Goblin 500 Manual

SAB Heli Division

Goblin 500 Manual

Release 1.0 - February 2013

SAB HELI DIVISION S.R.L.
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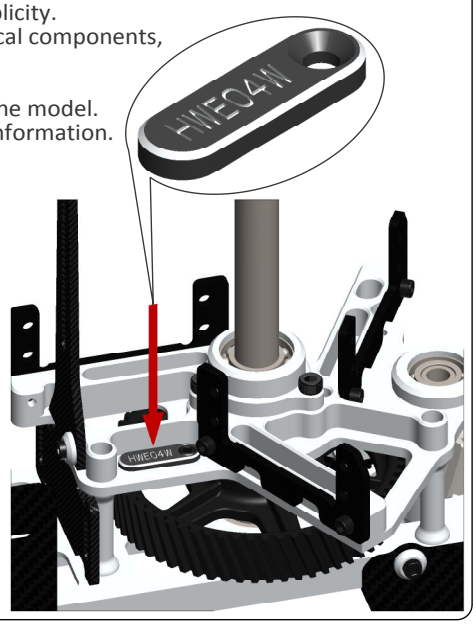
The Goblin is a high performance radio controlled helicopter.
The design is original, moving away from traditional schemes, searching rationality for simplicity.
Our goal was to create a simple, high performance helicopter, with a minimum of mechanical components, and simple maintenance.

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.



Very Impotant:

Inside Box 4, you will find Bag 9 with a red label. This bag contains your serial number tag. 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.

To mount the serial number tag on your helicopter, please refer to page 26.

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

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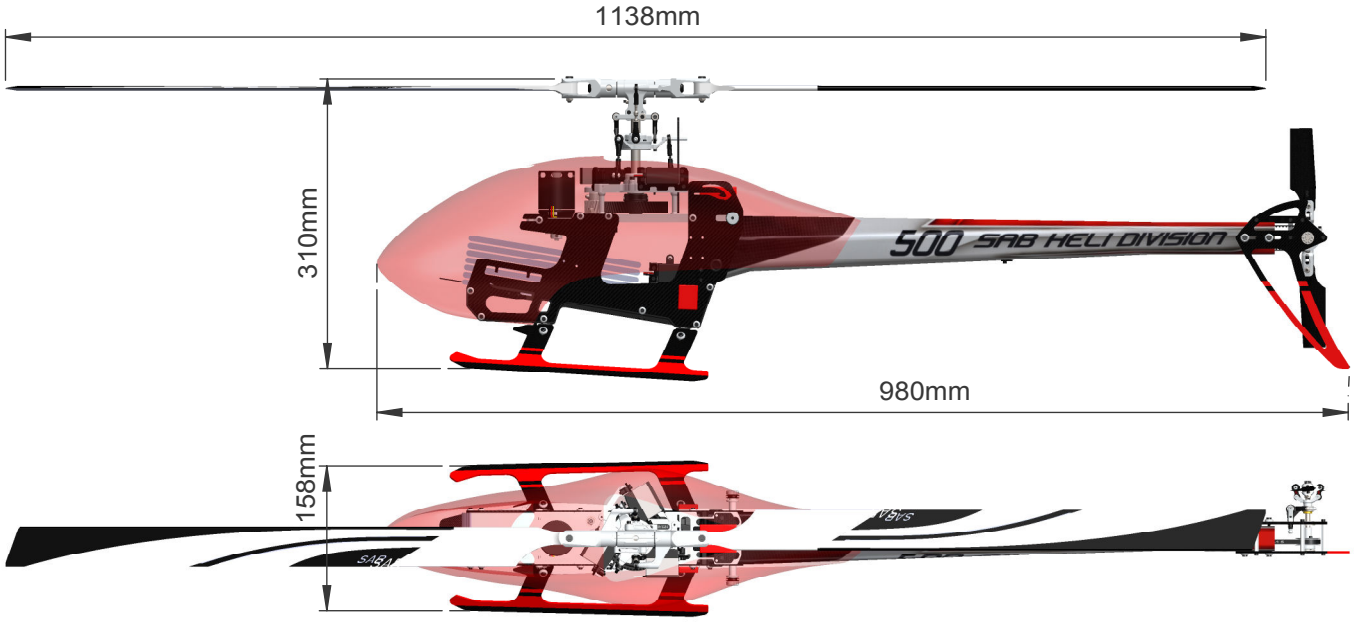
SPECIFICATIONS



- Main rotor diameter: 1138mm (with 500mm blades)
- Main blade length: 500mm
- Tail rotor diameter: 226mm
- Tail blade length: 80mm
- Weight including standard electronics: 1900g (excluding batteries).
- Maximum motor size: diameter 52mm, height 53mm
- Battery compartment: 52x53x180mm.

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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.

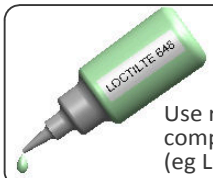
Follow the assembly order shown here, the instructions are divided into chapters, the chapters are structured in a logical sequence as each step is based on work done during the previous step. Changing the order of assembly may result in additional or unnecessary steps.

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

Use retaining compound (eg Loctite 243)



Use retaining compound (eg Loctite 648)

Use CA Glue

Use grease (eg Vaseline Grease)

Use grease (eg Tri-Flow Synthetic Grease)

Bag xx
Tray xx
Indicates that for this assembly phase you need materials that are in bag xx, tray xx.

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ADDITIONAL COMPONENTS REQUIRED

*Electric Motor: 6S – 900 / 1400Kv
maximum diameter 52mm,
maximum height 53mm, pinion shaft diameter 5 - 6mm
*Speed controller:
minimum 80A, recommended 100A
*Batteries: 6S - 3300-45000mAh
*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 19)

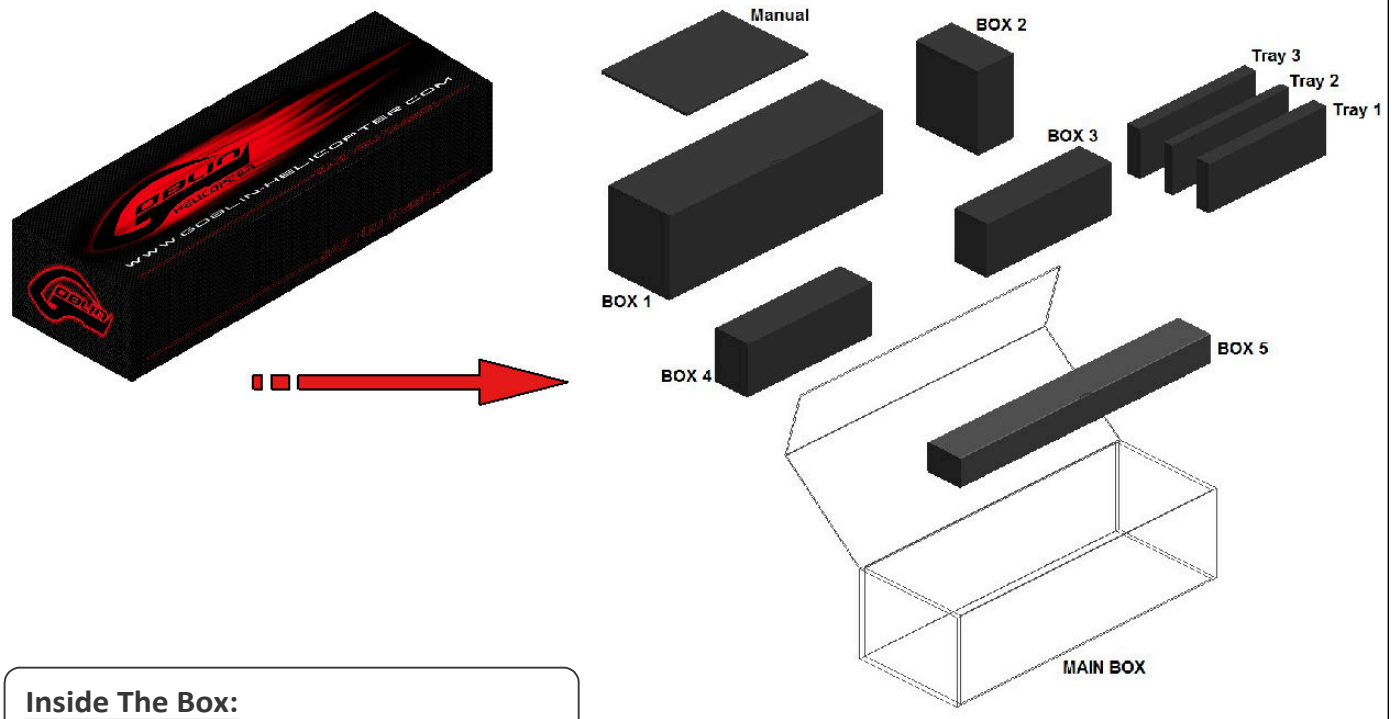
TOOLS, LUBRICANTS, ADHESIVES

*Generic pliers
*Hexagonal driver, size 1.5, 2, 2.5, 3,4 mm
*4mm T-Wrench
*5.5mm Socket wrench (for M3 nuts)
*7mm Hex fork wrench (for M4 nuts)

*Medium threadlocker (eg. Loctite 243)
*Strong retaining compound (eg. Loctite 270)
*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 box:



Inside The Box:

Box 1: Canopy, Main Frames, Plastic Parts and Blade Holder.

Box2: Optional Combo Components

Box 3: Mechanical Parts in 3 trays:

Tray 1: Head parts
Tray 2: Main structure
Tray 3: Transmission parts

Box 4: Bags

Box 5: Blades, Tail Blades, Boom, Carbon Rod

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 red box in the upper right hand corner of the page at the beginning of every chapter.

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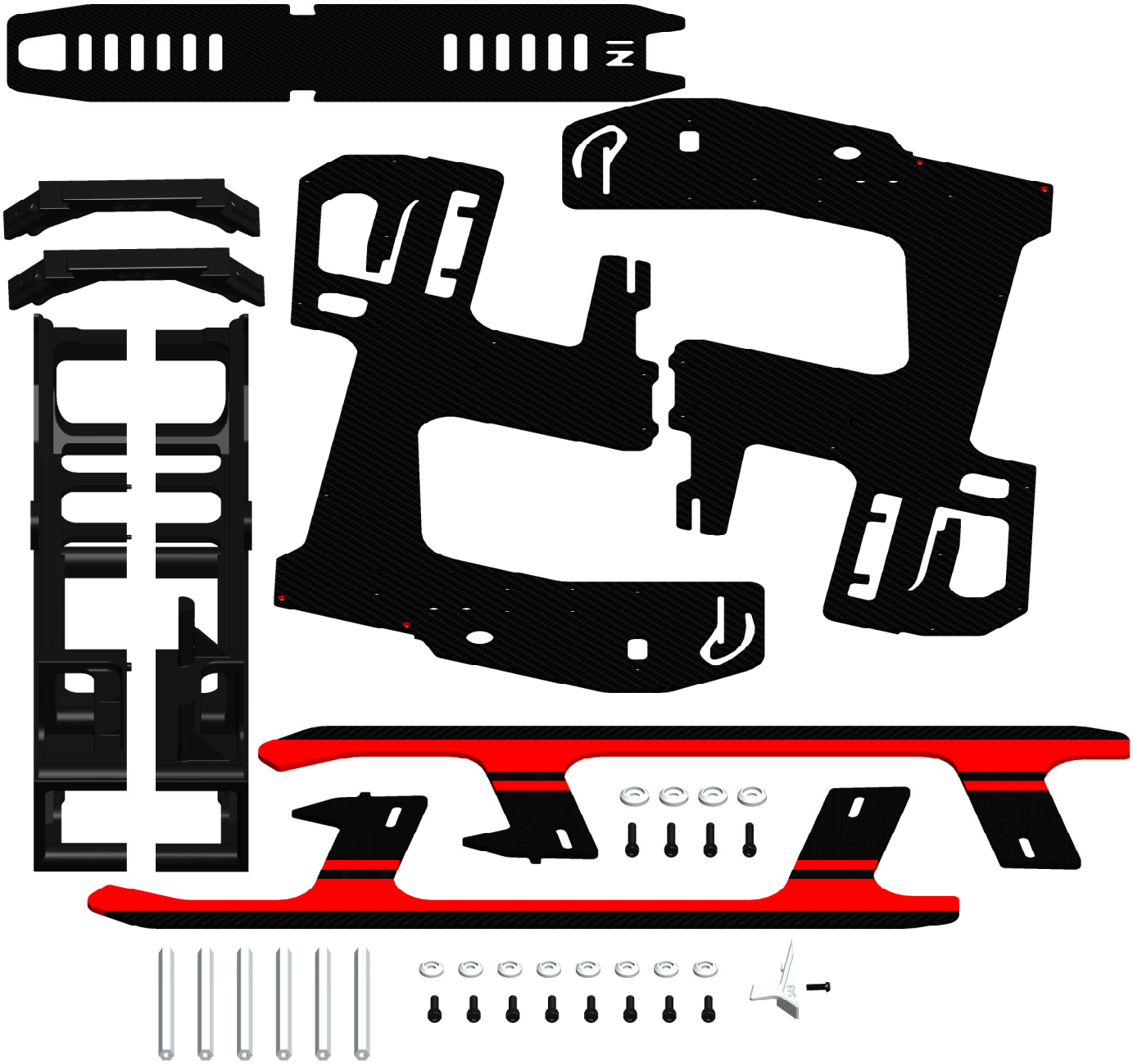
4-Carbon Frame

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.



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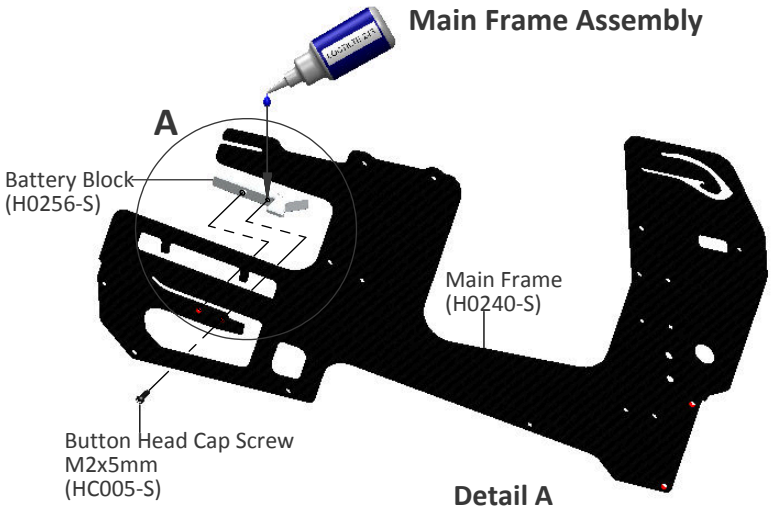
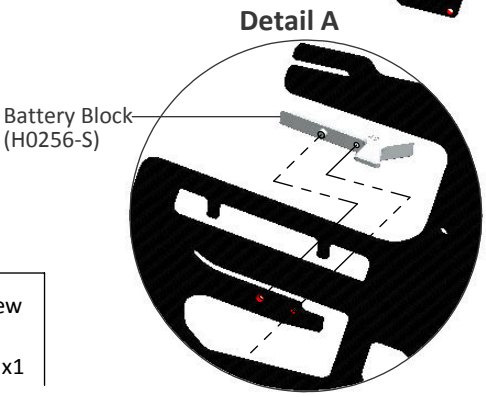
Bag 1, Bag 1-A, Bag 1-C, Tray 2

Main Frame Assembly

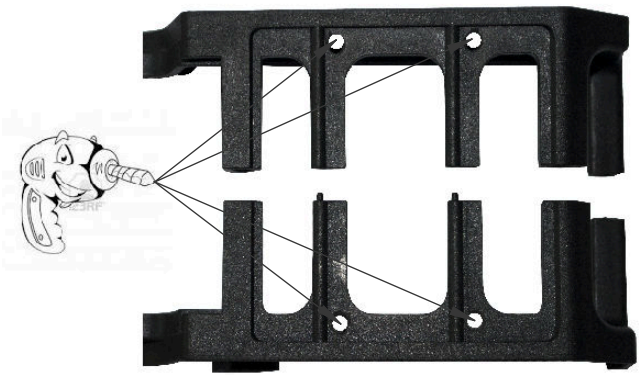


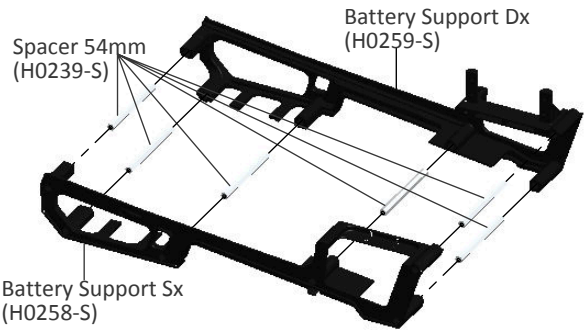


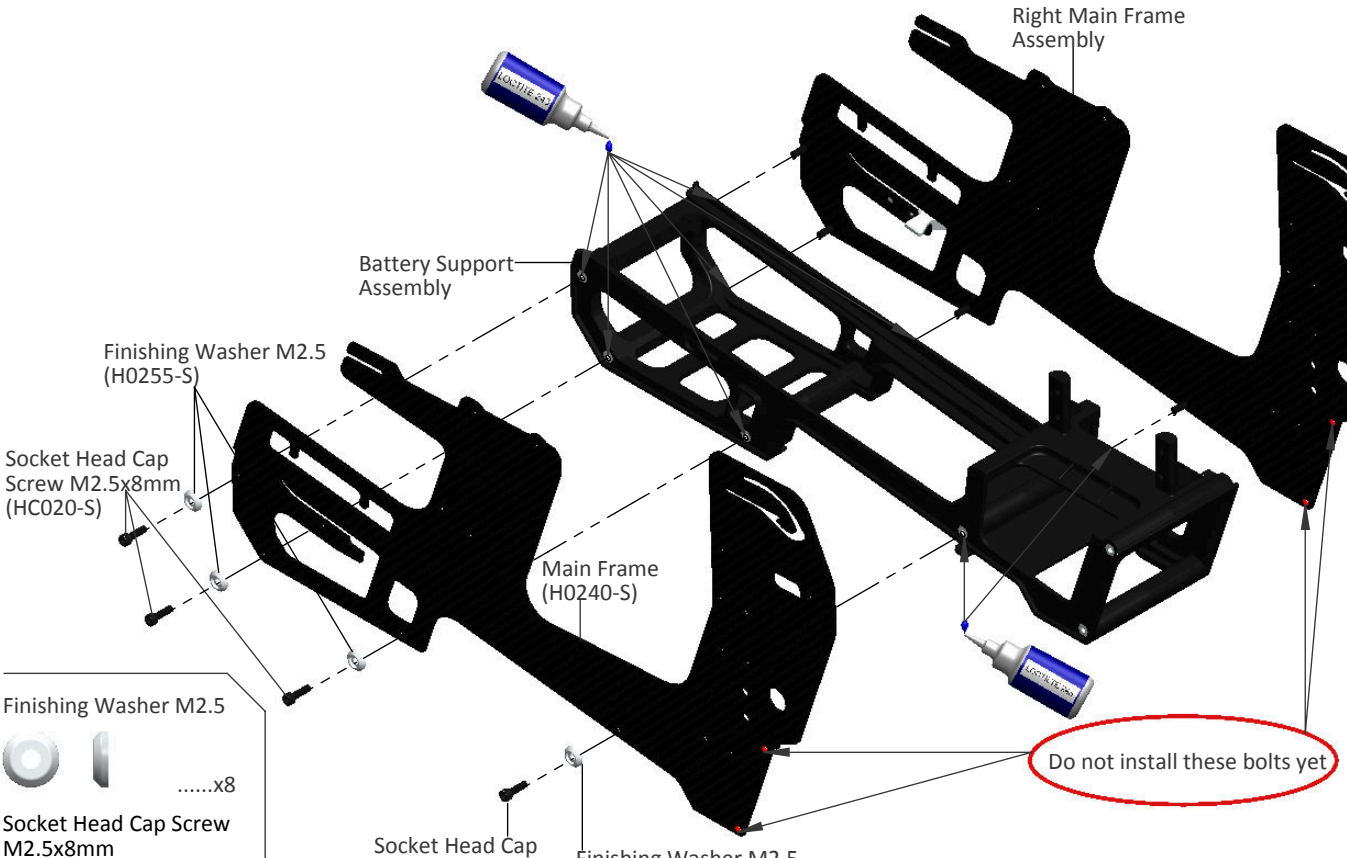
Button Head Cap Screw M2x5mm

.....x1

NOTE:
We recommend drilling 4 holes (approximately 2.5 - 3 mm) to facilitate the installation of the ESC (See page 20).







