OXY 3

Instruction Manual

OXY HELI

VERY IMPORTANT NOTE:

- Inside Box 02 you will find the instruction manual in PDF format on cd rom.
- Visit the Oxy Heli web site www.oxyheli.com to download the latest version of the manual.
- In the same box you will also find your serial number card. Please take a moment to visit the Oxy Heli web site and follow the instructions to register your helicopter and serial number.
- It is important you take few minutes to register your helicopter and serial number with us. This is the only way to be in contact with us to receive news, promotional information and technical tips.
- We will also choose five serial numbers each year that will win a discount coupon worth 200USD each to spend at the Oxy Heli or Lynx Heli web sites.
- Thank you for your purchase, and we wish you the best enjoyment with your new Oxy 3 Helicopter.

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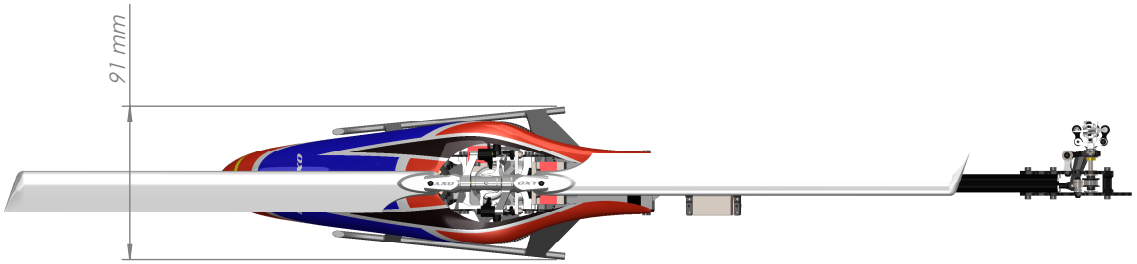
SPECIFICATIONS



-Standard main rotor diameter	: 570mm (with 255mm blades).
-Standard main blade length	: 255mm.
-Main Grip Clamping	: M2 / 5.6 mm root.
-Standard tail rotor diameter	: 130-136mm.
-Standard tail blade length	: 47 - 50mm.
-Tail Blade Clamping	: M2 / 3.5 mm root.
-Weight	: 450g (ready to fly excluding batteries)
-Maximum motor size	: diameter 28mm.
-Maximum battery size	: length 76mm, height 35mm, width 37mm, weight 180gr

IMPORTANT NOTE.

This model helicopter has been designed and produced to be a high performance 3D machine. With its simple design and low parts count, pilots of all skill levels will appreciate its easy repairability. This is not a toy. Please take care assembling the model, and take care and responsibility when you fly it. We take no responsibility for any damage or injuries, either direct or consequential, from the use of this product. If you are not experienced in the assembly and flying of a high performance model helicopter we recommend you seek the assistance of an experienced pilot. Above all, fly safely and we hope you enjoy this model.

SAFETY GUIDELINES.

Only fly this model in areas designated for the use of model aircraft. Ensure you obtain indemnity insurance, normally available through your National model aircraft association. Remain at least 6 meters (20 feet) from the model at all times. Never allow spectators or animals any closer than 30 meters (100 feet) from the model.

NOTES FOR ASSEMBLY.

Please read this instruction manual fully before beginning assembly of this model helicopter. Be sure to use quality tools during the assembly process, and remember not to overtighten small fasteners. Note the following symbols which are used in this manual. Use thread lock sparingly where indicated. If you are unsure about an assembly step, please seek the advice of an experienced pilot. Warranty on any parts is only applicable prior to assembly of the part on the model.

NONE OF THE PRE ASSEMBLED PARTS HAVE THREAD LOCK ON THE SCREWS. IS IMPORTANT TO READ AND FOLLOW THE ASSEMBLY NOTES IN EACH STEP. INCORRECT ASSEMBLY OR NOT USING THREAD LOCK WILL CAUSE A CRASH OR INJURY.

Important note

Use Loctite 243
Medium Strength

Use Loctite 262
High Strength

Use Loctite 648
Bonding

Use CA Glue

Use Silicone Grease

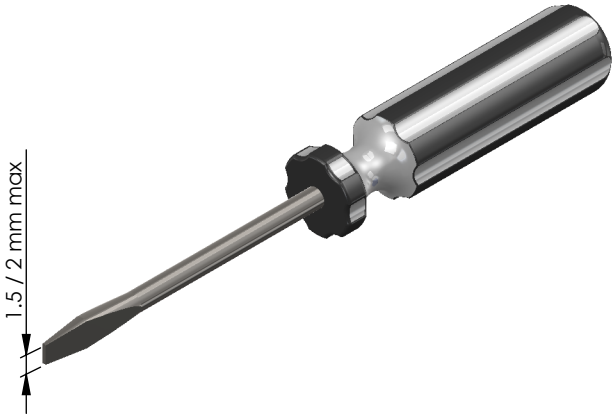
TOOLS REQUIRED

1.5mm Hex Screw Driver
(High quality)

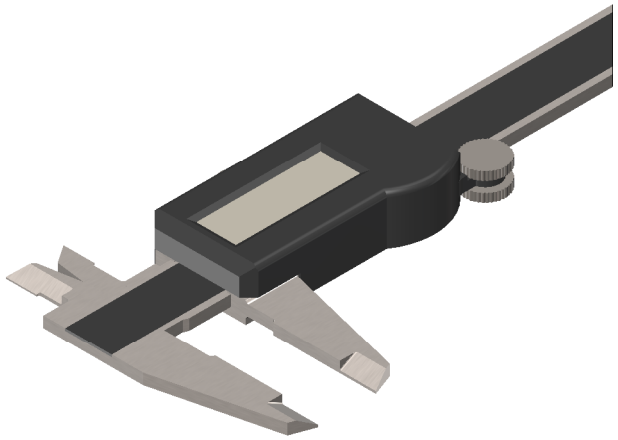
⚠ Two Tool Required

2.5 mm Hex Screw Driver
(High quality)

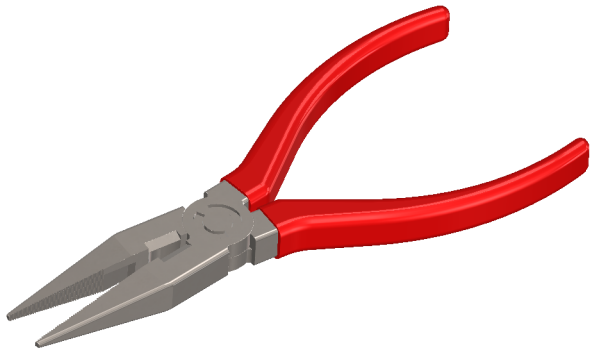
Small Tip - Flat Screw Driver



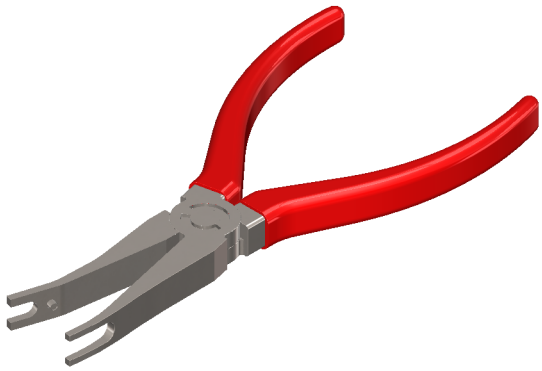
Caliper



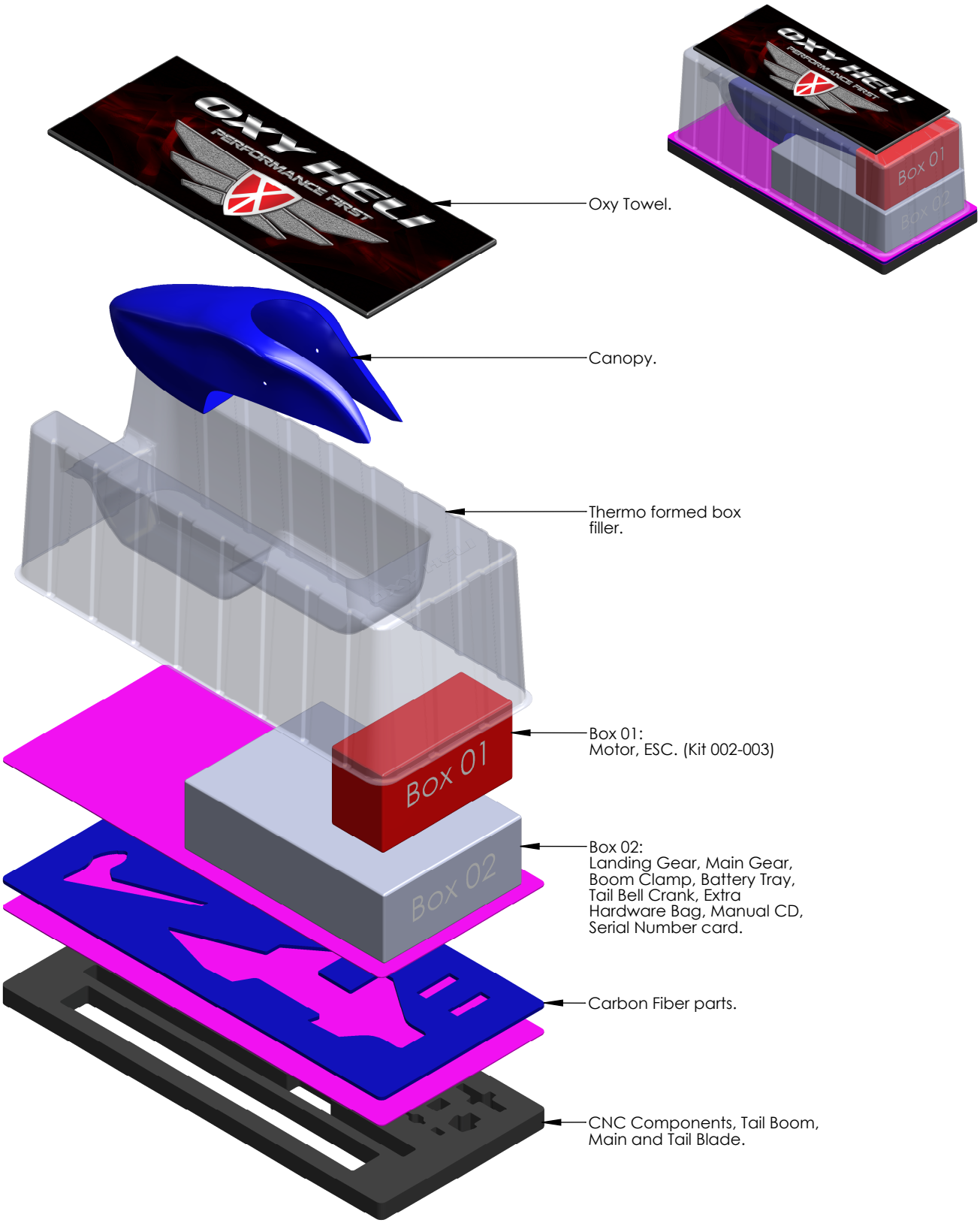
Needle nose pliers



Uniball Pliers



INSIDE THE BOX

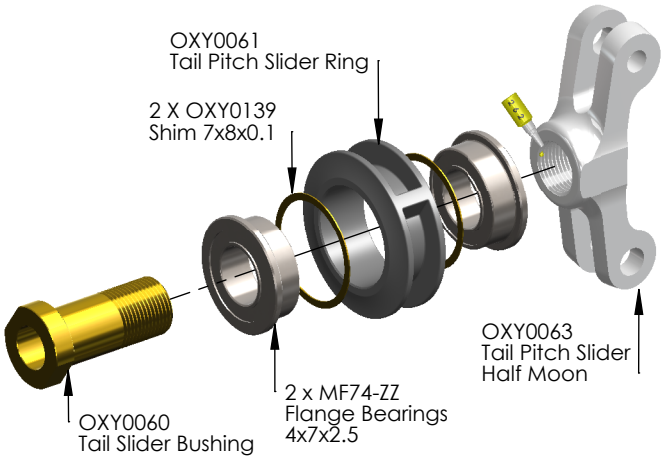


ASSEMBLY PARTS FINDER HELP NOTE:

In each assembly step you will see a parts finder note. Follow this information to find the necessary parts inside the Oxy 3 box.

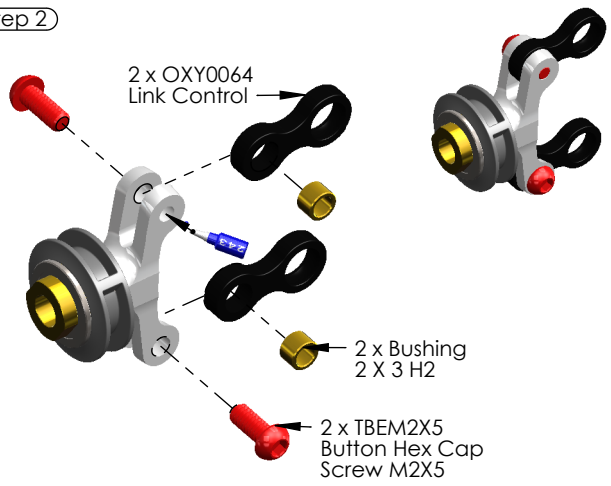
Tail Pitch Slider Assembly. (Box 02 / Bag 1)

Step 1



Important Note:
This part, for tuning reasons, comes factory pre assembled with grease and loctite. It is ready to use.

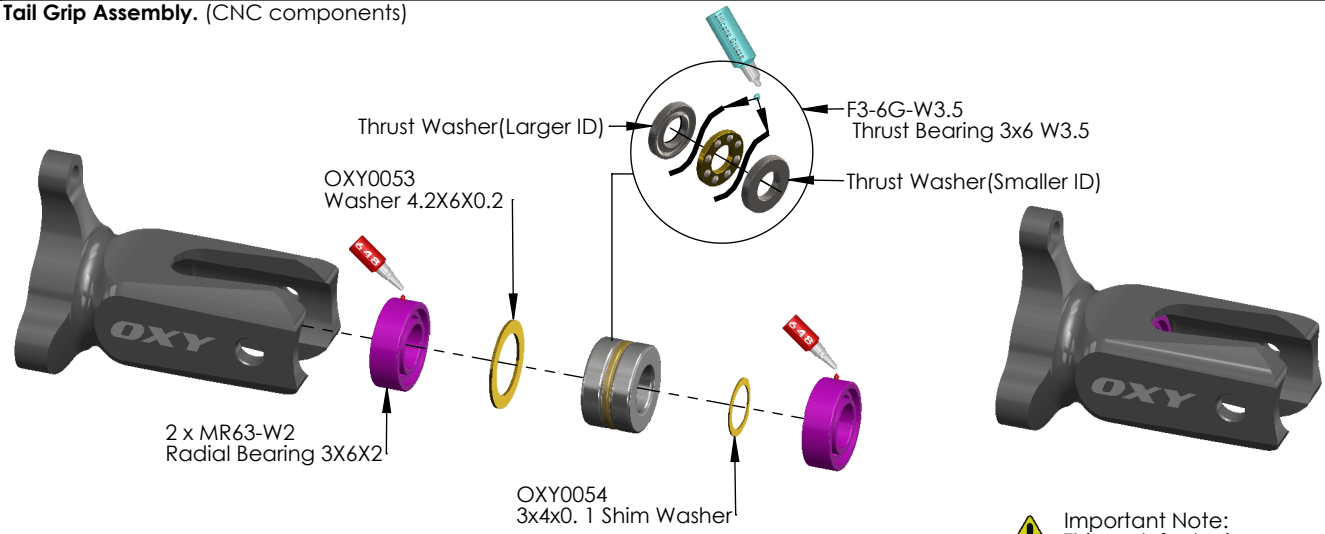
Step 2



Important Note:
This part comes pre assembled WITHOUT thread lock. Follow the instruction for final assembly.

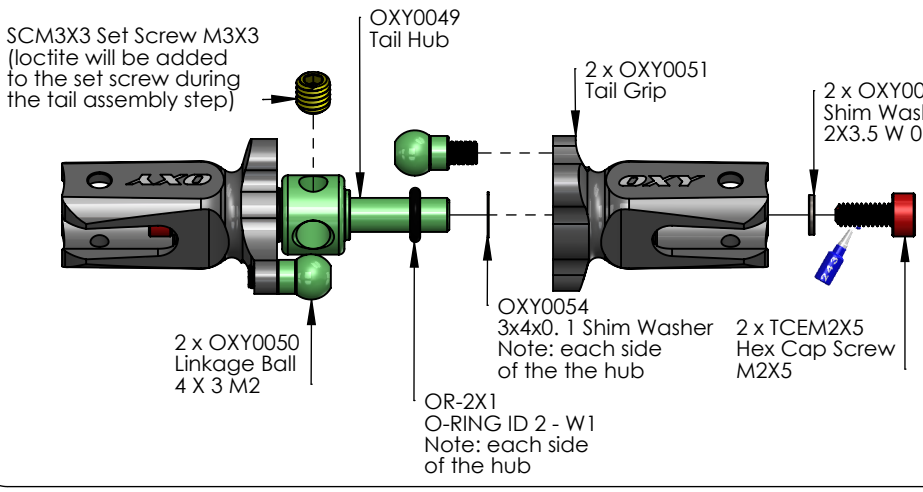
Ensure thread lock does not contaminate the bushings. In case of friction, clean then reassembly.

Tail Grip Assembly. (CNC components)

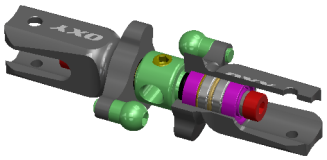


Important Note:
This part, for tuning reasons, comes factory pre assembled with grease and loctite. It is ready to use.

Tail Hub Assembly. (CNC components)

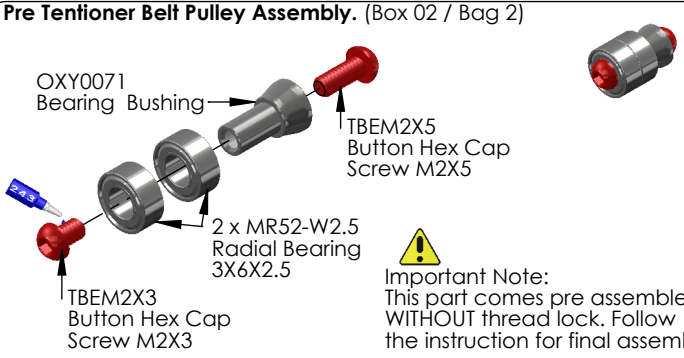


Important Note:
This part comes pre assembled WITHOUT thread lock. Follow the instruction for final assembly.



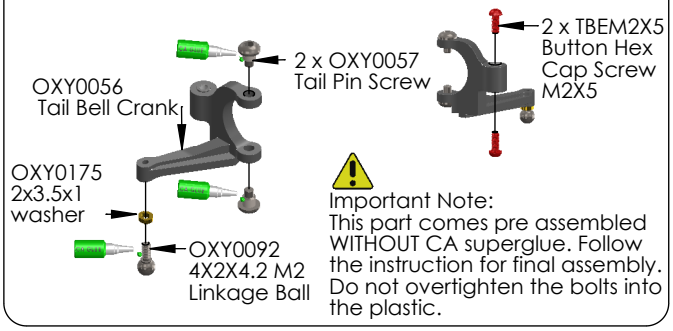
14T Pulley - Tail Shaft Assembly ready to use. (CNC components)

Pre Tentioner Belt Pulley Assembly. (Box 02 / Bag 2)



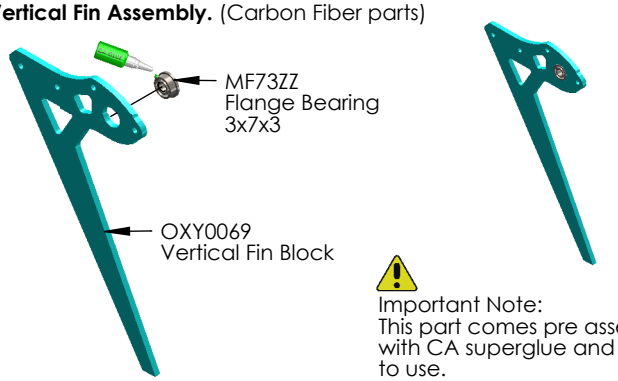
Important Note:
This part comes pre assembled WITHOUT thread lock. Follow the instruction for final assembly.

Tail Bell Crank Assembly. (Box 02 / Bag 3)



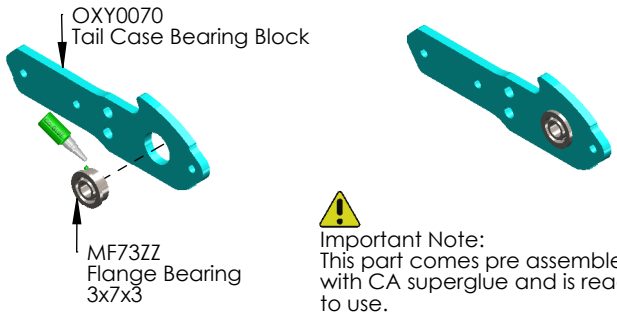
Important Note:
This part comes pre assembled WITHOUT CA superglue. Follow the instruction for final assembly. Do not overtighten the bolts into the plastic.

Vertical Fin Assembly. (Carbon Fiber parts)



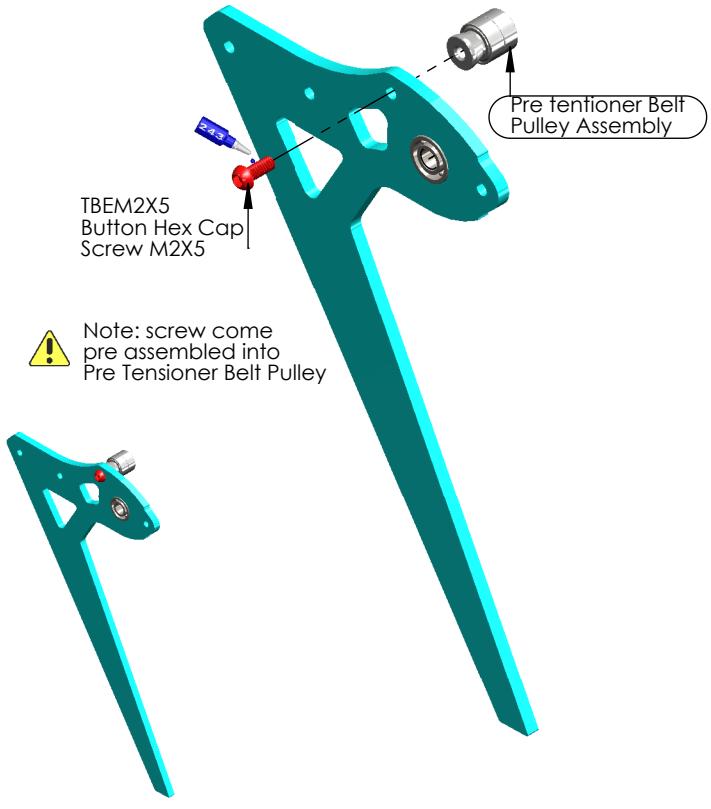
Important Note:
This part comes pre assembled with CA superglue and is ready to use.

Tail Case Plate Assembly. (Carbon Fiber parts)



Important Note:
This part comes pre assembled with CA superglue and is ready to use.

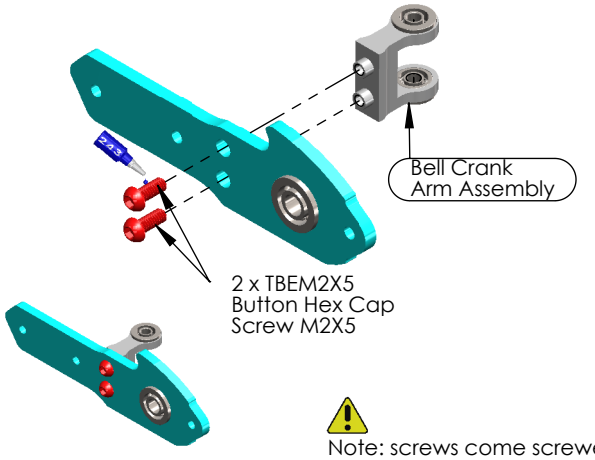
Pre Tensioner Belt Pulley Assembly.



Bell Crank Assembly. (Box 02 / Bag 3)

Important Note:
This part, for tuning reasons, comes factory pre assembled with loctite. It is ready to use.

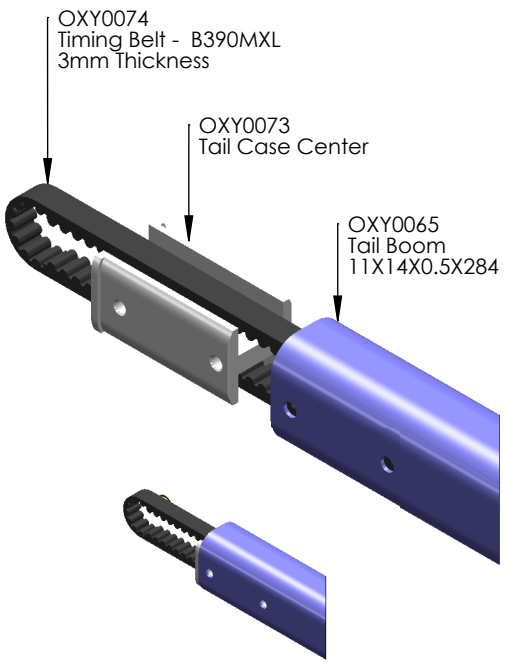
Bell Crank Arm Assembly.



