



Goblin 770 Manual

Goblin 770 Manual

Release 1.0 - December 2012

SAB HELI DIVISION S.R.L.

Via San Crispino, 47

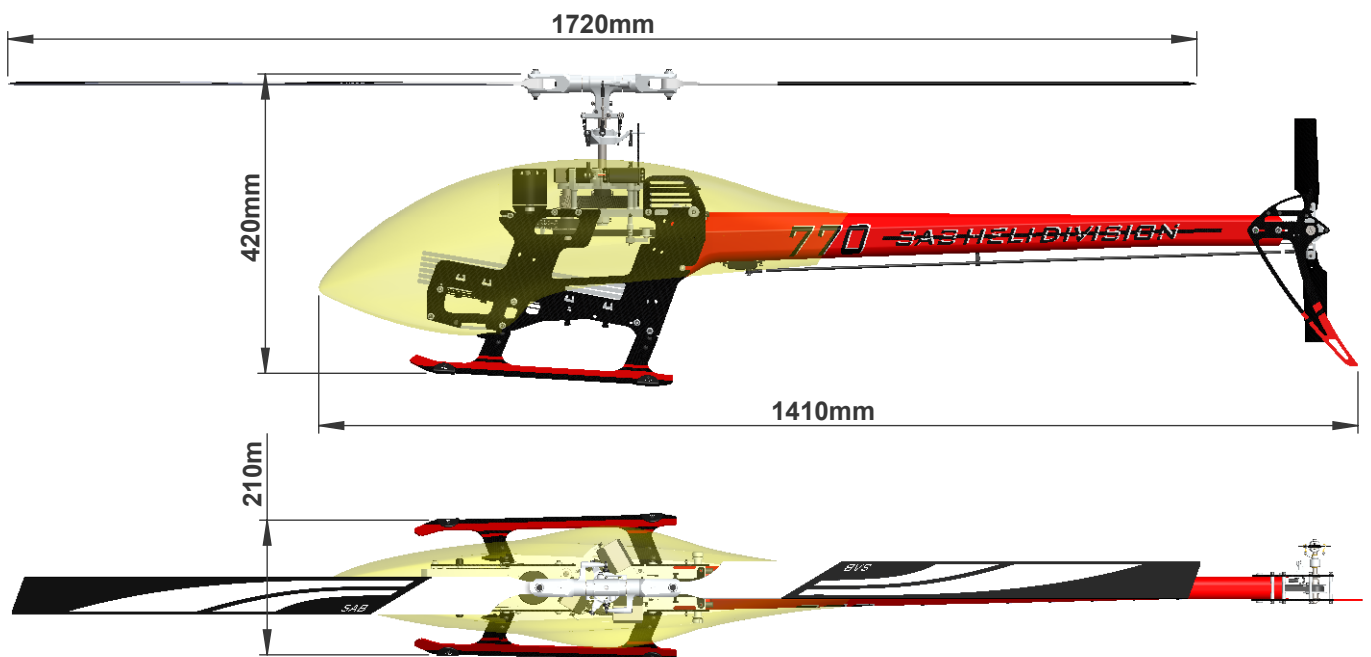
47030 San Mauro Pascoli (FC) - ITALY



INDEX

- | | | |
|------------------------------|---|---------------------------------------|
| 1 – Introduction | 7 – Tail assembly | 13 – Installation of the boom, Canopy |
| 2 – Important notes ⚠ | 8 – Assembling the modules | 14 – Battery |
| 3 – Components and Box | 9 – Installation of swashplate servos | 15 – In flight ⚠ |
| 4 – Carbon frame assembly | 10 – Installation of the ESC | 16 – Maintenance |
| 5 – Transmission module | 11 – Installation of Flybarless unit and RX | 17 – Exploded views |
| 6 – Main rotor | 12 – Installation of the motor | 18 – Spare parts |

SPECIFICATIONS



Main rotor diameter: 1720mm (with 770mm blades)
 Main blade length: 770mm
 Tail rotor diameter: 296mm
 Tail blade length: 115mm
 Main shaft diameter: 12mm
 Tail shaft diameter: 6mm
 Spindle diameter: 10mm

Weight including standard electronics: 4080g (excluding batteries).
 Motor size: Maximum 64mm diameter, maximum height 64mm.
 Battery compartment: 75x58x350mm.

SAB HELI DIVISION

The Goblin is a high performance radio controlled helicopter.
 The design is original, moving away from traditional schemes, searching rationality for simplicity.
 Our goal was to create a simple, high performance helicopter, with a minimum of mechanical components, and simple maintenance.
 Please read this user manual carefully, it contains instructions for the correct assembly of the model.
Please refer to the web site www.goblin-helicopter.com for updates and other important information.
 Thank you for your purchase, and have a great time with your Goblin!

SAB Heli Division.

SAB HELI DIVISION



IMPORTANT NOTES

- *This radio controlled helicopter is not a toy.
- *This radio controlled helicopter can be very dangerous.
- *This radio controlled helicopter is a technically complex device which has to be built and handled very carefully.
- *This radio controlled helicopter must be built following these instructions. This manual provides the necessary information to correctly assemble the model. It is necessary to carefully follow all the instructions.
- *Inexperienced pilots must be monitored by expert pilots.
- *All operators must wear safety glasses and take appropriate safety precautions.
- *A radio controlled helicopter must only be used in open spaces without obstacles, and far enough from people to minimize the possibility of accidents or of injury to property or persons.
- *A radio controlled helicopter can behave in an unexpected manner, causing loss of control of the model, making it very dangerous.
- *Lack of care with assembly or maintenance can result in an unreliable and dangerous model.

Neither SAB Heli Division nor its agents have any control over the assembly, maintenance and use of this product. Therefore, no responsibility can be traced back to the manufacturer. You hereby agree to release SAB Heli Division from any responsibility or liability arising from the use of this product.

SAFETY GUIDELINES

- *Fly only in areas dedicated to the use of model helicopters.
- *Follow all control procedures for the radio frequency system.
- *It is necessary that you know your radio system well. Check all functions of the transmitter before every flight.
- *The blades of the model rotate at a very high speed; be aware of the danger they pose and the damage they may cause.
- *Never fly in the vicinity of other people.

NOTES FOR ASSEMBLY

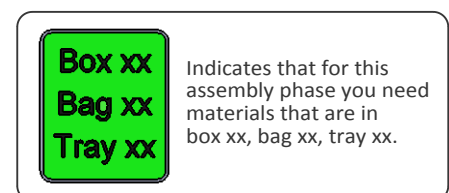
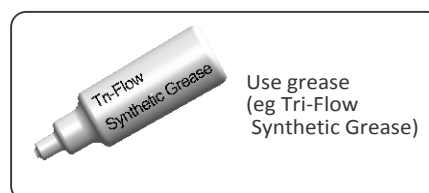
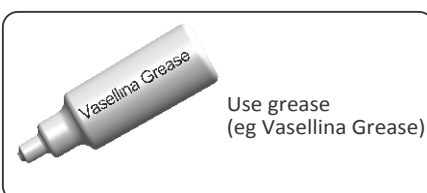
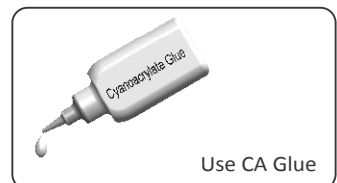
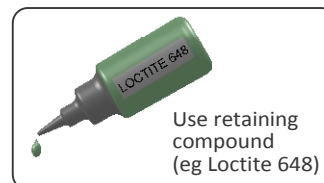
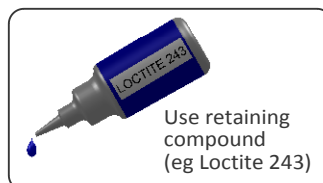
Please refer to this manual for assembly instructions for this model.

Follow the order of assembly indicated. The instructions are divided into chapters, which are structured in a way that each step is based on the work done in the previous step. Changing the order of assembly may result in additional or unnecessary steps.

Use thread lockers and retaining compounds as indicated. In general, each bolt or screw that engages with a metal part requires thread lock.

Factory pre-assembled components have been assembled with all the required thread lock and lubricants, and have passed quality control. It is not necessary to disassemble and re-assemble them.

It is necessary to pay attention to the symbols listed below:





ADDITIONAL COMPONENTS REQUIRED

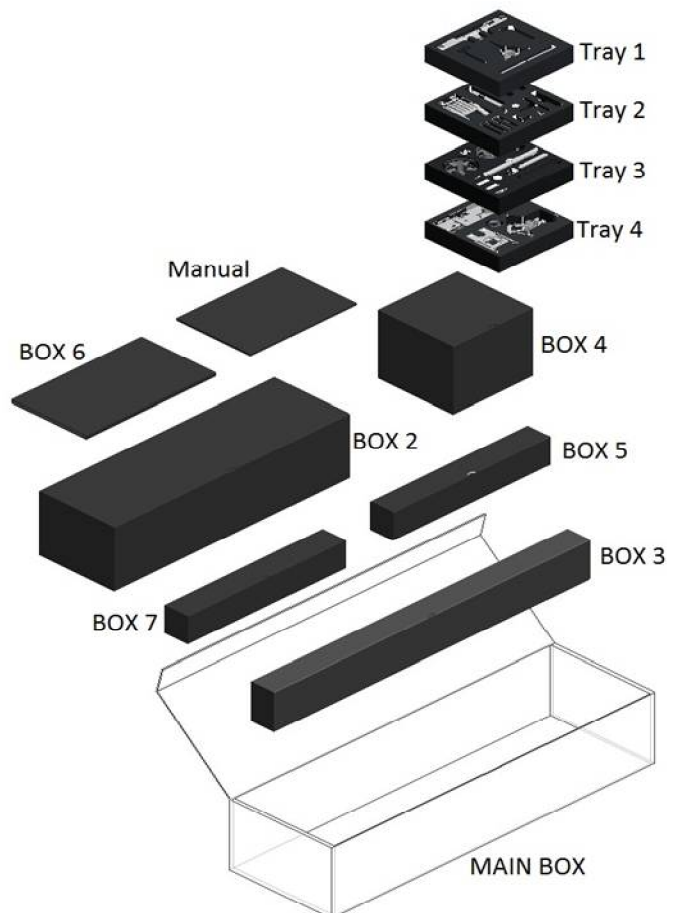
- *Electric Motor:
12S-14S – 380-520Kv
Maximum diameter 64mm,
Maximum height 64mm, pinion shaft diameter 6
- *Speed controller:
minimum 120A, suggest 160A
- *Batteries: 12-14S 4500-6000mAh
- *1 flybarless 3 axis control unit
- *Radio power system, if not integrated with the ESC
- *3 cyclic servos
- *1 tail rotor servo
- *6 channel radio control system on 2.4 GHz

(See configuration examples on page 28)

TOOLS, LUBRICANTS, ADHESIVES

- *Generic pliers
- *Hexagonal driver, size 1.5,2,2.5,3,4mm
- *4mm T-Wrench
- *5.5mm Socket wrench (for M3 nuts)
- *8mm Hex fork wrench (for M5 nuts)
- *Medium threadlocker (eg. Loctite 243)
- *Strong retaining compound (eg. Loctite 648)
- *Spray lubricant (eg. Try-Flow Oil)
- *Synthetic grease (eg. Tri-Flow Synthetic Grease)
- *Grease (eg. Vasellina Grease)
- *Cyanoacrylate adhesive
- *Pitch Gauge (for set-up)
- *Soldering equipment (for motor wiring)

Inside the main box there are:



Inside the main box:

- Box 2: Canopy, Blade Holder.
- Box 3: Boom, Blades, Tail blades, Carbon rod.
- Box 4: Mechanical parts in 4 trays:
Tray 1: Main rotor
Tray 2: Carbon frame and tail rotor
Tray 3: Transmission
Tray 4: Main structure
- Box 5: Bags
- Box 6: Carbon parts
- Box 7: Carbon parts

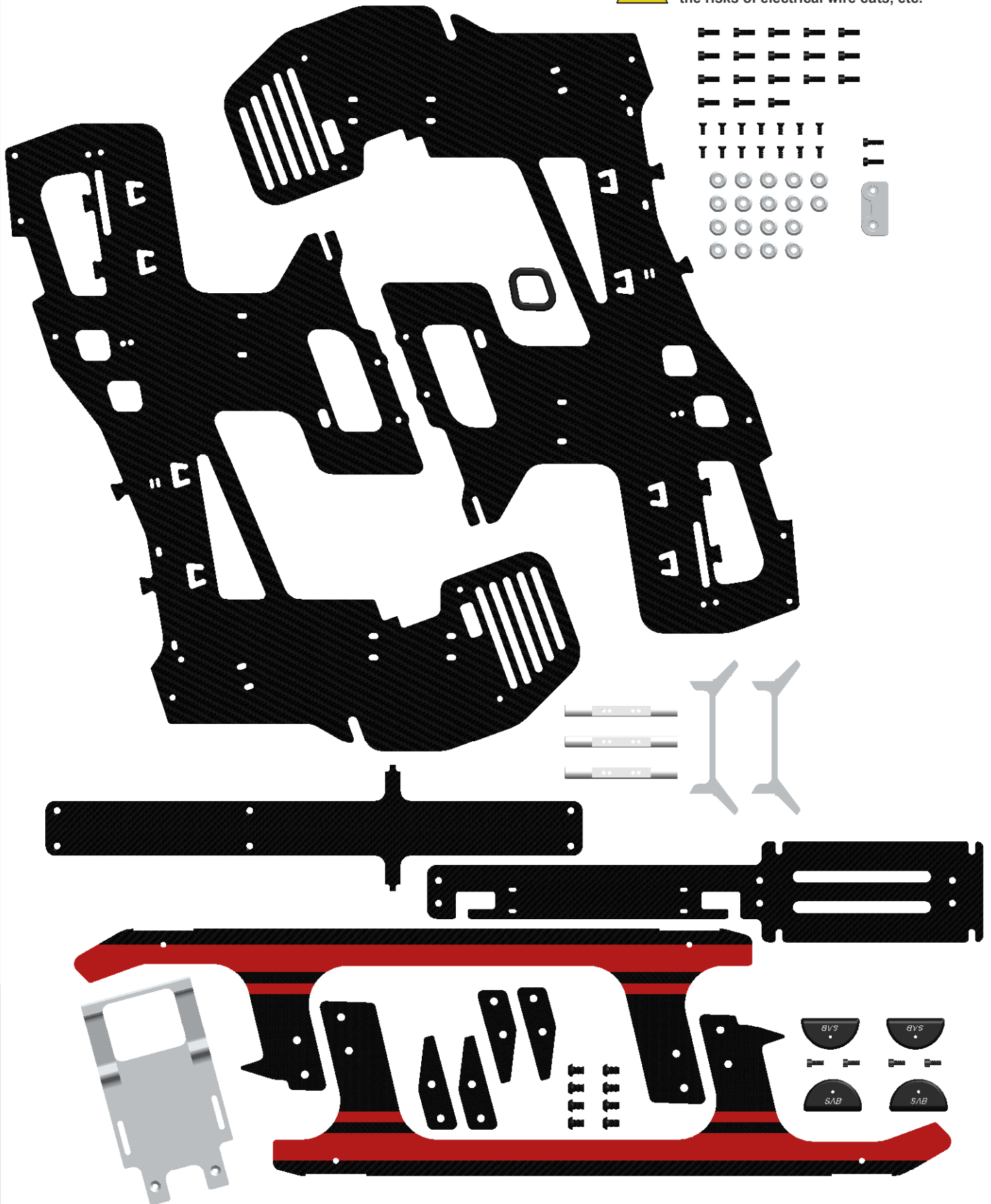
The assembly process is described in the following chapters of this manual. Each phase begins with a green frame which gives the box, the bag with screws (and miscellaneous items), and the foam tray with the components required for the phase.



4-Carbon Frame

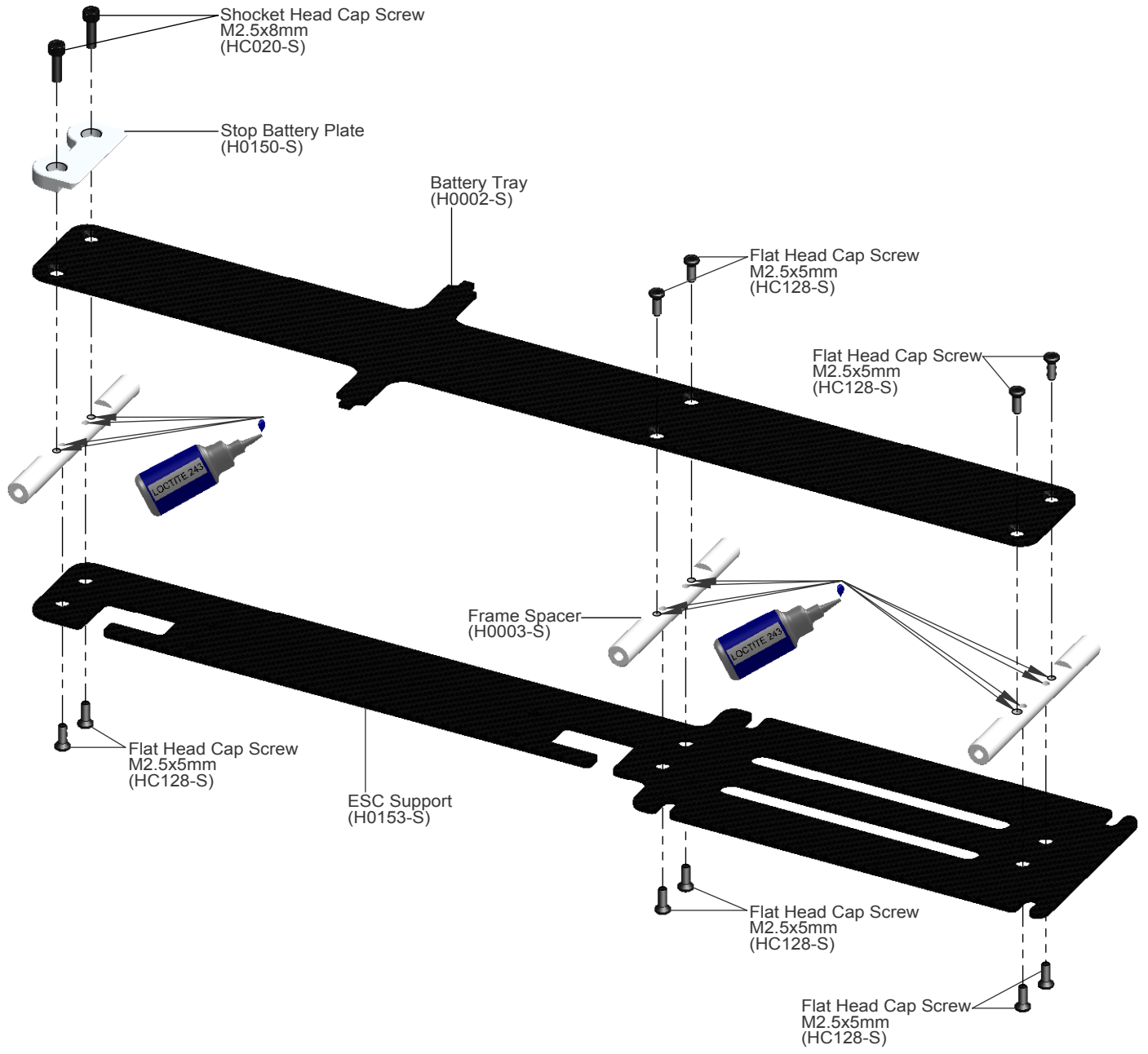


The manufacturing process of the carbon parts often leaves micro-burrs and sharp edges. We recommend de-burring the edges to minimize the risks of electrical wire cuts, etc.





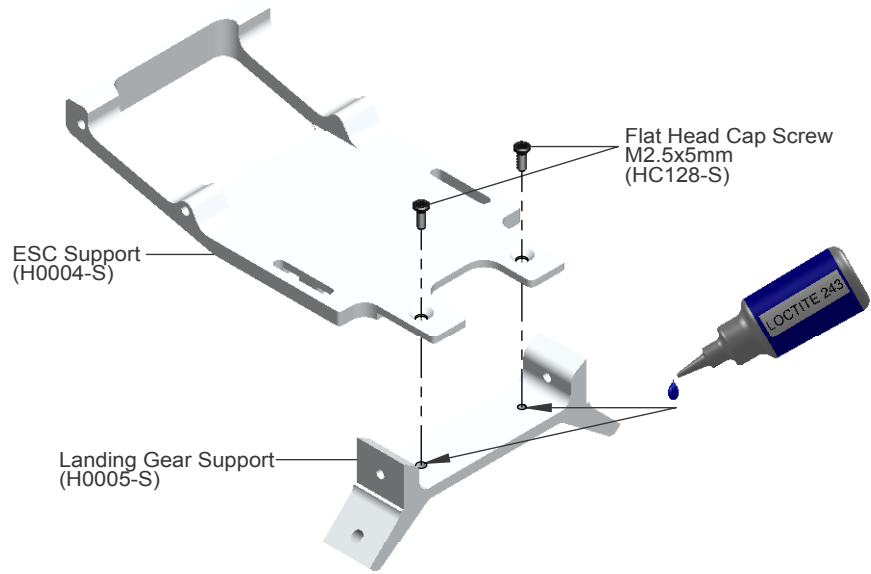
Box 7
Bag 1
Tray 2



- Socket Head Cap Screw M2.5x8mm
 x2
- Flat Head Cap Screw M2.5x5mm
 x10



**Bag 1
Tray 2**

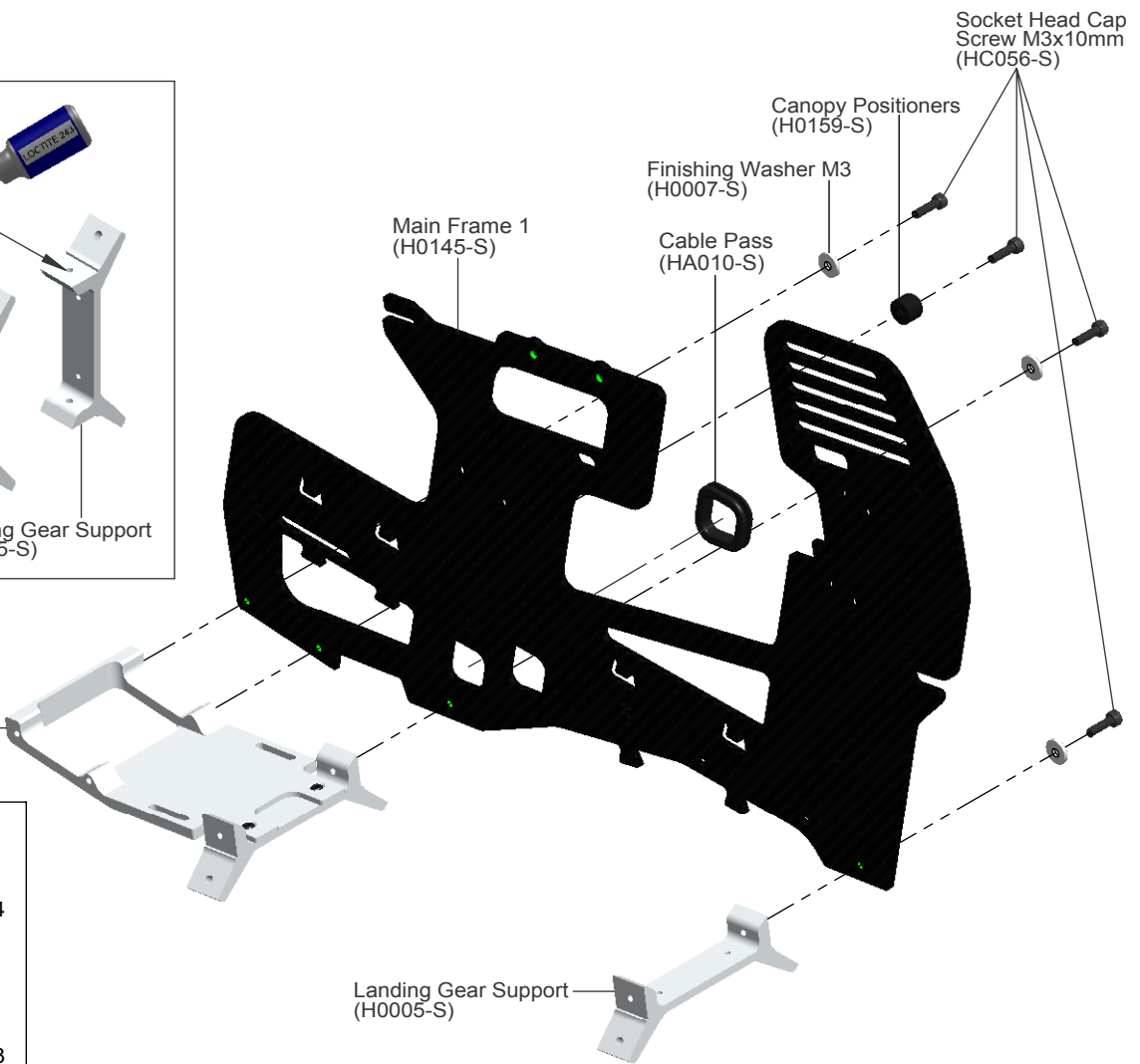
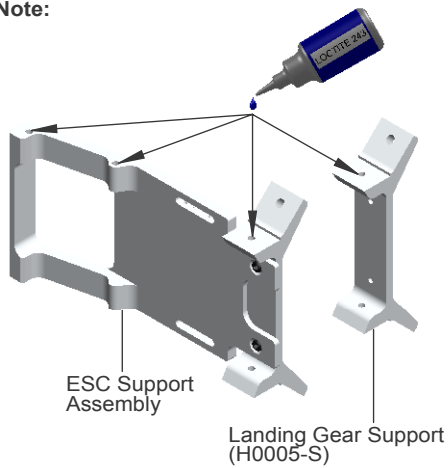


Flat Head Cap Screw
M2.5x5mm



**Box 6
Bag 1
Tray 2**

Note:



Socket Head Cap Screw
M3x10mm

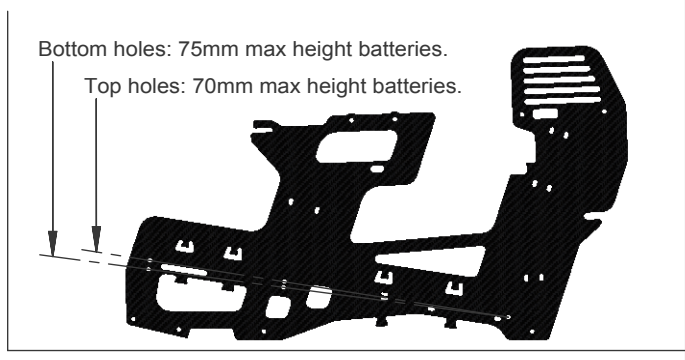


Finishing Washer M3

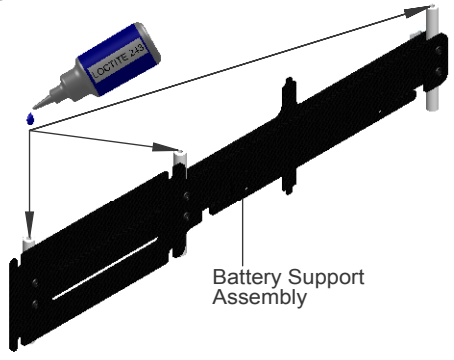




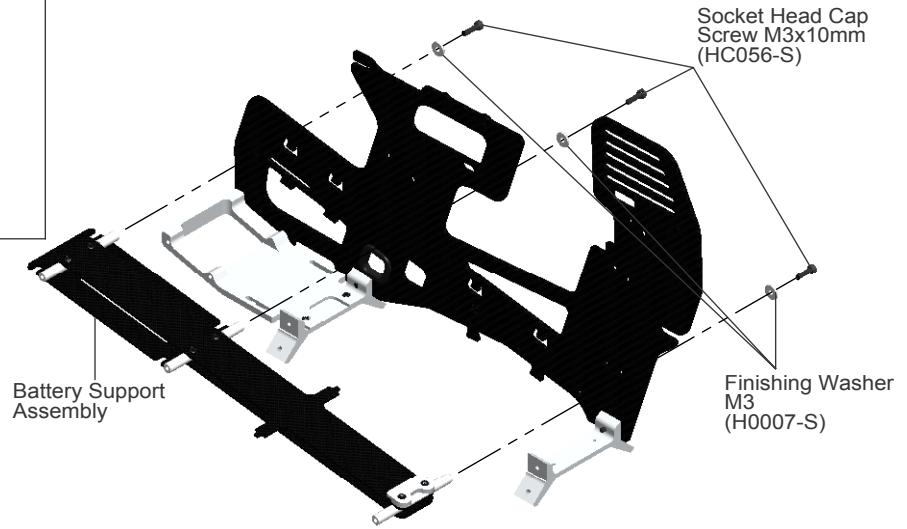
Bag 1



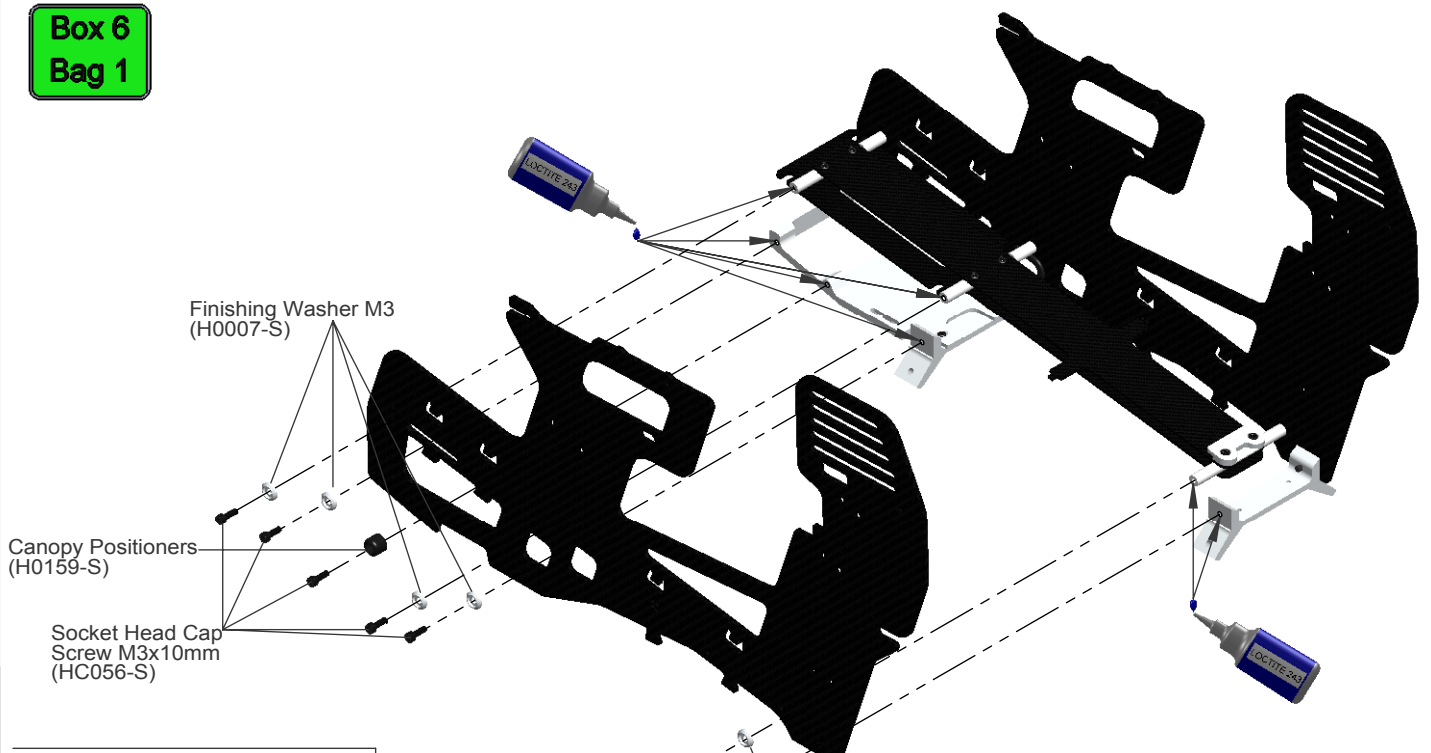
Note:



- Socket Head Cap Screw M3x10mm x3
- Finishing Washer M3 x3



Box 6 Bag 1



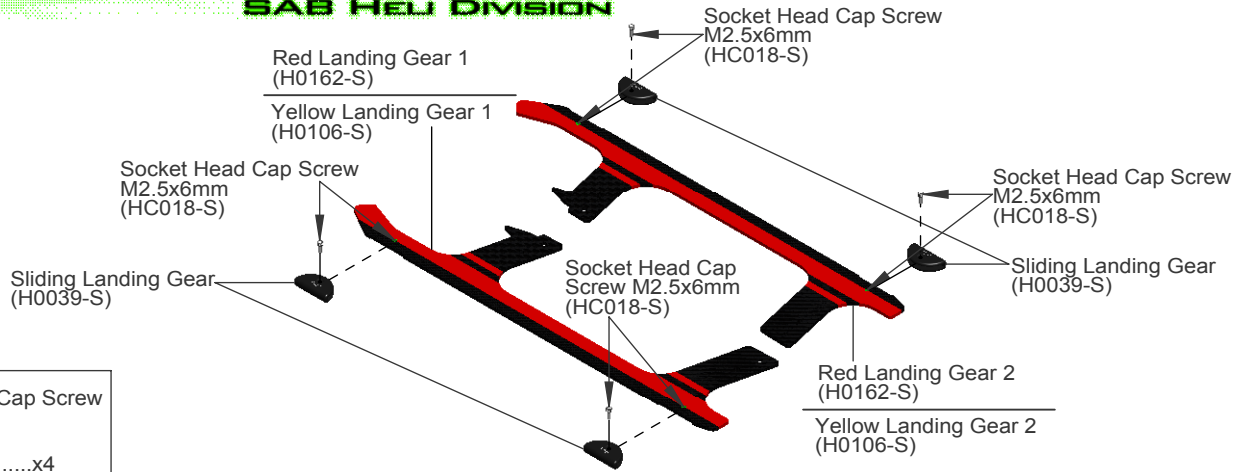
- Socket Head Cap Screw M3x10mm x7
- Finishing Washer M3 x6





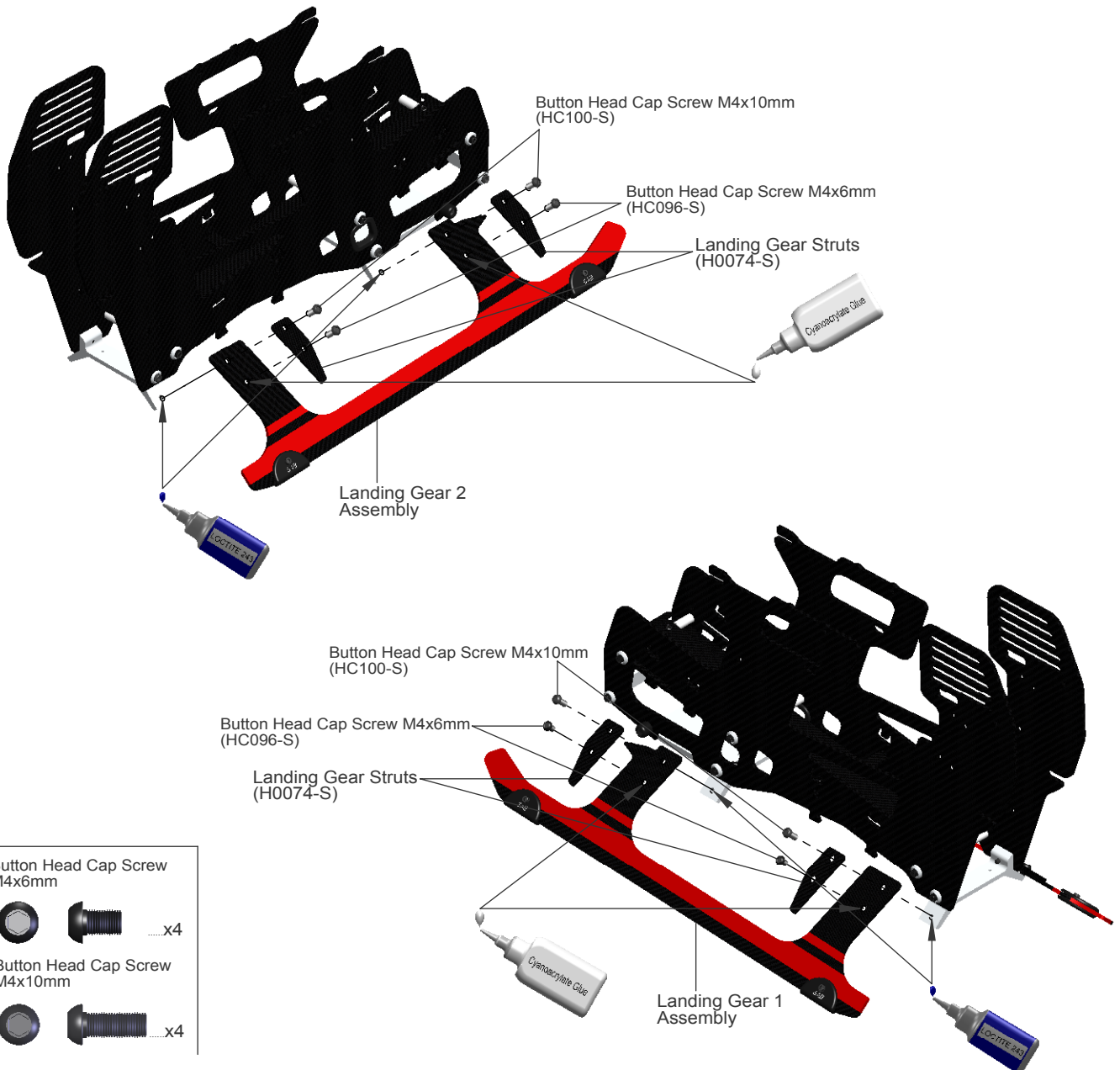
SAB HELI DIVISION

Box 6
Bag 2



- Socket Head Cap Screw M2.5x6mm
-
-x4

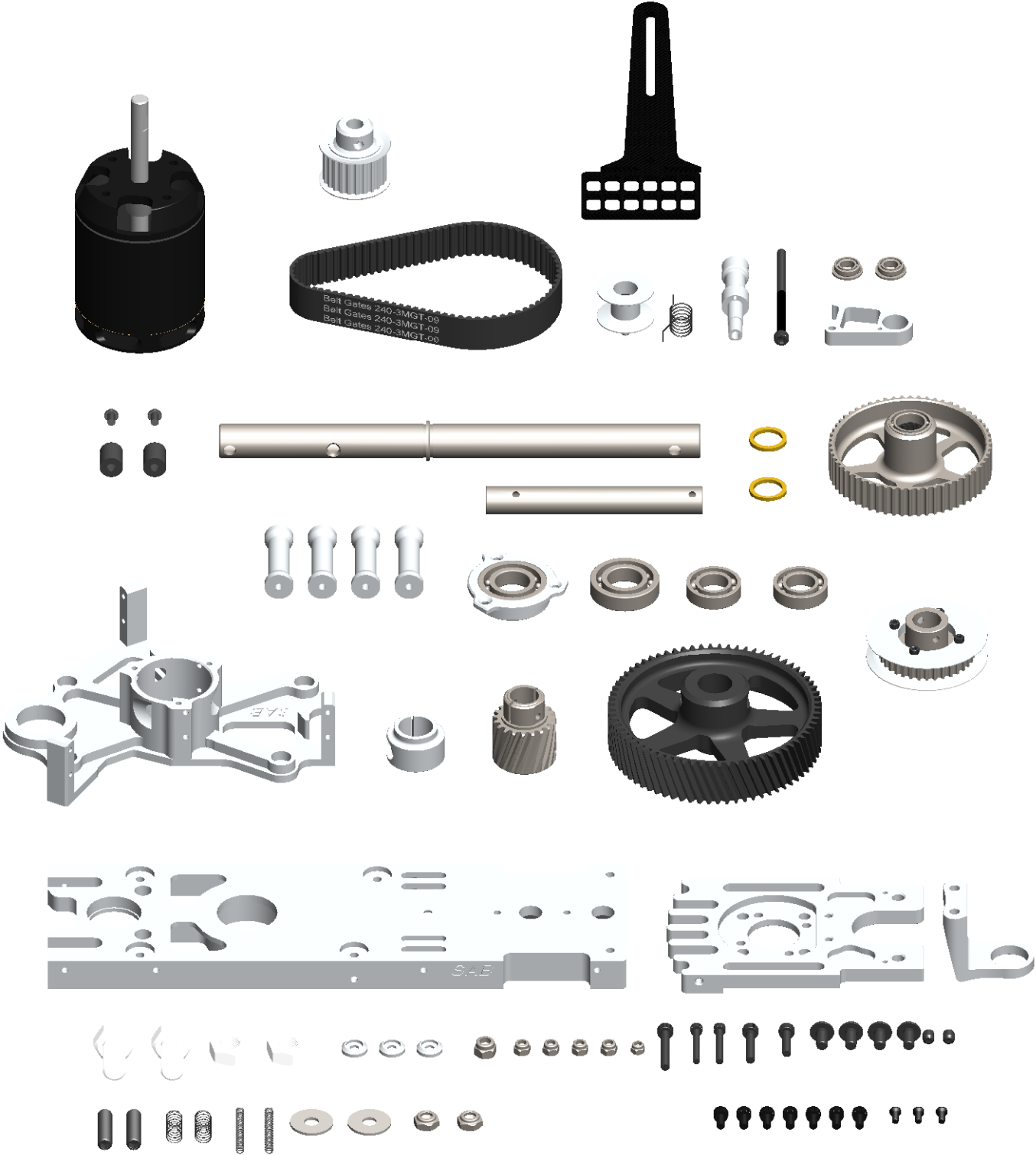
Bag 2



- Button Head Cap Screw M4x6mm
-
-x4
-
- Button Head Cap Screw M4x10mm
-
-x4



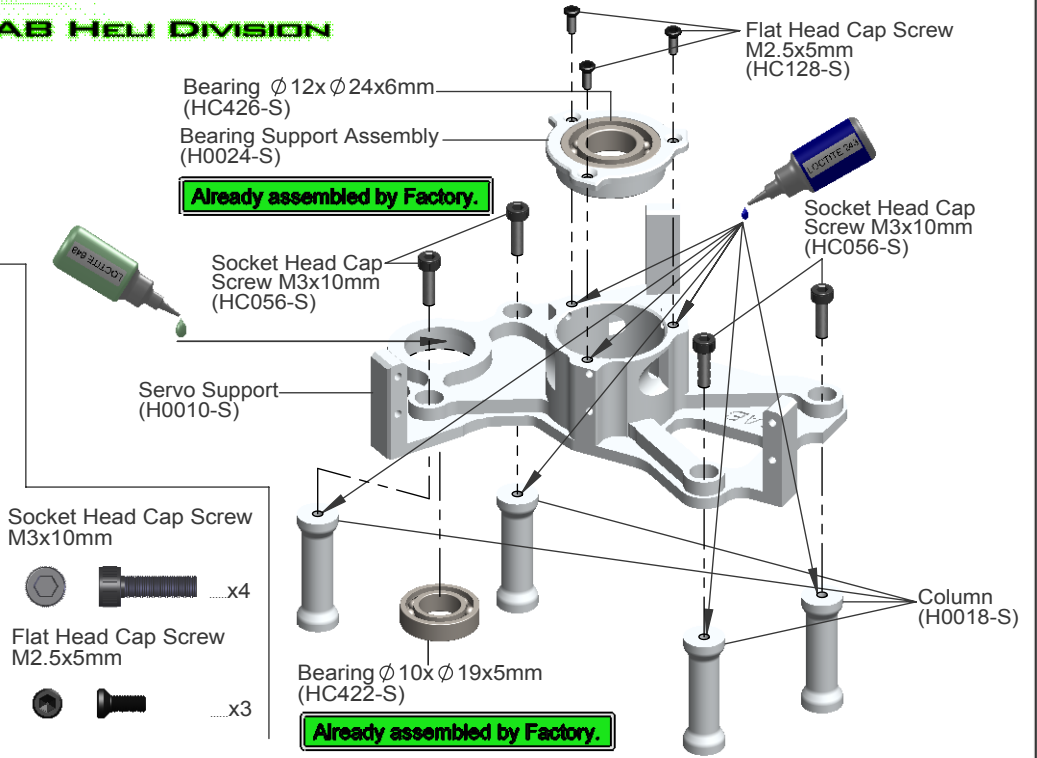
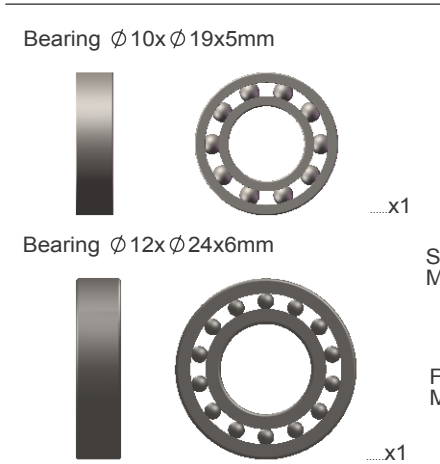
5 - Transmission Assembly





SAB HELI DIVISION

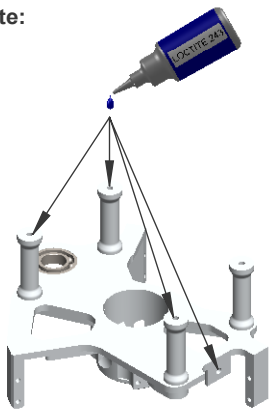
**Bag 3
Tray 3-4**



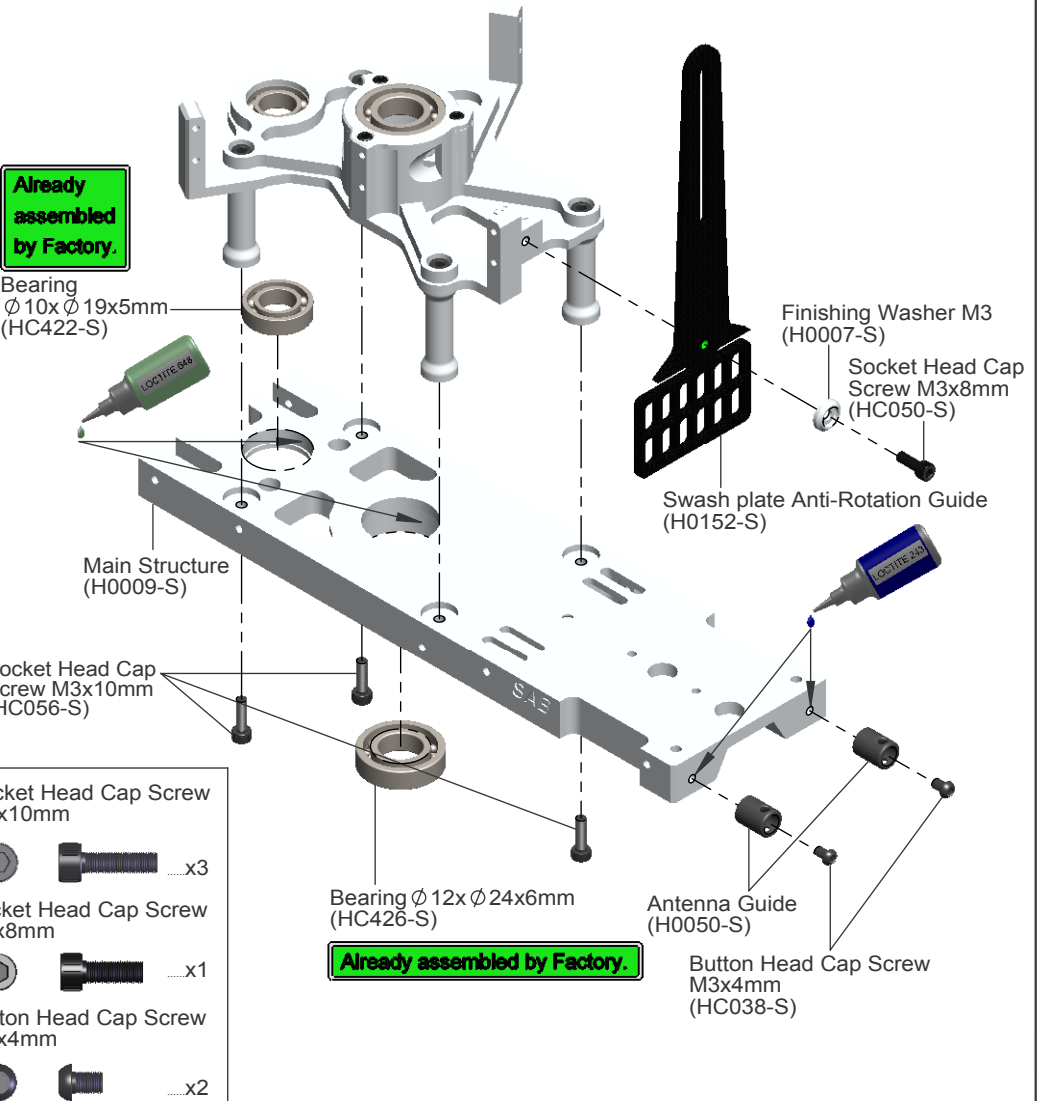
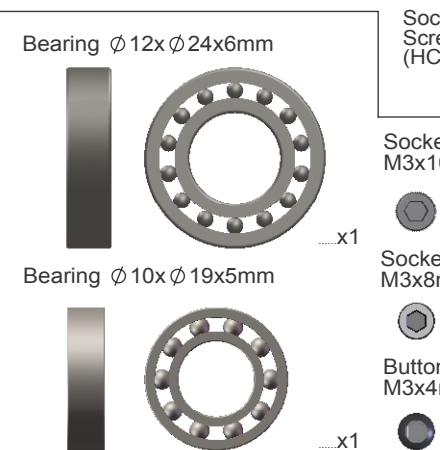
- Socket Head Cap Screw M3x10mm (x4)
- Flat Head Cap Screw M2.5x5mm (x3)

**Box 7
Bag 3
Tray 4**

Note:



Already assembled by Factory.



- Socket Head Cap Screw M3x10mm (HC056-S) (x3)
- Socket Head Cap Screw M3x8mm (x1)
- Button Head Cap Screw M3x4mm (x2)

SAB HELI DIVISION

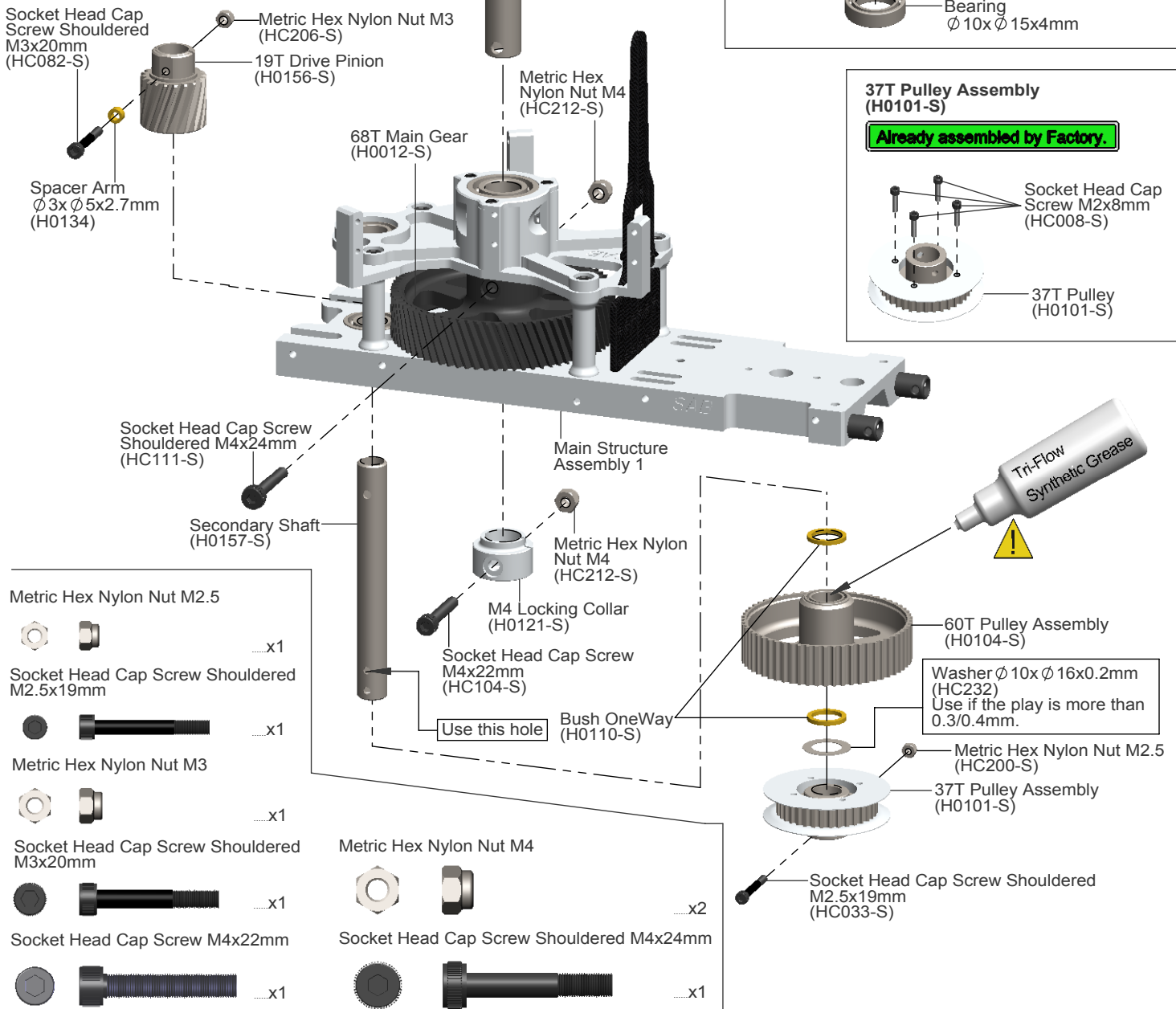


**Bag 4
Tray 3**

Note 1: When you tighten the collar (H0127-S) on the main shaft, ensure there is no axial play. Push down the main shaft while pulling up the locking collar. Tighten the screw M4x22 at this time.

Note 2:

The pinion and gear are designed to have zero backlash. This leads to initial "rough" rotation. After some run in flights (3-5 flights) it will begin to rotate freely, ensuring perfect contact and the ability to transmit maximum power. It is advisable to lubricate these two elements with a lubricant (eg Silicone or Tri-Flow Synthetic grease).



Metric Hex Nylon Nut M2.5

Socket Head Cap Screw Shouldered M2.5x19mm

Metric Hex Nylon Nut M3

Socket Head Cap Screw Shouldered M3x20mm

Socket Head Cap Screw M4x22mm

Metric Hex Nylon Nut M4

Socket Head Cap Screw Shouldered M4x24mm

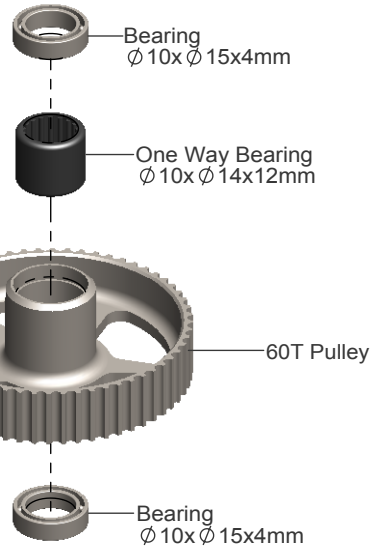
Socket Head Cap Screw Shouldered M4x22mm

Socket Head Cap Screw Shouldered M2.5x19mm

Socket Head Cap Screw Shouldered M2.5x19mm

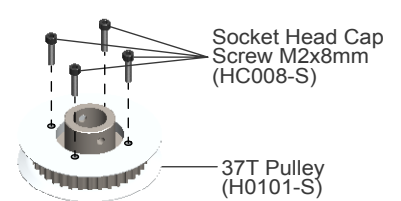
60T Pulley Assembly (H0104-S)

Already assembled by Factory.



37T Pulley Assembly (H0101-S)

Already assembled by Factory.

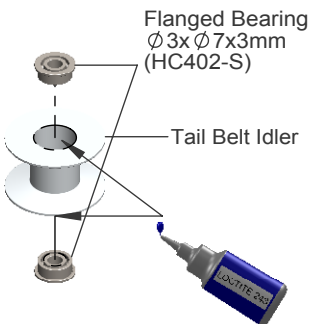




**Bag 5
Tray 3**

Tail Belt Idler Assembly (H0070-S)

Already assembled by Factory.

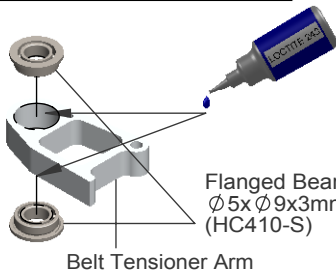


Flanged Bearing
Ø3xØ7x3mm
(HC402-S)

Tail Belt Idler

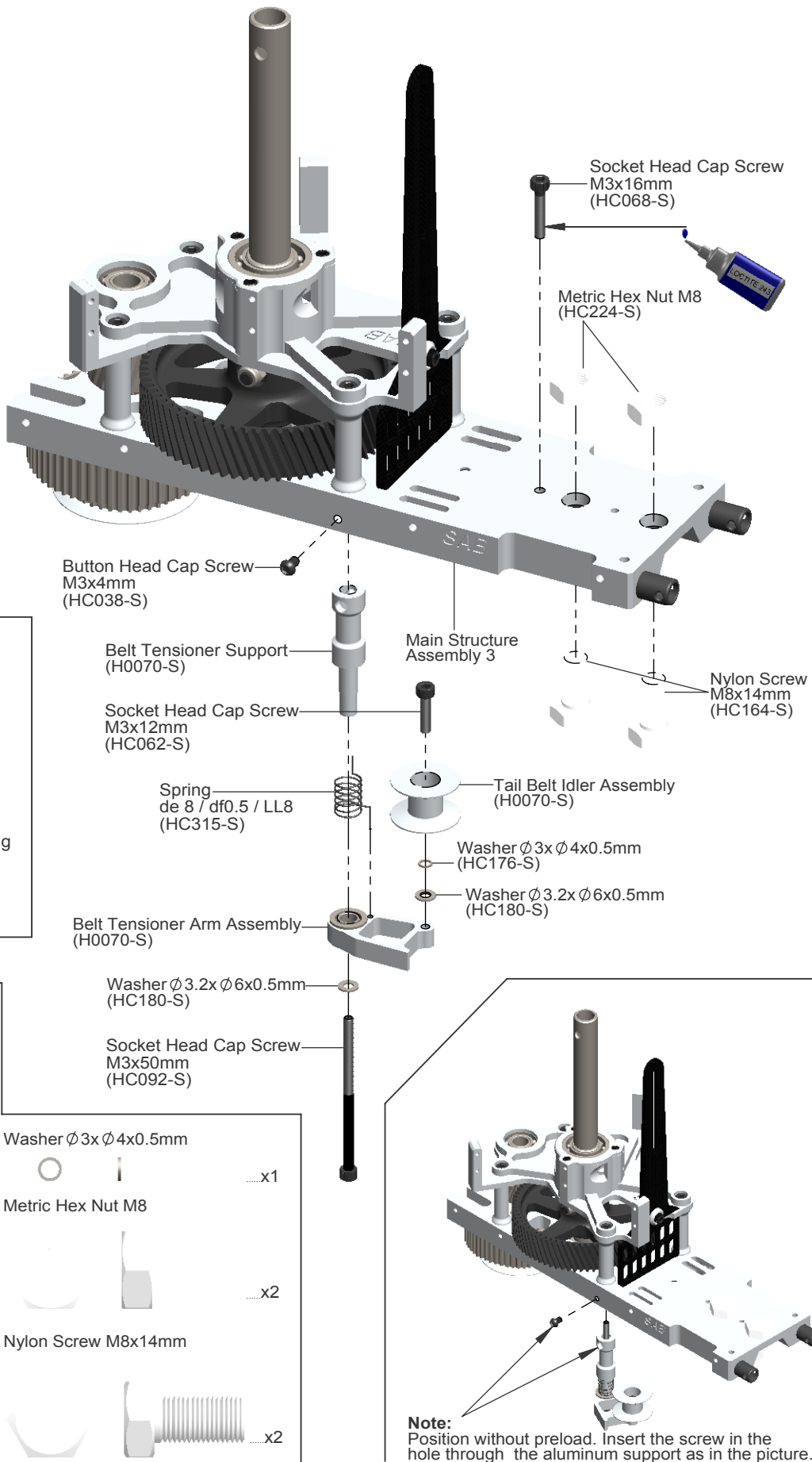
Belt Tensioner Arm Assembly (H0070-S)

Already assembled by Factory.