Finishing Washer M2.5

.....x8

Socket Head Cap Screw M2.5x8mm

.....x8

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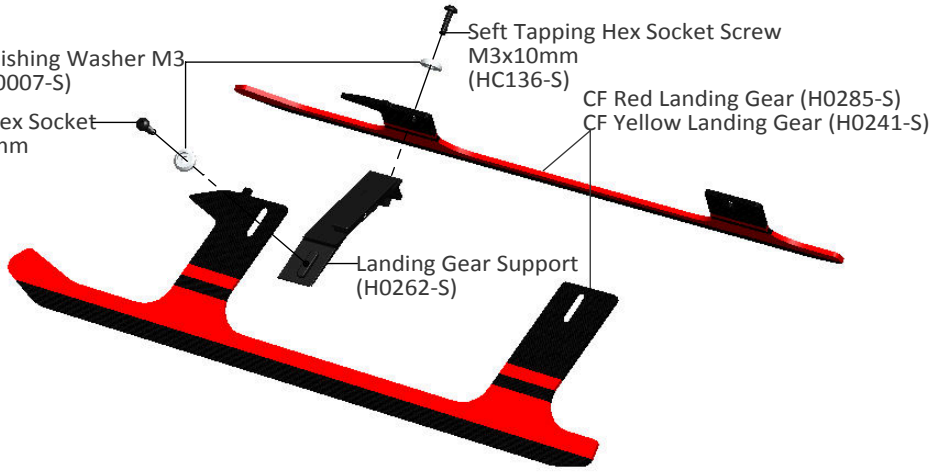
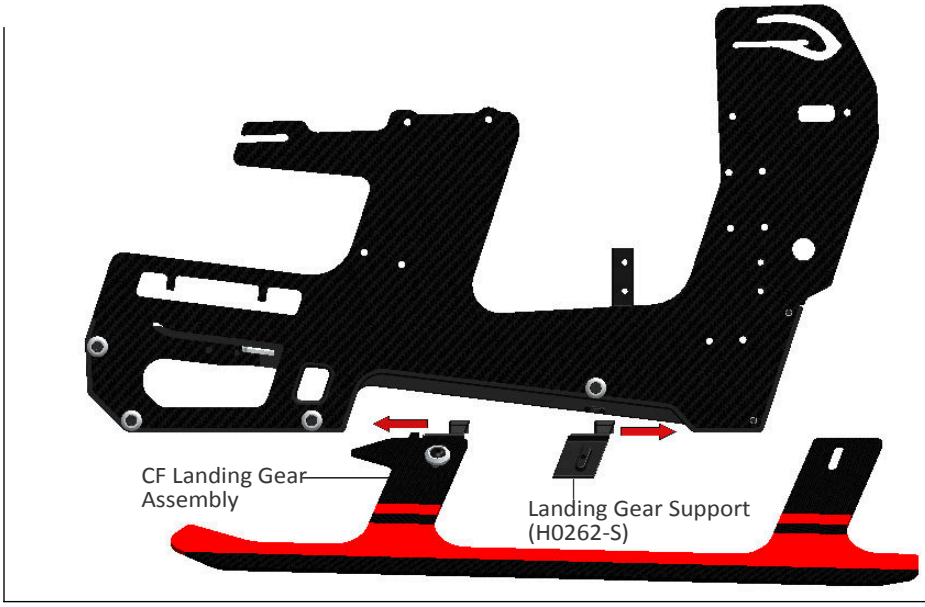
Bag 1, Bag 1-B, Bag 1-C



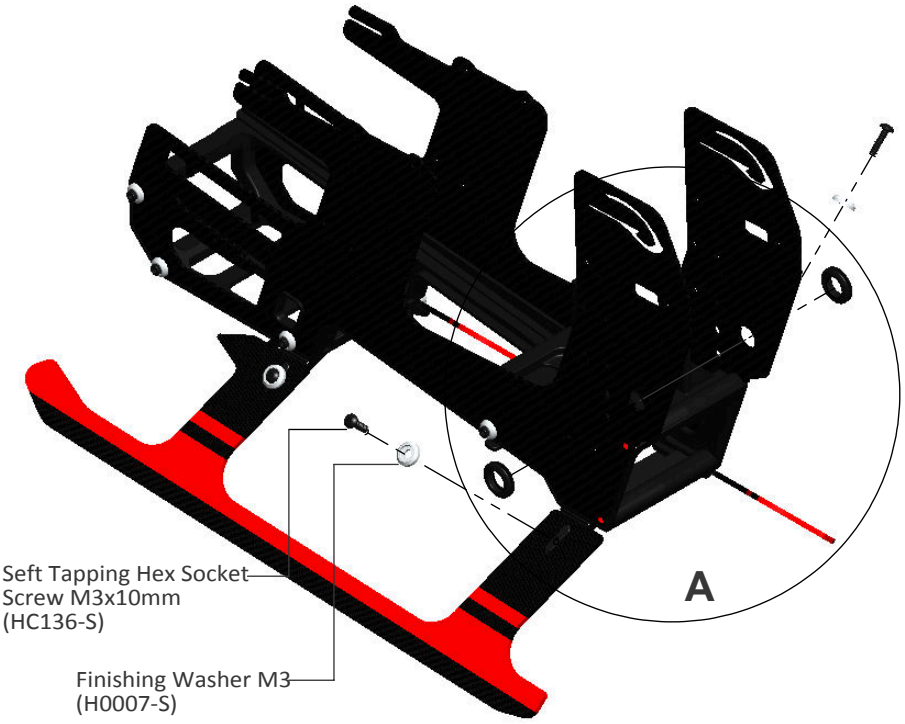
Finishing Washer M3 .....x2

Seft Tapping Hex Socket Screw M3x10mm x2

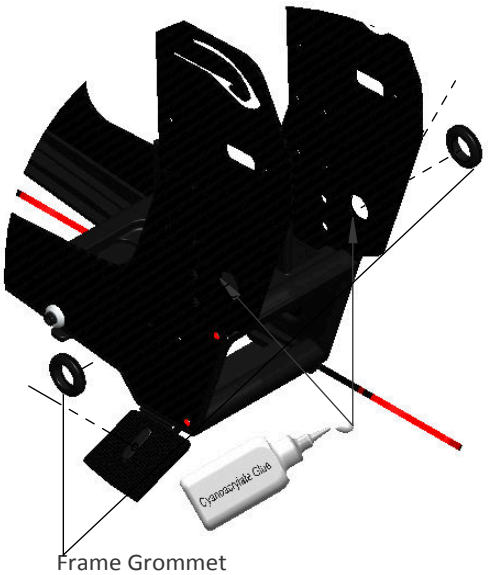


Finishing Washer M3 .....x2

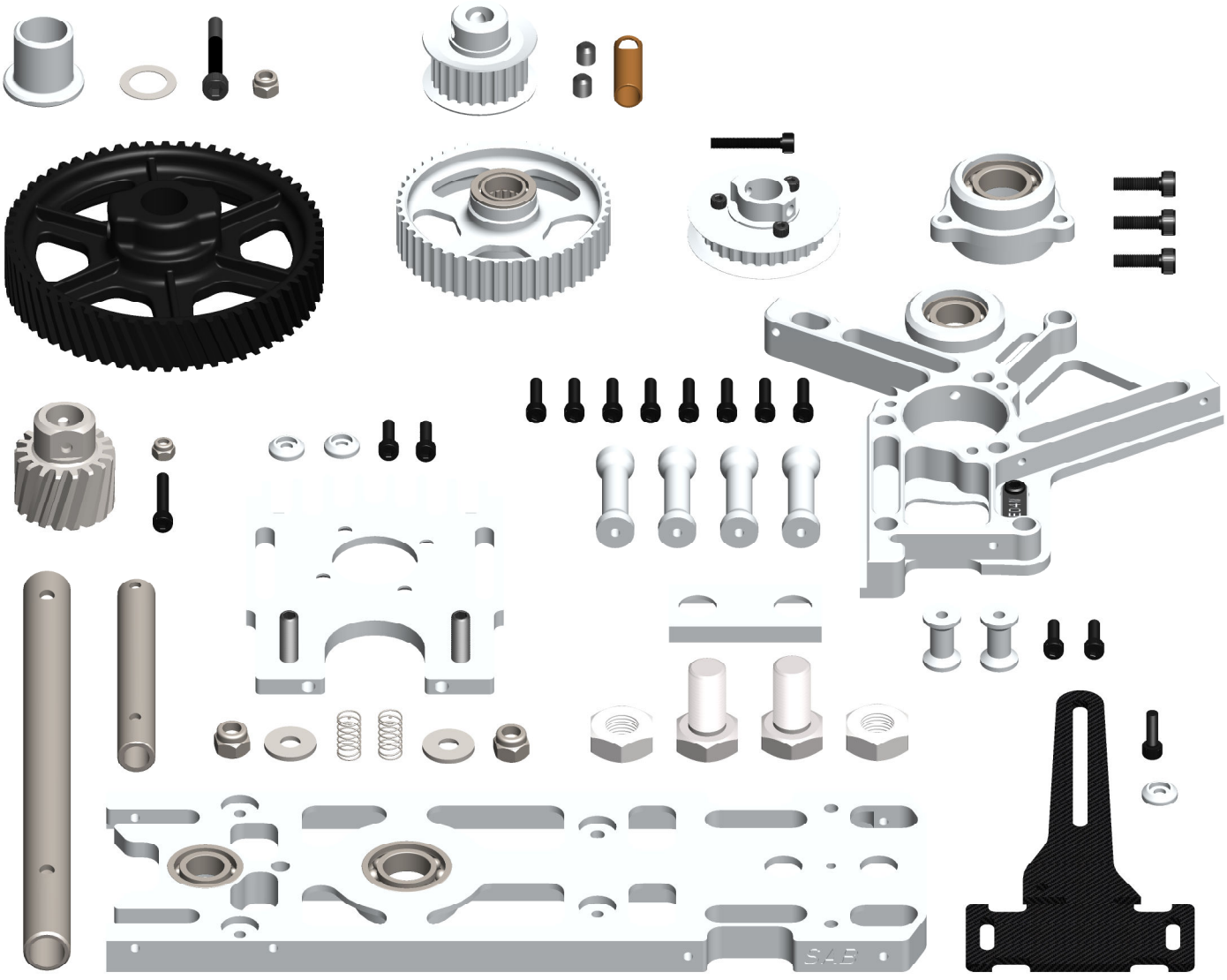
Seft Tapping Hex Socket Screw M3x10mm x2



Detail A



5-Transmission Assembly



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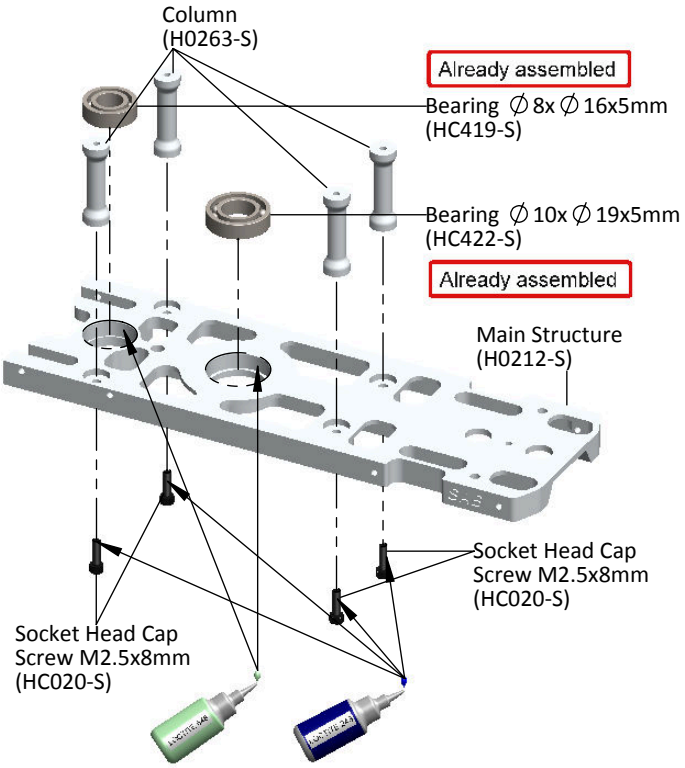
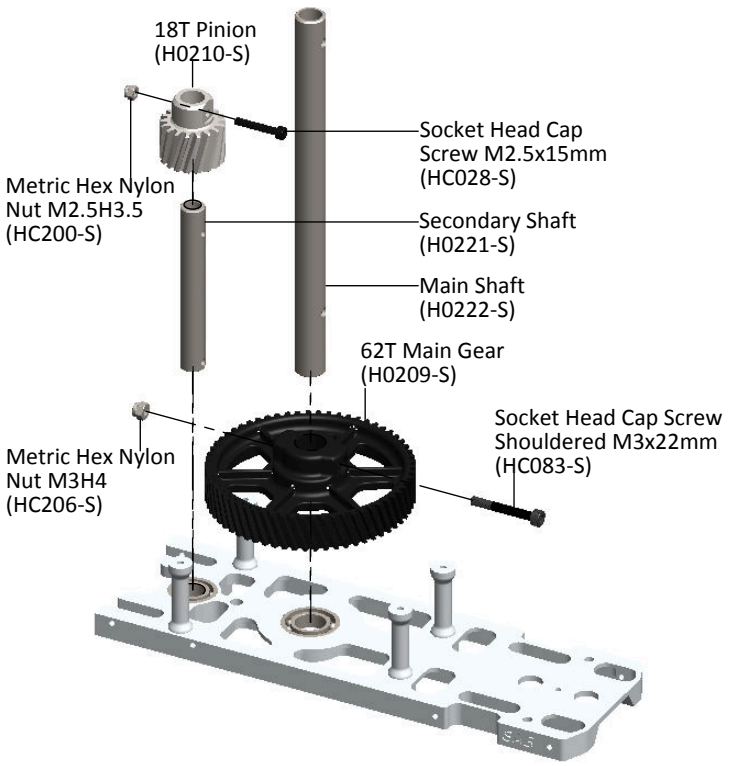
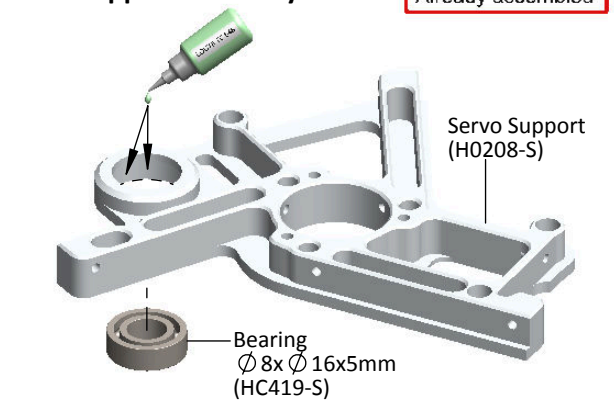
Tray 2, Tray 3, Bag 2.1

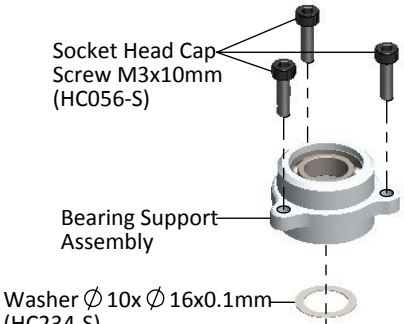




Servo Support Assembly

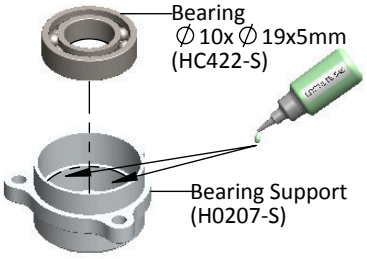
Already assembled

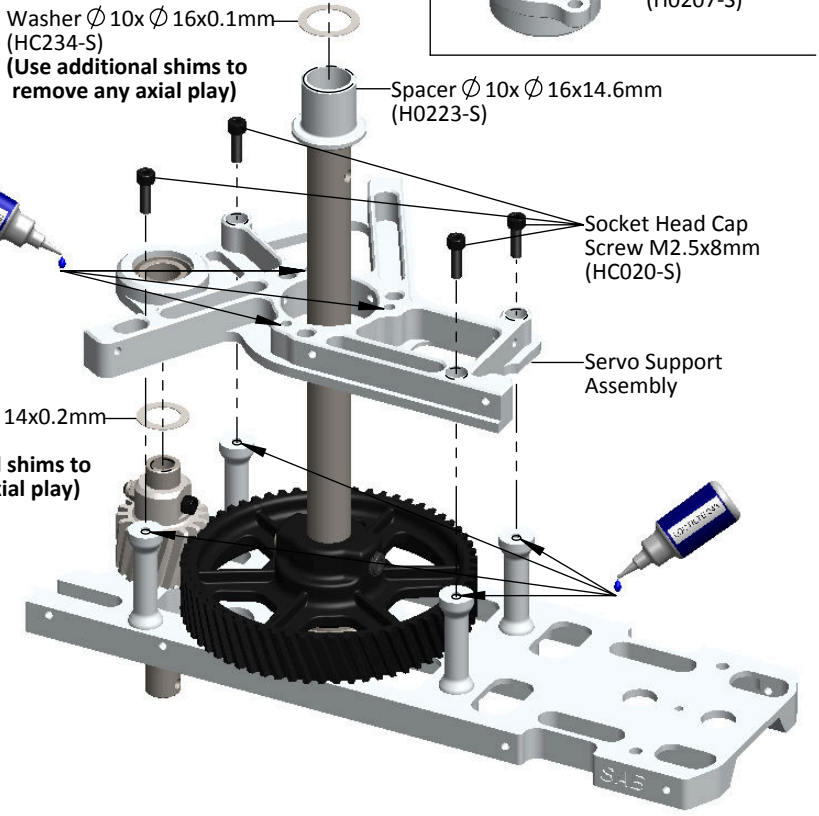




Bearing Support Assembly

Already assembled





Metric Hex Nylon Nut M2.5H3.5 .....x1

Metric Hex Nylon Nut M3 H4 .....x1

Socket Head Cap Screw M2.5x8mm x8

Socket Head Cap Screw M2.5x15mm x1

Socket Head Cap Screw M3x10mm x3

Socket Head Cap Screw Shouldered M3x22mm x1

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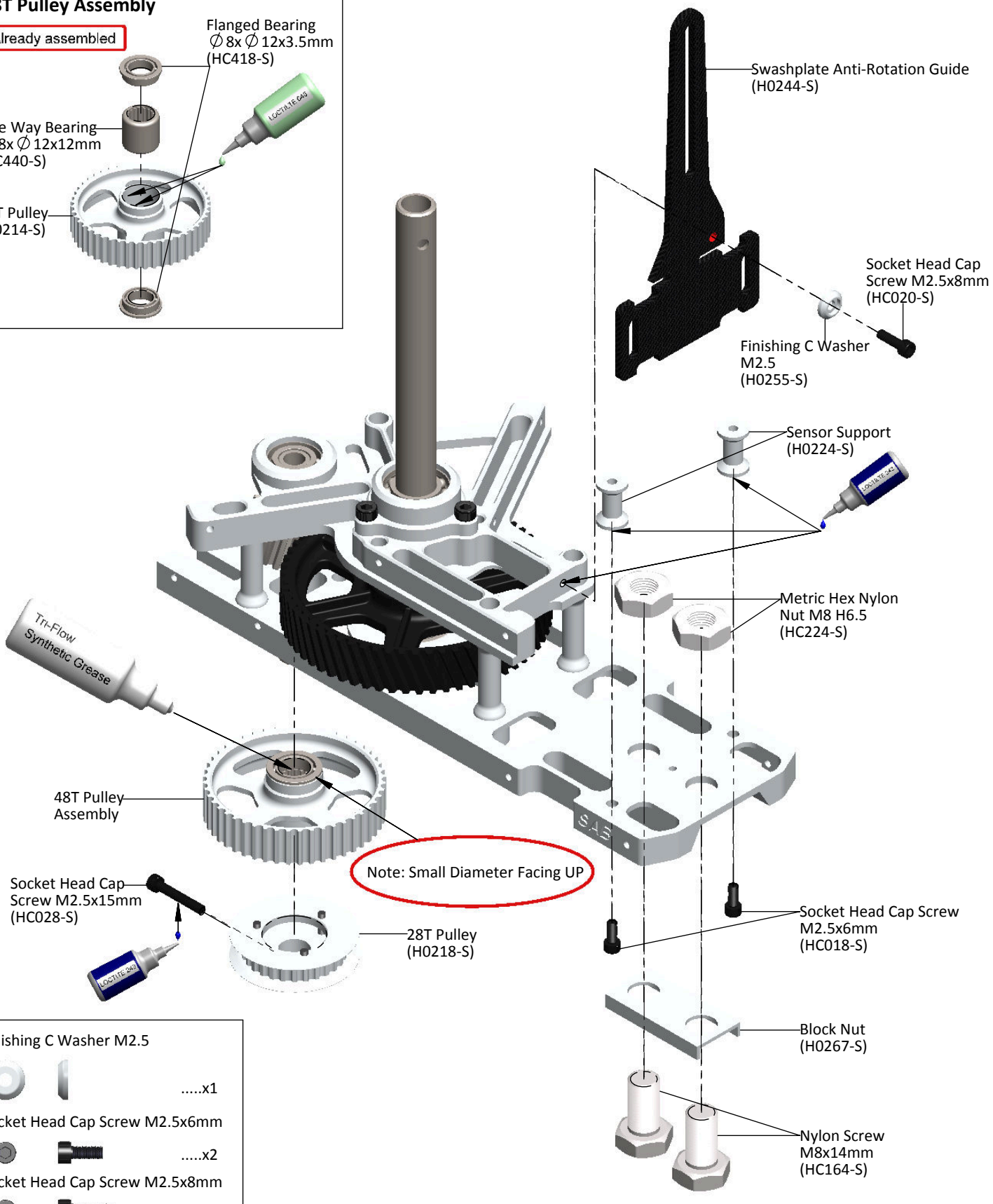
Tray 3, Bag 2.2, Bag 2.3

48T Pulley Assembly

Already assembled



Finishing C Washer M2.5 .....x1

Socket Head Cap Screw M2.5x6mm x2

Socket Head Cap Screw M2.5x8mm x1

Socket Head Cap Screw M2.5x15mm x1

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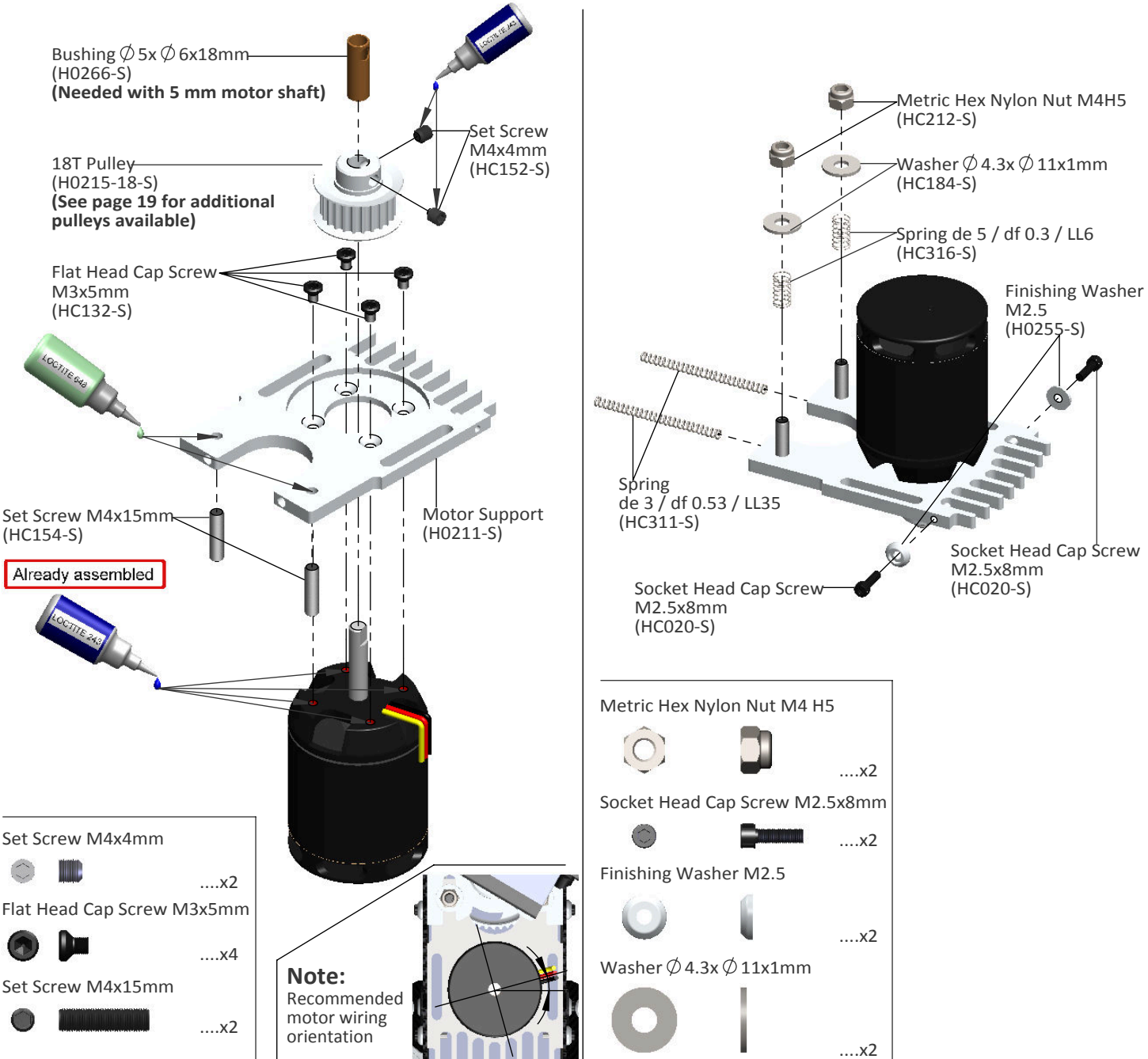
Tray 3, Bag 3.1, Bag 3.2



Set Screw M4x4mm x2

Flat Head Cap Screw M3x5mm x4

Set Screw M4x15mm x2

Note:
Recommended motor wiring orientation

Metric Hex Nylon Nut M4 H5 ....x2

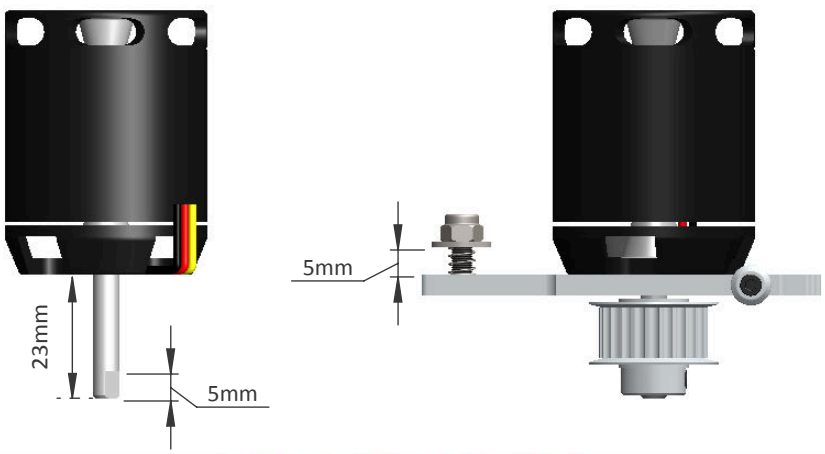
Socket Head Cap Screw M2.5x8mm x2

Finishing Washer M2.5 ....x2

Washer ∅4.3x∅11x1mm x2

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.



