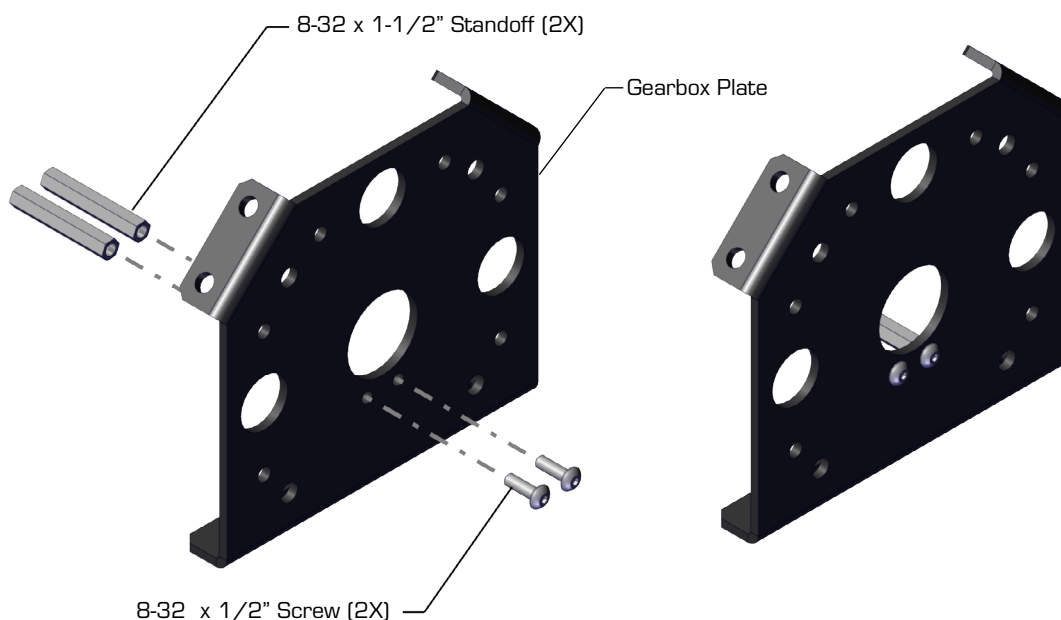
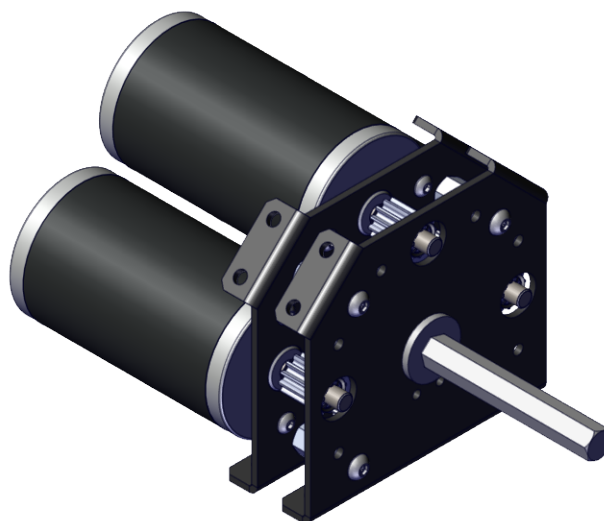
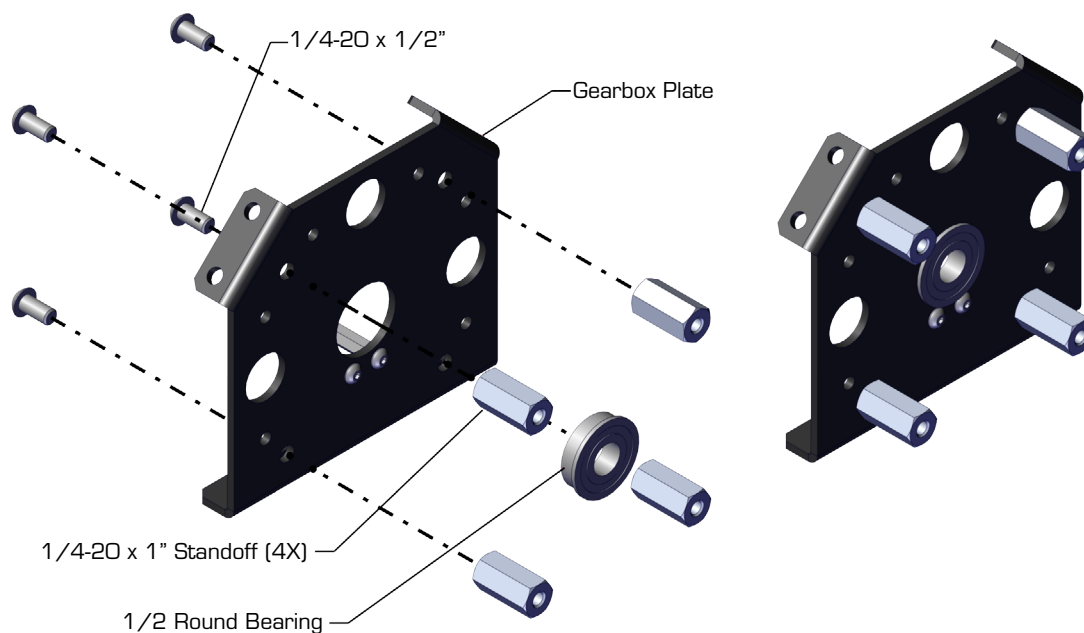


