

MANUAL GOBLIN 700 KYLE STACY EDITION



- 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 orbstacles.
- Rotor blades can rotate at very high speeds! Be aware of the danger they pose.
- Always keep the model at a safe distance from other pilots and spectators.
- Avoid maneuvers with trajectories towards a crowd.
- Always maintain a safe distance from the model.

SAB HELI DIVISION



Goblin 700 Kyle Stacy Edition Manual

Release 1.0 - June 2015

WORLD DISTRIBUTION

www.goblin-helicopter.com

For sales inquiries, please email: <u>sales@goblin-helicopter.com</u> For info inquiries, please email: <u>support@goblin-helicopter.com</u>

Attention: If you are a consumer and have questions or need of assistance,

please contact in a first time the Goblin retailer where you made the purchase $% \left(1\right) =\left(1\right) \left(1\right) \left($

EUROPEAN DISTRIBUTION

www.sabitaly.it

For sales inquiries, please email: sales@sabitaly.it
For info inquiries, please email: info@sabitaly.it

Attention: If you are a consumer and have questions or need of assistance,

please contact in a first time the Goblin retailer where you made the purchase



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

VERY IMPORTANT

Inside Box 5, you will find Bag 21. 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 29.

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

SAB Heli Division

INDEX

- 1 Serial Number
- 2 Important Notes 🔼
- 3 Components and Box
- 4 Carbon frame Assembly
- 5 Trasmission Assembly
- 6 Main rotor

- 7 Assembling The Modules
- 8 Installation of Swashplate Servos
- 9 Installation of The Motor
- 10 Installation of The ESC
- 11 Installation of Flybarless Unit and RX
- 12 Tail Assembly

- 13 Installation of the Boom, Canopy
- 14 Battery
- 15 In flight 🦺
- 16 Maintenance
- 17 Exploded Views
- 18 Spare Parts

SPECIFICATIONS





Main rotor diameter: 1582mm (with 690mm blades)

Main blade length: 690mm Tail rotor diameter: 305mm Tail blade length: 115mm Main shaft diameter: 12mm Tail shaft diameter: 6mm Spindle diameter: 10mm

Weight including standard electronics: 4175g (excluding batteries). Motor size: Maximum 64mm diameter, maximum height 64mm Battery compartment: 60x58x350mm (adaptable to 75x58x350mm)



IMPORTANT NOTES

- *This radio controlled helicopter is not a toy.
- *This radio controlled helicopter can be very dangerous.
- *This radio controlled helicopter is a technically complex device which has to be built and handled very carefully.
- *This radio controlled helicopter must be built following these instructions. This manual provides the necessary information to correctly assemble the model. It is necessary to carefully follow all the instructions.
- *Inexperienced pilots must be monitored by expert pilots.
- *All operators must wear safety glasses and take appropriate safety precautions.
- *A radio controlled helicopter must only be used in open spaces without obstacles, and far enough from people to minimize the possibility of accidents or of injury to property or persons.
- *A radio controlled helicopter can behave in an unexpected manner, causing loss of control of the model, making it very dangerous.
- *Lack of care with assembly or maintenance can result in an unreliable and dangerous model.
- *Neither SAB Heli Division nor its agents have any control over the assembly, maintenance and use of this product. Therefore, no responsibility can be traced back to the manufacturer. You hereby agree to release SAB Heli Division from any responsibility or liability arising from the use of this product.

SAFETY GUIDELINES

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

NOTES FOR ASSEMBLY

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

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

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

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



Important

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



Use retaining compound (eg Loctite 648)



Use retaining compound (eg Loctite 243)





Use Proper Lubricant



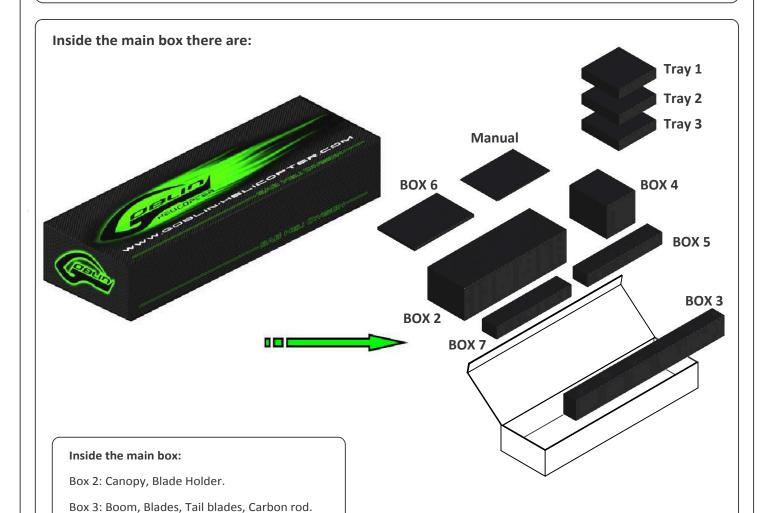
ADDITIONAL COMPONENTS REQUIRED

- *Electric Motor: 12S 480/520Kv Maximum diameter 64mm, Maximum height 64mm, Pinion shaft diameter 6/8mm
- *Speed controller: minimum 160A to be safe
- *Batteries: 12S 5000mAh
- *1 flybarless 3 axis control unit
- *Radio power system, if not integrated with the ESC
- *3 cyclic servos
- *1 tail rotor servo
- *6 channel radio control system on 2.4 GHz

(See configuration examples on page 17)