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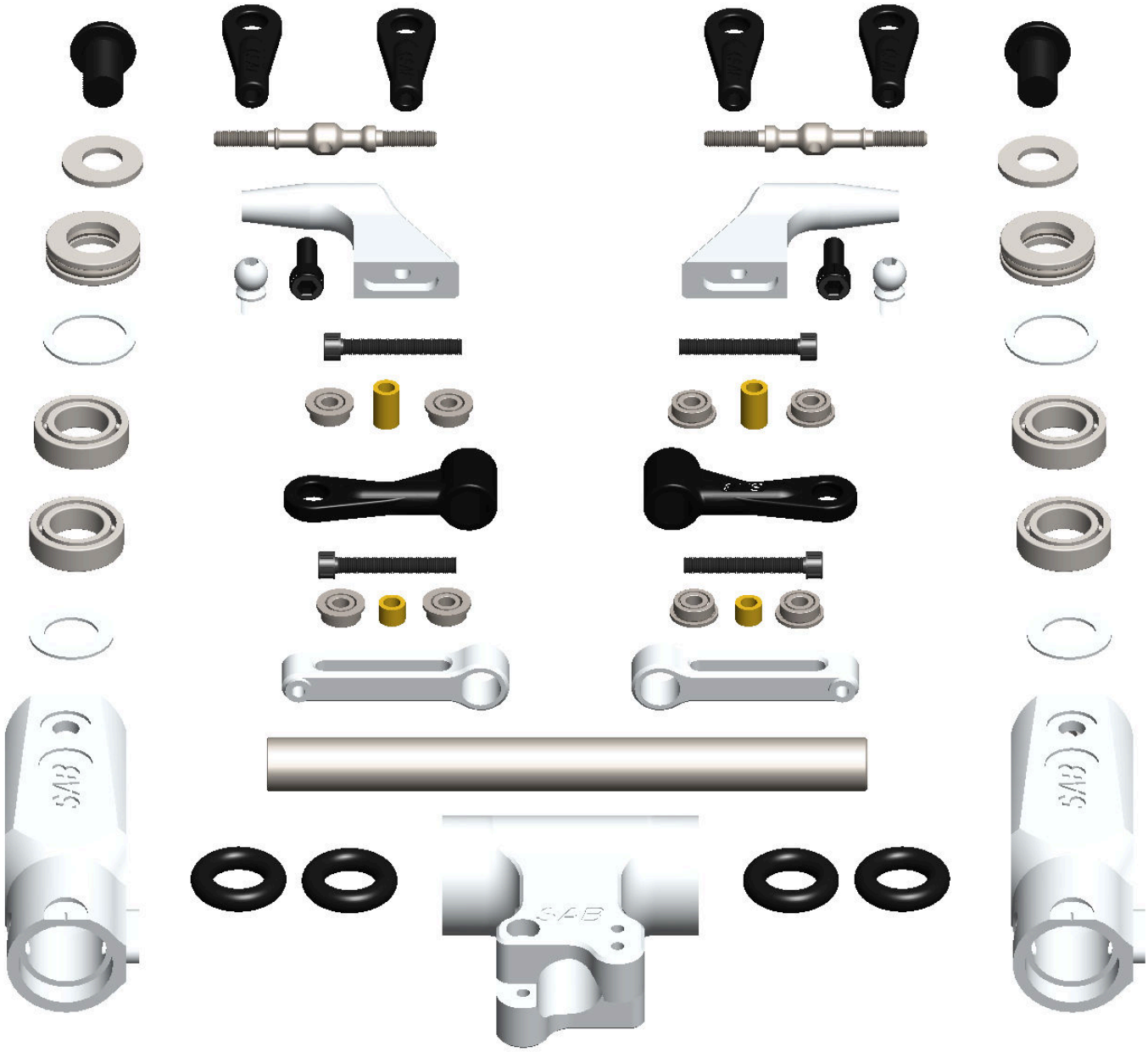
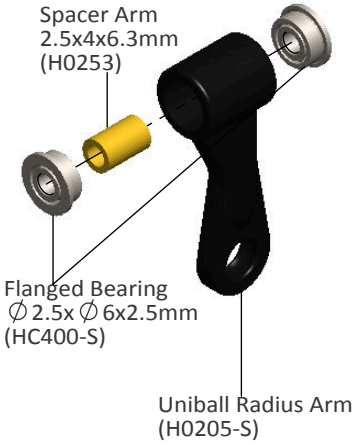
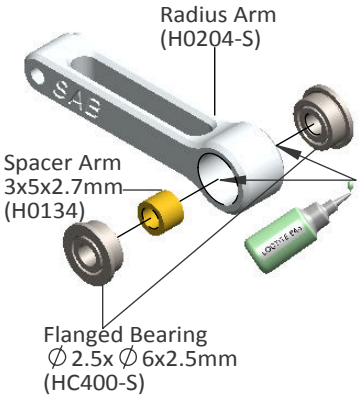
6-Main Rotor



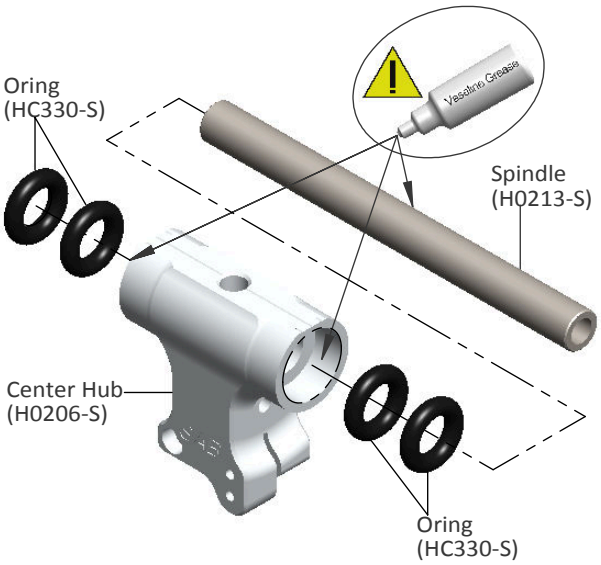
Uniball Radius Arm ... x 2 Assembly



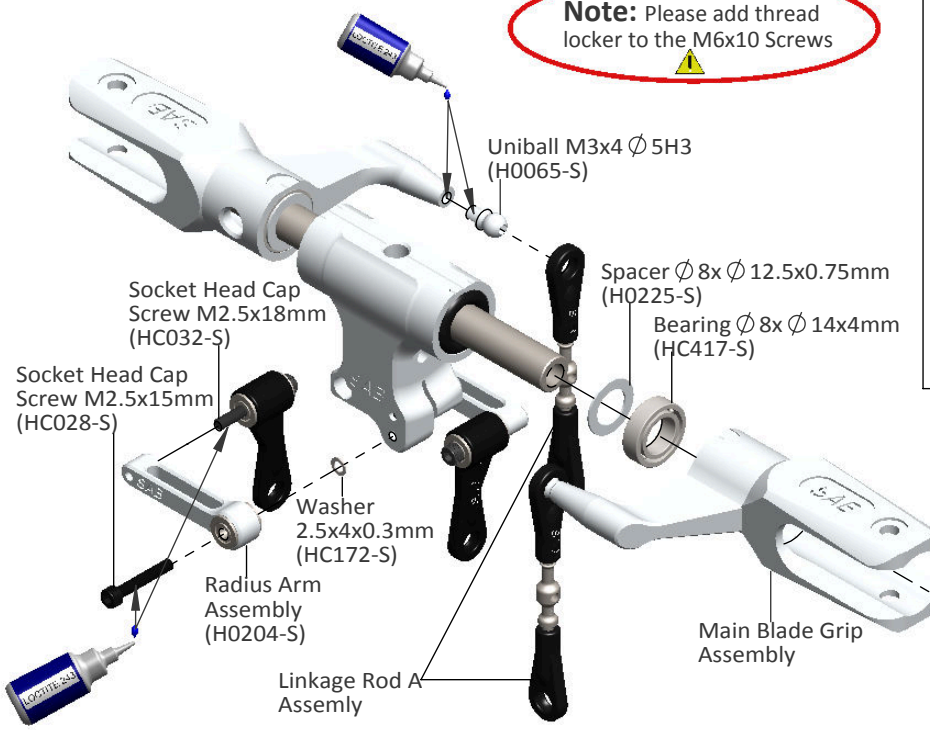
Radius Arm ... x 2 Assembly



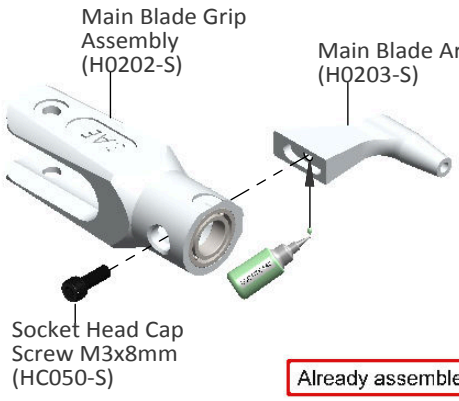
Center Hub Assembly



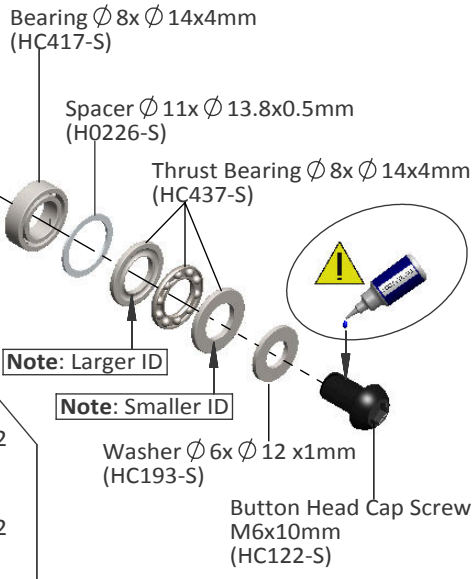
Note: Please add thread locker to the M6x10 Screws



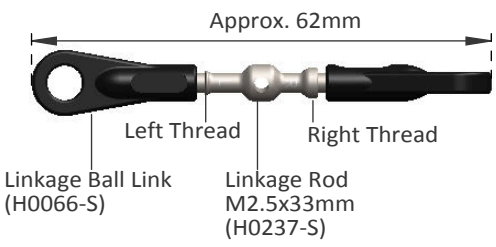
Main Blade Grip Assembly x2



Already assembled



Linkage Rod A Assembly x2



(Initial length for the rods from the swashplate to the blade grip.)

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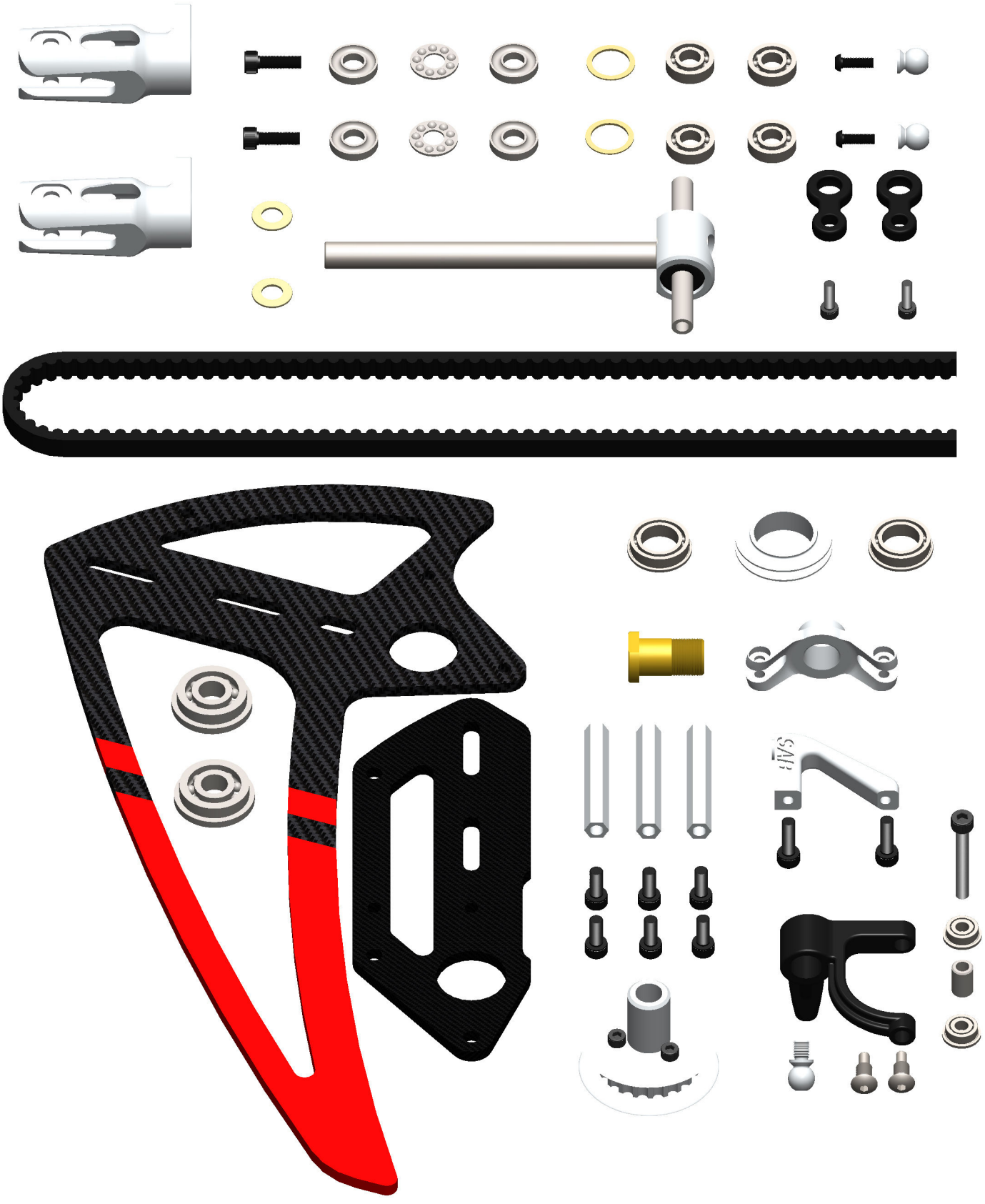
7-Tail



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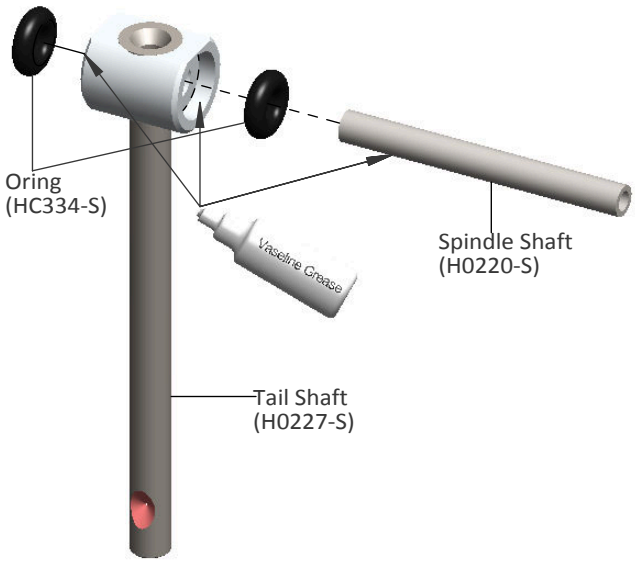
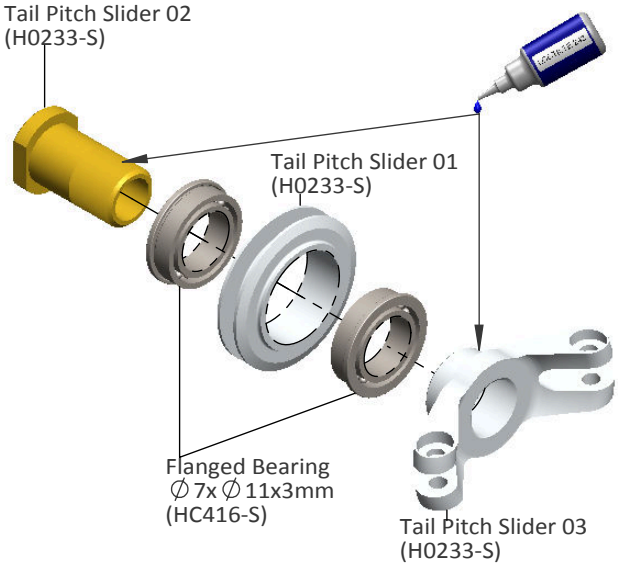
Tray 1, Bag 5.1, Bag 5.2

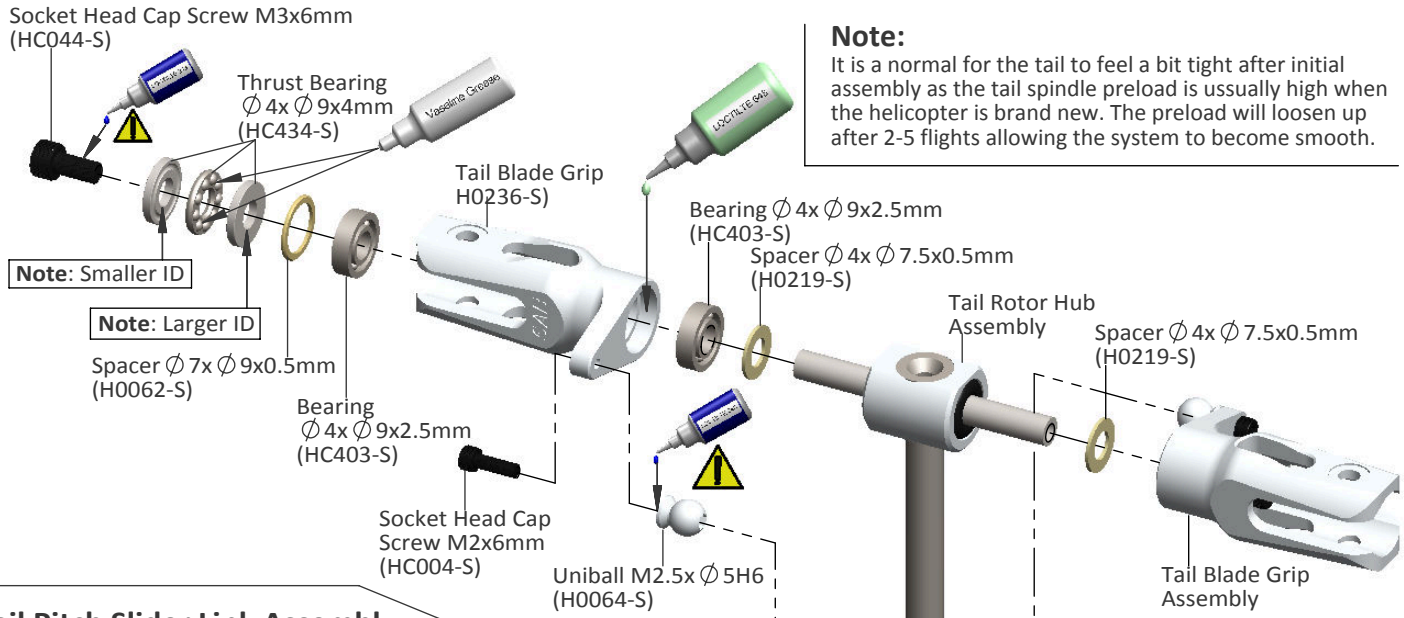
Tail Rotor Hub Assembly



Tail Pitch Slider Assembly

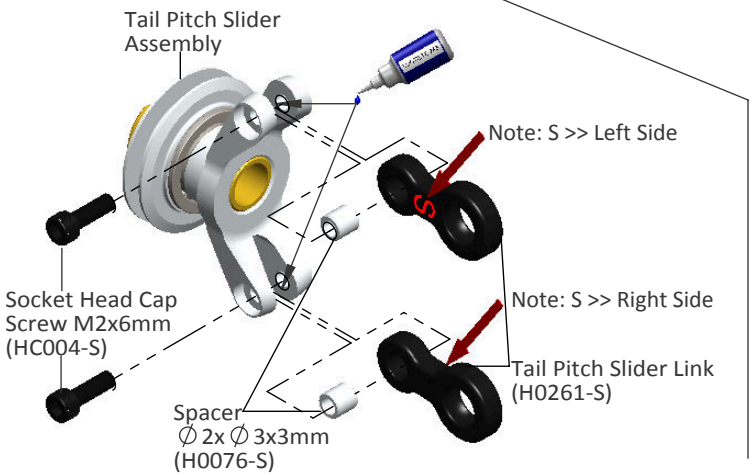
Already assembled

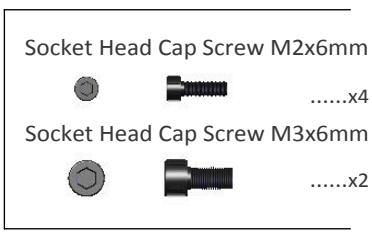




Note:
It is a normal for the tail to feel a bit tight after initial assembly as the tail spindle preload is ussually high when the helicopter is brand new. The preload will loosen up after 2-5 flights allowing the system to become smooth.

