SWERVE DRIVE
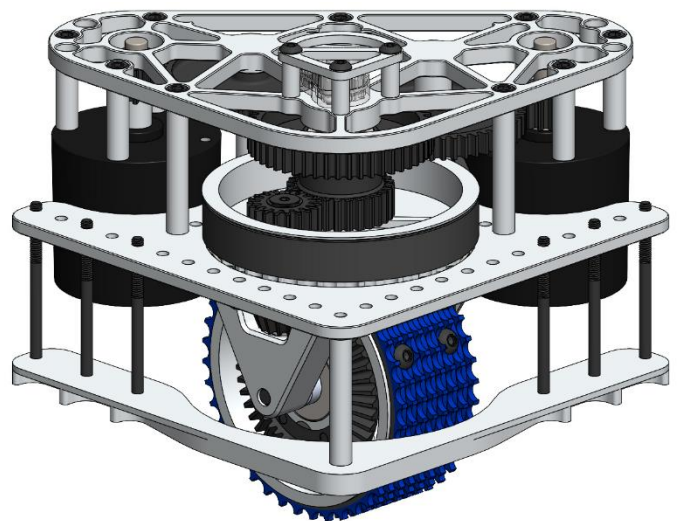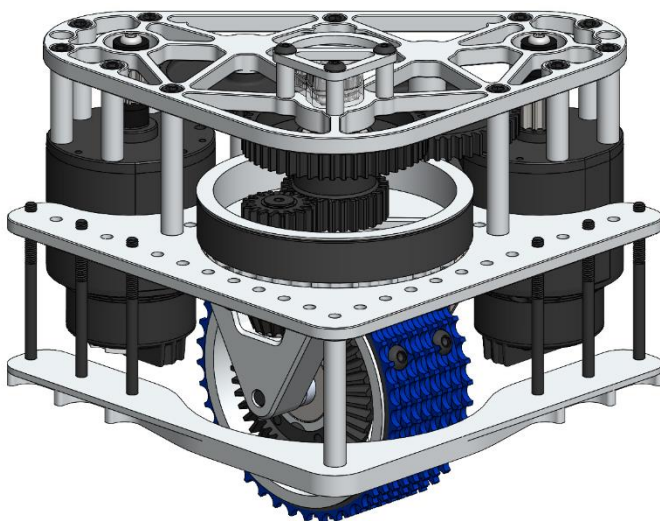## SPECIALTIES

MK4i Module
Assembly Guide

Recommendations:

Use Loctite 242/243 Retaining Compound on all bolts, excluding those used to mount the encoder

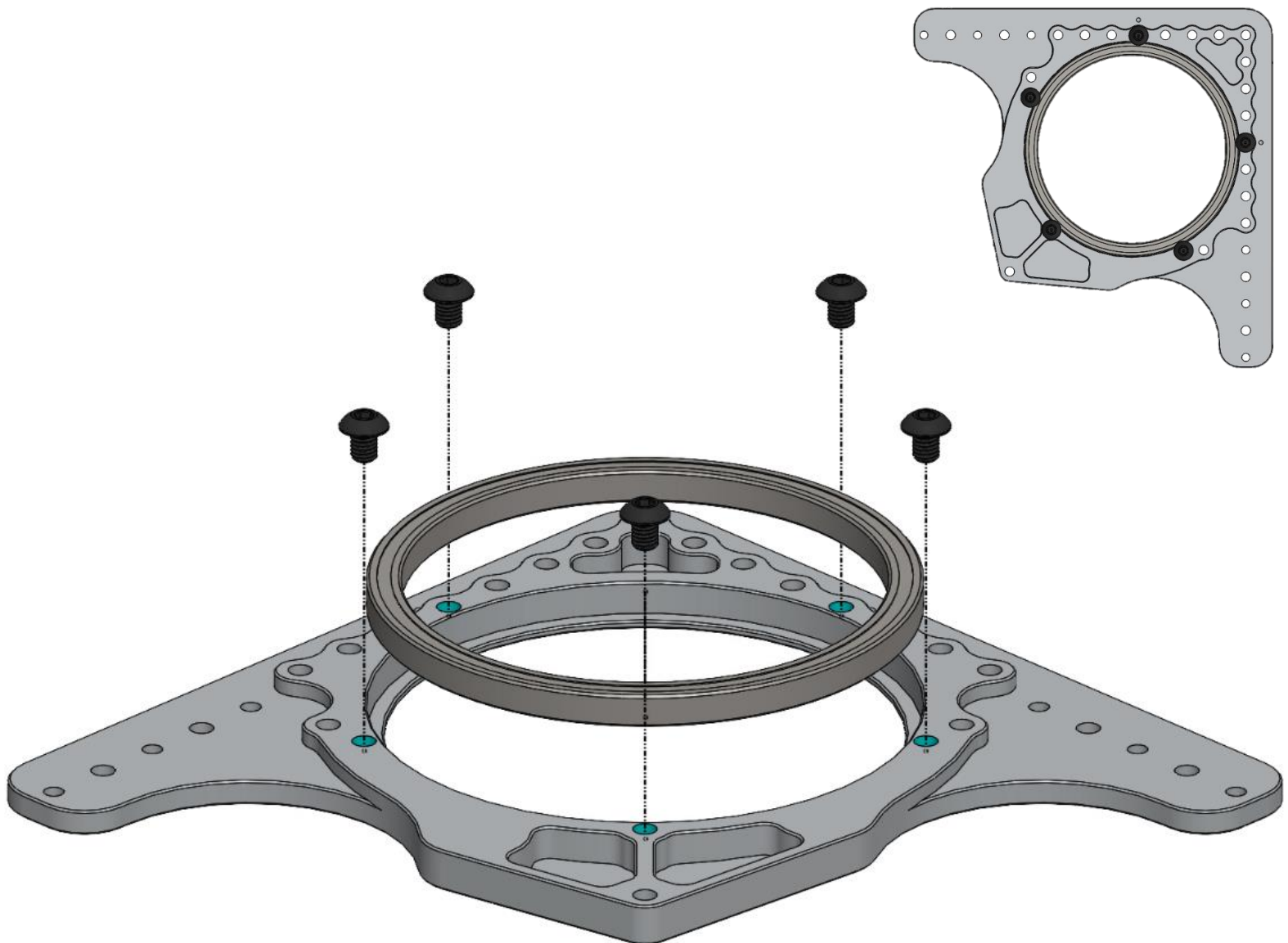Lubricate all gears with grease after assembly

Ziptie encoder wires to top plate

Step 1: Main Bearing Mounting

Secure with five #10-32 X .25 Button Head Screws. Nonobvious screw positions are indicated by adjacent drilled dots.