Note: screws come screwed into the Bell Crank Arm

Tail Case Assembly. (CNC components Box 02 / Bag 4)

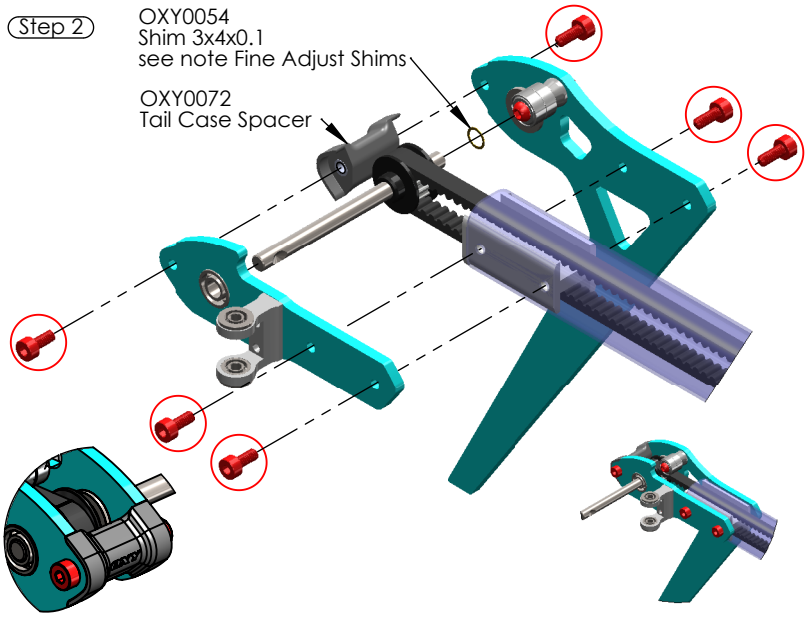
Step 1



Remove the tail case center from the boom, and then feed the belt through the boom. Try not to tightly bend the belt. We suggest using a length of wire or similar to pull the belt through the boom.

Tail Case Assembly.

Step 2



Note: Tail case spacer is not symmetrical, after finising this step logo Oxy's position as shown

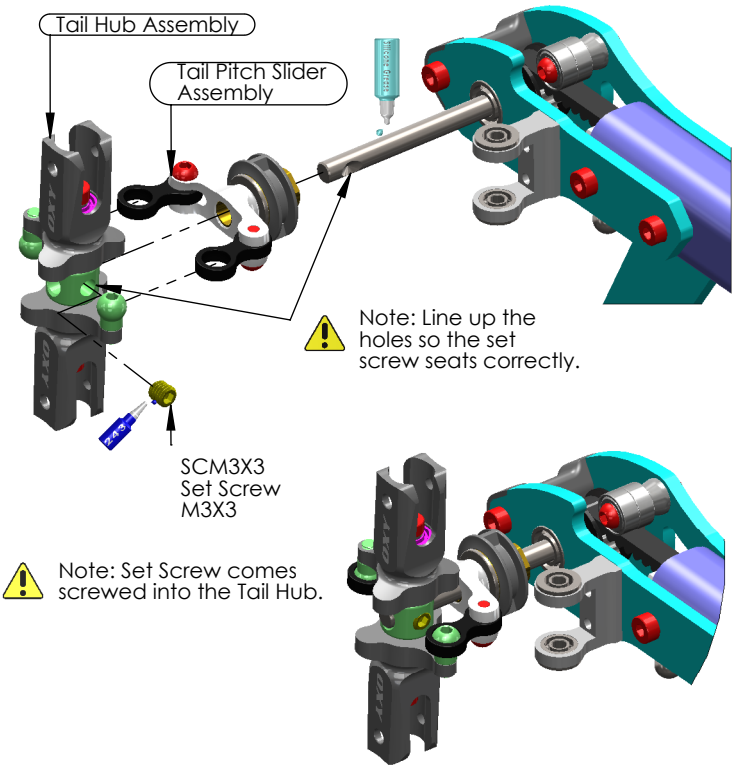
Note: screw come screwed into the Tail Boom & Tail Case Spacer.

6 x TCEM Hex Cap Screw M2X5

Fine Adjust Shims:
In order to give fine adjustment options, in the Extra Hardware Bag you will find extra shims 3x4x0.1 Start assembly without shims. If the Tail Assembly has sideways play, add shims as required, to one side, as shown.

Tail Assembly.

Step 1



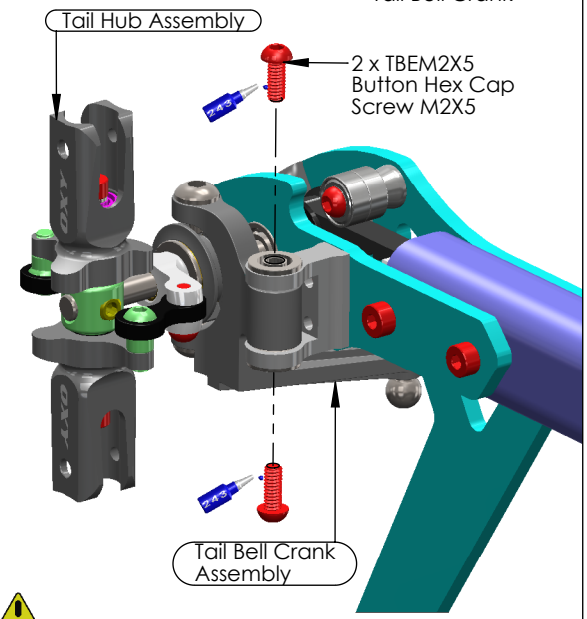
Note: Line up the holes so the set screw seats correctly.

Note: Set Screw comes screwed into the Tail Hub.

Tail Assembly.

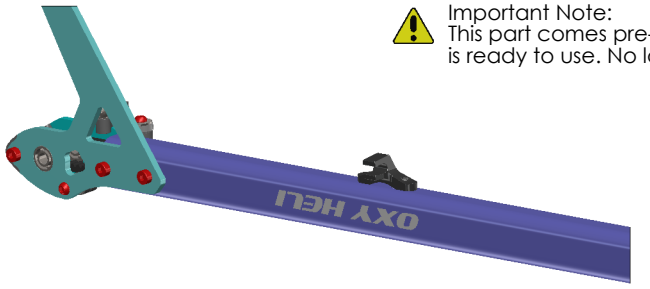
Step 2

Note: Screws come screwed into the Tail Bell Crank



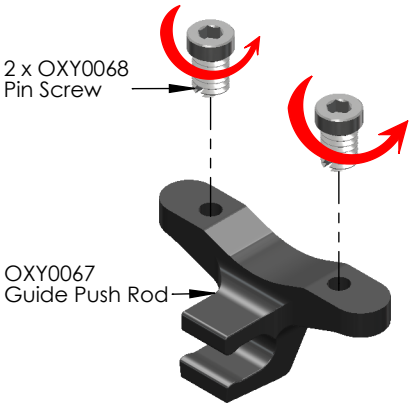
Important Note:
Once you finish assembly, check the system can slide and move without friction. If tail system is assembled correctly, it should move smoothly and without play. In case of friction or play recheck each single component and re-assembly as required. If necessary adjust the position of the Bell Crank Arm. A common mistake would be allowing loctite to contaminate the bushing and plastic in step 2.

Tail Push Rod Guide Assembly.
(CNC components).



Important Note:
This part comes pre-assembled and is ready to use. No loctite required.

Step 1

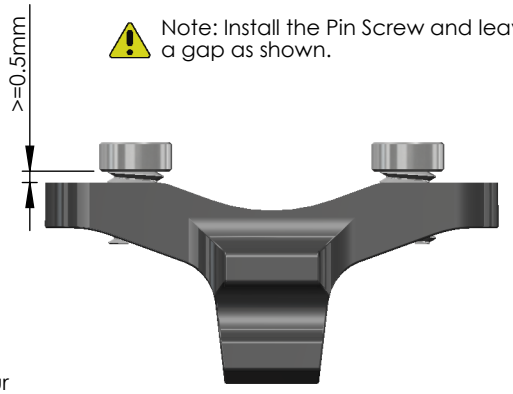


Note: To install this pin screw rotate counter clock wise.

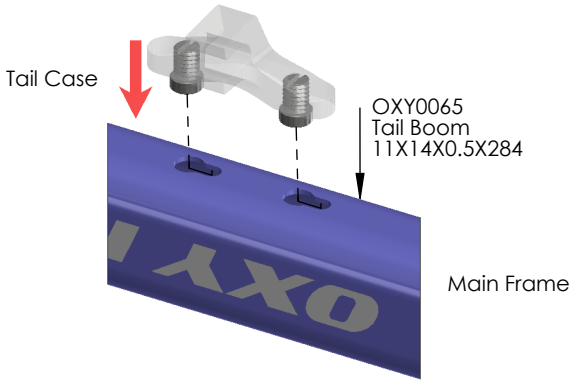
Note Pin Screw Thread:
Oxy designed the Pin Screw with a counter clockwise thread. This will help on the final locking operation. Be careful to follow our instructions to get a perfect assembly.

Step 2

Note: Install the Pin Screw and leave a gap as shown.

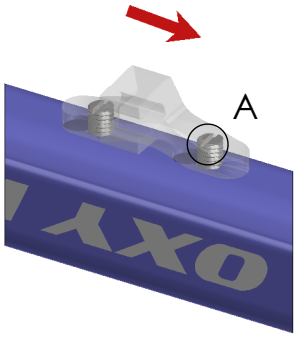


Step 3



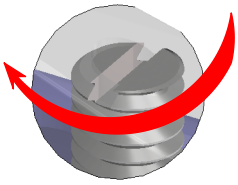
Push the part inside the boom sockets as shown.

Step 4



Slide the parts as shown.

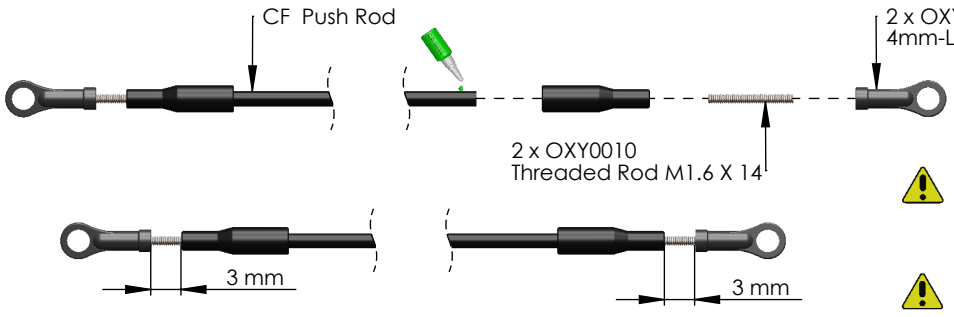
Step 5



Detail A

In order to lock the tail push rod support, use a Flat Screw Driver and turn clockwise. Do not over tighten.

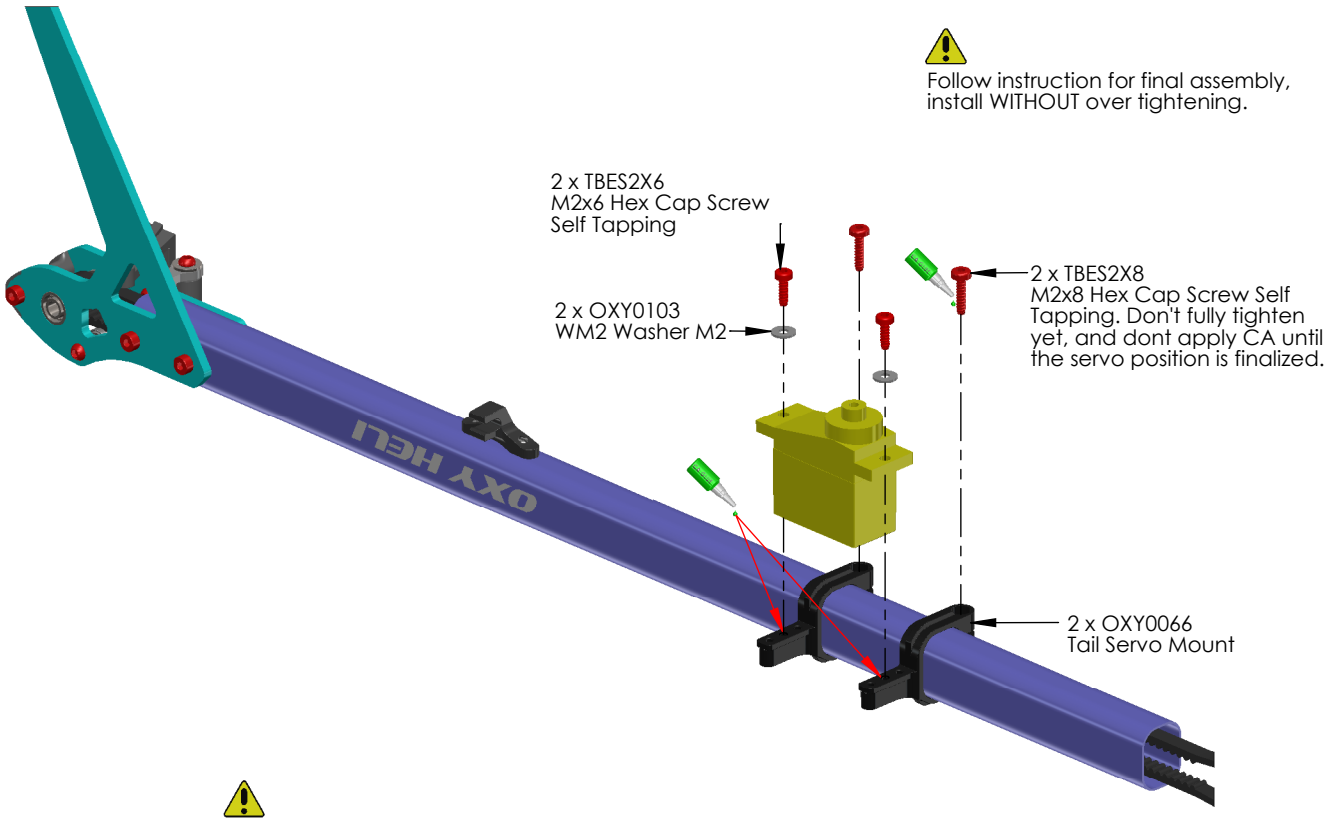
Carbon Fiber Tail Push Rod Assembly. (CNC components - Inside Tail Boom)



Important Note:
The Plastic Terminals and CF Push Rod come pre assembled with CA superglue. It is ready to use.

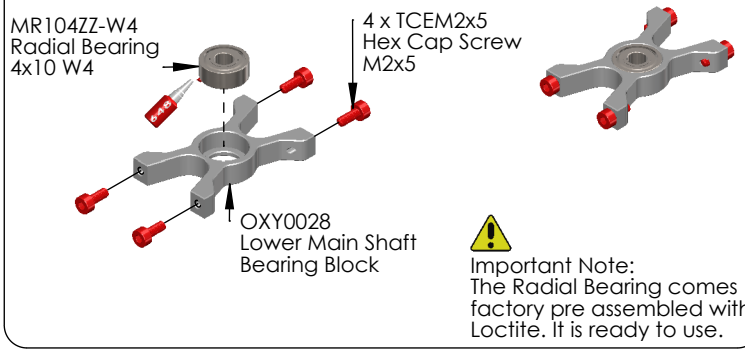
The Plastic ball links have a Lynx logo to give you information about the turn adjustment, but have symmetrical ball socket shape and can be installed in either direction to achieve the best fine tuning.

Tail Servo Mount Assembly. (Box 02 / Bag 5)



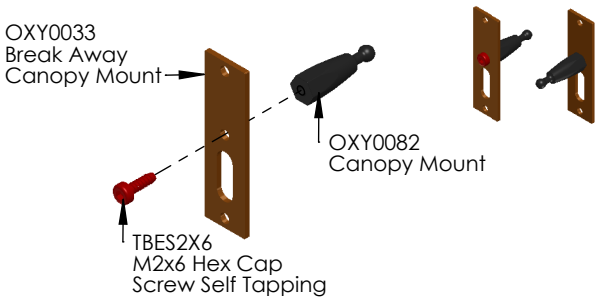
Tail Servo Mount Position:
Install the Tail servo as shown, using the reference distance between the Tail Boom End and Tail Servo Mount as shown. Lock all four Self Tapping Screws and add CA super glue once the servo position is finalized. Don't install the Servo Arm in yet, see page 29 for final Tail Servo Set-up.

Lower Bearing Block Assembly. (CNC components)

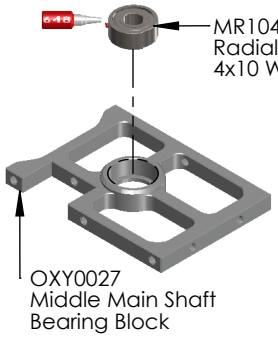


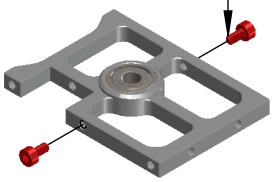
Important Note:
The Radial Bearing comes factory pre assembled with Loctite. It is ready to use.

Break Away Canopy Assembly. (Box 02 / Bag 6-1 Carbon Fiber parts)

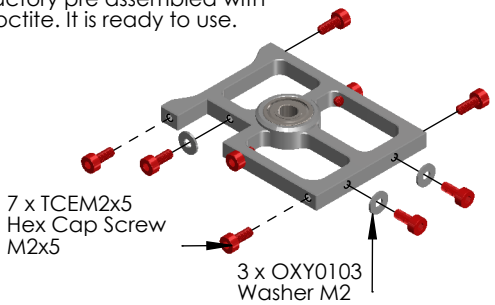


Middle Bearing Block Assembly. (CNC components)

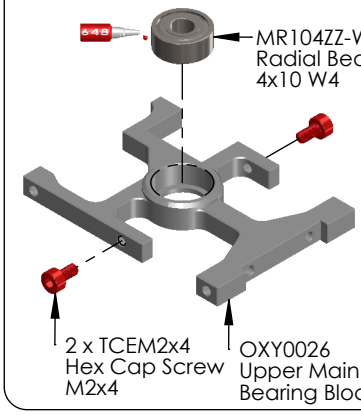


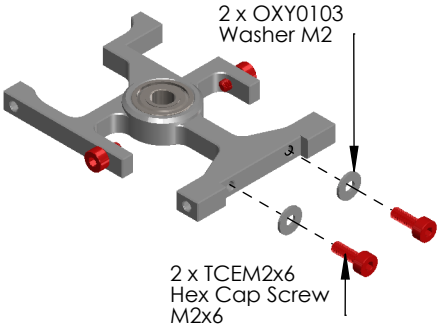


Important Note:
The Radial Bearing comes factory pre assembled with Loctite. It is ready to use.

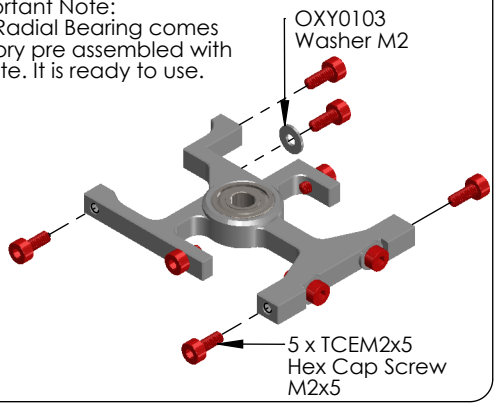


Upper Bearing Block Assembly. (CNC components)

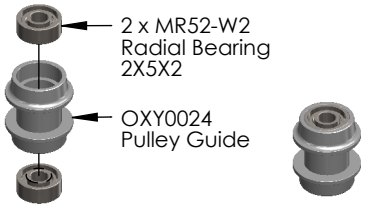




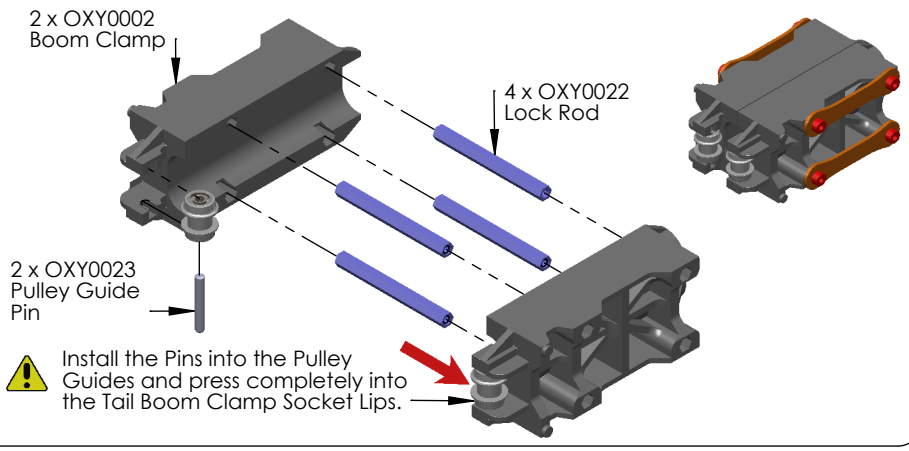
Important Note:
The Radial Bearing comes factory pre assembled with Loctite. It is ready to use.



Boom Clamp Assembly. (Box 02 / Bag 7)



Important Note:
The Radial Bearings come factory pre assembled. It is ready to use.



Install the Pins into the Pulley Guides and press completely into the Tail Boom Clamp Socket Lips.

Main Frame Assembly. (Carbon Fiber parts + Box 02 / Bag 6)

Step 01

Note: Radial Bearing open Face up

Note: Screw come screwed into the 3 x Bearings Blocks.

Middle Bearing Block Assembly
Note: Radial Bearing open Face Down

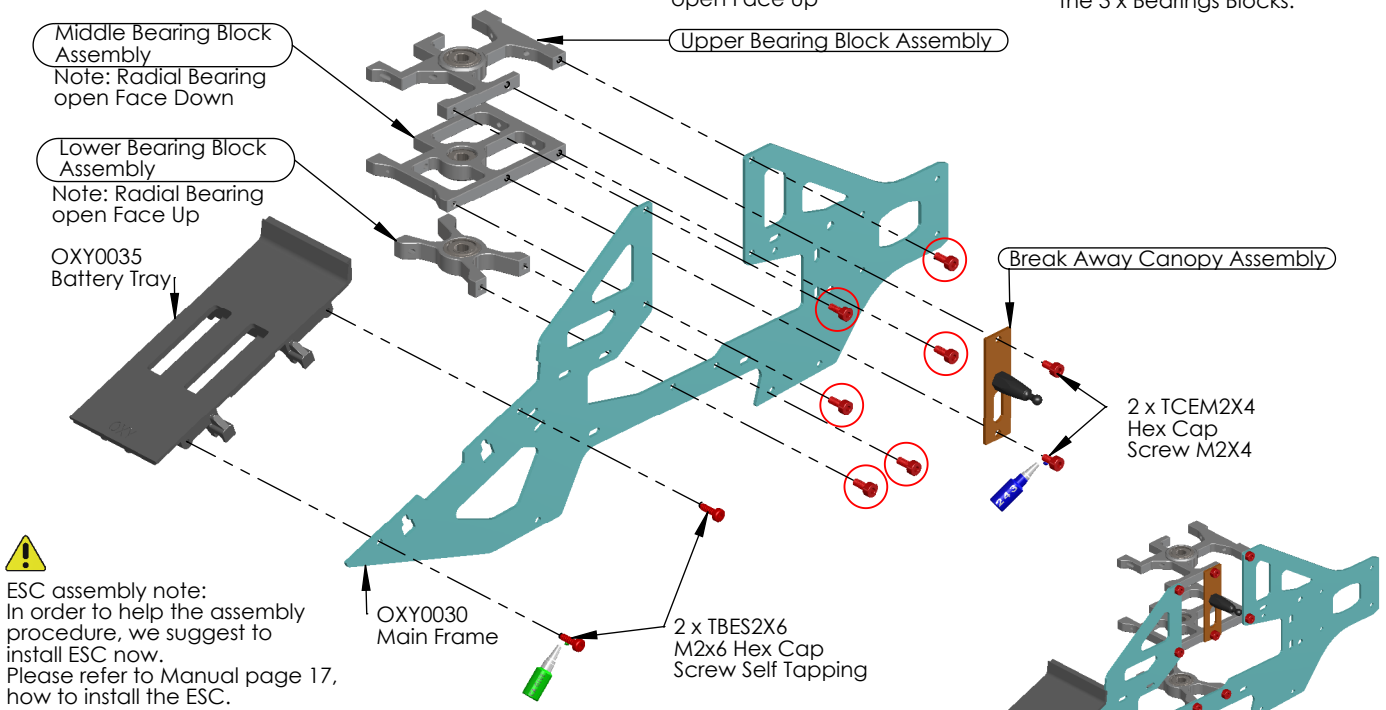
Upper Bearing Block Assembly

Lower Bearing Block Assembly
Note: Radial Bearing open Face Up

OXY0035
Battery Tray

Break Away Canopy Assembly

2 x TCEM2X4
Hex Cap
Screw M2X4



ESC assembly note:
In order to help the assembly procedure, we suggest to install ESC now.
Please refer to Manual page 17, how to install the ESC.

OXY0030
Main Frame

2 x TBES2X6
M2x6 Hex Cap
Screw Self Tapping

6 x TCEM2X5
Hex Cap Screw M2X5
Note: Don't fully tighten yet.
See the assembly alignment note page 14.

Main Frame Assembly. (CNC components)

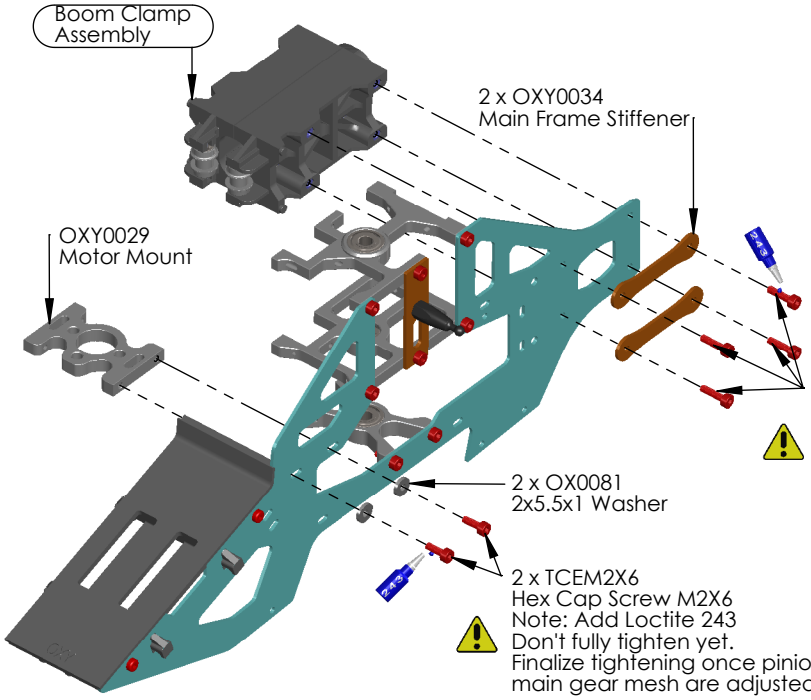
Step 02

Note: Screw come screwed into the Boom Clamp and Motor Mount.