Tail Pitch Slider Link Assembly





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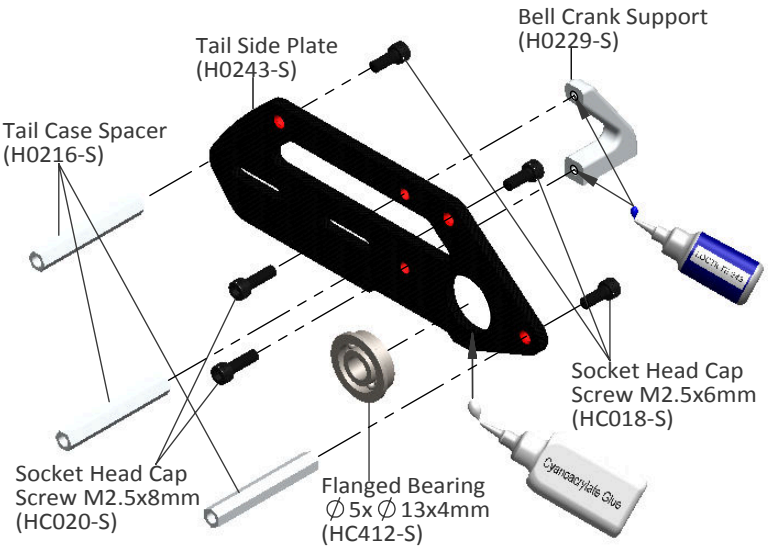
Tray 1, Bags 5.3, 5.4, 5.5, 5.6

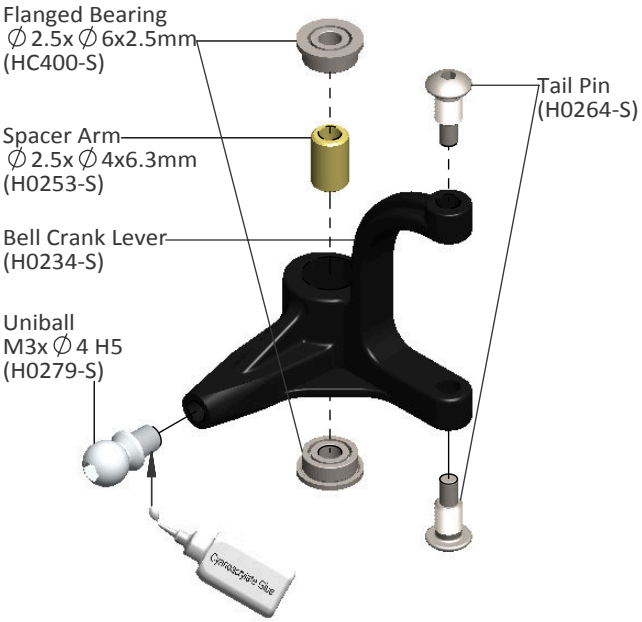
Tail Side Plate Assembly



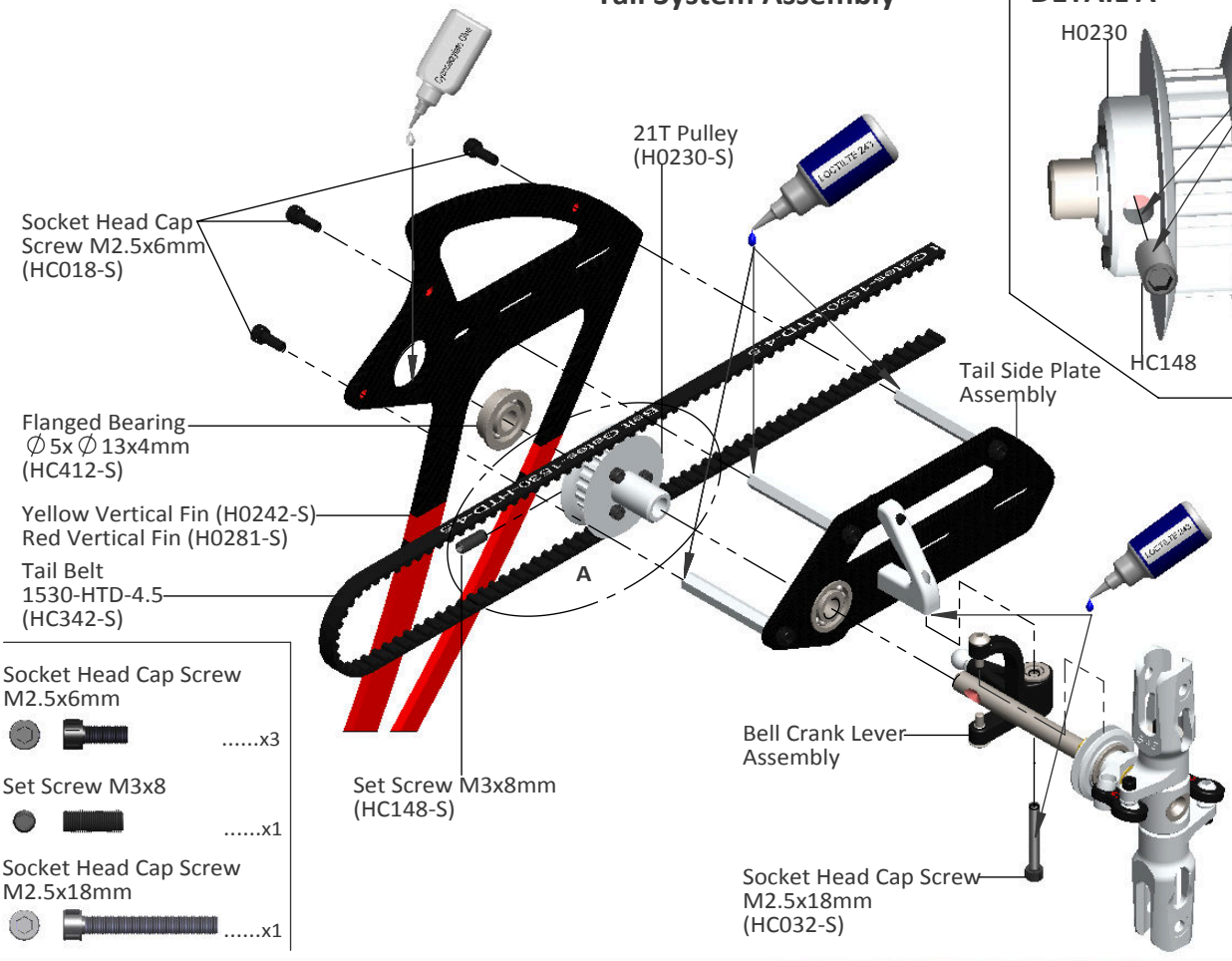
Socket Head Cap Screw M2.5x6mm x3

Socket Head Cap Screw M2.5x8mm x2

Bell Crank Lever Assembly



Tail System Assembly

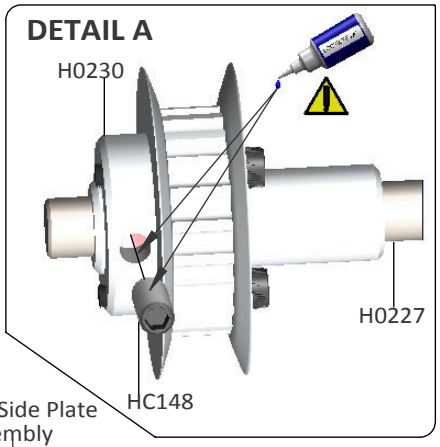


Socket Head Cap Screw M2.5x6mm x3

Set Screw M3x8 .....x1

Socket Head Cap Screw M2.5x18mm x1

DETAIL A



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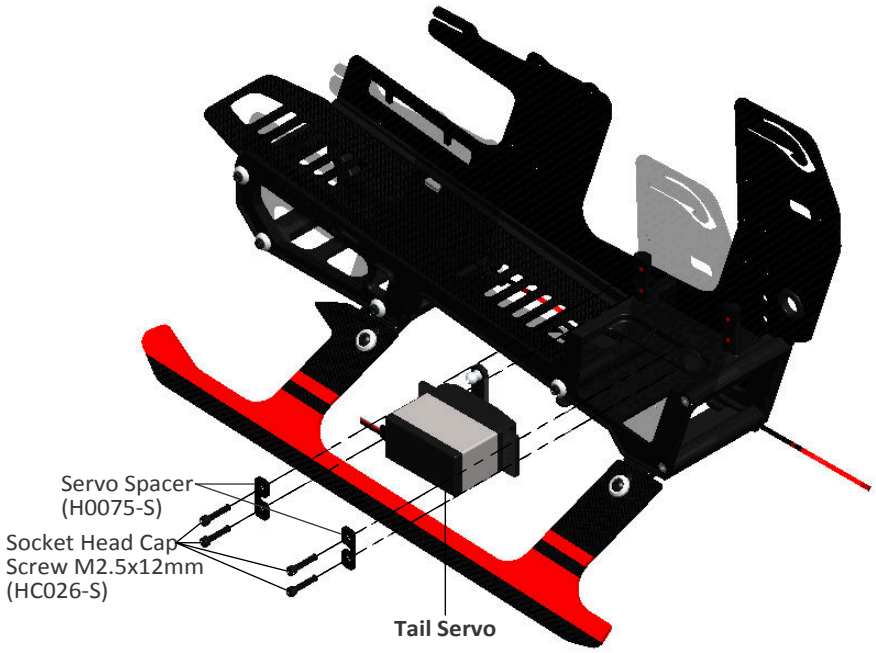
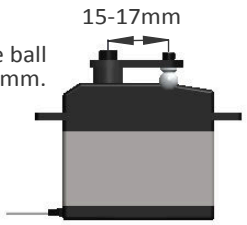
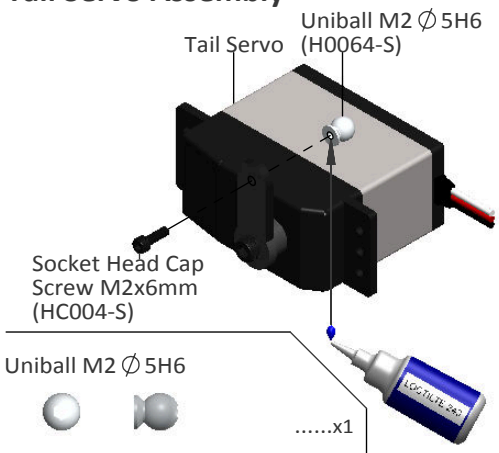
Tray 1, Bags 6.1, 6.2



The distance between the center of the horn and the ball should be between 15-17 mm.



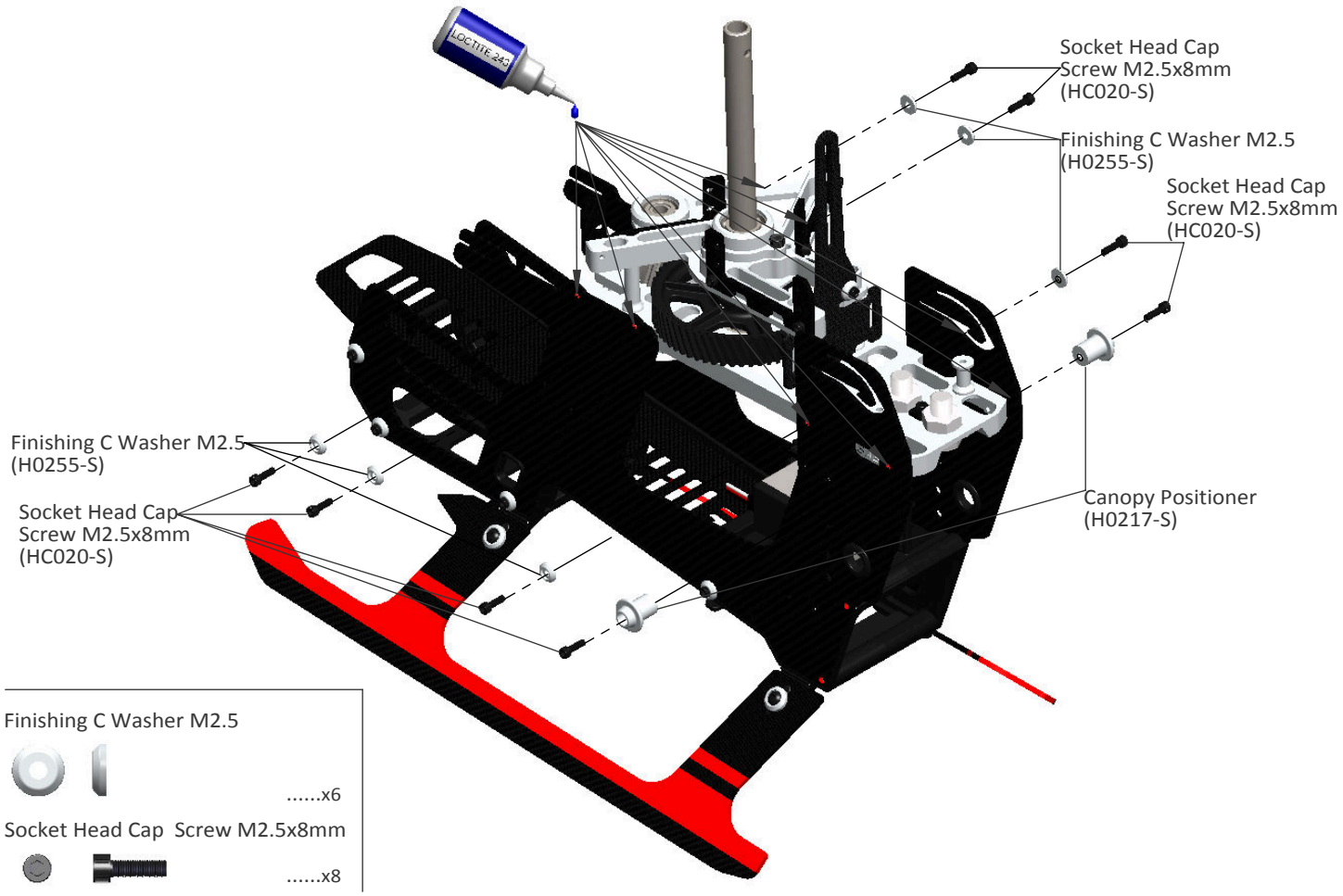
Tail Servo Assembly



Uniball M2 ∅5H6 .....x1

Socket Head Cap Screw M2x6mm x1

Socket Head Cap Screw M2.5x12mm x4



Finishing C Washer M2.5 .....x6

Socket Head Cap Screw M2.5x8mm x8

Installation Of The Swashplate Servos

The distance between the center of the horn and the ball should be between **16-18 mm (Figure 1)**.
Select the carbon fiber servo mount that is suitable for the size of servos to be used **(Figrure 2)**.

Fig. 1

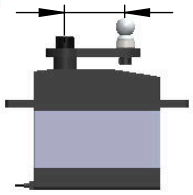


Fig. 2

Servo Mounting

The servo linkages must be aligned correctly. In order to do this, you must chose from one of the options shown here.
Figure 3 shows the installation of the servos at 120 degrees. Note that the distance between the carbon fiber servo mount and the center of the ball should be 18.5mm.
Figure 4 shows 4 different mounting options, the distance "X" should be as close as possible to 18.5mm.

Fig. 3

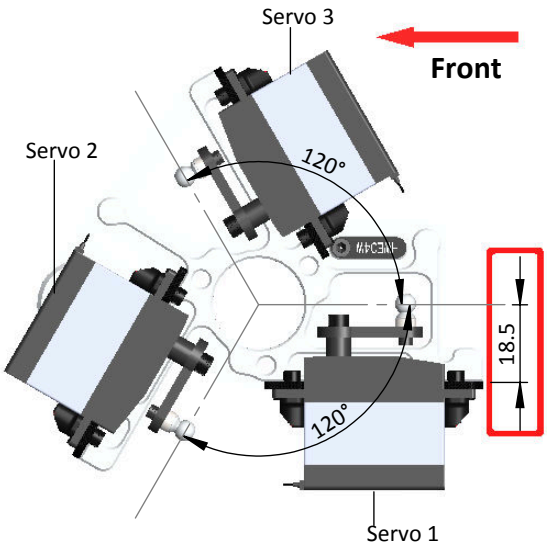
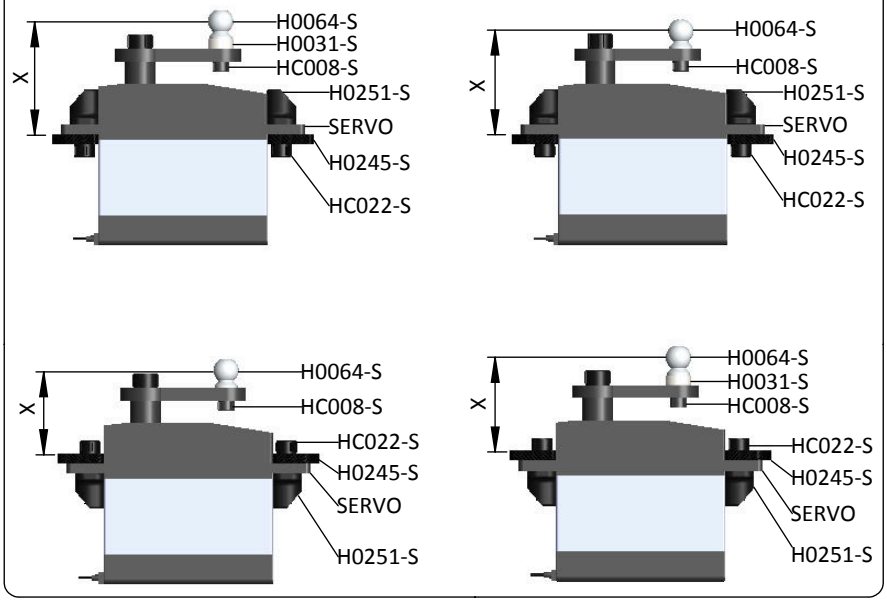
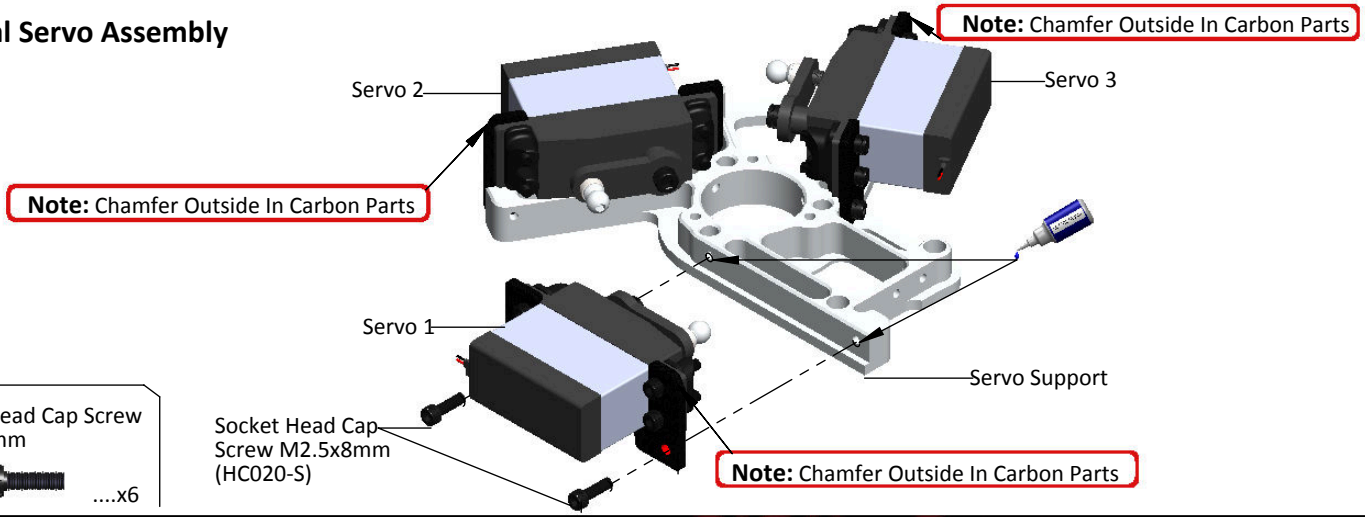


Fig. 4

Servo Mounting Options



Final Servo Assembly



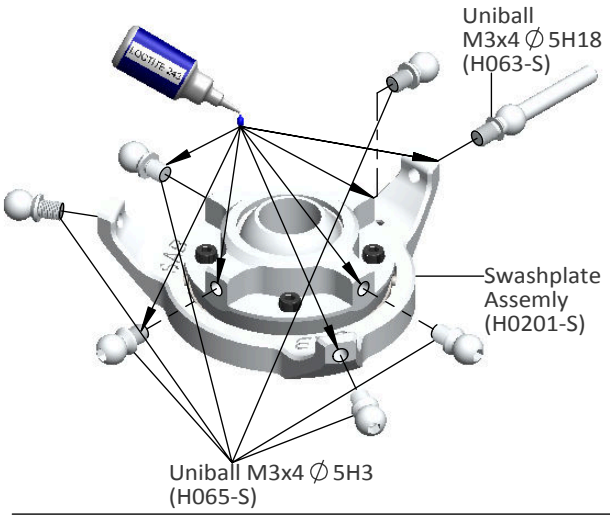
Socket Head Cap Screw M2.5x8mm

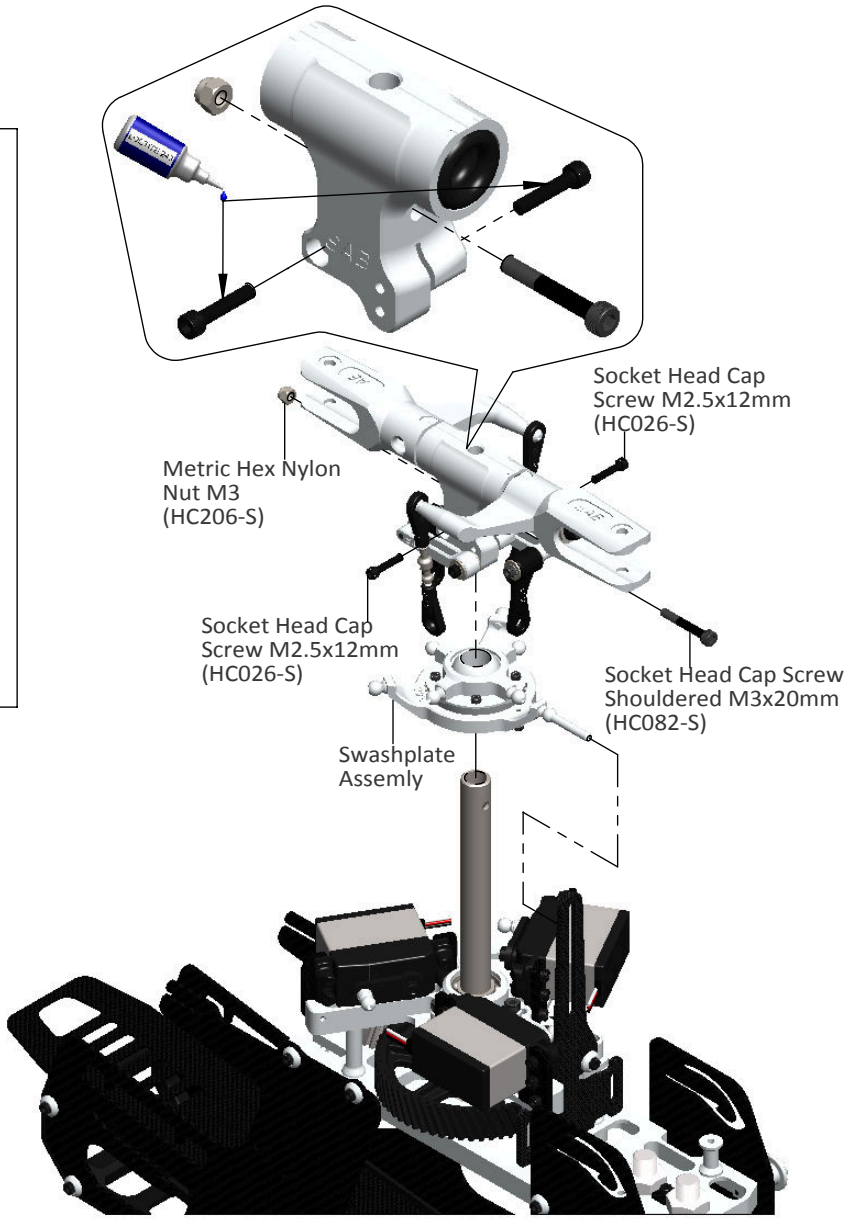
....x6

SAB Heli Division

Tray 1, Bags 6.6, 6.7

Swashplate Assembly





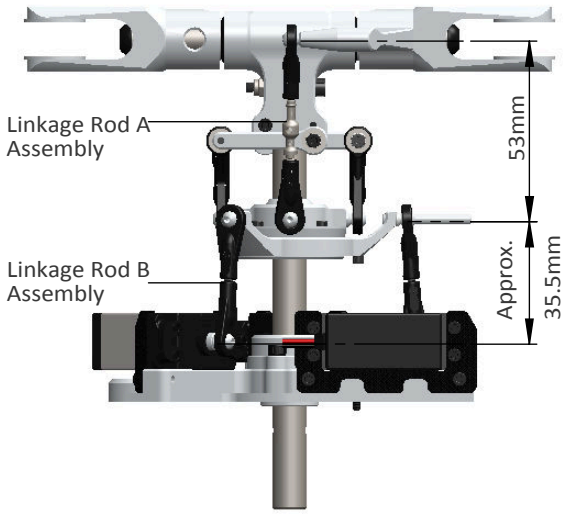
Metric Hex Nylon Nut M3 ....x1

Socket Head Cap Screw M2.5x12mm x2

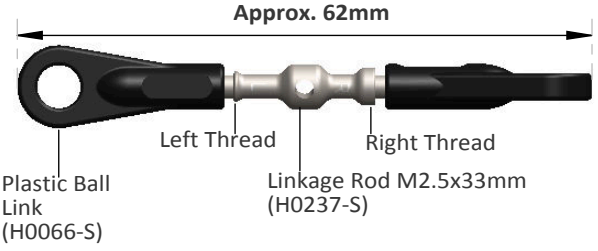
Socket Head Cap Screw Shouldered M3x20mm x1

Preliminary Head Setup

Adjust the linkages as shown. You can change the tracking without disconnecting the plastic ball links by inserting a small tool through the rod hole and turning it.

