

outDo 600

Sport/Pro
HELICOPTER
First Edition



ASSEMBLY

AND

MAINTENANCE MANUAL



[WWW.QUICKHELI.COM](http://www.quickheli.com)

TABLE OF CONTENTS

<i>INTRODUCTION</i>	<i>3</i>
<i>CUSTOMER SERVICE</i>	<i>4</i>
<i>FEATURES</i>	<i>5</i>
<i>PRE-ASSEMBLY INFORMATION</i>	<i>6</i>
<i>REQUIRED TOOLS</i>	<i>7</i>
<i>HARDWARE AND OPTIONAL ACCESSORIES</i>	<i>8</i>
<i>OTHER REQUIREMENTS</i>	<i>10</i>
<i>SECTION 1- UPPER FRAME</i>	<i>12</i>
<i>SECTION 2: MAIN FRAME</i>	<i>23</i>
<i>SECTION 3: DRIVING SYSTEM</i>	<i>30</i>
<i>SECTION 4: TAIL ASSEMBLY</i>	<i>32</i>
<i>SECTION 5: CONTROL SYSTEMS</i>	<i>37</i>
<i>SECTION 6: ROTOR HEAD</i>	<i>39</i>
<i>SECTION 7: LINKAGE AND FINAL SETUP</i>	<i>42</i>
<i>SECTION 8: SETTINGS</i>	<i>46</i>
<i>PRE-FLIGHT CHECKS</i>	<i>53</i>
<i>WARNING</i>	<i>54</i>
<i>ADJUSTMENTS</i>	<i>55</i>
<i>HOW TO HOVER</i>	<i>56</i>
<i>HOW TO FLY FORWARD</i>	<i>58</i>
<i>AFTER FLIGHT CHECKS</i>	<i>60</i>
<i>WHAT IF THE HELICOPTER CRASHED</i>	<i>60</i>

INTRODUCTION

Congratulation and thank you for the purchase of great product! It is our sole desire for you to enjoy the quality workmanship and performance of any of our electric Li-Po powered helicopters. We believe we have the latest designs and technology incorporated into our model helicopters. Our CNC parts are produced using the best high density materials & anodized using material hardening finishes with the tightest of tolerances. Our new helicopters feature the latest advances in R/C helicopter design. The simple and mechanically superior EMS design (also known as CCPM) ensures a helicopter that will be more responsive and more stable than any other R/C helicopter you have ever flown. Three servos are attached directly to the Swashplate to ensure precise control. This kit features all metal construction, and a carbon or composite frames are standard. Along with great products, our staffs are RC guys that fly and have hands on experience with total manufacturing & testing of our helicopters. In addition, we stand behind all our products 100% with satisfaction guaranteed.

In the past several years, we have been devoting ourselves to developing electric powered helicopters. We feel that our electrics now are more powerful, smoother, and more responsive than most of the nitro machines in the market. In addition, there is less time for maintenance and no more dirty of oil and gas. With new technology of batteries and electric motors, the flying time and the efficiency increase significantly day by day. We believe so much in our electric helicopters that we have given out for reviews to our fellow hobbyists EP kits of four different motors and Li-Po battery classes. Electric powered helicopters are here now to stay and will in time be bigger than the current nitro market. The market has some very mixed ideas about electric and their safety. Our staff is here to answer all of your technical questions. Our kits will be shipped 100% complete and we can assure you that once you fly your EP helicopter you will love it.

The OutDo 600

We believe you hold in your hands one of the best helicopters manufactured in the world today. The **OUTDO 600** is built on the same platform as the **Q50**, but carries the power and punch of the **Q70** delivered smoothly throughout the entire range of its electric motor. The **OUTDO 600 PRO** features a fully machined head, metal grips, carbon fiber frames, and carbon fiber boom supports. The **OUTDO 600 SPORT** version features a G10 fiberglass frame, and molded main blade grips and tail blade grips. Our helicopters are carefully designed and tested, and manufactured of the highest quality materials available.

In a short time, you can be flying.

We ask that you please read the entire manual before starting the construction of the **OUTDO 600**, and if you have any questions our technical support staff can be reached at

(610) 282-4811 M-F 9-6, S 9-4 Eastern time,
or by email at chuck@quickworldwide.com.

For the latest information and updates, please visit our website at

www.quickworldwide.com

CUSTOMER SERVICE

<p>Quickworldwide 201 South 3rd. St. & 309 N. Coopersburg, PA 18036</p> <p>Phone: (610)-282-4811</p> <p>Fax: (610)-282-4816</p>	<p><u>Websites:</u> http://www.hhiheli.com http://www.quickheli.com http://www.giantscaleplanes.com</p> <p><u>E-mail:</u> hhi@fast.net</p>
<p><u>Office Hours:</u></p> <p>Mon – Fri: 8:30 – 6:00 Sat: 8:30 – 1:30 (Eastern Daylight Time)</p>	
<p>Technical Support Personnel:</p> <p>Chuck – chuck@quickworldwide.com Jon – jon@quickworldwide.com</p>	

FEATURES

QUICK OUTDO-600

- 1. Frame Construction:** Quick OutDo 600 frames are made of the highest Quality Black G-10 Frames or Carbon Fiber. These frames are not only rigid but will provide excellent vibration absorption.
- 2. Constant Tail Rotor Drive System:** provides full tail authority during engine off maneuvers.
- 3. Belt driven Tail:** Smooth, reliable, and low maintenance.
- 4. High Quality Ball Bearings:** Quick OutDo 600 offers ball bearings on all moving parts.
- 5. EMS Collective System:** The EMS Collective design allows ease of setup with fewer moving parts. EMS demonstrates overall design simplicity and represents the future of helicopter technology.
- 6. Control Linkages:** The control linkages provided with the Quick Learner Kit are high quality 2.3mm stainless steel rods with Delrin® acetal resin rod ends.
- 7. Single Blade Axle Design:** simple, very responsive, with exceptionally consistent flight characteristics.
- 8. Advanced Airfoil Fly-bar Paddles:** These paddles will provide the best flight characteristics for both 3D & Sport flying: Smooth forward flight, with quick response upon demand.

PRE-ASSEMBLY INFORMATION

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 spectators if not properly assembled and operated. Hobbies & Helis assumes no liability for damage that could occur from the mis-assembly and/or use/misuse of this product.

Academy of Model Aeronautics

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. For further information, please contact AMA at:

Academy of Model Aeronautics

5161 East Memorial Drive

Muncie, IN 47302-9252

USA







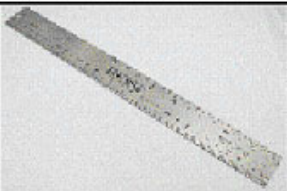



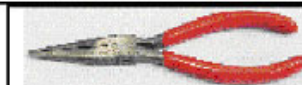
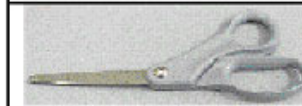
Phone: (317) 287-1256

www.modelaircraft.org

Before you begin:

Quick Helicopter kits are packaged with care and attention to detail. We recommend when you are ready to begin building this model that you examine the kit carefully, inspect the contents of each package, and read and understand these instructions thoroughly before starting assembly. It is suggested that you purchase a parts box for the small fasteners and hardware, or use small bowls or other containers.

REQUIRED TOOLS

 <p>Phillips Screw Driver</p>	 <p>Ball End Drivers HHI7050 or Bit Link Driver HHI7051</p>	 <p>Bubble Blade Balancer HHI7010 High Point Balancer DUB499</p>
 <p>Composite Paddle Gauges HHI7000</p>	 <p>HHI7320 – 6pc Nut & Allen Driver Set</p>	 <p>Pitch Gauge HHI7001</p>
 <p>Ruler</p>	 <p>Ball Link Pier MAT1001</p>	 <p>Universal FlybarLock HHI7040</p>
 <p>Hobby Knife</p>	 <p>Needle Nose Pliers</p>	 <p>Scissors</p>

HARDWARE & OPTIONAL ACCESSORIES

GLUES AND THREAD LOCK COMPOUNDS

		
Ca Glue. ...GBG1	JB Weld...JBW8265S	Loctite.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 HARDWARE & OPTIONAL ACCESSORIES



3MM FLYBAR STIFFENERS
HHI 402



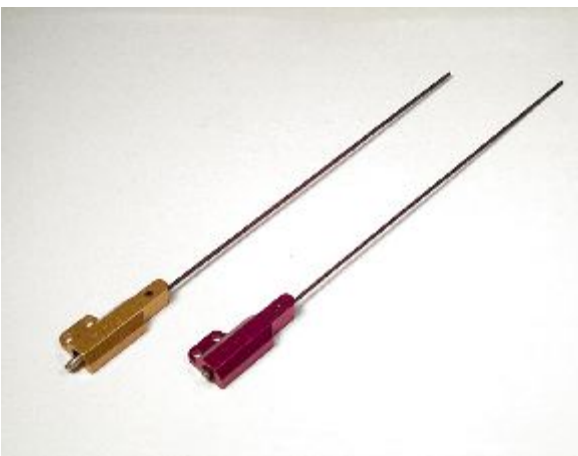
60 SIZE SKID STOPS
HHI 200 AVAILABLE IN COLORS



SERVO ARM SET

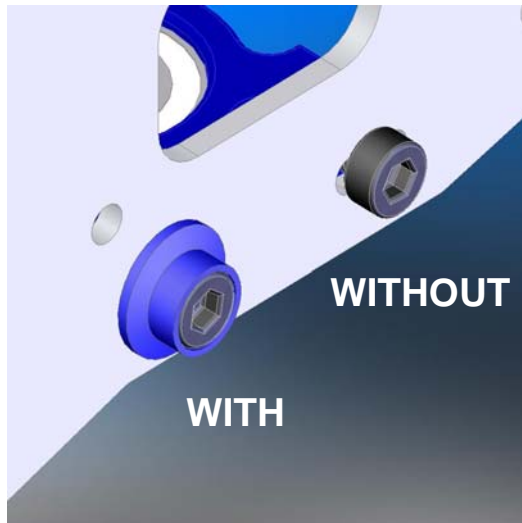


LANDING GEAR DAMPENERS
HHI 2004



BASE LOAD ANTENNA
HHI 53**

**AVAILABLE IN BLUE, GOLD,
PURPLE
AND IN 40, 50, AND 72 Mhz**



FINISHING CAPS

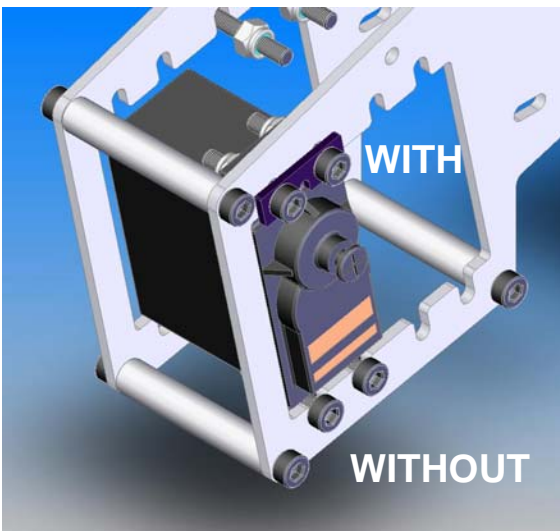
- Adds color and style
- Distributes force across larger surface area

3mm

4mm

(20 pcs in a package) (8 pcs in a package)

BLACK	HHIM11100B	---
BLUE	HHIM11103	HHIM11108
GOLD	HHIM11101	HHIM11106
GREEN	HHIM11100G	---
PURPLE	HHIM11100	HHIM11105
RED	HHIM11100R	---
SILVER	HHIM11100	HHIM11107



SERVO FIXING PLATES

- Transmits force of fastener to plastic instead of rubber

HHI 1205 SERVO MOUNT KIT

- Includes hardware and fixing plates to mount 5 servos

OTHER REQUIREMENTS

Radios:

Any radio that supports EMS/CCPM Mixing will work fine. Hobbies & Helis & its distributors carry various lines of helicopter radios.

Servos:

Any sport servo will offer acceptable performance. However, because servos operate all critical functions of the helicopter, they can be the single most important component that contributes to proper function of the helicopter. Due to the nature of EMS collective, we suggest the use of digital servos to enhance and ensure matched servo timing without servo interaction.

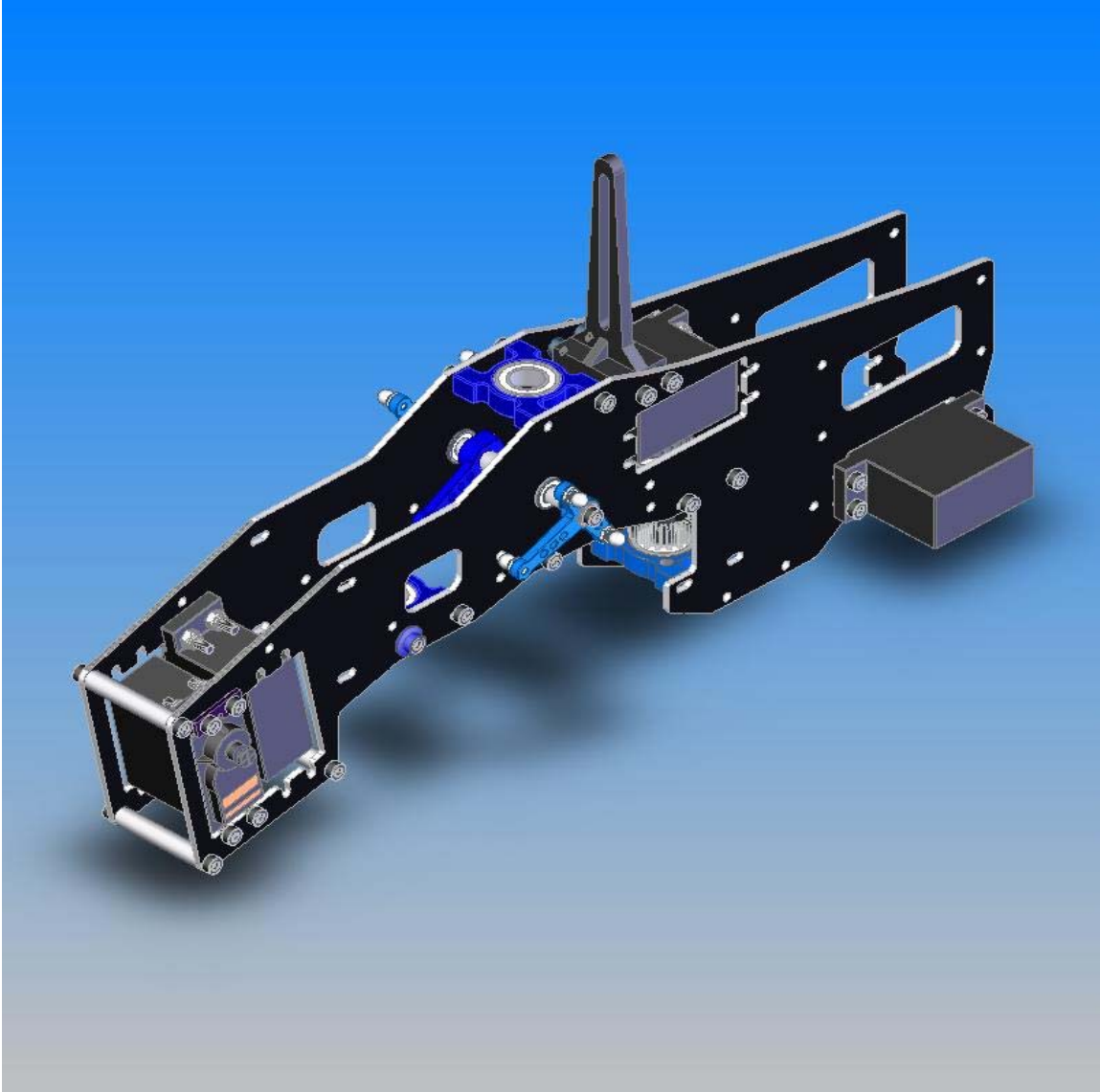
Loctite Warning (CRITICAL):

This is a general warning about the use of Loctite and its importance. **Loctite must be used anywhere that a metal fastener** i.e. (M2, M3, M4 Cap Head Bolts, Set Screws etc.) **is threaded into a metal part** i.e. (Bearing Blocks, Cross-members, etc.). **Failure to use Loctite can result in loosening of critical operating components, loss of control of the model, and can lead to a crash.**

ASSEMBLY

SECTION 1: UPPER FRAME

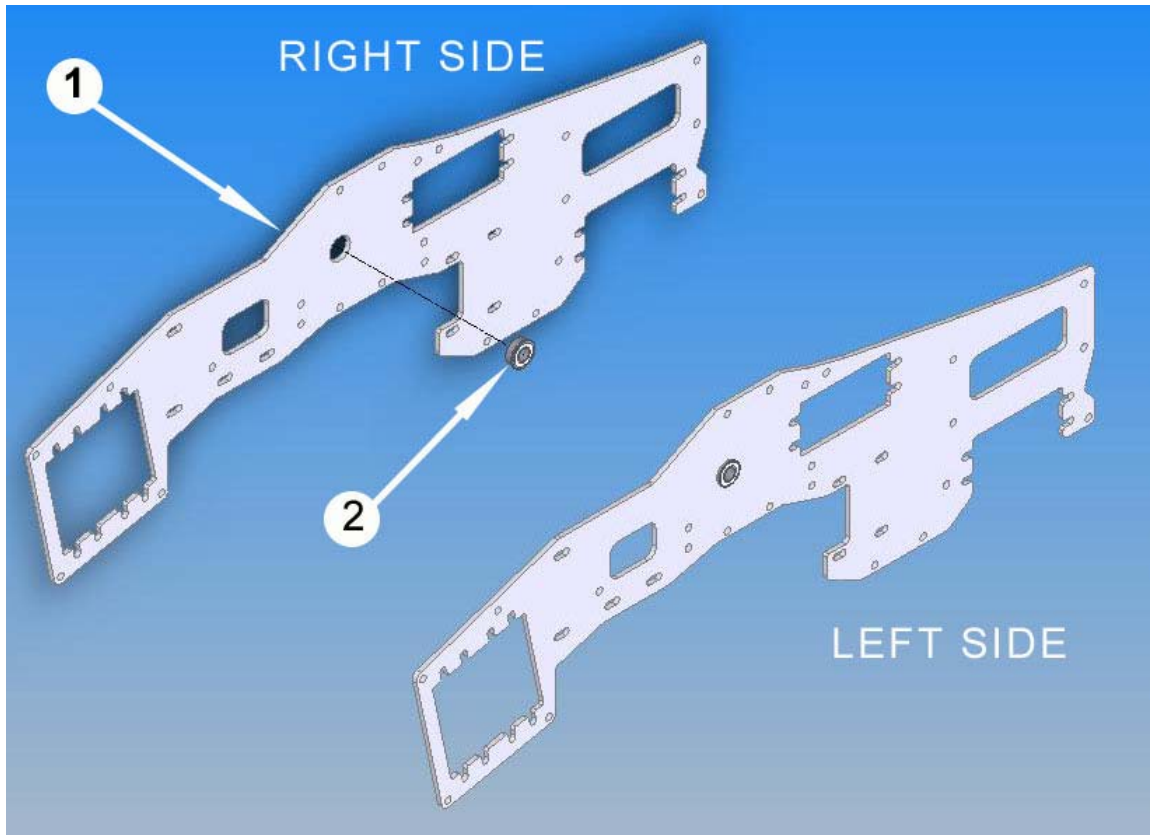
BAG 1



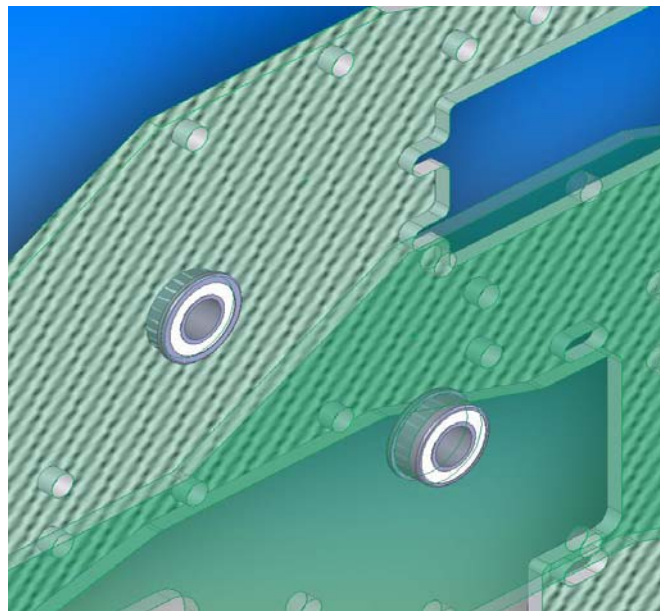
- In your kit, parts are bagged according to each major assembly and are labeled “Bag 1, Bag 2, etc.” You will note that the heading for each assembly indicates which bag correlates with each assembly.
- For a good installation, only open up the bag that you need for particular assembly.
- Please check the parts in that bag against the parts list shown for each assembly as well as each subassembly to make sure there are no missing parts.
- Small parts such as nuts and bolts can be put into containers or trays to prevent losing parts.
- Part No. with ***** means that part is not included in the kit.

1-1 ELEVATOR SHAFT BEARINGS

No.	Part No.	Description	Qty
1	QF551C	Upper Frame (from Frame Bag)	2
2	BRG05104F	5X10X4Flanged Bearing	2



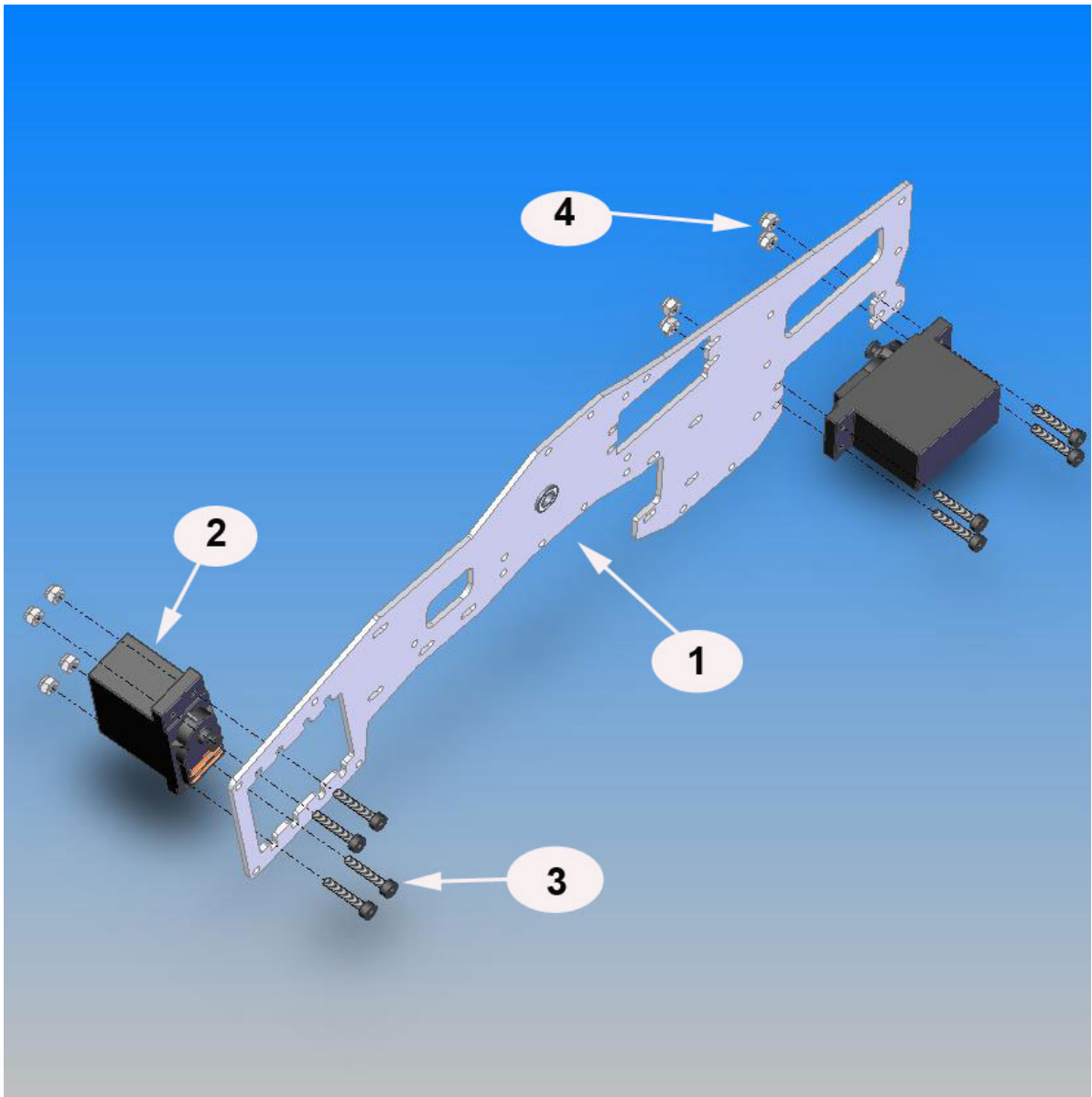
Note: The bearing flange mates against the inside of the frame



1-2 LEFT AILERON & RUDDER SERVO SUBASSEMBLY

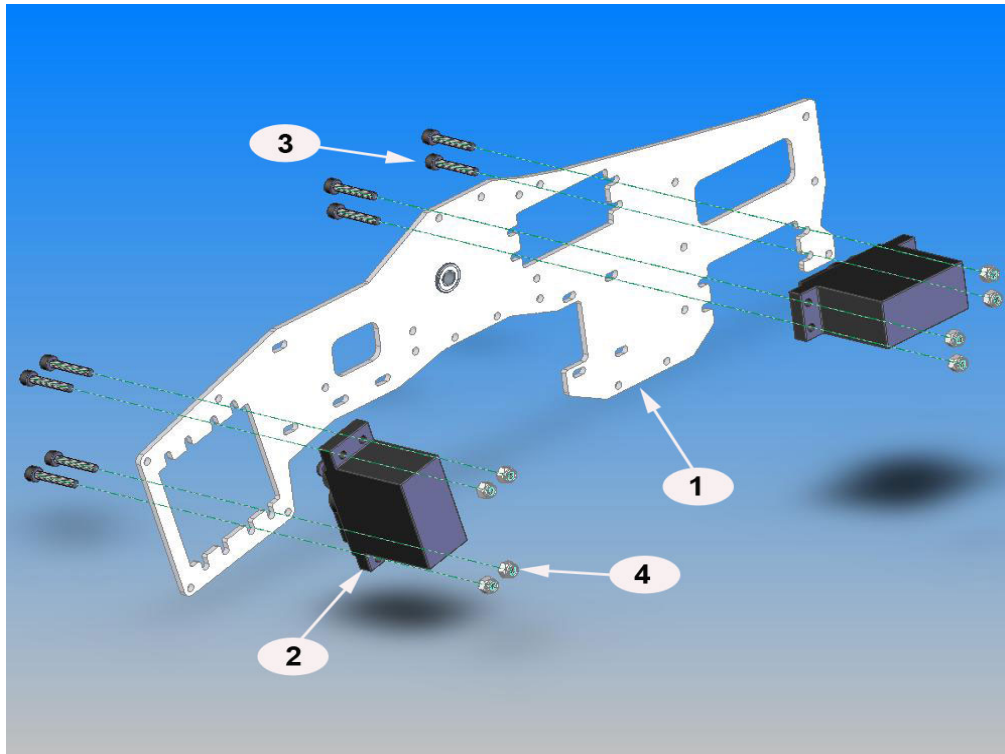
No.	Part No.	Description	Qty
1	1-1	L. Upper Frame Subassembly	1
2	****	Servo	2
3	HHI2.5M14	M2.5x14 Cap Head Bolt	8
4	HHI2.5MLN	M2.5 Locknut	8

Note: If the servos come with anti-vibrating rubber, insert them on the servos first. We recommend using the servo fixing plates to protect and get the best performance from the servos. Please see *"Hardware & Optional Accessories"* for more details.



