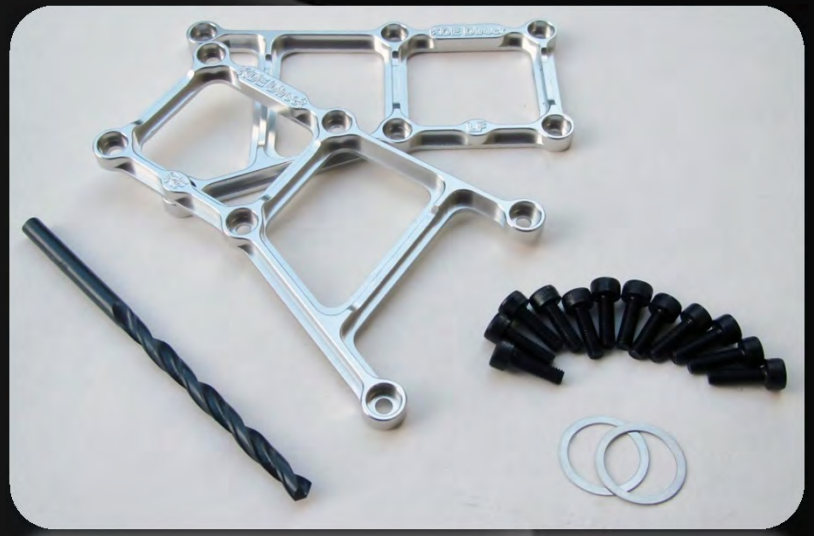
KDE Direct Align TREX 550/600 Series
UNIVERSAL TAIL BOOM CASE SUPPORT

Introducing the ultimate solution to prevent the front-torque tube stripping and vibration-related issues for the full range of ALIGN TREX 550 and 600 series helicopters. The upgrade provides all the components needed to produce a fully-adjustable gear mesh between the autorotation gear and front-torque tube gears, giving the pilot the ability to adjust for full-gear tooth strength and accommodate both the MOD 0.6 (4.5 ratio) and MOD 0.8 (3.85 ratio) gearing to suit their flying style. Dual Aluminum 6061-T6 Case Supports are provided for improved stiffness and a solid-hold to the carbon frames for the Tail Boom Case, preventing any unwanted shifting of the mechanics during flight for ultimate strength and smoothness of the tail gear train. In addition, shims are provided for further adjustment of the bevel gears, further improving the strength and accuracy of the tail gear train.



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STEP 1: Disassemble the Tail Boom Case, Umbrella Gear Case, and Front-Torque Tube Gear as shown in the image below. Remove the Radial-Ball Bearings from the Front-Torque Tube Gear.

Optional Tool: *To aid in installation, a 12 mm or 0.5" Drive Socket will be useful to install the 0.25 mm Shims onto the Front-Torque Tube Gear as described in the next page.*

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STEP 2: Install one or two of the provided 12.0 x 15.0 x 0.25 mm Stainless Steel Shims between the Front-Torque Tube Gear and Radial-Ball Bearing as shown during installation.

Use the 12 mm (or 0.5”) Drive Socket to push the 0.25 mm Shim onto the Front-Torque Tube Gear without bending the thin material, or be careful with installation using pliers or alternate methods.

