

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 or towerhobbies.com and click on the support or resources 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 move the throttle fully down 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.

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Required Tools

- Spektrum™ Transmitter/Receiver Programming Cable: USB Interface (SPMA3065)
- 1.5mm hex driver
- Small side cutter or scissors
- Small cable ties
- Medium strength thread locking compound

Before Assembly

Update the Flight Controller Firmware

The belt drive conversion requires an update to the InFusion 210 flight controller firmware to support the servo-driven tail. Scan the QR code (or visit www.horizonhobby.cc/infusion210bdc) for detailed instructions to update the firmware prior to assembling the conversion kit.

After the firmware is updated and the conversion kit assembly is completed, re-bind the flight controller to a new model in your transmitter. A revised Smart transmitter file is included with the flight controller firmware update. Refer to the Auto Transmitter Setup section of the InFusion 210 manual for information on importing the STF file to your supported Spektrum transmitter.

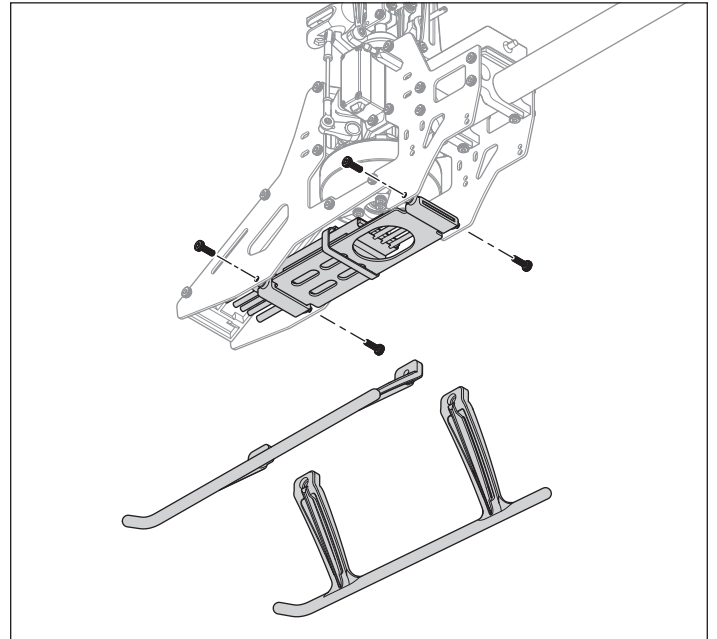
UPDATE



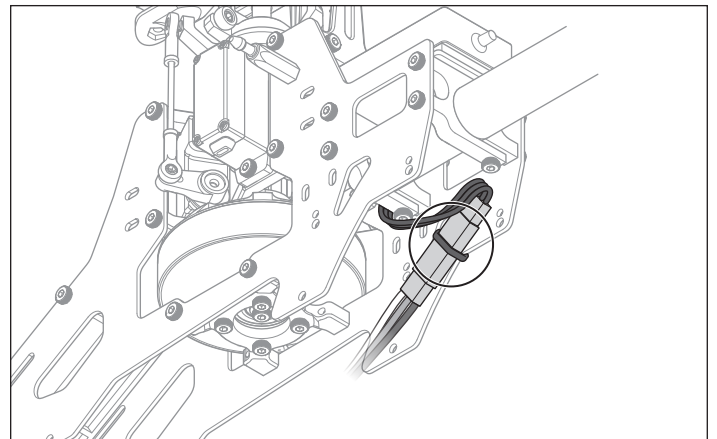
Conversion Kit Assembly

Disassembly

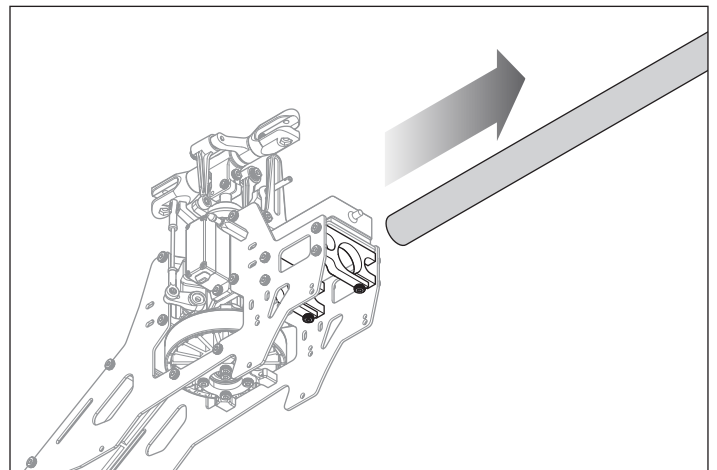
1. Remove the canopy and disconnect the battery from the aircraft.
2. Remove the main rotor blades.
3. Using the 1.5mm hex driver, remove four screws from the side of the frame to remove the landing gear.



