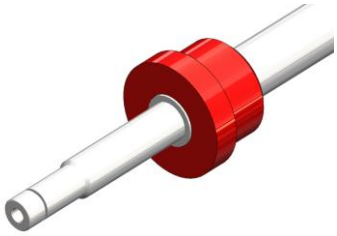
AndyMark DART 12”

Part Number	Description	QTY
am-3262	Brass Nut for Lead Screw	1
am-3257	DART 12 Lead Screw	1
am-3253	DART Bearing Block	1
am-3254	DART 12 Square Tube	1
am-3255	DART Back Block with Magnet	1
am-3256	DART Ram 12 Tube and Cap	1
am-3259	DART Ram End Bearing	1
am-0031	Bearing, 3/16"ID (R3)	1
am-0209	Bearing, 3/8"ID 1614ZZ	2
am-1009	Washer, 5/16" id, flat	2
am-1028	Screw, BHCS 10-32 x 375 - Philips	8
am-1121	Machine key, 2x2x10mm	1
am-1252	Screw, FHCS 10-32 x 625	4
am-1388	Shoulder Screw, 18-8 Thread, 3/16" dia,	1
am-1389	E-clip, 5/16", Carbon Spring Steel	2
am-3260	Spacer, 0.25 th x 0.382 id x 0.625 od	2
am-3265	Pulley for Timing Belt, 30 tooth, 5/16	1
am-3268	Gear, 14 tooth, 48 dp, 20 pa, 0.1875	1
am-0033	Retainer Clip, 8mm	1
am-1012	Screw, SHCS ¼-20 x 2000	4
am-1015	Nut, Nylock ¼-20	4
am-1026	Washer, #10	2
am-1120	Screw, SHCS 10-32 x 625	4
am-1121	Machine Key, 2x2x10mm	1
am-2619	Potentiometer	1
am-2650	Spacer	2
am-3250	DART Cap Plate	1
am-3251	DART Base Plate	1
am-3259	DART Ram End Bearing	1
am-3263	Pulley for Timing Belt, 12 tooth	1
am-3267	Gear, 96T	1
am-3274	Belt, HTD 48T	1

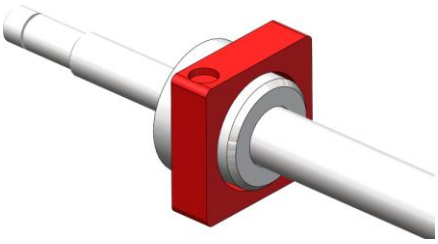
Tools Needed	Part Number
1/16" hex wrench	am-3172
3/32" hex wrench	am-3173
5/32" hex wrench	am-2751
3/16" hex wrench	am-2752
flat head screwdriver	
Phillips head screwdriver	am-2833
7/16" wrench	am-2745
1/2" wrench	am-2746
3/4" wrench	
Medium strength thread locking adhesive	am-3171
Small hammer	

Step 1: Slide 5/16" washer (am-1009) onto the other end of lead screw. Using a flat head screw driver, press the e-clip (am-1389) into groove on same end, retaining the washer onto the shaft.

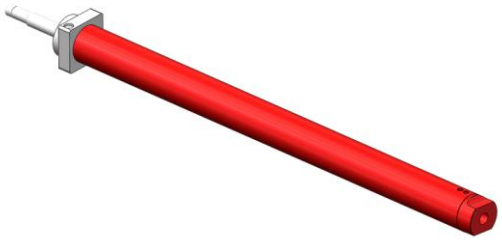
Step 2: Install Brass Nut (am-3262) onto Lead Screw (am-3257) with flange closest to the narrow end of the screw. Position nut so that the flange face is even with end of threads of the lead screw.



