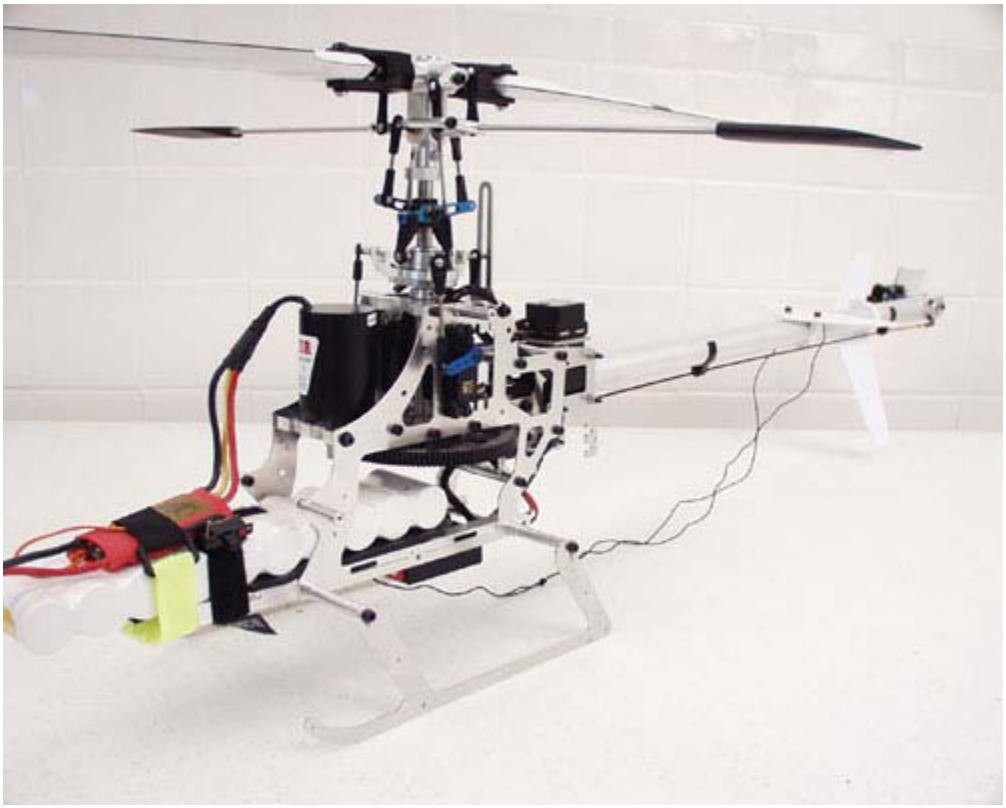
QuickWorldwide.com

Quickie EP Helicopter



Exclusively distributed by: **Quick Worldwide** **201 South 3rd. St. & 309 N.** **Coopersburg, PA 18036** **Phone:** (610)-282-4811 **Fax:** (610)-282-4816	Websites: http://www.hhiheli.com http://www.quickheli.com http://www.giantscaleplanes.com E-mail: hhi@fast.net Jon@ewtech.com (Tech. Support)

Table Of Contents

Introduction

Quick Worldwide & Hobbies & Helis International:

Quick of Japan and Hobbies & Helis International teamed up in 1997 to manufacture various upgrades for many of the plastic helicopters on the market. After four years of distributing numerous upgrades and crash parts for other helicopters, Quick and HHI decided to develop a lin of their own. Starting with the Quick 60, 30 and Quick Learner, the popularity of the Quick helicopter line continued to grow. In 2003, Quick and HHI pushed the outside of the envelope when they released a radical new design in the Quick 50, which immediately became a tremendous success.

Now, using the same design concepts used

Building on the popularity of this, and severAs the development of the kit began, initial designs were approved, proto-types were created and flown - all to ensure that the design was flawless. No minor details were over-looked. After countless hours of hard work and dedication, Quick-World-Wide is proud to release the first in a new standard in Helicopters - the Quick Learner.

Warning:

The radio-controlled model helicopter contained in this kit is not a toy. Rather, it is a sophisticated piece of equipment. This Product is not recommended for use by children, without adult supervision. Radio controlled models such as this, are capable of causing both property damage and/or bodily harm to both the operator/assembler and/or spectator if not properly assembled and operated. Hobbies & Helis assumes no liability for damage that could occur from the assembly and/or use/misuse of this product.

AMA:

We strongly encourage all prospective and current R/C aircraft pilots to join the Academy of Model Aeronautics. The AMA is a non-profit organization that provides services to model aircraft pilots. As an AMA member, you will receive a monthly magazine entitled Model Aviation, as well as a liability insurance plan to cover against possible accident or injury. All AMA charter aircraft clubs require individuals to hold a current AMA sporting license prior to the operation of their model.

Pre-Assembly Information:

Quick Helicopters are put together with care and quality topping our priority list. A recommendation when you are ready to begin building this model is that you examine the kit and understand the contents of the packages and read thoroughly before starting the assembly process. Purchase a parts box for all the nuts, bolts, and other small parts. We take great care to ensure all parts are in the box.