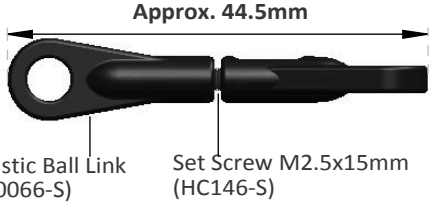


Linkage Rod A Assembly x2



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

Linkage Rod B Assembly x3



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

SAB Heli Division

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 moror and battery combination. It is recommended to use wiring and connector 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 165 teeth for 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:

H0215-15-S-15T	Pinion = ratio 11:1	H0215-20-S-20T	Pinion = ratio 8.26:1
H0215-16-S-16T	Pinion = ratio 10.33:1	H0215-21-S-21T	Pinion = ratio 7.87:1
H0215-17-S-17T	Pinion = ratio 9.72:1	H0215-22-S-22T	Pinion = ratio 7.51:1
H0215-18-S-18T	Pinion = ratio 9.18:1	H0215-23-S-23T	Pinion = ratio 7.19:1
H0215-19-S-19T	Pinion = ratio 8.7:1	H0215-24-S-24T	Pinion = ratio 6.91:1

These are pulleys for motors with a 6 mm shaft. Each pulley includes an adapter for motors with a 5 mm shaft.

Some example configurations:

GOBLIN 500 CONFIGURATIONS

Performance	Battery	Mortor	ESC	Pinion	Gov	RPM Max	Pitch
GENERAL	6S 3300/4500	Scorpion HK 4015-1070	CC Talon 90	19T	SET RPM	2450	± 12,5
			Koby 90 YGE 100 LV	18T	Gov @ 80%		
		Quantum 4115-1200	CC Talon 90	17T	SET RPM		
			Koby 90 YGE 100 LV	16T	Gov @ 80%		
3D	6S 3300/4500	Pyro 600-1200	CC Talon 90	18T / 19T / 20T	SET RPM	2600 / 2700 / 2850	± 12,5
			Jive 100LV YGE 120 LV	17T / 18T / 19T	Gov @ 80%		
		Quantum 4120-1200	CC Talon 90	18T / 19T / 20T	SET RPM		
			Jive 100LV YGE 120 LV	17T / 18T / 19T	Gov @ 80%		
		Scorpion HK4020-1100	CC Talon 90	19T / 20T / 21T	SET RPM		
			Jive 100LV YGE 120 LV	18T / 19T / 20T	Gov @ 80%		
		Scorpion HK4020-1350	CC Talon 90	16T / 17T / 18T	SET RPM		
			Jive 100LV YGE 120 LV	15T / 16T / 17T	Gov @ 80%		
		Savox BMS 4750-1200	CC Talon 90	18T / 19T / 20T	SET RPM		
			Jive 100LV YGE 120 LV	17T / 18T / 19T	Gov @ 80%		

Note: Although the Goblin can fly at high RPM, for safety reasons we recommend not exceeding 2900 RPM.

De-Burr The Side Frames

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

ESC Installation

The electronic speed control (ESC) is intalled in the front part of the helicopter.
If you have drilled the 4 holes (Fig 1) as suggested on page 5, you can easily fasten the ESC with cable ties as shown in figures 2 and 3.

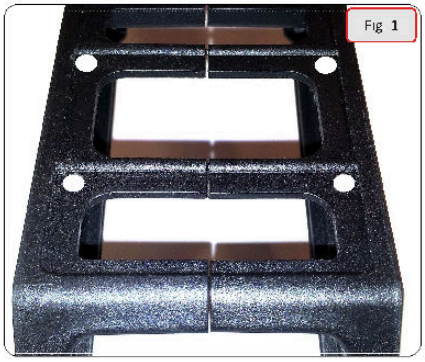


Fig 1

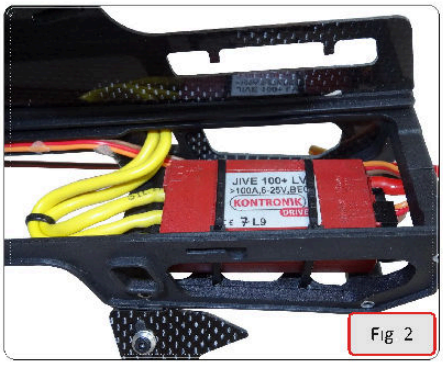


Fig 2

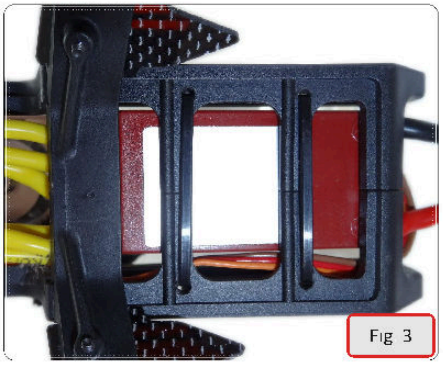


Fig 3

Figure 4: You can see the wiring for connecting the ESC to the central unit. Use cable ties to fasten the wires as indicated by the arrows.

Figure 5: Route the ESC throttle wire as shown, you can use hot glue to keep the wire in place.

Figure 6: You can install a BEC if required as shown.


Fig 4

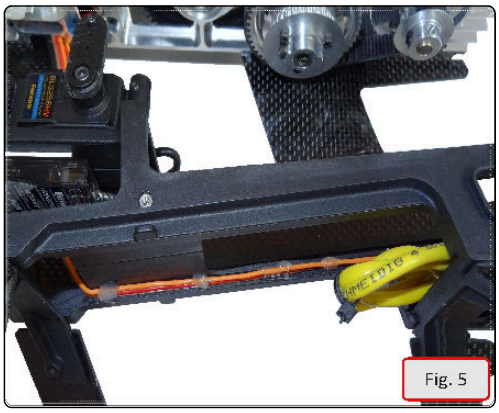


Fig. 5

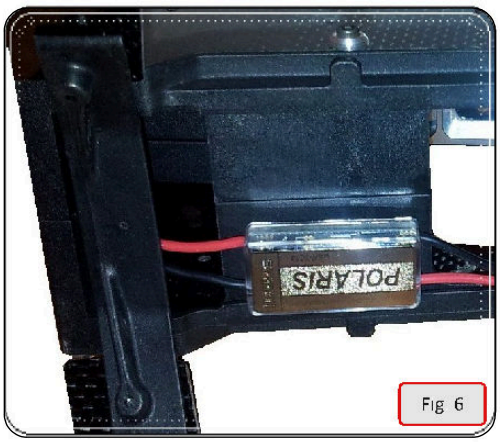


Fig 6

Motor Belt Tension

- Install the motor and pulley to the motor mount plate.
- Place the motor assembly in position.
- Compress the springs by pushing the motor towards the main shaft.
- At max compression, tighten one of the slide screws temporarily.
- Put the belt around the motor pulley first, then put it around the big pulley.
- Rotate the motor a few times by hand to allow the belt to site properly.
- Loosen up the slide screw; the springs will tension the belt.
- Help the springs by pulling the motor and tighten.
- The belt must be very tight.
- Make sure to tighten all screws and nuts.

Figure 1 shows the correct wiring for the motor. We recommend to use heat shrink in the joins between the motor and the ESC wires.

Check for proper vertical alignment of the motor pulley. Simply turn the motor several times by hand in the direction of normal rotation (counter clock-wise when viewed from above) and check to see if the belt is aligned with the big pulley. If the belt is riding too high, simply loosen up the motor pulley and drop it a bit, if it is riding too low, loosen up the motor pulley and raise it a bit (Fig 2 - 3).

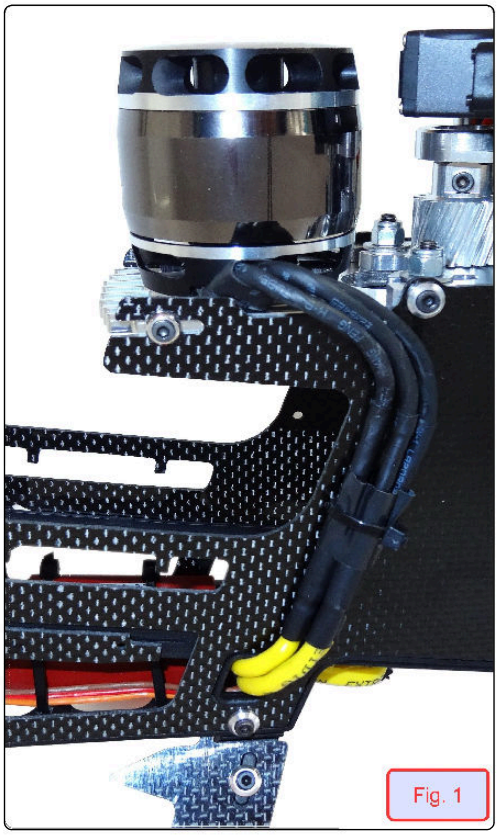
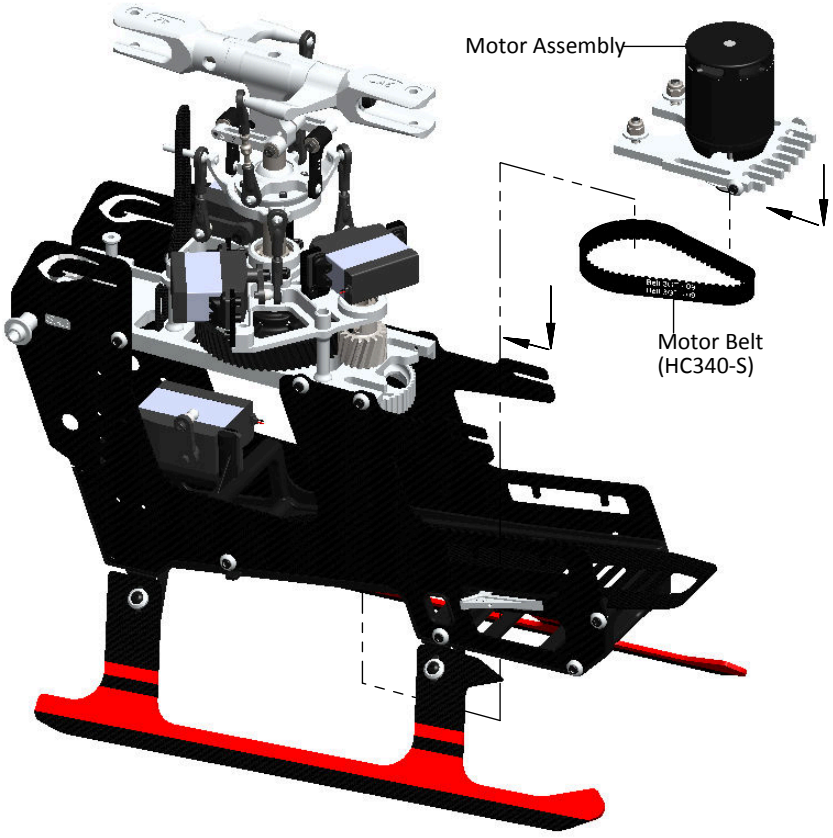
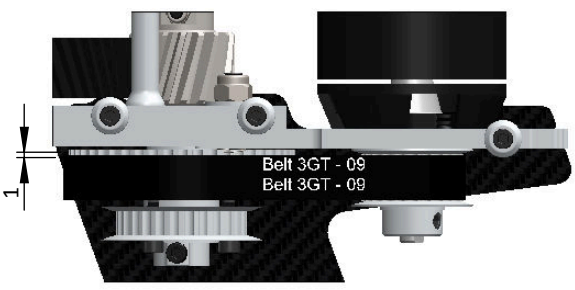


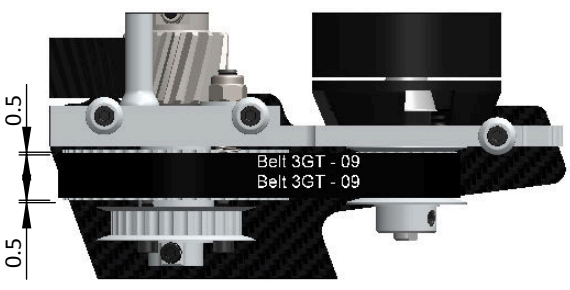
Fig. 1





INCORRECT

Fig. 2



CORRECT

Fig. 3

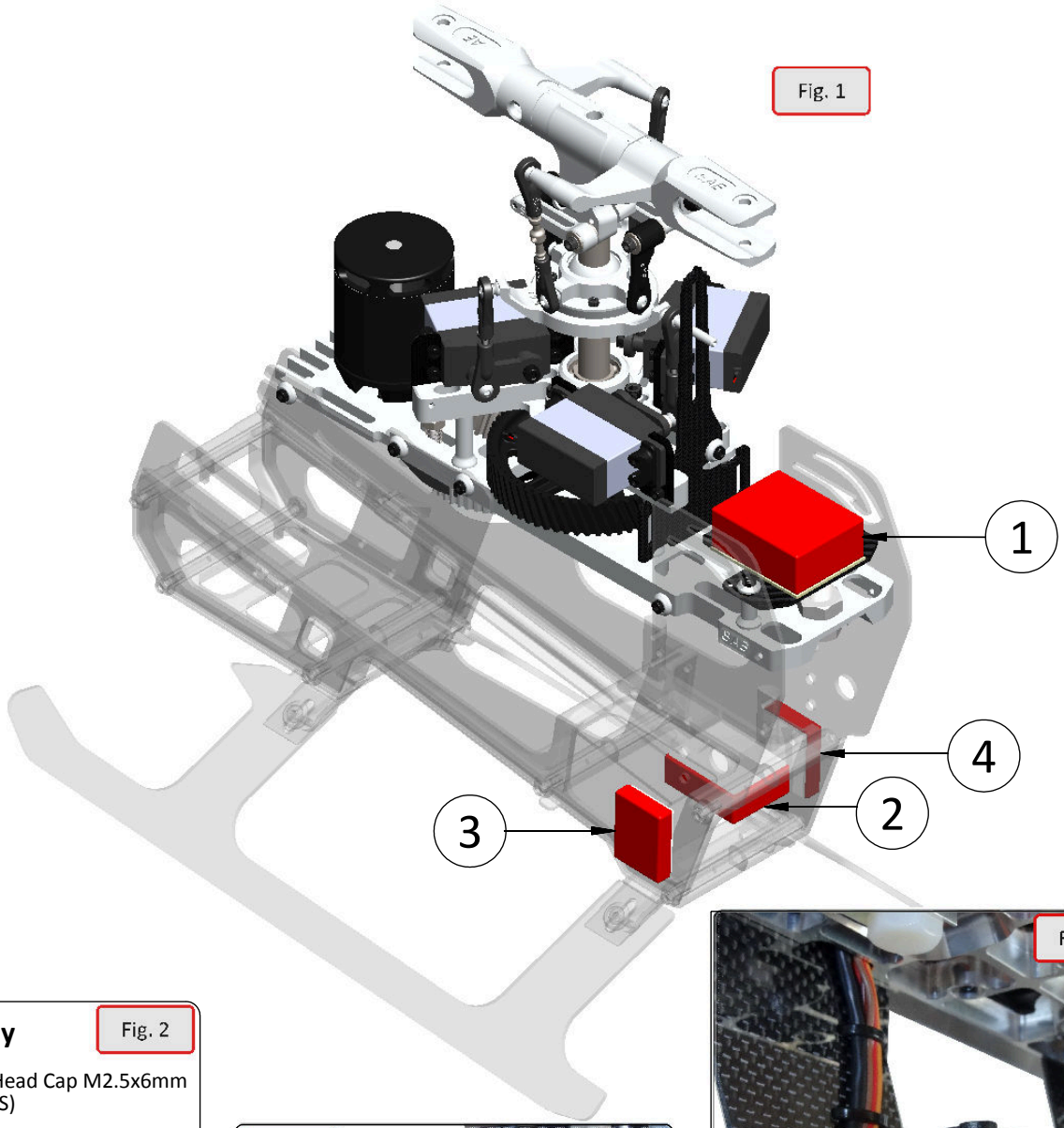
FBL System Installation

We recommend the use of a one unit flybarless system, i.e. Mini vBar, Microbeast, etc. However, a two unit flybarless system can also be installed. For one unit systems, the unit is installed as shown in position 1 (Fig 1)

Two unit systems can be installed as follows: control unit in position 1 and sensor in position 2 or vice-versa. (Fig 1). See Fig 2, 3 & 4.

Position 3 and 4 can be used for a Spektrum sattelite. (Fig 1)

Fig. 1



FBL Assembly

Fig. 2

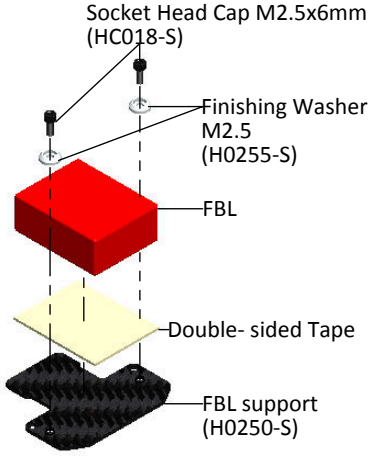


Fig. 3

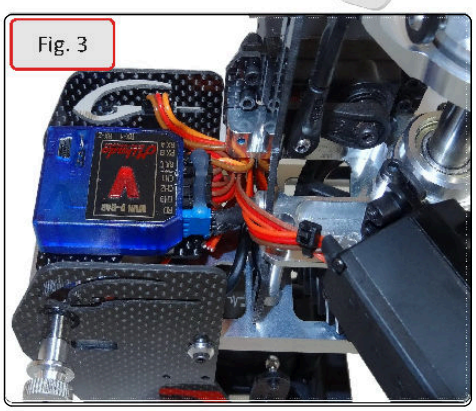
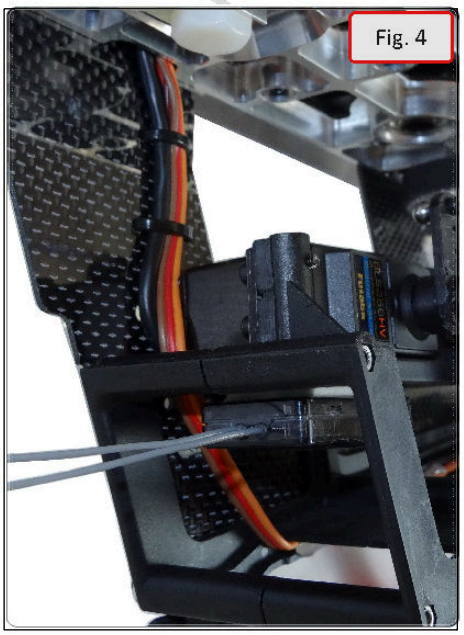
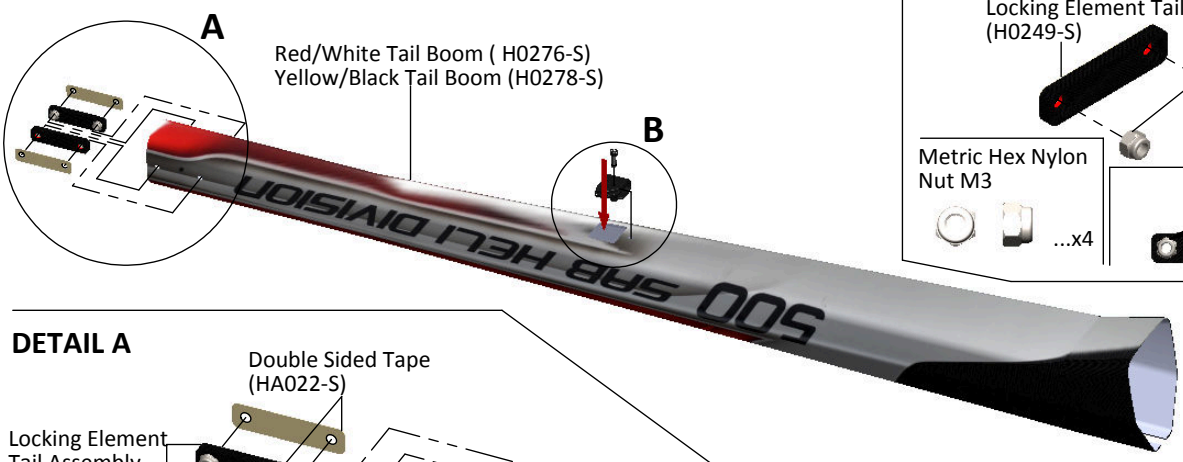


Fig. 4

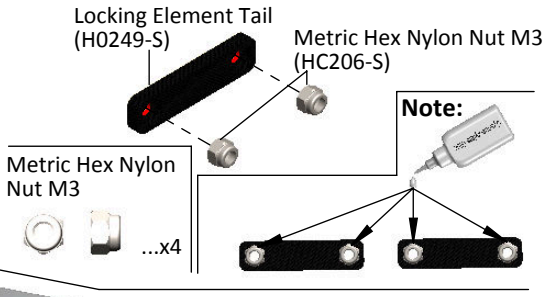


Bags 7.3, 7.4

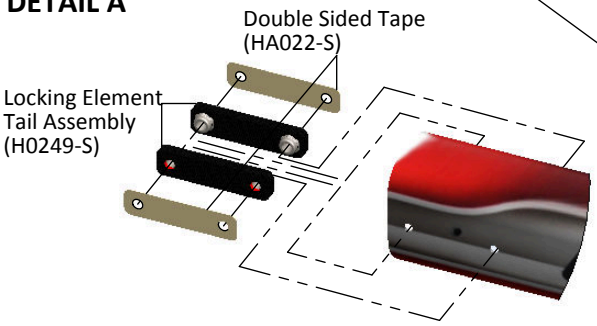
Tail Boom Assembly



Locking Element Tail Assembly ...x2



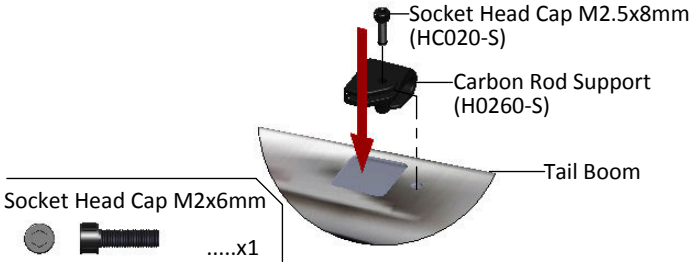
DETAIL A

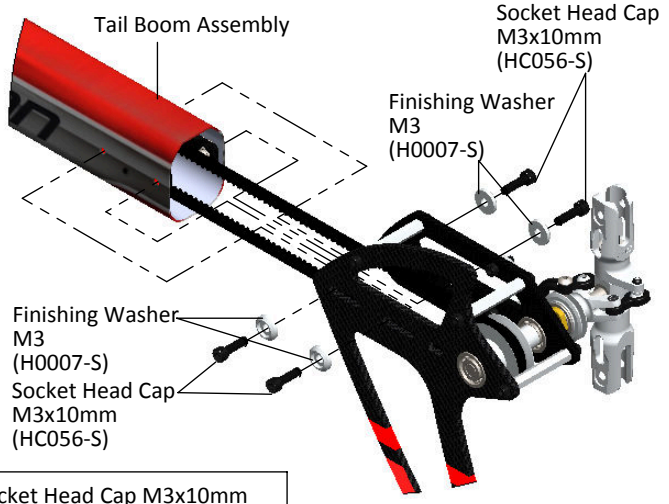


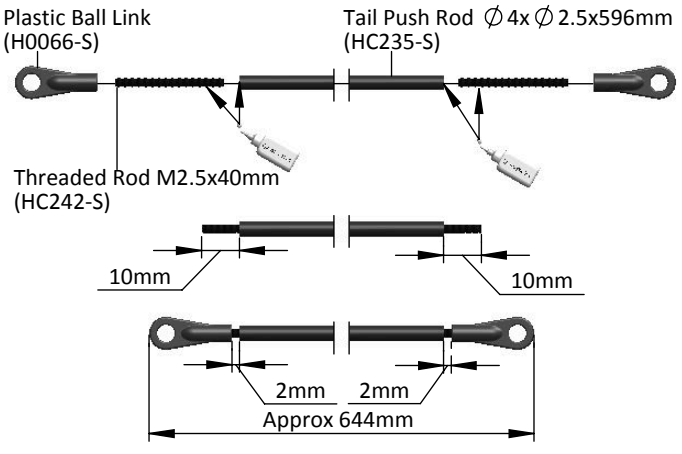
DETAIL B

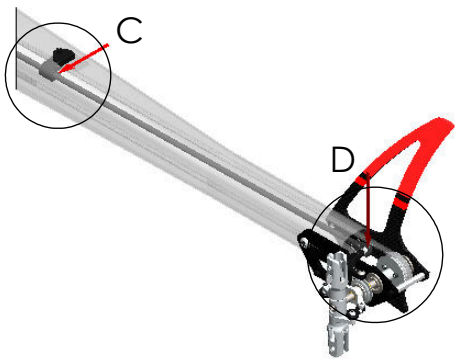
Install H0260-S On The Boom

Before mounting H0260 on the boom, we recommend to first tighten the M2.5 screw into the hole to open up the threads a bit. This will allow for easier installation.