4. Using side cutters or scissors, cut the cable tie holding the wire and connector to the rear of the side frame.
5. Unplug the tail motor.



6. Using the hex driver, loosen the bottom screw in both tail boom clamps. Slide the tail boom to the rear, carefully pulling the motor connector out through the boom clamps. Set the tail boom/motor assembly aside.

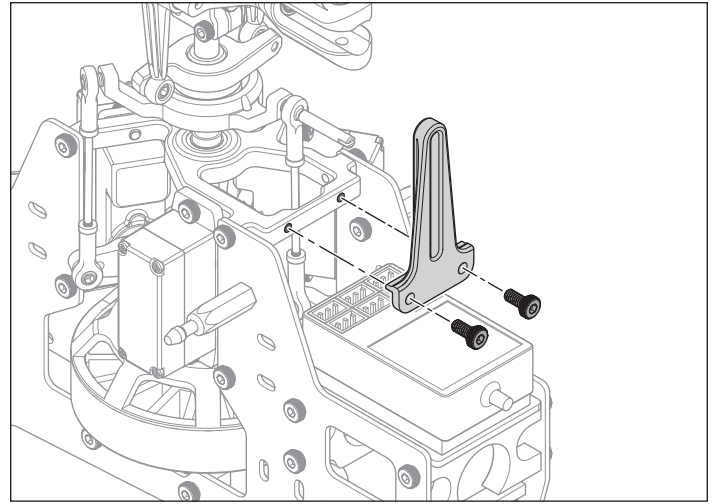


7. Using the hex driver, remove the anti-rotation bracket by removing two screws.

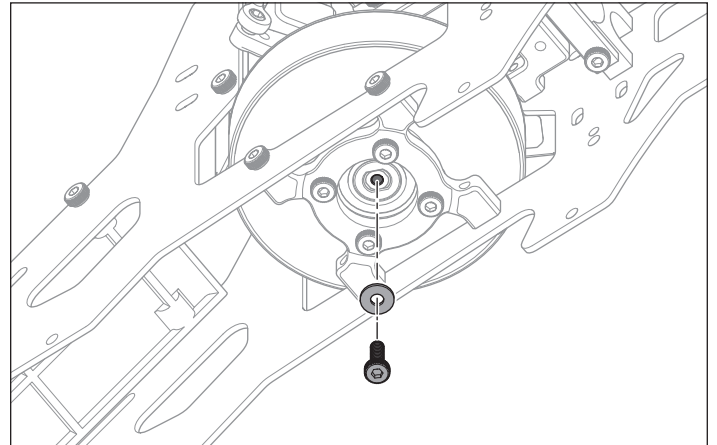
8. Remove the servo linkages and set aside.

IMPORTANT: Take note from which position each of the linkages are removed. The linkages must be installed later in the same positions.

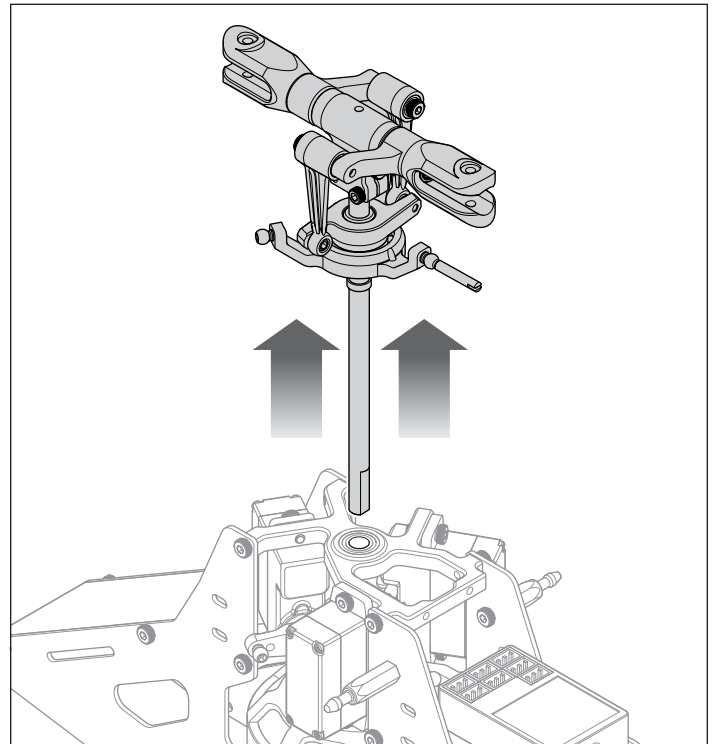
TIP: You may remove just the lower end of the links from the servo arms, leaving the upper end of the links attached to the swashplate.