Flanged Bearing
Ø5xØ9x3mm
(HC410-S)

Belt Tensioner Arm



Button Head Cap Screw M3x4mm



...x1

Socket Head Cap Screw M3x12mm



...x1

Socket Head Cap Screw M3x50mm



...x1

Flanged Bearing Ø5xØ9x3mm



...x2

Flanged Bearing Ø3xØ7x3mm



...x2

Washer Ø3xØ4x0.5mm



...x1

Metric Hex Nut M8



...x2

Nylon Screw M8x14mm



...x2



**Bag 6
Tray 3-4**

Bearing Support (H0142-S)
Lock H0142 after have locked the motor. Motor shaft is requires to optimize the centering. H0142 can not be used with motor shaft 8mm.

Set Screw M4x4mm (HC152-S)

20T Pulley (H0015-20-S)
Lock motor pulley after locking H0142 (see page 28 for optional pulley selection)

Button Head Cap Screw M4x8mm (HC098-S)

Motor Support (H0143-S)

Set Screw M5x20mm (HC158-S)

Set Screw M4x4mm

Button Head Cap Screw M4x8mm

Socket Head Cap Screw M3x8mm

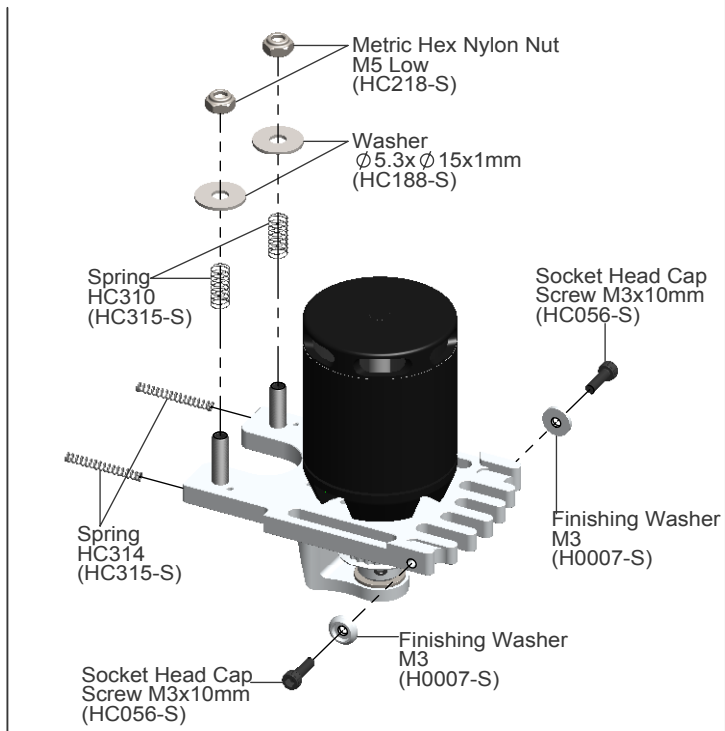
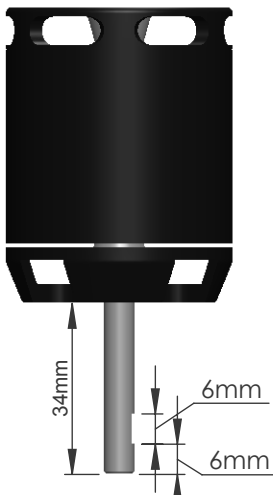
Set Screw M5x20mm

Set Screw M4x4mm

Button Head Cap Screw M4x8mm

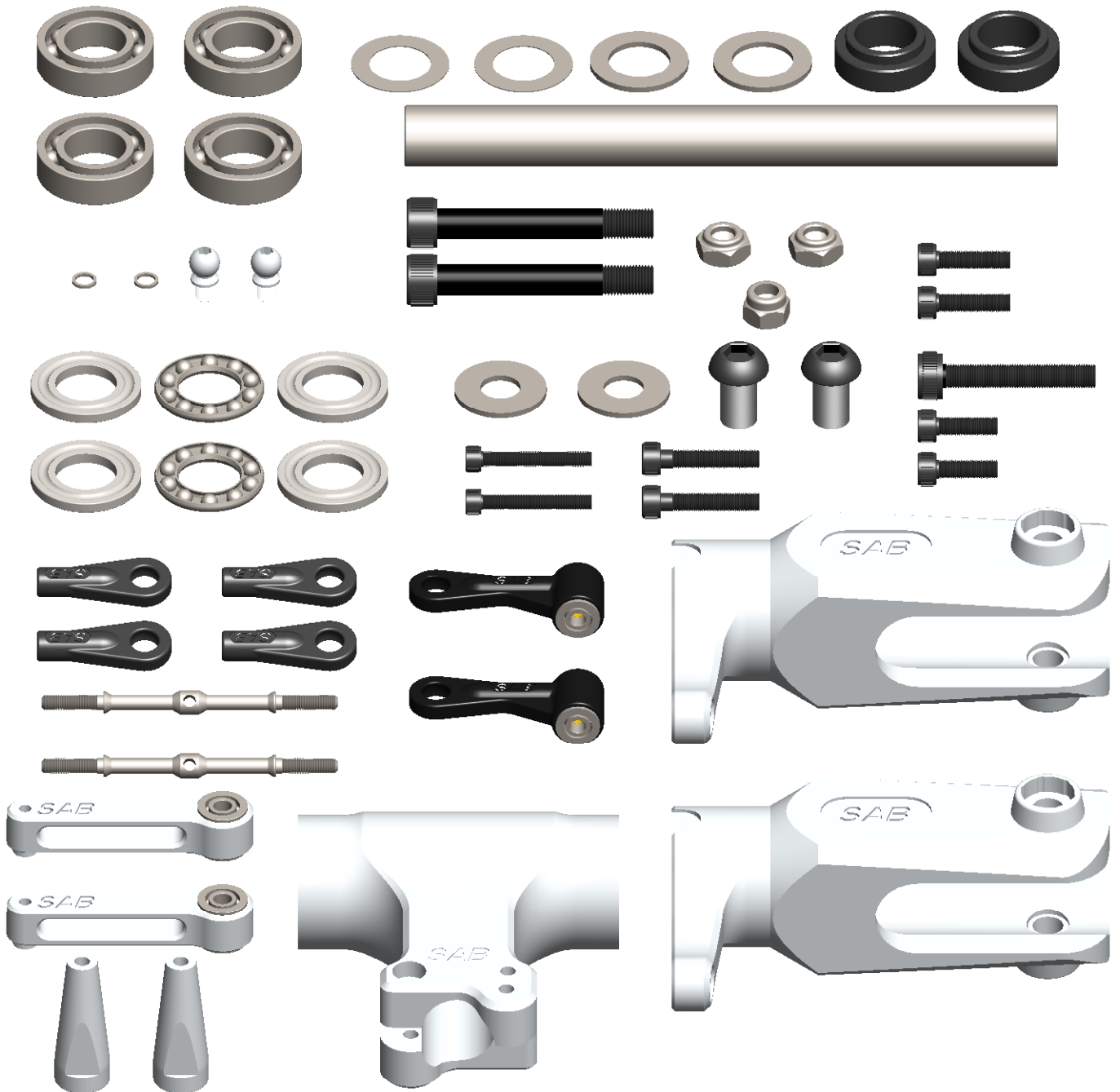
Note:

To maximize space for the batteries, it is advisable to shorten the motor shaft. Follow the dimensions given in this drawing. For the cut, you can use an electric tool like a "Dremel" with a cut-off disc. Additionally, ensure the motor shaft has an appropriate 'flat' for one of the set screws.





6 - Main Rotor

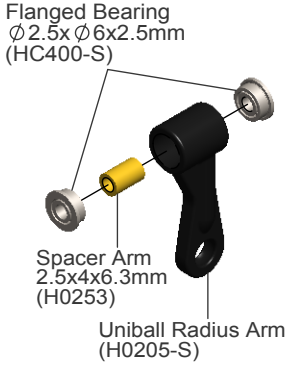




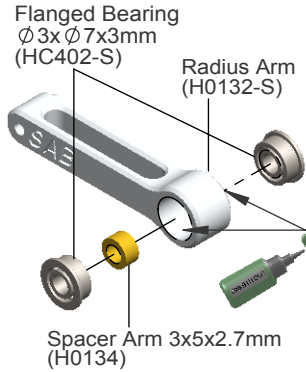
SAB HELI DIVISION

Tray 1, Bag 7

Uniball Radius Arm ... x 2 Assembly

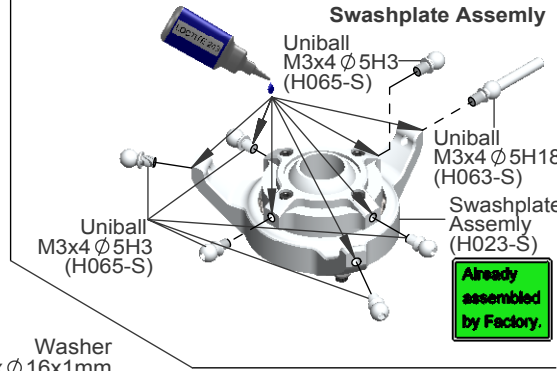
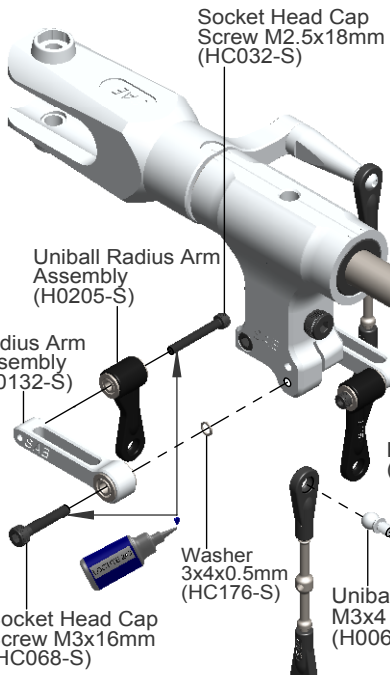
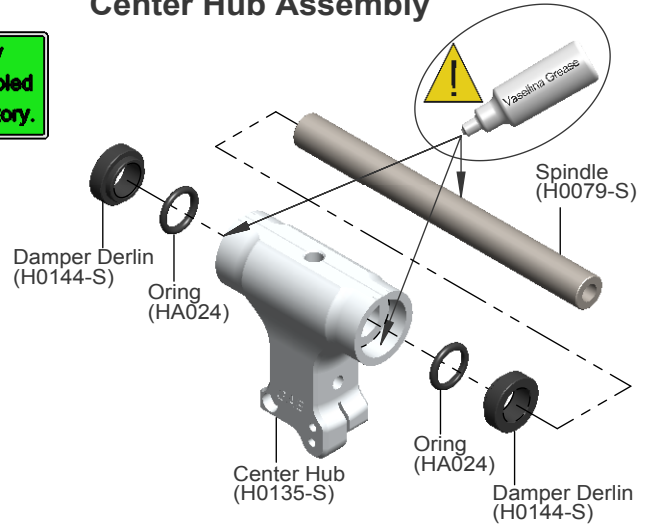


Radius Arm ... x 2 Assembly

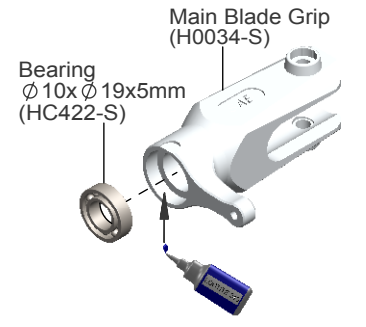


Already assembled by Factory.

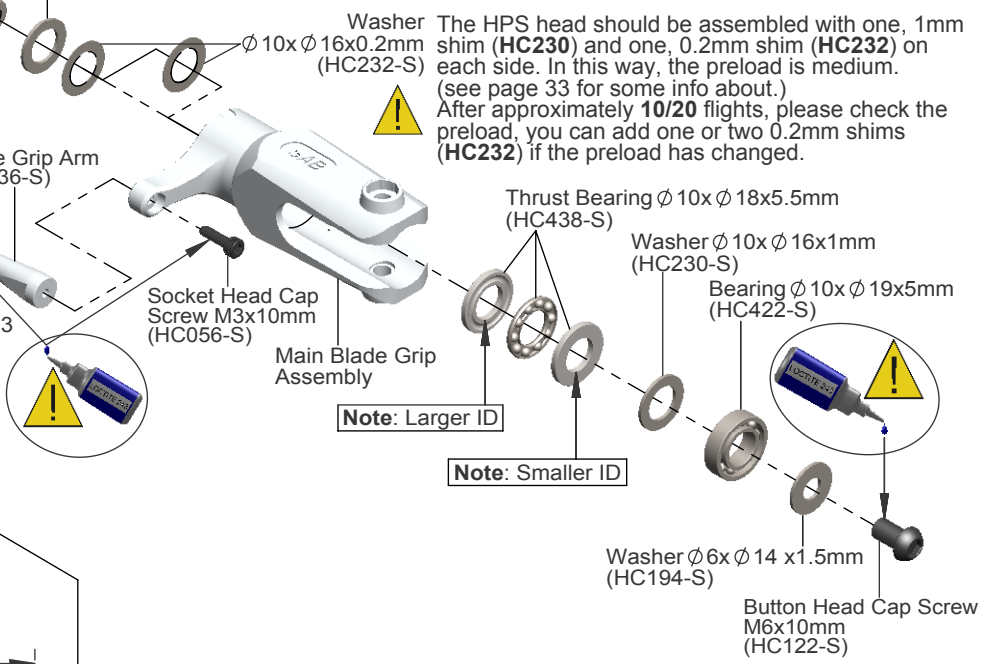
Center Hub Assembly



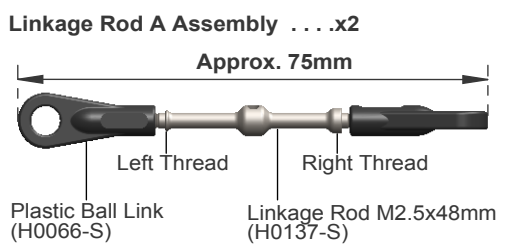
Main Blade Grip Assembly ...x2



The HPS head should be assembled with one, 1mm shim (HC230) and one, 0.2mm shim (HC232) on each side. In this way, the preload is medium. (see page 33 for some info about.) After approximately 10/20 flights, please check the preload, you can add one or two 0.2mm shims (HC232) if the preload has changed.



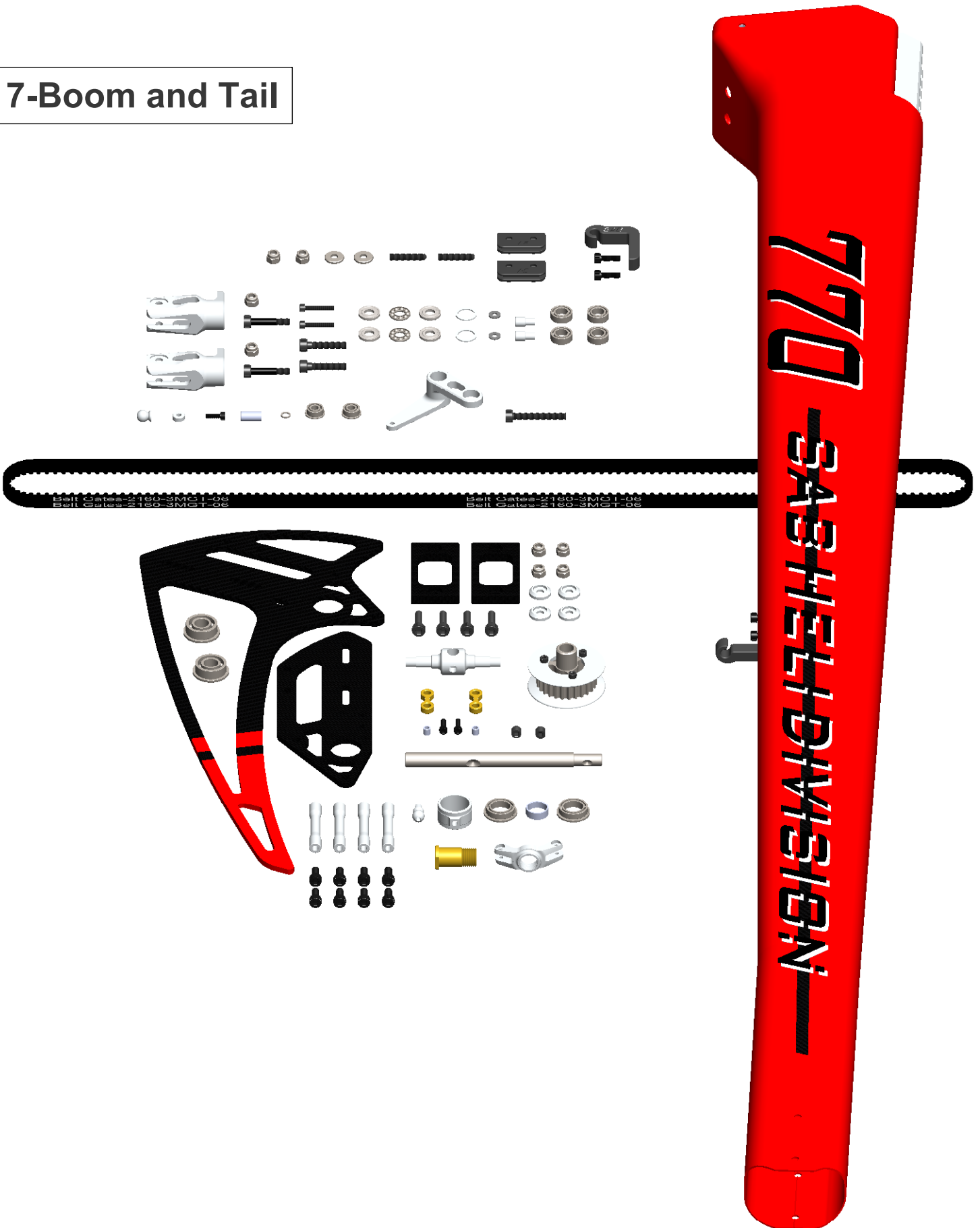
SETUP LINKAGE



(Initial length for the rods from the swash plate to the Blade Grip.)



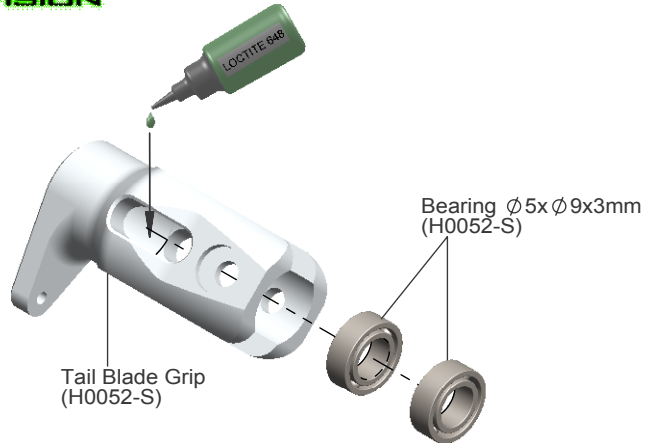
7-Boom and Tail





Tail Blade Grip Assembly x 2
(H0052-S)

Already assembled by Factory.



Bearing $\varnothing 5 \times \varnothing 9 \times 3 \text{mm}$



Bag 8
Tray 2

Washer $\varnothing 3 \times \varnothing 4 \times 0.5 \text{mm}$



Socket Head Cap Screw M2x8mm



Socket Head Cap Screw M3x22mm



Flanged Bearing $\varnothing 3 \times \varnothing 7 \times 3 \text{mm}$



Flanged Bearing $\varnothing 3 \times \varnothing 7 \times 3 \text{mm}$ (HC402-S)

Spacer $\varnothing 3 \times \varnothing 4 \times 9.6 \text{mm}$ (H0059-S)

Bush Bell Crank (H0059-S)

Socket Head Cap Screw M2x8mm (H0008-S)

Bell Crank Lever (H0059-S)

Uniball Spacer (H0064-S)

Uniball M2 $\varnothing 5 \text{H6}$ (H0064-S)

Socket Head Cap Screw M3x22mm (HC086-S)

Bell Crank Lever Assembly

Already assembled by Factory.

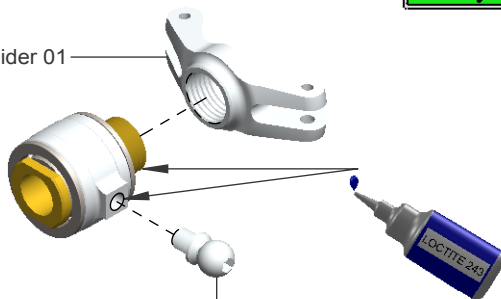
Bell Crank Base (H0058-S)

Washer $\varnothing 3 \times \varnothing 4 \times 0.5 \text{mm}$

Tail Pitch Slider Assembly

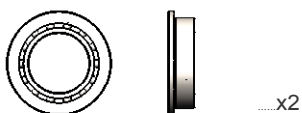
Already assembled by Factory.

Tail Pitch Slider 01 (H0053-S)



Uniball M3x3.5 $\varnothing 5 \text{H3}$ (H0065-S)

Flanged Bearing $\varnothing 8 \times \varnothing 12 \times 3.5 \text{mm}$



Flanged Bearing $\varnothing 8 \times \varnothing 12 \times 3.5 \text{mm}$ (HC418-S)

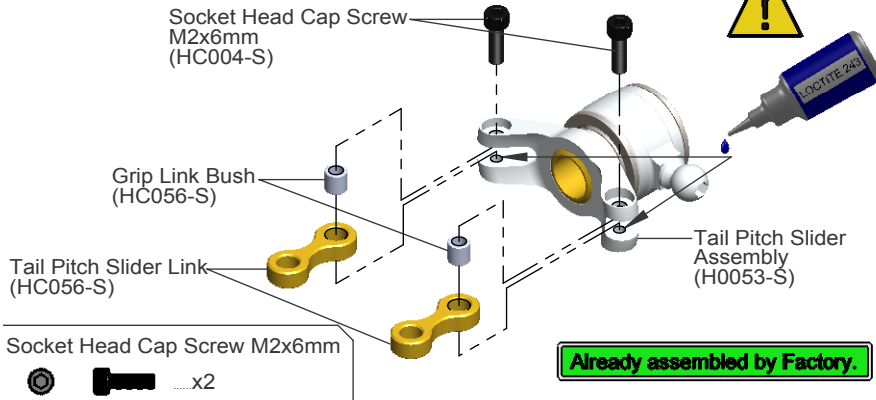
Spacer $\varnothing 8.1 \times \varnothing 9.2 \times 3.2 \text{mm}$

Tail Pitch Slider 02 (H0053-S)

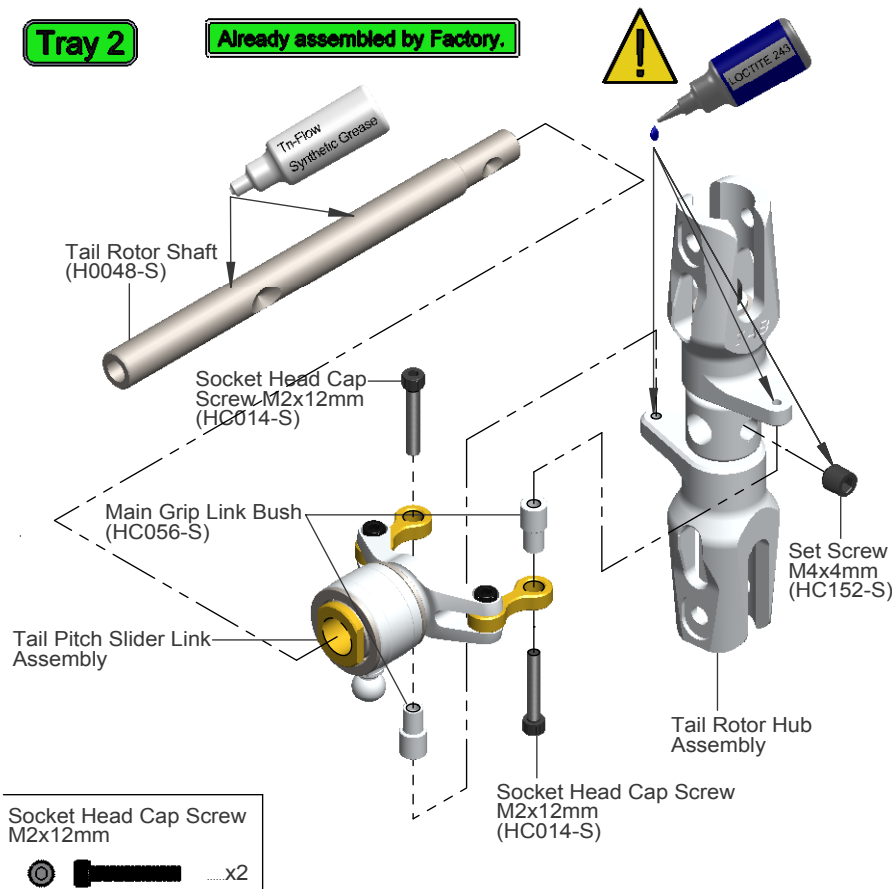
Tail Pitch Slider 03 (H0053-S)



Tray 2 Tail Pitch Slider Link Assembly



Tray 2 **Already assembled by Factory.**



Socket Head Cap Screw M3x16mm



Spacer $\phi 7 \times \phi 9 \times 5 \text{mm}$

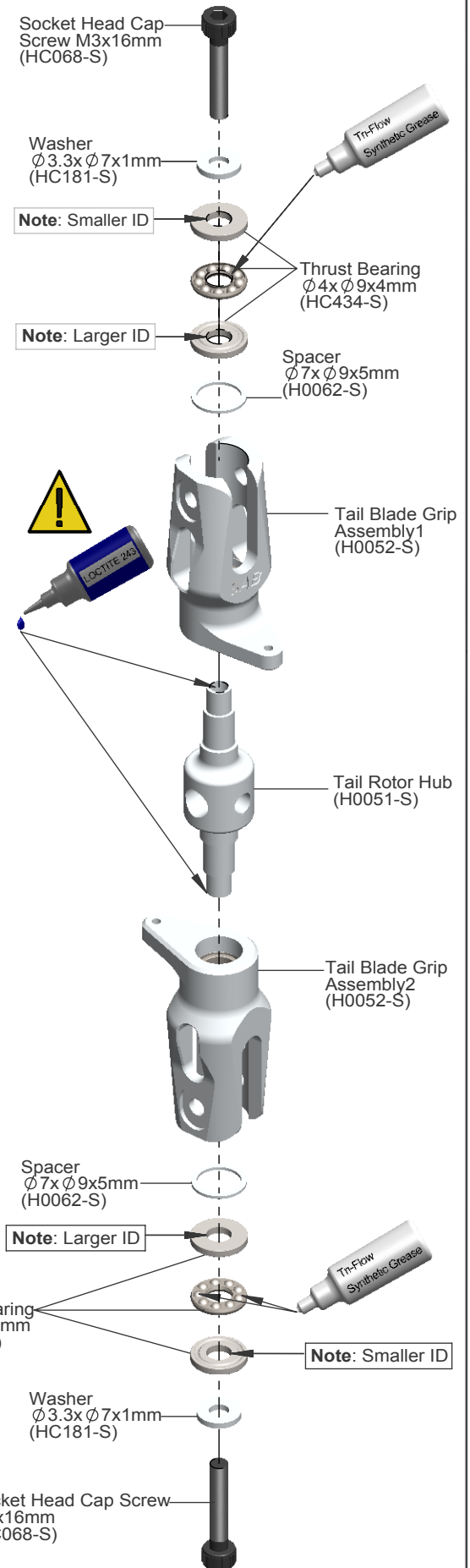


Thrust Bearing $\phi 4 \times \phi 9 \times 4 \text{mm}$



Tray 2 Tail Rotor Hub Assembly

Already assembled by Factory.