Quickie EP Features

1. Frame Construction:
Quickie frames are made of the highest Quality Black G-10 or Carbon Frames. These frames are not only rigid but will provide excellent vibration absorption.

2. Belt driven Tail:
Belt Driven tail is not only a reliable way to drive a tail, but is also very smooth with low maintenance.

3. High Quality Ball Bearings:
Quickie EP offers ball bearings on all moving parts.

4. EMS Collective System:
The EMS Collective design allows ease of setup with fewer moving parts. EMS constitutes overall design simplicity and represents the future of helicopter technology.

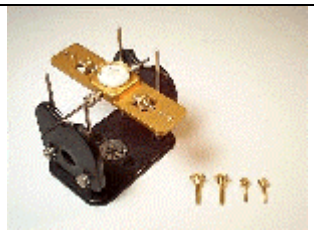
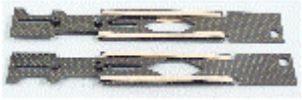
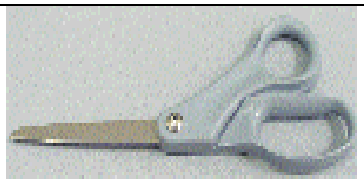
5. Heavy-Duty Motor Mount:
The Quickie EP sports a new heavy-duty top motor mount that allows the easy removal and change of motors and pinions.

6. Control Linkages:
The control linkages that are provided with the Quickie EP are high quality 2.3mm stainless steel rods and the rod ends are made of a high quality Delrin.

7. Single Blade Axle Design:
The single blade axle design is simple very responsive system, with very consistent flight characteristics.

8. Inside the Frame Battery Mount:
This design provides quick access to the flight battery and lots of protection in case of a crash.

Tools Needed to Assemble the “Quickie EP”

 Phillips Screw Driver	 Ball End Drivers HHI7050	 Bubble Blade Balancer HHI7010 High Point Balancer DUB499
 Composite Paddle Gauges HHI7000	 HHI7320 – 6pc Nut & Allen Driver Set	 Pitch Gauge HHI7001
 Ruler	 Hobby Knife	 Universal Flybar Lock HHI7040
 Needle Nose Pliers	 Scissors	

Hardware & Accessories

Motors (These are our recommended motor but others will work)

Glues & Thread Lockers

 CA Glue. …GBG1	 JB Weld…JBW8265S	 Locktite. …….PT40

Radio Mounting Accessories

 Single Sided Foam Tape… HHI2008	 Receiver Hold Down Straps HHI55** $4.99 2 Per Bag & Colors: Red, White, Purple, Black
 Receiver Strong Box… HHI2200	 Spiral Wrap HHI2809 & HHI2810
 Wire Ties…HHIWT01	

Other Optional Accessories

3mm Fly-bar Stiffeners…HHI402*

Quickie Servo Arm Set

3mm Finishing Caps
HHIM1110
Available in Blue, Silver, Gold, & Purple

Base Load Antenna
HHI53**
Available in Blue, Gold, Purple
& In 40, 50, 72mhz

Radio Requirements

Radios:

Hobbies & Helis & its distributors carry various lines of helicopter radios. Any radio that supports EMS/CCPM Mixing will work fine. We recommend using an eight-channel or better radio, although a six-channel radio is all that is required.

Servos:

This is the single most important function of the helicopter. Any sport servo will offer acceptable performance. You should be sure to use all the same type of servo on the swash plate. Higher speed servo is recommended for tail, but not required.

Introduction:

Please read through the entire manual before starting your construction of the Quickie. If there are any questions or concerns regarding the assembly of the helicopter you can call Hobbies & Helis International (610)-282-4811 or Email the any of the following techs.

Technical Support Personnel:

Jon – Jon@ewtech.com

Threadlocker Warning (Very Important):