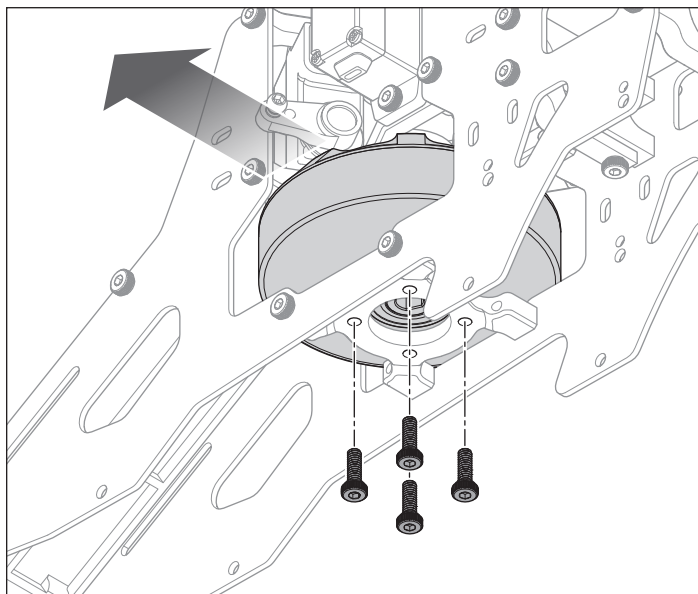
9. Using the hex driver, remove the screw and washer from the bottom of the mainshaft, under the motor.



10. Pull the mainshaft and rotor assembly up and out of the bearing blocks. Set the assembly aside.



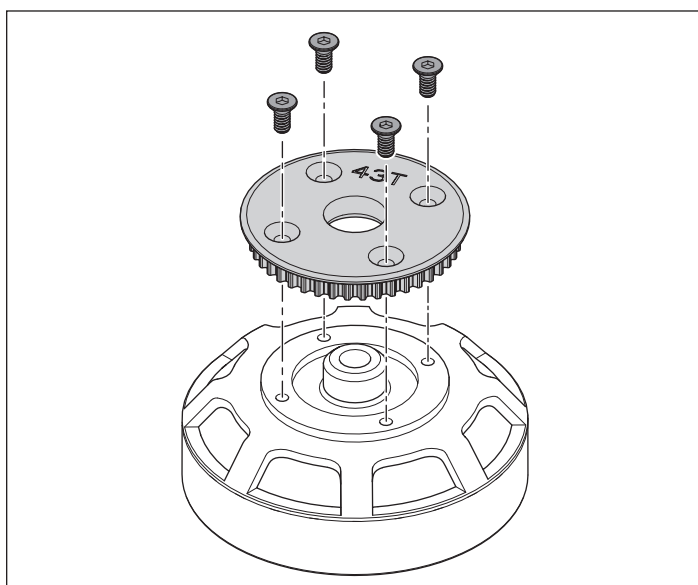
11. Unplug the three motor wire bullets from the ESC motor lead.
12. Using the hex driver, remove four screws from the bottom of the motor mount. Remove the motor through the side of the frame.