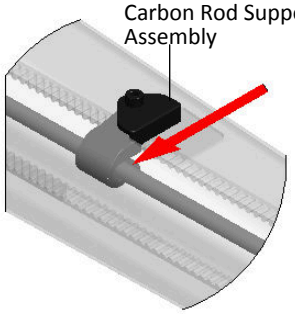








DETAIL C

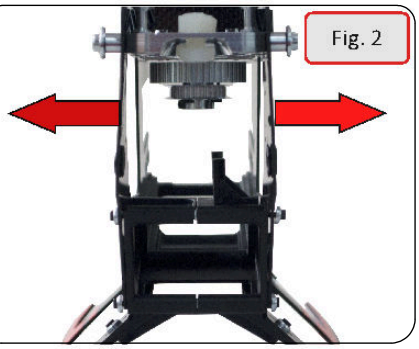


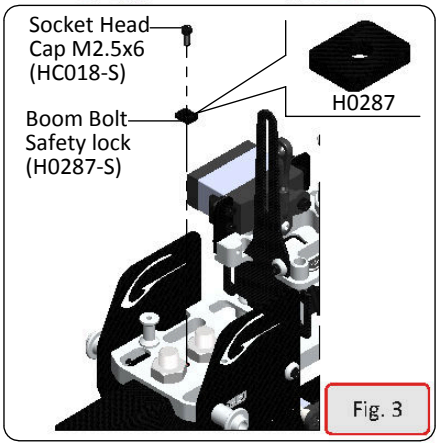
DETAIL D

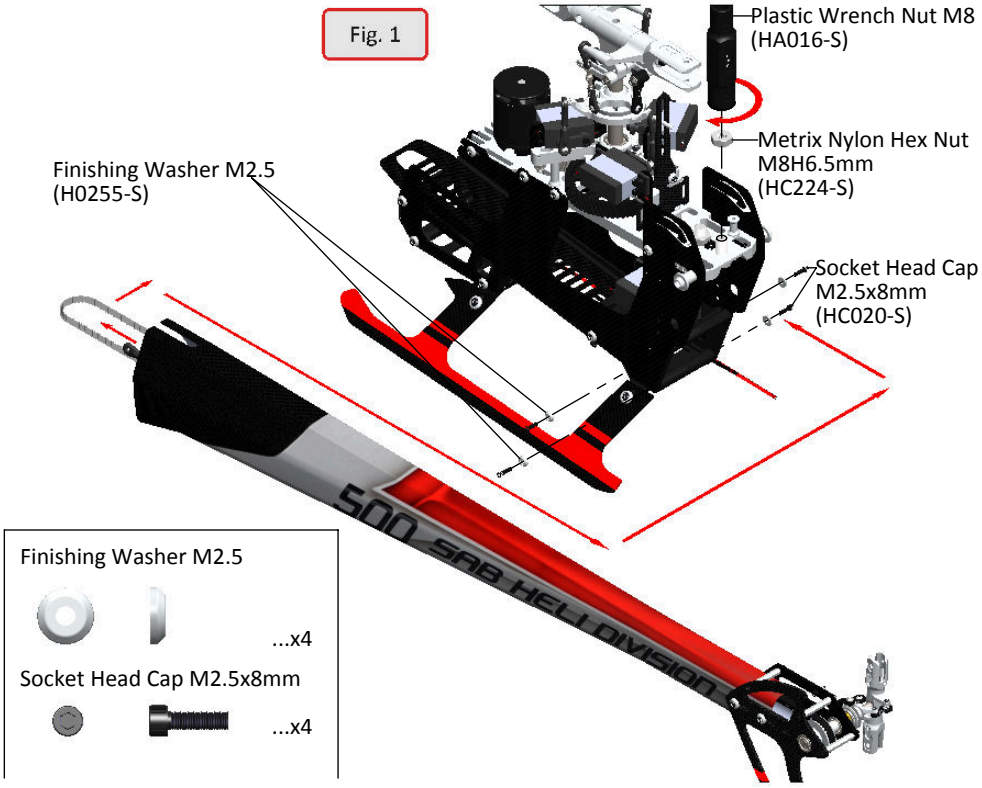
Bag 7.5

Installation Of The Boom

- Make sure the 4 2.5x8 screws that go in the rear section of the side frames (2 on each side) are not installed or tightened all the way.
- Insert the boom in place helping enlarging the frame (Fig 1,2).
- Push the boom forward until the nylon bolts bottom out against the end of the slot on the boom.
- Tighten the nylon bolts
- Insert or tighten the 4 side frame screws.
- For additional safety, install the boom bolt safety lock (Fig 3)







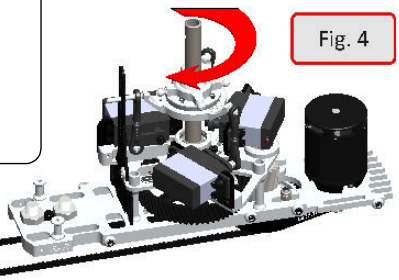
Finishing Washer M2.5 ...x4

Socket Head Cap M2.5x8mm ...x4

Tail Belt Tension

- Make sure the boom is assembled and installed correctly.
- Loosen up the tail case by loosening the 4 M3 screws.
- Mount the tail belt on the front pulley making sure the direction of rotation is correct (Fig 4).
- Adjust the belt tension by pulling on the tail case.
- Tighten the 4 M3 screws.
- Check that the tail output shaft is perpendicular to the boom (Fig 5).
- Connect the tail push rod to the tail servo.
- Make sure the tail belt and carbon rod are free, check the belt to ensure it is not twisted.

NOTE: To remove the tail boom from the helicopter, it is possible to remove the front tail pulley H0218-S without having to loosen up the tail case. Simply remove the locking screw and pull.



Batteries

The Goblin has a quick release battery tray system.
The batteries must be installed onto the battery tray to take advantage of the quick release locking system.
Install the battery to the battery tray using double sided tape and the long Velcro straps included.
Make sure to find the right position of the battery to optimize the center of gravity.
To insert the battery, simply align the battery tray in the slots at the front of the helicopter and slide all the way. The battery will lock in place.
To remove the battery, simply lift up on the locking lever (Fig 4) and pull.

IMPORTANT: Make sure the battery is locked in place before flight; the battery tray must be inside the slots on both sides! When removing the battery, pull gently on the locking lever, using excessive force can break the area of carbon that supports the locking lever damaging the quick release mechanism.

Fig. 1

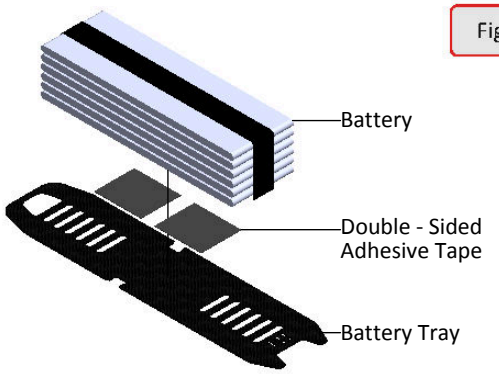


Fig. 2

Fig. 3

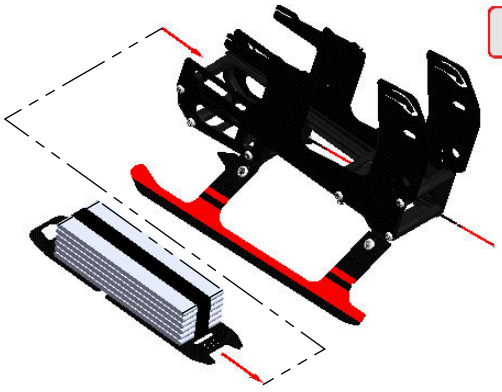
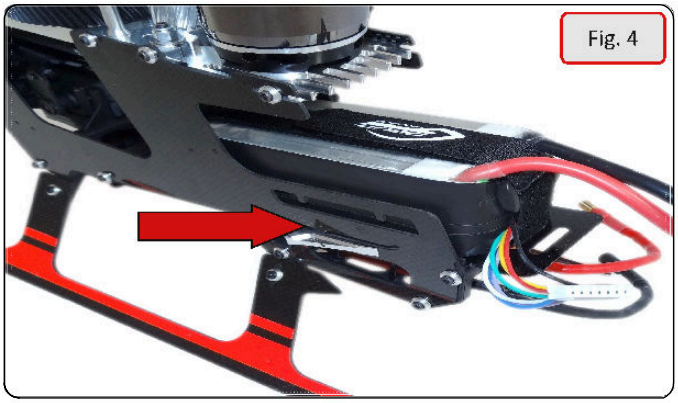


Fig. 4



Canopy

The canopy touches the frames on the Goblin, this is normal and expected as it is part of the design. To avoid canopy damage due to high frequency vibration, it is necessary to attach the adhesive foam tape HA006 to the canopy. [Bag 8] (Fig 5).

Install the canopy grommets [Bag 8] as shown in Figure 5.
The canopy locks in the front as shown by the arrow in Figure 6 and in the rear by the canopy screws H0248 [Tray 2] (Fig 7).

Fig. 7

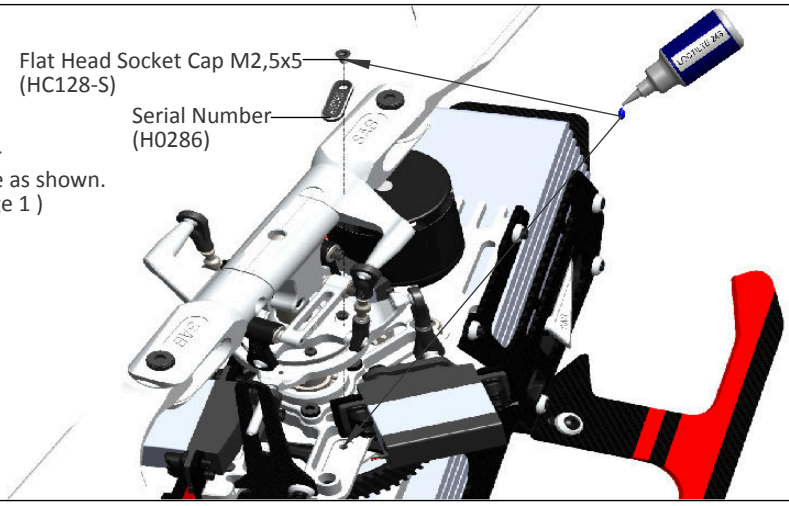
Fig. 5

Fig. 6

Serial Number

Serial Number Tag

In bag 9, you will find the serial number tag for your helicopter. Install the tag on the servo support plate as shown. Please remember to register your product.(See page 1)



Operations Before Flight

*Set up the transmitter and the flybarless system with utmost care.
*It is advisable to test and verify all the settings on the transmitter and flybarless system without the main or tail blades on initially.
*Check that all wiring is isolated from the carbon/aluminum parts. It is good practice to protect them in the areas 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 increased rpm. Although the Goblin can fly at high rpm, for safety reasons we suggest to not exceed 2900 rpm on the Goblin 500.

*Check the correct tension of the tail belt, use common sense; the belt should be tight enough, but not too tight.
*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.
*Check the collective and cyclic pitch range. For 3D flight, set about +/- 12°-13°. The outer marks in the blade grips and head hub indicate 13°.
*It is important to check the correct tracking of the main blades.
*On the Goblin 500, in order to correct the tracking, adjust the main link rod as shown in figure 3. The threads are opposite, one side clock-wise and the other side counter clock-wise, this system allows for continuous fine adjustments of the length of the control rod; it is not necessary to detach any of the ball links.
*The tail of the Goblin 500 is quite unique in the sense that the tail hub is dampened like the main rotor head. It is normal for the tail slider to be a bit tight in the very beginning as the tail spindle preload is usually a bit high when the helicopter is brand new. The preload will loosen up after a few flights once the o-rings start to wear, it is completely normal for the tail blade grips to have what appears to be “lose dampening” over time.

*Perform the first flight at a lower head speed than normal, for example 2400 rpm. After this first flight, do a general check of the helicopter. Verify that all screws and bolts are correctly tightened.

Fig. 1

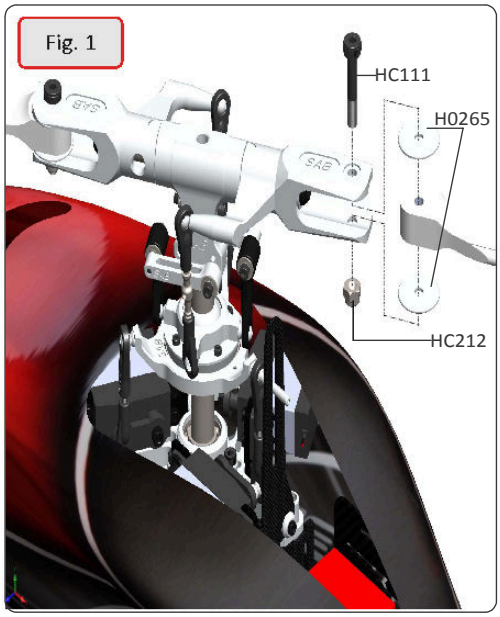


Fig. 2

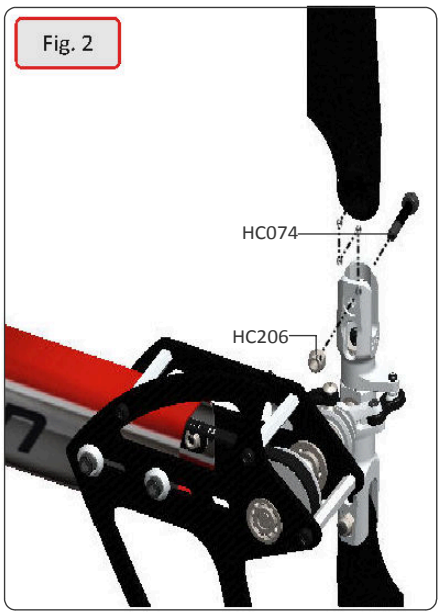
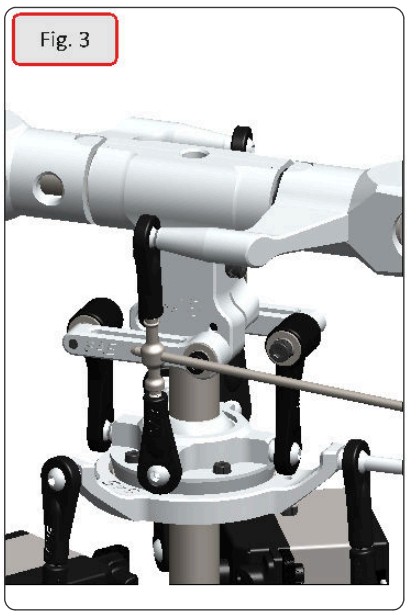


Fig. 3



In Flight

The Goblin 500 has been tested at head speeds as low as 1800 rpm and as high as 3000 rpm. However, due to the nature of the head and dampening system, the model could exhibit swaying phenomena at some lower head speeds between 1800 rpm and 2400 rpm.

This phenomena is noticeable in the elevator axis and can present itself at different head speed ranges based on the types of blades used, flybarless system gains, etc., usually this goes away by increasing or decreasing the head speed in order to move away from the harmonic's rpm.

For 3D flight, it is recommended a head speed of 2400 rpm or higher, at these higher head speeds, the phenomena is non-existent as the machine is then outside this harmonic range.

The Goblin 500 uses the HPS head (High Precision System)

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

The dampening preload is set for optimal flying characteristics at a wide range of rpms, it is recommended not to change the preload by adding or removing shims.

Maintenance

*On the Goblin 500, some areas to look for wear include:

* Motor belt
* Tail belt
* Dampers
* Main gear and pinion

*The lifespan of these components varies according to the type of flying. On average it is recommended to check these parts every **100** flights. In some instances, based on wear, these parts should be replaced every **200** flights.

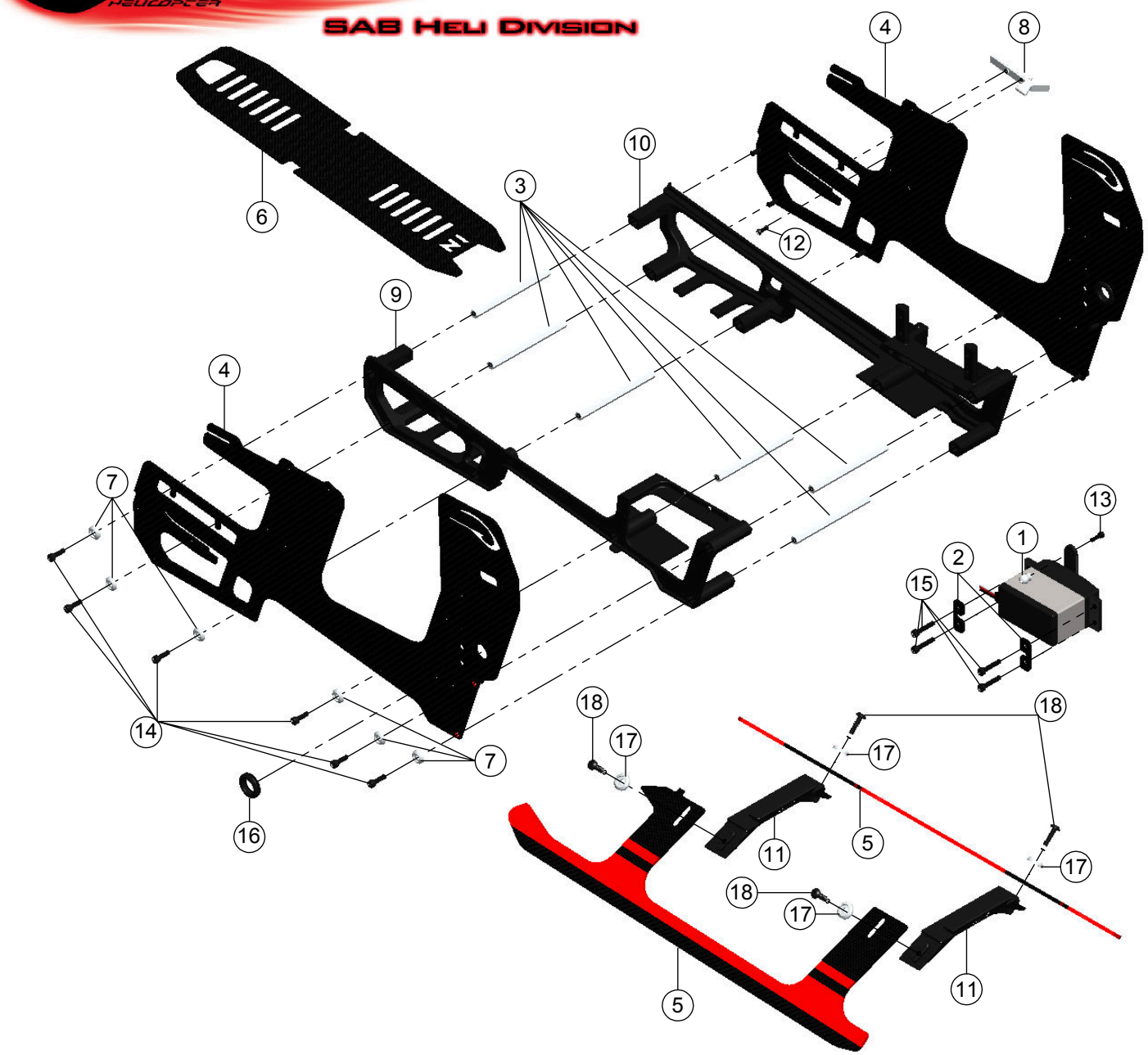
*The most stressed bearings are definitely those on the tail shaft. Check them frequently. All other parts are not particularly subject to wear.

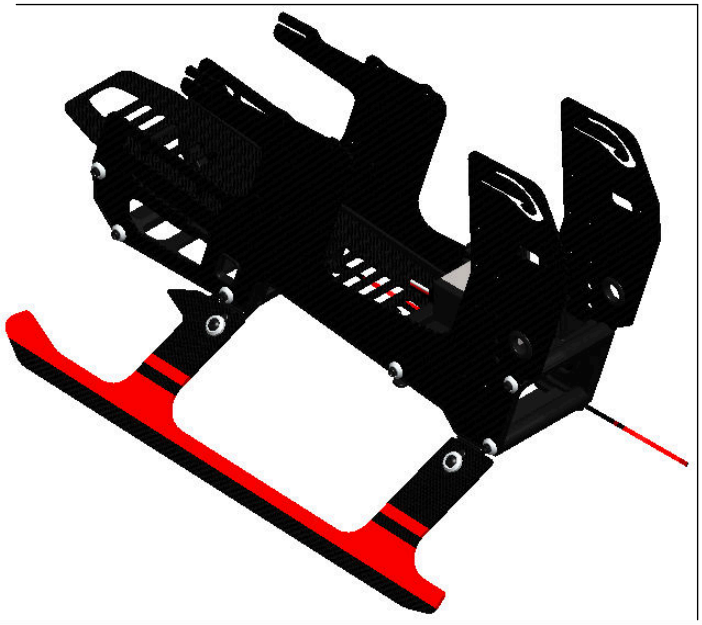
*Periodically lubricate the tail slide movement and its linkages as well as the swash plate movement and its linkages.