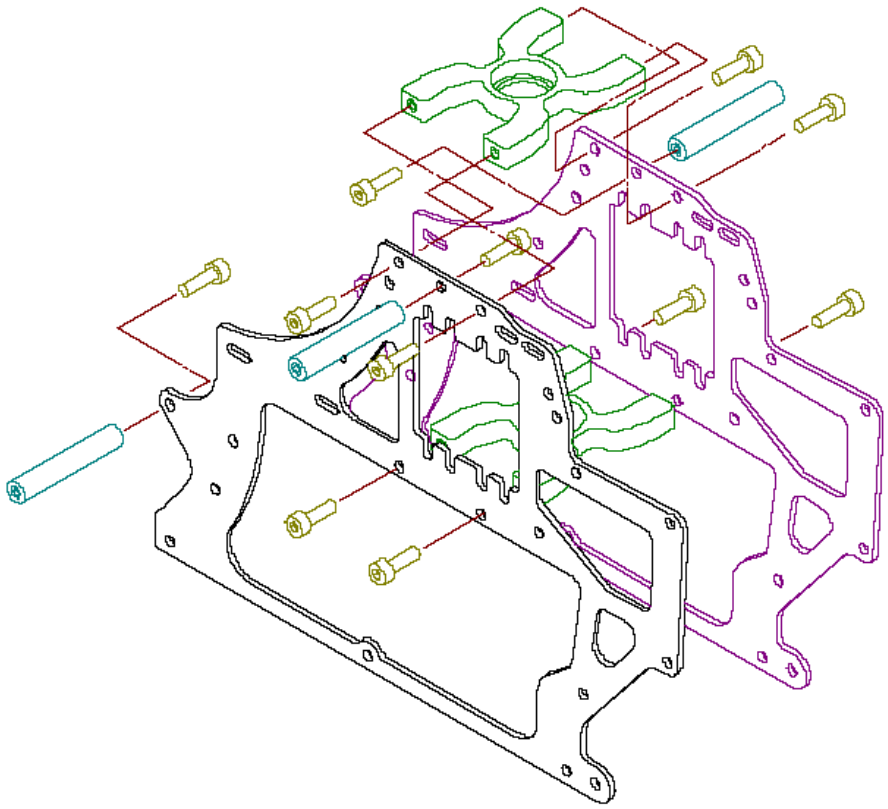
This is a general warning about the use of threadlocker and its importance. Threadlocker must be used anywhere that a metal fastener i.e. (M2, M3, M4 Cap Head Bolts, Set Screws etc.) are threaded into a metal part i.e. (Bearing Blocks, Cross-members, etc.). The failure to use threadlocker can result in parts falling a part and possible loss of control of the model, which can lead to a crash. Also, be sure to check your bolts' tightness after each flight. Many bolts, even with the use of threadlocker can come loose from vibration in the helicopter.

Section 1 – Frame Assembly

Parts List

Frame Set Bag
Main Frames X 2
Rear Sub-frame x 2
Landing gear x 2

Bag 1	
Main-shaft Bearing Block X 2	
Canopy Standoffs x 4	
Motor Mount x 1	
Frame Rails x 2	
26mm Landing Gear Standoffs x 4	
Antirotation Base x 1	



Assemble the main frames as shown in Figure 1. Open part is the bearing block opening that the bearing was inserted into. Describe which is up or down, a sticker or indent or mark to designate the top part of the bearing block. You may not need the washers that HHI sells as you want to keep the weight down

Assemble the main frames as shown in the picture. Attach the canopy standoffs using (4) M3x6 cap head screws. The bearing blocks will be inserted as follows; the upper block will have the open part facing up, and the lower bearing block will have the open face down. Each of the bearing blocks are attached with (4) M3x6 cap head screws.

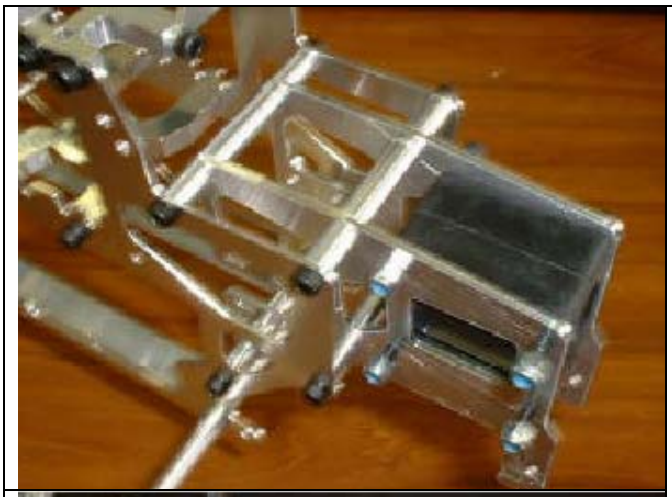
Loosely install the motor mount. This item will be coming out again when you install your motor, so only put this mount in loosely. Install the motor mount (4) M3x6 cap head screw and (4) M3 washers

Next, install the frame rails. The flat part of the frame rail is oriented on top. The slotted sides go against the frames. Install the two 46mm cross members into the frame. The frame rails go on the inside of the frames. Next put an M3x20 set screw into each of the cross member ends. There should be a bit still protruding.

Then attach a 26mm Landing gear standoff onto each of the M3x20 set screws. Attach the landing gear using (4) M3x6 cap head screws.

Note that if you have problems getting the standoff to screw down entirely, remove it and use a hex head driver to drive the screw into the standoff, as there might be a little excess material.

	Attach the antirotation upright piece to the antirotation base using (2) M3x6 cap head screws.
	Attach the antirotation guide using (4) M3x6 cap head screws and (4) M3 washer. When installing the antirotation guide, do not tighten at first until after the swash is installed.
	Assemble the rear sub-frame as shown. Attach the two frame halves with the boom holders. They will be attached using (4) M3x35 cap head bolts and nuts. *Remove the two boom holders from the bag with the tail rotor parts.*



Next you will attach the rear sub frame to the helicopter.

There are eight attachment points, four on each side. Take an M3x20 cap head screw and slide it through the hole on the frame. Next, slide a 10mm spacer onto each of the bolts. Slip the sub-frame into the middle and secure each bolt with a 24mm cross member in the middle.

