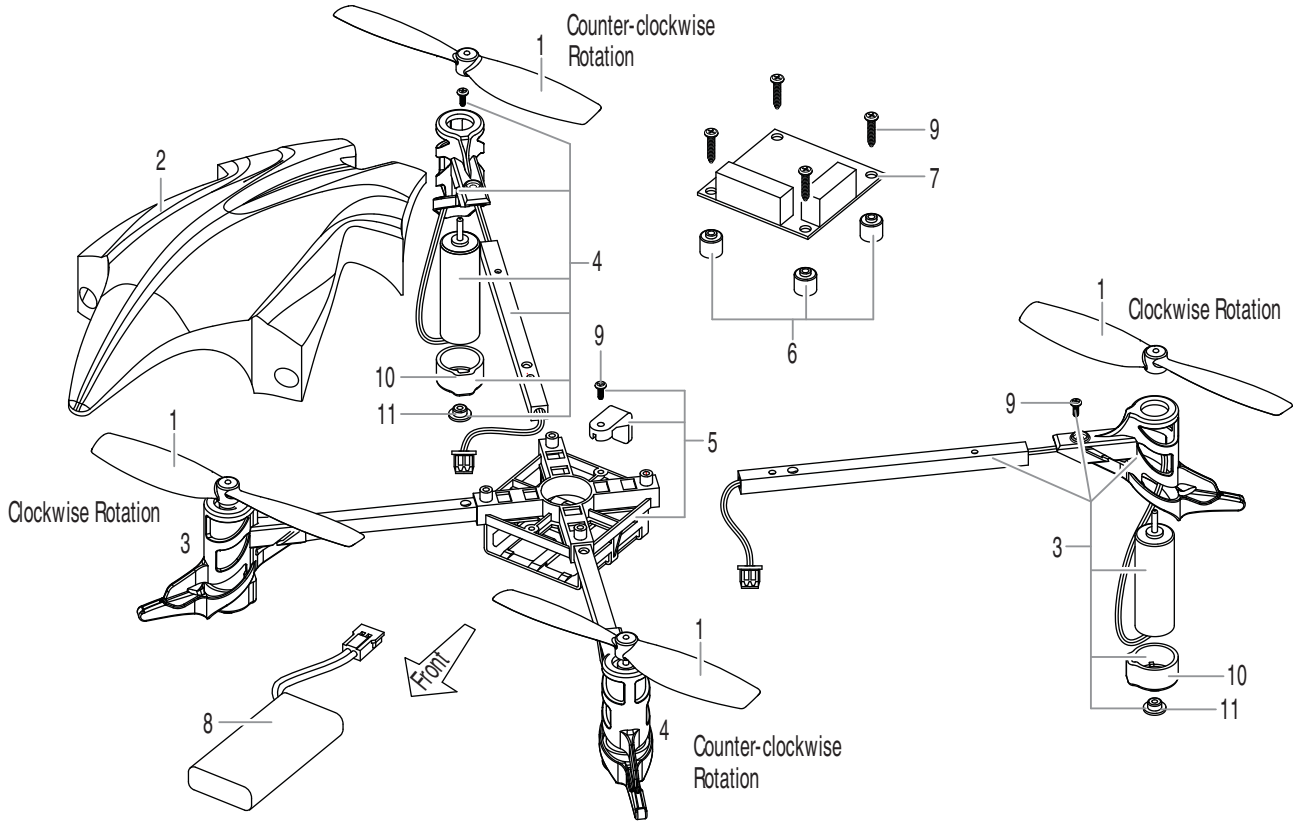
Solution 1: One of the props may be bent. Carefully bend it straight.

Problem: *With the battery disconnected, you notice that one of the motors spins noticeably slower or feels tight.*

Solution 1: The motor may have slid down. Gently push the motor back up into its mount.

Solution 2: The prop may have slid down against the mount. Use a small screwdriver to pry the prop upwards slightly.

Solution 3: If the prop still turns slow, replace that motor boom. This is done by removing the canopy, loosening the screw (9), unplugging the motor, and pulling out the boom. Install the new boom in reverse order.



FCC REQUIREMENT This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions.



- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

CE COMPLIANCE INFORMATION FOR THE EUROPEAN UNION

Instructions for Disposal of Waste Equipment by Private Users in the European Union: This symbol on the product or its packaging indicates this product must not be disposed of with other household waste. Instead, it is the user's responsibility to dispose of their waste equipment by handing it over to a designated collection point



for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or location where you purchased the product.

Declaration of Conformity:

Product: Heli-Max TX410 2.4GHz 4-Channel Tx Rx

Item number: HMXJ2024 TX410, Equipment class: 1

TX410 transmitter: The objects of the declaration described here are in conformity with the requirements of the specifications listed below, following the provisions of the European 2006/95/EC Low Voltage Directive:

EN 60950-1:2006 Safety

The objects of the declaration described here are in conformity with the requirements of the specifications listed below, following the provisions of the European R&TTE directive 1995/5/EC:

ETSI EN 300 328 V1.7.1 Technical requirements for radio equipment

ETSI EN 301 489-1 V1.8.1, 301 489-17 V1.3.2 General EMC requirements for radio equipment

Hobbico, Inc.
2904 Research Road
Champaign, IL USA 61826



The associated regulatory agencies of the following countries recognize the noted certifications to this product as authorized for sale and use.

UK	DE	DK	BG	SE	FI	GR
EE	LV	LT	PL	CZ	SK	HU
RO	SI	AT	IT	ES	PT	IE
NL	LU	MT	CY			