GOBLIN

HELICOPTER

MANUAL

GOBLIN 770 SPORT S

SAB HELI DIVISION

Goblin 770 Sport

Release 1.0 - June 2018

WORLD DISTRIBUTION
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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.

VERY IMPORTANT

In the Manual bag you will find a product card your with serial number. Please take a moment to register your kit online via our web site at:

http://www.goblin-helicopter.com

It is extremely important that you take a moment to register your helicopter with us. This is the only way to ensure that you are properly informed about changes to your kit, such as upgrades, retrofits and other important developments. SAB Heli Division cannot be held responsible for issues arising with your model and will not provide support unless you register your serial number.

The Serial number is also engraved in the Aluminum Main Plate.

Thank you for your purchase, we hope you enjoy your new Goblin helicopter!

SAB Heli Division

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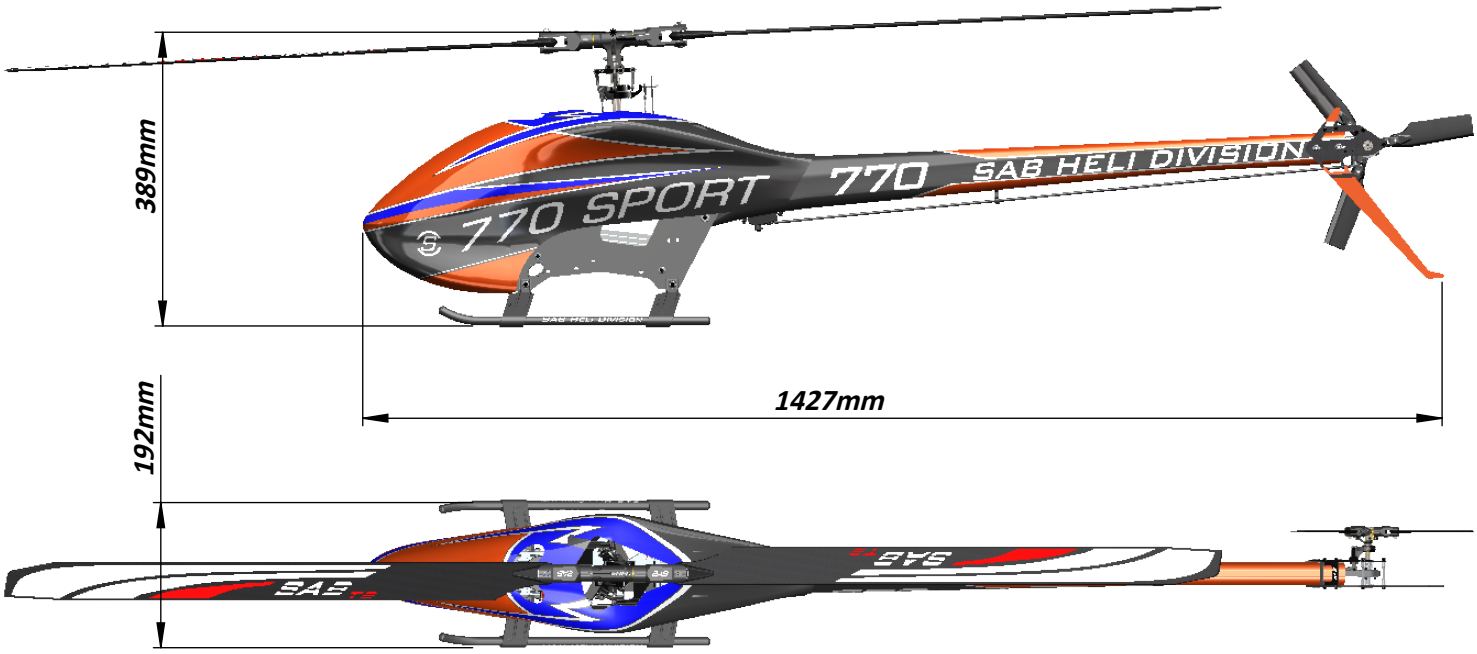
SPECIFICATIONS



Main rotor diameter: *1688mm (with 750 mm Main blades)*
Tail rotor diameter: *302mm (with 115 Tail blades)*
Max blades dimension:
Main blades 770mm with Tail blades 105mm
Main blades 766mm with Tail blades 115mm
Air frame weight: *2850g*
Motor size: *Maximum 64mm diameter, maximum height 64mm*
Battery compartment: *60x58x350mm*

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.

DAMAGE LIMITS

SAB HELI DIVISION SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCT, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY. Further, in no event shall the liability of SAB Heli Division exceed the individual price of the Product on which liability is asserted. As SAB Heli Division has no control over use, setup, final assembly, modification or misuse, no liability shall be assumed nor accepted for any resulting damage or injury. By the act of use, setup or assembly the user accepts all resulting liability. If you as the Purchaser or user are not prepared to accept the liability associated with the use of this Product, you are advised to return this Product immediately in new and unused condition to the place of purchase.

LIMITED WARRANTY.

SAB Heli Division reserves the right to change or modify this warranty without notice and disclaims all other warranties, express or implied.
(a) This warranty is limited to the original Purchaser ("Purchaser") and is not transferable. REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE PURCHASER This warranty covers only those Products purchased from an authorized SAB Heli Division dealer. Third party transactions are not covered by this warranty. Proof of purchase is required for warranty claims.
(b) Limitations- SAB HELI DIVISION MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NONIFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCT. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE REQUIREMENTS OF THE PURCHASER'S INTENDED USE.
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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. It is necessary to pay attention to the symbols listed below:

Important

⇨ Bag xx

Indicates that for this assembly phase you need materials that are in bag xx.

Use retaining compound (SAB HA115-S)

Use Thread Locker Medium Strength (SAB HA116-S)

Use CA Glue

Use Proper Lubricant

ADDITIONAL COMPONENTS REQUIRED

*Electric Motor: 12S/14S – 400/530Kv
Maximum diameter 64mm,
Maximum height 64mm,
Pinion shaft diameter 6/8mm

*Speed controller: minimum 160A to be safe

*Batteries: 12S/14S – 5000mAh
*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 17)

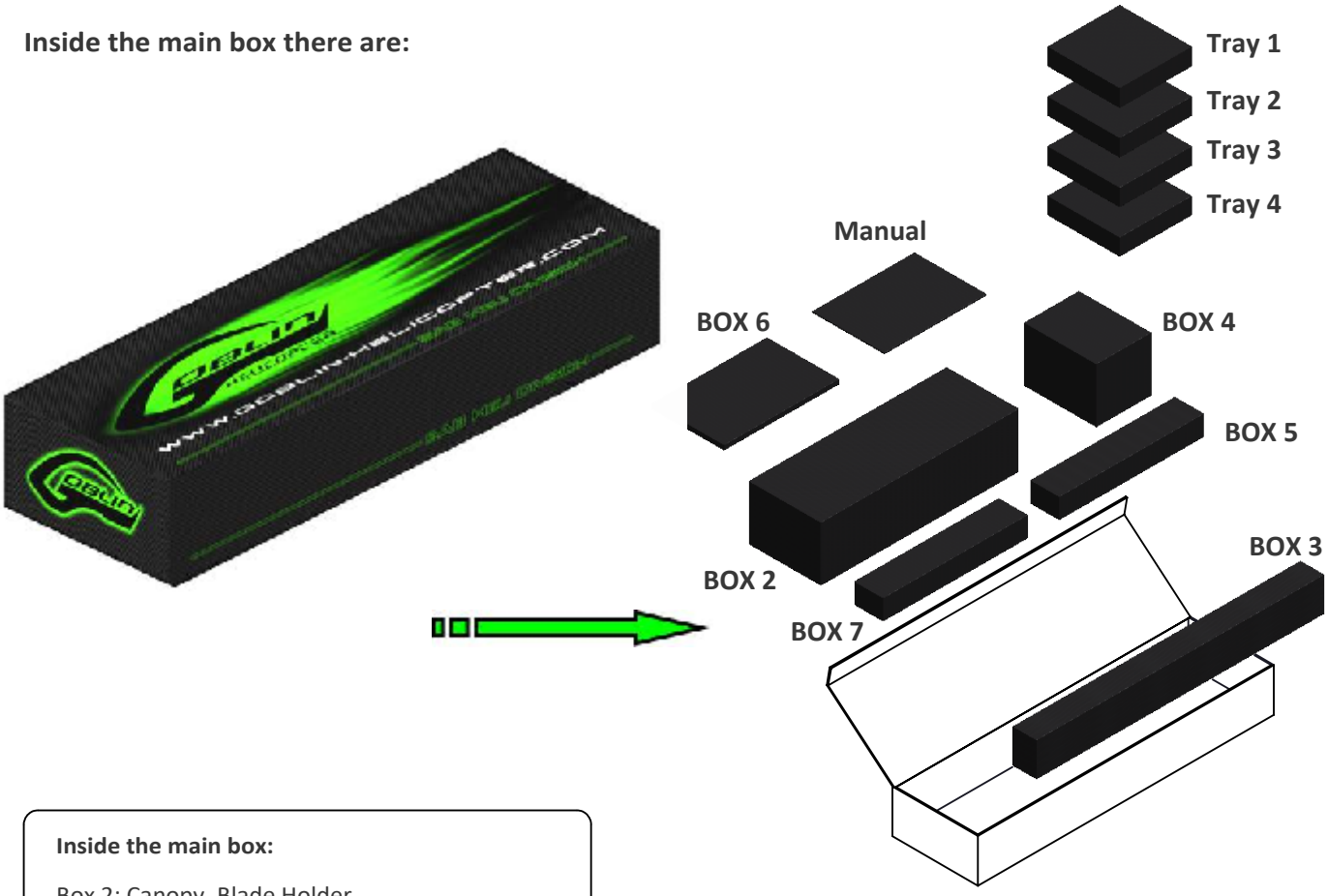
TOOLS, LUBRICANTS, ADHESIVES

*Generic pliers
*Hexagonal driver, size 1.5, 2, 2.5, 3, 4, 5mm
*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. Vaseline 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, 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

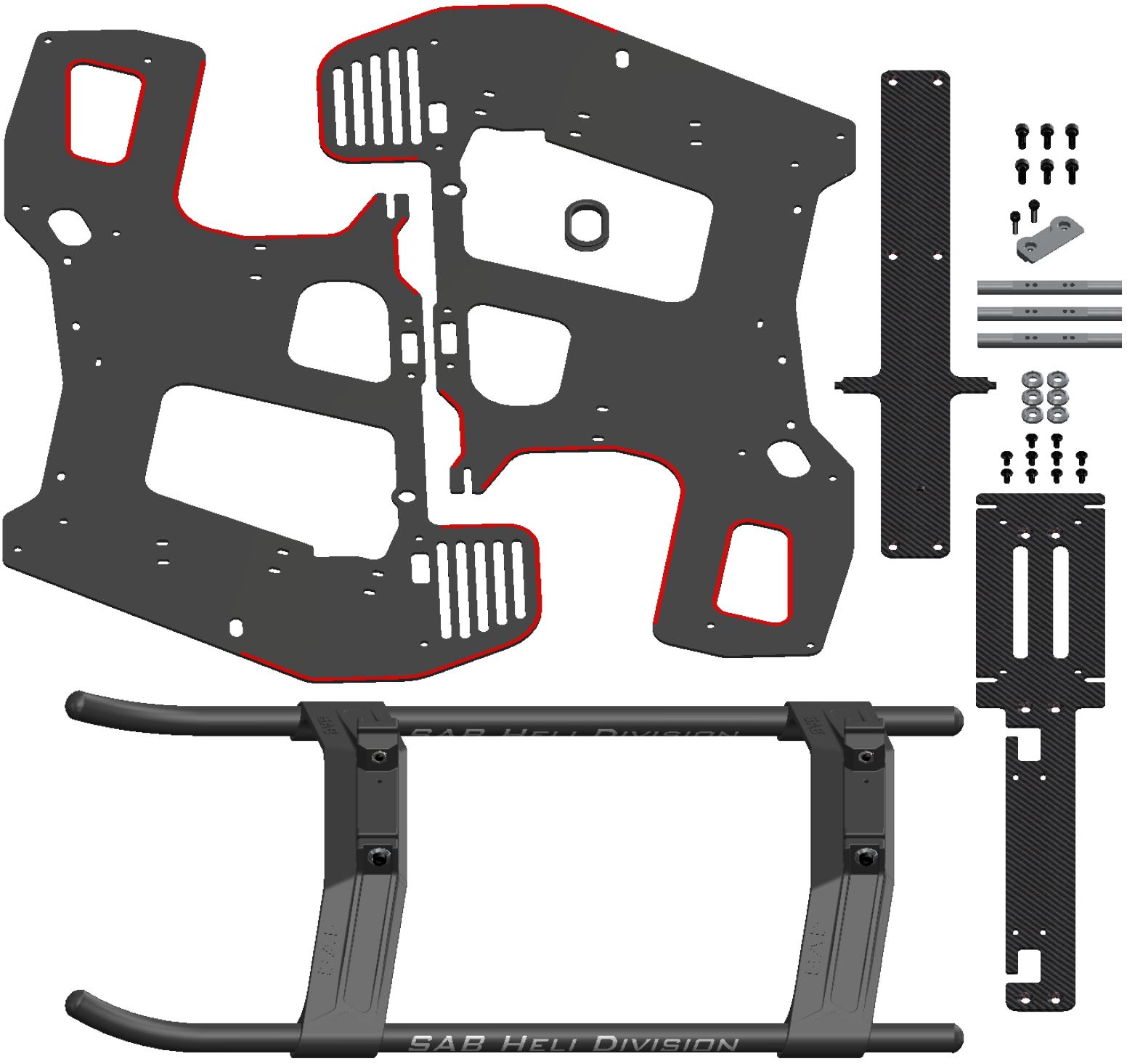
Box 5: Bags

Box 6: Carbon parts

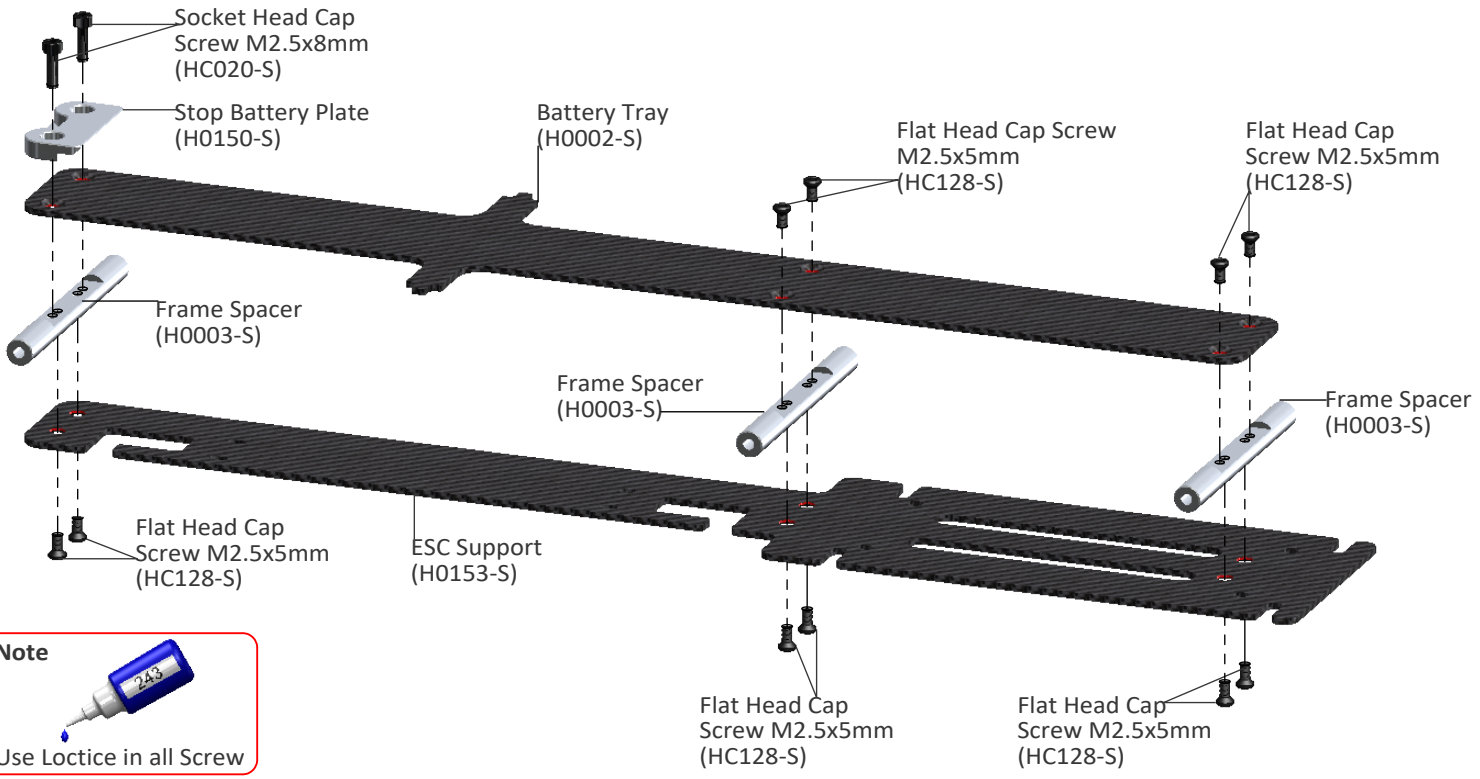
Box 7: Empty

The assembly process is described in the following chapters. Each chapter provides you with the box, bag and/or foam tray numbers you will need for that chapter. The information is printed in a green box in the upper right hand corner of the page at the beginning of every chapter.

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. Very important in red line zone.