Step 2: Wheel Assembly

The MK4i Module uses the 4"D X 1.5"W Billet Wheel from SDS. Tread comes pre-installed. Mount 45t Bevel Gear with six #10-32 X .75 Button Head Screws. Insert .5" ID Bearing and Wheel Spacer on 45t Bevel Side, insert .375" ID Bearing on opposite side.
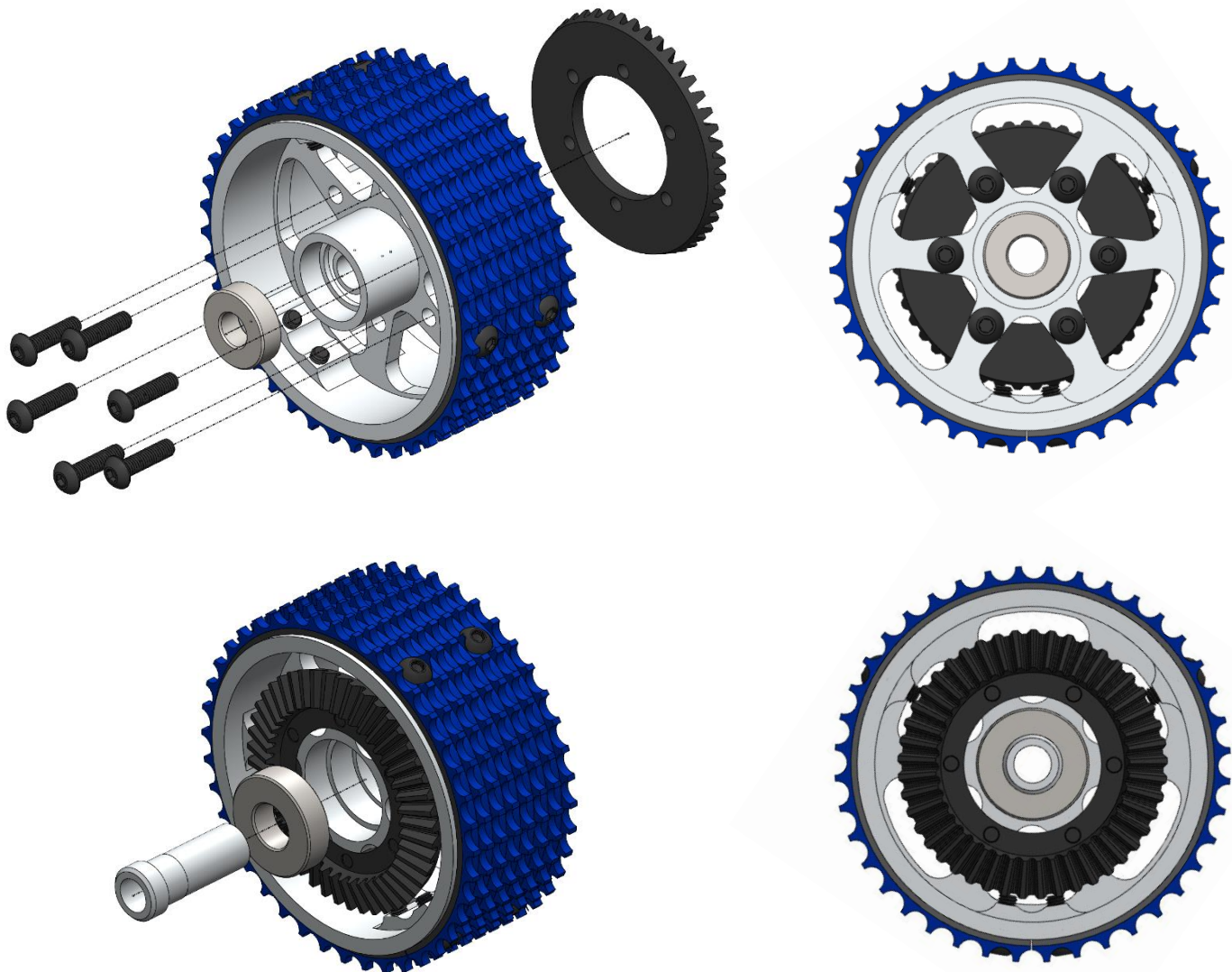
Step 3: Intermediate Shaft Assembly

Insert 10.25mm Flanged Bearing and secure shaft and .375 Hex Bore Gear with #12-24 X .625" Flat Head Screw.
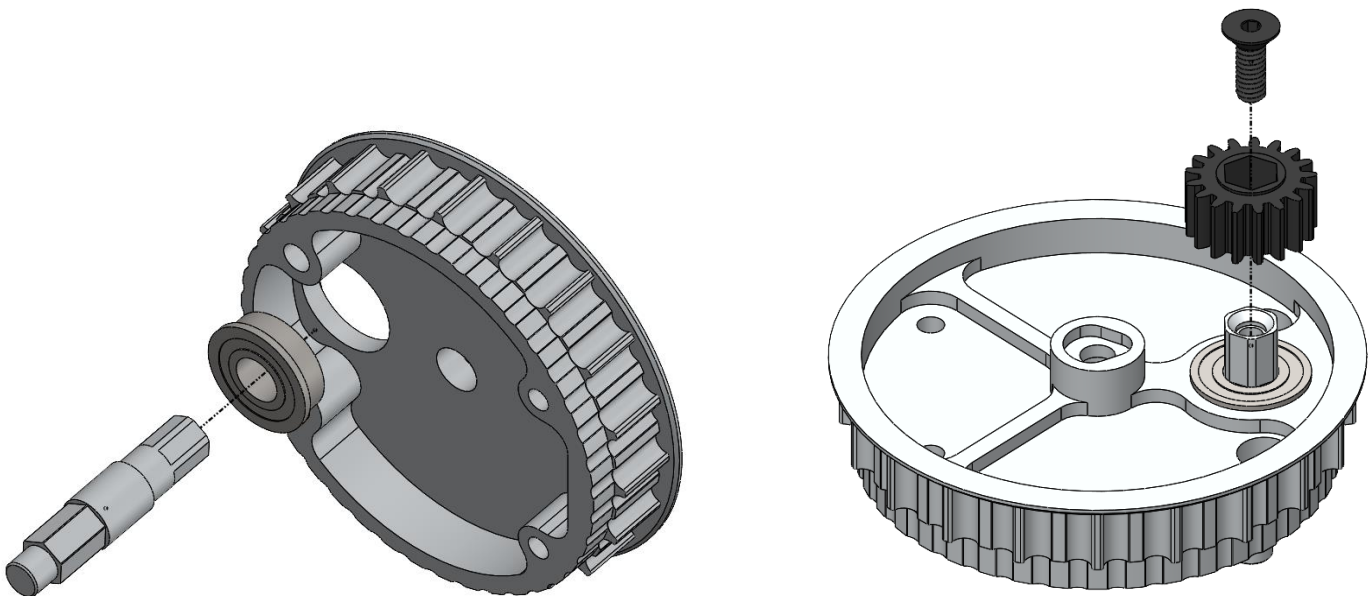
Step 4: Center Column Assembly