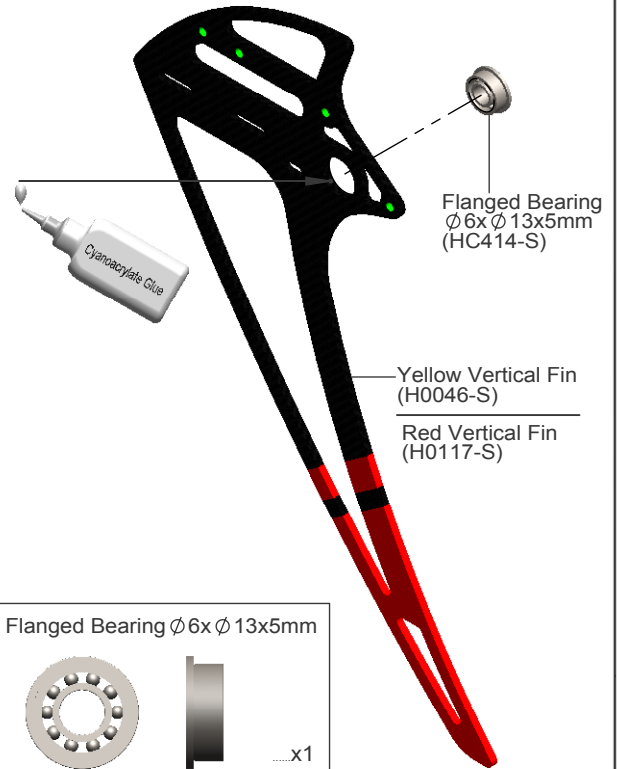




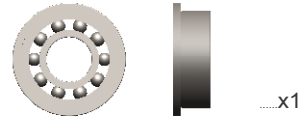
Bag 6

Vertical Fin Assembly

Already assembled by Factory.

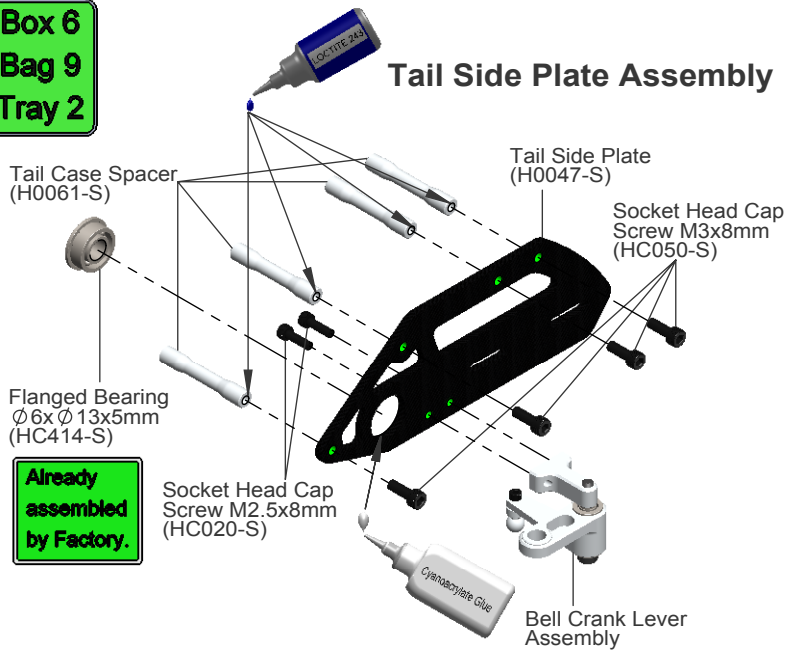


Flanged Bearing $\varnothing 6 \times \varnothing 13 \times 5 \text{mm}$

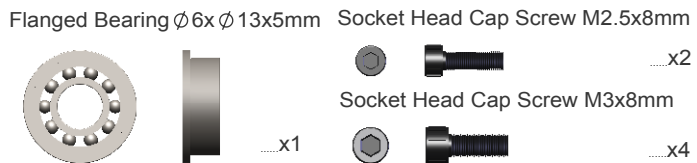


**Box 6
Bag 9
Tray 2**

Tail Side Plate Assembly

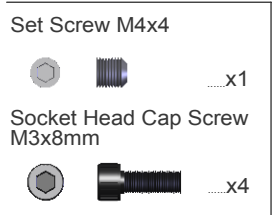
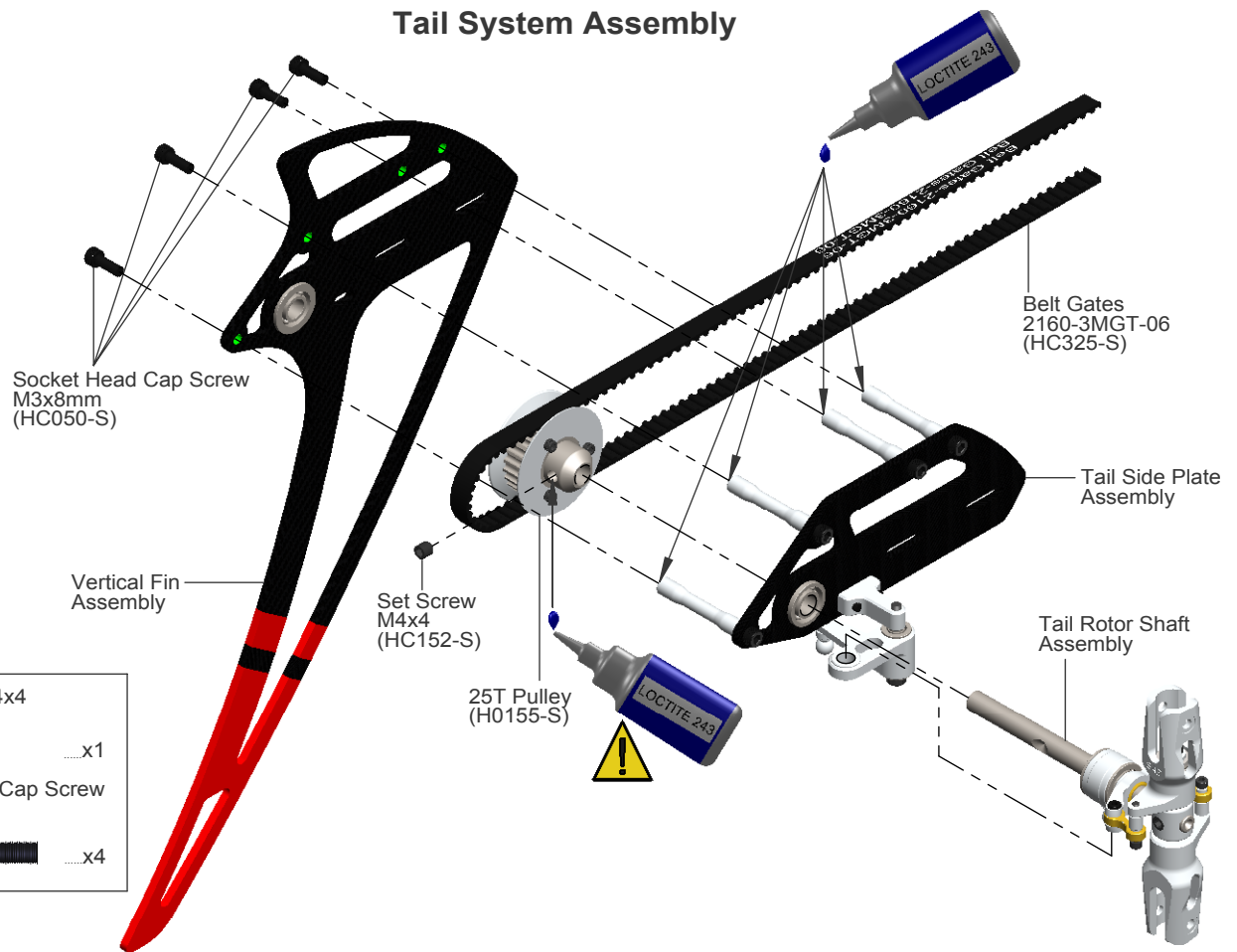


Already assembled by Factory.



Tail System Assembly

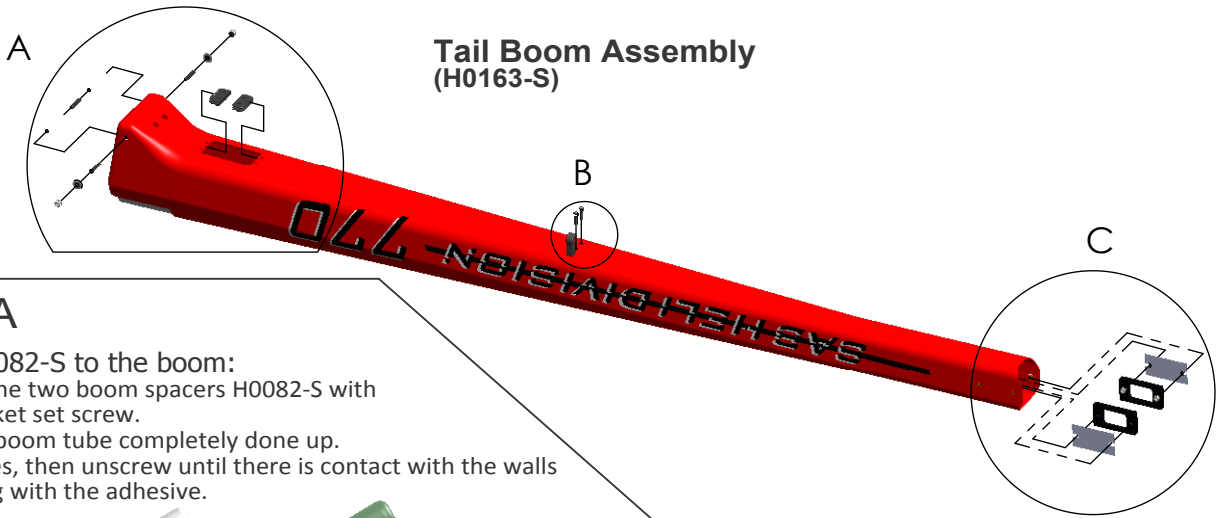
**Bag 9
Tray 2**





If you want to see a video of this operation, consult the SAB Heli Division YouTube channel.

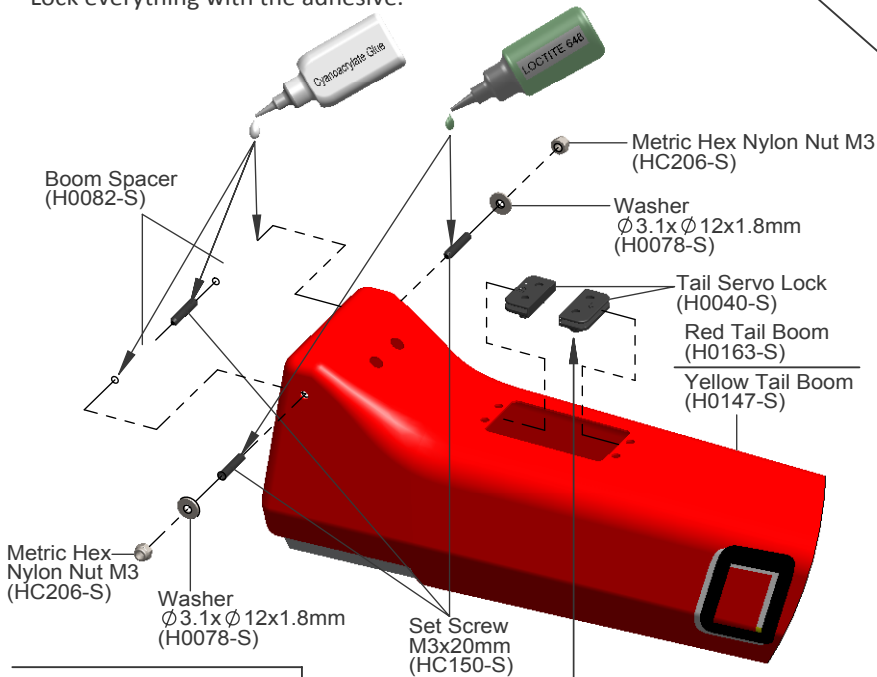
**Box 3
Bag 10**



Tail Boom Assembly (H0163-S)

DETAIL A

Attaching H0082-S to the boom:
Pre-assemble the two boom spacers H0082-S with the M3x20 socket set screw. Insert into the boom tube completely done up. Center the holes, then unscrew until there is contact with the walls. Lock everything with the adhesive.

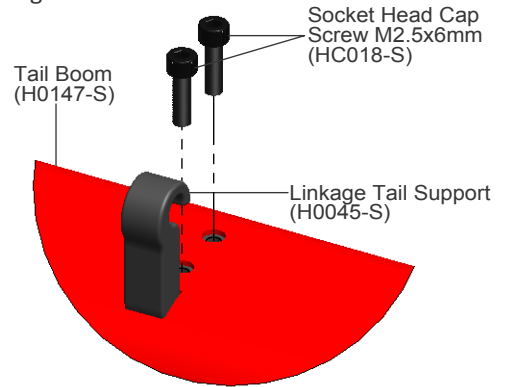


- Set Screw M3x20mm ...x3
- Metric Hex Nylon Nut M3 ...x2

Assemble H0040-S in the boom
Before assembling the two parts in the boom we suggest tightening the M2.5 screws into the two plastic parts to pre-thread them. In this way when you will assemble the tail servo it will be easier to tighten the screws into the plastic parts. Check the tail servo can fit, if necessary carefully sand the hole.

DETAIL B

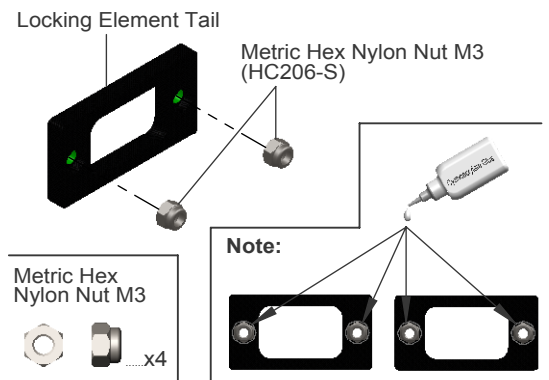
Assemble H0045-S in the boom
Before mounting H0045 on the boom we suggest to first tighten the M2.5 screws into the holes to thread them. In this way when you assemble the part it will be easier to tighten the screws.



- Socket Head Cap Screw M2.5x6mm ...x2

Locking Element Tail Assembly X 2

Already assembled by Factory.

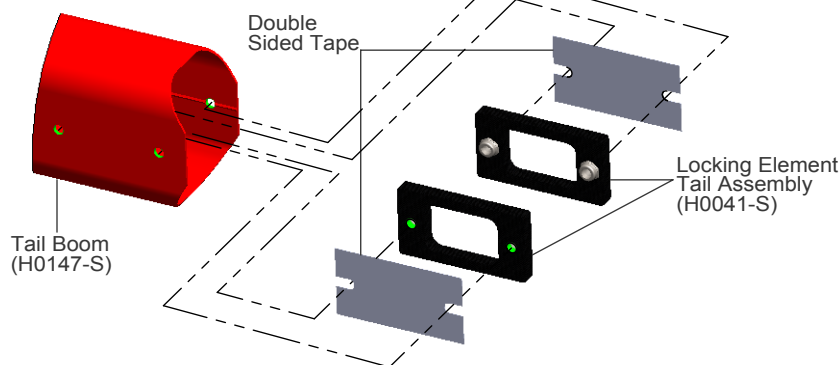


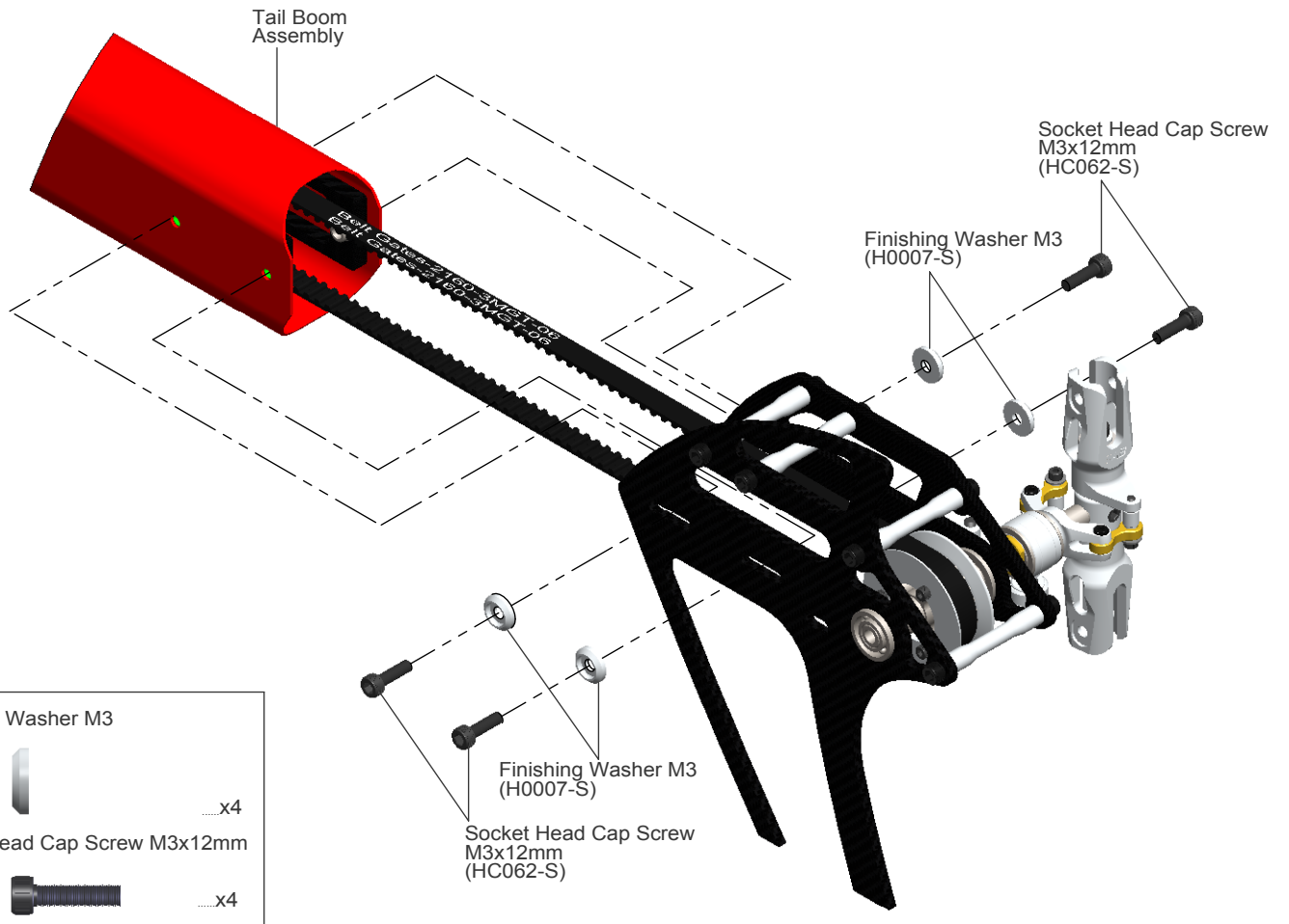
- Metric Hex Nylon Nut M3 ...x4

Note:



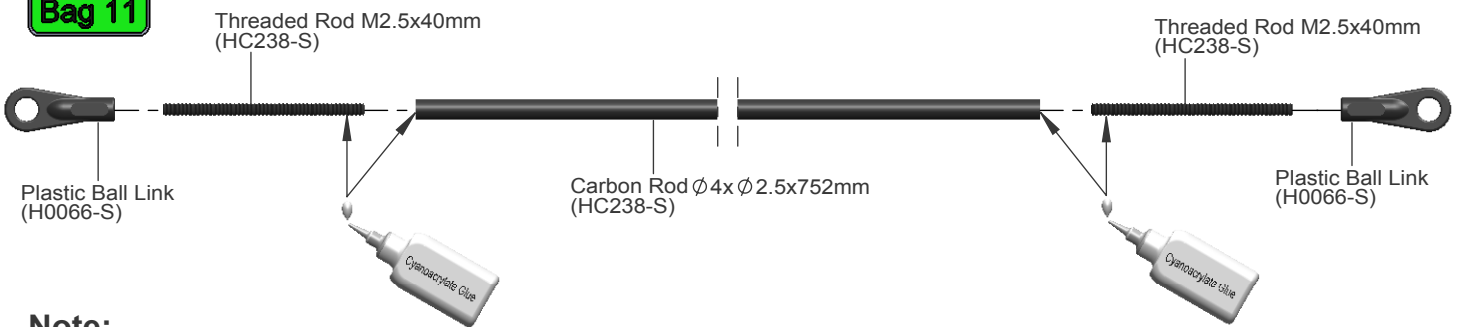
DETAIL C



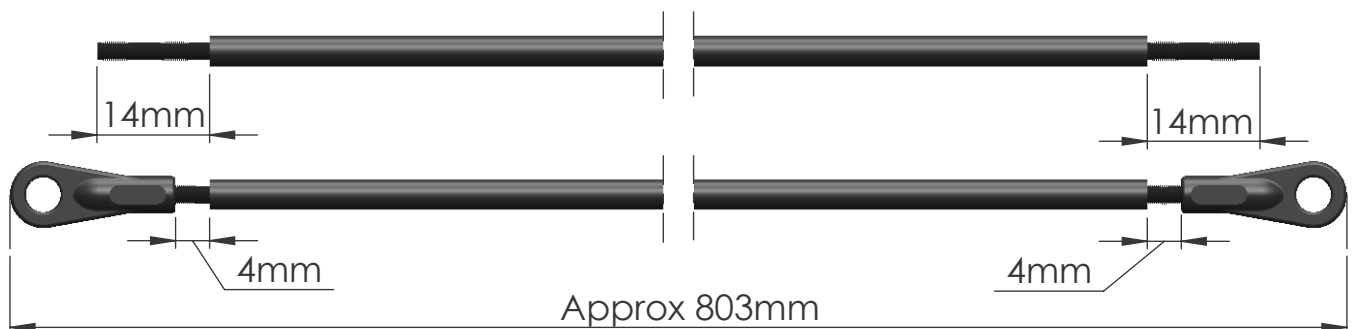


- Finishing Washer M3
-x4
- Socket Head Cap Screw M3x12mm
-x4

Box 3
Bag 11



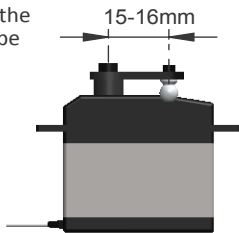
Note:



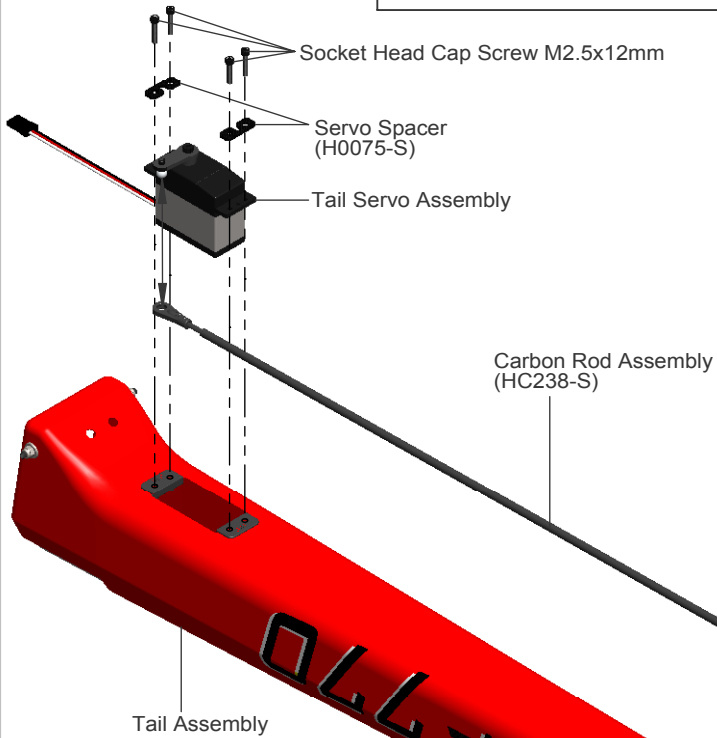
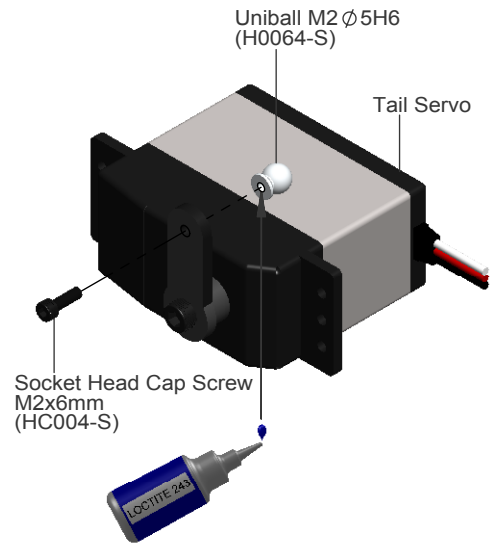


Bag 13

The distance between the axis and the ball must be between 15-16 mm



Tail Servo Assembly



- Uniball M2 Ø5H6

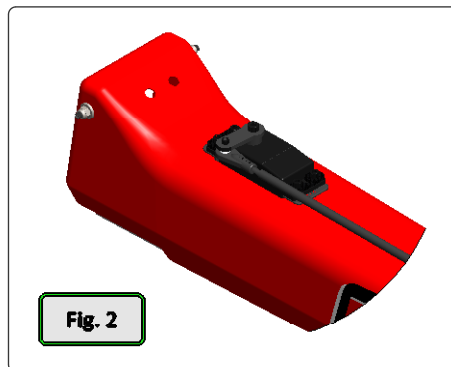
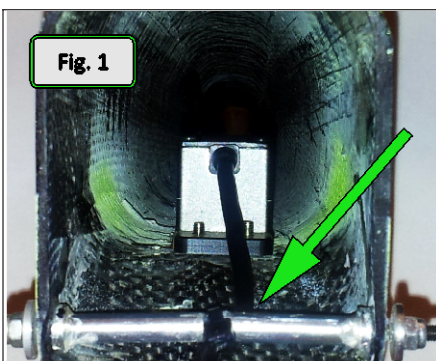

...x1
- Socket Head Cap Screw M2x6mm


...x1
- Socket Head Cap Screw M2.5x12mm


...x4

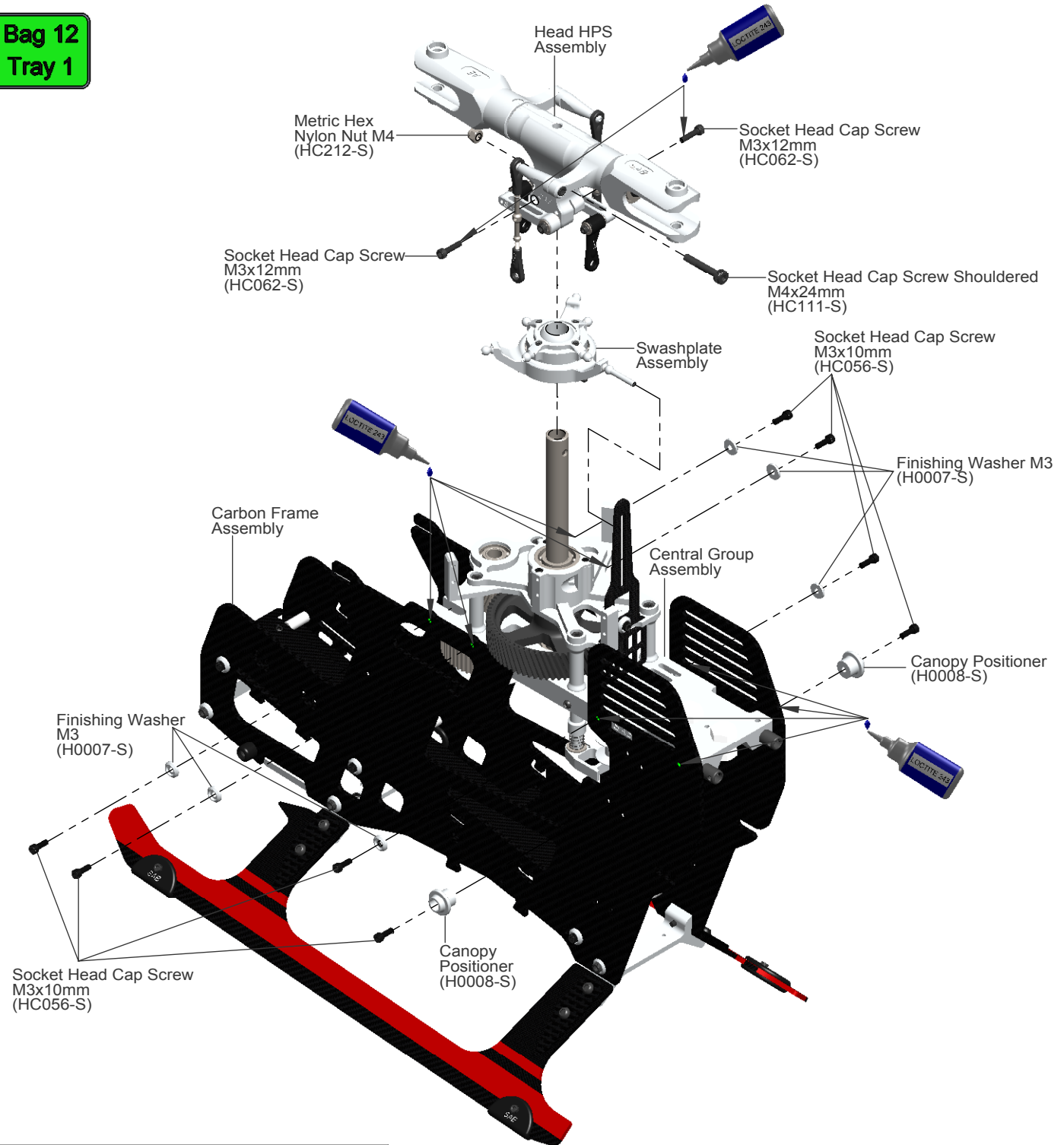
The tail servo wire lead should be secured with hot glue in the area indicated by the arrow (figure 1). Figure 2 shows the installed servo.