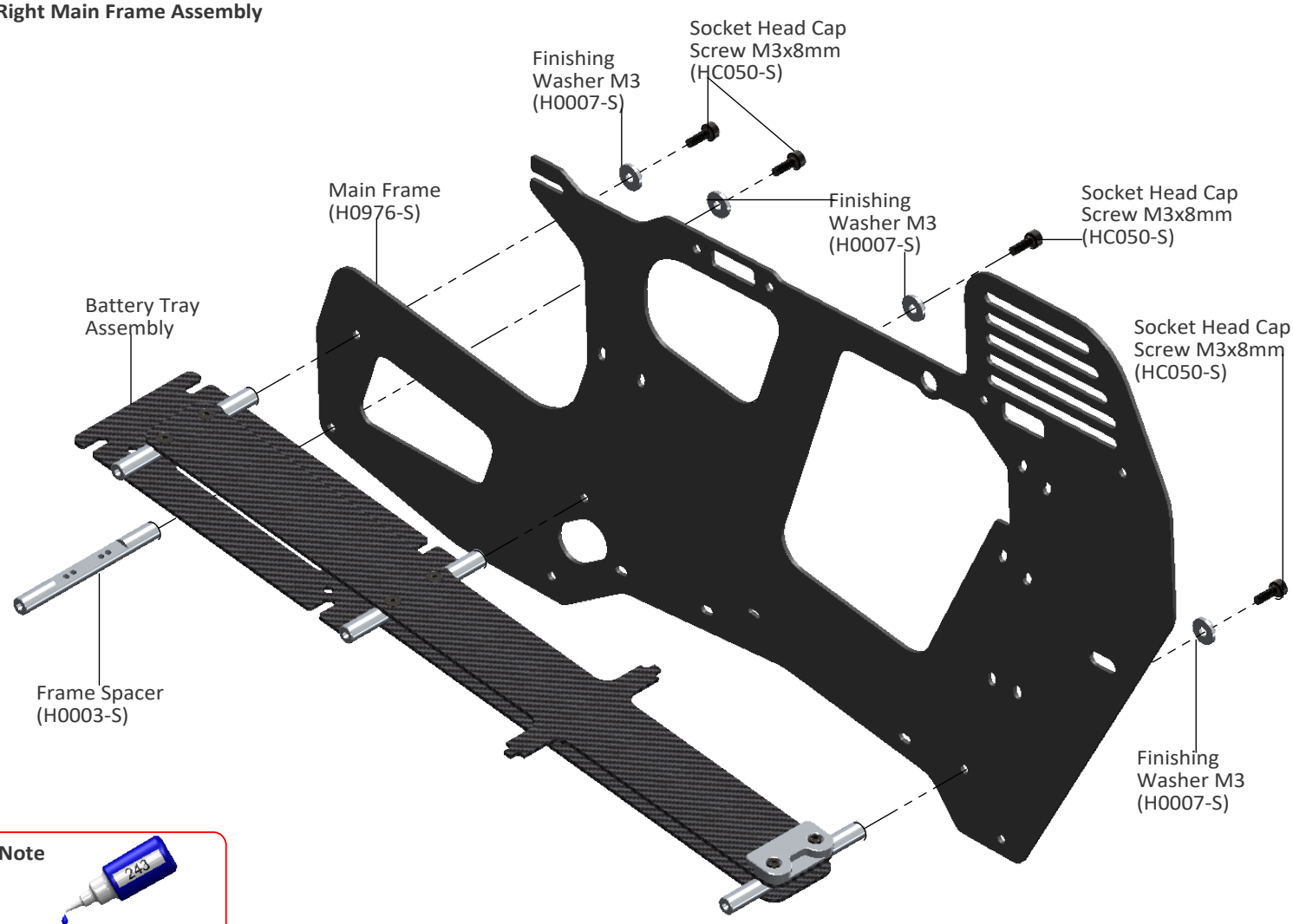
Battery Tray Assembly



Note

Use Loctice in all Screw

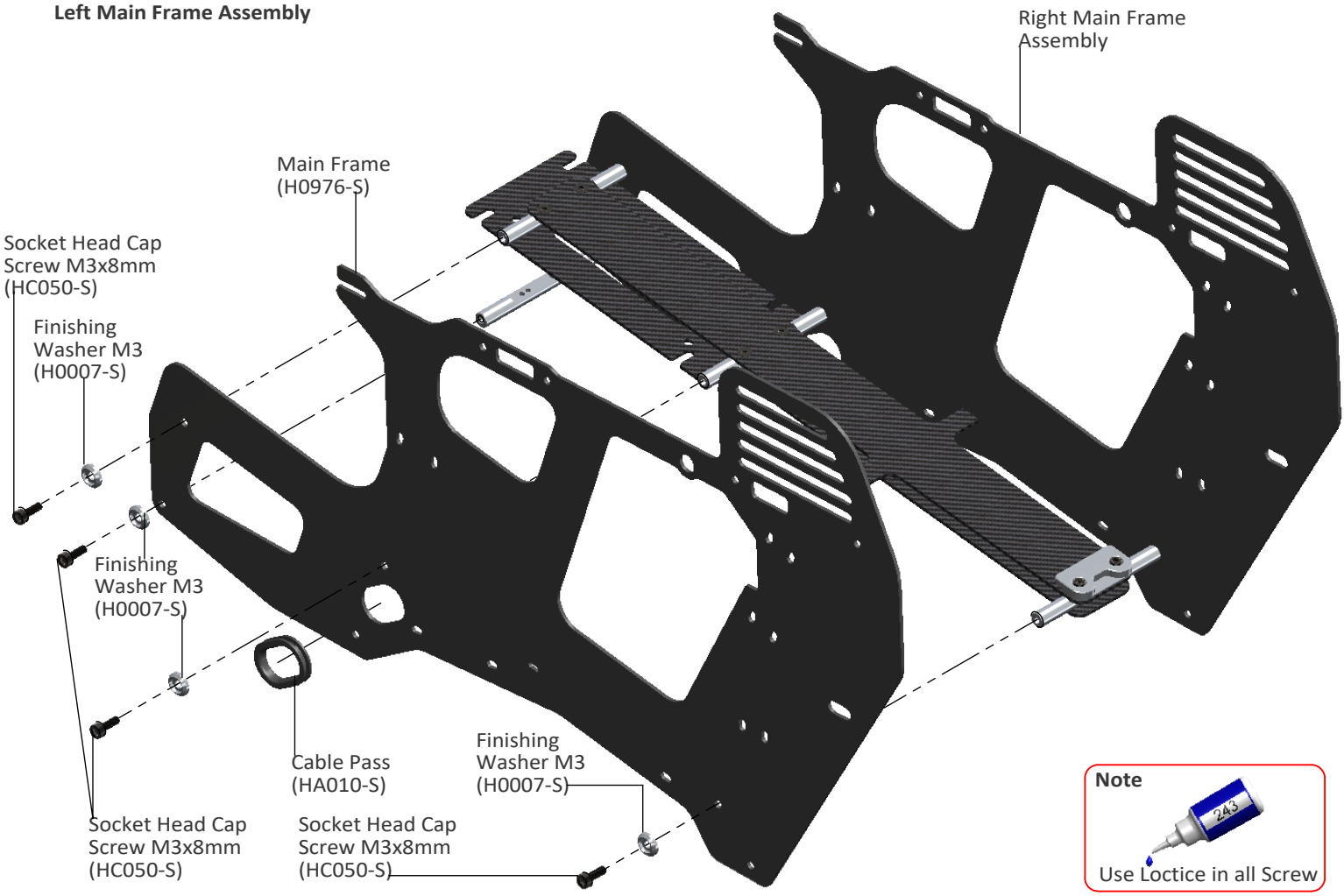
Right Main Frame Assembly



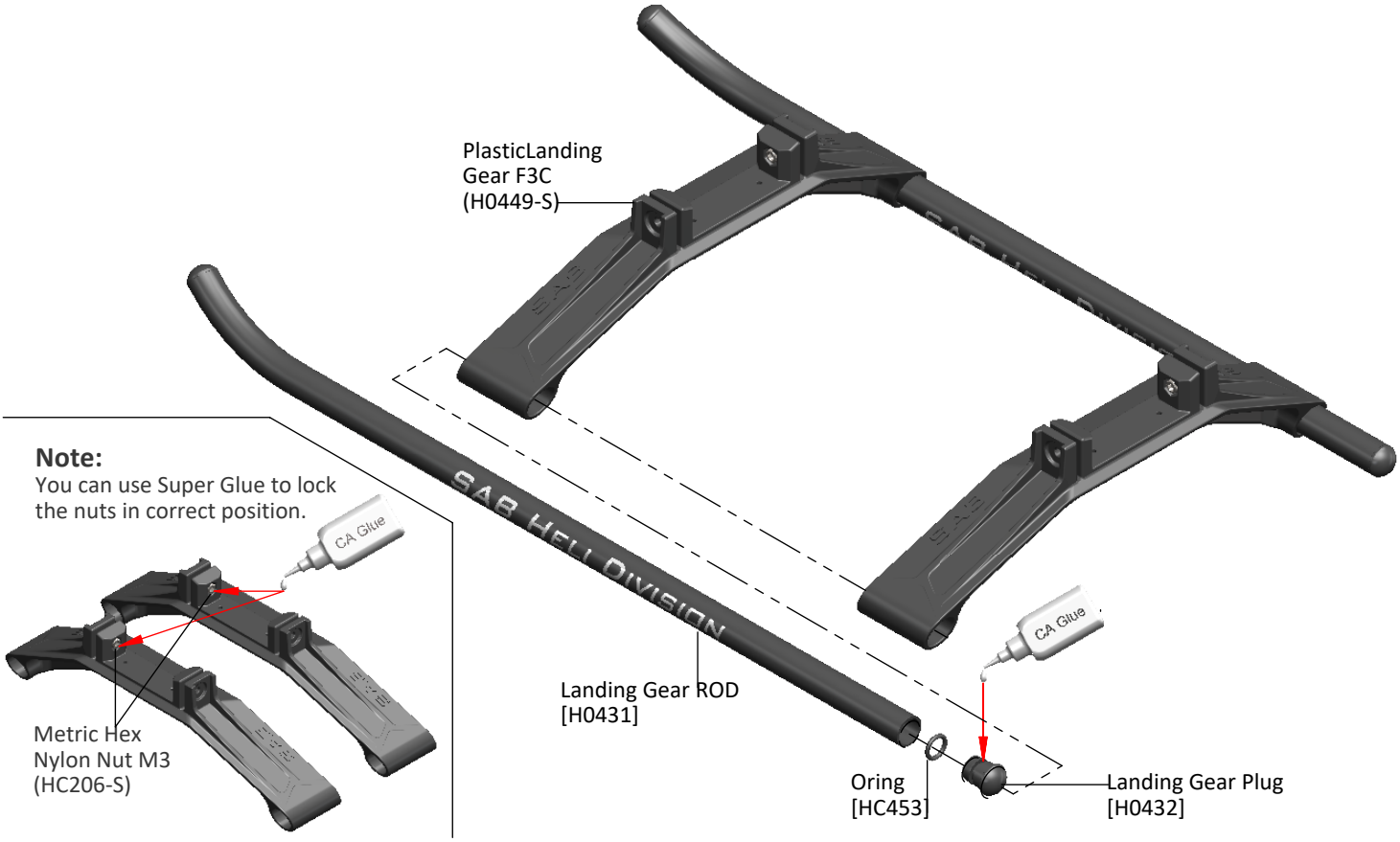
Note

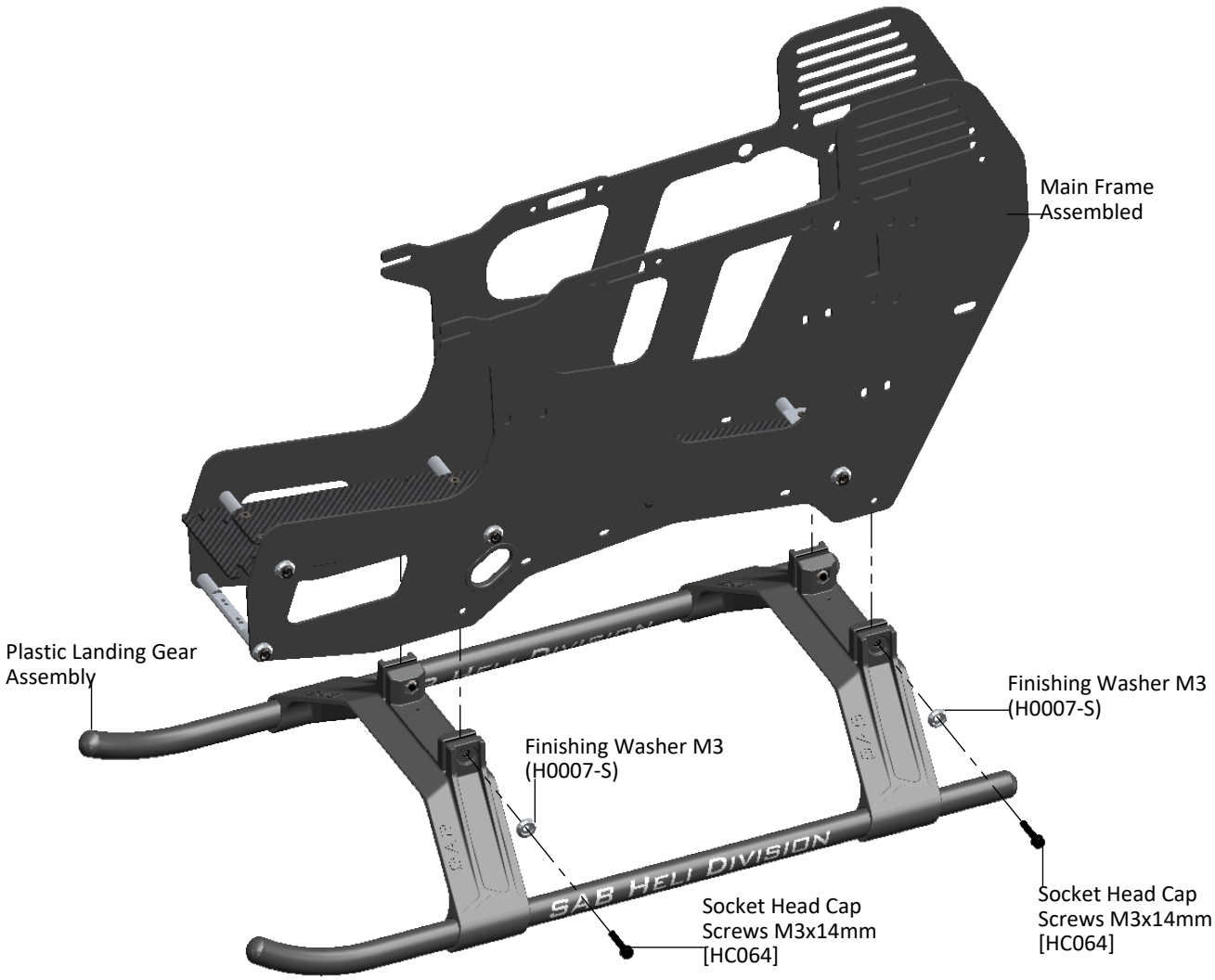
Use Loctice in all Screw

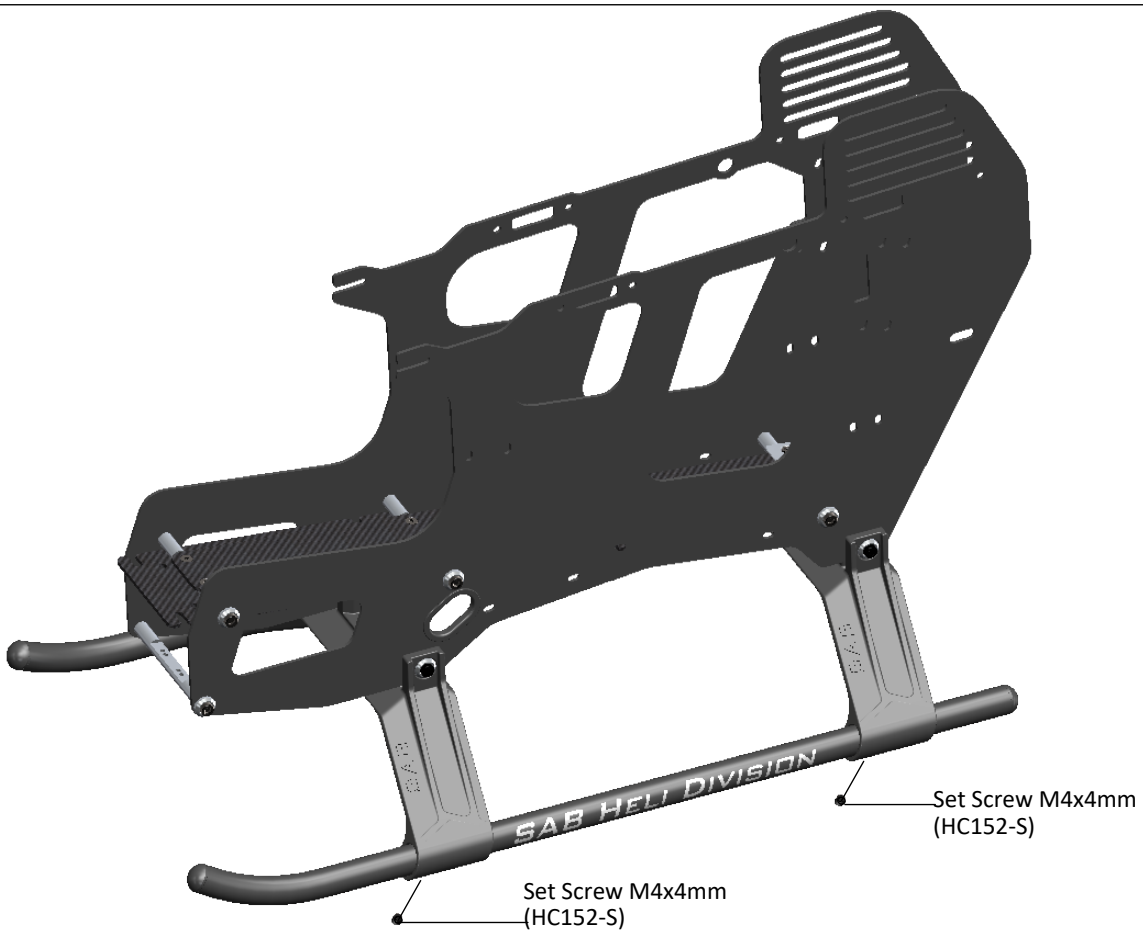
Left Main Frame Assembly

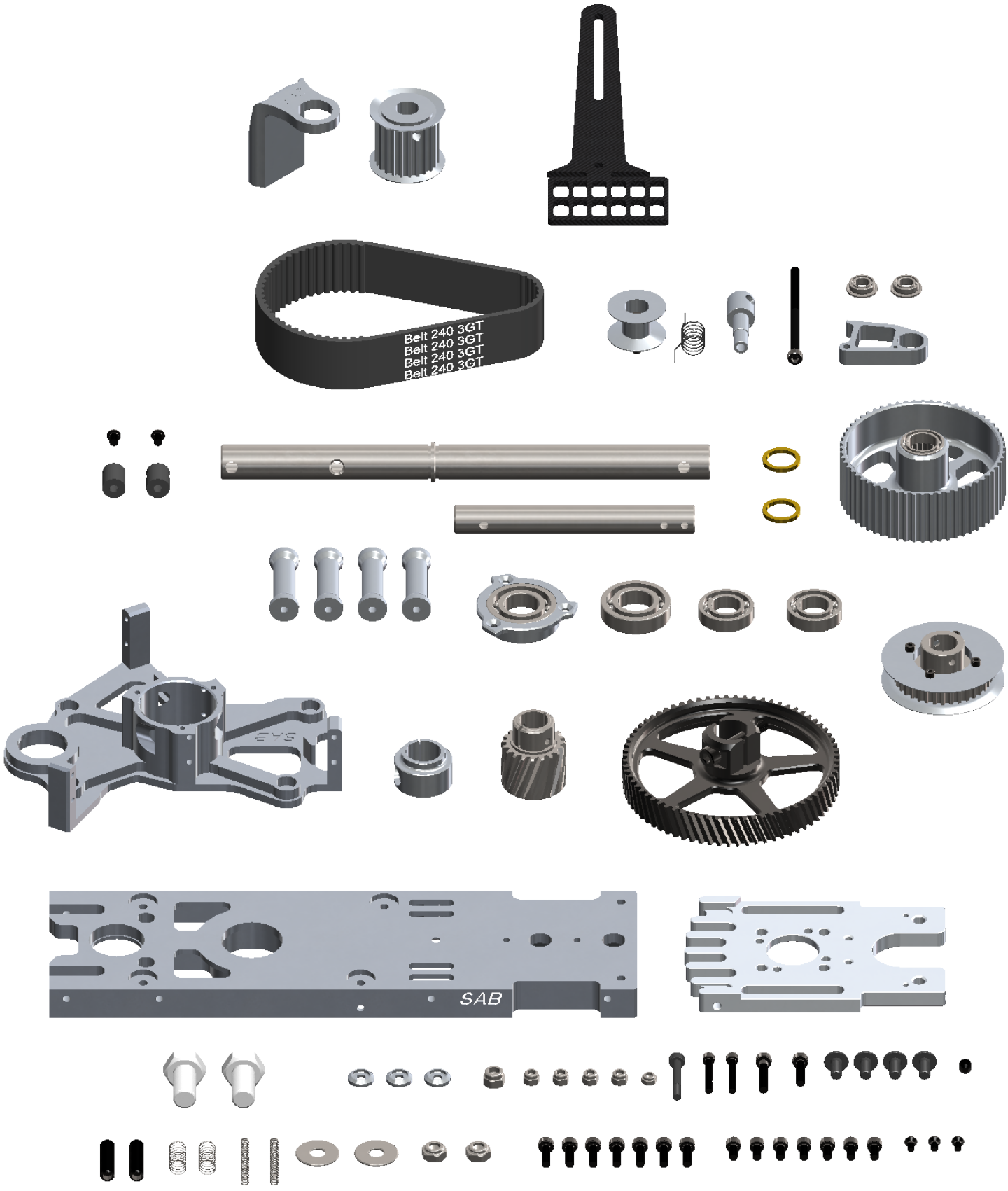


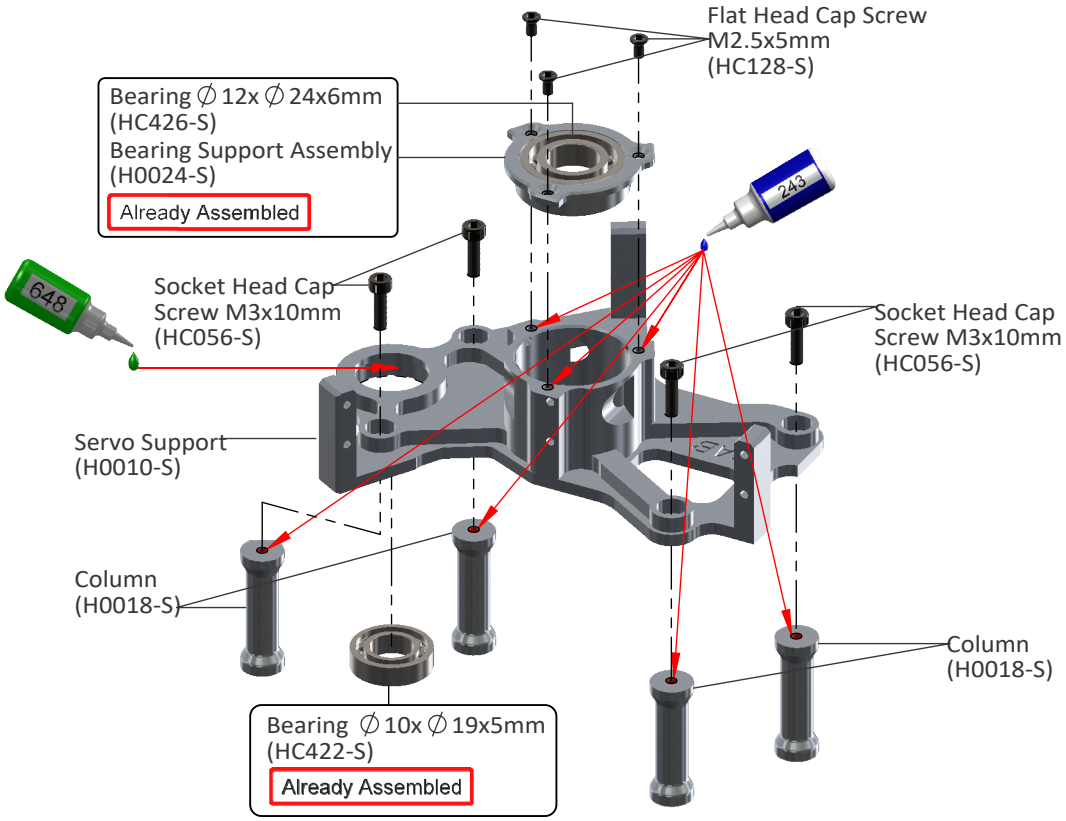
Plastic Landing Gear Assembly

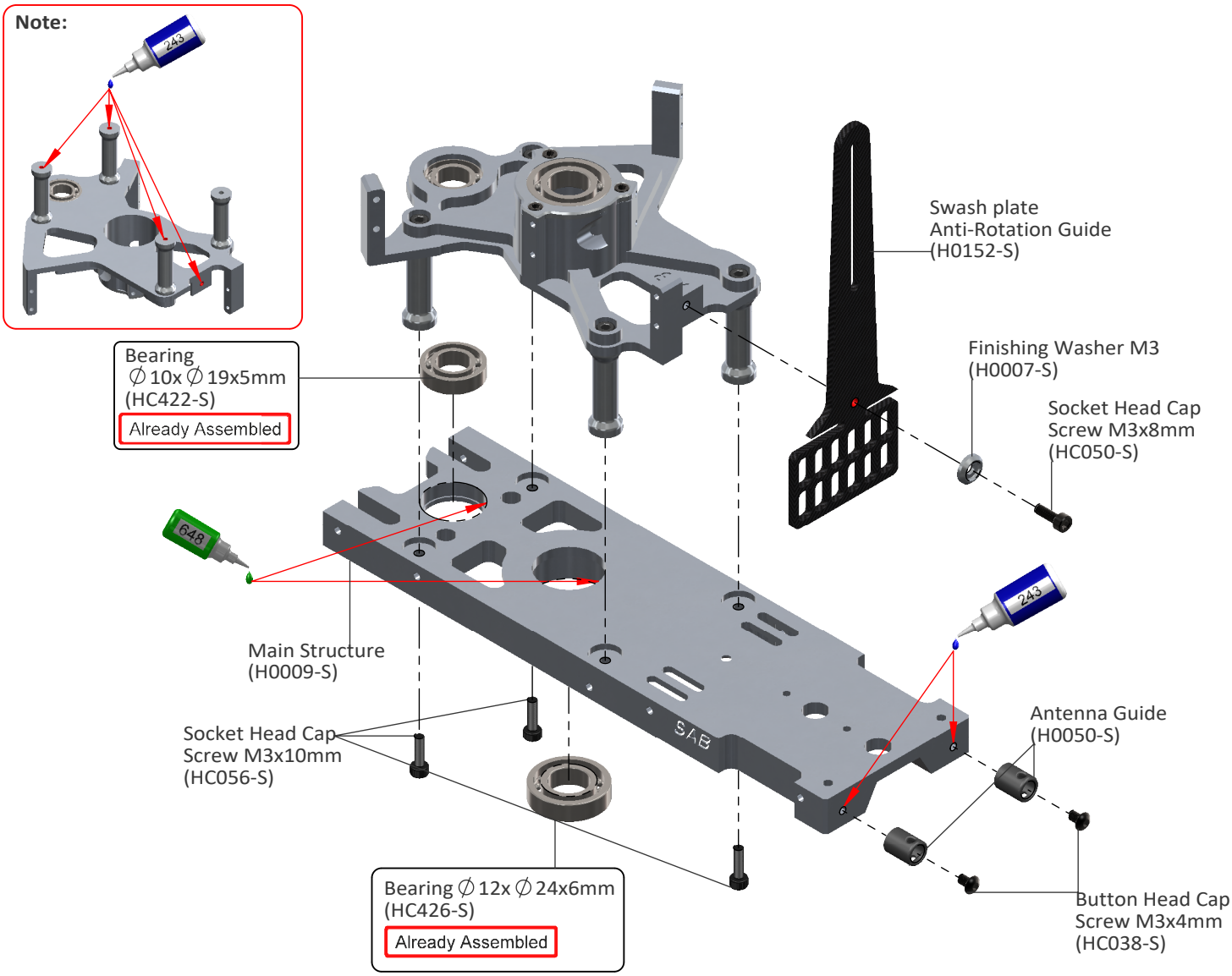



Main Frame
Assembled
Plastic Landing Gear
Assembly
Finishing Washer M3
(H0007-S)
Finishing Washer M3
(H0007-S)
Socket Head Cap
Screws M3x14mm
[HC064]
Socket Head Cap
Screws M3x14mm
[HC064]
SAB HELI DIVISION


Set Screw M4x4mm
(HC152-S)
Set Screw M4x4mm
(HC152-S)
SAB HELI DIVISION


Belt 240 3GT
Belt 240 3GT
Belt 240 3GT
Belt 240 3GT
SAB


Flat Head Cap Screw
M2.5x5mm
(HC128-S)
Bearing ∅12x∅24x6mm
(HC426-S)
Bearing Support Assembly
(H0024-S)
Already Assembled
243
648
Socket Head Cap
Screw M3x10mm
(HC056-S)
Socket Head Cap
Screw M3x10mm
(HC056-S)
Servo Support
(H0010-S)
Column
(H0018-S)
Column
(H0018-S)
Bearing ∅10x∅19x5mm
(HC422-S)
Already Assembled

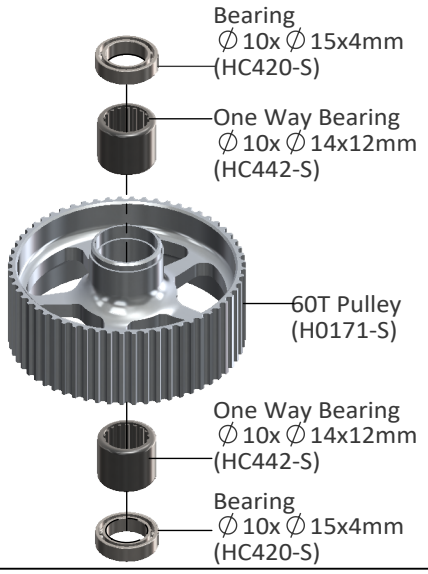

Note:
243
Swash plate
Anti-Rotation Guide
(H0152-S)
Bearing
∅10x∅19x5mm
(HC422-S)
Already Assembled
Finishing Washer M3
(H0007-S)
Socket Head Cap
Screw M3x8mm
(HC050-S)
648
243
Main Structure
(H0009-S)
Antenna Guide
(H0050-S)
Socket Head Cap
Screw M3x10mm
(HC056-S)
Bearing ∅12x∅24x6mm
(HC426-S)
Already Assembled
Button Head Cap
Screw M3x4mm
(HC038-S)

Note:

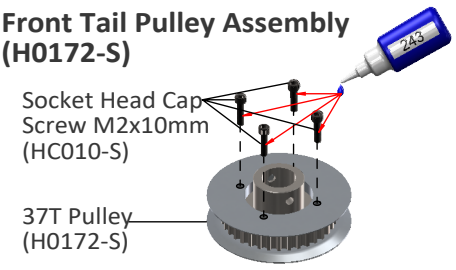
When you tighten the collar (**H0121-S**) on the main shaft, ensure there is no axial play.
Push down the main shaft while pulling up the locking collar. Tighten the screw **M4x22** at this time.