Insert encoder magnet and retain with ample LOCTITE Retaining Compound, Superglue, or Cyanoacrylate. LOCTITE 609 is recommended. Wipe off excess. Insert two 6802 Bearings into Double Gear and capture with center column. Be sure the center column is properly aligned and seated to Base Pulley before securing with 1/4-20 X .625" Socket Head Cap Screw.
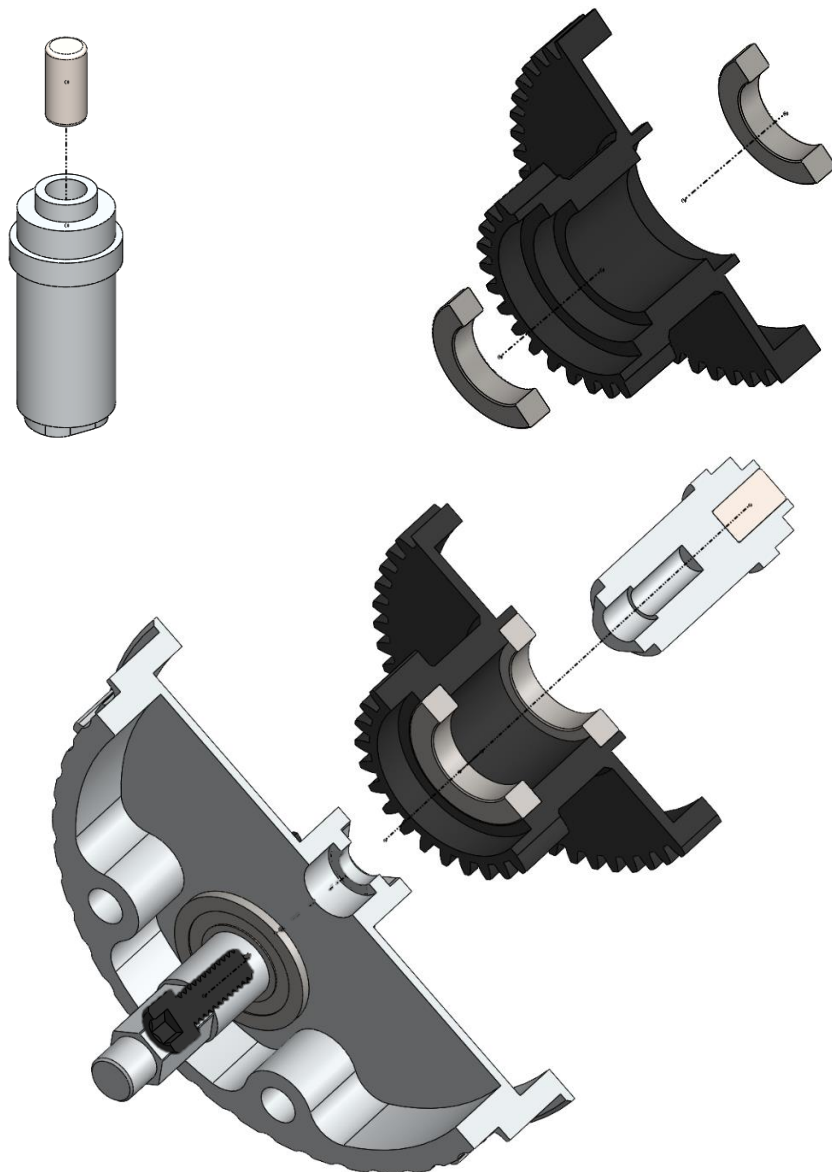
Step 5: Pulley Mounting