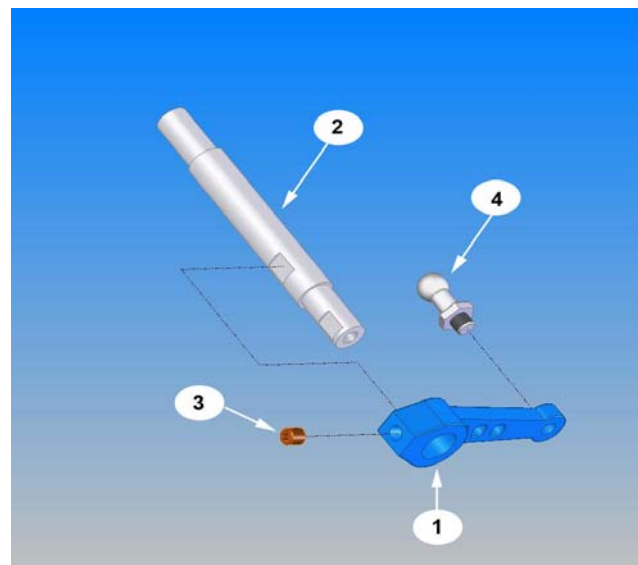
1-3 RIGHT AILERON & ELEVATOR SERVO SUBASSEMBLY

No.	Part No.	Description	Qty
1	1-1	R. Upper Frame Subassembly	1
2	*****	Servo	2
3	HHI2.5M14	M2.5x14 Cap Head Bolt	8
4	HHI2.5MLN	M2.5 Locknut	8



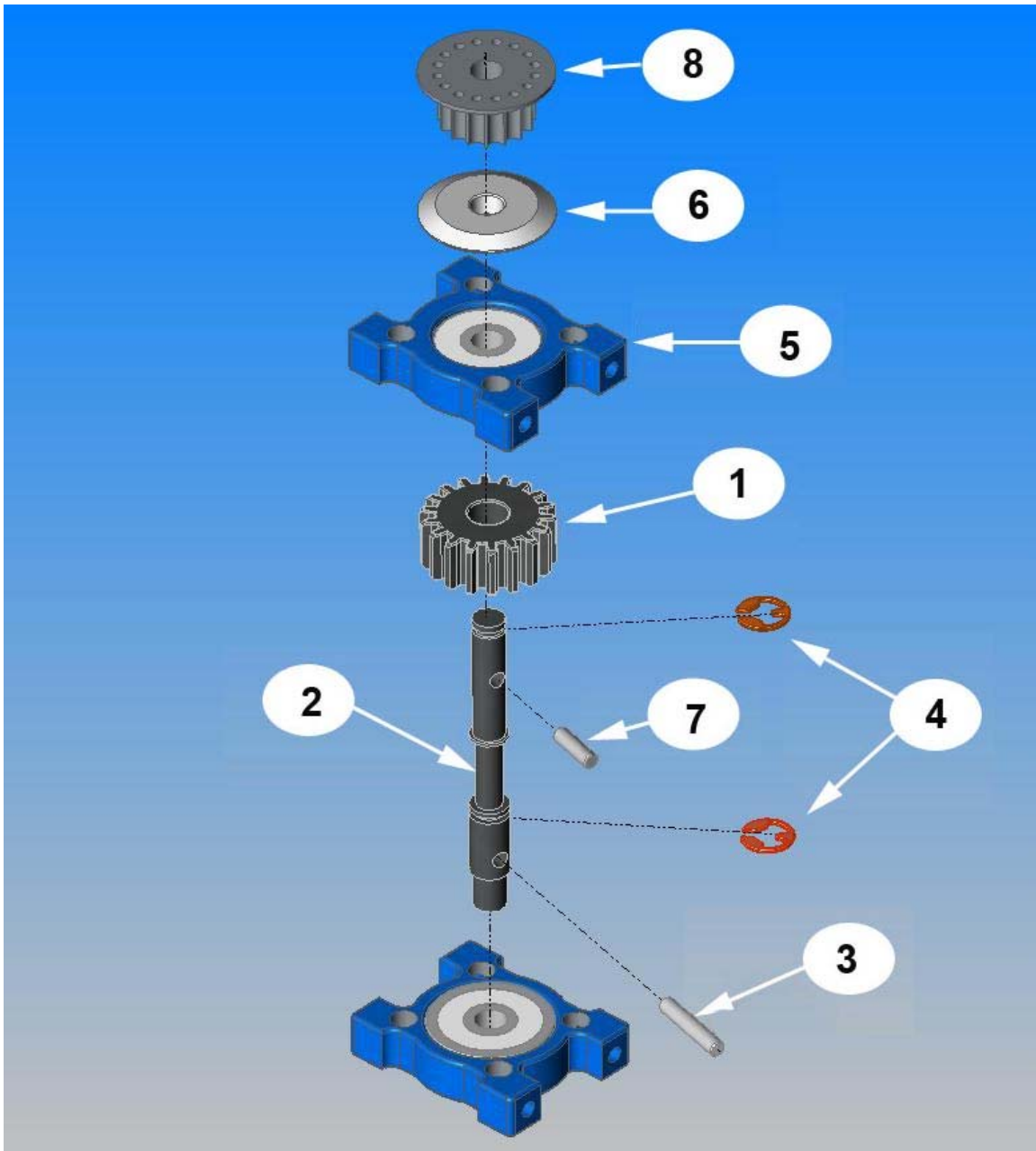
1-4 INNER ELEVATOR CONTROL ARM SUBASSEMBLY

No	Part No.	Description	Qty
1	QC557	Inner Elevator Control Arm	1
2	QF537	Elevator Control Shaft	1
3	HHI3M05SS	M3x5 Set Screw	1
4	HHI3M6PS	M3x6 Pivot Ball Stud	1



1-5 TAIL TRANSMISSION SUBASSEMBLY

No	Part No.	Description	Qty	
1	QD551B	Counter Gear	1	-Install Counter Gear to Counter Gear Shaft using Counter Gear Lock Pin (No. 3) and M4 E-clip to secure it -Put Counter Gear Bearing Block (the lower) in with the Flange facing up -Install Counter Gear Bearing Block (the upper) with the Flange facing down -Install Pulley Gear Plate (No. 6) -Insert Pulley Gear Lock Pin (No. 7) -Install Pulley Gear and retain with M4 E-clip
2	QD551A	Counter Gear Shaft	1	
3	QD551C	Counter Gear Lock Pin	1	
4	QPM4CLIP	M4 E-clip	2	
5	QD553	Counter Gear Bearing Block	2	
6	QD575	Pulley Gear Plate	1	
7	QD554A	Pulley Gear Block Pin	1	
8	QD504	Pulley Gear	1	

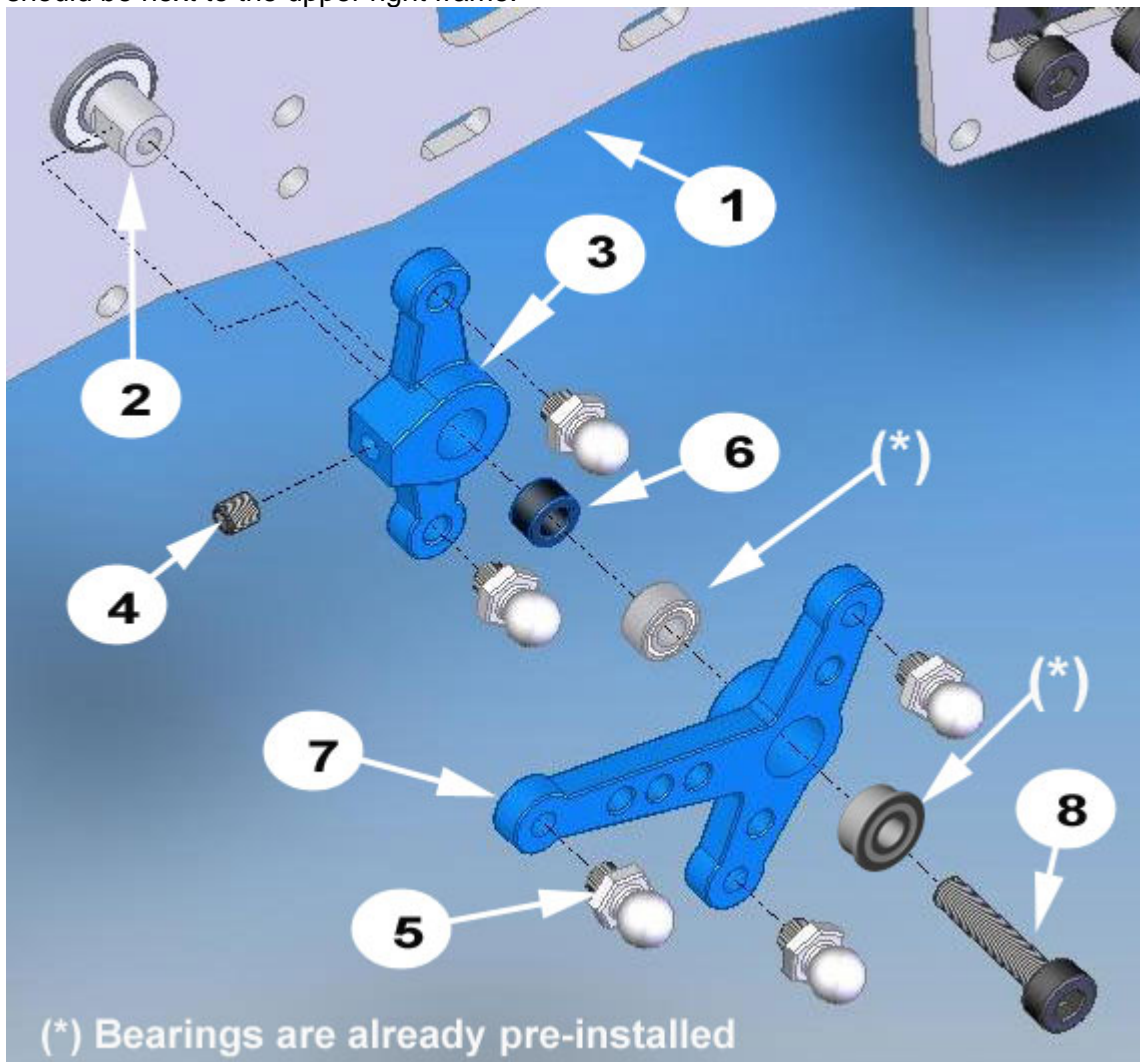


1-6 UPPER FRAME INSTALLATION

1-6-a ELEVATOR CONTROL ARM-RIGHT SIDE

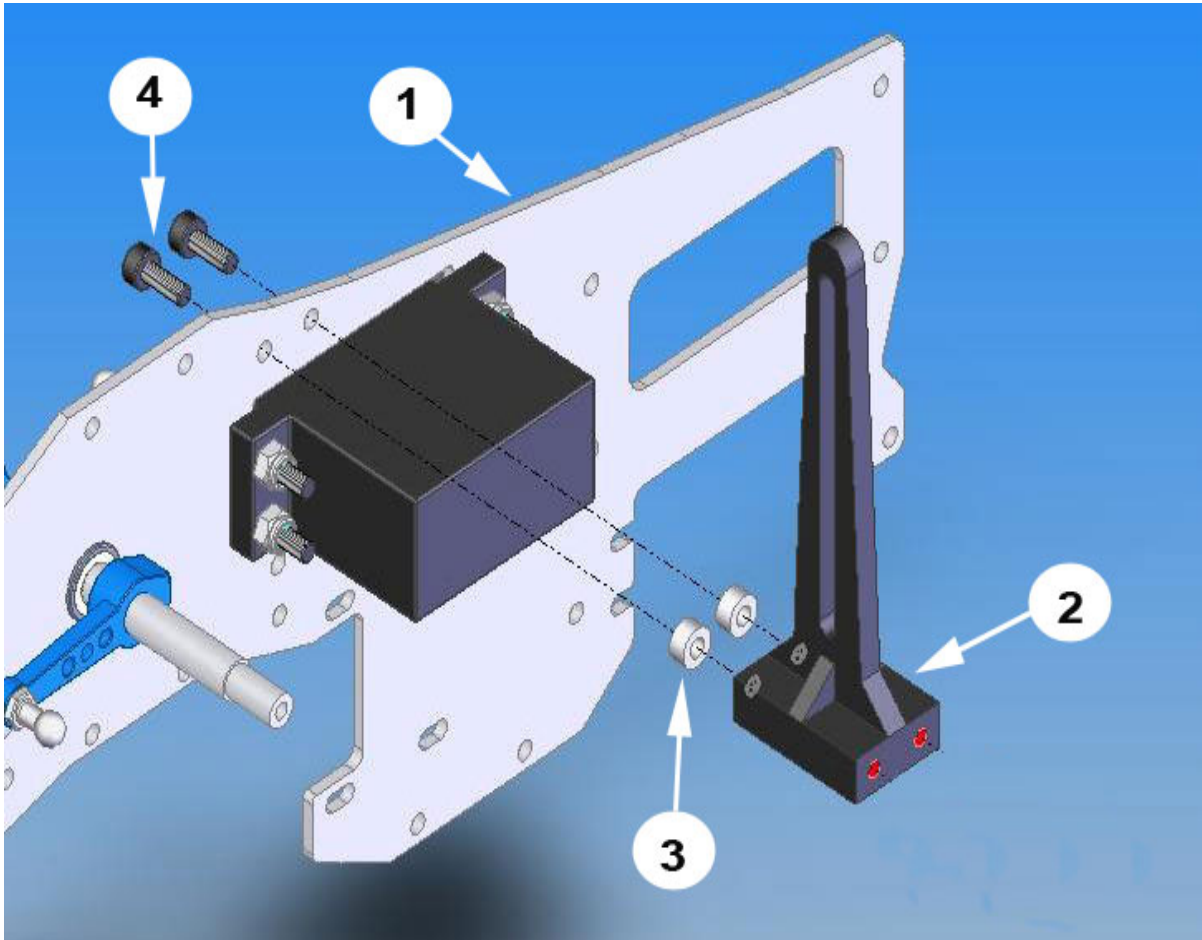
No.	Part No.	Description	Qty
1	1-3	R. A&E Arm Subassembly	1
2	1-4	Inner El. Ctrl. Arm Subassembly	1
3	QC552	Outer Elevator Control Arm	1
4	HHI3M05SS	M3x5 Set Screw	1
5	HHI3M4PS	M3x4 Pivot Ball Stud	5
6	QF567	M3x5x3 Spacer	1
7	QC524R	Right Aileron Control Lever	1
8	HHI3M12C	M3x12 Cap Head Bolt	1

Note: For No. 2 (Inner Elevator Control Arm Sub.), the Inner Elevator Control Arm should be next to the upper right frame.



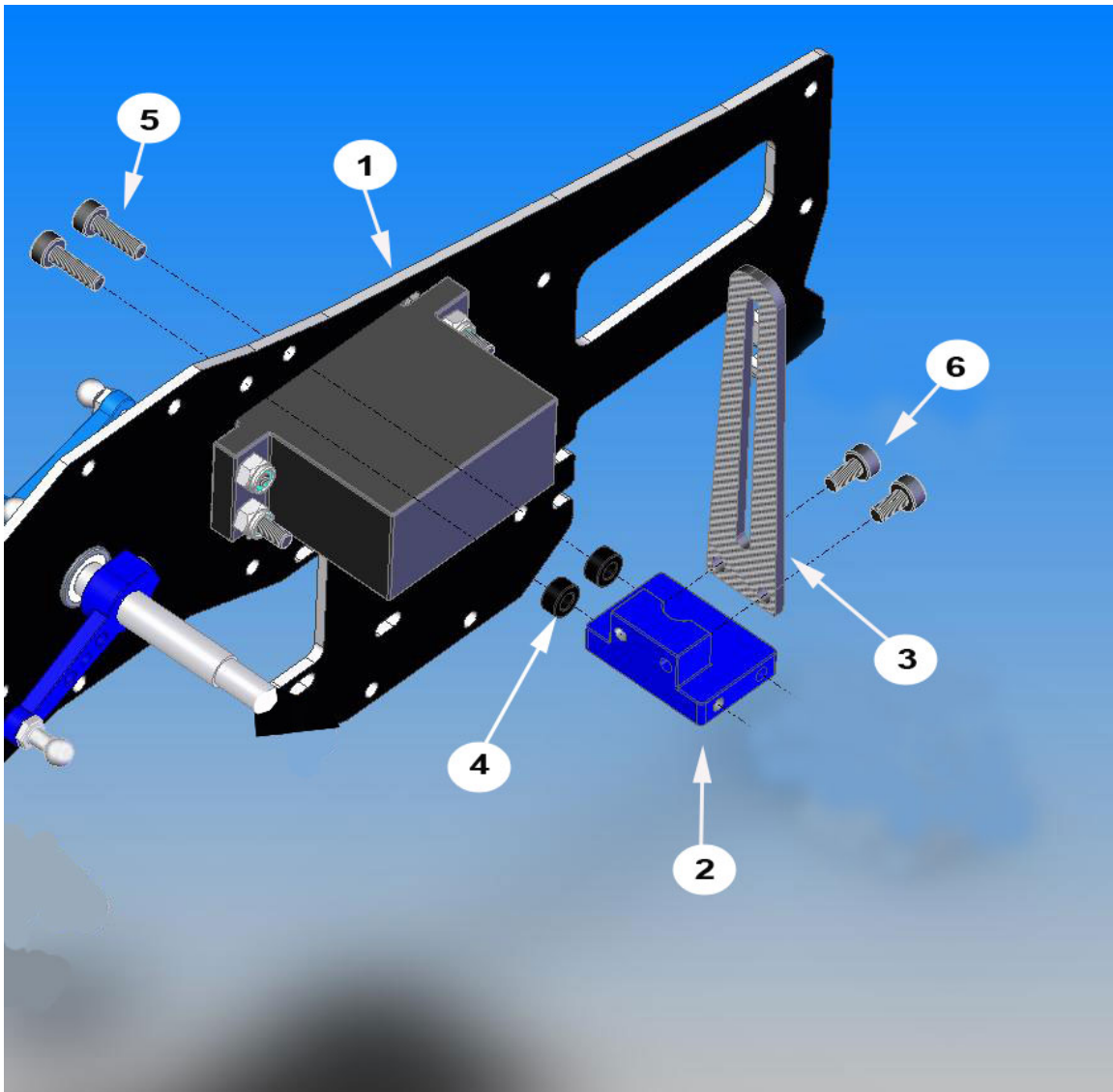
1-6-b ANTI-ROTATION GUIDE ASSEMBLY (SPORT MODEL)

No.	Part No.	Description	Qty
1	1-6-a	Right Upper Frame (up to step 1-6-a)	1
2	QF673	Washout Anti-Rot. Guide	1
3	QF567	M3x5x3 Spacer	2
4	HHI3M45C	M3x45 Cap Head Bolt	2



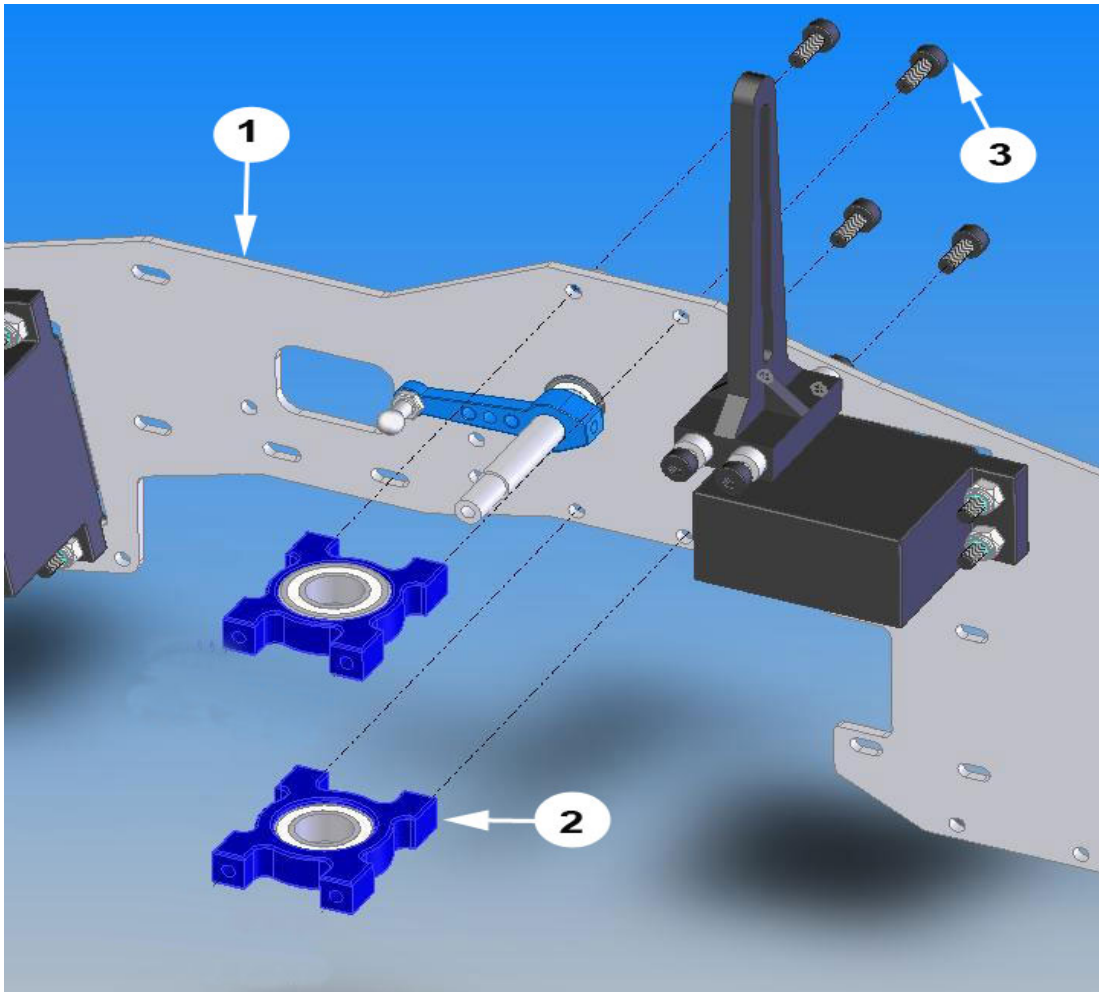
1-6-b ANTI-ROTATION GUIDE ASSEMBLY (PRO MODEL)

No.	Part No.	Description	Qty
1	1-6-a	Right Upper Frame (up to step 1-6-a)	1
2	QF318	Washout Anti-Rot. Guide Base	1
3	QF317	Washout Anti-Rot. Guide A (from Frame Bag)	1
4	QF567	M3x5x3 Spacer	2
5	HHI3M10C	M3x10 Cap Head Bolt	2
6	HHI3M06C	M3x6 Cap Head Bolt	2



1-6-c MAIN SHAFT BEARING BLOCKS

No.	Part No.	Description	Qty
1	1-6-b	Right Upper Frame (up to step 1-6-b)	1
2	QF559	Main Shaft Bearing Block	2
3	HHI3M08C	M3x8 Cap Head Bolt	4

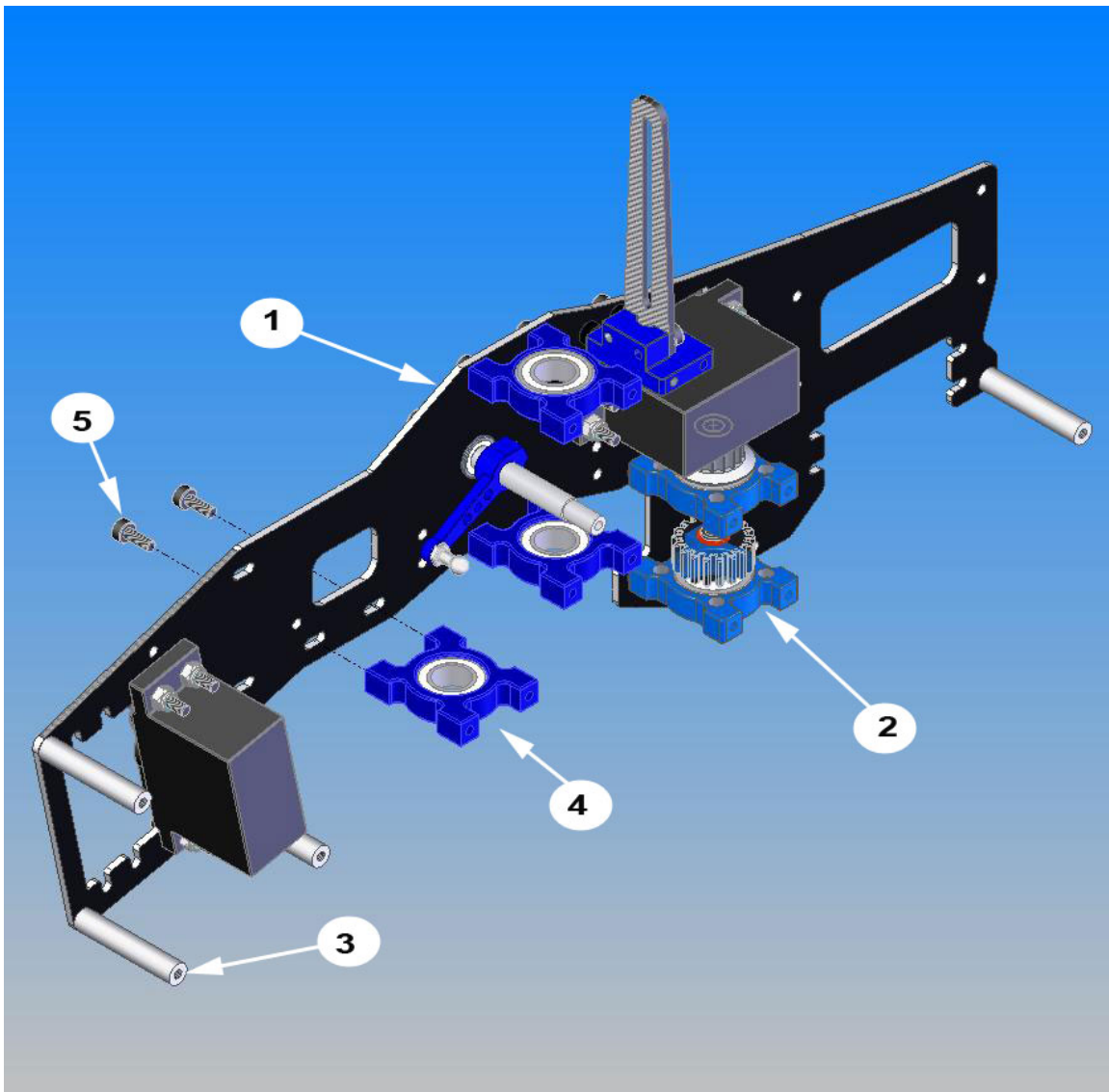


Note: For the Lower Bearing Block, the flange should face down. For the Upper one, the flange should face up.