TOOLS, LUBRICANTS, ADHESIVES

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



Box 4: Mechanical parts in 4 trays: Tray 1: Main rotor

Tray 2: Carbon frame and tail rotor

Tray 3: Transmission
Tray 4: Main structure

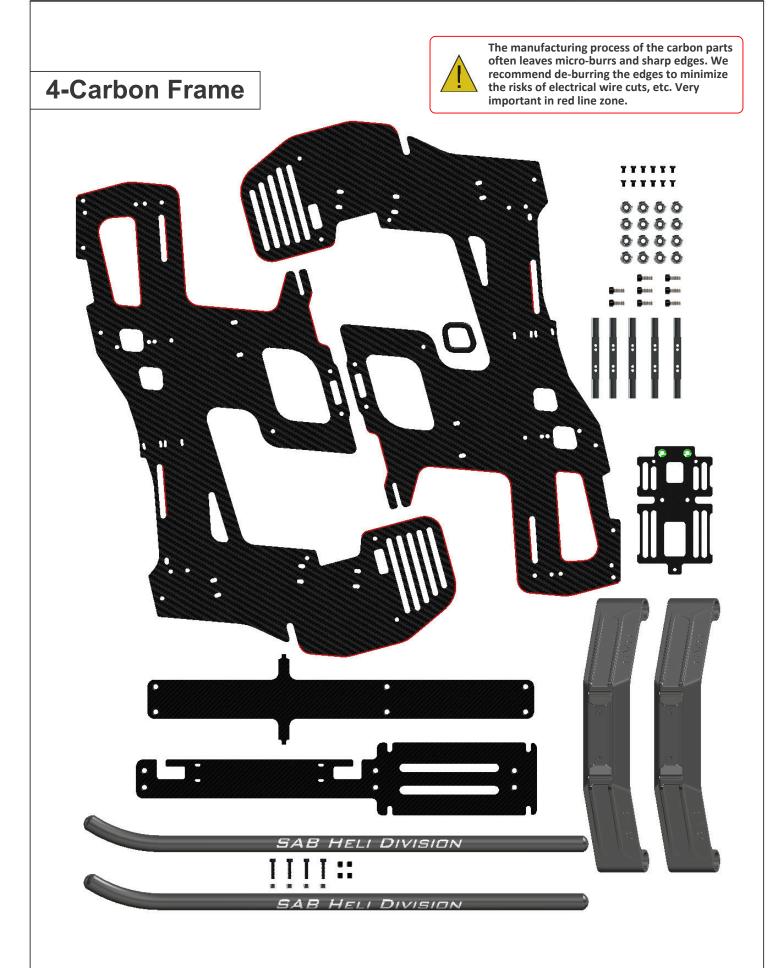
Box 5: Bags

Box 6: Carbon parts

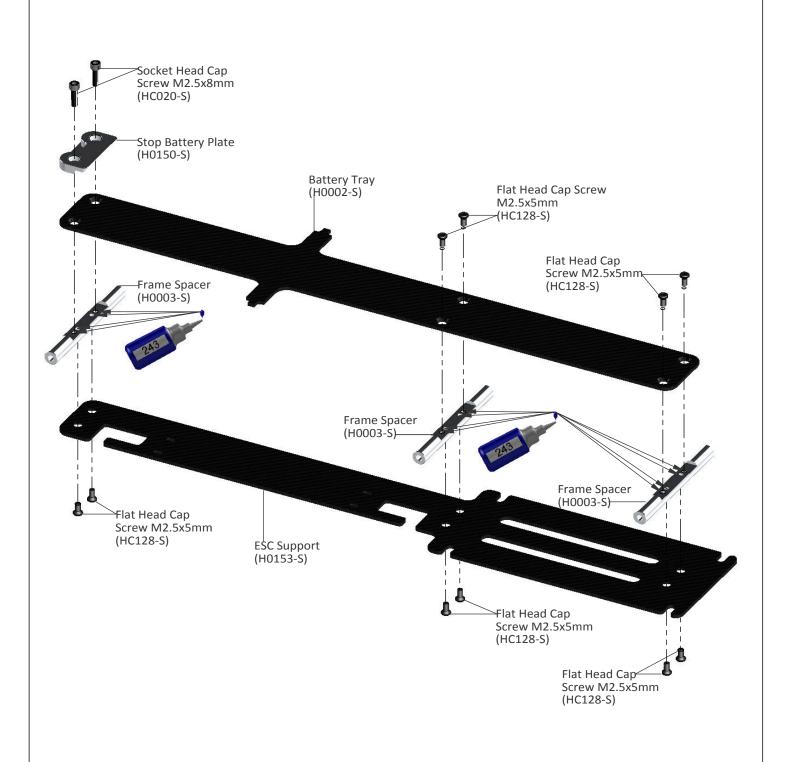
Box 7: Landing Gear

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

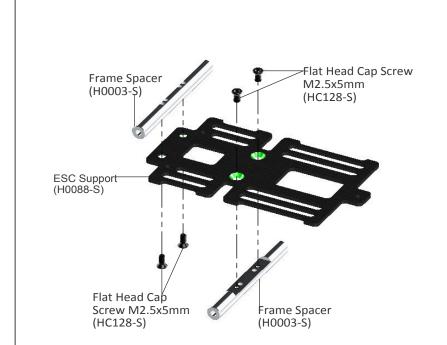




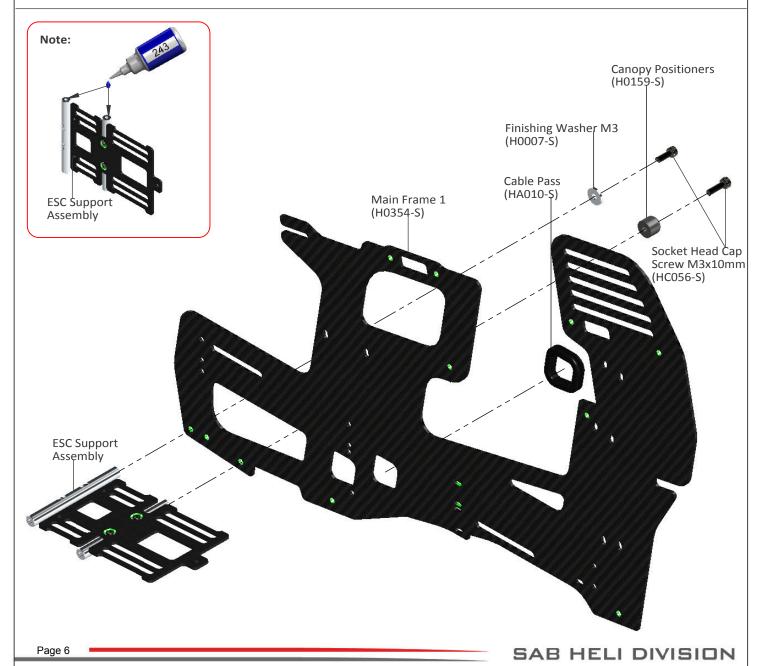




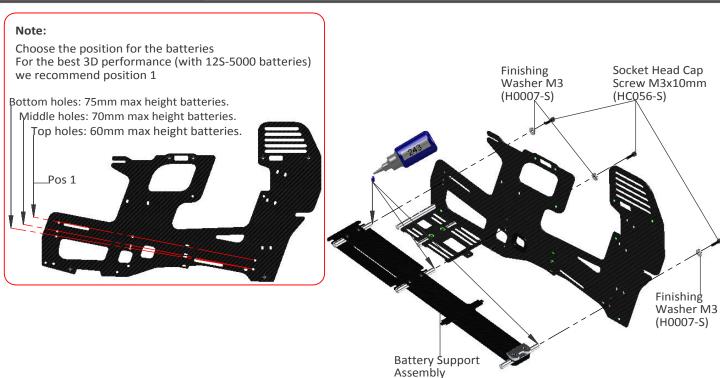


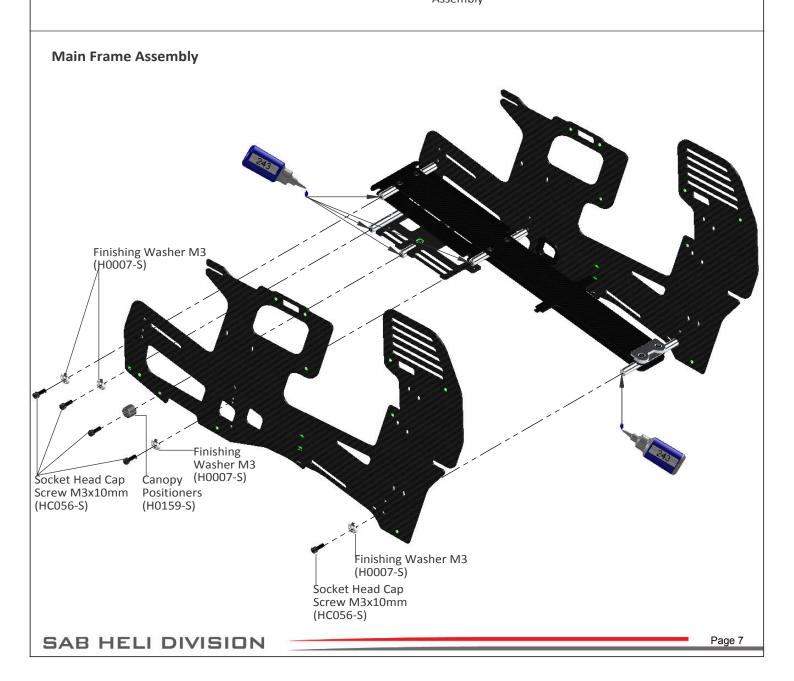




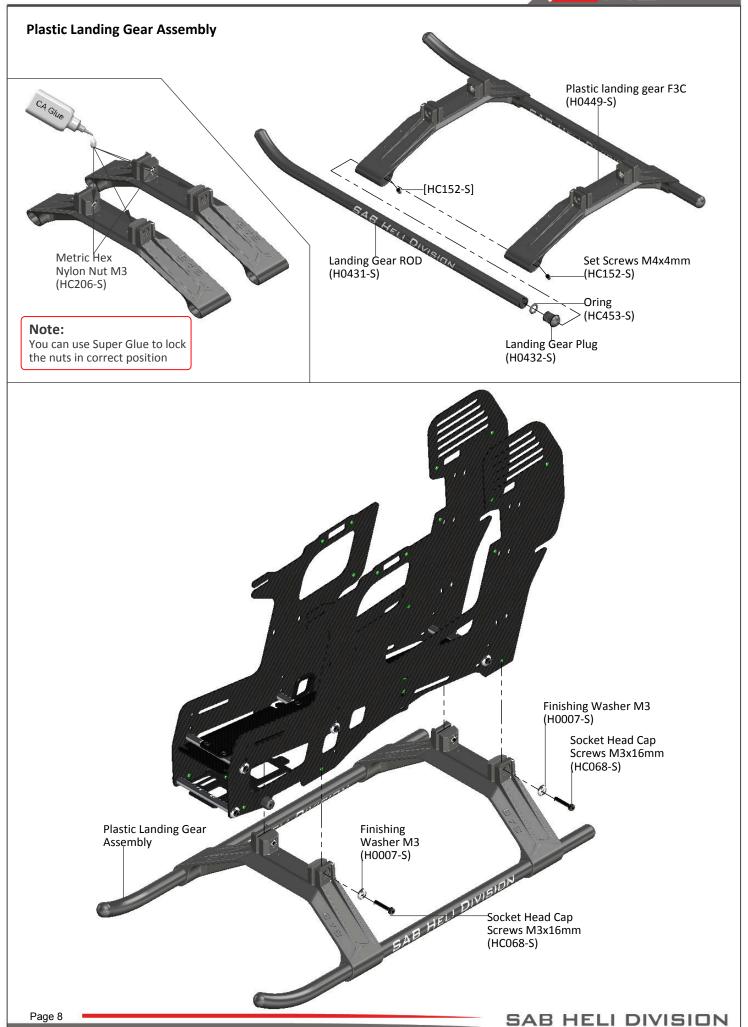




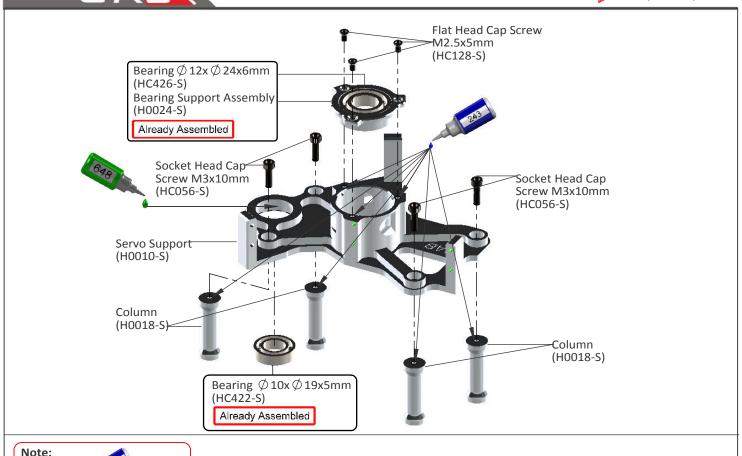


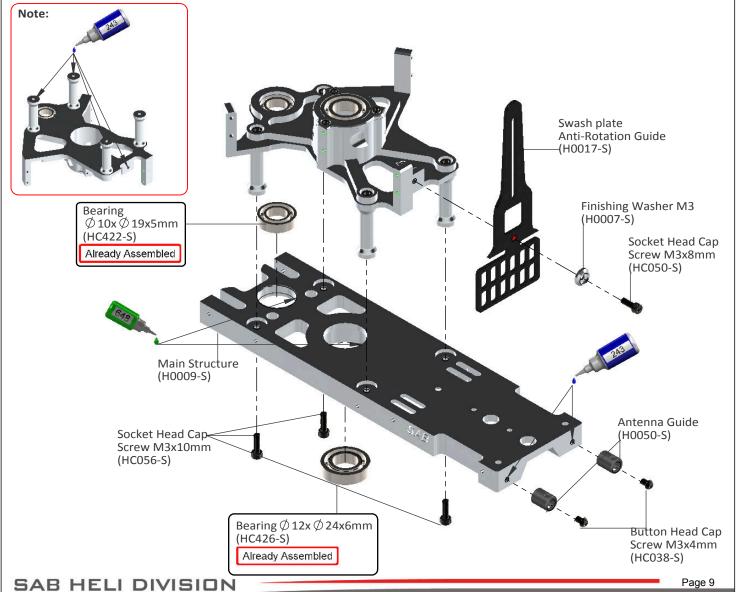




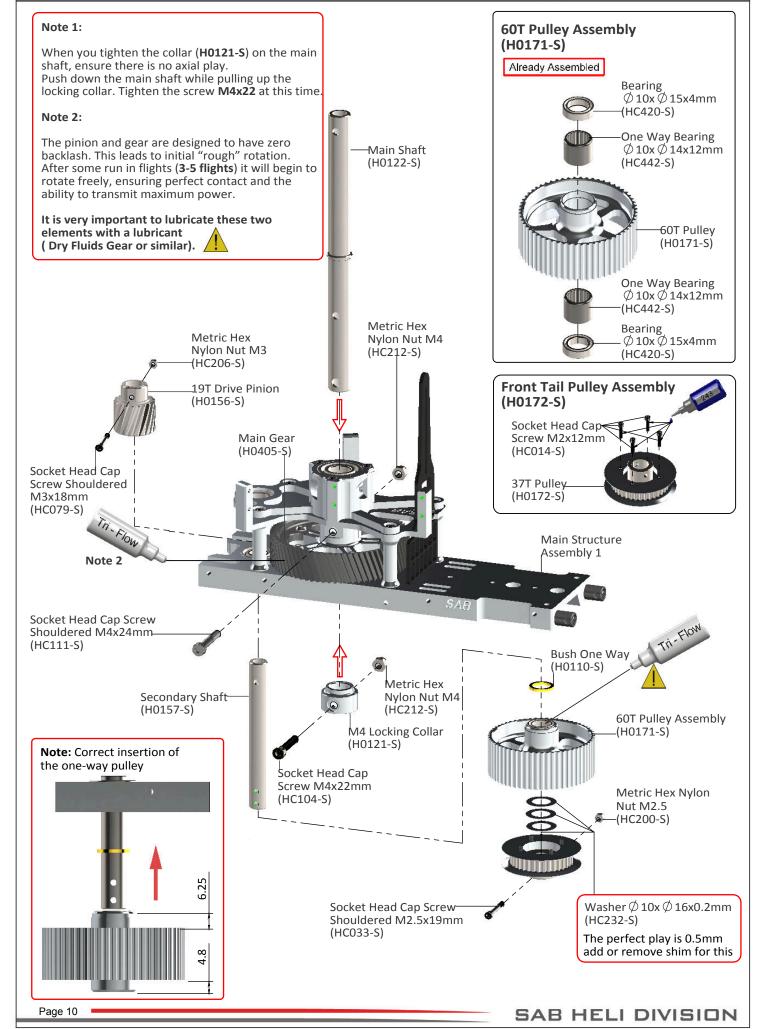








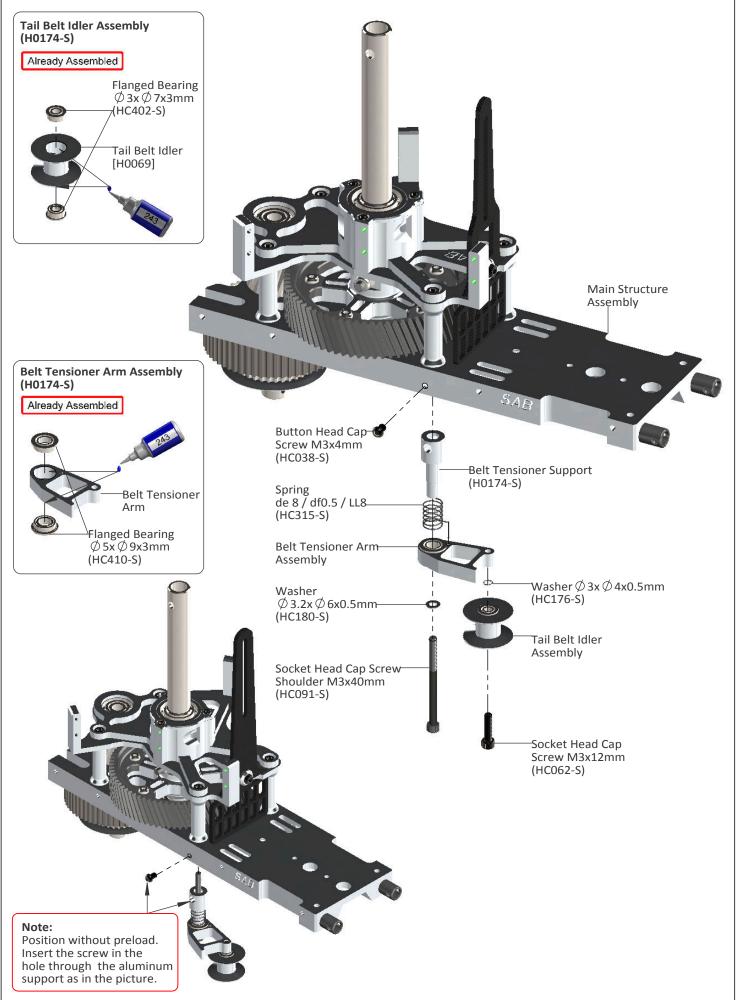




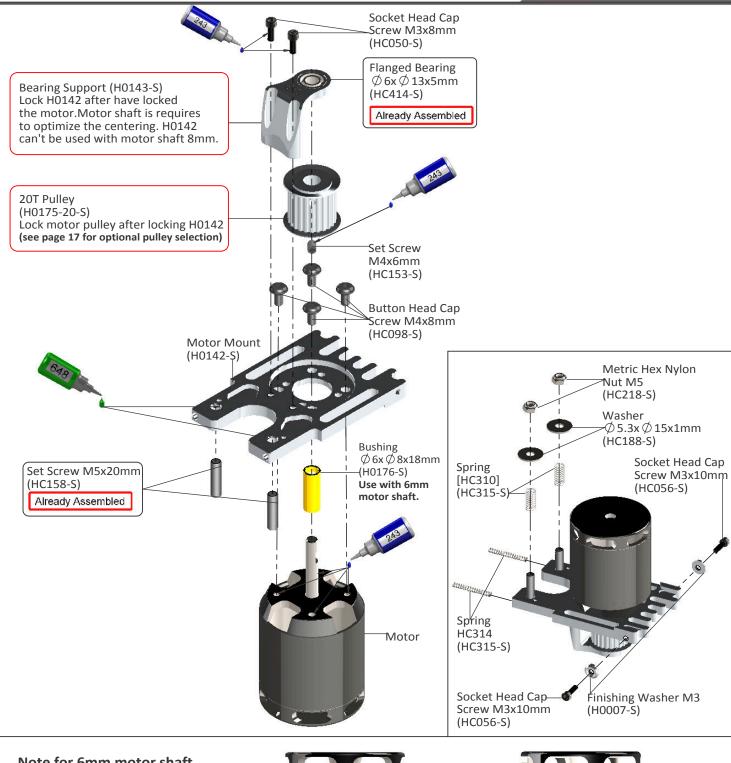
Page 11



SAB HELI DIVISION



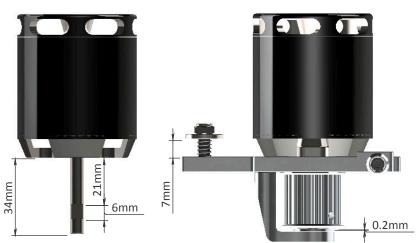




Note for 6mm motor shaft

To maximize space for the batteries, it is advisable to shorten the motor shaft. Follow the dimensions given in this drawing. For the cut, you can use an electric tool like a "Dremel" with a cutoff disc.