Capture 320-5M-9 Belt between Steering Shaft and Base Pulley. Insert 20DP 50t gear with .375" Hex bore onto Steering Shaft and between Base Pulley and Double Gear. Insert R188ZZ Bearing in Main Plate before continuing with assembly.
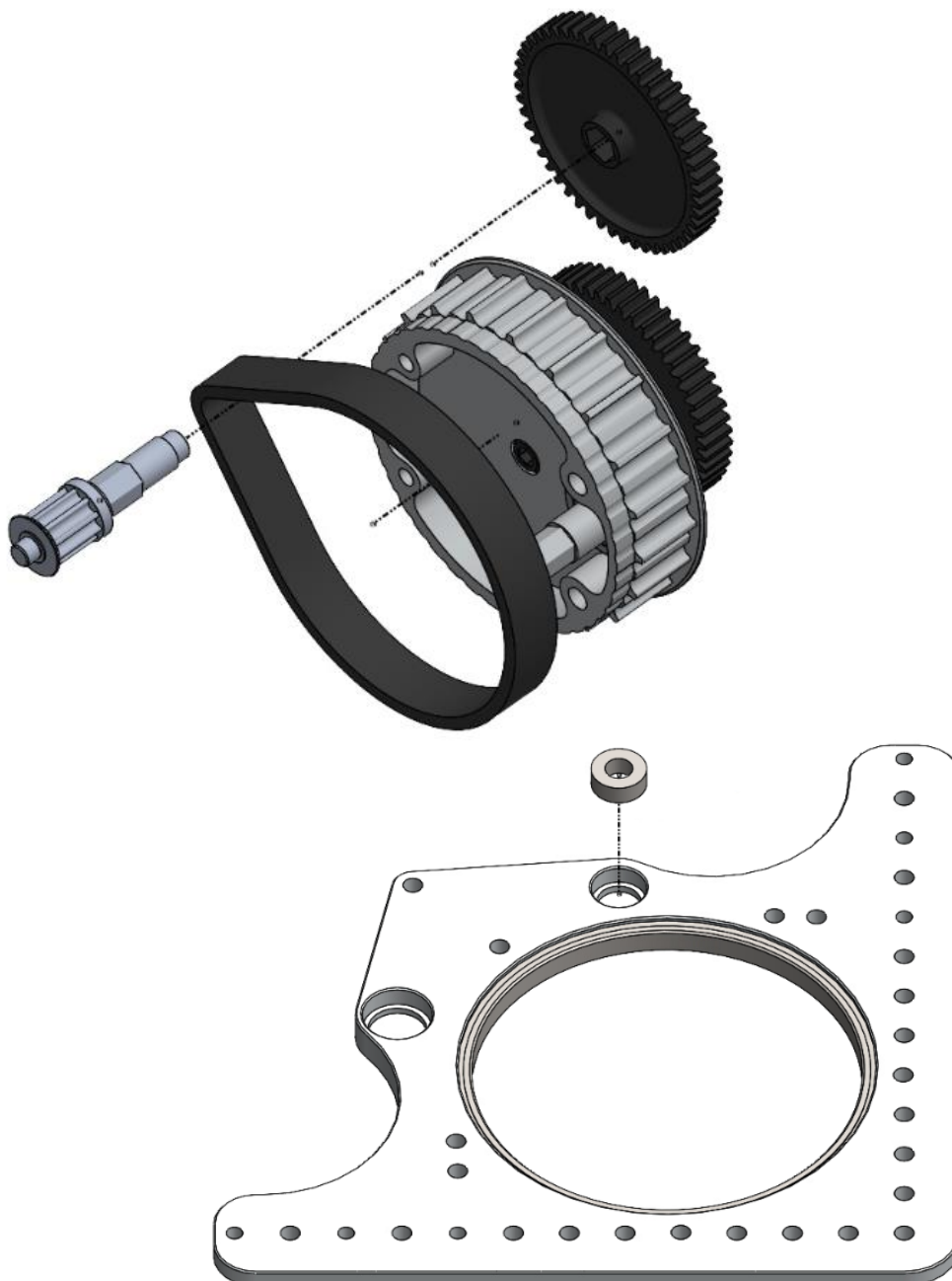
Step 5: Pulley Mounting (Cont.)