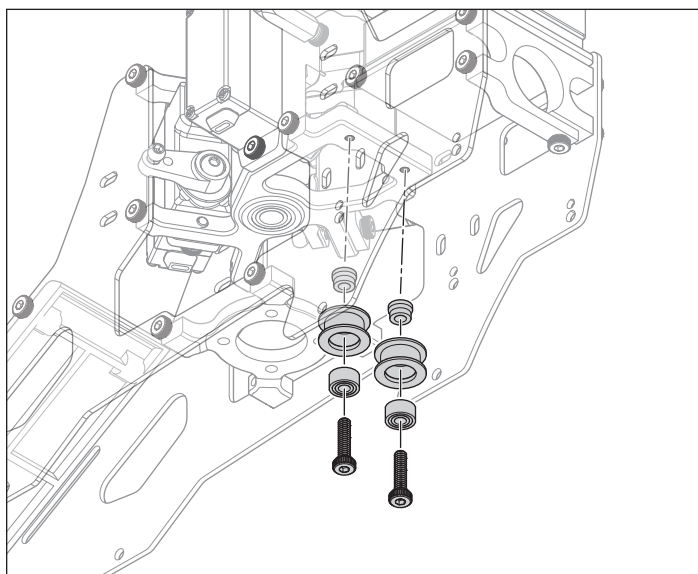
Assembly

Motor/Main Drive Pulley Assembly

1. Install the belt pulley to the top of the motor using four countersunk screws and thread locking compound.

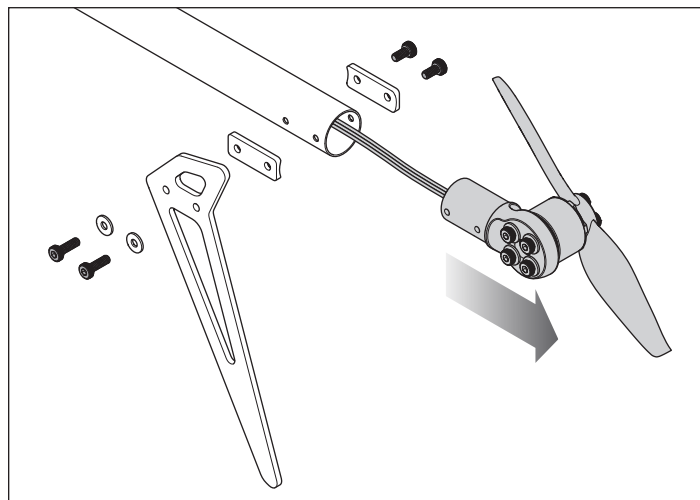


2. Install the two idler pulleys to the bottom of the lower bearing block/servo mount. Use two screws and two 'top hat' spacers. Apply thread locking compound to the screw threads, using caution not to allow the compound to contaminate the bearings. Note the orientation of the pulleys. They must capture the ball bearing. Set the frame aside.

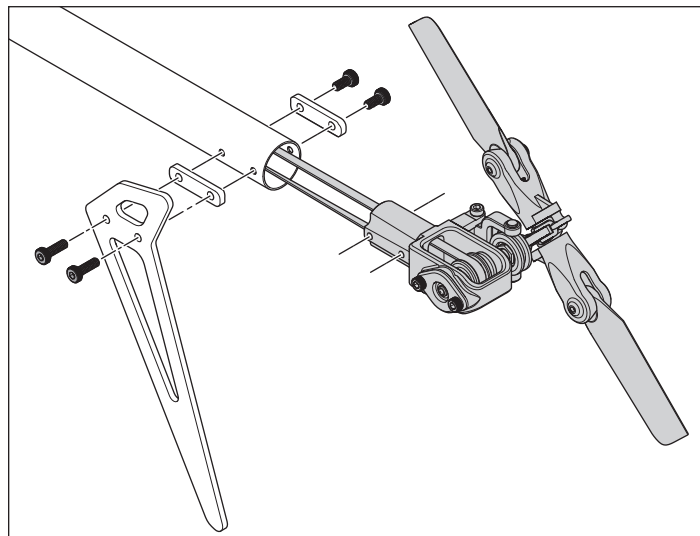


Tail Boom Assembly

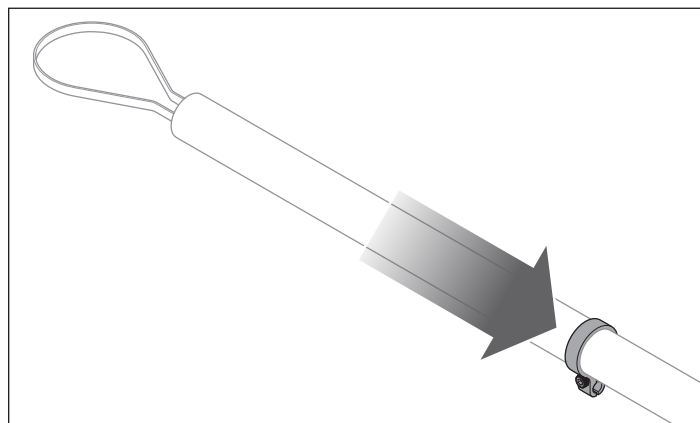
1. Using the hex driver, remove four screws from the sides of the tail boom to remove the vertical tail fin and tail motor mount.
2. Pull the tail motor mount out of the tail boom. Store the motor assembly for possible use later.



3. Feed the drive belt through the boom, and slide the tail case into the boom. Ensure the holes in the boom line up with those in the tail case, and the logo on the boom is oriented correctly.
4. Using the hex driver, install the two screws and spacer on the rotor side of the tail boom.
5. Install the vertical tail fin, spacer, and two screws with washers on the opposite side of the tail boom.

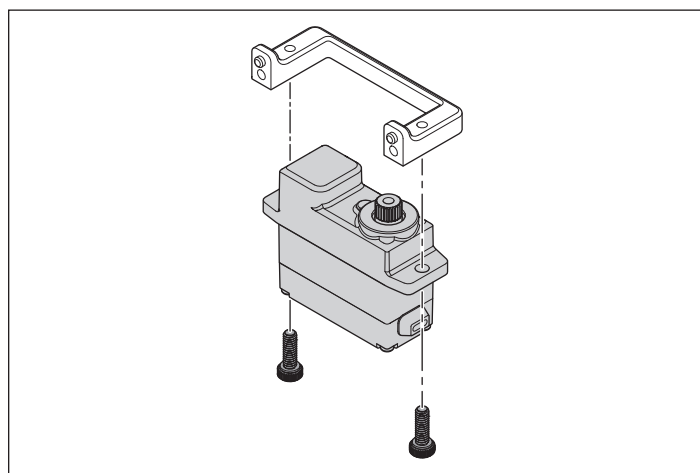


6. Slide the pushrod support onto the tail boom. Lightly secure the support to the boom with the self-tapping screw. Set the tail boom assembly aside.

