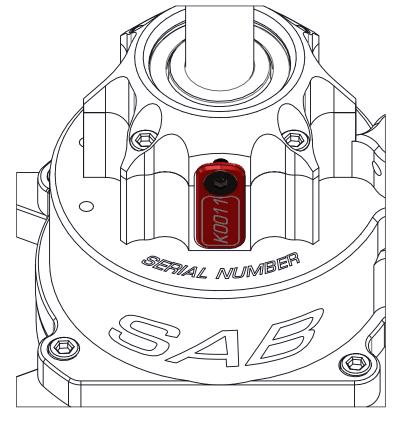


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SAE || | RENESIS |

Please read this user manual carefully, it contains instructions for the correct assembly of the model. Please refer to the web site <u>www.goblin-helicopter.com</u> for updates and other important information.



VERY IMPORTANT

You will find your serial number on the RED plate of the transmission module and on the product card included with your kit. 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 any issues with your model and will not provide support unless you register your model.

The Serial number is also engraved in the Aluminum part.

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

SAB Heli Division

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- 2 Important Notes
- 3 Note for Assembly
- 4 Carbon Rod Assembly
- 5 Transmission Group Assembly
- 6 Swashplate Servos Assembly
- 7 Frame Group Assembly

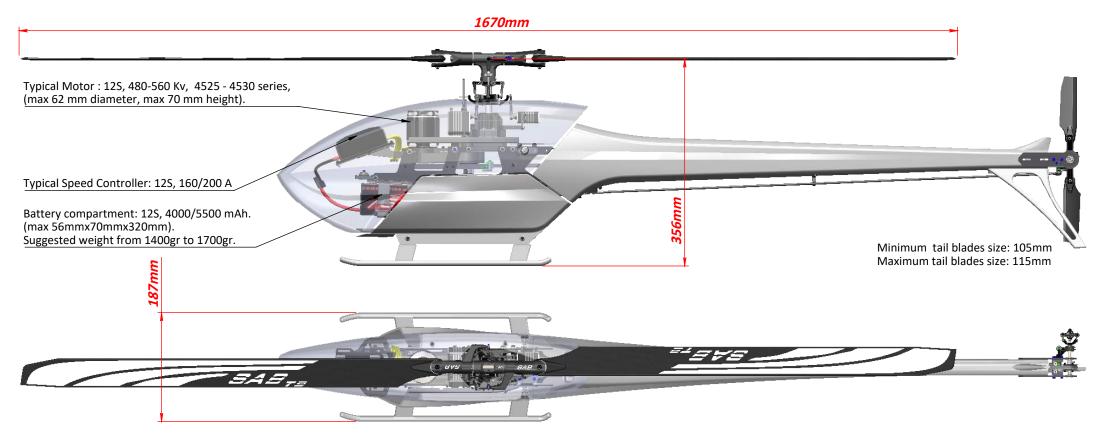
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15 – Installation ESC/FBL/RX 16 – Installation Batteries 17 – Installation Canopy <u>18 – In flight</u> 19 – Maintenance 20 – Transmission Module <u>21 – Check list</u> 22 – Spare Parts





GOBLIN URUKAY GENESIS TECHNICAL SPECIFICATIONS



- AIRFRAME weight: 2950 (with blades, no battery, no electronics).
- Main rotor diameter: 1670 mm (with 747 mm blades).
- Main blade length: 690 to 760mm.
- Tail rotor diameter: 284 mm (with 105 mm tail blades).
- Tail blade length: 105 to 115 mm.

KIT Includes:

- 21T motor pulley (other pulley sizes available).
- 2 battery trays with straps.

- Cyclic Servos: Standard size 40mm.
- Tail Servo: Standard size 40mm.
- Main Rotor Ratio: 12.1 to 8.8:1 (21T included: 10.4:1).
- Tail Rotor Ratio : 5.0-4.8:1 (26T included: 4.9:1).
- 747 mm main blades.
- 105 mm tail blades.

Pade



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.

(c) Purchaser Remedy- SAB Heli Division's sole obligation hereunder shall be that SAB Heli Division will, at its option, replace any Product determined by SAB Heli Division to be defective In the event of a defect, this is the Purchaser's exclusive remedy. Replacement decisions are at the sole discretion of SAB Heli Division. This warranty does not cover cosmetic damage or damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or modification of or to any part of the Product. This warranty does not cover damage due to improper installation, operation, maintenance or attempted repair by anyone.





TOOLS, LUBRICANTS, ADHESIVES INSIDE THE MAIN BOX THERE ARE:

*Electric Motor

. . .

*Speed controller

*Batteries: 12S – 4000/5500mAh

*1 flybarless 3 axis control unit

*Radio power system.

*3 cyclic servos *1 tail rotor servo

*6 channel radio control system on 2.4 GHz

ADDITIONAL COMPONENTS REQUIRED

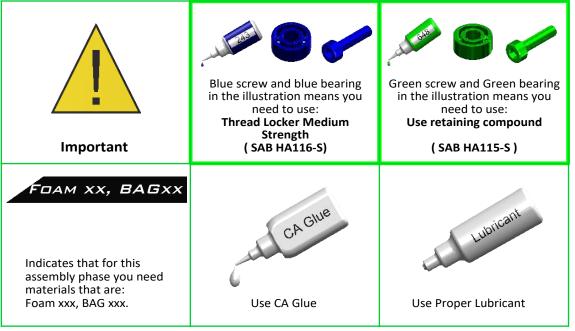
NOTES FOR ASSEMBLY

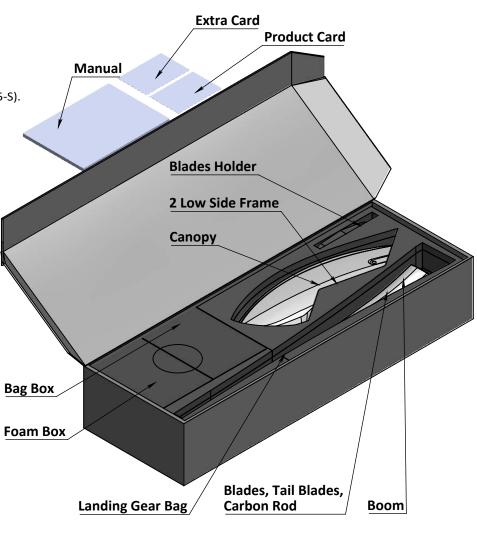
*Generic pliers. *Hexagonal driver, size 1.5, 2, 2.5, 3mm. *4/5mm T-Wrench. *5.5mm Socket wrench (for M3 nuts). *8mm Hex fork wrench (for M5 nuts).

*Medium threadlocker (SAB p/n HA116-S). *Strong retaining compound (SAB p/n HA115-S). *Spray lubricant (eg. Try-Flow Oil). *Synthetic grease (eg. Microlube 261). *Cyanoacrylate adhesive.

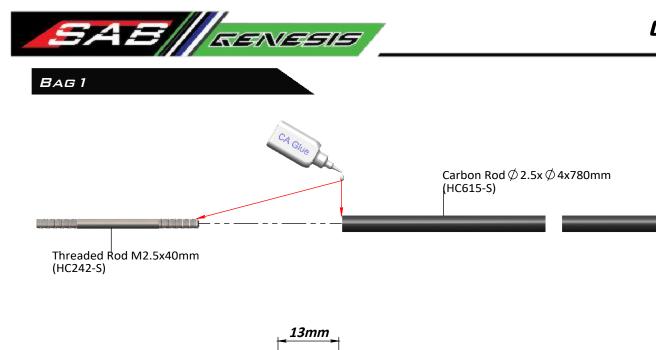
*Pitch Gauge (for set-up). *Soldering equipment (for motor wiring).

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:



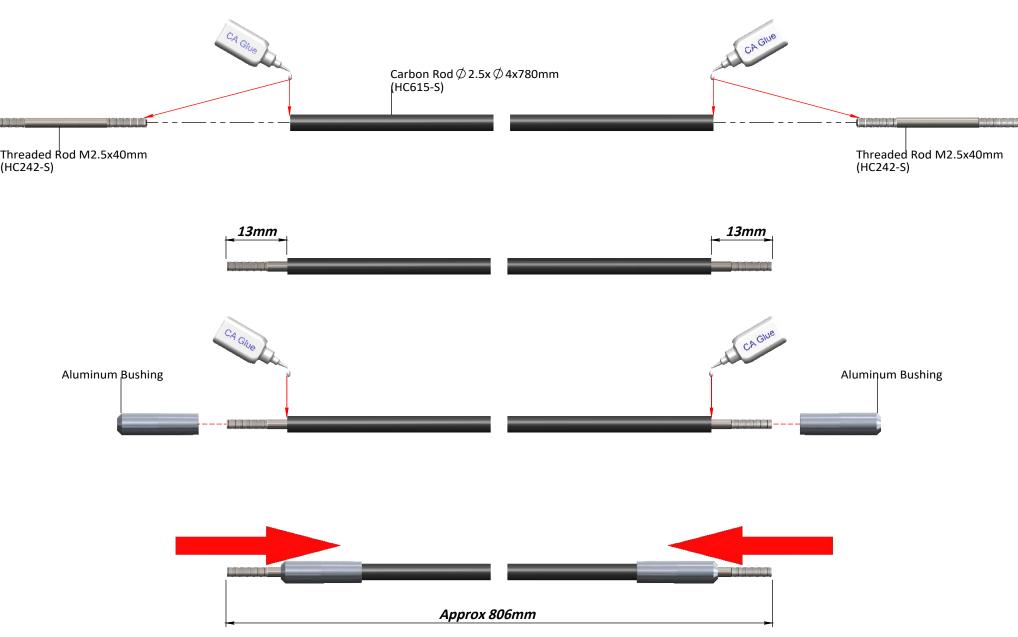


The assembly process is described in the following chapters. Each chapter provides you with the box, bag and/or foam numbers you will need for that chapter. The information is printed in a black box in the upper corner of the page.



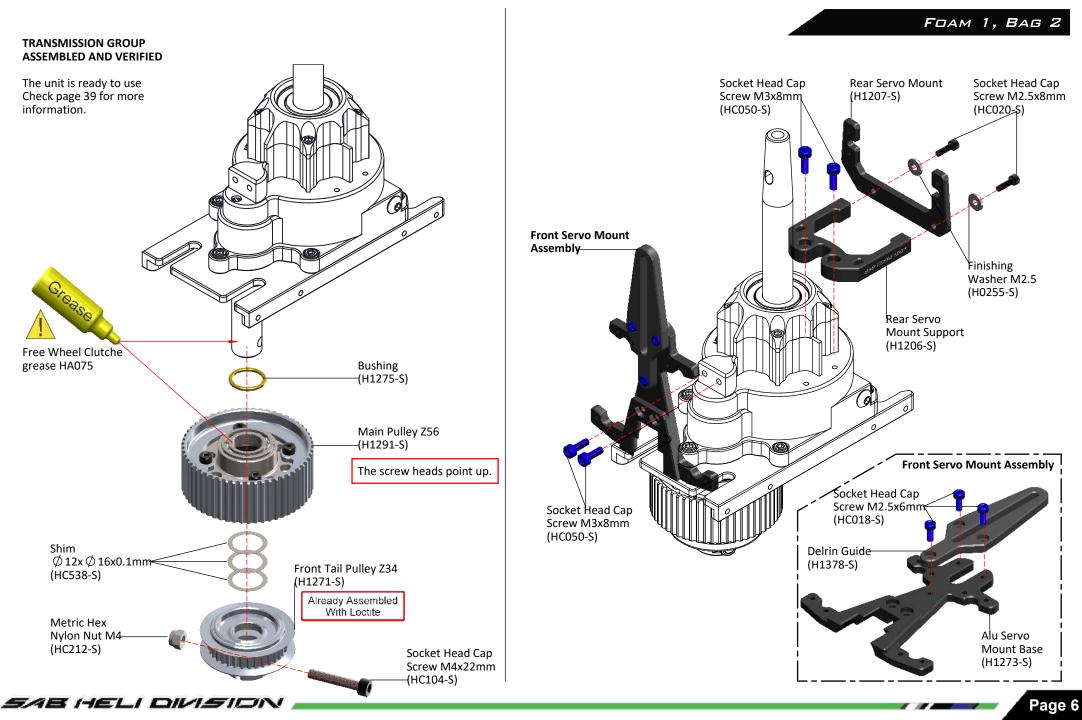
CARBON ROD ASSEMBLY

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TRANSMISSION GROUP ASSEMBLY







SWASHPLATE SERVOS ASSEMBLY

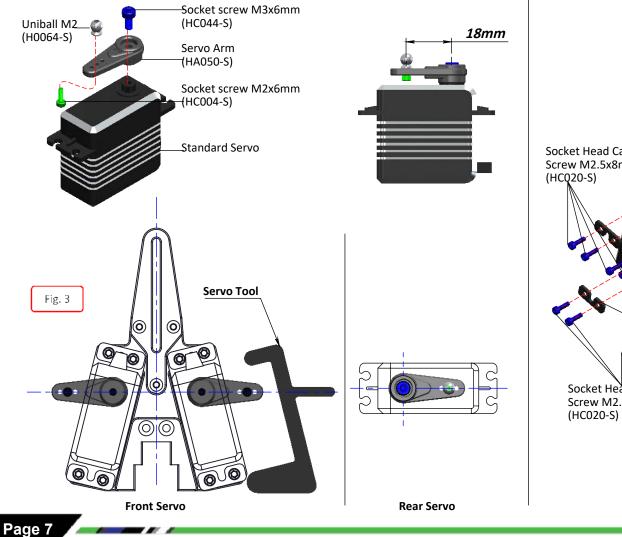
BAG 3

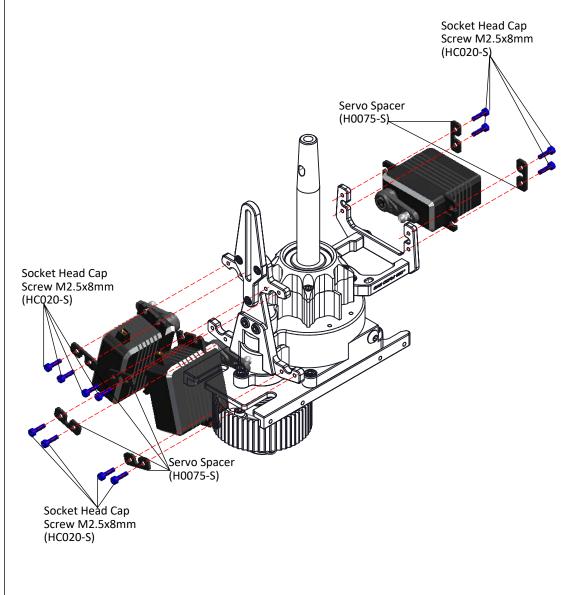
SERVO ASSEMBLY

The linkage ball must be positioned 18 mm out on the servo arm. The recommended servo arm to use is: SAB p/n [HA050/HA051].