! Note: Please note that the boom edges might be rough and can eventually chafe or cut your tail servo lead - we recommend protecting the leads with heat shrink or even electrical tape.





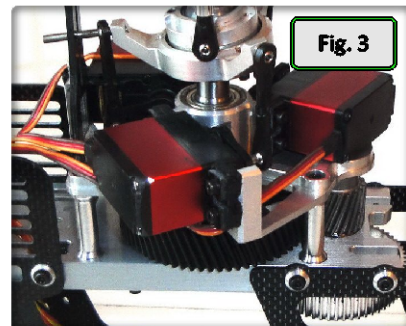
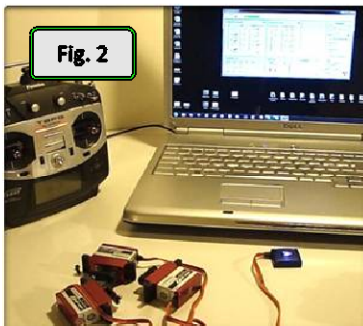
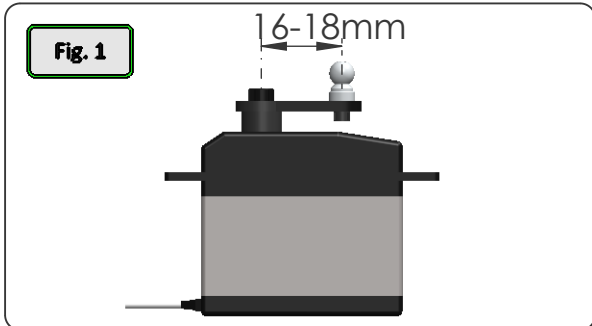
**Bag 12
Tray 1**



- | | | | | | |
|--|--|---------|-------------------------|--|---------|
| Socket Head Cap Screw M3x10mm | |x8 | Finishing Washer M3 | |x6 |
| Socket Head Cap Screw M3x12mm | |x2 | Metric Hex Nylon Nut M4 | |x1 |
| Socket Head Cap Screw Shouldered M4x24mm | |x1 | | | |

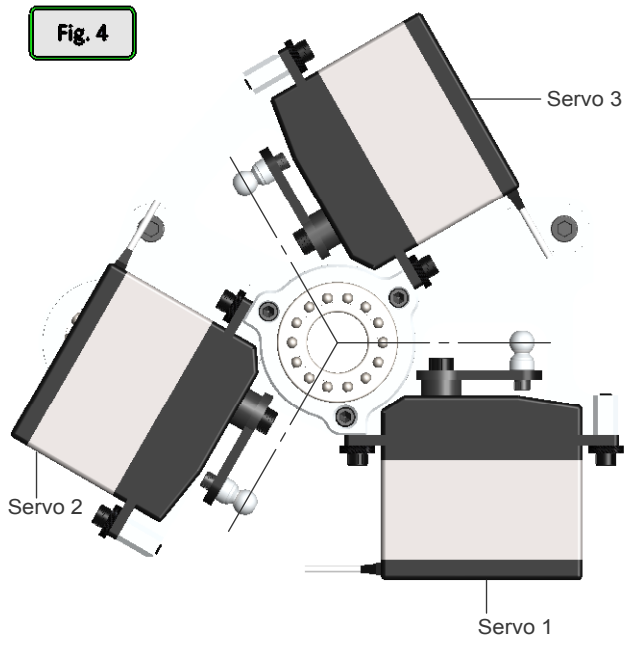
INSTALLATION OF SWASHPLATE SERVOS

The linkage ball must be positioned between **16-18 mm** out on the servo arm (**figure 1**). The 120° placement of the servos inside Goblin means the arms are difficult to access. For this reason it is advisable to ensure alignment of the servo arms (and sub trim set) before installation of the servos in the model (**figure 2**). Proceed with installation following the instructions below. **Figure 3** shows a completed installation.



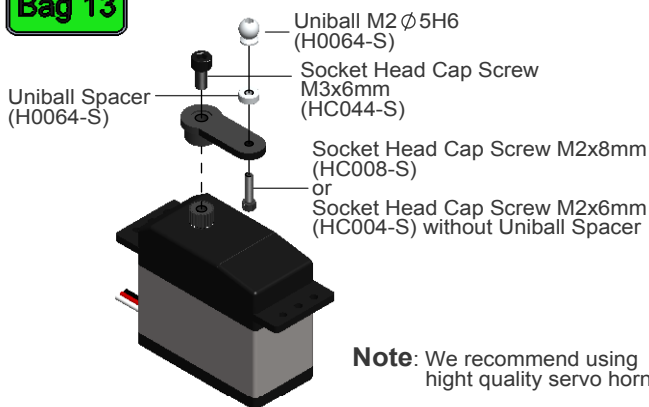
Assembly of the Ball on the Horn.

The rods going from the servos to the swash plate must be as vertical as possible. Not all servos are equal, so to better align them you can choose to use the supplied spacer H0031. Figure 4 illustrates this.



Bag 13

Servos Assembly 1, 2, 3



Bag 13

Socket Head Cap Screw M2.5x8mm

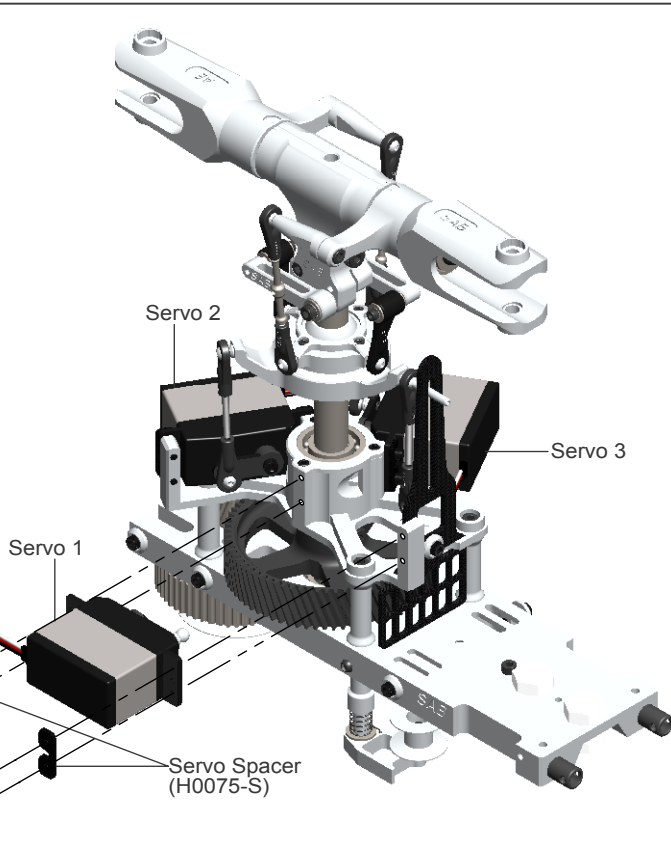


Socket Head Cap Screw M2.5x12mm



Socket Head Cap Screw M2.5x8mm (HC020-S)

Socket Head Cap Screw M2.5x12mm (HC026-S)





The wire for the front servo must be positioned here.

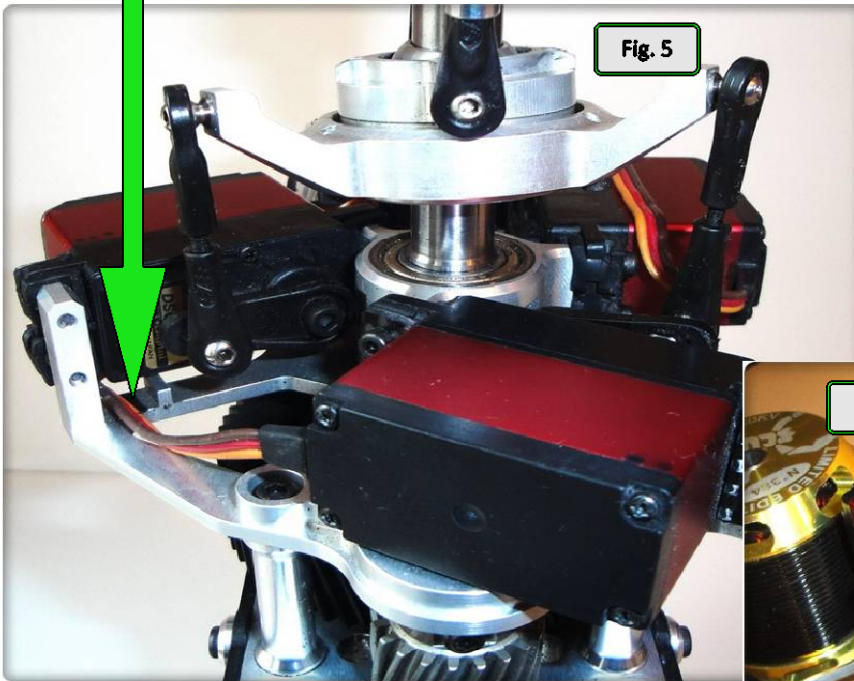



Fig. 5

Bag 14



— Tool HA002

If it is necessary to tighten the horn screw, use the included hexagonal wrench (HA002).

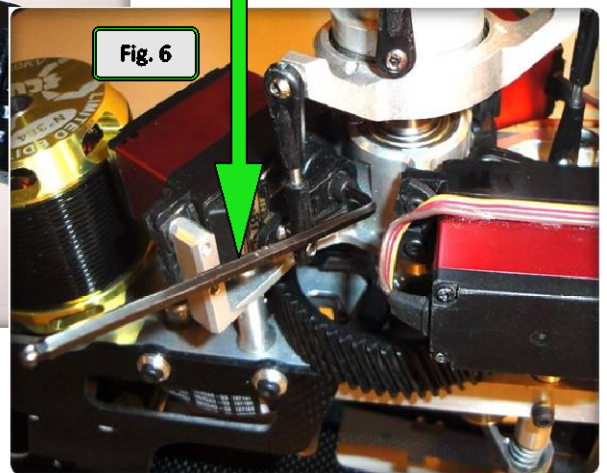
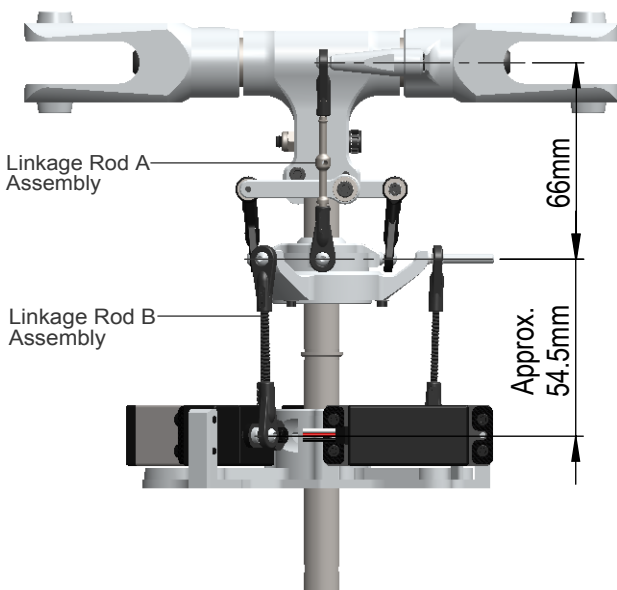


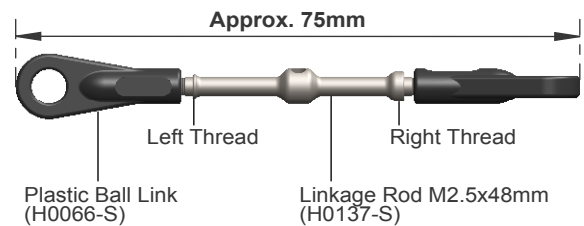
Fig. 6

Head Preliminary Setup

Adjust the linkage as shown. The linkage Rod A has thread right / left. Turning, you can change the tracking without disconnecting the plastic ball link.

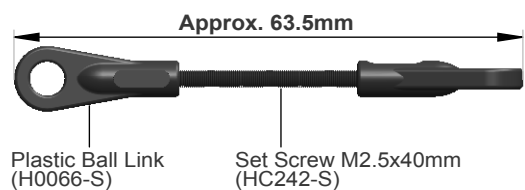


Linkage Rod A Assemblyx2



(Initial length for the rods from the swash plate to the Blade Grip.)

Linkage Rod B Assemblyx3



(Initial length for the rods from the servos to the swash plate.)



DE-BURR THE SIDE FRAMES

We recommend de-burring the edges of the carbon parts in areas where electrical wires run.



ESC INSTALLATION

There are two mounting options:

Mount using part # H0004 (ESC Aluminum Support)
Typically used for Kontronik Jive 120. The speed controller is placed on top of the aluminum support. (Fig. 1)

Mount using part #H0153 (ESC Carbon Support) (Fig. 2)
Typically used for ESCs with aluminum cases, such as Kontronik Kosmik (Fig. 3). The speed controller is attached under the carbon fiber plate.

A heat sink upgrade is available for the YGE 160 controller (Part #H0165-S) (Fig. 4)

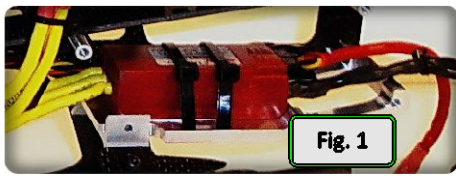


Fig. 1

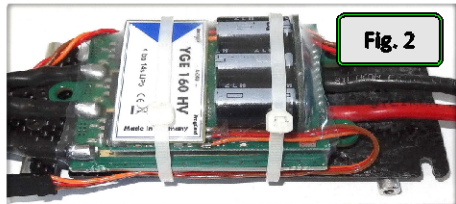


Fig. 2

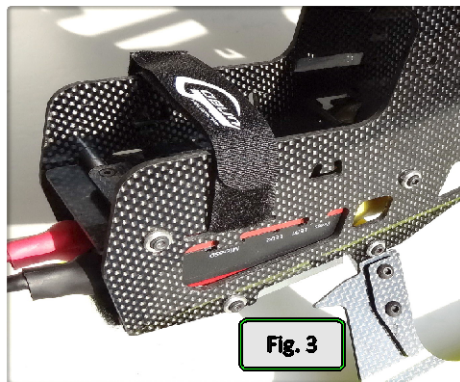


Fig. 3

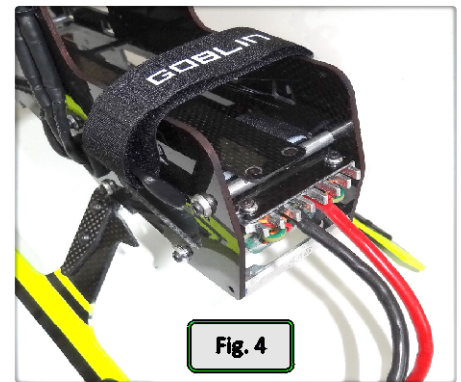


Fig. 4

Figure 5: Shows the wiring which connects the receiver and ESC (in this picture one frame has been removed).
If the BEC used is combined with the ESC, it is recommended to use a dual wire connection.

Figure 6: The passage of the controller wires to the motor is highlighted.

Figure 7: Shows the installation of a 2S battery for the flight control system.
Alternatively, a BEC could be placed in the same area.

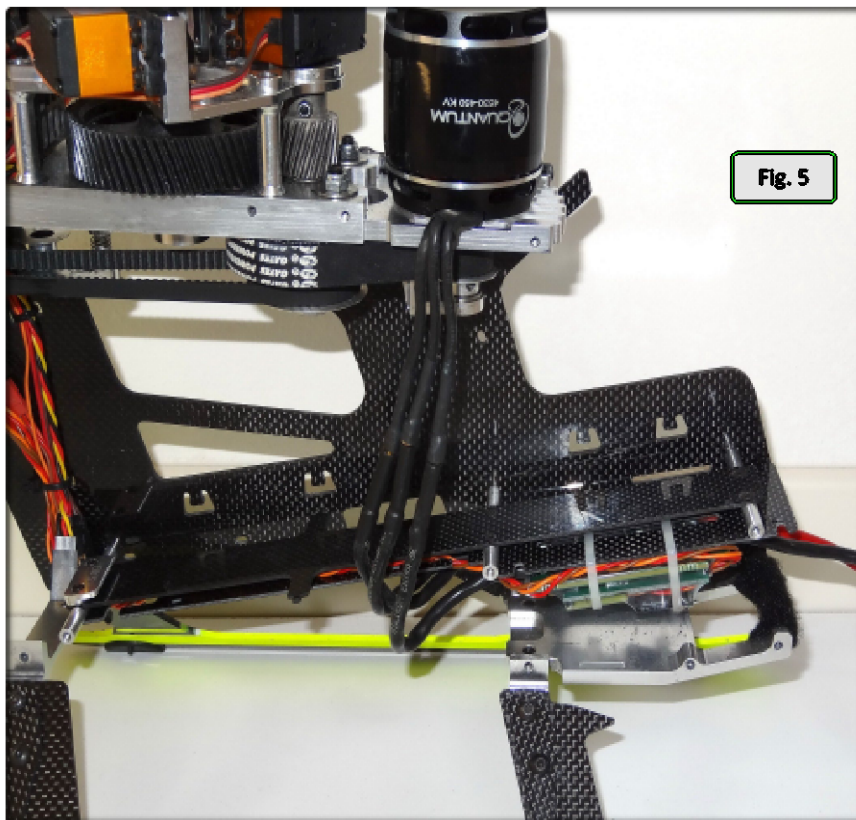


Fig. 5

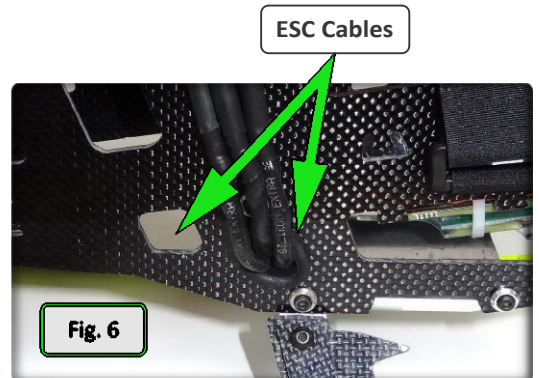
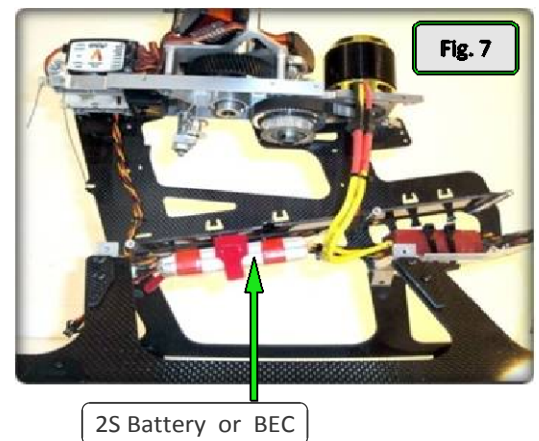


Fig. 6



2S Battery or BEC

FLYBARLESS CONTROL UNIT AND RX INSTALLATION

It is possible to install any commercially available Flybarless control unit in the goblin. For Flybarless systems with a separate sensor, the sensor must be installed under the plate (**Figure 1**). **Figure 2** shows an example of installation of the receiver and flybarless control unit. In **Figure 3** you can see the extension lead for the tail servo. It is very important to include a connector for fast disassembly of the boom module. The connector will prevent servo damage in case of boom separation during a crash.

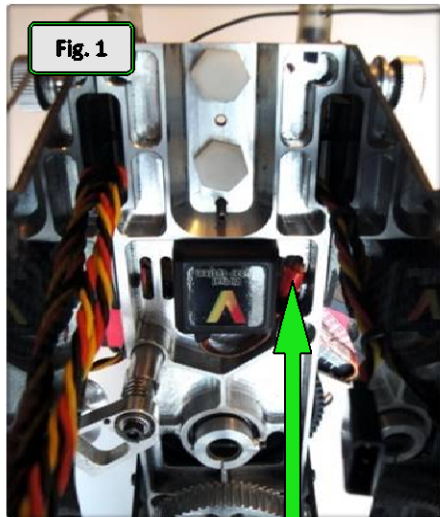


Fig. 1

Slot for sensor cable

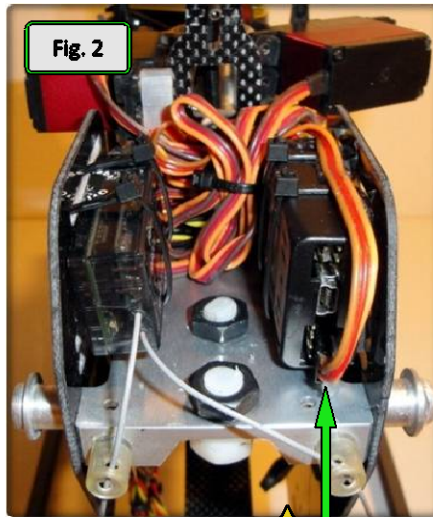


Fig. 2

It is important to lock the plugs of the flybarless unit with an adhesive - for example hot glue.

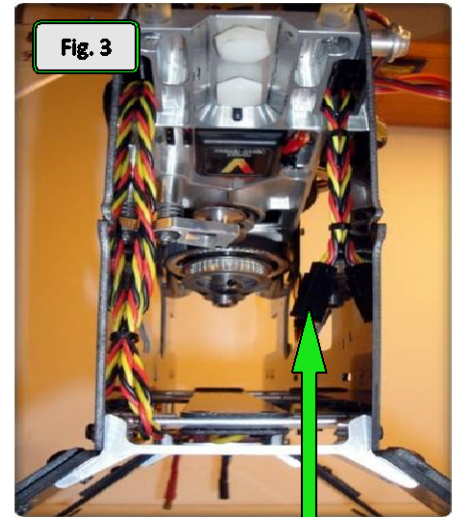


Fig. 3

Tail servo extension cable

To install a one piece Flybarless system it is necessary to add the support shown in these figures. Figure 3 shows the installed support. Figure 4 shows the control unit and the receiver installed on the support.

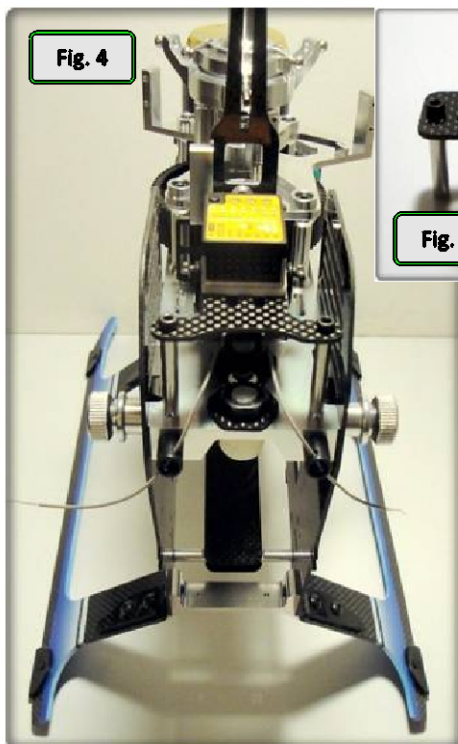


Fig. 4

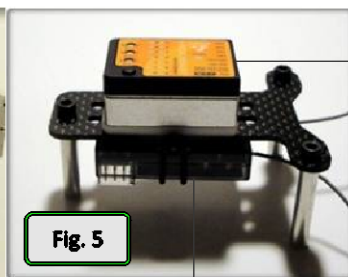
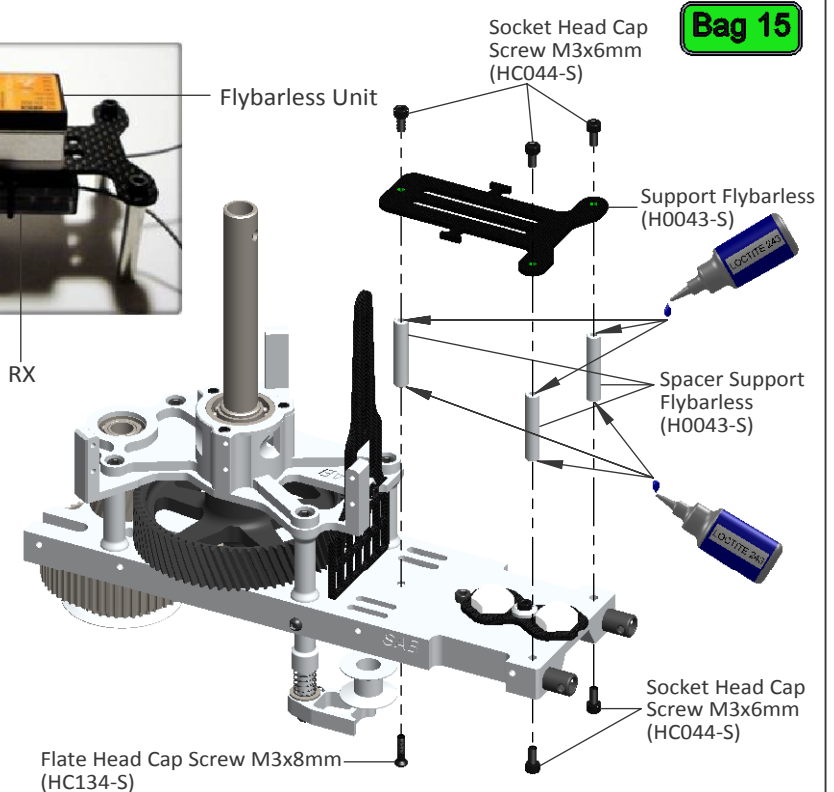


Fig. 5





TRANSMISSION SETUP

It is important to choose the right reduction ratio to maximize efficiency based on your required flight performance. The Goblin has many possible reduction ratios at your disposal. It is possible to optimize any motor and battery combination. It is recommended to use wiring and connectors appropriate for the currents generated in a helicopter of this class.

If you are using a head speed calculator which requires a main gear and pinion tooth count, use **215** teeth for the main gear (this takes into account the two stage reduction) and the tooth count of your pulley as the pinion count.

Below is a list of available reduction ratios:

- | | |
|---|--|
| H0015-18-S - 18T Pinion = ratio 11.93:1 | H0015-22-S - 22T Pinion = ratio 9.75:1 |
| H0015-19-S - 19T Pinion = ratio 11.3:1 | H0015-23-S - 23T Pinion = ratio 9.35:1 |
| H0015-20-S - 20T Pinion = ratio 10.75:1 | H0015-24-S - 24T Pinion = ratio 8.95:1 |
| H0015-21-S - 21T Pinion = ratio 10.25:1 | H0015-26-S - 26T Pinion = ratio 8.25:1 |

H0015-xx-S is a motor pulley for 6mm motor shaft
Available also H0126-xx-S, motor pulley for 8mm motor shaft.

Some example configurations:

GOBLIN 770 CONFIGURATIONS							
							Rev 01
Performance	Battery	Motor	ESC	Pinion	Gov	RPM Max	Pitch
GENERAL	12S 5000/5500	Scorpion HK 5025-440	Ice 120 HV (V2)	22T	SET RPM	1820	± 12.5
			Jive 120 HV YGE 160HV	21T	Gov @80%	1820	± 12.5
		Quantum 4530-500	Ice 120 HV (V2)	20T	SET RPM	1850	± 12.5
			Jive 120 HV YGE 160HV	19T	Gov @80%	1850	± 12.5
		Kontronik Pyro 700-520	Ice 120 HV (V2)	19T	SET RPM	1820	± 12.5
			Jive 120 HV YGE 160HV	18T	Gov @80%	1820	± 12.5
3D	12S 5000/5500	Scorpion HK 4525-520	Ice 120 HV (V2)	21T	SET RPM	2000	± 12.5
			Jive 120 HV YGE 160HV	20T	Gov @75%	2000	± 12.5
		Quantum 4530-500 Scorpion 4530-500	Ice 120 HV (V2)	21T	SET RPM	2000	± 12.5
			Jive 120 HV YGE 160HV	20T	Gov @80%	2000	± 12.5
		Kontronik Pyro 800-48	Ice 120 HV (V2)	22T	SET RPM	2000	± 12.5
			Jive 120 HV YGE 160HV	21T	Gov @80%	2000	± 12.5
	14S 5000/5500	Scorpion HK 5025-440	YGE 160HV	21T	SET RPM	2000	± 12.5
			KOSMIK 160	20T	Gov @75%	2000	± 12.5
3D HARD 3D	14S 5000/5500	Quantum 4530-450 Scorpion 4530-450	YGE 160HV	20T	Gov @80%	2050	± 12.5
			KOSMIK 160				
		Kontronik Pyro 800-48	YGE 160HV	20T	Gov @75%	2100	± 12.5
		Quantum HK 5330-450	YGE 160HV KOSMIK 160	21T	Gov @75%	2100	± 12.5

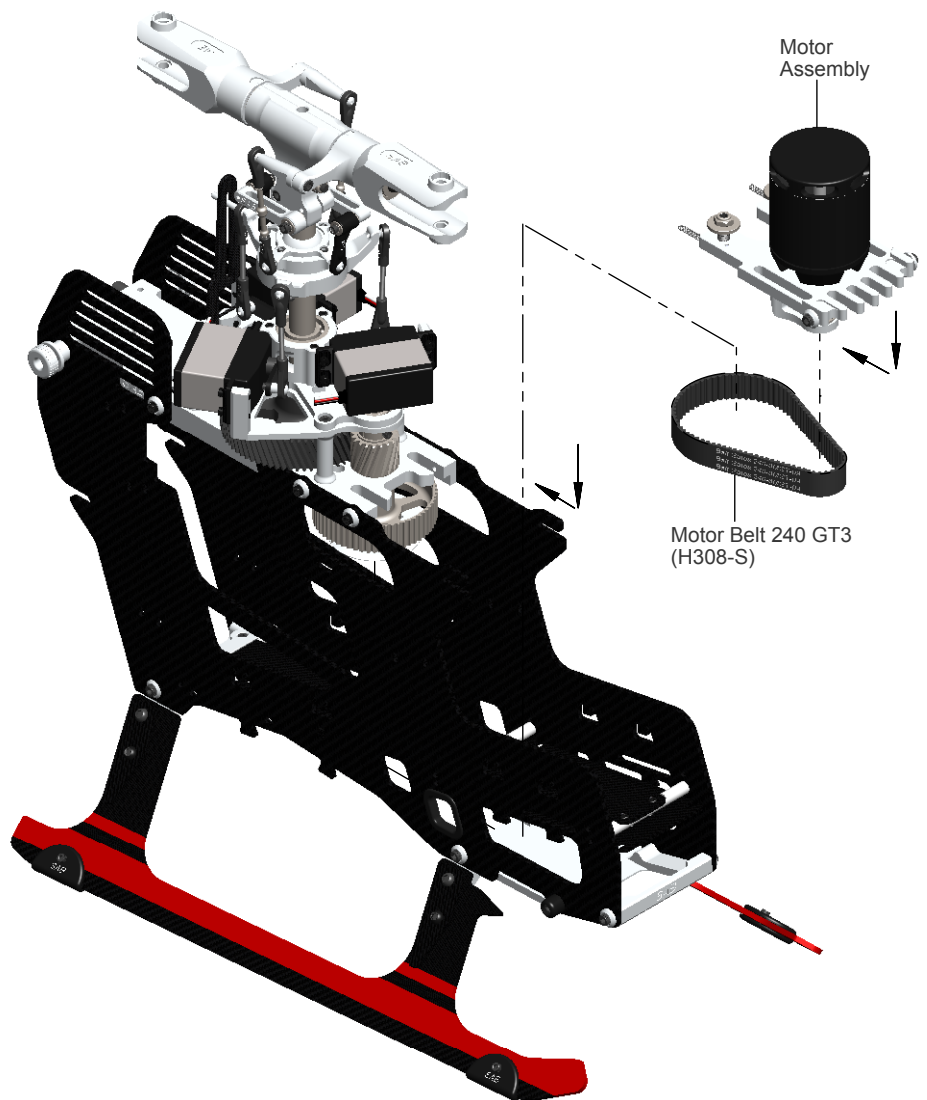
Note: Although the Goblin can fly at high rpm, for safety reasons we suggest to not exceed 2000 rpm.



