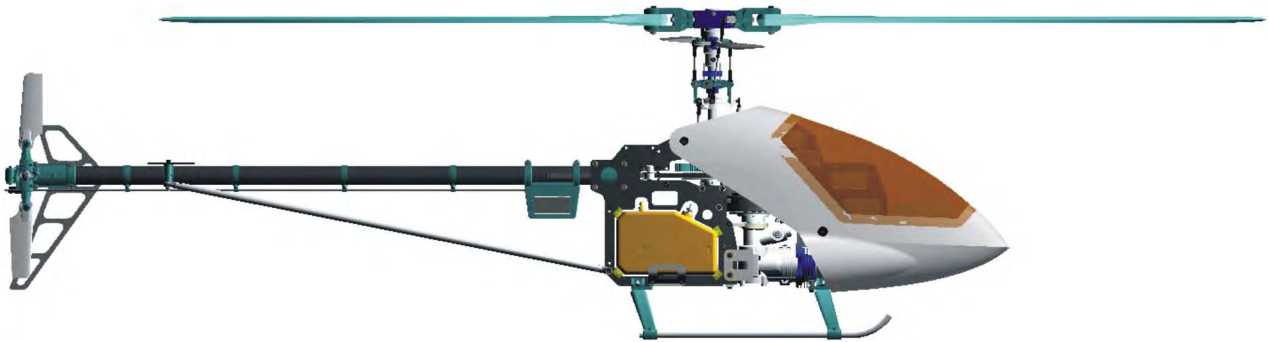


Knight 3D

说明书

INSTRUCTION MANUAL



▲ 注意事项

这个遥控模型并不是玩具

- 这个机器包含一个高速旋转的旋翼，并会造成危险。你需要为此模型的组装、安全（飞行地点、频率）检查及正确调校负责。
- 请在儿童接触不到的地方组装此模型。
- 运作前后都必需做足安全措施。在每次飞行后，请检查螺丝和螺母有否松脱，及零件有否磨损。为使本模型能安全运作，请即时更换、维修或调校损坏的零件。
- 请只用本公司所制造的零件作更换。使用其它公司零件或会造成意外或模型运作不良，本公司并不会对此所造成的意外或撞毁承担任何责任。
- 即使在完成安装后，请继续保留本说明书作参考。

传动比：8.7:1:4.8
起飞重量：3.2kg
发动机：46-60
桨：600-620mm

▲ SAFETY PRECAUTIONS

This radio control model is not a toy.

- The rotor on this model rotates with high speed and would possibly be dangerous. You are responsible for the safety operation check, assembly and adjustment of this model.
- Assemble this model only in places out of the reach of children.
- After every flights, check screws, nuts and parts for wear and looseness. For safety, damaged parts should be replaced or repaired immediately.
- For replacement, use only parts supplied by Compass Model. Parts not made by Compass Model could cause malfunctions or crashes of the model. Compass Model do not take any responsibility for any damage so caused.
- Keep this instruction manual as reference even after assembly.

Transmission rate: 8.7:1:4.8
Take-off Weight: 8.8pounds
Engine: 46~60
Blade Size: 600~620mm

本手册内容可有变更，无需通知。

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未曾包括的其他必需品

NECESSARY ITEMS NOT INCLUDED IN THIS PACKAGE

以下各项并不包括在本产品内,为了正常使用,请自行购买。

In order to operate this model, you need to purchase the following items which are not included in the package.

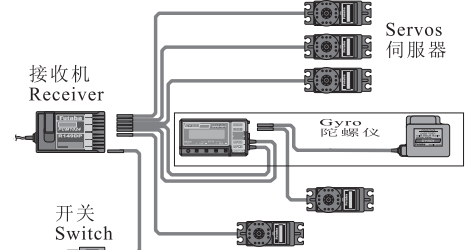
油动直升机专用遥控设备及干电池

Radio for engine-powered R/C helis, and dry batteries.

- 请使用油动直升机模型专用遥控器, 伺服器5个, 陀螺仪一个。
- 使用方法请参照遥控器说明书。
- This model requires a EMS System radio for Engine-powered R/C heli with 5 servos and 1 gyro.
- For more information of the radio, please refer to the radio sets manual.

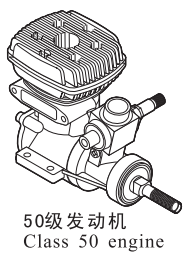


Transmitter
发射机

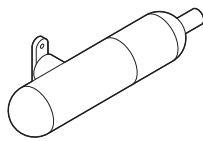


接收机
Receiver
开关
Switch
干电池
Ni-Cd Battery

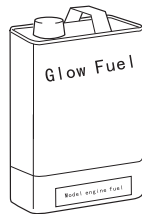
注意
Caution
使用非油动直升机模型专用遥控设备可能造成重大事故。
USE ONLY RADIO FOR ENGINE-POWERED HELI MODEL (ANY OTHER RADIO IS PROHIBITED!)



50级发动机
Class 50 engine



50级排气管
Muffler for 50 class

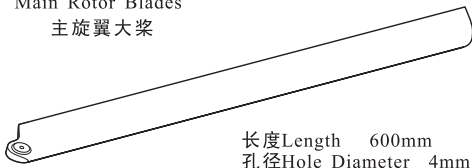


Glow Fuel
遥控模型专用燃料

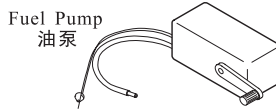
1. Use only GLOW fuel for model engines,
*Do not use gasoline or kerosine.
*GLOW fuel is highly flammable and explosive, always use with care!
2. Always keep the fuel and empty fuel cans away from children.
3. Never refuel before the engine has cooled down.
4. Be careful not to drink or allow the fuel in contact with eyes.

1. 只可以使用遥控模型专用燃料。
*不可以使用煤油或汽油。
*此燃料是高挥发性,易燃,易爆物品。使用时务必注意安全。
2. 注意保持燃料及其容器远离儿童。
3. 一定要在发动机冷却后才可加油。
4. 该燃料不可饮用,注意不要使其接触眼睛。

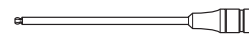
Main Rotor Blades
主旋翼大桨



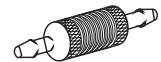
长度Length 600mm
孔径Hole Diameter 4mm
厚度Thickness 12mm



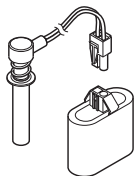
Fuel Pump
油泵



Starter Shaft
启动头



Fuel Filter
滤油器



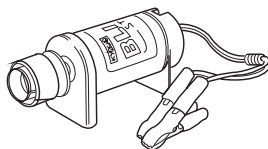
Plug Heater
加热器



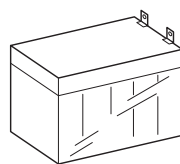
Loctite
Loctite 胶水



Grease
润滑油



Engine Starter
起动电机



Battery for
Engine Starter
蓄电池



Instant Glue
厌氧胶水

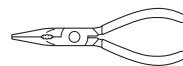
装配工具 Tools necessary for assembly

使用工具时注意安全! Handle the Tools Carefully!

六角扳手 (1.5mm, 2mm, 2.5mm, 3mm)
Hexagon wrench (1.5mm, 2mm, 2.5mm, 3mm)