1-6-d FRAME CROSS MEMBERS, PINION GEAR BEARING BLOCK & TAIL TRANSMISSION

No.	Part No.	Description	Qty
1	1-6-c	Right Upper Frame (up to step 1-6-c)	1
2	1-5	Tail Transmission Subassembly	1
3	QF501	32mm Cross Member	4
4	QF559	Pinion Gear Bearing Block*	1
5	HHI3M08C	M3x8 Cap Head Bolt	10

*Pinion Gear Bearing Block is the same as Main Shaft Bearing Block



Note: The flange of the Pinion Bearing Block should face up.

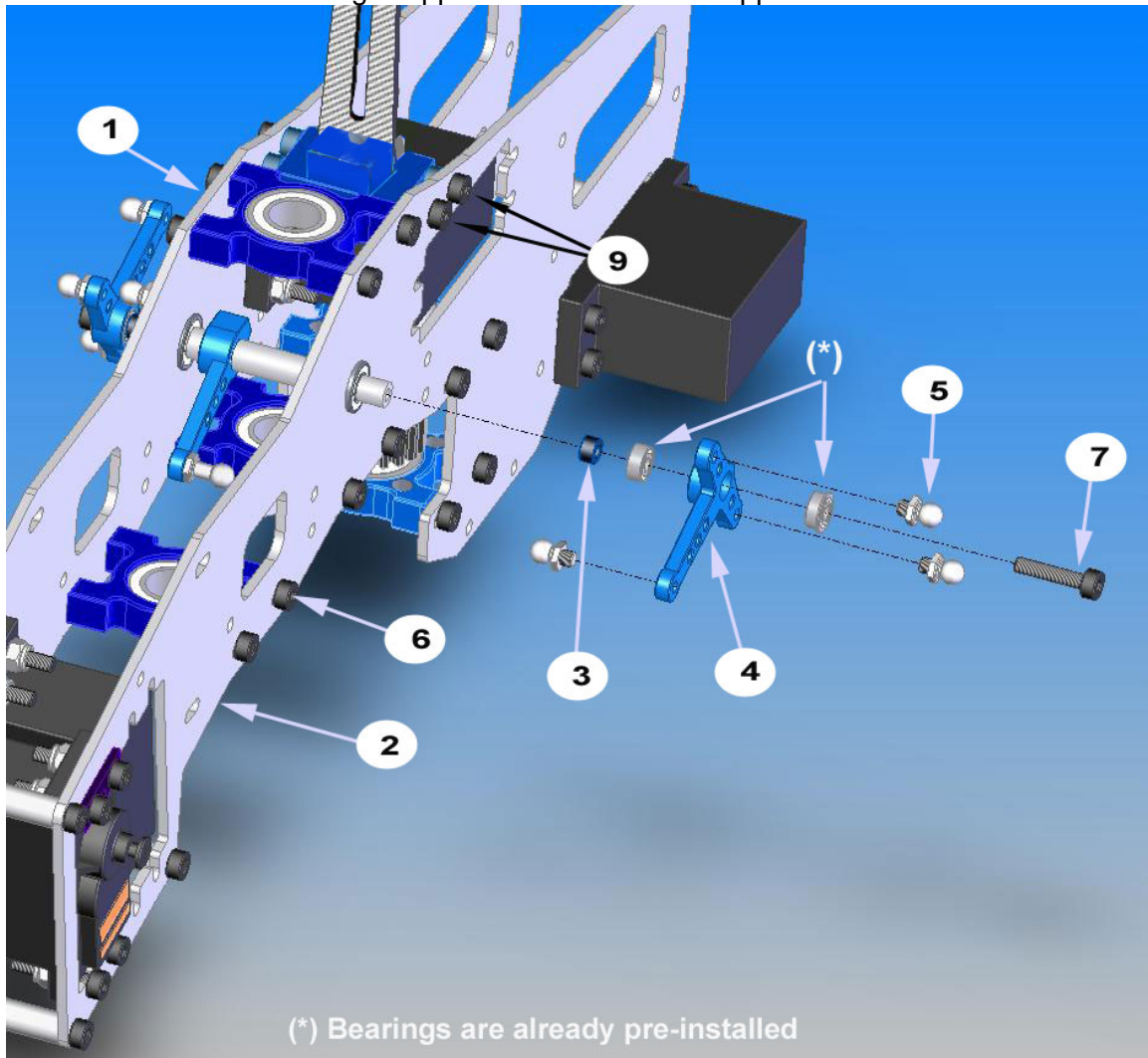
1-6-e UPPER FRAME INSTALLATION

No.	Part No.	Description	Qty
1	1-6-d	Right Upper Frame (up to step 1-6-d)	1
2	1-2	Left Upper Frame Subassembly	1
3	QF567	M3x5x3 Spacer	3
4	QC524L	Left Aileron Control Lever	1
5	HHI3M4PS	M3x4 Pivot Ball Stud	3
6	HHI3M08C	M3x8 Cap Head Bolt	14
7	HHI3M12C	M3x12 Cap Head Bolt	1
8	HHI03MLN	M3 Locknut	2*
9	HHI3M10C	M3x10 Cap Head Bolt	2**

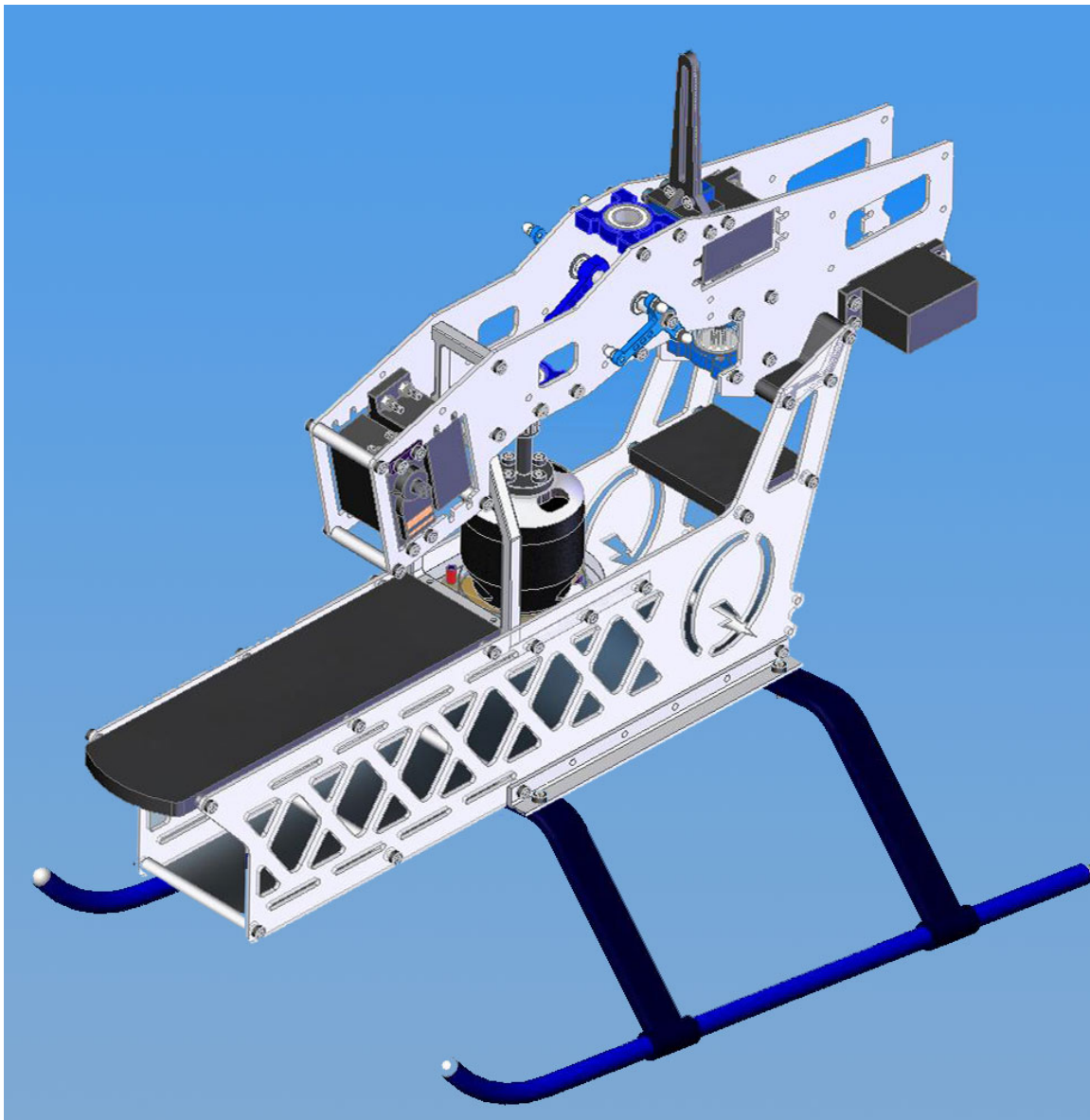
*Pro version does not have these.

**Sport version does not have these

Attach the Right Upper Frame to the Left Upper Frame as shown



Note: Sport version use two M3 Locknut to secure two M3x45 Cap Head Bolts holding the Anti Rotation Guide.



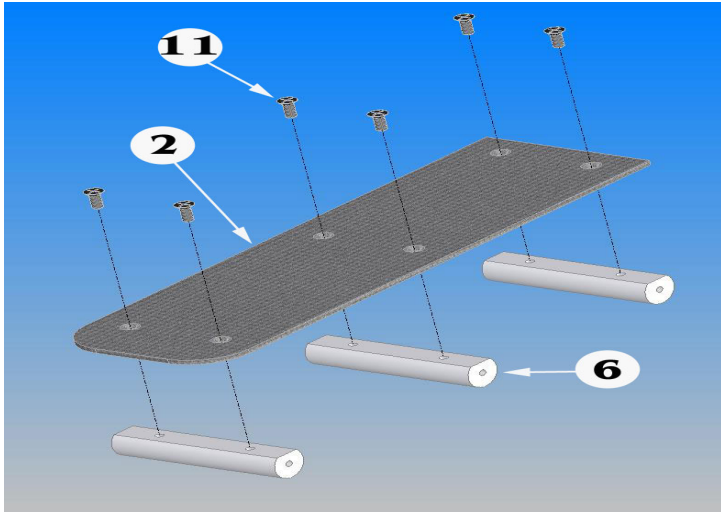
2-1 LOWER FRAME ASSEMBLY

No.	Part No.	Description	Qty	No	Part No.	Description	Qty
1	QFE558C	Lower Frame(from Frame Bag)	2	7	QF569	60mm Cross Member	3
2	QF356C*	Radio Tray (from Frame Bag)	1	8	HHI3M08C	M3x8 Cap Head Bolt	6
3	QF357	Gyro Plate (from Frame Bag)	1	9	HHI3M10C	M3x10 Cap Head Bolt	14
4	QF555	Lo. Frame Angle(from Frame Bg)	2	10	QF567	M3x5x3 Spacer	14
5	QFE170C*	Rear ESC Mounting Tray Carbon (from Frame Bag)	1	11	HHI3M06P	M3x6 Philip Screw ***	6
				12	*****	Double Side Dutch Tape	1
6	QF571	Half Round Cross Member	5**				

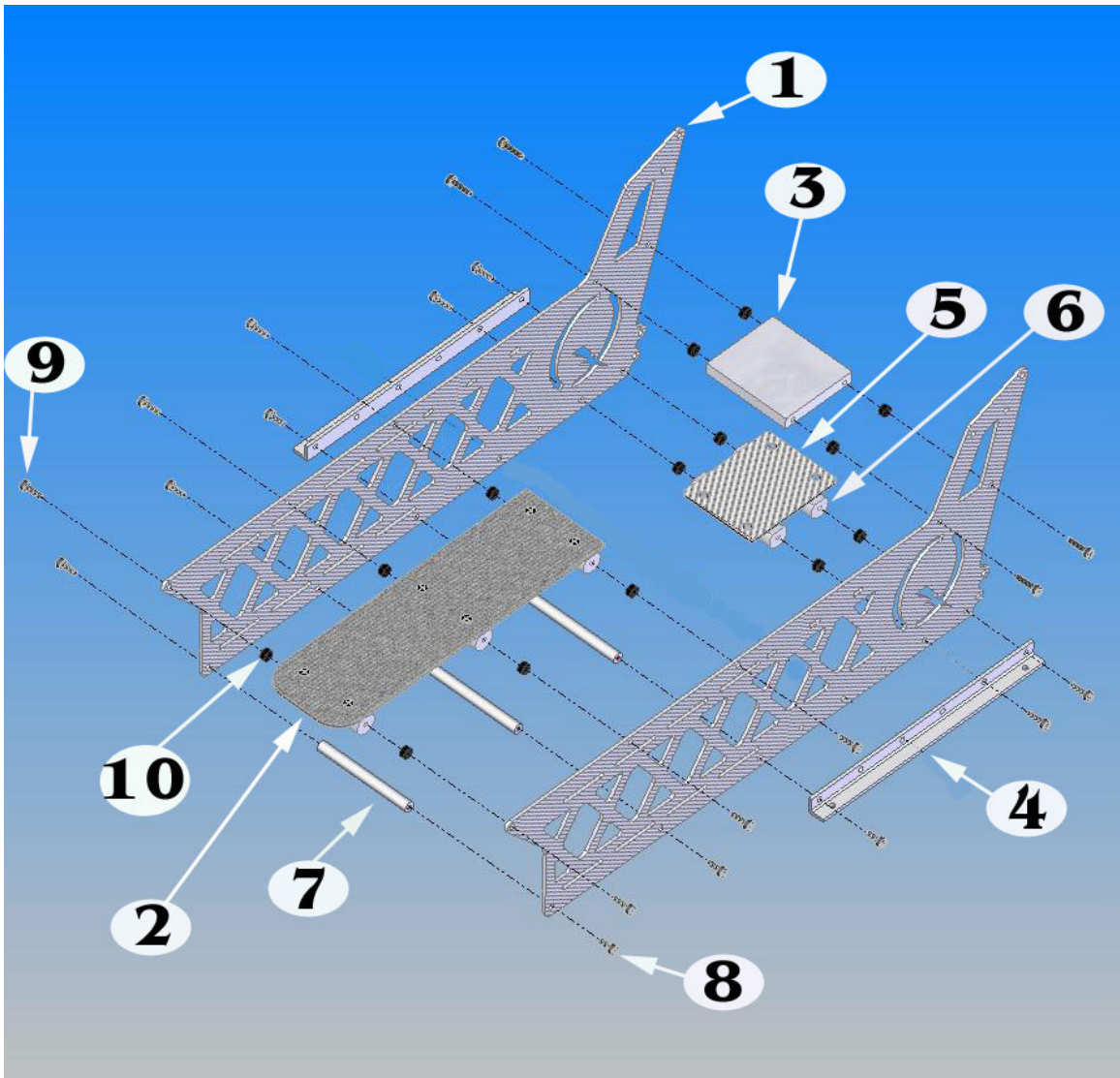
* Sport version: QF356 (plastic), QFE170 (G-10)

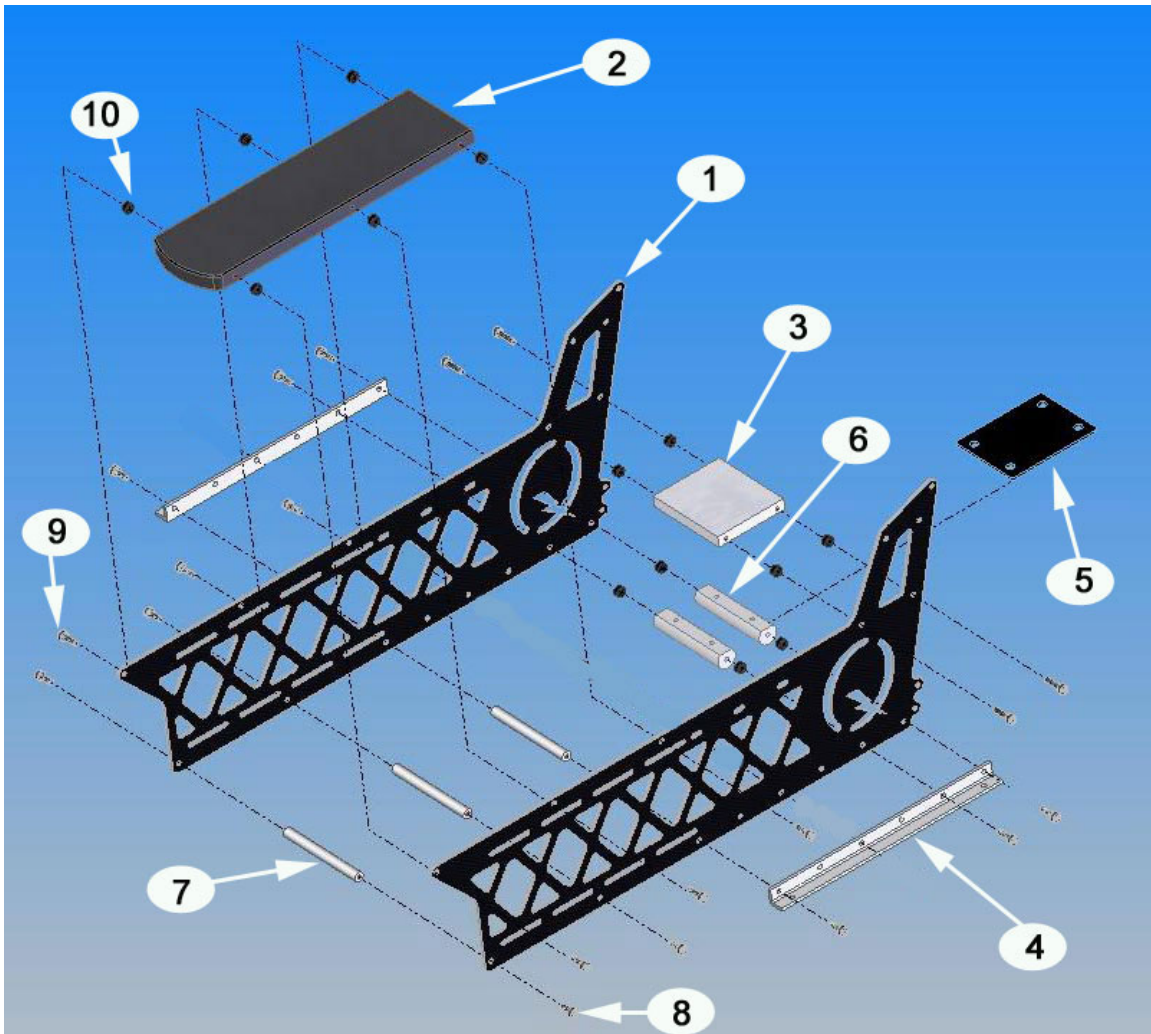
** Sport version just has 2 (just for Rear ESC Mounting Tray)

***Sport version does not use these screw



For Pro version, mount the Radio Tray on three Half Round Cross Members using six M3x6 Philip Screws (No. 11) first. The six holes in the Radio Tray maybe counter sunk for nicer finish.





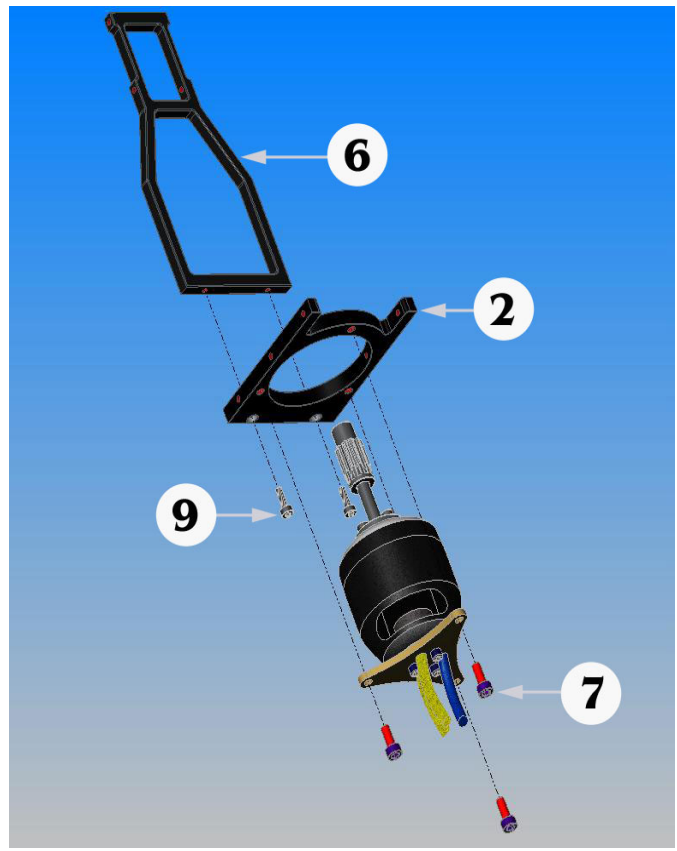
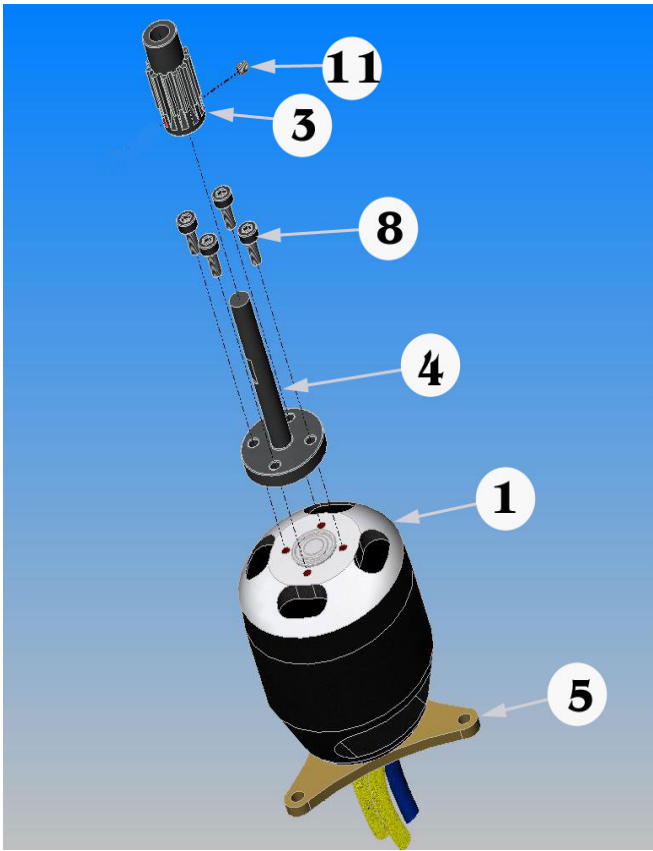
For both models, use the Double Side Tape to attach the Rear ESC Mounting Tray on two Half Round Cross Members installed underneath the Gryro Plate.