Boom Clamp Assembly

2 x OXY0034
Main Frame Stiffener

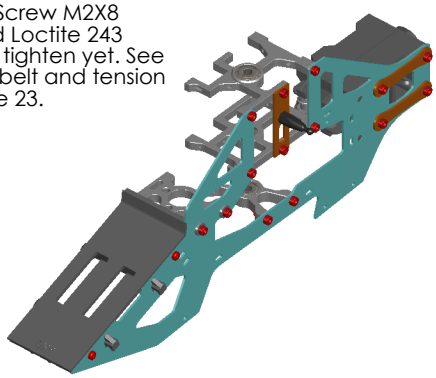
OXY0029
Motor Mount



4 x TCEM2X8
Hex Cap Screw M2X8
Note: Add Loctite 243
Don't fully tighten yet. See assembly belt and tension note page 23.

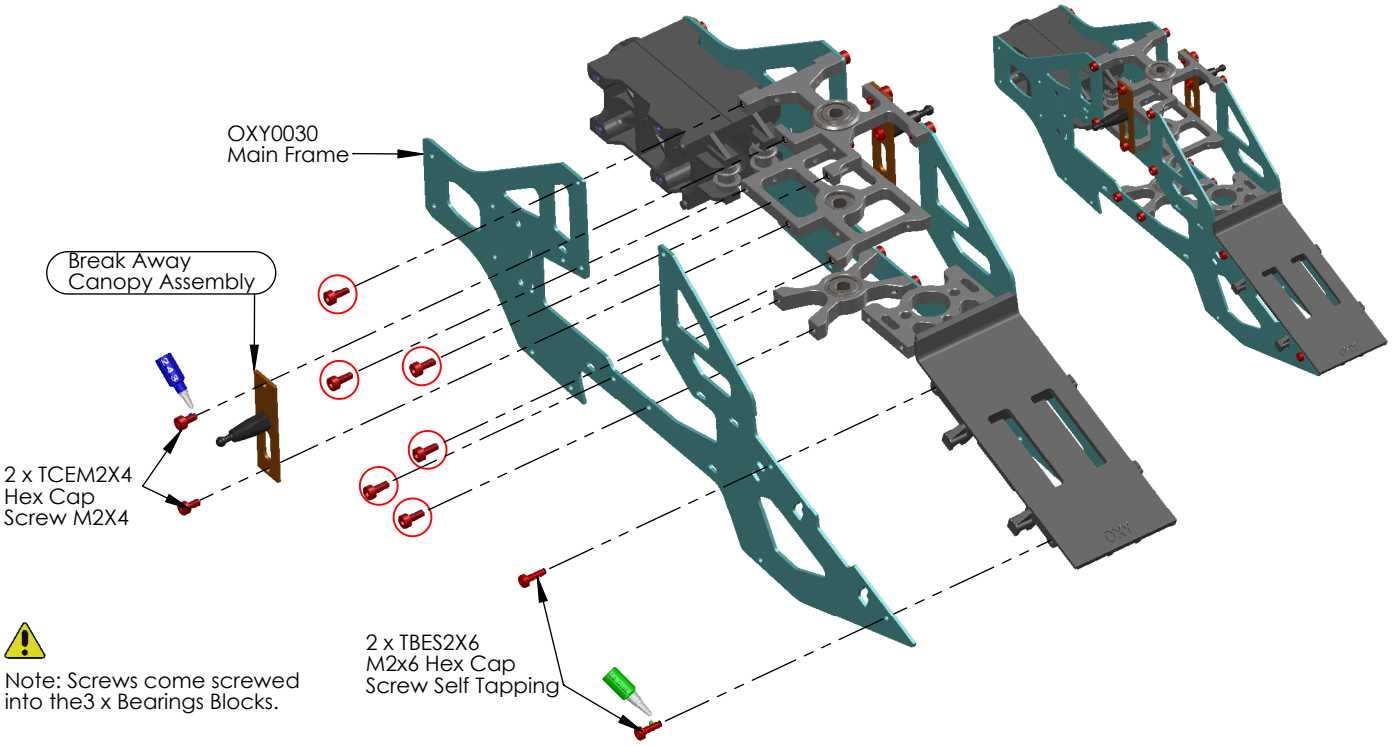
2 x OX0081
2x5.5x1 Washer

2 x TCEM2X6
Hex Cap Screw M2X6
Note: Add Loctite 243
Don't fully tighten yet.
Finalize tightening once pinion and main gear mesh are adjusted.



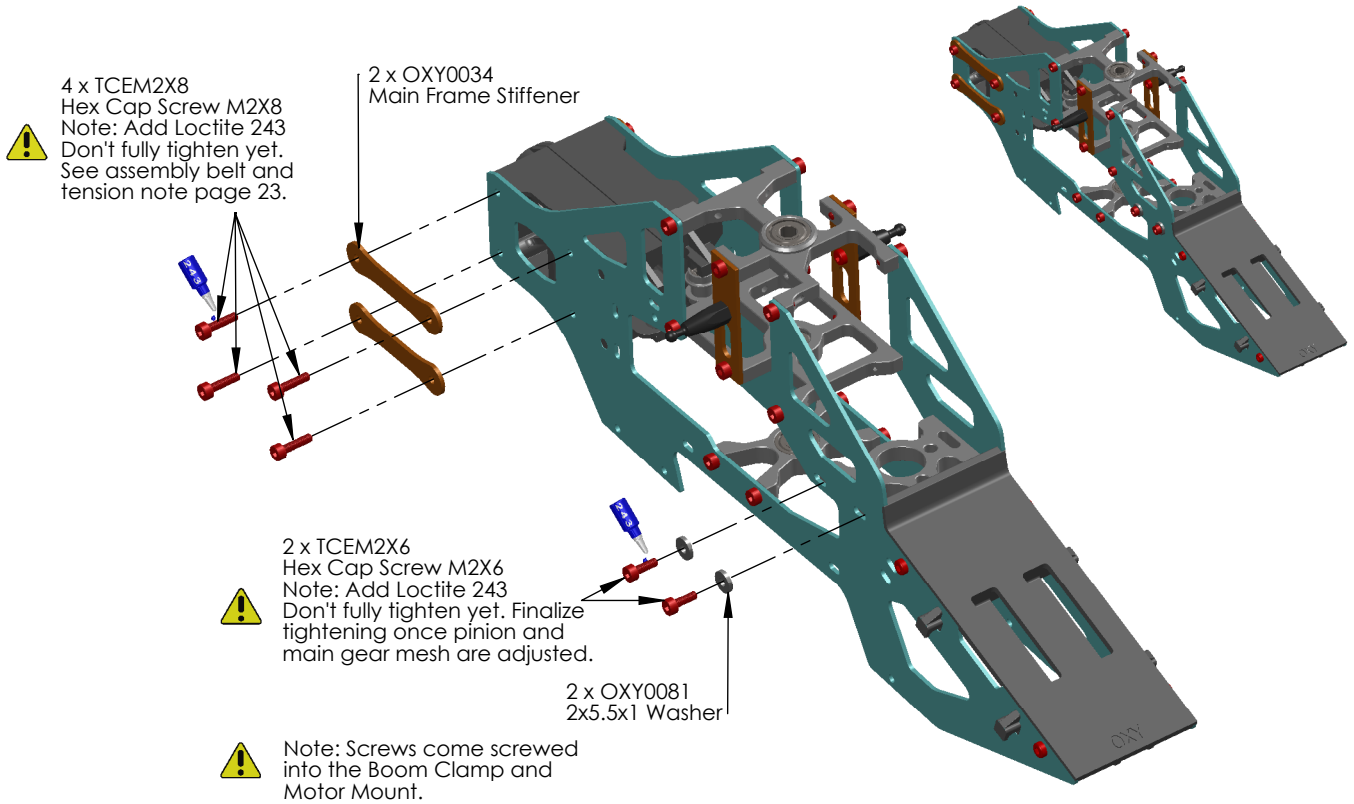
Main Frame Assembly

Step 03



Main Frame Assembly

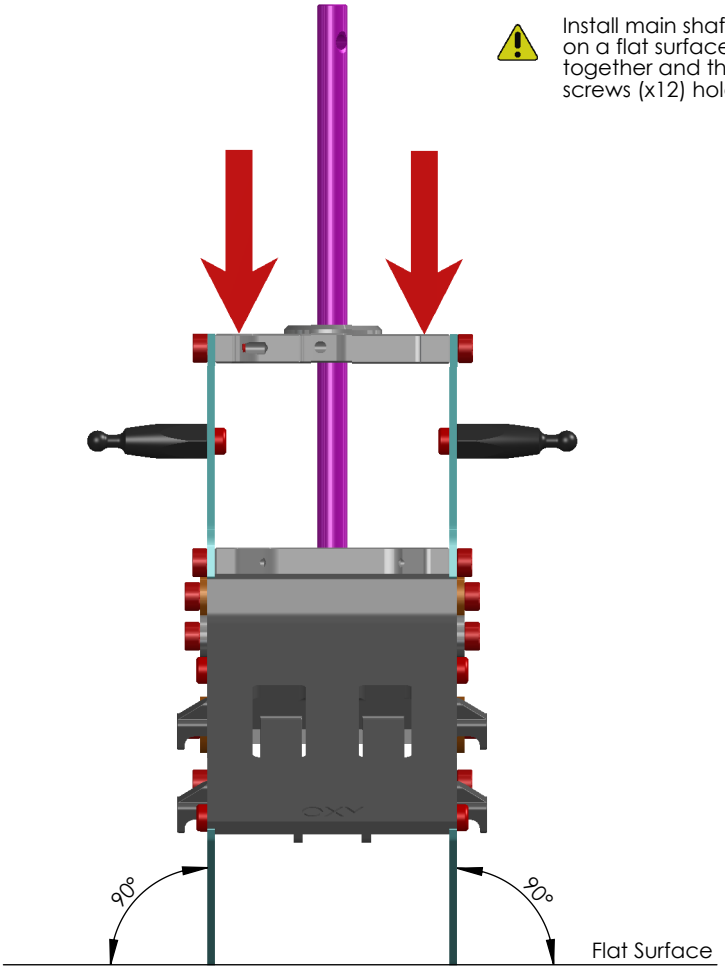
Step 04

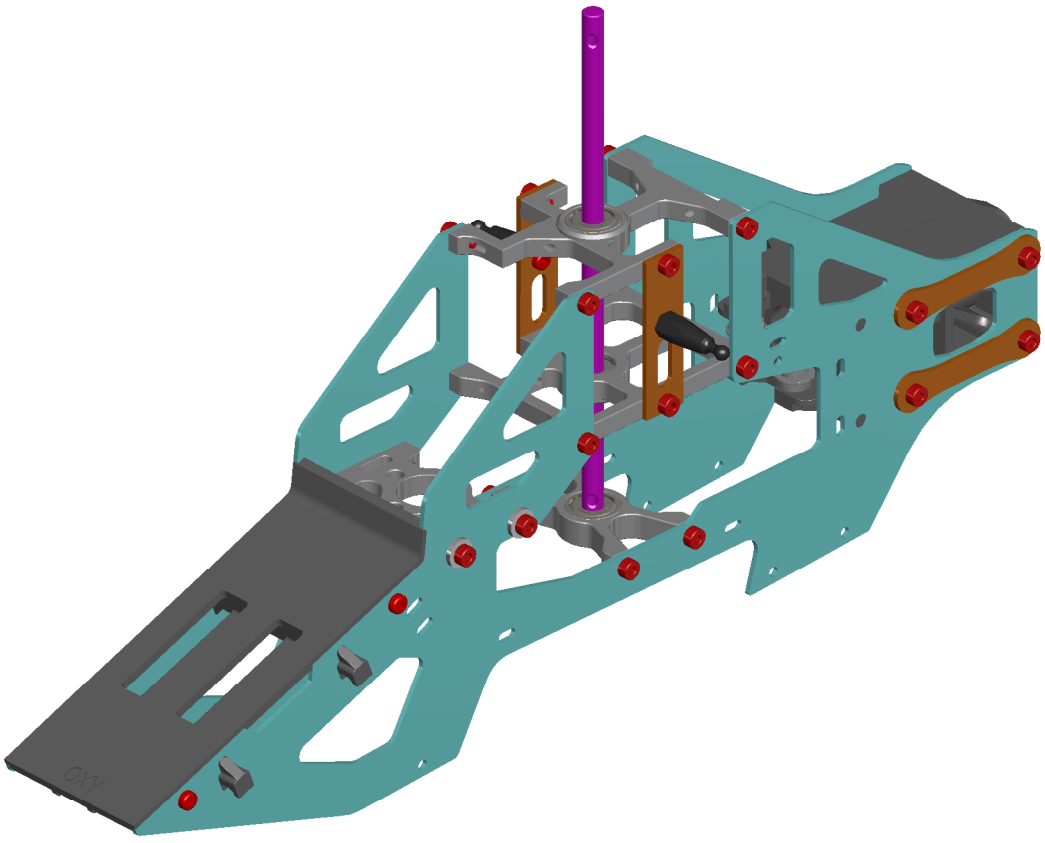


Main Frame Assembly. (CNC components)

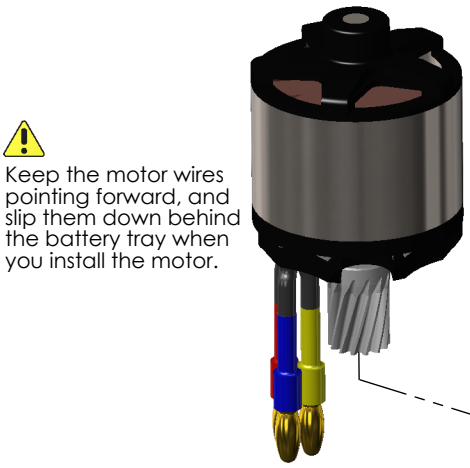
Step 05

Install main shaft with frame assembly on a flat surface, push down on both frames together and then fully tighten all M2x5 hex cap screws (x12) holding the bearing blocks.

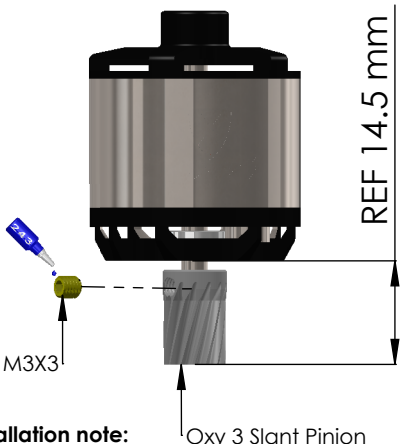




Motor Installation. (Box 02 / Bag 8)

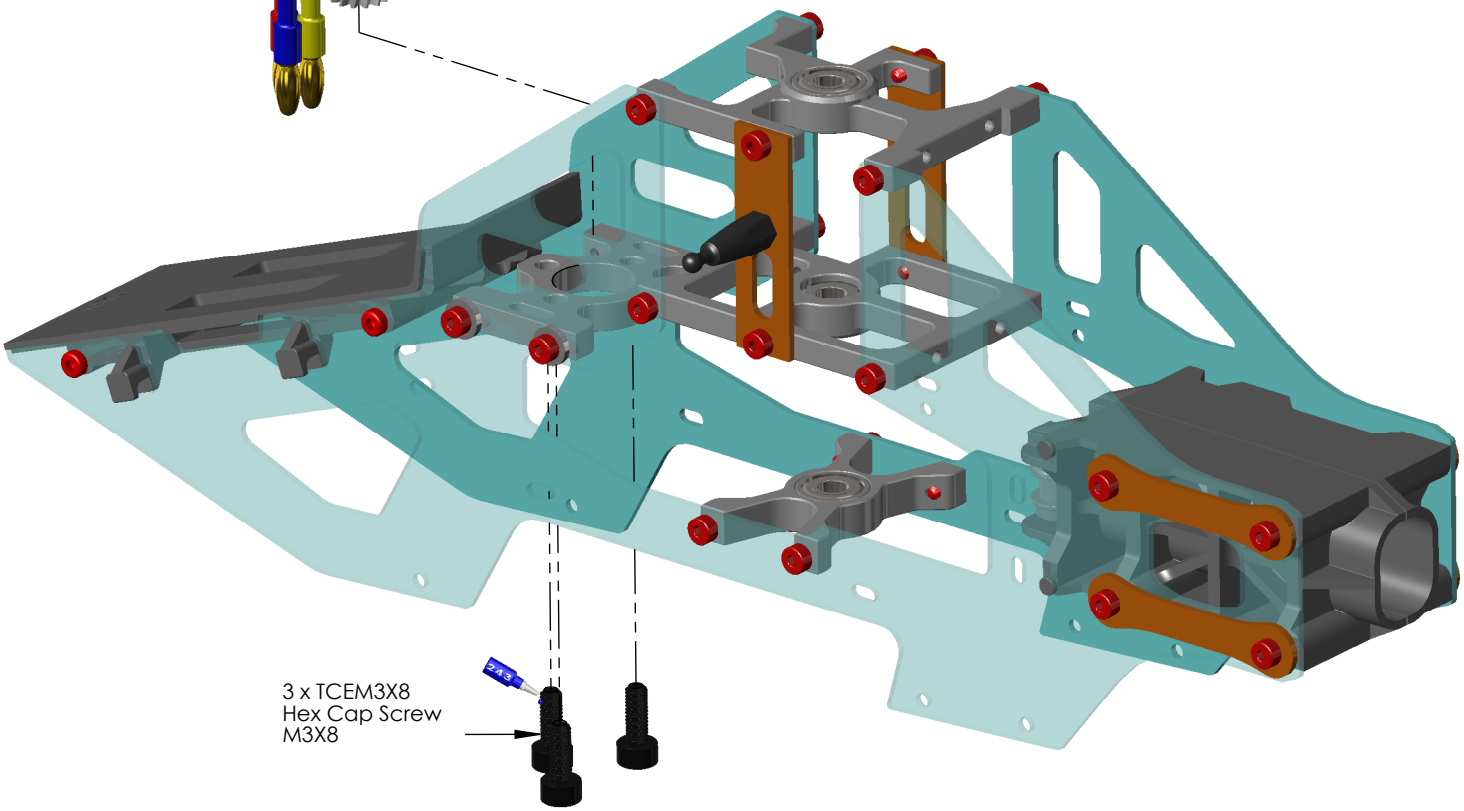


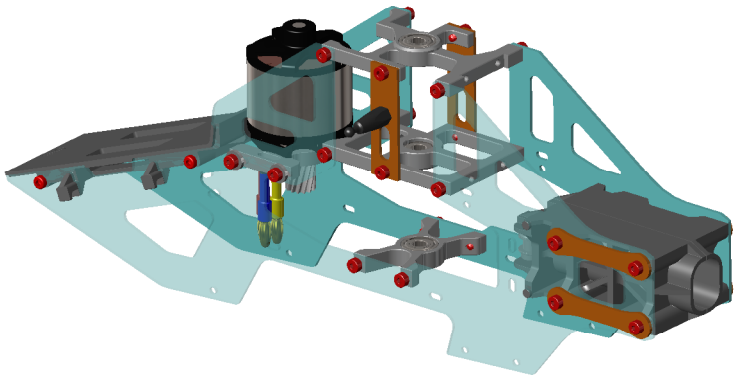
Keep the motor wires pointing forward, and slip them down behind the battery tray when you install the motor.



Pinion Installation note: Be sure the set screw for the pinion tightens down on the 'flat' on the motor shaft.

Oxy 3 Slant Pinion (11T – 14T Standard) See page 15 - Table for best pinion choice.





OXY 3 POWER SYSTEM AND HEAD SPEED SET-UP

In order to choose the best setup for your Oxy 3, and optimize performance, it is important to know some basic information:

1- Motor Kv – the standard motor is the EOX 2214 – 4100 KV
2- Battery Pack – (3s or 4s)
3- Your target head speed
If you use a head speed calculator, use **140T** for the main gear and one of the available pinions 10T – 11T – 12T – 13T – 14T – 15T. The kit comes with two pinions (11T and 14T) which enables a wide head speed range with both 3 and 4s batteries for novice and expert pilots.

Oxy 3 gear ratio chart

Oxy P/n	Description	Ratio	Note
OXY0104	Pinion 10T-M0.5 - 3.17 Motor Shaft	14	
OXY0094	**Pinion 11T-M0.5 - 3.17 Motor Shaft**	**12.727**	**Included**
OXY0095	Pinion 12T-M0.5 - 3.17 Motor Shaft	11.667	
OXY0096	Pinion 13T-M0.5 - 3.17 Motor Shaft	10.769	
OXY0042	**Pinion 14T-M0.5 - 3.17 Motor Shaft**	**10.000**	**Included**
OXY0086	Pinion 15T-M0.5 - 3.17 Motor Shaft	9.333	

Oxy 3 Fly Style / Head Speed / Main Blade / Tail Blade / Max Pitch suggestion chart:

Fly Style	Head Speed	Main Blade	Tail Blade	Max Pitch
Hover	2500 / 3000	245 Plastic 255 CF	50	+ 10 / -3
Fly 2D	3000 / 3500	245 Plastic 255 CF	50	+ 10 / -5
Soft 3D	3000 / 3500	250 CF 255 CF	50	+/- 12
Hard 3D	3500 / 4000	250 CF 255 CF	47	+/- 14
Extreme 3D	4000 / 4500	250 CF 255 CF	47	+/- 14

As a quick guide, if you are a beginner use the 11T pinion, and 3 cells.
If you are more experienced, use the 14T pinion on 3 cells.
For 4 cell setups, we assume you know what you are doing!

Head Speed Note: *Although Oxy 3 can handle very high Head Speed, we suggest not to exceed 4500 RPM to maintain a good compromise btw performances and efficiency.*

Configuration examples

Since the Oxy 3 is a high performance 3D RC helicopter, we suggest using high quality power components including motor, battery and ESC. Remember the Oxy 3 is a 300 class heli – use light components to maximize flight time and performance.

Here are some suggestions:

- Motor: Suggested KV 3000KV to 4500KV, 21-08 to 22-14 caliber series (stator diameter – stator length).

- Battery: 3 or 4S with capacity from 1300 to 1500mAh / 35C discharge rate. Maximum size: length 76mm, height 35mm, width 37mm, weight 180g.

- ESC: 35 to 40A – with BEC 6V or higher. Or use an external 5A BEC. The Oxy 3 Kit 002 comes with a 40A ESC, preset with 6V BEC and settings for the EOX 2214-4100KV motor.

- Cyclic servos: Standard MICRO size servo with metal gear – speed: =>0.06 sec/60 at 6V.

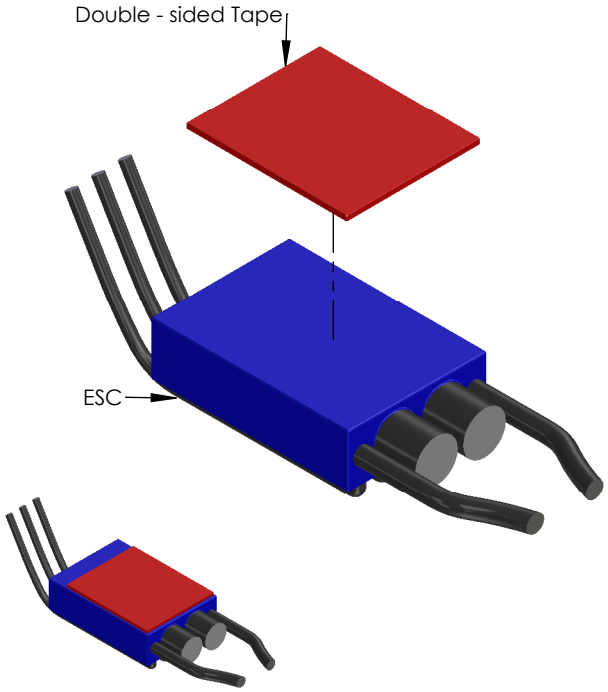
- Rudder servo: Standard MICRO size servo – speed =>0.06 sec/60 at 6V – a specific rudder servo is suggested for best tail authority.

- FBL system: The Oxy 3 was designed around the Ikon / Brain and Mini V-Bar Systems. But many other good quality FBL systems can be used, depending on your personal choice.

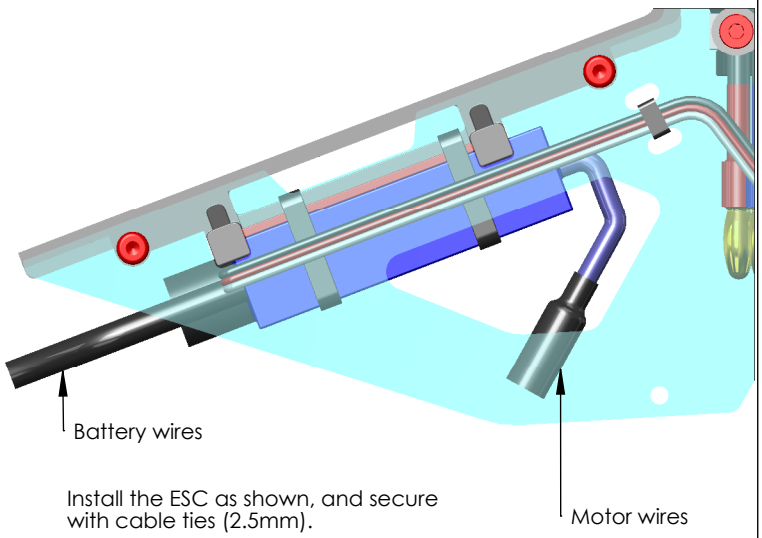
- Main blade: The Oxy 3 can fly with plastic or CF main blades from 245 to 255mm. Our testing was with Lynx 245mm plastic main blades, and Zeal 250mm and 255mm CF main blades. The Oxy 3 main grips use M2 clamp screw and have a 5.6mm root.