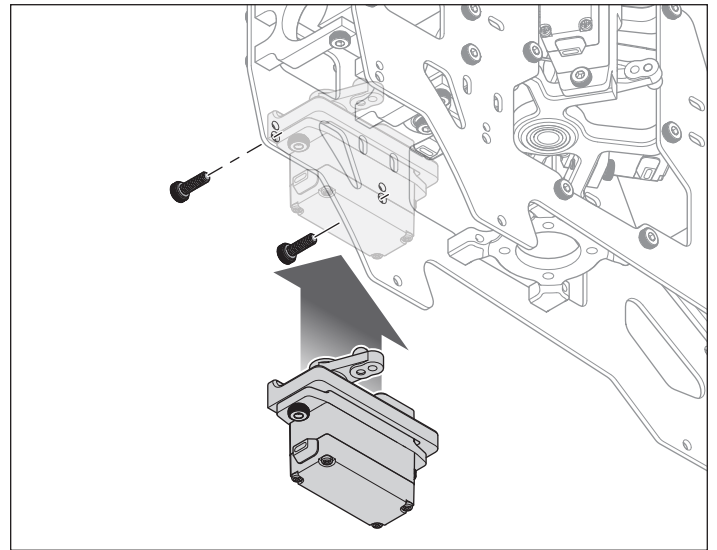


Servo Mount Assembly and Installation

1. Use two screws to attach the servo to the servo mount.
2. Temporarily insert the servo connector into port 5 of the flight controller.
3. Power on the transmitter with throttle hold engaged.
4. Power on the aircraft.
5. In the transmitter, from the Function List, enter Forward Programming > Setup > Tail Rotor > Output Setup > Frame Rate – 333hz, Direction – Reverse.
6. Click on Sub Trim to center the servo.
7. Attach the servo horn with the ball stud attached to the servo. Ensure the servo horn is 90° to the case. Use small amounts of sub trim if necessary to get the servo arm to 90° to the case.
8. Back out of Forward Programming to save the settings.
9. Power off the aircraft.
10. Power off the transmitter.



11. Using the hex driver and two screws, install the servo mount inside the left side frame.



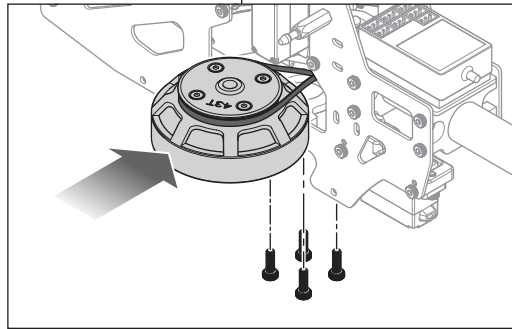
Tail Boom Installation

IMPORTANT: Ensure the drive belt is not twisted in the boom before continuing.

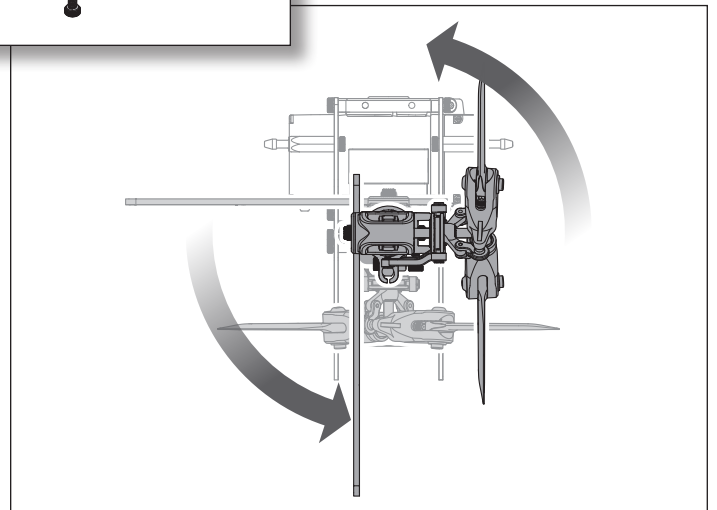
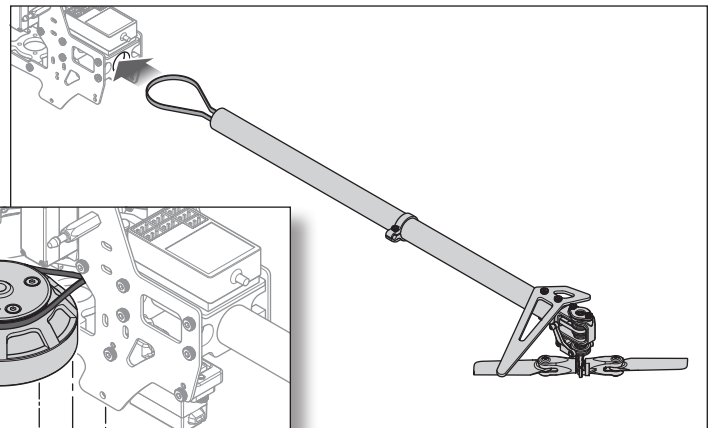
1. Insert the tail boom into the tail boom mounts with the boom rotated 90°, so the tail rotor is facing down. Route the belt between the idler pulleys.