2-2 MOTOR MOUNT ASSEMBLY

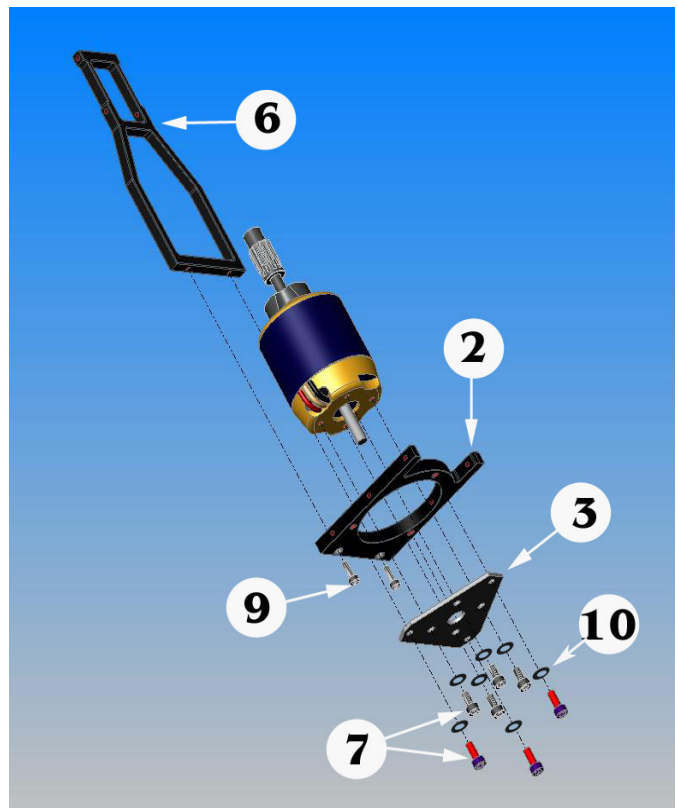
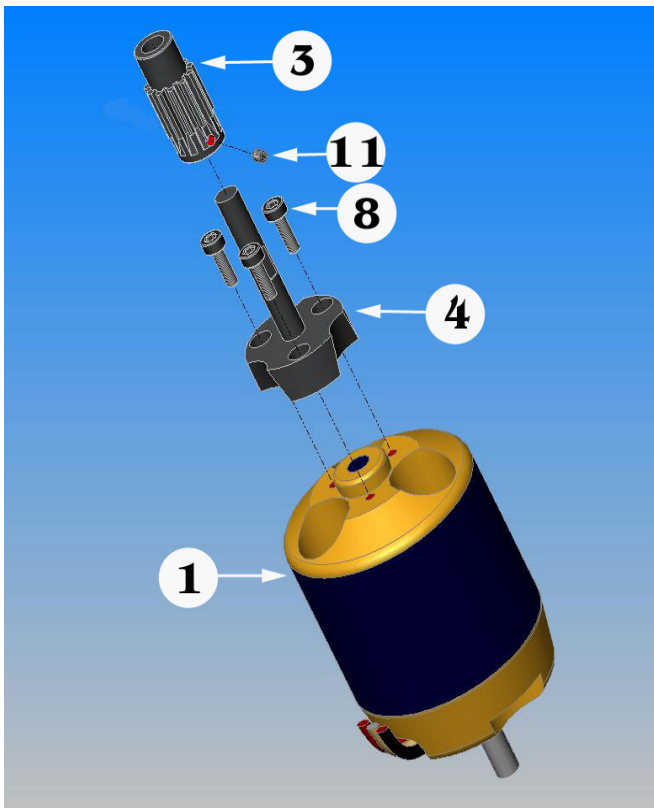
No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	*****	Motor	1	6	QFE569	Bulkhead (from Frame Bag)	1
2	QDE568	Motor Mount (fr Frame Bag)	1	7	HHI4M10C	M4x8 Cap Head Bolt	7
3	*****	Pinion Gear 11T	1	8	HHI3M10C	M3x10 Cap Head Bolt	4
4	*****	Pinion Shaft	1	9	HHI3M12C	M3x12 Cap Head Bolt	2
5		Motor Mounting Plate (from Frame Bag)	1	10	M4FW	M4 Washer	7
				11	*****	M3x5 Set Screw	1

Generally, there are two kinds of motors you can use for the helicopter: **Actro** and **Axi**.

- For **Actro**, the Motor Mounting Plate is not needed because it comes with its own plate. Use this plate, three M4x8 Cap Head Bolts, and three M4 Washers.

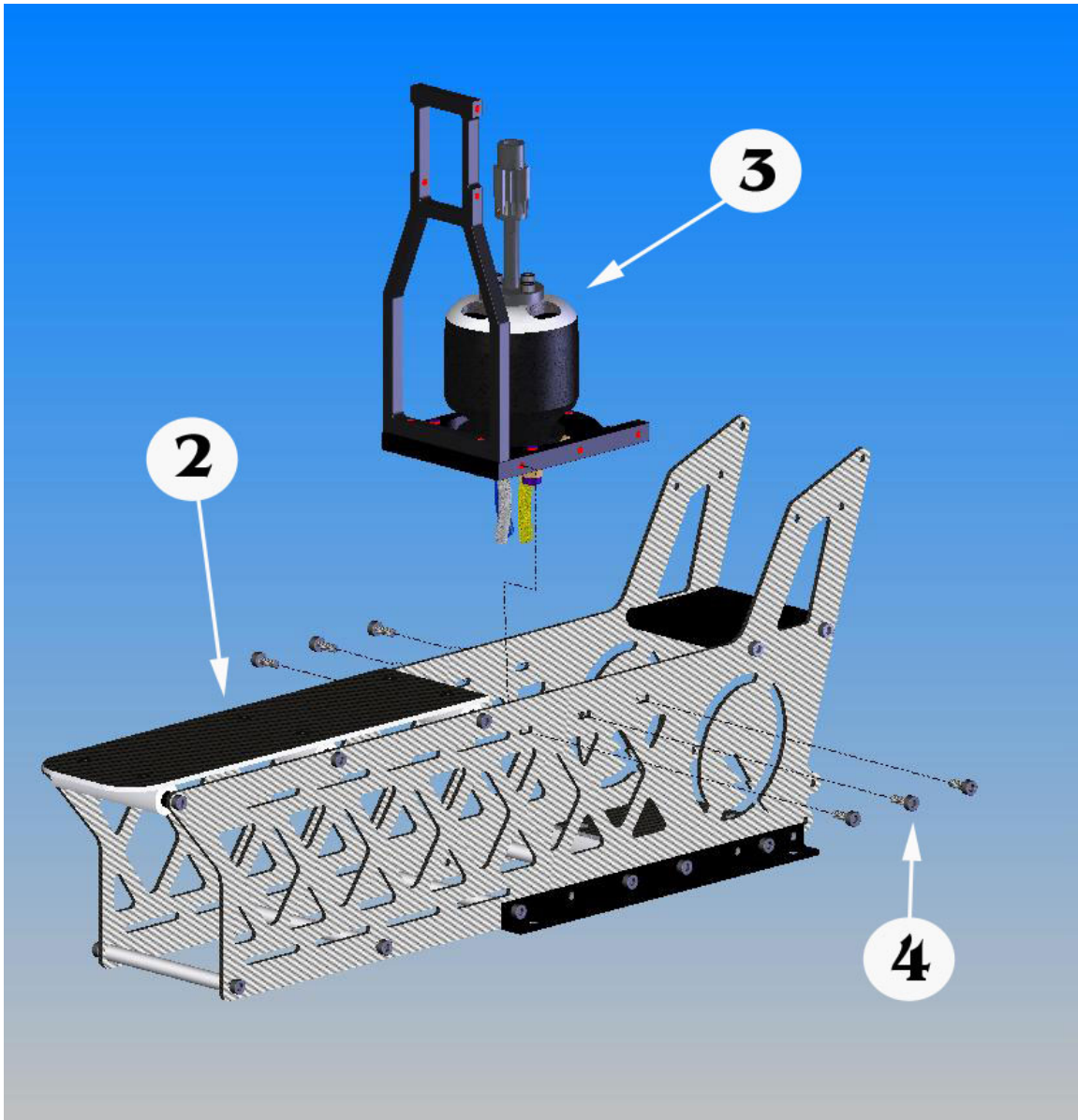


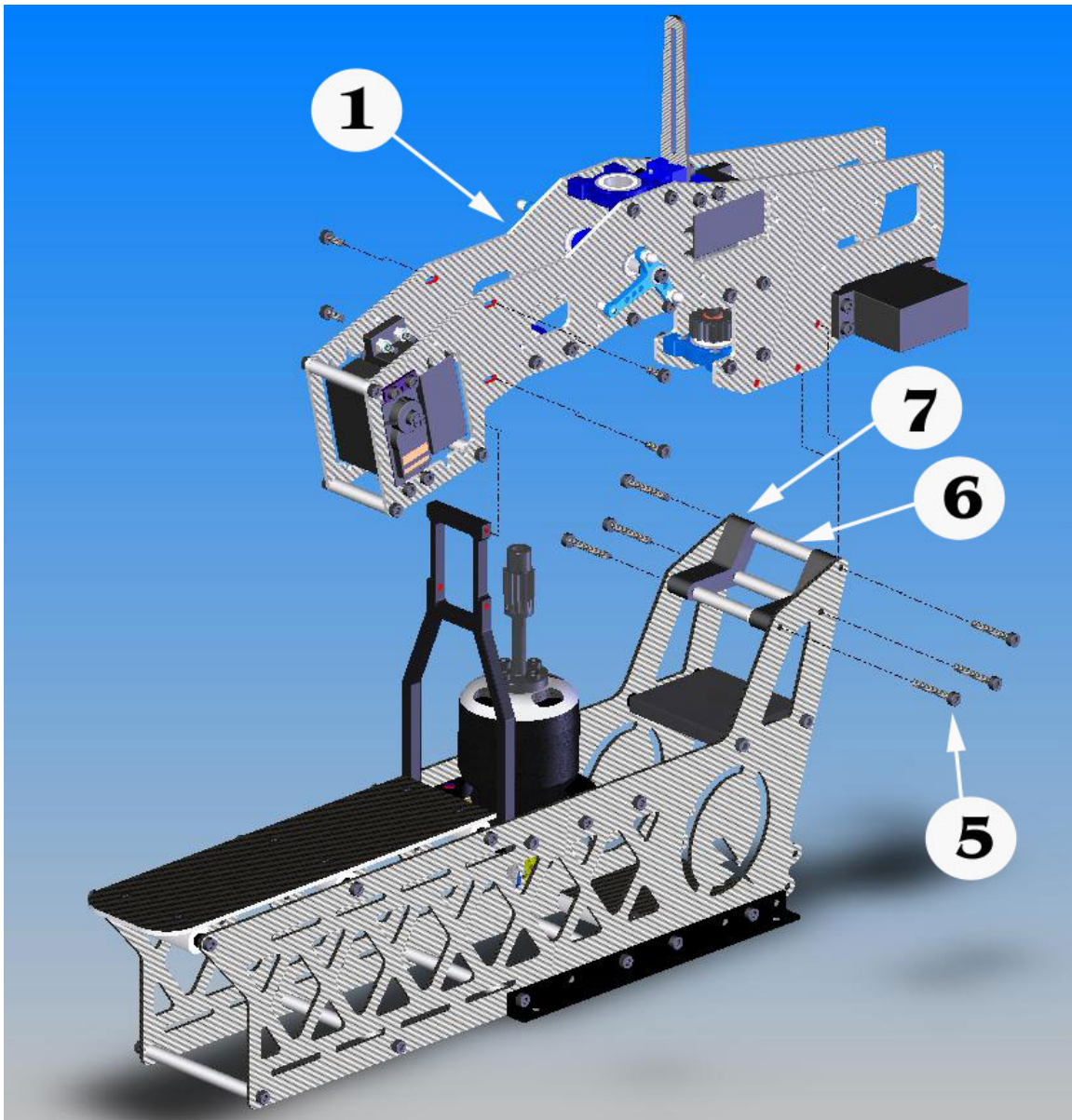
- For **Axi**, use the Motor Mounting Plate, seven M4x8 Cap Head Bolts, and seven M4 Washers. If you use **Axi** with model **4130/****, you have to make a cut on the motor mount to make room for the motor wires to come out.



2-3 MAIN FRAME INSTALLATION

No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	1	Upper Frame Assembly	1	5	HHI3M20C	M3x20 Cap Head Bolt	6
2	2-1	Lower Frame Assembly	1	6	QF501	32mm Cross Member	3
3	2-2	Motor Mount Assembly	1	7	QFL307	Rear One-piece Cross	2
4	HHI3M8	M3x8 Cap Head Bolt	10				

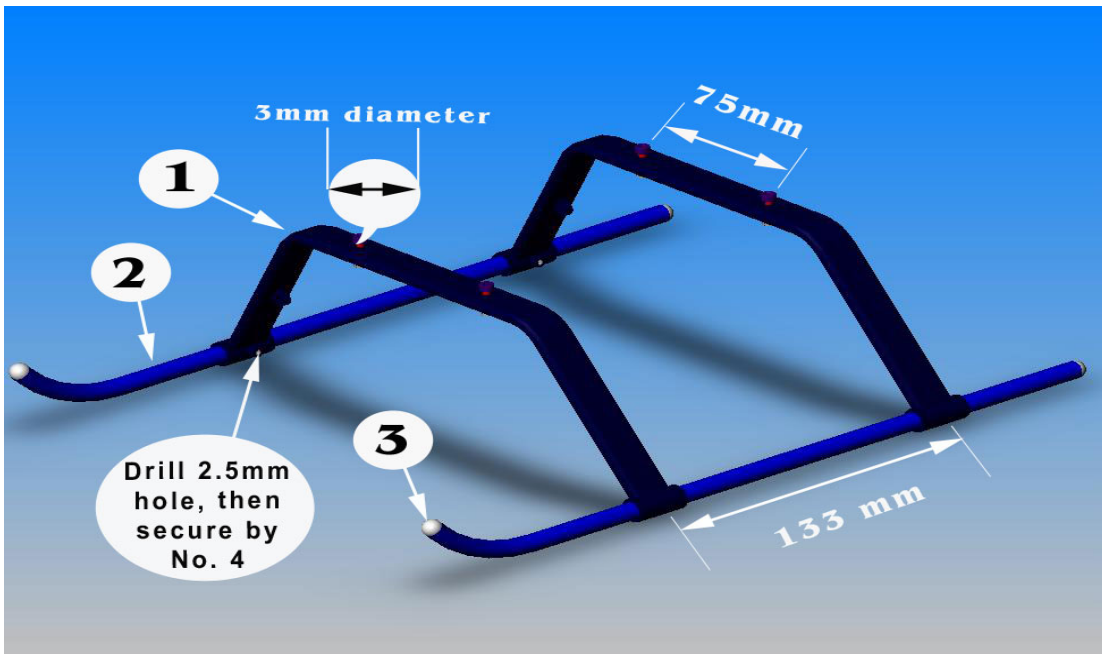




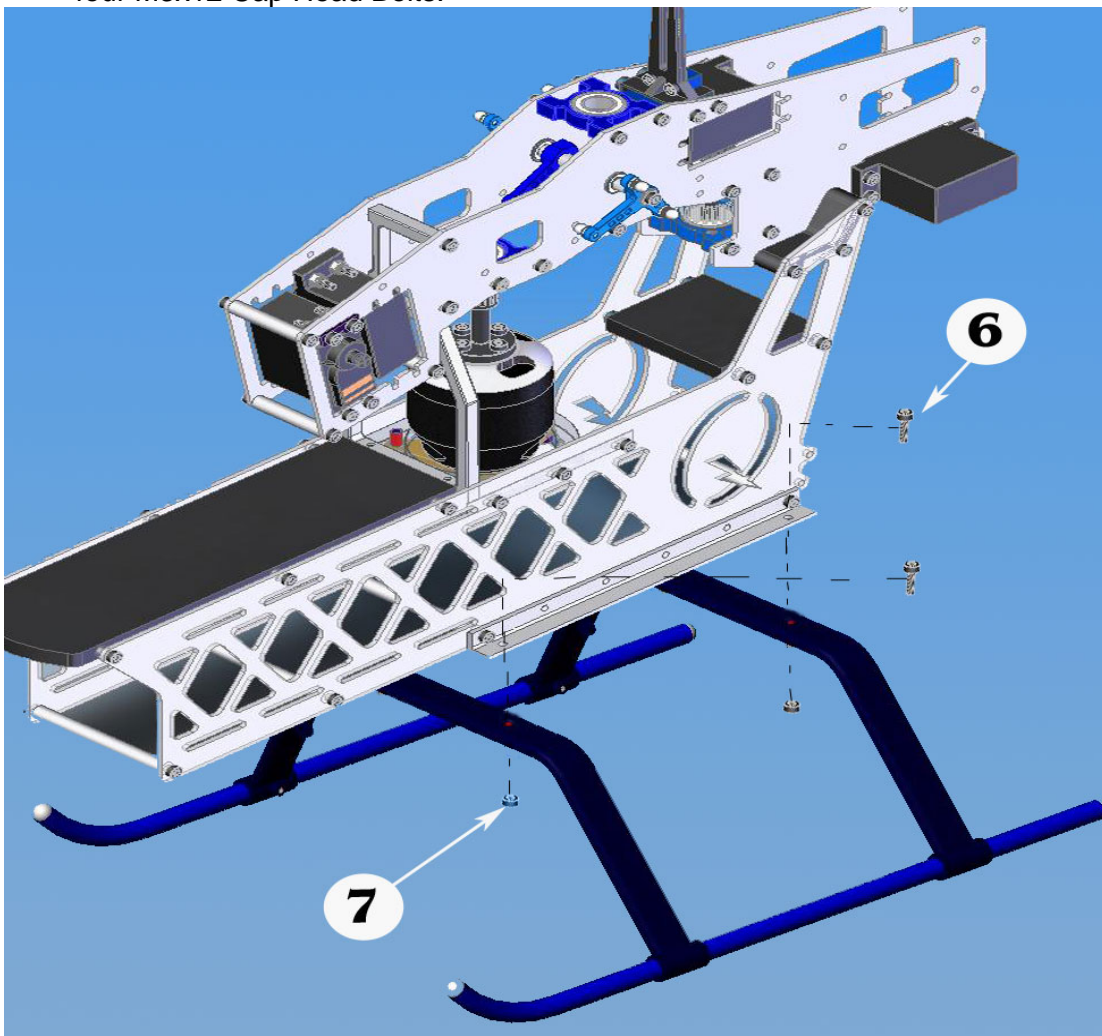
2-4 LANDING GEAR SUBASSEMBLY

No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	HHI4042	Landing Gear Strut	2	4	QD354	M2.5x6 Phillip Screw	4
2	HHI4042	Landing Gear Skid	2	5	*****	CA Glue	1
3	QD561	Landing Gear End Cap	4	6	HHI3M12C	M3x12 Cap Head Bolt	4
				7	HHI03MLN	M3 Locknut	4

- Drill 4 holes in the Landing Gear Struts with a 3mm drill bit with a spacing of 75mm
- Install the Landing Gear Skids into the Struts.
- Apply CA Glue into the Landing Gear End Cap then insert them into the Skids.
- Drill four 2.5mm holes into the little rounds on the ends of the Struts then secure them with the four M2.5x6 Phillip Screws.



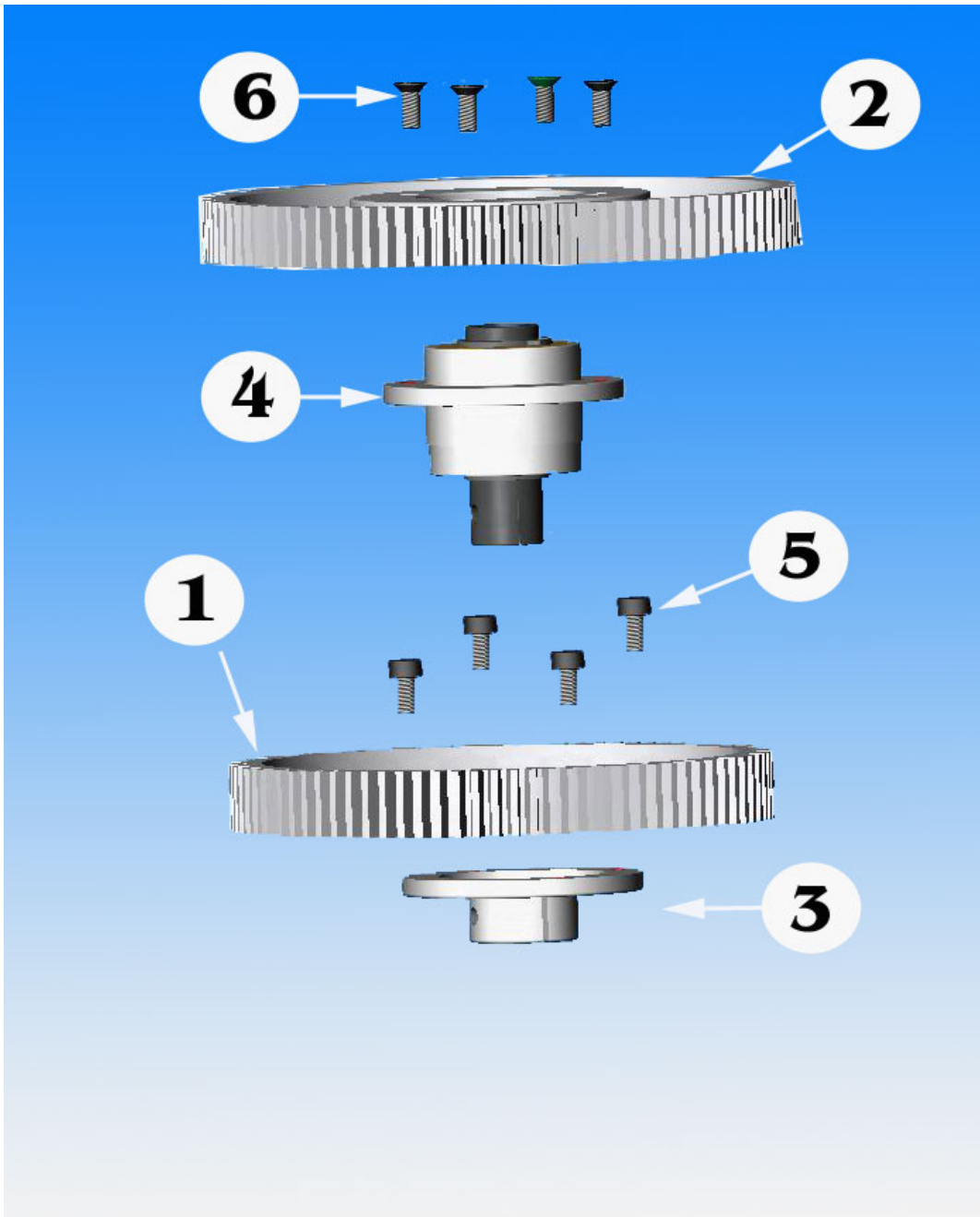
- Install the Main Frames onto the Landing Gear Assembly and secure them with four M3x12 Cap Head Bolts.



3-1 MAIN GEAR SUBASSEMBLY

No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	QD355	Lower Main Gear 88T	1	4	QD354*	Auto-rotation Clutch	1
2	QD502	Upper Main Gear 97T	1	5	HHI3M06C	M3x6 Cap Head Bolt	4
3	QD559	Lower Main Gear Hub	1	6	HHI3M06P	M3x6 Philip Screw	4

*For Sport version: QD351 (Plastic)

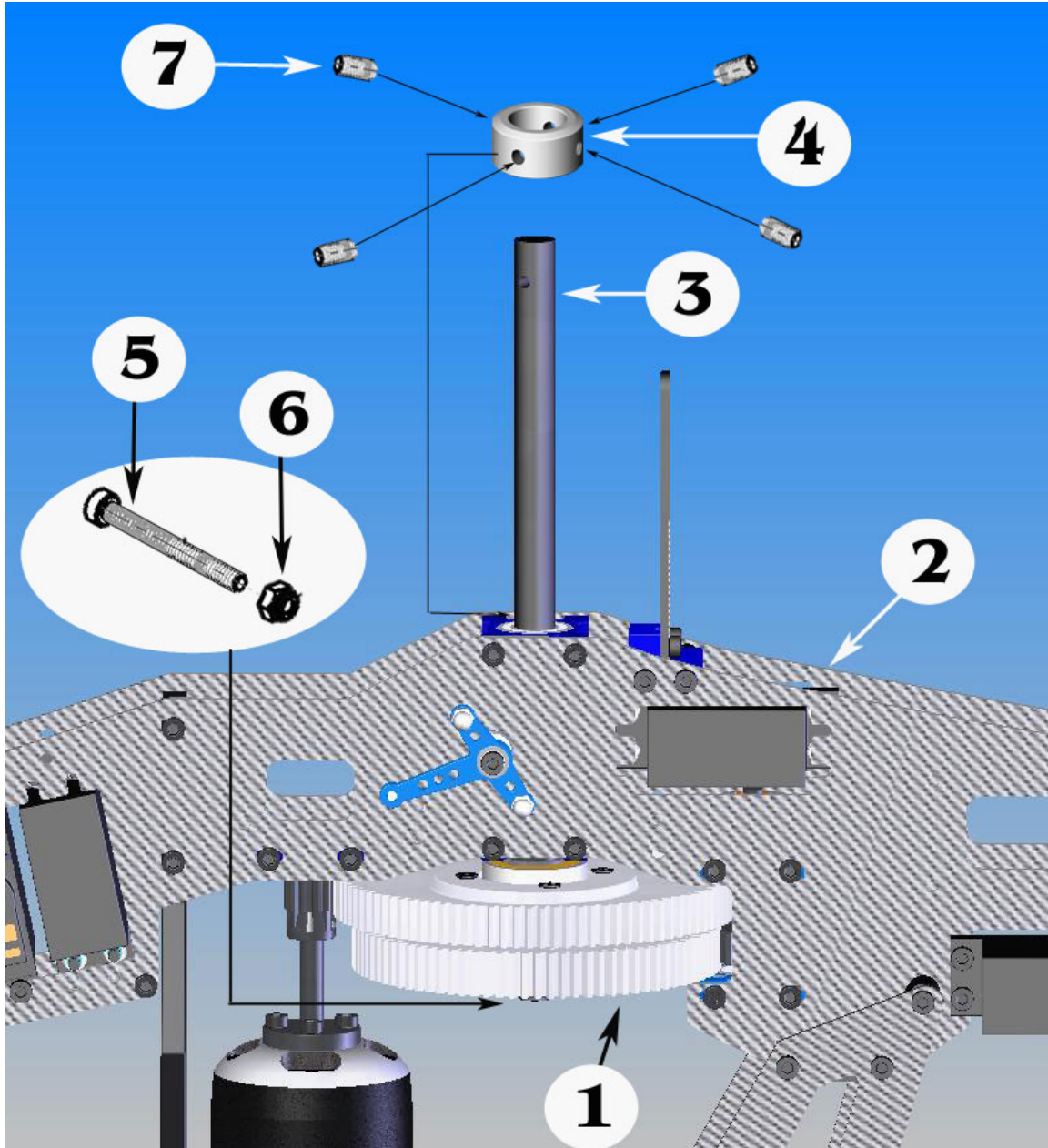


Note: For the Upper Main Gear, the raised portion should be face up.

3-2 DRIVING SYSTEM ASSEMBLY

No.	Part	Description	Qty	No.	Part No.	Description	Qty
1	3-1	Main Gear Subassembly	1	5	HHI3M22C	M3x22 Cap Head Bolt	1
2	2	Main Frame Assembly	1	6	HHI03MLN	M3 Locknut	1
3	QD556	Main Shaft	1	7	HHI3M05SS	M3X5 Set Screw	4
4	QD357	Main Shaft Collar	1				

- Slide the Main Gear Subassembly in, install the Main Shaft down, then secure with one M3x22 Cap Head Bolt and one M3 Locknut.
- Install the Main Shaft Collar on the Main Shaft then secure with four M3x5 Set Screws.