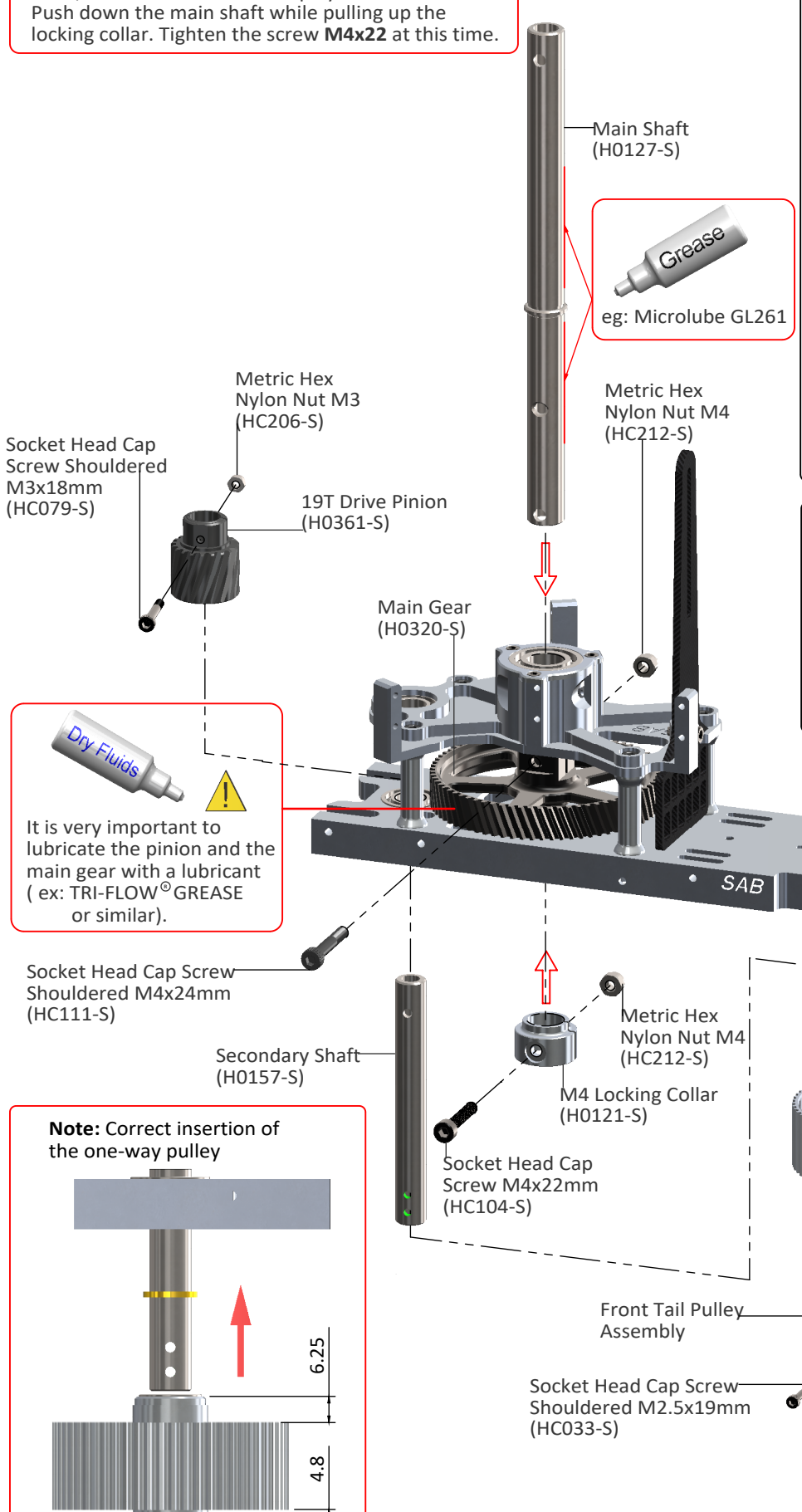
60T Pulley Assembly (H0171-S)

Already Assembled



Front Tail Pulley Assembly (H0172-S)

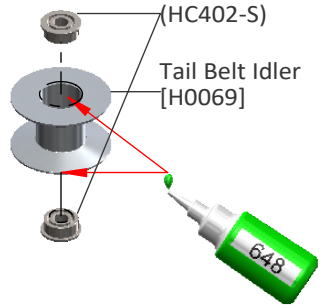




Note: Correct insertion of the one-way pulley

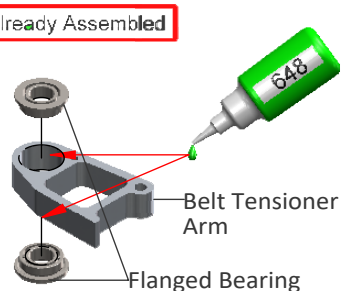
Tail Belt Idler Assembly (H0174-S)

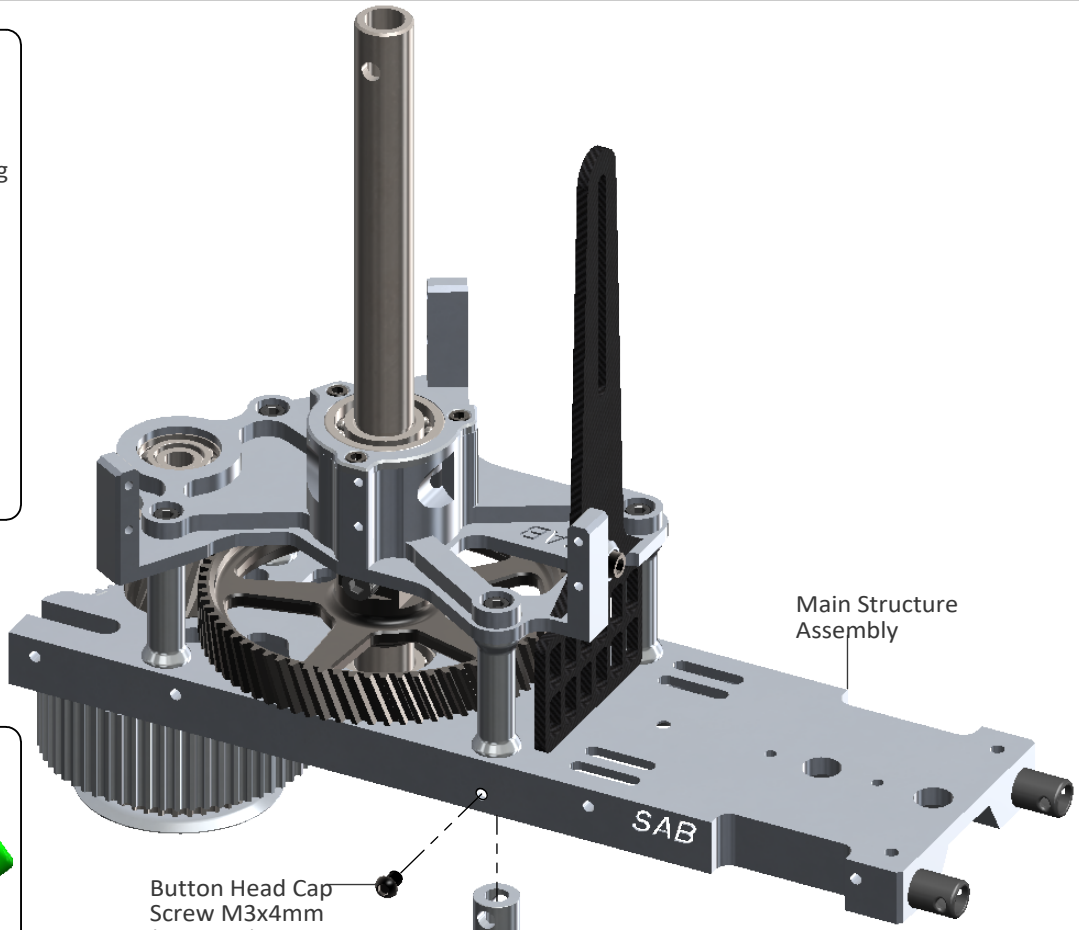
Already Assembled



Belt Tensioner Arm Assembly (H0174-S)

Already Assembled





Button Head Cap Screw M3x4mm (HC038-S)

Belt Tensioner Support (H0174-S)

Spring de 8 / df0.5 / LL8 [HC312]

Belt Tensioner Arm Assembly

Washer ∅3x∅4x0.5mm (HC176-S)

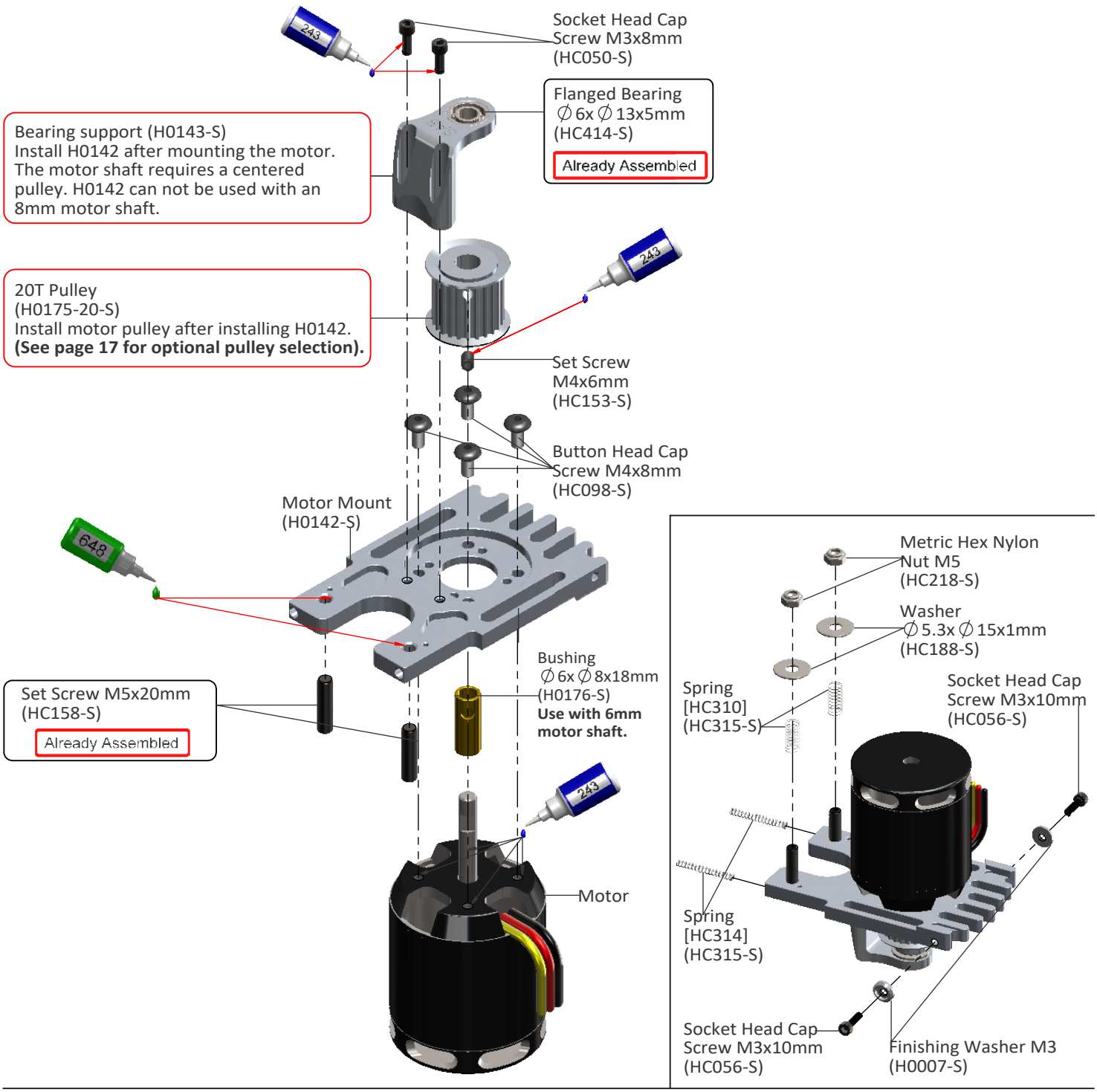
Washer ∅3.2x∅6x0.5mm (HC180-S)

Tail Belt Idler Assembly

Socket Head Cap Screw Shoulder M3x40mm (HC091-S)

Socket Head Cap Screw M3x12mm (HC062-S)

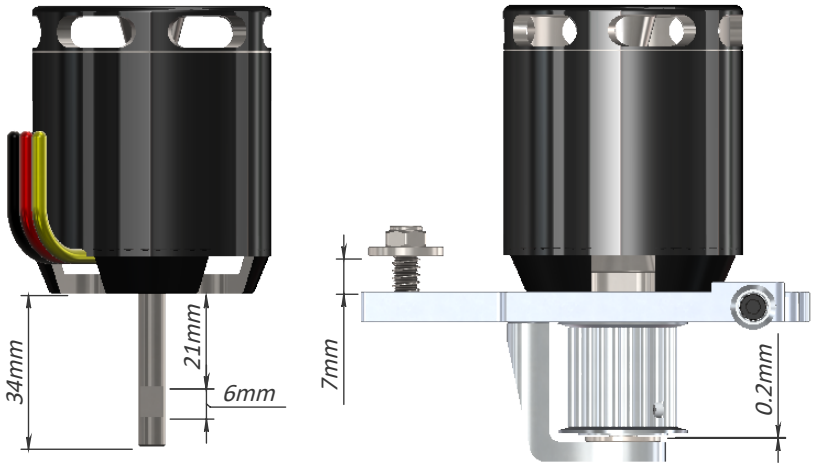
Note:
Position without preload.
Insert the screw in the hole through the aluminum support as in the picture.



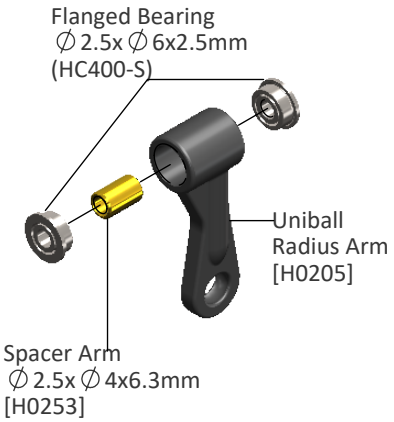
Note for 6mm motor shaft

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.

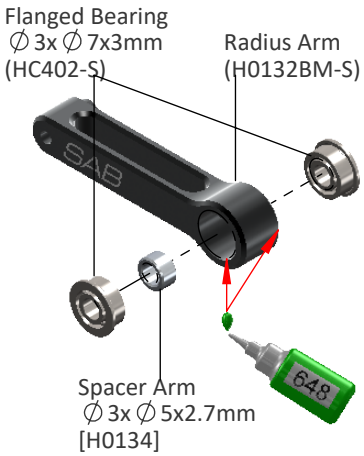
Additionally, ensure the motor shaft has an appropriate 'flat' for one of the set screws.



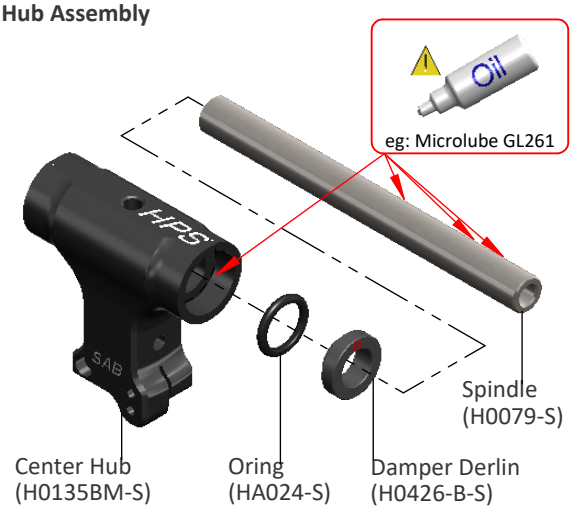
Uniball Arm Assembly ... x2



Radius Arm Assembly ... x2



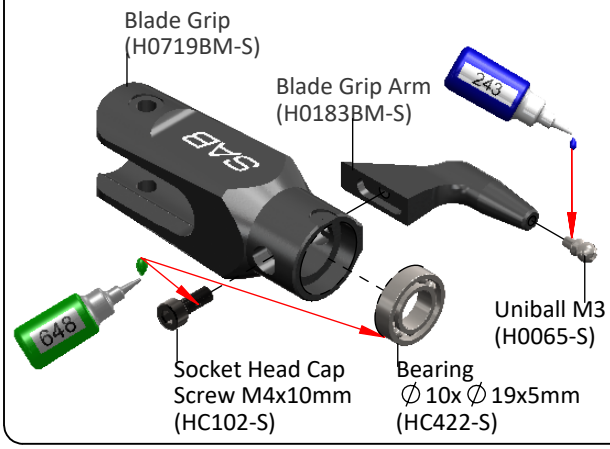
Center Hub Assembly

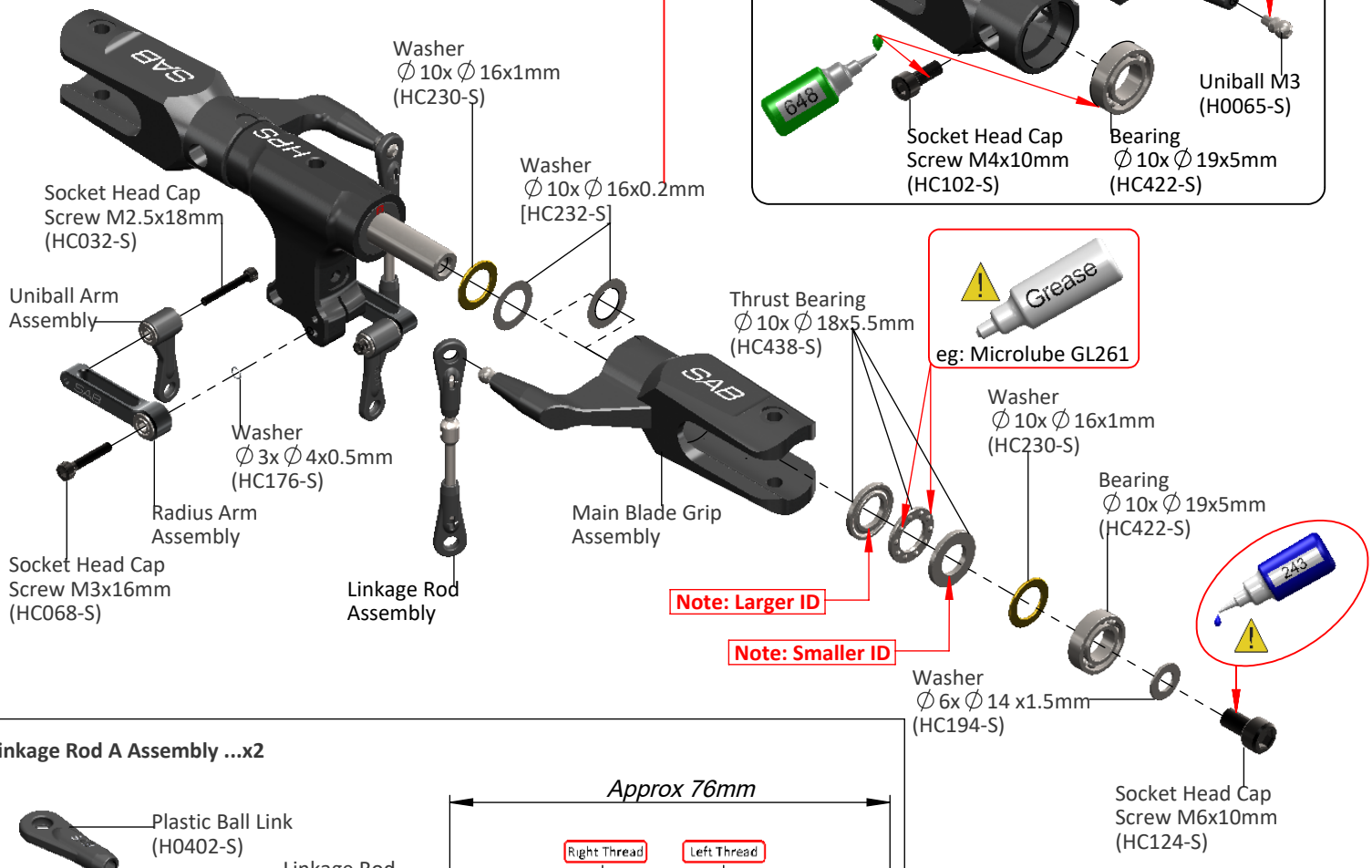


Note:

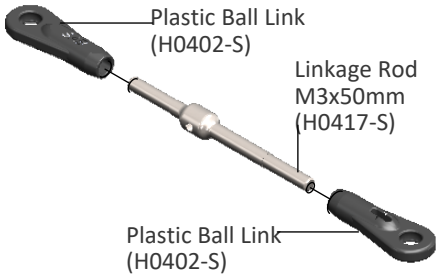
The HPS head should be assembled with one, 1mm shim (HC230) and one, 0.2mm shim (HC232) on each side. The blade grips must move freely, but they should not move just under their own weight. If the blade grips are too tight, you can remove the 0.2mm shim (HC232) from each side. After approximately 10/20 flights, please check preload, you can add one or two 0.2mm shim (HC232) if preload has changed.

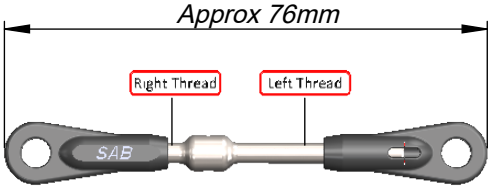
Main Blade Grip Assembly ...x2





Linkage Rod A Assembly ...x2

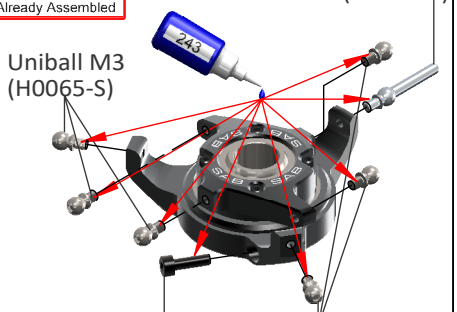


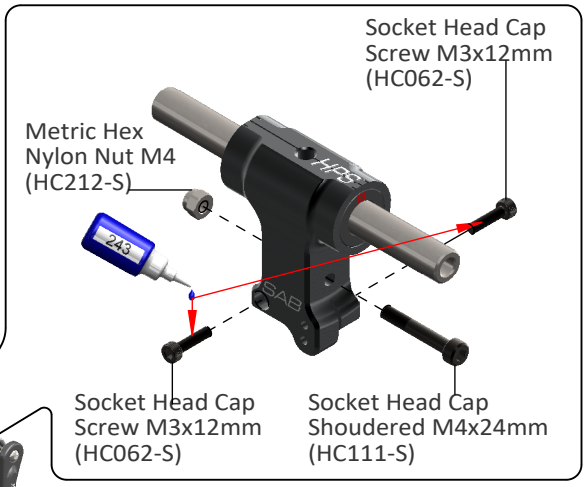


(Initial length for the rods from the swashplate to the Blade Grip.)

Swashplate Assemly (H0422BM-S)

Already Assembled





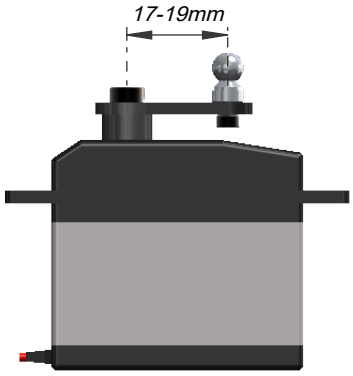
Note:

Use Loctice in all Screw

INSTALLATION OF SWASHPLATE SERVOS

The linkage ball must be positioned between **17-19 mm** out on the servo arm (F**igure 1**), recommended servo arm SAB p/n [HA050/HA051]. 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. Proceed with installation following the instructions below. **Figure 2** shows a completed installation.