- Tail blades: The Oxy 3 uses our own OEM tail blades, either 47 or 50mm (included with the kit). They use a M2 clamp screw and 3.5 root.
We offer 47 and 50mm tail blades to suit different head speeds. Use 50mm tail blades when your head speed is lower than 3500rpm and 47mm with higher head speeds.

Step 1 Accessories Bag

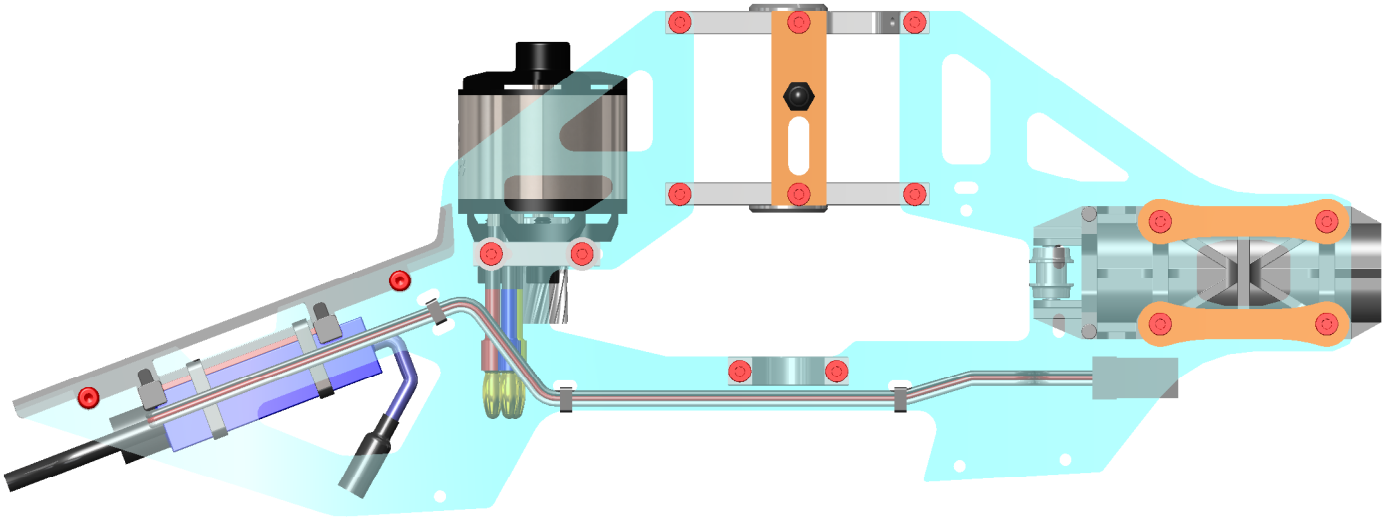


Step 2



Install the ESC as shown, and secure with cable ties (2.5mm).

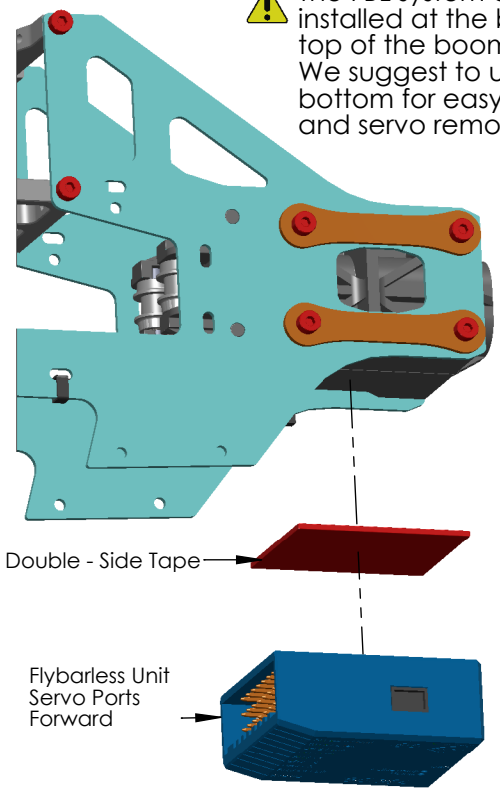
Step 3



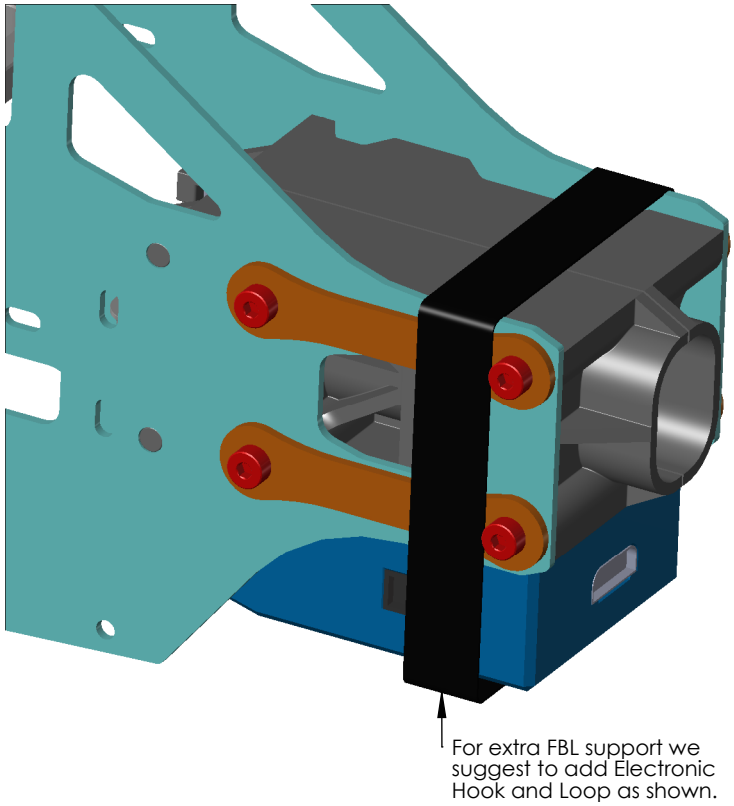
⚠ Use 3 x cable ties, to secure the Throttle ESC wire to the main frame. Use the Frame built-in socket for best holding. In this Step connect the Motor and ESC Wires but don't secure yet. Wait till the final motor rotation check, once the FBL system is set up.
NOTE: To reverse Motor rotation direction , just switch 2 of the 3 wires.

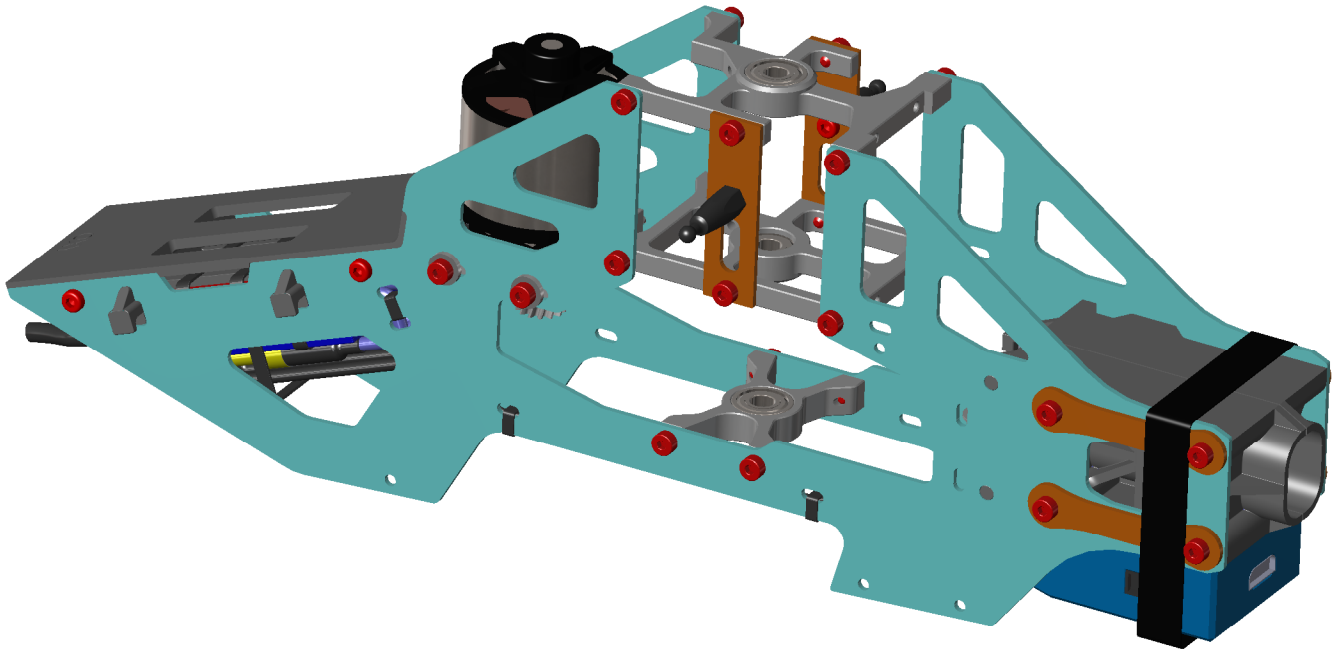
Step 1

The FBL system can be installed at the bottom or top of the boom clamp. We suggest to use the bottom for easy wiring and servo removal.

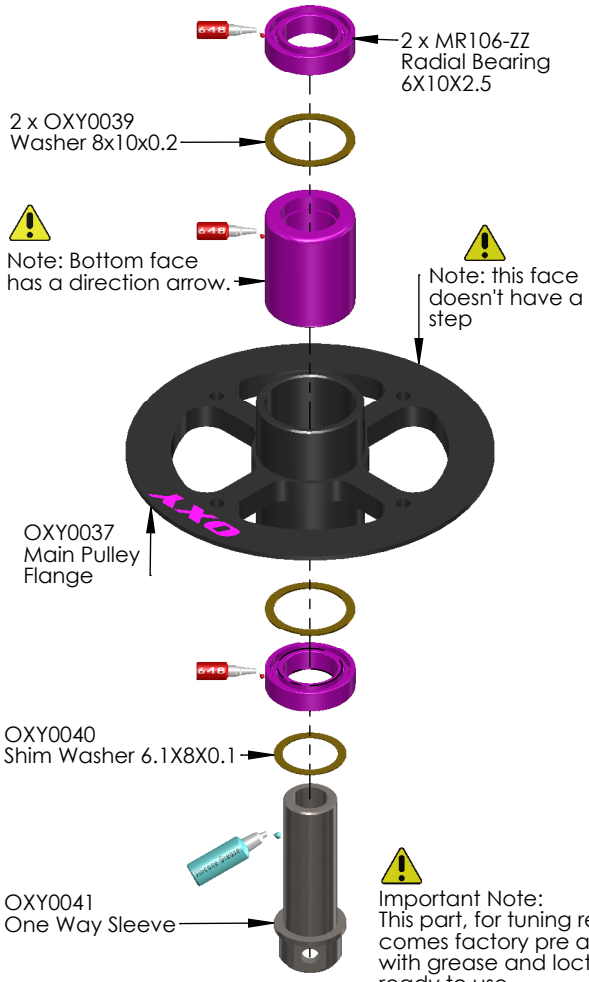


Step 2



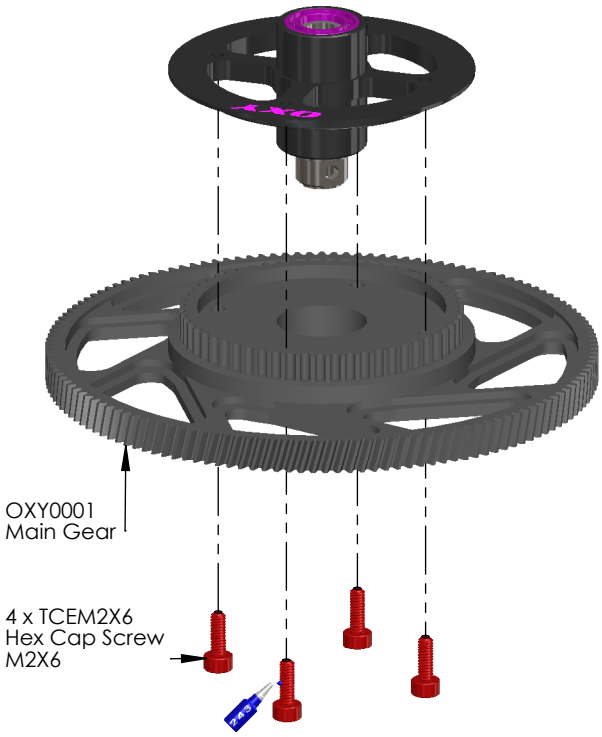


One Way Hub Assembly. (Box 02 / Bag 9)



Important Note:
This part, for tuning reasons, comes factory pre assembled with grease and loctite. It is ready to use.

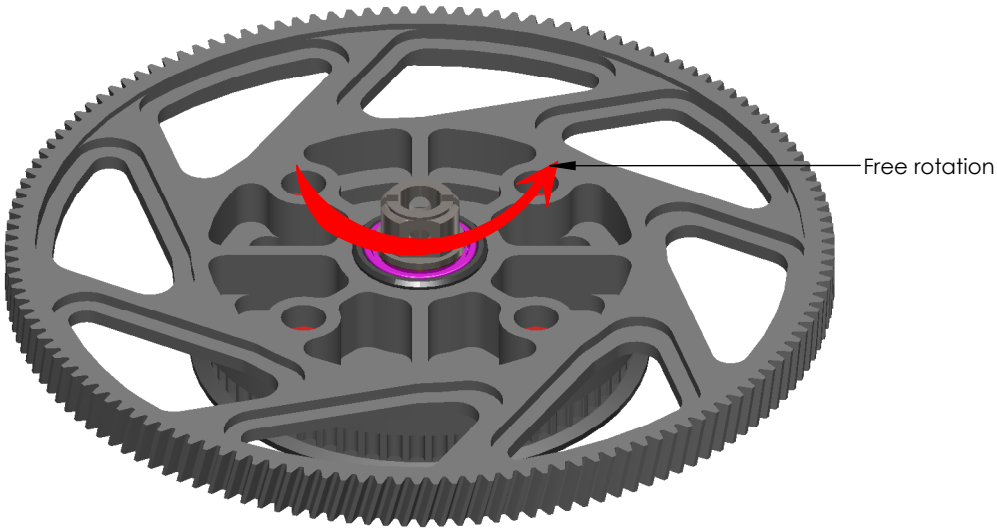
Main Gear Assembly.



Note: Tighten these four screws with similar toque. Tighten each gradually in a criss-cross manner to get similar torque.

Important Note:
This part comes pre assembled WITHOUT thread lock. Follow the instruction for final assembly.

One Way System Direction Check.

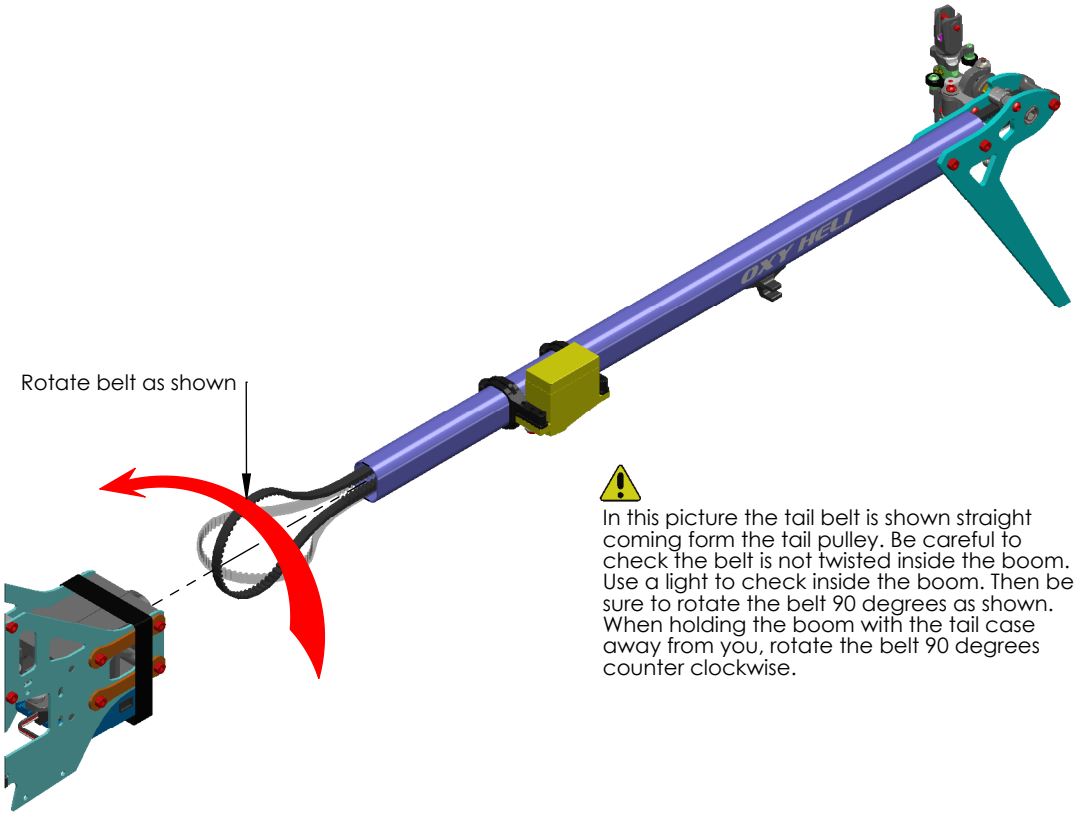


Bottom view

Note: use one way sleeve to check the rotation direction of the one way bearing as shown

Belt Adjustment.

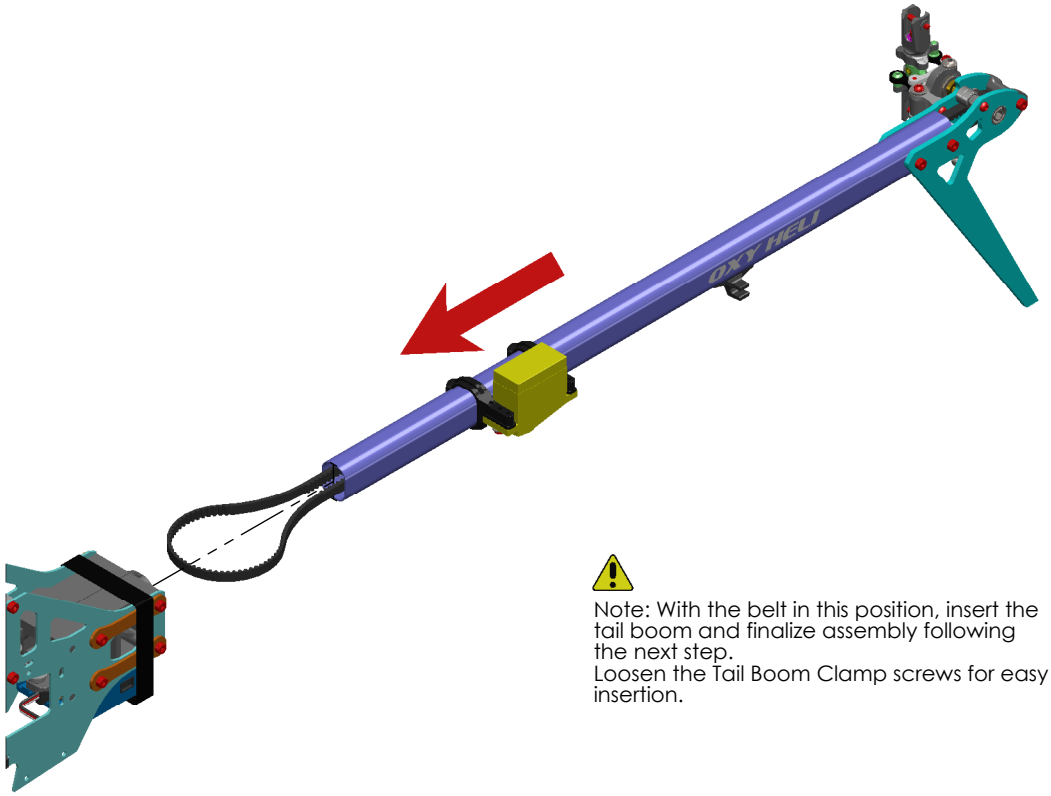
Step 1



In this picture the tail belt is shown straight coming form the tail pulley. Be careful to check the belt is not twisted inside the boom. Use a light to check inside the boom. Then be sure to rotate the belt 90 degrees as shown. When holding the boom with the tail case away from you, rotate the belt 90 degrees counter clockwise.

Belt Adjustment.

Step 2



Note: With the belt in this position, insert the tail boom and finalize assembly following the next step.
Loosen the Tail Boom Clamp screws for easy insertion.

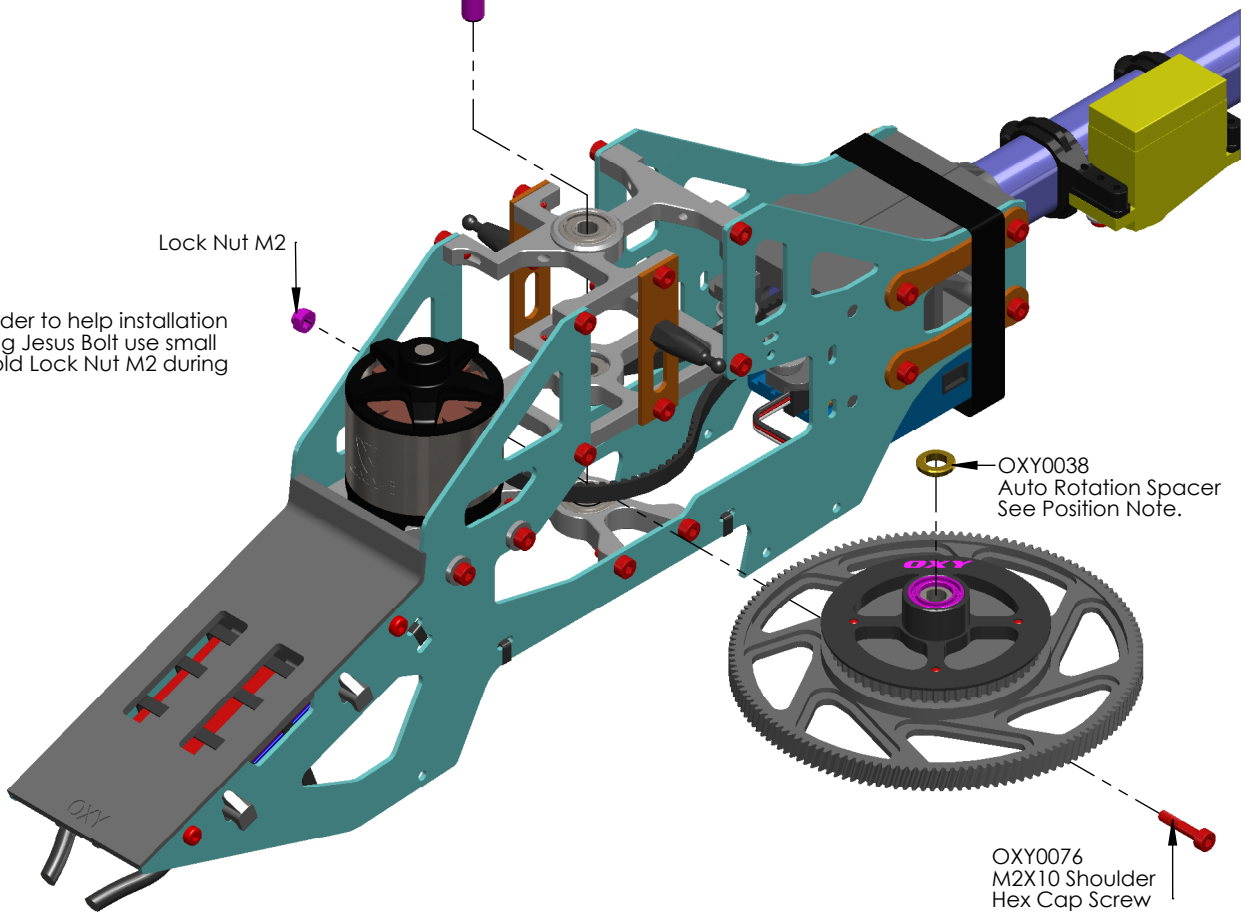
Install Main Gear, Main Shaft into Main Frame. (Box 02 / Bag 9-1 CNC components)

Note: hole's position on main shaft.

OXY0003
Main Shaft

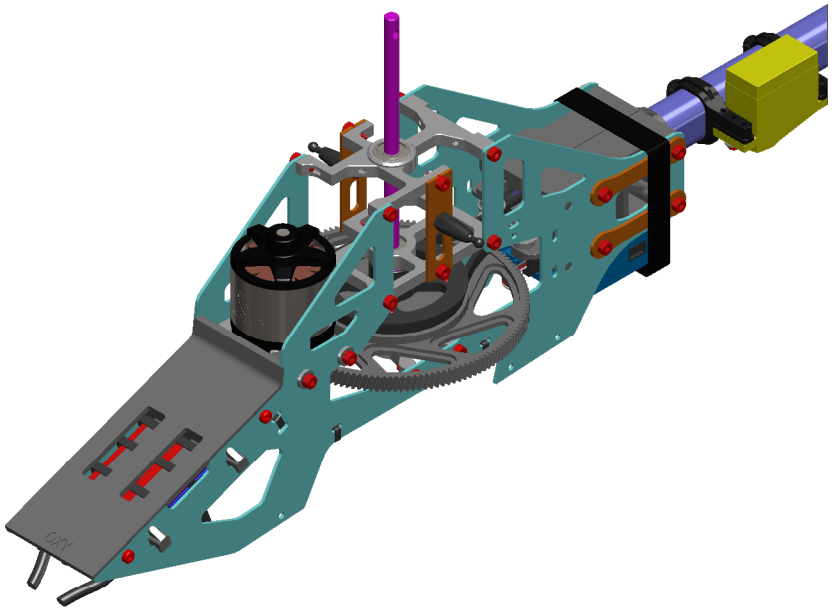
Lock Nut M2

Note: In order to help installation and locking Jesus Bolt use small pliers to hold Lock Nut M2 during install.