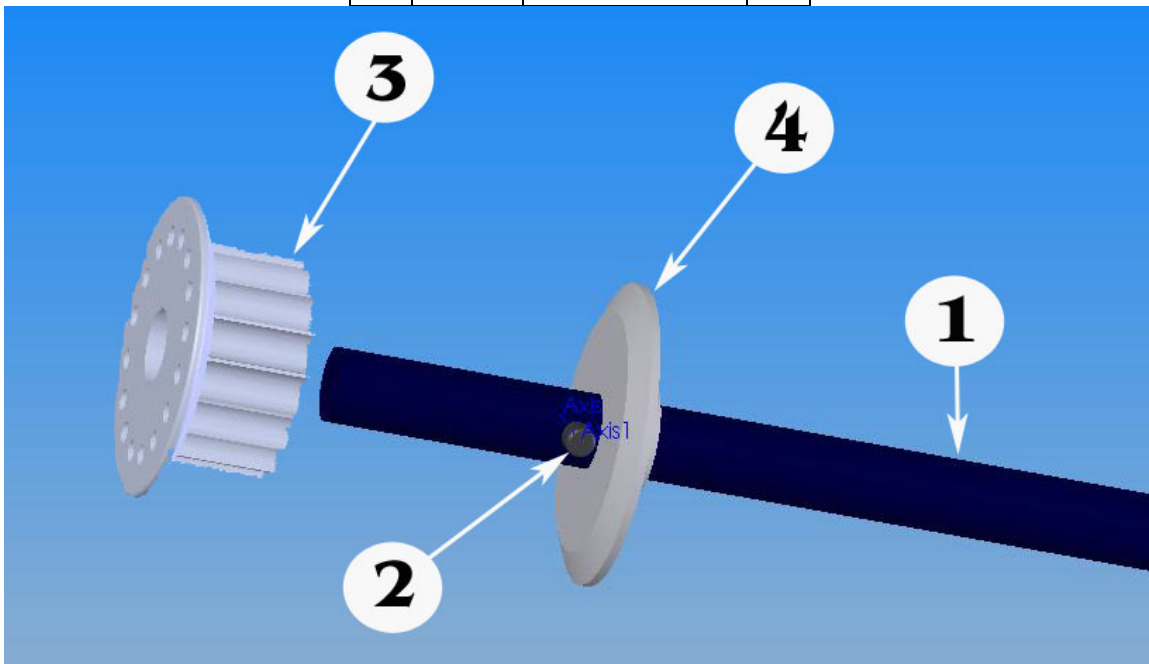


SECTION 4: TAIL ASSEMBLY

BAG 4

4-1 TAIL PULLEY GEAR SUBASSEMBLY

No.	Part No.	Description	Qty
1	QT513	Tail Output Shaft	1
2	QT520B	Tail Gear Lock Pin	1
3	QT556	Tail Pulley Gear	1
4	QT520A	Tail Gear Side Plate	1

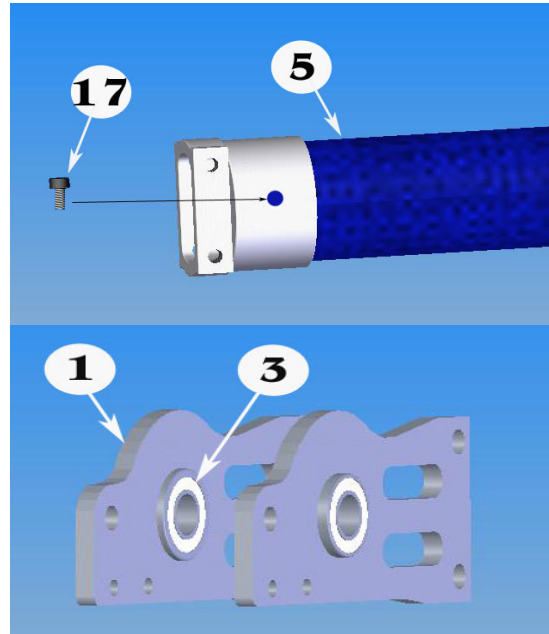


4-2 TAIL ROTOR SUBASSEMBLY

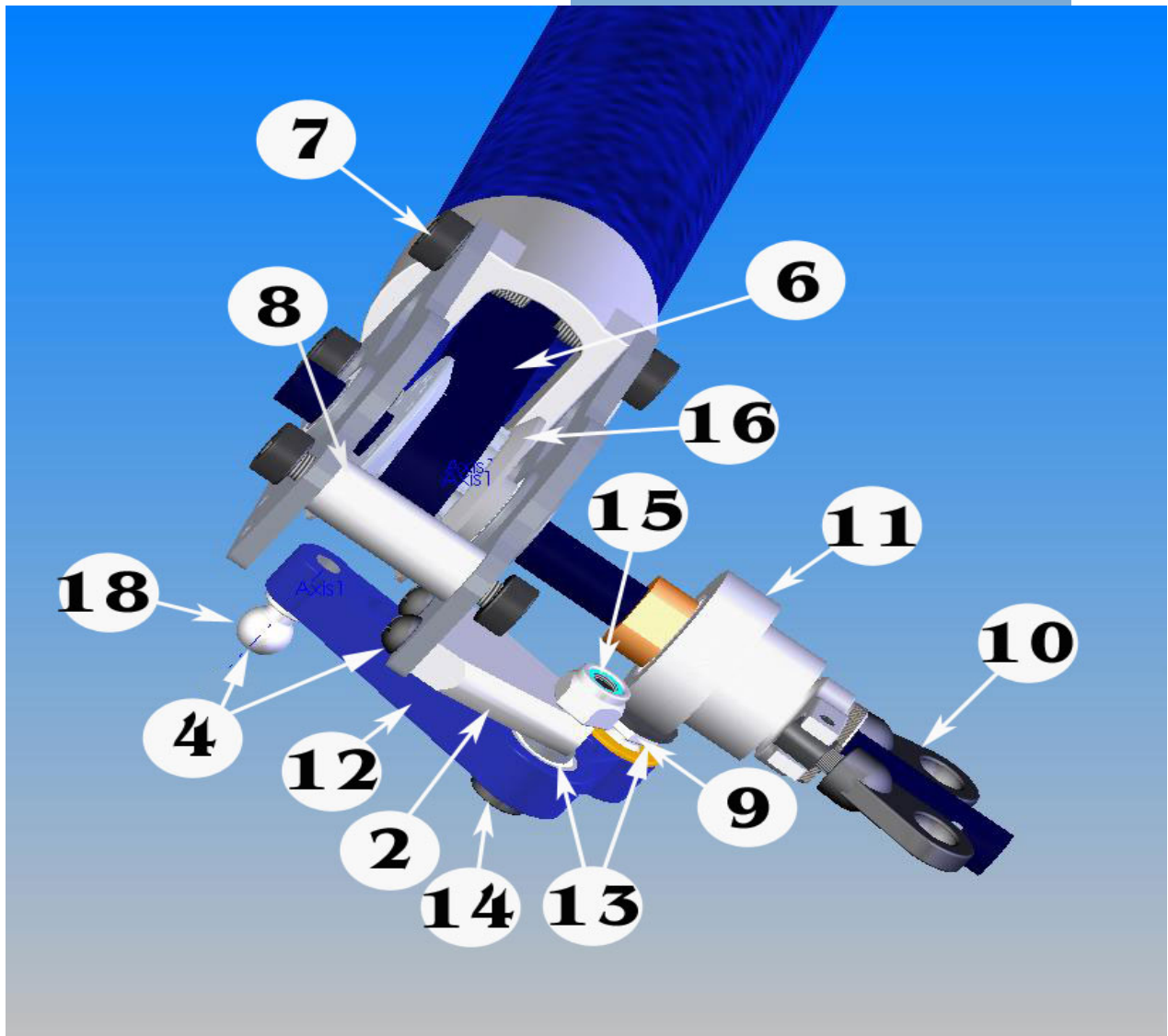
No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	QT563C*	Tail Case Side Plate (fr Frame Bag)	2	10	QP150B	M2.3 Medium Ball Link	2
2	QT551B	Tail Pitch Lever Mount	1	11	QT550	Tail Pitch Slider	1
3	BRG05104FJ	5X10X4F Bearing	2	12	OD351A	Tail Pitch Control Lever	1
4	HHI2M10P	M2x10 Phillip Screw	3	13	HHI3M5X1	M3x5x1 Spacer	2
5	QT554	Tail Boom (in Box)	1	14	HHI3M16C	M3x16 Cap Head Bolt	1
6	QT555	Timing Belt (in Box)	1	15	HHI03MLN	M3 Locknut	1
7	HHI3M6C	M3x6 Cap Head Bolt	6	16	4-1	Tail Pulley Gear	1
8	QT359	Tail Case Cross Member	1	17	HHI2.5M06C	M2.5x6 Cap Head Bolt	1
9	HHI3M4PS	M3x4Pivot Ball Stud	1	18	QP124	Shim Ball	1

*Sport Version: QT563

First, to prevent the Boom End from rotating, drill a 2.5mm hole in the side of the Boom End, then secure with a M2.5x6 Cap Head Bolt.

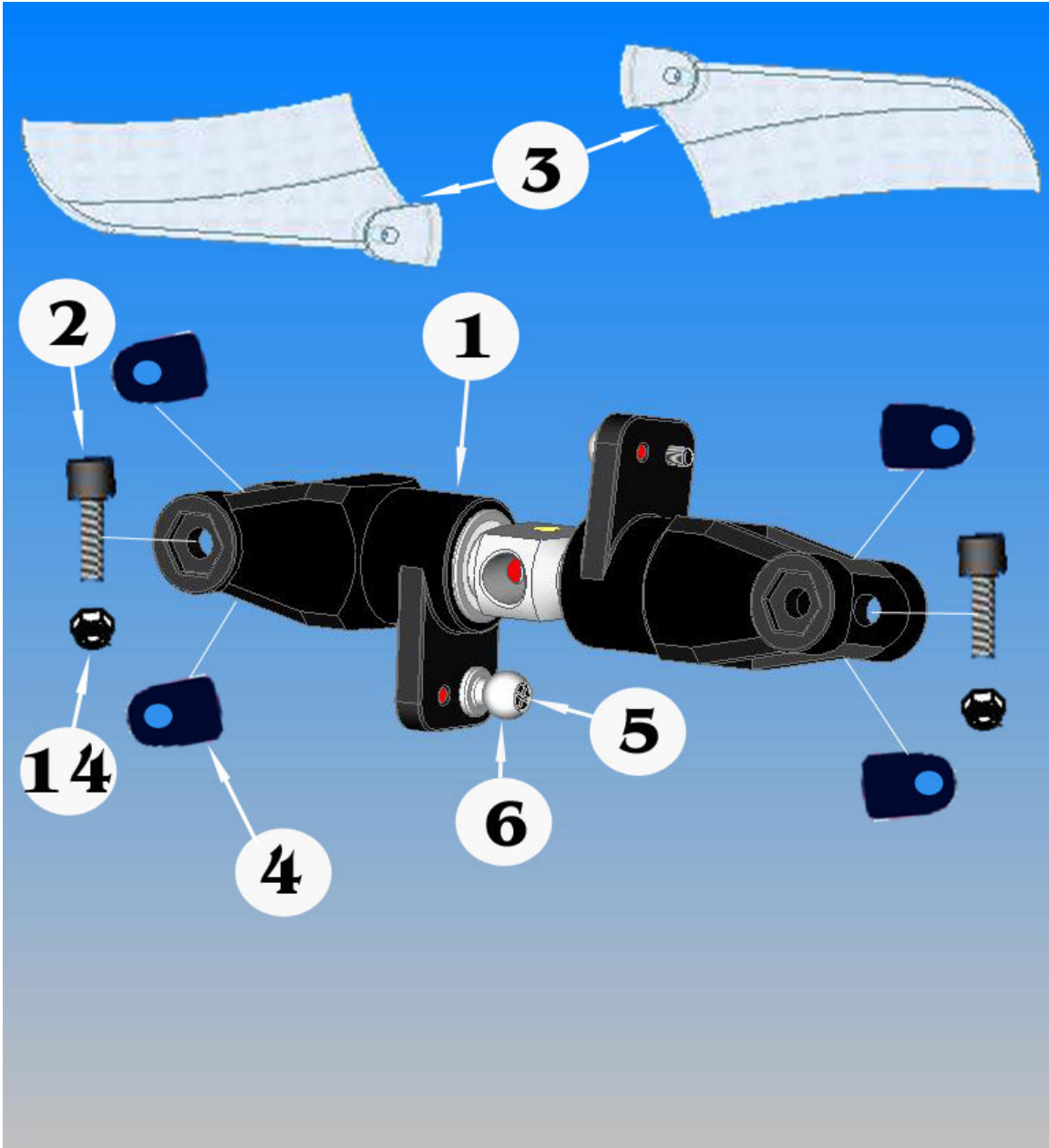


Install the Bearings into the Tail Case Side Plates. The flange should be inside.

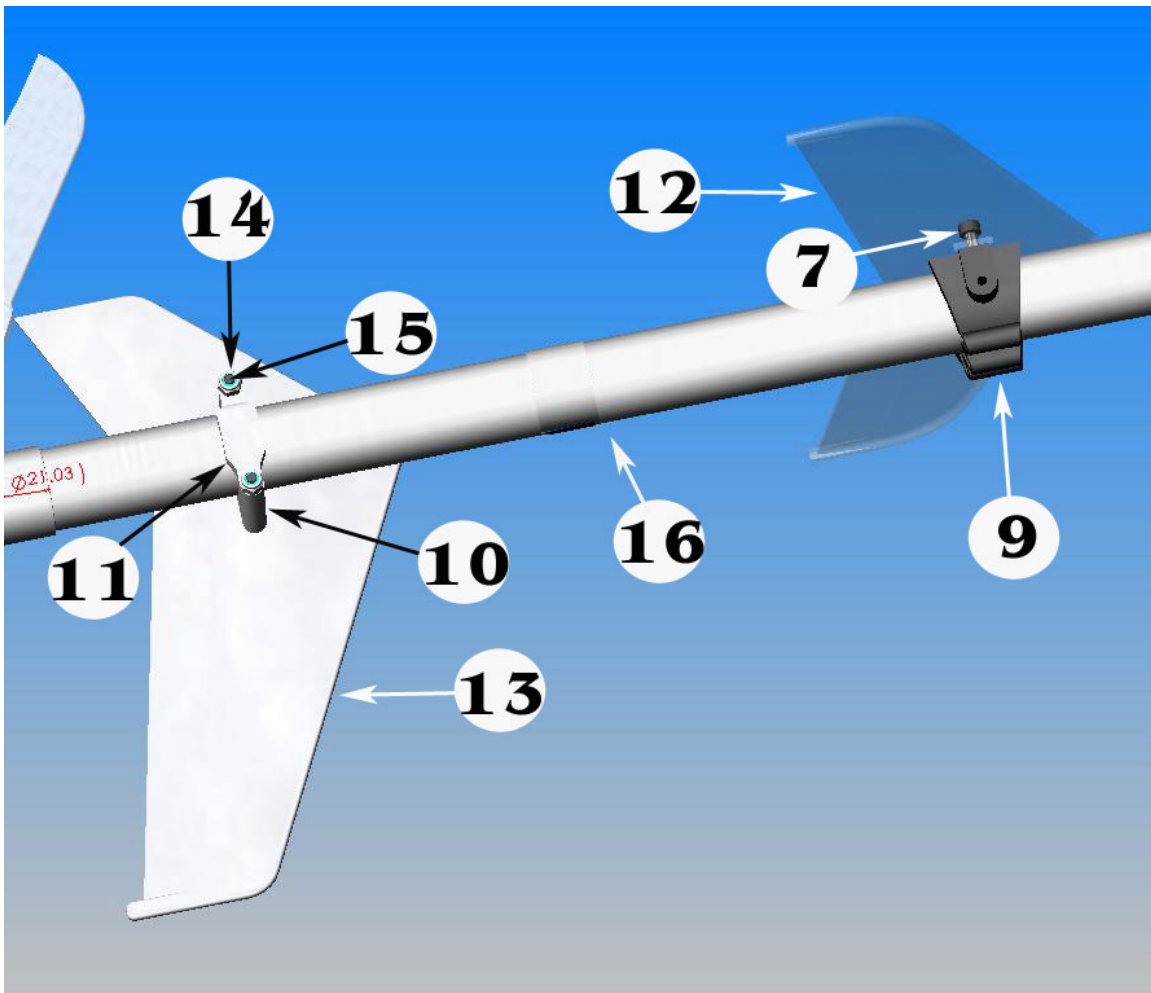
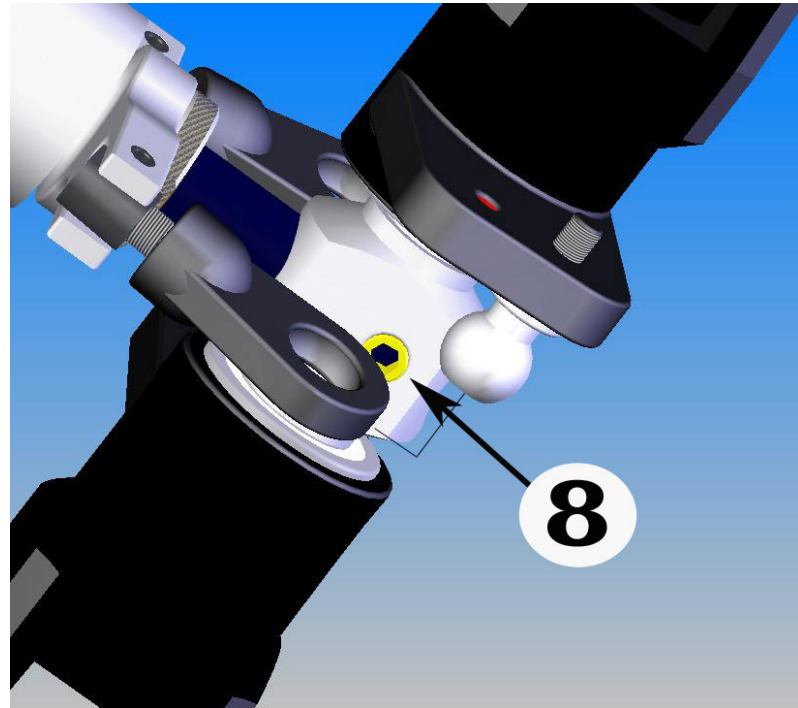


4-3 TAIL ROTOR INSTALLATION

No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	QT365	Dual Bearing Tail Rotor	1	9	QT360	Horizontal Fin Mount	1
2	HHI3M22C	M3x22 Cap Head Bolt	2	10	QT360A	Vertical Fin Mount A	1
3	HHI6305	Tail Blade	2	11	QT360B	Vertical Fin Mount B	1
4	QT365B	Tail Blade Spacer	4	12	HHI4124H	Horizontal Fin	1
5	HHI2M08P	M2x8 Phillip Screw	2	13	HHI4124V	Vertical Fin	1
6	QP124	Shim Ball	2	14	HHI03MLN	M3 Locknut	4
7	HHI3M6C	M3x6 Cap Head Bolt	2	15	HHI3M30C	M3x30 Cap Head Bolt	2
8	HHI3M05SS	M3x5 Set Screw	1	16	4-2	Tail Rotor Subassembly	1



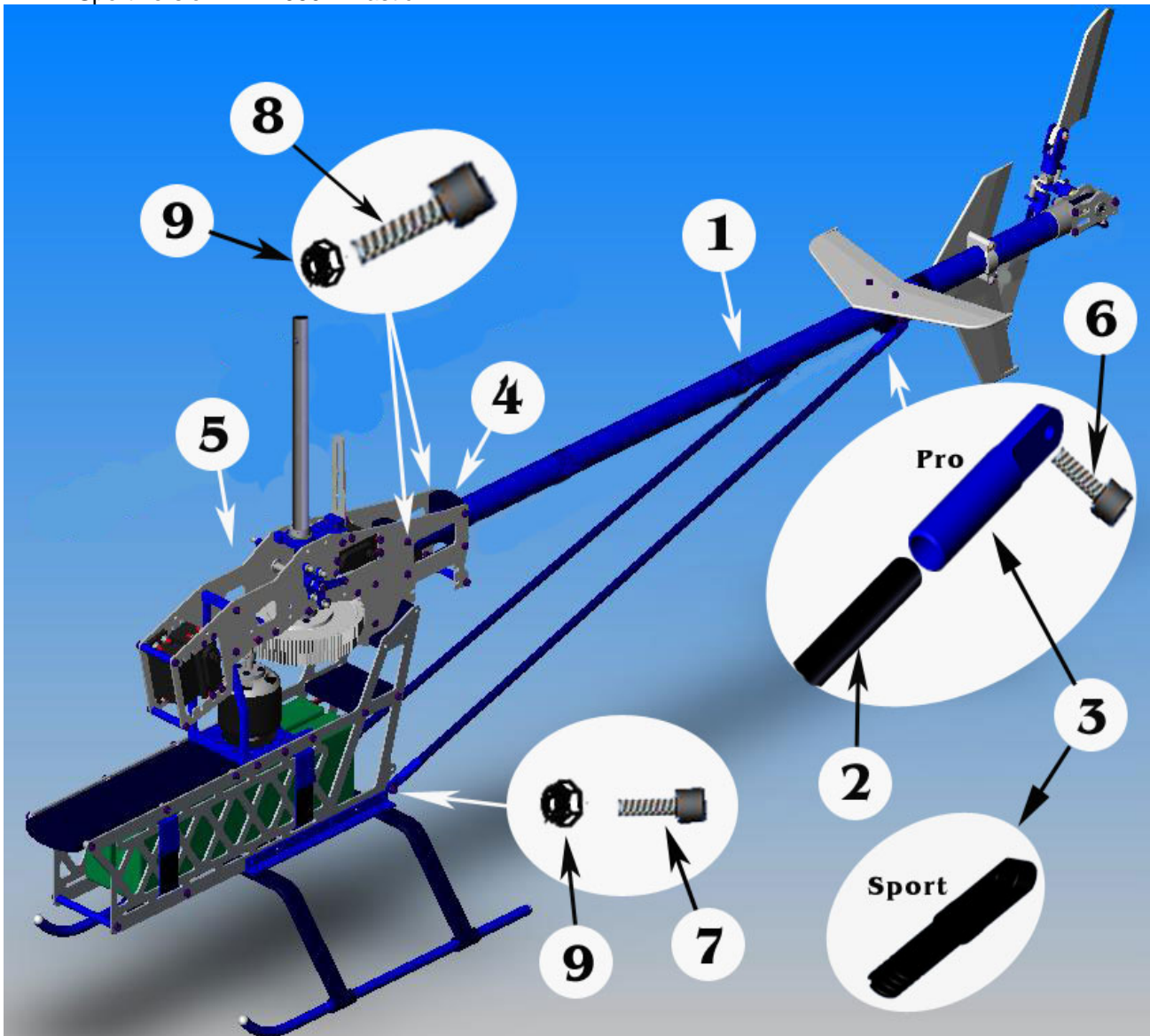
After installing all the parts as shown above, slide this subassembly on the output shaft then secure it with one M3x5 Set Screw.



4-4 INSTALLATION OF THE TAIL & FRAME

No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	4-3	Tail Assembly	1	6	HHI3M08C	M3x8 Cap Head Bolt	2
2	HHI4062R	Boom Support (in Box)	2	7	HHI3M10C	M3x10 Cap Head Bolt	2
3	HHI4062A*	Boom Support End	4	8	HHI3M45C	M3x45 Cap Head Bolt	4
4	QT558	Tail Boom Clamp	2	9	HHI03MLN	M3 Locknut	6
5	3-2	Main Frame w/ Driving System	1	10	*****	CA Glue	1

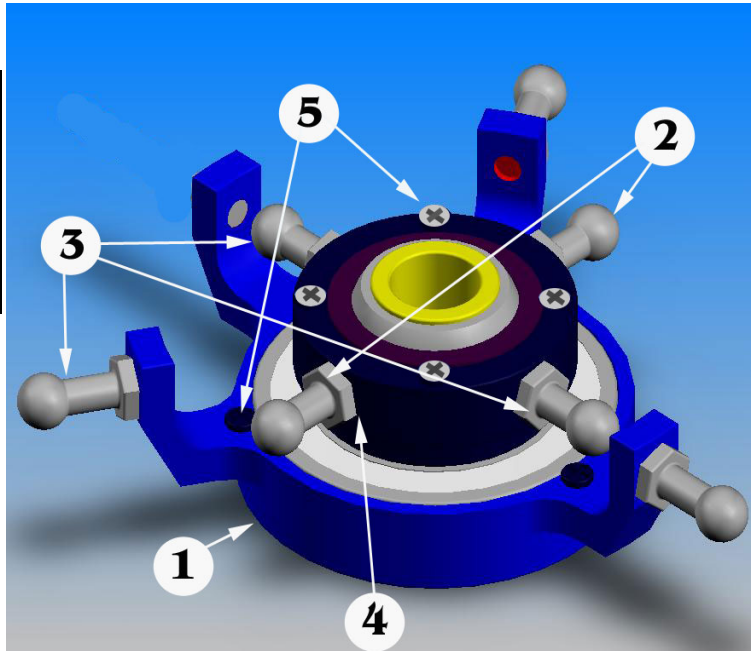
*Sport version: HHI4060A Plastic



- Note for installing the timing belt: Turn the Tail assembly so that the Tail Output Shaft pointing upward, put the belt onto the Transmission, then twist the Tail Assembly 90° to the right. Make sure the belt not too tight or loose.
- Measure the Boom Support carefully before cutting. It is a good idea if we install one end of the rod first, then make the measure then cut it. Remember apply CA Glue for the rods when installing into the Support Ends.