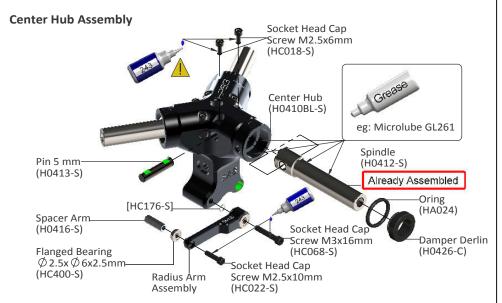
Additionally, ensure the motor shaft has an appropriate 'flat' for one of the set screws.

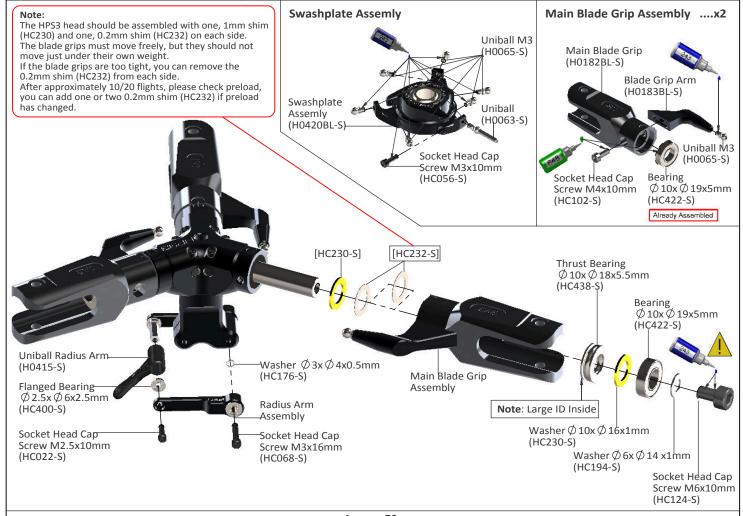




Radius Arm Assembly ... x 2





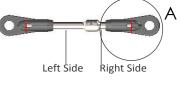






(Initial length for the rods from the swashplate to the Blade Grip.)

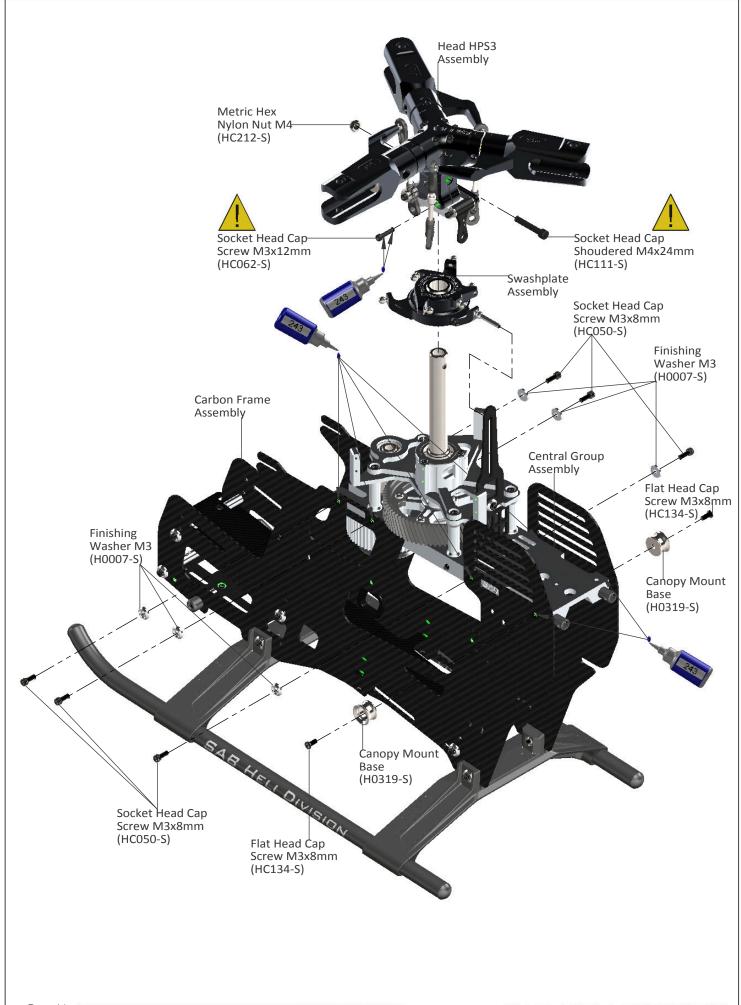
* Clock-wise, counter clock-wise thread
* By turning the linkages you can adjust
tracking. If tracking is adjusted correctly,
you'll see the metal part line up around
in the center of the opening.





Linkage Rod A Assemblyx3

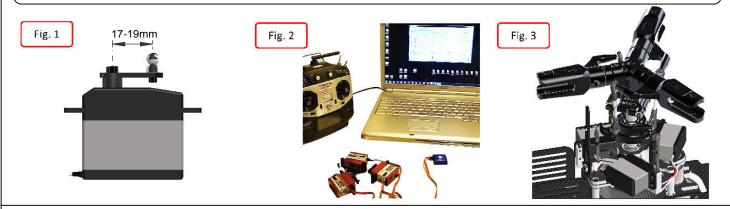






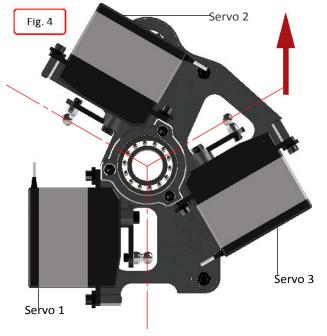
INSTALLATION OF SWASHPLATE SERVOS

The linkage ball must be positioned between **17-19 mm** out on the servo arm (**figure 1**), recommended servo arm SAB p/n [HA050/HA051]. The **120°** placement of the servos inside Goblin means the arms are difficult to access. For this reason it is advisable to ensure alignment of the servo arms (and sub trim set) before installation of the servos in the model (**figure 2**). Proceed with installation following the instructions below. **Figure 3** shows a completed installation.



ASSEMBLY OF THE BALL ON THE HORN.

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



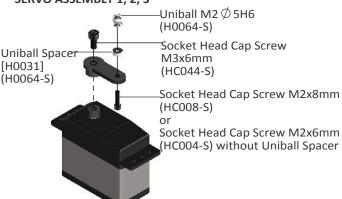
Socket Head Cap Screw M2.5x8mm (HC020-S)

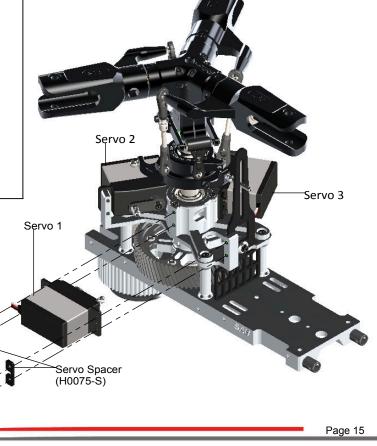
Socket Head Cap Screw M2.5x12mm

(HC026-S)

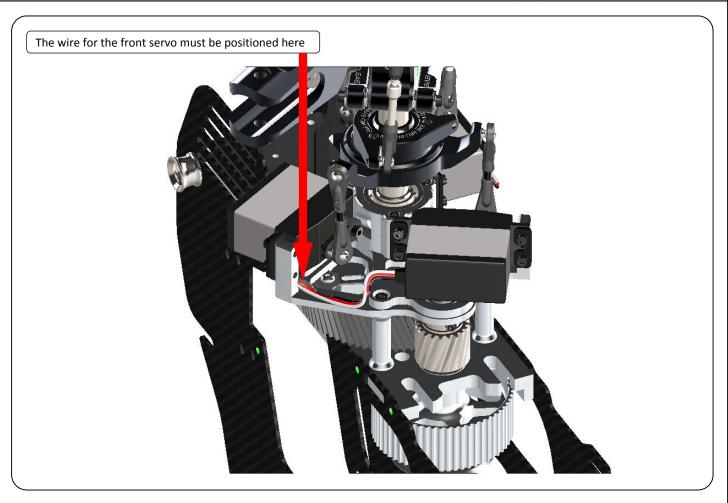
SAB HELI DIVISION

SERVO ASSEMBLY 1, 2, 3



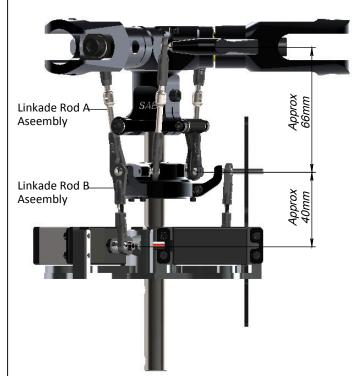


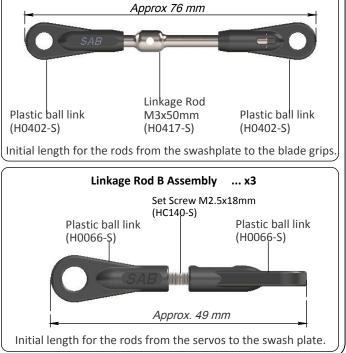




Head HPS Version Preliminary Setup

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





Linkage Rod A Assembly ... x2



TRANSMISSION SETUP

It is important to choose the right reduction ratio to maximize efficiency based on your required flight performance.

The Goblin has many possible reduction ratios at your disposal. It is possible to optimize any motor and battery combination.

It is recommended to use wiring and connectors appropriate for the currents generated in a helicopter of this class.

If you are using a head speed calculator which requires a main gear and pinion tooth count, use **214** teeth for the main gear (this takes into account the two stage reduction) and the tooth count of your pulley as the pinion count.

Below is a list of available reduction ratios:

H0175-18-S - 18T Pinion = r	atio 11.9:1	H0175-22-S - 22T	Pinion = ratio	9.8:1
H0175-19-S - 19T Pinion = r	atio 11.3:1	H0175-23-S - 23T	Pinion = ratio	9.3:1
H0175-20-S - 20T Pinion = r	atio 10.7:1	H0175-24-S - 24T	Pinion = ratio	8.9:1
H0175-21-S - 21T Pinion = r	atio 10.2:1	H0175-25-S - 25T	Pinion = ratio	8.6:1

Some example configurations:

GOBLIN 700 KYLE STACY EDITION CONFIGURATIONS

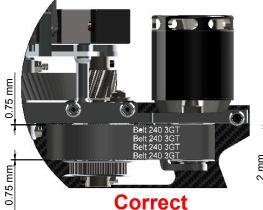
					Rev:01
Battery Motor		ESC	Pinion	RPM Max (Gov)	Pitch
3D CONFIGURATION					
12S 5000/5500 mAh	Kontrionik Pyro 800-480	Edge 160 HV	21T	- 1800/1900 rpm	± 12,5
	KUTILITUTIIK PYTU 000-400	YGE 160 HV KOSMIK 160/200	20Т		± 12,5
	Xnova 4530-500KV	Edge 160 HV	20Т		± 12,5
	KDE 700 G3 HP 505	YGE 160 HV KOSMIK 160/200	19T		± 12,5
	Coursian LIV 4525 520	Edge 160 HV	19Т		± 12,5
	Scorpion HK-4525-520	YGE 160 HV KOSMIK 160/200	18T		± 12,5
HARD 3D CONFIGURATION					
12S 5000/5500 mAh	Kontrionik Pyro 800-480 COMPETITION	Edge 160 HV	22Т		± 12,5
	XNOVA XTS 4530-480	YGE 160 HV KOSMIK 160/200	21T	1900/2000 rpm	± 12,5
	Scorpion HK-4530-500	Edge 160 HV	21T	1500/2000 16111	± 12,5
	KDE 700 G3 HP 505	YGE 160 HV KOSMIK 160/200	20T		± 12,5

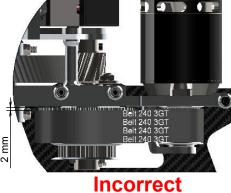
Note: Although the Goblin can fly at high rpm, for safety reasons we suggest to not exceed 2000 rpm.



MOTOR BELT TENSION

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





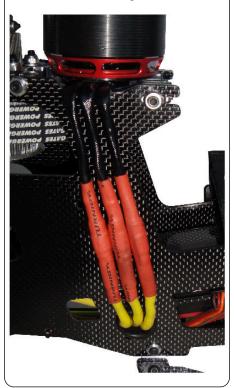
Note:

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

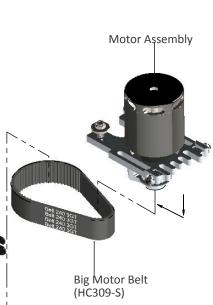
Fig 1:

Fig. 1

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









DE-BURR THE SIDE FRAMES

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

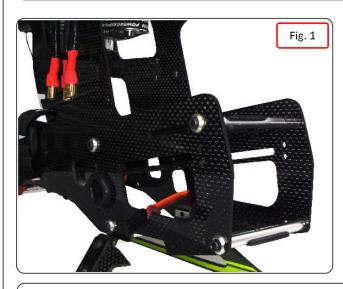


ESC INSTALLATION

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

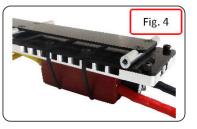
Figure 1 shows the mounting area. Figure 2 shows the installation of the Kosmik ESC from Kontronik.