MOTOR BELT TENSION

- * Assemble the motor and pinion to its mounting plate.
- * Fit the motor assembly into position.
- * Compress the springs by pushing the motor toward the main shaft.
- * At maximum compression, temporarily tighten one of the slide screws.
- * With the minimum centre distance it is easy to install the belt. First put the belt on the motor pinion.
- * Then put the belt around the big pulley.
- * Rotate the motor several times by hand.
- * Release the screw that locks the slide.
- * The springs keep the belt in tension.
- * Help the springs by pulling the motor slightly.
- * The belt must be very tight.
- * Lock all screws.

Figure 1 shows the motor correctly wired. It is advisable to cover the wire joints between the motor and the ESC with heat shrink tubing.





BOOM ASSEMBLY

- *Insert the tail boom assembly making sure that the aluminum part of the tube touches the M3x16 screw.
- *Lock the M8 nuts with the HA005 special tool supplied (Tray 2).
- *Firmly lock the lateral M3 nuts.
- *Assemble the H0038 carbon security plate .
- *Connect the tail servo wire to the previously fitted extension lead.

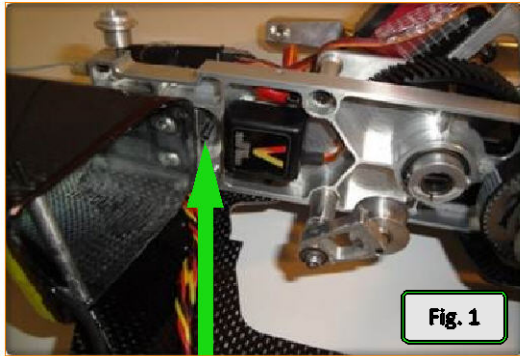


Fig. 1

The Socket Head Cap Screw M3x16mm correctly positions the boom assembly.

- Socket Head Cap Screw M3x8mm
- Finishing Washer M3

Bag 12

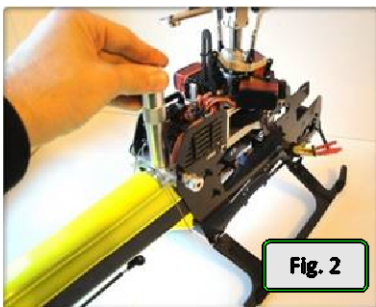
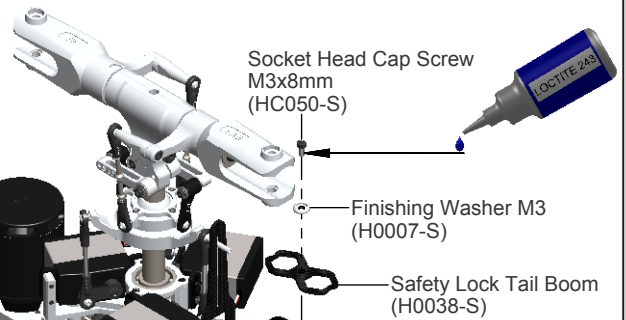


Fig. 2

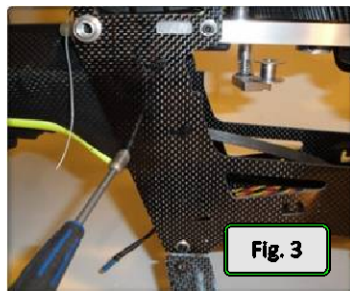


Fig. 3



Fig. 4



TAIL BELT TENSION

- *Check the proper assembly of the tail boom.
- *Check that the aluminum part of the tube is against the M3 stop screw.
- *Loosen the tail group by loosening the 4 M3 screws.
- *Install the belt onto the pulley, taking care to respect the direction of rotation (figure 1).
- *Rotate the tail drive several times by hand.
- *Load the spring by a rotation of 270° the tensioning arm (clockwise)
- *Tension the boom until the tensioning arm is aligned with the frame.
- *Tighten the 4 screws.
- *Check that the tail output shaft is perpendicular to the tube. (figure 2)
- *In figure 3,4,5 you can see the three conditions, ok, too loose and too tight.

NOTE. To disassemble the tail boom it is possible to remove the pulley H0016-S without loosening the tail unit.
Remove the locking screw and pull down.

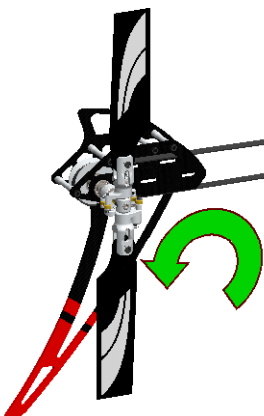
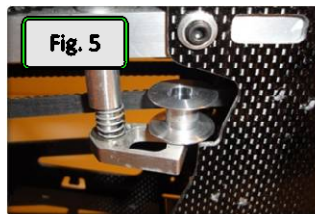
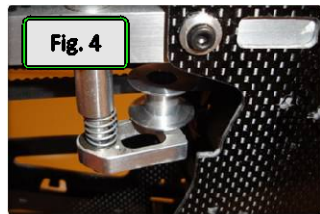
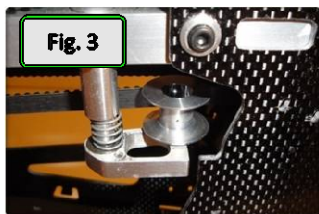


Fig. 1

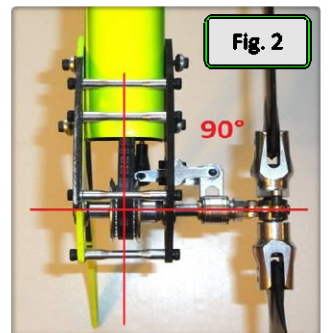
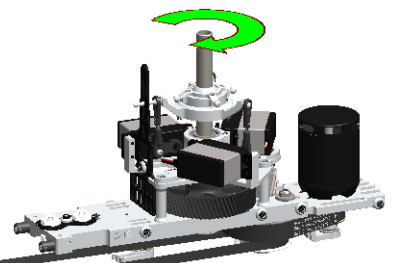


Fig. 2

Canopy

Red Canopy code: H0164-S - Yellow Canopy cod: H0148-S.

On the Goblin, the canopy touches the frame. To avoid triggering vibration, it is necessary to attach an adhesive foam tape to the canopy HA006 [Bag 14] (figure 6).

The canopy is locked at the point shown in figure 8 and with two H0036 kobs (both equipped with OR HA008 [Bag 14] (figure 7)). Confirm the canopy is secure prior to each flight.



Fig. 7

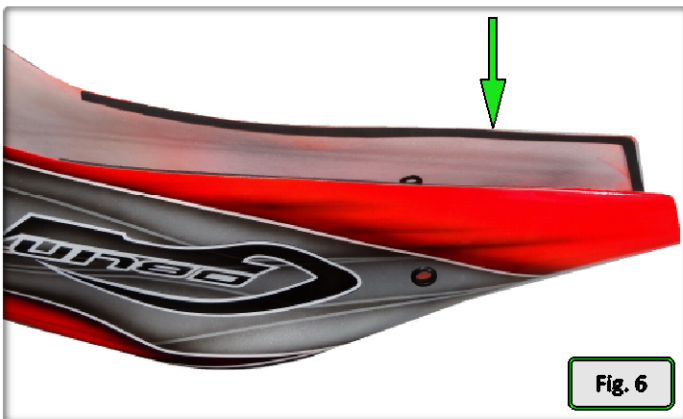


Fig. 6



Fig. 8



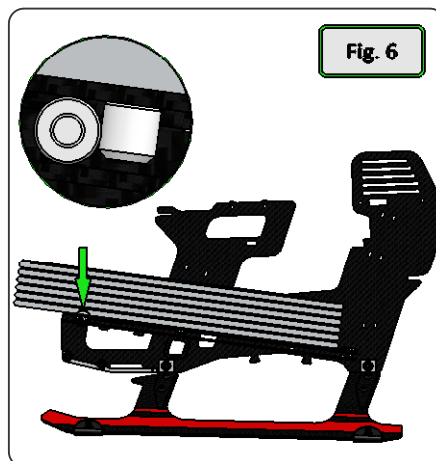
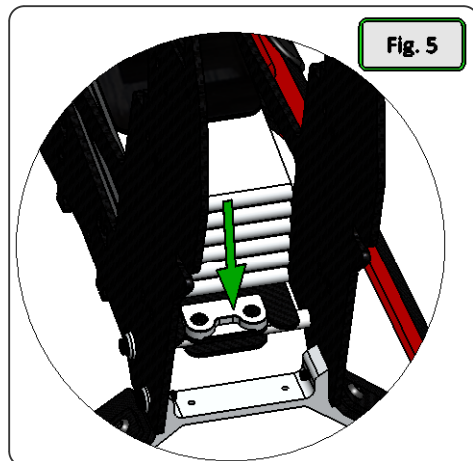
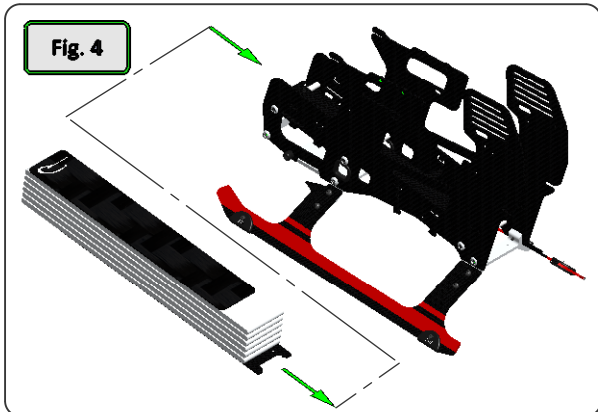
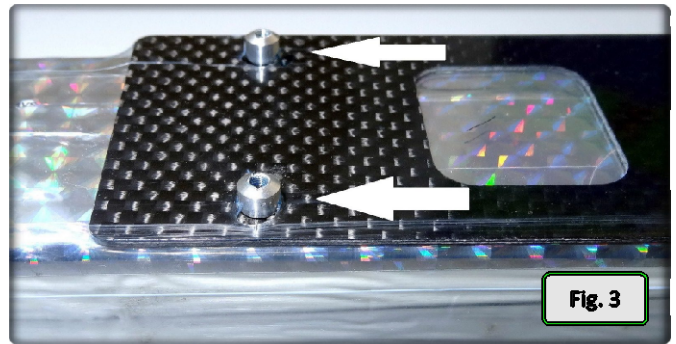
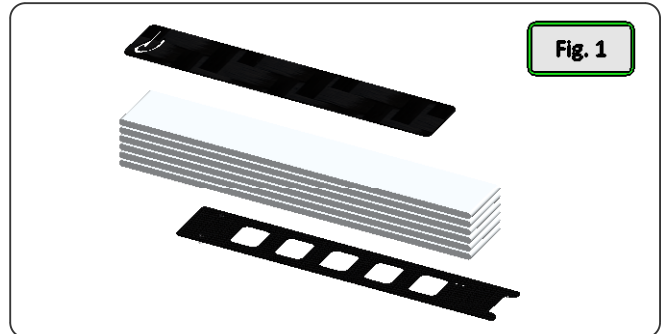
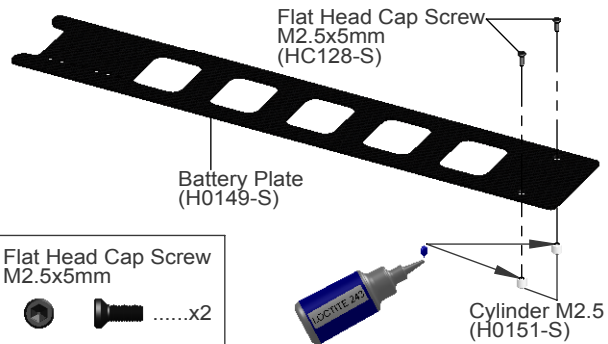
BATTERIES

The battery tray system in the Goblin 770 is simple, but very effective. The battery should be attached to the tray (Part **H0149**) with heat shrink, tape or velcro. You can optionally use the battery protection tray (Part **H0151**) see **Fig. 1, 2**. Before permanently mounting the batteries onto the battery tray, check the ideal position for the best center of gravity. Cut the heat shrink around the carbon fiber tray locking pins. **Fig. 3**.

Battery Pack:

Slide the tray until it locks into the CNC stopper. **Fig. 4, 5**. Using the velcro straps, making sure that the two locking pins are stopped against the frame spacer (Part1#**H0003** and #**H0151**) **Fig.6, 7**.

**Box 7
Bag 14A**





OPERATIONS BEFORE FLIGHT

- *Set up the remote control and the flybarless system with utmost care.
- *It is advisable to test the correct settings of the remote and flybarless system without main blades or tail blades fitted.
- *Check that all wiring is isolated from the carbon/aluminum parts. It is good practice to protect them at the points where they are at most risk.
- *Be sure of the gear ratio, verifying carefully the motor pulley in use. The forces acting on the mechanics increase enormously with increasing of rpm. Although the Goblin can fly at high rpm, for safety reasons we suggest to not exceed 2000 rpm.



- *Check the correct tension of the tail belt through the belt tensioner.
- *Fit the main blades and tail blades. (Fig.1 and Fig.2)
- *Please make sure the main blades are tight on the blade grips, you should be able to violently jerk the head in both directions and the blades should not fold. Failure to tighten the blades properly can result in a boom strike. To fold the blades for storage, it is advisable to loosen them.
- *Check the collective and cyclic pitch. For 3D flight, set about +/- 12°-13°.
- *It is important to check the correct tracking of the main blades.
- *On the Goblin, in order to correct the tracking, adjust the main link rod as shown in figure 3. This is provided with a right/left thread system that allows continuous fine adjustments of the length of the control rod; for this adjustment it is not necessary to detach the ball link.



- *Perform the first flight at a low headspeed, 1600 RPM.
- After this first flight, do a general check of the helicopter. Verify that all screws are correctly tightened.

Fig. 1

Bag 14

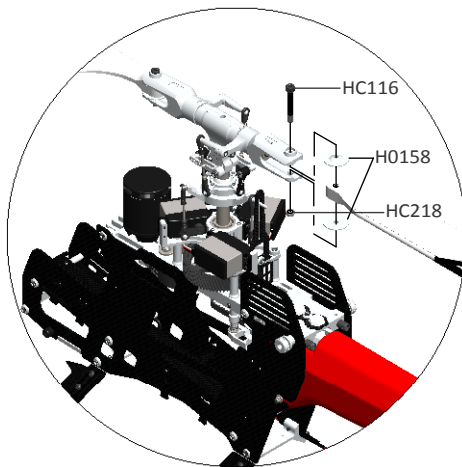


Fig. 2

Bag 14

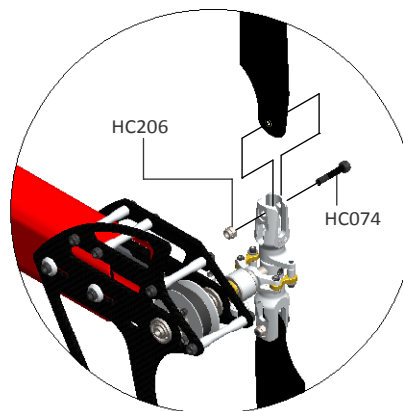
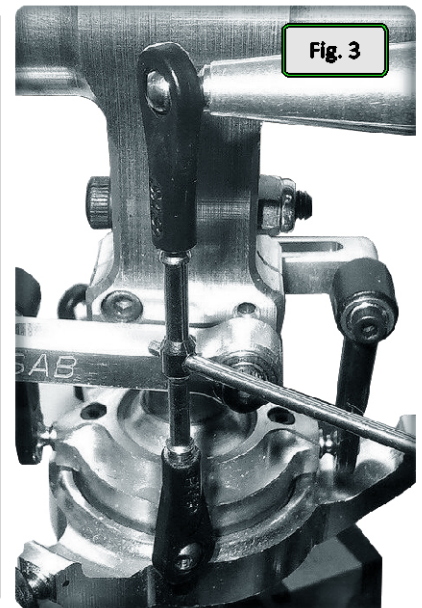


Fig. 3



IN FLIGHT

During its first flights the Goblin has to be "run in".

The Dampener system, the main gear, the uniball and other parts must undergo some slight wear to operate smoothly. It is likely that during the very first flights the model may exhibit a swaying phenomena, particularly at low head speed. This phenomena disappears after a few flights.

If you want to fly in a generic way, using both low headspeed and high headspeed, the standard setting is the best compromise.

However, if you prefer flying at low speed [< 1800 rpm], for best results we recommend changing the tail pulley for a smaller one to increase tail rotor rpm. In this way, you will have extremely precise tail control even at low RPM. This pulley is available in the upgrade list [H0154-S].

Goblin 770 uses the HPS head.

The dampening system of this head allows for a wide range of head speeds to be used without sacrificing safety.

The dampers are composed of an o-ring and a technopolymer damper that defines the maximum possible movement of the spindle.

The model response with change based on the preload, less preload (less shims) will allow for a softer feel and lower head speed, a high preload is used for hard 3D flight.

To increase the preload, you can add an additional 0.2mm shim on each side, to decrease the preload, you can remove a 0.2mm shim on each side. It is important that the blade grips do not have the axial play so you must always keep the 1mm shim on each side regardless.



MAINTENANCE

*On the Goblin, areas to look for wear include:

- * Motor belt
- * Tail belt
- * Damper
- * Main gear and pinion

The lifespan of these components varies according to the type of flying. On average it is recommended to replace these special parts every **100** flights.

*The head tends to lose rigidity after a while. Check this condition every **20** flights. Preloading with precision shim washers, it is possible to vary the rigidity of the head.

*Check all uniballs often.

*The most stressed bearings are definitely those of the tail shaft. Check them frequently. All other parts are not particularly subject to wear.

*Periodically lubricate the tail slide movement and its linkages as well as the swashplate movement and its linkages.

*Lubricate the main gear with Tri-Flow Synthetic grease, even though the gear is made of technopolymer, a high mineral based filler, it still requires some lubrication.

*Check the screws that are highlighted in the following images frequently, make sure you remain tight (**fig.1** and **fig.2**).

*To ensure safety you should do a general inspection of the helicopter after each flight. You should check:

- * The maintenance of proper belt tension.
- * The proper isolation of wires from the carbon and aluminum parts.
- * That all screws remain tight.

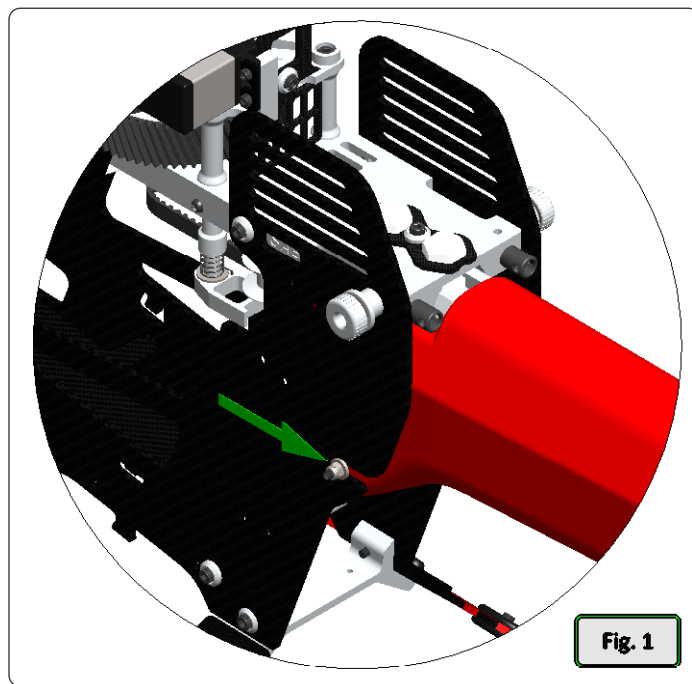


Fig. 1

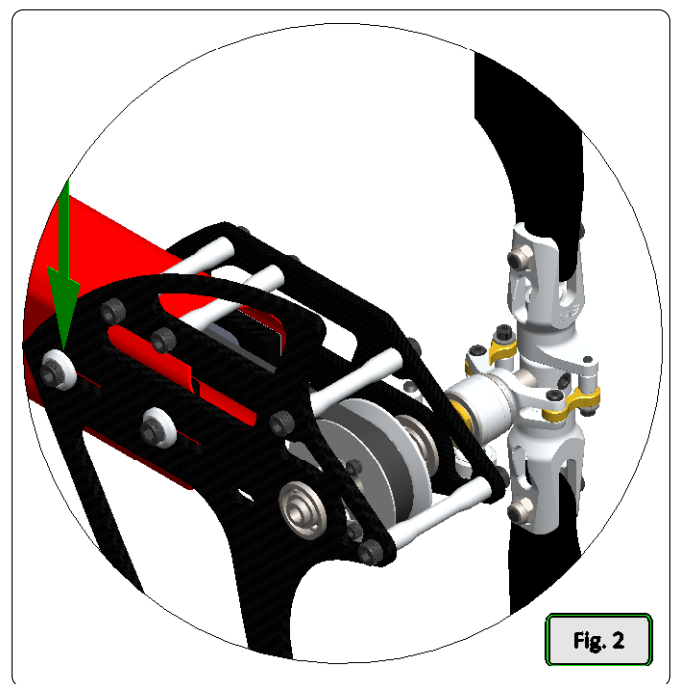
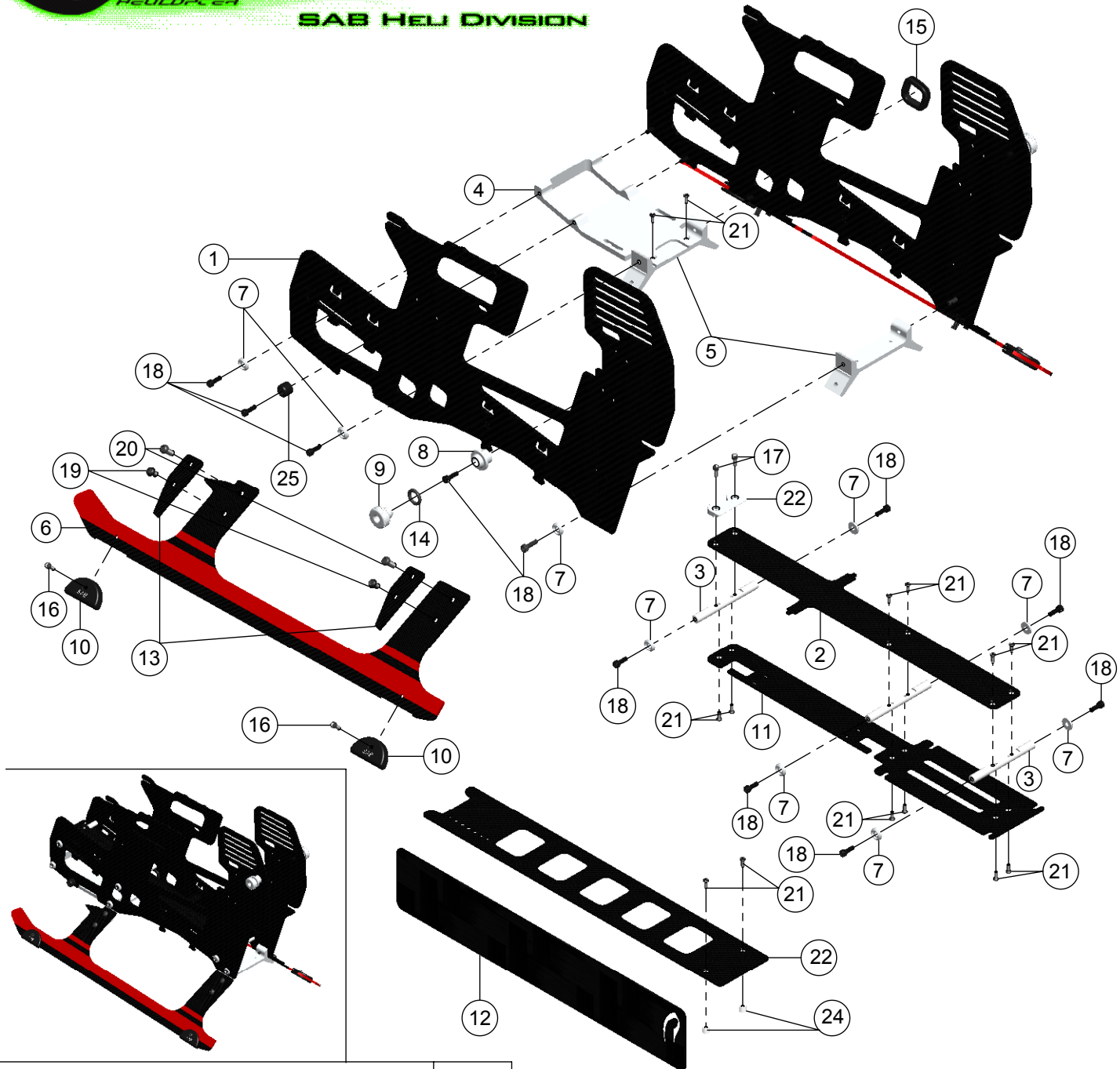
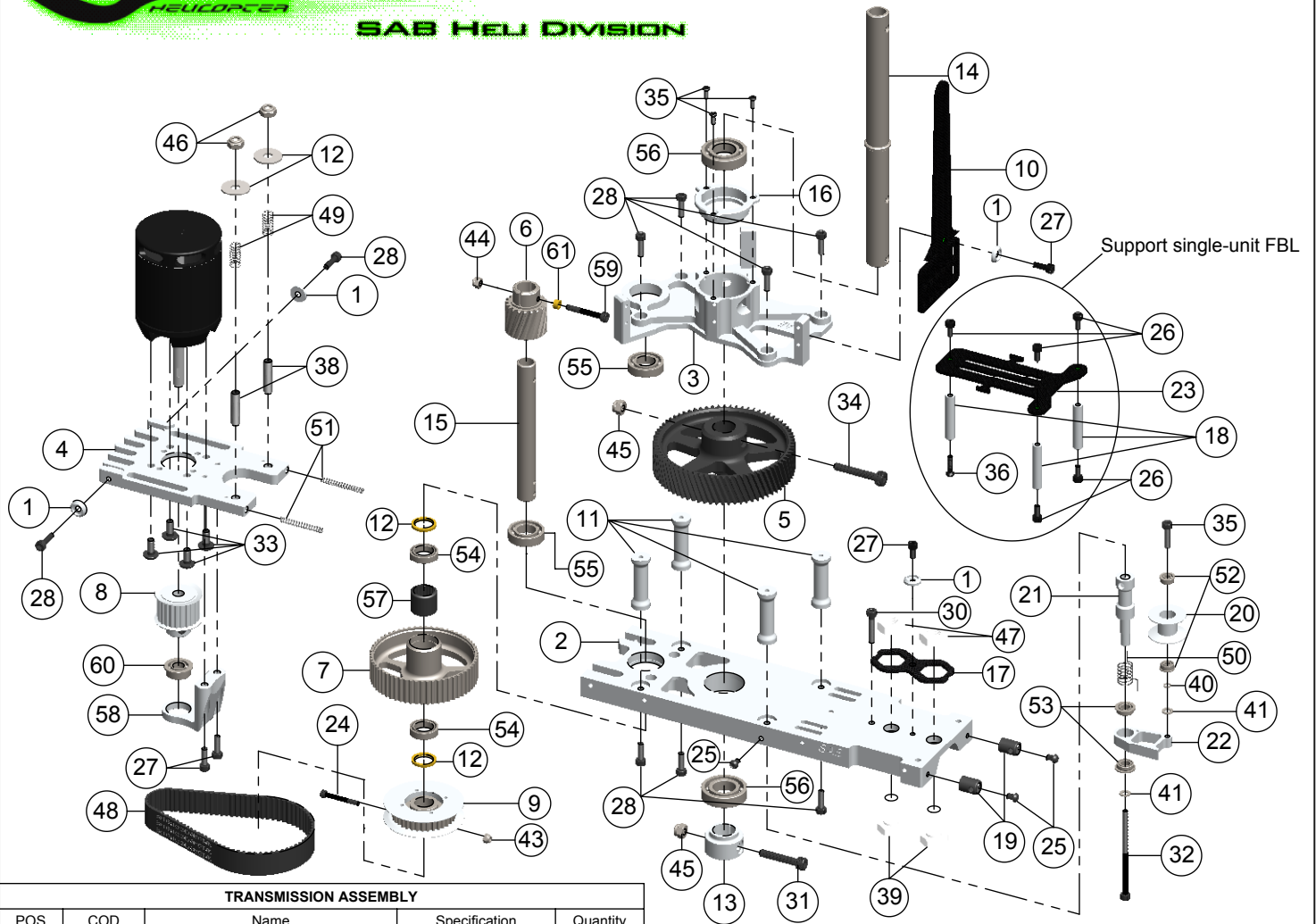