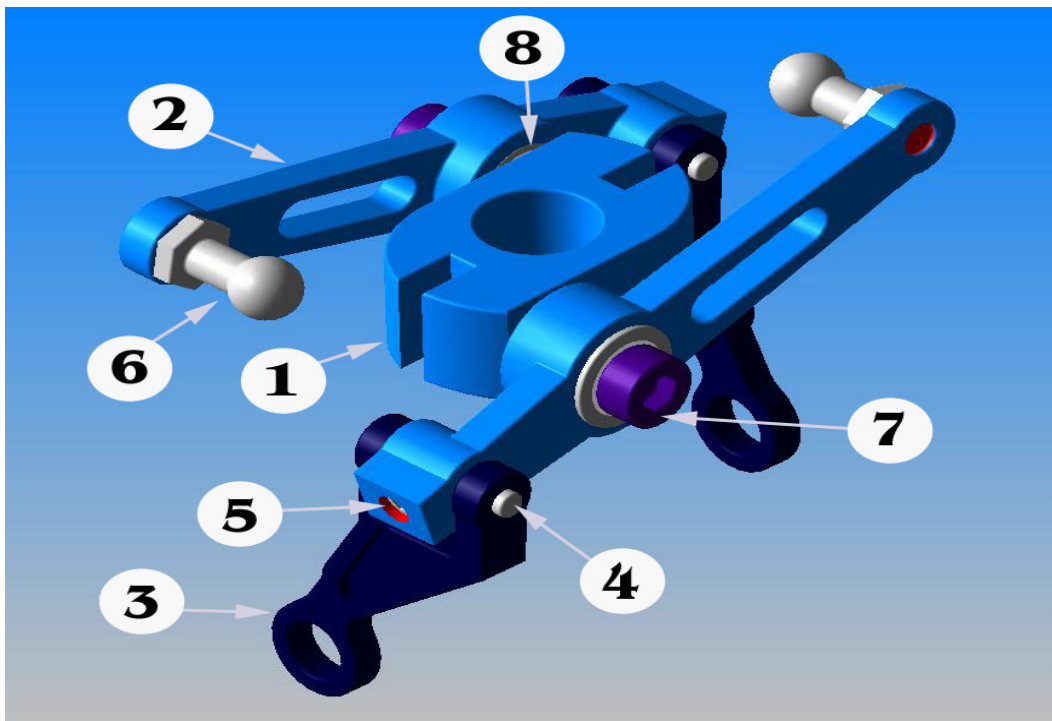
5-1 WASHPLATE ASSEMBLY

No.	Part No.	Description	Qty
1	QC351	Swashplate	1
2	HHI3M4PS	M3x4Pivot Ball Stud	2
3	HHI3M7PS	M3x7Pivot Ball Stud	5
4	HHI3M7FW	M3 Washer	4
5	HHI2M04B	M2X4 Phillip Screws	7



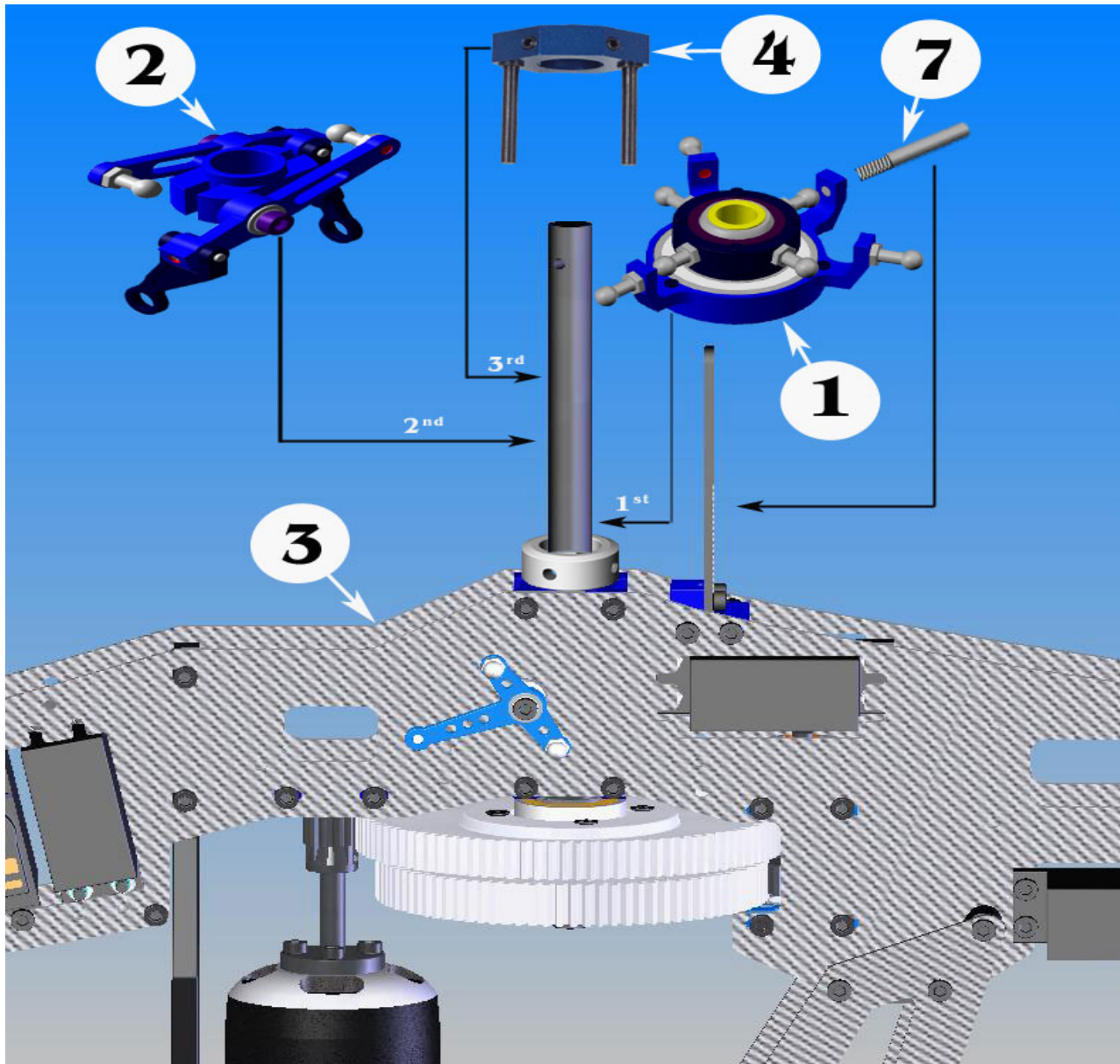
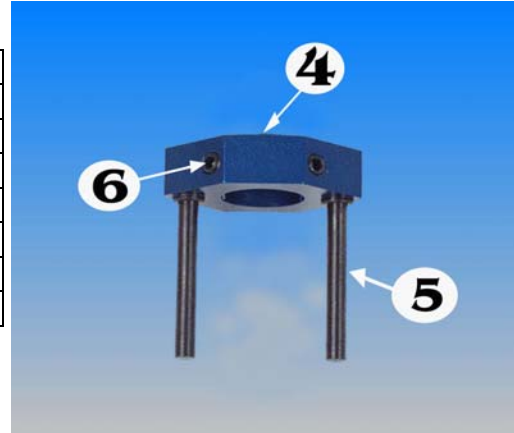
5-2 WASHOUT ASSEMBLY

No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	QC352	Washout Base	1	5	HHI3M05SS	M3x5 Set Screw	2
2	QC105	Washout Arm	2	6	HHI3M8PS	M3x8Pivot Ball Stud	2
3	QC358	Washout Link	2	7	HHI3M12C	M3x12 Cap Head Bolt	2
4	QC359	Washout Link Pin	2	8	HHI3M5X1	M3X5X1 Spacer	4



5-3 CONTROL SYSTEM INSTALLATION

No.	Part No.	Description	Qty
1	4-1	Swashplate Assembly	1
2	4-2	Washout Assembly	1
3	3-3	Helicopter (up to step 3)	1
4	QC651	Double Pin Washout Anti-rotation Base	1
5	QC651	Washout Anti-Rot Guide Pin	2
6	HHI3M05SS	M3x5 Set Screw	4
7	QC301	Swash Anti-rotation Pin	1



Note: Connect the Washout Links to the longer Pivot Studs on the Washplate

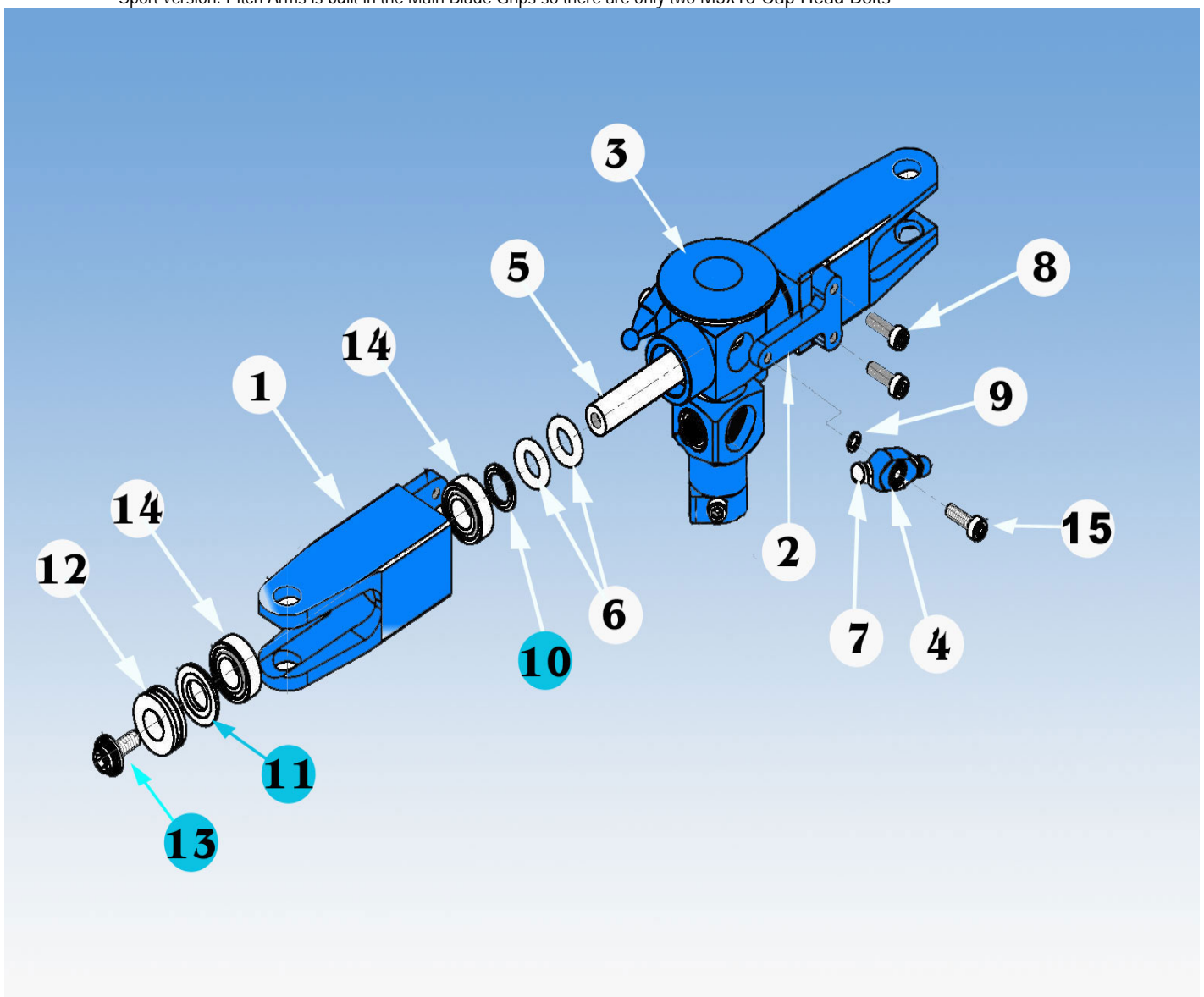
SECTION 6: ROTOR HEAD

BAG 6

6-1 MAIN ROTOR HUB ASSEMBLY

No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	QH558	Main Blade Grip *	2	9	HHI3M5X3	M3X5X3 Spacer	2
2	QH554	Pitch Arm**	2	10	QHL353	Head Spindle Spacer	2
3	QHL351	Center Hub	1	11	QH556	Thrust Bearing Spacer	2
4	QH352	Hiller Arm	2	12	BRG08165T	8x16x5 Thrust Bearing	2
5	QH550	Head Spindle	1	13	HHI4M08CF	M4 Cap Head Bolt	2
6	QH324	Dampener O-Ring	4	14	BRG08165R	8x16x5 Regular Bearing	4
7	HHI3M6PS	M3x6 Pivot Ball Stud	2	15	HHI3M12C	M3x12 Cap Head Bolt*	2
8	HHI3M10C	M3x10 Cap Head Bolt**	4	*Sport version: plastic			

**Sport version: Pitch Arms is built in the Main Blade Grips so there are only two M3x10 Cap Head Bolts

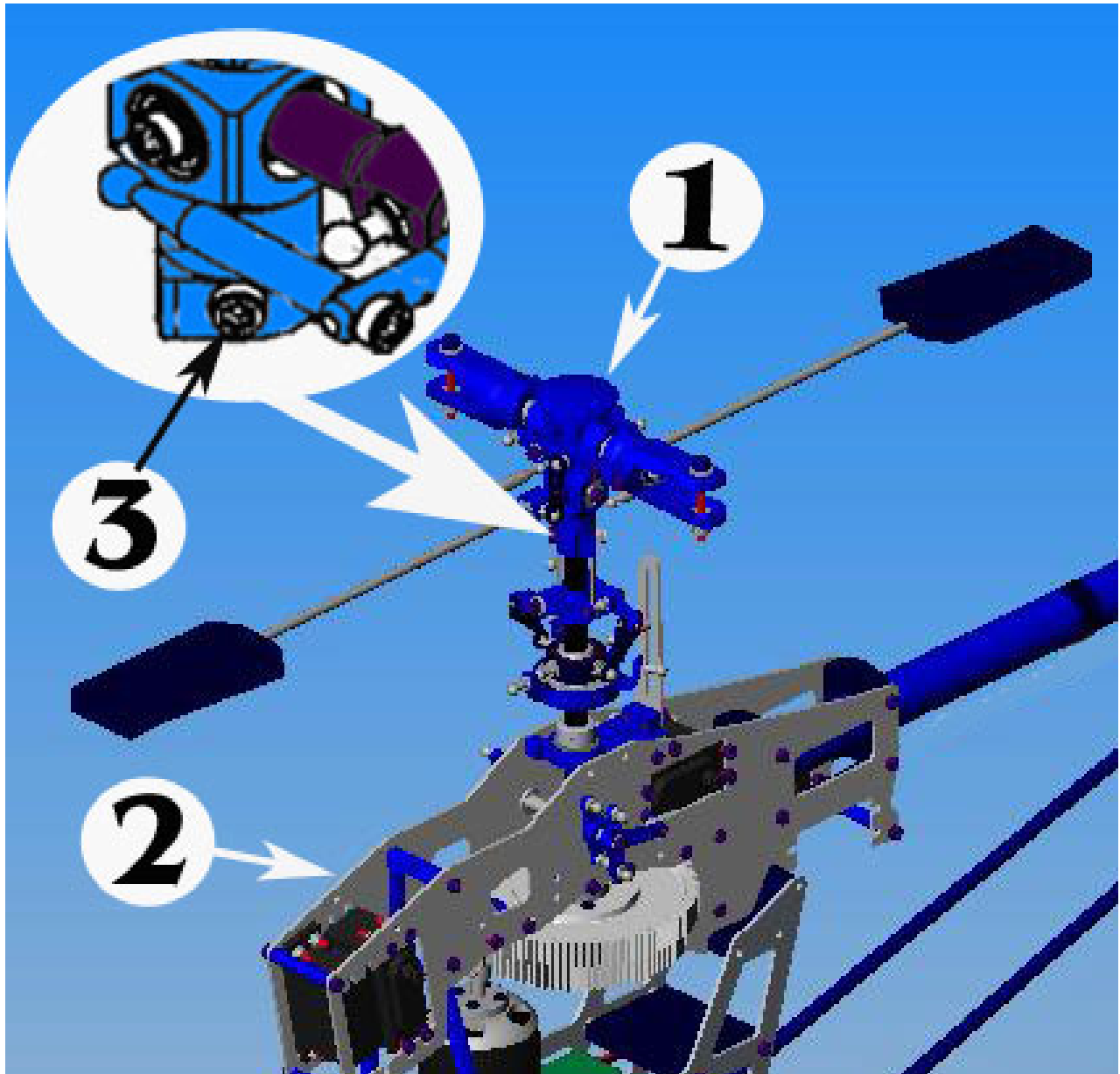


Note: The flanges of the bearings of the Hiller Arms should face outside.

6-3 ROTOR HEAD INSTALLATION

No.	Part No.	Description	Qty
1	6-2	Fly-Bar Seesaw Assembly	1
2	5-3	Helicopter (up to step 4)	1
3	HHI3M20C	M3x20 Cap Head Bolt	1
4	HHI03MLN	M3 Locknut	1

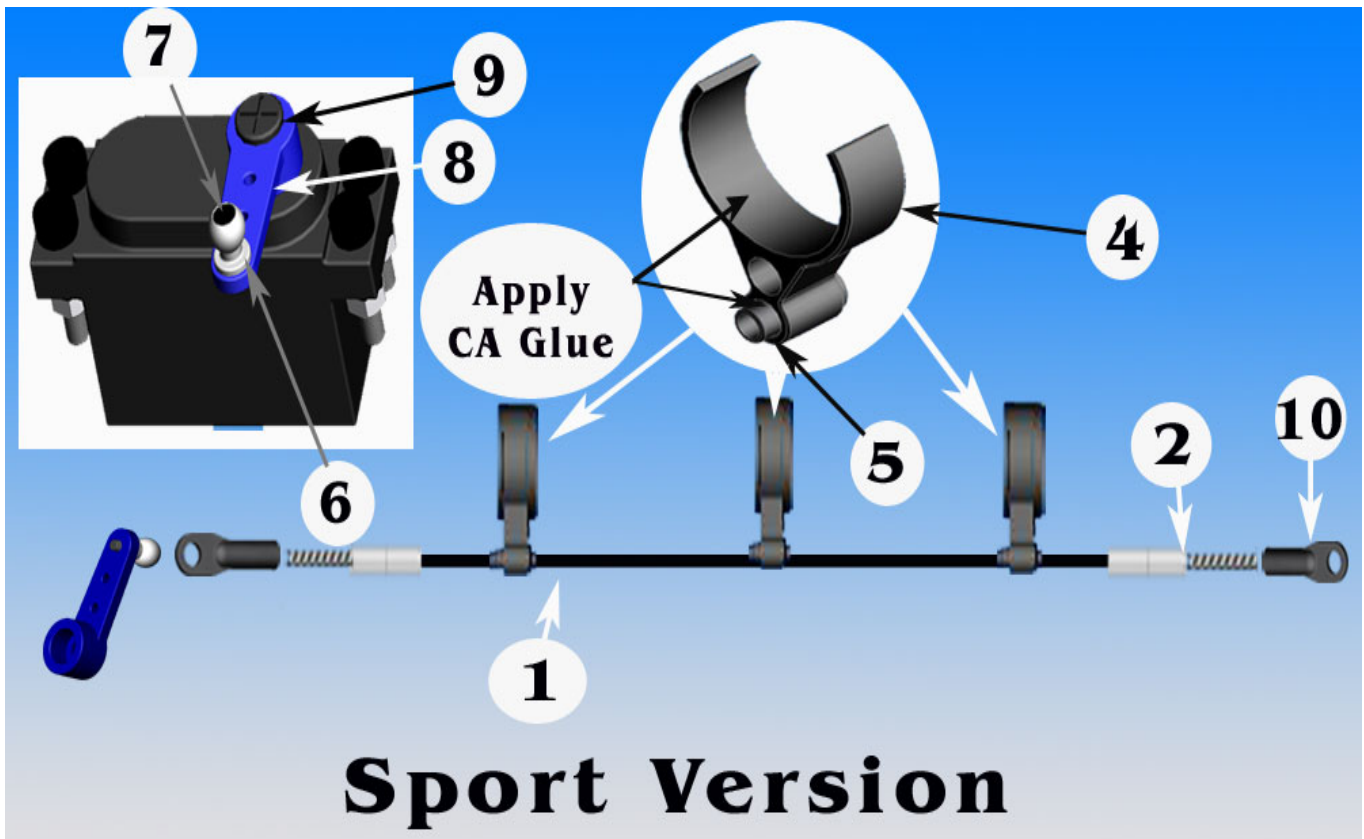
Install the Head Assembly into the Main Shaft, and then secure it by one M3x20 Cap Head Bolt and one M3 Locknut.



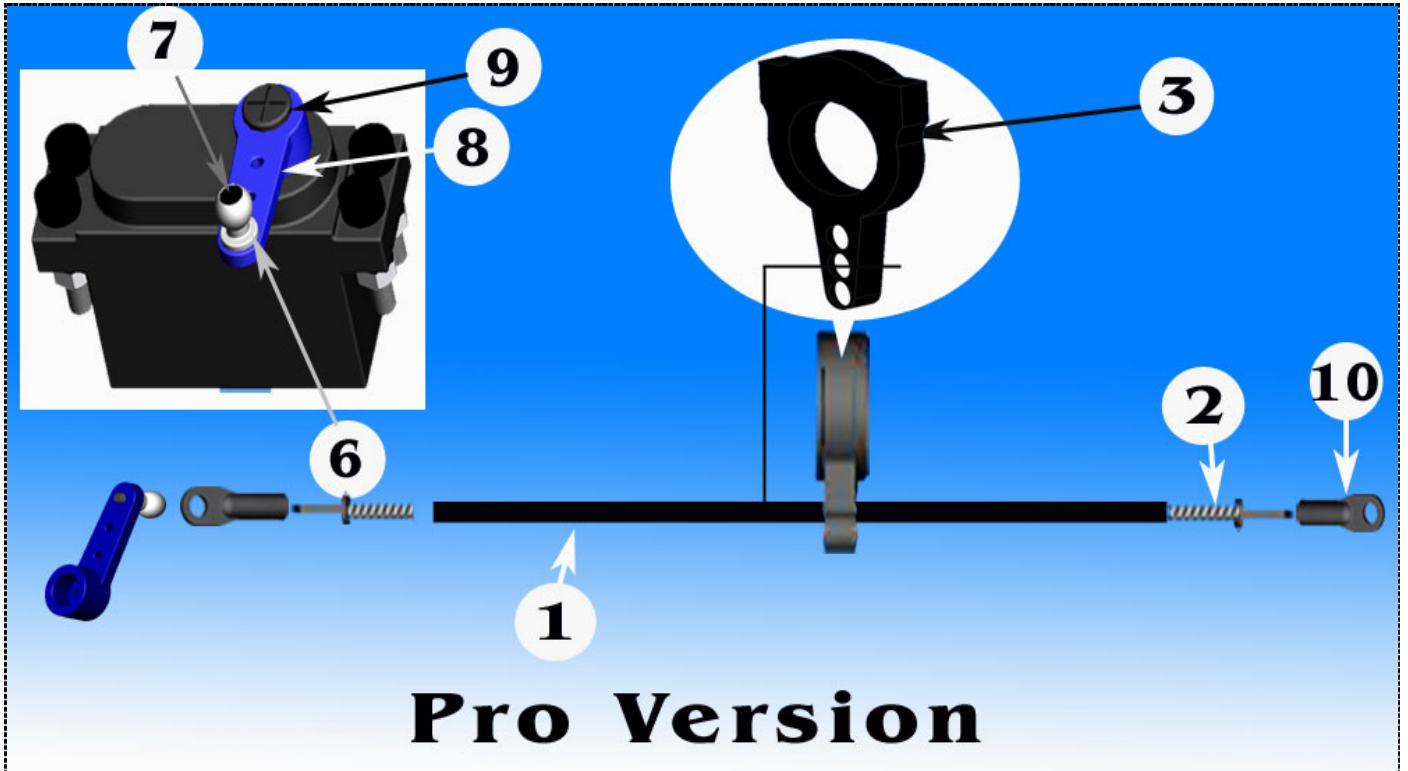
7-1 RUDDER PUSH ROD INSTALLATION

No.	Part No.	Description	Qty
1	HHI4073C*	Rudder Push Rod (in Box)	1
2	HHI4073A*	Rudder Push Rod End	2
3	HHI2903**	Pushrod Guide Clamp-on	1
4	HHI2900L***	Rudder Pushrod Guide	3
5	HHI2900I***	Rudder Pushrod Guide Insert	3
6	QP124	Shim Ball	1
7	HHI2M08P	M2x8 Phillip Screw	1
8	****	Servo Arm	1
9	****	M3 Servo Phillip Screw	1
10	QP150P	2.3mm Long Ball End	2
11	****	CA Glue	1
12	****	Electric Tap	1

*Sport version: HHI4072C, HHI4070E.
 **Sport version does not use this part.
 ***Pro version does not use these parts.



Note: Put electric tape around the Boom before installing the Rudder Push Guide in, so you can remove them later.

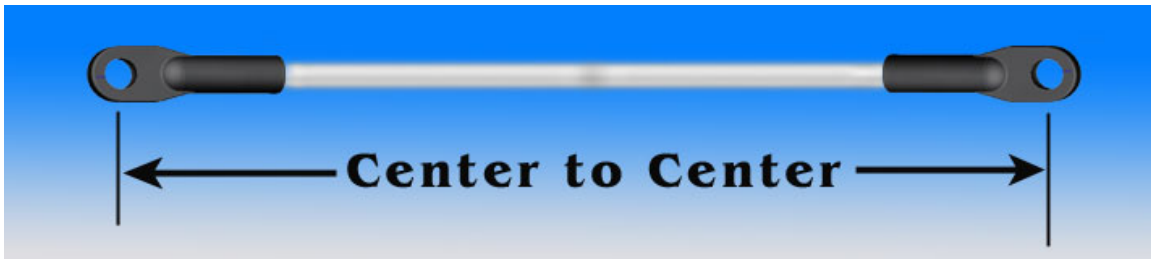


The length of the Rudder Rod measured from center to center should be around 713 mm.