Cutter Knife
裁纸刀





Needle Nose Pliers
尖嘴钳



Screw Driver
螺丝刀



Step 1 Landing Gear & Front Plate

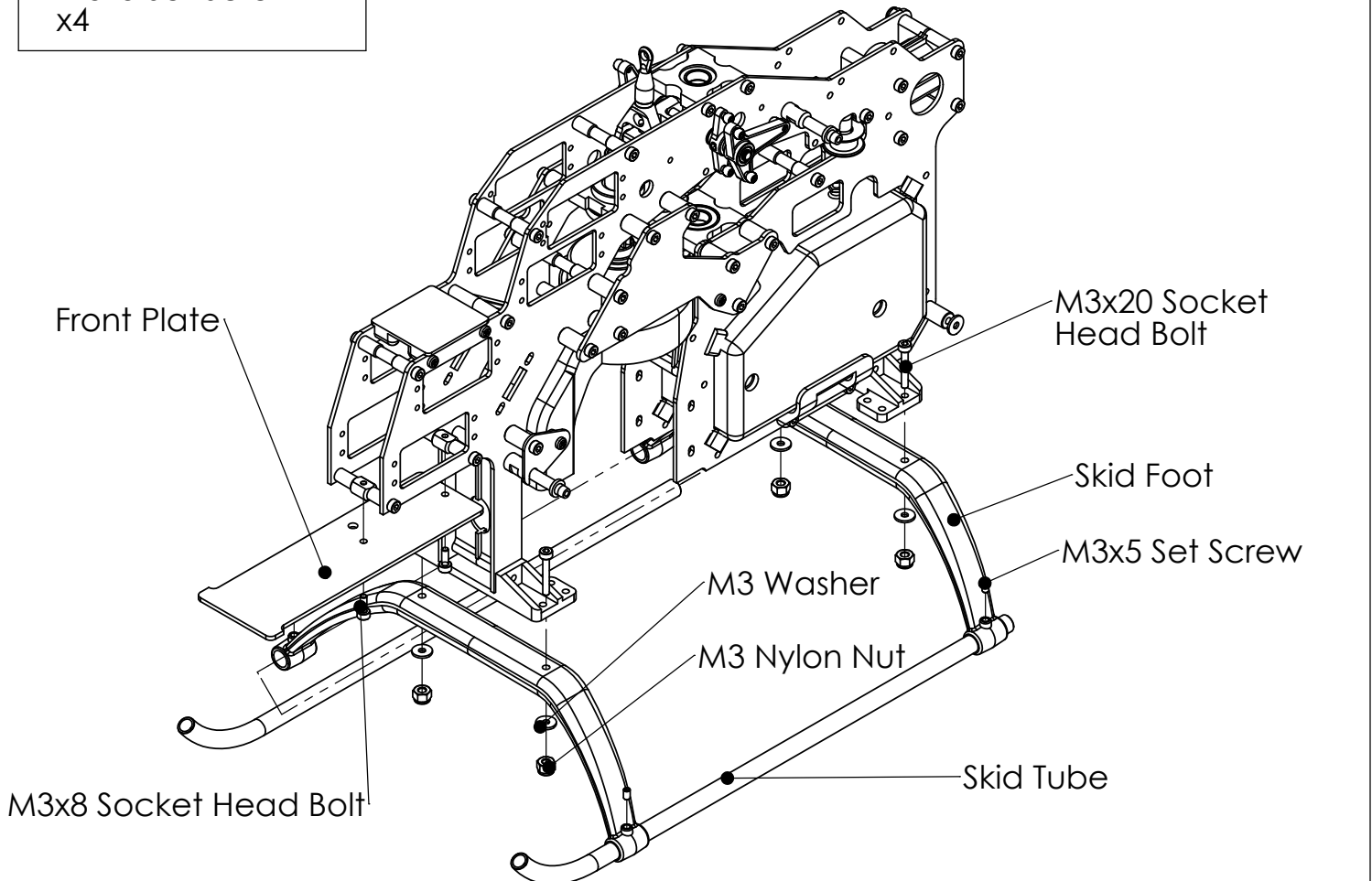
 
M3 Nylon Nut
x 4

 
M3 Washer
x 4

 
M3x20 Socket
Head Bolt x4

 
M3x8 Socket
Head Bolt x2

 
M3x5 Set Screw
x4



- Use M3x20 Socket Head Bolts, Washers and Nylon Nuts to fix the Skid Foot on the frame body.
- Insert the 2 alumine Skid Tube into the Skid Foot, and use the M3 set Screw tight them.
- Use M3x8 Socket Head Bolts to fix the front plate on the body. **Locktitle is needed here.**

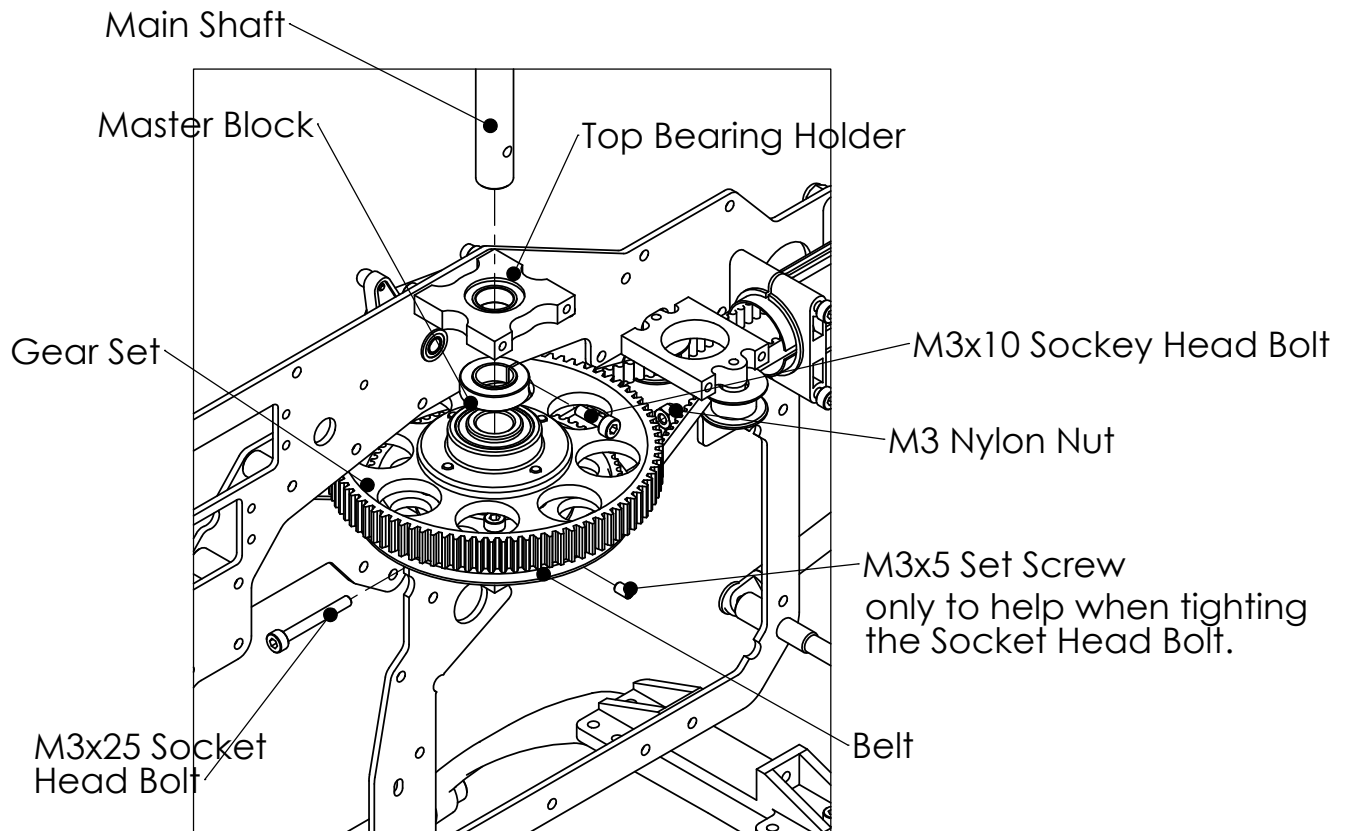
Step 4. Main Shaft, Gear Set and Belt

 
M3x10 Socket
Head Bolt x1

 
M3x25 Socket
Head Bolt x1

 
M3x5 Set
Screw x1













 
M3 Nylon
Nut x1

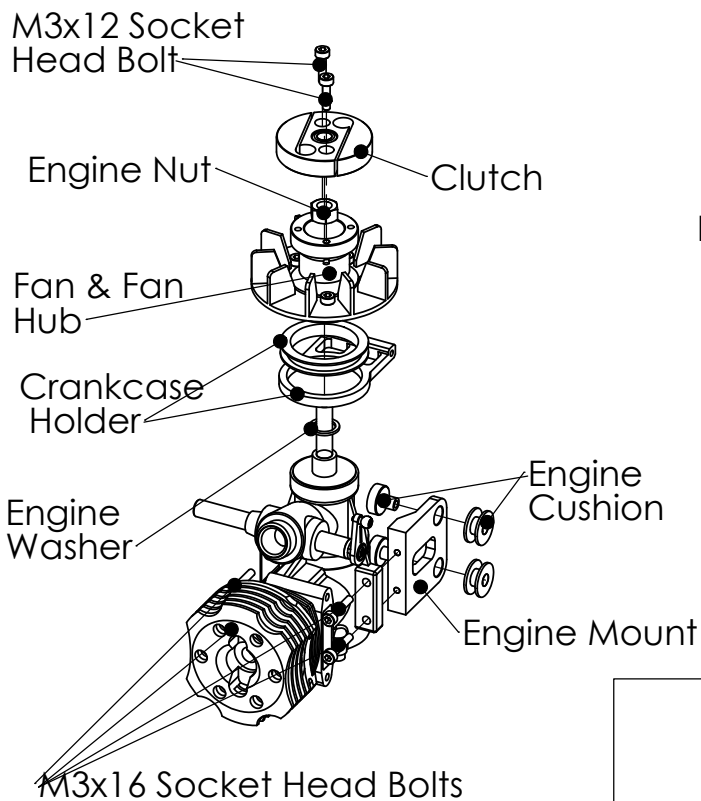


To show this step clearly, some irrelevant parts have been removed in the drawing above.

