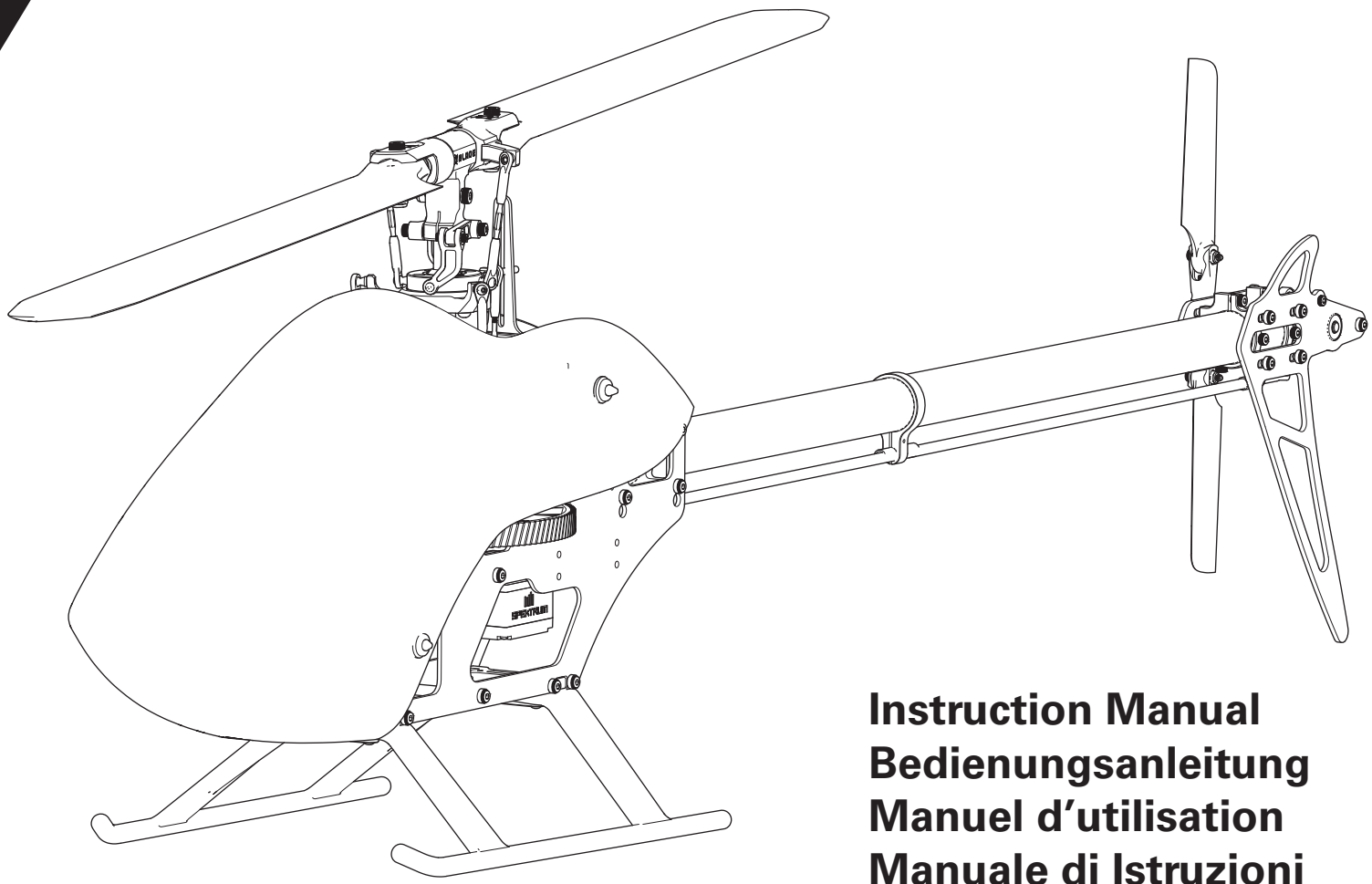
BLH4975, BLH4975C

Fusion 550



Instruction Manual
Bedienungsanleitung
Manuel d'utilisation
Manuale di Istruzioni

BNF BASI

Scan the QR code and select the Manuals and Support quick links from the product page for the most up-to-date manual information.

Scannen Sie den QR-Code und wählen Sie auf der Produktseite die Quicklinks Handbücher und Unterstützung, um die aktuellsten Informationen zu Handbücher.

Scannez le code QR et sélectionnez les liens rapides Manuals and Support sur la page du produit pour obtenir les informations les plus récentes sur le manuel.

Scannerizzare il codice QR e selezionare i Link veloci Manuali e Supporto dalla pagina del prodotto per le informazioni manuali più aggiornate.

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NOTICE

All instructions, warranties and other collateral documents are subject to change at the sole discretion of Horizon Hobby, LLC. For up-to-date product literature, visit horizonhobby.com and click on the support tab for this product.

Meaning of Special Language

The following terms are used throughout the product literature to indicate various levels of potential harm when operating this product:

WARNING: Procedures, which if not properly followed, create the probability of property damage, collateral damage, and serious injury OR create a high probability of superficial injury.

CAUTION: Procedures, which if not properly followed, create the probability of physical property damage AND a possibility of serious injury.

NOTICE: Procedures, which if not properly followed, create a possibility of physical property damage AND a little or no possibility of injury.

WARNING: Read the ENTIRE instruction manual to become familiar with the features of the product before operating. Failure to operate the product correctly can result in damage to the product, personal property and cause serious injury.

This is a sophisticated hobby product. It must be operated with caution and common sense and requires some basic mechanical ability. Failure to operate this Product in a safe and responsible manner could result in injury or damage to the product or other property. This product is not intended for use by children without direct adult supervision. Do not use with incompatible components or alter this product in any way outside of the instructions provided by Horizon Hobby, LLC. This manual contains instructions for safety, operation and maintenance. It is essential to read and follow all the instructions and warnings in the manual, prior to assembly, setup or use, in order to operate correctly and avoid damage or serious injury.

Age Recommendation: Not for children under 14 years. This is not a toy.

Safety Precautions and Warnings

- Always keep a safe distance in all directions around your model to avoid collisions or injury. This model is controlled by a radio signal subject to interference from many sources outside your control. Interference can cause momentary loss of control.
- Always operate your model in open spaces away from full-size vehicles, traffic and people.
- Always carefully follow the directions and warnings for this and any optional support equipment (chargers, rechargeable battery packs, etc.).
- Always keep all chemicals, small parts and anything electrical out of the reach of children.
- Always avoid water exposure to all equipment not specifically designed and protected for this purpose. Moisture causes damage to electronics.
- Never place any portion of the model in your mouth as it could cause serious injury or even death.
- Never operate your model with low transmitter batteries.
- Always keep aircraft in sight and under control.
- Always activate throttle hold at rotor strike.
- Always use fully charged batteries.
- Always keep transmitter powered on while aircraft is powered.
- Always remove batteries before disassembly.
- Always keep moving parts clean.
- Always keep parts dry.
- Always let parts cool after use before touching.
- Always remove batteries after use.
- Never operate aircraft with damaged wiring.
- Never touch moving parts.

WARNING: This is a large model helicopter with carbon fiber blades that spin at very high RPM. Always use extreme caution and common sense when maintaining and operating this product. If you are unsure about ANY function or procedure described in this manual, DO NOT operate. Contact Horizon Product Support for assistance.

WARNING: Always ensure you are operating the helicopter a safe distance, 45 feet (13 meters), away from yourself and others.

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BLADE®

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Specifications	
Length	42.5 in (1080mm)
Main Rotor Diameter	49 in (1245mm)
Tail Rotor Diameter	9.8 in (250mm)

Components Needed to Complete

	Recommended Component	BLH4975 Kit Only	BLH4975C Kit + Combo
Motor	Brushless Motor 4320-1180Kv (SPMXHM1030)	**Included**	**Included**
ESC*	Avian 130A ESC (SPMXAE1130)	**Required**	**Included**
Battery	5000mAh 6S 22.2V Smart G2 50C; LiPo (SPMX56S50)	**Required**	**Required**
Flight Controller	FC6250HX Helicopter FBL System (SPMFC6250HX)	**Required**	**Included**
Receiver	DSMX Remote Receiver (SPM9745)	**Required**	**Included**
Swash Servos*	H6350 Digital Brushless Ultra Torque, High Speed Cyclic Servo (SPMSH6350), *metal geared servos required*	**Required**	**Included**
Tail Servo*	H6360 Digital Brushless Mid Torque / Ultra Speed Heli Tail Servo (SPMSH6360), *metal geared servo required*	**Required**	**Included**
Charger	Smart S1400 G2 AC Charger,1x400 (SPMXC2040)	**Required**	**Required**
Transmitter	DSM2®/DSMX® Compatible Transmitter	**Required**	**Required**

*The H6350 and H6360 servos are rated to operate at up to 8.4 volts, however the BEC built into the Avian 130A ESC is only rated to power these servos at 6.0 volts or below.

⚠ **WARNING:** Do not set the BEC voltage of the Avian 130A ESC above 6.0 volts when using the Spektrum H6350 and H6360 servos. Setting the BEC voltage above 6.0 volts may cause the BEC to become overloaded which will cause a loss of control.

Tools Needed To Complete

- Medium strength thread-locking compound (Zap Z42 Thread Lock PAAPT42)
- 1.5mm, 2mm, 2.5mm, 3mm and 4mm hex drivers
- Ball link pliers (BLH100)
- Needle nose pliers
- Digital pitch gauge
- Metric ruler or calipers
- Double-sided servo tape
- Servo Tester (Spektrum Smart LiPo Battery Checker & Servo Driver SPMXBC100)
- (Optional) USB interface programming cable for FC6250HX Flight Controller SPMA3065
- (Optional) ESC Programming Box SPMXCA200

Assembly Guide Legend



Apply Medium Thread-locking Compound


Loosely Tighten


Apply Medium Cyanoacrylate (CA)


Fully Tighten


Apply NO Thread-locking Compound

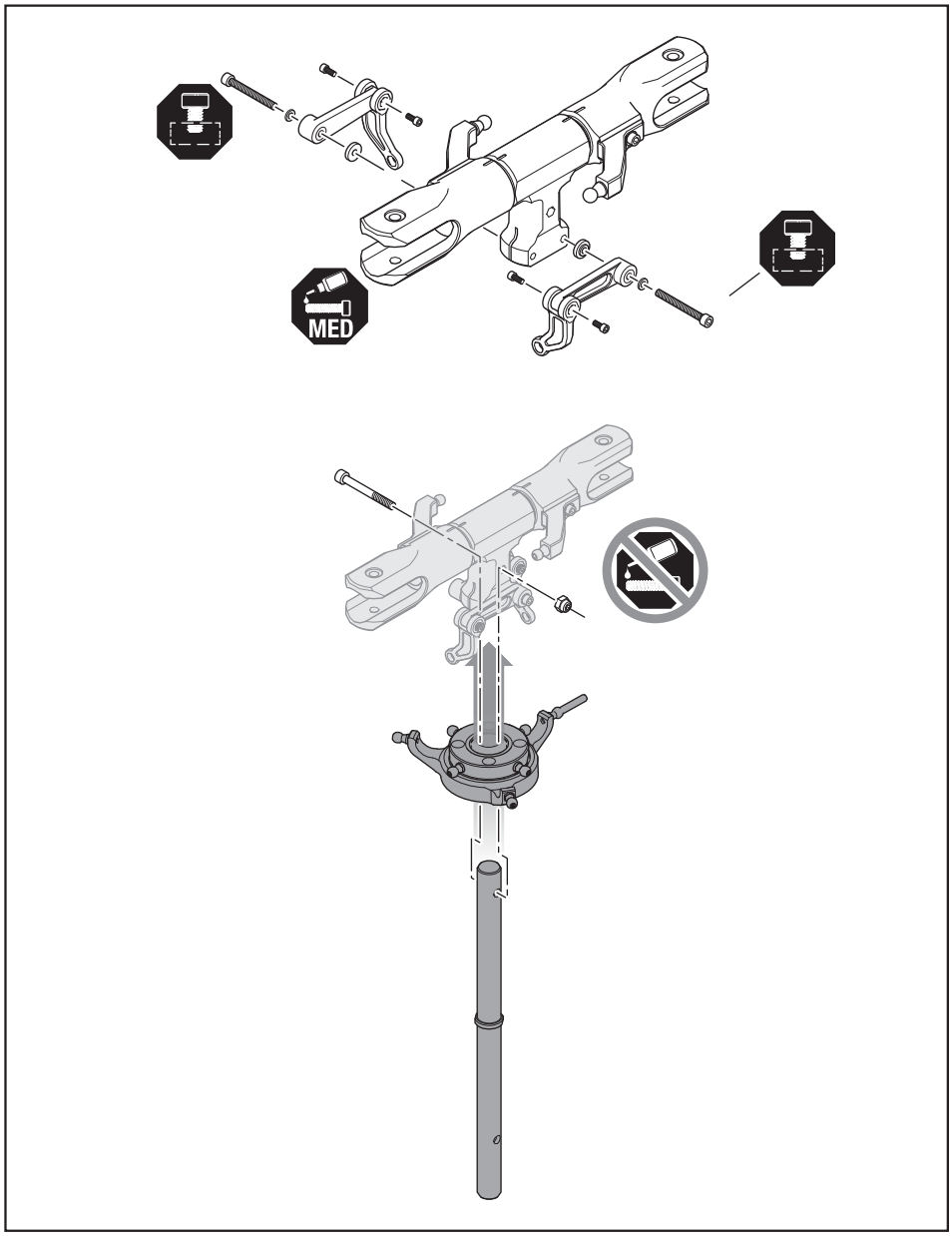
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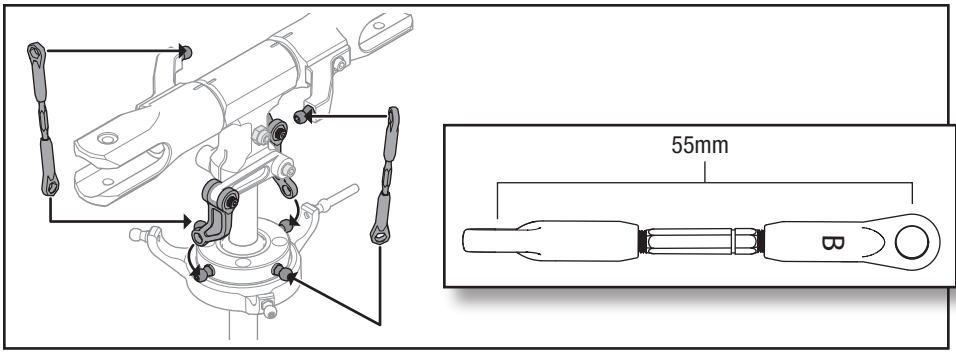
Head Assembly (Bags H, A)

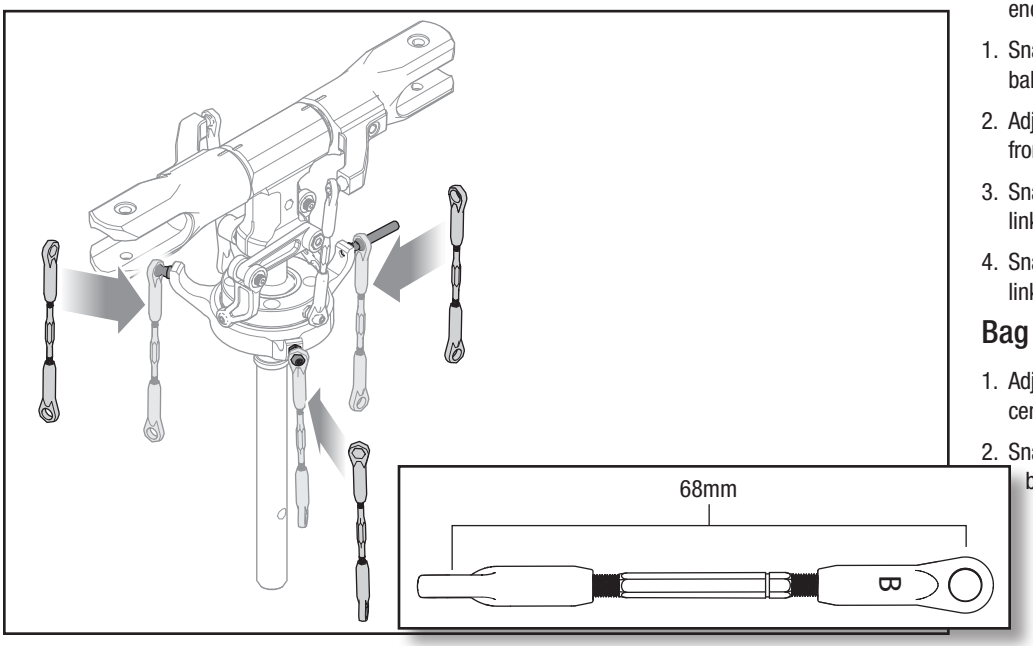
Bag H1, H2, H3

1. The main rotor head assembly and swashplate are pre-assembled with thread locking compound. If you disassemble the fasteners, use medium strength thread-locking compound for reassembly.
2. Install the follower arms to the head block with a 2.5mm hex driver using one M3x20mm socket head cap screw and two washers per arm and medium thread-locking compound. Ensure the thread-locking compound does not contact the bearings of the follower arms. Do not fully tighten at this time.
3. Insert the main shaft into the head block and secure the M4x20mm bolt and locknut with a 3mm hex driver and needle nose pliers. Before tightening the bolt, pull on the head block to verify the bolt passes through the hole in the main shaft. **Do not use thread-locking compound on the head bolt and locknut.**
4. Fully tighten the two follower arm M3x20mm socket head cap screws installed in step 2 above.



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Bag A1

IMPORTANT: The plastic links are one-way, there is a **B** printed on the outside of the link. Always orient the links so they snap onto the control ball with the **B** on the outside.

IMPORTANT: The linkages are turnbuckles. There is a notch toward one end of the turnbuckle to indicate the normal thread direction, the opposide side has reverse threads. When both ball links are installed and cannot rotate, make changes to the overall length by rotating the turnbuckle with a 3mm open-ended wrench.

1. Snap the follower arms onto two opposite linkage balls on the upper swashplate.
2. Adjust the length of the rotor head linkages to 55mm from center to center of the link openings.
3. Snap the rotor head linkages onto the main grip linkage balls.
4. Snap the other end of the linkages to the remaining linkage balls of the upper swashplate.

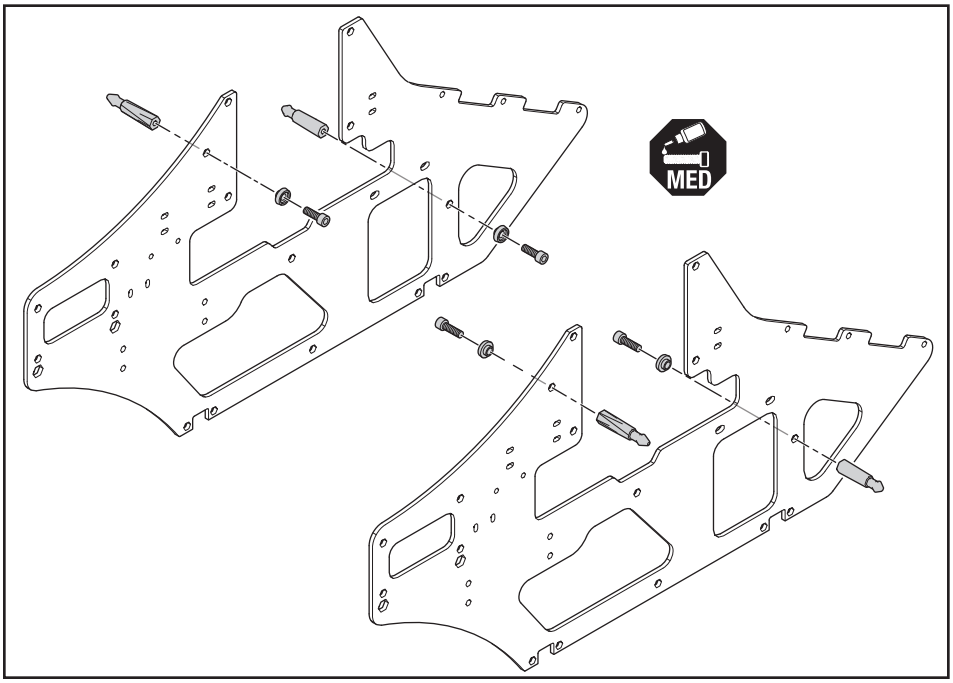
Bag A1

1. Adjust the length of the servo linkages to 68mm from center to center of the link openings.
2. Snap one end of the servo linkages onto the linkage balls on the lower swashplate.

