

# AndyMark Super Shifter Assembly Instructions

August 2011



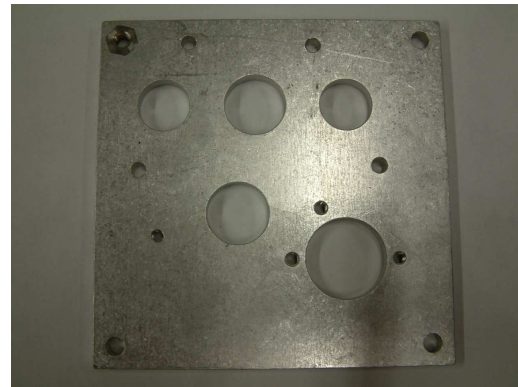
## Parts needed to make one (1) Super Shifter

Component	Qty.	Part #
¼ -20 Flush mount captive nut (PEM)	1	am-1035
SS Motor Plate	1	am-0362
½" id flanged, shielded ball bearing (FR8ZZ)	3	am-0030
¾" Id flanged, shielded ball bearing (FR6ZZ)	3	am-0028
¼ - 20 x 3 SHCS	3	am-1030
¼ - 20 Nylock Nut	3	am-1015
35 Tooth Small Output Gear	1	am-0023
4-40 x ¾ SHCS	2	am-1032
Retainer clip, 8mm id	2	am-0033
¼ - 28 Hex Nut ZP	1	am-1134
½ id, ¾ od washer Nylon 1/16 thick	1	am-1001
48 Tooth Large Output Gear w/ Dog Gear teeth	1	am-0022
10-32 x 5/8 SHCS	4	am-1120
1.702" Spacer, aluminum ¼" id ½" od	2	am-0606
¼ - 20 x 2.5 SHCS ZP	1	am-1031
40 Tooth Cluster Gear	1	am-0024
15 Tooth ¾ Hex Bore Gear	1	am-0451
10-32 x 2.5 Screw, Zinc Plate	2	am-1024
28 Tooth Medium Cluster Gear	1	am-0025
8-32 x ½" SHCS ZP	4	am-1037
2mm x 2mm x 14mm Machine Key	2	am-0032
20 Tooth Drive Gear	1	am-0186
External Klipping for ½"	1	am-0206
45 Tooth Drive Gear	1	am-0185
1/8 x 0.40 Machine Key	1	am-1018
CIM Gear, 12 Tooth	2	am-0018
SS Cluster Shaft	1	am-0536
AM Shifter Cylinder Plate	1	ip-076_d02
SS Wheel Shaft	2	am-0125
Dog Gear	1	am-0020
Encoder Bracket w/ Servo Mount	1	am-0574
#10-32 x ½ SHCS ZP	2	am-1002
SS Shaft Plate	1	am-0361
Super Shifter Box Extrusion	1	am-0363
½" id Bearing (R8)	1	am-0029
RD Brass Tubing ½ x .442 x 0.565/0.585	1	am-0712
5/16 id Flat Washer 33114	8	am-1009
SS Hex Shaft	1	am-0131
Shift Block and Assembly	1	am-0293
¾" id flanged bearing (FR6)	1	am-0027
RD Brass Tubing .25 x .014 x 335"	1	am-0300
M2.5x20mm SHCS	1	am-1133

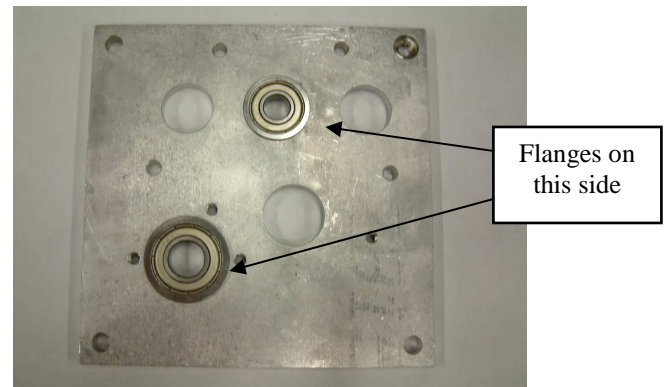
## Tools needed:

5/32 Hex Driver (allen wrench)
3/16 Hex Driver (allen wrench)
7/16 Wrench
Arbor Press
2mm Hex Driver (allen wrench)

Step 1: Press the PEM nut into the motor plate.



Step 2: Press the FR8ZZ and FR6ZZ bearings into the motor plate.



Step 3: Press an FR6 bearing into the flat side of the 35-tooth output gear.



Step 4: Insert the gear over the small end of the Super Shifter hex shaft.



Step 5: Place an FR6ZZ bearing over the shaft, with the flange facing the 35-tooth gear.



Step 6: Insert the shift block through the small brass spacer and shaft assembly into the SS hex shaft hole.



Step 7: Attach the dog gear to the shift block and assembly with loctite in the 2.5mm screw.



Step 8: Press the assembly into the motor plate.