You can also use the heat sink (H0165-S) if you wish for improved cooling (Figure 3,4,5)









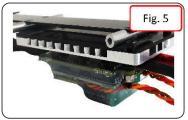
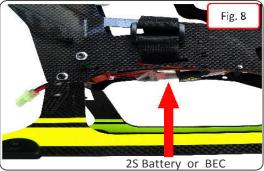


Figure 6: Shows the wiring which connects the receiver and ESC (in this picture one frame has been removed). If the BEC used is combined with the ESC, it is recommended to use a dual wire connection.

Figure 7: The passage of the controller wires to the motor is highlighted. **Figure 8**: Shows the installation of a 2S battery for the flight control system. Alternatively, a BEC could be placed in the same area.



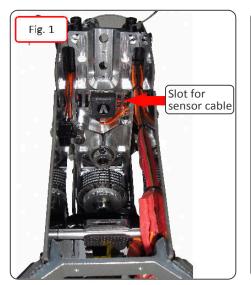






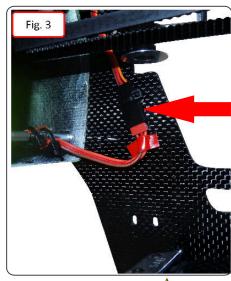
FLYBARLESS CONTROL UNIT AND RX INSTALLATION

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

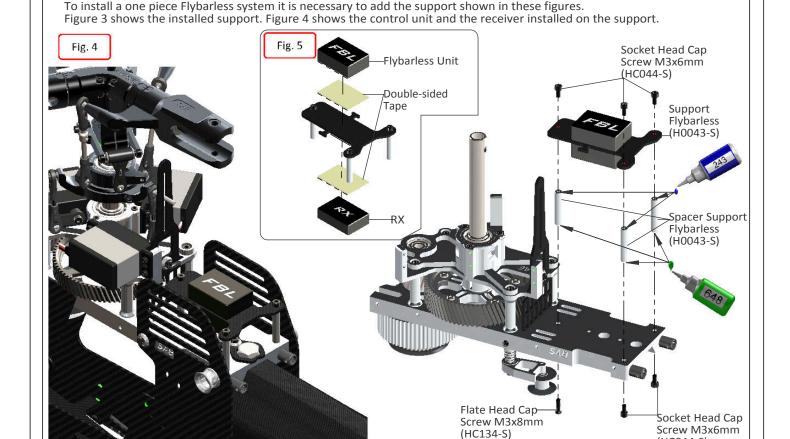




It is important to lock the plugs of the flybarless unit with an adhesive - for example hot glue.



Tail servo extension cable



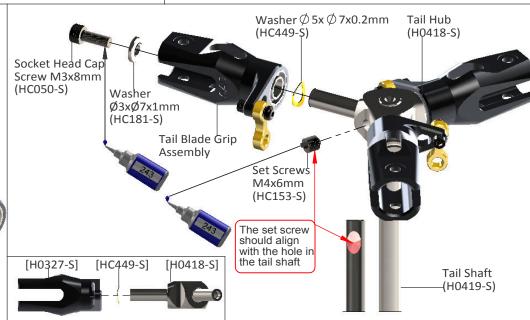
(HC044-S)

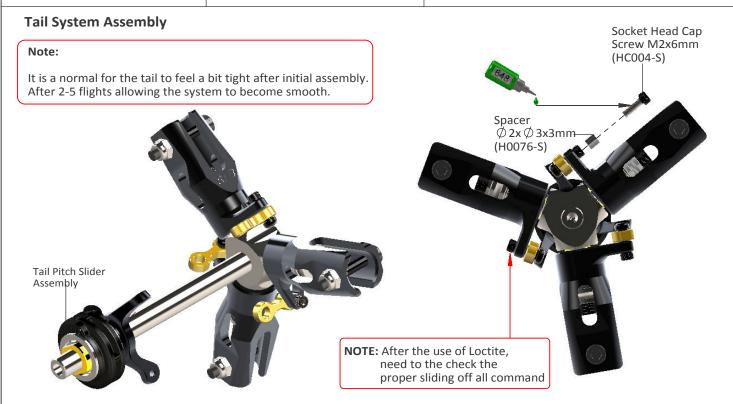




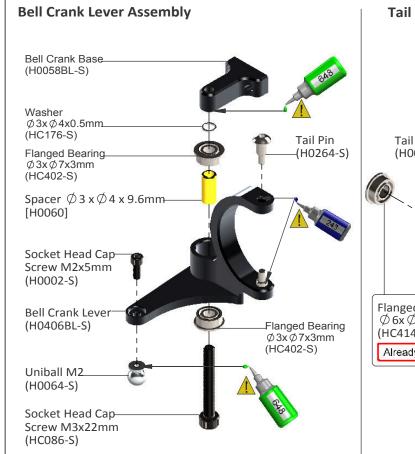


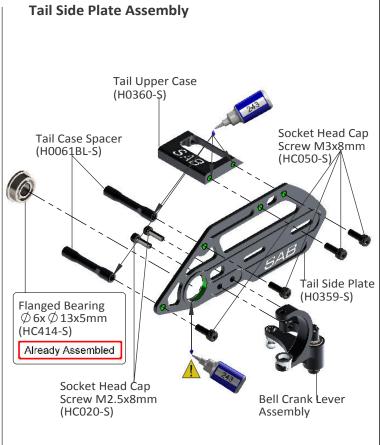


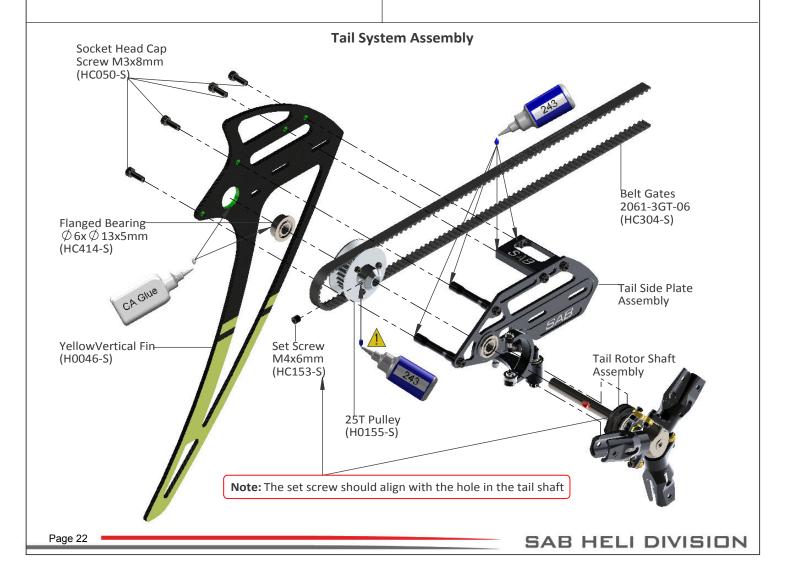




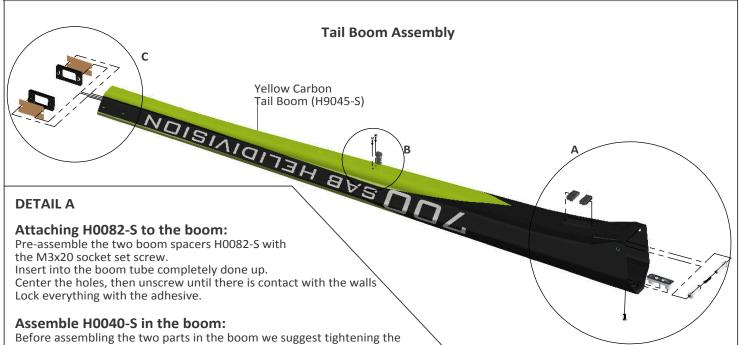












Tail Servo Lock (H0040-S) Block Nut (H0358-S) Set Screw M3x20mm (HC150-S) Flat Head Cap Screws M3x8mm (HC134-S) Boom Spacer (H0082-S)

M2.5 screws into the two plastic parts to pre-thread them. In this way when you will assemble the tail servo it will be easier to tighten the screws

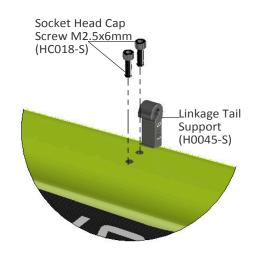
the hole.

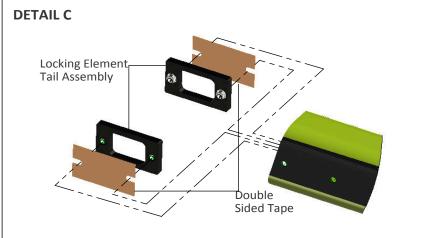
into the plastic parts. Check the tail servo can fit, if necessary carefully sand

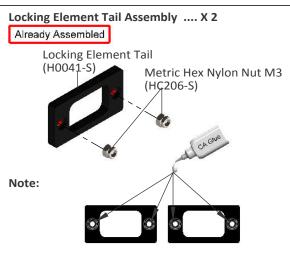
DETAIL B

Assemble H0045-S in the boom:

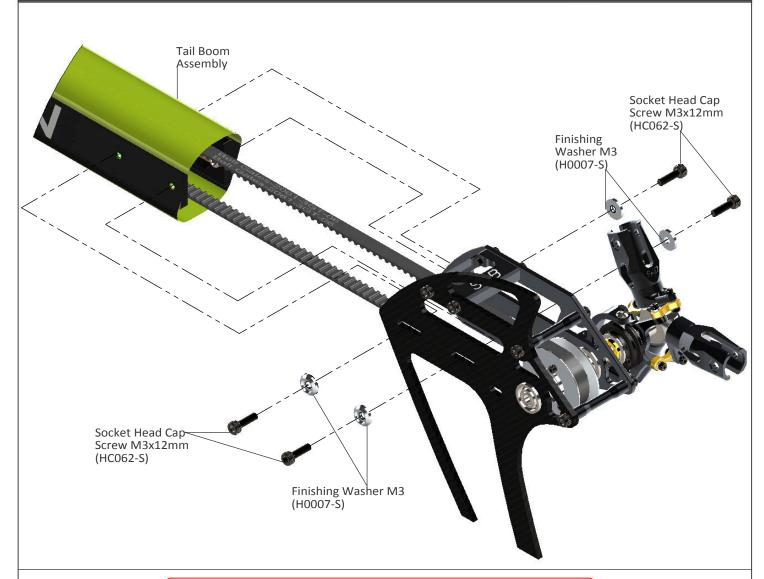
Before mounting H0045 on the boom we suggest to first tighten the M2.5 screws into the holes to thread them. In this way when you assemble the part it will be easier to tighten the screws.