7-2 LINKAGE ASSEMBLY

No.	Part No.	Description	Qty
1	QP150P	2.3 Long Ball End	26
2	HHIR23035	2.3x35mm Rod	2
3	HHIR23040	2.3x40mm Rod	3
4	HHIR23045	2.3x45mm Rod	2
5	HHIR23070	2.3x70mm Rod	2
6	HHIR23090	2.3x90mm Rod	2
7	HHIR23110	2.3x110mm Rod	2



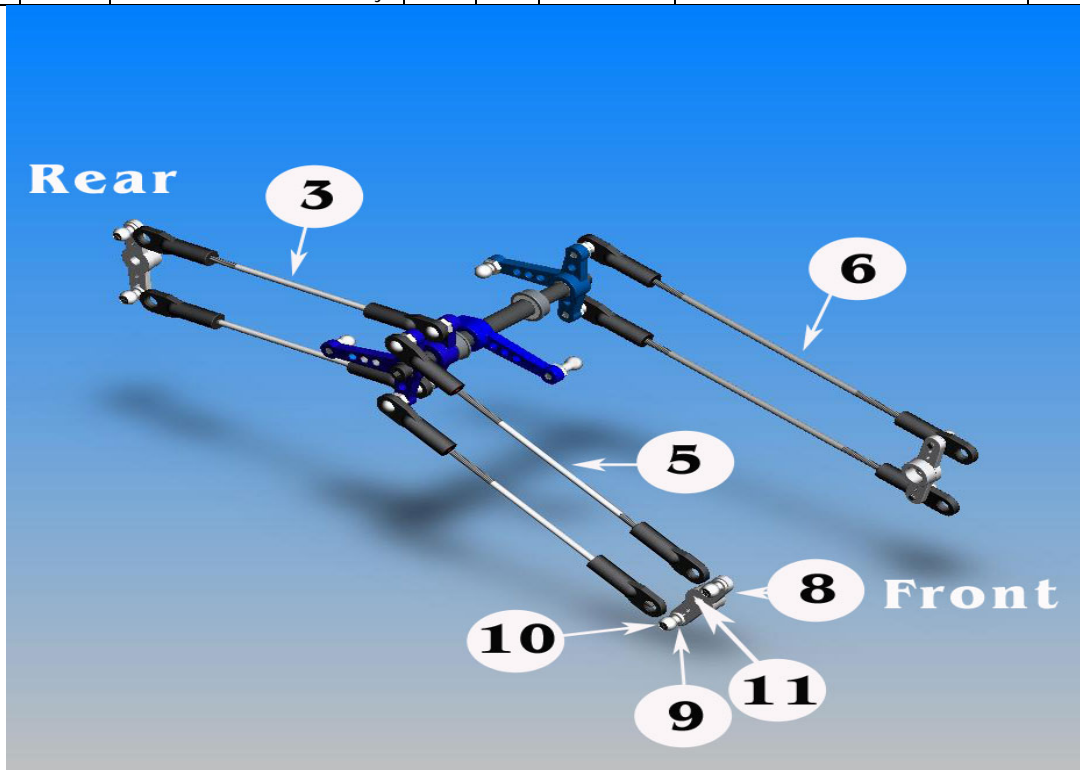
Coding the Rod Assembly:

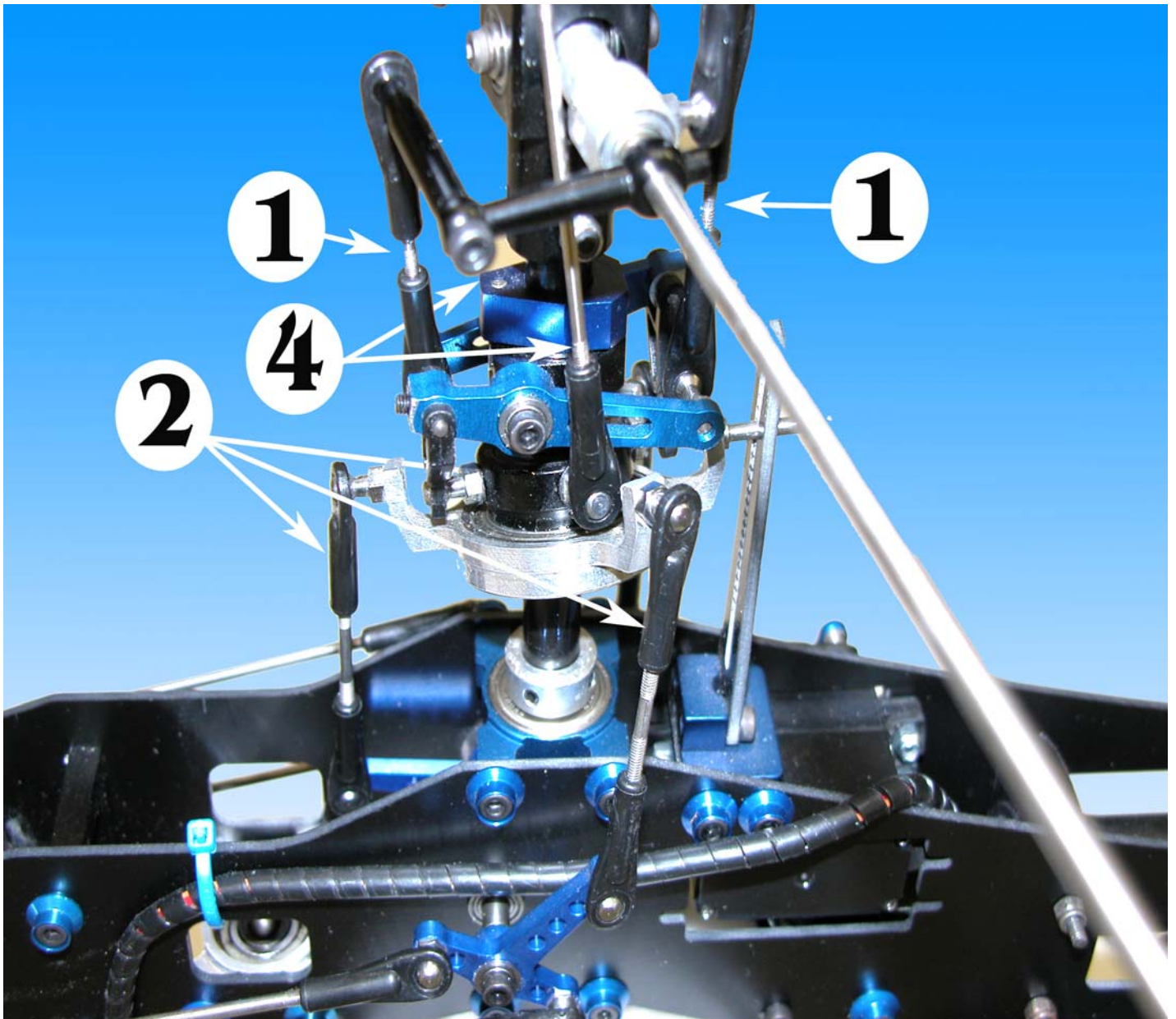
All the Linkage should be assembled with dimensions measured center to center and coded as following:

No.	Code	Rod Description	Center to Center	Qty
1	A	2.3x35mm Rod	51.5 mm	2
2	B	2.3x40mm Rod	64 mm	3
3	C	2.3x45mm Rod	66.5 mm	2
4	D	2.3x70mm Rod	94.5 mm	2
5	E	2.3x90mm Rod	110 mm	2
6	F	2.3x110mm Rod	133 mm	2

7-3 LINKAGE INSTALLATION

No.	Part	Description	Qty	No.	Part No.	Description	Qty
1	A	2.3x35mm Rod Assembly	2	7	5-3	Helicopter (up to step 5)	1
2	B	2.3x40mm Rod Assembly	3	8	****	Servo Arm	3
3	C	2.3x45mm Rod Assembly	2	9	QP124	Shim Ball	6
4	D	2.3x70mm Rod Assembly	2	10	HHI2M08P	M2x8 Phillip Screw	6
5	E	2.3x90mm Rod Assembly	2	11	****	M3 Servo Phillip Screw	3
6	F	2.3x110mm Rod Assembly	2				



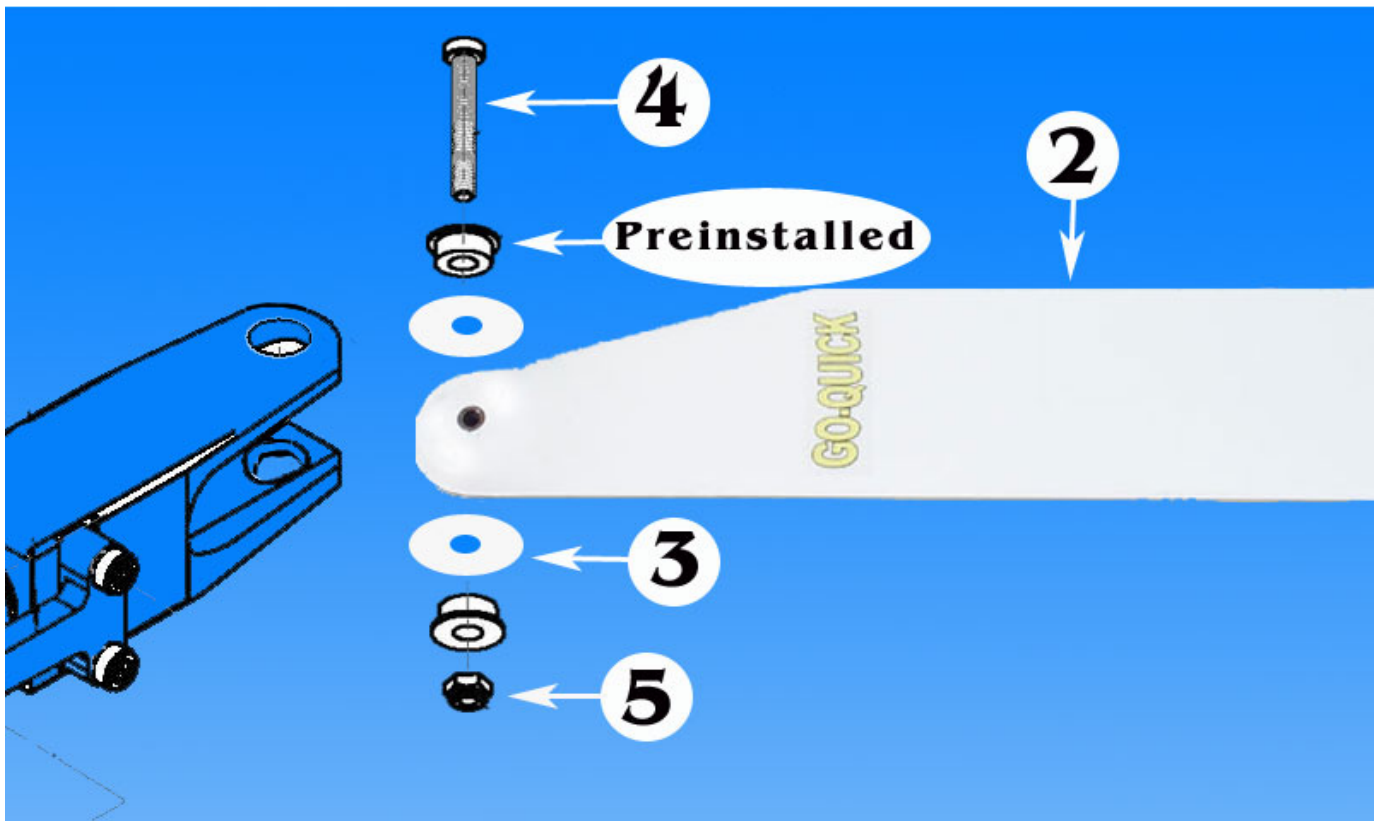


SECTION 8: SETTINGS

BAG 8

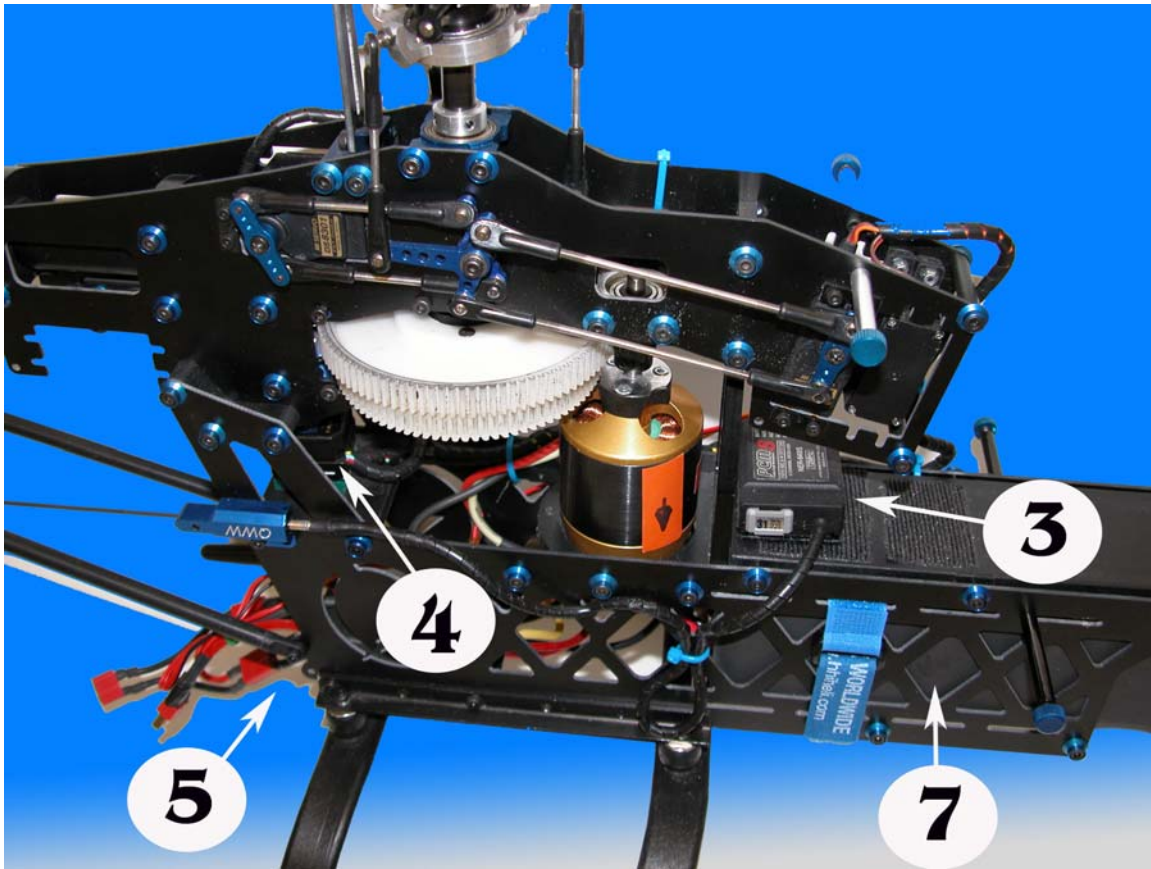
8-1 MAIN BLADE INSTALLATION

No.	Part No.	Description	Qty
1	6-2	Helicopter (up to step 6)	1
2	*****	Main Blade	2
3	*****	Main Blade Spacer	4
4	HHI4M30C	M4x30 Cap Head Bolt	2
5	HHI04MLN	M4 Locknut	2



8-2 SETTING UP RADIO

No.	Part No.	Description	Qty
1	7-1	Helicopter (up to step 7-1)	1
2	*****	Radio	1
3	*****	Receiver	1
4	*****	Gyro	1
5	*****	Speed Controller	1
6	*****	Battery for Receiver	1
7	*****	Main Battery	***
8	*****	Battery Connector	1



CCPM Helicopter Setup (for all Quick Helicopters)

Before setting up the radio, you have to install the receiver, gyro, speed controller, and batteries for your helicopter. See your radio, receiver, speed controller, and gyro manuals for how to hook up.

General

Instead of giving you the exact length of each linkage rod we will explain to you what you are trying to achieve. This is the same for all Quick helicopters. Another thing worth mentioning is that all controls on our helicopters are leading edge controlled. We have three such controls on our helicopter and they are Main blades, Tail blade and flybar control arms. For example the main blade pitch arms should be mounted so they are in front of the blades in the direction of travel, clockwise if you look at the helicopter from above, see picture 4.

Your radio manual will be needed during this set up.

Swashplate

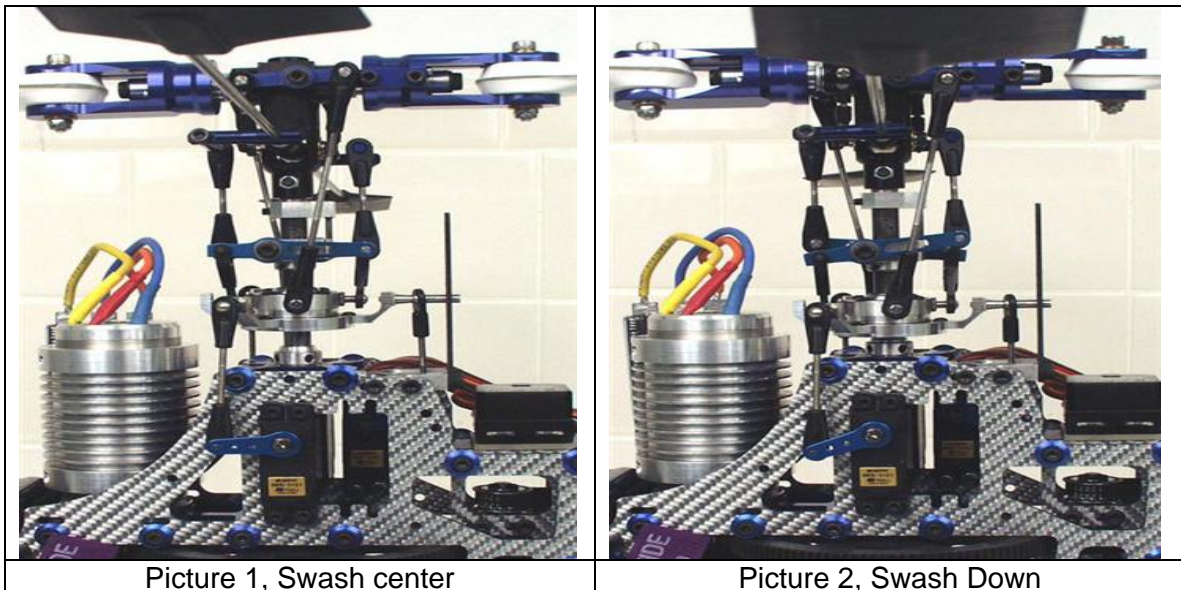
First, set your radio so that all travel values are at 100%. If you have a radio with Swash Mixing set, set those values to 50% (Aileron, Elevator, and Pitch.) Then use servo reversing so that all servos are moving in the right direction. If Pitch operates reversed, change the value in the Swash Mixing from + to -.

Step 1: First set your radio up so that all servos are moving in the right direction and adjust all travel values to 100%. If you have a radio with Swash mixing values set those to 50% (Pitch, Aileron and Elevator).

Now center both radio sticks (including “throttle”) and center all trim and sub-trim values. When this is done turn your receiver pack on. Now mount the servo arms at a 90° angle towards the linkage rod. In our non push pull helis this will be horizontal. Use the mounting position on the servo arm that will be closest to 90°, not all servos will line up 100% correct. If they are visible off from the 90° position the use the sub-trim function in your radio for fine tuning, do not use regular trim for this, see picture 1.

Now you have a good start and the rest of the setup will become easier.

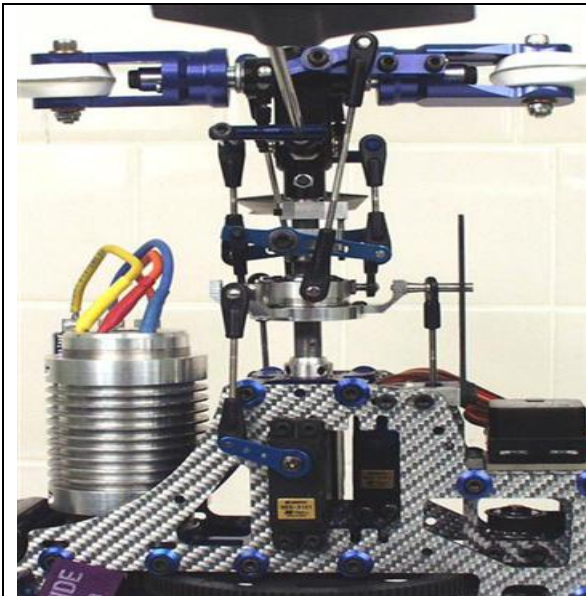
Step 2: Connecting the Swashplate at the right distance. This is done by moving your Pitch (throttle) stick all the way down, see picture 2. When the servos are in this position adjust the length of the linkage rods so the Swashplate is located towards the bottom, but still leaves enough room for left/right (aileron) and front/back (elevator) travel. During such travel, portions of the Swashplate will move below the Swashplate position archived during Pitch full down radio stick position. So make sure you leave enough room for this extra travel, see picture 2 for recommended height. Also make sure that all 3 linkage rods between the servo arms and the Swashplate are the same, so the Swashplate is level. It should not tilt in any direction; unless your right radio stick is moved. If it tilts, and all linkage rods are the same length, then go back to step one and make sure your three servo arms have the same neutral position (horizontal on non push pull helis).



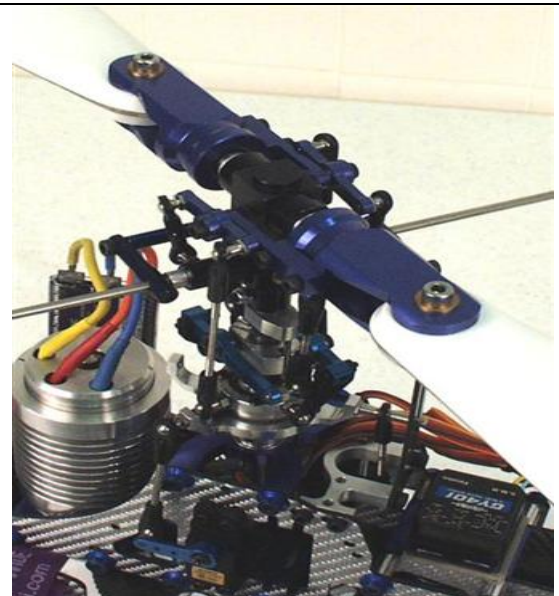
Step 3: Connecting the Washout assembly. Connect the fixed length plastic “A” arms to the Swashplate, connect to the two longer pivot studs, if all four are the same length then any two will do. The next step is to adjust the length of the linkage rod between the

Washout Arm and the Flybar connection point. Turn your radio and receiver back on and center both sticks. Now adjust the length of the flybar linkage so the washout arms are level (horizontal), see picture 1. Also make sure your flybar arms and flybar-paddles are level (horizontal), when adjusting the linkage. After the length is adjusted make sure that you have free travel in all directions and stick positions. When the Pitch stick is all the way up it should look like picture 3. As you can see there is still plenty of room for aileron and elevator travel. Now adjust the Washout Anti-rotation pin height so the pin is still in the guide slot of the washout base during all travel positions. For the Left/Right Washout Anti-rotation position, line the attachment point of the plastic washout "A" arm on the Swashplate up with flybar linkage connection point. The imaginary line between these points should be vertical.

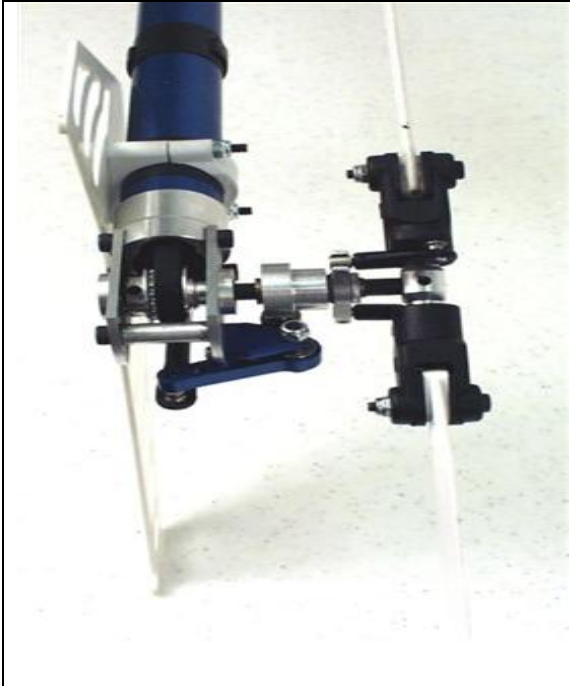
Now you are almost done, only one set of links left, and the length of those links will be depending on your desired setup whether it's Aerobatic or normal flying. Please refer to the Pitch travel setup table for this final link length.



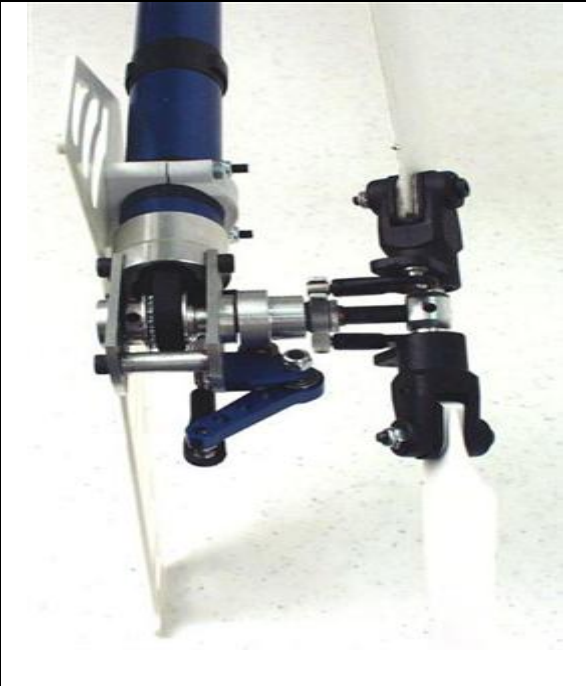
Picture 3, Swash Up



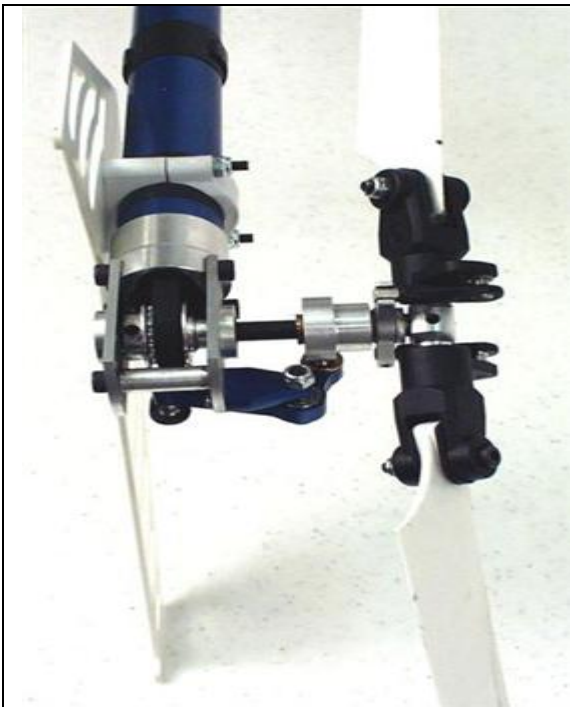
Picture 4, Head



Picture 5, Tail Center



Picture 6, Tail Positive Thrust



Picture 7, Tail Negative Thrust



Picture 8, Tail

Pitch Travel Setup		
Collective Position	Normal Flying	Aerobatic
Up (100%)	+10°	+10°
Center (50%)	+5°	+0°
Down (0%)	-3°	-10°

Throttle Curve Setup				
Collective Position	Fuel		Electric (non governor mode)	
	Normal Flying	Aerobatic	Normal Flying	Aerobatic
Up (100%)	100%	100%	85%	85%
Center (50%)	70%	60%	75%	75%
Down (0%)	10%	100%	0%	85%

Tail

First adjust the servo arm position like you did with the swash, make sure your trim and sub-trim values are centered. Attach the servo arm so it's 90° to the tail pushrod (vertical). Now adjust your two plastic ball ends, for the push rod, so they are screwed on about half way onto the threaded pushrod guide end piece. This will allow you have maximum amount of adjustment available in both directions. Use the outer holes on the tail blade grips for the ball link attachments. When this is done cut the carbon pushrod to a length that will achieve about 3° of positive pitch on your tail blades, when the servo is in its neutral (vertical) position. Then glue the two end pieces on to the pushrod with CA glue, don't forget to insert the pushrod guides first.