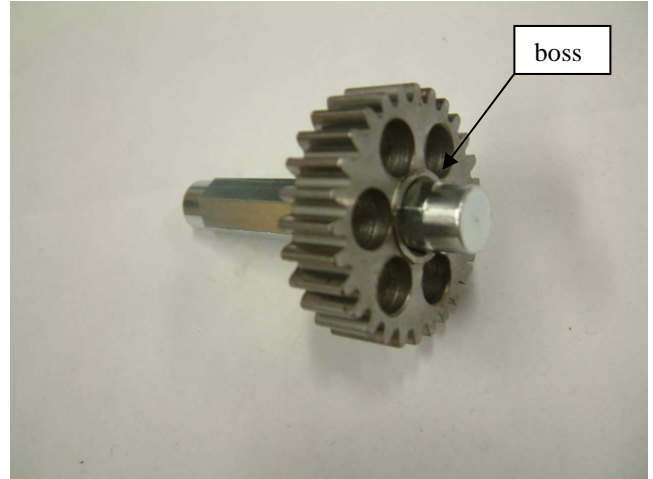
Step 9: Press an R8 bearing into the 48T output gear.



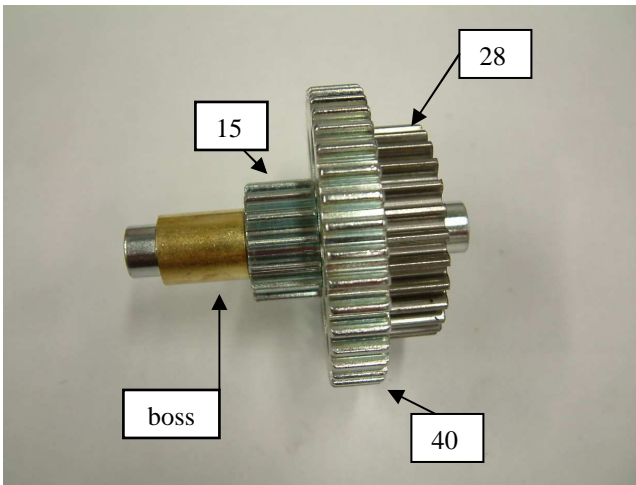
Step 10: Place the gear with the cut-out side on the SS hex shaft towards the dog gear.



Step 11: Take the SS cluster shaft and place the 22T gear with the boss facing away from the middle.



Step 12: Slide the 40T gear, the 15T gear, and the brass spacer onto the backside of the 28T gear.



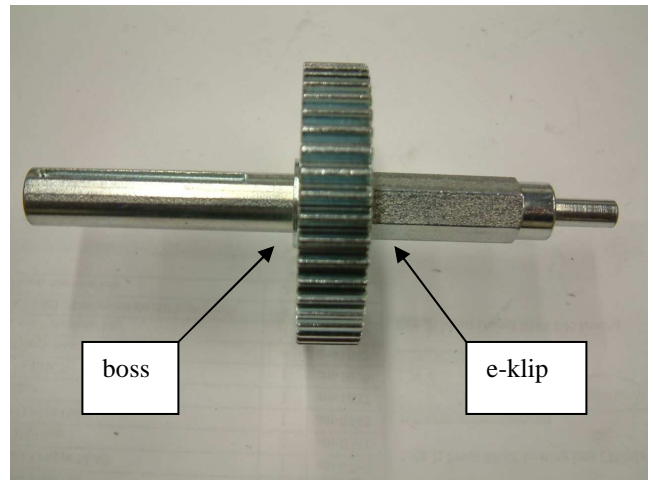
Step 13: Place the black nylon washer over the FR6ZZ bearing. Install the cluster assembly into the bearing.



Step 14: Place the machine key on the SS hex shaft. Insert the 20T drive gear onto the shaft.

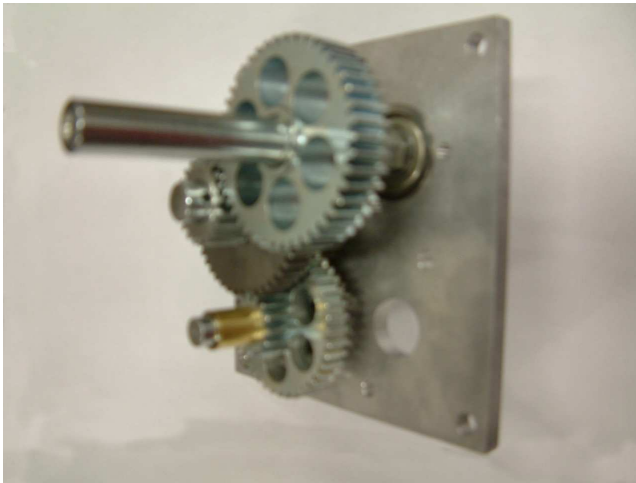


Step 15: Insert the 1/2" e-Klip onto the SS output shaft. Place the 45T gear on the SS output shaft.