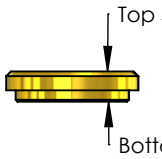


OXY0038
Auto Rotation Spacer
See Position Note.

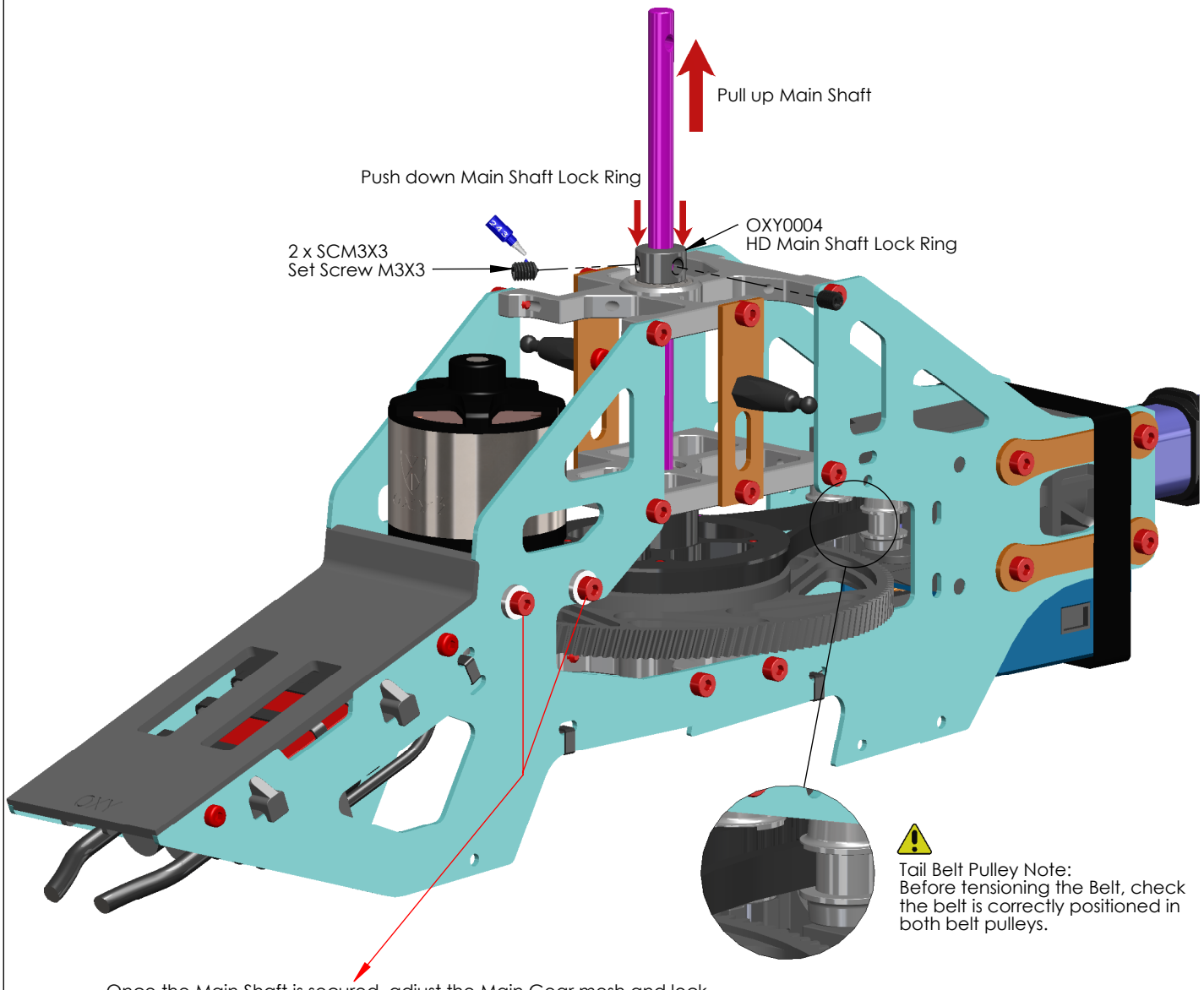
OXY0076
M2X10 Shoulder
Hex Cap Screw



Note: Auto Rotation Spacer's position:

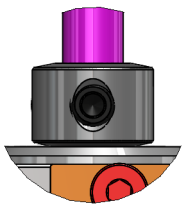


Install Main Shaft Lock Ring into Main Shaft.

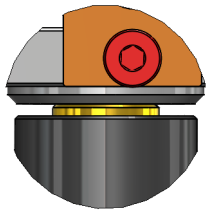


Tail Belt Pulley Note:
Before tensioning the Belt, check the belt is correctly positioned in both belt pulleys.

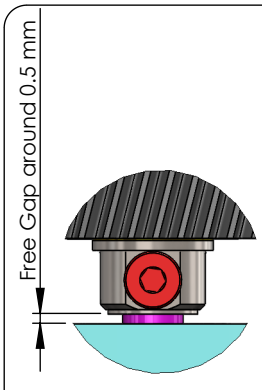
Once the Main Shaft is secured, adjust the Main Gear mesh and lock the Motor Mount. The Pinion and Main Gear must have a little play. Don't use the paper system to set the mesh, as there will be too much play. Adjust the mesh so there is only a very small amount of play. Before tightening completely the Motor Mount, test the play all around the Main Gear. e-adjust so the correct mesh is set at the tightest point. To increase system efficiency the main gear must rotate freely without binding.



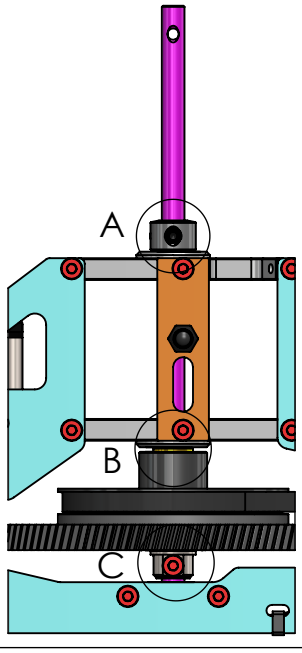
DETAIL A



DETAIL B



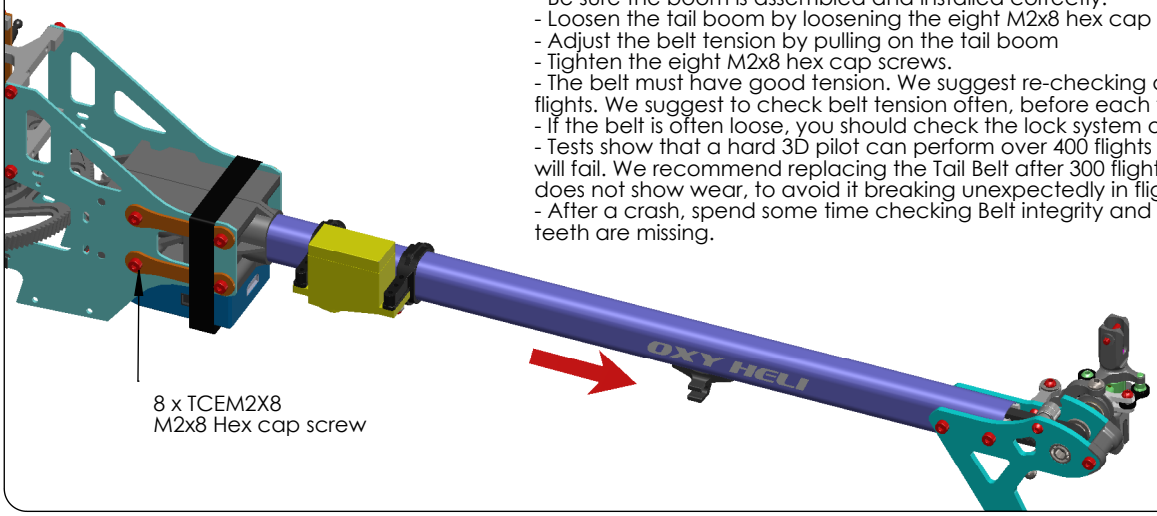
DETAIL C



Belt Tension.

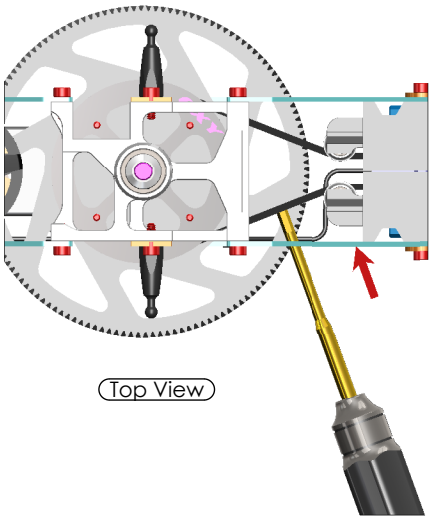
Belt Tension Note:

- Be sure the boom is assembled and installed correctly.
- Loosen the tail boom by loosening the eight M2x8 hex cap screws.
- Adjust the belt tension by pulling on the tail boom
- Tighten the eight M2x8 hex cap screws.
- The belt must have good tension. We suggest re-checking after a few flights. We suggest to check belt tension often, before each flying session.
- If the belt is often loose, you should check the lock system or belt integrity.
- Tests show that a hard 3D pilot can perform over 400 flights before the belt will fail. We recommend replacing the Tail Belt after 300 flights, even if it does not show wear, to avoid it breaking unexpectedly in flight.
- After a crash, spend some time checking Belt integrity and replace if any teeth are missing.



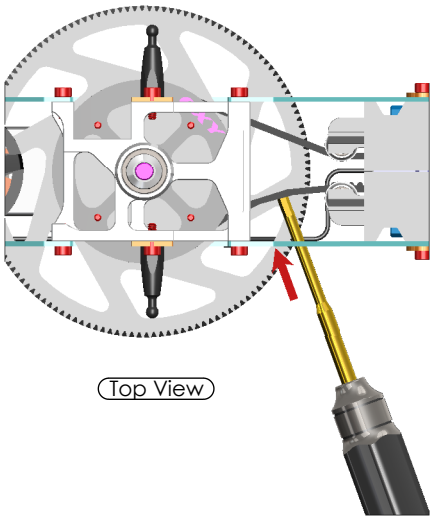
8 x TCEM2X8
M2x8 Hex cap screw

Belt Tension Check.



Top View

- Use a Screw Driver to check Belt Tension (suggested max deflection is 1mm)
- Note: We recommend a tight belt tension.
- Check the belt tension again after the first 2 flights.
- With a new Tail Belt, when the head is rotated slowly, it is normal to hear a tooth sound as the belt engages with the Main Pulley. This sound is normal and will disappear after a few flights and the necessary "break-in".



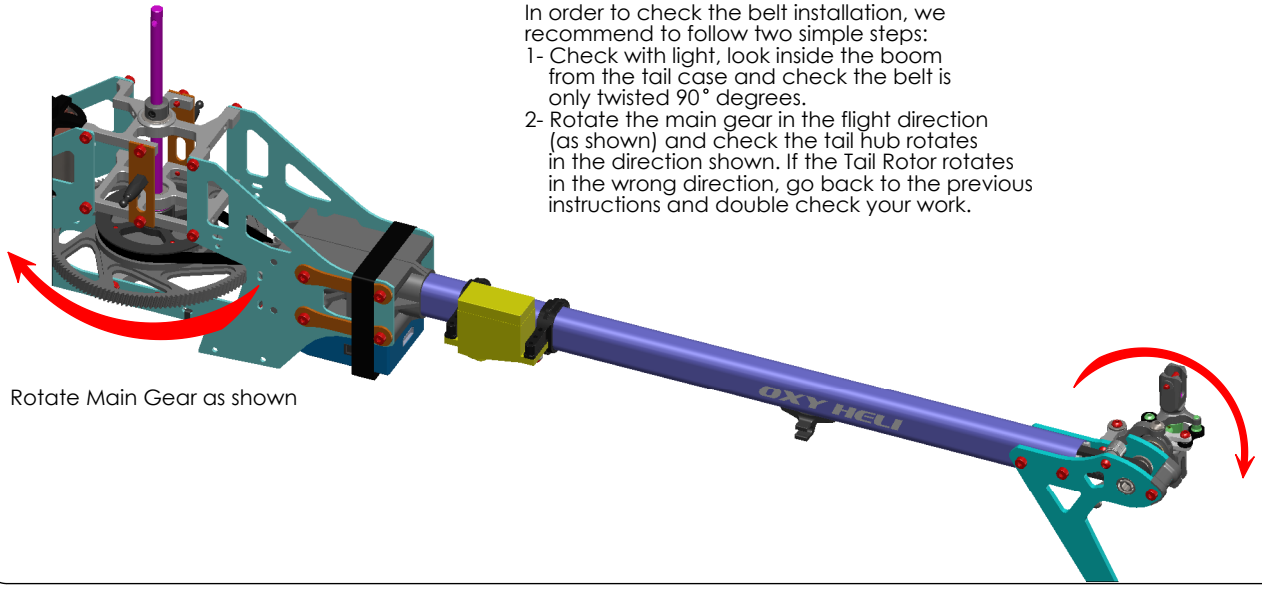
Top View

Tail Rotor Rotation Direction Check.

In order to check the belt installation, we recommend to follow two simple steps:

1- Check with light, look inside the boom from the tail case and check the belt is only twisted 90° degrees.

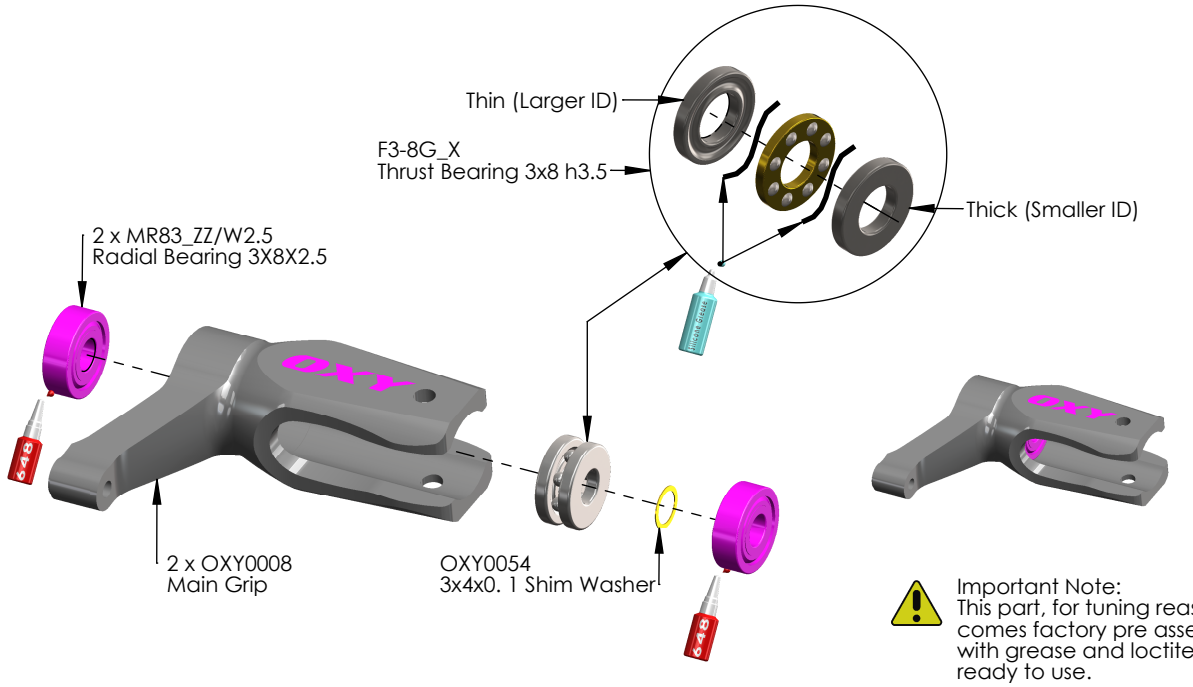
2- Rotate the main gear in the flight direction (as shown) and check the tail hub rotates in the direction shown. If the Tail Rotor rotates in the wrong direction, go back to the previous instructions and double check your work.



Rotate Main Gear as shown

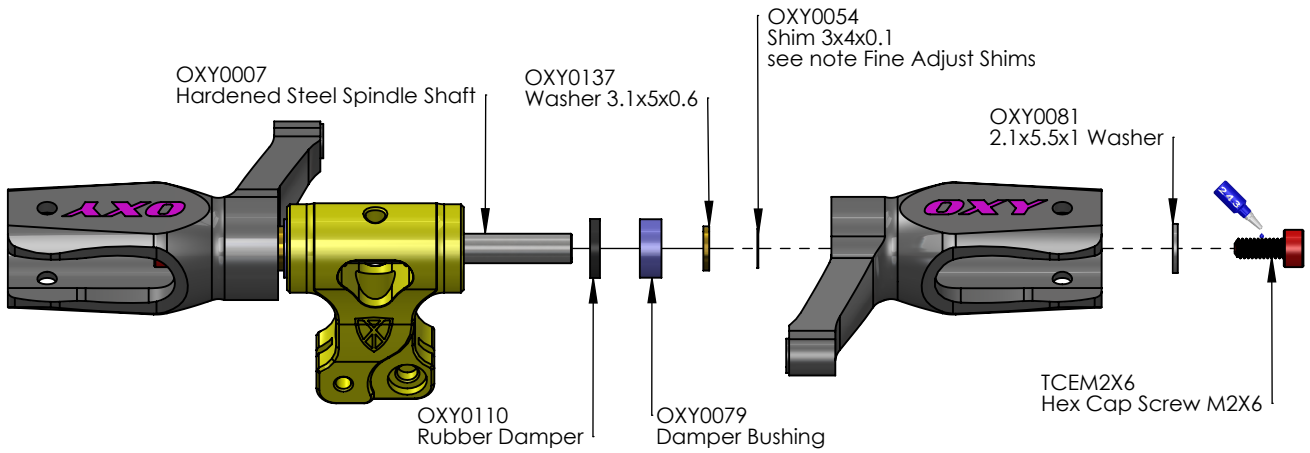
Head Assembly. (CNC components)

Step 1

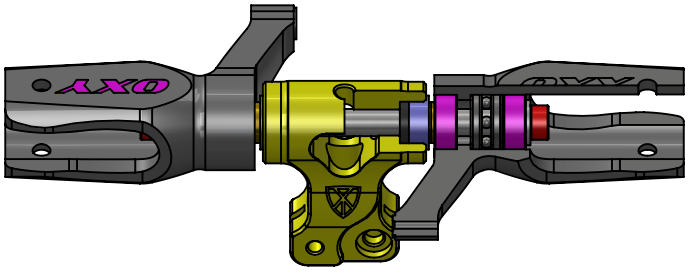


Important Note:
This part, for tuning reasons, comes factory pre assembled with grease and loctite. It is ready to use.

Step 2



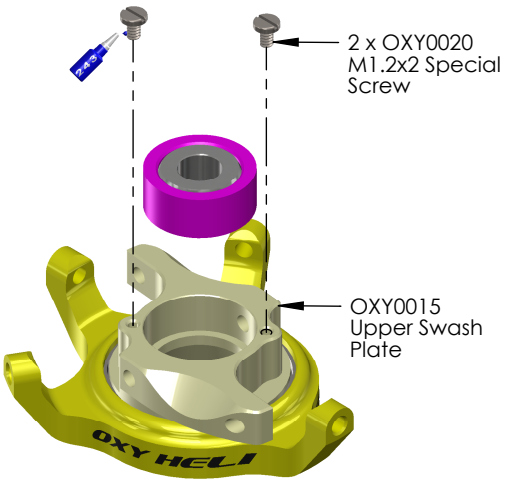
Important Note:
This part comes pre assembled WITHOUT thread lock. Follow the instruction for final assembly.



Fine Adjust Shims:
In order to give fine adjustment options, the extra Hardware Bag contains extra Shims 3x4x0.1. Start assembly with factory pre installed shims. If the Main Grips have sideway play, add shims as required. Each Grips must have the same number of shims. If you add one shim on the left side, you need to also add one shim on the right side.

Swash Plate Assembly. (CNC components)

Step 1

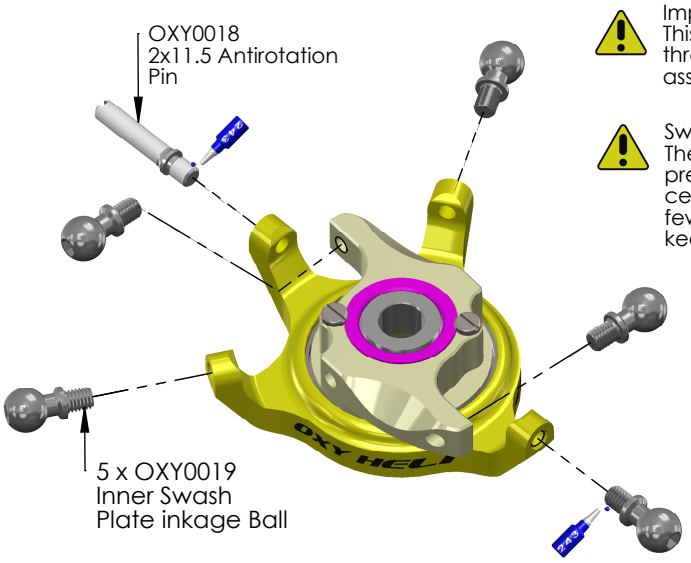


Important Note:
This part, for tuning reasons, comes factory pre assembled with loctite. It is ready to use.

Step 2

Important Note:
This part, for tuning reasons, comes factory pre assembledwith loctite. It is ready to use.

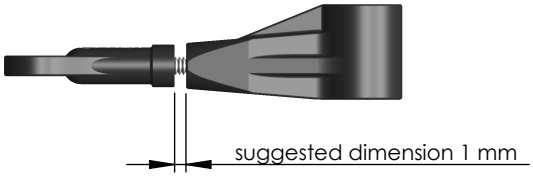
Step 3



Important Note:
This part comes pre assembled WITHOUT thread lock. Follow the instruction for final assembly.

Swivel Ball Note:
The Swivel Ball is pre-assembled with a precise fitting. When new, the Swash Plate center ball will have a little friction. After a few flights and "break-in" it will come smooth, keeping the best precision without play.

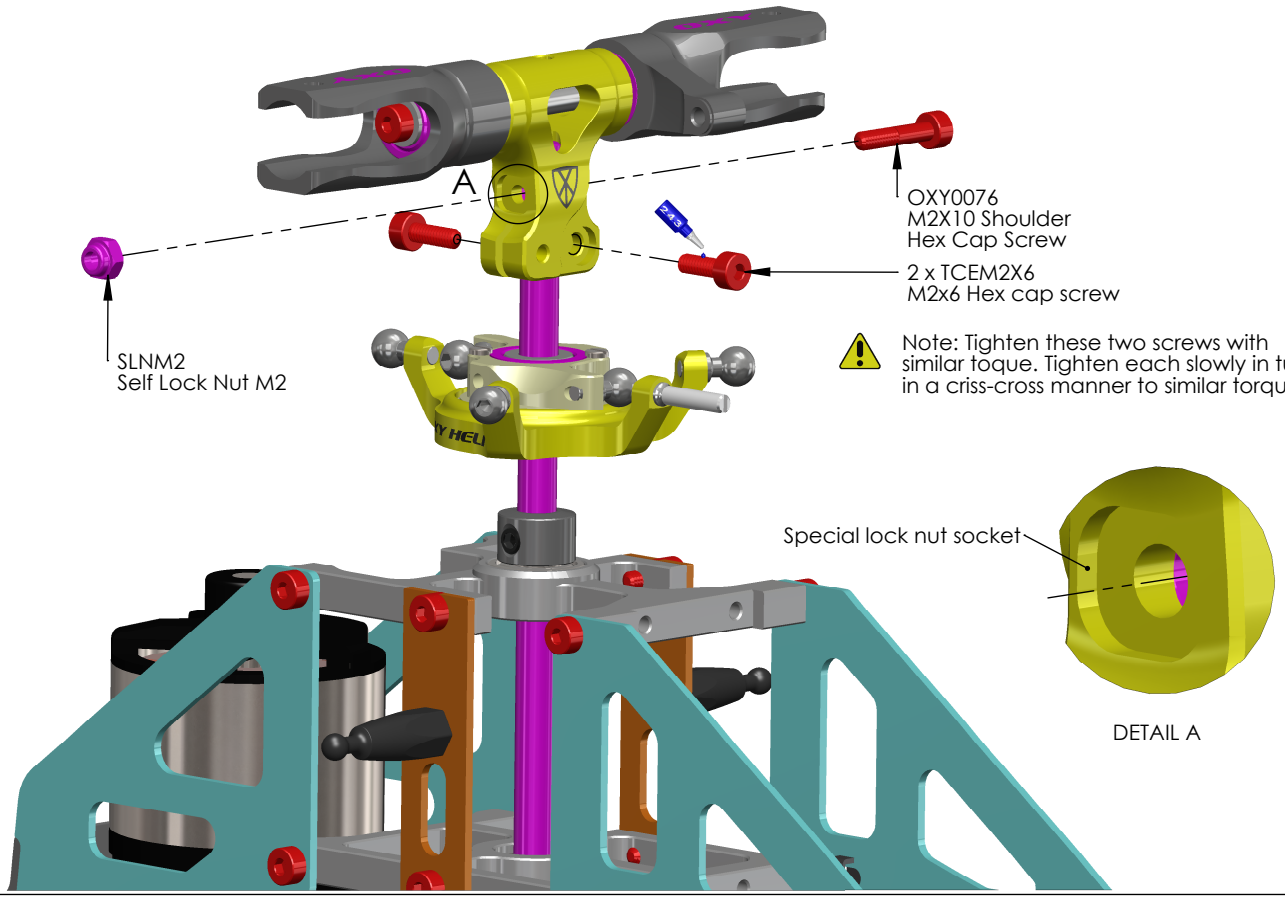
DFC Arm Assembly.