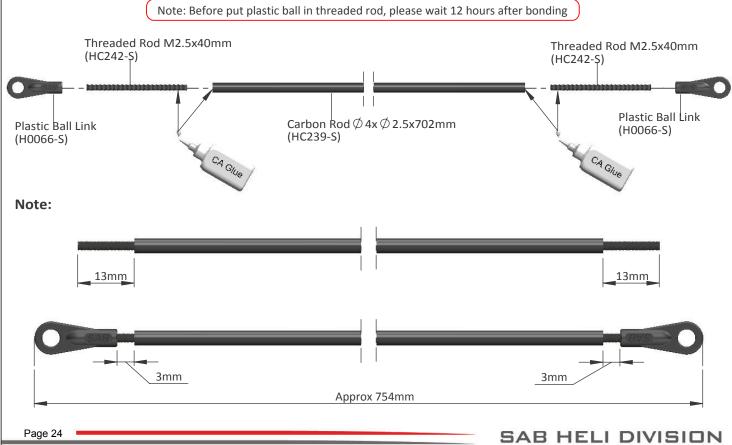




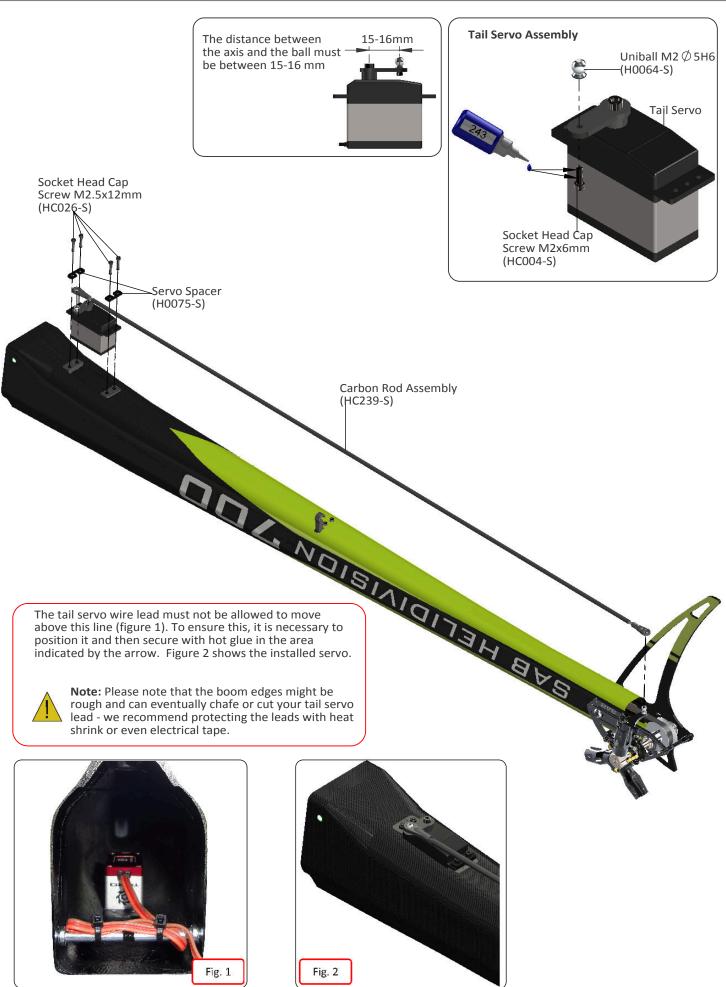








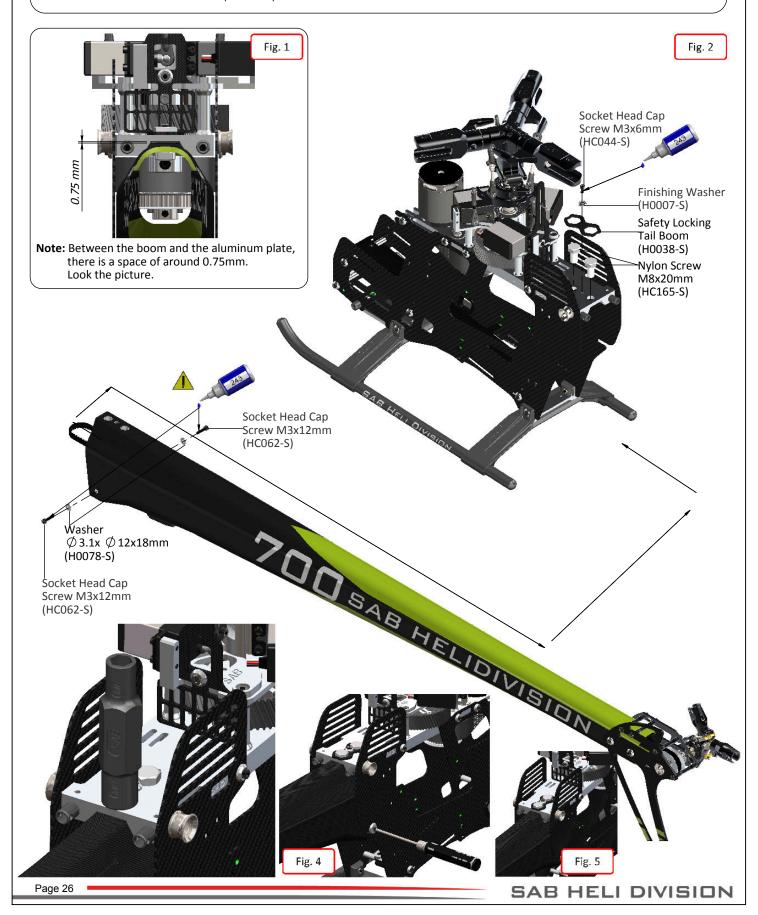






BOOM ASSEMBLY

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

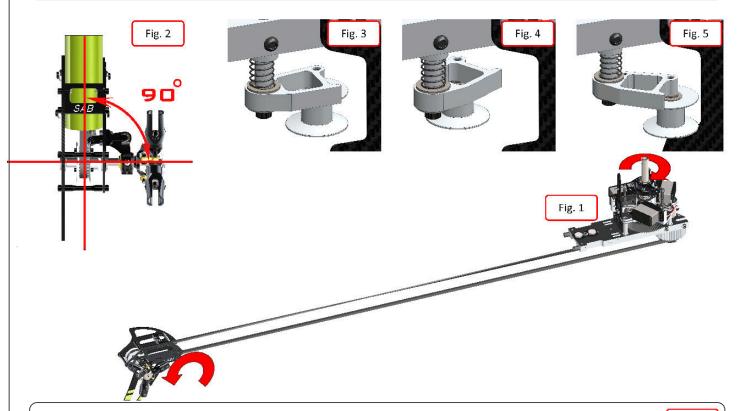




TAIL BELT TENSION

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

NOTE. To disassemble the tail boom it is possible to remove the pulley H0172-S without loosening the tail unit. Remove the locking screw and pull down.



CANOPY

Install the canopy following these step:

- Canopy grommets (Fig 6), Canopy edge protection (Fig 7), Adhesive foam tape.

The canopy hole must be 12.5 mm in diameter. Initially is 9 mm.

You can enlarge the hole slightly to optimize the vertical position of the canopy itself. To install the canopy:

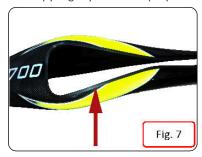
- Insert the canopy from the front up to the area of the block shown in Fig. 8.
- Use Canopy quick release for the correctly locked Fig. 9.

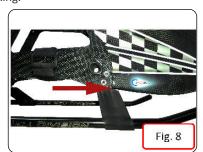
It is recommended a bit of lubricant on the quick release canopy mount system.

VERY IMPORTANT

Always ensure the proper installation and locking before each flight. The lock button must always come out to ensure locking. It is recommended to attempt removal by forcing the canopy slightly to ensure proper locking.















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

BATTERIES

The battery tray system in the Goblin 700 is simple, but very effective.

The battery should be attached to the tray (Part H0149) with heat shrink, tape or velcro.

You can optionally use the battery protection tray (Part H0151) see Fig. 1, 2.

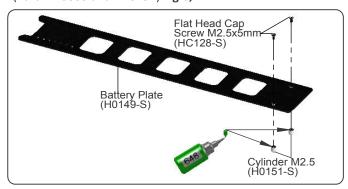
Before permanently mounting the batteries onto the battery tray, check the ideal position for the best center of gravity.

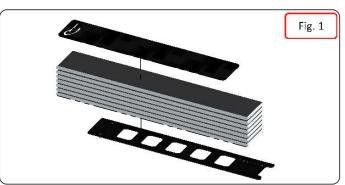
Cut the heat shrink around the carbon fiber tray locking pins. Fig. 3.

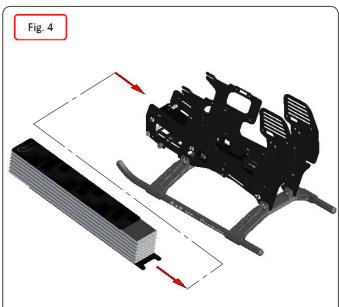
Battery Pack:

Slide the tray until it locks into the CNC stopper. Fig. 4, 5.

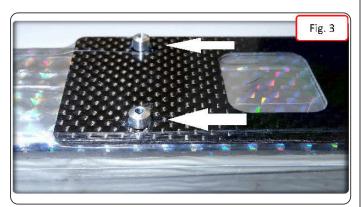
Using the velcro straps, making sure that the two locking pins are stopped against the frame spacer (Part1#H0003 and #H0151) Fig.6, 7.

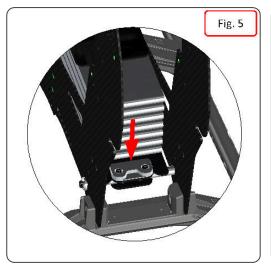


















SERIAL NUMBER

In Bag 21, you will find the serial number tag for your Helicopter

Sticking the tag as show. Please remember to register your product. (See page 1)





Always in Bag 21, you can take the KSE plate and put in this position



OPERATIONS BEFORE FLIGHT

- *Set up the remote control and the flybarless system with utmost care.
- *It is advisable to test the correct settings of the remote and flybarless system without main blades or tail blades fitted.
- *Check that all wiring is isolated from the carbon/aluminum parts. It is good practice to protect them at the points where they are at most risk.



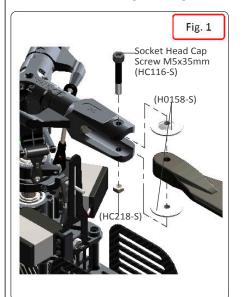
- *Be sure of the gear ratio, verifying carefully the motor pulley in use. The forces acting on the mechanics increase enormously with increasing of rpm. Although the Goblin can fly at high rpm, for safety reasons we suggest to not exceed 2000 rpm.
- *Check the correct tension of the tail belt through the belt tensioner.
- *Fit the main blades and tail blades. (Fig.1 and Fig.2)
- *Please make sure the main blades are tight on the blade grips, you should be able to violently jerk the head in both directions and the blades should not fold. Failure to tighten the blades properly can result in a boom strike. To fold the blades for storage, it is advisable to loosen them.
- *Check the collective and cyclic pitch. For 3D flight, set about +/- 12°-13°.
- *It is important to check the correct tracking of the main blades.
- *On the Goblin, in order to correct the tracking, adjust the main link rod as shown in figure 3.

 This is provided with a right/left thread system that allows continuous fine adjustments of the length of the control rod; for this adjustment it is not necessary to detach the ball link.

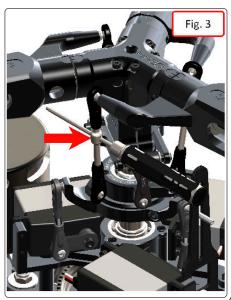
 Λ

*Perform the first flight at a low headspeed, 1500/1600 RPM.

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







IN FLIGHT

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

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

If you want to fly in a generic way, using both low headspeed (1600rpm) and higher headspeed (1900rpm), the standard setting is the best compromise (3BW5115 with 25T tail pulley).

However, if you want the best setup for high RPM (2000 rpm) we recommend changing the tail blades from 3BW5115 to 3BW5104 and tail pulley from 25T to 24T (H0154-S).

With high RPM, the smaller tail blades will work well creating less drag in very fast maneuvers, for the best performance!



ABOUT HPS3

The new HPS head offers an independent dampening system for each blade grip, there are three dampening settings:

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

In the kit, there is the damper for direct and precise responce H0426-C Other Setting >> p/n H0426-S

ABOUT HPS3 SETUP

3 blade rotor heads require a much lower cyclic gain on flybarless systems. We recommend that you set your gain at least 30% lower than the gain you normally use on your 2 blade rotor head helicopters. You can start increasing the gain after you complete your first flight. Running too high of a gain can induce a violent oscillation that can potentially cause damage to your helicopter in flight.

With 3 blades rotor head, it is very important to have a perfect tracking Often, unusual vibration are determined by wrong tracking.



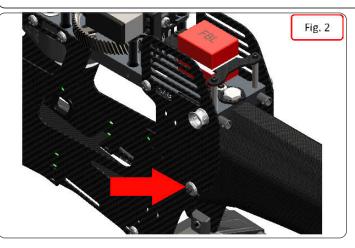


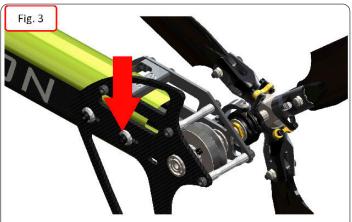
MAINTENANCE

- *On the Goblin, areas to look for wear include:
 - Motor belt
 - * Tail belt
 - * Damper
 - * Main gear and pinion

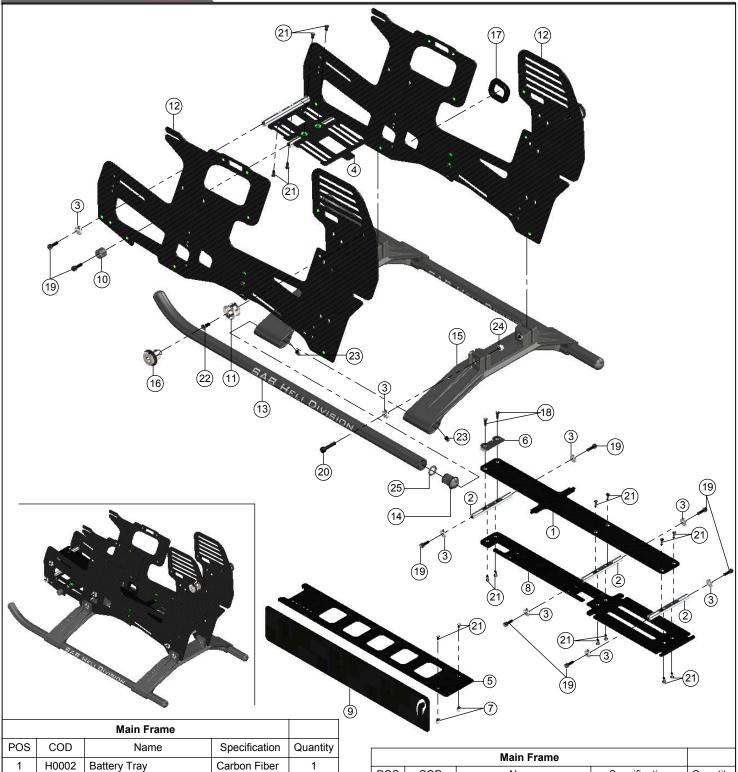
The lifespan of these components varies according to the type of flying. On average it is recommended to replace these special parts every **100** flights.