Frame Assembly (Bags A, F, M, T)

NOTICE: Always plan your servo wire routing prior to assembly. If servo wires will pass through or cross the frame plates, use sandpaper or a file to smooth the edges of the frame plate to prevent wire chafing. Damage to servo wires may result in loss of control.

CAUTION: Sanding or filing carbon fiber, such as frame plates, may produce carbon dust. Always wear appropriate Personal Protection Equipment (PPE) such as a dust mask, when there is a danger of carbon dust.



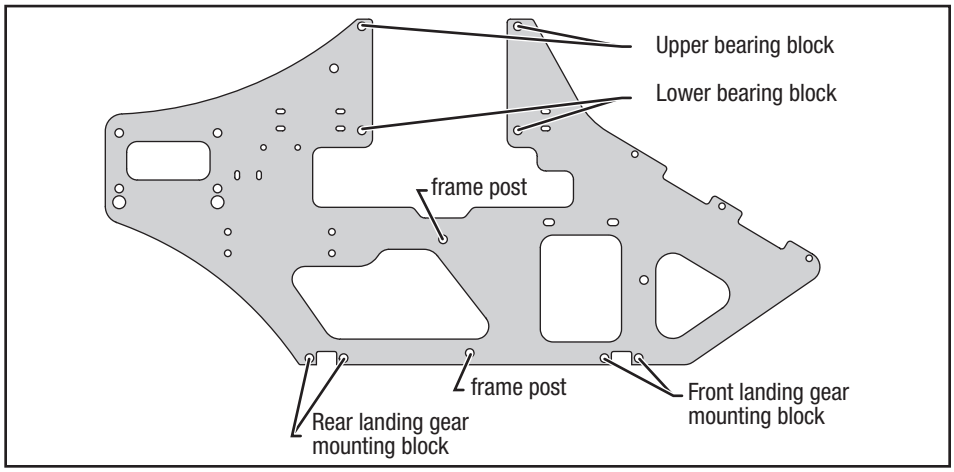
Bags F, M1

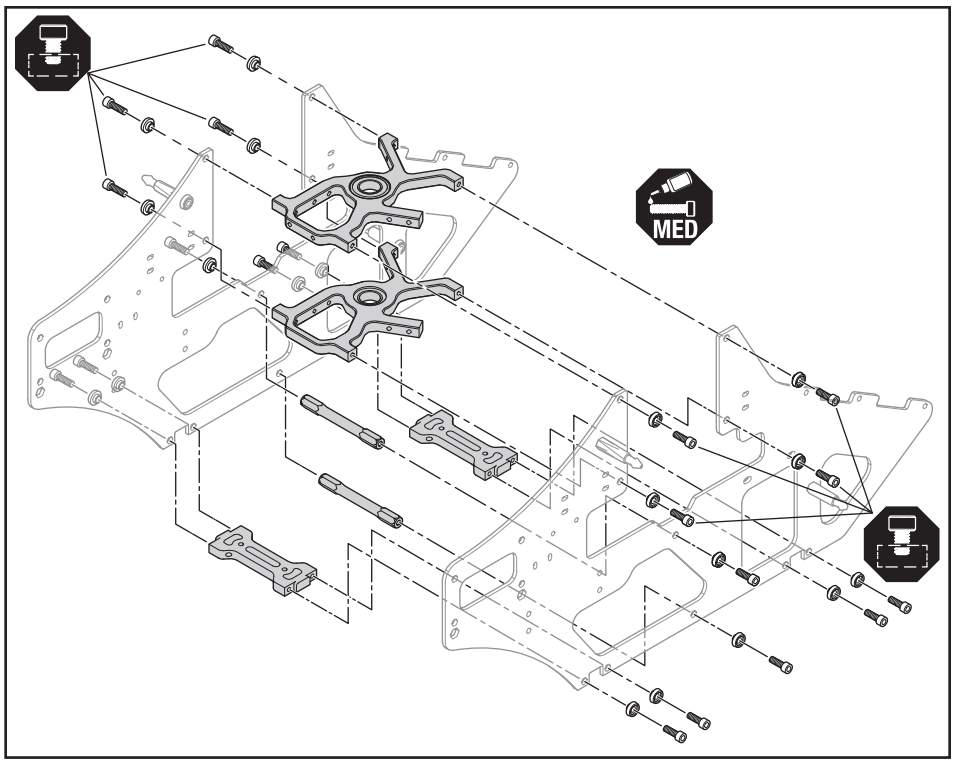
Attach front and rear canopy posts to each frame plate using a 2.5mm hex driverand medium thread-locking compound for each post to install the M3x10mm screw with a machined washer. Front canopy posts are labled **F**. Assemble a left and right frame side as shown in the illustration.

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Bags M1, M2, M3

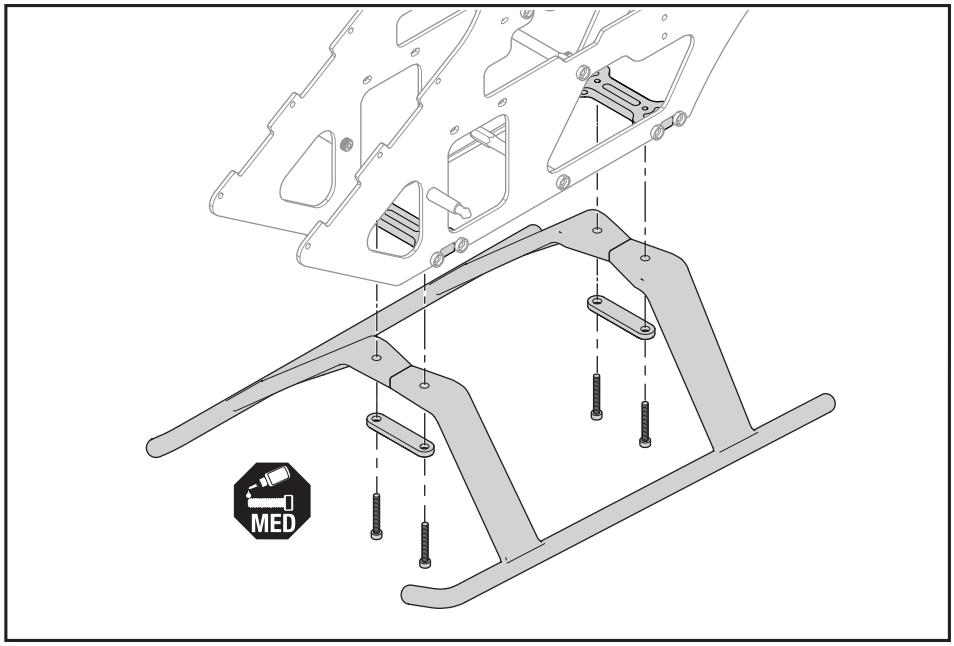
1. The upper bearing block has two threaded holes in the rear of the block. Orient the bearing blocks so the upper bearing block has the bearing pressed in from the top, and the bottom has it pressed in from below.
2. Attach the upper and lower bearing blocks to the frame sides using a 2.5mm hex driver and medium strength thread-locking compound to install the M3x10mm screws with machined washers. Do not fully tighten the screws in the bearing blocks at this time.
3. Slide the main shaft through both bearing blocks to ensure the blocks are properly aligned with each other.
4. Set the frame sides upright on a flat surface, with the bottom of both sides fully in contact with the work surface.
5. Tighten all of the bearing block screws fully and remove the main shaft from the bearing blocks.
6. Attach two landing gear mounts and two frame posts to the frame sides using a 2.5mm hex driver and medium thread-locking compound to install the M3x10mm screws with machined washers.



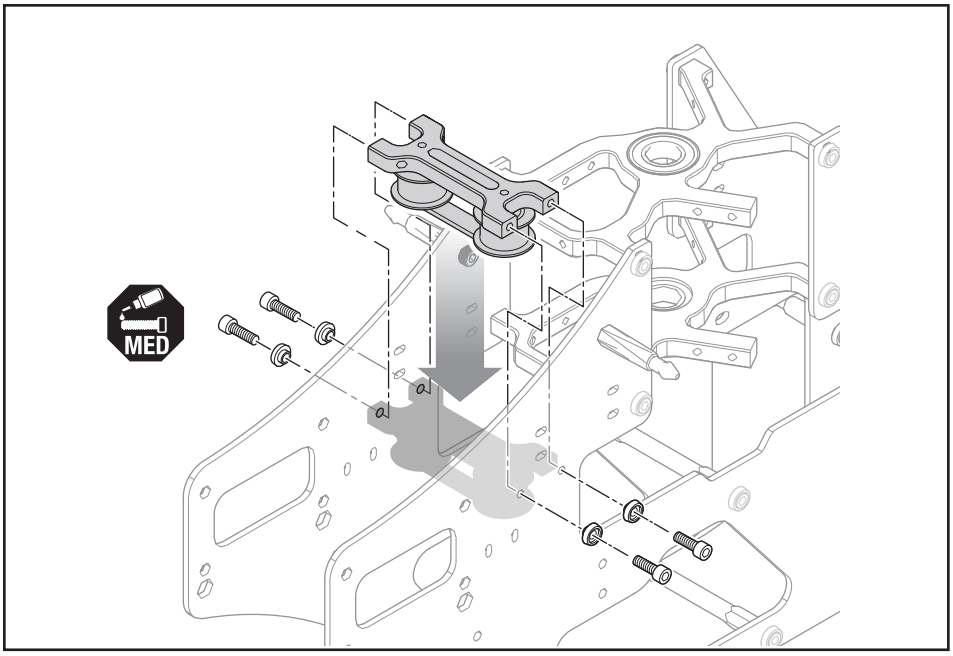


Bag M3

Secure the landing gear halves with plastic straps using a 2mm hex driver and medium thread-locking compound to install the M3x12mm screws.

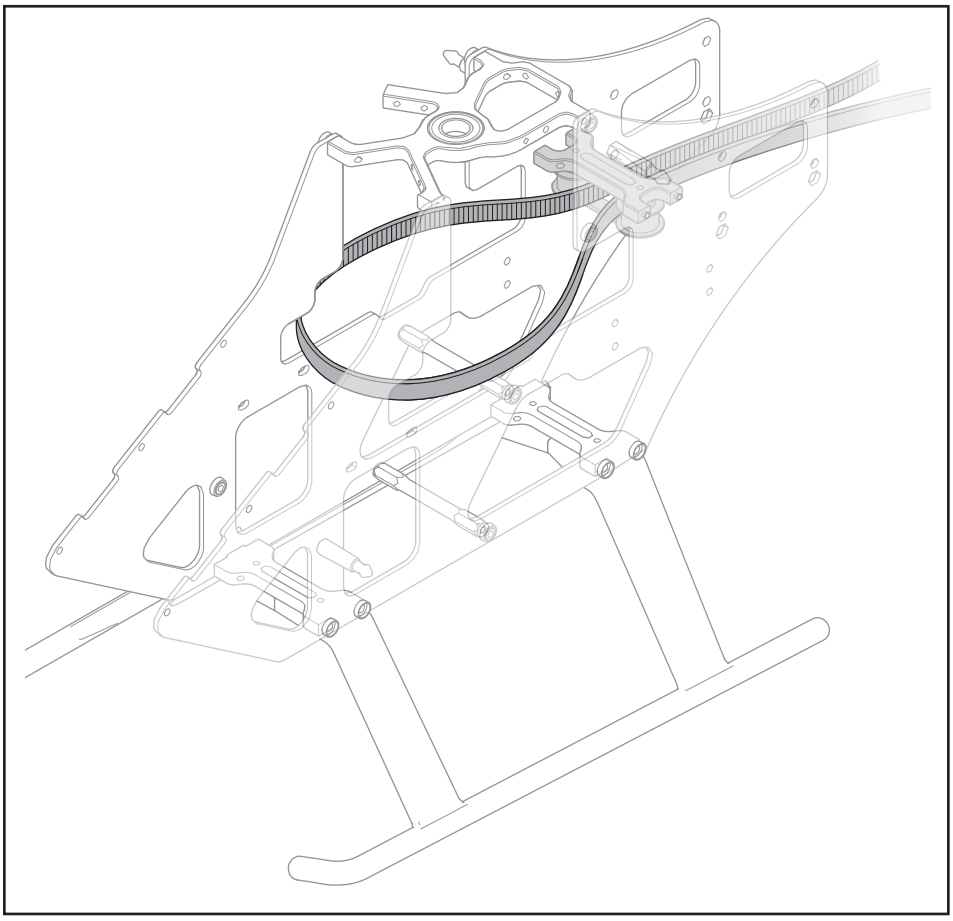


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Bag M4

Install the tail belt guide between the side frames using a 2.5mm hex driver and medium strength thread-locking compound to install the M3x10mm screws with machined washers.



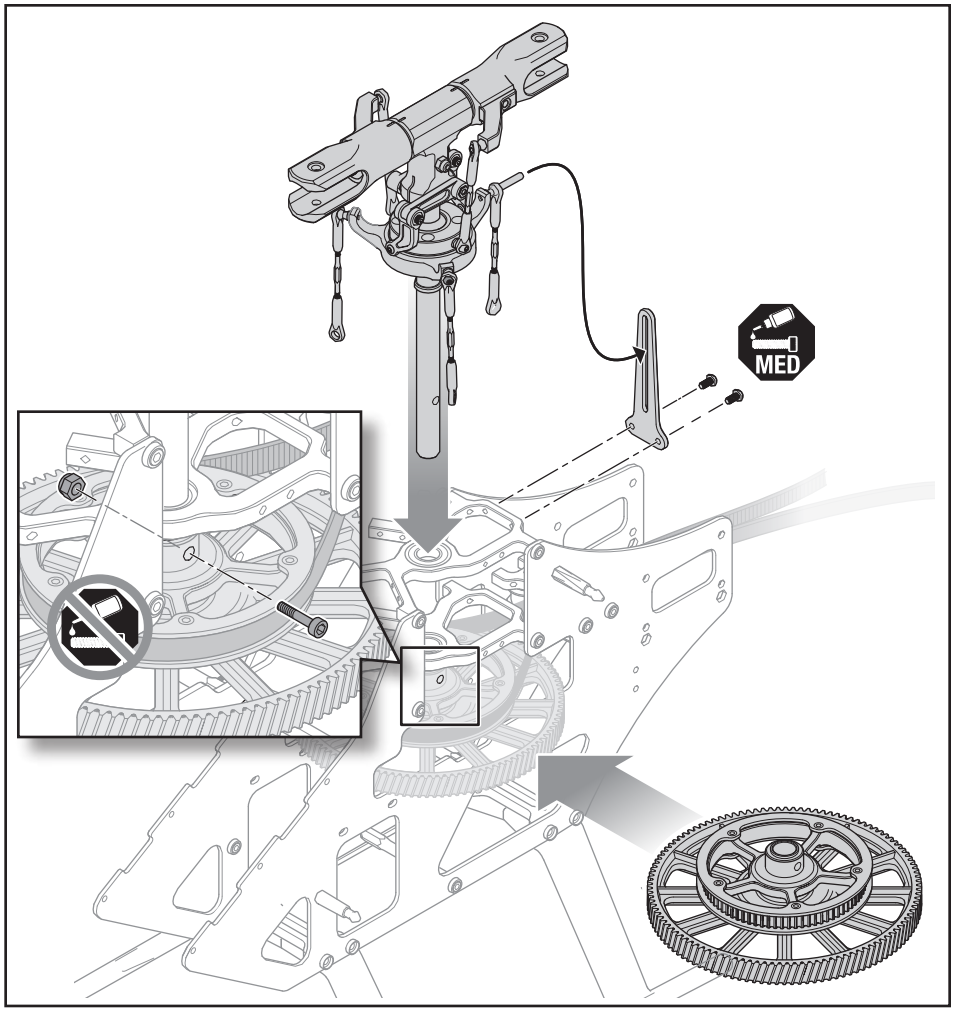
Bag T1

Thread the tail belt through the belt guide with the teeth facing inward. Pull enough of the belt through the guide to form a large loop, as shown.
Be careful to not kink the belt.

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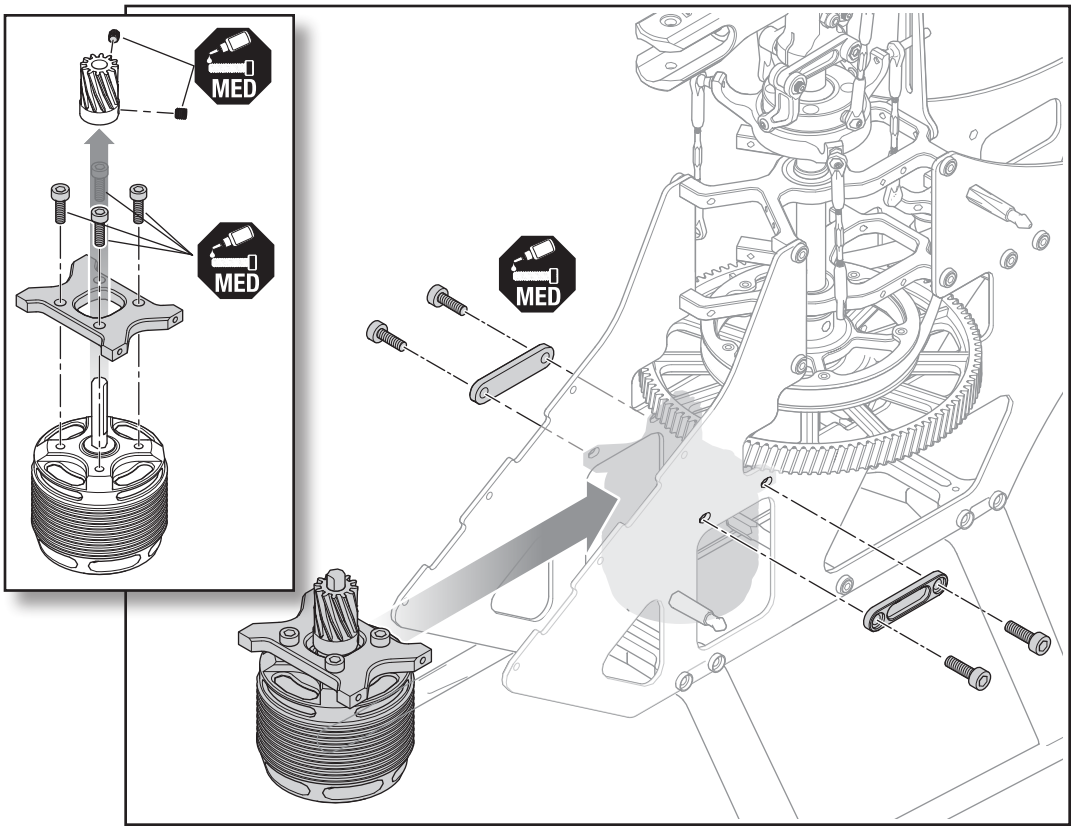
Bags M1, H2, H4

1. Slide the main gear assembly through the side of the frame.
2. Place the tail belt around the upper gear as shown.
3. Slide the rotor head assembly down through both bearing blocks and the main gear assembly.
4. Secure the main gear to the main shaft using a 3mm hex driver to install the M4x20mm bolt and lock nut. **Do not use thread-locking compound on the bolt and lock nut.**
5. Attach the anti-rotation bracket to the back of the upper bearing block using a 2.5mm hex driver and medium thread-locking compound to install the two M3x6mm button head screws. Ensure the anti-rotation pin is facing the rear of the frame and is inserted in the bracket before securing the bracket to the bearing block.
6. Rotate the rotor head to ensure it rotates freely.
7. Check for any vertical free play in the main shaft. If required, a shim is included in bag H2. Remove the main shaft and install the shim above the top bearing block during reassembly.