2. Pull the loop of the drive belt out the side of the airframe. Install the motor through the side of the airframe, pulley side up, looping the belt around the motor pulley. Ensure the motor leads are facing the front of the aircraft.

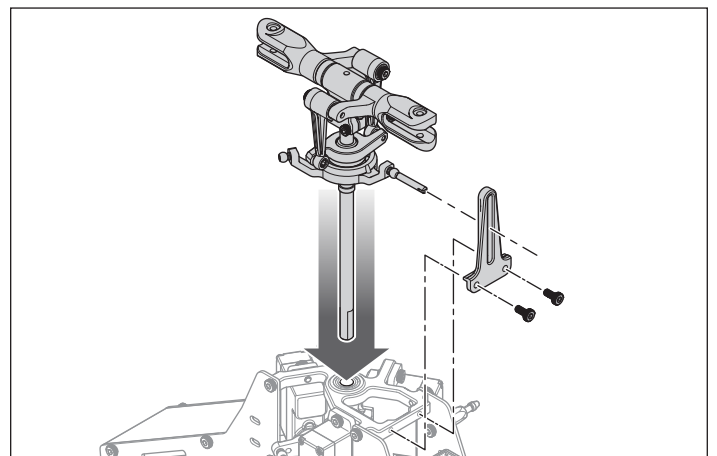
3. Using the hex driver, install four screws through the motor mount, into the motor.



4. Rotate the boom 90° in the mounts until the tail fin is vertical and the tail rotor is facing the right side of the aircraft.
5. Pull back slightly on the tail boom to tension the drive belt while tightening the screws of the boom mounts.
6. Connect the 2mm bullet connectors from the motor to the ESC, matching the colors of the wires.
7. Carefully route the servo and ESC wires through the airframe, securing them with small cable ties as needed to ensure they do not contact any moving parts.

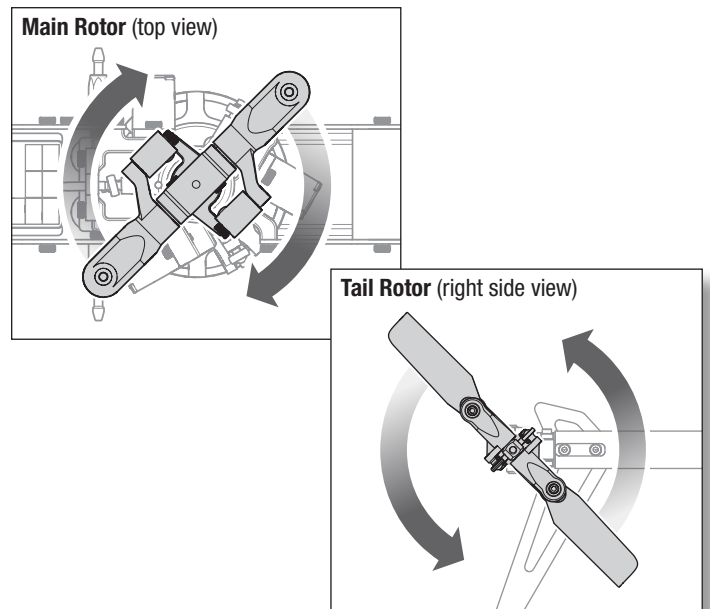


8. Install the main shaft/rotor head assembly through the bearing blocks and into the motor. Secure the mainshaft with the screw and washer through the bottom of the motor. Place a small drop of medium thread locking compound on the screw threads, making sure to not allow any compound to get in the motor bearings.
9. Reconnect the three servo pushrods.
- IMPORTANT:** Ensure the pushrods are installed in the same locations from where they were removed.
10. Using the hex driver and two screws, install the anti-rotation bracket over the pin on the rear of the swashplate. Apply thread lock to the screw threads.