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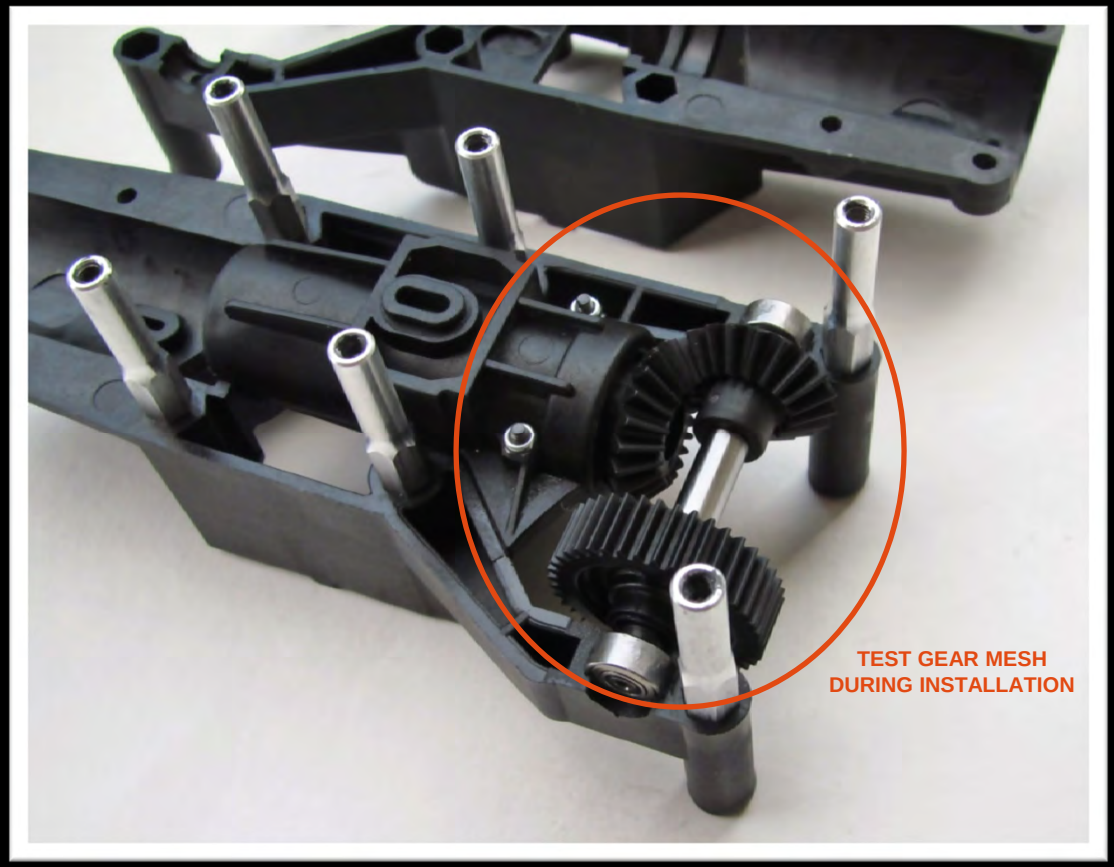
STEP 3: Install the Front-Torque Tube assembly into the Umbrella Gear Case (see original ALIGN Installation Manual if needed). Once assembled, install the assembly into the Tail Boom Case and check gear mesh for smooth operation.

Use one or two 0.25 mm Shims to provide a snug, but smooth gear mesh. Allow for minimal backlash to provide significantly increased strength for hard tail maneuvers.



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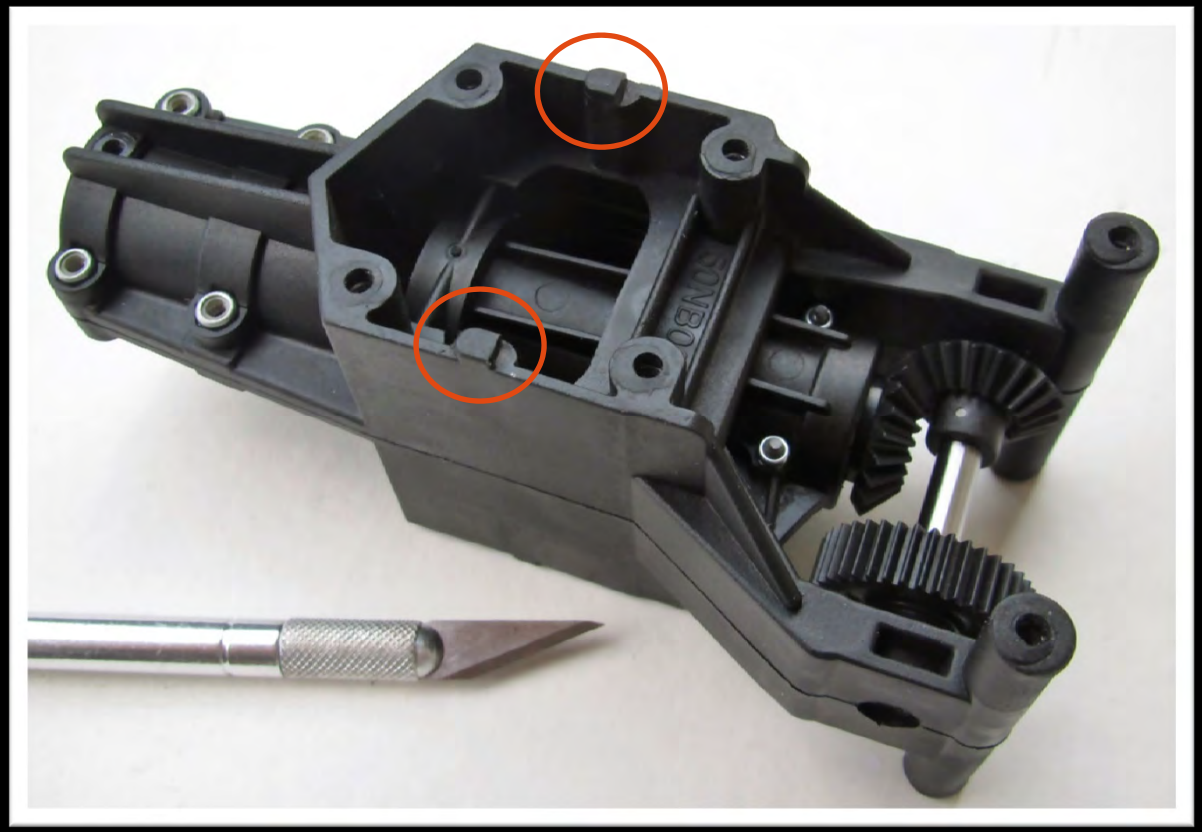
STEP 4: Finish assembling the Tail Boom Case on the bench and then using an Exacto-knife or Dremel cut-off wheel, remove a small portion of the Tail Boom Case plastic tabs (towards the gears) as shown in the image below. This will allow for forward adjustment of the Tail Boom Case as described in the following pages.