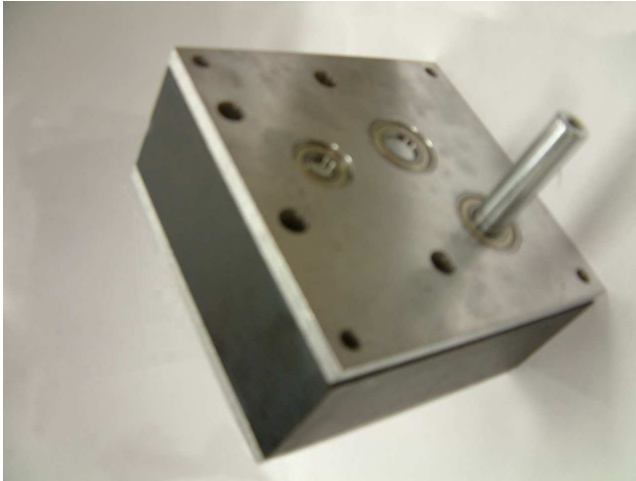




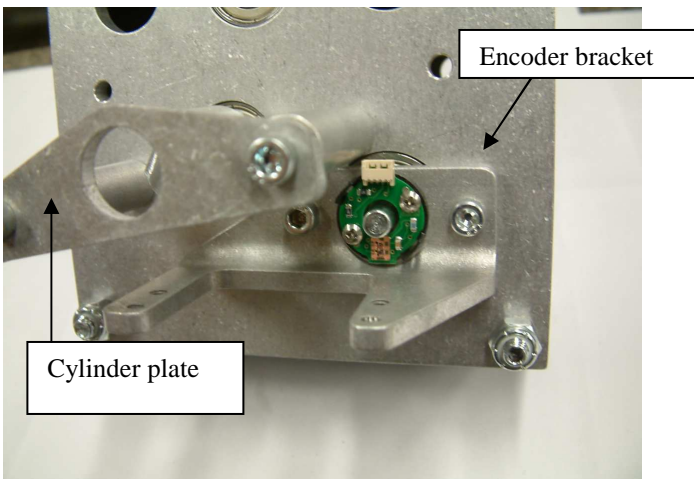
Step 16: Insert the small end into the FR8ZZ bearing on the motor plate.



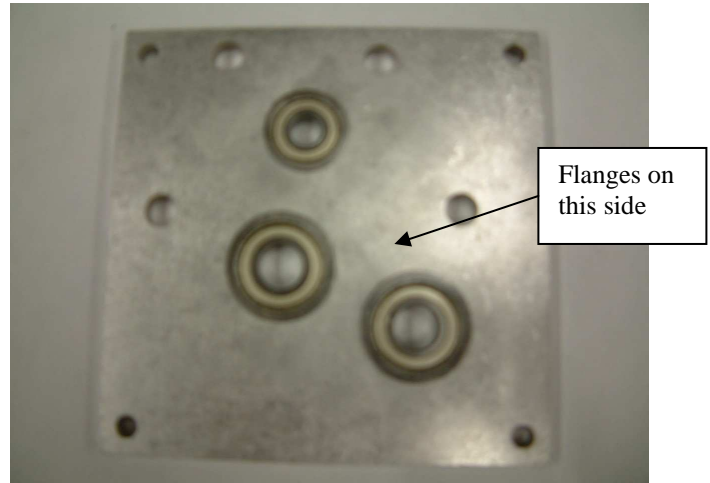
Step 18: Grease the gears and place the SS housing over the motor plate. Slide the output plate over the shaft.



Step 20: Using the 10-32 x 2 1/2 screws, mount the cylinder plate and the 1.8 spacers on the motor plate. Mount the encoder onto the encoder bracket with servo mount.



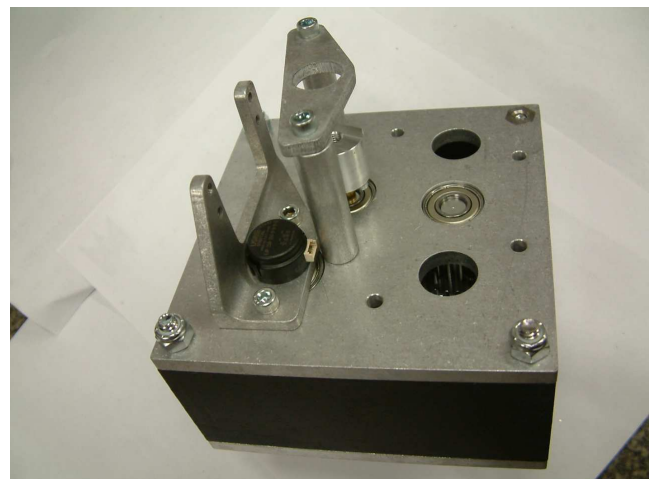
Step 17: Press two FR8ZZ bearings and one FR6ZZ bearing into the output plate.



Step 19: Screw the 1/4 - 20 x 2 1/2" screws into the press-in nut, and the 1/4 - 20 x 3" into the exterior holes.



Step 21: Mount the encoder bracket onto the motor plate by using 10-32 x 1/2" screws. Press the encoder disk onto the shaft over the encoder so that the outer face of the encoder disk is flush with the tips of the encoder mount clips. Press the encoder cap over the encoder.



*For more information on AndyMark products, please visit our website, [www.andymark.com](http://www.andymark.com).*