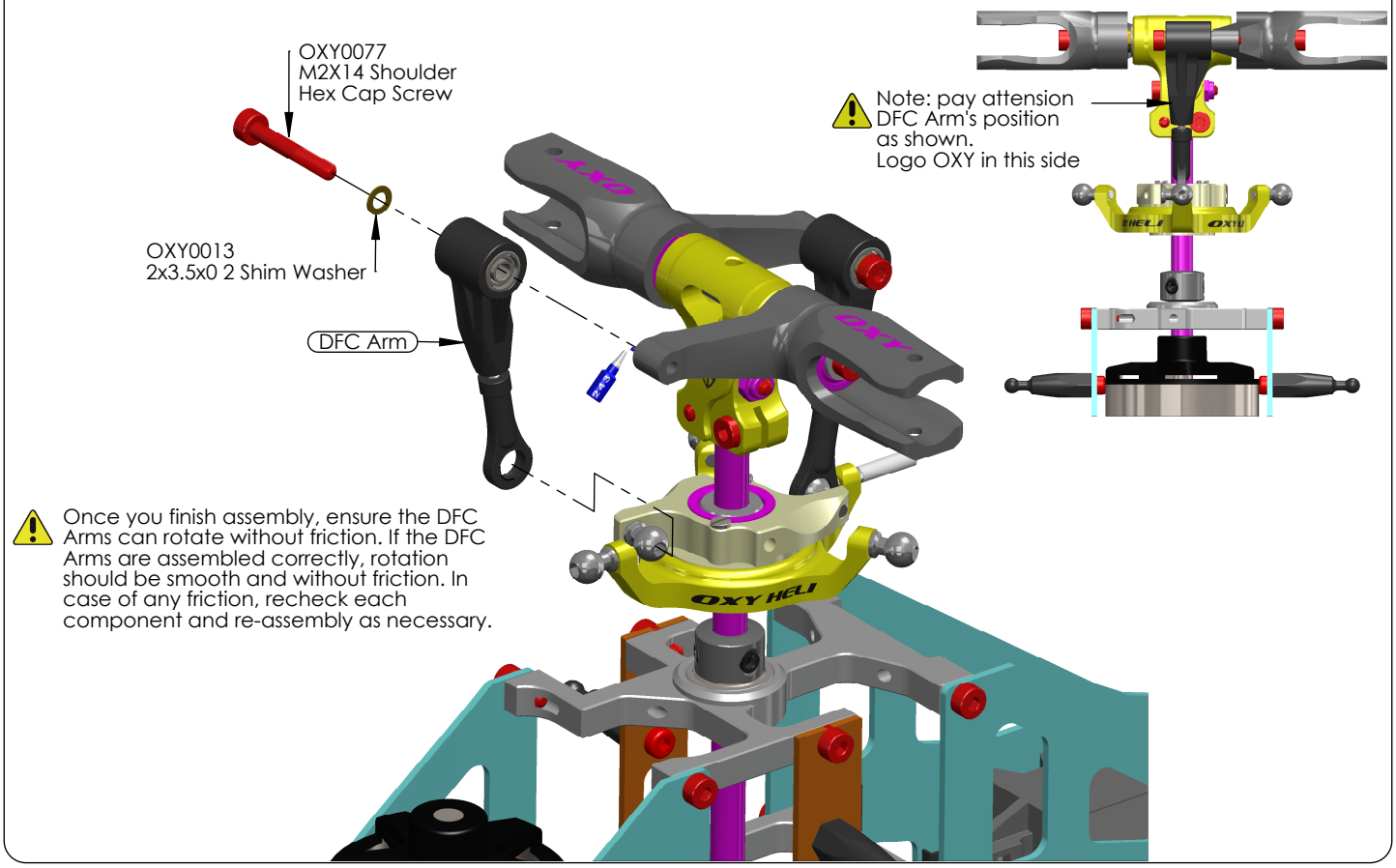
The Oxy Plastic ball links have a logo to give you information about turn adjustment, but have a symmetrical ball socket shape and can be installed in either direction to achieve the best fine tuning.

Head Assembly.

Step 3

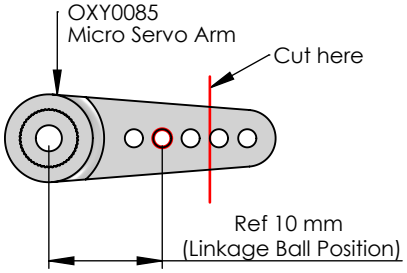


Step 4

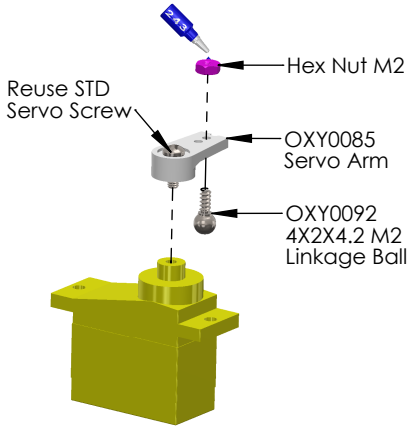


- You should now do some initial setup of your FBL unit and servos.
- We recommend you select a new model in your transmitter, and reset your FBL unit and start with a clean setup in it as well.
- After binding your transmitter to the receiver system used with the FBL unit, work your way through the FBL setup instructions to the point you plug in your servos.
- Now set your collective stick in the middle position, and position the servo arms as close to the correct positions you can on each servo see the following pages for arm orientations on the various servos.
- Next confirm the servos work in the correct direction, then return the collective stick to the center position.
- Now use your FBL unit to trim the servos so the arms are exactly horizontal (see pictures below).
- This procedure varies between units. Carefully label the position of the servos, then proceed with the installation of the servos as shown.

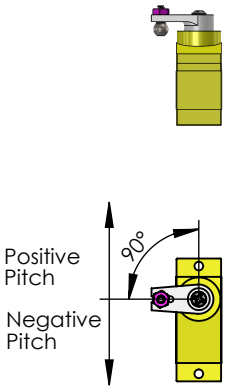
Front Cyclic Servo. (Box 02 / Bag 10)



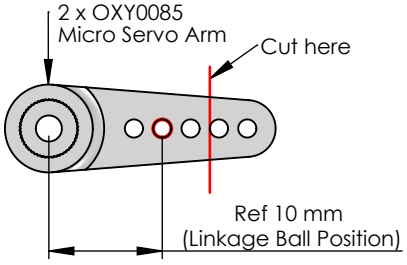
Linkage Ball Direction: Front cyclic servo Linkage Ball, must installed as shown.



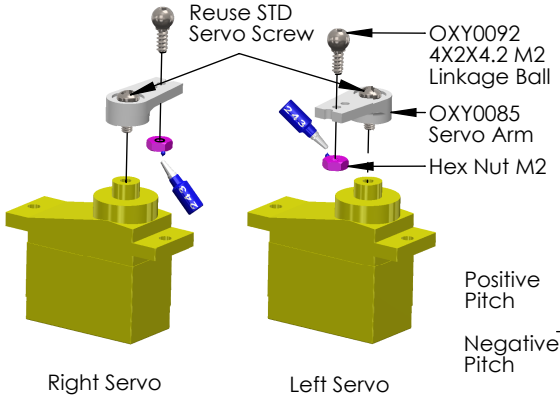
Arm position with zero deg pitch and centered cyclic stick.



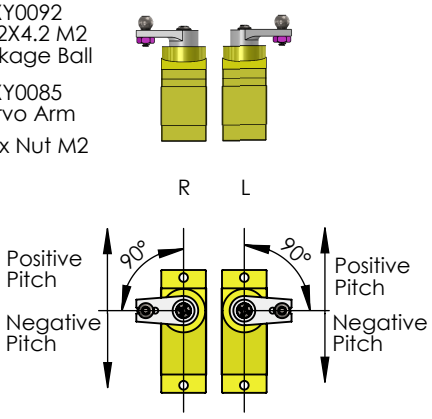
Left, Right Servos. (Box 02 / Bag 10)



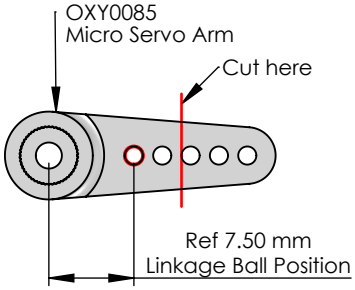
Linkage Ball Direction: Left and Right servo Linkage Balls must be installed as shown.



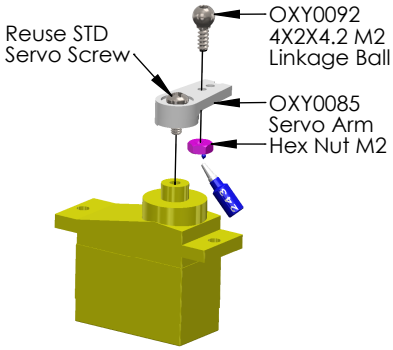
Arm position with zero deg pitch and centered cyclic stick.



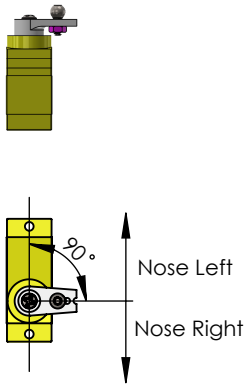
Tail Servo. (Box 02 / Bag 10)



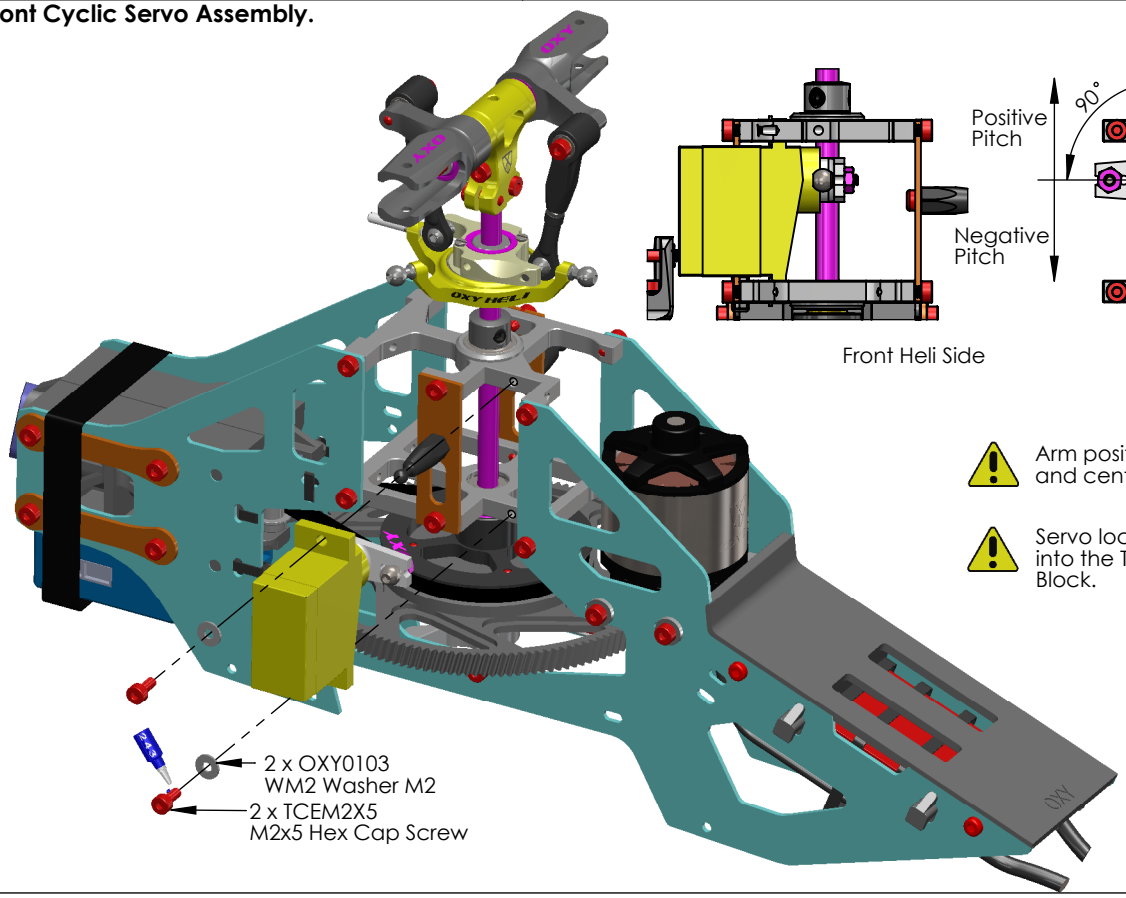
Linkage Ball Direction: The Tail servo Linkage Ball must be installed as shown.



Arm position with zero deg pitch and centered rudder stick.



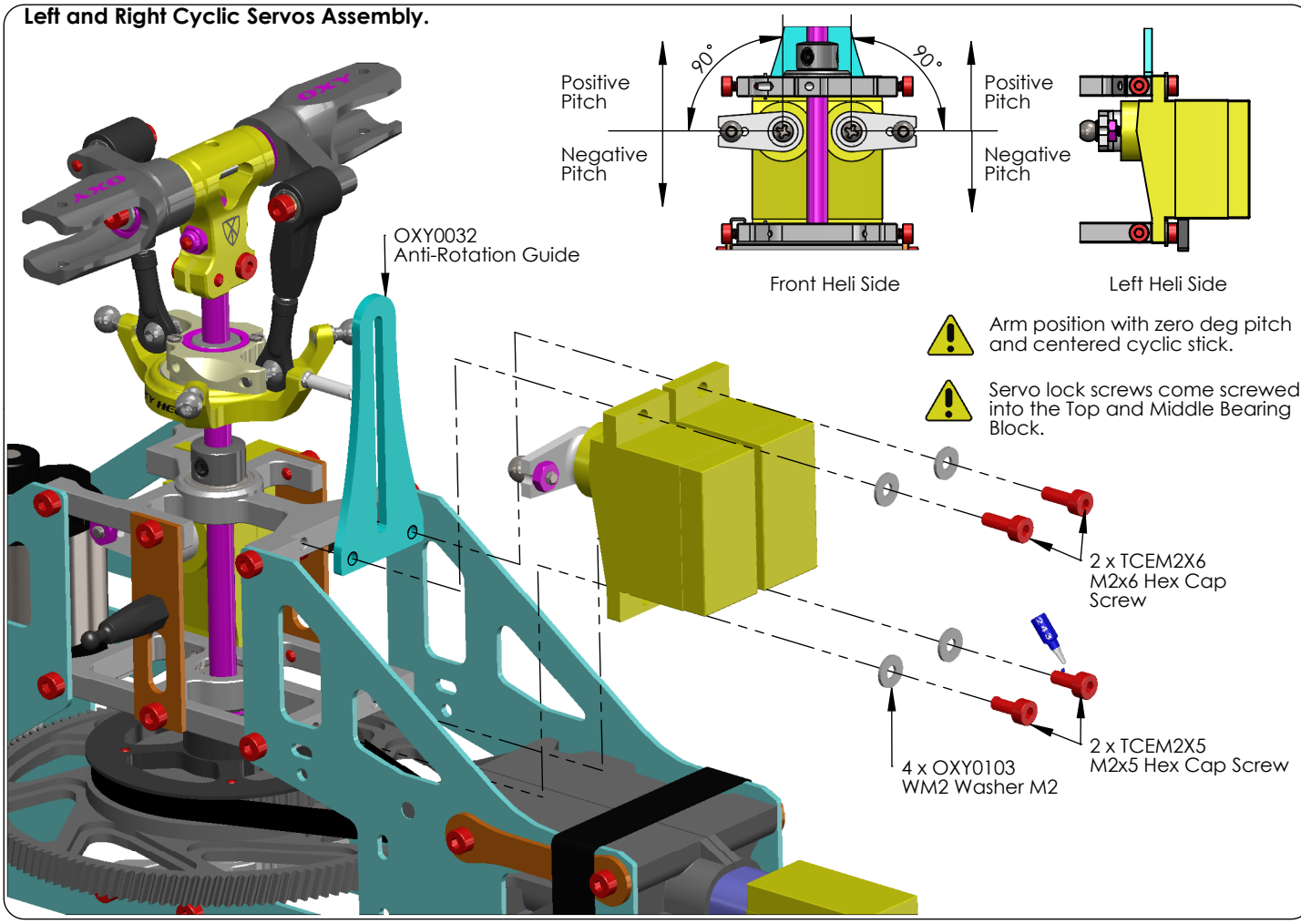
Front Cyclic Servo Assembly.



Arm position with zero deg pitch and centered cyclic stick.

Servo lock screws come screwed into the Top and Middle Bearing Block.

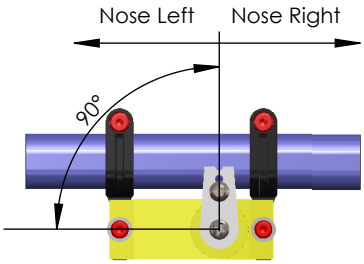
Left and Right Cyclic Servos Assembly.

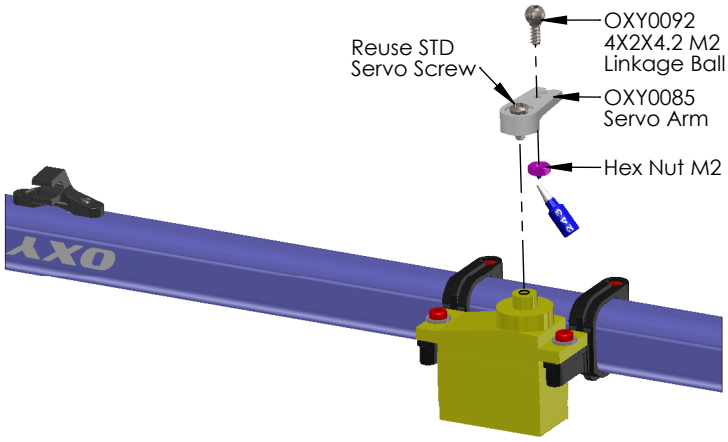


Arm position with zero deg pitch and centered cyclic stick.

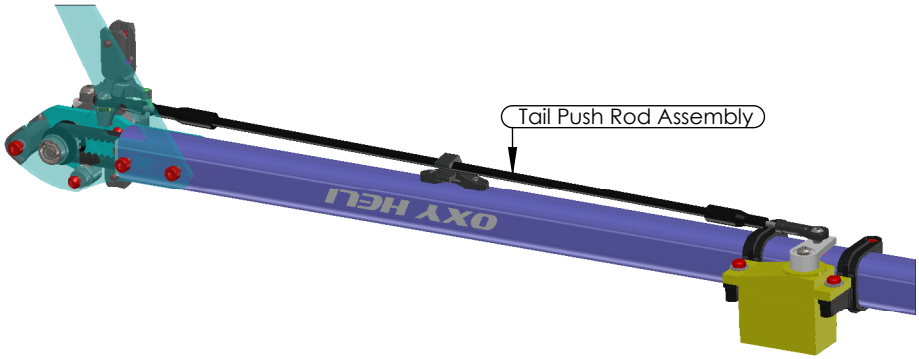
Servo lock screws come screwed into the Top and Middle Bearing Block.

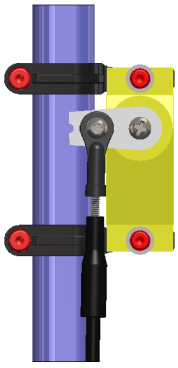
Tail Servo Assembly.





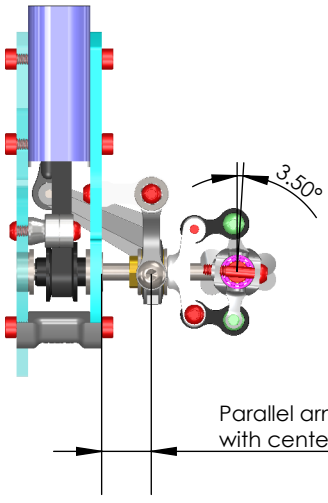
Tail Push Rod Assembly.





Bottom Heli View

Arm position with centered Rudder stick.



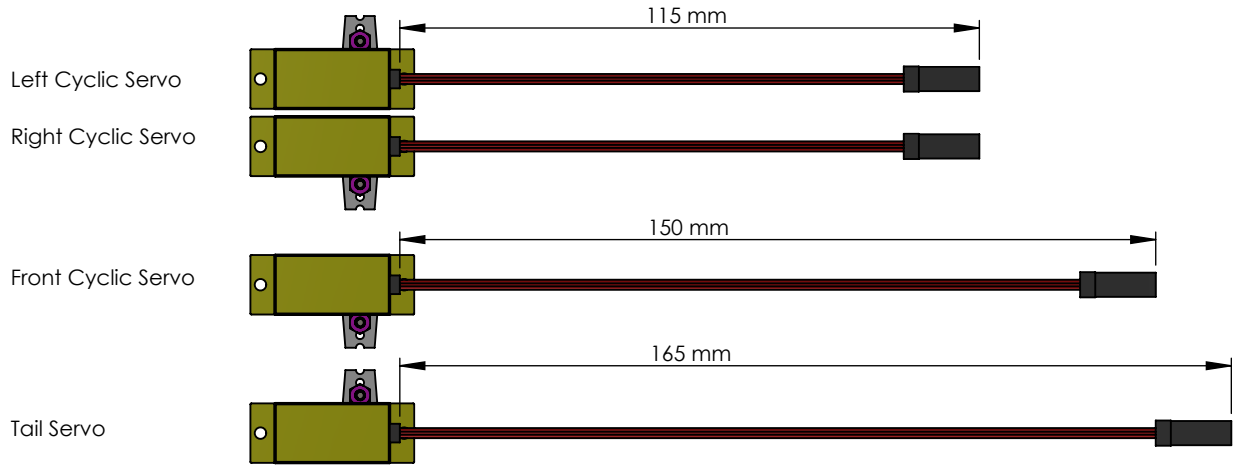
Top Heli View

With Rudder Stick centered and the Tail Servo Arm in the center position, adjust the Tail Push Rod length until the Tail Bell Crank and Tail Case Plate are parallel as shown.

The Oxy 3 Tail System has approximately 3.5° of counter torque with the Tail Bell Crank set per instructions.

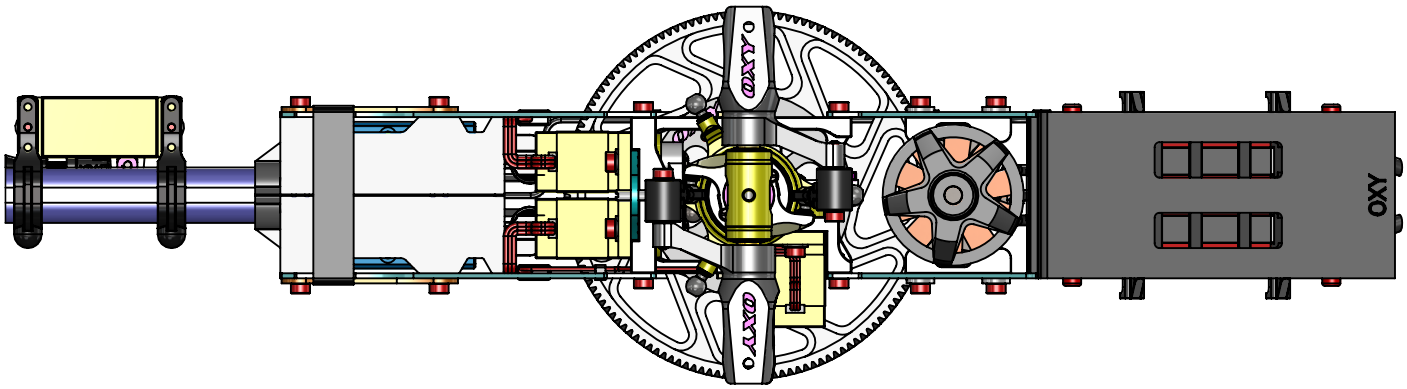
Finalize servo connection, wiring.

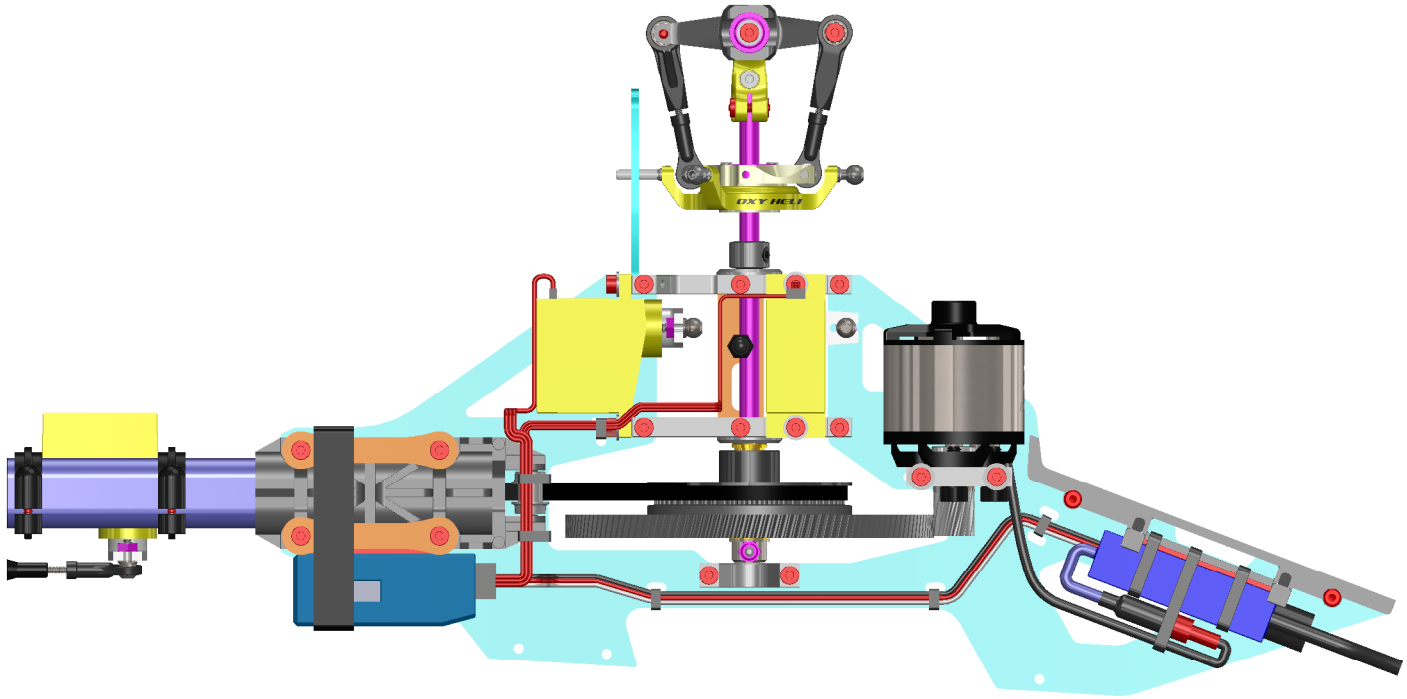
Suggest Servo Wiring Dimension



Servo Wiring Length:
For a clean wiring installation, we suggest trimming the servo wires as shown. It is important to use the correct tools: Servo Terminals and Crimp Pliers. If you don't have these specific tools, it is best to leave your servo wires at their standard length and use Cable Ties to lock and secure the wires.