# Single Speed, Single Reduction Gearbox Assembly Instructions Rev1



## Step 1:

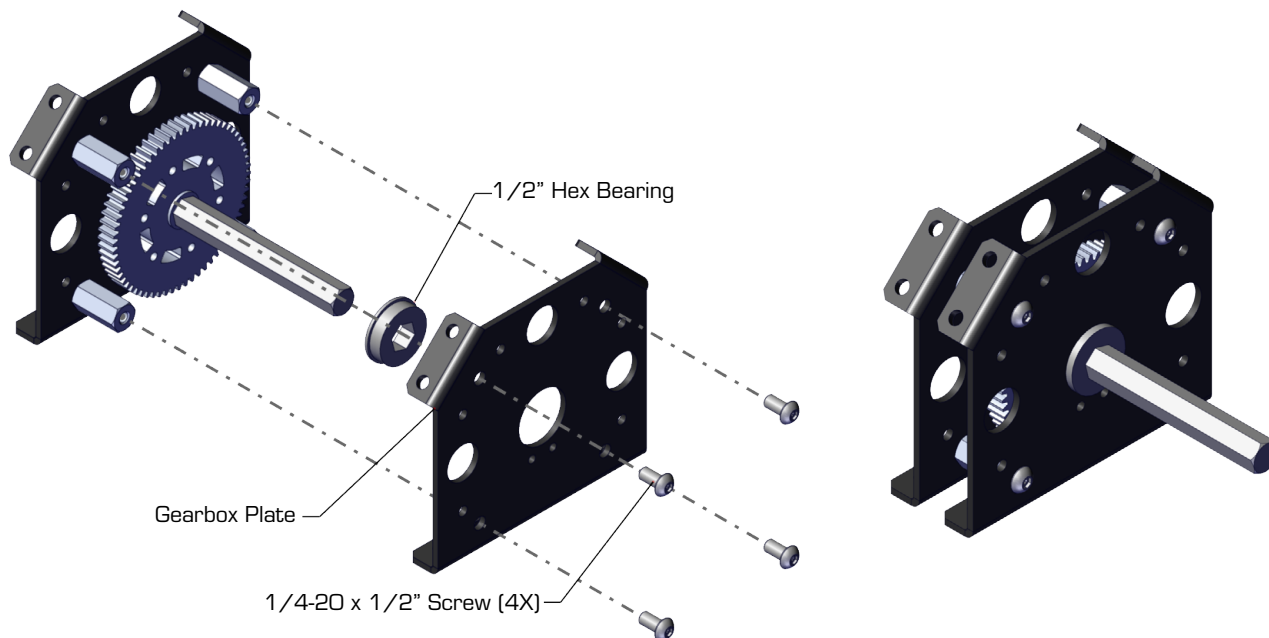
Both Gearbox plates are identical. If using a Grayhill Series 63R Encoder, use (2X) 8-32 x 1/2" screws to attach (2X) 8-32 x 1-1/2" standoffs to a gearbox plate as shown.