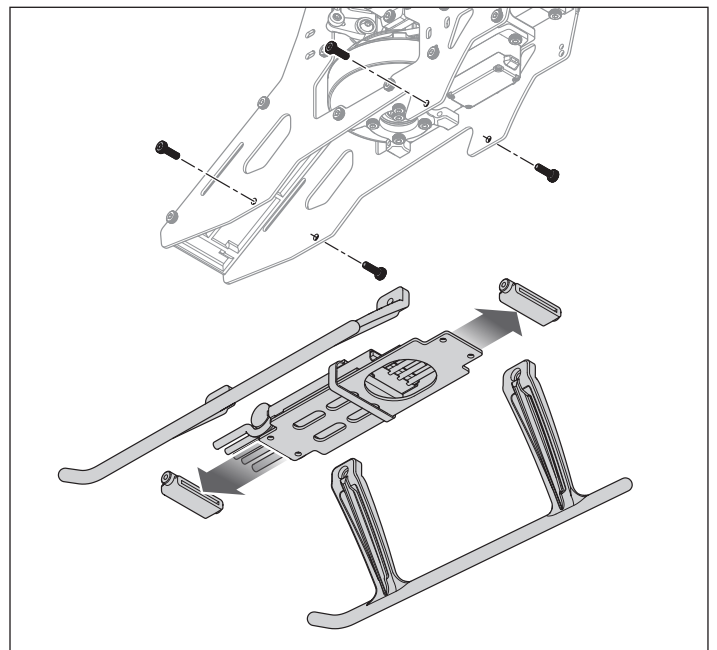
11. Rotate the main rotor clockwise by hand. As the main rotor turns clockwise, the tail rotor should rotate counter-clockwise, viewed from the right side of the aircraft.

IMPORTANT: If the tail rotor rotates the other direction, either the belt is twisted the wrong way in step 4 of the tail boom installation, or the belt is twisted more than 1/4 turn. Return to step 1 and correct the problem before continuing.



Final Assembly

12. Using the hex driver and 4 screws, install the landing gear to the airframe, ensuring the ESC mount is correctly installed in the gear mounts.



13. Snap the front tail pushrod ball link on the tail servo ball. Loosen the screw on the tail boom pushrod guide, and install the pushrod in the hole in the guide. Tighten the pushrod guide screw to secure the pushrod in the guide.

14. Power on the transmitter with throttle hold engaged.

15. Power on the aircraft.

16. In the transmitter, go to Forward Programming > Setup > Tail Rotor > Output Setup > Sub Trim. This centers the tail servo.

17. Adjust the length of the rudder pushrod until the pitch slider is at 90°, as shown, when the servo is centered.

18. Snap the rear tail pushrod ball link on the pitch slider ball.

19. Back out of the Sub Trim menu, and click on Travel.

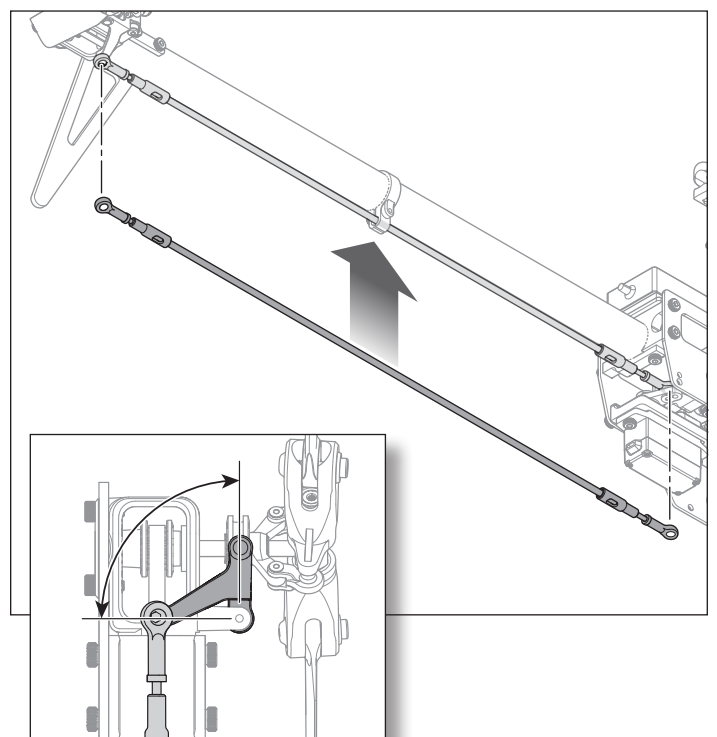
- Hold the transmitter rudder stick fully to the right. The pitch slider should move towards the tail case. Increase or decrease the travel value to maximize the range of movement without binding.
- Hold the transmitter rudder stick fully to the left. The pitch slider should move away from the tail case. Increase or decrease the travel value to maximize the range of movement without binding.