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

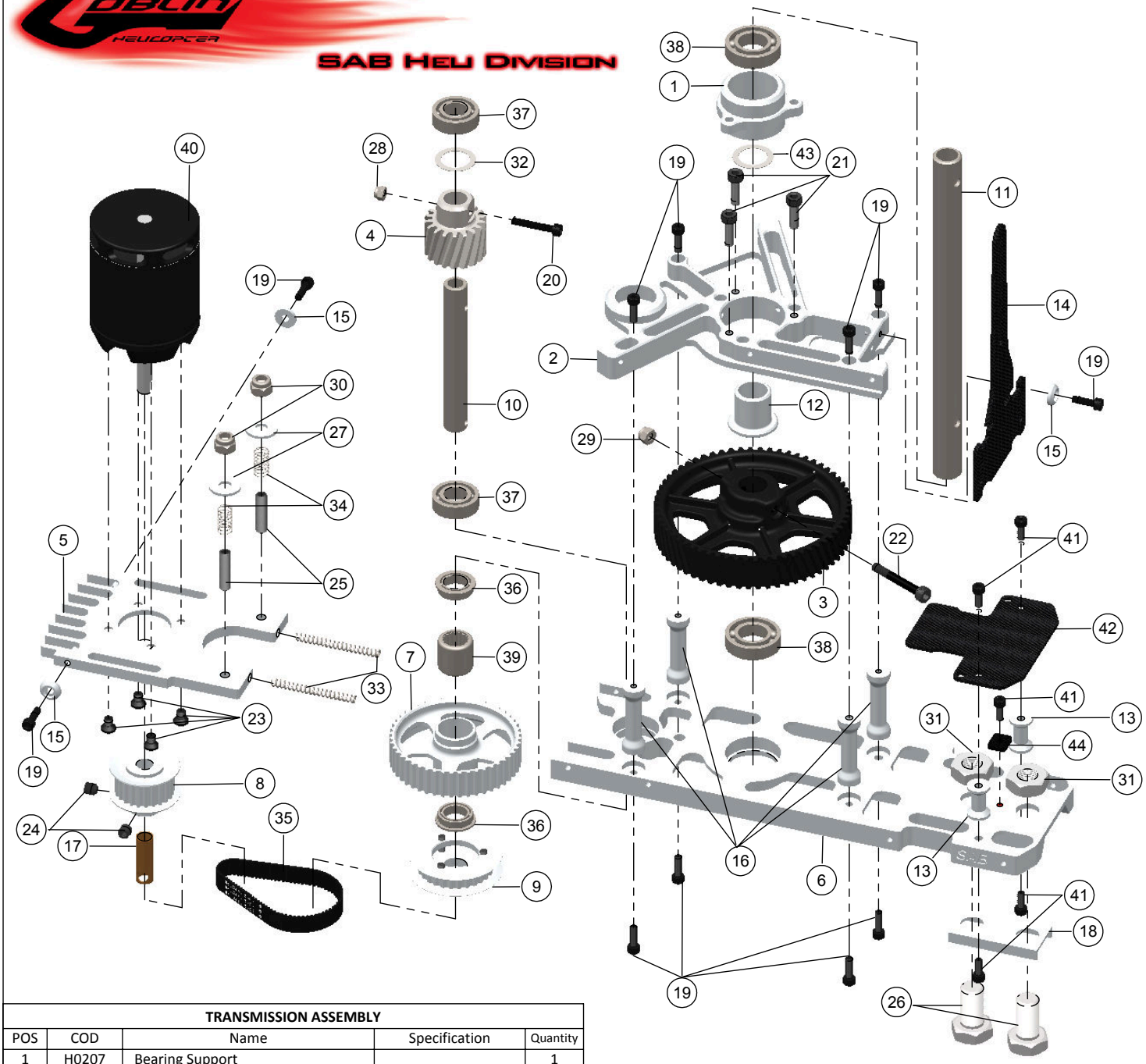
* Proper belt tension (motor belt and tail belt).
* Proper isolation of the wires from the carbon and aluminum parts.
* All screws remain tight.

After a crash, please inspect the carbon servo mounts (H0245 or H0246) to make sure they are not cracked or weakened. Failure to check and detect a possible crack could result in a future crash if a carbon servo mount breaks in flight.



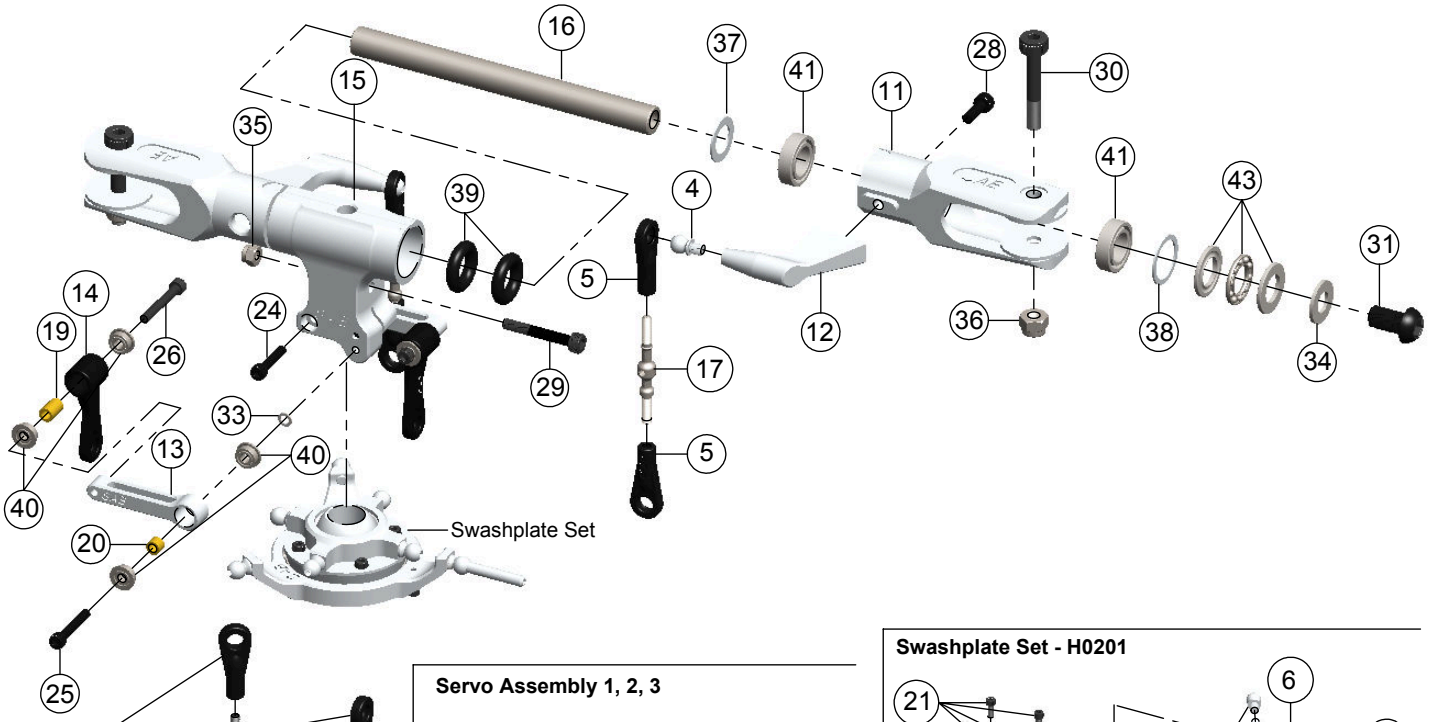


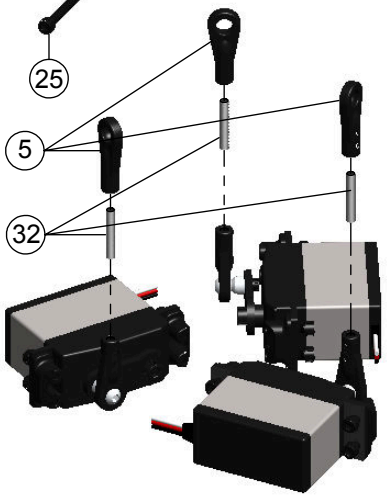
Main Frame				
POS	COD	Name	Specification	Quantity
1	H0064	Uniball	M2 ∅ 5H6	1
2	H0075	Servo Spacers	Carbon Fiber	2
3	H0239	Frames Spacer	Aluminum	6
4	H0240	Main Frame	Carbon Fiber	2
5	H0281	Red Landing Gear	Carbon Fiber	2
	H0241	Yellow Landing Gear		
6	H0252	Battery Tray	Carbon Fiber	1
7	H0255	Finishing Washers	M2.5	12
8	H0256	Battery Block	Aluminum	1
9	H0258	Battery Support Sx	Plastic	1
10	H0259	Battery Support Sx	Plastic	1
11	H0262	Landing Gear Supports	Plastic	2
12	HC005	Button Head Cap Screws	M2x5mm	1
13	HC004	Socket Head Cap Screws	M2x6mm	1
14	HC020	Socket Head Cap Screws	M2.5x8mm	12
15	HC026	Socket Head Cap Screws	M2.5x12mm	4
16	HA021	Canopy Grommet	Rubber	2
17	H0007	Finishing Washers	M3	4
18	HC136	Seft Tapping Hex Socket Screw	M3x10	4



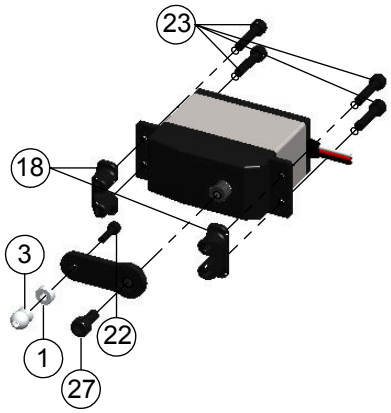
TRANSMISSION ASSEMBLY				
POS	COD	Name	Specification	Quantity
1	H0207	Bearing Support		1
2	H0208	Servo Support		1
3	H0209	Main Gear	62T	1
4	H0210	Pinion	18T	1
5	H0211	Motor Support		1
6	H0212	Main Structure		1
7	H0214	Pulley	48T	1
8	H0215	Pulley	18T	1
9	H0218	Pulley	28T	1
10	H0221	Secondary Shaft		1
11	H0222	Main Shaft		1
12	H0223	Spacer	Ø10x Ø16x14.6mm	1
13	H0224	Sensor Suport		2
14	H0244	SwashPlate Anti-Rotation Guide		1
15	H0255	Finishing Washer	M2.5	3
16	H0263	Column		4
17	H0266	Bush	Ø5x Ø6x18mm	1
18	H0267	Block Nut		1
19	HC020	Socket Head Cap Screws	M2.5x8mm	11
20	HC022	Socket Head Cap Screws	M2.5x10mm	4
20	HC028	Socket Head Cap Screws	M2.5x15mm	1
21	HC056	Socket Head Cap Screws	M3x10mm	3
22	HC083	Socket Head Cap Screw Shouldered	M3x22mm	1
23	HC132	Flat Head Socket Cap	M3x5mm	4

TRANSMISSION ASSEMBLY				
POS	COD	Name	Specification	Quantity
24	HC152	Cone Point Set Screws	M4x4mm	2
25	HC154	Cup Point Set Screws	M4x15mm	2
26	HC164	Nylon Screw	M8x14mm	2
27	HC184	Washer	Ø4.3x Ø11x1mm	2
28	HC200	Metrix Hex Nylon Nut	M2.5xH3.5	1
29	HC206	Metrix Hex Nylon Nut	M3	1
30	HC212	Metrix Hex Nylon Nut	M4H5	2
31	HC224	Metrix Nylon Hex Nut	M8H6.5	2
32	HC228	Washer	Ø8x Ø14x0.2mm	1
33	HC311	Sping	de 3/ df 0.53 / LL35	2
34	HC316	Sping	de 5/ df 0.3 / LL6	2
35	HC340	Belt Gates		1
36	HC418	Flanged Bearing	Ø8x Ø12x3.5mm	2
37	HC419	Bearing	Ø8x Ø16x5mm	2
38	HC422	Bearing	Ø10x Ø19x5mm	2
39	HC440	One Way Bearing	Ø8x Ø12x12mm	1
40	Motor			1
41	HC018	Socket Head Cap Screws	M2.5x6mm	5
42	H0250	FBL Support		1
43	HC234	Washer	Ø10x Ø16x0.1mm	1
44	H0287	Boom Bolt Safety lock		1

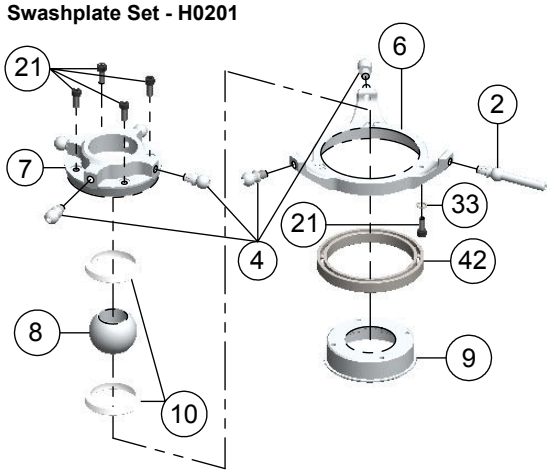




Servo Assembly 1, 2, 3



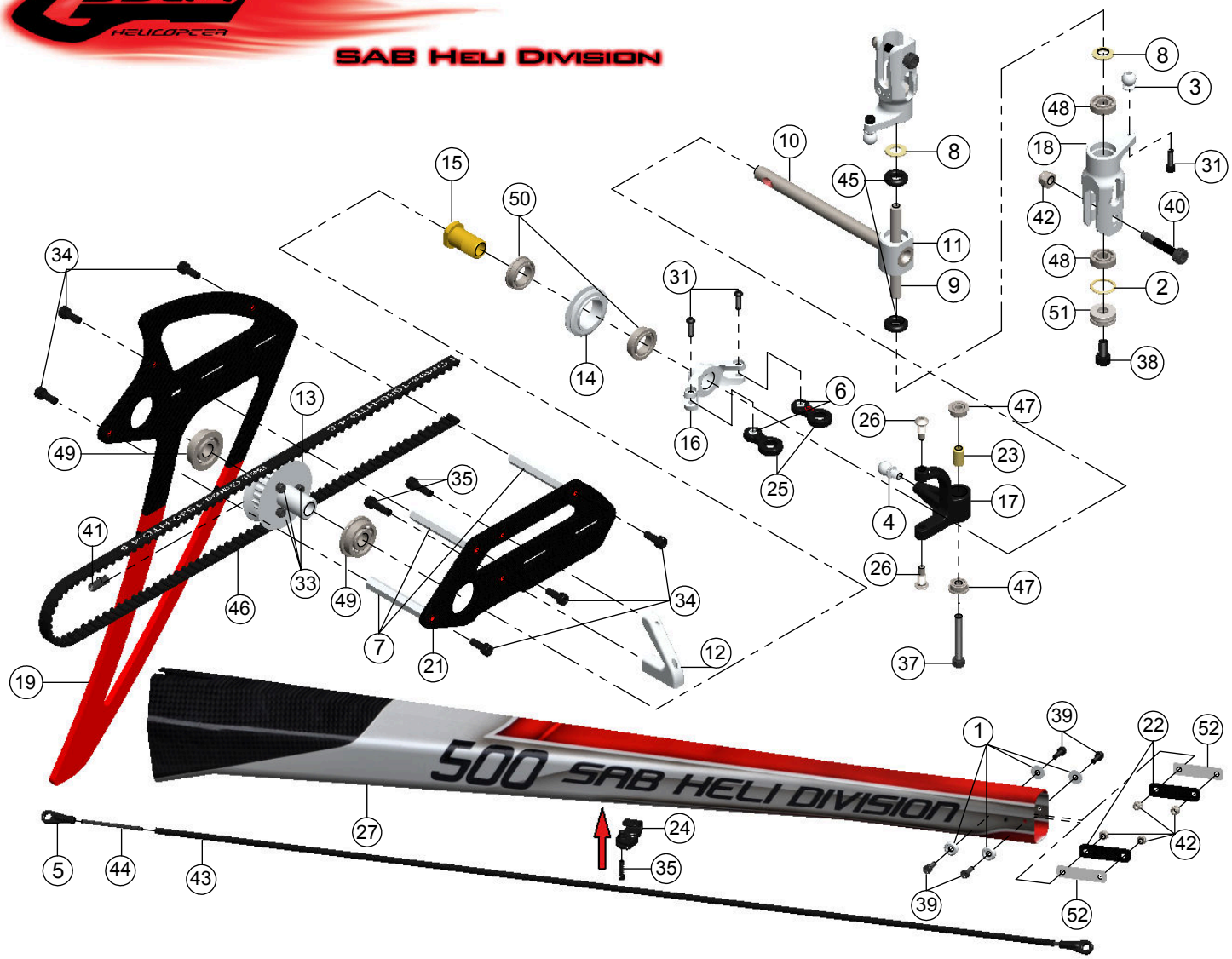
Swashplate Set - H0201



Head System				
POS	COD	Name	Specification	Quantity
1	H0031	Uniball Spacers	Ø2 x Ø5 x 2mm	2
2	H0063	Uniball	M3 x 4 Ø5 H18	1
3	H0064	Uniball	M2.5 Ø5 H6	1
4	H0065	Uniball	M3 x 4 Ø5 H3	8
5	H0066	Plastic Ball Linkages	Plastic	10
6	H0201-1	Swashplate 01		1
7	H0201-2	Swashplate 02		1
8	H0201-3	Swashplate 03		1
9	H0201-4	Swashplate 04		1
10	H0201-5	Swashplate 05		2
11	H0202	Blade Grips	Aluminum	2
12	H0203	Blade Grip Arms	Aluminum	2
13	H0204	Radius Arms	Aluminum	2
14	H0205	Unibal Radius Arms	Plastic	2
15	H0206	Center Hub	Aluminum	1
16	H0213	Spindle Shaft	Ø8 x 89mm	1
17	H0237	Linkage Rod	M2.5 x 33mm	2
18	H0251	Servo Spacers	Plastic	6
19	H0253	Spacer Arm	Ø2.5 x Ø4 x 6.3mm	2
20	H0254	Spacer Arm	Ø2.5 x Ø4 x 3mm	2
21	HC005	Button Head Cap Screws	M2 x 5mm	6
22	HC004	Socket Head Cap Screws	M2 x 6mm	3

Head System				
POS	COD	Name	Specification	Quantity
23	HC022	Socket Head Cap Screws	M2.5 x 10mm	18
24	HC026	Socket Head Cap Screws	M2.5 x 12mm	2
25	HC028	Socket Head Cap Screws	M2.5 x 15mm	2
26	HC032	Socket Head Cap Screws	M2.5 x 18mm	2
27	HC044	Socket Head Cap Screws	M3 x 6mm	3
28	HC050	Socket Head Cap Screws	M3 x 8mm	2
29	HC082	Socket Head Cap Screw Shouldereds	M3 x 20mm	1
30	HC111	Socket Head Cap Screw Shouldereds	M4 x 24mm	2
31	HC122	Button Head Cap Screws	M6 x 10mm	2
32	HC146	Set Screws	M2.5 x 15mm	3
33	HC172	Washers	Ø2.5 x Ø4 x 0.3mm	3
34	HC193	Washers	Ø6.1 x Ø12 x 1mm	2
35	HC206	Metric Hex Nylon Nut	M3 H4	1
36	HC212	Metric Hex Nylon Nuts	M4 H5	2
37	HC225	Spacers	Ø8 x Ø12.5 x 0.75mm	2
38	HC226	Spacers	Ø11 x Ø13.8 x 0.5mm	2
39	HC330	Orings		4
40	HC400	Flanged Bearings	Ø2.5 x Ø6 x 2.5mm	8
41	HC417	Bearings	Ø8 x Ø14 x 4mm	4
42	HC430	Bearings	Ø30 x Ø37 x 4mm	1
43	HC437	Thrust Bearings	Ø8 x Ø14 x 4mm	2

SAB Heli Division

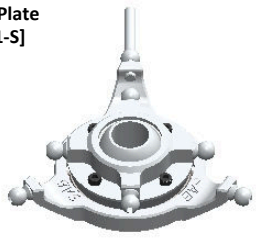


TAIL SYSTEM				
POS	COD	Name	Specification	Quantity
1	H0007	Finishing Washer M3	Aluminum	4
2	H0062	Spacer	Ø7 x Ø9 x 5mm	2
3	H0064	Uniball	M2 Ø5H6	2
4	H0279	Uniball	M3x4 Ø5H5	1
5	H0066	Plastic Ball Linkages	Plastic	2
6	H0076	Spacer	Ø2 x Ø3 x 3mm	2
7	H0216	Tail Case Spacer	Aluminum	3
8	H0219	Spacer	Ø4 x Ø7.5 x 0.5mm	2
9	H0220	Spindle Shaft	Carbon Steel	1
10	H0227	Tail Shaft	Carbon Steel	1
11	H0228	Tail Rotor Hub	Aluminum	1
12	H0229	Bell Crank Support	Aluminum	1
13	H0230	Pulley	21T	1
14	H0231	Tail Pitch Slider 01	Aluminum	1
15	H0232	Tail Pitch Slider 02	Aluminum	1
16	H0233	Tail Pitch Slider 03	Aluminum	1
17	H0234	Bell Crank Lever	Plastic	1
18	H0236	Tail Blade Grips		2
19	H0242	Yellow Vertical Fin	Carbon Fiber	1
	H0281	Red Vertical Fin	Carbon Fiber	1
21	H0243	Tail Side Plate	Carbon Fiber	1
22	H0249	Locking Element Tail	Carbon Fiber	2
23	h0253	Spacer Arm	Ø2.5 x Ø4 x 6.3mm	1
24	H0260	Carbon Road Support	Plastic	1
25	H0261	Tail Pitch Slider links	Plastic	2
26	H0264	Tail Pins	Aluminum	2

TAIL SYSTEM				
POS	COD	Name	Specification	Quantity
27	H0275	White / Red Tail Boom	Fiber Glass	1
	H0276	White / Red Tail Boom	Carbon Fiber	1
	H0277	Yellow / Blue Tail Boom	Fiber Glass	1
	H0278	Yellow / Blue Tail Boom	Carbon Fiber	1
31	HC004	Button Head Cap Screws	M2 x 6mm	4
33	HC014	Socket Head Cap Screws	M2 x 12mm	3
34	HC018	Socket Head Cap Screws	M2.5 x 6mm	6
35	HC020	Socket Head Cap Screws	M2.5 x 8mm	3
37	HC032	Socket Head Cap Screws	M2.5 x 18mm	1
38	HC044	Socket Head Cap Screws	M3 x 6mm	2
39	HC056	Socket Head Cap Screws	M3 x 10mm	4
40	HC074	Socket Head Cap Screw Shouldereds	M3 x 16mm	2
41	HC148	Set Screw	M3 x 8mm	1
42	HC206	Metric Hex Nylon Nuts	M3	6
43	HC237	Carbon Rod	Ø2.5 x Ø4 x 596mm	1
44	HC242	Set Screws	M2.5 x 40mm	2
45	HC334	Orings		2
46	HC342	Bell Gates	1530-HTD-4.5	1
47	HC400	Flanged Bearings	Ø2.5 x Ø6 x 2.5mm	2
48	HC403	Bearings	Ø4 x Ø9 x 2.5mm	4
49	HC412	Flanged Bearings	Ø5 x Ø13 x 4mm	2
50	HC416	Flanged Bearings	Ø7 x Ø11 x 3mm	2
51	HC434	Thrust Bearings	Ø4 x Ø9 x 4mm	2
52	HA022	Double Sided Tapes		2

SAB Heli Division

SwashPlate
[H0201-S]

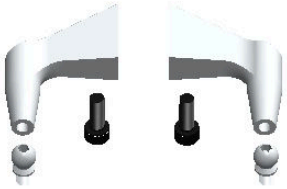


- 1 x Swashplte Assembly.
- 1 x Uniball M3x4 ∅5H18.
- 6 x Uniball M3x4 ∅5H3.
- 5 x Socket Head Cap M2x5mm.
- 1 x Bearing Rad ∅30 ∅37x4mm.