Ensure the alignment of the servo arms (and sub trim set) before installation of the servos in the model.

Proceed with installation following the instructions below. You can use the G10 servo tool to align the front servo arms with the theoretical horizontal line. (Figure 3)





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FRAME GROUP ASSEMBLY



Flat Head Cap Screw M2.5x8mm

(HC125-S)

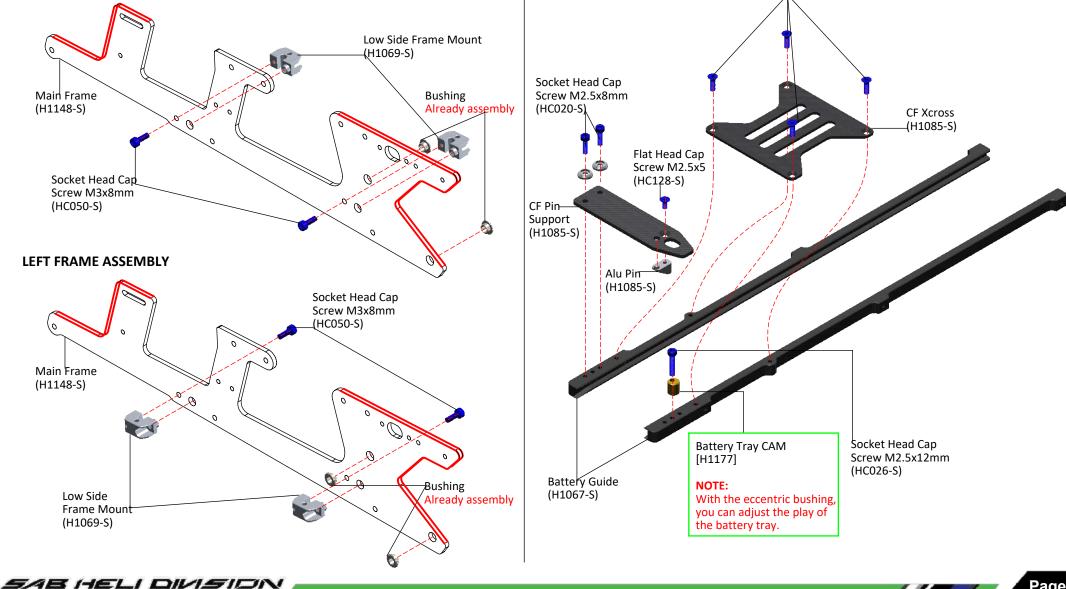
BAG

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. It is very important to do this along the red lines.

RIGHT FRAME ASSEMBLY



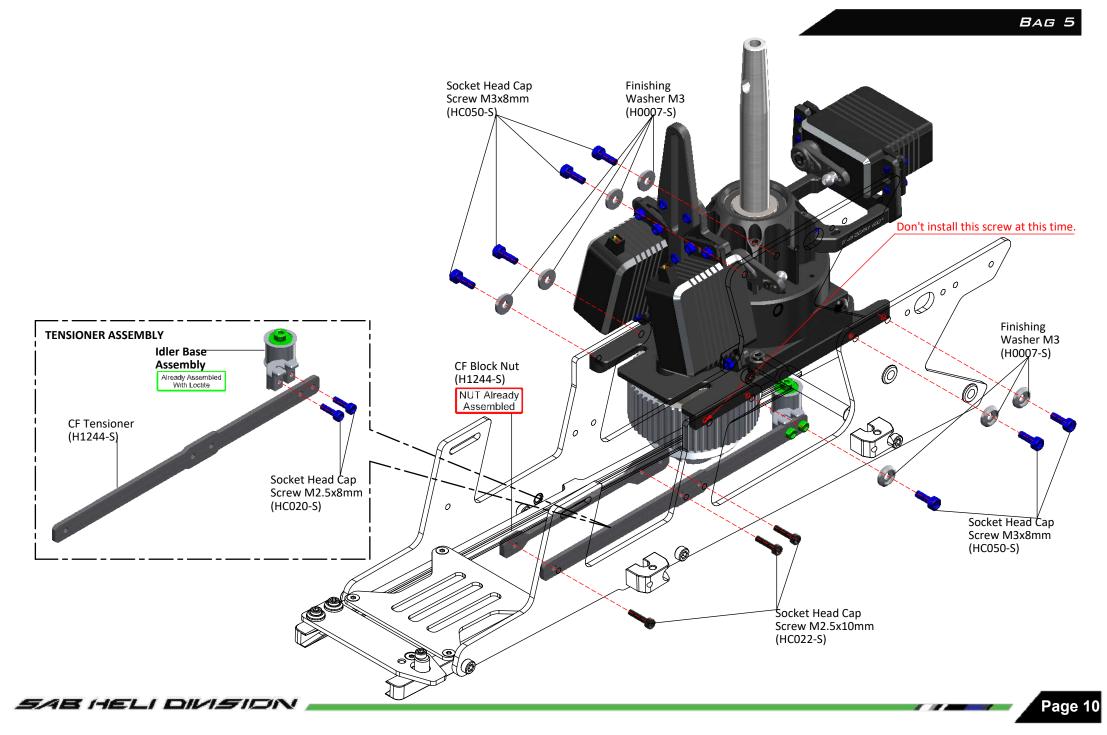
BATTERY GUIDE ASSEMBLY

RENESIS FRAME GROUP ASSEMBLY BAG 4 0 00 °° **RIGHT MAIN FRAME ASSEMBLY** Socket Head Cap Screw M3x10mm (HC056-S) LEFT MAIN FRAME ASSEMBLY 0 0 0 Frame Spacer N 0000 (H1076-S) Socket Head Cap Screw M3x6mm (HC044-S)-Washer 0 Ø 3.2x Ø 6x0.5 @⁰ 0 (HC180-S)_ 0 **BATTERY GUIDE ASSEMBLY** Socket Head Cap 0 Screw M3x10mm (HC056-S) In case of any lateral play on the tray, you can install 2 washers (HC180-S) on the battery tray guide screws (just the 2 in the middle). You can Socket Head Cap Washer find the 2 washer \emptyset 3x \emptyset 6x0.5 in backup bag. \emptyset 3.2x \emptyset 6x0.5mm Screw M3x6mm 0 (HC180-S) (HC044-S) Socket Head Cap Screw M3x6mm (HC044-S)

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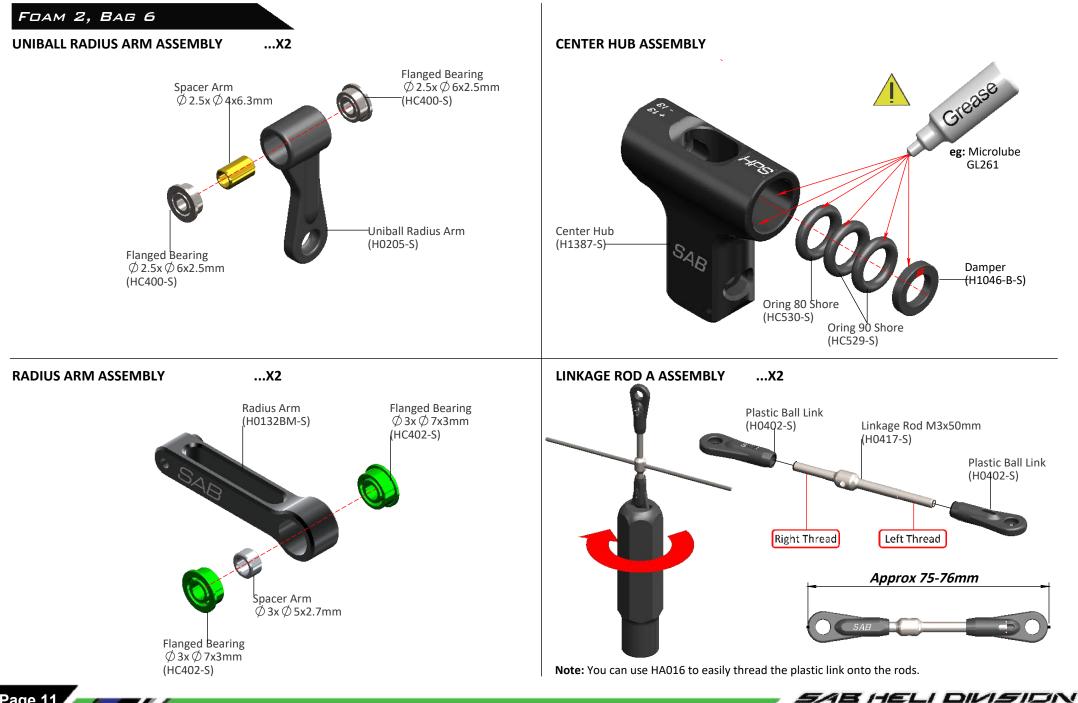
FRAME GROUP ASSEMBLY