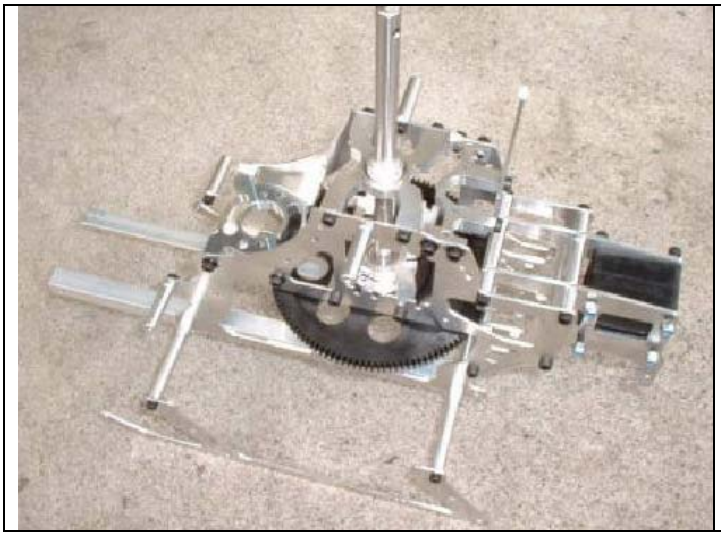
When assembling the rear frame, do not tighten all of the screws until you loosely install and start all of the M10 and M24 cross members. This will take a little time so be patient.

Section 2 – Main Gear Installation

Parts List

Bag 2 Main Gear Autorotation Hub-Deluxe/Main Gear Hub-Standard M3x6 Cap Head Screws x 4 Main Shaft x 1	Main Shaft Collar x 1 M3x18 Cap Head Screw x 1 M3 Locknut x 1 M3x3 Set Screw x 4

	Next, attach the main gear to the antirotation/main gear hub as shown. It will be attached with (4) M3x6 cap head screws. *When attaching the antirotation hub to the main gear, you may need to open the holes slightly. Use a hobby knife to gently open the holes so that the M3x6 screws will easily screw into the plastic.*
	Slide the main shaft down through the upper and lower bearing blocks and into the autorotation hub. *Note that the smaller diameter part of the shaft goes into the gear and autorotation hub.* Secure the shaft in place with an M3x18 cap head bolt and M3 locknut. Then secure the main shaft on top with the main shaft collar and (4) M3x3 set screws. *Pull up on the shaft when tightening the setscrews to remove any possible endplay.*

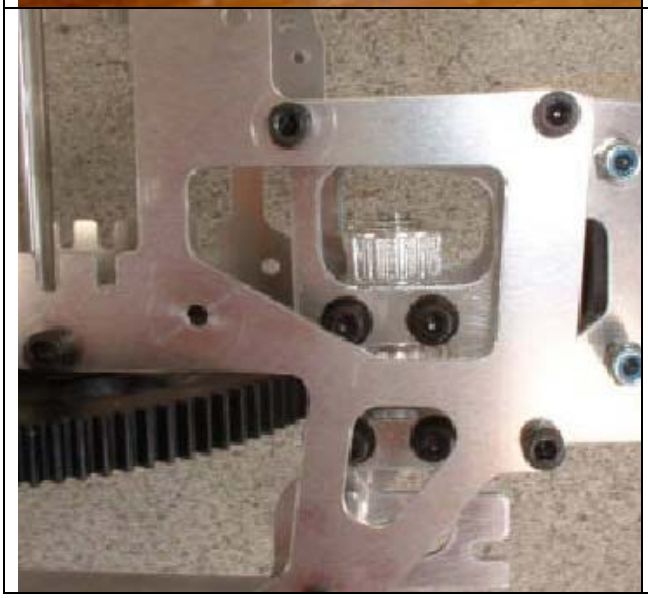
	This is how the helicopter should look at this point.

Section 3 – Counter Gear Assembly

Parts List

Bag 3 Counter Gear Shaft x 1 Counter Gear x 1 Lock Pin x 1 E-Clip x 1 Counter Gear Bearing Block x 2	Pulley Gear Plate x 1 Lock Pin x 1 Pulley Gear x 1 E-Clip x 1 M3x6 Cap Head Screw x 8 M3 Washer x 8

	Install the steel stopper pin into the counter gear shaft. Then slide the counter gear onto the counter gear shaft.
	Secure the gear in place using an E-clip.
	Locate the two counter gear bearing blocks. Next slide each bearing block onto the counter gear shaft. Each bearing block has an open face. The open faces should both face up as shown in the picture.

	Then slide the pulley spacer on, with the shoulder down and the bevel side up, and finally the cross locking pin. Next slide the gear on the shaft capturing the cross pin with the slot in the gear. Secure the gear down with the second e-clip.
	Next, slide the counter gear assembly into the frame and secure it in place using (8) M3x6 cap head screws with a M3 washer under each.