Insert Base Pulley Assembly, aligning Base Pulley with X-Contact Bearing and Steering Shaft with R188ZZ Bearing. Insert 15t Bevel Gear, followed by .5mm Shim and 688 Bearing.
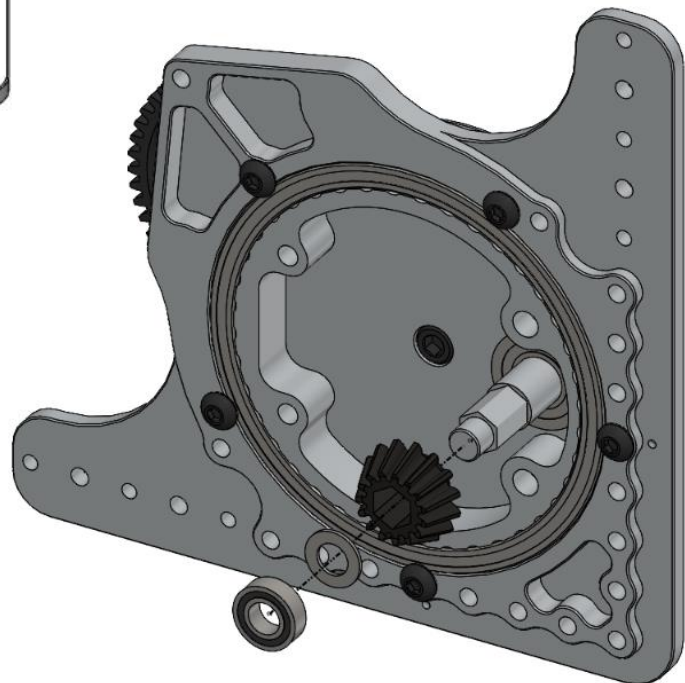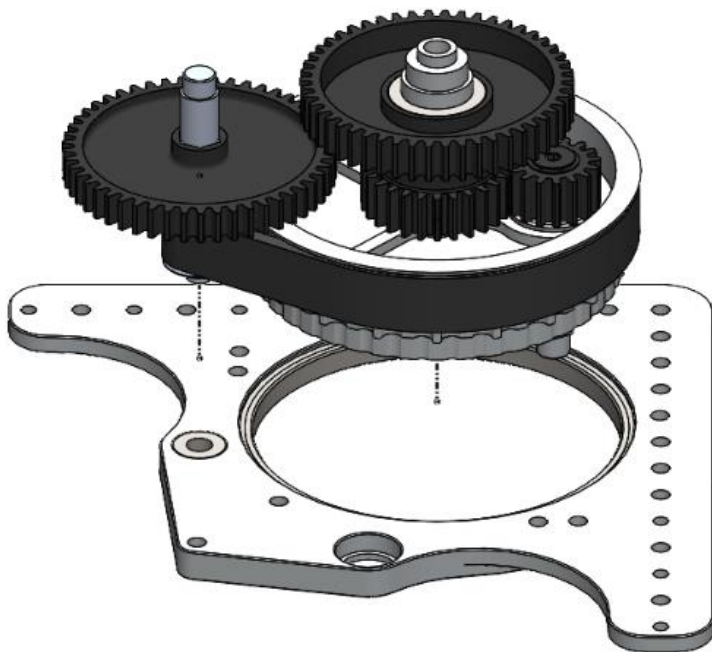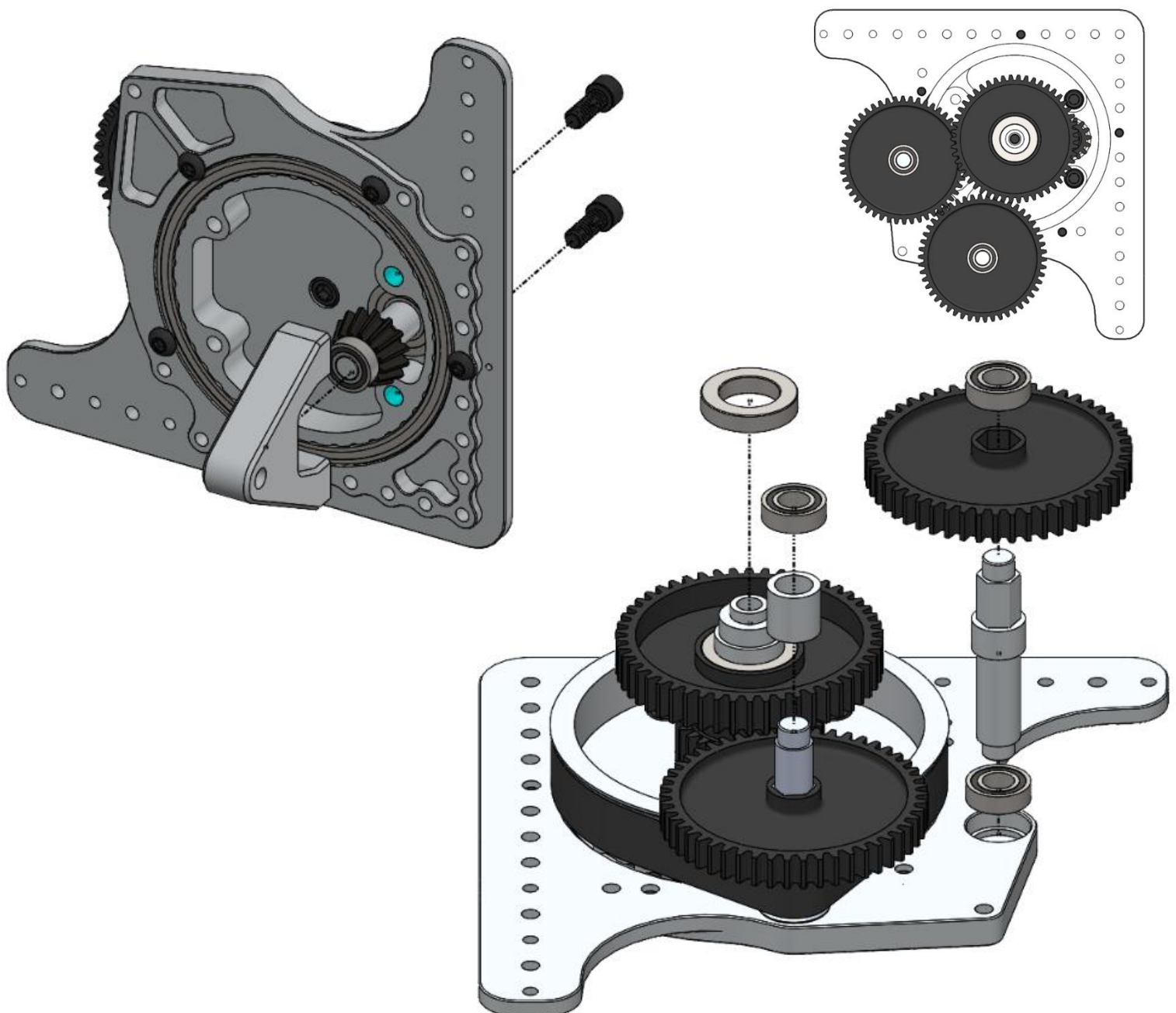
Step 6: Wheel and Motor Mount Prep.

Attach Wheel Mount B with two 1/4-20 X .625 Socket Head Cap Screws. Place three 688 Bearings, 20DP 50t Gear, .5"OD .375"ID Spacer and 6802 Bearing on respective shafts.