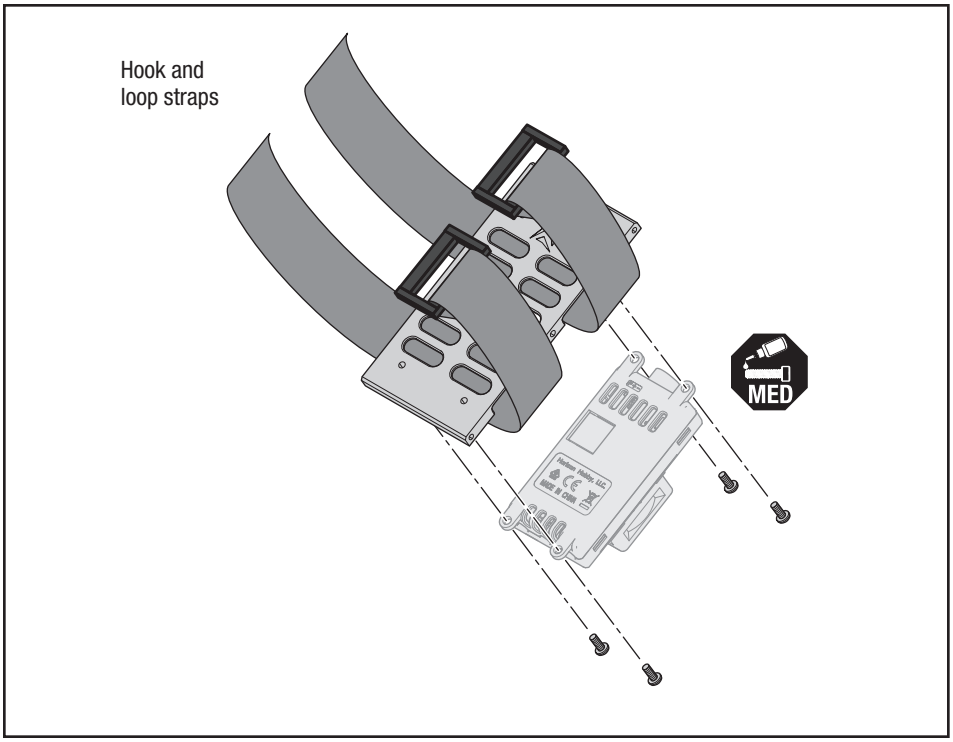


Bag M5

1. Attach the included 4320-1180Kv brushless motor (SPMXHM1030) to the motor mount using a 2.5mm hex driver and medium thread-locking compound to install the four M3x8mm screws. The motor leads should face toward the front of the aircraft when installed.
2. Attach the pinion gear to the motor shaft using a 2mm hex driver and medium thread-locking compound to install the two M4x4mm setscrews.
3. Attach the motor mount assembly between the frame sides using a 2.5mm hex driver and medium thread-locking compound to install the M3x10mm screws and machined frame doublers.

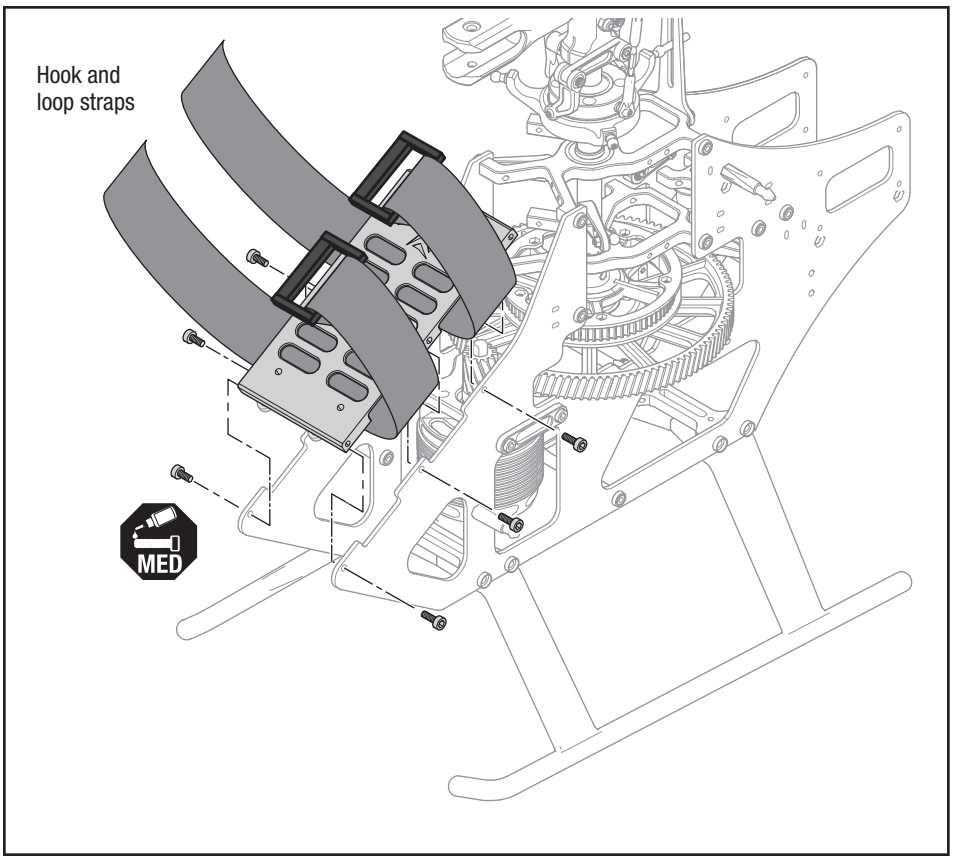


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Bag A, M6

1. Attach the ESC directly to the bottom side of the battery plate using a 2mm hex driver and medium thread-locking compound to install the M3x6mm button head scews. Secure two hook and loop straps between the battery plate and the speed control, as shown.



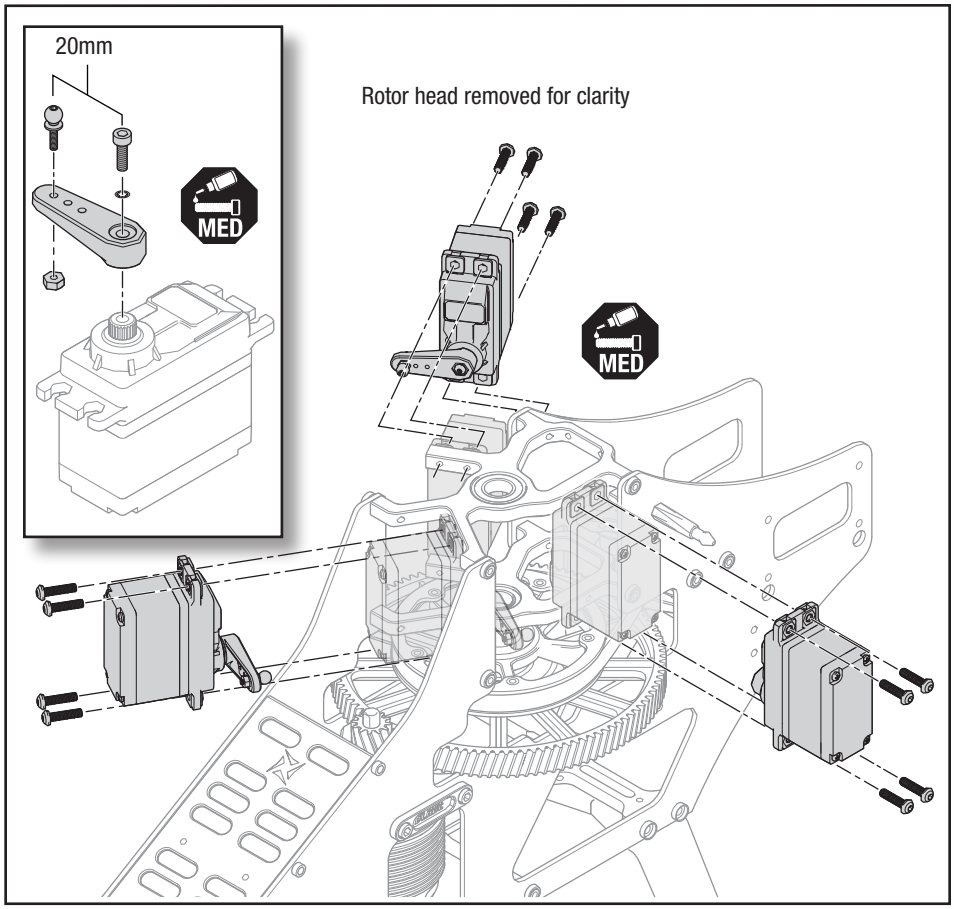
2. Connect the motor leads to the speed control.
3. Attach the battery mounting plate between the frame sides using a 2.5mm hex driver and medium thread-locking compound to install the six M3x10mm screws and medium thread-locking compound. The hook and loop straps should exit through the gaps in the frame sides.

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Bag A1, A3

Prepare three cyclic servos as follows:

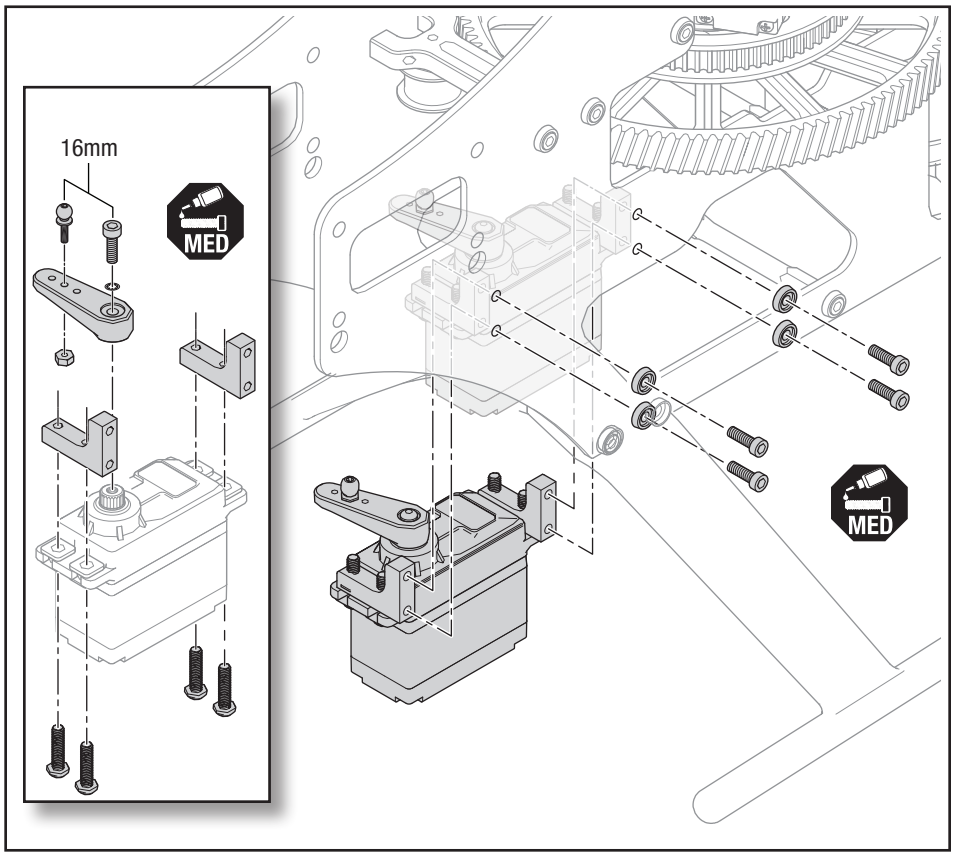
1. Center the servos using either your receiver or a servo tester. We recommend the Spektrum Smart LiPo Battery Checker & Servo Driver (SPMXBC100). Use the 1520µs setting for testing the Spektrum H6350 servos.
2. Attach the servo arm in the position shown, perpendicular to the servo case. Use the spline setting the gives the closest approximate position, final centering will be done during flight controller setup. When installing the servo horn use the M3 x 8 socket cap head screw included in bag A-1, and the lock washer included with the servo.
   Do not use the M3 x 6 button head screw included with the servo.
3. Hold the M2 nut with pliers and attach the linkage ball using a 1.5mm hex driver to the outer servo arm location.
4. Attach the servos to the bearing blocks, in the positions shown using a 2mm hex driver and medium thread-locking compound to install the M3x10mm button head screws.
5. Press the bottom end of the servo linkages on the servo arm linkage balls.



Bag A1, A3, M1

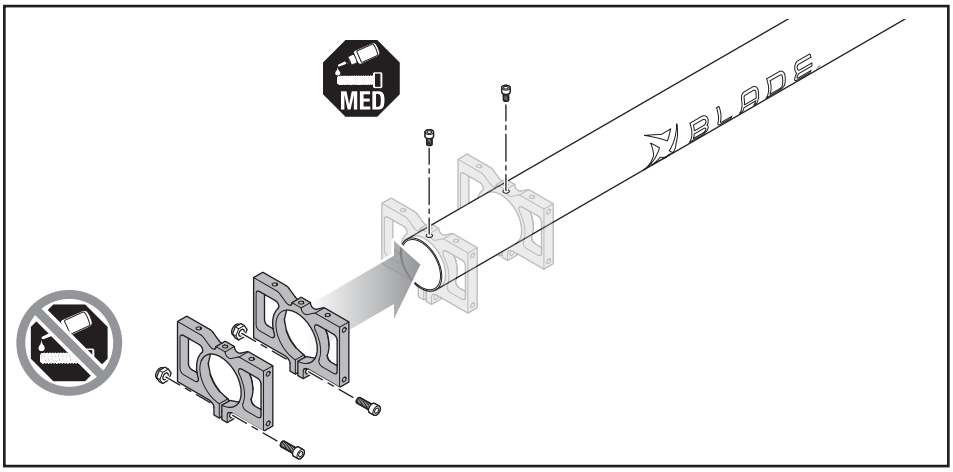
Prepare the tail servo as follows:

1. Center the servo using either your receiver or a servo tester. We recommend the Spektrum Smart LiPo Battery Checker & Servo Driver (SPMXBC100). Use the 760µs setting for testing the Spektrum H6360 servo.
2. Attach the servo arm in the position shown, perpendicular to the servo case. Use the spline setting the gives the closest approximate position, final centering will be done during flight controller setup. When installing the servo horn use the M3 x 8 socket cap head screw included in bag A-1, and the lock washer included with the servo.
   Do not use the M3 x 6 button head screw included with the servo.
3. Hold the M2 nut with pliers and attach the linkage ball using a 1.5mm hex driver to the middle servo arm location.
4. Attach the tail servo mounts to the servo using a 2mm hex driver and medium thread-locking compound to install the M3x8mm button head screw. Do not fully tighten the servo mount screws.
5. Attach the tail servo assembly to the inside of the right frame side as shown, using a 2.5mm hex driver and medium thread-locking compound to install the four M3x10mm screws with machined washers.
6. Fully tighten the servo mount screws.



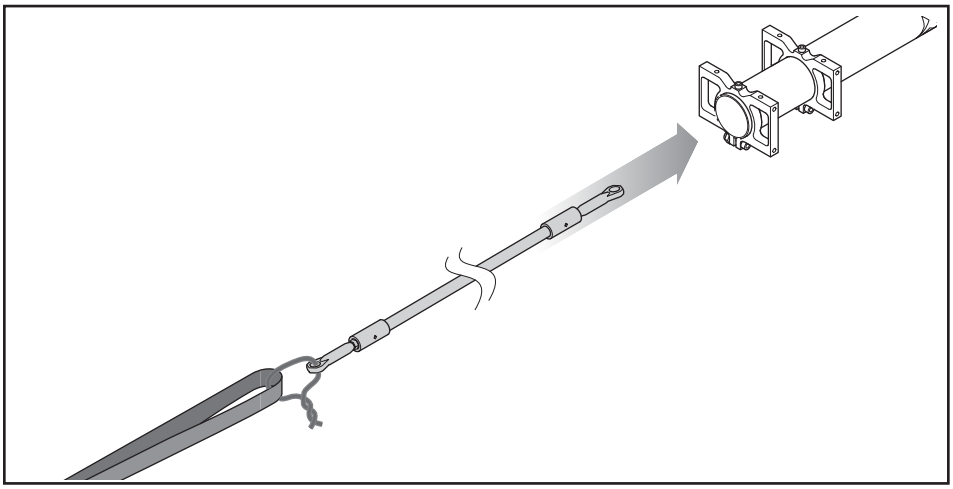
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Tail Assembly (Bags B, M, T)

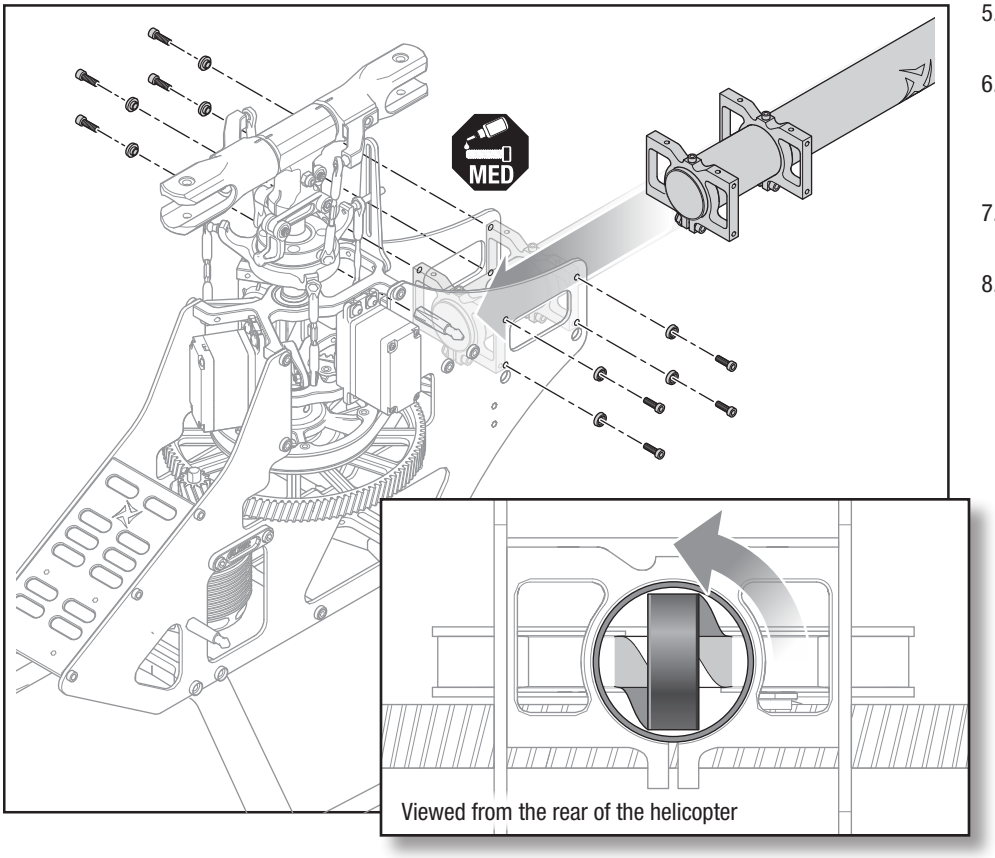


Bags B, M8

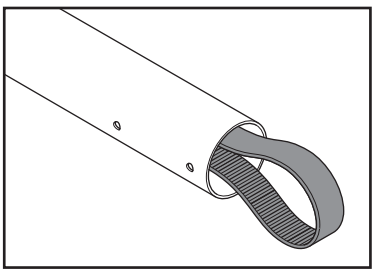
1. Slide two front tailboom mounts over the front of the tail boom. The Blade® logo is towards the front of the tailboom.
2. Attach the mounts to the tailboom using a 2mm hex driver and medium thread-locking compound to install the M3x6mm button head screw per mount and medium thread-locking compound, into the holes in the top of the tailboom.
3. Loosely secure a M3x12mm screw with a 2.5mm hex driver and locknut into the bottom of each mount. Do not use thread-locking compound. Do not fully tighten.