Fig. 2



Main Frame				
POS	COD	Name	Specification	Quantity
1	H0145	Main Frames	Carbon Fiber	2
2	H0002	Battery Tray	Carbon Fiber	1
3	H0003	Frame Spacers	Aluminum	3
4	H0004	ESC Support	Aluminum	1
5	H0005	Landing Gear Supports	Aluminum	2
6	H0106	Yellow Landing Gears	Carbon Fiber	2
	H0162	Red Landing Gears	Carbon Fiber	2
7	H0007	Finishing Washers M3	Aluminum	12
8	H0008	Canopy Positioners	Aluminum	2
9	H0036	Canopy Lockings	Aluminum	2
10	H0039	Landing Gear Protection	Plastic	4
11	H0153	Battery Support	Carbon Fiber	1
12	H0155	Battery Protection	Carbon Fiber	1

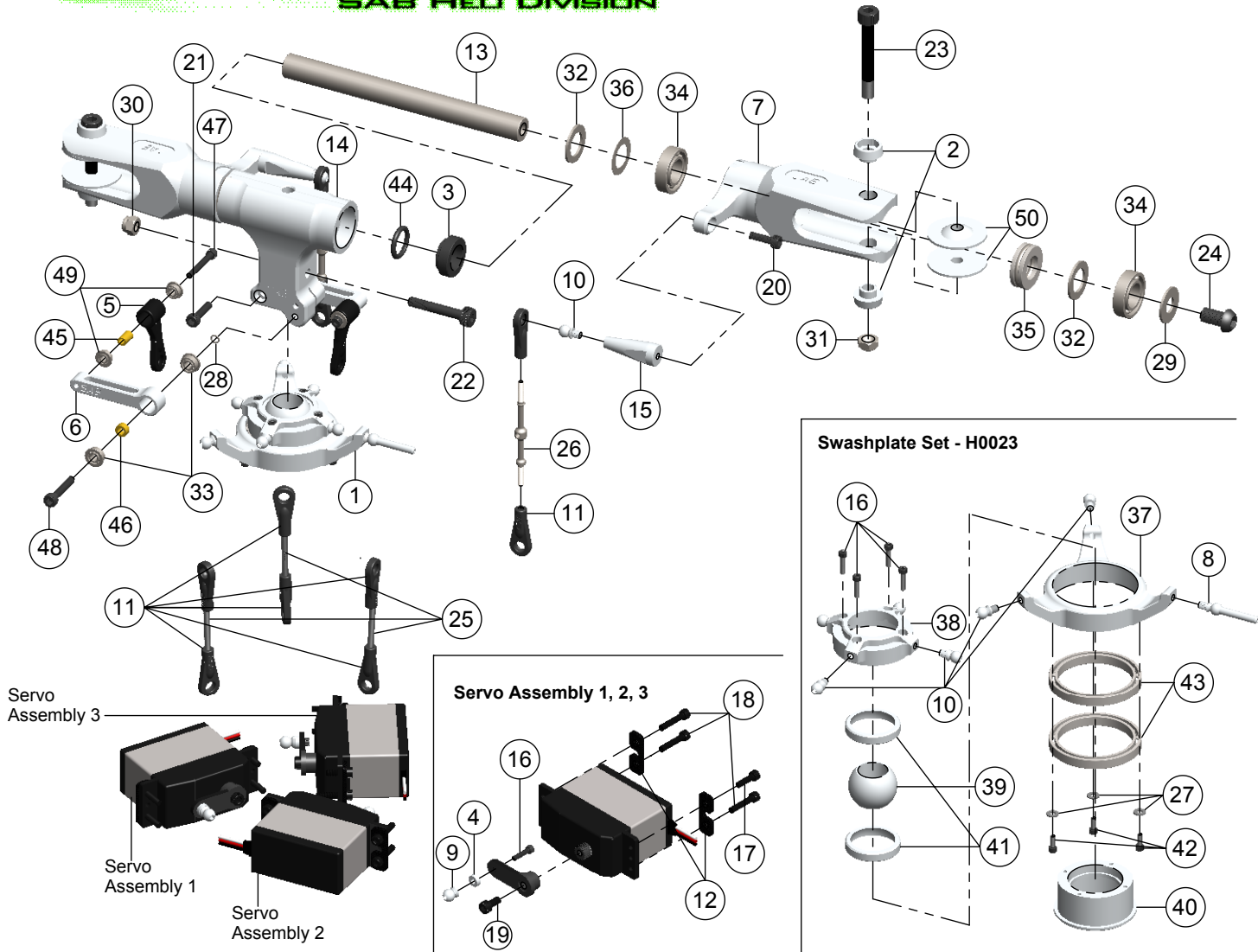
Main Frame				
POS	COD	Name	Specification	Quantity
13	H0074	Landing Gear Struts	Carbon Fiber	4
14	HA008	Canopy ORs O-ring	Oring 3030	2
15	HA010	Cable Pass	Ø 16 x Ø 24 x 2mm	1
16	HC018	Socket Head Cap Screws	M2.5 x 6mm	4
17	HC020	Socket Head Cap Screws	M2.5 x 8mm	2
18	HC056	Socket Head Cap Screws	M3 x 10mm	16
19	HC096	Button Head Cap Screws	M4 x 6mm	4
20	HC100	Button Head Cap Screws	M4 x 10mm	4
21	HC128	Flat Head Cap Screws	M2.5 x 5mm	12
22	H0149	Battery Plate	Carbon Fiber	1
23	H0150	Stop Battery Plate	Plastic	1
24	H0151	Cylinder M2.5	Aluminum	2
25	H0157	Canopy Positioners	Plastics	2



TRANSMISSION ASSEMBLY				
POS	COD	Name	Specification	Quantity
1	H0007	Finishing Washers M3	Aluminum	4
2	H0009	Main Structure	Aluminum	1
3	H0010	Servo Support	Aluminum	1
4	H0143	Motor Support	Aluminum	1
5	H0012	Main Gear	68T M1	1
6	H0156	Drive Pinion	19T M1	1
7	H0104	Pulley	60T	1
8	H0015-20	Pulley	20T	1
9	H0101	Pulley	37T	1
10	H0152	Swash plate Anti-Rotation Guide	Carbon Fiber	1
11	H0018	Columns	Aluminum	4
12	H0110	Bush-One Ways	Ø 10 x Ø 13 x 1.4mm	2
13	H0121	M4 Locking Collar	Aluminum	1
14	H0127	Main Shaft	Carbon Steel	1
15	H0157	Secondary Shaft	Carbon Steel	1
16	H0024	Main Shaft Bearing Support	Aluminum	1
17	H0038	Safety Locking Tail Boom	Carbon Fiber	1
18	H0043	Spacers Flybarless	Aluminum	3
19	H0050	Antenna Guide	Plastic	2
20	H0069	Tail Belt Idler	Aluminum	1
21	H0070	Belt Tensioner Support	Aluminum	1
22	H0071	Belt Tensioner Arm	Aluminum	1
23	H0077	Flybarless Support	Carbon Fiber	1
24	HC033	Socket Head Cap Screw Shouldered	M2.5 x 19mm	1
25	HC038	Button Head Cap Screws	M3 x 4mm	3
26	HC044	Socket Head Cap Screws	M3 x 6mm	5
27	HC050	Socket Head Cap Screws	M3 x 8mm	4
28	HC056	Socket Head Cap Screws	M3 x 10mm	9
29	HC062	Socket Head Cap Screw	M3 x 12mm	1
30	HC068	Socket Head Cap Screws	M3 x 16mm	1
31	HC104	Socket Head Cap Screw	M4 x 22mm	1

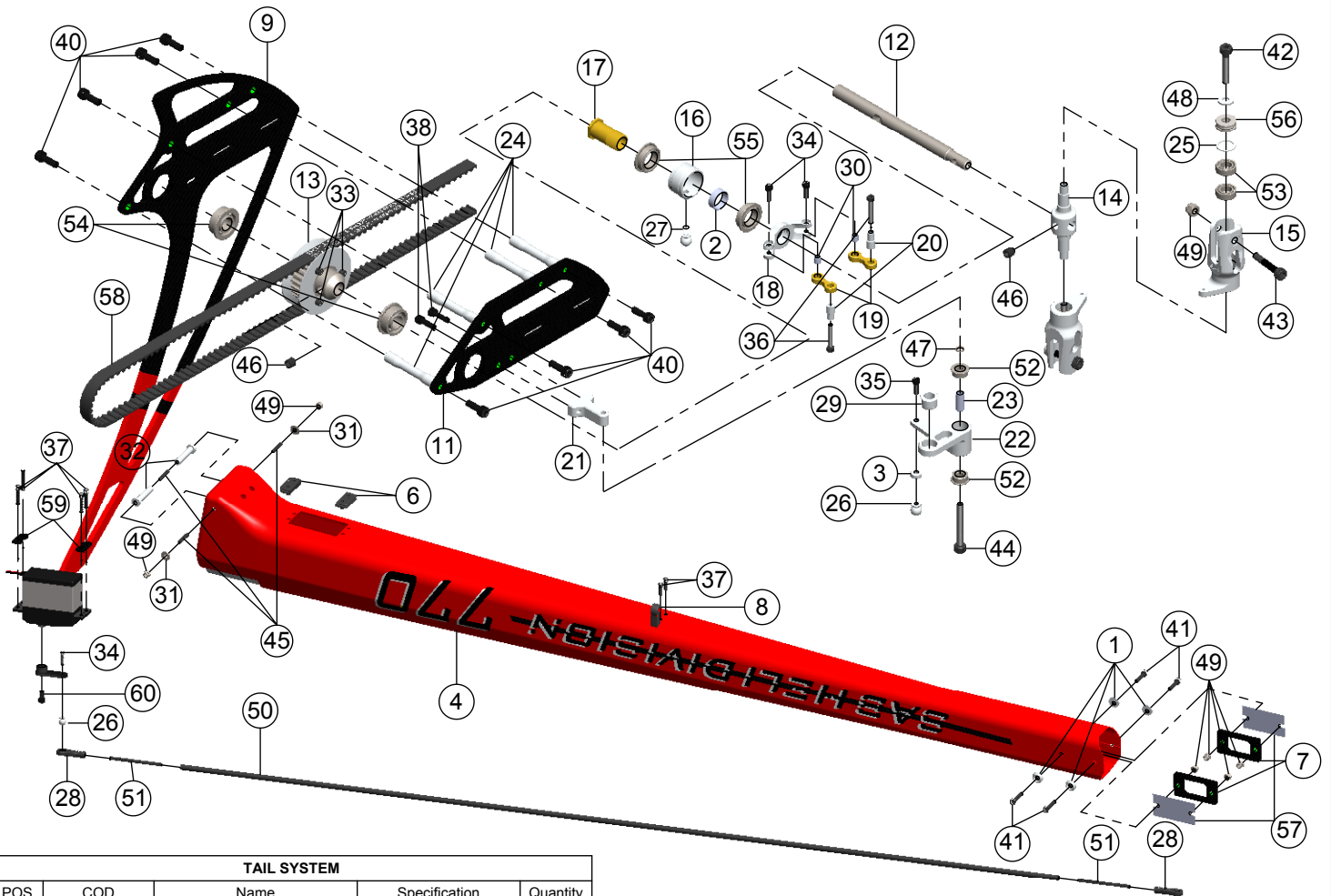
TRANSMISSION ASSEMBLY				
POS	COD	Name	Specification	Quantity
32	HC092	Socket Head Cap Screw	M3 x 50mm	1
33	HC098	Button Head Cap Screws	M4 x 8mm	4
34	HC111	Socket Head Cap Screw Shouldered	M4 x 24mm	1
35	HC128	Flat Head Cap Screws	M2.5 x 5mm	3
36	HC134	Flat Head Cap Screw	M3 x 8mm	1
37	HC152	Set Screws	M4 x 4mm	2
38	HC158	Set Screws	M5 x 20mm	2
39	HC164	Vite Nylon Esa	M8 x 14mm	2
40	HC176	Washer	Ø 3 x Ø 4x0.5mm	1
41	HC180	Washers	Ø 3.2 x Ø 6 x 0.5mm	2
42	HC188	Washers	Ø 5.3 x Ø 15 x 1mm	2
43	HC200	Metric Hex Nylon Nuts	M2.5 H3.5mm	1
44	HC206	Metric Hex Nylon Nuts	M3 H4mm	1
45	HC212	Metric Hex Nylon Nuts	M4 H5mm	2
46	HC218	Metric Hex Nylon Nuts	M5 H4.8mm	2
47	HC224	Metric Hex Nuts Low	M8 H6.5mm	2
48	HC308	Belt Gates	240-3MGT-13	1
49	HC310	Springs	De 5.8-df0.3-LL9	2
50	HC312	Spring	De 8-df0.5-LL8	1
51	HC314	Springs	De 8-df0.5-LL12	2
52	HC402	Flanged Bearings	Ø 3 x Ø 7 x 3mm	2
53	HC410	Flanged Bearings	Ø 5 x Ø 9 x 3mm	2
54	HC420	Bearings	Ø 10 x Ø 15 x 4mm	2
55	HC422	Bearings	Ø 10 x Ø 19 x 5mm	2
56	HC426	Bearings	Ø 12 x Ø 24 x 6mm	2
57	HC442	One Way Bearing	Ø 10 x Ø 14 x 12mm	1
58	H0142	Support Bearing	Aluminum	1
59	HC082	Socket Head Cap Screw Shouldered	M3 x 20mm	1
60	HC414	Flanged Bearings	Ø 6 x Ø 13 x 5mm	1
61	H0134	Spacer Arm	Ø 3 x Ø 5 x 2.7mm	1





Head System				
POS	COD	Name	Specification	Quantity
1	H0023	Swashplate Set		1
2	H0025	Locking Nut Main Blade Grips	Aluminum	4
3	H0144	Damper Derlin		2
4	H0031	Uniball Spacers	Aluminum	3
5	H0205	Unibal Radius Arms	Plastic	2
6	H0132	Radius Arms	Aluminum	2
7	H0034	Main Blade Grips	Aluminum	2
8	H0063	Uniball	M3 x 4 Ø5 H18	1
9	H0064	Uniballs	M2.5 Ø5 H6	3
10	H0065	Uniballs	M3 x 4 Ø5 H3	8
11	H0066	Plastic Ball Linkages	Plastic	8
12	H0075	Servo Spacers	Carbon Fiber	6
13	H0079	Spindle	Carbon Steel	1
14	H0135	Center Hub	Aluminum	1
15	H0136	Blade Grip Arms	Aluminum	2
16	HC008	Socket Head Cap Screws	M2 x 8mm	7
17	HC020	Socket Head Cap Screws	M2.5 x 8mm	3
18	HC026	Socket Head Cap Screws	M2.5 x 12mm	9
19	HC044	Socket Head Cap Screws	M3 x 6mm	3
20	HC056	Socket Head Cap Screws	M3 x 10mm	2
21	HC062	Socket Head Cap Screws	M3 x 12mm	2
22	HC111	Socket Head Cap Screw Shouldered	M4 x 24mm	1
23	HC116	Socket Head Cap Screw Shouldered	M5 x 34mm	2
24	HC122	Button Head Cap Screws	M6 x 10mm	2
25	HC242	Threaded Rods	M2.5 x 40mm	3

Head System				
POS	COD	Name	Specification	Quantity
26	H0137	Linkages	M2.5 x 48mm	2
27	HC170	Washers	M2 x Ø5 x 0.5mm	3
28	HC176	Washers	Ø3 x Ø4 x 0.5mm	2
29	HC194	Washers	Ø6 x Ø14 x 1.5mm	2
30	HC212	Metric Hex Nylon Nut	M4 H5	1
31	HC218	Metric Hex Nylon Nuts	M5 H4.8	2
32	HC230	Washers	Ø10 x Ø16 x 1mm	4
33	HC402	Flanged Bearings	Ø3 x Ø7 x 3mm	4
34	HC422	Bearings	Ø10 x Ø19 x 5mm	4
35	HC438	Thrust Bearings	Ø10 x Ø18 x 5.5mm	2
36	HC232	Washers	Ø10 x Ø16 x 0.2mm	2
37	H0023-01	Swashplate 01		1
38	H0023-02	Swashplate 02		1
39	H0023-03	Swashplate 03		1
40	H0023-04	Swashplate 04		2
41	H0023-05	Swashplate 05		1
42	HC002	Socket Head Cap Screws	M2 x 5mm	3
43	HC430	Bearing Rads	Ø30 x Ø37 x 4mm	2
44	HA024	Oring	3050	2
45	H0235	Spacer Arm	Ø2.5 x Ø4 x 6.3mm	2
46	H0134	Spacer Arm	Ø3 x Ø5 x 2.7mm	2
47	HC032	Socket Head Cap Screws	M2.5 x 18mm	2
48	HC068	Socket Head Cap Screws	M3 x 16mm	2
49	HC400	Flanged Bearings	Ø2.5 x Ø6 x 2.5mm	4
50	H0158	Blade Washers	Ø5 x Ø24 x 1mm	4



TAIL SYSTEM

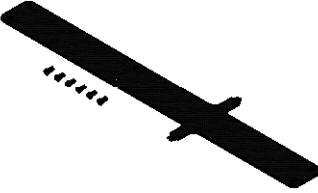
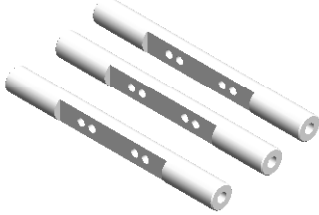
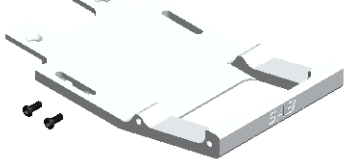




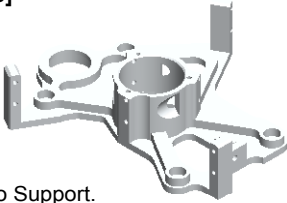










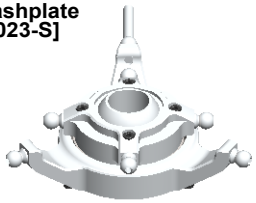
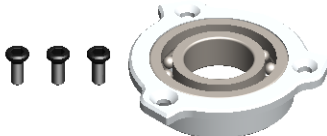

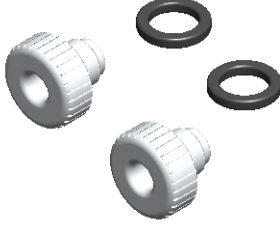



POS	COD	Name	Specification	Quantity
1	H0007	Finishing Washer M3	Aluminum	4
2	H0029	Spacer	Ø 8.1 x Ø 9.2 x 3.2mm	1
3	H0031	Uniball Spacer	Aluminum	1
4	H0147	Yellow Tail Boom	Carbon Fiber	1
	H0163	Red Tail Boom	Carbon Fiber	1
6	H0040	Tail Servo Locks	Plastic	2
7	H0041	Locking Element Tails	Carbon Fiber	2
8	H0045	Linkage Tail Support	Plastic	1
9	H0046	Yellow Vertical Fin	Carbon fiber	1
	H0117	Red Vertical Fin	Carbon fiber	1
11	H0047	Tail Side Plate	Carbon fiber	1
12	H0048	Tail Rotor Shaft	Carbon Steel	1
13	H0155	Tail Pulley	25T	1
14	H0051	Tail Rotor Hub	Carbon Steel	1
15	H0052	Tail Blade Grips	Aluminum	2
16	H0053	Tail Pitch Slider 01		1
17	H0054	Tail Pitch Slider 02		1
18	H0055	Tail Pitch Slider 03		1
19	H0056	Grip Links		2
20	H0057	Main Grip Link Bushes		2
21	H0058	Bell Crank Base	Aluminum	1
22	H0059	Bell Crank Lever	Aluminum	1
23	H0060	Spacer	Ø 3 x Ø 4 x 9.6mm	1
24	H0061	Tail Case Spacers	Aluminum	4
25	H0062	Spacers	Ø 7 x Ø 9 x 0.5mm	2
26	H0064	Uniballs	M2.5 Ø 5 H6	2
27	H0065	Uniball	M3 x 4 Ø 5 H3	1
28	H0066	Plastic Ball Links	Plastic	2
29	H0072	Bush Bell Crank		1
30	H0076	Grip Link Bushes		2
31	H0078	Washers	Ø 3.1 x Ø 12 x 1.8mm	2

TAIL SYSTEM










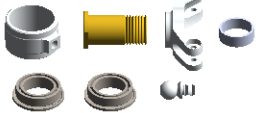


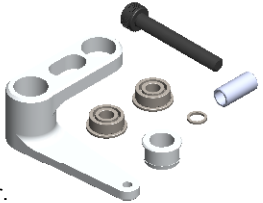
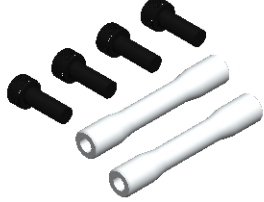

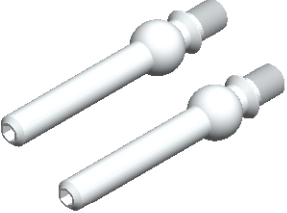

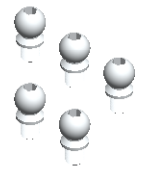

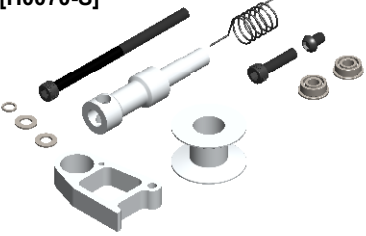

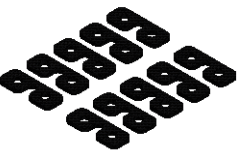
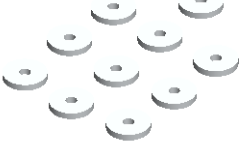
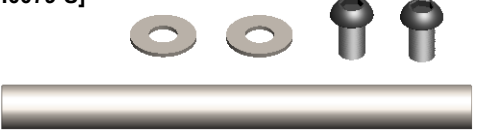
POS	COD	Name	Specification	Quantity
32	H0082	Boom Spacers	Aluminum	2
33	HC002	Socket Head Cap Screws	M2 x 5mm	6
34	HC004	Socket Head Cap Screws	M2 x 6mm	3
35	HC008	Socket Head Cap Screw	M2 x 8mm	1
36	HC014	Socket Head Cap Screws	M2 x 12mm	2
37	HC018	Socket Head Cap Screws	M2.5 x 6mm	2
38	HC020	Socket Head Cap Screws	M2.5 x 8mm	2
39	HC026	Socket Head Cap Screws	M2.5 x 12mm	4
40	HC050	Socket Head Cap Screws	M3 x 8mm	8
41	HC062	Socket Head Cap Screws	M3 x 12mm	4
42	HC068	Socket Head Cap Screws	M3 x 16mm	2
43	HC074	Socket Head Cap Screw Shouldereds	M3 x 16mm	2
44	HC086	Socket Head Cap Screw	M3 x 22mm	1
45	HC150	Set Screws	M3 x 20mm	3
46	HC152	Set Screws	M4 x 4mm	2
47	HC176	Washer	Ø 3 x Ø 4 x 0.5mm	1
48	HC181	Washers	Ø 3.3 x Ø 7 x 1mm	2
49	HC206	Metric Hex Nylon Nuts	M3	8
50	HC238	Carbon Rod	Ø 2.5 x Ø 4 x 752mm	1
51	HC242	Threaded Rods	M2.5 x 40mm	2
52	HC402	Flanged Bearings	Ø 3 x Ø 7 x 3mm	2
53	HC406	Bearings	Ø 5 x Ø 9 x 3mm	4
54	HC414	Flanged Bearings	Ø 6 x Ø 13 x 5mm	2
55	HC418	Flanged Bearings	Ø 8 x Ø 12 x 3.5mm	2
56	HC434	Thrust Bearings	Ø 4 x Ø 9 x 4mm	2
57	HA015	Double-Sided Tapes		2
58	HC325	Belt Gates	2160-3MGT-06	1
59	H0075	Servo Spacers	Carbon Fiber	2
60	HC044	Screw supplied with Servo	M3 x 6mm	1




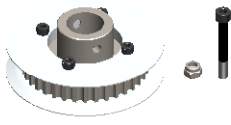
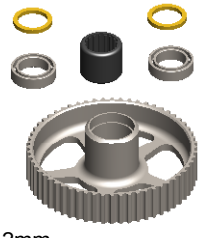
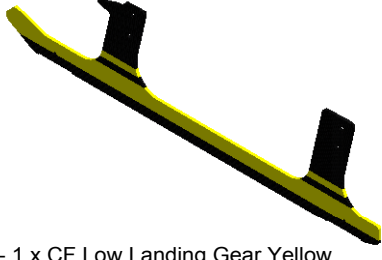
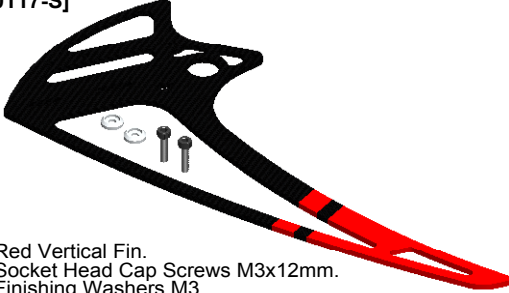
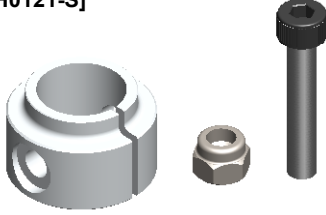
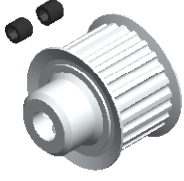
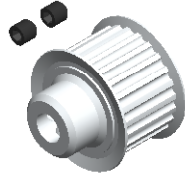
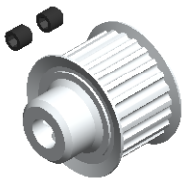
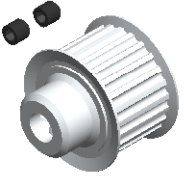
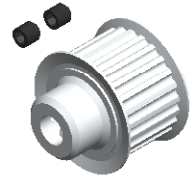
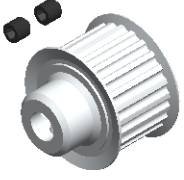

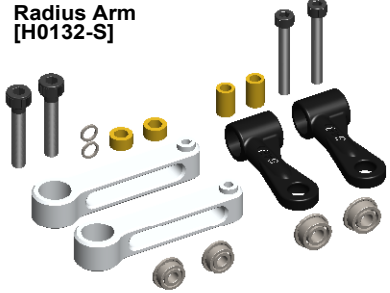
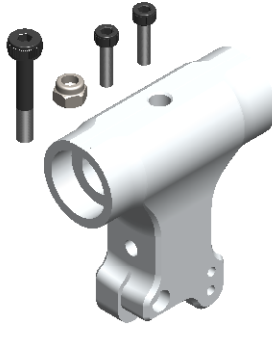
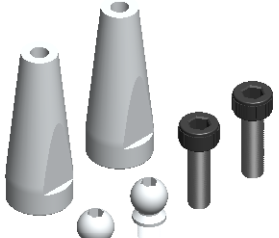

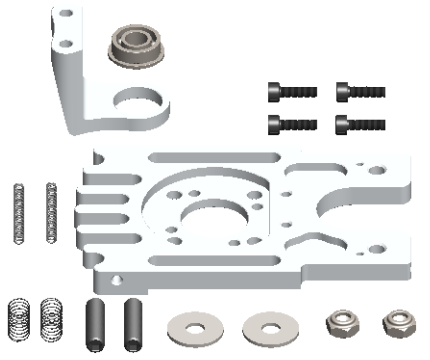


<p>Battery Tray [H0002-S]</p>  <ul style="list-style-type: none"> - 1 x CF Battery Tray. - 6 x Flat Head Cap Screws M2.5x5mm. 	<p>Frame Spacer [H0003-S]</p>  <ul style="list-style-type: none"> - 3 x Frame Spacers. 	<p>ESC Support [H0004-S]</p>  <ul style="list-style-type: none"> - 1 x ESC Support. - 2 x Flat Head Cap Screws M2.5x5mm. 	<p>Landing Gear Support [H0005-S]</p>  <ul style="list-style-type: none"> - 1 x Landing Gear Support. 	
<p>Finishing Washer M3 [H0007-S]</p>  <ul style="list-style-type: none"> - 10 x Finishing Washers M3. 	<p>Canopy Positioner [H0008-S]</p>  <ul style="list-style-type: none"> - 2 x Canopy Positioners. 	<p>Main Structure [H0009-S]</p>  <ul style="list-style-type: none"> - 1 x Main Structure. 	<p>Servo Support [H0010-S]</p>  <ul style="list-style-type: none"> - 1 x Servo Support. 	
<p>68T Main Gear [H0012-S]</p>  <ul style="list-style-type: none"> - 1 x 68T Main Gear. - 1 x Socket Head Cap Screw Shouldered M4x24mm. - 1 x Metric Hex Nylon Nut M4 H5. 	<p>18T Pulley [H0015-18-S]</p>  <ul style="list-style-type: none"> - 1 x 18T Pulley 6mm. - 2 x Set Screws M4x4. 	<p>19T Pulley [H0015-19-S]</p>  <ul style="list-style-type: none"> - 1 x 19T Pulley 6mm. - 2 x Set Screws M4x4. 	<p>20T Pulley [H0015-20-S]</p>  <ul style="list-style-type: none"> - 1 x 20T Pulley 6mm. - 2 x Set Screws M4x4. 	<p>21T Pulley [H0015-21-S]</p>  <ul style="list-style-type: none"> - 1 x 21T Pulley 6mm. - 2 x Set Screws M4x4.
	<p>22T Pulley [H0015-22-S]</p>  <ul style="list-style-type: none"> - 1 x 22T Pulley 6mm. - 2 x Set Screws M4x4. 	<p>23T Pulley [H0015-23-S]</p>  <ul style="list-style-type: none"> - 1 x 23T Pulley 6mm. - 2 x Set Screws M4x4. 	<p>24T Pulley [H0015-24-S]</p>  <ul style="list-style-type: none"> - 1 x 24T Pulley 6mm. - 2 x Set Screws M4x4. 	<p>26T Pulley [H0015-26-S]</p>  <ul style="list-style-type: none"> - 1 x 26T Pulley 6mm. - 2 x Set Screws M4x4.
<p>Column [H0018-S]</p>  <ul style="list-style-type: none"> - 4 x Columns. 	<p>Swashplate [H0023-S]</p>  <ul style="list-style-type: none"> - 1 x Swashplate Assembly. - 2 x Bearings 30x\varnothing37x4mm. - 6 x Uniballs M3x4 \varnothing5 H3. - 1 x Uniball M3x4 \varnothing5 H18. - 3 x Socket Head Cap Screws M2x5mm. - 4 x Socket Head Cap Screws M2x8mm. 	<p>Bearing Support [H0024-S]</p>  <ul style="list-style-type: none"> - 1 x Bearing Support. - 1 x Bearing \varnothing12x\varnothing24x6mm. - 3 x Flat Head Cap Screws M2.5x5mm. 	<p>Blade Grip [H0034-S]</p>  <ul style="list-style-type: none"> - 1 x Blade Grip. - 2 x Bush Blade Grips. 	
<p>Canopy Locking [H0036-S]</p>  <ul style="list-style-type: none"> - 2 x Canopy Lockings. - 2 x Canopy ORs. 	<p>Safety Lock Tail Boom [H0038-S]</p>  <ul style="list-style-type: none"> - 1 x Safety Lock Tail Boom. - 1 x Finishing Washer M3. - 1 x Socket Head Cap Screw M3x8mm. 	<p>Sliding Landing Gear [H0039-S]</p>  <ul style="list-style-type: none"> - 4 x Sliding Landing Gears. - 4 x Socket Head Cap Screws M2.5x6mm. 	<p>Tail Servo Lock [H0040-S]</p>  <ul style="list-style-type: none"> - 2 x Tail Servo Locks. - 2 x Servo Spacers. - 4 x Socket Head Cap Screws M2.5x12mm. 	