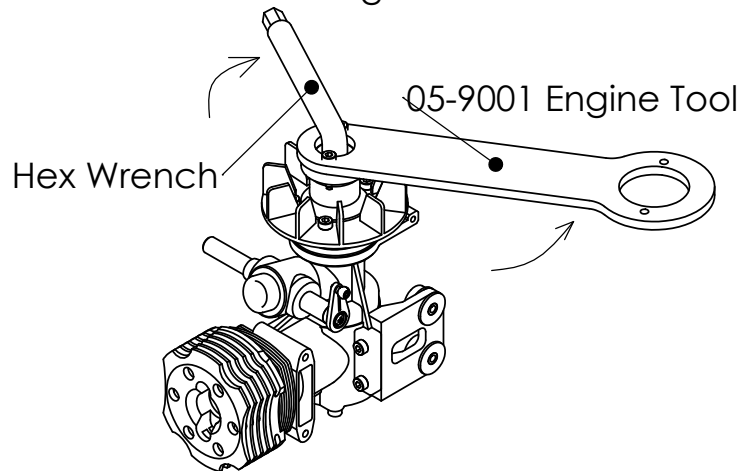
- Pull up the belt, circle it around the Pulley Wheel under the main Gear.
- As showed above, insert the main shaft, use M3x25 bolt and Nylon Nut to fix the Gear Set on the right position. Note: the M3 set screw is used to help inserting the Socket Head Bolt into right directoin. It is not needed to tight it up after installing the Gear Set.
- Tight up the Master Block underneath the Top Bearing Holder so that the main shaft can not move vertically. **Locktitle is needed on the M3x10 Socket Head Bolt.**

Step 2. Install the Engine

					
M3 Nylon Nut x 4		M3 Washer x4		M3x16 Socket Head Bolts x8	
					
M3x10 Socket Head Bolts x4		M3x12 Socket Head Bolts x2		M3x8 Socket Head Bolts x2	



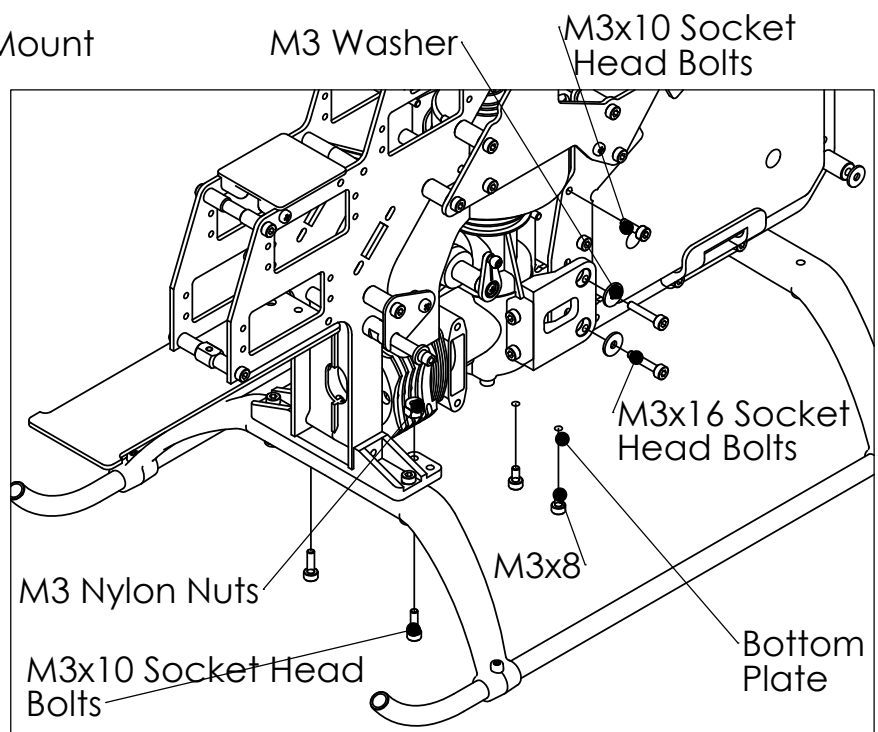
An Engine Tool is needed to tight the Fan Hub on the Engine.











a) Assemble the Clutch, Fan Hub, Fan, Engine, Crankcase Holder, Engine Mount together.

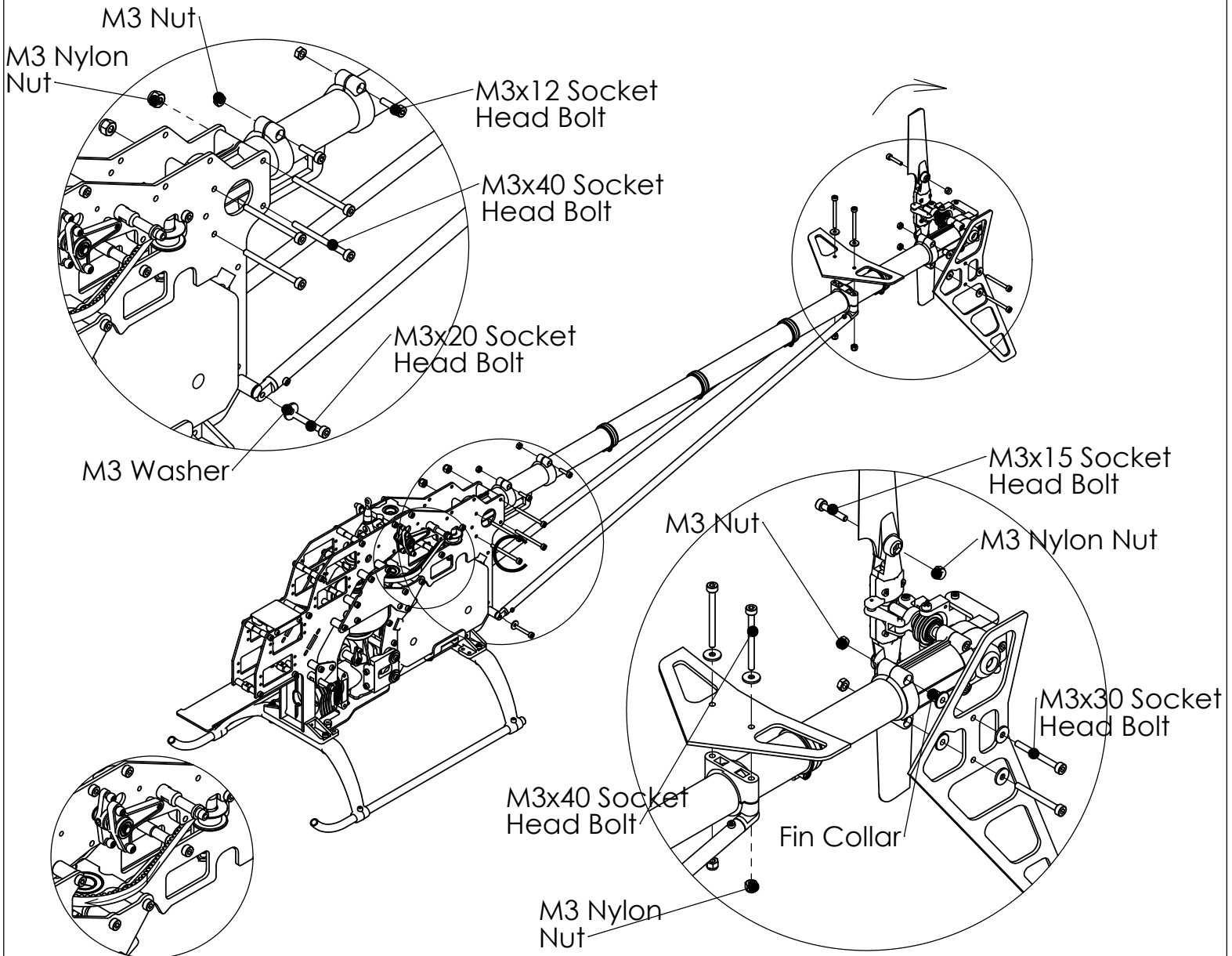
b) Insert the whole Engine Set from the bottom up, Fix the Engine Mount on the body. Then install the Bottom Plate on the body.

Note: Locktitle is need on all Bolts in this step.