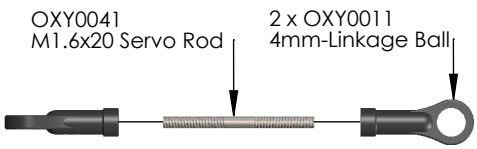
Electronics Wiring.
Follow our schematics suggestion for the cleanest wiring set up.

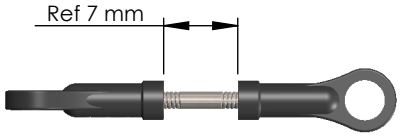




Use Cable Ties to hold and secure Servo Wires to the Main frame using our suggestions above, and the Main Frame built-in sockets. For Extra information about wiring, visit the oxyheli.com web site under Tutorials and Tips.

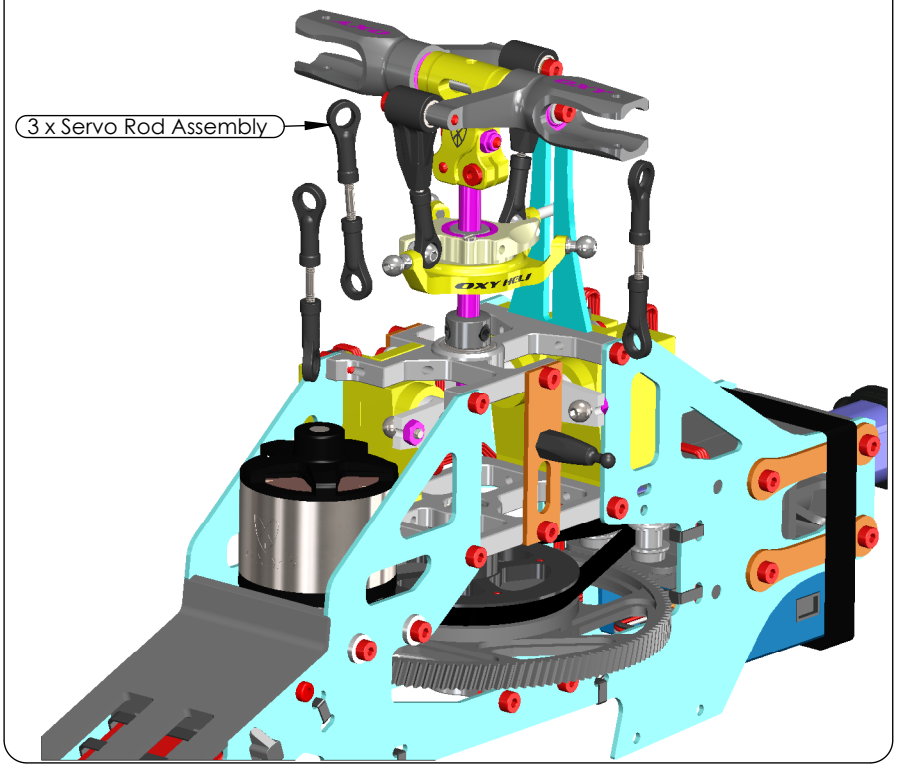
Servo Rod Assembled. (Box 02 / Bag 10)





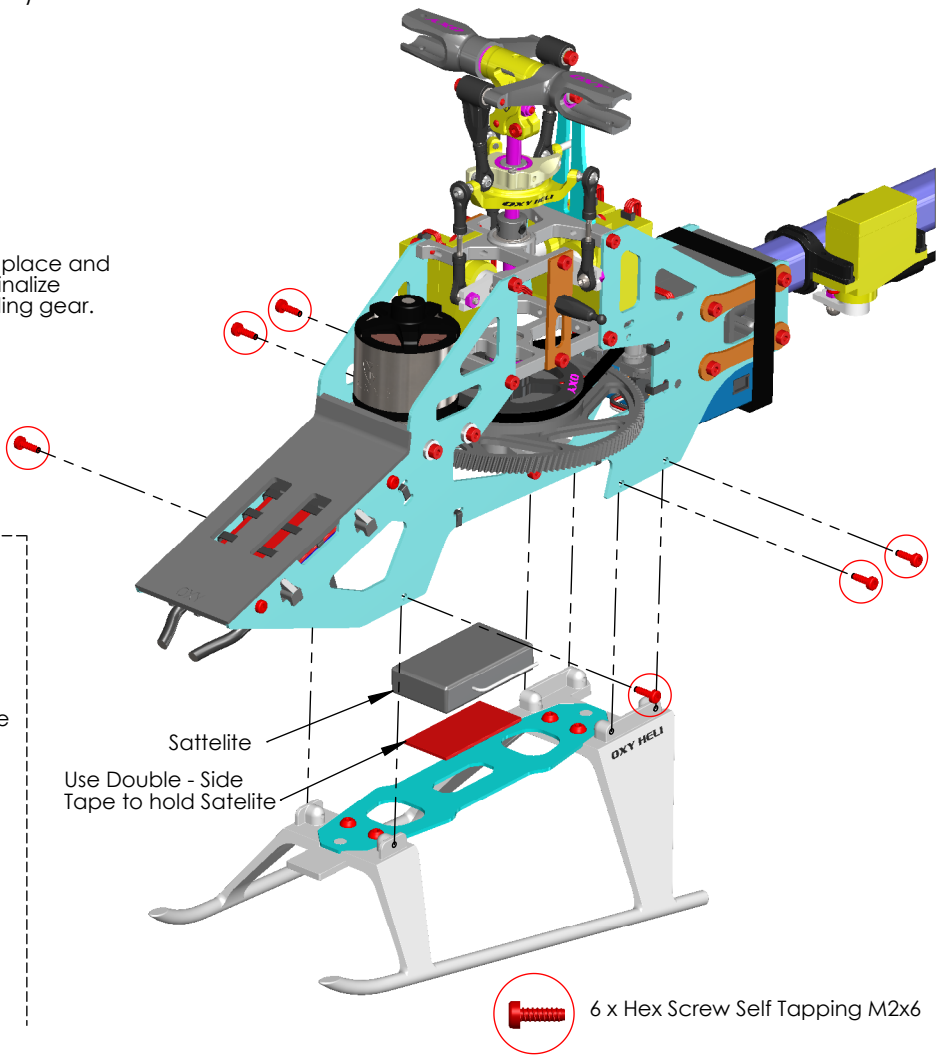
It is really important the servo rods screw onto the linkages the same amount. The Plastic ball links have a Lynx logo to give you information about turn adjustment, but have a symmetrical ball socket shape and can be installed in either direction to achieve the best fine tuning.

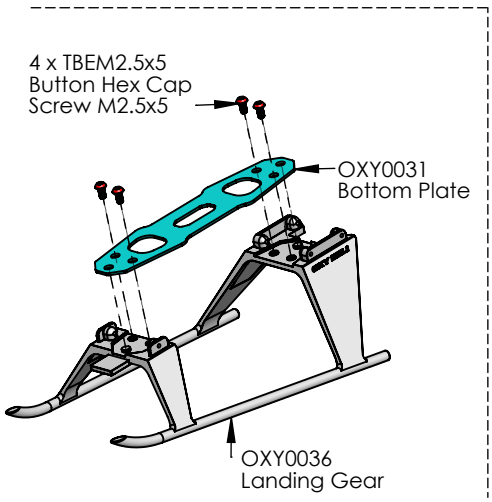
Install Sevo rod into Swash Plate and Servo.



Landing Gear Assembly. (Box 02 / Bag 11)

Once the servo connectors are in place and secured with cable ties, you can finalize the assembly by installing the landing gear.

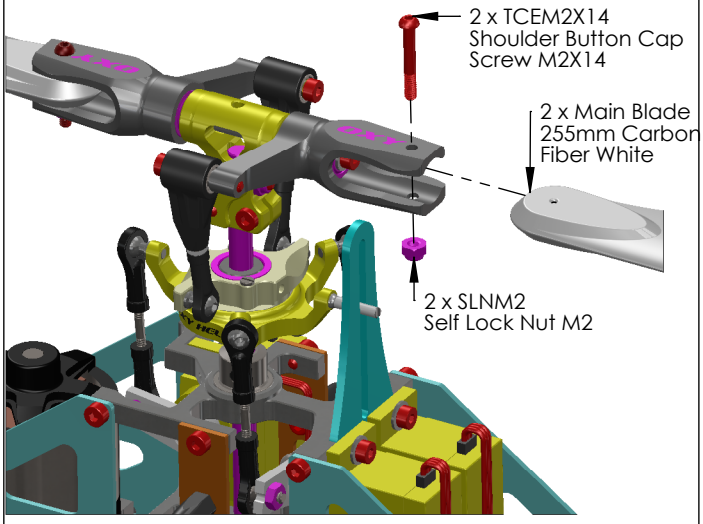




Before Flight.

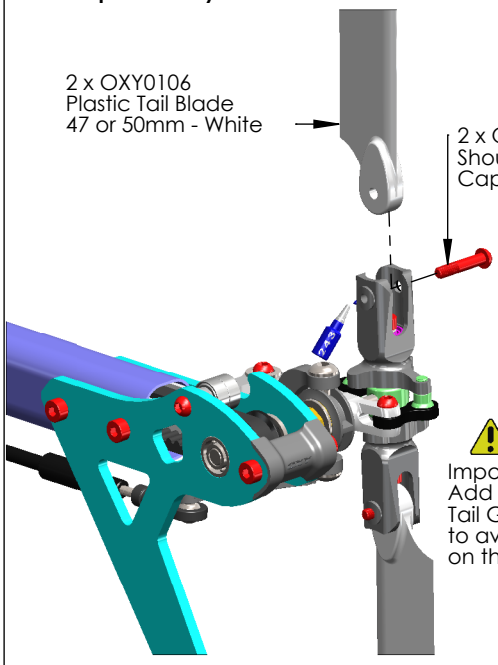
Now complete the setup of your FBL system. In the Accessories Bag you will find an Oxy 3 Swash Plate Leveler.
This Tool is designed to fit under the Swash Plate without disassembly any parts. This simple tool will both level the swash and give the Zero Pitch Position.
Starting gyro gain: The Oxy 3 was designed around famous FBL Systems (IKON / Brain / mini V-Bar), and we suggest you start with the following standard set up and adjust after test flying.
Cyclic Set Up:
Use suggested settings for 450 Helicopters and adjust after test flights.
See our table on page 15 for RPM and Pitch Settings. Cyclic Max pitch should be +/- 10.5 deg.
Tail Set Up:
Use the suggested settings for 450 Helicopters BUT start with a lower Tail Gain
IKON / Brain = 20%
Mini V-Bar = 250 Heli suggested gain.

Main Grip assembly.



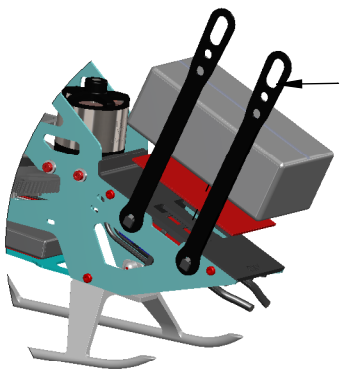
Note: The Oxy Main Grips have a 5.5mm root cavity in order to work with any standard 245 / 255 main blade root.
Use main blade shims if necessary.
Shims are usually supplied with the main blades.

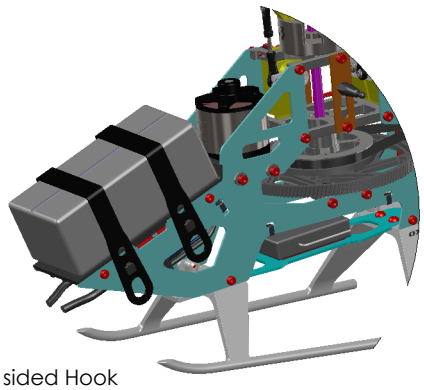
Tail Grip assembly.



Oxy tail blade dimension note: In order to assure the best performance Oxy made a custom tail blade with a 3.5mm root. If you use different tail blades with a 2.5mm root you must use shims (not included).
Information about 47 and 50mm tail blades: In the kit we include two sets of tail blades - the 47mm are designed for high head speed, the 50mm are designed for low head speed. We recommends using 47mm when head speed is higher than 4000rpm.

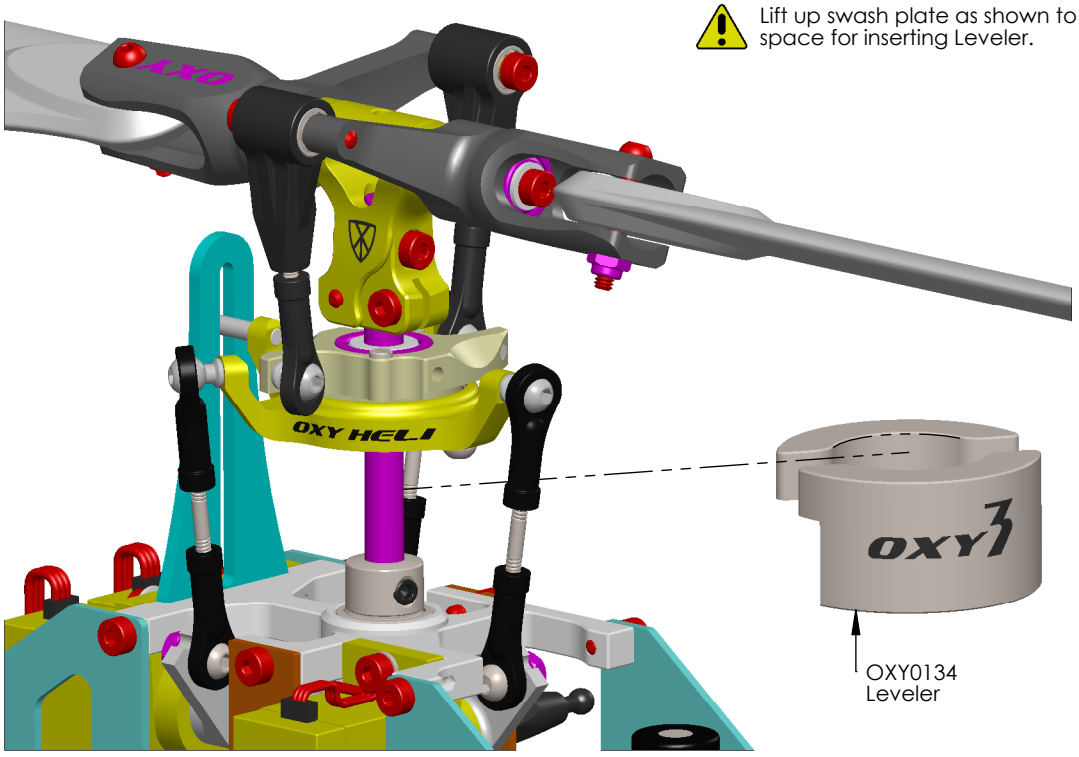
Battery Assembly.





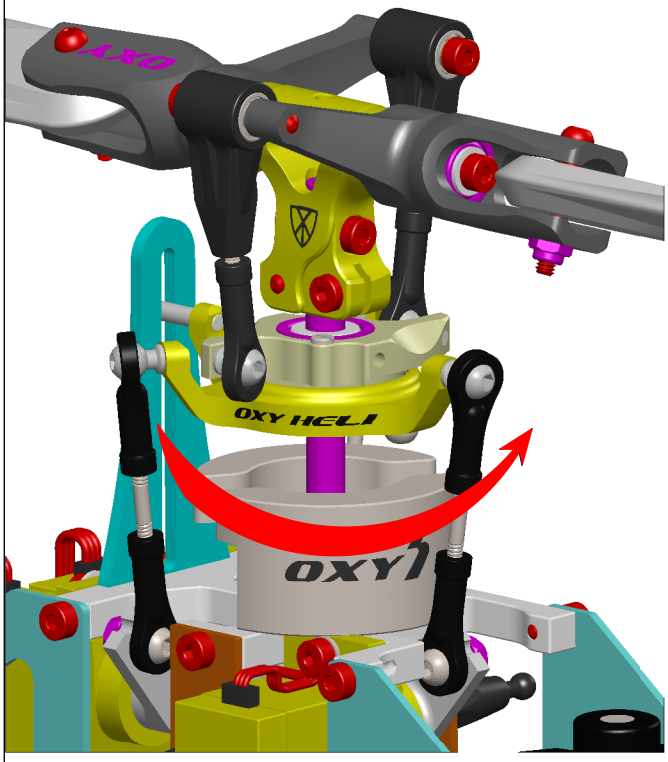
Important Note: Use both double sided Hook and Loop Velcro and the included battery straps to fully secure the battery pack.

Step 1



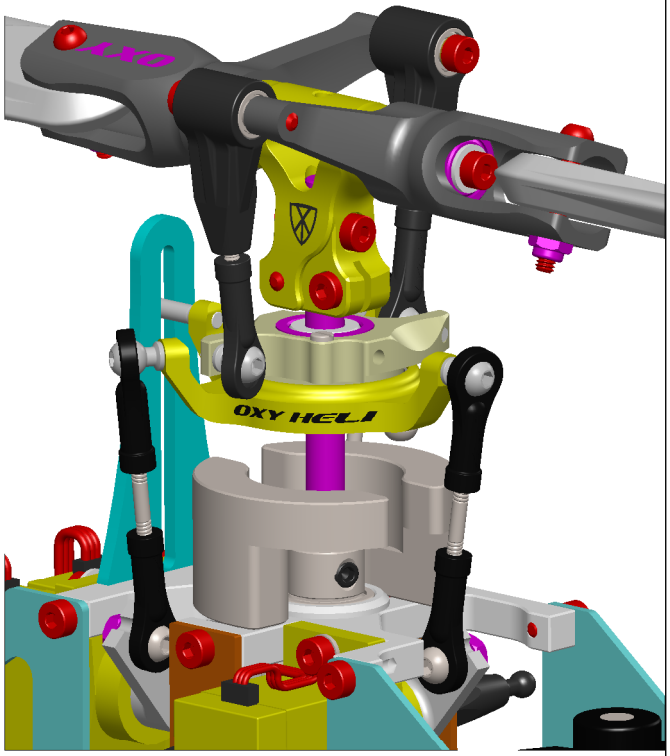
Lift up swash plate as shown to have space for inserting Leveler.

Step 2



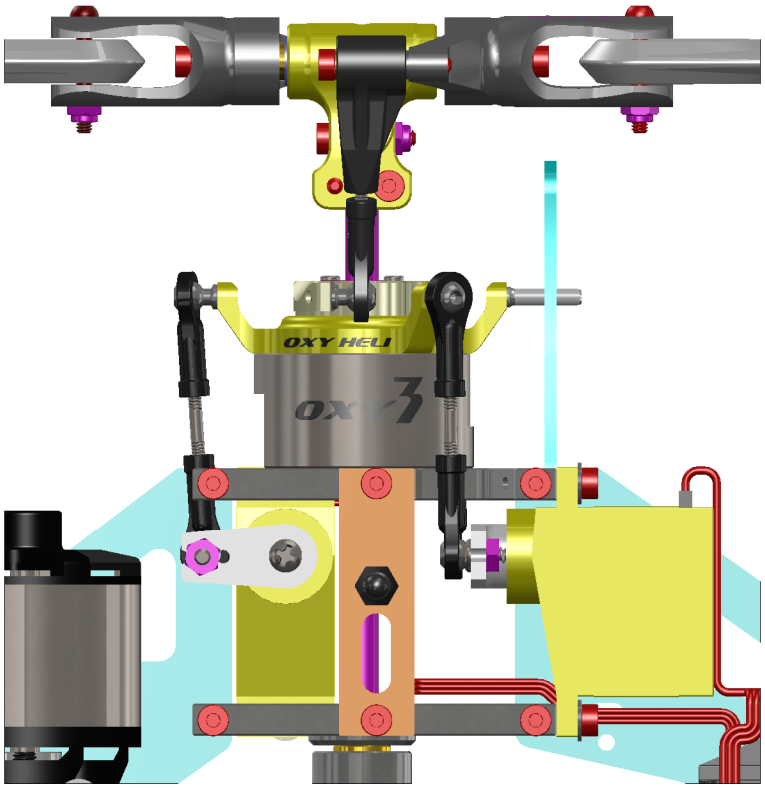
Rotate Swash Plate Leveler as shown.

Step 3



Note: pay attention screws's position at the bottm of Swash Plate. Leveler's position as shown after rotating.

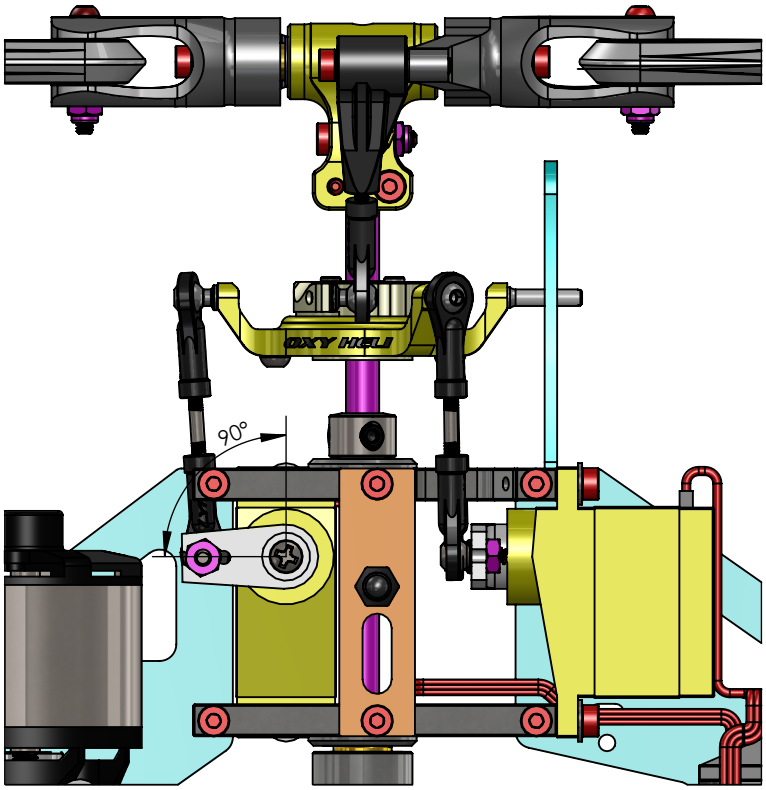
Step 4



Left heli side

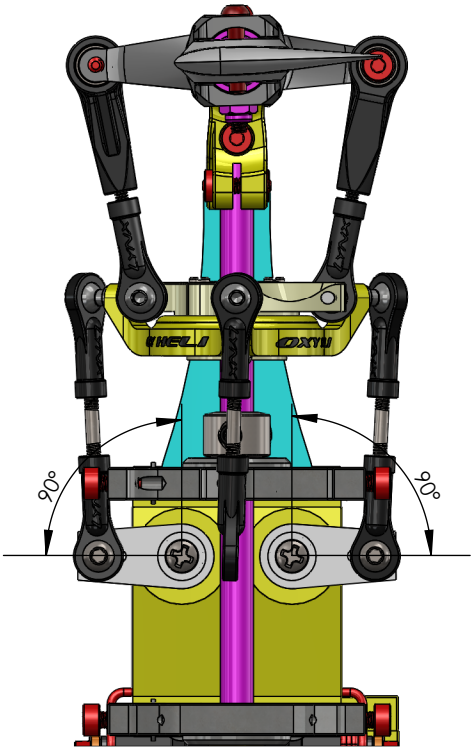
Lift Swash Plate down untill Swash Plate touch Leveler as shown.