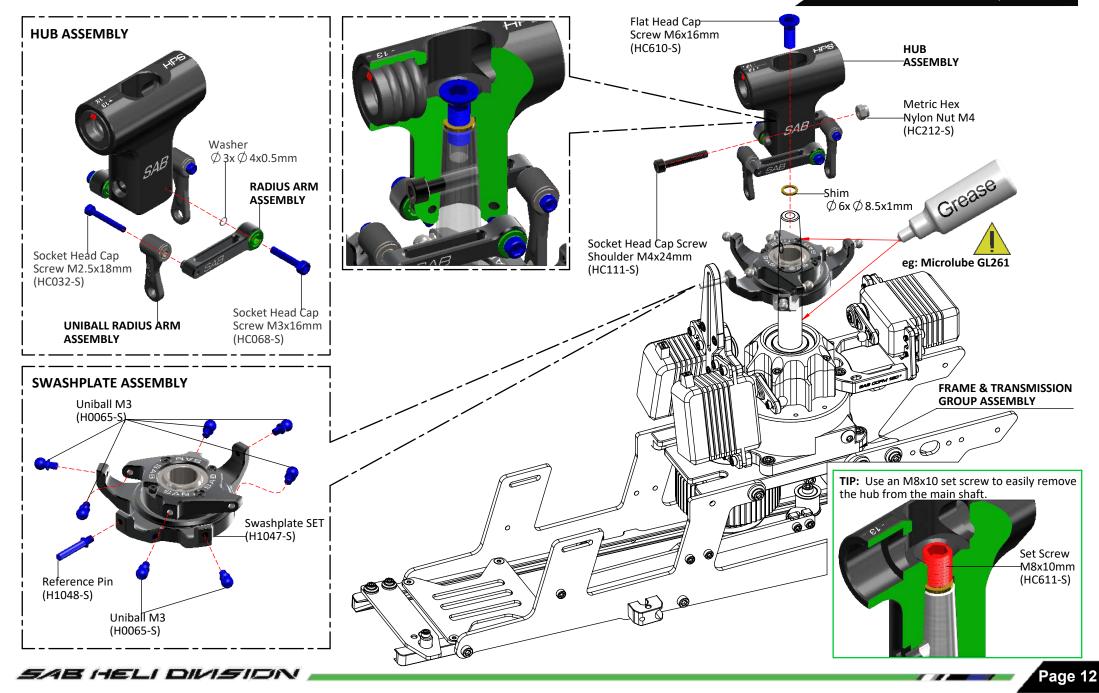


HEAD ASSEMBLY

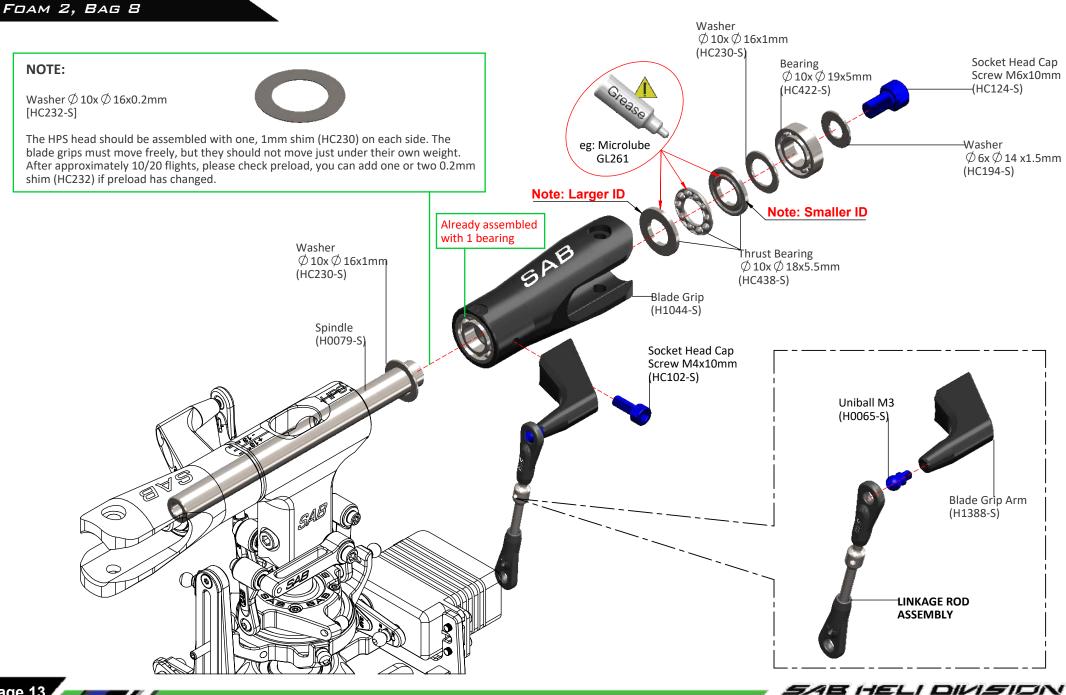




FOAM 2, BAG 7



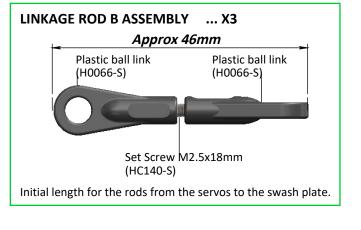


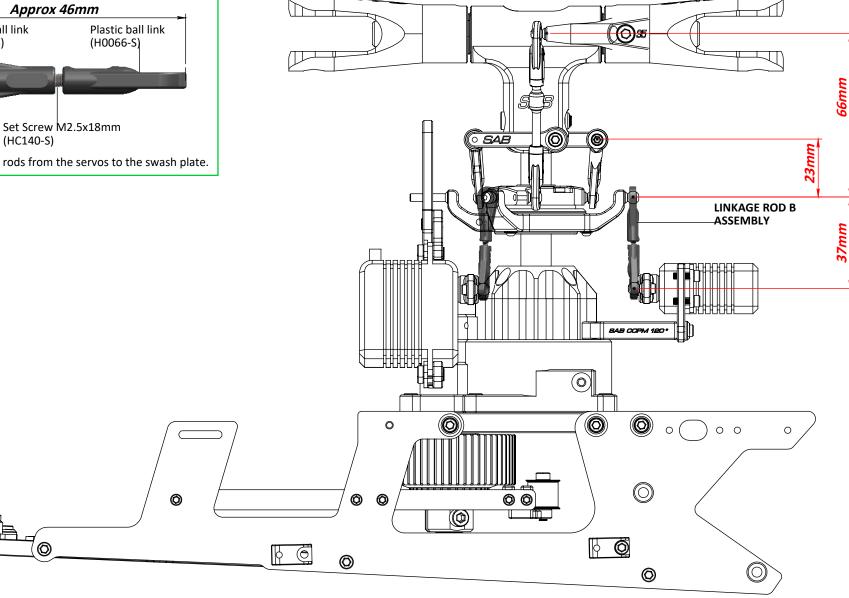


ASSEMBLING OF THE MODULES



BAG 8







INSTALLATION OF THE MOTOR

TRANSMISSION SETUP

It is important to choose the right reduction ratio to maximize efficiency based on your required flight performance. 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 216 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 12.1:1	H0175-22-S - 22T Pinion = ratio 9.9:1
H0175-19-S - 19T Pinion = ratio 11.5:1	H0175-23-S - 23T Pinion = ratio 9.5:1
H0175-20-S - 20T Pinion = ratio 10.9:1	H0175-24-S - 24T Pinion = ratio 9.1:1
H0175-21-S - 21T Pinion = ratio 10.4:1	H0175-25-S - 25T Pinion = ratio 8.7:1

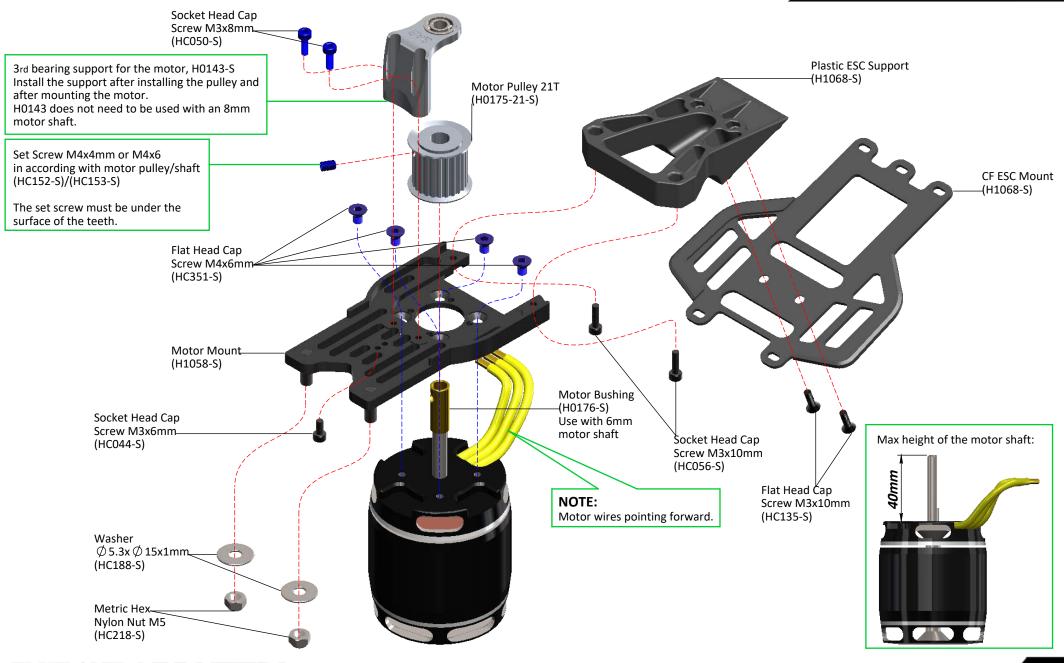
.		500	Pinion	RPM Max	Rev:	
Battery	Motor	ESC	(a,b)	(a, b)	Pitch	
12S 4200/5500 mAhlightnirScorpioScorpio	Xnova 4525-530kv lightning	HW-200A	19T / 20T			
	Pyro 750-560	Kosmik 160 YGE Aureus 135	18T / 19T	1700 / 1800	± 12	
	Scorpion HKII 4525-520 UL	SCORPION II 14-200A	19T / 20T			
Xnova 4530-525kv lightning 12S 4500/5500 mAh Scorpion HKII 4530-540		HW-200A	20T / 21T			
	Pyro 800-480	Kosmik 200 YGE 205HVT	21T / 22T	1700 / 1900	± 13	
	SCORPION II 14-200A	19T / 20T				



INSTALLATION OF THE MOTOR



FOAM 1, BAG 9



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INSTALLATION OF THE MOTOR

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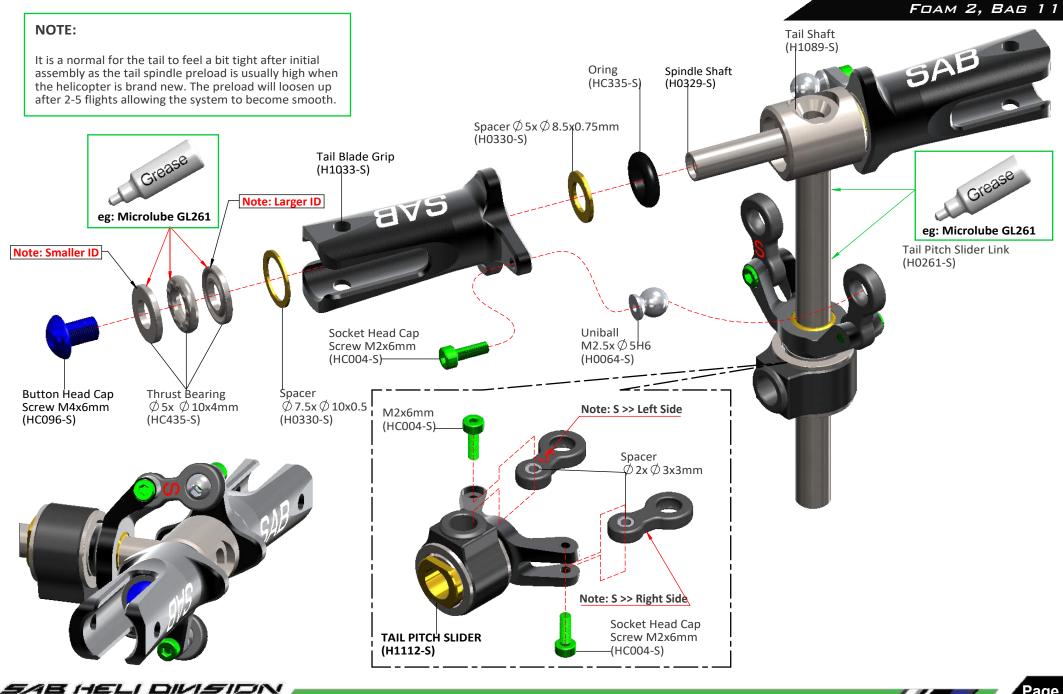
BAG 10

MOTOR BELT TENSION

*Fit the motor assembly into position. You can use a 4-5mm shaft as a lever to set proper *Move it to the minimum center distance. motor belt tension. *First put the belt on the motor pinion. *Then put the belt around the big pulley. *Rotate the motor several times by hand. 8 *Pull on the motor mount to tension the belt. *Rotate again the motor several times by hand. *Provide the correct force, and properly tension the belt. *Tighten the M5 nuts first, then the (2) M3 screws later. 0000 Socket Head Cap Finishing Screw M3x8mm Washer M3 Ø (H0007-S) (HC050-S) SAB 0 0 Motor Belt 3GT-276-19 (HC601-S) ۲ Finishing Washer M3 ۲ (H0007-S) Socket Head Cap Screw M3x8mm (HC050-S)