Section 4 – Control Items

Parts List

Swashplate Washout Arms Washout Base Antirotation guide pin Washout link x 2	M2x12 Pan head screw x 2 M3x3 Set Screw x 1 M3x6 Pivot studs x 2 M3x10 Cap head screws M3x5x1 Spacer x 2

	Install the antirotation pin/elevator ball on to the swashplate. Install the two sim balls on to the the swashplate as shown. Locate the swashplate and slide it on the main shaft first.
	Next locate the washout base, arms, links, M3x6 pivot studs, M3x10 cap head screws, M3x5x1 spacers, and M2x12 pan head screws. First slide an M3x8 cap head screw through each arm. Note which direction the screw should go through the arm in the picture. Slide an M3x5x1 on each bolt and attach them to the base. Next attach an M3x6 pivot stud to each of the washout arms. Finally attach a washout link to each arm with an M2x12 pan head screw. Next slide the washout onto the main shaft with the protruding side going down first.
	Attach the washout links to the longer pivot studs on the inner ring of the swashplate.

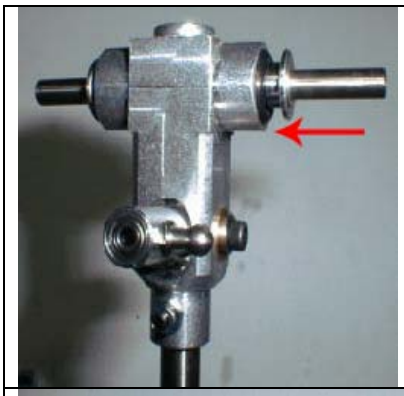
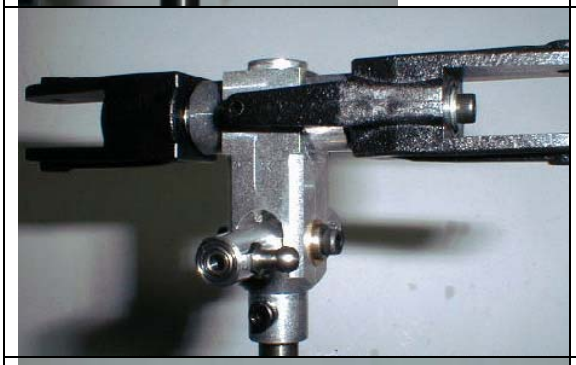
	Attach the washout links to the longer pivot studs on the inner ring of the swashplate.
	Slide the Antirotation guide pin on the main shaft next. Secure it using the M3x3 set screw. This will be adjusted later, so snug is all this screw needs to be for now.

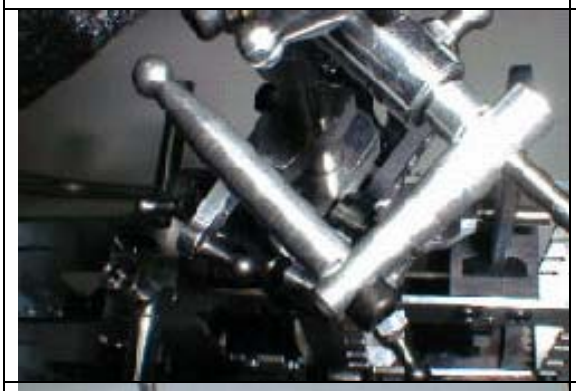
Section 5 – Head Assembly

Parts List

Center Hub	Hiller arm x 2
Seesaw	M3x10 Cap head screw x 2
Seesaw Collar x 2	3x5x1 Spacer x 3
M3x8 Cap head screw x 2	Flybar
M3x6 Pivot studs x 2	Flybar control arm base x 2
M3x16 Cap head bolt	Flybar control arm extension x 2
M3 Locknut	Flybar control arm spacer (3x5x5) x 2
7x13x3 O-ring x 2	M4x4 Set screw x 2
O-ring spacer x 2	M3x8 Cap head screw x 2
Spindle	Flybar paddle x 2
5x10x4R Bearing x 4	Blade Grip x 2
M3x10 Cap head screw	M3x24 Cap head bolt x 2
3x8x1 Washer x 2	M3 Locknut x 2

	Locate the head block, seesaw, seesaw collars, and (2) M3x8 cap head screws. Slide the seesaw into the opening on the head block. Slide a seesaw collar into each of the bushings on the head block. Secure the seesaw using the (2) M3x8 cap head screws. Be sure not to over tighten the seesaw collars. Use threadlocker on the bolt to secure it.
	Locate (2) M3x6 pivot studs and (2) 3x5x1 spacers. Install the two pivot studs with 3x5x1 spacer into the seesaw. They should be in holes opposite of each other. The other two holes tapped in the seesaw will be unused. Attach the head block to the main shaft using the M3x16 cap head bolt and an M3 locknut.