- *The head tends to lose rigidity after a while. Check this condition every **20** flights. Preloading with precision shim washers, it is possible to vary the rigidity of the head.
- *Check all uniballs often.
- *The most stressed bearings are definitely those of the tail shaft. Check them frequently. All other parts are not particularly subject to wear.
- *Periodically lubricate the tail slide movement and its linkages as well as the swashplate movement and its linkages.
- *Lubricate the main gear with silicone and Tri-Flow Synthetic grease, even though the gear is made of technopolymer, a high mineral based filler, it still requires some lubrication.
- *Check the screws that are highlighted in the following images frequently, make sure you remain tight (fig.2 and fig.3).
- *To ensure safety you should do a general inspection of the helicopter after each flight. You should check:
 - * The maintenance of proper belt tension.
 - * The proper isolation of wires from the carbon and aluminum parts.
 - * That all screws remain tight.









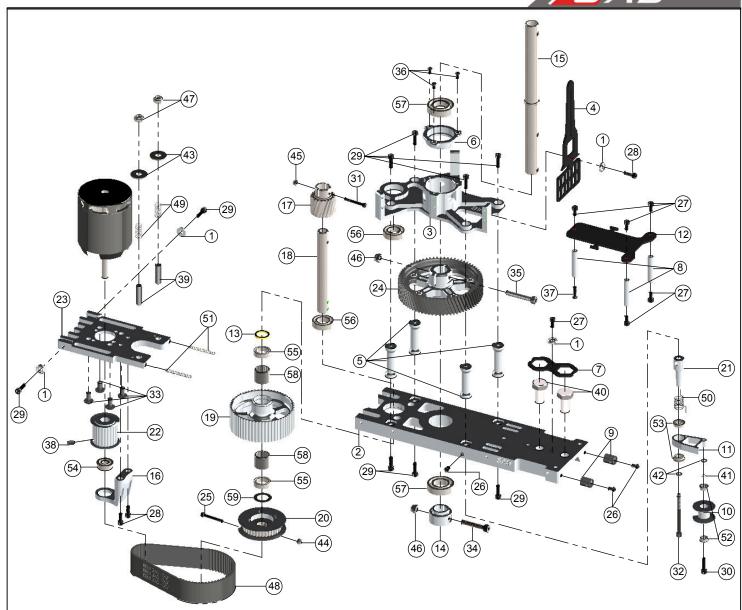
		Main Frame		
POS	COD	Name	Specification	Quantity
1	H0002	Battery Tray	Carbon Fiber	1
2	H0003	Frame Spacers	Aluminum	5
3	H0007	Finishing Washers M3	Aluminum	12
4	H0088	ESC Support	Carbon Fiber	1
5	H0149	Battery Plate	Carbon Fiber	1
6	H0150	Stop Battery Plate	Aluminum	1
7	H0151	Cylinder M2.5	Aluminum	2
8	H0153	Battery Support	Carbon Fiber	1
9	H0155	Battery Protection	Carbon Fiber	1
10	H0159	Canopy Positioner	Plastics	2
11	H0319	Canopy Mouse Base	Steel	2
12	H0354	Main Frames	Carbon Fiber	2
13	H0431	Landing Gears Rod	Aluminum	2

		Main Frame		
POS	COD	Name	Specification	Quantity
14	H0432	Landing Gears Plug	Plastic	4
15	H0449	Plastic Landing Gear F3C	Plastic	2
16	H0319	Quick Realise Canopy	Assembly	2
17	HA010	Cable Pass	Ø 16 x Ø 24 x 2mm	1
18	HC020	Socket Head Cap Screws	M2.5 x 8mm	2
19	HC056	Socket Head Cap Screws	M3 x 10mm	12
20	HC068	Socket Head Cap Screws	M3 x 16mm	4
21	HC128	Flat Head Cap Screws	M2.5 x 5mm	16
22	HC134	Flat Head Cap Screws	M3 x 8mm	2
23	HC152	Set Screw	M4 x 4mm	4
24	HC206	Nylon Nuts	M3	4
25	HC453	Oring	Plastic	4

SAB HELI DIVISION

Page 31





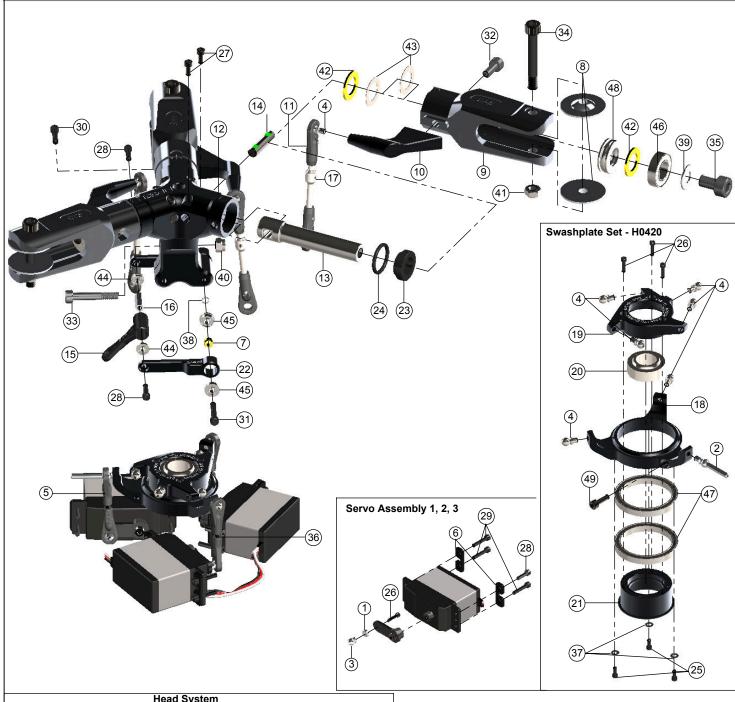
TRANSMISSION ASSEMBLY					
POS	COD	Name	Specification	Quantity	
1	H0007	Finishing Washers M3	Aluminum	4	
2	H0009	Main Structure	Aluminum	1	
3	H0010	Servo Support	Aluminum	1	
4	H0017	Swash plate Anti-Rotation Guide	Carbon Fiber	1	
5	H0018	Columns	Aluminum	4	
6	H0024	Main Shaft Bearing Support		1	
7	H0038	Safety Locking Tail Boom	Carbon Fiber	1	
8	H0043	Spacers Flybarless		3	
9	H0050	Antenna Guide	Plastic	2	
10	H0069	Tail Belt Idler		1	
11	H0071	Belt Tensioner Arm		1	
12	H0077	Flybarless Support	Carbon Fiber	1	
13	H0110	Bush-One Ways	Ø 10 x Ø 13 x 1.4mm	2	
14	H0121	M4 Locking Collar		1	
15	H0122	Main Shaft		1	
16	H0142	Support Bearing	Aluminum	1	
17	H0156	Steel Pinion	19T	1	
18	H0157	Secondary Shaft		1	
19	H0171	One Way Double Bearing	60T	1	
20	H0172	Front Tail Pulley Low	37T	1	
21	H0174	Column Belt Tensioner		1	
22	H0175-20	Motor Pulley 20mm	20t	1	
23	H0143	Motor Support	Aluminum	1	
24	H0405	Main Gear CNC	68T M1	1	
25	HC033	Socket Head Cap Screw Shouldereds	M2.5 x 19mm	1	
26	HC038	Button Head Cap Screws	M3 x 4mm	3	
27	HC044	Socket Head Cap Screws	M3 x 6mm	5	
28	HC050	Socket Head Cap Screws	M3 x 8mm	3	
29	HC056	Socket Head Cap Screws	M3 x 10mm	7	
30	HC062	Socket Head Cap Screw	M3 x 12mm	1	

TRANSMISSION ASSEMBLY				
POS	COD	Name	Specification	Quantity
31	HC079	Socket Head Cap Screws	M3 x 18mm	1
32	HC091	Socket Head Cap Shoudered	M4 x 40mm	1
33	HC098	Button Head Cap Screws	M4 x 8mm	4
34	HC104	Socket Head Cap Screw	M4 x 22mm	1
35	HC111	Socket Head Cap Screw	M4 x 24mm	1
36	HC128	Flat Head Cap Screws	M2.5 x 5mm	3
37	HC134	Flat Head Cap Screw	M3 x 8mm	1
38	HC153	Set Screws	M4 x 6mm	1
39	HC158	Set Screws	M5 x 20mm	2
40	HC165	Vite Nylon Esa	M8 x 20mm	2
41	HC176	Washer	Ø3 x Ø4x0.5mm	1
42	HC180	Washers	Ø3.2 x Ø6 x 0.5mm	2
43	HC188	Washers	Ø5.3 x Ø 15 x 1mm	2
44	HC200	Metric Hex Nylon Nuts	M2.5 H3.5mm	2
45	HC206	Metric Hex Nylon Nuts	M3 H4mm	1
46	HC212	Metric Hex Nylon Nuts	M4 H5mm	2
47	HC218	Metric Hex Nylon Nuts	M5 H4.8mm	2
48	HC309	Big Motor Belt	240-3MGT	1
49	HC310	Spring	de 5.8-df0.3-ll9	2
50	HC312	Spring	de 8-df0.5-ll8	1
51	HC314	Spring	de 8-df0.5-ll12	2
52	HC402	Flanged Bearings	Ø3 x Ø7 x 3mm	2
53	HC410	Flanged Bearings	Ø5 x Ø9 x 3mm	2
54	HC414	Flanged Bearings	Ø6 x Ø 13 x 5mm	1
55	HC420	Bearings	Ø10 x Ø15 x 4mm	2
56	HC422	Bearings	Ø10 x Ø19 x 5mm	2
57	HC426	Bearings	Ø12 x Ø24 x 6mm	2
58	HC442	One Way Bearing	Ø10 x Ø14 x 12mm	2
59	HC232	Washer	Ø10 x Ø16 x 0.2mm	1