Step 7: Motor Plate Mounting

Line up the three bearing bores and attach Motor Plate. Be sure all three bearings are seated in the bearing bores and secure with three #10-32 X 2.25" screws through three #10 X 1.875" Spacers.
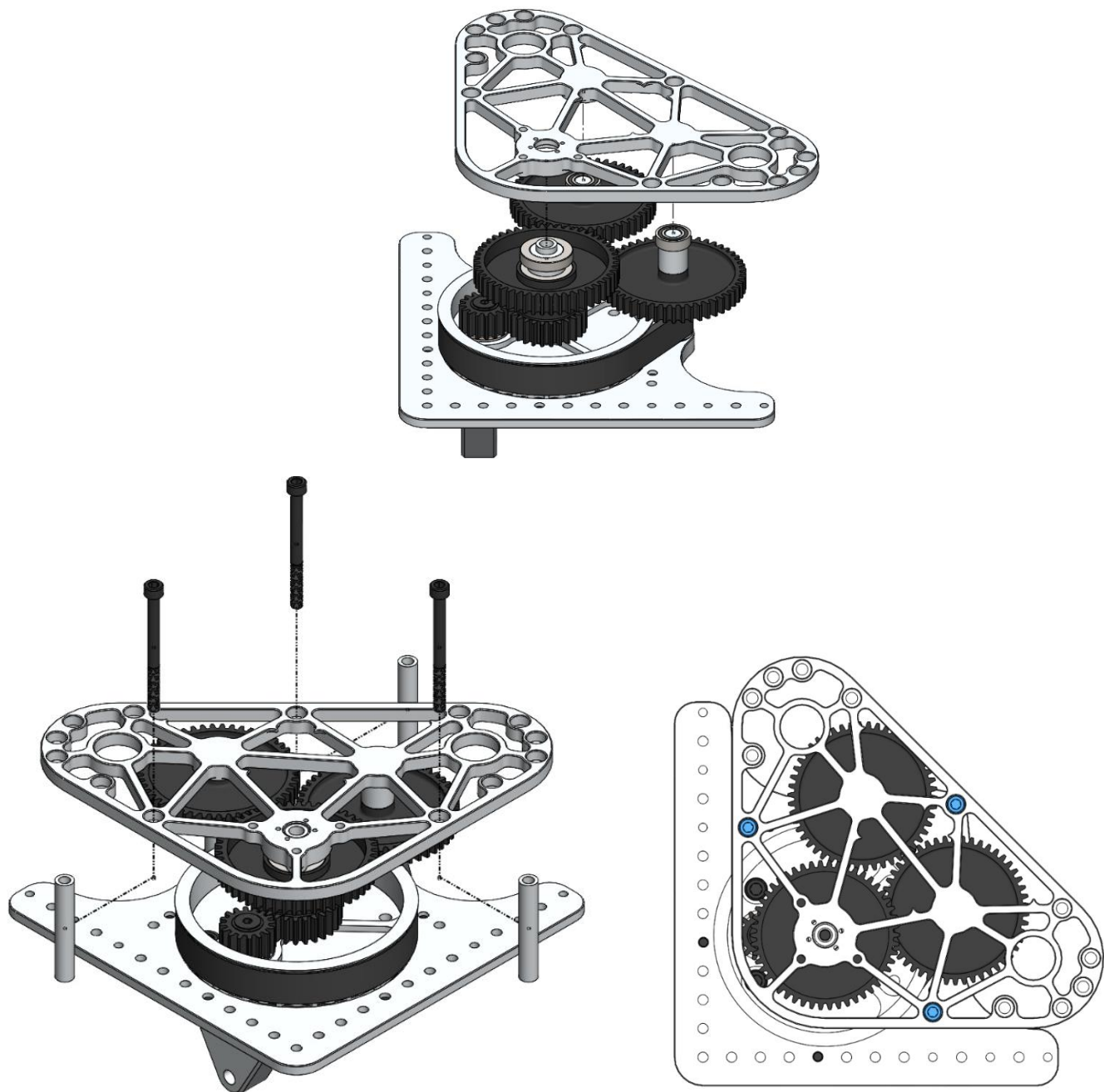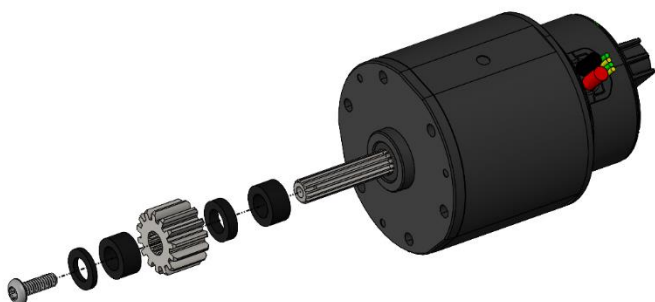
Step 8: Motor Configurations

Falcon 500:

For usage with Falcon 500 Motors, use the acetal spacers that are provided with the Falcon 500 motors.

Drive Motor .125" and .25" spacers before pinion, 20DP 14t Pinion, .25" and .0625" after. Secure with 8-32 X 1/2" truss head screw.
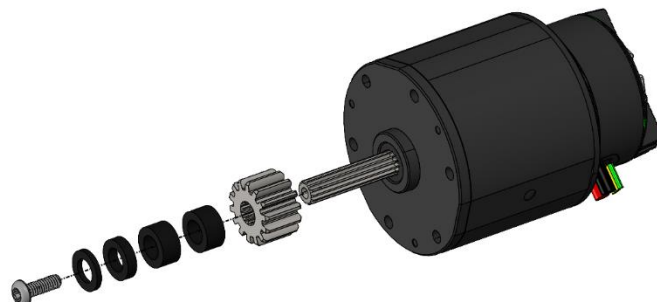
Steering Motor: 20DP 14t Pinion, 2 X .25", .125", .0625" spacers after. Secure with 8-32 X 1/2" truss head screw.

Assemble with medium strength retaining compound on retaining screw.

Drive
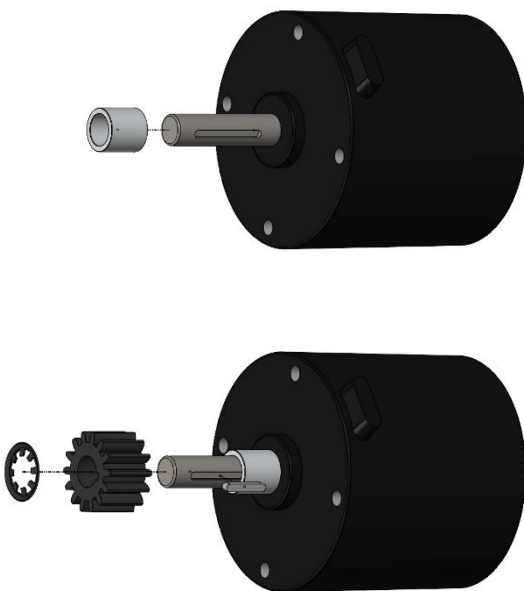
Steering

Step 8: Motor Configurations Cont.

NEO Brushless Motor:

Drive Motor: .437" spacer before pinion, 20DP 14t Pinion, retaining ring after
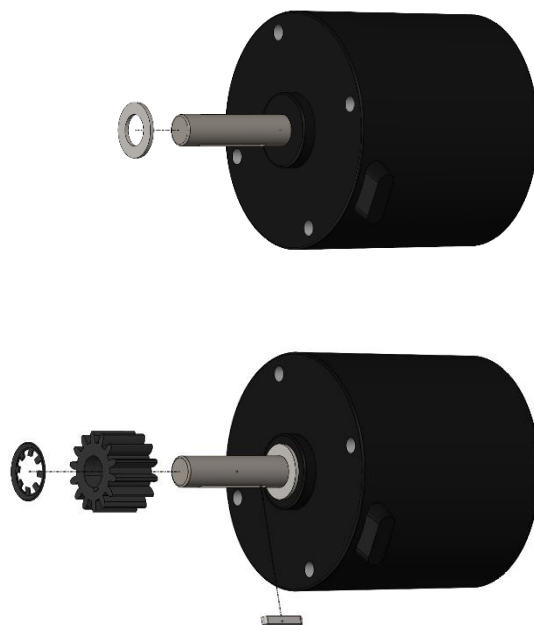
Steering Motor: .5mm spacer before pinion, 20DP 14t Pinion, retaining ring after.