4. Insert the free end of the tail belt through the tailboom.
   IMPORTANT: Use a twist tie from the package to temporarily attach the belt to the ball link on the tail pushrod. Feed the pushrod through the boom and pull the belt through, then remove the twist tie



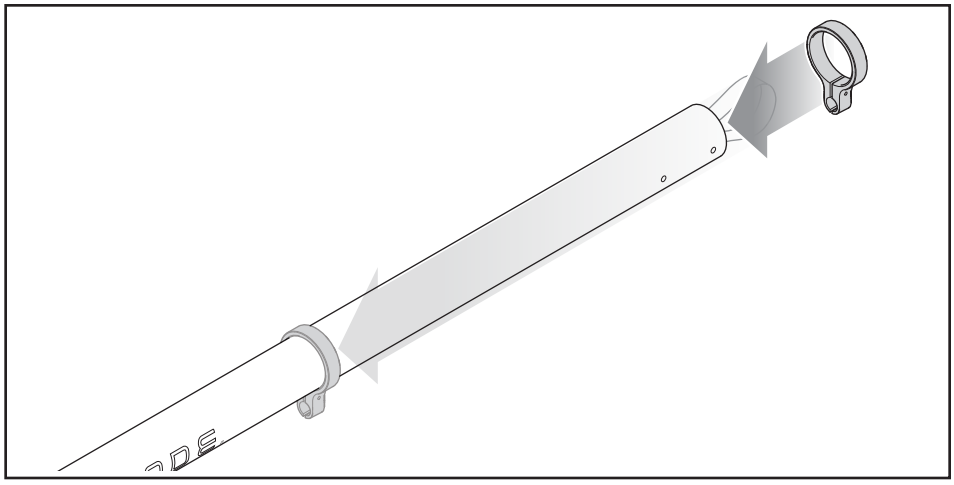
5. Feed the belt through the boom as you slide the boom mounts between the frame sides.
6. Attach the boom mounts to the frame sides using using a 2.5mm hex driver and medium thread-locking compound to install the M3x10mm screws with machined washers.
7. Fully tighten the M3x12mm boom mount screws and locknuts installed in Step 3 above.
8. When the boom is fully seated in place, the tail belt should extend from the back of the boom as shown. Rotate the rear loop of the belt 90° counter-clockwise from horizontal, when viewed from the rear of the aircraft. Ensure the belt is not twisted inside the boom.



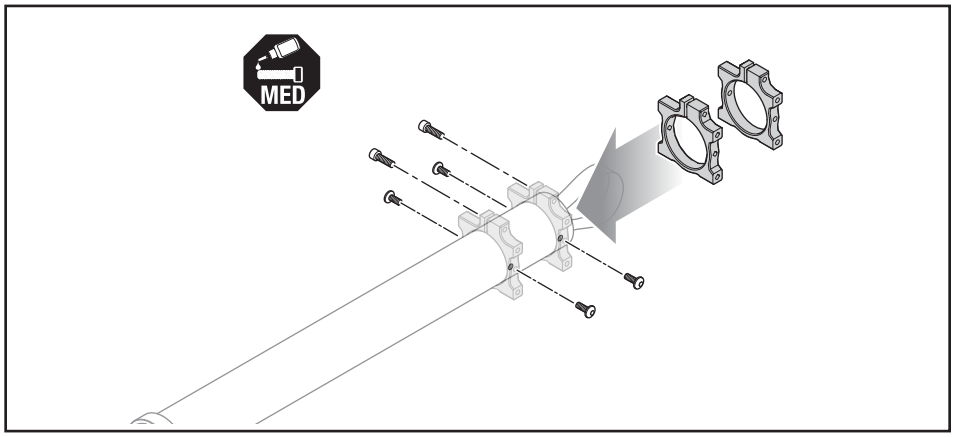
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Bags B1, T2

1. Slide the tail pushrod guide onto the tailboom. The guide should be located approximately in the center of the tailboom.

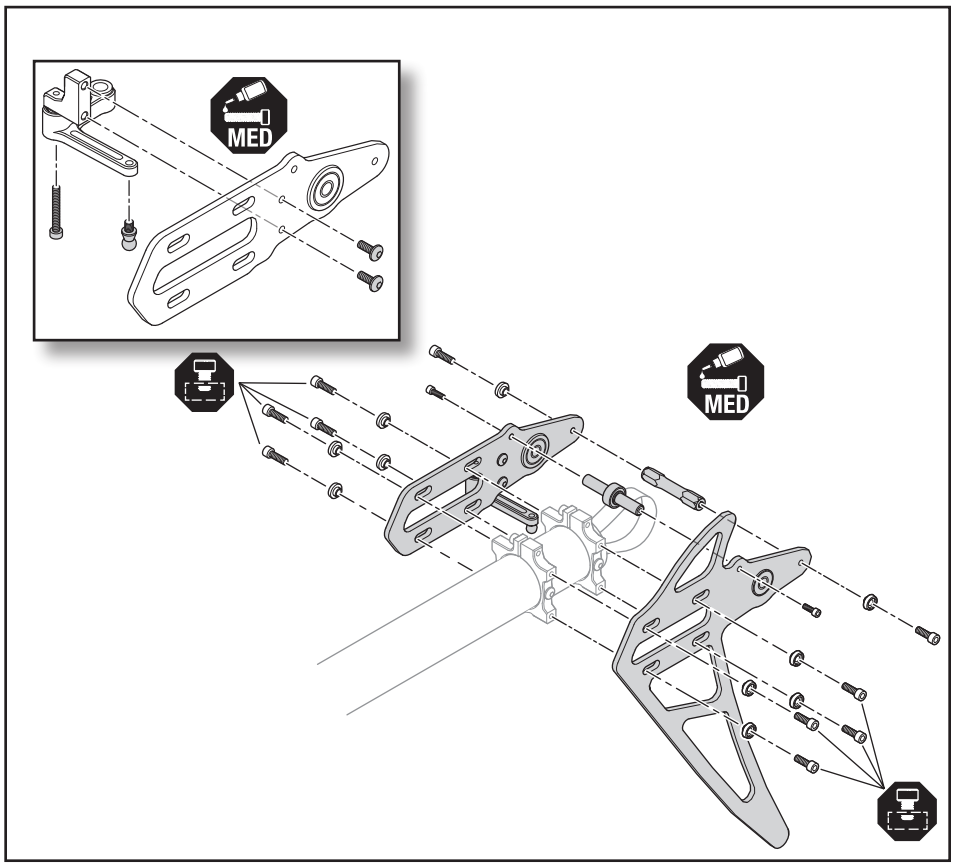


2. Slide two rear tailboom mounts over the tailboom.
3. Attach the mounts using using a 2mm hex driver and medium thread-locking compound to install the two M3x6mm button head screws per mount, into the holes on either side of the tailboom.
4. Use a 2.5mm hex driver to loosely insert one M3x10mm socket head capscrew with medium thread-locking compound in the top of each mount as shown.

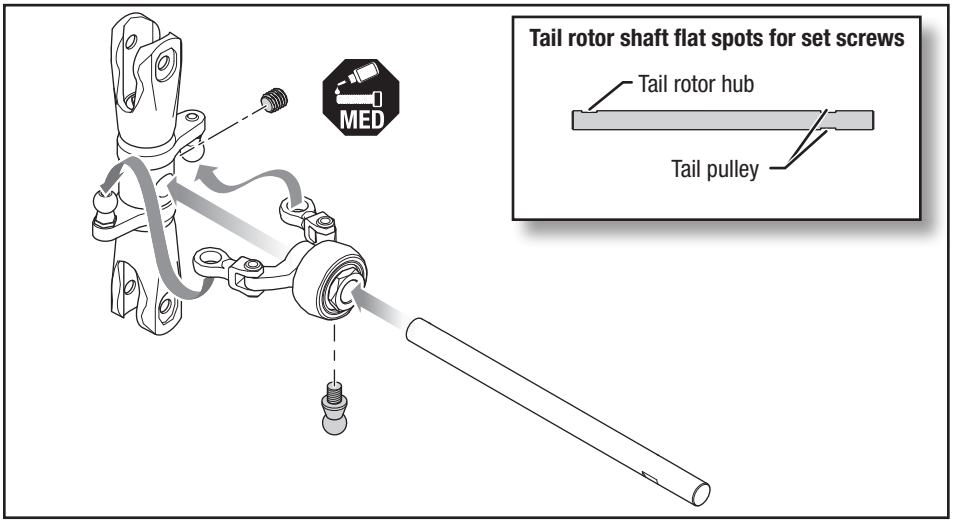


Bags T2, T3

1. Attach the tail rotor pitch lever assembly to the right side tail plate using a 2mm hex driver and medium thread-locking compound to install the two M2.5x8mm button head screws.
2. Attach the right tail plate assembly to the tailboom mounts using a 2.5mm hex driver and medium thread-locking compound to install the four M3x10mm socket head capscrews with machined washers. Do not fully tighten.
3. Attach the left side tail plate/fin to the tailboom mounts using a 2.5mm hex driver and medium thread-locking compound to install the four M3x10mm socket head capscrews with machined washers. Do not fully tighten.
4. Insert the tail belt guide bearing between the tail plates and attach using a 2.5mm hex driver and medium thread-locking compound to install the two M2.5x8mm socket head capscrews.
5. Insert the rear spacer post between the tail plates and attach using a 2.5mm hex driver and medium thread-locking compound to install the two M3x10mm socket head capscrews with machined washers.



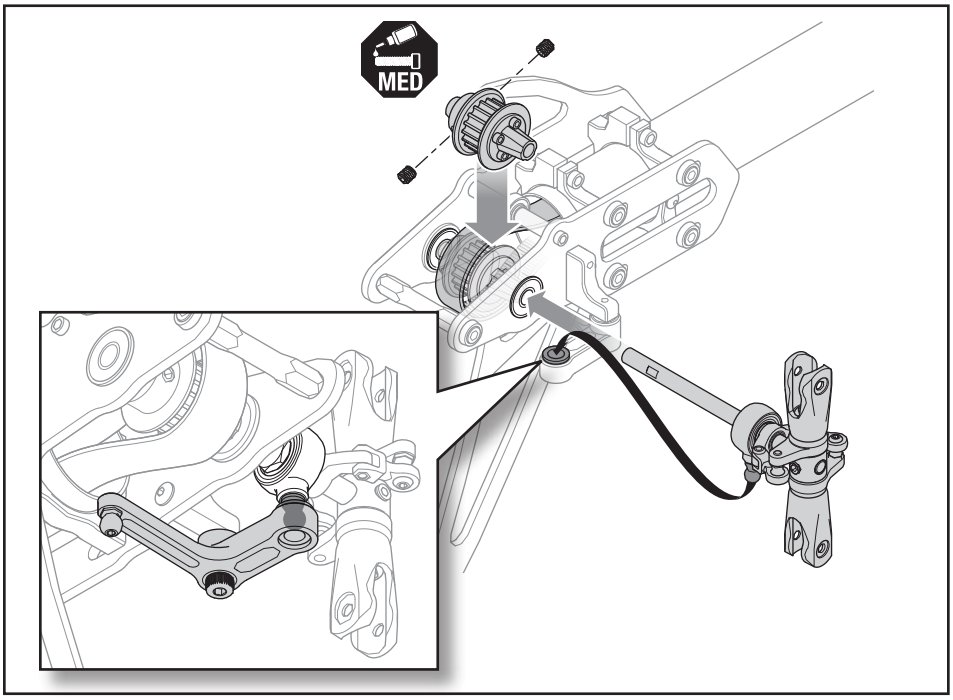
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Bag T4

IMPORTANT: The tail shaft has one flat spot close to one end for the tail rotor hub, and two flat spots on the other end for the tail pulley.

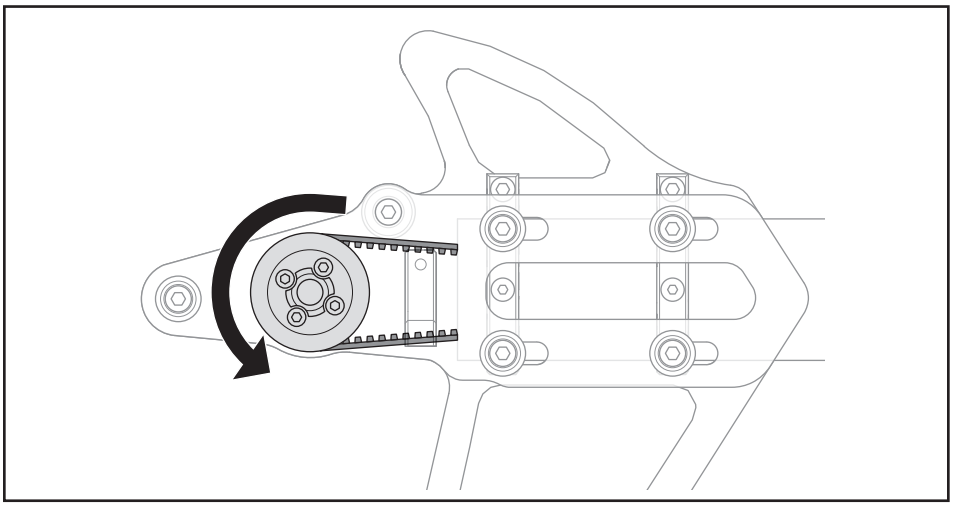
1. Insert the tail shaft into the tail rotor hub assembly.
2. Lock the tail shaft into place using a 2mm hex driver and medium thread-locking compound to install the M4x4mm setscrew. Ensure the setscrew contacts the flat area machined into the tail shaft.
3. Remove the linkage ball from the pitch slider assembly and re-install using medium thread-locking compound.
4. Slide the pitch slider assembly over the tail shaft and snap the ball links onto the tail grip linkage balls.



Bag T2, T4

1. Insert the tail pulley into the loop created by the tail belt, as shown.
2. Slide the tail shaft in from the right side, through the tail pulley and into the left side tail plate bearing. As you slide the tail shaft in, insert the linkage ball of the tail pitch slider into the nylon bushing of the tail rotor bell crank.

   IMPORTANT: Remove one of the set screws from the pulley to view the flat spot on the shaft. Tighten the opposing set screw when the flat spot is centered, then re-install the set screw.
3. The tail shaft should extend out of the left side plate bearing by approximately 1mm.
4. Secure the tail pulley to the tail shaft using a 2mm hex driver and medium thread-locking compound to install the two M4x4mm setscrews. Ensure the setscrews are in contact with the flat areas machined into the tail shaft.

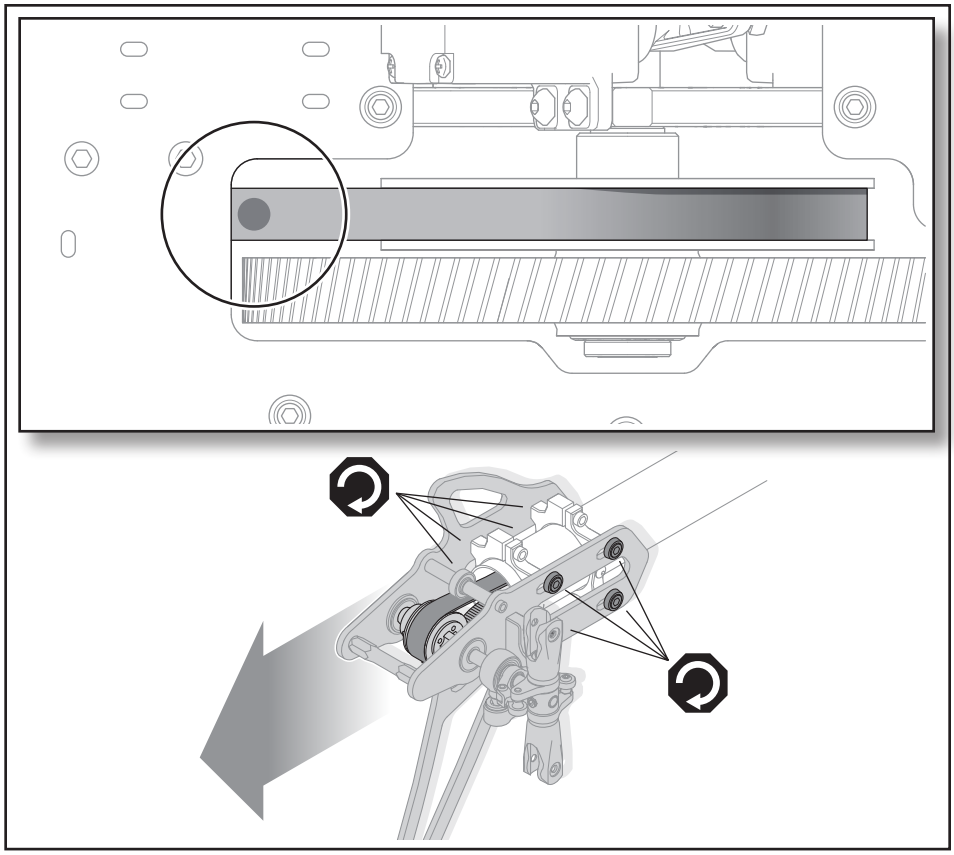


Check the rotation of the tail pulley. The tail pulley should rotate as shown when the main rotor is rotated clockwise, when viewed from above. If the tail gear does not rotate as shown, remove the tail shaft and tail pulley, rotate the tail belt loop 180° and re-assemble. **Sight down the tail boom and ensure the tail belt is not twisted more than 90° inside the tail boom.**

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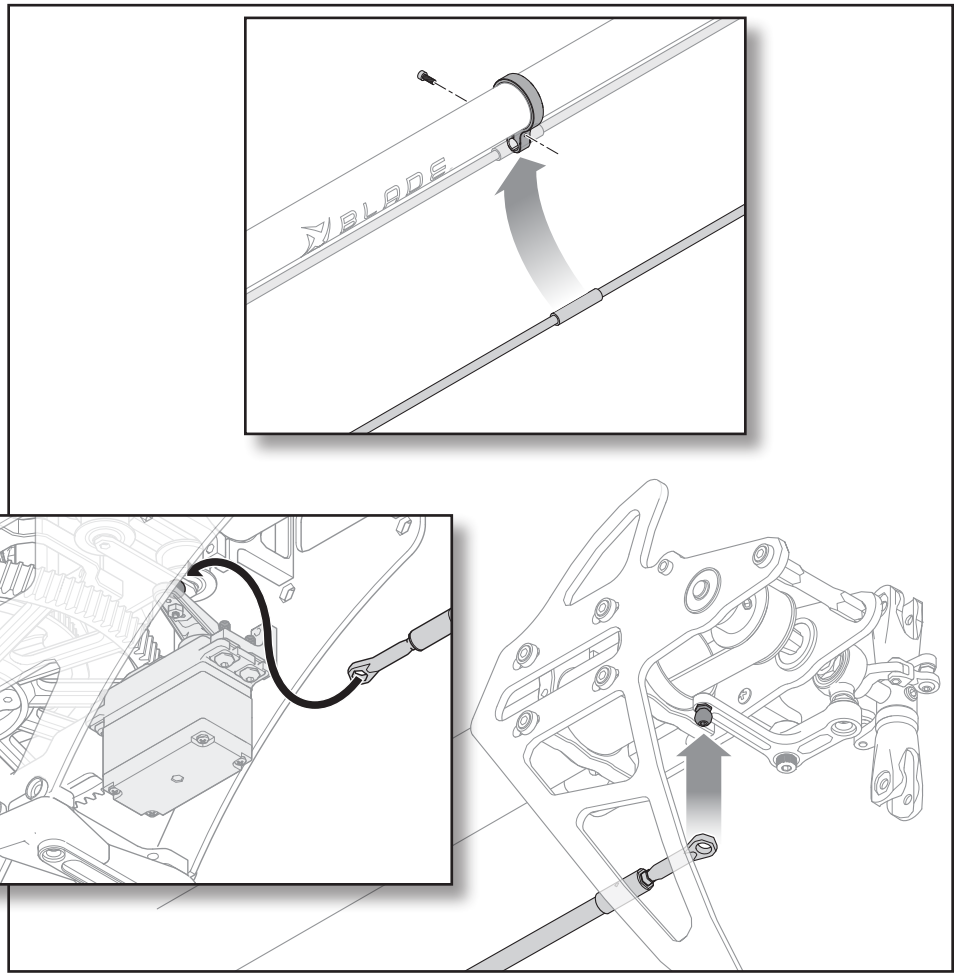
Belt Tension

1. Check the belt tension just behind the main gear at the rear of the side plate opening. Push inward on the belt from the side with moderate pressure. The belt should not deflect more 4mm.
2. Set the tail belt tension by applying pressure against both tail side plates towards the rear of the aircraft. Use a 2.5mm hex driver to fully tighten the eight M3x10mm screws holding the tail side plates to the rear boom mounts.