Fig. 1



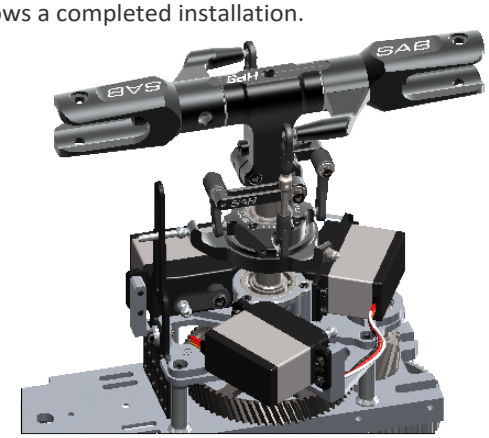
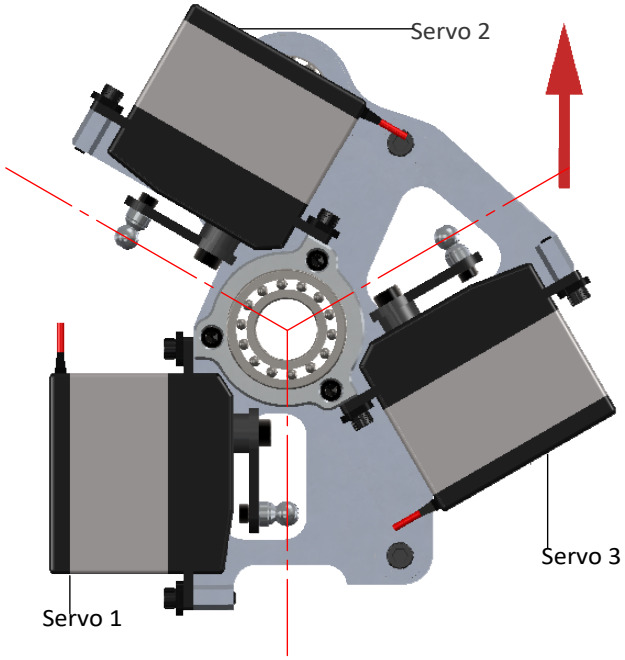


Fig. 2

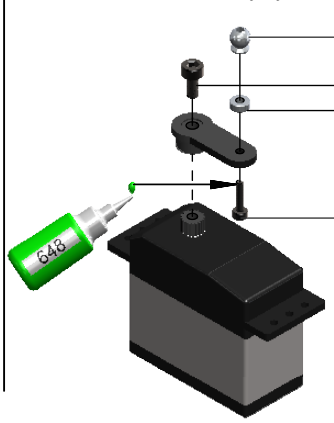
ASSEMBLY OF THE BALL ON THE HORN.

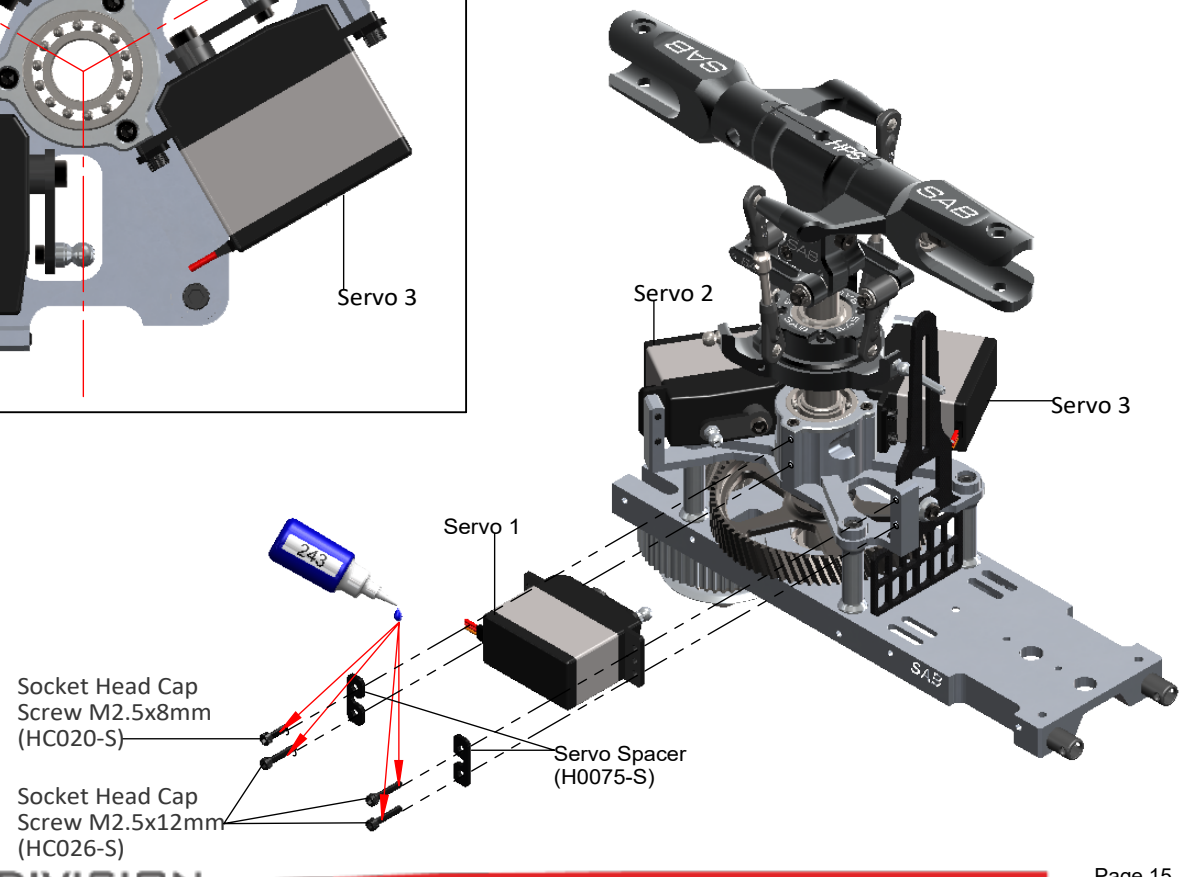
The rods going from the servos to the swash plate must be as vertical as possible. Not all servos are equal, so to better align them you can choose to use the supplied spacer H0031. **Figure 3** illustrates this.

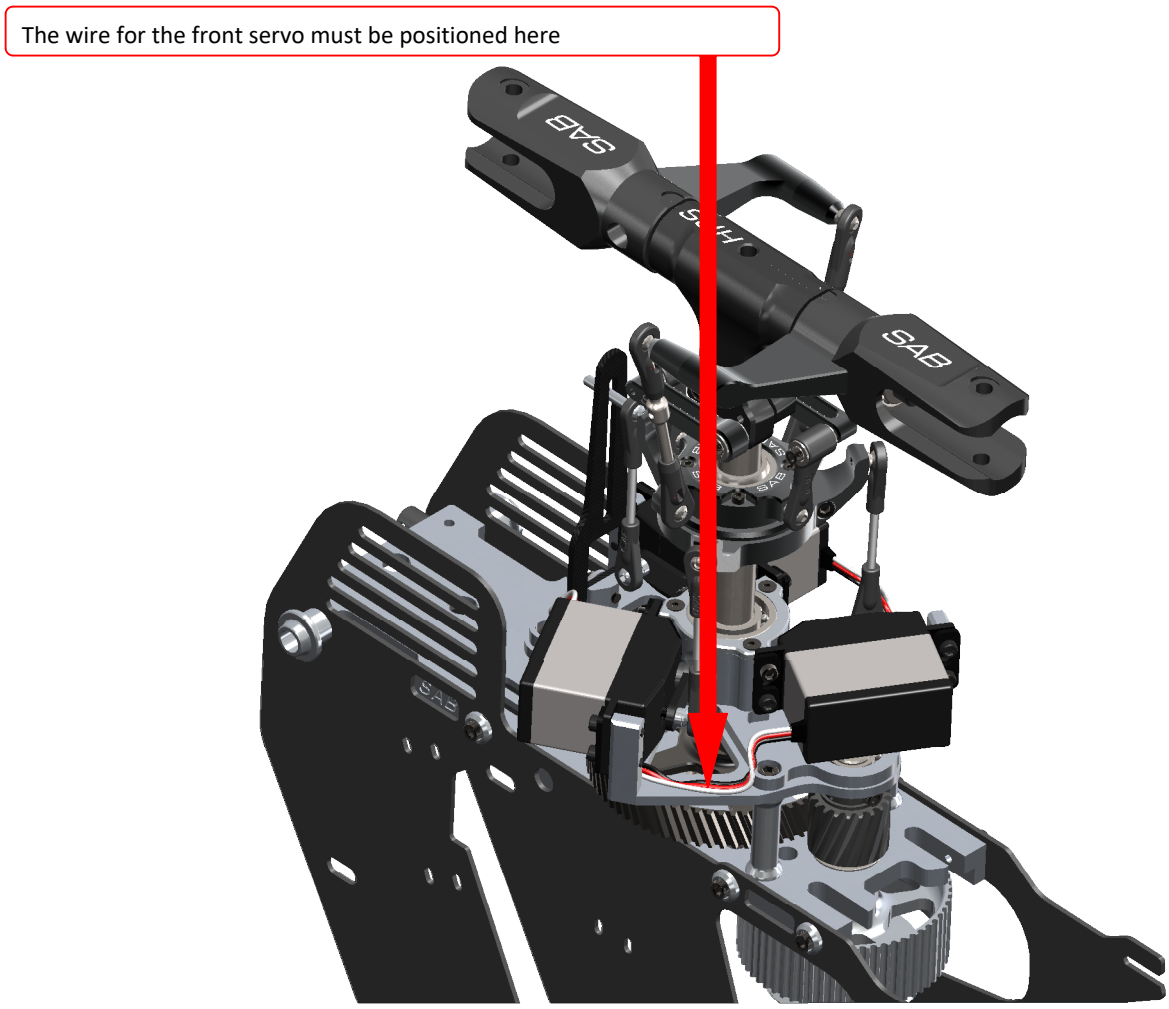
Fig. 3



SERVO ASSEMBLY 1, 2, 3

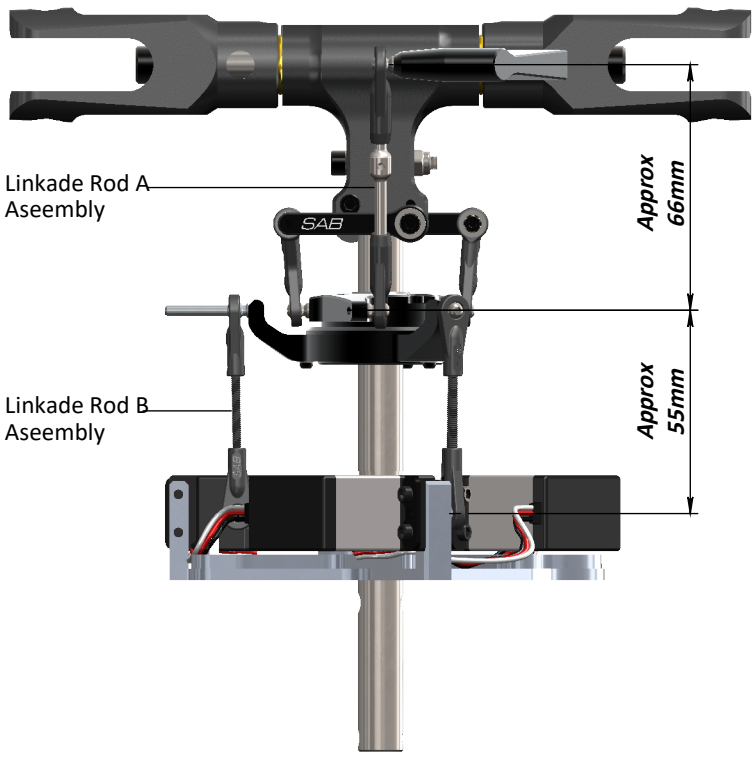




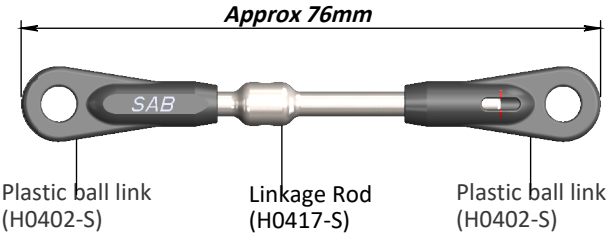


Head HPS Version Preliminary Setup

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

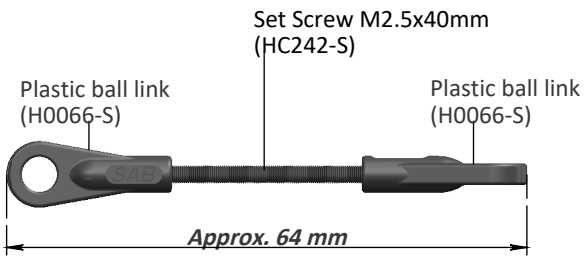


Linkage Rod A Assembly ... x2



Initial length for the rods from the swashplate to the blade grips.

Linkage Rod B Assembly ... x3



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

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 **214** 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:

H0175-18-S - 18T Pinion = ratio 11.9:1

H0175-19-S - 19T Pinion = ratio 11.3:1

H0175-20-S - 20T Pinion = ratio 10.7:1

H0175-21-S - 21T Pinion = ratio 10.2:1

H0175-22-S - 22T Pinion = ratio 9.8:1

H0175-23-S - 23T Pinion = ratio 9.3:1

H0175-24-S - 24T Pinion = ratio 8.9:1

H0175-25-S - 25T Pinion = ratio 8.6:1

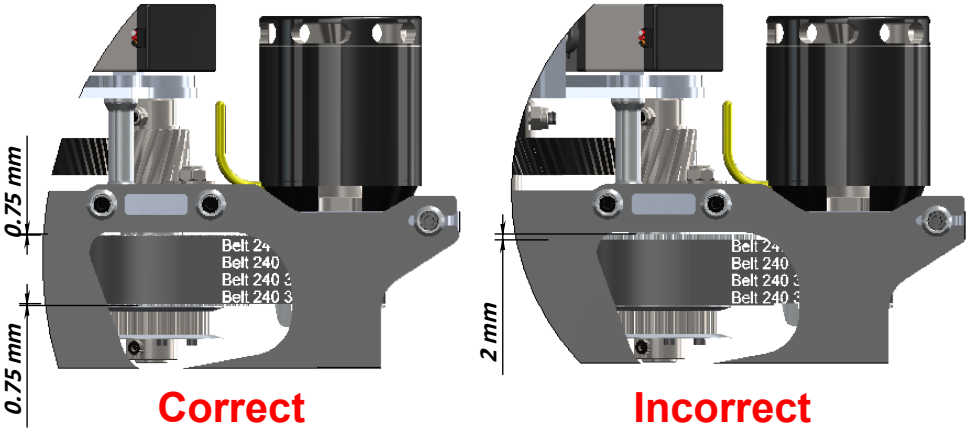
Some example configurations:

GOBLIN 770 SPORT CONFIGURATIONS						
						rev01
Performace	**Battery**	**Motor**	**ESC**	**Pinion**	**RPM Max**	**Pitch**
LOW Head Speed	**12S 5000/5500**	Scorpion HK 4530-450	HobbyWing 160 A Tribunus II 14-200 A Kosmic 160 A	**19T**	**1650**	± 12,5
		Xnova 4530-480		**18T**	**1650**	
		Kontronik Pyro 800-480				
GENERAL 12S	**12S 5000/5500**	Scorpion HK 4530-450	HobbyWing 200 A Tribunus II 14-200 A Kosmic 200 A	**22T**	**1900**	± 12,5
		Xnova 4530-480		**21T**	**1900**	
		Kontronik Pyro 800-480				
GENERAL 14S	**14S 4500/5000**	Scorpion HK 4530-450	HobbyWing 200 A Tribunus II 14-200 A Kosmic 200 A	**20T**	**2000**	± 12,5
		Xnova 4530-480		**19T**	**2000**	
		Kontronik Pyro 800-480				

Note: For safety reasons we suggest to not exceed 2000rpm.

MOTOR BELT TENSION

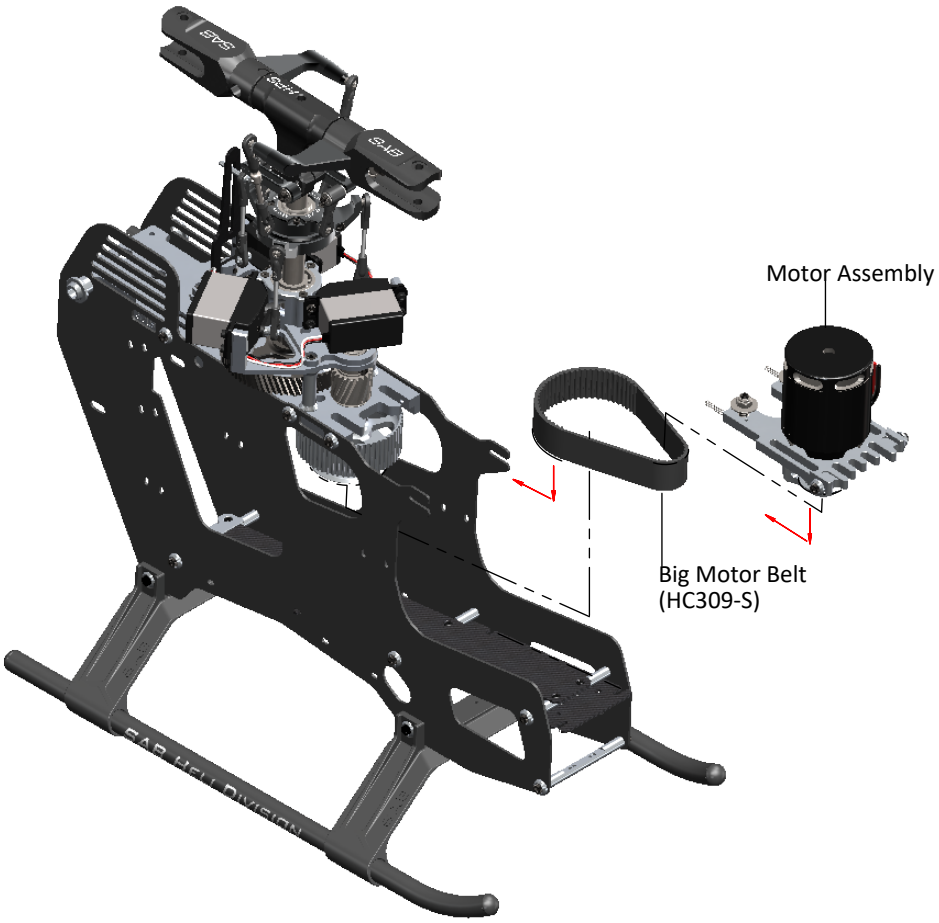
*Assemble the motor and pinion to its mounting plate.
*Fit the motor assembly into position.
*Compress the springs by pushing the motor toward the main shaft.
*At maximum compression, temporarily tighten one of the slide screws.
*With the minimum centre distance it is easy to install the belt. First 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.



Note:

Check for vertical alignment of the motor pulley. To do this, simply turn the motor several times and check to you see if the belt is aligned with the big pulley (one way bearing pulley). If the belt is riding too high, simply loosen up the motor pulley and drop it just a little bit, if it is riding too low, loosen up the motor pulley and raise it a bit.

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.



DE-BURR THE SIDE FRAMES

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

ESC INSTALLATION

The speed controller (ESC) is installed in the front of the helicopter.

Figure 1: Show the ESC support. You can use hole or slot in according with your ESC.

Figure 2: Show the installation of the ESC.

Fig. 1

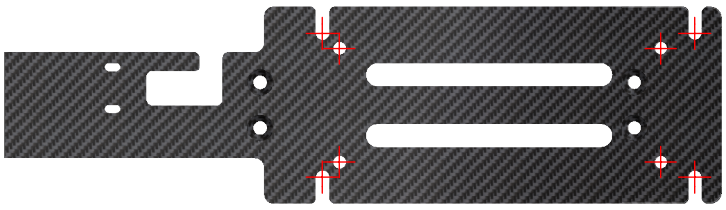


Fig. 2

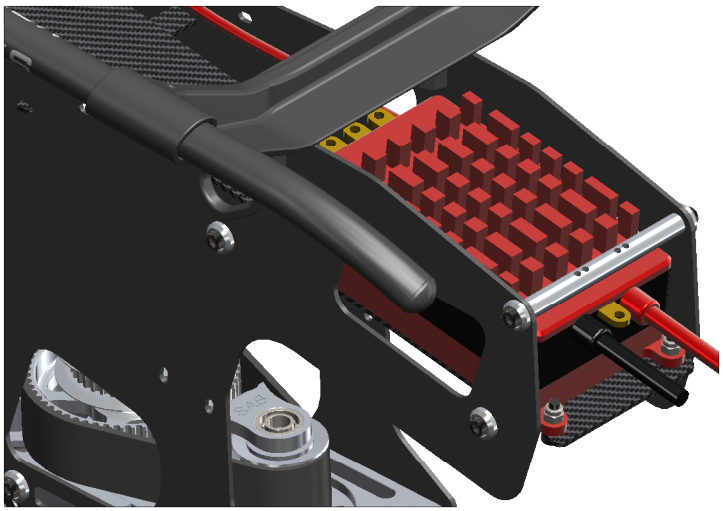
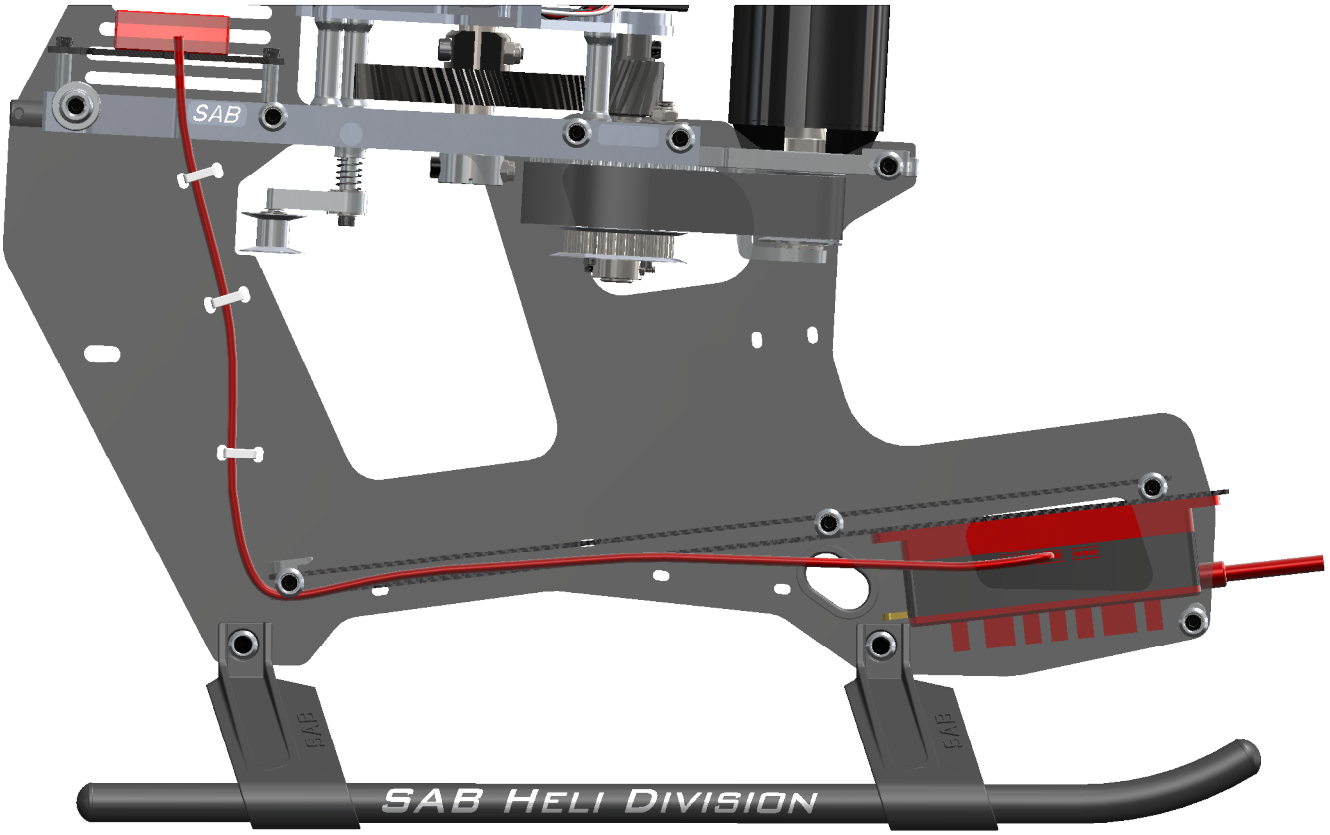


Figure 3: You can see the wiring for connecting the ESC to the central unit.

Route the ESC throttle wire as shown, It is reccomanded to ues cable ties to keep the wire in place.
This is very important near the tail belt.

Fig. 3



FLYBARLESS CONTROL UNIT AND RX INSTALLATION

Figures 1 shows an example of installation of the flybarless control unit.
You can use short spacer H0727 (**Figure 2**).
You can use long spacer H0043 (**Figure 3**). This is typical if you want to put RX satellite under the control unit.

Fig. 1

If you want to assembly RX under FBL support. You can use H0043 [26mm].