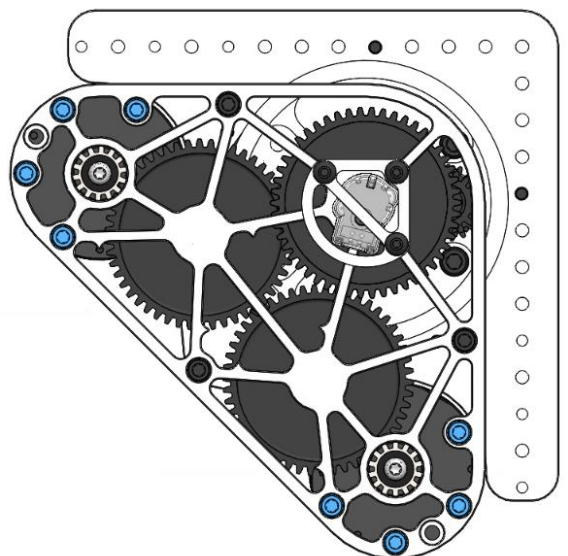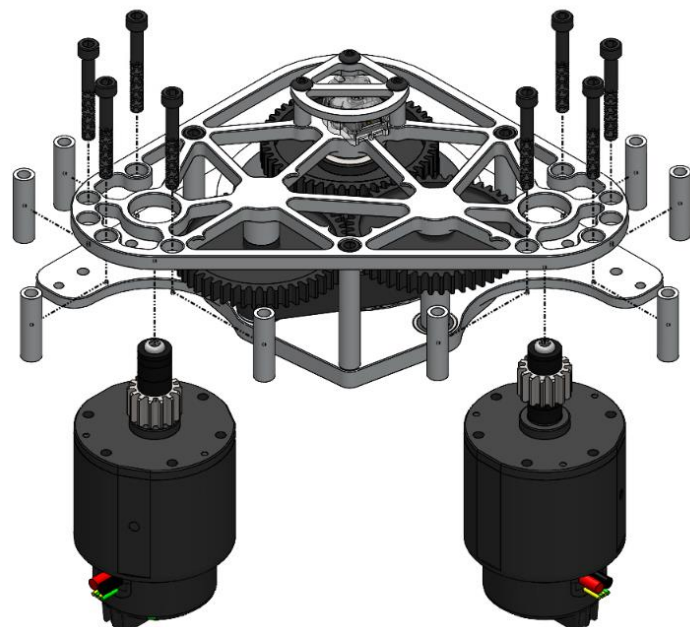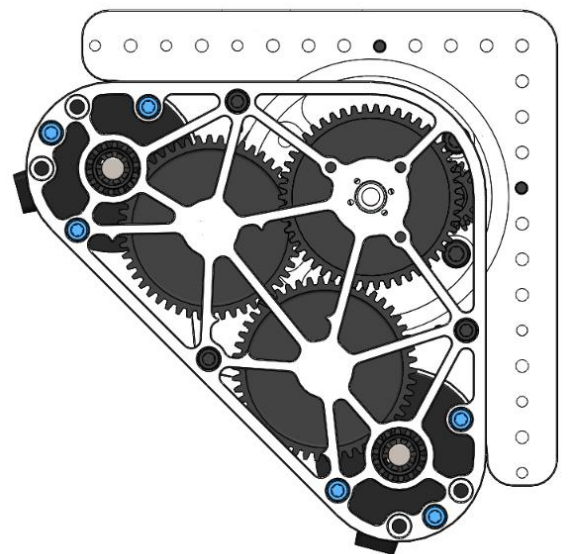Place spacers on NEO Motor shafts, followed by machine keys, gears, and retaining rings.
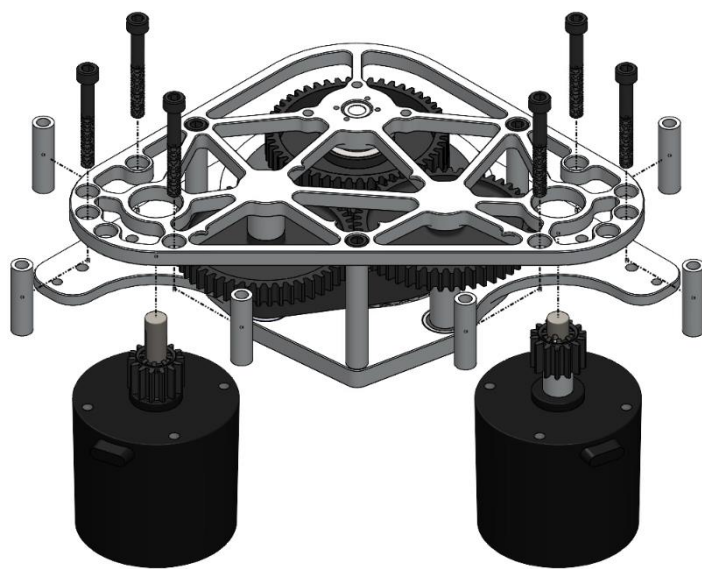
Drive   **Steering**

Step 9: Motor Mounting

Attach Falcon 500s with four #10-32 X 1.5" screws and #10 X 1.125" spacers. Attach NEO Motors with three #10-32 X 1.5" screws and #10 X 1.125" spacers.

Step 10: Wheel Mounting

Insert Shoulder Bolt partially through Wheel Mount A with integral spacer facing wheel. Slide wheel subassembly module and screw Shoulder Bolt in partially. Secure Wheel Mount A with two 1/4-20 X 1" Socket Head Cap Screws. Screw in Shoulder Bolt.