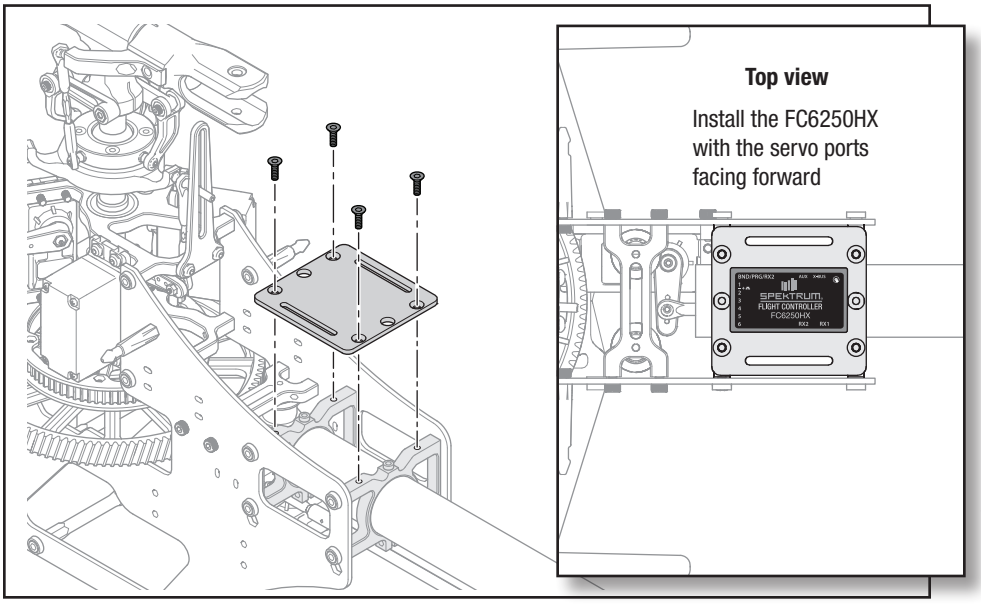
Tail Rotor Pushrod

1. Insert the metal sleeve of the tail pushrod into the pushrod guide.
2. Secure the pushrod guide with a socket head cap screw.
3. Snap the front tail pushrod linkage onto the tail servo arm.
4. Snap the rear pushrod linkage onto the tail rotor pitch lever.



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Flight Controller Mounting Plate

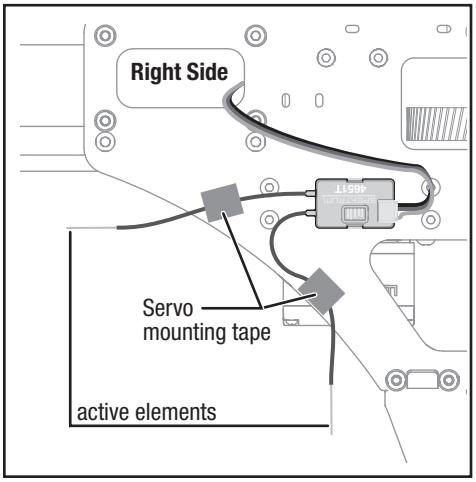


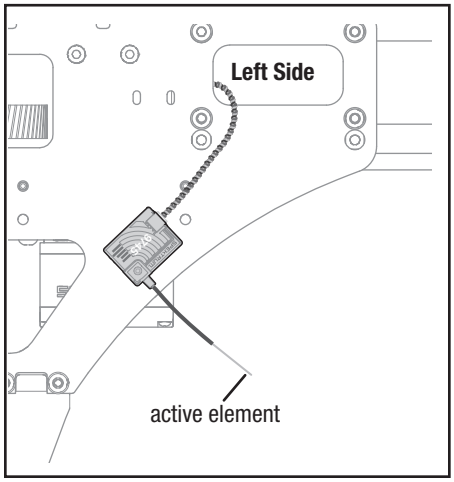
Bag M7

1. Route the servo and throttle wires to the flight controller mounting area of the frame. Small holes are provided in the frame side plates to allow for securing the servo wires with small plastic cable ties. When routing the wires, be very careful to avoid any moving parts and sharp edges of the carbon fiber plates.
2. Attach the flight controller mounting plate to the top of the front tail boom mounts using a 2mm hex driver and medium thread-locking compound to install the four M3x6mm countersunk screws.
3. Secure the FC6250HX to the mounting plate with the servo ports facing forward using the double sided tape provided with the flight controller.

IMPORTANT: Mount the flight controller square with the frame.

Main and Remote Receiver Mounting





Use double-sided mounting tape to install the 9745 remote receiver on the left side of the frame, and the 4651T main receiver on the right side of the frame, as shown.

Antenna Installation

The 9745 and 4651T receivers have a coaxial style antenna. We recommend installing the antennas as shown in the illustration to maximize signal reception. Use mounting tape to secure the longer antennas on the 4651T so the active elements at the end of the coaxial cables are not mounted next to the carbon fiber frame.

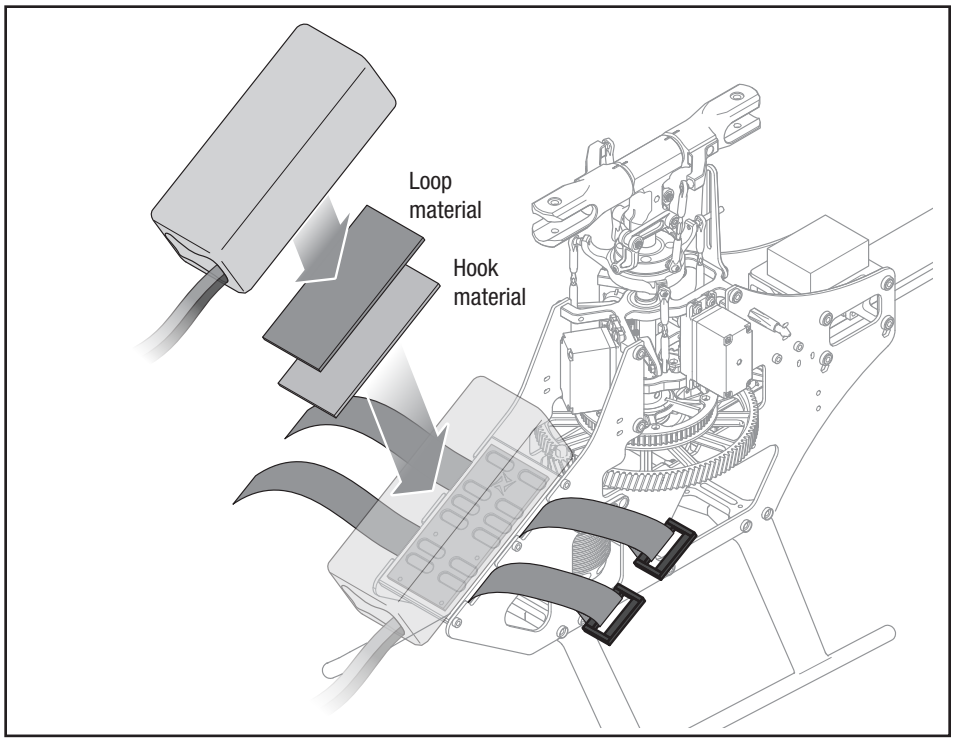
NOTICE: Do not cut, kink, or modify the antenna. Damage to the coaxial portion of an antenna will reduce the performance of the antenna. Shortening or cutting off the 31mm tip will reduce the range.

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Battery Installation

1. Apply the loop side of adhesive backed hook and loop material to the flight battery.
2. Apply the hook side to the battery plate.
3. Attach the flight battery to the battery plate.
4. Secure the battery with the hook and loop straps.

CAUTION: Always disconnect the Li-Po battery from the electronic speed control when not flying to avoid over-discharging the battery. Batteries discharged to a voltage lower than the lowest approved voltage may become damaged, resulting in loss of performance and potential fire when batteries are charged.



Throttle Hold

Activating and using the Throttle Hold (TH HOLD) function in your chosen transmitter is required for safe setup and operation. Throttle hold only cuts power to the motor on an electric helicopter. Pitch and direction control are maintained.

WARNING: Always engage throttle hold before approaching the helicopter.

The blades will spin if TH HOLD is OFF. For safety, turn TH HOLD ON any time you need to touch the helicopter or check the control directions.
Additionally, turn TH HOLD ON to cut power to the motor if the helicopter is out of control, in danger of crashing, or both.

Setup for FC6250HX Flight Controller

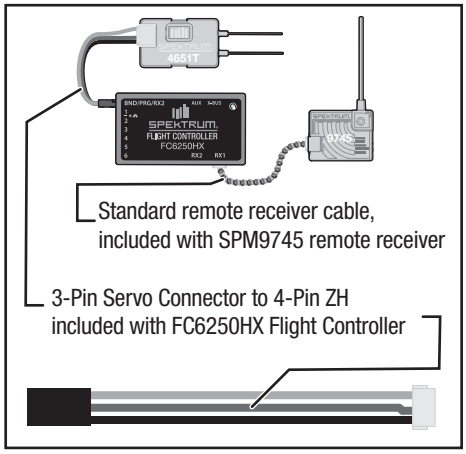
Flight Controller Setup

WARNING: Always remove the pinion gear or disconnect the main drive motor from the ESC to disengage the drive system during initial setup. The main rotor blades may turn in response to setup changes or transmitter inputs. Failure to do so could result in serious personal injury or property damage.

WARNING: The following setup information is for the Spektrum FC6250HX flight controller with the Spektrum H6350 and H6360 servos and 130A Avian ESC from the BLH4975C combo. If you are not using this combination of components, be sure to refer to your product manuals for proper setup information. Failure to properly set up your flight controller system may lead to an uncontrollable helicopter.

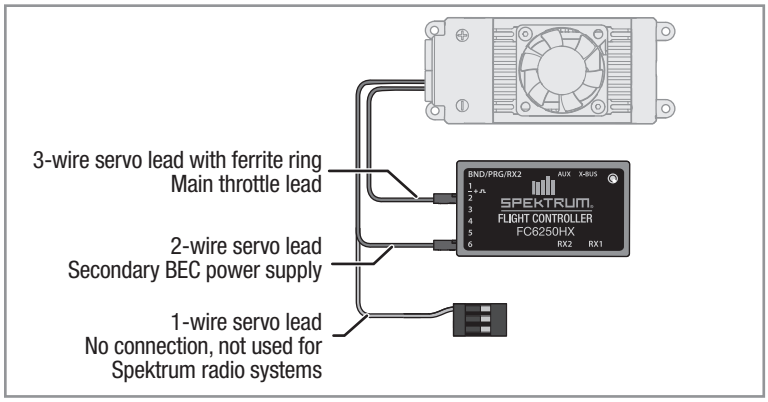
We recommend the FC6250HX Flight controller for the Fusion 550. The FC6250HX may be programmed directly through your transmitter or with a PC. We recommend updating to the most recent firmware to begin, use the SPMA3065 USB interface programming cable with your PC to register and update the Flight Controller. The PC programmer tool can be downloaded from the SPMFC6250HX product page, click on the **Manuals and Support** tab. Select **FC6250HX PC Programmer Download and Quickstart Guide** which includes both a link to download the software and the instructions for it's use. This manual covers the setup using the transmitter to configure the flight controller through Forward Programming.

1. Connect your main telemetry receiver (SPM4651T) to the BND/PRG/RX2 port, and the remote receiver (SPM9745) to the RX1 port as shown. You will need to be able to access the BND/PRG/RX2 port later to bind the system to your radio, so be sure to leave the wiring enough flexibily to be able to access that connector.



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2. Connect your ESC to the Flight Controller. For the Avian 130A ESC, the throttle connector goes ino the number 2 port, and the 2-wire servo lead goes into the number 6 port on the FC6250HX as shown.
   IMPORTANT: If you are using an ESC without Spektrum Smart technology, referece the FC6250HX manual for the proper ESC and servo ports.



3. In your transmitter, create a new heli setup and name the model file.

SYSTEM SETUP

Model Type	HELI
Swash Type	Normal

F-Mode Setup		
Switch 1	Switch B	
Switch 2	Inhibit	
Hold Switch	Switch H	
	0	1

Channel Assign	
Channel Input Config	
1 Throttle	
2 Aileron	
3 Elevator	
4 Rudder	
5 Gear	
6 Collective	
7 AUX 2	

Frame Rate
11ms
DSMX

ESC Telemetry for SPMXHM1030 Motor	
Gear Ratio	9.33
Motor Pole Count	10

FUNCTION LIST

Servo Setup

Chan	Travel	Reverse
THR	100/100	Normal
AIL	100/100	Normal
ELE	100/100	Normal
RUD	100/100	Normal
GER	100/100	Normal

Chan	Travel	Reverse
PIT	100/100	Normal
AX2	100/100	Normal
AX3	100/100	Normal
AX4	100/100	Normal

D/R & Expo

Chan	Sw (F) Pos	D/R	Expo
AILE	0	100/100	+25
	1	100/100	+25
	2	75/75	+25
ELEV	0	100/100	+25
	1	100/100	+25
	2	75/75	+25
RUDD	0	100/100	+25
	1	100/100	+25
	2	75/75	+25

Gyro

Channel: Gear		Switch: Flight Mode		Th Hold
Flight Mode	Normal	Idle Up 1	Idle Up 2	
	75%	75%	75%	75%

Throttle Curve

Sw (B) Pos	Pt 1	Pt 2	Pt 3	Pt 4	Pt 5
ESC Setup*	0	50	50	50	50
Normal	0	60	60	60	60
1	70	70	70	70	70
2	80	80	80	80	80

*Use this throttle curve for setup on the Avian 130A ESC, then change to the normal throttle curve for flight.

Pitch Curve

Sw (B) Pos	Pt 1	Pt 2	Pt 3	Pt 4	Pt 5
Normal	30	40	50	75	100
1	0	25	50	75	100
2	0	25	50	75	100
HOLD	25	37	50	75	100

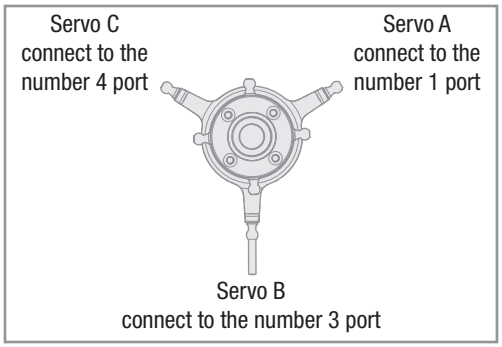
Timer

Mode	Count Down
Time	5:00
Start	Throttle Out
Over	25%
One Time	Inhibit

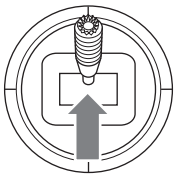
4. Bind the transmitter to your flight control system.
   I. Remove the SPM4651T receiver connector from the BND/PRG/RX2 port.
   II. Insert a bind plug into the BND/PRG/RX2 port.
   III. Connect a battery to the ESC, the LED on the 9745 remote receiver will begin to flash indicating the receiver is in bind mode.
   IV. Leave the battery and remote receiver powered on, remove the bind plug.
   V. Press and hold the bind button on the 4651T main receiver and insert the connector into the BND/PRG/RX2 Port. The LED will be begin to flash indicating the receiver is in bind mode, release the bind button once the LED begins to flash.
   VI. With your throttle at zero, put your transmitter into bind mode, the LEDs on the receviers will stay illuminated when the connection is successful.
5. Ensure your throttle hold is enabled. In your transmitter menu, select **Forward Programming**. The transmitter connects to the flight controller, and a menu is displayed.
6. Navigate to the **Setup→Swashplate→Output** Setup menu.
7. Set the **Frame Rate** to 333Hz.

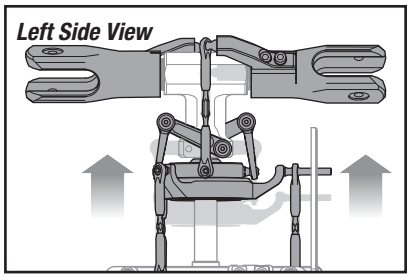
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8. Select the **Type** menu. Select the 3 servo 120° swashplate option that shows the B servo connection in the rear of the swashplate.
9. Connect the servos as shown and verify it matches what is shown on your transmitter.
   The servos will respond to the control sticks and should be centered when the throttle stick is centered.
   IMPORTANT: You are required to center the servo arms on the servos during installation, as described in this manual. If a servo arm is not centered when the throttle stick is centered, disconnect the battery from the ESC, remove the servo, and re-center the servo arm on the servo before proceeding.
   Select **Back**, and navigate to the **Direction** menu.

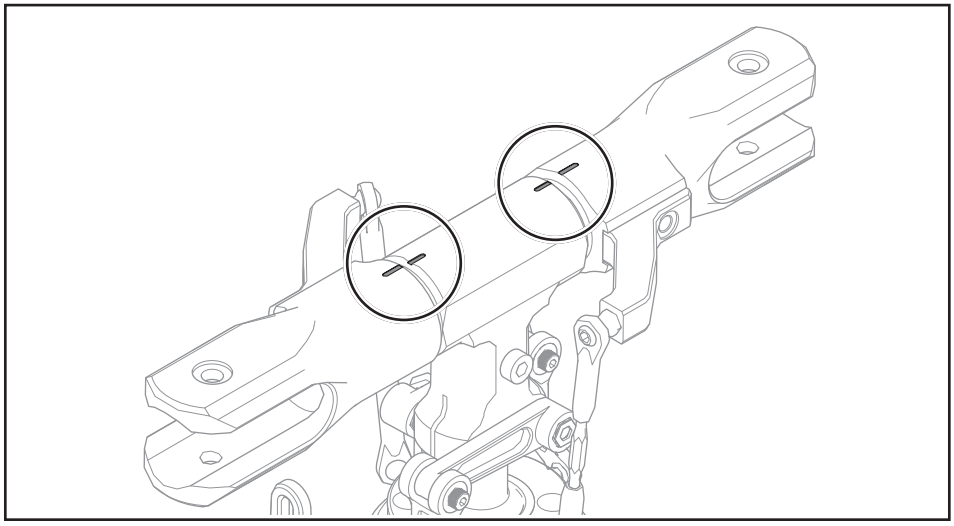


10. Set servo reversing in the forward programming menu so the 1, 2, and 3 outputs are all set to **Normal**. The swashplate servos should move the swashplate up with positive collective pitch movement.
    IMPORTANT: Servo reversing should only be done within the Forward Programming menu, do not change servo reversing in the transmitter's servo menu.
    Select **Back** to return to the previous menu.



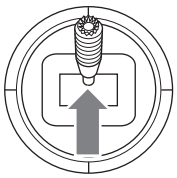


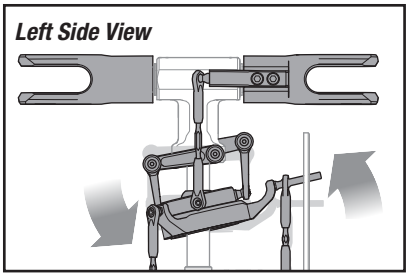
11. Select the **Sub Trim** menu. The swashplate servos move to the center position. Use the sub trim adjustments to ensure the servos are level.
    Before exiting the menu, ensure the main rotor blades are at 0° collective and the swashplate is level in the roll and pitch axis. When the nothces on top of the blade grips and rotor hub are aligned the blades are at 0° collective pitch, as shown in the image.
    Select **Back** twice to exit the **Swashplate→Output Setup** menu.