When this is done you should have 3° of positive tail blade pitch. The tail should spin counter clockwise looking at the right side of the helicopter with the nose to your right and tail to your left. See pictures 5-8.

Throttle

The throttle curve will be affected by several conditions; some of them are, motor choice, blades choice, elevation, temperature, helicopter weight and type of helicopter. So in order to explain this I will explain what you are looking for. Your goal is to achieve a constant head speed once the helicopter is airborne. If you add pitch (climb) you need to add power (throttle) to compensate for the added resistance a higher blade pitch creates. If during climb your head speed drops, then you need to add throttle to that particular stick position, and reversed if you have an increase in rpm. If during max climb out you experience an increase in head speed then you need to give the blades a higher pitch, do not try to adjust the max climb rpm by reducing throttle. There are other ways of achieving this by using cyclic mixing, however we will stay away from this for now. Follow the pitch guidelines in the table above, and if you need more pitch at max power because the rpm is increasing, then add pitch. 10° is just a guideline and will work in

most setups, but a powerful motor or a light helicopter might need more. For rpm adjustment during anything other than full stick deflection you should use the throttle.

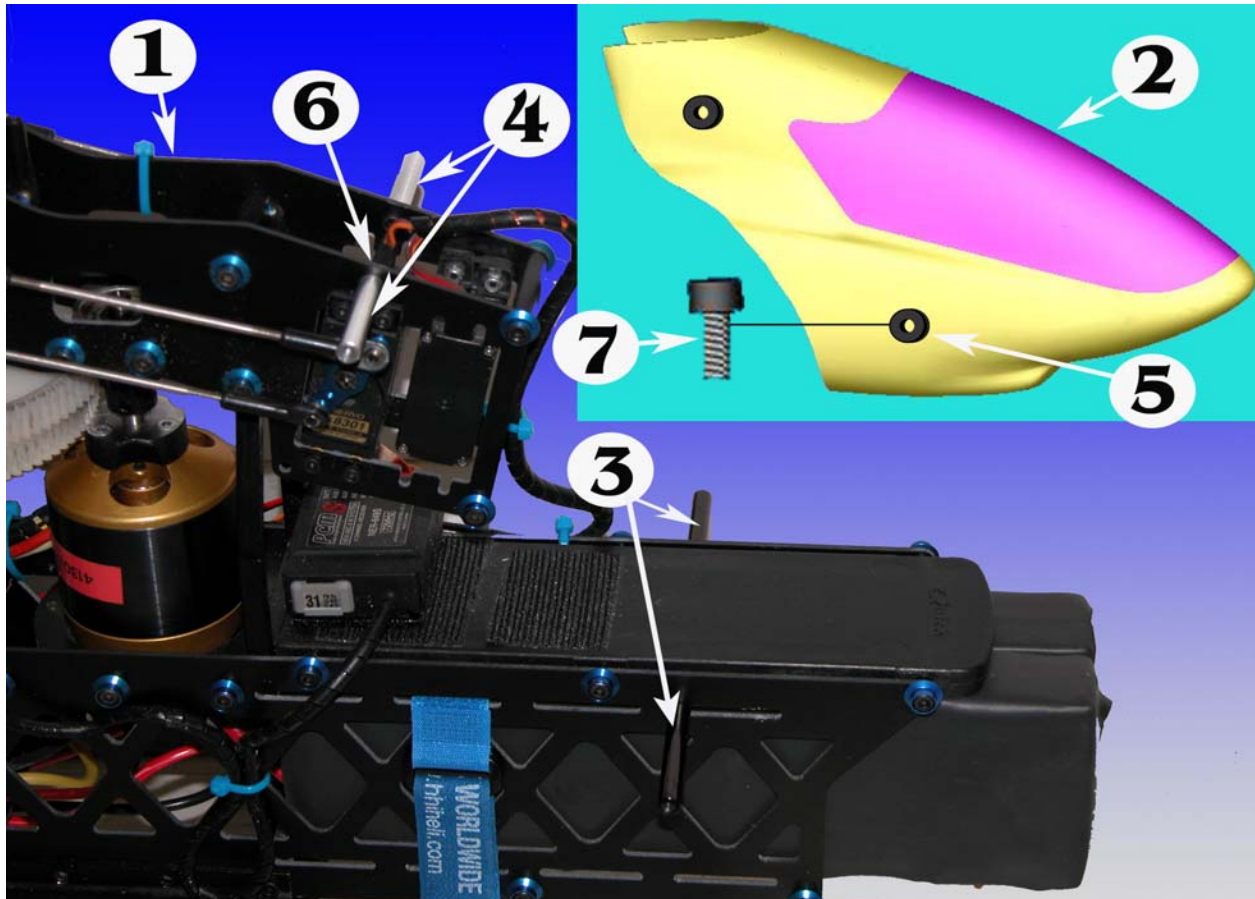
A short recap, adjust throttle to adjust rpm during anything other than full collective. At full collective adjust the pitch. See the Throttle table for general setup.

Final Words

These are guidelines and will get you going but might not be 100% accurate in regards to all helicopters. Especially the throttle curve table should be considered as initial guidelines. As mentioned before it's greatly affected by your equipment. As you become more familiar and proficient with your helicopter you can change the pitch and throttle curves to your flying style.

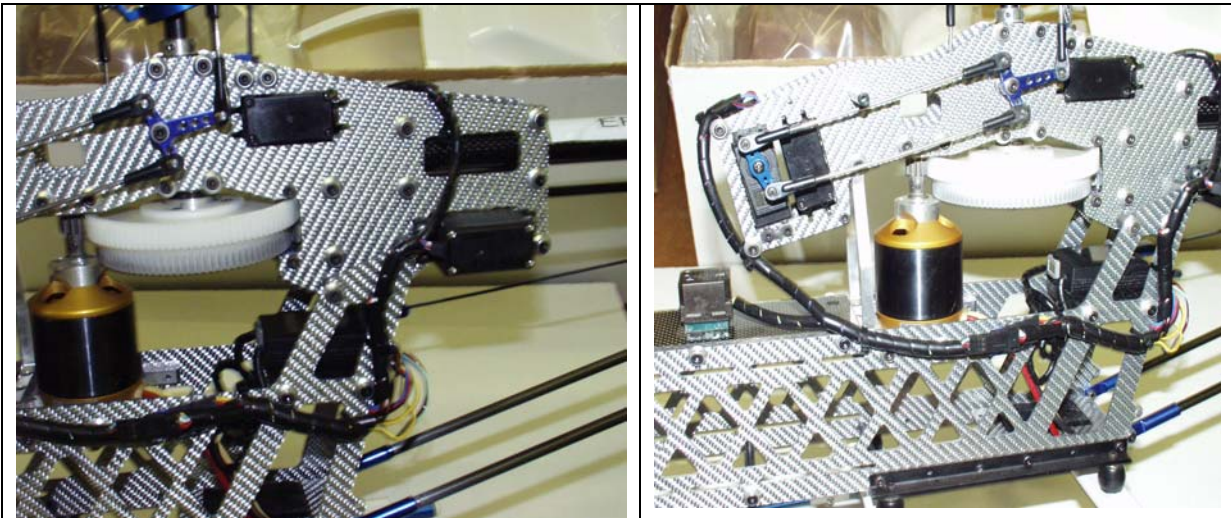
8-3 MOUNTING CANOPY

No.	Part No.	Description	Qty	
1	7-2	Helicopter (up to step 7-2)	1	<ul style="list-style-type: none"> • Install the 4 Canopy Standoff using 4 M3x8 Cap Head Bolts. • Put the Canopy on the helicopter, mark the right positions for 4 holes, then drill four 5.5mm holes. • Install the Canopy Grommets on the Canopy. • Secure the Canopy by 4 M3x16 Cap Head Bolts
2	HHI8003	Canopy (in box)	1	
3	QF326	Long Canopy Stand-off	2	
4	QF325	Short Canopy Stand-off	2	
5	HHI2802	Canopy Grommet	4	
6	HHI3M8C	M3x8 Cap Head Bolt	4	
7	HHI3M16C	M3x16 Cap Head Bolt	4	



FRE-FLIGHT CHECKS

- The rotor flybar and shaft must be straight.
- The flybar and control paddles must tilt in the proper direction and operates smoothly throughout the whole range.
- Check the swashplate to make sure it move smoothly and clean.
- When control input are given to tilt the swashplate, make sure no control arms or pushrods are binding.
- Check the two control paddles for level, parallel, and proper direction.
- Make sure the batteries are fully charged.
- Make sure the radio and receiver are on and all controls operate properly before flight.
- There should be no interference of radio signal in your flying zone. Range check the radio.
- Always grab onto the helicopter main rotor head when turning on the helicopter.



These pictures illustrate how everything should be neatly wired up and strapped down before your helicopters first flights.

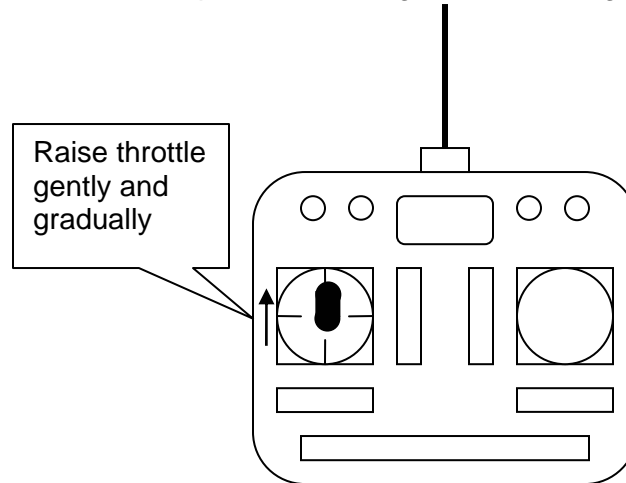
WARNINGS

- Do not operate helicopters in rainy, windy, or snowy condition.
- Operate helicopter in a safe zone away from crowds, traffic, or distractions.
- Use the proper batteries to prevent damage to the motor and equipment.
- Make sure all the batteries are fully and properly charged.
- Make sure all the controls operate properly before flight.
- The main and tail rotors blades operate at very high speed (rpm); therefore, make sure nothing can come into contact with them while they are spinning.
- Perform a range check on the radio before flying.
- Make sure the transmitter and receiver are turned on before plugging in the main power battery/baterries.
- Keep a safe distance when operating a helicopter.
- Do not fly for a long period of time. Take some rests during flights.
- Motors are often very hot after operation. So be careful when handling or touching them immediately after flying.

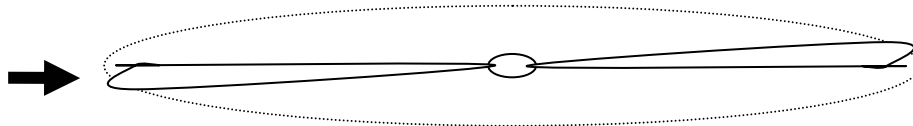
ADJUSTMENTS

Tracking Adjustment: The tips of the main rotor blades should follow the same path when they rotate. We call the main rotor blades are in track.

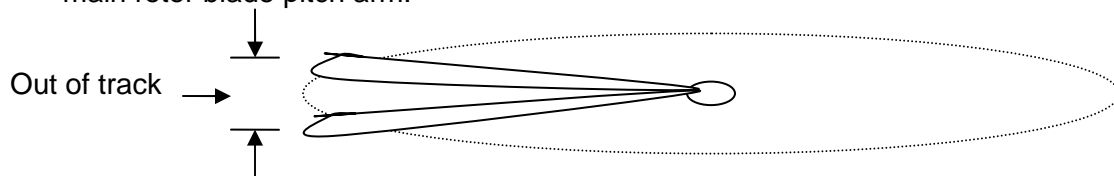
(a) Rev up the motor until the helicopter becomes light on its landing gear.



(b) If the main rotor blades are in track , it's good.



(c) If the blades are out of track, then adjust one of the pushrods that connect to the main rotor blade pitch arm.

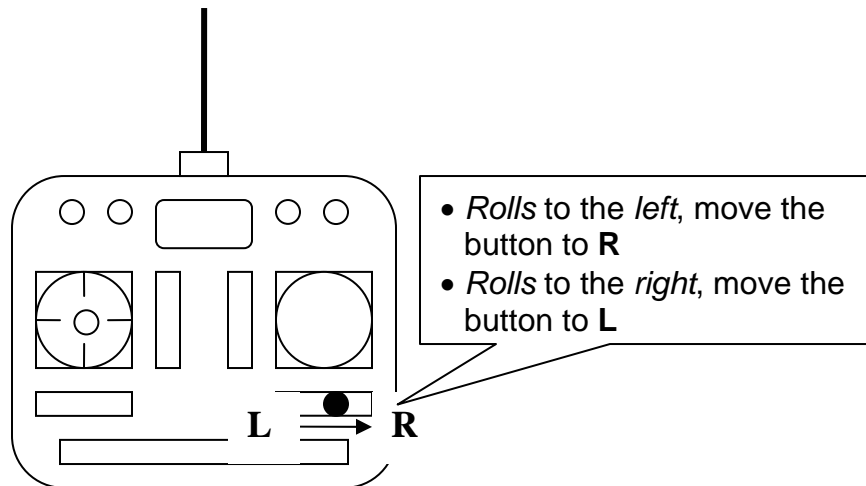


Repeat steps (a) to (c) until the blades are in track.

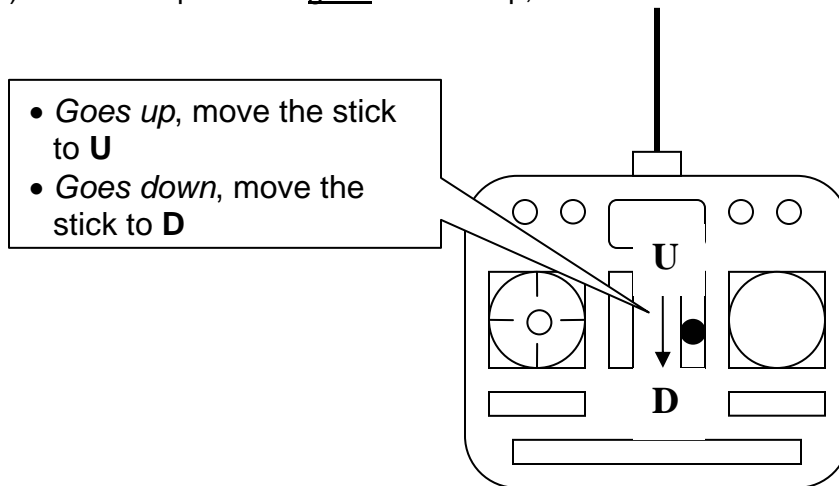
Trimming: Most of new built helicopters are unstable. But if you trim your helicopter properly, you will stop it from drifting away or yawing by itself quickly. Followings are instructions for trimming your helicopter.

(a) If the helicopter nose starts to yaw left or right, adjust the tail rotor push rod to compensate. If using a Heading Hold Gyro, do not adjust the trim lever on the radio.

(b) If the helicopter rolls to left or right, then:



(c) If the helicopter nose goes down or up, then:



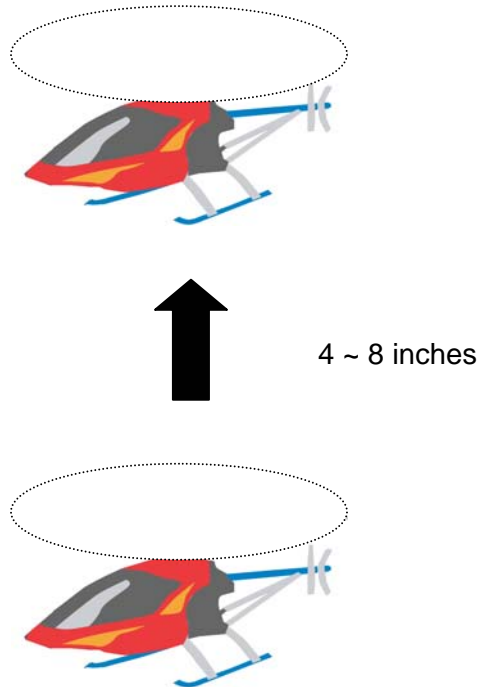
HOW TO HOVER

Basic maneuver for a pilot is learn how to hover a helicopter. When the helicopter is floating in a stationary position in the air, we call that hovering. Use the following procedure to practice your hovering:

- (a) Make sure everything is clear in the flying zone. Stand at least 30 feet (10 meters) behind the helicopter.
- (b) Check the main rotor fore/aft and left/right cyclic to make sure the main rotor is following to your cyclic command before taking off. Make sure the helicopter nose will swing in your desired directions by moving the tail rotor control stick.
- (c) Now, increase the throttle/collective gently to lift the helicopter landing gear off the ground to no more than 4 inches (10 cm). At the beginning, it is very difficult for the

pilot to keep the helicopter from moving. It will also be difficult to know if the helicopter is in trim or not for a beginner. Keep going on the practice close to ground you will develop your skills.

- (d) Keep practicing lifting your helicopter no more than 8 inches (20cm) from the ground until you feel comfortable with control commands. Once you can keep it at one place, then it is time to slowly increase the height a few inches in each flight. Soon, you will be able to hover the helicopter confidently at a few feet high. Beginners should always practice hovering close to ground since in an emergency situation; you can drop the throttle and collective quickly without making any big damage.

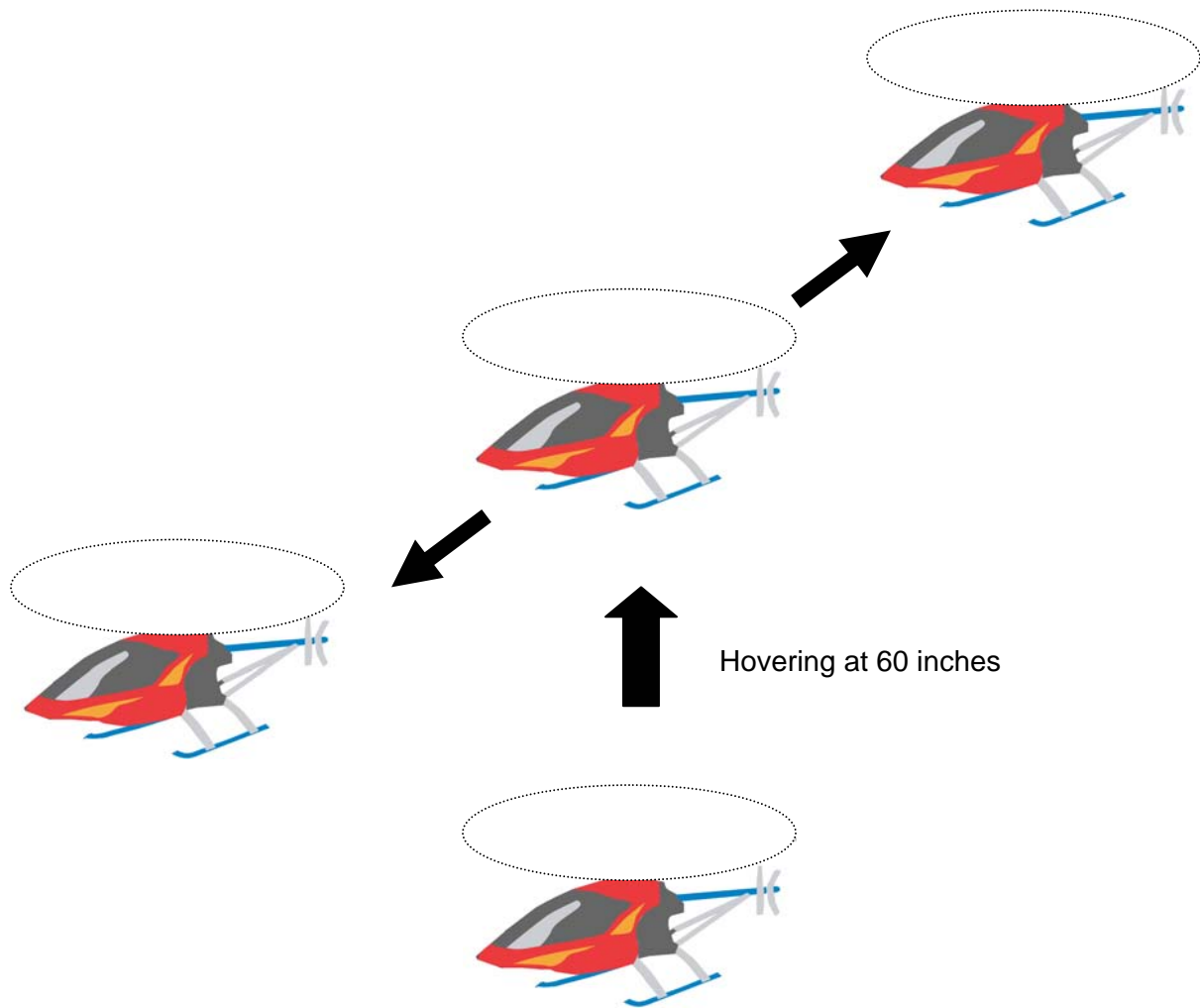


- (e) Stand behind the helicopter so you can watch the nose of the helicopter. A left tail rotor command will yaw the helicopter nose to the left, and a right command will yaw to the right. Also, a left cyclic command will cause the helicopter to translate left., Start practice hovering while standing to either side of the model after you can comfortably hover the helicopter at 3 feet (1m) high without drifting. Finally, you need to learn hovering the model from any positions. When you can confidently hover a helicopter at any altitude and at any position, you have mastered most of the fundamental control movements of a helicopter.

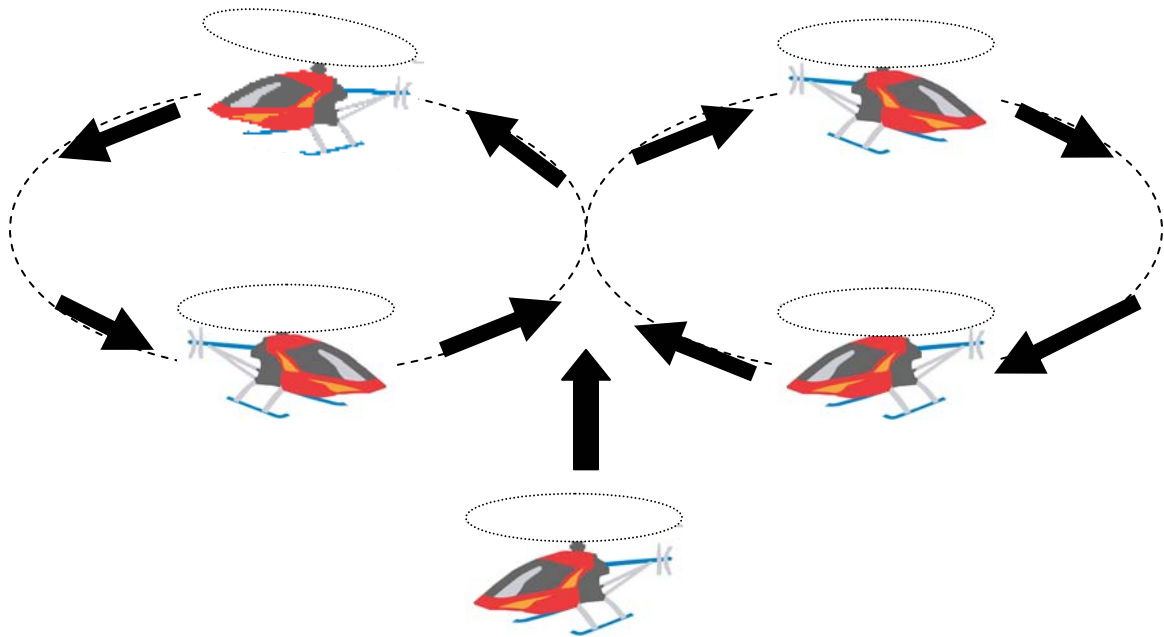
HOW TO FLY FORWARD

Once you have mastered hovering flight:

- (a) Let's begin the exercise of changing positions by practice moving the helicopter to the left or right slowly from 60 inches (1.5 m) above the ground.



- (b) Once you have been comfortable with all the movements and controls in the previous step, start using some tail rotor control to make the helicopter point slightly to the left or right as you fly it to the left or right. Keep practicing the figure-eight path as shown below, you will master all basic control movements of a helicopter.



AFTER FLIGHT CHECKS

After each flight, the helicopter should be thoroughly inspected:

- (a) Unplug the batteries.
- (b) Check every bolt, nut, and screw to make sure none has loosened due to vibration.
- (c) Check every rotating and movable part like head rotor, swashplate, tail rotor,...to ensure they still move smoothly and properly.
- (d) Check all movable parts, such as gears, ball links, belt, etc. for unusual wear.
- (e) Clean up the helicopter then lubricate every moving part with oil to ensure a smooth operation in the future.
- (f) Keep the helicopter in a cool and dry place. Avoid storage under direct sun light or near heat.
- (g) Please replace any damaged parts if they are discovered during maintenance.

WHAT IF THE HELICOPTER CRASHED

Turn off everything and check the helicopter immediately. If any item is damaged, replace the damaged parts to ensure safe operation. Do not try to glue any broken or damaged plastic or carbon parts specially broken rotor blades. The followings are parts that should be inspected right away:

- Main and tail rotor blades.
- Flybar, main shaft, head spindle, and tail output shaft.
- All the gears.
- Tail boom and supports for cracks.
- Vertical and horizontal fins.
- Frames.
- All pushrods.
- Servos, motor, and batteries.