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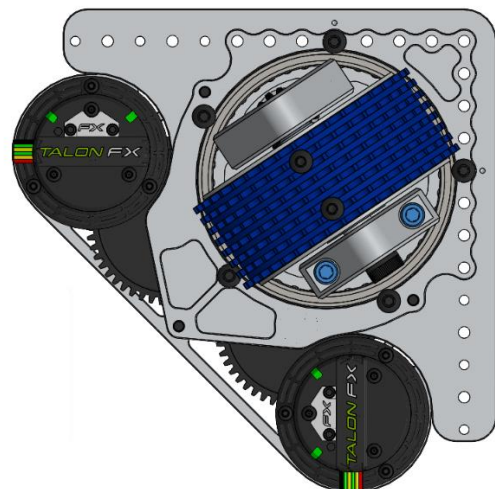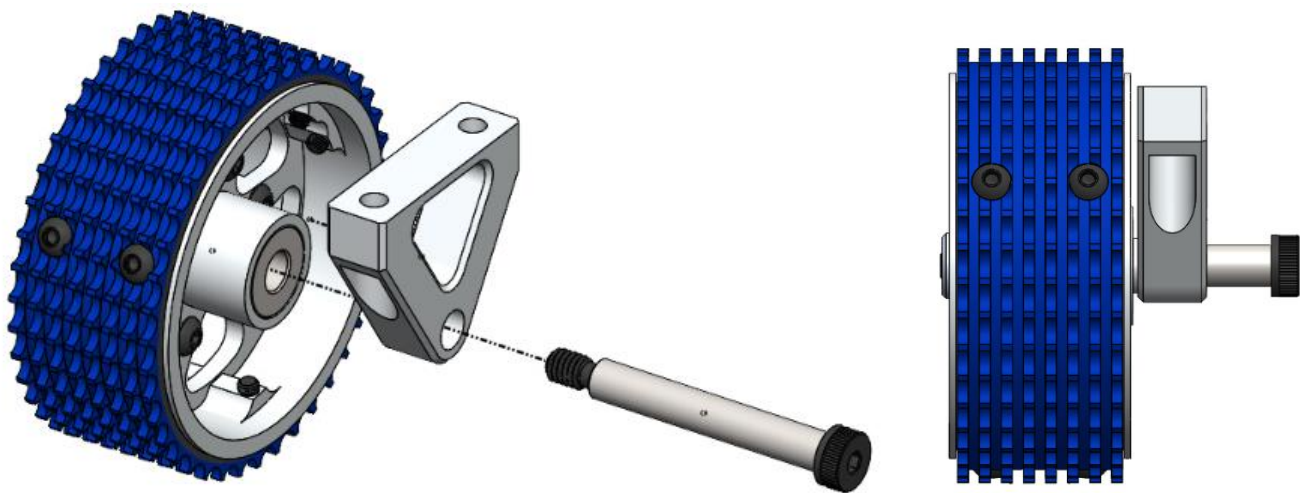
Step 11: Encoder Mounting

Begin by mounting housing base with both #3 – 48 screws included with the encoder (without thread locking compound) before inserting encoder circuit board (attaching data cable if using SRX Mag Encoder or soldering on CAN wires if using CANcoder). Choose the mounting holes that result with the wire direction you prefer. Place housing cap and follow CTR Electronics instructions: "DO NOT OVER TIGHTEN THE 2-28 SCREW AS THIS MAY RESULT IN PERMANENT DAMAGE TO THE HOUSING. HAND TIGHTEN UNTIL RESISTANCE IS FELT." Cable tie encoder wires to Motor Plate using machined keeper features. Finally mount machined Encoder Enclosure using three provided 8-32 X .875" Button Screws and three #8 X .531" Spacers.
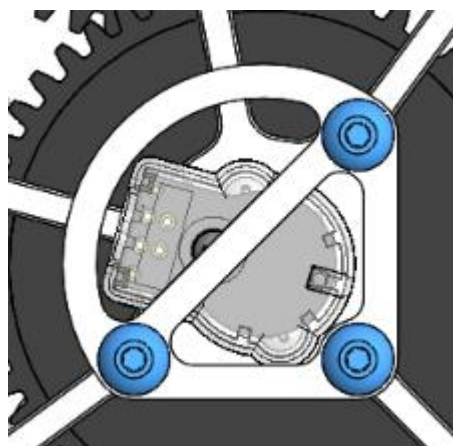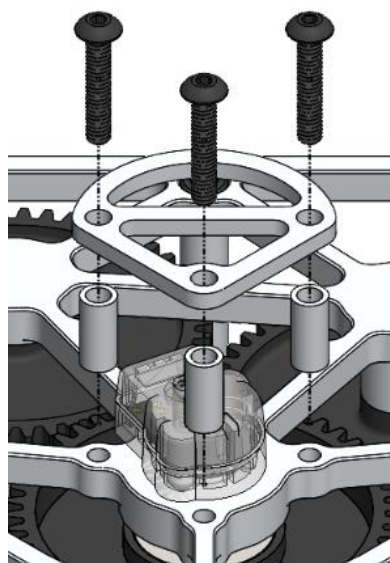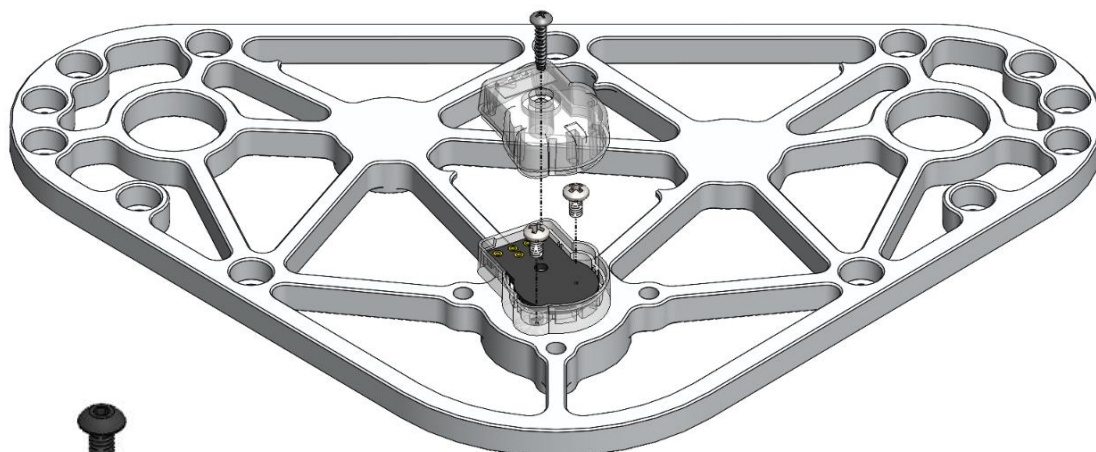
Step 12: Module Mounting

Attach final #10 X 1.875" spacer to module with #10-32 X 2.25" Socket Head Cap Screw. Mount to box tube with six provided #8-32 X 2.5" Socket Head Cap Screws. Grease modules gears. Module assembly complete.