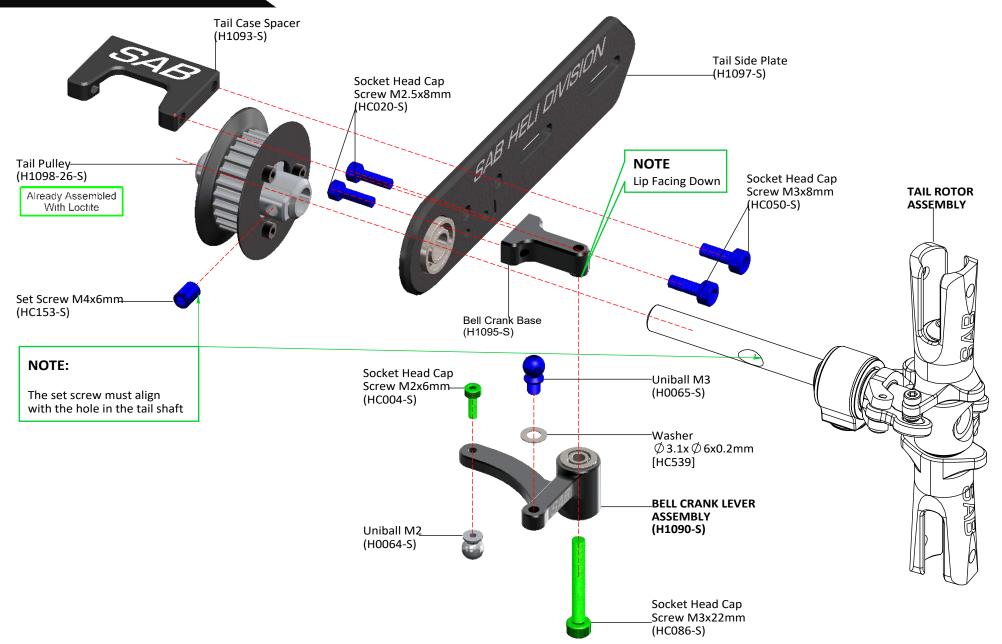
TAIL GROUP ASSEMBLY

GENESIS

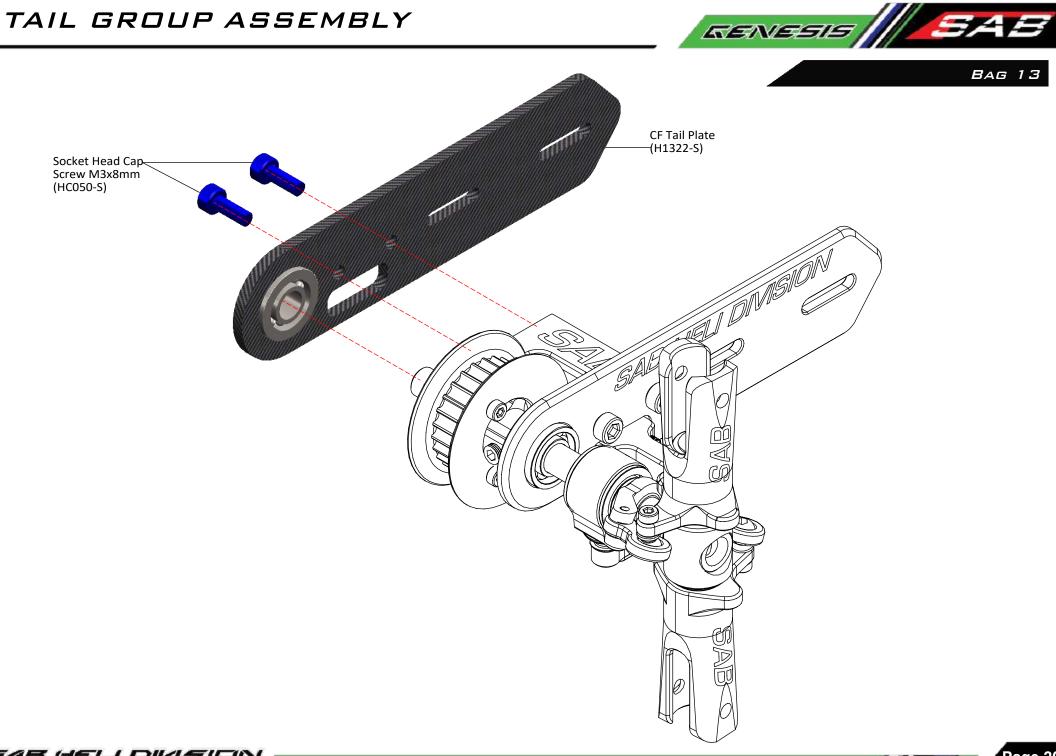




FOAM 2, BAG 12

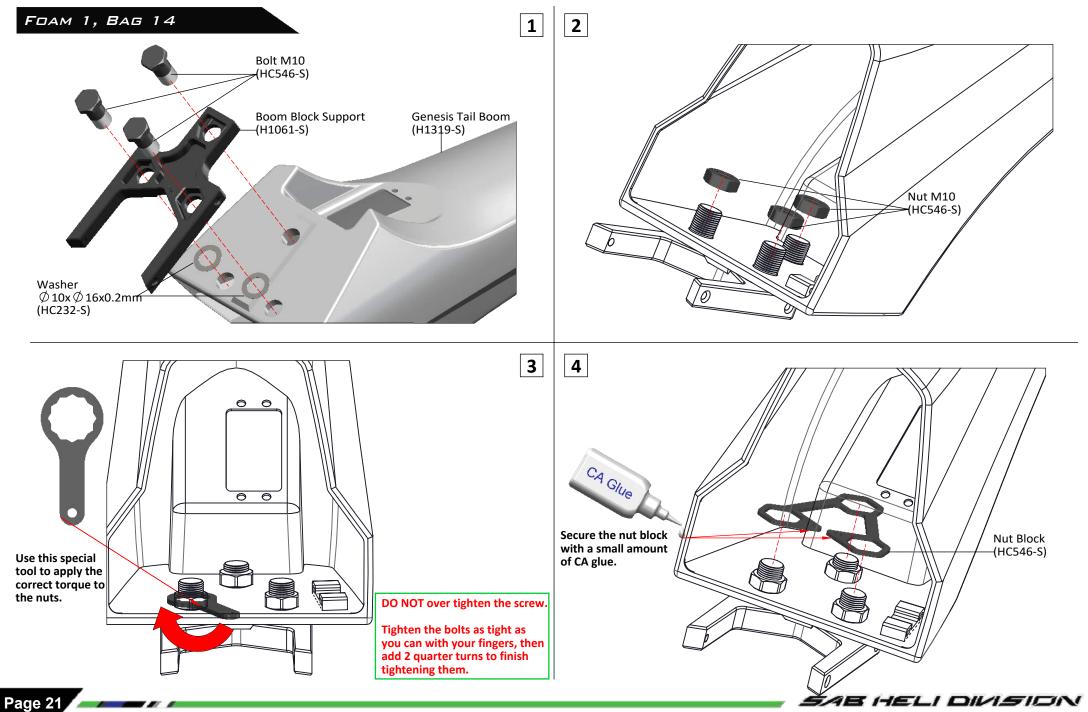




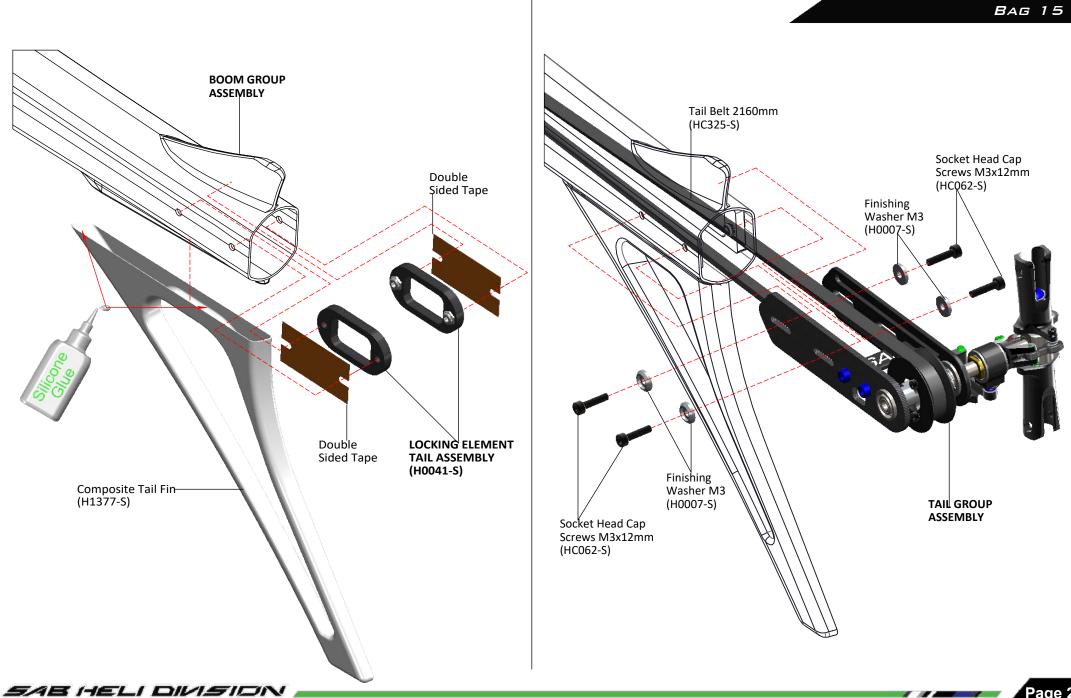


SAB HELI DIVISION

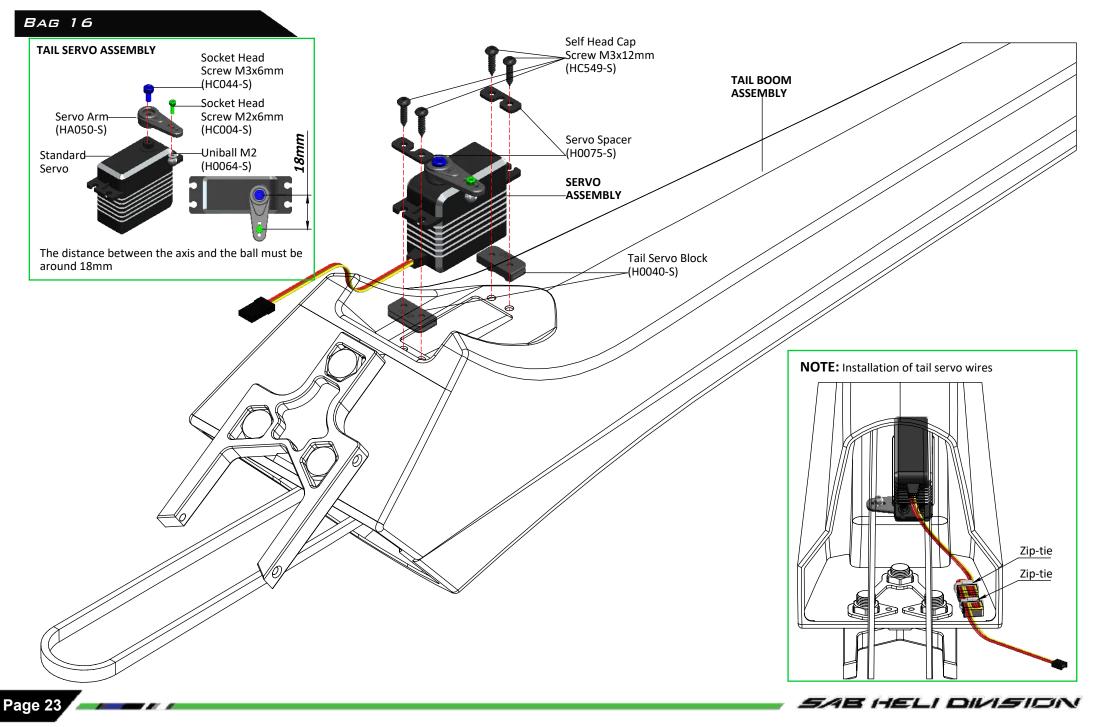








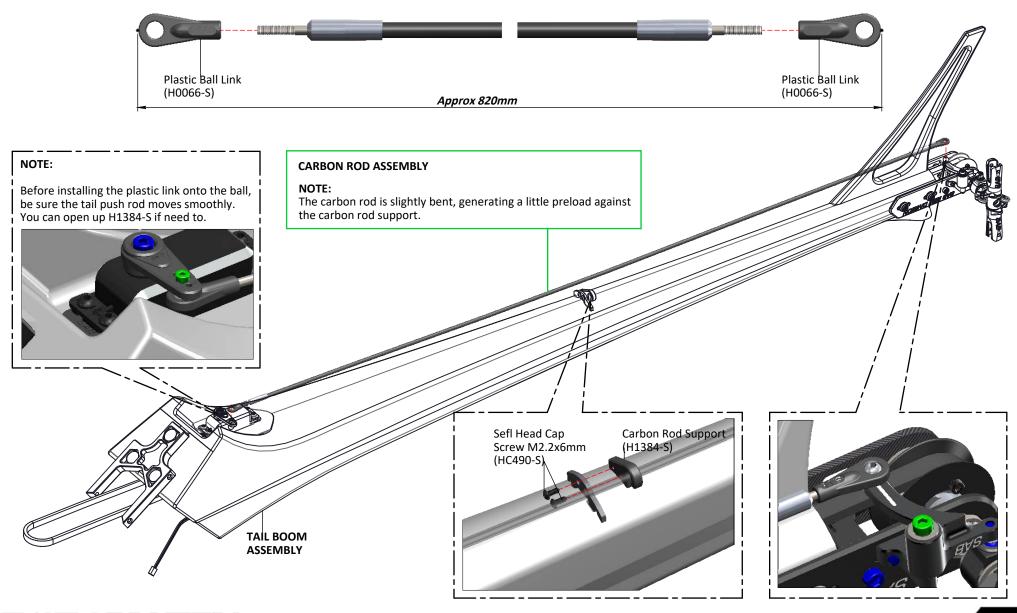






BAG 17

Before installing the plastic link on the threaded rod, be sure that you have waited at least 12 hours for the glue to fully cure.



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BAG 17

Page 25

TAIL BOOM ASSEMBLY

To fit the tail belt, loosen the tail case by loosening the 4 M3 screws (Figure 1).

- *Install the belt onto the tail front pulley, checking the direction of rotation.
- *Insert and tighten the four M4 screws of the boom plate.

*Rotate the tail drive several times by hand.

*Tension the tail case by hand and slowly tighten the 2 BLACK screws in (Figure 2).

NOTE: To disassemble the tail boom, you have to remove the 4 M4 screws. **DO NOT** loosen the 3 M10 plastic screw.