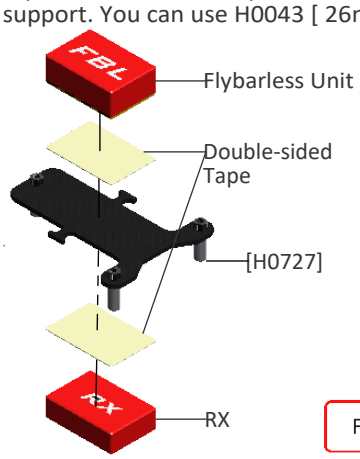
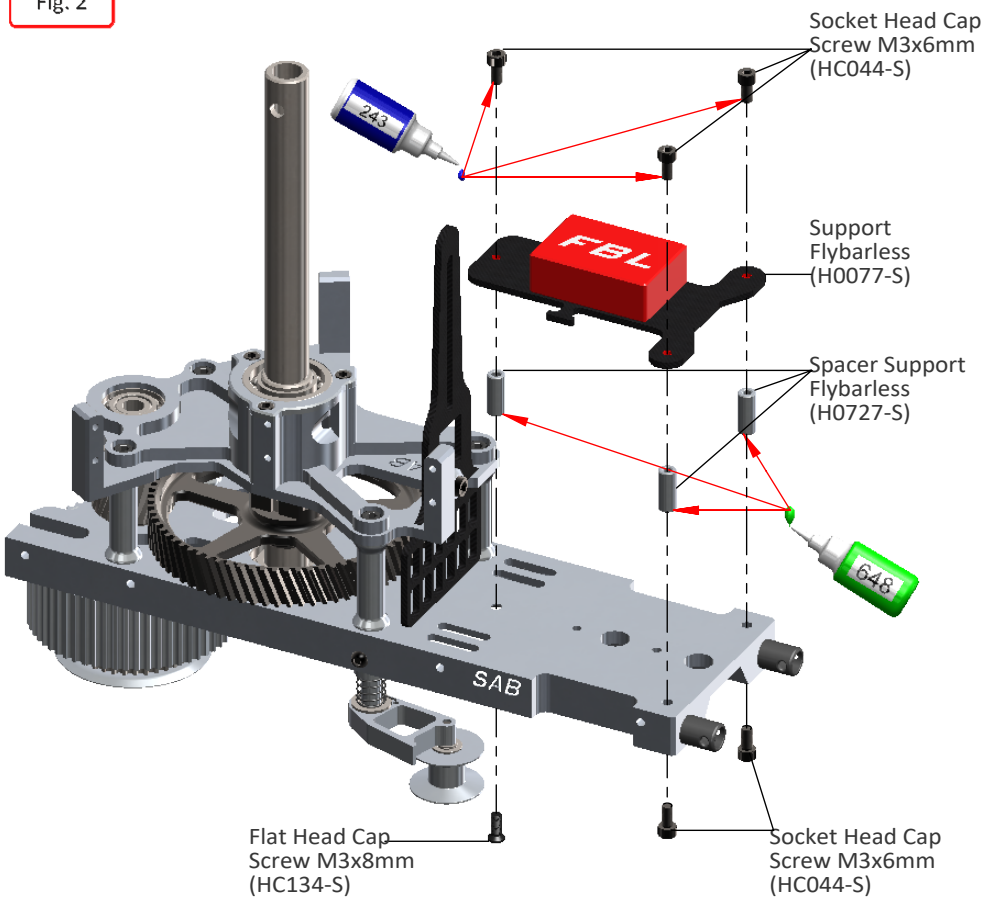


Fig. 3

Fig. 2



For Flybarless systems with a separate sensor, the sensor must be installed under the main plate (**Figure 4**).

In **Figure 5** 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. 4

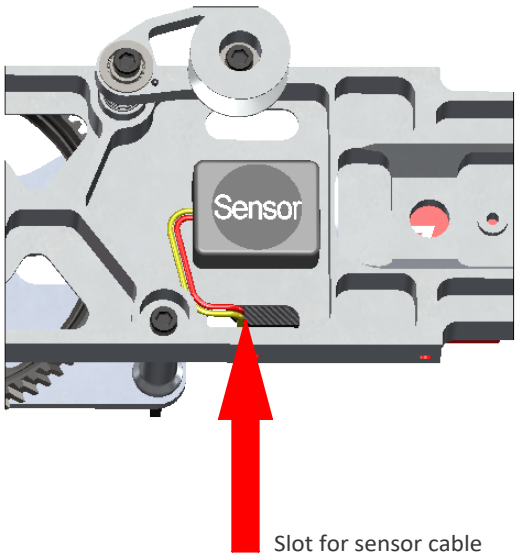
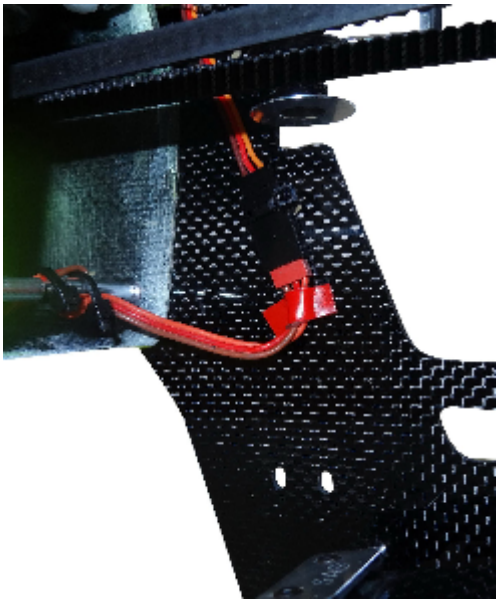
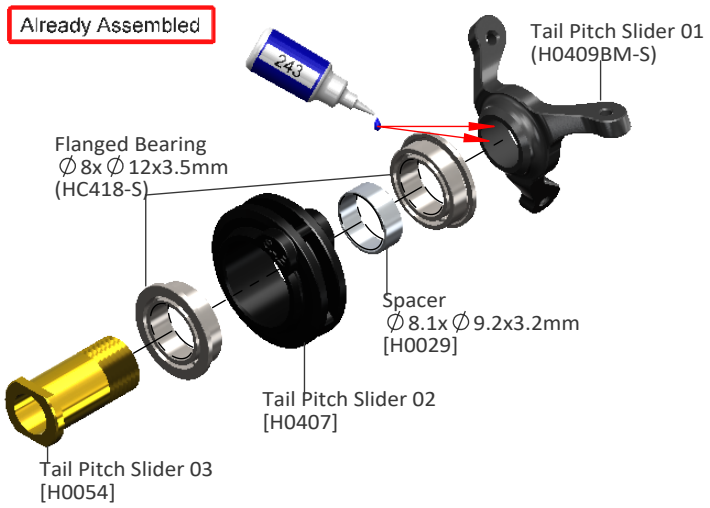


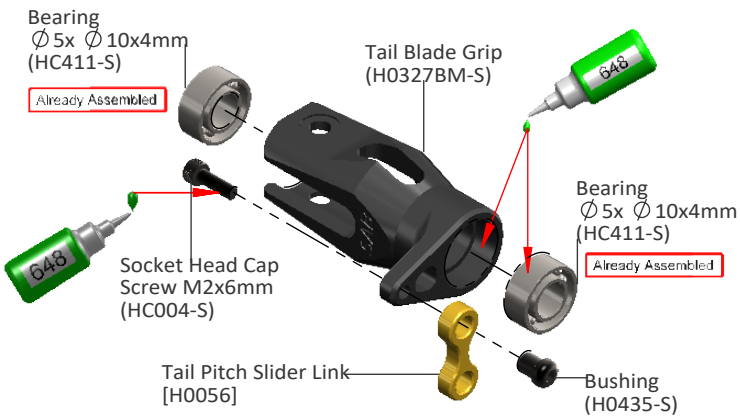
Fig. 5

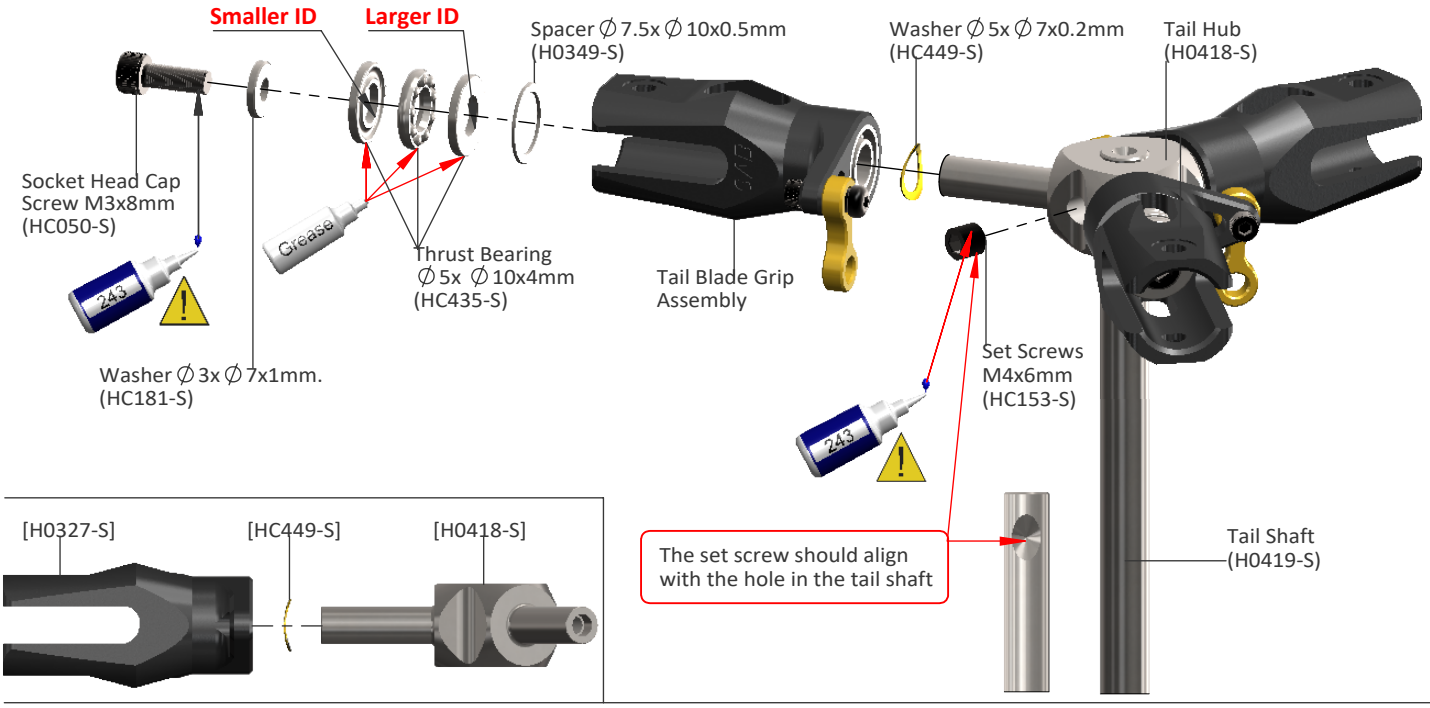


Tail Pitch Slider Assembly

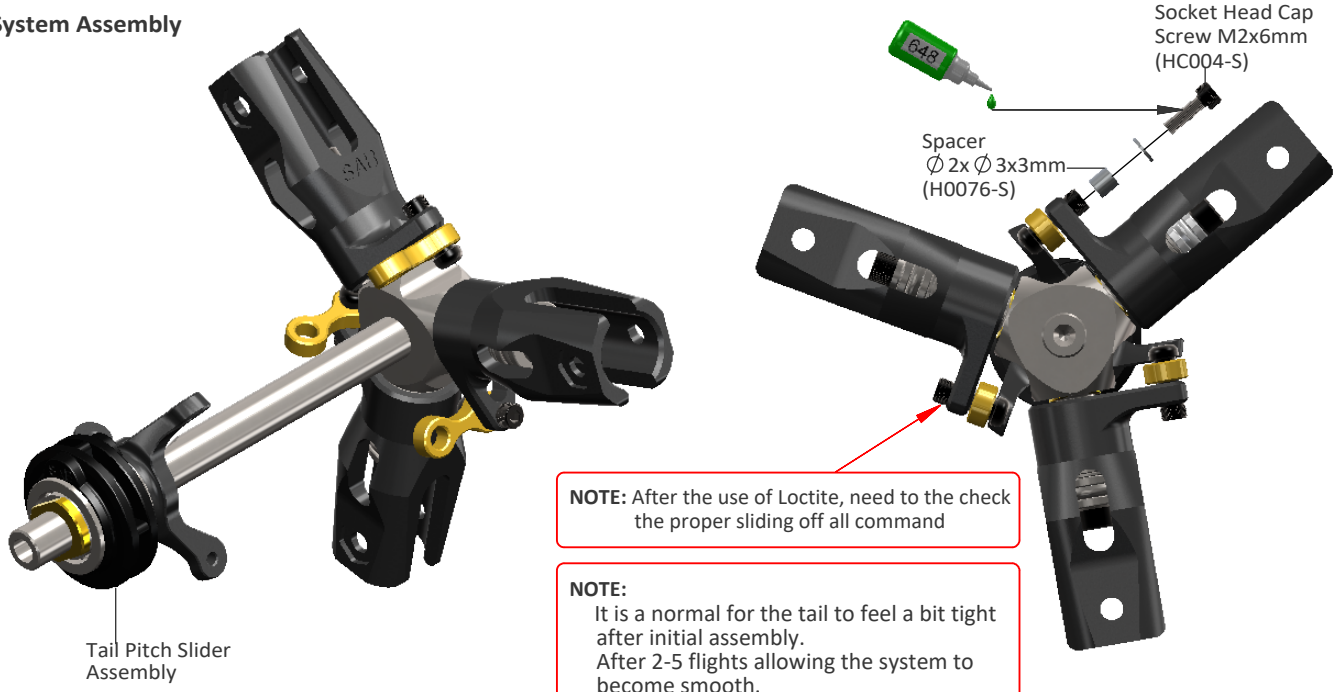


Tail Blade Grip Assembly x3





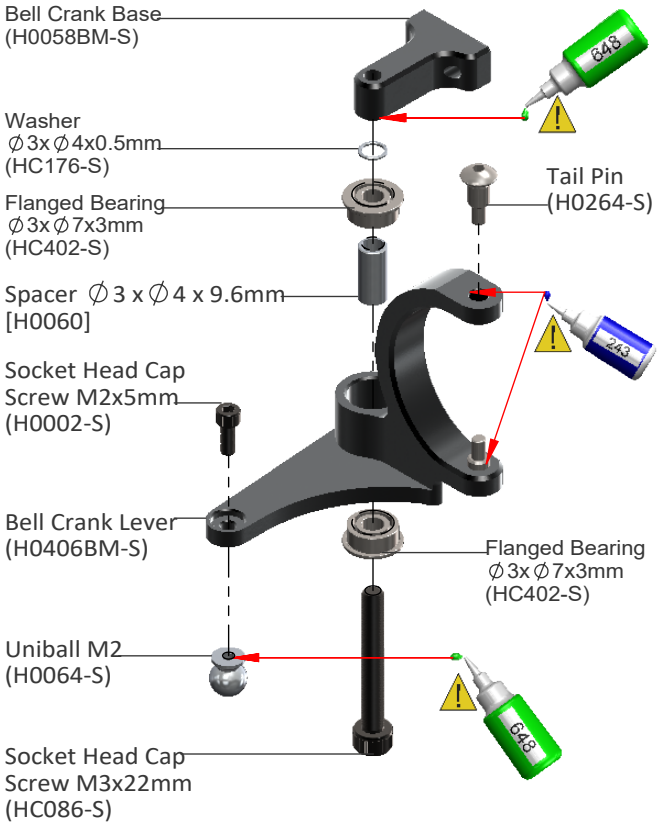
Tail System Assembly



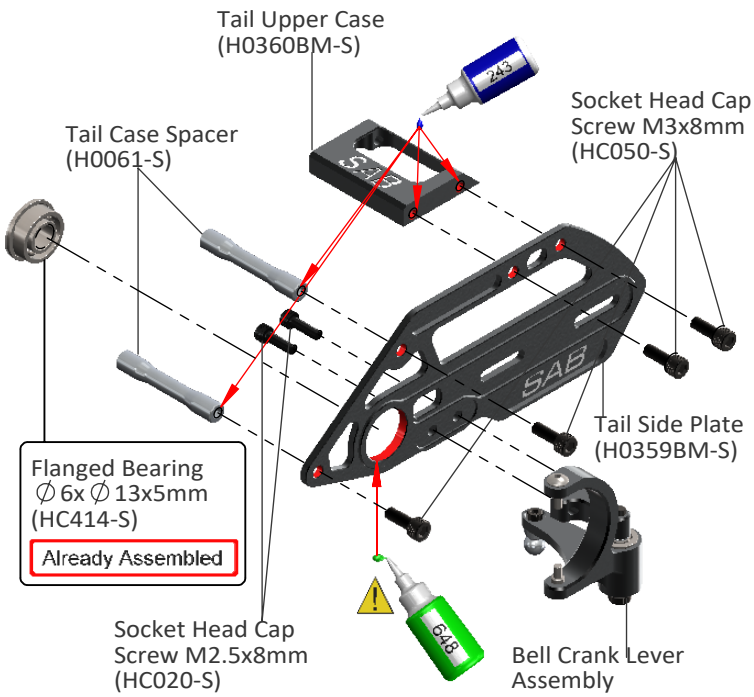
NOTE: After the use of Loctite, need to the check the proper sliding off all command

NOTE:
It is a normal for the tail to feel a bit tight after initial assembly.
After 2-5 flights allowing the system to become smooth.

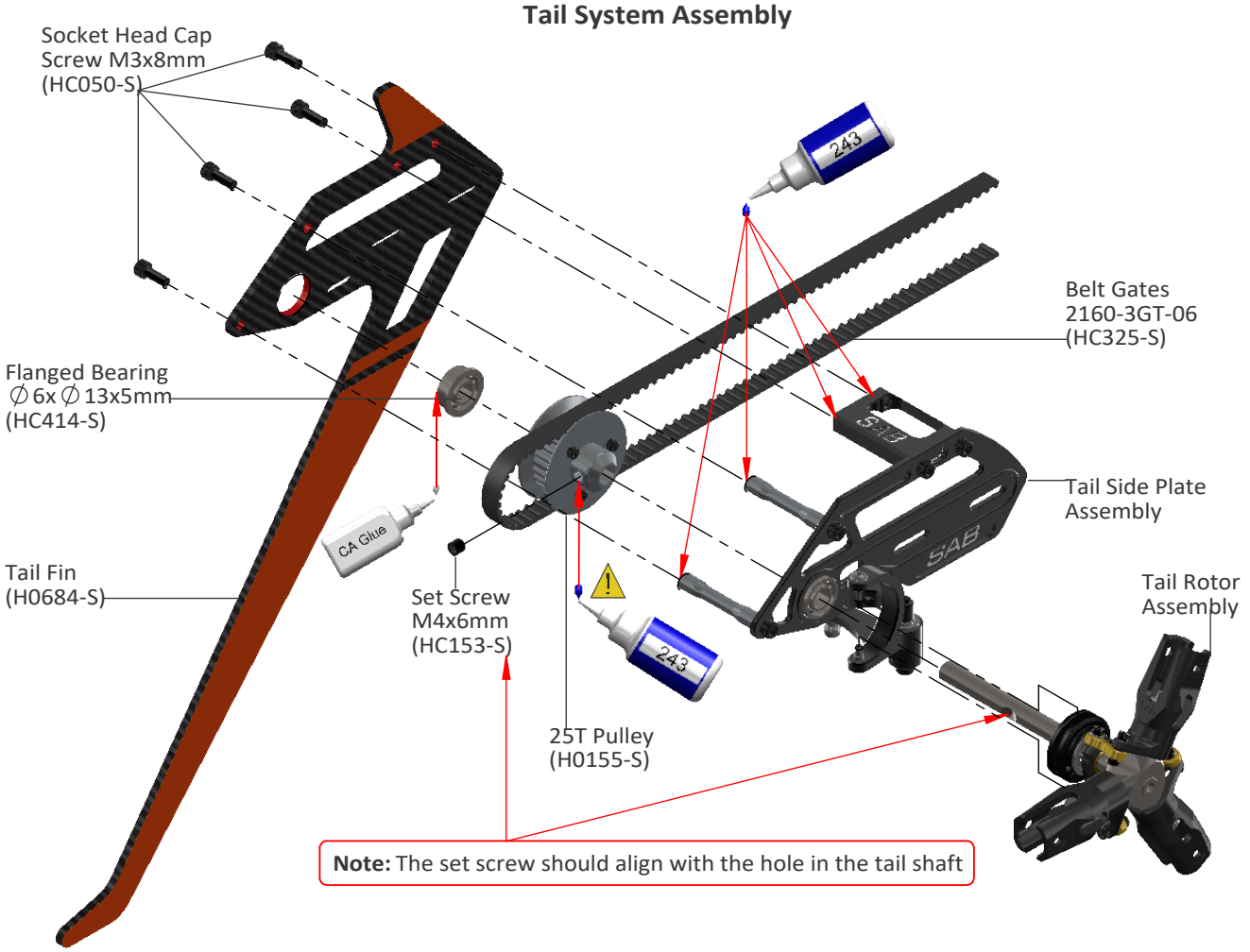
Bell Crank Lever Assembly



Tail Side Plate Assembly

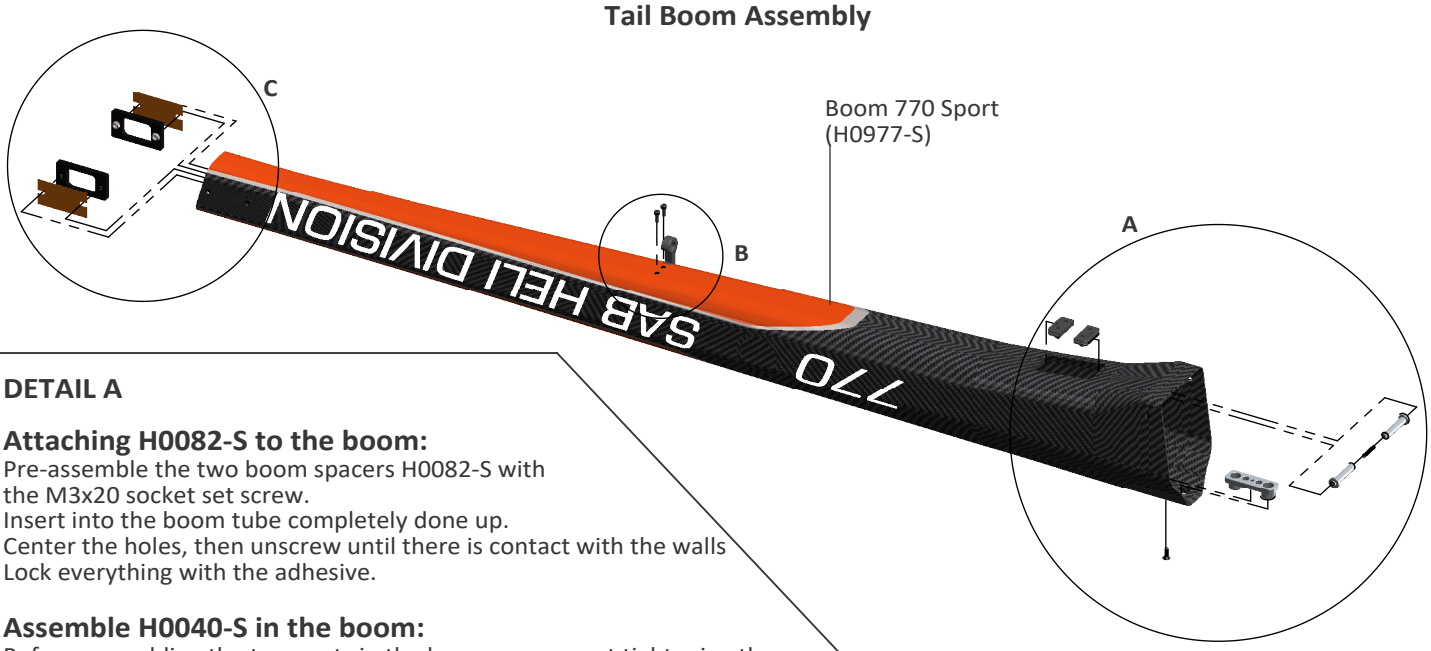


Tail System Assembly



Note: The set screw should align with the hole in the tail shaft

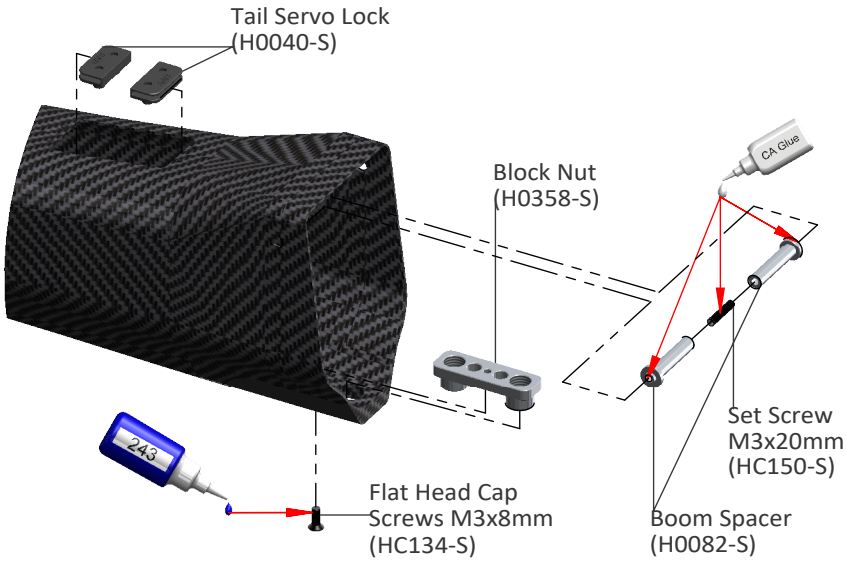
Tail Boom Assembly



DETAIL A

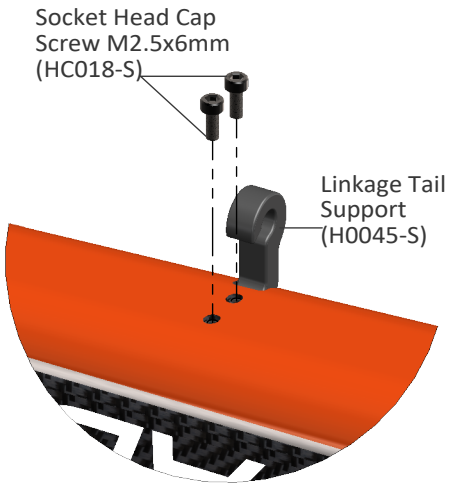
Attaching H0082-S to the boom:
Pre-assemble the two boom spacers H0082-S with the M3x20 socket set screw.
Insert into the boom tube completely done up.
Center the holes, then unscrew until there is contact with the walls
Lock everything with the adhesive.