**Step 2:**

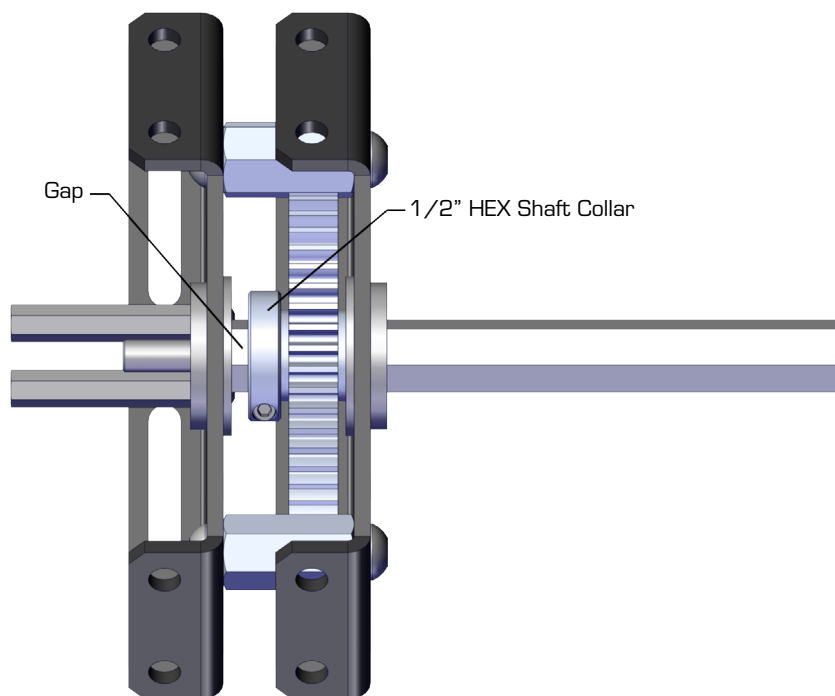
Use [4X] 1/4-20 screws to attach [4X] 1/4-20 x 1" Standoffs to the gearbox plate and insert a 1/2" round bearing as shown.

**Step 3:**

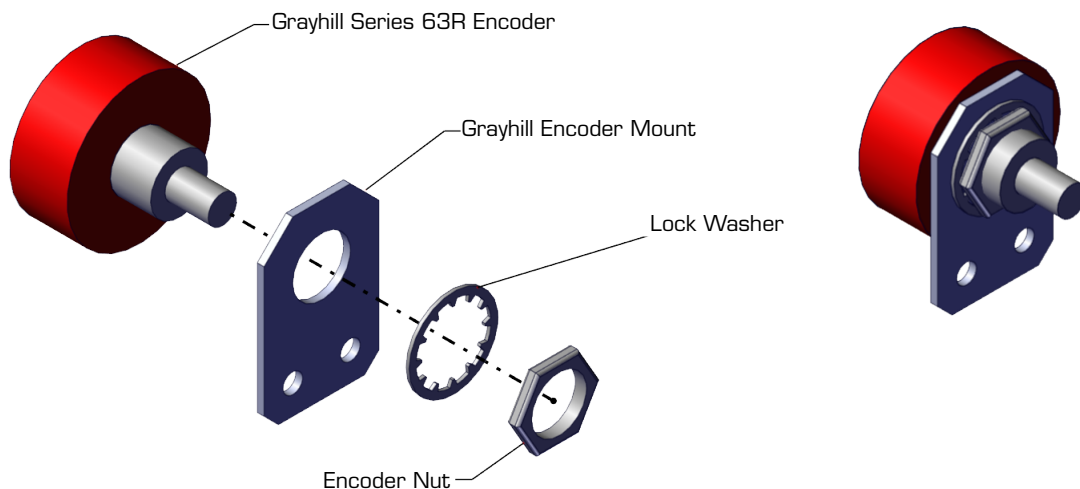
Insert the output shaft in the bearing. Then, slide on a 1/2" hex shaft collar and the included gear. Do not tighten the shaft collar.