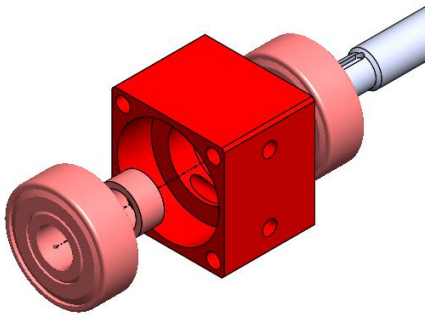
Step 3: Slide the Back Block (am-3255) onto the Brass Nut, leading with the smaller interior shoulder fitting onto the Brass Nut threads. The Back Block should be pressed all the way to the flange of the nut. This may be a tight fit, and can be screwed or tapped into position with a small hammer.



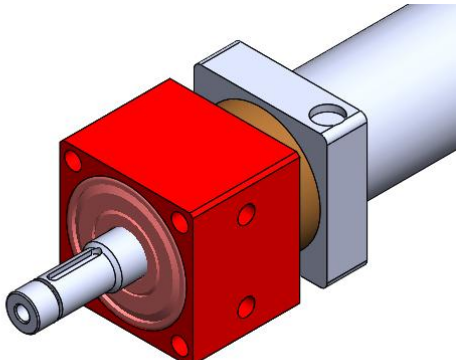
Step 4: Apply small amount of thread lock adhesive on the Brass Nut outer thread. Then, screw the Ram Tube and Cap (am-3256) onto the outer threads of the Brass Nut using a vice with a rag (to protect the brass) to hold the Brass Nut and a 3/4" wrench to tighten the end of the Ram Tube and Cap.



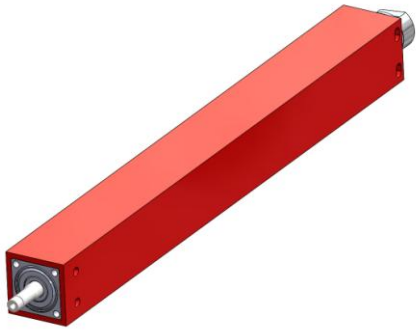
Step 5: Press the one of the 3/8" ID bearings (am-0209) into a pocket of the Bearing Block. Insert the ¼" long, 3/8" id aluminum spacer (am-3260) into the middle of the Bearing Block. Press the other 3/8" ID ball bearings into the Bearing Block pocket. Keep the spacer hole and the bearing holes aligned.



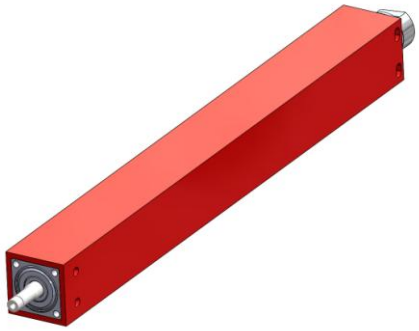
Step 6: Slide the Bearing Block onto the narrow end of the Lead Screw. Position the Bearing Block so that the face with the tapped holes is adjacent to the face of the Back Block with the magnets.



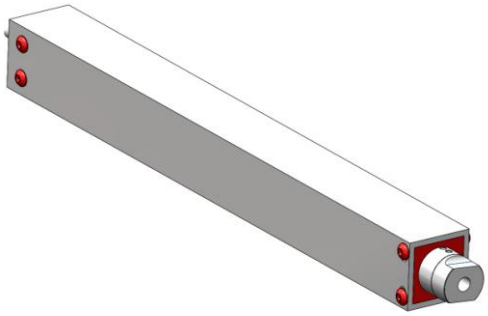
Step 7: Maintaining the position of the Back Block with magnet, slide the Bearing Block into the Square Tube (am-3254) so that the #10-32 tapped holes on the Bearing Block line up with the #10 clearance holes on the Square Tube.



Step 8: Slide on the Ram End Bearing (am-3259) over the Ram Tube and into the Square Tube so that the tapped holes on the Ram End Bearing align with the slots on the Square Tube.