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.

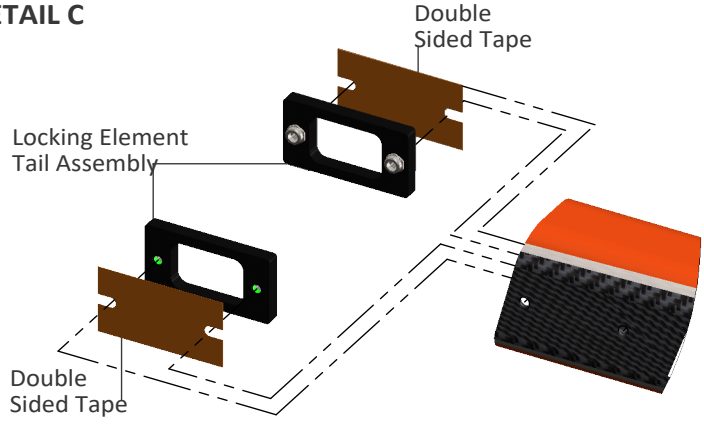


DETAIL B

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.

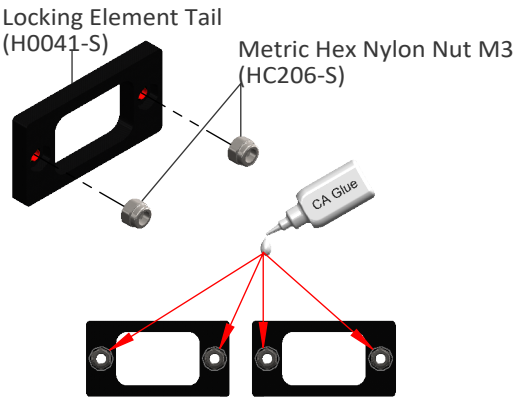


DETAIL C

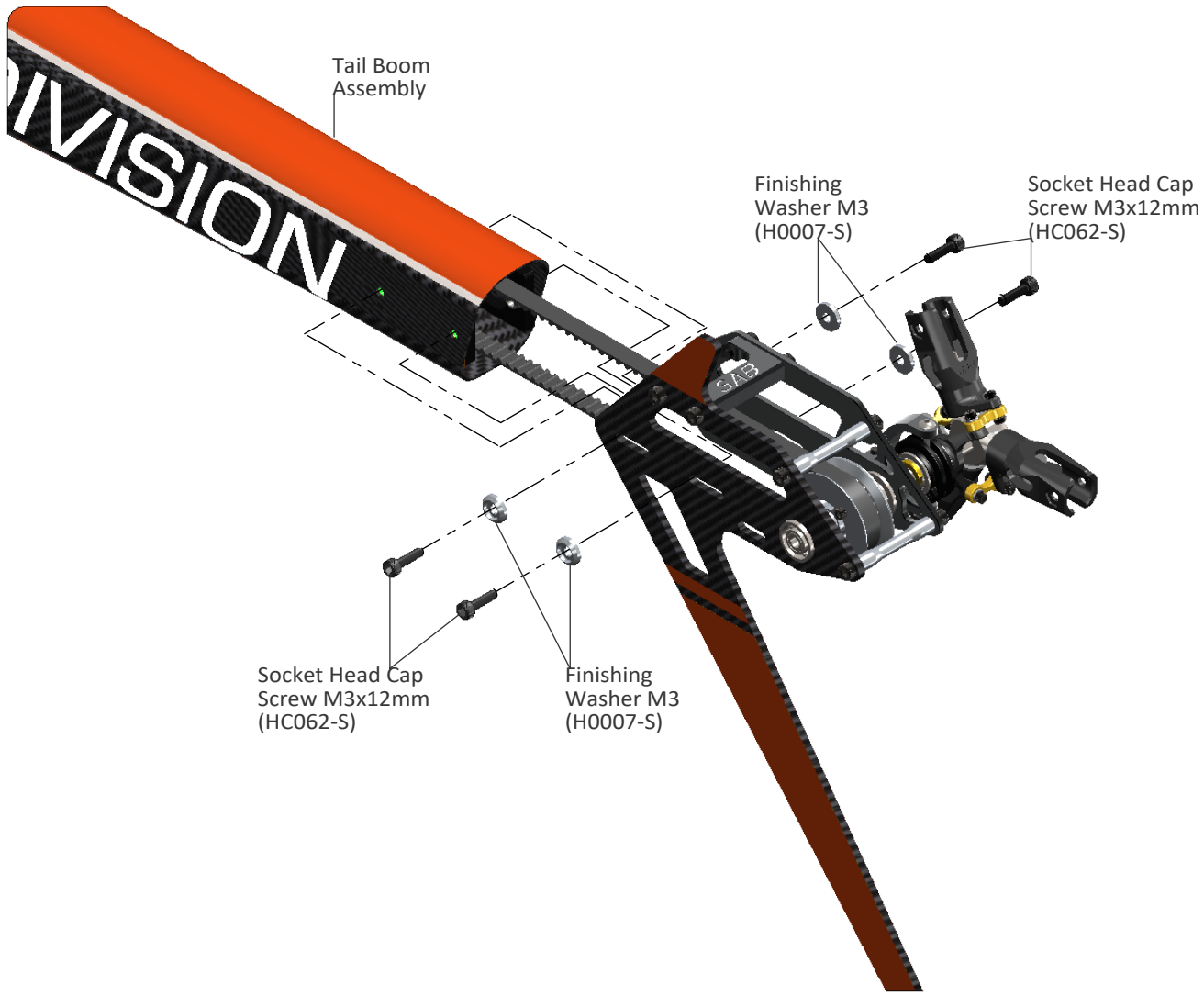


Locking Element Tail Assembly .... x 2

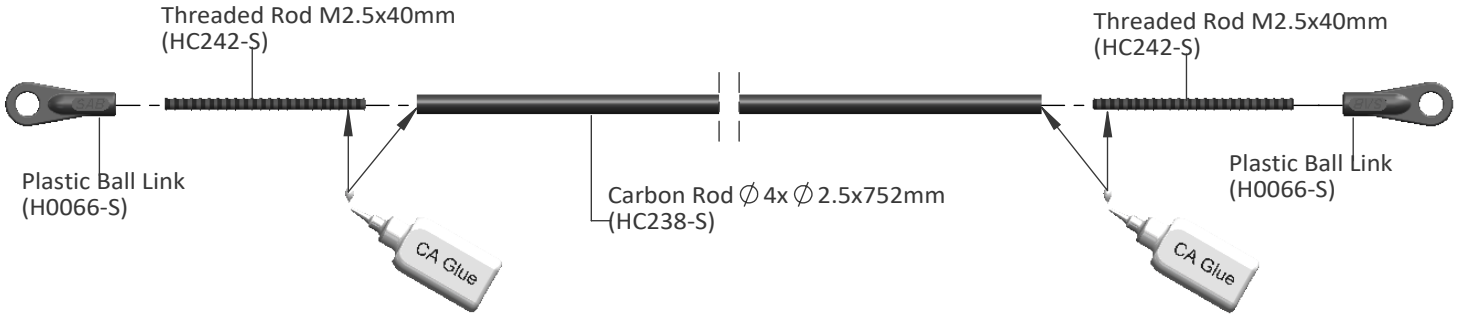
Already Assembled



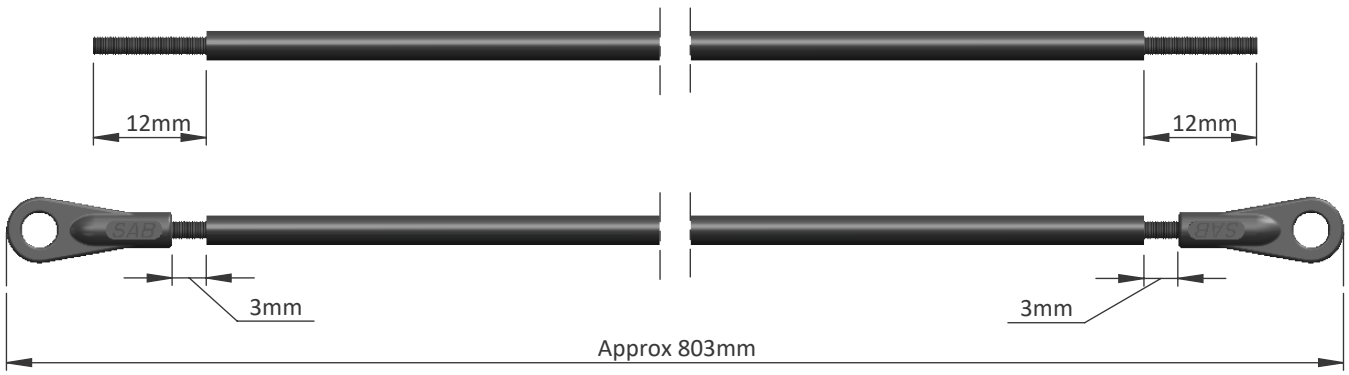
Note:



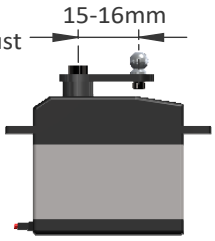
Note: Before put plastic ball in threaded rod, please wait 12 hours after bonding



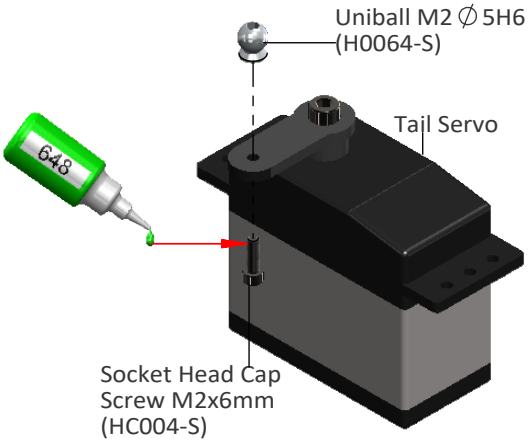
Note:

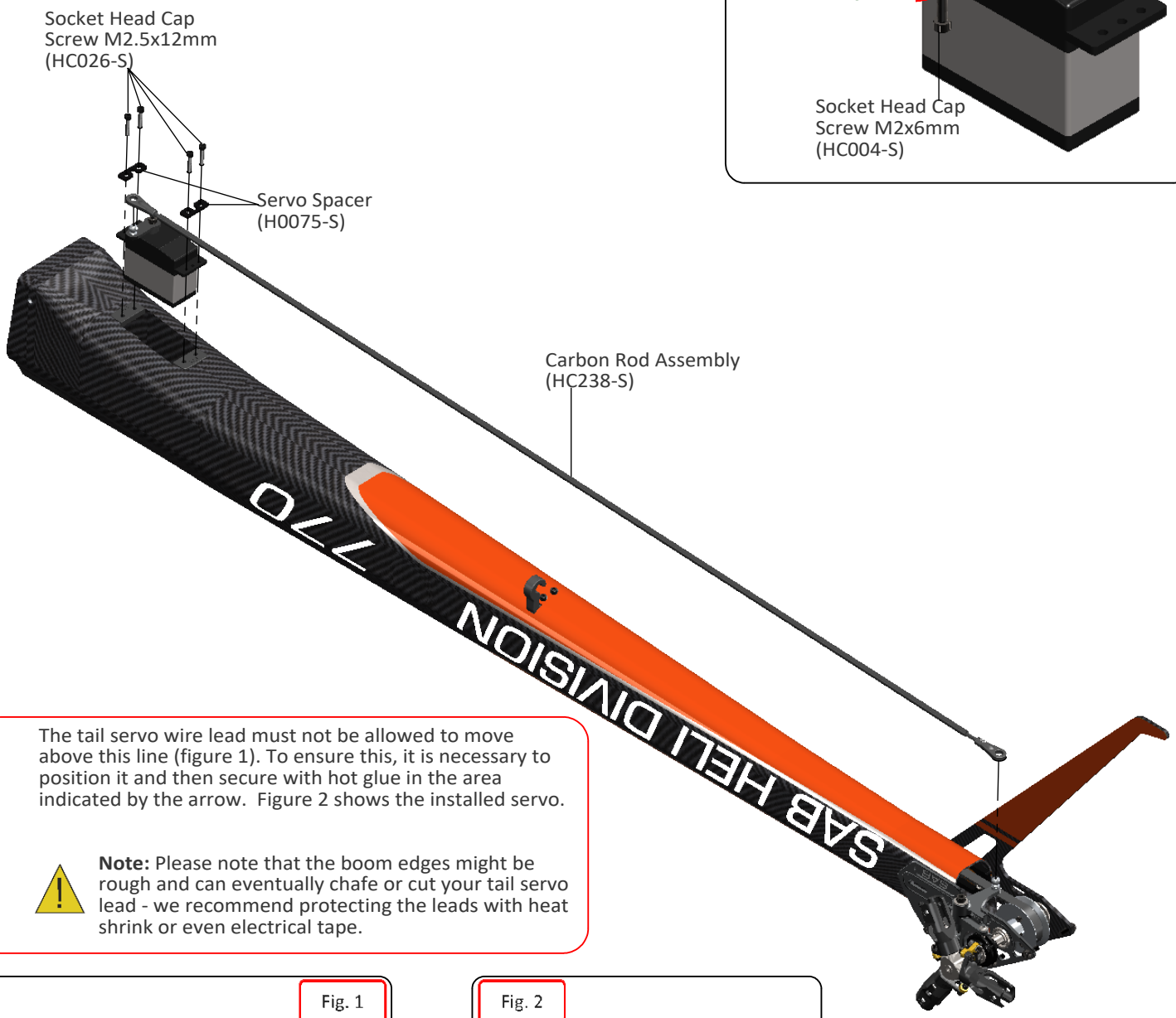


The distance between the axis and the ball must be between 15-16 mm



Tail Servo Assembly





The tail servo wire lead must not be allowed to move above this line (figure 1). To ensure this, it is necessary to position it and then secure with hot glue in the area indicated by the arrow. 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.

Fig. 1

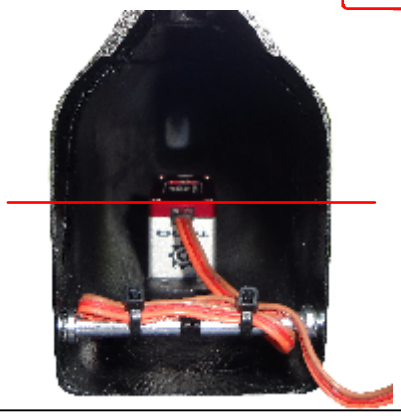
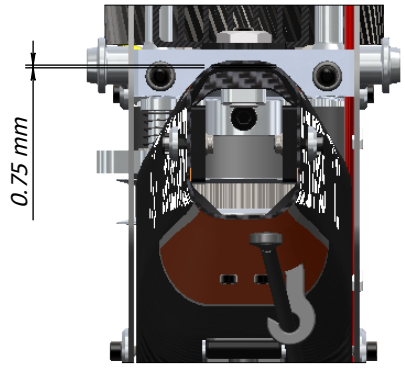


Fig. 2

BOOM ASSEMBLY

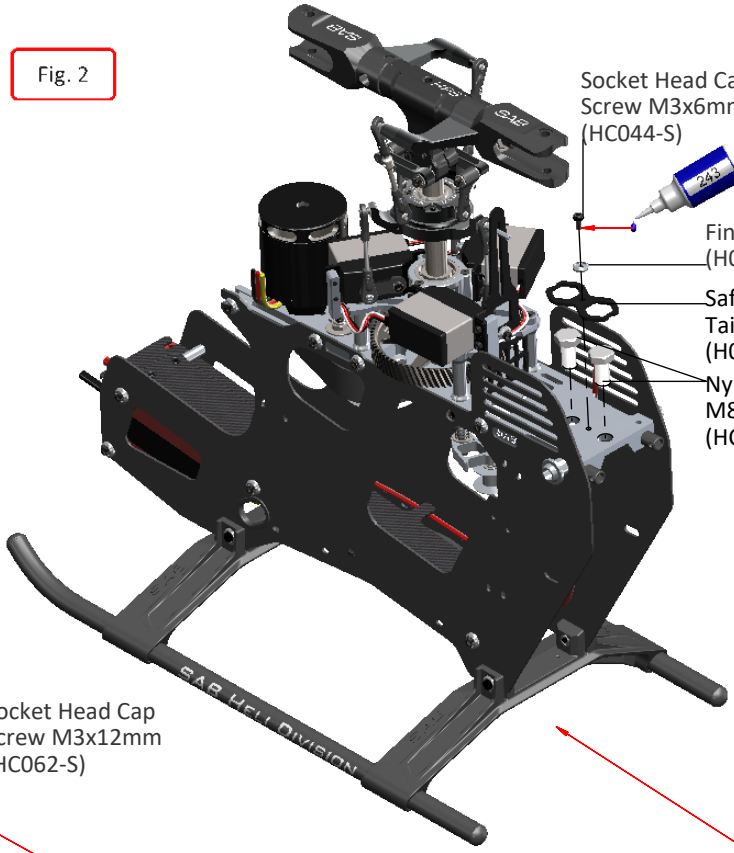
*Insert the tail boom assembly .
*Lock the M8 nuts with the HA016 special tool supplied.
*Firmly lock the lateral srews M3x12mm. Use Loctile for this screw and make sure you remain tight.
*Assemble the H0038 carbon security plate .
*Connect the tail servo wire to the previously fitted extension lead.

Fig. 1



Note: Between the boom and the aluminum plate, there is a space of around 0.75mm. Look the picture.

Fig. 2



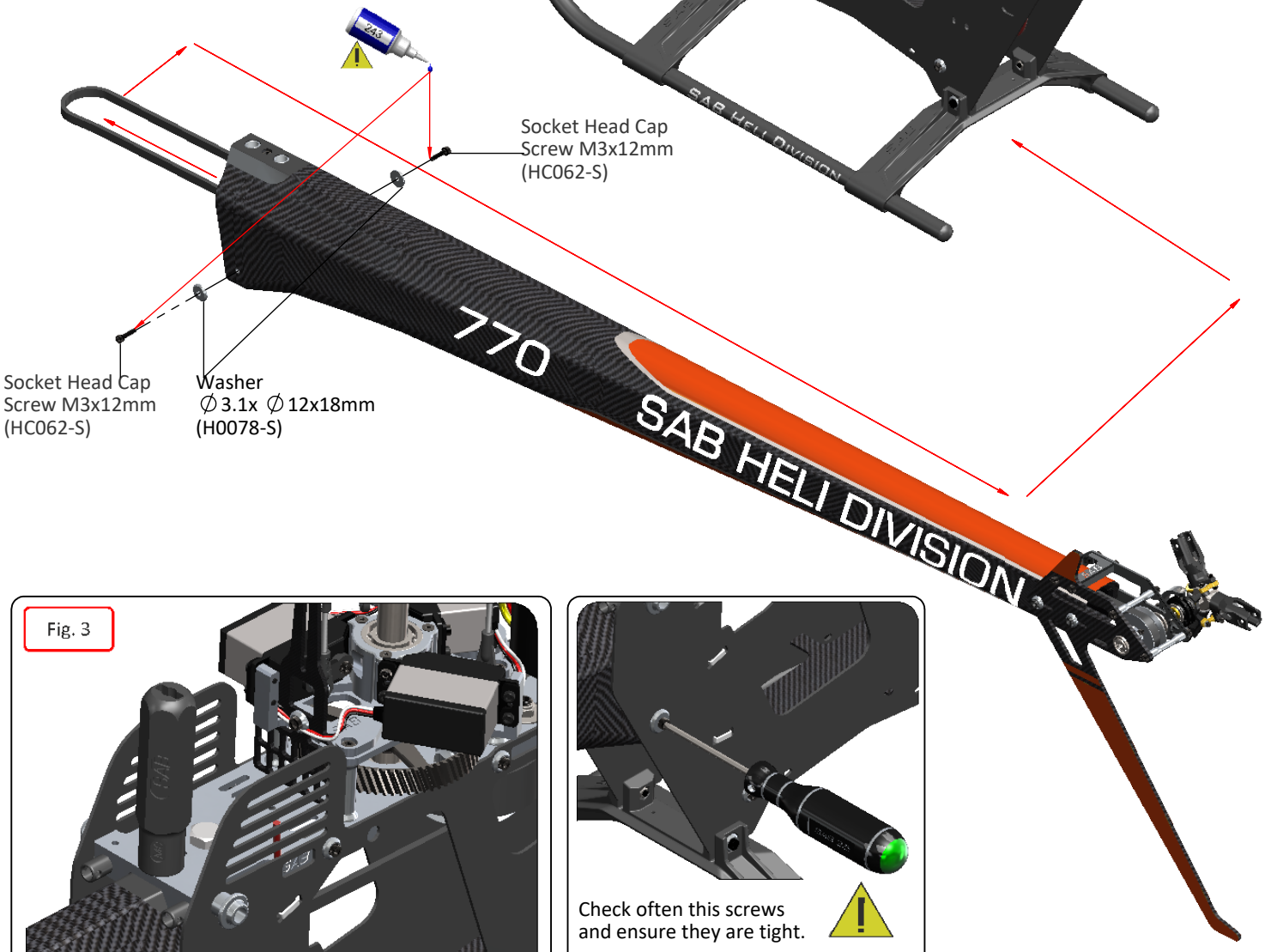


Fig. 3

Check often this screws and ensure they are tight.

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, you can remove the front pulley (H0172-S) without loosening the tail box. Simply remove the bolt and pull down.