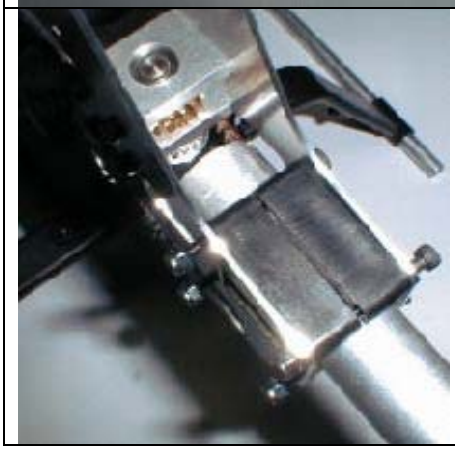
	Install two 7x13x3 o-rings into the head block. Next slide the head spindle through the o-rings. Then slide the head dampener spacers onto the spindle
	Each blade grip will have (2) 5x10x4R bearings. Install the bearings into the blade grips. Slide each one onto the spindle shaft. Secure the blade grips to the spindle using (2) M3x10 cap head screws. Place a 3x8x1 spacer under each bolt before installing them.
	Attach each hiller arm to the blade grip using an M3x10 cap head screw. Put the bolt through the hiller arm and put a 3x5x1 spacer on the bolt next, and screw it into the blade grip. *Note that the open side should be towards blade grip. Do this before mounting the spindle.*
	Slide the flybar through the seesaw.

	Locate two 3x5x5 spacers, two flybar control arm bases, two flybar control arm extensions, and two M4x4 set screws. Slide (2) 3x5x5 spacers onto the flybar with the protruding side going against the seesaw. Next slide the flybar control arm bases onto the flybar. They face in opposite directions and oppose the M3x6 pivot studs on the seesaw previously installed. Secure them with (2) M3x5 set screws. Be sure that they are parallel with each other and that the flybar is equally distant from both ends. *You may find it easier to assemble the flybar assembly before mounting the head.*
	Attach the (2) flybar control arm extensions using (2) M3x8 cap head screws. *This needs to happen before the flybar control arms are installed on to the flybar.* *Note the side that the flybar control arm is facing.*
	Screw each paddle onto the flybar 25mm. Be sure the paddles are parallel with each other. Also the paddles should be inline/parallel with the flybar control arms.
	Use M3x24 cap head bolts with M3 locknuts to attach each blade to the grip.

Section 6 – Tail Assembly

Parts List

Tail boom	M3x4 Pivot Stud
Belt	2.3 Medium ball ends
Boom holder half x 2	Tail Pitch Lever
M3x35 x 4	M3x4 Pivot stud
M3 Locknut x 4	M3x10 Cap head screw
Tail output shaft	M3x3 Set screw
Pulley gear	Tail rotor hub
M3 set screw x 2	Tail blade grips x 2
Tail case side plate x 2	3x7x3R Bearing x 2
5x10x4R Bearing x 2	M3x6 cap head screw x 2
Tail pitch lever base	M2x8 Pan head screw x 2
M2x6 Pan head screw x 2	Shim ball x 2
M3x6 Cap head screw x 6	Tail blades x 2
Tail Pitch Slider	M3x20 Cap head screw x 2
	M3 Locknut x 2
	Tail blade spacers x 4

	Locate the tail boom and the belt. Slide the belt through the boom. Be sure you do not twist the belt.
	Install the two boom halves into the frames. Put the (4) M3x35 cap head screws through the four open holes in the boom halves. Loosely put the nuts on the ends of the bolts.

	Locate your tail output shaft and tail pulley gear. Secure the gear to the shaft using (2) M3x3 set screw. *The set screw should align with the hole in the shaft and installs on the longer end*
	Locate your two tail case side plates. Install a 5x10x4R Bearing into each plate.
	Attach the tail pitch lever mount to the side plate using (2) M2x6 pan head screws.
	Attach the side plate to the boom using two M3x6 cap head screws. Next slide your tail output and shaft through the side plate.
	Attach the other tail case side plate to the tail boom using (2) M3x6 cap head screws. Also attach the tail case cross member using (2) M3x6 cap head screws.
	Locate your tail pitch slider, (2) medium ball ends, and an M3x4 pivot stud.

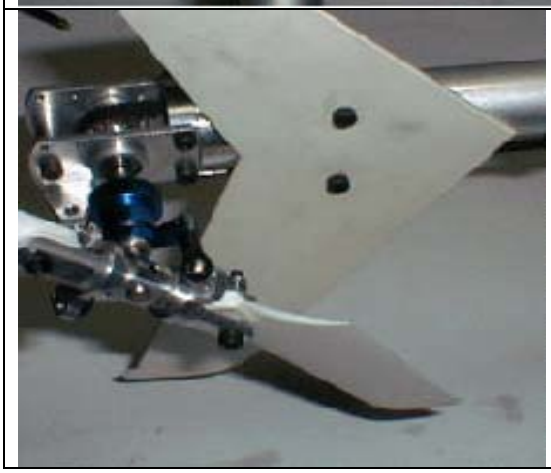
	Slide the tail pitch slider assembly onto the tail output shaft.
	Attach the M3x4 pivot stud to the tail pitch lever.
	Attach the tail pitch lever to the tail pitch lever base using an M3x10 cap head screw. Be sure that you capture the M3x4 pivot stud in the tail pitch slider with the brass coupler in the tail pitch lever.
	Attach the tail rotor hub to the tail output shaft using an M3x3 set screw.
	Install a 3x7x3R bearing into each tail blade grip. Then attach each grip to the tail rotor hub using an M3x6 cap head screw. Install a shim ball onto each blade grip using an M2x8 pan head screw. They should go in the outmost holes.