**Step 4:**

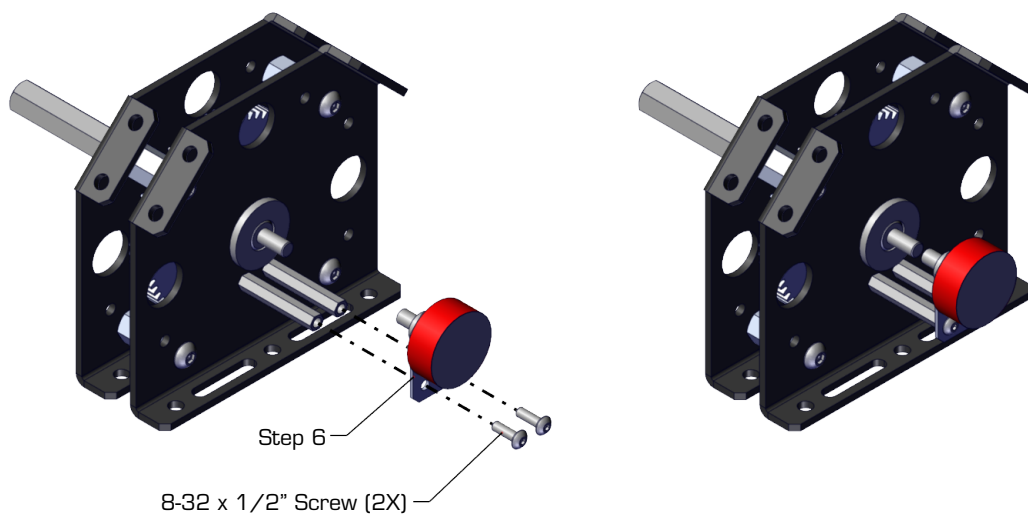
Slide a 1/2" Hex Bearing on the Output Shaft and use (4X) 1/4-20 x 1/2" screws to mount a second gearbox plate as shown.

**Step 5:**

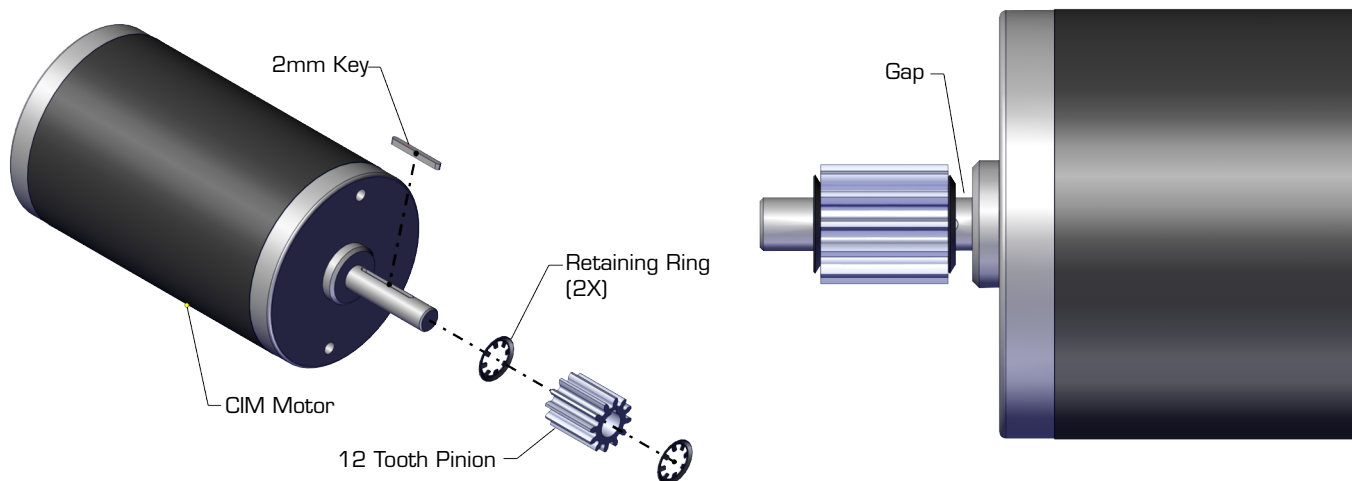
Slide the gear and shaft collar all the way forward as shown, and tighten the shaft collar.