Step 3 Tail, Boom, Belt and Fins

				
M3 Nylon Nut x 8	M3 Washer x4	M3 Washer x4	M3x40 Socket Head Bolts x6	M3x15 Socket Head x2
				
M3x12 Socket Head Bolts x2	M3x30 Socket Head Bolts x2	M3 Nuts x4		

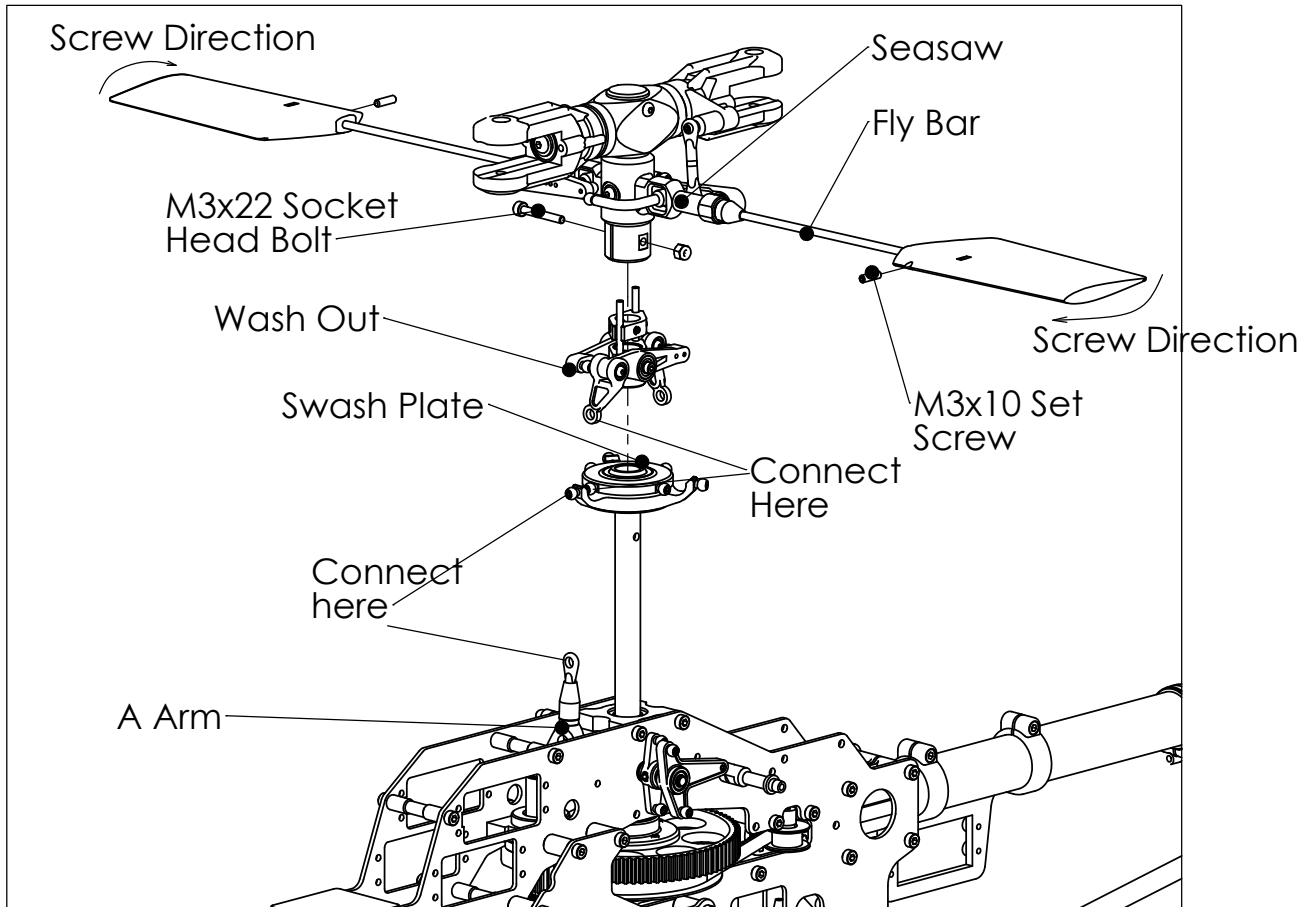


a) Install the Boom, Tail Gear Box with Belt on the Body.

b) then install the Fins, Boom Supporters on the boom. Then fix the tail boom supporters on the body, locktitle is need for the bolts here.

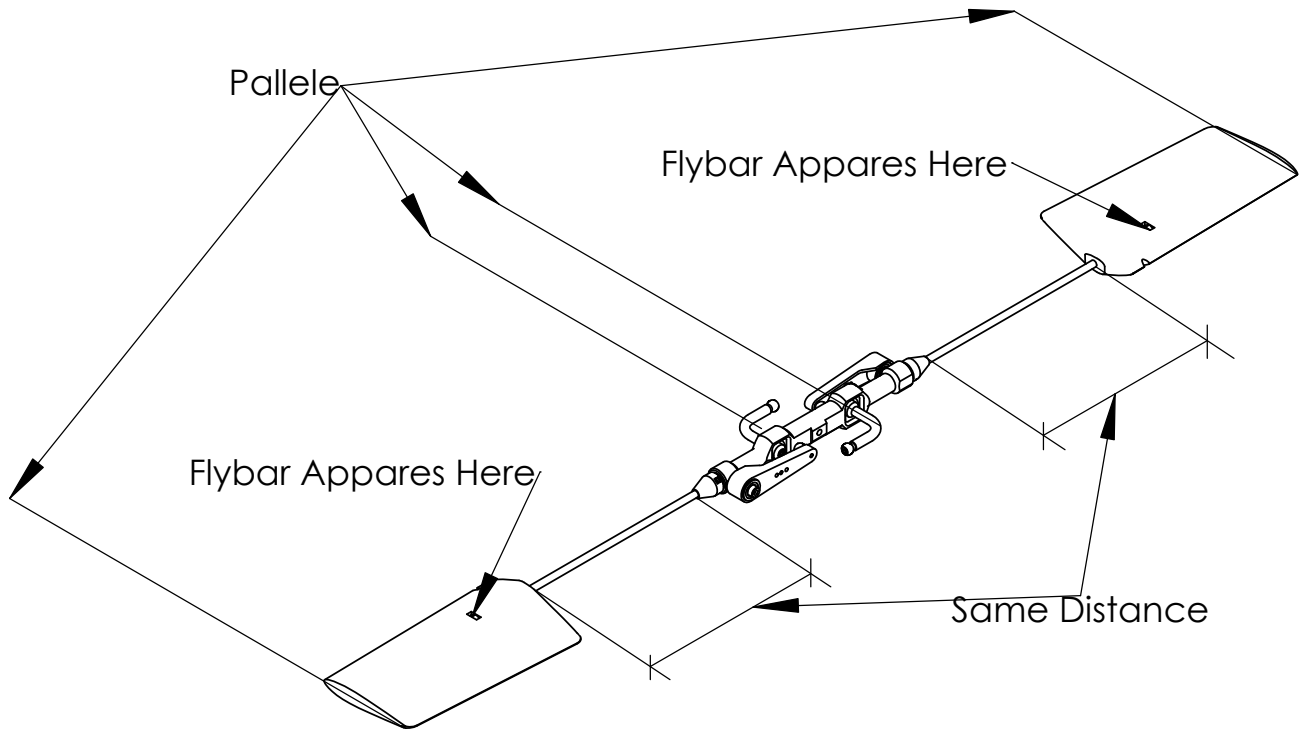
Watch out the belt direction, make sure when the belt turns at the direction as showed, the tail blades turn back wards.

Step 5. Rotor Head, Swash Plate, Washout & Paddle



- install the Swash Plate, Wash Out, Rotor head on the main shaft. Tight the M3x22 Socket Head Bolt to fix the rotor head position.
- Install the Fly Bar into the Seasaw. Use the Flybar to push the stocked short shaft in the Seasaw out.
- Screw the paddle on the Flybar in the showed direction. Tight the M3 Set screw to fix the Paddle position.
- Connect the ball link on the wash out with the Swash Plate inner ring. Connect the ball link on the A Arm with the Swash Plate outer ring.

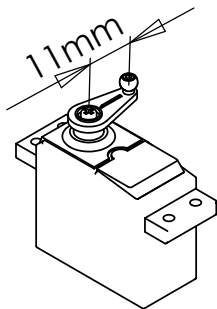
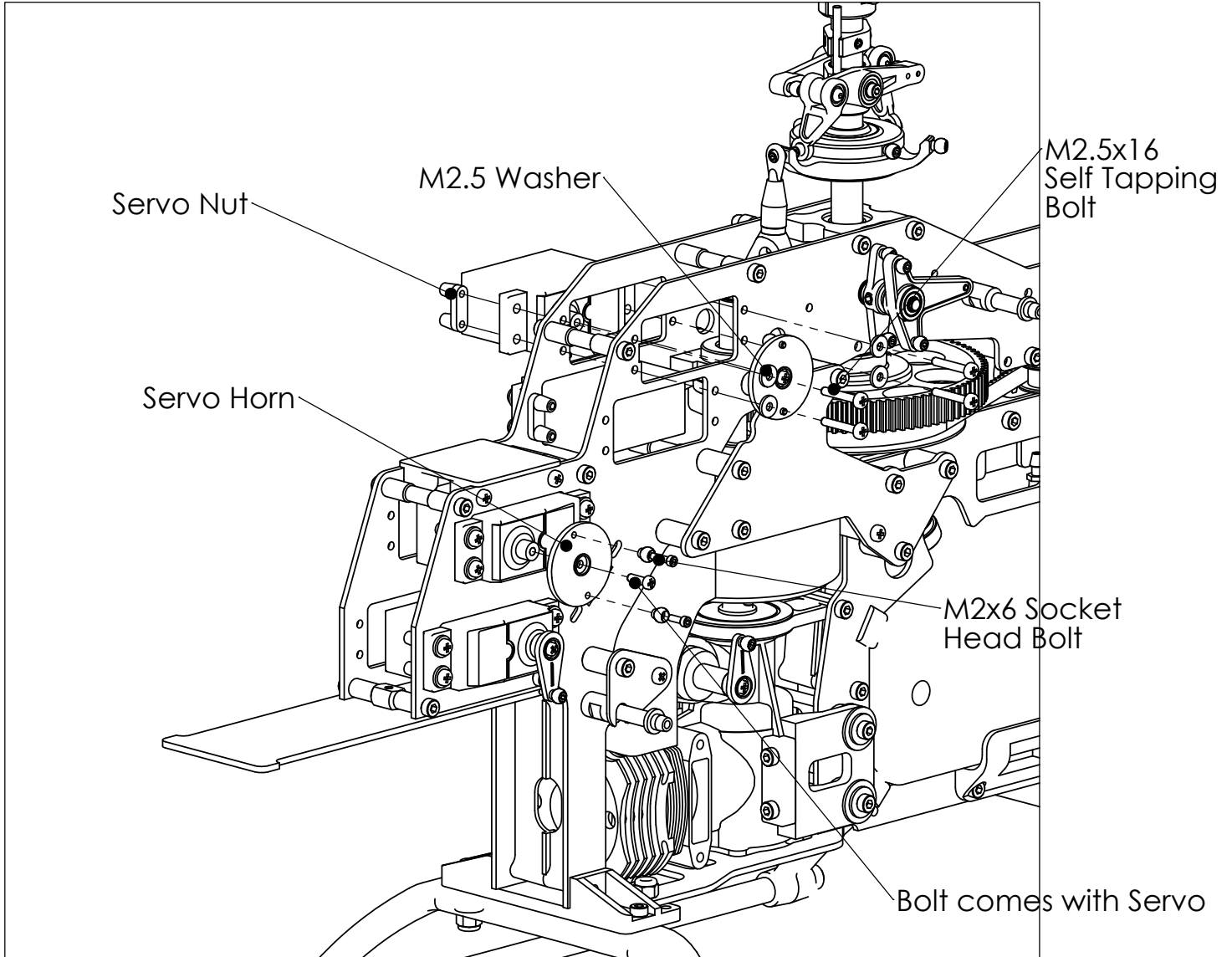
A few notes on Paddle and Fly Bar installation