	Attach a tail blade to each grip using (2) tail blade spacers, an M3x20 cap head bolt, and an M3 locknut. Note: The Tail Blades should rotate counter clockwise when looking at the right side of the Tail Case.

Section 6 – Fin Set Installation

Parts List

Vertical Fin Horizontal Fin C-clamp x 2 M3x14 Cap head screw x 4	

	Attach the horizontal fin using one c-clamp and (2) M3x14 cap head screws. Note: Be sure the fin doesn't interfere with the tail blades when they are rotating.
	Attach the vertical fin using one c-clamp and (2) M3x14 cap head screws.

Section 7 – Linkage Rod Installation

Parts List

M2x8 Pan head screws x 6 Shim ball x 6 M2.3x35mm Linkage Rod x 3 M2.3x50mm Linkage Rod x 3 M2.3x20mm Linkage Rod x 2 2.3mm Ball end, Medium x 8 Tail Rotor Pushrod guide set. (Clips, two inner sleeves (2))	2.3mm Ball end, Long x 10 Double Link x 2 Canopy Rubber grommets x 4 M3x14 Cap head screws x 4 Stainless rudder control rod end x 2 M3x14 Cap head screw x 40 M3 Locknut x 40

Attach each servo using (4) M3x14 Cap head screws and (4) M3 Locknuts. Look at the pictures that follow for the proper servo orientation.

Step 1 – Linkage Rod Setup

In the following table the linkages will be measured center to center as per the picture. The table explains the amount of rods you need to make and which ball links to use on each end. This will get the helicopter close to finished setup, as always you will need to make some final adjustments to maximize the performance of your Helicopter

Replacement Part #:
Linkage Rod Set – QC150
All Linkages available individually just know the size

Step 1A – Shim Ball Installation

Install (6) Shim Balls using (6) M2-8 Phillips Screws. Install each Shim ball as close to the recommended distance for the center of the servo splice and the center of the shim balls.

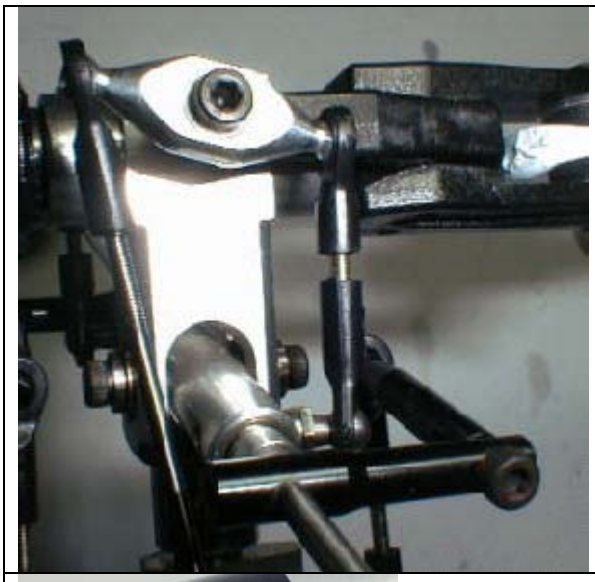
Swashplate Servos	18-20mm
Rudder Servo	11.75-13mm

All three swashplate rods will be the same length.

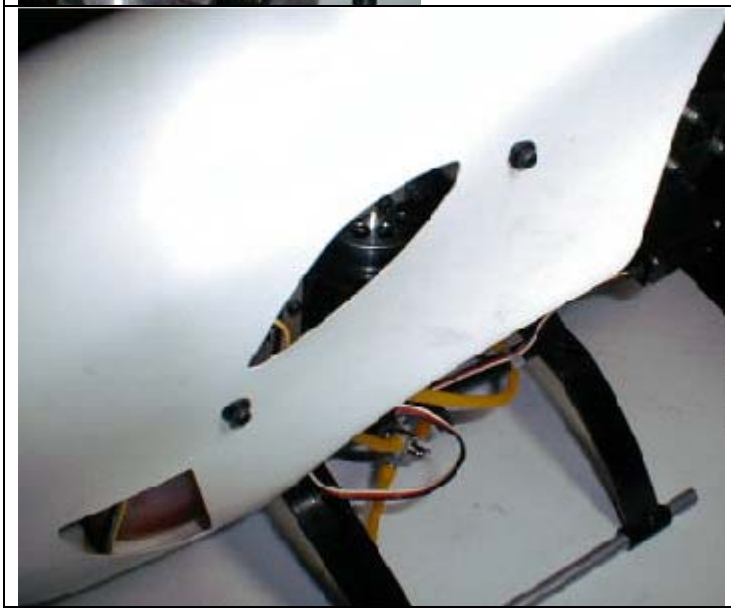
# of Rods	3
Rod Size	2.3-35
Ball Link 1	Medium
Ball Link 2	Medium
Center to Center	50mm

Rod Use	*Washout to Flybar Control Arm*
# of Rods	1
Rod Size	2.3-20
Ball Link 1	Medium
Ball Link 2	Medium
Center to Center	38mm

Pitch and aileron servo arm balls are mounted on the inside. Elevator ball is mounted facing outside of the servo arm.