Fig 3


Fig 4


Fig 5

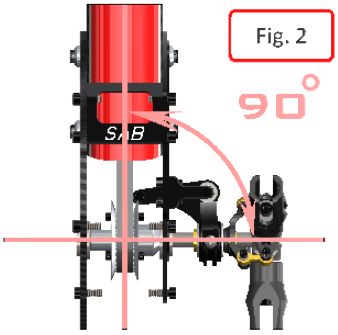
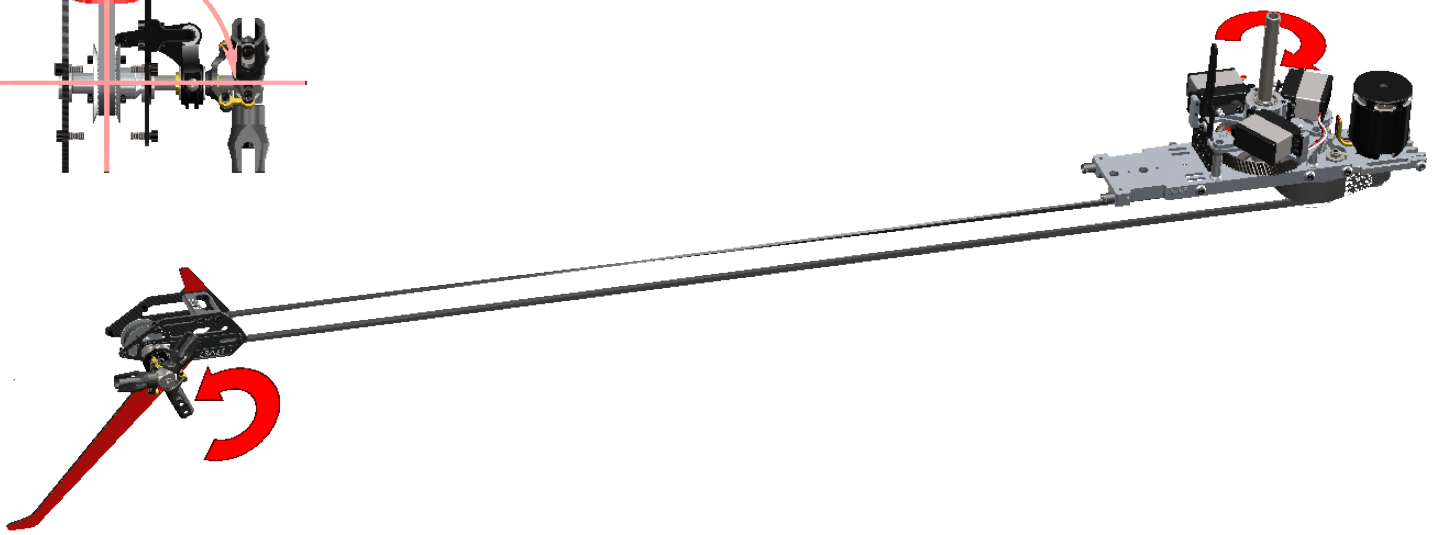


Fig. 2

Fig. 1



CANOPY

Install the canopy following these step :
- Canopy edge protection, Adhesive foam tape, Canopy grommets. **(Fig.6)(Fig.7).**

The canopy hole must be 12.5 mm in diameter. Initially is a bit smaller.
You can enlarge the hole slightly to optimize the vertical position of the canopy itself.

The canopy is locked at the point shown in figure 8 and with two H0036 knobs **Fig.9** .
Confirm the canopy is secure prior to each flight.

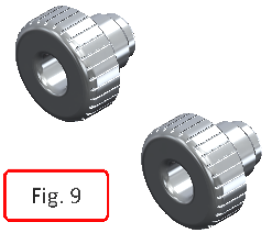


Fig. 9

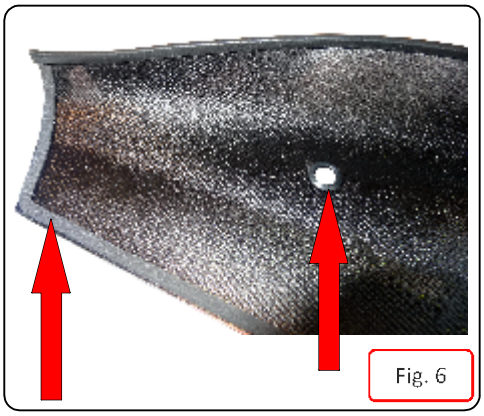


Fig. 6

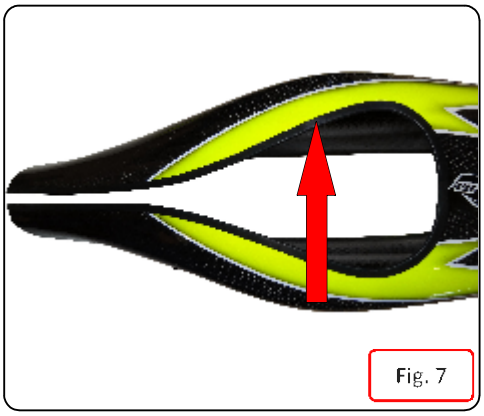


Fig. 7

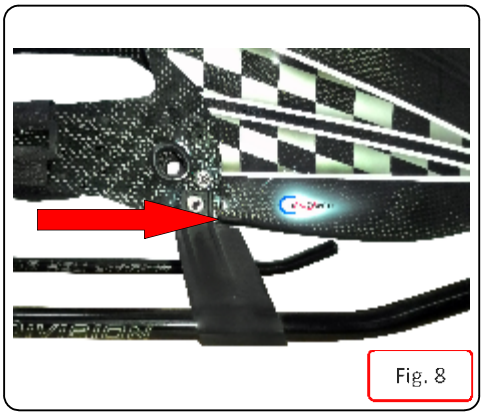


Fig. 8

BATTERIES

Note: Using sandpaper, sand the slot where you insert the battery strap. This helps increase the life of the strap.

The battery tray system in the Goblin 700 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**.

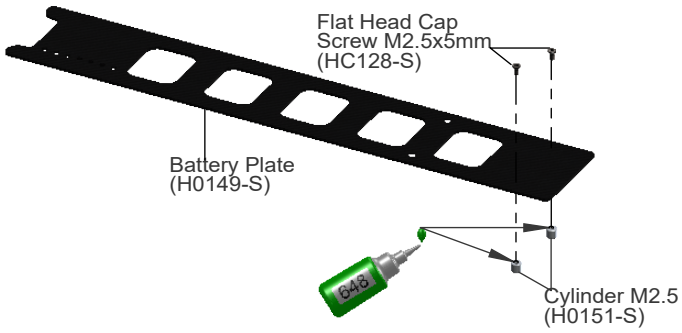


Fig. 1

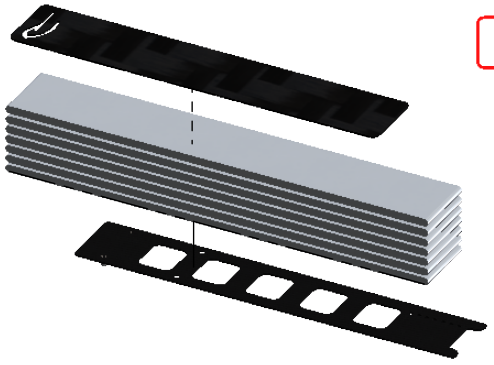
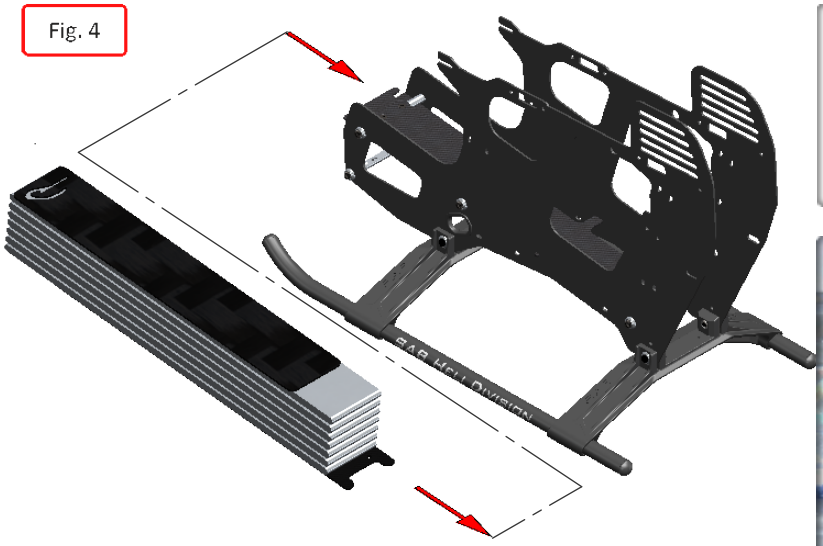
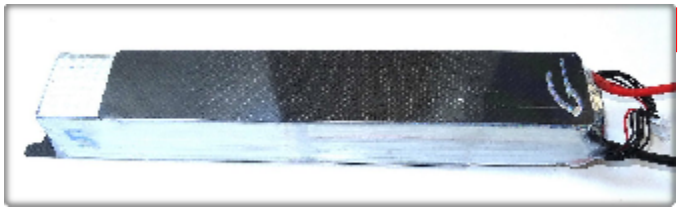
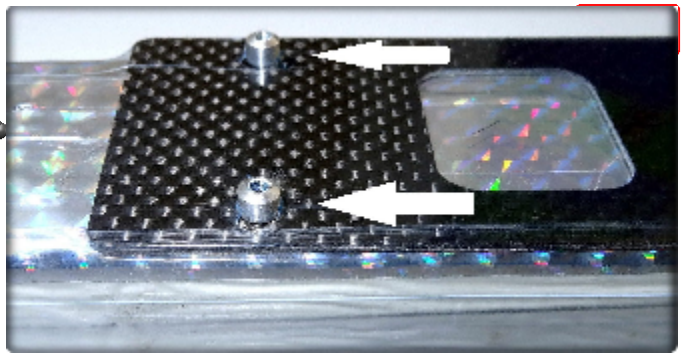


Fig. 4







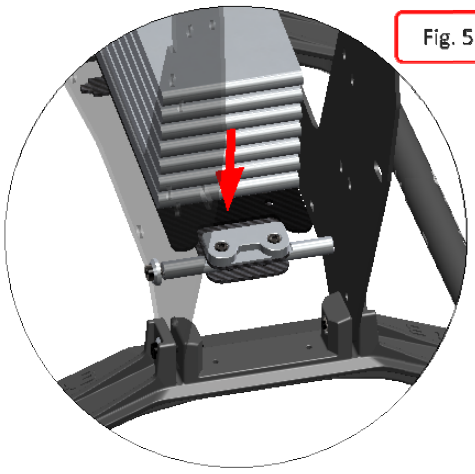


Fig. 5

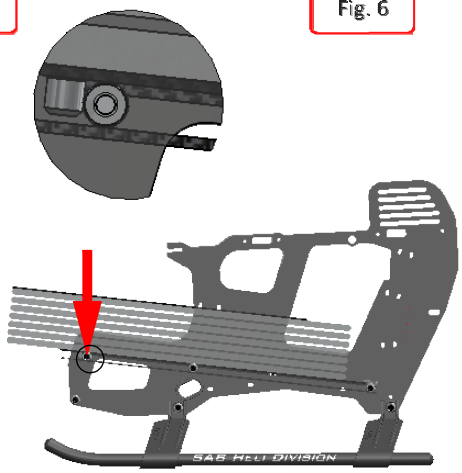


Fig. 6

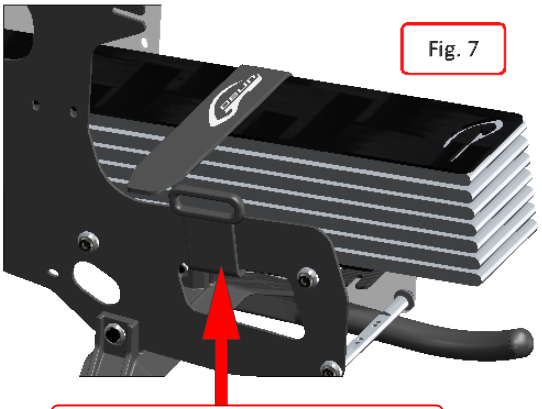


Fig. 7

Note: Using sandpaper, sand the slot where you insert the battery strap. This helps increase the life of the strap.

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. For safety reasons we suggest to not exceed 2000rpm.

*Check the correct tension of the tail belt through the belt tensioner.

*Fit the main blades and tail blades. (**Fig.1** and **Fig.2**)

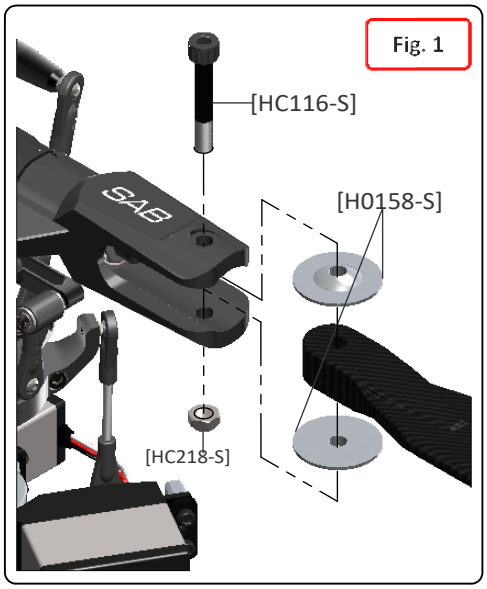
*Please make sure the main blades are tight on the blade grips, you should be able to violently jerk the head in both directions and the blades should not fold. Failure to tighten the blades properly can result in a boom strike.
To fold the blades for storage, it is advisable to loosen them.

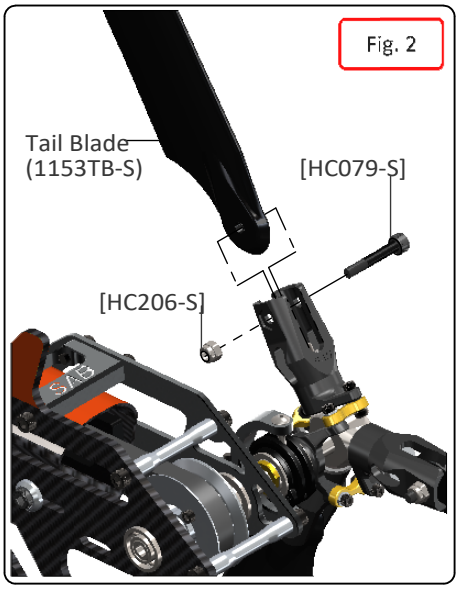
*Check the collective and cyclic pitch. For 3D flight, set about +/-12.5°.

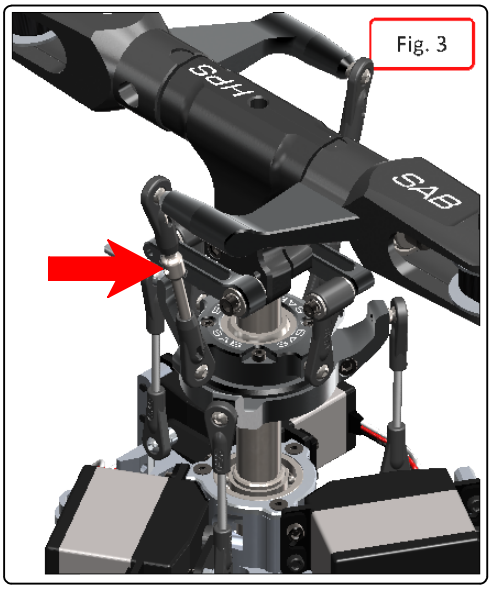
*It is important to check the correct tracking of the main blades.

*On the Goblin, in order to correct the tracking, adjust the main link rod as shown in **Fig.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, 1500/1600 RPM.
After this first flight, do a general check of the helicopter. Verify that all screws are correctly tightened.





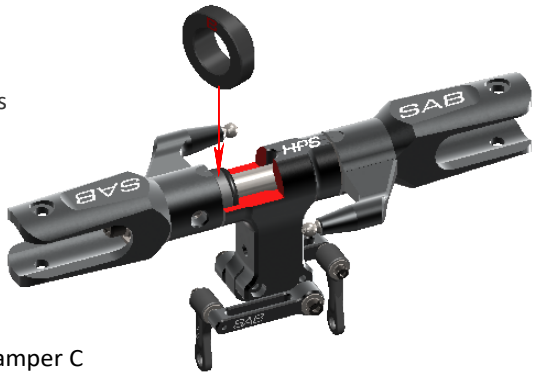


IN FLIGHT

During its first flights the Goblin has to be “run in”.
The Damper, 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 very low headspeed [**< 1500 rpm**], for best results we recommend changing the tail pulley for a smaller one to increase tail rotor rpm. This pulley is available in the upgrade list [**H0154-S**]

ABOUT HPS



The HPS head allows for a very broad range of dampening setups.
The dampers are composed of an O-ring and a technopolymer damper that defines the maximum possible movement of the spindle.Using different dampers we can get different responses of the model.

A = Soft for smooth response.
B = Medium.
C = Firm for direct and precise response.

The head in the kit use H0426-B + O-ring 70° shore.
In the Bag 6.4 you can find O-ring 90° shore (model a bit more direct), and also Damper C

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 slider and its linkages, as well as the swashplate and its linkages.

*Lubricate the main gear with silicone and Tri-Flow Synthetic grease or similar

*Check the screws that are highlighted in the following images frequently, make sure you remain tight (**fig.2** and **fig.3**).

*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.

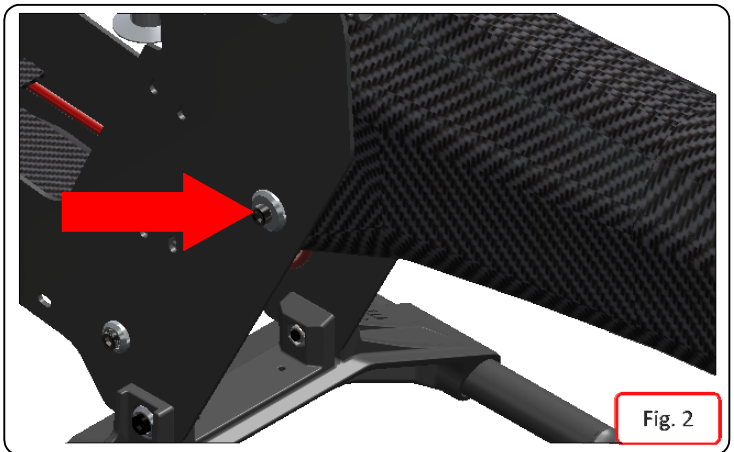


Fig. 2

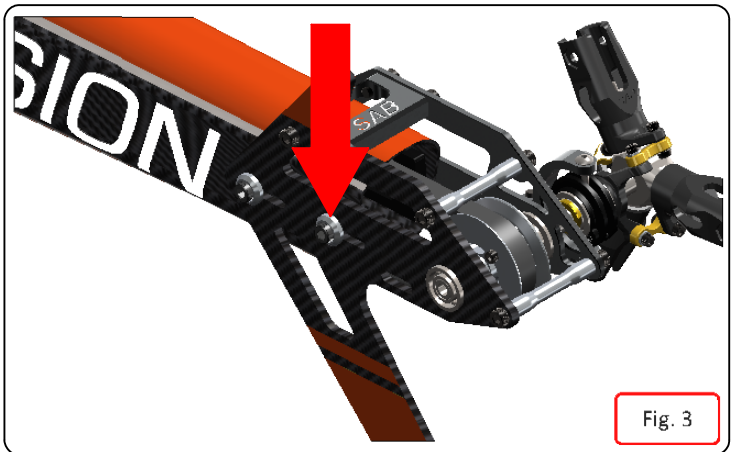
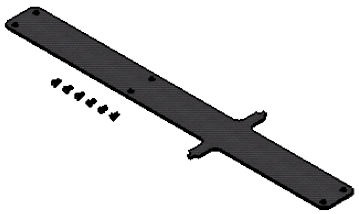


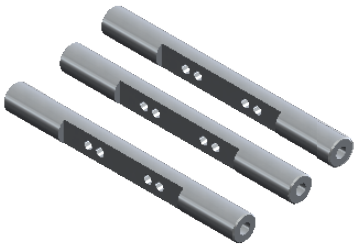
Fig. 3

Battery Tray
[H0002-S]



- 1 x CF Battery Tray.
- 6 x Flat Head Cap Screws M2.5x5mm.

Frame Spacer
[H0003-S]



- 3 x Frame Spacers.

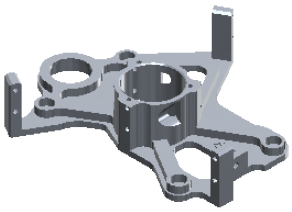
Finishing Washer M3
[H0007-S]

- 10 x Finishing Washers M3.

Main Structure
[H0009-S]

- 1 x Main Structure.

Servo Support
[H0010-S]

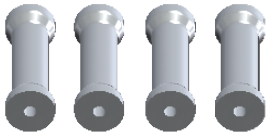


- 1 x Servo Support.

Swashplate Anti-Rotation Guide
[H0017-S]

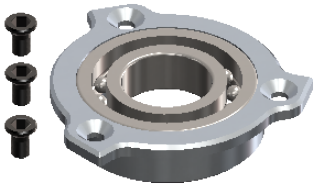
- 1 x CF Swashplate Anti-Rotation Guide.
- 1 x Finishing Washer M3.
- 1 x Socket Head Cap Screw M3x8mm.

Column
[H0018-S]



- 4 x Columns.

Bearing Support
[H0024-S]



- 1 x Bearing Support.
- 1 x Bearing ∅12x∅24x6mm.
- 3 x Flat Head Cap Screws M2.5x5mm.

Safety Lock Tail Boom
[H0038-S]

- 1 x Safety Lock Tail Boom.
- 1 x Finishing Washer M3.
- 1 x Socket Head Cap Screw M3x8mm.

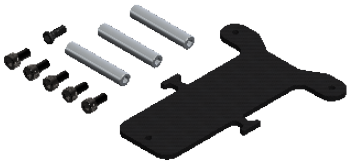
Tail Servo Lock
[H0040-S]

- 2 x Tail Servo Locks.
- 2 x Servo Spacers.
- 4 x Socket Head Cap Screws M2.5x12mm.

Locking Element Tail
[H0041-S]

- 2 x Locking Element Tails.
- 4 x Metric Hex Nylon Nuts M3.
- 2 x Double Sided Tapes.

Spacer Flybarless
[H0043-S]



- 3 x Spacer Flybarless.
- 1 x Supporto Flybarless.
- 1 x Flat Head Cap Screw M3x8mm.
- 5 x Socket Head Cap Screws M3x6mm.

Linkage Tail Support
[H0045-S]

- 1 x Linkage Tail Support.
- 2 x Socket Head Cap Screws M2.5x6mm.

Antenna Guide
[H0050-S]

- 2 x Antenna Guide.
- 2 x Button Head Cap Screws M3x4mm.

Aluminum Bell Crank Base
(H0058BM-S)

- 1 x Aluminum Bell Crank Base.

Tail Case Spacer
[H0061-S]

- 2 x Tail Case Spacers.
- 4 x Socket Head Cap Screws M3x8mm.

Uniball M3x4 5H18
[H0063-S]

- 2 x Uniball M3x4 5H18.

Uniball M2 5H6
[H0064-S]

- 5 x Uniballs M2 5H6.
- 5 x Uniball Spacers.
- 5 x Socket Head Cap Screws M2x8mm.
- 5 x Socket Head Cap Screws M2x6mm.

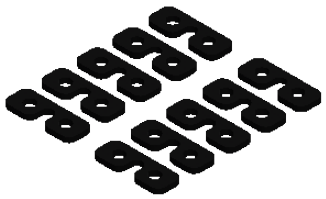
Uniball M3x4 5H3
[H0065-S]

- 5 x Uniballs M3x4 5H3.5.

Plastic Ball Link
[H0066-S]

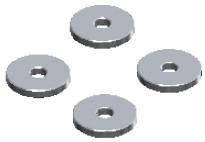
- 10 x Plastic Ball Link.

Servo Spacer
[H0075-S]



- 10 x Servo Spacers.

Washer ∅3.1x∅12x1.8mm
[H0078-S]



- 4 x Washers ∅3.1x∅12x1.8mm.

Boom Spacer
[H0082-S]

- 2 x Boom Spacer.
- 1 x Set Screw M3x20mm.

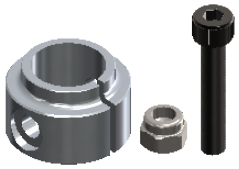
Spindle
[H0097-S]

- 1 x Spindle Shaft.
- 2 x Button Cap Screw M6x10mm.
- 2 x Washer ∅6x∅14x1.5mm

Bush One Way
[H0110-S]

- 4 x Bush One Ways.

M4 Locking Collar
[H0121-S]

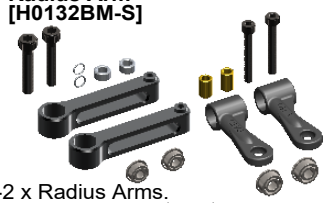


- 1 x M4 Locking Collar.
- 1 x Socket Head Cap Screw M4x22mm.
- 1 x Metric Hex Nylon Nut M4 H5.

Main Shaft
[H0127-S]

- 1 x Main Shaft.
- 1 x M4 Locking Collar
- 1 x Socket Head Cap Screw Shouldered M4x24mm.
- 2 x Socket Head Cap Screws M4x22mm.
- 3 x Metric Hex Nylon Nuts M4.