- make sure Flybar has been installed deep enough into the Paddle. Flybar show appares from the hole on the paddle.
- the centre line of Paddle and Flybar Control Arm should be pallele.
- the 2 Paddles should be balanced to the center of the Seasaw.
- Locktitle is need for all set screws on Seasaw and Arms here.

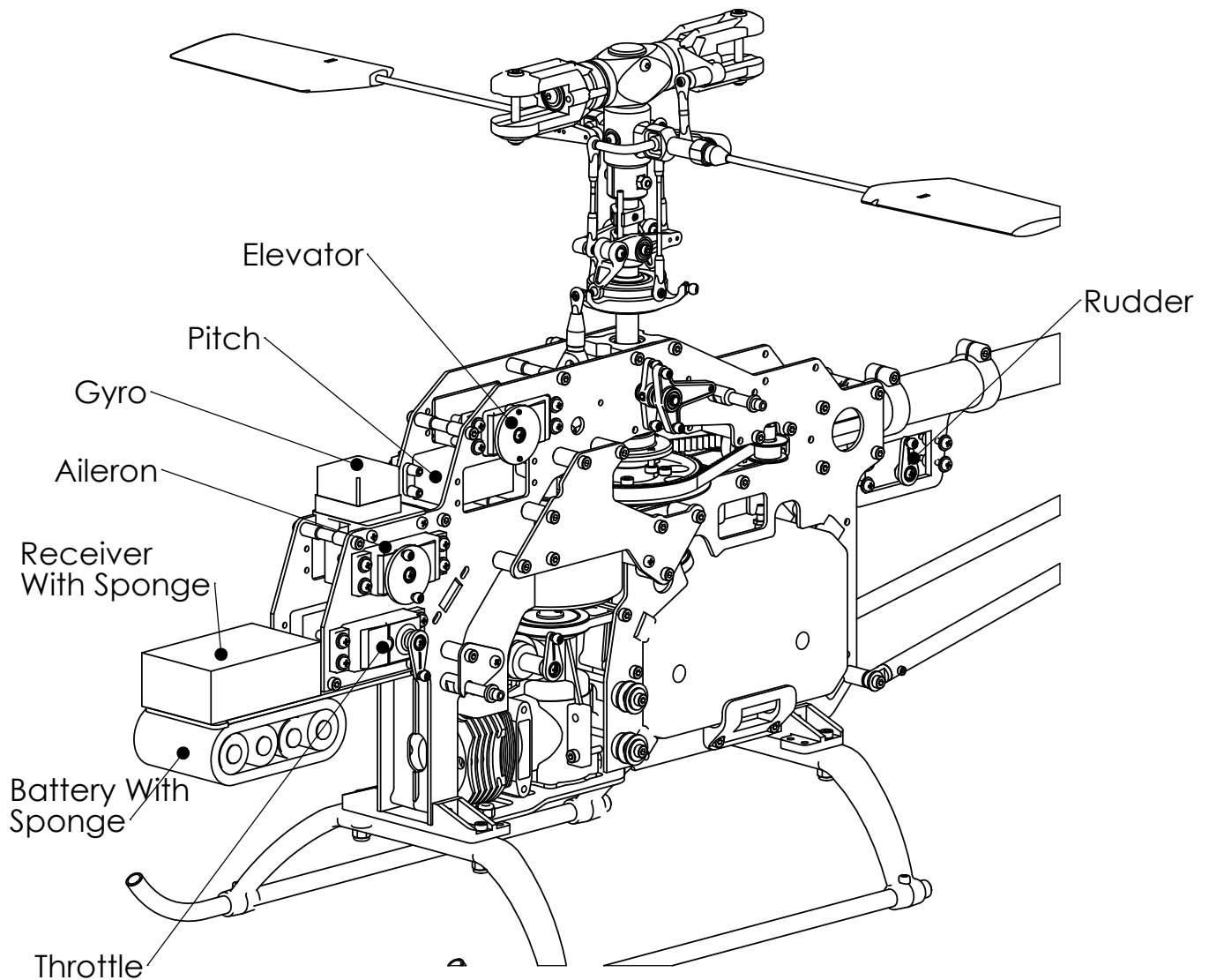
Step 6. Servos

				
M2.5x16 Self Tapping Bolt x20		M2x6 Socket Head Bolt x8	M2.5 Washer x20	



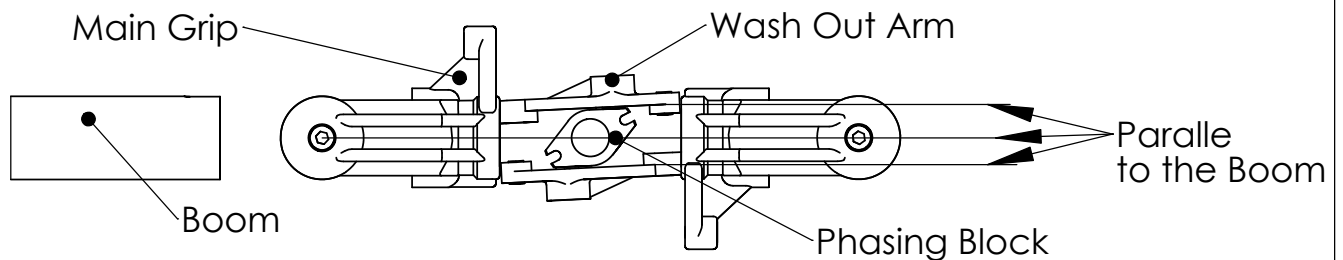
- a) all Servo Horn should be set to 11mm from the Center.
- b) use M2.5 Self Tapping Bolt install Servos on frame.
- c) use M2x6 Socket Head Bolts fix the balls on the Servo Horn. Note the balls on Elevator Servo is in Servo Horn's different side.

Step 7. Wire Up



- Install Receiver, Battery Gyro and other electronic device.
- Refer to the Radio manual, connect all the electronic devices.