	Seesaw to Hiller Arm Use a double link on this spot.
	Assemble the push rod guides. There are three pieces the main clip and two inner sleeves. Simply slide the two sleeves into each other and then into the main clip and glue. Putting electrical tape onto the boom before gluing is good, so it is possible to reuse the clip later. (HHI2900 – Rod Guides)
	Install the carbon rudder control rod. The rod should end up 22" or 558mm long from ball to ball. Slide the carbon rod through the guides and glue the ends on. Screw the links onto the ends and attach to the balls.

Rod Use	*Swashplate to Hiller arm*
# of Rods	2
Rod Size	2.3-50
Ball Link 1	Long
Ball Link 2	Long
Center to Center	83mm

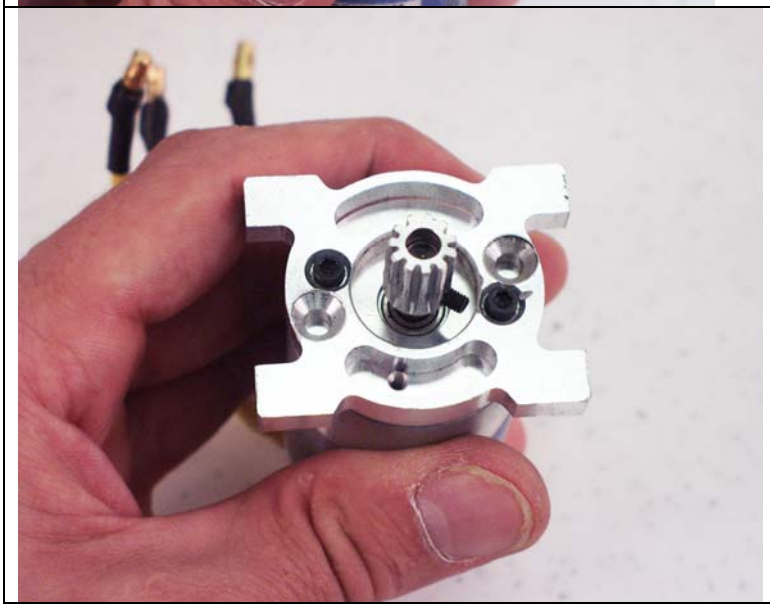


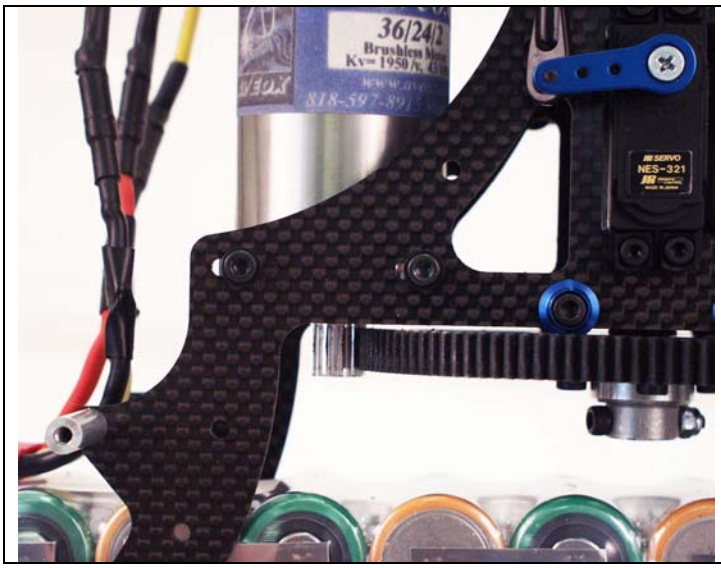
Place the canopy where you like, mark the holes for the canopy standoffs. Use a ¼" drill bit. Place the grommets in the holes and secure the canopy to the helicopter using (4) M3x14 cap head screws.

Section 8 – Motor Installation

Parts List

M3x6 Cap Head Screw x 2 Pinion Gear x 1 M3x5 Set Screw x 1	

	Attach your pinion gear to the motor using an M3x5 set screw. It is recommended to grind a flat onto the output shaft of the motor if there is not already one there. This will help to prevent the gear from slipping.
	Attach the motor to the motor mount using (2) M3x6 cap head screws.

	Finally install the motor assembly into the helicopter. Be sure not to set the gear mesh too tight or too loose. A good way to set the mesh is to slide a piece of notebook paper between the gears and then tighten the bolts. This will give an idea mesh.