Radius Arm
[H0132BM-S]

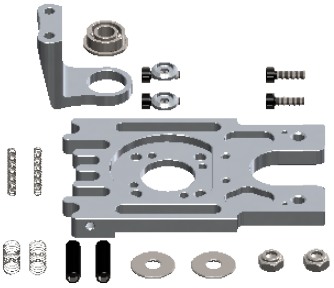


-2 x Radius Arms.
-2 x Spacer Arm ∅3x∅5x2.7mm.
-2 x Spacer Arm ∅2.5x∅4x6.3mm.
-2 x Uniball Radius Arms.
-2 x Head Cap Screws M3x16mm.
-2 x Head Cap Screws M2.5x18mm.
-2 x Washers 3x 4x0.5mm.
-2 x Flanged Bearings ∅2.5x∅6x2.5.
-2 x Flanged Bearings ∅3x∅7x3mm.

Center Hub
[H0135BM-S]

- 1 x Center Hub.
- 2 x Head Cap Screw M3x12mm.
- 1 x Head Cap Shoulder M4x24.
- 1 x Nylon Nut M4.

Motor Support
[H0142-S]

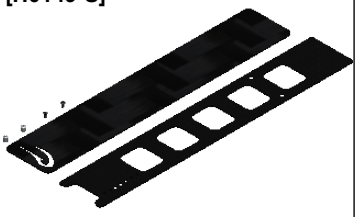


- 1 x Bearing Support.
- 1 x Motor Support.
- 1 x Flanged Bearing ∅6x∅13x5mm.
- 2 x Head Cap Screws M3x8mm.
- 2 x Set Screws M5x20mm.
- 2 x Washers ∅5.3x∅15x1mm.
- 2 x Nylon Nuts M5H4.8.
- 2 x Finishing Washers M3.
- 2 x Head Cap Screws M3x10mm.
- 2 x Nylon Nuts M3 H4.
- 2 x Springs de 5.8/ df0.5 / LL9.
- 2 x Springs de 3/ df0.5 / LL12.

Bearing Support
[H0143-S]

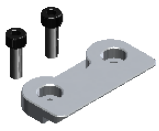
- 1 x Bearing Support.
- 1 x Flanged Bearing ∅6x∅13x5mm.
- 2 x Socket Head Cap Screws M3x8mm.

Battery Tray
[H0149-S]



- 1 x Battery Plate.
- 1 x Battery Protection.
- 2 x Cylinder M2.5.
- 2 x Flat Cap Screw M2.5x5mm
- 1 x Heat Shrink.

Stop Battery Tray
[H0150-S]

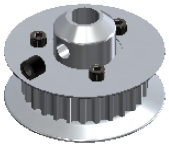


- 1 x Stop Battery Tray.
- 2 x Socket Head Cap Screw M2.5x8mm.

Carbon Fiber ESC Support
(H0153-S)

- 1 x Carbon Fiber ESC Support.
- 6 x Flat Head Socket Cap Screw M2,5x5mm.

25T Tail Pulley
[H0155-S]

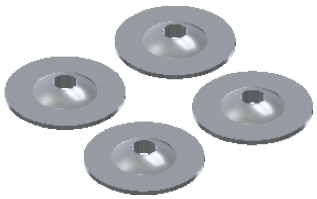


- 1 x 25T Tail Pulley.
- 1 x Set Screw M4x4mm.
- 6 x Socket Head Cap Screws M2x5mm.

Secondary Shaft
[H0157-S]

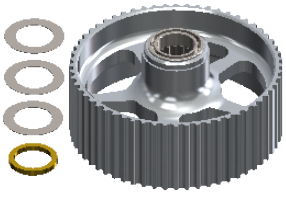
- 1 x Secondary Shaft M3.
- 1 x Socket Head Cap Screw Shoulder M2.5x19mm.
- 1 x Metric Hex Nylon Nut M2,5.
- 1 x Socket Head Cap Shoulder M3x19mm.
- 1 x Metric Hex locknut Nut M3.

Aluminum Blade Spacer
[H0158-S]



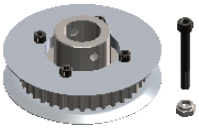
- 4 x Aluminum Blade Spacer.

Double Bearing One Way Pulley
[H0171-S]



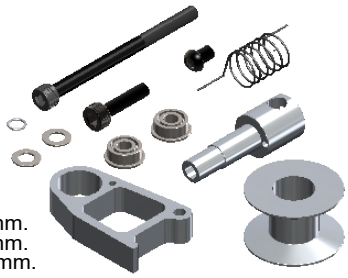
- 1 x Aluminum Double Bearing One Way Pulley Assembly.
- 3 x Shims ∅10x∅16x0,2mm.
- 1 x One Way Brass Bushing.

Aluminum Front Tail Pulley
[H0172-S]



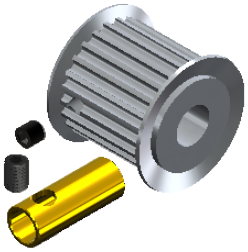
- 1 x Front Tail Pulley Assembly.
- 1 x Head Cap Screw M2.5x19mm.
- 1 x Metric Hex Nylon Nuts M2,5.

Belt Tensioner Support
[H0174-S]



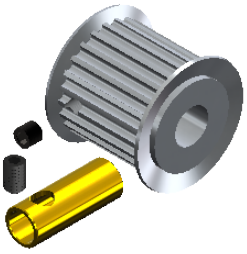
- 1 x Column Belt Tensioner.
- 1 x Tail Belt Idler.
- 1 x Belt Tensioner Arm.
- 2 x Flanged Bearings ∅3x∅7x3mm.
- 2 x Flanged Bearings ∅5x∅9x3mm.
- 1 x Head Cap Shouldered M3x40mm.
- 1 x Washer ∅3x∅4x0.5mm.
- 1 x Head Cap Screw M3x12mm.
- 2 x Washers ∅3.2x∅6x0.5mm.
- 1 x Button Cap Screw M3x4mm.
- 1 x Spring De8/df0.5/LL8.

18T Pulley
[H0175-18-S]



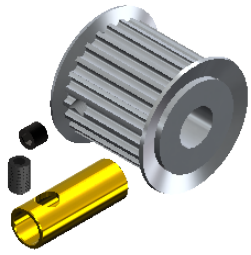
- 1 x 18T Pulley.
- 1 x Set Screws M4x4mm.
- 1 x Set Screws M4x6mm.
- 1 x Bushing.

19T Pulley
[H0175-19-S]



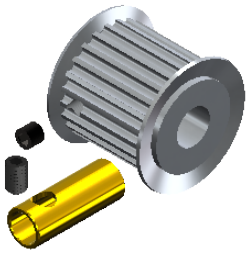
- 1 x 19T Pulley.
- 1 x Set Screws M4x4mm.
- 1 x Set Screws M4x6mm.
- 1 x Bushing.

20T Pulley
[H0175-20-S]



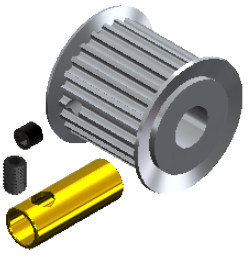
- 1 x 20T Pulley.
- 1 x Set Screws M4x4mm.
- 1 x Set Screws M4x6mm.
- 1 x Bushing.

21T Pulley
[H0175-21-S]



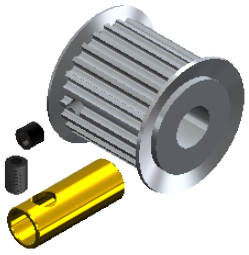
- 1 x 21T Pulley.
- 1 x Set Screws M4x4mm.
- 1 x Set Screws M4x6mm.
- 1 x Bushing.

22T Pulley
[H0175-22-S]



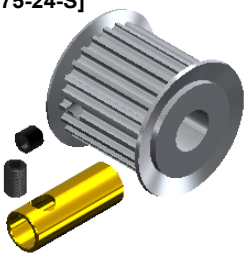
- 1 x 22T Pulley.
- 1 x Set Screws M4x4mm.
- 1 x Set Screws M4x6mm.
- 1 x Bushing.

23T Pulley
[H0175-23-S]



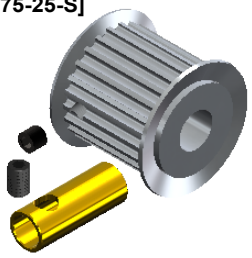
- 1 x 23T Pulley.
- 1 x Set Screws M4x4mm.
- 1 x Set Screws M4x6mm.
- 1 x Bushing.

24T Pulley
[H0175-24-S]



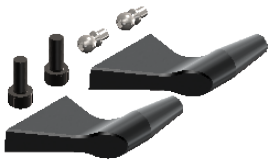
- 1 x 24T Pulley.
- 1 x Set Screws M4x4mm.
- 1 x Set Screws M4x6mm.
- 1 x Bushing.

25T Pulley
[H0175-25-S]



- 1 x 25T Pulley.
- 1 x Set Screws M4x4mm.
- 1 x Set Screws M4x6mm.
- 1 x Bushing.

Blade Grip Arm
[H0183BM-S]



- 2 x Blade Grip Arm.
- 2 x Socket Head Cap Screw M4x10mm.
- 2 x Uniball M3x4 Ø5 H3.5.

Uniball Radius Arm
[H0205-S]

- 2 x Uniball Radius Arm.

Plastic Tail Linkage
[H0261-S]

- 2 x Plastic Tail Linkage.
- 2 x Grip Link Bushing.
- 2 x Head Cap Screws M2x6mm.

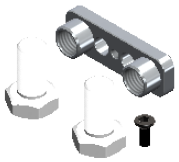
Steel Main Gear
[H0320-S]

- 1 x Steel Main Gear.
- 1 x Heavy Duty Main Pinion.
- 1 x Socket Head Cap M4x25mm.
- 1 x Socket Head Cap M3x18mm.
- 1 x Metric Nylon Nut M3.
- 1 x Metric Nylon Nut M4.

Aluminum Tail Blade Grip
[H0327BM-S]

- 2 x Aluminum Tail Blade Grip.
- 4 x Bearing Ø5xØ10x4mm.
- 2 x Thrust bearing Ø5xØ10x4mm.
- 2 x Button Head Cap M4x8mm.
- 2 x Socket Head Cap M2x6mm.
- 2 x Washer Ø5xØ8.9x0,75mm.
- 2 x Washer Ø7.5xØ10x0,5mm.

Tail Boom Support
[H0358-S]



- 1 x Tail Boom Support.
- 1 x Nylon screw M8x20mm.
- 1 x Flat Head Cap ScrewsM3x8.

Aluminum Tail Side Plate
[H0359BM-S]

- 1 x Aluminum Tail Side Plate.
- 1 x Flanged bearing Ø6xØ13x5mm.

Aluminum Tail Case Spacer
[H0360BM-S]

- 1 x Aluminum Tail Case Spacer.
- 4 x Socket Head Cap M3x8mm.

19T Drive Pinion
[H0361-S]

- 1 x 19T Drive Pinion.
- 1 x Socket Head Cap Screw Shouldered M3x19mm.
- 1 x Metric Hex Nylon Nut M3.

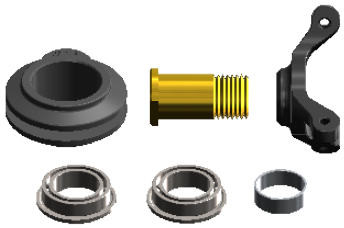
Plastic Ball Link
[H0402-S]

- 5 x Plastic Ball Link.

Bell Crank Lever
[H0406BM-S]

- 2 x Tail Pin.
- 1 x Uniball M2.
- 1 x Uniball Spacer.
- 1 x Bell Crank Lever.
- 2 x Flanged Bearing ∅3x∅7x3mm.
- 1 x Head Cap Screws M3x22mm.
- 1 x Head Cap Screws M2x8mm.
- 1 x Washer∅3x∅4x0.5mm.
- 1 x Spacer∅3x∅4x9.6mm.

Tail Pitch Slider 3
[H0409-S]



- 1 x Tail Pitch Slider SET.

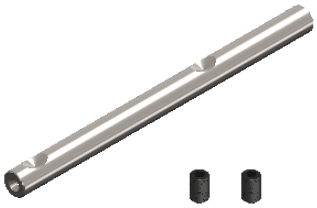
Main Linkage
[H0417-S]

- 2 x Main Linkage.
- 4 x Uniballs M3.

Tail Hub
[H0418-S]

- 1 x Tail Hub.
- 1 x Set Screw M4x6mm.
- 3 x Socket Head Cap Screws M3x8mm.
- 3 x Washer∅3x∅7x1mm.
- 3 x Washer∅5x∅7x0,2mm.

Tail Shaft
[H0419-S]



- 1 x Tail Shaft.
- 2 x Set Screws M4x6mm.

Swashplate Set HPS
[H0422BM-S)

- 1 x Swashplate Assembly.
- 2 x Bearings∅30x∅37x4mm.
- 6 x Uniballs M3x4 5 H3.
- 1 x Uniball M3x4 5 H18.
- 3 x Head Cap Screws M2x5mm.
- 3 x Swasher∅2x∅5x0.5mm

Damper
[H0426-S)

- 3 x H0426-A.
- 3 x H0426-B.
- 3 x H0426-C.
- 3 x Washers∅10x∅16x1mm.
- 3 x Washers∅10x∅16x0.2mm.
- 3 x Orings 3050.

Landing Gear Rod
[H0431-S]

- 2 x Landing Gear Rod.
- 4 x Landing Gear Plug.
- 4 x OR DI=6,75, S=1,78.

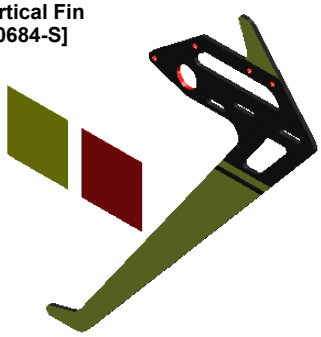
Pin M2
[H0435-S]

- 3 x Pin M2.
- 3 x Spacer∅2x∅3x3mm.
- 3 x Tail Pitch Slider Link.
- 6 x Socket Head Cap Screws M2x6mm.

F3C Landing Gear Set
[H0454-S]

- 2 x Plastic Landing Gear Support.
- 2 x Aluminum Landing Skid.
- 4 x Cone Point Set Screws M4x4.
- 4 x Aluminum M3 Washer.
- 4 x Head Cap Screw M3x16mm.
- 4 x M3 Lock Nut.

Vertical Fin
[H0684-S]



- 1 x Vertical Fin.
- 2 x Sticker.

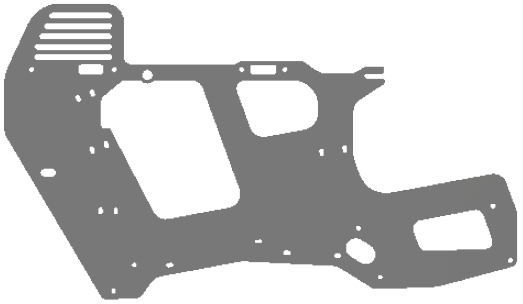
FBL Support Low
[H0727-S]

- 3 x FBL Support Low.
- 5 x Head Cap Screw M3x8mm.
- 1 x Flat Head Cap Screw M3x8mm.

Blade Grip
[H0719BM-S]

- 2 x Blade Grip.
- 2 x Thrust Bearing∅10x∅18x5.5mm.
- 4 x Bearing∅10x∅19x5mm.
- 2 x Washer∅10x∅16x1mm.
- 2 x Socket Head Cap Screw M4x10mm.

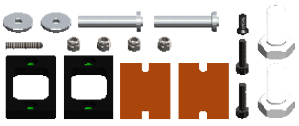
Main Frame
[H0976-S]



- 1 x Main Frame.

Boom 770 Sport
[H0977-S]

- 1 x Boom 770 Sport.
- 2 x Locking Element Tails.
- 2 x Double-Sided Tapes.
- 1 x Set Screws M3 x 20mm.
- 2 x Washers 3.1 x 12 x 1.8mm.
- 4 x Metric Hex Nylon Nuts M3.
- 2 x Boom spacers.



- 2 x Head Cap Screws M3 x 12mm.
- 2 x Nylon Screw M8x20mm.
- 1 x Flat Head Cap Screws M3x8mm.

Canopy 770 Sport
[H0978-S]

- 1 x Canopy 770 Sport.
- 1 x Canopy Grommet.
- 1 x Canopy Mousse.
- 1 x Canopy Edge Protection.

[HC002-S]

- 8 x Socket Head Cap Screws M2x5mm.

[HC004-S]

- 8 x Socket Head Cap Screws M2x6mm.

[HC008-S]

- 8 x Socket Head Cap Screws M2x8mm.

[HC010-S]

- 8 x Socket Head Cap Screws M2x10mm.

[HC018-S]

- 8 x Socket Head Cap Screws M2.5x6mm.

[HC020-S]

- 8 x Socket Head Cap Screws M2.5x8mm.

[HC026-S]

- 8 x Socket Head Cap Screw M2.5x12mm.

[HC033-S]

- 4 x Socket Head Cap shouder M2.5x19mm.
- 4 x Metrix Hex Nylon Nut M2.5.

[HC038-S]

- 8 x Button Head Cap Screws M3x4mm.

[HC044-S]

- 8 x Socket Head Cap Screws M3x6mm.

[HC050-S]

- 8 x Socket Head Cap Screws M3x8mm.

[HC056-S]

- 8 x Socket Head Cap Screws M3x10mm.

[HC062-S]

- 8 x Socket Head Cap Screws M3x12mm.

[HC068-S]

- 8 x Socket Head Cap Screws M3x16mm.

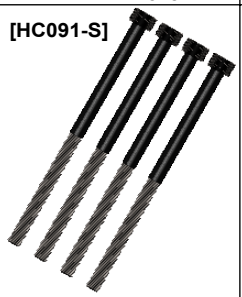
[HC079-S]

- 2 x Socket Head Cap Shouder M3x18mm.
- 2 x Metrix Hex Nylon Nut M3.

[HC086-S]

- 8 x Socket Head Cap Screws M3x22mm.

[HC091-S]



- 4 x Socket Head Cap Shouldereds M3x40mm.

[HC096-S]

- 8 x Buttom Head Cap Screws M4x6mm.

[HC098-S]

- 8 x Button Head Cap Screws M4x8mm.

[HC100-S]

- 8 x Button Head Cap Screws M4x10mm.

[HC104-S]

- 8 x Socket Head Cap Screws M4x22mm.

[HC111-S]

- 8 x Socket Head Cap Shouder M5x30mm.

[HC114-S]

- 2 x Socket Head Cap Shouder M5x30mm.
- 2 x Metrix Hex Nut M5.

[HC124-S]

- 8 x Socket Head Cap Screws M6x10mm.

[HC128-S]

- 8 x Flat Head Cap Screws M2.5x5mm.

[HC134-S]

- 8 x Flat Head Cap Screws M3x8mm.

[HC140-S]

- 8 x Set Screws M2.5x20mm.

[HC150-S]

- 8 x Cup Poin Set Screws M3x20mm.

[HC152-S]

- 8 x Cup Poin Set Screws M4x4mm.

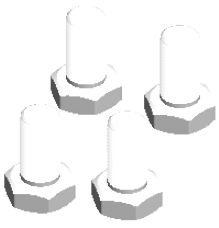
[HC153-S]

- 8 x Cup Poin Set Screws M4x6mm.

[HC158-S]

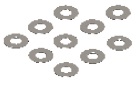
- 8 x Cup Poin Set Screws M5x20mm.

[HC165-S]



- 4 x Nylon Screw M8x20mm.

[HC170-S]



- 10 x Washer Ø2,2xØ5x0,3mm.

[HC176-S]

- 5 x Washer Ø3xØ4x0,5mm.

[HC180-S]

- 10 x Washer Ø3.3xØ6x0,5mm.

[HC188-S]

- 5 x Washer Ø5.3xØ15x1mm.

[HC194-S]

- 8 x Washer Ø6.3xØ15x1mm.

[HC200-S]

- 8 x Metric Hex Nylon Nuts M2,5H3,5.

[HC206-S]

- 8 x Metric Hex Nylon Nuts M3H4.

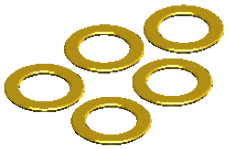
[HC212-S]

- 8 x Metric Hex Nylon Nuts M4H5.

[HC218-S]

- 8 x Metric Hex Nylon Nuts M5H4.5.

[HC230-S]



- 5 x Shims Ø10xØ16x1mm.

[HC232-S]

- 5 x Shims Ø10xØ16x0.2mm.

[HC238-S]

- 1 x Carbon Rod Ø4xØ2,5x752mm.
- 2 x Plastic Ball Linkage.
- 2 x Thread Rod M2.5x40mm.

[HC242-S]

- 3 X Thread Rods M2.5 x 40mm.

[HC309-S]

- 1 x Motor Belt 240-3MGT 19mm.

[HC315-S]

- 2 x Spring 5,8/df 0,3.
- 1 x Spring 8 /df 0,5.
- 2 x Spring 3 /df 5.

[HC325-S]

- 1 x Belt Gates 2160-3GT-06mm.

[HC335-S]

- 4 x Tail Oring Damper.

[HC400-S]

- 4 x Flanged Bearings ∅2.5x∅6x2.6mm.

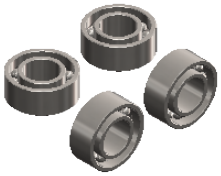
[HC402-S]

- 4 x Flanged Bearings ∅3x∅7x3mm.

[HC410-S]

- 4 x Flanged Bearings ∅5x∅9x3mm.

[HC411-S]



- 4 x Bearings ∅5x∅10x4mm.

[HC414-S]

- 2 x Flanged Bearings ∅6x∅13x4mm.

[HC418-S]

- 2 x Flanged Bearings ∅8x∅12x3.5mm.

[HC420-S]

- 2 x Bearings ∅10x∅15x4mm.

[HC422-S]

- 4 x Bearings ∅10x∅19x5mm.

[HC426-S]

- 2 x Bearings ∅12x∅24x6mm.

[HC430-S]

- 2 x Rad Bearings ∅30x∅37x4mm.

[HC435-S]

- 2 x Thrust Bearings ∅5x∅10x4mm.

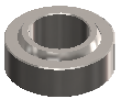
[HC438-S]

- 2 x Thrust Bearings ∅10x∅18x5.5mm.

[HC442-S]

- 1 x One Way Bearings ∅10x∅14x12mm.

[HC447-S]



- 1 x Spherical Bearing ∅12x∅22x7mm.

[HA001-S]

- 1 x Foam Blade Holder.

[HA006-S]

- 1 x Canopy Mousse.

[HA010-S]

- 2 x Cable Pass.

[HA015-S]

- 2 x Double-sided Tape.

[HA016-S]

- 1 x Wrench Nuts M8.

[HA024-S]

- 4 x OR 3050.

[HA025-S]

- 2 x Big Straps.

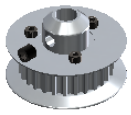
[HA026-S]

- 4 x Heats Sink.

[HA111-S]	[HA112-S]	[HA114-S]	[1153TBS]	[750TBS]
				
- 4 x Canopy Grommet.	- 1 x Rubber Canopy Edge Protection 80.	- 1 x Rubber Frame Edge Protection 40.	- 3 x Tail Blades 115.	- 2 x Main Blades 750mm.

UPGRADES and ACCESSORIES

Tail Pulley 24T
[H0154-S]



- 1 x Tail Pulley 24T.

DELRIN Main Gear
[H0405-S]

- 1 x Delrin Main Gear SET.

Quick release Canopy Knob
[H0714-S]

- 1 x Quick release Canopy Knob SET.

Complete Competition Tail Rotor Set
[H0826-K]

- 1 x Complete Competition Tail Rotor Set.

Quick Battery Release Set
[H0865-S]

- 1 x Quick Battery Release Set.

SAB Tool Kit
[HM054]

- 1 x SAB Tool Kit.

SAB HELI DIVISION New Black T-shirt
[HM025-S-M-L-XL-XXL]

- SAB HELI DIVISION New Black T-shirt.

SAB HELI DIVISION Black Polo Shirt
[HM027-S-M-L-XL-XXL]

- SAB HELI DIVISION Black Polo Shirt.

SAB HELI DIVISION Black Hoodies
[HM029-S-M-L-XL-XXL]

- SAB HELI DIVISION Black Hoodies.

SAB HELI DIVISION Neck Strap
[HM034]

- 1 x Neck Strap.

CAP
[HM001,HM002,HM003]

- 1 x SAB HELI DIVISION CAP.

SAB Goblin 630/700/770/
Urukay Competition/Speed Carry Bag
[HM060]

- 1 x Carry Bag.

- Carefully check your model before each flight to ensure it is airworthy.
- Consider flying only in areas dedicated to the use of model helicopters.
- Check and inspect the flying area to ensure it is clear of people obstacles.
- Rotor blades can rotate at very high speeds! Be aware of the danger they pose.
- Always keep the model at a safe distance from other pilots and spectators.
- Avoid maneuvers with trajectories towards a crowd.
- Always maintain a safe distance from the model.

SAB

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