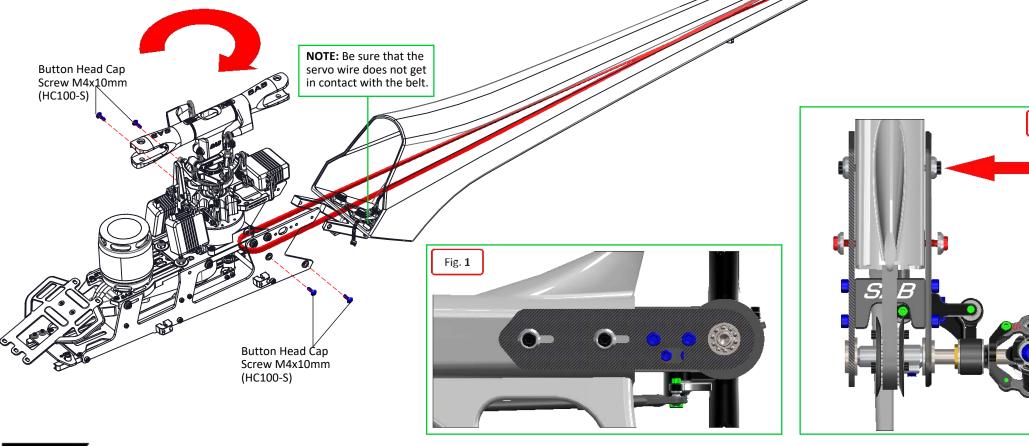




Fig. 2



TAIL BELT TENSION

To provide the correct tail belt tension, you can use the **"zig-zag"** method.

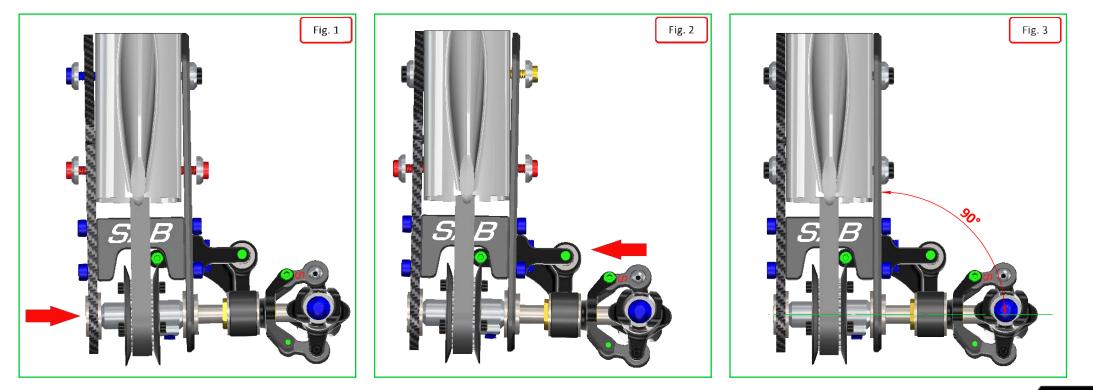
Figure 1, Loosen the 2 RED screws and the BLUE and push the tail side in according with red arrow. Tighten the BLUE screw while you are pushing.

Figure 2, Loosen the 2 RED screws and the YELLOW and push the tail side in according with red arrow. Tighten the YELLOW screw while you are pushing.

You can proceed step by step until the tail belt is tight enough.

Hard 3D style will require more tension; Sport flight style less.

When you set your perfect tension, you can tighten all screws making sure the tail shaft is perfectly straight. (Figure 3, tail output shaft have to be perpendicular to the boom mid line).

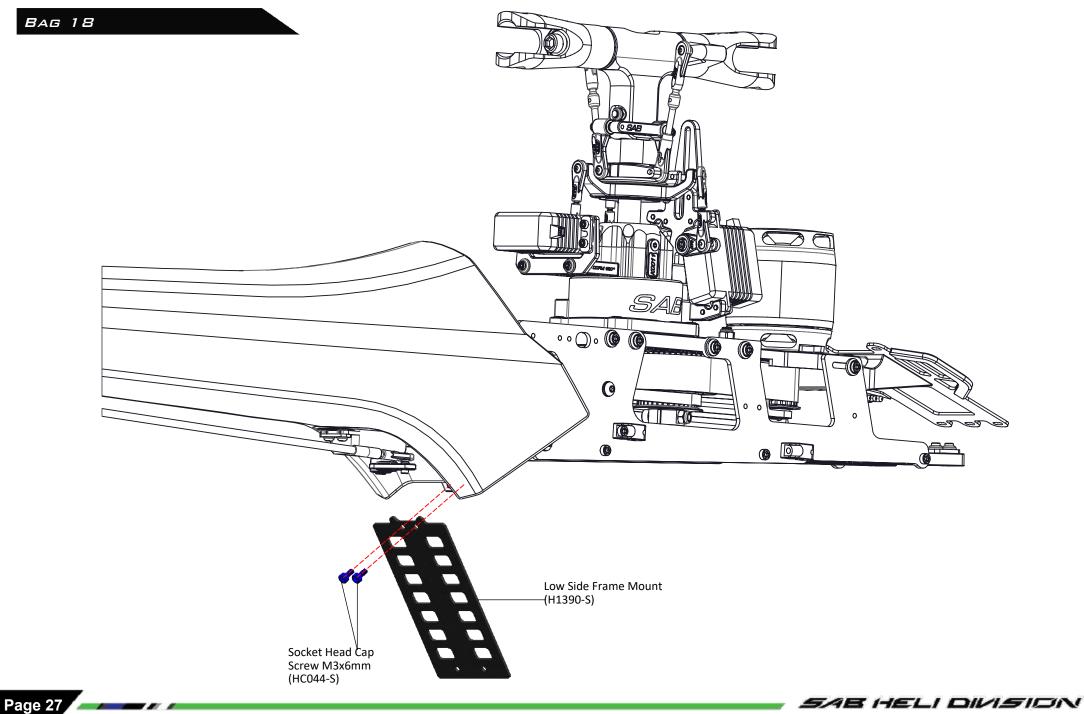


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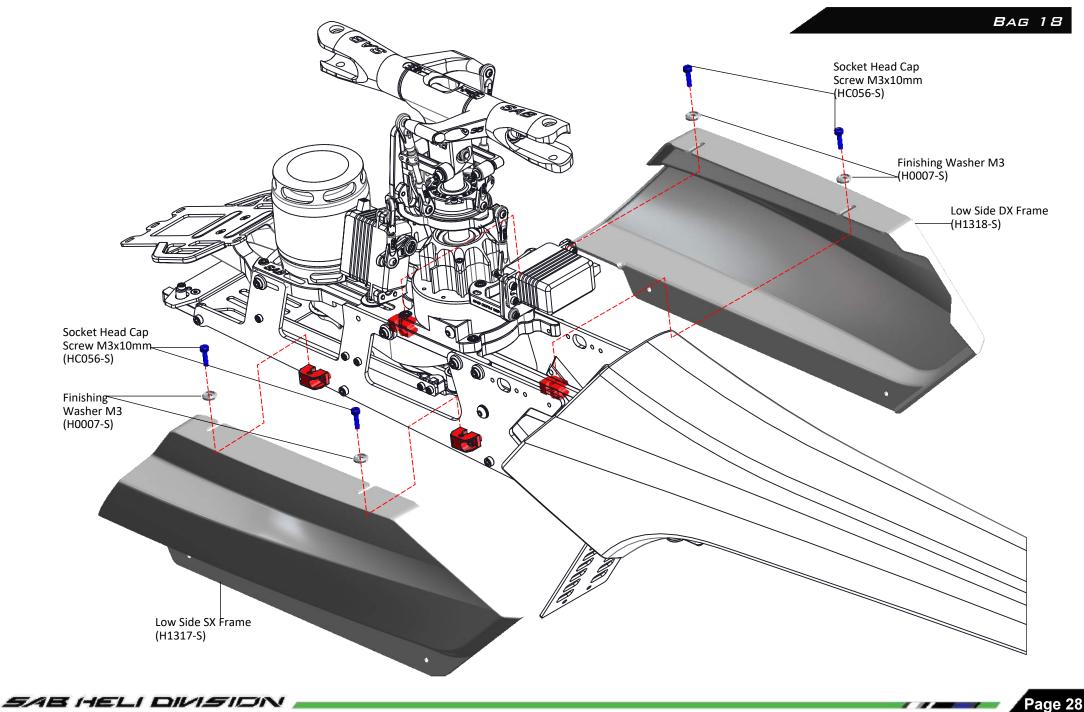