20. Back out of Forward Programming to the Model Adjust screen to save the settings.

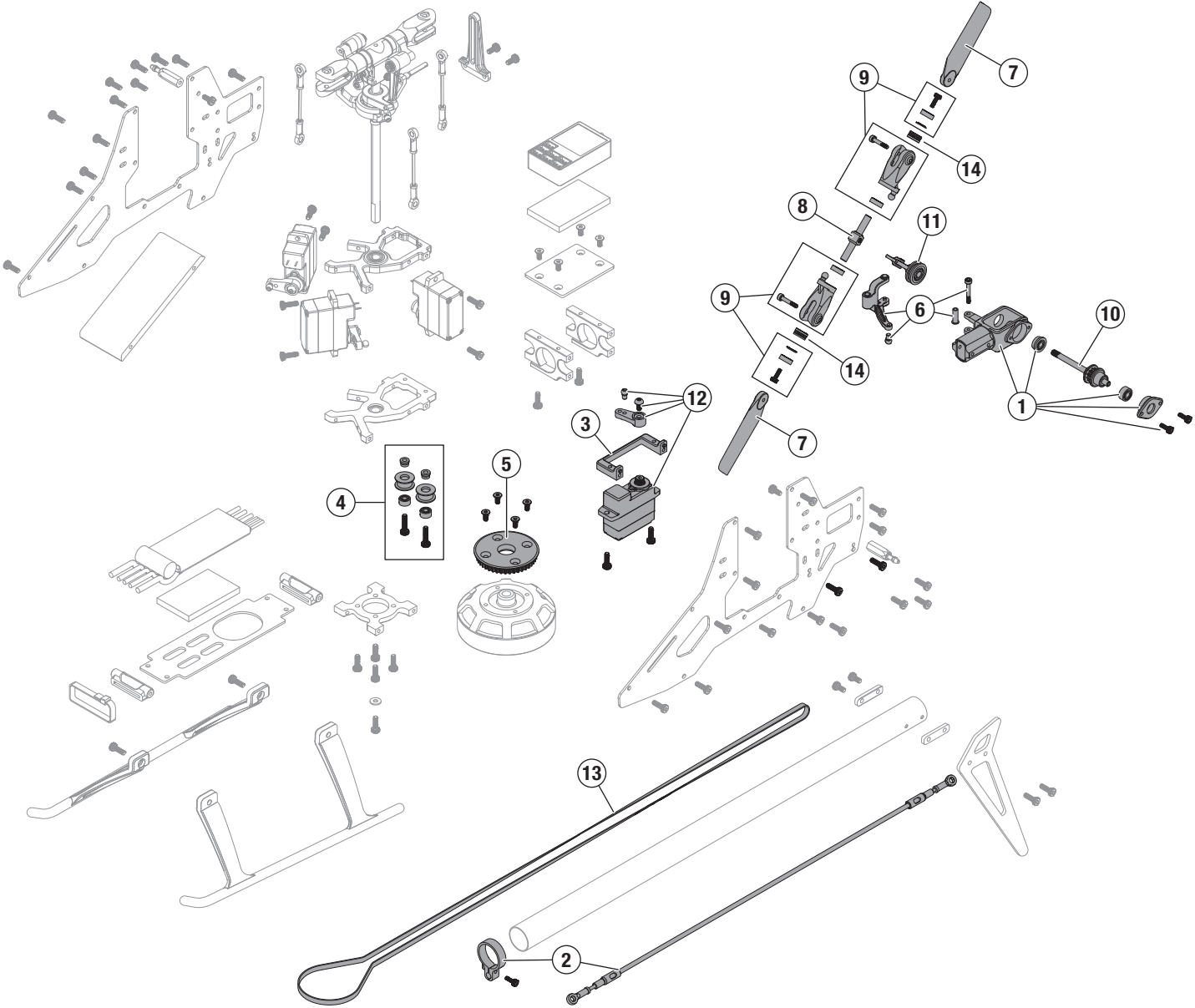
21. Power off the aircraft and then the transmitter.

22. Install the main rotor blades.

23. Install the canopy.



Exploded View



Replacement Parts

Part #			Description		
1	BLH-2923	Tail Case: InFusion 210 BDC			
2	BLH-2924	Tail Pushrod: InFusion 210 BDC			
3	BLH-2925	Tail Servo Mount: InFusion 210 BDC			
4	BLH-2926	Belt Guide Pulleys: InFusion 210 BDC			
5	BLH-2927	Tail Pulley: InFusion 210 BDC			
6	BLH-2932	Pitch Slider Bellcrank: InFusion 210 BDC			
7	BLH-2933	Tail Rotor Blade Set: InFusion 210			

Part #			Description		
8	BLH-2934	Tail Rotor Hub: InFusion 210			
9	BLH-2935	Tail Rotor Grip Set: InFusion 210			
10	BLH-2936	Tail Shaft with Pulley: InFusion 210			
11	BLH-2937	Pitch Slider: InFusion 210			
12	SPMSH3059T	Servo, Digital, metal gear, heli tail			
13	BLH-2989	Drive Belt: InFusion BDC 210			
14	BLH-2904	Thrust Bearing Set: InFusion 210			

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 Li-Po batteries to Horizon. If you have any issue with a Li-Po 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.

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

Warranty and Service Contact Information

Country of Purchase	Horizon Hobby	Contact Information	Address
USA	Horizon Service Center (Repairs and Repair Requests)	servicecenter.horizonhobby.com/RequestForm/	2904 Research Rd Champaign, Illinois 61822 USA
	Horizon Product Support (Product Technical Assistance)	productsupport@horizonhobby.com 877-504-0233	
	Sales	websales@horizonhobby.com	
		800-338-4639	
EU	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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US 9,930,567. US 10,419,970. Other patents pending.

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