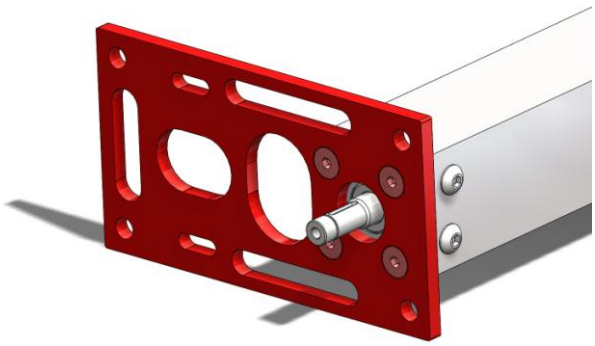


Step 9: Using 8 - #10-32 BHCS (am-1028) secure the Square Tube onto both sides of the Bearing Block and the Ram End Bearing.



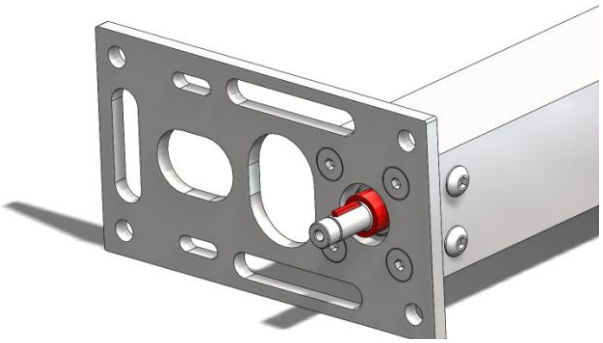
Step 10: Apply small amount of thread lock adhesive on the 4 #10-32 Flat Head Screw (am-1252) threads.

Use the 4 - #10-32 FHCS to attach the DART Base Plate (am-3251) to the bearing block. The heads of the screw should be flush with the plate.



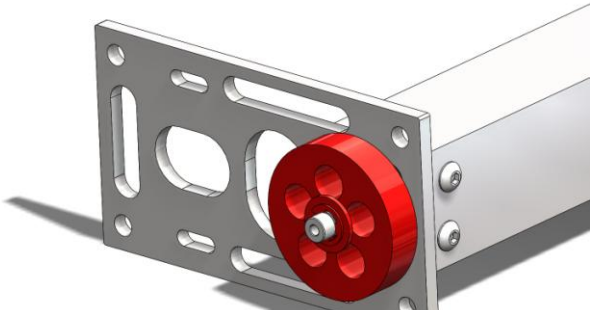
Step 11: Slide the Aluminum Spacer (am-3260) onto the exposed end of the lead screw, until it touches the inner race of the 3/8" ID bearing.

Insert the Machine Key (am-1121) into the keyway on the lead screw.



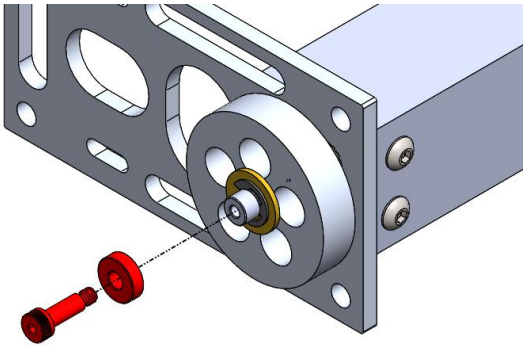
Step 12: Slide 30 tooth HTD pulley (am-3265) onto exposed end of lead screw, aligning keyway onto machine key, until pulley touches the aluminum spacer. Slide a 5/16" washer (am-1009) onto exposed end of lead screw.

Press e-clip (am-1389) into groove using a flat head screw driver.