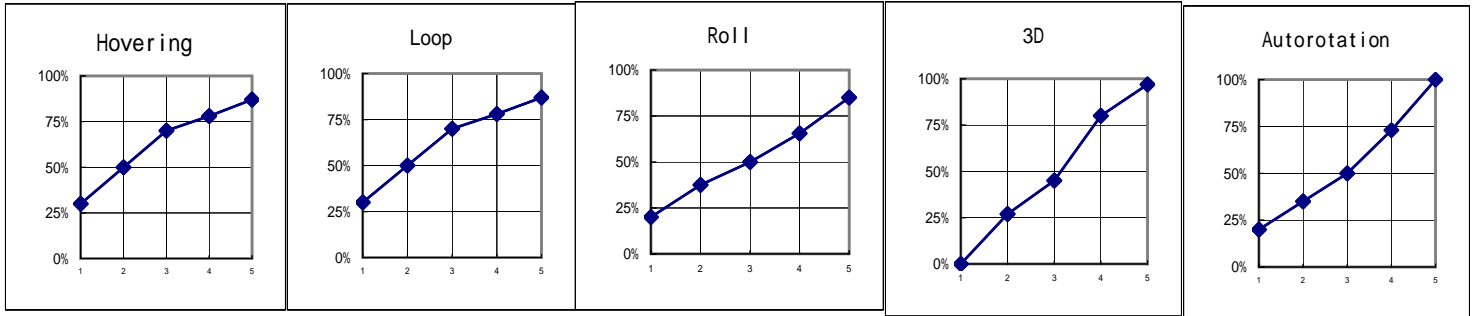
Step 8. Phasing Block



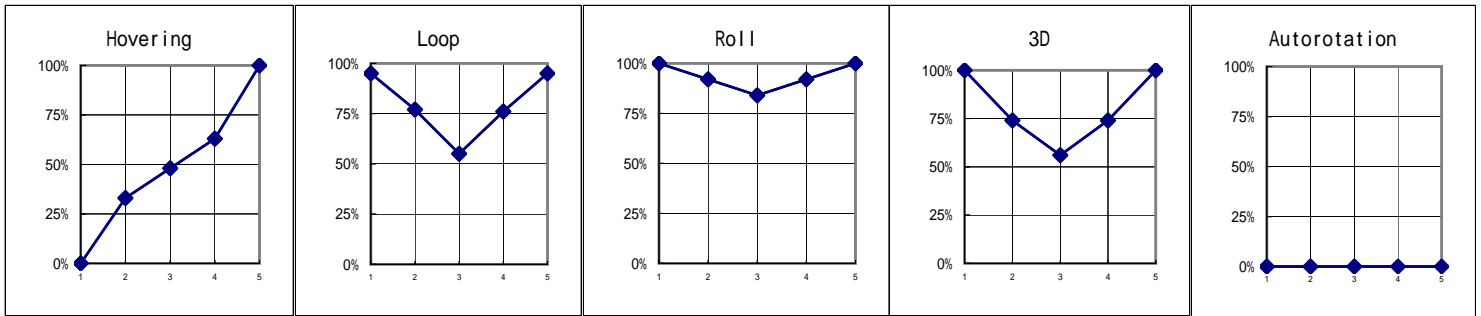
The Wash Out should be set at an angle so that the Main Grip and Wash Out Arms are parallel to the Boom.

Step 9. Radio Setting Data

Pitch Curve



Throttle Curve



Pitch Setting

	Hovering	ID1 Loop	ID2 Roll	ID3 3D	Autorotation
High Pitch	9~10	9~10	7	8.5~9	12
Hovering	5~5.5	3	0	0	N/A
Low Pitch	-4	-6	-7	-8.5~9	-7

Swash Type Setting

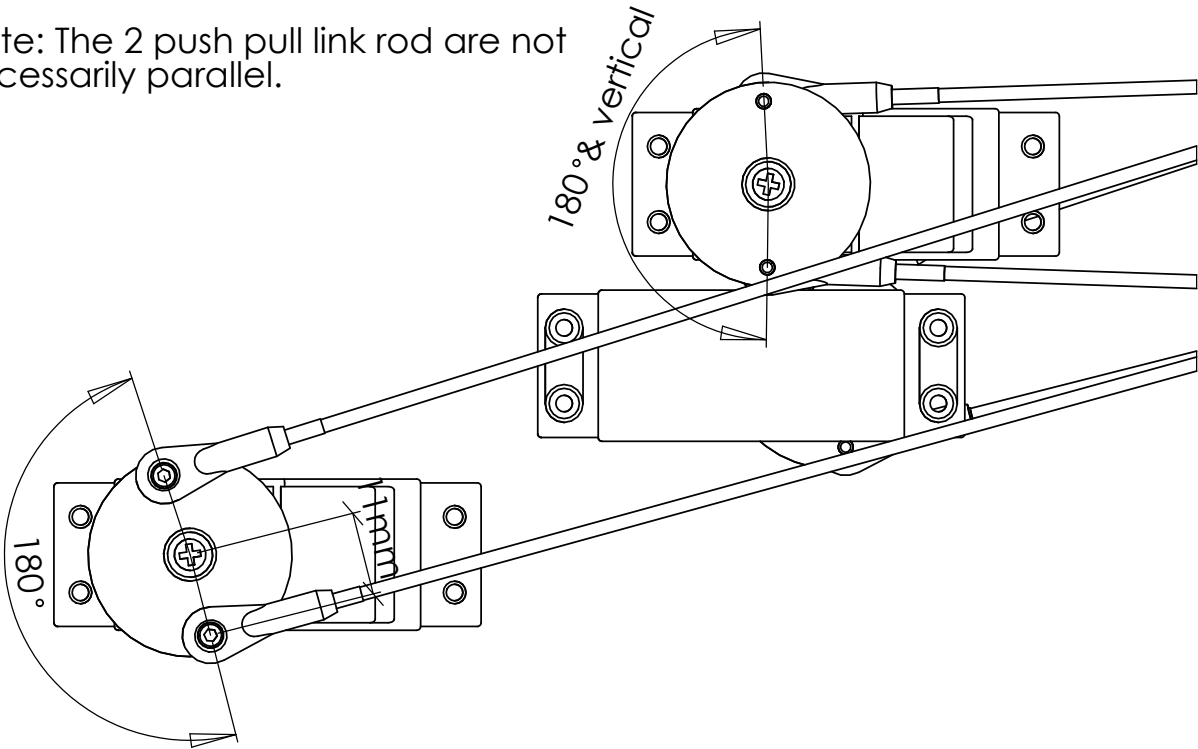
JR		Futaba
Swash Type		SWH
S3 120°		SR3
Aile	Elev	Pitch
65%	65%	65%

Above data just give some general idea of setting. It varies by engine, blades, muffler and pilot's style. Adjust by actual flight.

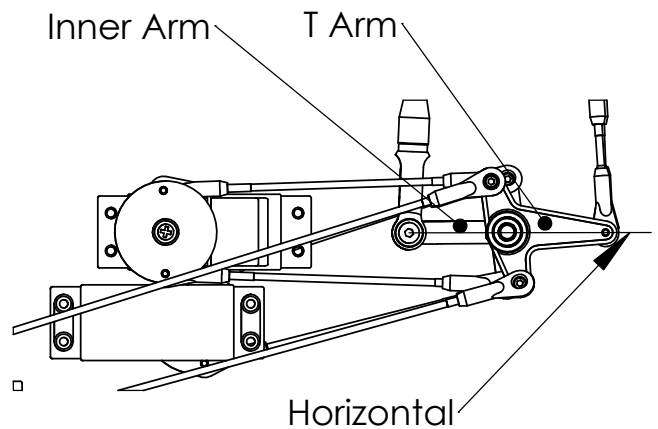
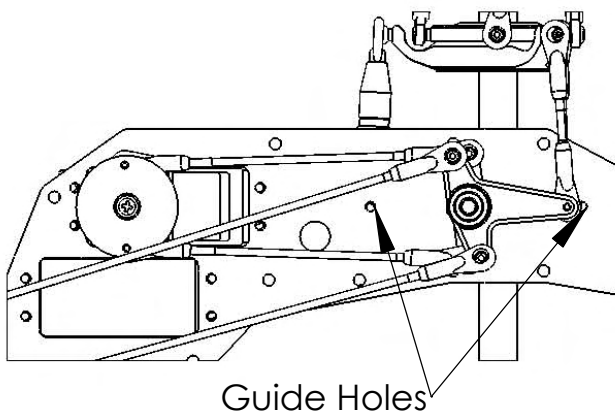
Step10. Set Up

a) Turn on the radio and set throttle position to middle position for 0 deg. All horn distance should be set to 11 mm from centre. Use the sub trim in radio programme to adjust each servo to get control horn to the right angle.

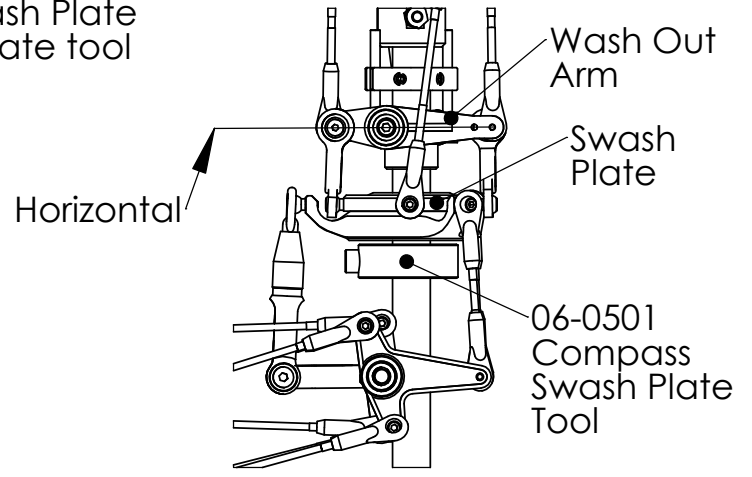
Note: The 2 push pull link rod are not necessarily parallel.