Approximately 1.0 mm – 2.0 mm of the plastic tabs should be removed, and repeat on the alternate side.



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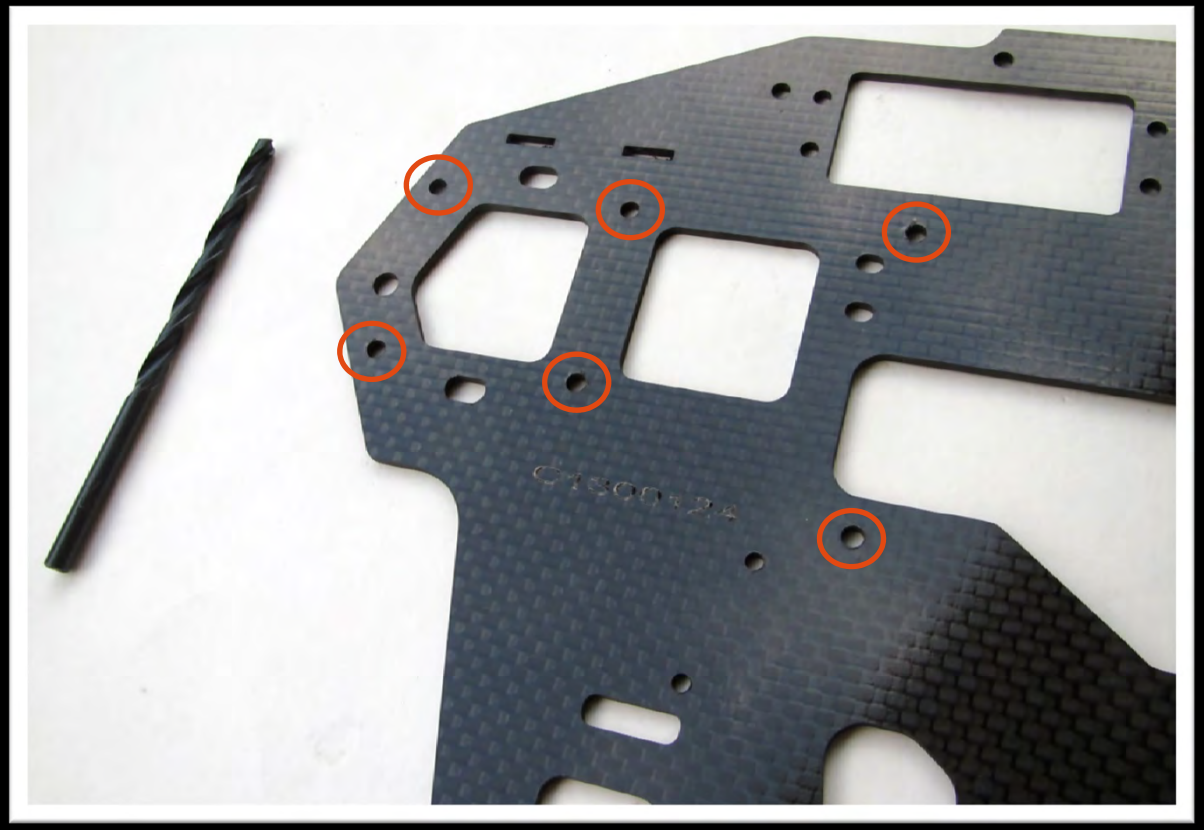
STEP 5: Using the included 5/32" (4 mm) Drill Bit, drill out the six mounting holes for the Tail Boom Case on both the Right and Left Carbon Main Frames. The 550 series Carbon Main Frame is shown below, but same procedure is used on all the TREX 550 and 600 (Electric and Nitro) frame sets for simple installation.