LOW SIDE FRAME INSTALLATION



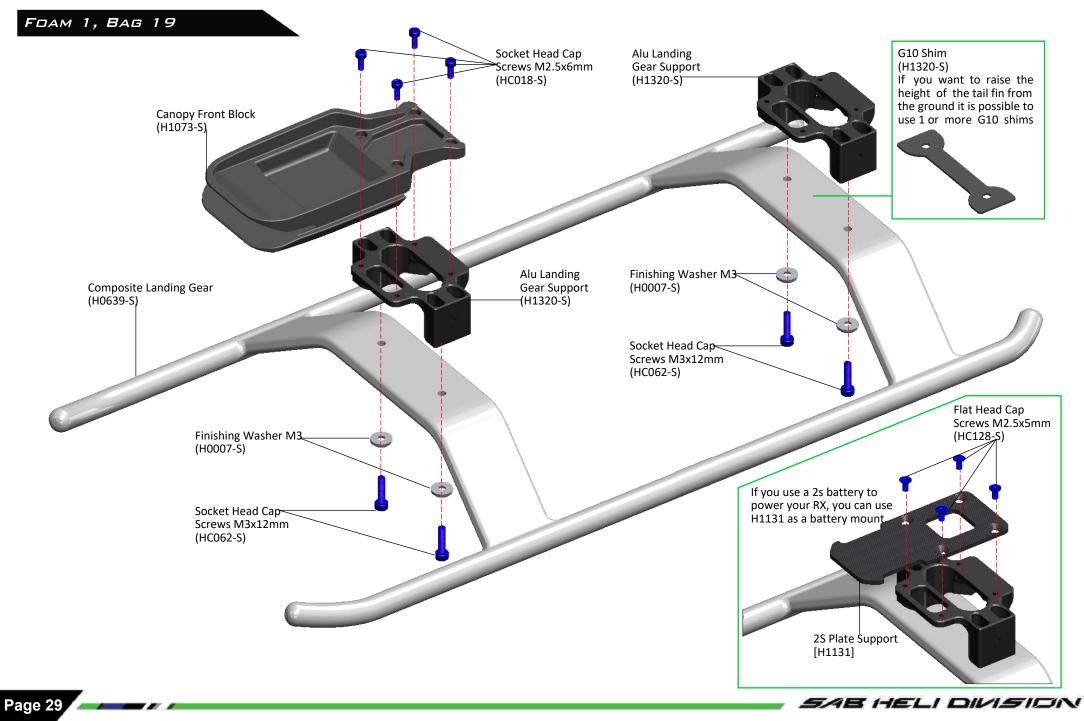
LOW SIDE FRAME INSTALLATION





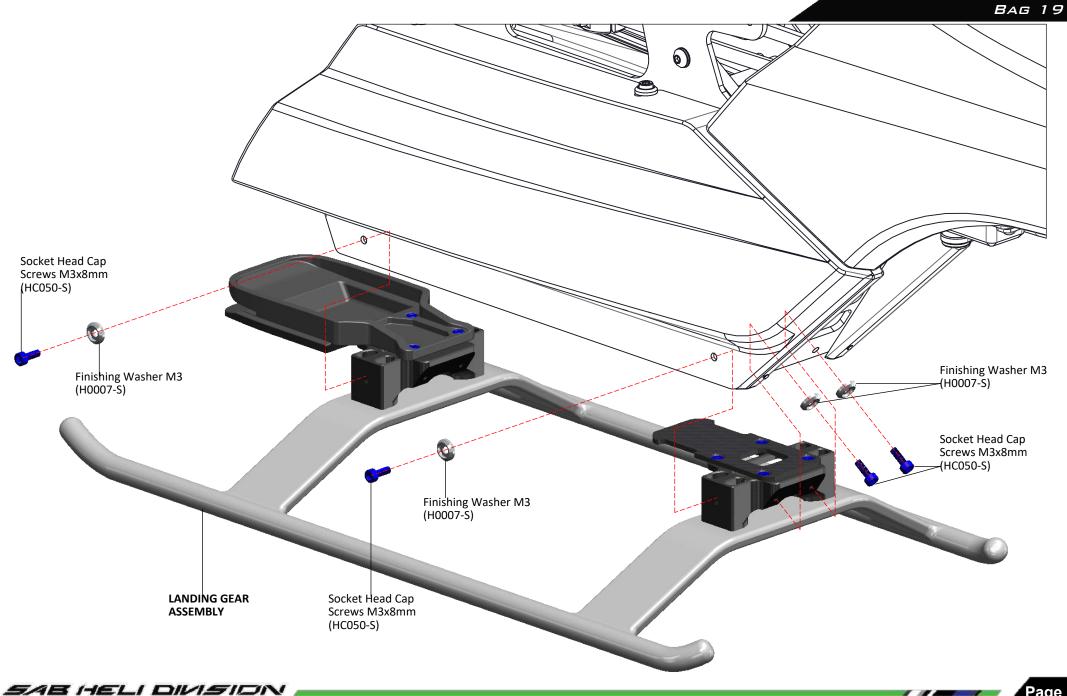


LANDING GEAR INSTALLATION



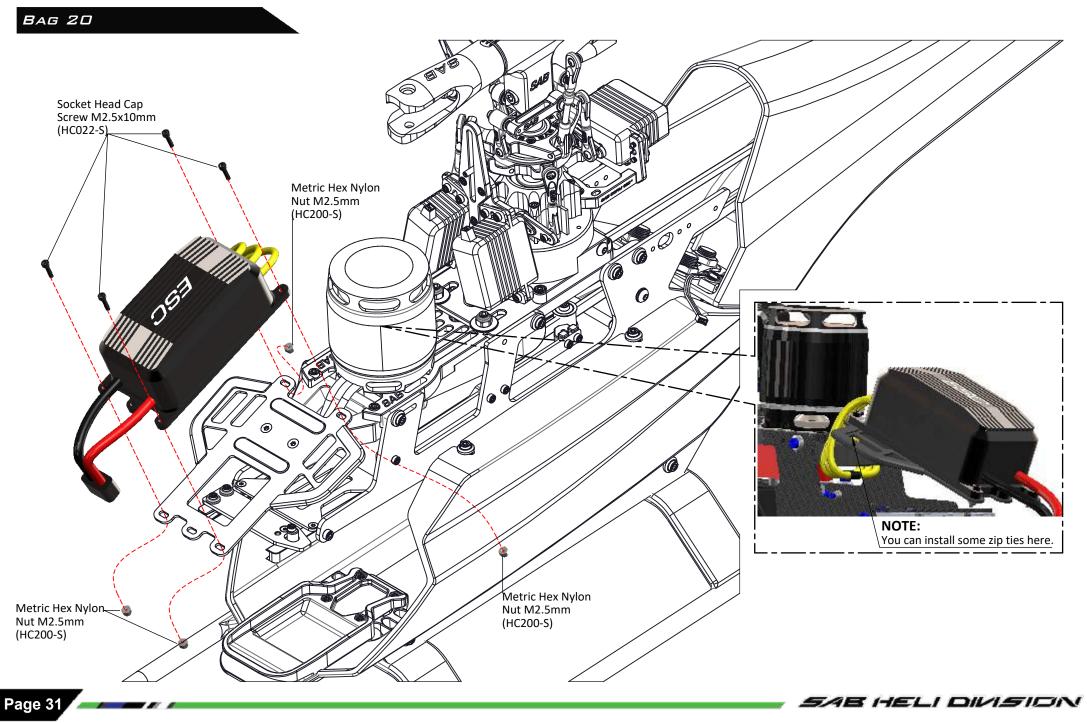
LANDING GEAR INSTALLATION



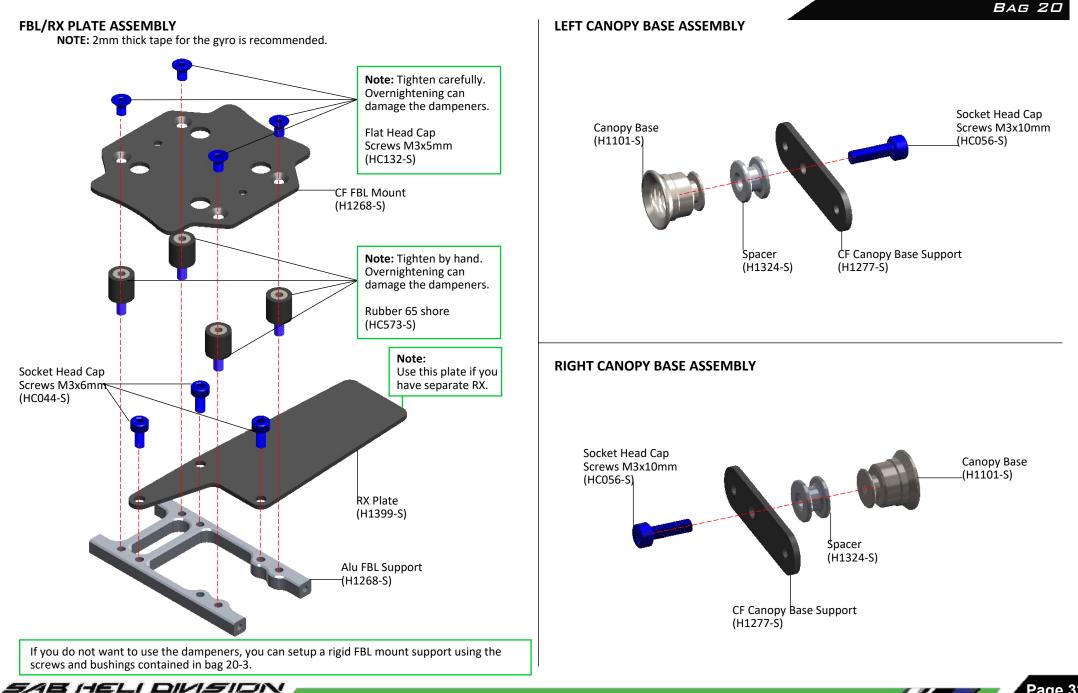




INSTALLATION ESC/FBL/RX



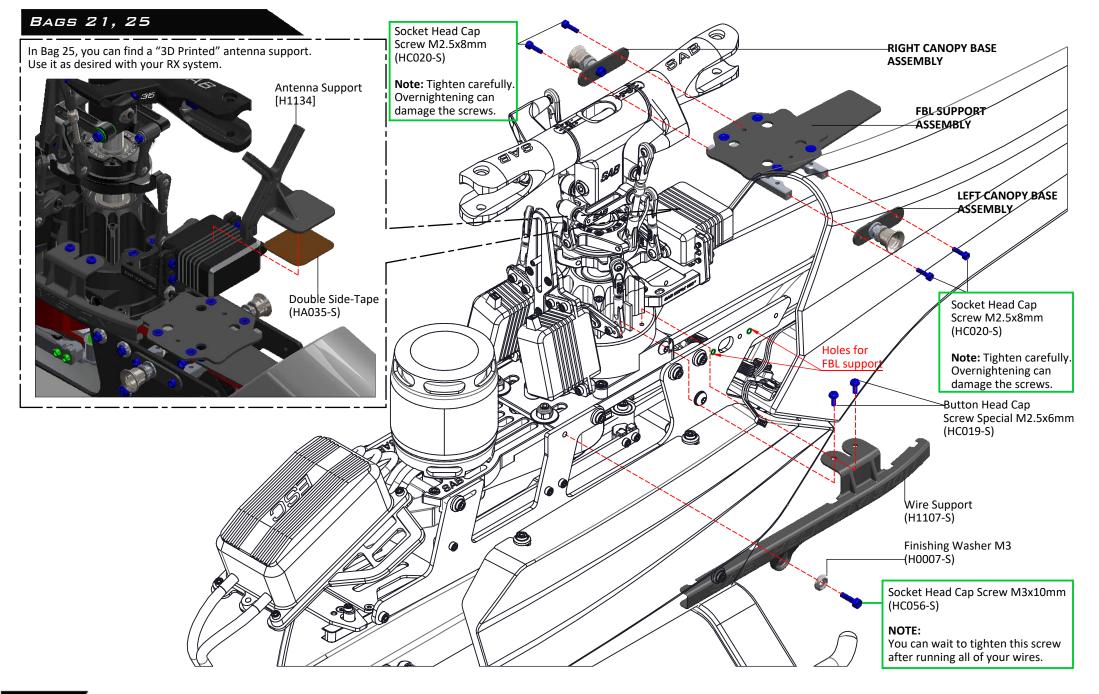






INSTALLATION ESC/FBL/RX

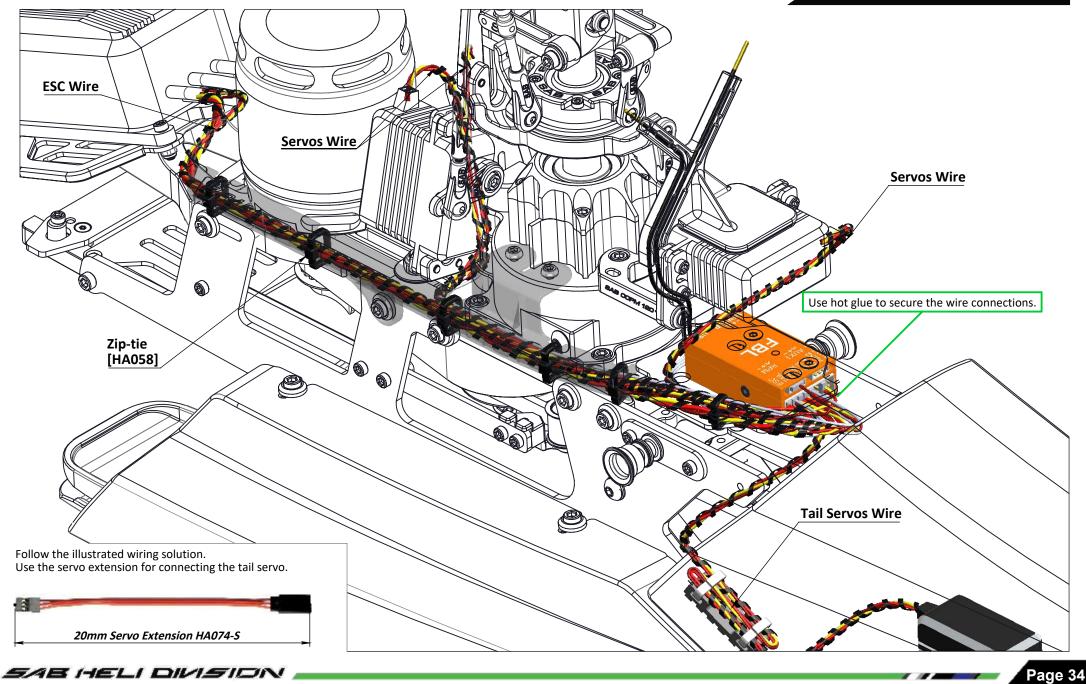
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INSTALLATION ESC/FBL/RX



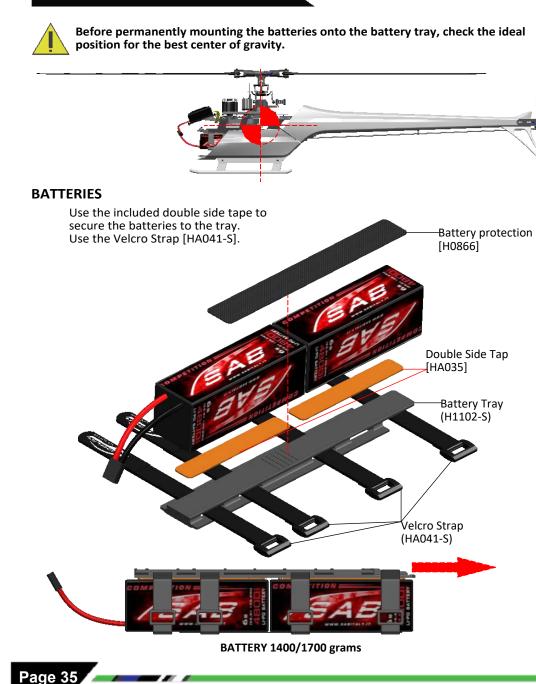
BAG 22

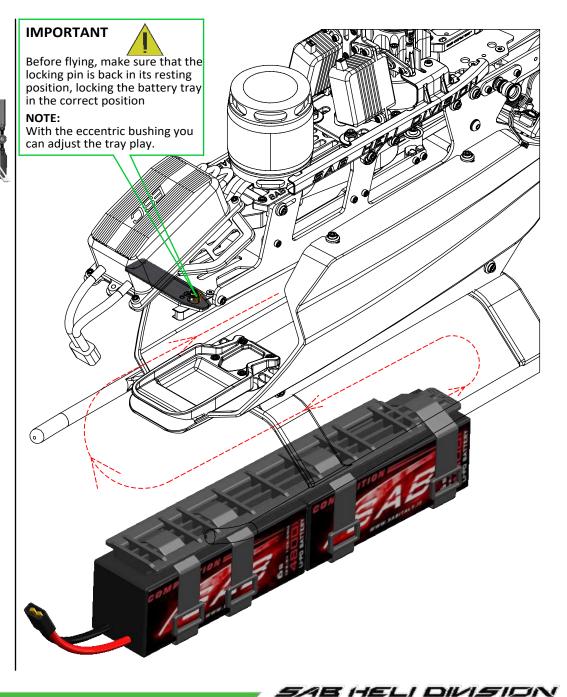




INSTALLATION BATTERIES

BAG 22



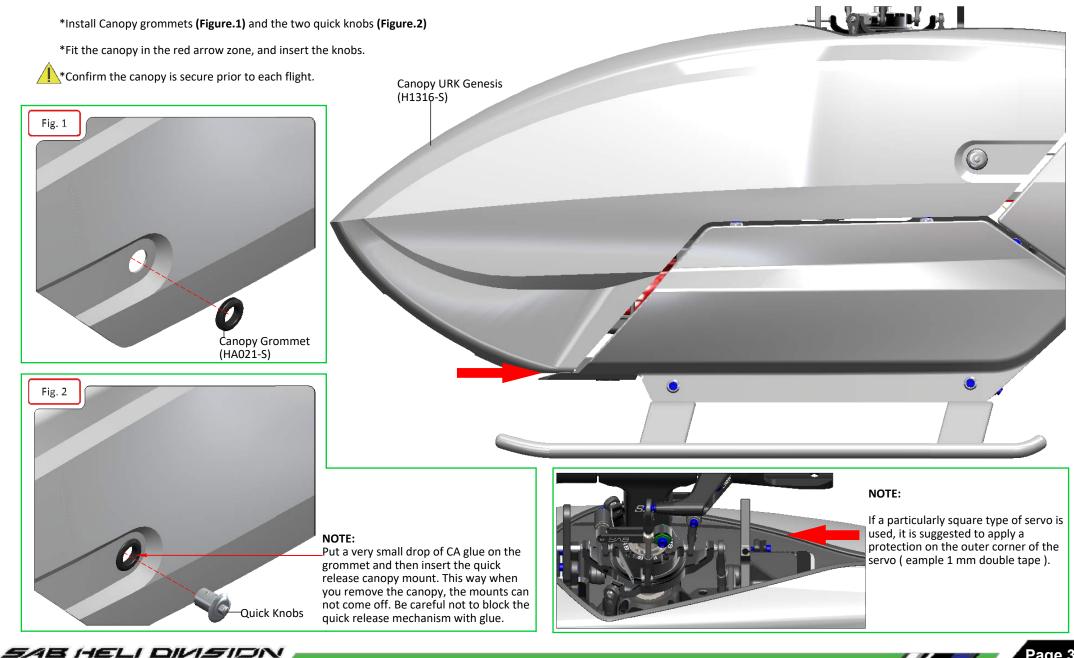


INSTALLATION CANOPY



BAG 23

CANOPY





BAG 24

OPERATIONS BEFORE FLIGHT

*Set up the remote control and the flybarless system with utmost care.