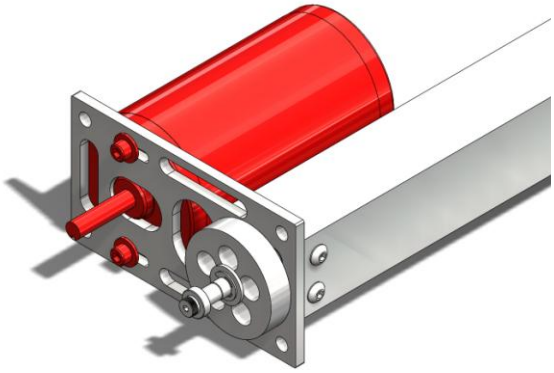


Step 13: Slide R3 bearing (am-0031) onto shoulder screw body, until bearing touches head of shoulder screw (am-1388). Slide 14 tooth gear (am-3268) onto shoulder screw body, until gear touches R3 bearing.

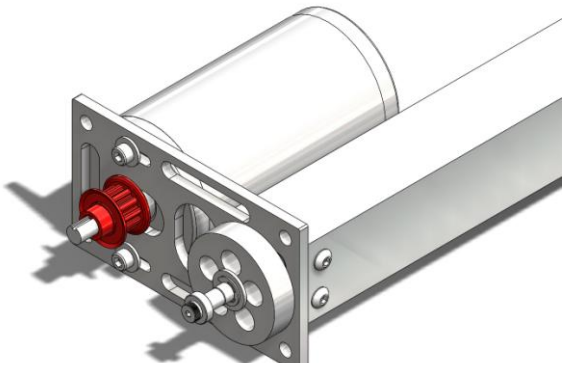
Apply small amount of thread lock adhesive on #8-32 threads of 3/16" shoulder screw, then screw it onto end of lead screw.



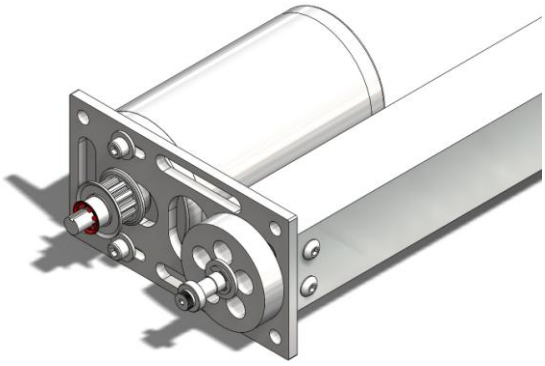
Step 14: Slide the output shaft of a CIM Motor (am-0255 not included) into the motor slot on the Base Plate. Use 2 - #10-32 SHCS (am-1120) with #10 washers (am-1026) in to attach the CIM Motor to the back side of the Base Plate. Do not tighten completely yet.



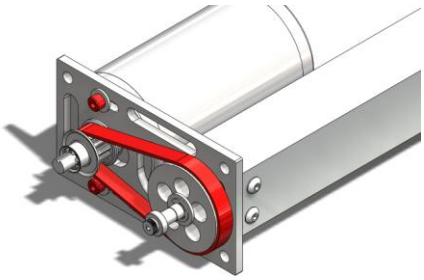
Step 15: Insert the 2x2x10mm machine key (am-1121) into the CIM Motor keyway. Slide the 12 tooth HTD pulley (am-3263) onto the CIM Motor shaft and over the machine key with the hub facing out. Press the pulley onto the shaft until the pulley face touches the CIM Motor face.



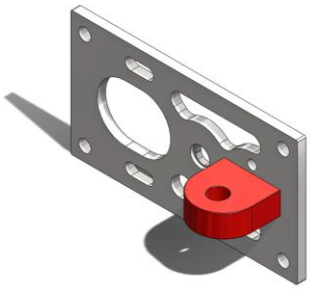
Step 16: Install the 8mm retaining clip (am-0033) over the CIM Motor shaft, pressing it on until it touches the pulley hub face. For easy installation, the opening of the 7/16" wrench can be used to press on the retaining clip.