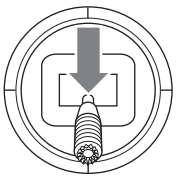


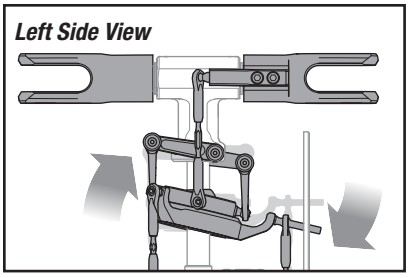
12. Select the **AFR** menu. Set the Roll to +80, and the Pitch to +80. Verify that the roll and pitch cyclic are moving in the correct direction by moving the cyclic stick. To reverse an axis, edit the axis value and invert the sign (for example; change from a postive value to a negative value to reverse the control).
    Once the directions are correct, center the collective stick on the transmitter.

Elevator, Forward and Back Cyclic

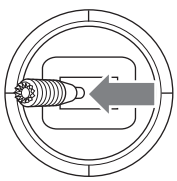


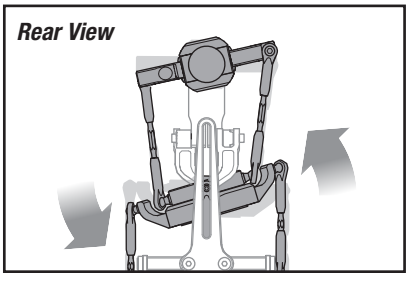


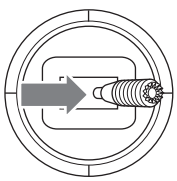


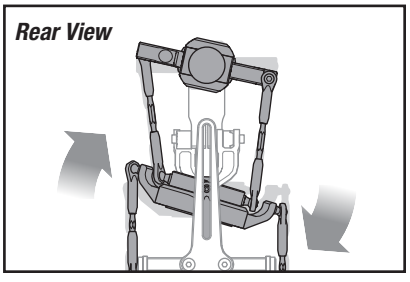


Aileron, Left and Right Cyclic





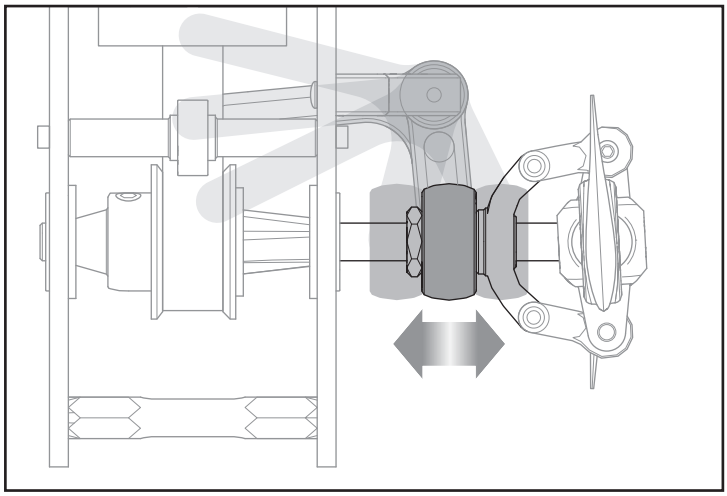




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13. The AFR values provided in the previous step should be a good starting point, but we recommend verifying with a digital pitch guage on your helicopter.
    Place a pitch gauge on a main rotor blade, ensure the throttle stick is exactly centered and the blades are at 0°. The throttle stick needs to remain centered when setting AFR values.
    - Rotate the main blades so they are perpendicular to the frame, apply full right cyclic, and adjust the AFR value for roll until your pitch gauge reads 12.5°.
    - Rotate the main blades so they are parallel to the frame. Apply full aft cyclic, and adjust the AFR value for cyclic pitch until your pitch gauge reads 12.5°.

14. Adjust the **Collective AFR** value to set your collective pitch range. We recommend starting with +45 and adjust the pitch range to suit your needs.
    You may set it as low as +/- 10° for sport flying or as high as +/- 14° for aggressive performance. We recommend +/- 12° as a starting point. Your skill level as a 3D pilot will determine how much pitch is acceptable. Proper collective management skills are required to utilize more than +/- 12 degrees..
    If you cannot get equal positive and negative values, use the differential value to adjust the endpoints. The differential value does not change the center position, only shift the endpoints.
    Remove the pitch gauge.
    Select **Back** twice to return to the **Setup** menu. The swashplate setup is complete.



15. Navigate to the **TailrotorOutput→Setup** menu.

16. Set the **Frame Rate** to 560Hz.

17. Connect the tail rotor servo to the number 5 port on the FC6250HX.

18. Navigate to the **Direction** menu. Set the direction to reverse. Move the tail rotor stick on the transmitter to the right. Observing from behind, the tail pitch slider should move to the left. If not, reverse the channel direction on the FC6250HX.
    Select **Back** to return to the previous menu.

19. Select **Subtrim** to center the tail rotor servo.
    Select **Back** to return to the previous menu.

20. Select the **Travel** menu.
    - Select **Left** travel. Hold the transmitter tail rotor stick full left, and adjust travel to ensure full travel and that no binding occurs.
    - Select the **Right** travel. Hold the transmitter tail rotor stick full right, and adjust travel to ensure full travel and that no binding occurs.

    Press **Back** twice to return to the **Setup** menu. Tailrotor setup is complete.

21. Exit **Forward Programming**. We recommend testing failsafe operation before proceeding. Remove the pinion gear and then run the motor. Power off the RF on your transmitter, your motor should shut off. If it does not, rebind the system with the throttle off and test again. Reinstall the pinion gear.

22. Once your throttle failsafe test is complete, enter **Forward Programming** mode, and select the **Setup→Throttle→Failsafe** menu.

23. Lower the throttle stick to the full stop position, and select **Capture** to record the throttle failsafe position.
    Select **Back** to return to the **Setup→Throttle** menu.

24. Select **Throttle→Hover**
    This setting is the throttle point where your model hovers in normal mode, mainly during takeoff and landing. The flight controller applies special anti roll over algorithms at or below the throttle setting, helping to make takeoffs and landings easier. The Stunt 1 and Stunt 2 throttle curves should be above the hover throttle setting to ensure the roll over mitigation is disabled in flight.
    During the initial setup, you can set **Throttle→Hover** to a high value of 65% and normal offset 0%. Once the throttle setting is determined for hovering in normal mode, set the **Hover Throttle** value.
    Select **Back** to return to the **Setup** menu.

25. Select the **Gyro Settings→Orientation Menu**, and set the mounting orientation to match the FC6250HX mounting orientation on your helicopter. Once complete, physically move the helicopter on each axis to ensure the gyros are compensating in the correct direction.
    If you update your FC6250HX to the newest firmware (version 5.5 or newer) the system will ask you to perform the sensor calibration after setting the sensor mounting orientation. Level the side of the FC6250HX that faces upwards and select **Apply** to complete the sensor calibration step.
    With firmware version 5.4 or earlier the calibration step after changing the sensor orientation is not necessary.
    Select **Back** twice to return to the **Setup** menu.

26. Select the **FM Channel** and select **Inhibit**. After initial test flights, if you would like to use individual gains for cyclic per flight mode, set the FM Channel within the **Setup** menu.

27. The **Gain Channel** defaults to the gear channel. This is the transmitter gyro gain channel for the tail rotor. Adjust the tail gain value for each flight mode during flight testing to maximize tail holding performance without intorducing a tail wag.

28. Press **Back** to exit the forward programming menu, and save the parameters.
    The FC6250HX flight controller setup is complete.

29. Optional SAFE setup requires the FC6250HX is tuned for normal flight before you can set up SAFE, please refer to the FC6250HX manual for more details.

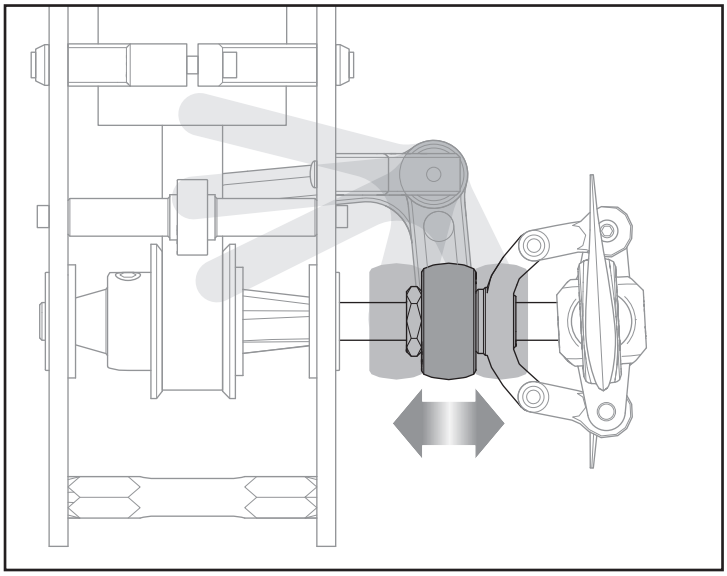
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Control Tests

CAUTION: You must complete the Rudder and Cyclic tests prior to attempting flight. Failure to ensure the sensor directions are not reversed can cause the helicopter to crash, resulting in property damage and injury.

Rudder

1. Power on the transmitter.
2. Turn TH HOLD ON and set the flight mode to NORMAL.
3. Connect the helicopter battery to the ESC and allow the flight controller to fully initialize.
4. **Rudder channel test:**
   Move the rudder stick to the right. The tail pitch slider should move towards the tail boom.
   Move the rudder stick to the left. The tail pitch slider should move away from the tail boom.
   If the slider does not move in the desired direction, review step 17 in the **Setup for FC6250HX Flight Controller** section of this manual.
5. **Flight controller sensor test:**
   Release the rudder control. Manually turn the helicopter counterclockwise when viewed from above. The tail pitch slider should move towards the tail boom.
   Manually turn the helicopter nose clockwise. The tail pitch slider should move away from the tail boom.
   If the slider does not react in the proper direction, review step 24 in the **Setup for FC6250HX Flight Controller** section of this manual.



Cyclic Sensor Test

From the back of the helicopter:

1. Tilt the helicopter forward. The swashplate should tilt backward.
2. Tilt the helicopter backward. The swashplate should tilt forward.
3. Roll the helicopter left. The swashplate should roll right.
4. Roll the helicopter right. The swashplate should roll left.
5. If the swashplate does not move in the correct direction, review step 24 in the **Setup for FC6250HX Flight Controller** section of this manual.

Motor Direction Test

Place the helicopter outdoors on a clean, flat and level surface (concrete or asphalt) free of obstructions. Always stay clear of rotating parts.

1. Power on the transmitter. Make sure TH HOLD is ON and the flight mode switch is set to NORMAL.

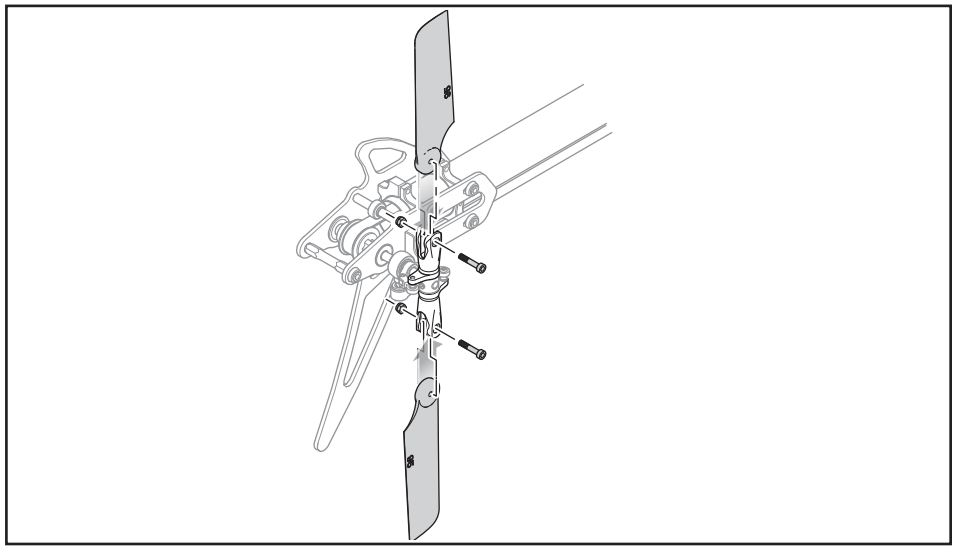
WARNING: The motor and rotors will spin when throttle is increased and TH HOLD is OFF.

2. Lower the throttle completely.
3. Connect the Li-Po battery to the ESC.
4. Turn TH HOLD OFF. Slowly increase the throttle until the drive train begins to turn. The main rotor should spin clockwise when viewing the helicopter from the top. The tail rotor should spin counterclockwise when viewing the helicopter from the right side.
5. If the drive train does not turn with the motor or the main rotor spins counterclockwise, turn TH HOLD ON and reverse the motor. The Avian 130A ESC can reverse the motor direction from the trasnmitter based programming or the Avian programming box (SPMXCA200). Or, the wiring between the ESC and the motor may be changed. To change the motor wires disconnect the battery from the helicopter and reverse any two motor wire connections to the ESC and repeat the motor control test.

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Tail Rotor Blade Installation

Install the tail blades in the orientation shown using a 2.5mm hex driver and M3x12mm bolts and locknuts. **Do not apply thread lock compound to the bolt and lock nut.**



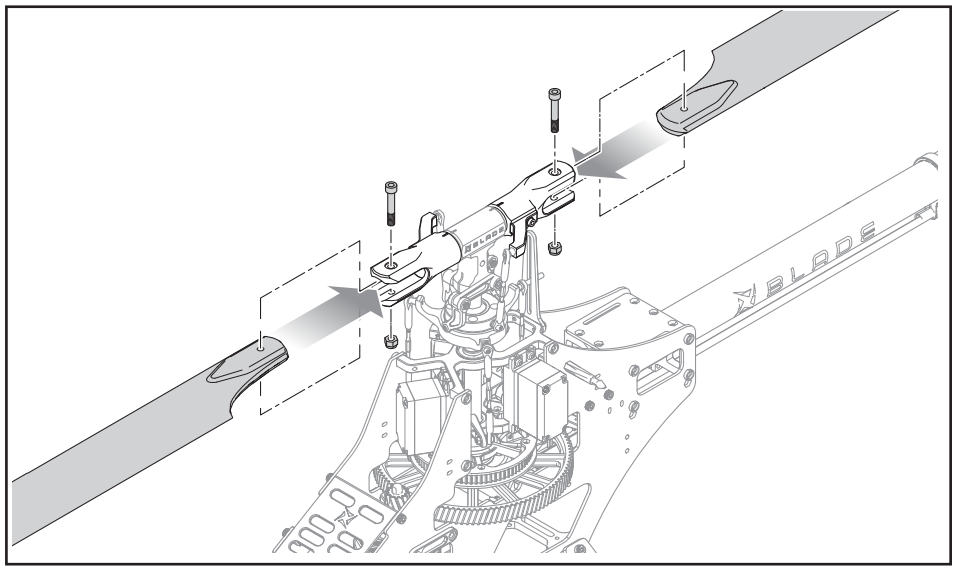
Main Rotor Blade Installation

Install the main rotor blades in the orientation shown using a 3mm hex driver to install the M4x30mm bolts and locknuts.

Do not apply thread lock compound to the bolt and lock nut.

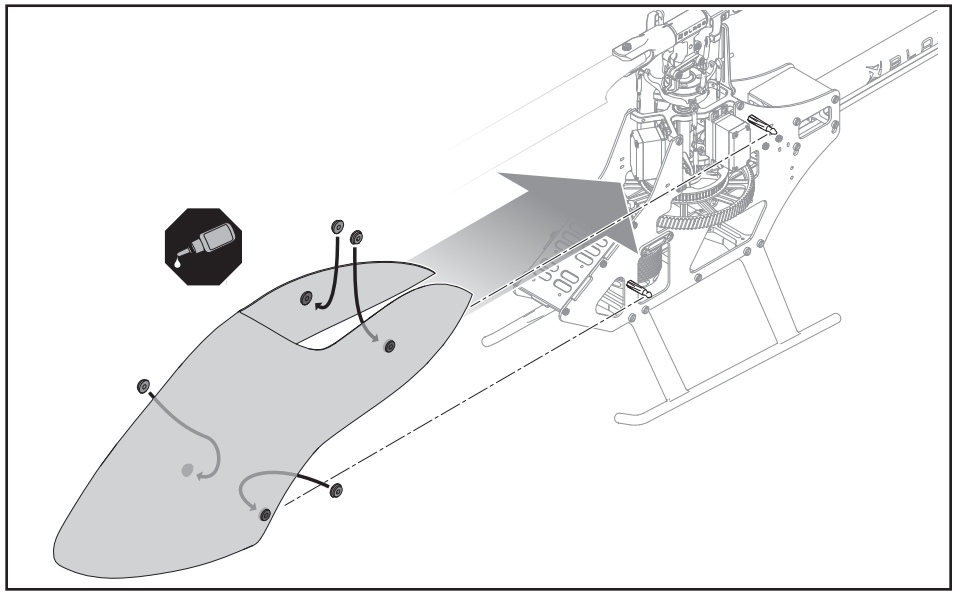
Do not over-tighten.

- The rotor blades should be tight enough to hold their position if you hold the helicopter sideways and remain in position even if the helicopter is shaken abruptly. The exact tension is not as important as ensuring both blades are at the same tension.



Canopy Installation

1. Install the four canopy grommets into the canopy from the inside. Secure the grommets with medium CA.
2. Install the canopy by sliding the canopy grommets over the corresponding canopy posts as shown.



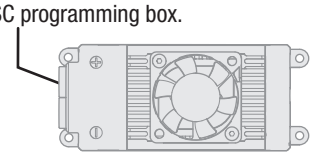
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Settings for Avian 130A ESC

We recommend the Avian 130A ESC for your Fusion 550. The Avian may be programmed directly through your transmitter or through a programming box (SPMXCA200).

1. Use the optional ESC programming box or access the ESC programming page from your transmitter's telemetry screen. To access the ESC programming from your transmitter, begin with the model connected to your transmitter. From the main screen scroll past the Smart telemetry menus to access the ESC programming page. Hold the sticks as shown to access the menu.
   IMPORTANT: Do not power the motor on before attempting to enter ESC programming, the programming menu is locked once the motor is powered on. If you need to enter ESC programming after the motor has been powered, you must power cycle by unplugging the battery and plugging it in again.
2. Set the parameters as shown in the table at the right.
3. Use the normal throttle curve set for ESC programming during radio setup (0 50 50 50 50).
   Do not change to idle up throttle curves while running the motor for this procedure.
4. Select a safe location to test the helicopter outside with a flat surface. Spool up the helicopter on the ground in normal mode, keeping the throttle at half stick (zero pitch) so the helicopter does not lift off, and let it spin for at least 20 seconds. Power the motor off and disconnect the battery.
5. Reset your normal throttle curve to (0 60 60 60 60) for flight.

The cooling fan port is used to program the ESC with the optional SPMXCA200 ESC programming box.



Programming Parameter	
Flight Mode	Heli Sto Gov
Brake Type	Disabled
Brake Force	0
Cutoff Type	Soft Cutoff
Number of Lipo Cells	Auto Calc.
Cutoff Voltage	3.0V
BEC Voltage	6.0V
Startup Time	Soft
Timing	5
Motor Rotation	CW
Freewheel Mode	Enabled
Governor Gain	Level 1
AutoRestart Time	45s
Restart accl	1.5s
Thrust Rev	Ch 8

The H6350 and H6360 servos are rated to operate at up to 8.4 volts, however the BEC built into the Avian 130A ESC is only rated to power these servos at 6.0 volts or below. We recommend using the default BEC voltage setting, which is 6.0 volts.