*It is advisable to test the correct settings of the remote and flybarless system without main blades or tail blades fitted.

*Check that all wiring is isolated from the carbon / aluminum parts. It is good practice to protect them at the points where they are at most risk.

*Be sure of the gear ratio, verifying carefully the motor pulley in use. The forces acting on the mechanics increase enormously with increasing of rpm. Although the Goblin can fly at high rpm, for safety reasons we suggest to not exceed 2100rpm.

*Fit the main blades and tail blades. (Figure.1 and Figure.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 +/-13°.

*It is important to check the correct tracking of the main blades. On the Goblin, in order to correct the tracking adjust the main link rod.

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.

*Confirm the canopy is secure prior to each flight.

* Make sure that the battery locking pin is back in its resting position, blocking in correct way the battery tray.

*Perform the first flight at a low headspeed, 1600 RPM.

After this first flight, do a general check of the helicopter. Verify that all screws are correctly tightened.

IN FLIGHT

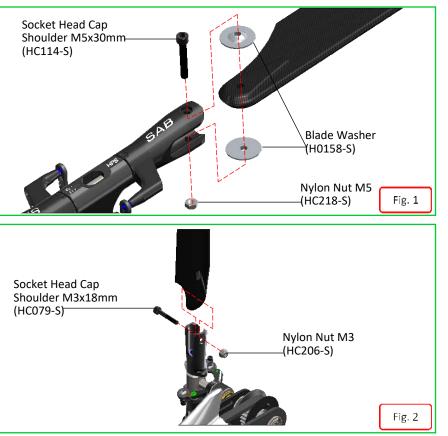
ABOUT HEAD

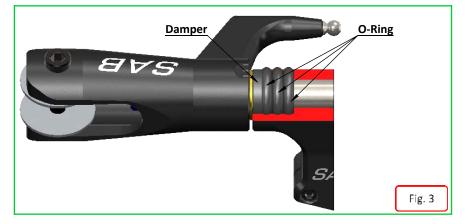
The HPS head allows for a very broad range of dampening setups. The dampers are composed of 3 O-ring (that defines the rigidity) and a technopolymer damper (that defines the maximum possible movement of the spindle). Using different Oring and dampers you can get different responses of the model.

Oring

- 80 Shore: Soft for smooth response 90 Shore: Firm for direct and precise response
- A = Max movement of the spindle, feeling more elastic.
- B = Medium.
- C = Min movement of the spindle, feeling more direct.

The kit includes B damper H1046-B with 90 Shore O-ring [other Setting >>p/n H1135-S, HC530-S].





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MAINTENANCE

Take a look at the red parts.

Check them frequently. All other parts are not particularly subject to wear.

The lifespan of these components varies according to the type of flying.

On average it is recommended to check these parts every 20 flights. In some instances, based on wear, these parts should be replaced every 100 flights.

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

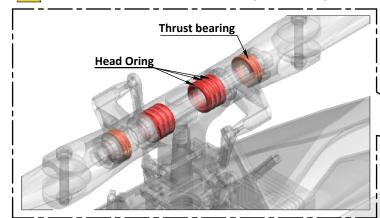
To ensure safety you should do a general inspection of the helicopter after each flight. You should check:

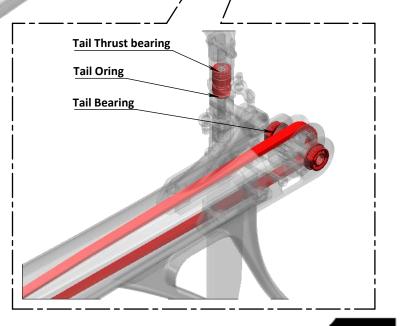
- Proper belt tension (motor belt and tail belt).
- Proper isolation of the wires from the carbon and aluminum parts.

Power Connector

- All screws and bolts remain tight.

IMPORTANT: It is recommended to replace the 3 nylon screws after any crash, even if soft crash.