Page 32

SAB HELI DIVISION





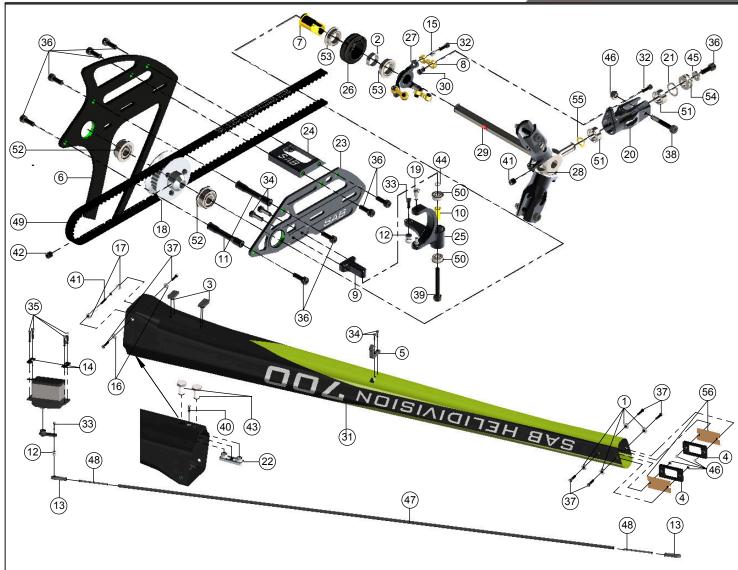
POS COD Name Specification Quan 1 H0031 Uniball Spacers Aluminum 3 2 H0063 Uniballs M3x4 ∅ 5 H18 1 3 H0064 Uniballs M2.5 ∅ 5 H6 3 4 H0065 Uniball M3 Steel 3 5 H0066 Plastic Ball Linkages Plastic 8 6 H0075 Servo Spacers Carbon Fiber 6 7 H0134 Spacer Arm Aluminum 2 8 H0158 Blade Washers Aluminum 6 9 H0182BL Main Blade Grip Aluminum 3 10 H0183BL Blade Grip Arm Aluminum 3 11 H0402 Ball Linkages Plastic 6 12 H0410BL Center Hub Aluminum 1 13 H0412 Spindle Steel 3 14 H0413 Pin 5mm Aluminum 3	tity
2 H0063 Uniballs M3x4 Ø 5 H18 1 3 H0064 Uniballs M2.5 Ø 5 H6 3 4 H0065 Uniball M3 Steel 3 5 H0066 Plastic Ball Linkages Plastic 8 6 H0075 Servo Spacers Carbon Fiber 6 7 H0134 Spacer Arm Aluminum 2 8 H0158 Blade Washers Aluminum 6 9 H0182BL Main Blade Grip Aluminum 3 10 H0183BL Blade Grip Arm Aluminum 3 11 H0402 Ball Linkages Plastic 6 12 H0410BL Center Hub Aluminum 1 13 H0412 Spindle Steel 3 14 H0413 Pin 5mm Aluminum 3 15 H0415 Uniball Radius Arm Plastic 1 16 H0416 Spacer Arm Aluminum 1	
3 H0064 Uniballs M2.5 Ø 5 H6 3 4 H0065 Uniball M3 Steel 3 5 H0066 Plastic Ball Linkages Plastic 8 6 H0075 Servo Spacers Carbon Fiber 6 7 H0134 Spacer Arm Aluminum 2 8 H0158 Blade Washers Aluminum 6 9 H0182BL Main Blade Grip Aluminum 3 10 H0183BL Blade Grip Arm Aluminum 3 11 H0402 Ball Linkages Plastic 6 12 H0410BL Center Hub Aluminum 1 13 H0412 Spindle Steel 3 14 H0413 Pin 5mm Aluminum 3 15 H0415 Uniball Radius Arm Plastic 1 16 H0416 Spacer Arm Aluminum 1 17 H0417 Linkage Rod Aluminum 3	
4 H0065 Uniball M3 Steel 3 5 H0066 Plastic Ball Linkages Plastic 8 6 H0075 Servo Spacers Carbon Fiber 6 7 H0134 Spacer Arm Aluminum 2 8 H0158 Blade Washers Aluminum 6 9 H0182BL Main Blade Grip Aluminum 3 10 H0183BL Blade Grip Arm Aluminum 3 11 H0402 Ball Linkages Plastic 6 12 H0410BL Center Hub Aluminum 1 13 H0412 Spindle Steel 3 14 H0413 Pin 5mm Aluminum 3 15 H0415 Uniball Radius Arm Plastic 1 16 H0416 Spacer Arm Aluminum 1 17 H0417 Linkage Rod Aluminum 3	
5 H0066 Plastic Ball Linkages Plastic 8 6 H0075 Servo Spacers Carbon Fiber 6 7 H0134 Spacer Arm Aluminum 2 8 H0158 Blade Washers Aluminum 6 9 H0182BL Main Blade Grip Aluminum 3 10 H0183BL Blade Grip Arm Aluminum 3 11 H0402 Ball Linkages Plastic 6 12 H0410BL Center Hub Aluminum 1 13 H0412 Spindle Steel 3 14 H0413 Pin 5mm Aluminum 3 15 H0415 Uniball Radius Arm Plastic 1 16 H0416 Spacer Arm Aluminum 1 17 H0417 Linkage Rod Aluminum 3	
6 H0075 Servo Spacers Carbon Fiber 6 7 H0134 Spacer Arm Aluminum 2 8 H0158 Blade Washers Aluminum 6 9 H0182BL Main Blade Grip Aluminum 3 10 H0183BL Blade Grip Arm Aluminum 3 11 H0402 Ball Linkages Plastic 6 12 H0410BL Center Hub Aluminum 1 13 H0412 Spindle Steel 3 14 H0413 Pin 5mm Aluminum 3 15 H0415 Uniball Radius Arm Plastic 1 16 H0416 Spacer Arm Aluminum 1 17 H0417 Linkage Rod Aluminum 3	
7 H0134 Spacer Arm Aluminum 2 8 H0158 Blade Washers Aluminum 6 9 H0182BL Main Blade Grip Aluminum 3 10 H0183BL Blade Grip Arm Aluminum 3 11 H0402 Ball Linkages Plastic 6 12 H0410BL Center Hub Aluminum 1 13 H0412 Spindle Steel 3 14 H0413 Pin 5mm Aluminum 3 15 H0415 Uniball Radius Arm Plastic 1 16 H0416 Spacer Arm Aluminum 1 17 H0417 Linkage Rod Aluminum 3	
8 H0158 Blade Washers Aluminum 6 9 H0182BL Main Blade Grip Aluminum 3 10 H0183BL Blade Grip Arm Aluminum 3 11 H0402 Ball Linkages Plastic 6 12 H0410BL Center Hub Aluminum 1 13 H0412 Spindle Steel 3 14 H0413 Pin 5mm Aluminum 3 15 H0415 Uniball Radius Arm Plastic 1 16 H0416 Spacer Arm Aluminum 1 17 H0417 Linkage Rod Aluminum 3	
9 H0182BL Main Blade Grip Aluminum 3 10 H0183BL Blade Grip Arm Aluminum 3 11 H0402 Ball Linkages Plastic 6 12 H0410BL Center Hub Aluminum 1 13 H0412 Spindle Steel 3 14 H0413 Pin 5mm Aluminum 3 15 H0415 Uniball Radius Arm Plastic 1 16 H0416 Spacer Arm Aluminum 1 17 H0417 Linkage Rod Aluminum 3	
10 H0183BL Blade Grip Arm Aluminum 3 11 H0402 Ball Linkages Plastic 6 12 H0410BL Center Hub Aluminum 1 13 H0412 Spindle Steel 3 14 H0413 Pin 5mm Aluminum 3 15 H0415 Uniball Radius Arm Plastic 1 16 H0416 Spacer Arm Aluminum 1 17 H0417 Linkage Rod Aluminum 3	
11 H0402 Ball Linkages Plastic 6 12 H0410BL Center Hub Aluminum 1 13 H0412 Spindle Steel 3 14 H0413 Pin 5mm Aluminum 3 15 H0415 Uniball Radius Arm Plastic 1 16 H0416 Spacer Arm Aluminum 1 17 H0417 Linkage Rod Aluminum 3	
12 H0410BL Center Hub Aluminum 1 13 H0412 Spindle Steel 3 14 H0413 Pin 5mm Aluminum 3 15 H0415 Uniball Radius Arm Plastic 1 16 H0416 Spacer Arm Aluminum 1 17 H0417 Linkage Rod Aluminum 3	
13 H0412 Spindle Steel 3 14 H0413 Pin 5mm Aluminum 3 15 H0415 Uniball Radius Arm Plastic 1 16 H0416 Spacer Arm Aluminum 1 17 H0417 Linkage Rod Aluminum 3	
14 H0413 Pin 5mm Aluminum 3 15 H0415 Uniball Radius Arm Plastic 1 16 H0416 Spacer Arm Aluminum 1 17 H0417 Linkage Rod Aluminum 3	
15 H0415 Uniball Radius Arm Plastic 1 16 H0416 Spacer Arm Aluminum 1 17 H0417 Linkage Rod Aluminum 3	
16 H0416 Spacer Arm Aluminum 1 17 H0417 Linkage Rod Aluminum 3	
17 H0417 Linkage Rod Aluminum 3	
18 H0420-01BI Swashplate 01 Aluminum 1	
10 110-20 01DE Owasiipiate 01 Administra	
19 H0420-02BL Swashplate 02 Aluminum 1	
20 H0420-03 Swashplate 03 Steel 1	
21 H0420-04BL Swashplate 04 Aluminum 1	
22 H0421 Radius Arm Aluminum 2	
23 H0426 Damper derlin Pom black 3	
24 HA024 Oring 3	
25 HC002 Head Cap Screws M2x5mm 3	

	Head System				
POS	COD	Name	Specification	Quantity	
26	HC008	Head Cap Screws	M2 x 8mm	6	
27	HC018	Head Cap Screws	M2.5x6mm	6	
28	HC020	Head Cap Screws	M2.5x10mm	5	
29	HC026	Head Cap Screws	M2.5x12mm	9	
30	HC056	Head Cap Screws	M3x10mm	1	
31	HC068	Head Cap Screws	M3x16mm	2	
32	HC102	Head Cap Screws	M4x10mm	3	
33	HC111	Head Cap Shoulder	M4x24mm	1	
34	HC116	Head Cap Shoulder	M5x35mm	3	
35	HC124	Head Cap Screws	M6x10mm	3	
36	HC140	Threaded Rods	M2.5 x 18mm	3	
37	HC170	Washers	Ø2 x Ø5 x 0.5mm	3	
38	HC176	Washers	Ø3x Ø4x0.5	2	
39	HC194	Washers	Ø6xØ14x1	3	
40	HC212	Metric Hex Nylon Nut	M4 H5	1	
41	HC218	Metric Hex Nylon Nut	M5	3	
42	HC230	Washers	Ø10xØ16x1	6	
43	HC232	Washers	Ø 10x Ø 16x0.2	3	
44	HC400	Flanged Bearing	Ø2.5x Ø6x2.5	2	
45	HC402	Flanged Bearing	Ø3x Ø7x3	4	
46	HC422	Bearing	Ø 10x Ø 19x5	6	
47	HC430	Bearing Rads	Ø30 x Ø37 x 4mm	2	
48	HC438	Thrust Bearing	Ø 10x Ø 18x5.5	3	
49	HC062	Head Cap Screws	M3x12mm	1	

SAB HELI DIVISION

Page 33





		TAIL SYSTEM		
POS	COD	Name	Specification	Quantity
1	H0007	Finishing Washer M3	Aluminum	4
2	H0029	Spacer	Ø8.1 x Ø 9.2 x 3.2mm	1
3	H0040	Tail Servo Locks	Plastic	2
4	H0041	Locking Element Tails	Carbon Fiber	2
5	H0045	Linkage Tail Support	Plastic	1
6	H0046	Yellow Vertical Fin	Carbon fiber	1
0	H0117	Red Vertical Fin	Carbon fiber	1
7	H0054	Tail Pitch Slider 02	Aluminum	1
8	H0056	Tail Pitch Slider Link	Aluminum	3
9	H0058BL	Bell Crank Base	Aluminum	1
10	H0060	Spacer	Ø3 x Ø4 x 9.6mm	1
11	H0061BL	Tail Case Spacers	Aluminum	2
12	H0064	Uniballs	M2.5 Ø 5H6	2
13	H0066	plastic ball links	Plastic	2
14	H0075	Servo Spacer	Carbon Fiber	2
15	H0076	Spacer	Ø2x Ø2x3mm	3
16	H0078	Washers	Ø3.1 x Ø 12 x 1.8mm	2
17	H0082	Boom spacers	Aluminum	2
18	H0155	Tail Pulley	25T	1
19	H0264	Pin M3		2
20	H0327BL	Tail Blade Grip	Aluminum	3
21	H0349	Spacer	Ø7.5x Ø10x0.5mm	3
22	H0358	Block Nut	Aluminum	1
23	H0359	Tail Side Plate	Aluminum	1
24	H0360	Tail Upper Case	Aluminum	1
25	H0406BL	Tail Bell Crank	Aluminum	1
26	H0407	Tail Pitch Slider 02	Plastic	1
27	H0409BL	Tail Pitch Slider 01	Aluminum	1
28	H0418	Tail Hub	Steel	1

	TAIL SYSTEM					
POS	COD	Name	Specification	Quantity		
29	H0419	Tail Shaft	Steel	1		
30	H0435	Bushing	Aluminum	3		
31	H9045	Carbon Tail Boom		1		
32	HC004	Socket Head Cap Screws	M2 x 6mm	6		
33	HC008	Socket Head Cap Screws	M2 x 8mm	2		
34	HC020	Socket Head Cap Screws	M2.5 x 8mm	4		
35	HC026	Socket Head Cap Screws	M2.5 x 12mm	4		
36	HC050	Socket Head Cap Screws	M3 x 8mm	11		
37	HC062	Socket Head Cap Screws	M3 x 12mm	6		
38	HC079	Socket Head Cap Screws Shoulder	M3 x 18mm	2		
39	HC086	Socket Head Cap Screws	M3 x 22mm	1		
40	HC134	Flat Head Cap Screws	M3x8mm	1		
41	HC150	Set Screws	M3 x 20mm	1		
42	HC153	Set Screws	M4 x 6mm	2		
43	HC165	Nylon Screw		2		
44	HC176	Washer	Ø3xØ4x0.5mm	1		
45	HC181	Washer	Ø3xØ7x1mm	3		
46	HC206	Metric Hex Nylon Nuts	M3	7		
47	HC239	Carbon Rod	Ø2.5 x Ø4 x 702mm	1		
48	HC242	Threaded Rods	M2.5 x 40mm	2		
49	HC304	Belt Gates	2061-3gt-06	1		
50	HC402	Flanged Bearings	Ø3 x Ø7 x 3mm	2		
51	HC411	Bearings	Ø5xØ10x4mm	6		
52	HC414	Flanged Bearings	Ø6 x Ø 13 x 5mm	2		
53	HC418	Flanged Bearings	Ø8 x Ø 12 x 3.5mm	2		
54	HC435	Thrust Bearings	Ø5x Ø10x4mm	2		
55	HC449	Washer	Ø5xØ7x0.2	3		
56	HA015	Double-Sided Tapes		2		

Page 34

SAB HELI DIVISION



Battery Tray [H0002-S]



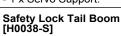
- 1 x CF Battery Tray. - 6 x Flat Head Cap Screws

M2.5x5mm.

Servo Support [H0010-S]



- 1 x Servo Support.





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

Linkage Tail Support [H0045-S]



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



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

Frame Spacer [H0003-S]



- 3 x Frame Spacers.

Swashplate Anti-Rotation Guide [H0017-S]



- 1 x CF Swashplate
- Anti-Rotation Guide.

 1 x Finishing Washer M3.

 1 x Socket Head Cap Screw M3x8mm.

Tail Servo Lock [H0040-S]



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

Yellow Vertical Fin [H0046-S]



- 1 x Yellow Vertical Fin.
 2 x Socket Head Cap Screws M3x12mm.
 2 x Finishing Washers M3.

Uniball M3x4 5H18 [H0063-S]



- 2 x Uniball M3x4 5H18.

Finishing Washer M3 [H0007-S]



- 10 x Finishing Washers M3.

Column [H0018-S]



- 4 x Columns.

Locking Element Tail [H0041-S]



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

Antenna Guide [H0050-S]



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

Uniball M2 5H6 [H0064-S]



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

Main Structure [H0009-S]



- 1 x Main Structure.

Bearing Support [H0024-S]



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

Spacer Flybarless [H0043-S]



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

Aluminum Bell Crank Base (H0058BL-S)



- 1 x Aluminum Bell Crank Base.

Uniball M3x4 5H3 [H0065-S]



- 5 x Uniballs M3x4 5H3.5.