Blade Grip
[H0202-S]

- 2 x Main Blade Grip.
- 2 x Spacer ∅11x∅13.8x0.5mm.
- 4 x Bearing ∅8x∅14x4mm.
- 2 x Thrust Bearing ∅8x∅14x4mm.

Blade Grip Arm
[H0203-S]



- 2 x Main Blade Arm.
- 2 x Socket Head Cap Screw M3x8mm.
- 2 x Uniball M3 ∅4H3.

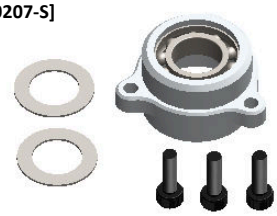
Radius Arm HPS
[H0204-S]

- 2 x Radius Arm.
- 2 x Spacer Arm 2.5x4x6.3mm.
- 2 x Spacer Arm 2.5x4x3mm.
- 2 x Uniball Radius Arm.
- 8 x Flanged Bearing ∅2.5x∅6x2.5mm.
- 2 x Washer 2.5x4x0.3mm.
- 2 x Socket Head Cap Screw M2.5x15mm.
- 2 x Socket Head Cap Screw M2.5x18mm.

Center Hub
[H0206-S]

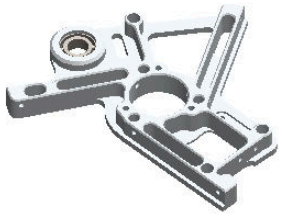
- 1 x Center Hub.
- 2 x Socket Head Cap Screw M2.5x12mm.
- 1 x Socket Head Cap Screw M3x20mm.
- 1 x Metrix Hex Nylon Nut M3.

Bearing Support
[H0207-S]



- 1 x Bearing Support.
- 1 x Bearing ∅10x∅19x5mm.
- 3 x Socket Head Cap Screws M3x10mm.
- 2 x Washer ∅10x∅16x0.1mm.

Servo Support
[H0208-S]



- 1 x Servo Support.
- 1 x Bearing ∅8x∅16x5mm.

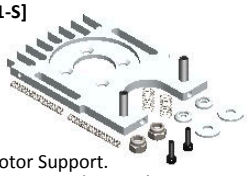
62T Main Gear
[H0209-S]

- 1 x 62T Main Gear .
- 1 x Socket Head Cap Screw Shouldered M3x22mm.
- 1 x Metric Hex Nylon Nut M3H4.
- 1 x Busing Main Gear.

18T Pinion
[H0210-S]

- 1 x 18T Pinion.
- 1 x Socket Head Cap Screw M2.5x15mm.
- 1 x Metric Hex Nylon Nut M2.5H3.5.
- 1 x Washer 8x ∅14x0.2mm.

Motor Support
[H0211-S]



- 1 x Motor Support.
- 2 x Spring de 5 / df 0.3 / LL6.
- 2 x Spring de 3 / df 0.53 / LL35.
- 2 x Washer ∅4.3x∅11x1mm.
- 2 x Metrix Hex Nylon Nut M4H5.
- 2 x Socket Head Cap M2.5x8mm.
- 2 x Finishing Washer M2.5mm.
- 2 x Set Screw M4x15mm.

Main Structure
[H0212-S]

- 1 x Main Structure.
- 1 x Bearing ∅8x∅16x5mm.
- 1 x Bearing ∅10x∅19x5mm.

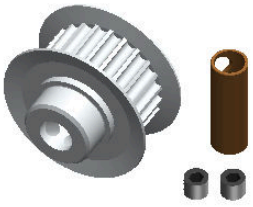
Spindle
[H0213-S]

- 1 x Spindle.
- 2 x Button Head Cap Screw M6x10mm.
- 2 x Washers ∅6.1x∅12x1mm.

48T Pulley
[H0214-S]

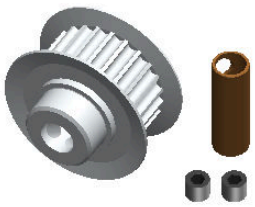
- 1 x 48T Pulley.
- 2 x Flanged Bearing ∅8x∅12x3.5mm.
- 1 x One Way Bearing ∅8x∅12x12mm.
- 1 x Washer ∅8x∅14x0.2mm.

15T Pulley
[H0215-15-S]



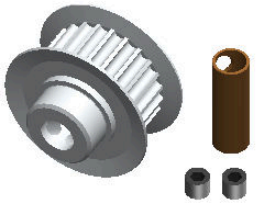
- 1 x 15T Pulley.
- 2 x Set Screw M4x4mm.
- 1 x Bushing ∅5x∅6x18mm.

16T Pulley
[H0215-16-S]



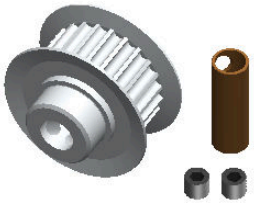
- 1 x 16T Pulley.
- 2 x Set Screw M4x4mm.
- 1 x Bushing ∅5x∅6x18mm.

17T Pulley
[H0215-17-S]



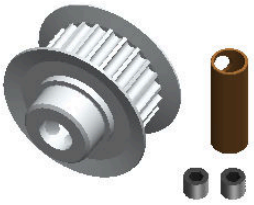
- 1 x 17T Pulley.
- 2 x Set Screw M4x4mm.
- 1 x Bushing ∅5x∅6x18mm.

18T Pulley
[H0215-18-S]



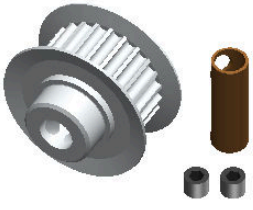
- 1 x 18T Pulley.
- 2 x Set Screw M4x4mm.
- 1 x Bushing ∅5x∅6x18mm.

19T Pulley
[H0215-19-S]



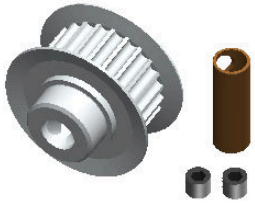
- 1 x 19T Pulley.
- 2 x Set Screw M4x4mm.
- 1 x Bushing ∅5x∅6x18mm.

20T Pulley
[H0215-20-S]



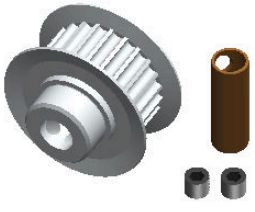
- 1 x 20T Pulley.
- 2 x Set Screw M4x4mm.
- 1 x Bushing ∅5x∅6x18mm.

21T Pulley
[H0215-21-S]



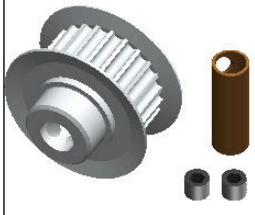
- 1 x 21T Pulley.
- 2 x Set Screw M4x4mm.
- 1 x Bushing ∅5x∅6x18mm.

22T Pulley
[H0215-22-S]



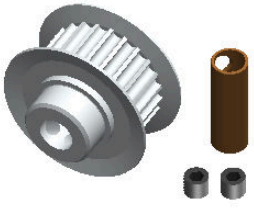
- 1x 22T Pulley.
- 2x Set Screw M4x4mm.
- 1x Bushing ∅5x∅6x18mm.

23T Pulley
[H0215-23-S]



- 1 x 23T Pulley.
- 2 x Set Screw M4x4mm.
- 1 x Bushing ∅5x∅6x18mm.

24T Pulley
[H0215-24-S]



- 1x 24T Pulley.
- 2x Set Screw M4x4mm.
- 1x Bushing ∅5x∅6x18mm.

SAB Heli Division

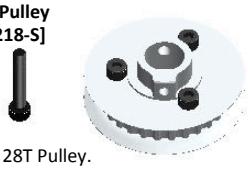
Spacer 26mm
[H0216-S]

- 3 x Spacer 26mm.

Canopy Positioner
[H0217-S]

- 2 x Canopy Positioner.

28T Pulley
[H0218-S]



- 1 x 28T Pulley.
- 3 x Socket Head Cap Screw M2x8mm.
- 1 x Socket Head Cap Screw M2.5x15mm.

Tail Spindle
[H0220-S]

- 1 x Tail Spindle.
- 2 x Socket Head Cap Screw M3x6mm.

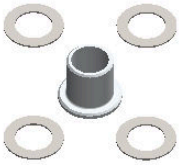
Secondary Shaft
[H0221-S]

- 1 x Secondary Shaft.
- 2 x Socket Head Cap ScrewM2.5x15mm.
- 1 x Metrix Hex Nylon Nut M2.5H3.5.
- 1 x Washer ∅8x∅14x0.2mm.

Main Shaft
[H0222-S]

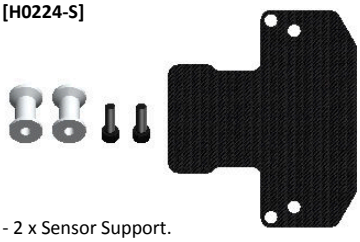
- 1 x Main Shaft.
- 2 x Metrix Hex Nylon Nut M3H4.
- 1 x Socket Head Cap Shoulder M3x20mm.
- 1 x Socket Head Cap Shoulder M3x22mm.

Spacer Main Shaft
[H0223-S]



- 1 x Spacer Main Shaft.
- 4 x Washer ∅10x∅16x0.1mm.

Sensor Support
[H0224-S]



- 2 x Sensor Support.
- 1 x FBL Support.
- 2 x Socket Head Cap Screw M2.5x8mm.

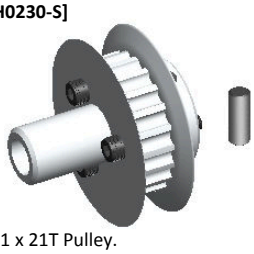
Tail Rotor Shaft
[H0227-S]

- 1 x Tail Rotor Shaft.
- 1 x Set Screw M3x8mm.
- 1 x Tail Hub.

Bell Crank Support
[H0229-S]

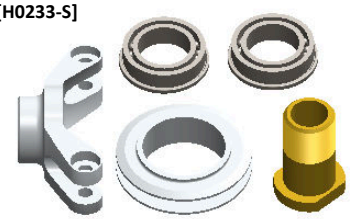
- 1 x Bell Crank Support.
- 2 x Socket Head Cap Screw M2x8mm.

21T Pulley
[H0230-S]



- 1 x 21T Pulley.
- 3 x Socket Head Cap Screw M2x12mm.
- 1x Set Screws M3x8mm.

Tail Pitch Slider
[H0233-S]



- 1 x Tail Pitch Slider 01.
- 1 x Tail Pitch Slider 02.
- 1 x Tail Pitch Slider 03.
- 2 x Flanged Bearing ∅7x ∅11x3mm.

Bell Crank Level
[H0234-S]

- 1 x Bell Crank level.
- 2 x Tail Pin.
- 2 x Flanged Bearing ∅2.5x ∅6x2.5mm.
- 1 x Spacer Arm ∅2.5x ∅4x6.3mm.
- 1 x Socket Head Cap Screws M2.5x18.
- 1 x Uniball M3x 4 H5.

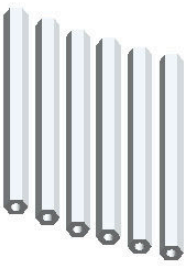
Tail Blade Grip
[H0236-S]

- 2 x Tail Blade Grip.
- 4 x Bearing ∅4x∅9x2.5mm.
- 2 x Spacer ∅7x∅9x0.5mm.
- 2 x Thrust Bearing ∅4x∅9x4mm.
- 2 x Socket Head Cap Screw M3x6mm.
- 2 x Button Head Cap Screw M2x8mm.

Linkage HPS
[H0237-S]

- 2 x Linkage Rod M2.5x33mm.
- 4 x Linkage Ball Link.

Spacer 54mm
[H0239-S]



- 6 x Spacer 54mm.

Main Frame
[H0240-S]

- 1 x Main Frame.

Yellow Landing Gear
[H0241-S]

- 1 x Yellow Landing Gear .

Yellow Vertical Fin
[H0242-S]

- 1 x Yellow. Vertical Fin

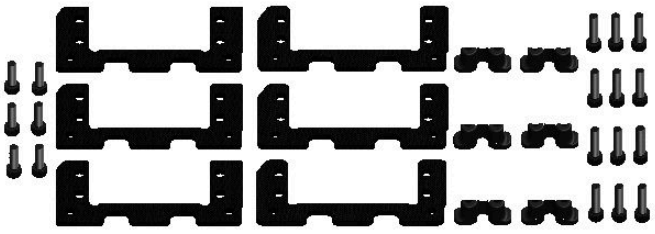
Tail Slider Plate
[H0243-S]

- 1 x Tail Slider Plate.

Anti-Rotation Guide
[H0244-S]

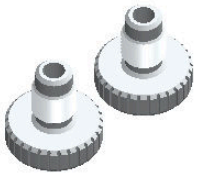
- 1 x Anti-Rotation Guide.
- 1 x Socket Head Cap Screw M2.8x8mm.
- 1 x Finisching Washer M2.5.

Servo Support
[H0245-S]



- 3 x Servo Support (for servo 36mm).
- 3 x Servo Support (for servo 34mm).
- 6 x Servo Spacer.
- 12 x Socket Head Cap Screw M2.5x10mm.
- 6 x Socket Head Cap Screw M2.5x8mm.

Canopy Locking
[H0248-S]



- 2 x Canopy Locking.

Locking Element Tail
[H0249-S]

- 2 x Locking Element Tail.
- 4 x Metric Hex Nylon Nut M3.
- 4 x Socket Head Cap Screw M3x10mm.
- 2 x Double Side Tape.

Servo Block
[H0251-S]

- 6 x Servo Block.

Battery Tray
[H0252-S]

- 2 x Battery Tray.
- 2 x Straps Goblin 500

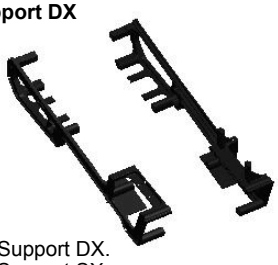
Finishing Washer
[H0255-S]

- 10 x Finishing Washer.

Battery Block
[H0256-S]

- 1 x Battery Block.
- 1 x Socket Head Cap Screw M2.5x5mm.

Battery Support DX
[H0258-S]



- 1 x Battery Support DX.
- 1 x Battery Support SX.

Carbon Road Support
[H0260-S]

- 1 x Carbon Road Support.
- 1 x Socket Head Cap M2.5x8mm.

Tail Linkage
[H0261-S]

- 2 x Tail Linkage.
- 2 x Spacer.
- 2 x Socket Head Cap M2x6mm.

Landing Gear Support
[H0262-S]

- 2 x Landing Gear Support.

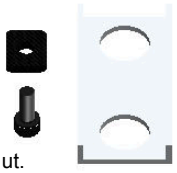
Column
[H0263-S]

- 4 x Column.

Spacer ∅4x∅18x1
[H0265-S]

- 4 x Spacer ∅4x∅18x1mm.

Block Nut
[H0267-S]



- 1 x Block Nut.
- 1 x Boom Botl Safety Lock.
- 1 x Socket Head Cap Screw M2.5x6mm.

Yellow/Black Canopy
[H0268-S]

- 1 x Yellow/Black Canopy.
- 2 x Canopy Groummet.
- 1 x Canopy Mouse.

Red/White Canopy
[H0271-S]

- 1 x Red/White Canopy.
- 2 x Canopy Groummet.
- 1 x Canopy Mouse.

White/Black Tail Boom (Fiber Glass)
[H0275-S]

- 1 x White/Red Tail Boom.
- 2 x Nylon Screw M8x14mm.
- 2 x Metric Hex Nylon Nut M8H6.5.
- 2 x Locking Element Tail.
- 4 x Metric Hex Nylon Nut M3.
- 2 x Double Side Tape.

White/Red Tail Boom
[H0276-S]

- 1 x White/Red Tail Boom.
- 2 x Nylon Screw M8x14mm.
- 2 x Metric Hex Nylon Nut M8H6.5.
- 2 x Locking Element Tail.
- 4 x Metric Hex Nylon Nut M3.
- 2 x Double Side Tape.

Yellow/Black Tail Boom (Fiber Glass)
[H0277-S]

- 1 x Yellow/Black Tail Boom.
- 2 x Nylon Screw M8x14mm.
- 2 x Metric Hex Nylon Nut M8H6.5.
- 2 x Locking Element Tail.
- 4 x Metric Hex Nylon Nut M3.
- 2 x Double Side Tape.

Yellow/Black Tail Boom
[H0278-S]

- 1 x Yellow/Black Tail Boom.
- 2 x Nylon Screw M8x14mm.
- 2 x Metric Hex Nylon Nut M8H6.5.
- 2 x Locking Element Tail.
- 4 x Metric Hex Nylon Nut M3.
- 2 x Double Side Tape.

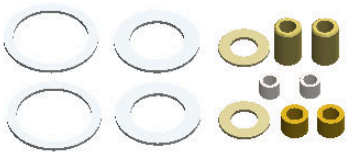
Red Vertical Fin
[H0281-S]

- 1 x Red Vertical Fin.

Red Landing Gear
[H0285-S]

- 1 x Red Landing Gear.

Spacer G500
[H0287-S]



- 2 x Spacer ∅2x∅3x2.5mm.
- 2 x Spacer ∅4x∅7.5x0.5mm.
- 2 x Spacer ∅8x∅12.5x0.5mm.
- 2 x Spacer ∅11x∅13.8x0.5mm.
- 2 x Spacer Arm ∅2.5x∅4x6.3mm.
- 2 x Spacer Arm ∅2.5x∅4x3mm.

SAB Heli Division

[HC002-S]

- 5 x Socket Head Cap Screws M2x5mm.

[HC004-S]

- 5 x Socket Head Cap Screws M2x6mm.

[HC005-S]

- 5 x Button Head Cap Screws M2x5mm.

[HC008-S]

- 5 x Socket Head Cap Screws M2x8mm.

[HC014-S]

- 5 x Socket Head Cap Screws M2x12mm.

[HC018-S]

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

[HC020-S]

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

[HC022-S]

-5 x Socket Head Cap Screws M2.5x10mm.

[HC026-S]

-5 x Socket Head Cap Screws M2.5x12mm.

[HC028-S]

-5 x Socket Head Cap Screws M2.5x15mm.

[HC032-S]

- 5 x Socket Head Cap Screws M2.5x18mm.

[HC044-S]

- 5 x Socket Head Cap Screws M3x6mm.

[HC056-S]

- 5 x Socket Head Cap Screws M3x10mm.

[HC074-S]

- 2 x Socket Head Cap Screw Shouldereds M3x16mm.
- 2 x Metric Hex Nylon Nuts M3H4.

[HC082-S]

- 5 x Socket Head Cap Screw Shouldereds M3x20mm.

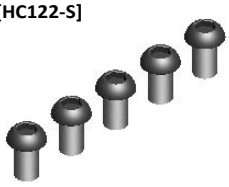
[HC083-S]

- 5 x Socket Head Cap Screw Shouldereds M3x22mm.

[HC111-S]

- 5 x Socket Head Cap Screw Shouldereds M4x24mm.

[HC122-S]



- 5 x Button Head Cap Screws M6x10mm.

[HC128-S]

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

[HC132-S]

- 5 x Flat Head Cap Screws M3x5mm.

[HC136-S]

- 5 x Seft Tapping Hex Socket Screw M3x10

[HC146-S]

- 5 x Set Screws M2.5x15mm.

[HC148-S]

- 5 x Set Screws M3x8mm.

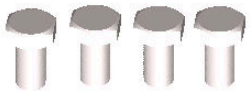
[HC152-S]

- 5 x Set Screws M4x4mm.

[HC154-S]

- 5 x Set Screws M4x15mm.

[HC164-S]

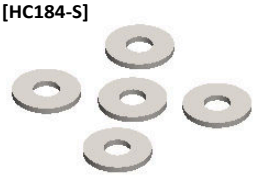


- 4 x Vite Nylon Esa Caps M8x14mm.

[HC172-S]

- 10 x Washers ∅2.5x∅4x0.3mm.

[HC184-S]



- **5 x Washers ∅4.3x∅11x1mm.**

[HC193-S]

- 10 x Washers ∅6.1x∅12x1mm.

[HC200-S]

- 10 x Metric Hex Nylon Nuts M2.5H3.5.

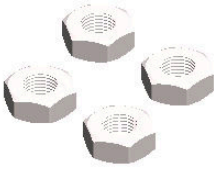
[HC206-S]

- 10 x Metric Hex Nylon Nuts M3H4.

[HC212-S]

- 10 x Metric Hex Nylon Nuts M4 H5.

[HC224-S]



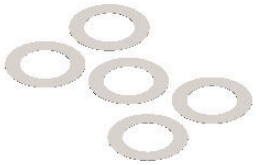
- 4 x Metric Hex Nuts M8 H6.5.

[HC228-S]

- 4 x Shim Washers ∅8x∅14x0.2mm.

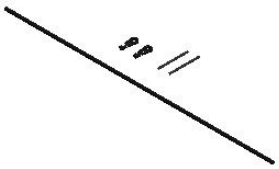
SAB Heli Division

[HC234-S]



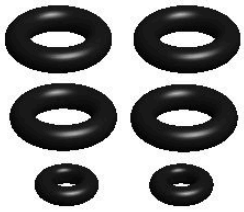
- 5 x Shims Washer
  Ø10xØ16x0,1mm.

[HC235-S]



- 1 x Carbon Rod
  Ø2.5 x Ø4 x596mm.
- 2 x Plastic Ball Links.
- 2 x Threaded Rods
  M2.5x40mm.

[HC330-S]



- 4 x Damper Orings HC330.
- 2 x Damper Orings HC334.

[HC340-S]

- 1 x Motor Belt 3GT-09.

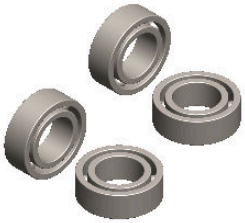
[HC342-S]

- 1 x Tail Belt 1530-HTD-4.5.

[HC316-S]

- 2 x Springs de 3 / df 0.53 / LL35.
- 2 x Springs de 5 / df 0.3 / LL6.

[HC403-S]



- 4 x Bearings
  Ø4xØ9x2.5mm.

[HC412-S]

- 4 x Flanged Bearings
  Ø5xØ13x4mm.

[HC416-S]

- 2 x Flanged Bearings
  Ø7xØ11x2.5mm.

[HC417-S]

- 2 x Bearings
  Ø8xØ14x4mm.

[HC418-S]

- 2 x Flanged Bearings
  Ø8xØ12x3.5mm.

[HC419-S]

- 2 x Bearings
  Ø8xØ16x5mm.

[HC422-S]

- 4 x Bearings
  Ø10xØ19x5mm.

[HC430-S]

- 2 x Bearing Rads
  Ø30xØ37x4mm.

[HC434-S]

- 2 x Thrust Bearings
  Ø4xØ9x4mm.

[HC437-S]

- 2 x Thrust Bearings
  Ø8xØ14x4mm.

[HC440-S]

- 1 x One Way Bearing
  Ø8xØ12x12mm.

[HA001-S]

- 1 x Foam Blade Holder.

[HA002-S]

- 2 x Hex Wrenches
  2.5mm.

[HA006-S]

- 1 x Canopy Mousse 80cm.

[HA016-S]

- 1 x Plastic Wrench Nut
  M8 & M6.

[HA021-S]

- 5 x Canopy Grommets.

[HA023-S]

- 3 x Straps Goblin 500.

[HA904-S]

Manual Goblin 500

[BW0500]

- White Main Blades 500

[BW5080]

- White Tail Blades 80

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