Step 5

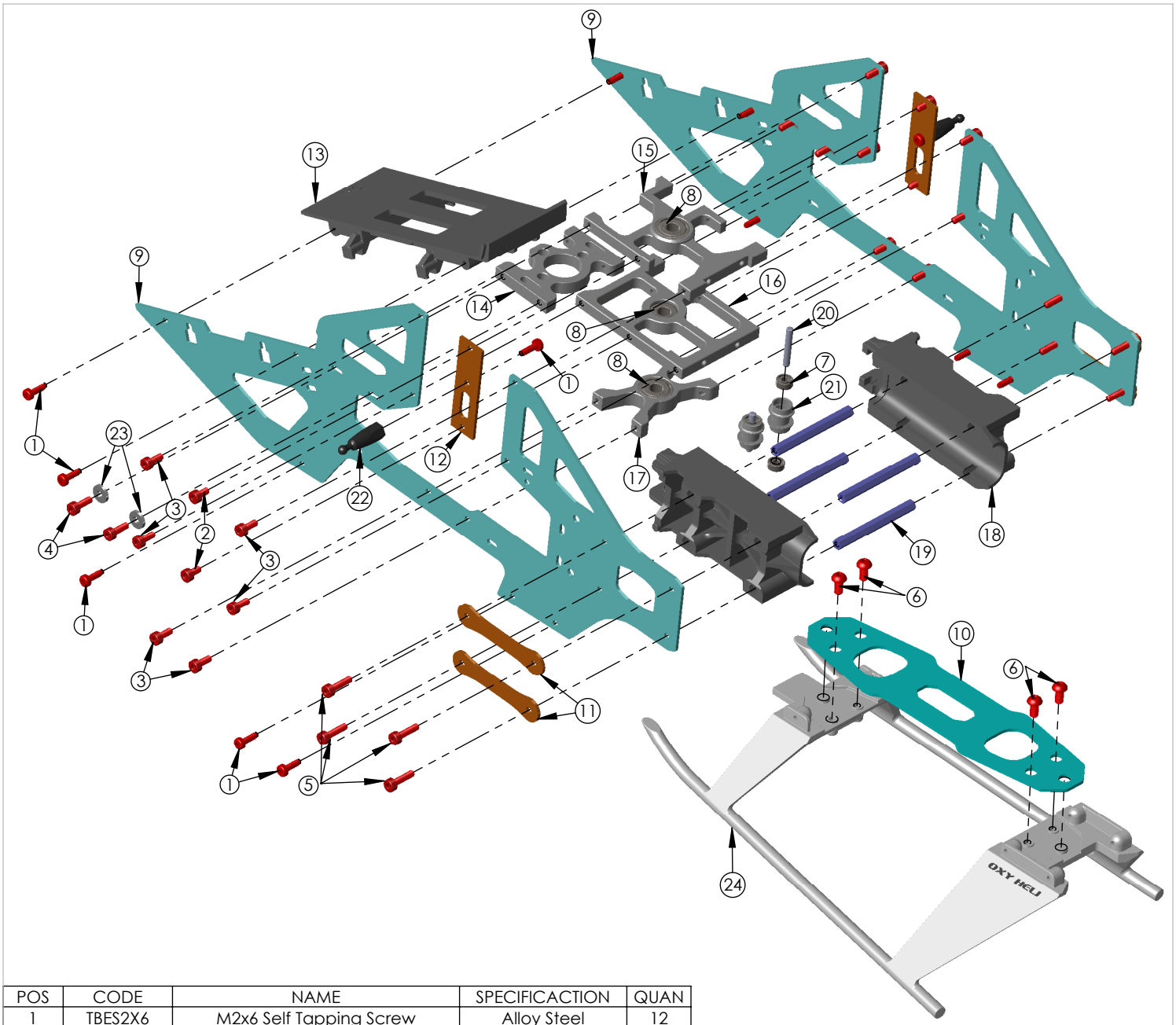


Left heli side

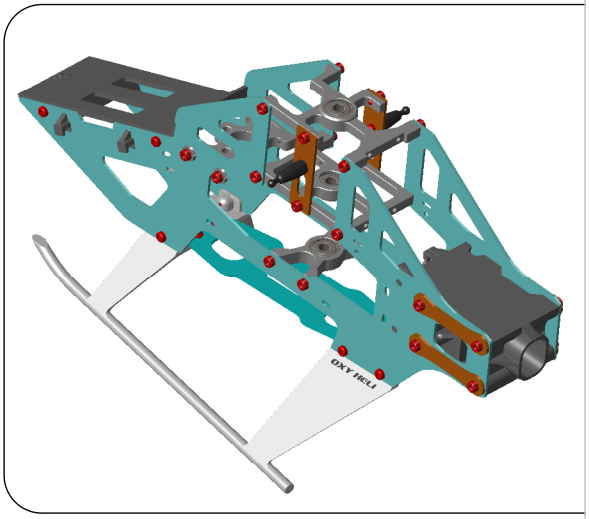
After removing Leveler, the position of servo arms as shown.

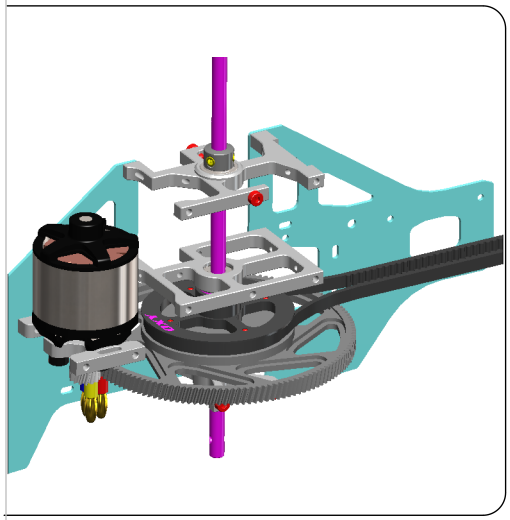


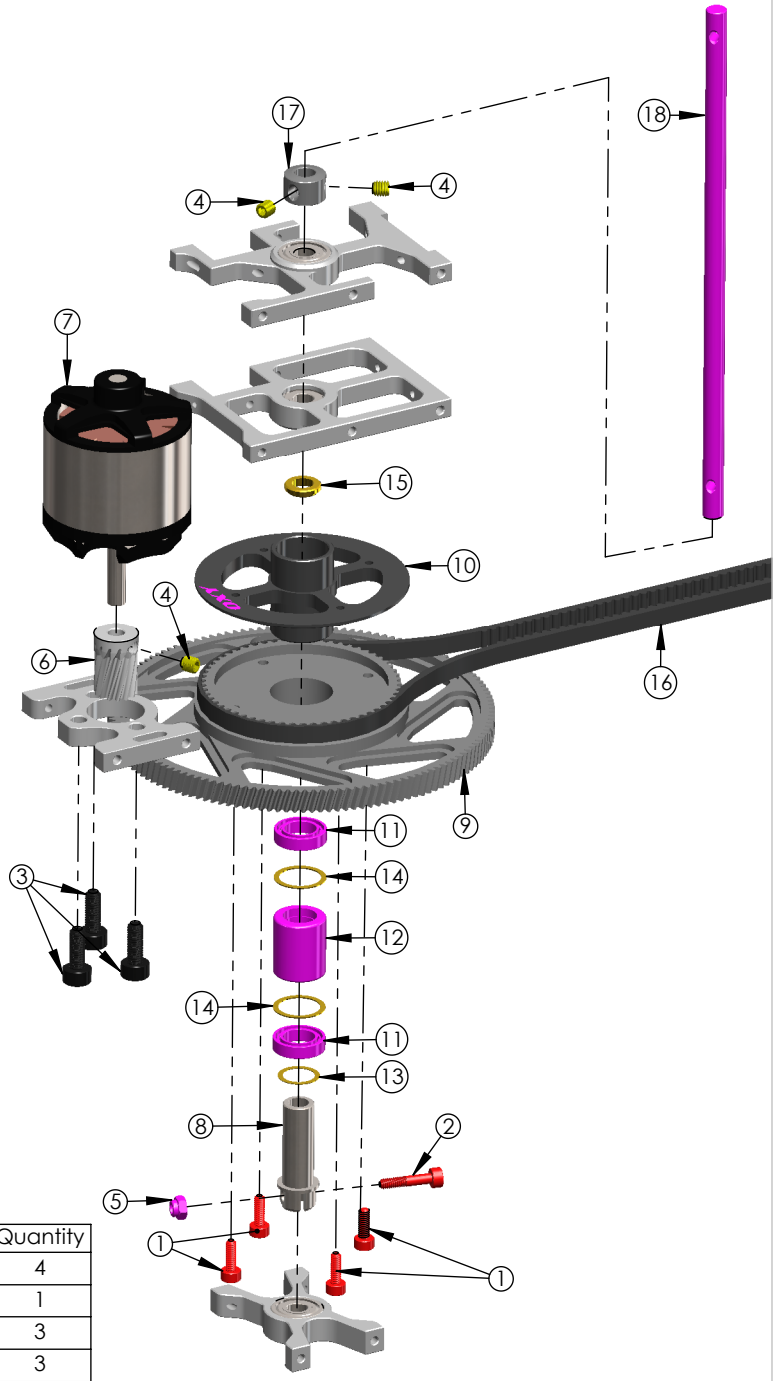
Front heli side



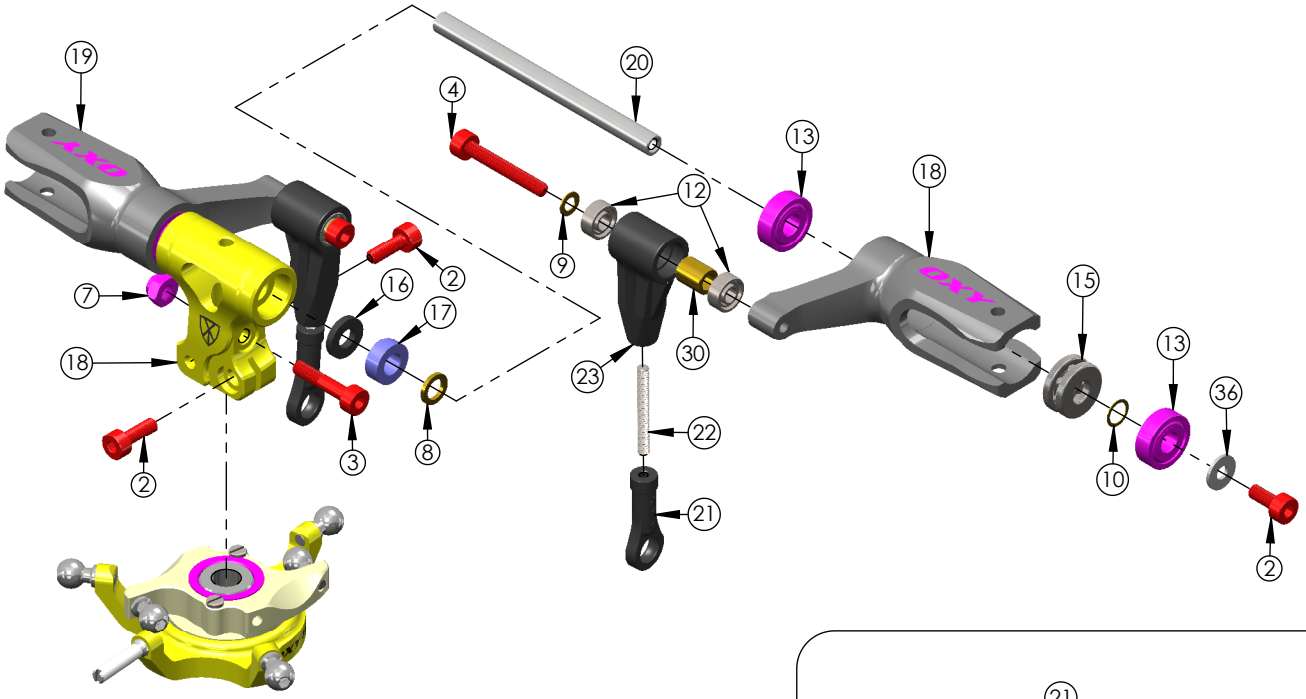
POS	CODE	NAME	SPECIFICACTION	QUAN
1	TBES2X6	M2x6 Self Tapping Screw	Alloy Steel	12
2	TCEM2X4	M2x4 Hex Cap Screw	Alloy Steel	4
3	TCEM2X5	M2x5 Hex Cap Screw	Alloy Steel	12
4	TCEM2x6	M2x6 Hex Cap Screw	Alloy Steel	4
5	TCEM2X8	M2x8 Hex Cap Screw	Alloy Steel	8
6	TBEM2.5x5	M2.5x5Button Hex Cap Screw	Alloy Steel	4
7	MR52-W2	Radial Bearing 2x5x2	STD	4
8	MR104ZZ-W4	Radial Bearing 4x10x4	STD	3
9	OXY0030	Main Frame	CF 1mm	2
10	OXY0031	Bottom Plate	CF 1mm	1
11	OXY0034	Main Frame Stifferner	CF 1mm	4
12	OXY0033	Break Way Canopy Mount	CF 1mm	2
13	OXY0035	Battery Tray	POM	1
14	OXY0029	Motor Mount	6061-T6	1
15	OXY0026	Upper Main Shaft Bearing Block	6061-T6	1
16	OXY0027	Middle Main Shaft Bearing Block	6061-T6	1
17	OXY0028	Lower Main Shaft Bearing Block	6061-T6	1
18	OXY0002	Boom Clamp	POM	2
19	OXY0022	Lock Rod	6061-T6	4
20	OXY0023	2x13.5 Pin	SST	2
21	OXY0024	Pulley Guide	POM	2
22	OXY0025	Canopy Mount	POM	2
23	OXY0081	2X5.5X1 Washer	SST	4
24	OXY0036	Landing Gear	POM	1



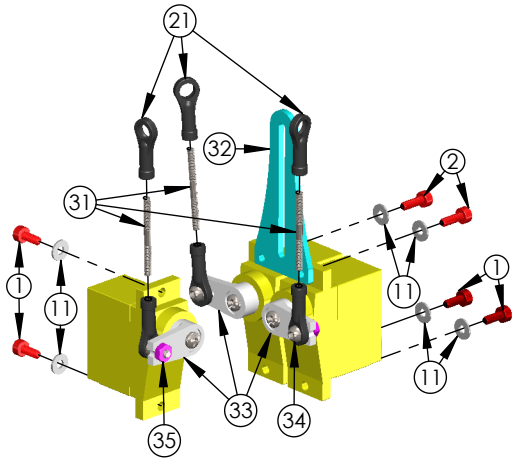




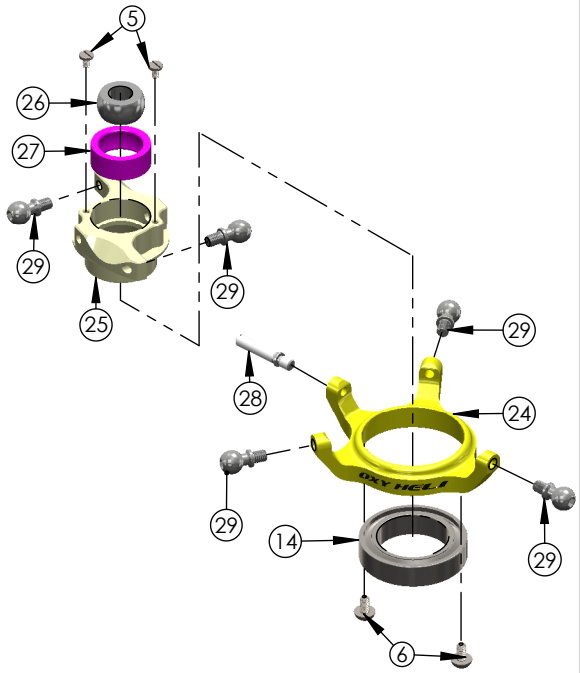
POS	COD	Name	Specification	Quantity
1	TCEM2X6	M2x6 Hex Cap Screw	Alloy Steel	4
2	OXY0076	M2x10 Hex Cap Screw	Alloy Steel	1
3	TCEM3X8	M3x8 Hex Cap Screw	Alloy Steel	3
4	SCM3X3	M3X3 Set Screw	Alloy Steel	3
5	SLNM2	Self Lock Nut M2	Alloy Steel	1
6	OXY0104	Pinion 10t- M0.5 - 3.17 Motor Shaft	Steel	1
	OXY0094	Pinion 11t- M0.5 - 3.17 Motor Shaft	Steel	1
	OXY0095	Pinion 12t- M0.5 - 3.17 Motor Shaft	Steel	1
	OXY0096	Pinion 13t- M0.5 - 3.17 Motor Shaft	Steel	1
	OXY0042	Pinion 14t- M0.5 - 3.17 Motor Shaft	Steel	1
	OXY0086	Pinion 15t- M0.5 - 3.17 Motor Shaft	Steel	1
7		LX8005 - EOX Motor 2214-3S-4100KV		1
8	OXY0041	One Way Sleeve	C40	1
9	OXY0001	Main Gear	PA66	1
10	OXY0037	Main Pulley Flange	6061-T6	1
11	MR104ZZ-W4	Radial Bearing 6X10X2.5	STD	2
12	HF0612	One Way Bearing 6X10X12	STD	1
13	OXY0040	Shim Washer 6.1X8X0.1	Brass	1
14	OXY0039	Washer 8x10x0.2	Brass	2
15	OXY0038	Auto Rotation Spacer	Brass	1
16		Timing Belt - B390MXL - 3MM Thickness		1
17	OXY0004	Main Shaft Lock Ring	SUS 304	1
18	OXY0003	Main Shaft	Hard Steel	1

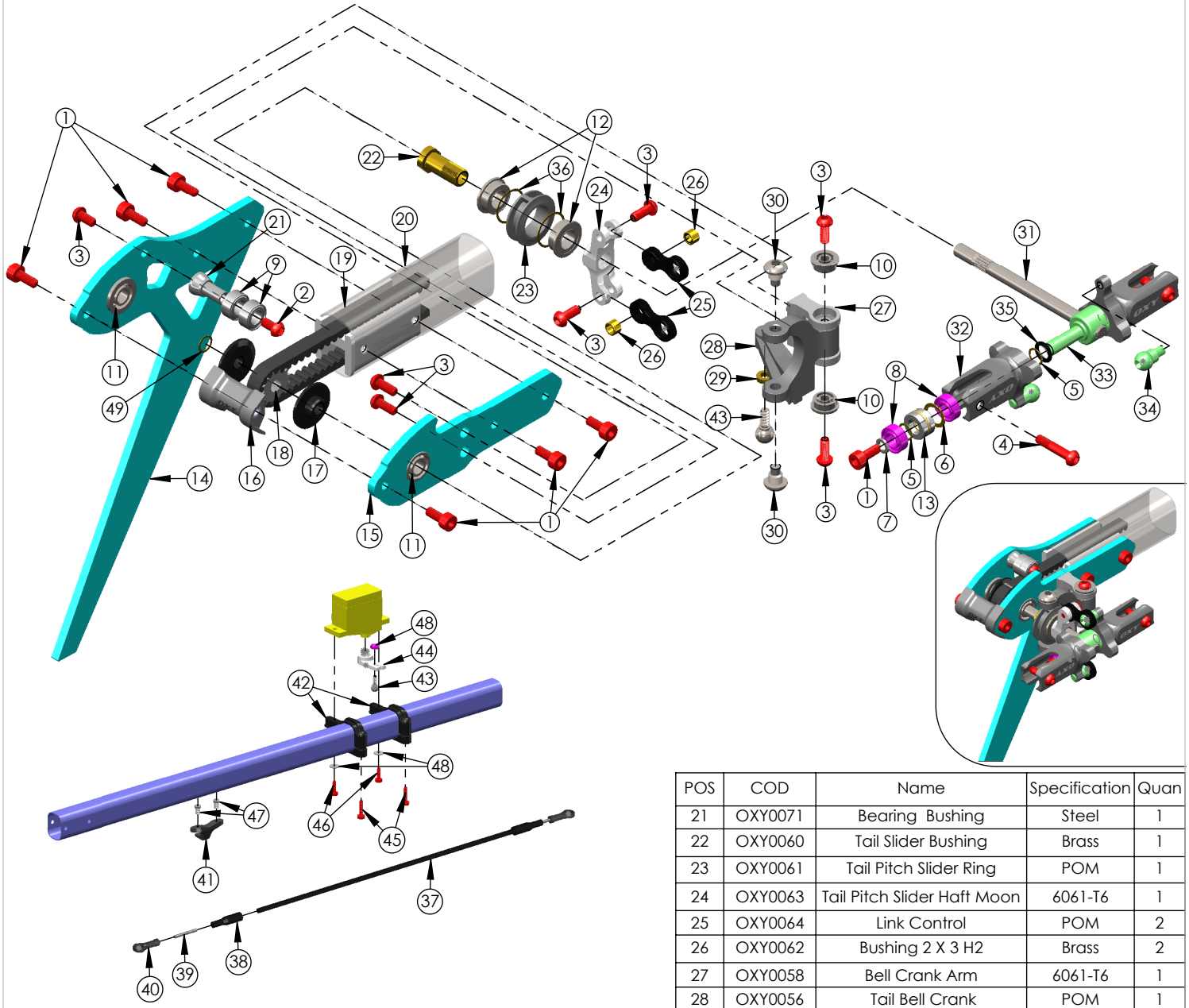


POS	COD	Name	Specification	Quantity
1	TCEM2X5	M2x5 Hex Cap Screw	Alloy Steel	4
2	TCEM2X6	M2x6 Hex Cap Screw	Alloy Steel	6
3	OXY0076	M2X10 Hex Cap Screw	Alloy Steel	1
4	TCEM2X14	M2x14 Hex Cap Screw	Alloy Steel	2
5	OXY0020	M1.2x2 Special Screw	SST	2
6	OXY0111	M1.6X3 Button Head Screw	Alloy Steel	2
7	SLNM2	Self Lock Nut M2	Alloy Steel	1
8	OXY0137	3.1x5x0.6 Washer	Brass	2
9	OXY0055	2x3.5x0.2 Washer	Brass	2
10	Oxy0054	3x4x0.1 Washer	Brass	2
11	WM2	WM2 Washer M2	SST	6
12	MR52-W2	Radial Bearing 2X5X2	STD	4
13	MR83_ZZ/W2.5	Radial Bearing 3X8X2.5	STD	4
14	MR6701_ZZ	Radial Bearing 12x18 H4	STD	1
15	F3-8G_X	thrust bearing 3x8 h3.5	STD	2
16	OXY0110	Rubber Dampener	Rubber	2
17	OXY0079	Dampener Bushing	POM	2
18	OXY0005	Center Hub	6061-T6	1
19	OXY0008	Main Grip	6061-T6	2
20	OXY0007	Spindle Shaft	SS420	1
21	OXY0011	4mm-linkage ball	POM	8
22	OXY0010	Thread Rod M1.6 X 14	SST	2
23	OXY0009	DFC Arm	POM	2
24	OXY0014	Lower Swash Plate	6061-T6	1
25	OXY0015	Upper Swash Plate	6061-T6	1
26	OXY0017	Center Ball	SST	1
27	OXY0016	Ball Holder	POM	1
28	OXY0018	Antirotation Pin	Steel	1
29	OXY0019	Swash Plate Ball	Steel	5
30	OXY0012	2x3.7x4.4 Bushing	Brass	2
31	OXY0075	Servo Rod M1.6x18	Steel	3
32	OXY0032	Anti-Rotation Guide	CF 1.5 mm	1
33	OXY0085	Servo Arm	POM	3
34	OXY0092	4X2X4.2 M2 Linkage Ball	SST	3
35		Hex Nut M2	Alloy Steel	3
36	OXY0081	2.1X5.5X1 Washer	Brass	2



Swash Plate Set





POS	COD	Name	Specification	Quan
1	TCEM2x5	M2x5 Hex Cap Screw	Alloy Steel	8
2	TBEM2X4	M2x4 Button Screw	Alloy Steel	1
3	TBEM2X5	M2x5 Button Screw	Alloy Steel	7
4	OXY0078	M2X10 Buttom Screw	Alloy Steel	2
5	OXY0054	3x4x0. 1 Shim Washer	Brass	4
6	OXY0053	4.2X6X0.2 Washer	Brass	2
7	OXY0055	2X3.5 W 0.5 Shim Washer	SST	2
8	MR63-W2	Radial Bearing 3X6X2	STD	4
9	MR63_ZZC	Radial Bearing 3X6X2.5	STD	2
10	MF682ZZ	Flange_Bearings_2x5x2.3	STD	2
11	MF73_ZZ/W3	Flange_Bearings_3x7x3	STD	2
12	MF74-ZZ	Flange_Bearings_4x7x2.5	STD	2
13	F3-6G-W3.5	Thrust Bearing 3x6 W3.5	STD	2
14	OXY0069	Vertical Fin Block	CF 2mm	1
15	OXY0070	Tail Case Bearing Block	CF 2mm	1
16	OXY0072	Tail Case Cover	POM	1
17	OXY0046	Flange Tail Pulley	POM	2
18	OXY0045	14T Tail Pulley	6061-T6	1
19	OXY0073	Tail Case Center	6061-T6	1
20	OXY0065	Square Boom 11X14X0.5X284	6061-T6	1

POS	COD	Name	Specification	Quan
21	OXY0071	Bearing Bushing	Steel	1
22	OXY0060	Tail Slider Bushing	Brass	1
23	OXY0061	Tail Pitch Slider Ring	POM	1
24	OXY0063	Tail Pitch Slider Haft Moon	6061-T6	1
25	OXY0064	Link Control	POM	2
26	OXY0062	Bushing 2 X 3 H2	Brass	2
27	OXY0058	Bell Crank Arm	6061-T6	1
28	OXY0056	Tail Bell Crank	POM	1
29	OXY0175	2x3.5x1 Washer	Brass	1
30	OXY0057	Tail Pin Screw	Steel	2
31	OXY0044	Tail Shaft	SST	1
32	OXY0051	Tail Grip	6061-T6	2
33	OXY0049	Tail Hub	SST 304	1
34	OXY0050	Linkage Ball 4 X 3 M2	SST	2
35	OR-2X1	O-RING ID 2 - W 1	Rubber	2
36	OXY0139	Shim 7x8x0.1	Brass	2
37	OXY0048	CF Rod 170 mm	CF	1
38	OXY0047	Tail Push Rod Terminal	POM	1
39	OXY0010	Thread Rod M1.6X14	SST	1
40	OXY0011	4 mm Linkage Ball	POM	2
41	OXY0067	Guide Push Rod	POM	1
42	OXY0066	Tail Servo Mount	POM	2
43	OXY0092	4X2X4.2 M2 Linkage Ball	SST	1
44	OXY0085	Servo Arm	POM	1
45	TBES2X8	M2x8 Self Tapping Screw	Alloy Steel	2
46	TBES2X6	M2x6 Self Tapping Screw	Alloy Steel	2
47	OXY0068	Pin Screw	SST	2
48		Hex Nut M2	Alloy Steel	1
49	OXY0054	Shim 3x4x0.1	Brass	1