By increasing the hole sizes, adjustment of 0.5 mm (0.020") is allowed in either direction to adjust gear mesh.



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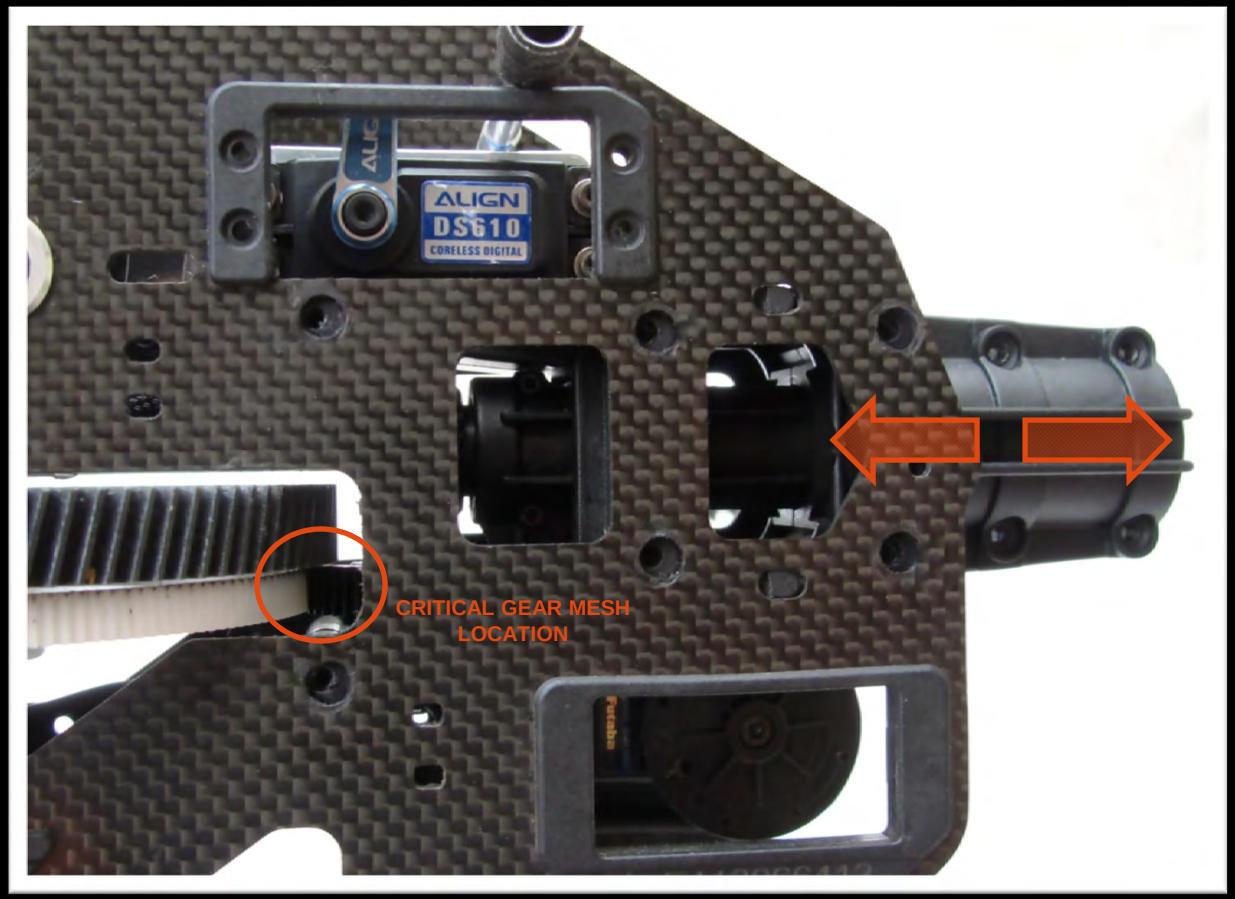
STEP 6: Install the Tail Boom Case assembly into the Carbon Main Frames, aligning the shortened plastic tabs into the provided slots in the frames. Hole sizes can be further increased up to 3/16" (4.75 mm) to provide additional adjustment capability for the gear mesh tolerance if required.