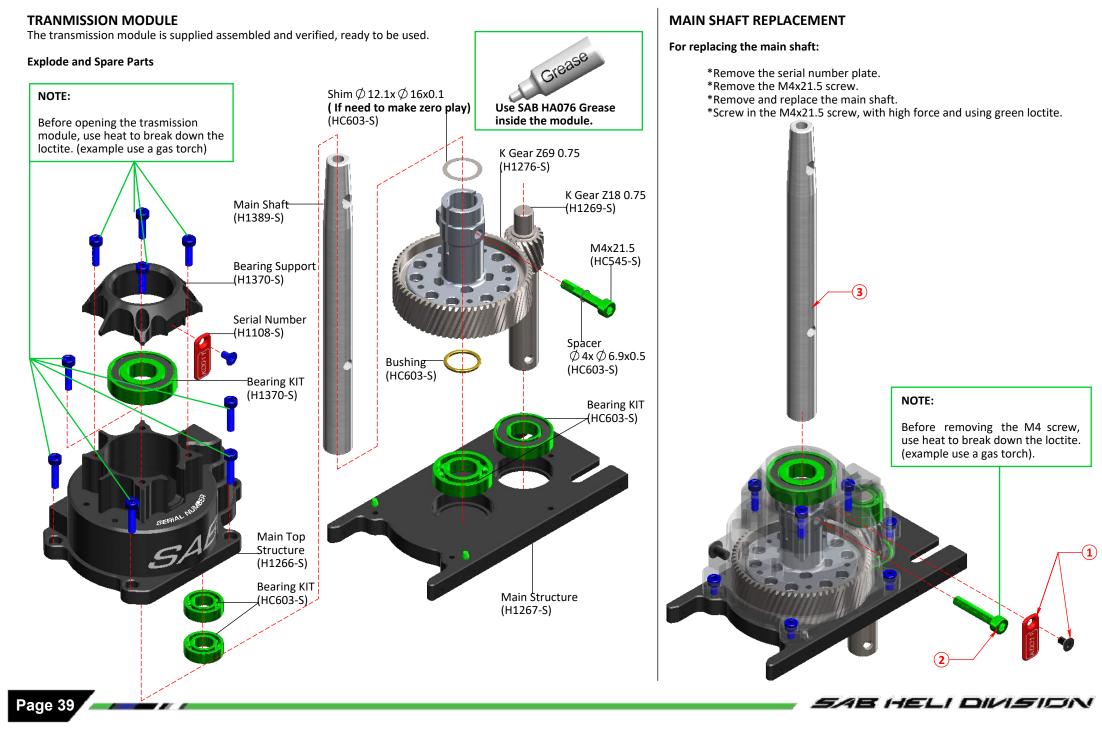


Tail Belt

Nylon Screws

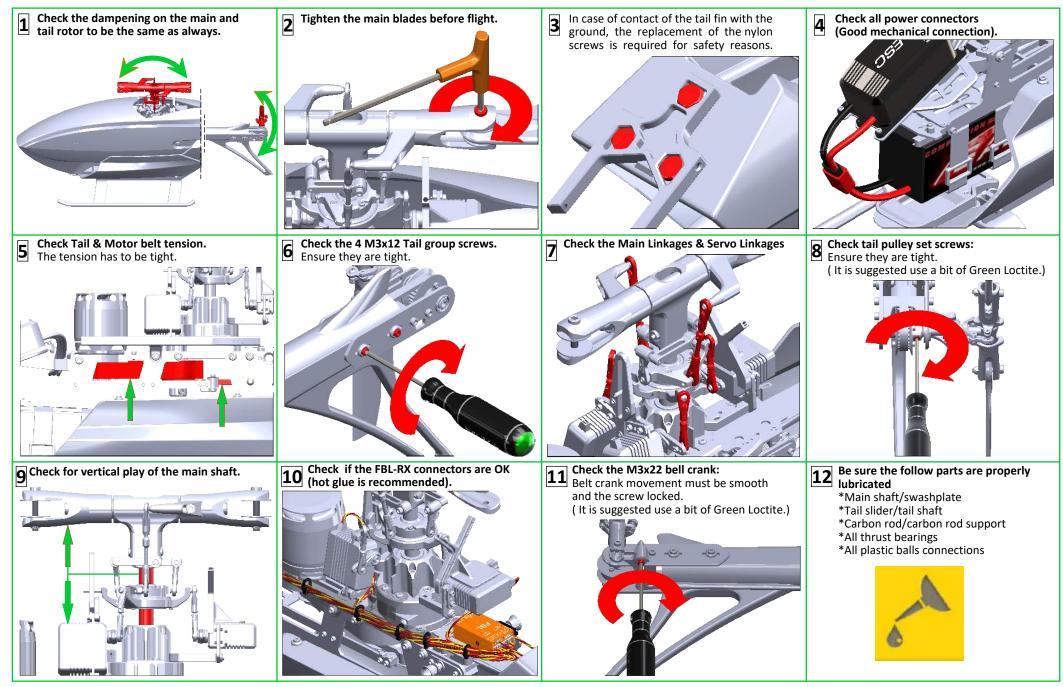
Motor Belt





CHECK LIST





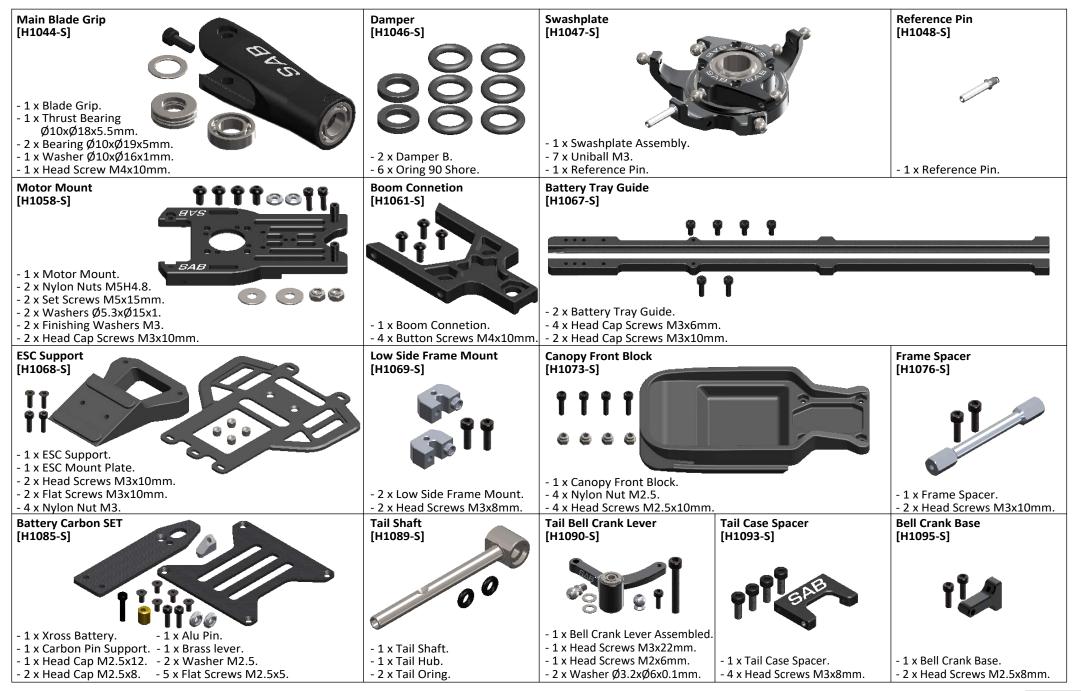
SAB HELI DIVISION



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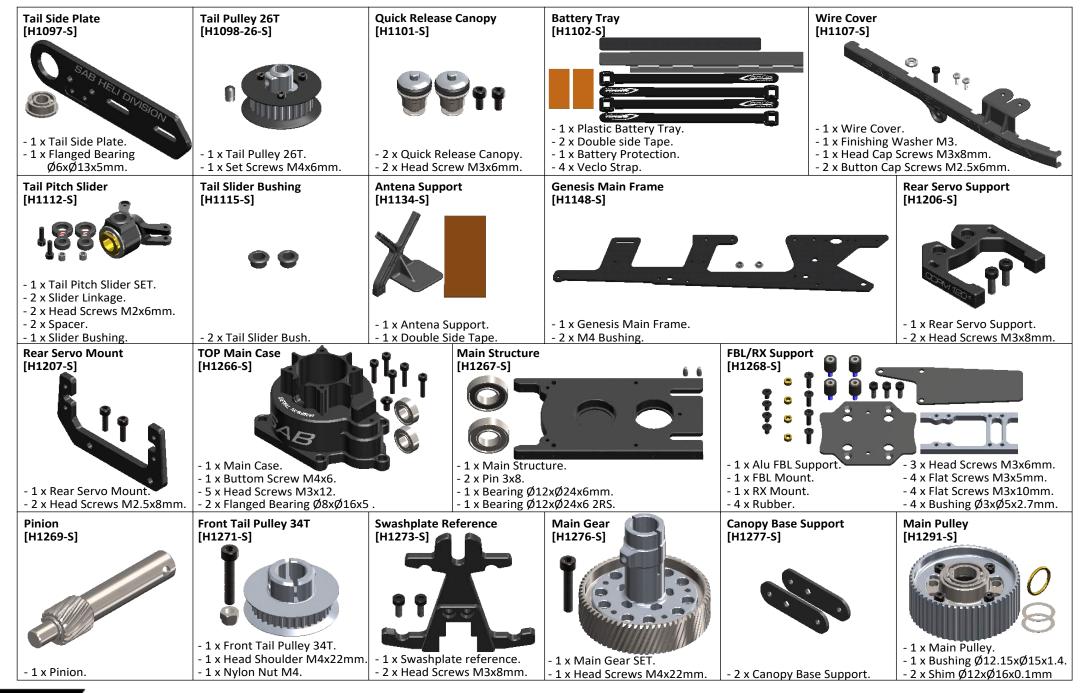
Finishing Washer M3 [H0007-S]	Tail Servo Lock [H0040-S]	Locking Element Tail [H0041-S]	Uniball M2 5H6 [H0064-S]	Uniball M3x4 5H3 [H0065-S]	Plastic Ball Link [H0066-S]
000 0000 000	- 2 x Tail Servo Locks.	- 2 x Locking Element Tails.	- 5 x Uniballs M2 5H6. - 5 x Uniball Spacers.	CAR CAR	
- 10 x Finishing Washers M3.	- 2 x Servo Spacers. - 4 x Head Screws M2.5x12mm.	- 4 x Nylon Nuts M3. - 2 x Double Sided Tapes.	- 5 x Head Screws M2x8mm. - 5 x Head Screws M2x6mm.	- 5 x Uniballs M3x4 5H3.5.	- 10 x Plastic Ball Link.
Servo Spacer [H0075-S]	Spindle [H0079-S]	Radius Arm [H0132BM-S] -2 x Radius Arms. -2 x Spacer Ø3xØ5x2.7.		Bearing Support [H0143-S]	Aluminum Blade Spacer [H0158-S]
- 10 x Servo Spacers.	 - 1 x Spindle Shaft. - 2 x Button Screw M6x10mm. - 2 x Washer Ø6xØ14x1.5mm. 	 -2 x Spacer Ø2.5xØ4x6.3. -2 x Uniball Radius Arms. -2 x Head Cap Screws M3x16mr -2 x Head Cap Screws M2.5x18r -2 x Washers Ø3xØ4x0.5mm. -2 x Flanged Bearings Ø2.5xØ6x -2 x Flanged Bearings Ø3xØ7x3r 	nm. 2.5mm.	 1 x Bearing Support. 1 x Flanged Bearing Ø6xØ13x5mm. 2 x Head Screws M3x8mm. 	- 4 x Aluminum Blade Spacer.
Motor Pulley [H0175-18 to 25-S]	Uniball Radius Arm [H0205-S]	Finishing Washer M2.5 [H0255-S]	Plastic Tail Linkage [H0261-S]	Tail Spindle [H0329-S]	Tail Spacer [H0330-S]
- 1 x Motor Pulley 18 to 25T. - 1 x Set Screws M4x4mm.			- 2 x Plastic Tail Linkage.		- 2 x Tail Oring Damper.
 - 1 x Set Screws M4x6mm. - 1 x Bushing. 	- 2 x Uniball Radius Arm.	- 10 x Finishing Washers M2.5.	- 2 x Grip Link Bushing.	- 1 x Tail Spindle.- 2 x Button Screws M4x6mm.	- 2 x Washer Ø5xØ8.9x0,75mm. - 2 x Washer Ø7.5xØ10x0,5mm.
Plastic Ball Link [H0402-S]	Main Linkage [H0417-S]	URK F3C Landing Gear [H0639-S]		Tail Blade Grips [H1033-S]	
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Canopy Urukay Genesis [H1316-S]		SX Low Side Frame Urukay Genesis [H1317-S]	DX Low Side Frame Urukay Genesis [H1318-S]	Boom Urukay Genesis [H1319-S]	
	• •				ÖÖ
 - 1 x Canopy Urukay Genesis. - 2 x Canopy Grommet. 		- 1 x SX Low Side Frame Urukay Genesis.	- 1 x DX Low Side Frame Urukay Genesis.	 1 x Boom Urukay Genesis. 2 x Locking Element Tail. 4 x Metric Hex Nylon Nuts M3 	 - 2 x Double Sided Tapes. - 1 x Nut Block.
Alu Landing Gear Mount [H1320-5] - 1 x Alu Landing Gear Mount. - 2 x Landing Gear Spacer. - 4 x Finishing Washer M3.	CF Tail Side Plate [H1322-S]	Canopy Knob Spacer [H1324-S]	Bearing Support [H1370-S] - 1 x Bearing Support. - 1 x Bearing Ø 12x Ø 28x7mm.	Tail Fin Urukay Genesis [H1377-S]	Delrin Anti-rotation [H1378-S]
 - 2 x Head Screws M3x8mm. - 2 x Head Screws M3x12mm. 	- 1 x Flanged Bearing $\oint 6x \oint 13x5mm.$	- 4 x Canopy Knob Spacer.	- 4 x Head Screws M3x10. - 2 x Shim \emptyset 12x \emptyset 16x0.1mm.	- 1 x Tail Fin Urukay Genesis.	 - 1 x Delrin Anti-Rotation. - 3 x Head Screws M2.5x6mm.
Delrin Carbon Rod Support [H1384-S]	Center Hub [H1387-S]	HINE	Blade Grip Arm 35 [H1388-S]	Main Shaft [H1389-S]	CF X-ross Plate [H1390-S]
- 1 x Carbon Rod Support. - 2 x Tapping Screws M2.2x6.	 - 1 x Center Hub. - 1 x Head Screw M4x24mm. - 1 x Nylon Nut M4. - 1 x Set Screw M8x10. - 1 x Flat Screw M6x16mm. - 1 x Spacer Ø6xØ8.5x1. 	SAE P	 - 2 x Blade Grip Arm. - 2 x Head Screws M4x10mm. - 2 x Uniball M3x4 Ø5 H3.5. 	- 1 x Main Shaft. - 2 x Shim Ø12xØ16x0.1. - 1 x Shoulder Screw M4x21.5. - 1 x Spacer Ø4xØ7.5x0.5.	 - 1 x CF X-ross Plate. - 2 x Finishing Washer M3. - 2 x HeadScrew M3x6mm. - 2 x HeadScrew M3x8mm.
[HC004-S]	[HC018-S]	[HC020-S]	[HC022-S]	[HC032-S]	[HC044-S]
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[HC050-S]	[HC056-S]	[HC062-S]	[HC068-S]	[HC079-S]	[HC086-S]	[HC096-S]
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- 8 x Head Screws M3x8mm.	- 8 x Head Screws M3x10.	- 8 x Head Screws M3x12.	- 8 x Head Screws M3x16.	- 2 x Shoulder Screws M3x18. - 2 x Nylon Nut M3.	- 8 x Head Screws M3x22.	- 8 x Button Screws M4x6.
[HC100-S]	[HC102-S]	[HC104-S]	[HC111-S] 🚬 🌑 👝	[HC114-S]	[HC124-S]	[HC125-S]
1 fi ^ş fî	្តព្រំ	PRIT		- 2 x Shoulder Screws M5x30		T
- 8 x Button Screws M4x10.	- 8 x Head Screws M4x10.	- 8 x Head Screws M4x22.	- 8 x Shoulder Screws M4x24.		- 8 x Head Screws M6x10.	- 8 x Flat Screws M2.5x8.
[HC128-S]	[HC132-S]	[HC135-S]	[HC140-S]	[HC152-S]	[HC153-S]	[HC176-S]
6 6 6 6 6 6 6 6 6 6						00
- 8 x Flat Screws M2.5x5.	- 8 x Flat Screws M3x5.	- 8 x Flat Screws M3x10.	- 8 x Set Screws M2.5x18.	- 8 x Set Screws M4x4mm.	- 8 x Set Screws M4x6mm.	- 5 x Washer \oint 3x \oint 4x0.5mm.
[HC180-S]	[HC188-S]	[HC194-S]	[HC200-S]	[HC206-S]	[HC212-S]	[HC218-S]
000	000	88				
- 5 x Washer	- 5 x Washer	- 5 x Washer				
			- 8 x Metrix Nylon Nut M2.5.		- 8 x Metrix Nylon Nut M4.	- 8 x Metrix Nylon Nut M5.
[HC230-S]	[HC232-S]	[HC242-S]	[HC325-S]	[HC335-S]	[HC351-S]	[HC400-S]
000	88	Connentia - Internation Connentia - Internation Connentia - Internation	\square	88	****	6 <mark>6</mark> 8
- 5 x Washer $\oint 10x \oint 16x1$ mm.	- 5 x Washer $\oint 10x \oint 16x0.2$ mm.	- 3 x Thread Rod M2.5x40.	- 1 x Tail Belt 2160mm.	- 4 x Tail Oring.	- 8 x Flat Screws M4x6.	- 4 x Flanged Bearing \oint 2.5x \oint 6x2.6mm .
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[HC402-S]	[HC411-S]	[HC414-S]	[HC418-S]	[HC419-S]	[HC422-S]	[HC426-S]
666				00		
- 4 x Flanged Bearing \oint 3x \oint 7x3mm .	- 4 x Ball Bearing $\oint 5x \oint 10x4mm$.	- 2 x Flanged Bearing $\oint 6x \oint 13x5mm$.	- 2 x Flanged Bearing \emptyset 8x \emptyset 12x3.5mm.	- 2 x Ball Bearing	- 4 x Ball Bearing $\oint 10x \oint 19x5mm$.	- 2 x Ball Bearing \emptyset 12x \emptyset 24x6mm.
[HC430-S]	[HC435-S]	[HC438-S]	[HC529-S]		[HC543-S]	[HC545-S]
- 2 x Rad Bearing Ø 30x Ø 37x4mm .	- 2 x Thrust Bearing ∅ 5x ∅ 10x4mm .	- 2 x Thrust Bearing ∅ 10x ∅ 18x5.5mm.	- 6 x O-ring 90 shore.	- 6 x O-ring 80 shore.	- 5 x Set Screw M5x16mm.	- 8 x Shoulder Screw M4x22
[HC546-S]	\$ 5X \$ 10X411111.	[HC549-S]	[HC601-S]	[HC602-S]	[HC603-S]	[HC610-S]
- 3 x Bolt M10x20mm. - 3 x Nut M10x5mm. - 1 x Nut Block.	- 1 x Special Tool. - 2 x Washer .	- 8 x Self Screws M3x12.	- 1 x Motor Belt GT3-276-19 mm.	- 1 x One Way Bearing \emptyset 12x \emptyset 20x12mm.	- 1 xBearing \emptyset 12x \emptyset 24x6 2Rs - 1 xBearing \emptyset 12x \emptyset 24x6. - 1 xBearing \emptyset 8x \emptyset 16x5. - 2 x Shims \emptyset 12x \emptyset 16x0.1. - 1 x Shim \emptyset 12x \emptyset 16x1.3. - 1 x Shim \emptyset 4x \emptyset 7x0.2. - 1 x M4x21.5 Screw. - 2 x Pin 3x6.	- 8 x Flat Screw M6x16mn
[HC611-S]	[HC615-S]		[747TBS]	μ μ		[105TBS]
- 8 x Set Screw M8x10mm.	- 1 x Carbon Rod Ø 3x Ø 4 - 2 x Plastic Ball Linkage - 2 x Thread Rod M2.5x40. - 2 x Aluminum Bush.		- 2 x Main Blades 747mm			- 2 x Tail Blades 105mm.
[HA021-S]	[HA035-S]	[HA041-S]	[HA050-S]/[HA051-S]	[HA072-S]	[HA075-S]	[HA076-S]
				S	BREASE	BREASE
00	- 2 x Double side				- 1 x Free Wheel	- 1 x Tranmissions module



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 and 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.

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