**Step 6:**

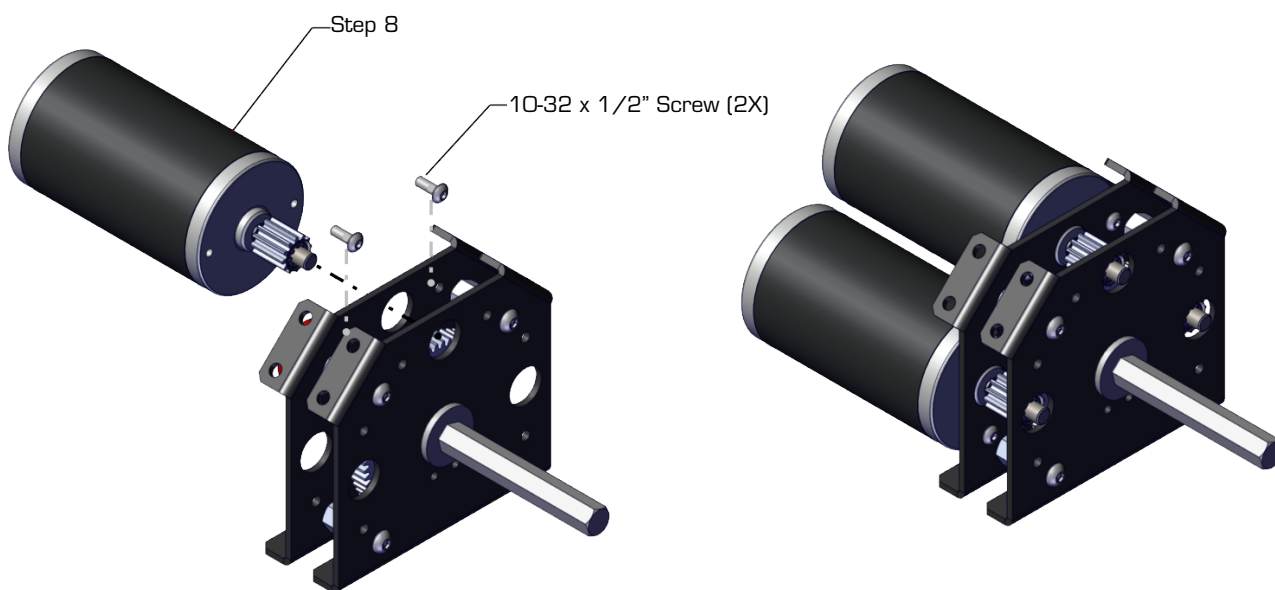
If using a Grayhill Series 63R encoder (not included), remove the nut and lock washer that come installed on the encoder. Re-install the nut and lock washer with the Grayhill encoder mount as shown above.

**Step 7:**

If using a Grayhill Series 63R Encoder, use (2X) 8-32 x 1/2" screws to mount the encoder assembly from Step 6 as shown. A coupler for the encoder is NOT provided. A 1/4"-1/4" shaft coupler will need to be provided by the user (McMaster part number 61005K311 or 6208K441).

**Step 8:**

Use a socket to press a retainer ring onto the shaft of a CIM motor. Push the ring to the back of the keyway, but DO NOT allow it to contact the housing of the CIM motor. The "teeth" of the retaining ring should point away from the motor. Insert a 2mm key into the keyway of the CIM motor and slide the 12 tooth pinion gear on. Retain the pinion gear with a second retaining ring as shown. Repeat for up to (3X) motor assemblies.

**Step 9:**

Install up to (3X) motor assemblies using (2X) 10-32 x 1/2" screw per motor as shown.