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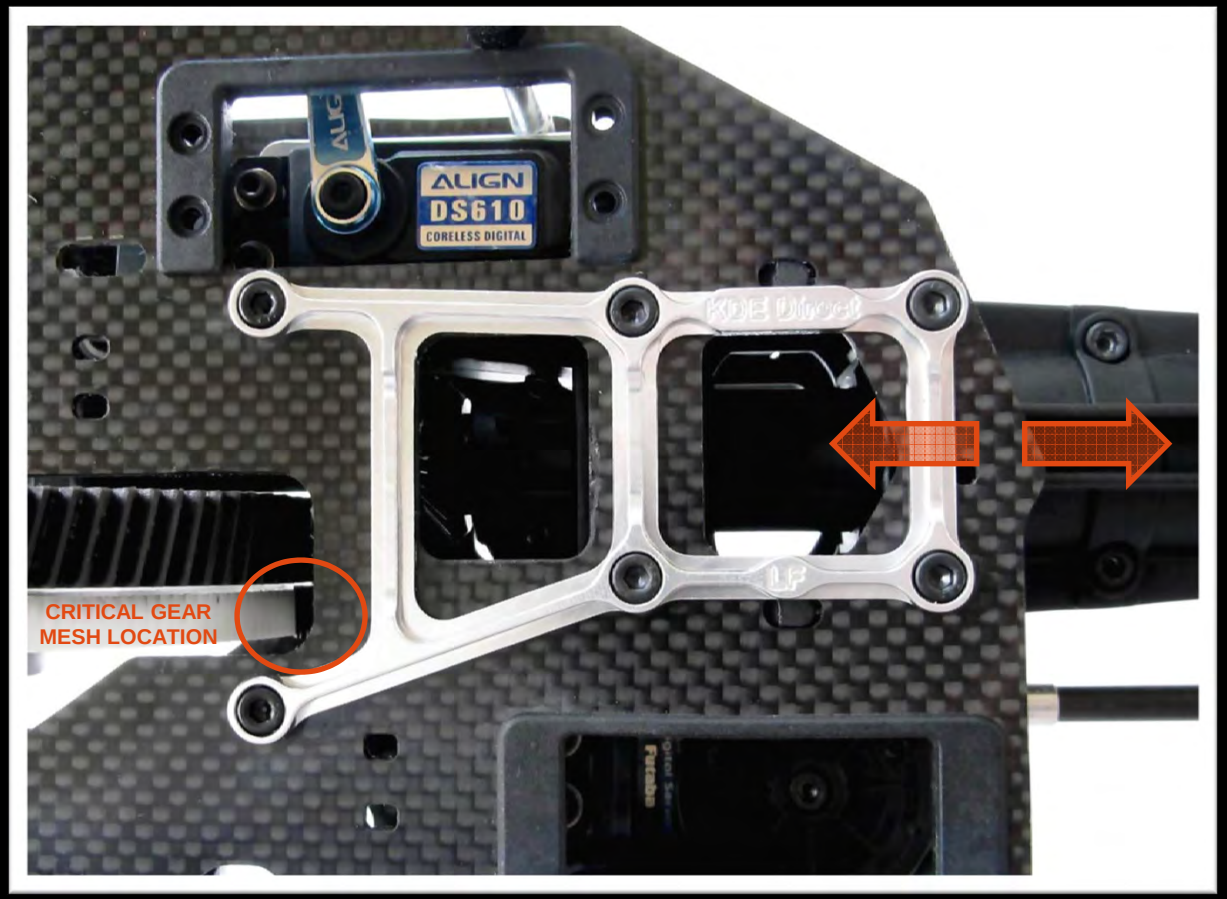
STEP 7: Install the provided Universal Tail Boom Case Supports (Right Frame and Left Frame sections provided) using the included M3 x 0.5 x 10 mm Socket Head Cap Screws. Make sure to apply medium-strength Loctite (243 or equivalent) during the installation. Shift the Tail Boom Case location forward or aft to provide a snug, but smooth gear mesh at the Autorotation Gear and Front-Torque Tube Gear junction; then fully tighten all hardware. Allow for minimal backlash to provide significantly increased strength for hard tail maneuvers.



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Installation is complete and gear-mesh has been optimized for a significant increase in gear-tooth strength and smooth-running operation. With correct adjustment and minimal backlash, using the MOD 0.6 (4.5 tail ratio) or MOD 0.8 (3.85 tail ratio) components is possible without fear of stripping the tail gear train; providing a significant increase in tail authority and control for hard-3D, competition-level, and overall confident flying for all pilots.