Plastic Ball Link [H0066-S]



Servo Spacer [H0075-S]



Washer \emptyset 3.1x \emptyset 12x1.8mm [H0078-S]



Boom Spacer [H0082-S]



- 10 x Plastic Ball Link.
- 10 x Servo Spacers.

- 4 x Washers Ø 3.1x Ø 12x1.8mm.

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



- 1 x ESC Support. 2 x Frame Spacer. 4 x Flat Head Cap Screws M2.5x5mm.

25T Tail Pulley [H0155-S]



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

Bush One Way [H0110-S]



Red Vertical Fin [H0117-S]



- 1 x Red Vertical Fin.
 2 x Socket Head Cap Screws M3x12mm.
 2 x Finishing Washers M3.

M4 Locking Collar [H0121-S]



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

Main Shaft [H0122-S]



- 1 x Main Shaft
- 1 x M4 Locking Collar 1 x Socket Head Cap Screw Shouldered M4x24mm.
- 2 x Socket Head Cap Screws M4x22mm. 3 x Metric Hex Nylon Nuts M4. Carbon Fiber ESC Support (H0153-S)

Bearing Support [H0143-S]

- 4 x Bush One Ways.



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



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

Stop Battery Tray [H0150-S]



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

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

19T Drive Pinion [H0156-S]



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

Secondary Shaft [H0157-S]



- 1 x Secondary Shaft M3.
- 1 x Socket Héad Cap Screw Shoulder M2.5x19mm.
- 1 x Metric Hex Nylon Nut M2,5.1 x Socket Head Cap

- Shoulder M3x19mm.
 1 x Metric Hex locknut Nut M3.

Aluminum Blade Spacer [H0158-S]



- 4 x Aluminum Blade Spacer.

Canopy Positioner [H0159-S]



- 2 x Canopy Positioner.
 2 x Socket Head Cap Screws M3x10mm.

Double Bearing One Way Pulley



- 1 x Aluminum Double Bearing One Way Pulley Assembly.
 3 x Shims Ø10xØ16x0,2mm.
 1 x One Way Brass Bushing.

Aluminum Front Tail Pulley [H0172-S]



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



Belt Tensioner Support [H0174-S]



- 1 x Column Belt Tensioner.1 x Tail Belt Idler.

- 1 x Belt Idler.
 1 x Belt Tensioner Arm.
 2 x Flanged Bearings Ø3x Ø7x3mm.
 2 x Flanged Bearings Ø5x Ø9x3mm.
 1 x Socket Head Cap Screw M3x50mm.

- Screw M3x50mm.

 1 x Washer Ø 3x Ø 4x0.5mm.

 1 x Socket Head Cap
 Screw M3x12mm.

 2 x Washers Ø 3.2x Ø 6x0.5mm.

 1 x Button Head Cap
 Screw M3x4mm.

- 1 x Spring De8/df0.5/LL8.

18T Pulley [H0175-18-S]



1 x 18T Pulley.1 x Set Screws M4x4mm.

19T Pulley [H0175-19-S]



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

20T Pulley [H0175-20-S]



1 x 20T Pulley.1 x Set Screws M4x4mm.

21T Pulley [H0175-21-S]



1 x 21T Pulley.1 x Set Screws M4x4mm.

22T Pulley [H0175-22-S]



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

23T Pulley [H0175-23-S]



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

24T Pulley [H0175-24-S]



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

Blade Grip [H0182BL-S]



- 2 x Blade Grip.
- 2 x Thrust Bearing Ø 10x Ø 18x5.5. 4 x Bearing Ø 10x Ø 19x5mm. 2 x Washer Ø 10x Ø 16x1mm.

Blade Grip Arm [H0183BL-S]



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



- 1 x Bearing Support.1 x Motor Mount.
- 1 x Motor Mount.
 1 x Flanged Bearing \$\phi 6x \phi 13x5mm.
 2 x Socket Head Cap Screws M3x8.
 2 x Set Screws M5x20mm.
 2 x Washers \$\phi 5.3x \phi 15x1mm.
 2 x Metric Hex Nylon Nuts M5H4.8.
 2 x Finishing Washers M3.
 2 x Socket Head Cap Screws M3x10.
 2 x Metric Hex Nylon Nut M3 H4.
 2 x Springs de 5.8/ df0.5 / LL12.

Main Frame [H0354-S]

Quick Release Canopy Mount [H0319-S]



- 2 x Quick Release Canopy Set.
- 2 x Flat Head Socket Cap M3x8.2 x Canopy Grommets.

CNC Derlin Main Gear [H0405-S]



- 1 x CNC Derlin Main Gear Set.

Aluminum Tail Blade Grip [H0327BL-S]



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



- 1 x Main Frame.

Tail Boom Support [H0358-S]



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

Aluminum Tail Side Plate [H0359-S]



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

Aluminum Tail Case Spacer [H0360-S]



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

Ball Link [H0402-S]



- 5 x Ball Link.

Bell Crank Lever [H0406BL-S] - 2 x Tail Pin.

- 1 x Uniball M2.
- 1 x Uniball Spacer.
- 1 x Bell Crank Lever. - 2 x Flanged Bearing Ø3x Ø7x3mm.
- 1 x Head Cap Screws M3x22mm.
- 1 x Head Cap Screws M2x8mm.
- 1 x Washer Ø3x Ø4x0.5mm.
- 1 x Spacer Ø 3x Ø 4x9.6mm.

- 1 x Tail Pitch Slider 02. - 1 x Tail Pitch Slider 03.

- 1 x Tail Pitch Slider 01.

Tail Pitch Slider 3 Blade

[H0409BL-S]

 1 x Spacer Ø 8x Ø 9x3.2mm. - 2 x Flanged Bearings Ø8x Ø12x3.5.



- 1 x Center Hub

Center Hurb

- 1 x Head Cap Screws M3x12mm.
- 1 x Head Cap Screw
- Shouldered M4x25mm. - 1 x Metric Hex Nylon Nut M4.



- 2 x Spindle Shaft.
- 2 x Pin 5mm.
- 4 x Head Cap Screw M2.5x6mm.
- 2 x Head Cap Screw M4x10mm
- 2 x Washer Ø6,3 x Ø15 x 1mm

Main Linkage [H0417-S]



2 x Linkage Rod M3x50mm.4 x Plastic ball linkages.





- 1 x Tail Hub
- 1 x Set Screw M4x6mm.
- 3 x Head Cap Screws M3x8mm.
- 3 x Washer Ø3xØ7x1mm.- 3 x Washer Ø5xØ7x0,2mm.





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



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

Radius Arm [H0421-S]



- 2 x Radius Arms.
- 2 x Spacer Arm Ø3x Ø5x2.7mm.
- 1 x Spacer Hex.
- 1 x Uniball Radius Arms.
- 2 x Head Cap Screws M3x16mm.
- 2 x Head Cap Screws M2.5x10mm. - 2 x Flanged Bearings Ø 2.5x Ø 6x2.5
- 4 x Flanged Bearings Ø 3x Ø 7x3.

Damper [H0426-S)



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

Pin M2 [H0435-S]



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

F3C Landing Gear Set [H0454-S]



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

Red/Carbon Canopy [H9030-S]





- 1 x Canopy Red/Carbon. All Hell Division
- 1 x Canopy Grommet.

Yellow/Carbon Canopy

[H9040-S]

- 1 x Canopy mousse.
- 1 x Canopy Edge Protection.

Red/Carbon Boom [H9035-S]





- 1 x Red/Carbon Tail Boom.
- 2 x Locking Element Tails.
- 2 x Double-Sided Tapes.
- 1 x Set Screws M3 x 20mm.
- 2 x Washers 3.1 x 12 x 1.8mm. 4 x Metric Hex Nylon Nuts M3.
- 2 x Boom spacers.
- 2 x Head Cap Screws M3 x 12mm. - 2 x Nylon Screw M8x20mm.
- 1 x Flat Head Cap Screws M3x8mm.

Yellow/Carbon Boom [H9045-S]

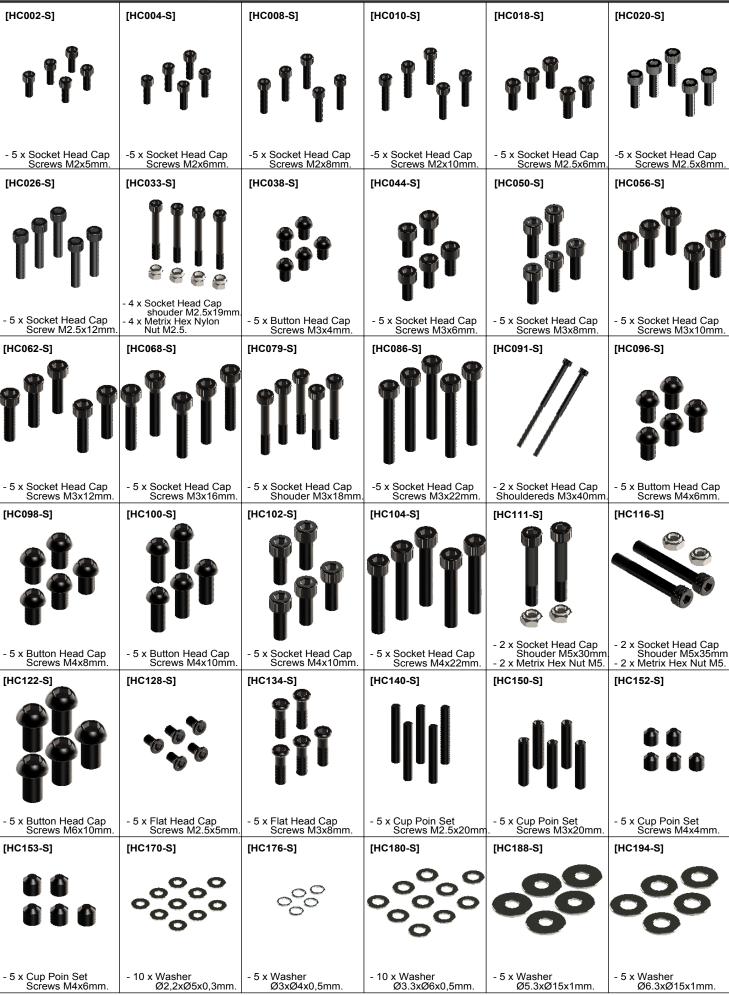




- 1 x Canopy Grommet.
- 1 x Canopy mousse.
- 1 x Canopy Edge Protection.
- 1 x Canopy Yellow/Carbon.

- 1 x Yellow/Carbon Tail Boom.
- 2 x Locking Element Tails. - 2 x Double-Sided Tapes.
- 1 x Set Screws M3 x 20mm.
- 2 x Washers 3.1 x 12 x 1.8mm.
- 4 x Metric Hex Nylon Nuts M3. - 2 x Boom spacers.
- 2 x Head Cap Screws M3 x 12mm.
- 2 x Nylon Screw M8x20mm.
- 1 x Flat Head Cap Screws M3x8mm.





Ø3xØ4x0,5mm.



Ø5.3xØ15x1mm.

Page 40







- 2 x Wrench Tool M8,M6.



- 4 x O-ring 3050.



- 2 x Velcro Battery Strap.



- 8 x Heat Shrink - Clear.



Edge Protection.





- 3 x Main Blades 690

[3BW5115-S]



- 3 x Tail Blades 115.

[3BW5104-S]



- 3 x Tail Blades 104.

UPGRADES and ACCESSORIES

New Heavy-Duty Tail Pulley 24T [H0154-S]



- 1 x New Heavy-Duty Tail Pulley 24T.

Aluminum ESC Heat Sink [H0165-S]



- x Aluminum ESC Heat Sink. - 1
- x Socket Head Cap M3x6mm. - 4
- x Cup Point Set Screws M3X20mm. - 4 - 12 x Washer Ø3,3xØ6x0.5mm
- 4 x Metric hex locknut Nuts M3H4

Aluminum Cooling Motor Mount [H0316-S]



- 1 x Aluminum Third Bearing Support.
- 1 x Aluminum Cooling Motor Mount.
 1 x Flanged Bearing Ø6 x Ø13 x 5mm.
- 2 x Socket Head Cap Screw M3x8mm.
- 2 x Aluminum Finishing Washers.
 - 2 x Spring 5.8 / 0.3 / LL 9
- 2 x Socket Head Cap Screw M3x10mm. 2 x Spring 3 / 0.5 / LL 12.



- 1 x Heavy Duty Main Gear.
 1 x Socket Head Cap M4x25mm.
 1 x Metric Hex Locknut Nuts M4.
- 1 x Heavy Duty Main Pinion.1 x Socket Head Cap M3x18mm.
- 1 x Metric Hex Locknut Nuts M3.

SAB HELIDIVISION Futaba Servo Horn [HA050]



- 1 x Plastic Servo Horn.

SAB HELIDIVISION JR Servo Horn [HA050]



- 4 x JR Servo Horn.

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



- SAB HELI DIVISION New Black T-shirt.

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



- SAB HELI DIVISION Black Polo Shirt.

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



- SAB HELI DIVISION Black Hoodies.

SAB HELI DIVISION Neck Strap [HM034]



- 1 x Neck Strap.

[HM001,HM002,HM003] HM001: WHITE CAP



- 1 x SAB HELI DIVISION CAP.

SAB HELI DIVISION Stand [HM038]



- 1 x SAB HELI DIVISION Stand (Set).