⚠ **WARNING:** Do not set the BEC voltage of the Avian 130A ESC above 6.0 volts when using the Spektrum H6350 and H6360 servos. Setting the BEC voltage above 6.0 volts may cause the BEC of the ESC to become overloaded which will cause a loss of control.

Smart Technology Telemetry

The Avian 130A ESC paired with the FC6250HX flight controller and the 4651T receiver enables the use of Smart technology. This system can provide a variety of real-time power system related telemetry data while you fly, including motor RPM, current, battery voltage and more to compatible Spektrum AirWare™ equipped transmitters.

During binding your transmitter will perform an auto configuration which will populate the telemetry page. You may need to change the telemetry values to suit this aircraft and your needs.

Telemetry Alarms	
Smart Battery : Startup Voltage Minimum	4.0V
Smart ESC : Total Cells	6
Smart ESC : Low Voltage Alarm	3.4V
Smart ESC : Motor Poles	10
Smart ESC : Ratio	9.33:1

To enter the telemetry values:
(For iX series transmitters, you must select **Save** on each page)

1. Power on your transmitter.
2. Enable throttle hold on.
3. Power on the aircraft and allow it to initialize.
4. In your transmitter, go to the **Function List** (**Model Setup** in iX series transmitters).
5. Select the **Telemetry** menu option.
6. Go to the **Smart Battery** menu option.
7. Scroll down to Startup Volts, enter **4.0**V/cell.
8. Return to the **Telemetry** menu.
9. Go to the **Smart ESC** menu option.
10. Scroll down to **Total Cells**, enter **6**.
11. Scroll down to **Low Voltage Alarm**, enter **3.4**V/cell.
12. Scroll down to **Poles**, enter **10**.
13. Scroll down to **Ratio**, enter **9.33:1**
14. Return to the main screen.

The following are optimal settings for the Blade Fusion 550, obtained through extensive flight testing. Refer to your flybarless flight controller and transmitter manuals for proper setup.

Collective Pitch Range
Normal, -12 degrees to +12 degrees (adjust to suit your preferences)

Head Speed	
Flight Mode	12t Pinion
Normal	2000
Stunt 1	2200
Stunt 2	2550

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Flight Guidelines and Warnings

- Always keep aircraft in sight and under control.
- Always keep people and pets at least 45 feet (13 meters) away when the battery is connected.
- Keep children out of the vicinity of this product at all times.
- Always turn on throttle hold prior to a rotor strike.
- Always use fully charged batteries.
- Always keep transmitter powered on while the aircraft is powered on.
- Always remove batteries before disassembly.
- Always keep moving parts clean.
- Always keep parts dry.
- Always let parts cool after use before touching.
- Always remove batteries after use.
- Always have a first aid kit with you.
- Always have an appropriate fire extinguisher with you.
- Never operate aircraft with damaged wiring.
- Never touch moving parts.

Flying Your Fusion 550

⚠ **CAUTION:** The Blade Fusion 550 is intended for pilots with experience flying aerobatic, collective pitch helicopters. The Blade Fusion 550 is more responsive than other Blade helicopters. If you are not an experienced 3D or collective pitch helicopter pilot, do not attempt to fly this product.

NOTICE: To minimize damage, always activate throttle hold prior to or during a crash.

⚠ **WARNING:** Only use Blade Fusion 550 approved carbon fiber main blades. Do not use wooden main blades with the Blade Fusion 550. Using wooden main blades may cause injury or property damage.

Consult local laws and ordinances before choosing a location to fly your aircraft.

Select a large, open area away from people and objects. Your first flights should be outdoors in low-wind conditions. Always stay at least 45 feet (13 meters) away from the helicopter when it is flying.

Do not attempt to fly the Blade Fusion 550 indoors.

Preflight Checklist

- ❑ Inspect the model, wiring, and electrical components.
- ❑ Activate **Normal Flight Mode** on the transmitter.
- ❑ Activate **Throttle Hold** on the transmitter. Lower the throttle to stop or idle.
- ❑ Power ON the transmitter.
- ❑ Power ON the model, and wait for initialization to complete.
- ❑ Complete the tailrotor and cyclic tests.
- ❑ Connect the flight pack to the ESC.
- ❑ Verify that all connected remote receivers display a solid orange LED.
- ❑ Confirm that the transmitter roll, pitch, yaw and collective inputs correspond to the helicopter controls.
- ❑ Confirm that the FC6250HX is compensating in the correct direction.
- ❑ Review all operational instructions before flying your model.
- ❑ Place the model on a level surface for take off.

Postflight Checklist

- ❑ Disconnect the flight battery
- ❑ Power down the FC6250HX
- ❑ Always turn the transmitter off last

Blade Tracking

⚠ **WARNING:** Always maintain a safe distance of at least 13 meters (45 feet) when checking the main rotor blade tracking.

⚠ **WARNING:** Always wear protective safety glasses when checking the main rotor blade tracking.

To check the blade tracking:

1. Put the helicopter in a hover at a safe distance.
2. Ensure both blades are tracking in the same plane.
3. If one blade tip appears to be higher than the other, land the helicopter, disconnect the flight battery and adjust the blade linkage.

IMPORTANT: We recommend leaving one linkage a fixed length and adjusting the opposite linkage to set blade tracking. Mark one linkage with a silver permanent marker or a dab of white paint so you know which linkage to adjust.

4. Repeat Steps 1 through 3 until both blades are moving in the same plane.

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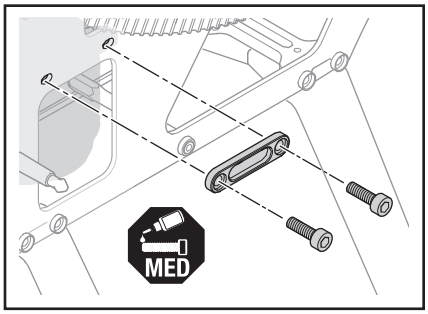
Post-Flight Inspection and Maintenance

WARNING: Disconnect and remove the flight battery prior to performing any troubleshooting or maintenance. Failure to do so may cause serious injury if the motor starts unexpetedly or if the battery or ESC connections are shorted.

Ball Links	Make sure the plastic ball link holds the control ball, but is not tight (binding) on the ball. When a link is too loose on the ball, it can separate from the ball during flight and cause a crash. Replace worn ball links before they fail.
Cleaning	Make sure the battery is not connected before cleaning. Remove dust and debris with a soft brush or a dry lint-free cloth.
Bearings	Replace bearings when they become notchy (sticky in places when turning) or draggy.
Wiring	Make sure wiring does not block moving parts. Replace damaged wiring and loose connectors.
Fasteners	Make sure there are no loose screws, other fasteners or connectors. Do not over tighten metal screws in plastic parts. Tighten screws so parts are mated together, then turn screw only 1/8th of a turn more.
Rotors	Make sure there is no damage to rotor blades and other parts which move at high speed. Damage to these parts includes cracks, burrs, chips or scratches. Replace damaged parts before flying.
Flight Controller	Make sure the flight controller is securely attached to the frame. Replace the double-sided tape when necessary. The helicopter will crash if the flight controller separates from the helicopter frame.
Gear	Make sure the gears are all in good condition. Watch for chipped teeth or excessive wear. Dust around gears is an indication of excess wear. Replace damaged gears before flying.

Cleaning fasteners for reuse when using thread lock

When you remove a metal fasenter that was threading into metal, it needs to be cleaned before reuse. Use a cleaning solution to ensure debris from the old thread lock is fully removed. Cleaning products with a spray tube can be helpful to clean the threaded hole where access is difficult.
Allow fasteners to fully dry before applying fresh thread lock for re-assembly.



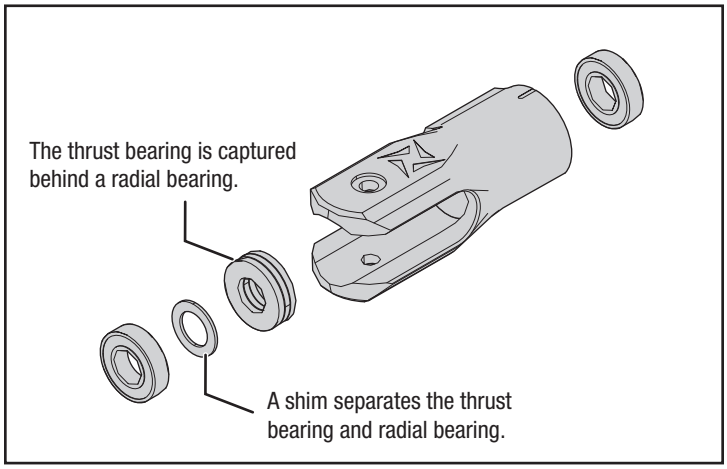
How to remove blade grip bearings

Blade grip bearings have close tolerances and require heat for removal.

1. In the event you need to service or replace your blade grip bearings, begin by disassembling your rotor head.
2. Use a heat gun (HAN100) to evenly heat the blade grips.

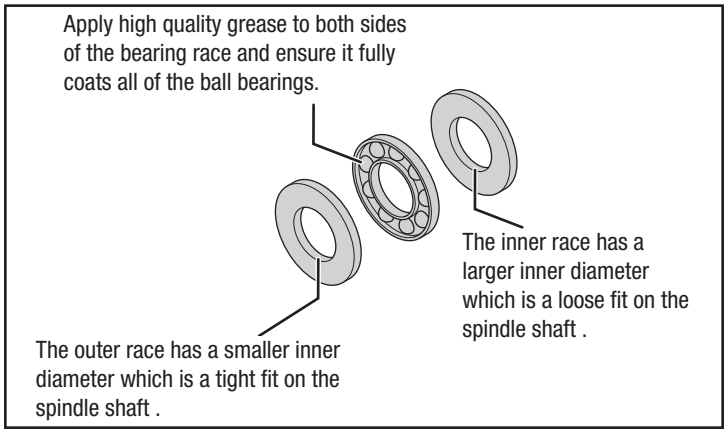
WARNING: Use heat protective gloves and a heat resistant surface to handle the parts during bearing removal. Failure to use PPE may result in personal injury.

3. Using heat protective gloves, pick up the blade grip and tap your heat resistant surface with the grip side down. If the grips are warm enough the bearings will come out with a few taps.
4. If the bearings do not come out easily, apply more heat and try again.



How to grease thrust bearings

Thrust bearings should be greased every 100 flights to ensure they are well lubricated.
Remove the blade grip bearings and liberally apply a quality grease to the ball races, then reaasemble. Ensure the thrust bearings get re-assembled in the correct order; the outer race has a smaller ID and the inner race has a larger ID.



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Troubleshooting Guide

Problem	Possible Cause	Solution
Helicopter power is lacking	Flight battery has low voltage	Fully charge the flight battery
	Flight battery is old or damaged	Replace the flight battery
	Flight battery cells are unbalanced	Fully charge the flight battery, allowing the charger time to balance the cells
Helicopter will not lift off	Transmitter settings are not correct	Check throttle and pitch curve settings and pitch control direction
	Flight battery has low voltage	Fully charge the flight battery
	Main rotor blades are installed backwards	Install the main rotor blades with the thicker side as the leading edge
The helicopter tail spins out of control	Rudder control and/or sensor direction reversed	Make sure the rudder control and the rudder sensor are operating in the correct direction
	Tail servo is damaged	Check the rudder servo for damage and replace if necessary
	Tail drive gears are damaged	Replace damaged gears.
	Inadequate control arm throw	Check the rudder control arm for adequate travel and adjust if necessary
The helicopter wobbles in flight	Cyclic gain is too high	Decrease gain on the flight controller
	Headspeed is too low	Increase the helicopter's head speed via your transmitter settings and/or using a freshly charged flight pack

Limited Warranty

What this Warranty Covers

Horizon Hobby, LLC, (Horizon) warrants to the original purchaser that the product purchased (the "Product") will be free from defects in materials and workmanship at the date of purchase.

What is Not Covered

This warranty is not transferable and does not cover (i) cosmetic damage, (ii) damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or due to improper use, installation, operation or maintenance, (iii) modification of or to any part of the Product, (iv) attempted service by anyone other than a Horizon Hobby authorized service center, (v) Product not purchased from an authorized Horizon dealer, (vi) Product not compliant with applicable technical regulations, or (vii) use that violates any applicable laws, rules, or regulations.

OTHER THAN THE EXPRESS WARRANTY ABOVE, HORIZON MAKES NO OTHER WARRANTY OR REPRESENTATION, AND HEREBY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE REQUIREMENTS OF THE PURCHASER'S INTENDED USE.

Purchaser's Remedy

Horizon's sole obligation and purchaser's sole and exclusive remedy shall be that Horizon will, at its option, either (i) service, or (ii) replace, any Product determined by Horizon to be defective. Horizon reserves the right to inspect any and all Product(s) involved in a warranty claim. Service or replacement decisions are at the sole discretion of Horizon. Proof of purchase is required for all warranty claims. SERVICE OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE PURCHASER'S SOLE AND EXCLUSIVE REMEDY.

Limitation of Liability

HORIZON SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY, REGARDLESS OF WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR ANY OTHER THEORY OF LIABILITY, EVEN IF HORIZON HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Further, in no event shall the liability of Horizon exceed the individual price of the Product on which liability is asserted. As Horizon 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 the Product, purchaser is advised to return the Product immediately in new and unused condition to the place of purchase.

Law

These terms are governed by Illinois law (without regard to conflict of law principals). This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Horizon reserves the right to change or modify this warranty at any time without notice.

WARRANTY SERVICES

Questions, Assistance, and Services

Your local hobby store and/or place of purchase cannot provide warranty support or service. Once assembly, setup or use of the Product has been started, you must contact your local distributor or Horizon directly. This will enable Horizon to better answer your questions and service you in the event that you may need any assistance. For questions or assistance, please visit our website at www.horizonhobby.com, submit a Product Support Inquiry, or call the toll free telephone number referenced in the Warranty and Service Contact Information section to speak with a Product Support representative.

Inspection or Services

If this Product needs to be inspected or serviced and is compliant in the country you live and use the Product in, please use the Horizon Online Service Request submission process found on our website or call Horizon to obtain a Return Merchandise Authorization (RMA) number. Pack the Product securely using a shipping carton. Please note that original boxes may be included, but are not designed to withstand the rigors of shipping without additional protection. Ship via a carrier that provides tracking and insurance for lost or damaged parcels, as Horizon is not responsible for merchandise until it arrives and is accepted at our facility. An Online Service Request is available at http://www.horizonhobby.com/content/service-center_render-service-center. If you do not have internet access, please contact Horizon Product Support to obtain a RMA number along with instructions for submitting your product for service. When calling Horizon, you will be asked to provide your complete name, street address, email address and phone number where you can be reached during business hours. When sending product into Horizon, please include your RMA number, a list of the included items, and a brief summary of the problem. A copy of your original sales receipt must be included for warranty consideration. Be sure your name, address, and RMA number are clearly written on the outside of the shipping carton.

NOTICE: Do not ship LiPo batteries to Horizon. If you have any issue with a LiPo battery, please contact the appropriate Horizon Product Support office.

Warranty Requirements

For Warranty consideration, you must include your original sales receipt verifying the proof-of-purchase date. Provided warranty conditions have been met, your Product will be serviced or replaced free of charge. Service or replacement decisions are at the sole discretion of Horizon.

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Non-Warranty Service

Should your service not be covered by warranty, service will be completed and payment will be required without notification or estimate of the expense unless the expense exceeds 50% of the retail purchase cost. By submitting the item for service you are agreeing to payment of the service without notification. Service estimates are available upon request. You must include this request with your item submitted for service. Non-warranty service estimates will be billed a minimum of ½ hour of labor. In addition you will be billed for return freight. Horizon accepts money orders and cashier's checks, as well as Visa, MasterCard, American Express, and Discover cards. By submitting any item to Horizon for service, you are agreeing to Horizon's Terms and Conditions found on our website http://www.horizonhobby.com/content/service-center_render-service-center.

ATTENTION: Horizon service is limited to Product compliant in the country of use and ownership. If received, a non-compliant Product will not be serviced. Further, the sender will be responsible for arranging return shipment of the un-serviced Product, through a carrier of the sender's choice and at the sender's expense. Horizon will hold non-compliant Product for a period of 60 days from notification, after which it will be discarded.

10/15

Important Federal Aviation Administration (FAA) Information

Use the QR code below to learn more about the Recreational UAS Safety Test (TRUST), as was introduced by the 2018 FAA Reauthorization Bill. This free test is required by the FAA for all recreational flyers in the United States. The completed certificate must be presented upon request by any FAA or law enforcement official.

If your model aircraft weights more than .55lbs or 250 grams, you are required by the FAA to register as a recreational flyer and apply your registration number to the outside of your aircraft. To learn more about registering with the FAA, use the QR code below.

Warranty and Service Contact Information

Country of Purchase	Horizon Hobby	Contact Information	Address
United States of America	Horizon Service Center (Repairs and Repair Requests)	servicecenter.horizonhobby.com/RequestForm/	1608 Interstate Drive Champaign, IL 61822
	Horizon Product Support (Product Technical Assistance)	productsupport@horizonhobby.com 800-338-4639	
	Sales	websales@horizonhobby.com 800-338-4639	
European Union	Horizon Technischer Service	service@horizonhobby.eu	Hanskampring 9 D 22885 Barsbüttel, Germany
	Sales: Horizon Hobby GmbH	+49 (0) 4121 2655 100	

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FCC and Canada Compliance Information

This equipment complies with FCC and IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and/or antenna and your body (excluding fingers, hands, wrists, ankles and feet). This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Supplier's Declaration of Conformity
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Horizon Hobby, LLC
2904 Research Rd., Champaign, IL 61822
Email: compliance@horizonhobby.com
Web: HorizonHobby.com

IC Information

CAN ICES-3 (B)/NMB-3(B)
This device contains license-exempt transmitter(s)/receivers(s) that comply with Innovation, Science, and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following 2 conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Compliance Information for the European Union

EU Compliance Statement:

Blade Fusion 550 (BLH4975): Hereby, Horizon Hobby, LLC declares that the device is in compliance with the following: EU Radio Equipment Directive 2014/53/EU; RoHS 2 Directive 2011/65/EU; RoHS 3 Directive - Amending 2011/65/EU Annex II 2015/863.

The full text of the EU declaration of conformity is available at the following internet address: https://www.horizonhobby.com/content/support-render-compliance.

NOTE: This product contains batteries that are covered under the 2006/66/EC European Directive, which cannot be disposed of with normal household waste. Please follow local regulations.