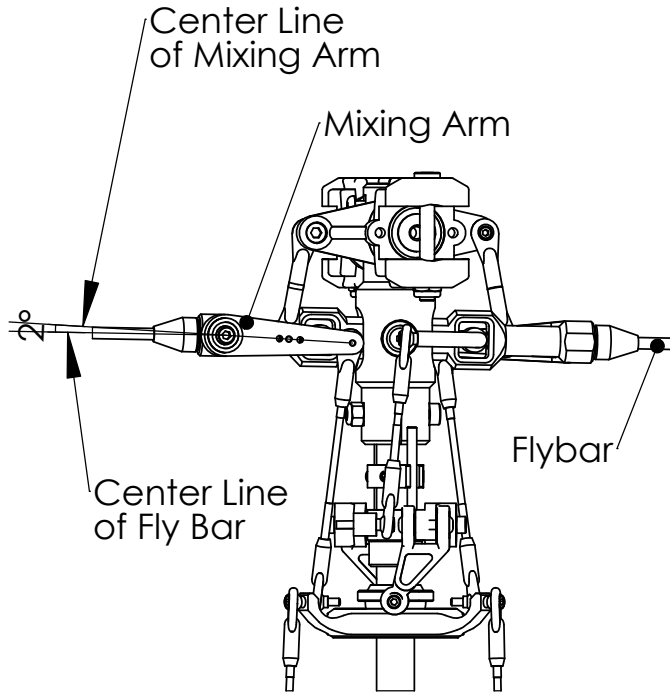
b) Next is to adjust links from servo to 2 T arms and I arm so that the T arm is horizontal and the inner arm is horizontal. Use the Guide Holes on frame to aim the two arms being Horizontal.



c) Next adjust the links from T arms to Swash Plate to level Swash Plate. A compass swash plate tool can be used here as a guide.



d) Set the Wash Out Arm horizontal.

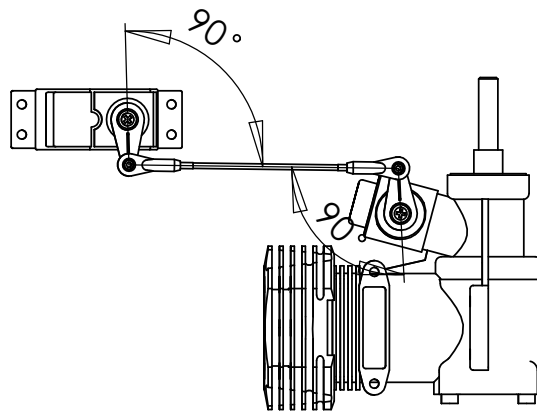


e) Set the mixing arm 2 deg downwards to the Flybar.

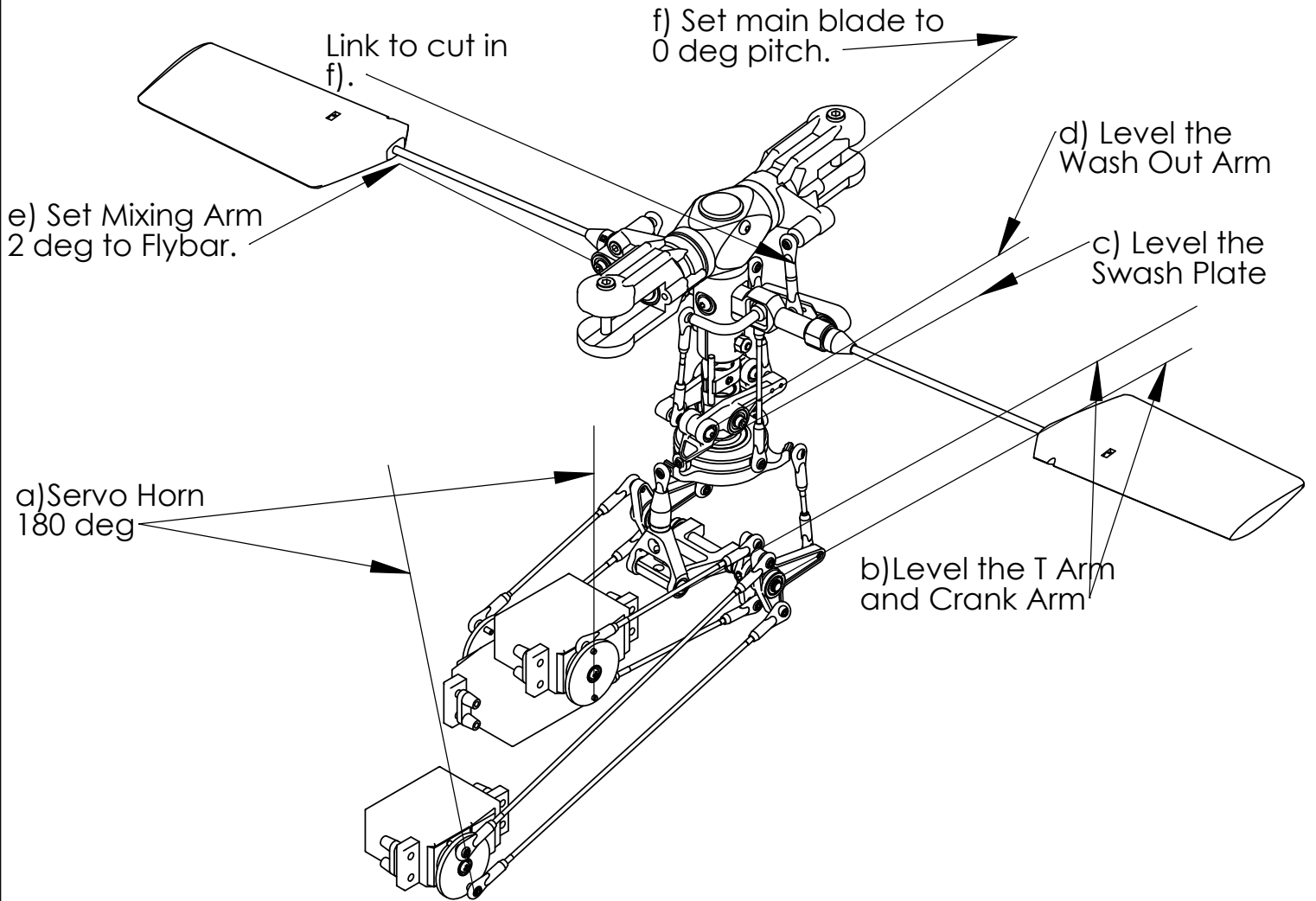
f) Install main blades and set the main blades to 0 deg pitch. One ball link might need to be cut shorter to get the right pitch.



g) Install and adjust the engine link so that link is 90 deg to the servo horn and the engine horn.