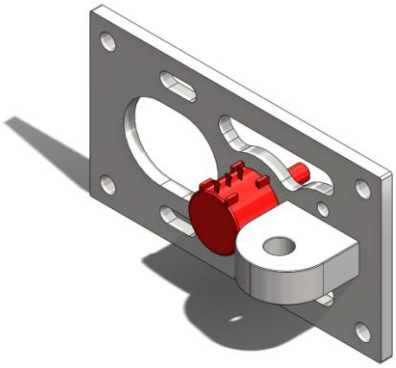
Step 17: Install the 48 tooth HTD timing belt (am-3274) into position onto both pulleys. Pull the CIM Motor away from the Square Tube so that the belt is tight on the pulleys. Ensure that the belt teeth are engaged on both pulleys. Tighten the 2 - #10 SHCS to fasten the CIM Motor in place.



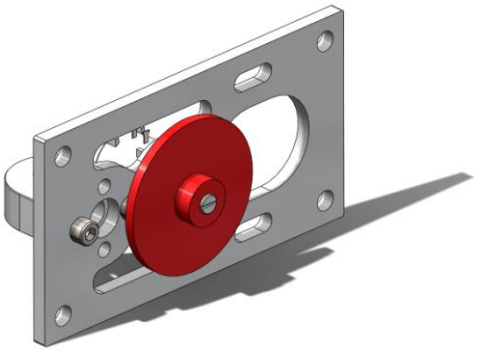
Step 18: Install Pivot Block (am-3249) on outside of Cap Plate, using 2 - #10-32 SHCS (am-1120) and 5/32" hex wrench. The outside of the Cap Plate is identified by the counter bore on the center hole in the plate (that is where the potentiometer is installed).



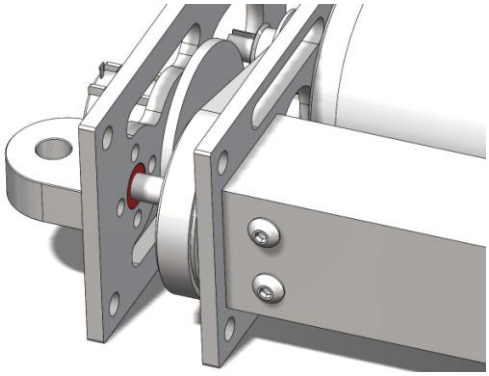
Step 19: Install potentiometer (am-2619) onto Cap Plate (am-3250), using 1/2" wrench, with counter bored portion of plate facing blue potentiometer body. Position the lock washer included with the potentiometer between the nut and the Cap Plate.



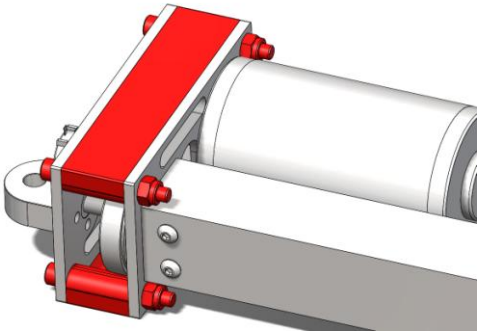
Step 20: Turn potentiometer shaft clockwise until it stops. Turn potentiometer shaft 1/2 turn counterclockwise. Install plastic potentiometer gear onto potentiometer shaft, with hub side of gear facing out.



Step 21: Install Cap Plate onto DART assembly so that the R3 bearing on the end of the lead screw fits into the bearing hole on the Cap Plate. Also, the plastic potentiometer gear will need to move slightly in order to nest the R3 bearing into the hole. This plastic gear needs to mesh with the 14 tooth gear on the lead screw shaft, but not rub against the heads of the adjacent #10-32 screws.



Step 22: Install Spacers (am-2650) on either side of the assembly, between the Cap Plate and Base Plate. Install 4 - 1/4-20 SHCS (am-1012) and Nylock Nuts (am-1015), through corner holes on Cap Plate, Base Plate, and Spacers, using 3/16" hex wrench and 7/16" wrench.



Step 23: Tighten small set screw on plastic potentiometer gear with 1/16" hex wrench.