<p>Locking Element Tail [H0041-S]</p>  <ul style="list-style-type: none"> - 2 x Locking Element Tails. - 4 x Metric Hex Nylon Nuts M3. - 2 x Double Sided Tapes. 	<p>Battery Protection [H0042-S]</p>  <ul style="list-style-type: none"> - 1 x Battery Protection. 	<p>Spacer Flybarless [H0043-S]</p>  <ul style="list-style-type: none"> - 3 x Spacer Flybarless. - 1 x Supporto Flybarless. - 1 x Flat Head Cap Screw M3x8mm. - 5 x Socket Head Cap Screws M3x6mm. 	<p>Linkage Tail Support [H0045-S]</p>  <ul style="list-style-type: none"> - 1 x Linkage Tail Support. - 2 x Socket Head Cap Screws M2.5x6mm. 	
<p>Vertical Fin [H0046-S]</p>  <ul style="list-style-type: none"> - 1 x Vertical Fin. - 2 x Socket Head Cap Screws M3x12mm. - 2 x Finishing Washers M3. 	<p>Tail Side Plate [H0047-S]</p>  <ul style="list-style-type: none"> - 1 x Tail Side Plate. - 2 x Socket Head Cap Screws M3x12mm. - 2 x Finishing Washers M3. 	<p>Antenna Guide [H0050-S]</p>  <ul style="list-style-type: none"> - 2 x Antenna Guide. - 2 x Button Head Cap Screws M3x4mm. 	<p>Tail Rotor Hub [H0051-S]</p>  <ul style="list-style-type: none"> - 1 x Tail Rotor Hub. - 1 x Set Screw M4x4mm. - 2 x Socket Head Cap Screws M3x16mm. 	<p>Tail Blade Grip [H0052-S]</p>  <ul style="list-style-type: none"> - 2 x Tail Blade Grips. - 2 x Socket Head Cap Screws M3x16mm. - 4 x Bearings $\phi 5x \phi 9x3mm$.
<p>Tail Pitch Slider [H0053-S]</p>  <ul style="list-style-type: none"> - 1 x Tail Pitch Slider 01. - 1 x Tail Pitch Slider 02. - 1 x Tail Pitch Slider 03. - 1 x Spacer $\phi 8x \phi 9x3.2mm$. - 1 x Uniball M3x4 $\phi 5H3$. - 2 x Flanged Bearings $\phi 8x \phi 12x3.5mm$ 	<p>Grip Link [H0056-S]</p>  <ul style="list-style-type: none"> - 2 x Grips Link. - 2 x Main Grip Link Bush. - 2 x Grip Link Bush. - 2 x Socket Head Cap Screws M2x12mm. - 2 x Socket Head Cap Screws M2x6mm. 	<p>Bell Crank Base [H0058-S]</p>  <ul style="list-style-type: none"> - 1 x Bell Crank Base. 	<p>Bell Crank Lever [H0059-S]</p>  <ul style="list-style-type: none"> - 1 x Bell Crank Lever. - 1 x Bush Bell Crank. - 1 x Washer $\phi 3x \phi 4x0.5mm$. - 1 x Spacer $\phi 3x \phi 4x9.6mm$. - 1 x Socket Head Cap Screw M3x22mm. - 2 x Flanged Bearings $\phi 3x \phi 7x3mm$. 	
<p>Tail Case Spacer [H0061-S]</p>  <ul style="list-style-type: none"> - 2 x Tail Case Spacers. - 4 x Socket Head Cap Screws M3x8mm. 	<p>Spacer $\phi 7x \phi 9x0.5mm$ [H0062-S]</p>  <ul style="list-style-type: none"> - 4 x Spacers $\phi 3x \phi 4x0.5mm$ 	<p>Uniball M3x4 $\phi 5H18$ [H0063-S]</p>  <ul style="list-style-type: none"> - 1 x Uniball M3x4 $\phi 5H18$ 	<p>Uniball M2 $\phi 5H6$ [H0064-S]</p>  <ul style="list-style-type: none"> - 5 x Uniballs M2 $\phi 5H6$. - 5 x Uniball Spacers. - 5 x Socket Head Cap Screws M2x8mm. - 5 x Socket Head Cap Screws M2x6mm. 	
<p>Uniball M3x4 $\phi 5H3$ [H0065-S]</p>  <ul style="list-style-type: none"> - 5 x Uniballs M3x4 $\phi 5H3.5$. 	<p>Plastic Ball Link [H0066-S]</p>  <ul style="list-style-type: none"> - 10 x Plastic Ball Links 	<p>Belt Tensioner Support [H0070-S]</p>  <ul style="list-style-type: none"> - 1 x Belt Tensioner Support. - 1 x Tail Belt Idler. - 1 x Belt Tensioner Arm. - 2 x Flanged Bearings $\phi 3x \phi 7x3mm$. - 2 x Flanged Bearings $\phi 5x \phi 9x3mm$. - 1 x Socket Head Cap Screw M3x50mm. - 1 x Washer $\phi 3x \phi 4x0.5mm$. - 1 x Socket Head Cap Screw M3x12mm. - 2 x Washers $\phi 3.2x \phi 6x0.5mm$. - 1 x Button Head Cap Screw M3x4mm. - 1 x Spring De8/df0.5/LL8. 		
<p>Landing Gear Struts [H0074-S]</p>  <ul style="list-style-type: none"> - 4 x Landing Gear Struts. - 4 x Button Head Cap Screws M4x6mm. - 4 x Button Head Cap Screws M4x10mm. 	<p>Servo Spacer [H0075-S]</p>  <ul style="list-style-type: none"> - 10 x Servo Spacers. 	<p>Washer $\phi 3.1x \phi 12x1.8mm$ [H0078-S]</p>  <ul style="list-style-type: none"> - 10 x Washers $\phi 3.1x \phi 12x1.8mm$. 	<p>Spindle [H0079-S]</p>  <ul style="list-style-type: none"> - 1 x Spindle. - 2 x Button Head Cap Screws M6x10mm. - 2 x Washers $\phi 6x \phi 14x1mm$. 	








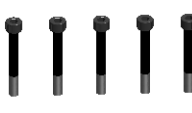























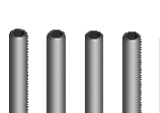
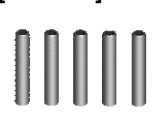
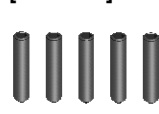

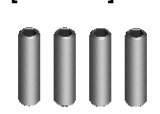

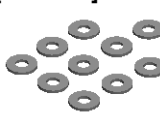

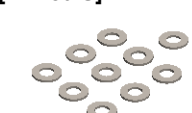

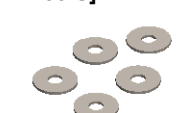











<p>Tail boom Support [H0082-S]</p>  <ul style="list-style-type: none"> - 2 x Tail Boom Support. - 3x Set Screws M3x20mm. 	<p>37T Pulley [H0101-S]</p>  <ul style="list-style-type: none"> - 1 x 37T Pulley. - 1 x Socket Head Cap Screws M2.5x19mm. - 1 x Hex Metric Nylon Nut M2.5H3.5. 	<p>60T Pulley [H0104-S]</p>  <ul style="list-style-type: none"> - 1 x 60T Pulley . - 2 x Bush One Ways. - 2 x Bearings 10x15x4mm - 1 x One Way Bearing 10x14x12mm. 		
<p>Low Landing Gear Yellow [H0106-S]</p>  <ul style="list-style-type: none"> - 1 x CF Low Landing Gear Yellow. 	<p>Red Vertical Fin [H0117-S]</p>  <ul style="list-style-type: none"> - 1 x Red Vertical Fin. - 2 x Socket Head Cap Screws M3x12mm. - 2 x Finishing Washers M3. 	<p>M4 Locking Collar [H0121-S]</p>  <ul style="list-style-type: none"> - 1 x M4 Locking Collar. - 1 x Socket Head Cap Screw M4x22mm. - 1 x Metric Hex Nylon Nut M4 H5. 		
<p>19T Pulley [H0126-19-S]</p>  <ul style="list-style-type: none"> - 1 x 19T Pulley 8mm. - 2 x Set Screws M4x4mm. 	<p>20T Pulley [H0126-20-S]</p>  <ul style="list-style-type: none"> - 1 x 20T Pulley 8mm. - 2 x Set Screws M4x4mm. 	<p>21T Pulley [H0126-21-S]</p>  <ul style="list-style-type: none"> - 1 x 21T Pulley 8mm. - 2 x Set Screws M4x4mm. 	<p>22T Pulley [H0126-22-S]</p>  <ul style="list-style-type: none"> - 1 x 22T Pulley 8mm. - 2 x Set Screws M4x4mm. 	<p>23T Pulley [H0126-23-S]</p>  <ul style="list-style-type: none"> - 1 x 23T Pulley 8mm - 2 x Set Screws M4x4mm.
<p>24T Pulley [H0126-24-S]</p>  <ul style="list-style-type: none"> - 1 x 23T Pulley 8mm. - 2 x Set Screws M4x4mm. 	<p>Long Main Shaft [H0127-S]</p>  <ul style="list-style-type: none"> - 1 x Long Main Shaft. - 1 x Socket Head Cap Screw M4x22mm. - 1 x Socket Head Cap Screw Shouldered M4x24mm. - 3 x Metric Hex Nylon Nuts M4H5. 	<p>Radius Arm [H0132-S]</p>  <ul style="list-style-type: none"> - 2 x Radius Arms. - 2 x Spacer Arm $\varnothing 3x \varnothing 5x 2.7mm$. - 2 x Spacer Arm $\varnothing 2.5x \varnothing 4x 6.3mm$. - 2 x Uniball Radius Arms. - 2 x Socket Head Cap Screws M3x16mm. - 2 x Socket Head Cap Screws M2.5x18mm. - 2 x Washers $\varnothing 3x \varnothing 4x 0.5mm$. - 2 x Flanged Bearings $\varnothing 2.5x \varnothing 6x 2.5mm$. - 2 x Flanged Bearings $\varnothing 3x \varnothing 7x 3mm$. 		
<p>Center Hub [H0135-S]</p>  <ul style="list-style-type: none"> - 1 x Center Hub. - 2 x Socket Head Cap Screws M3x12mm. - 1 x Socket Head Cap Screw Shouldered M4x24mm. - 1 x Metric Hex Nylon Nut M4 H5. 	<p>Blade Grip Arm [H0136-S]</p>  <ul style="list-style-type: none"> - 2 x Blade Grip Arms. - 2 x Uniballs M3x4 $\varnothing 5H3$. - 2 x Socket Head Cap Screws M3x10mm. 	<p>Linkage [H0137-S]</p>  <ul style="list-style-type: none"> - 2 x Linkages M2.5x48mm. - 4 x Plastic Ball Links. 	<p>Motor Support [H0143-S]</p>  <ul style="list-style-type: none"> - 2 x Finishing Washers M3. - 2 x Socket Head Cap Screws M3x10mm. - 2 x Metric Hex Nylon Nut M3 H4. - 2 x Springs de 5/8 / df0.5 / LL9. - 2 x Springs de 3/ df0.5 / LL12. 	

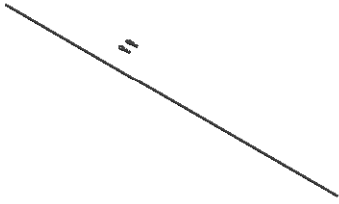



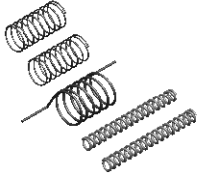

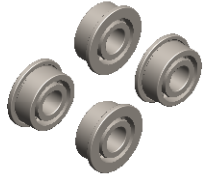
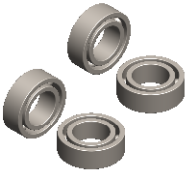







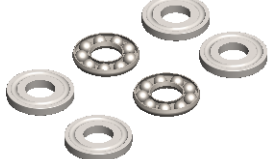



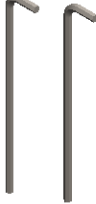



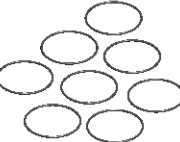










<p>Damper Derlin [H0144-S]</p> <ul style="list-style-type: none"> - 2 x Damper Derlin. - 2 x Washers $\varnothing 10 \times \varnothing 16 \times 1 \text{mm}$. - 4 x Washers $\varnothing 10 \times \varnothing 16 \times 0.2 \text{mm}$. - 4 x Orings 3050. 	<p>Main Frame [H0145-S]</p> <ul style="list-style-type: none"> - 1 x CF Main Frame. 	<p>Yellow Tail Boom [H0147-S]</p> <ul style="list-style-type: none"> - 1 x Yellow Tail Boom. - 1 x Tail Boom Interface. - 1 x Locking Interface. - 2 x Tube Spacers. - 2 x Locking Element Tails. - 4 x Button Head Cap Screws M4x8mm. - 3 x Set Screws M3x20mm. - 2 x Washers $\varnothing 3.1 \times \varnothing 12 \times 1.8 \text{mm}$. - 2 x Metric Hex Nylon Nuts M3 H4. - 2 x Vite Nylon Esa M8x14mm. - 2 x Metric Hex Nuts M8 H6.5. - 2 x Double Sided Tapes. 	
<p>Yellow / Blue Canopy 770 [H0148-S]</p> <ul style="list-style-type: none"> - 1 x Yellow / Blue Canopy 770 - 1 x Canopy Mouse. - 2 x Canopy Grommet. 	<p>Battery Tray [H0149-S]</p> <ul style="list-style-type: none"> - 1 x Battery Plate. - 1 x Battery Protection. - 2 x Cylinder M2.5. - 2 x Flat Head Cap Screw M2.5x5mm - 1 x Heat Shrink. 	<p>Stop Battery Tray [H0150-S]</p> <ul style="list-style-type: none"> - 1 x Stop Battery Tray. - 2 x Socket Head Cap Screw M2.5x8mm. 	<p>Anti-rotation Guide [H0152-S]</p> <ul style="list-style-type: none"> - 1 x Anti-rotation Guide. - 1 x Socket Head Cap Screw M3x8mm. - 1 x Finishing Washer M3.
<p>ESC Support [H0153-S]</p> <ul style="list-style-type: none"> - 1 x CF ESC Support. - 6 x Flat Head Cap Screws M2.5x5mm. 	<p>24T Pulley [H0154-S]</p> <ul style="list-style-type: none"> - 1 x 24T Tail Pulley. - 1 x Set Screws M4x4mm. 	<p>25T Pulley [H0155-S]</p> <ul style="list-style-type: none"> - 1 x 25T Tail Pulley. - 1 x Set Screws M4x4mm. 	<p>19T Pinion [H0156-S]</p> <ul style="list-style-type: none"> - 1 x 19T Pinion. - 1 x Socket Head Cap Screw M3x20mm. - 1 x Metric Hex Nylon Nut M3H4. - 1 x Spacer Arm $\varnothing 3 \times \varnothing 5 \times 2.7 \text{mm}$.
<p>Secondary Shaft M3 [H0157-S]</p> <ul style="list-style-type: none"> - 1 x Secondary Shaft M3. - 1 x Socket Head Cap Screw M2.5x19mm. - 1 x Socket Head Cap Screw M3x20mm. - 1 x Metric Hex Nylon Nut M2.5 H3.5. - 1 x Metric Hex Nylon Nut M3 H4. 	<p>Blade Spacer [H0158-S]</p> <ul style="list-style-type: none"> - 4 x Blade Spacer. 	<p>Canopy Positioner [H0159-S]</p> <ul style="list-style-type: none"> - 2 x Canopy Positioner. - 2 x Socket Head Cap Screw M3x10mm. 	<p>Red Landing Gear Low Profile [H0162-S]</p> <ul style="list-style-type: none"> - 1 x CF Red Landing Gear Low Profile.
<p>Red Tail Boom [H0163-S]</p> <ul style="list-style-type: none"> - 1 x Red Tail Boom. - 1 x Tail Boom Interface. - 1 x Locking Interface. - 2 x Tube Spacers. - 2 x Locking Element Tails. - 4 x Button Head Cap Screws M4x8mm. - 3 x Set Screws M3x20mm. - 2 x Washers $\varnothing 3.1 \times \varnothing 12 \times 1.8 \text{mm}$. - 2 x Metric Hex Nylon Nuts M3 H4. - 2 x Vite Nylon Esa M8x14mm. - 2 x Metric Hex Nuts M8 H6.5. - 2 x Double Sided Tapes. 	<p>Red Canopy 770 [H0164-S]</p> <ul style="list-style-type: none"> - 1 x Red Canopy 770 - 1 x Canopy Mouse. - 2 x Canopy Grommet. 	<p>ESC Heatsink [H0165-S]</p> <ul style="list-style-type: none"> - 1 x ESC Heatsink. - 4 x Socket Head Cap Screws M3x6mm. - 4 x Set Screws M3x20mm. - 4 x Metric Hex Nylon Nuts M3 H4. - 12 x Washers $\varnothing 3.2 \times \varnothing 6 \times 0.5 \text{mm}$. 	



<p>[HC002-S]</p>  <p>-5 x Socket Head Cap Screws M2x5mm.</p>	<p>[HC004-S]</p>  <p>-5 x Socket Head Cap Screws M2x6mm.</p>	<p>[HC008-S]</p>  <p>-5 x Socket Head Cap Screws M2x8mm.</p>	<p>[HC014-S]</p>  <p>-5 x Socket Head Cap Screws M2x12mm.</p>	<p>[HC018-S]</p>  <p>-5 x Socket Head Cap Screws M2.5x6mm.</p>	<p>[HC020-S]</p>  <p>-5 x Socket Head Cap Screws M2.5x8mm.</p>	<p>[HC026-S]</p>  <p>-5 x Socket Head Cap Screws M2.5x12mm.</p>
<p>[HC033-S]</p>  <p>- 5 x Socket Head Cap Screw Shoulderreds M2.5x19mm.</p>		<p>[HC038-S]</p>  <p>- 5 x Button Head Cap Screws M3x4mm.</p>	<p>[HC044-S]</p>  <p>-5 x Socket Head Cap Screws M3x6mm.</p>	<p>[HC050-S]</p>  <p>-5 x Socket Head Cap Screws M3x8mm.</p>	<p>[HC056-S]</p>  <p>-5 x Socket Head Cap Screws M3x10mm.</p>	<p>[HC062-S]</p>  <p>-5 x Socket Head Cap Screws M3x12mm.</p>
<p>[HC068-S]</p>  <p>-5 x Socket Head Cap Screws M3x16mm.</p>	<p>[HC074-S]</p>  <p>-2 x Socket Head Cap Screw Shoulderreds M3x16mm. -2 x Metric Hex Nylon Nuts M3H4.</p>	<p>[HC080-S]</p>  <p>-5 x Socket Head Cap Screws M3x20mm.</p>	<p>[HC082-S]</p>  <p>-5 x Socket Head Cap Screw Shoulderreds M3x20mm.</p>	<p>[HC083-S]</p>  <p>-5 x Socket Head Cap Screw Shoulderreds M3x22mm.</p>	<p>[HC086-S]</p>  <p>-5 x Socket Head Cap Screws M3x22mm.</p>	
<p>[HC090-S]</p>  <p>5xSocket Head Cap Screw Shoulderreds M3x30mm.</p>	<p>[HC092-S]</p>  <p>2xSocket Head Cap Screw Shoulderreds M3x50mm.</p>	<p>[HC096-S]</p>  <p>-5 x Button Head Cap Screws M4x6mm.</p>	<p>[HC098-S]</p>  <p>-5 x Button Head Cap Screws M4x8mm.</p>	<p>[HC100-S]</p>  <p>-5 x Button Head Cap Screws M4x10mm.</p>	<p>[HC104-S]</p>  <p>-5 x Socket Head Cap Screws M4x22mm.</p>	<p>[HC110-S]</p>  <p>-5 x Socket Head Cap Screws M4x25mm.</p>
<p>[HC111-S]</p>  <p>-5xSocket Head Cap Screw Shoulderreds M4x24mm.</p>	<p>[HC116-S]</p>  <p>- 2xSocket Head Cap Screw Shoulderreds M5x35mm. - 2xMetric Hex Nylon Nuts M5H4.8.</p>	<p>[HC122-S]</p>  <p>-5 x Button Head Cap Screws M6x10mm.</p>	<p>[HC128-S]</p>  <p>-5 x Flat Head Cap Screws M2.5x5mm.</p>	<p>[HC134-S]</p>  <p>-5 x Flat Head Cap Screws M3x8mm.</p>	<p>[HC140-S]</p>  <p>- 5 x Set Screws M2.5x20mm.</p>	
<p>[HC146-S]</p>  <p>- 5 x Set Screws M2.5x15mm.</p>	<p>[HC150-S]</p>  <p>- 5 x Set Screws M3x20mm.</p>	<p>[HC152-S]</p>  <p>- 5 x Set Screws M4x4mm.</p>	<p>[HC158-S]</p>  <p>- 5 x Set Screws M5x20mm.</p>	<p>[HC164-S]</p>  <p>- 4 x Vite Nylon Esa Cap M8x14mm.</p>	<p>[HC170-S]</p>  <p>- 5 x Washers Ø2.2xØ5x0.3mm.</p>	<p>[HC176-S]</p>  <p>- 5 x Washers Ø3xØ4x0.5mm.</p>
<p>[HC180-S]</p>  <p>- 10 x Washers Ø3.3xØ6x0.5mm.</p>	<p>[HC181-S]</p>  <p>- 10 x Washers Ø3.3xØ9x0.8mm.</p>	<p>[HC188-S]</p>  <p>- 5 x Washers Ø5.3xØ15x1mm.</p>	<p>[HC194-S]</p>  <p>- 5 x Washers Ø6xØ14x1.5mm.</p>	<p>[HC200-S]</p>  <p>- 10 x Metric Hex Nylon Nuts M2.5H3.5.</p>	<p>[HC206-S]</p>  <p>- 10 x Metric Hex Nylon Nuts M3H4.</p>	
<p>[HC212-S]</p>  <p>- 10 x Metric Hex Nylon Nuts M4 H5.</p>	<p>[HC218-S]</p>  <p>- 5 x Metric Hex Nylon Nuts M5 H4.8.</p>	<p>[HC224-S]</p>  <p>- 4 x Metric Hex Nuts M8 H6.5.</p>	<p>[HC230-S]</p>  <p>- 5 x Shim Washers Ø10xØ16x1mm.</p>	<p>[HC232-S]</p>  <p>- 5 x Shim Washers Ø10xØ16x0.2mm.</p>	<p>[HC234-S]</p>  <p>- 5 x Shim Washers Ø10xØ16x0.1mm.</p>	



<p>[HC238-S]</p>  <p>- 1 x Carbon Rod $\varnothing 2.5 \times \varnothing 4 \times 752\text{mm}$. - 2 x Plastic Ball Links. - 2 x Threaded Rods M2.5x40mm.</p>	<p>[HC242-S]</p>  <p>- 3 x Threaded Rods M2.5x40mm.</p>	<p>[HC325-S]</p>  <p>- 1 x Belt Gates 2160-3MGT-06.</p>	<p>[HC308-S]</p>  <p>- 1 x Belt Gates 240-3MGT-13.</p>	<p>[HC315-S]</p>  <p>- 2 x Springs de 5.8/df 0.3/LL9. - 1 x Spring de 8/df 0.5/LL8. - 2 x Springs de 3/df 0.5/LL12.</p>		
<p>[HC400-S]</p>  <p>- 4 x Flanged Bearings $\varnothing 2.5 \times \varnothing 6 \times 2.6\text{mm}$.</p>	<p>[HC402-S]</p>  <p>- 4 x Flanged Bearings $\varnothing 3 \times \varnothing 7 \times 3\text{mm}$.</p>	<p>[HC406-S]</p>  <p>- 4 x Bearings $\varnothing 5 \times \varnothing 9 \times 3\text{mm}$.</p>	<p>[HC410-S]</p>  <p>- 4 x Flanged Bearings $\varnothing 5 \times \varnothing 9 \times 3\text{mm}$.</p>	<p>[HC414-S]</p>  <p>- 2 x Flanged Bearings $\varnothing 6 \times \varnothing 13 \times 5\text{mm}$.</p>	<p>[HC418-S]</p>  <p>- 2 x Flanged Bearings $\varnothing 8 \times \varnothing 12 \times 3.5\text{mm}$.</p>	
<p>[HC420-S]</p>  <p>- 2 x Bearings $\varnothing 10 \times \varnothing 15 \times 4\text{mm}$.</p>	<p>[HC422-S]</p>  <p>- 4 x Bearings $\varnothing 10 \times \varnothing 19 \times 5\text{mm}$.</p>	<p>[HC426-S]</p>  <p>- 2 x Bearings $\varnothing 12 \times \varnothing 24 \times 6\text{mm}$.</p>	<p>[HC430-S]</p>  <p>- 2 x Bearing Rads $\varnothing 30 \times \varnothing 37 \times 4\text{mm}$.</p>	<p>[HC434-S]</p>  <p>- 2 x Thrust Bearings $\varnothing 4 \times \varnothing 9 \times 4\text{mm}$.</p>		
<p>[HC438-S]</p>  <p>- 2 x Thrust Bearings $\varnothing 10 \times \varnothing 18 \times 5.5\text{mm}$.</p>	<p>[HC442-S]</p>  <p>- 1 x One Way Bearing $\varnothing 10 \times \varnothing 14 \times 12\text{mm}$.</p>	<p>[HA001-S]</p>  <p>- 1 x Foam Blade Holder.</p>	<p>[HA002-S]</p>  <p>- 2 x Hex Wrenches 2.5mm.</p>	<p>[HA006-S]</p>  <p>- 1 x Canopy Mousse 80cm.</p>		
<p>[HA008-S]</p>  <p>- 5 x Canopy ORs.</p>	<p>[HA0010-S]</p>  <p>- 2 x Cable Pass.</p>	<p>[HA012-S]</p>  <p>- 8 x Battery ORs.</p>	<p>[HA016-S]</p>  <p>- 1 x Plastic Wrench Nut M8 & M6.</p>	<p>[HA024-S]</p>  <p>- 4 x Orings 3050.</p>	<p>[HA025-S]</p>  <p>- Straps Large Velcro.</p>	<p>[HA026-S]</p>  <p>- Heat Shrink (4pcs 350mm.)</p>
<p>[BW2770]</p>  <p>- White Main Blades 770mm</p>	<p>[BW6115]</p>  <p>- White Tail Blades 115mm</p>	<p>[HA111-S]</p>  <p>- 4 x Canopy Grommets.</p>	<p>[HA903-S]</p>  <p>Manual Goblin770</p>			

WWW.GOBLIN-HELICOPTER.COM

SAB HELI DIVISION