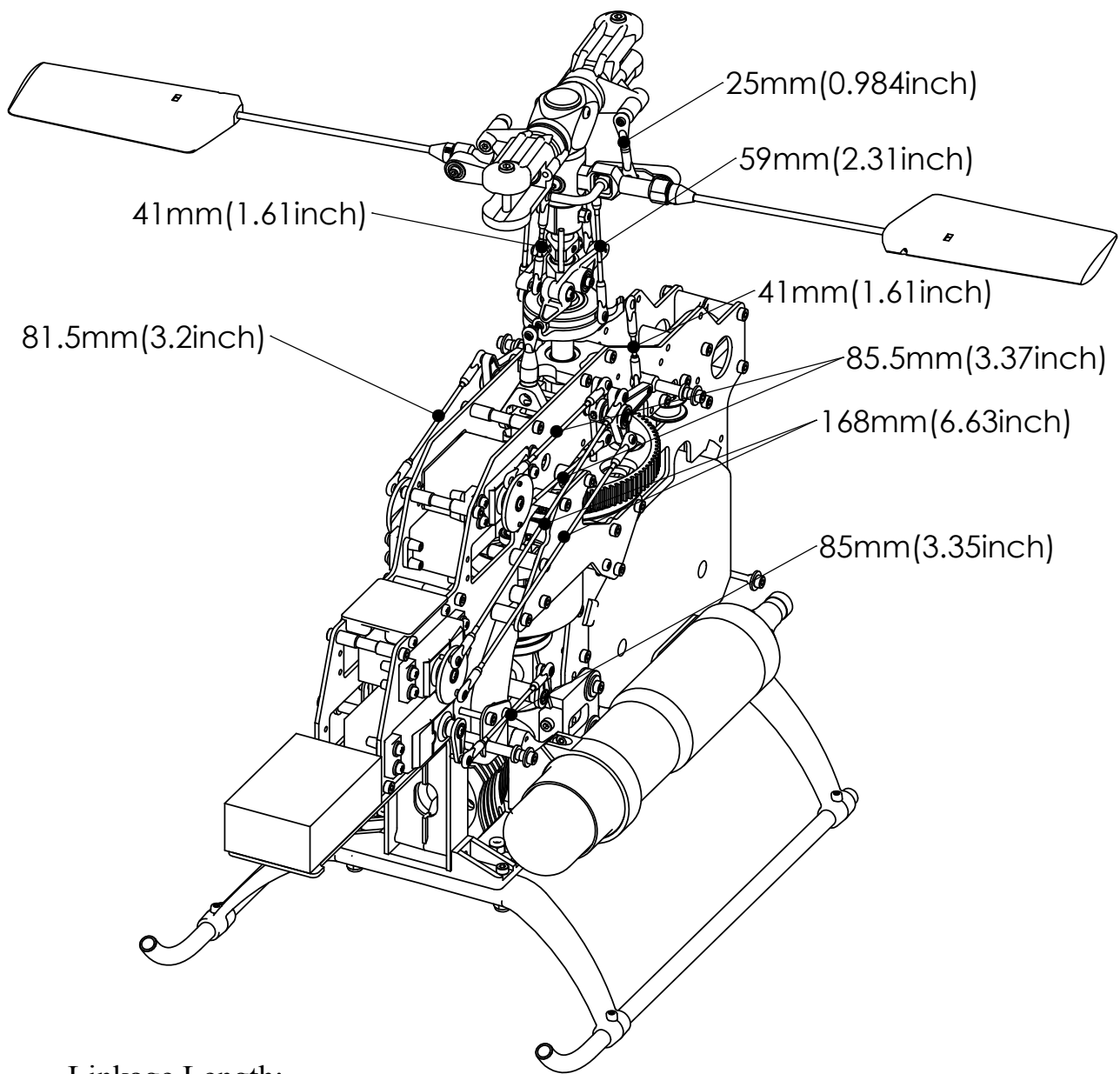
Summary



Linkage Length



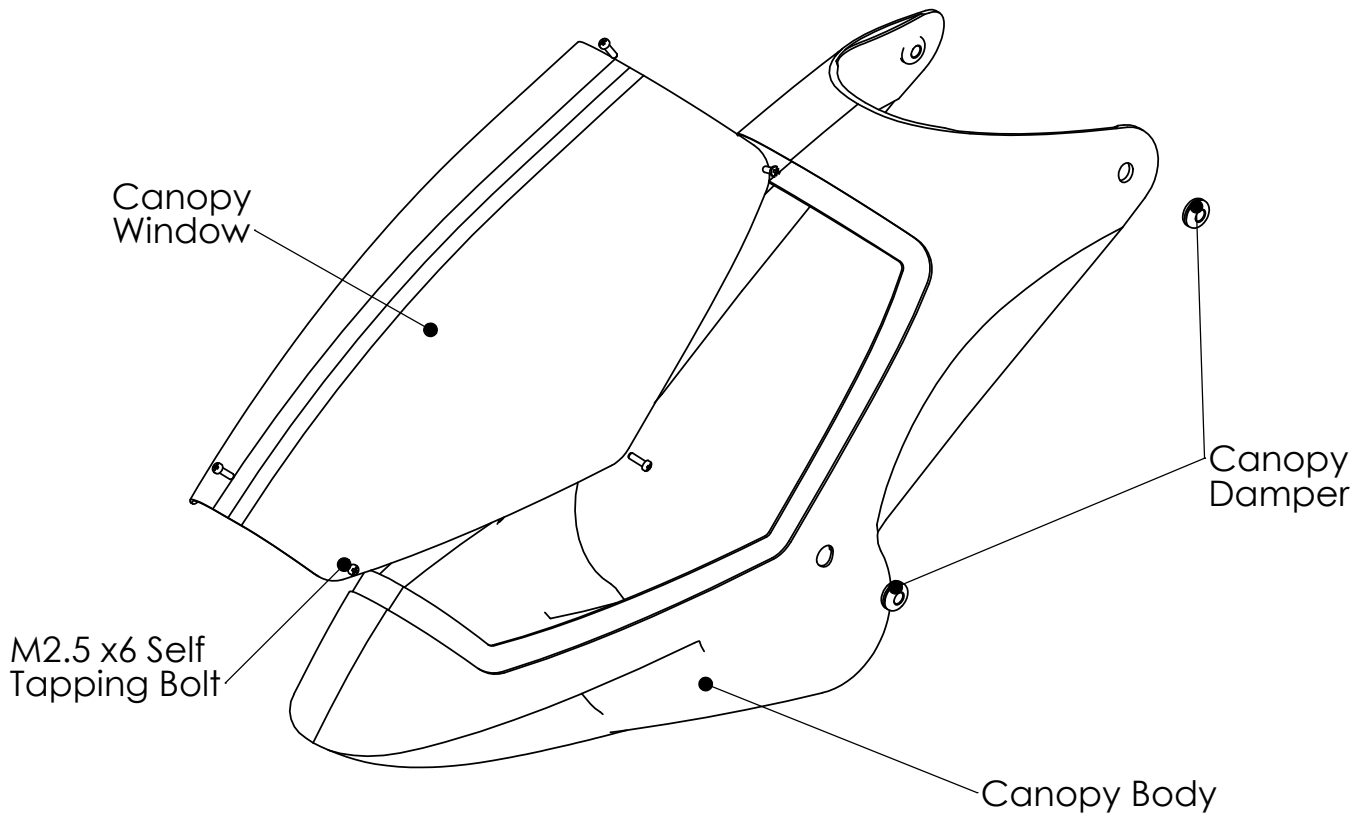
All Linkage Length are measured in this way. In case you change ball links, you can set the same measurement.



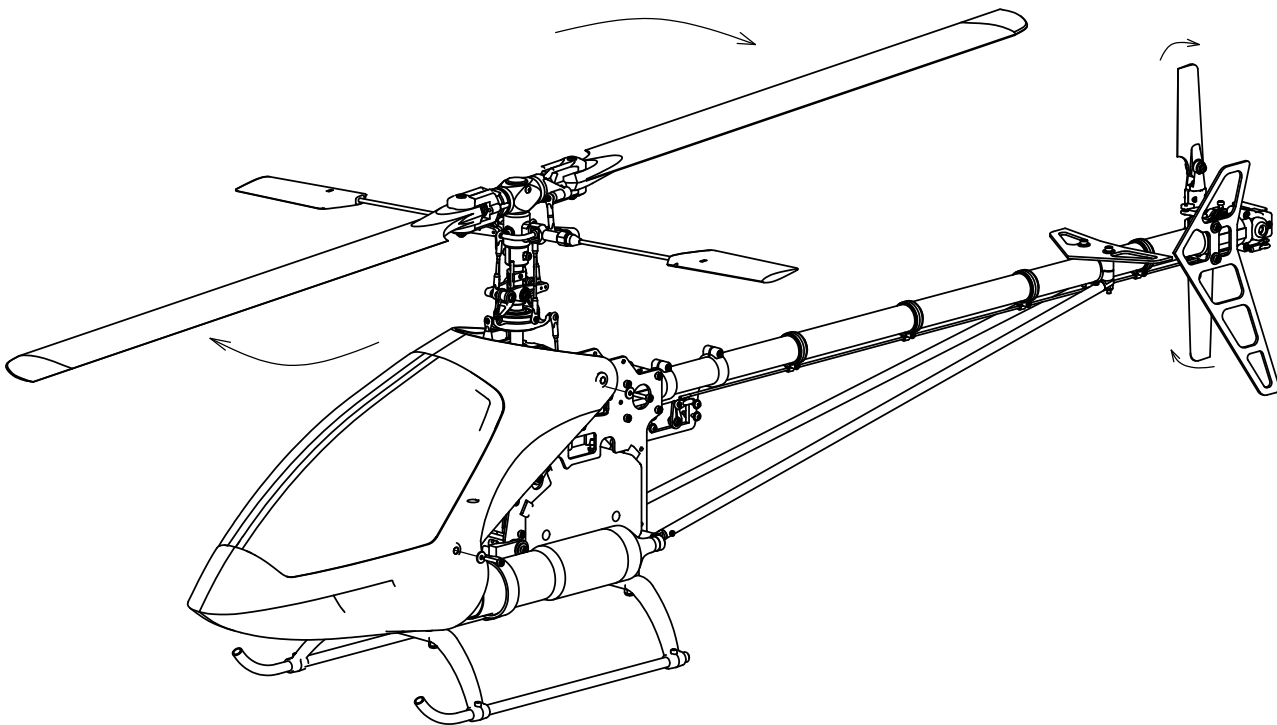
Linkage Length:

Main Blade Holder to Mixing Arm:	25mm(0.984inch)x2
Fly Bar Control Arm to Wash Out Arm:	41mm (1.61 inch) x2
Mixing Arm to Swash Plate Inner Ring:	59mm(2.31inch)x2
Swash Plate Outer Ring to T Arm:	41mm(1.61inch)x2
T Arm Left to Servo Horn:	168.5mm(6.63 inch) x2
T Arm Right to Servo Horn:	81.5mm(3.2inch) x2
I Arm to Servo Horn:	85.5mm(3.37inch)x2
Engine Link:	85mm(3.35inch)x1

Step 11 Canopy & Final Check



Note: Clean the Canopy with detergent or soap water before attaching the Decal on the canopy.



When Main Blades turn clockwise, the Tail Blades should turn Clockwisely too. If not, the Belt might be installed in wrong direction.