EU Manufacturer of Record:
Horizon Hobby, LLC
2904 Research Road
Champaign, IL 61822 USA

EU Importer of Record:
Horizon Hobby, GmbH
Hanskampring 9
22885 Barsbüttel Germany

WEEE NOTICE:



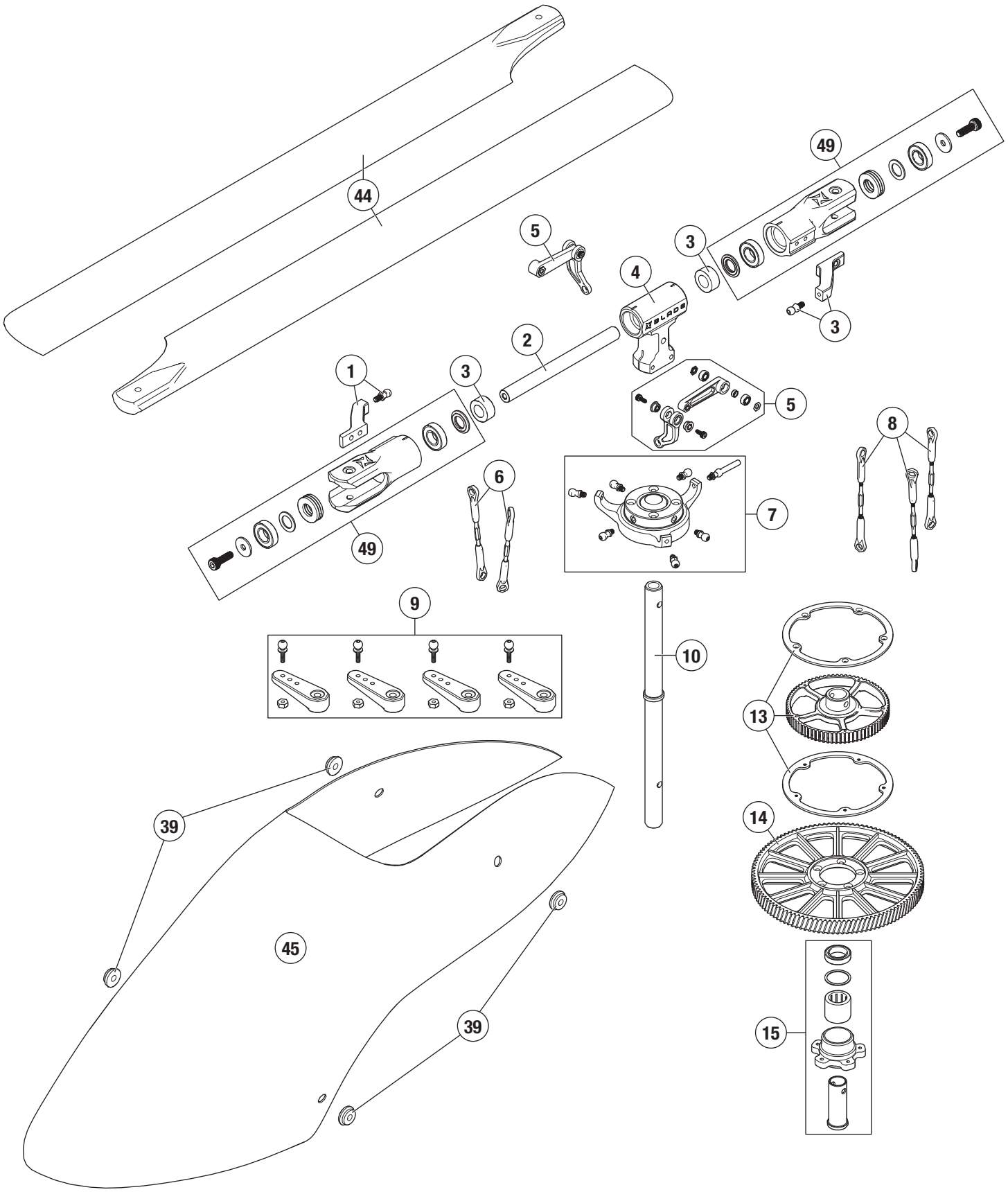
This appliance is labeled in accordance with European Directive 2012/19/EU concerning waste of electrical and electronic equipment (WEEE). This label indicates that this product should not be disposed of with household waste. It should be deposited at an appropriate facility to enable recovery and recycling.

E328

UK CA

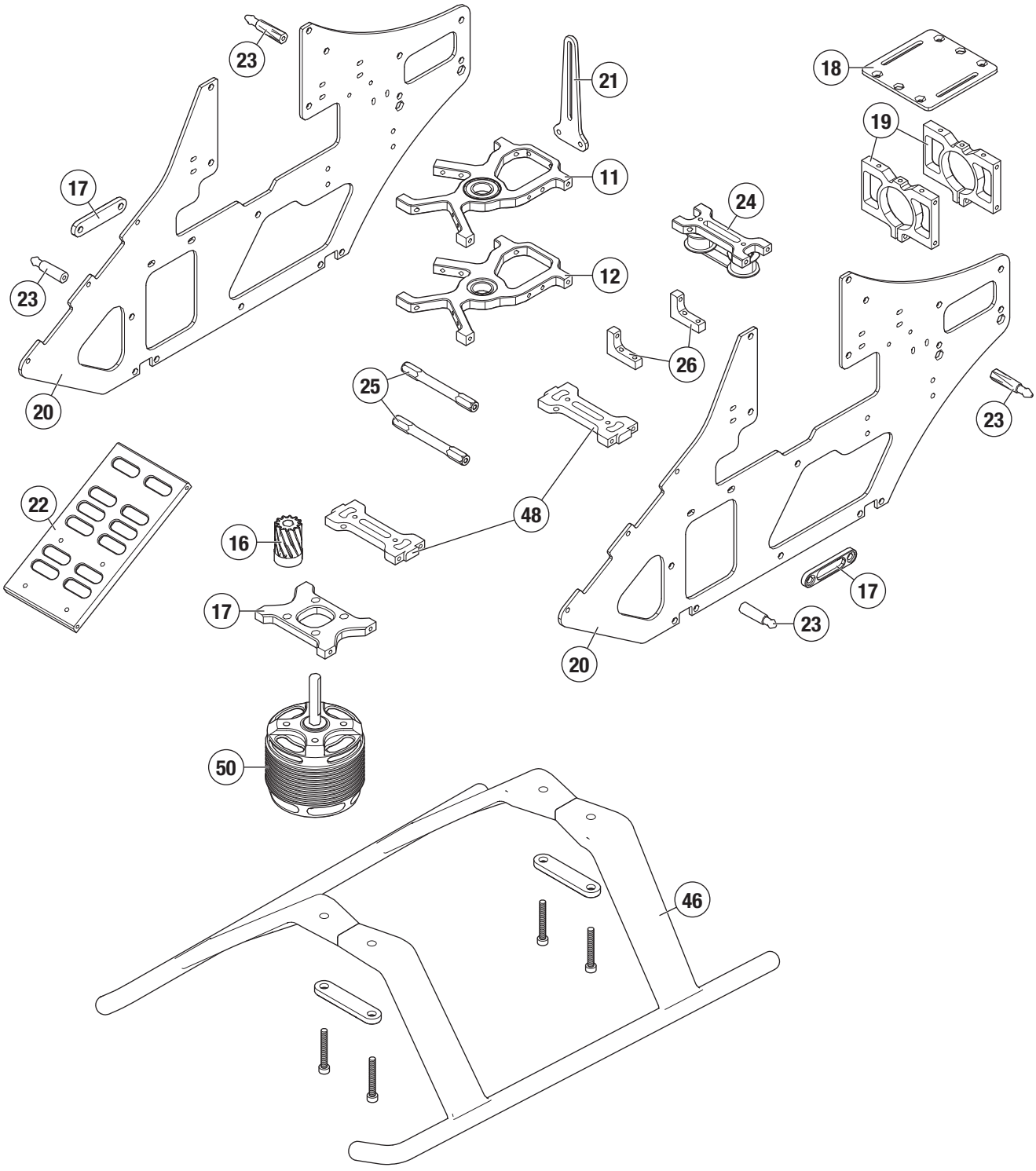
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Exploded View / Explosionszeichnung / Vue éclatée / Vista esplosa

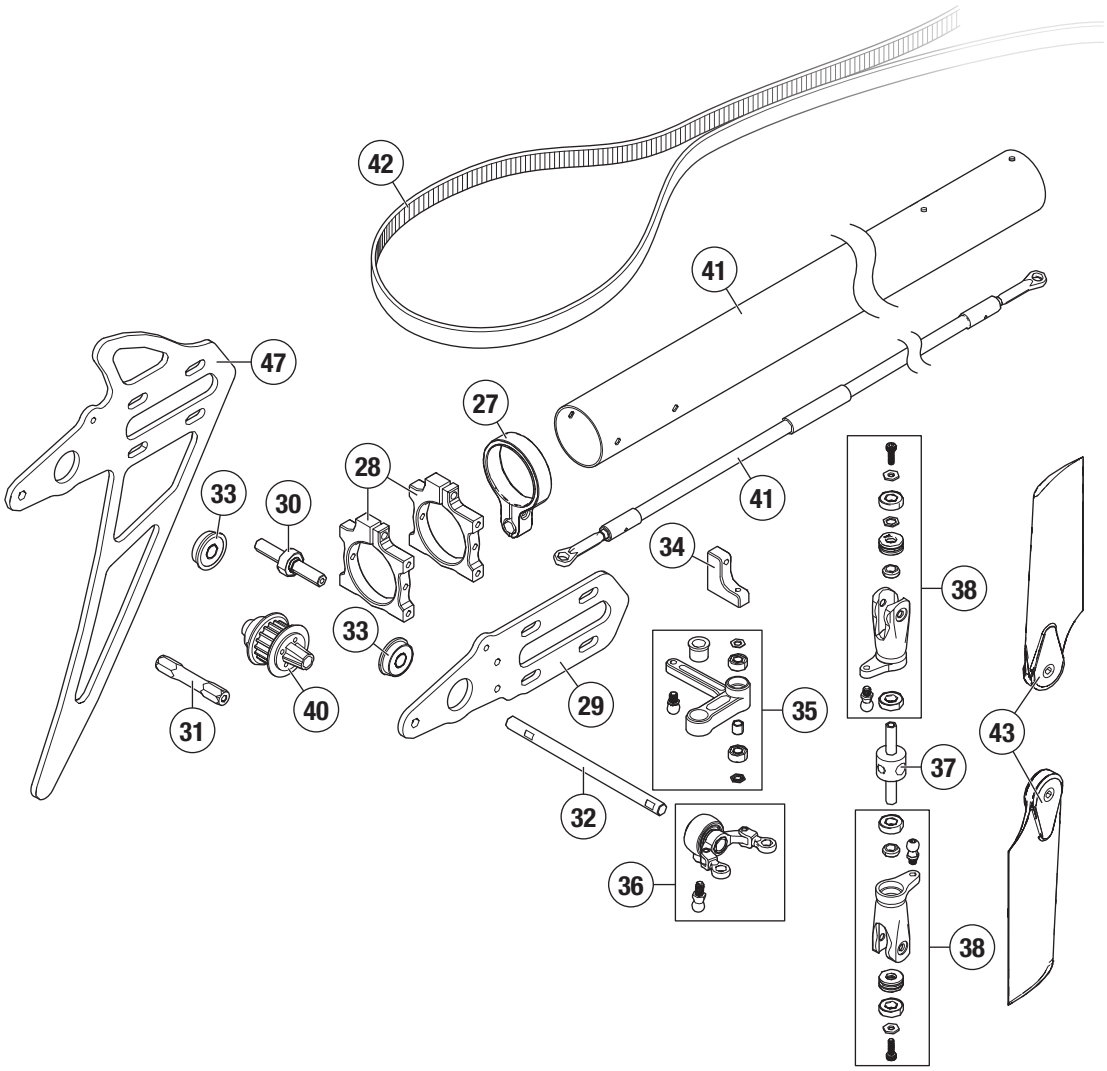


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Exploded View / Explosionszeichnung / Vue éclatée / Vista esplosa



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Parts List / Ersatzteile / Pièces de rechange / Pezzi di ricambio

#	Part #	English	Deutsch	Français	Italiano
1	BLH4903	Grip Arm	Halterarm	Poignée	Braccio fermo
2	BLH4904	Spindle	Spindel	Axe	Fuso
3	BLH4905	Dampener Set	Stoßdämpfersatz	Ensemble d'amortisseur	Set ammortizzatori
4	BLH4906	Aluminum Head Block	Aluminium-Kopfblock	Bloc de tête en aluminium	Blocco di testa in alluminio
5	BLH4907	Follower Arm	Folgerarm	Bras suiveur	Braccio elevatore
6	BLH4908	Rotor Head Linkage	Rotorkopf-Verbindung	Tringlerie de tête du rotor	Giunzione di testa del rotore
7	BLH4909	Swashplate Assembly	Taumelscheibenbaugruppe	Ensemble de plateau cyclique	Gruppo piatto ciclico
8	BLH4910	Servo Linkage Set	Servo-Verbindungssatz	Ensemble de tringlerie de servo	Set giunzione servo
9	BLH4911	Servo Arm Set	Servoarm-Satz	Ensemble de bras de servo	Set braccio servo
10	BLH4912	Mainshaft	Hauptwelle	Arbre principal	Albero principale
11	BLH4913	Upper Servo Mount	Obere Servohalterung	Support de servo supérieur	Supporto superiore servo
12	BLH4914	Lower Servo Mount	Untere Servohalterung	Support de servo inférieur	Supporto inferiore servo
13	BLH4915	Tail Drive Pulley, 75T	Heckriemenscheibe, 75T	Poulie d'entraînement d'empennage, 75T	Puleggia azionamento coda, 75T
14	BLH4916	Main Gear, 112T	Hauptgetriebe, 112T	Train principal, 112T	Ingranaggio principale, 112T
15	BLH4917	Autorotation Hub	Autorotationsnabe	Moyeu d'autorotation	Mozzo rotazione automatica
16	BLH4918	12t Pinion	12T Ritzel: Fusion 480	Pignon 12t : Fusion 480	Pignone 12t: Fusion 480
17	BLH4919	Motor Mount	Motorhalterung	Support moteur	Supporto motore
18	BLH4921	Gyro Tray	Kreiselhalterung	Plateau de Gyro	Piatto giroscopio
19	BLH4922	Tailboom Mount	Heckauslegerhalterung	Support de poutre de queue	Supporto tubo di coda
20	BLH4923	Main Frame	Hauptrahmen	Châssis principal	Telaio principale
21	BLH4924	Swashplate Guide	Taumelscheibenführung	Guide de plateau cyclique	Guida piatto ciclico
22	BLH4926	Battery Tray	Akkuhalterung	Support de batterie	Vassoio portabatteria
23	BLH4927	Body Mounts (4)	Gehäusehalterung (4)	Supports de carrosserie (4)	Supporti scocca (4)
24	BLH4928	Tail Belt Front	Heckriemen vorn	Courroie d'empennage avant	Parte anteriore cinghia di coda
25	BLH4929	Frame Spacer (2)	Rahmenabstandshalter (2)	Entretoise de châssis (2)	Distanziatore telaio (2)
	BLH4930	Frame Screw Set (10)	Rahmen-Schraubensatz (10)	Jeu de vis du châssis (10)	Set viti telaio (10)
26	BLH4933	Tail Servo Mounts	Heckservohalterungen	Support de servo d'empennage	Supporti servo coda
27	BLH4936	T/RPushrod Guide	Heckrotorgestängeführung	Guide de la barre de liaison du rotor d'empennage	Guida asta di comando T/R
28	BLH4937	Tail Case Mount	Heckgehäusehalterung	Support du boîtier de queue	Supporto contenitore coda
29	BLH4939	Tail Case	Heckflosse	Aileron caudal	Aletta coda
30	BLH4940	Tail Belt Guide	Heckgehäuse	Boîtier de queue	Contenitore coda
31	BLH4941	Tail Case Standoff	Heckriemenführung	Guide de courroie d'empennage	Guida cinghia di coda
32	BLH4942	Tail Shaft	Heckgehäuseabstand	Entretoise du boîtier de queue	Staffa contenitore coda
33	BLH4943	Tail Shaft Bearing	Heckwelle	Arbre de queue	Albero coda
34	BLH4944	Bell Crank Mount	Heckwellenlager	Roulement d'arbre de queue	Cuscinetto albero coda
35	BLH4945	Tail Bell Crank	Winkelhebelhalterung	Support de levier coudé	Supporto biella a campana
36	BLH4946	Tail Pitch Slider	Heckwinkelhebel	Levier coudé d'empennage	Biella a campana coda
37	BLH4947	Tail Rotor Hub	Heckschiebehülse	Curseur d'inclinaison arrière	Cursore beccheggio coda
38	BLH4948	Tail Rotor Grip	Heckrotornabe	Moyeu du rotor d'empennage	Mozzo rotore di coda
39	BLH4952	Canopy Grommets	Heckrotorhalter	Poignée du rotor d'empennage	Fermo rotore di coda
40	BLH4954	Tail Pulley	Umlenktrommel	Poulie d'empennage	Puleggia coda
41	BLH4970	Tail Boom/ Pushrod	Heckausleger/ -schubstange	Poutre de queue/Barre de liaison	Tubo coda/asta di spinta
42	BLH4971	Tail Belt	Heckriemen	Courroie d'empennage	Cinghia coda
43	BLH4972	95mm Carbon Tail Blade	95 mm Carbon-Heckrotorblatt	Pale en carbone de 95 mm	Pale di coda in fibra di carbonio da 95mm
44	BLH4973	550mm CF Main Rotor Blades	550 mm CF Hauptrotorblätter	Pales du rotor principal 550 mm CF	Pale rotore principale 550 mm CF
45	BLH4974	Canopy: Fusion 550	Kanzel: Fusion 550	Verrière : Fusion 550	Capottina: Fusion 550
46	BLH4976	Skid Set: Fusion 550	Kufensatz: Fusion 550	Ensemble de patin : Fusion 550	Set staffa di arresto: Fusion 550
47	BLH4977	Tail Fin: Fusion 550	Seitenleitwerk: Fusion 550	Aileron d'empennage : Fusion 550	Piano di deriva: Fusion 550
48	BLH4978	Skid Mount Set: Fusion 550	Kufen-Halterungssatz: Fusion 550	Ensemble de montage de patin : Fusion 550	Set montaggio staffa di arresto: Fusion 550
49	BLH4979	Main Rotor Grip: Fusion 550	Hauptrotorhalter: Fusion 550	Poignée du rotor principal : Fusion 550	Impugnatura rotore principale: Fusion 550
50	SPMXHM1030	Brushless Motor: 4320-1180kv	Bürstenloser Motor: 4320-1180KV	Moteur sans balais : 4320-1180 kv	Motore Brushless: 4320-1180 kv

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Recommended Components / Empfohlene Komponenten / Composants recommandés / Componenti raccomandati

Part #	English	Deutsch	Français	Italiano
SPM9745	DSMX Remote Receiver	DSMX Funkempfänger	Récepteur à distance DSMX	Ricevitore remoto DSMX
SPMFC6250HX	FC6250HX Helicopter FBL System	FC6250HX Hubschrauber mit FBL-System	Système FBL pour hélicoptère FC6250HX	Sistema per elicottero FBL FC6250HX
SPMR8200	NX8 8 Ch DSMX Transmitter Only	Nur NX8 8-Kanal-DSMX-Sender	Émetteur uniquement DSMX 8 canaux NX8	NX8 8 canali DSMX solo trasmit-tente
SPMSH6350	H6350 U-T / H-S Heli Cyclic Servo	H6350 U-T/H-S Heli-Steuerservo	Servo cyclique H6350 U-T / H-S Heli	Servo ciclico H6350 U-T / H-S elicottero
SPMSH6360	H6360 M-T / U-S Heli servo	H6360 M-T/U-S Hubschrauber-Servo	Servo d'empennage H6360 M-T / U-S Heli	Servo elicottero H6360 M-T / U-S
SPMX56S50	5000mAh 6S 22.2V Smart G2 50C;	5000 mAh 6S 22,2V Smart G2 50C;	5000 mAh 6S 22,2 V Smart G2 50C ;	5000 mAh 6S 22,2 V Smart G2 50C
SPMXAE1130	Avian 130A Brushless SmartESC 6	Avian 130A Brushless SmartESC 6	Variateur ESC sans balais Avian 130A Smart	Avian 130A Brushless SmartESC 6
SPMXC2040	Smart S1400 G2 AC Charger,1x400	Smart S1400 G2 Wechselstrom-Ladegerät, 1x400	Chargeur c.a. Smart S1400 G2, 1 x 400	Caricabatterie SmartS1400 G2 AC1x400

Optional Parts / Optionale Bauteile / Pièces optionnelles / Pezzi opzionali

Part #	English	Deutsch	Français	Italiano
SPMX56S100	5000mAh 6S 22.2V SmartG2100C IC5	5000mAh 6S 22,2V SmartG2100C IC5	IC 5SmartG2100C 22,2 V 6S 5000 mAh	5000 mAh 6S 22,2 V Smart G2 100C IC5
SPMX56S30	5000mAh 6S 22.2V Smart G2 30C; IC5	5000mAh 6S 22.2V Smart G2 30C; IC5	5000 mAh 6S 22,2 V Smart G2 30 C ; IC5	5000 mAh 6S 22,2V Smart G2 30C; IC5

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