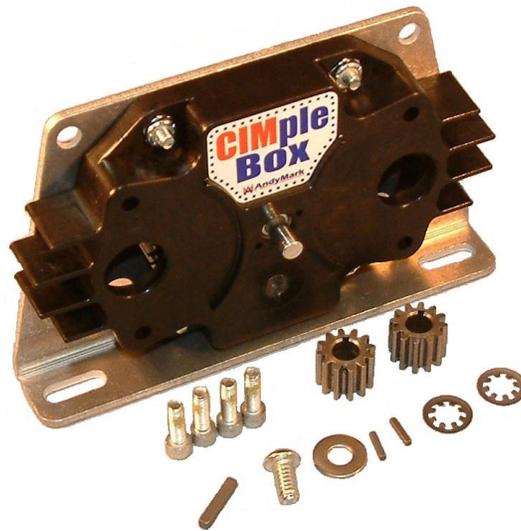
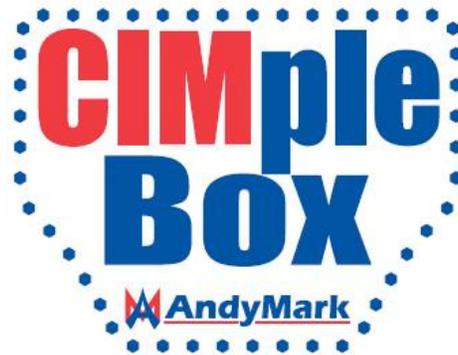


CIMple Box Assembly Guide



Version 1

Nov. 29, 2010

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CIMple Box Overview and Specifications

The AndyMark CIMple Box gearbox (am-0734) is a single stage, spur gearbox. .

The CIMple Box is provided in kit form, unassembled. Full assembly instructions are included in this manual, and on the www.andymark.com website. Each CIMple Box includes all parts to mount two 2.5" CIM Motors as input devices. A US Digital E4P encoder fits onto the CIMple Box in between the two motor mount locations.

Gears:

- AGMA 620 dp, 14.5 deg. pressure angle
- Material: cold-formed 4140 steel

Gear Sizes:

- CIM Gear: 12 tooth (0.314" inside diameter with 2mm keyway)
- Large Output Gear: 56 tooth (1/2" hex bore)

Gear Ratio:

- 4.67:1 (56/12)

Output Shaft:

- 1/2" diameter 4140 steel shaft, with 1/8" wide keyway
- 1/4-20 x 1/2" deep threaded hole at end
- 1 machine key, washer and 1/4-20 screw are provided

Materials:

- Housing: Nylon 6/6 with long fiber fill
- Shaft Plate: 5052 aluminum
- Gears: 4140 steel

CIMple Box (am-0734) Bill of Material and Part Photos

Component	Qty	Part Number	Part Photo
1/2" id flanged, shielded ball bearing (FR8ZZ)	1	am-0030	
Retainer clip, 8mm id	2	am-0033	
Grease Packet, 2 gram	1	am-0448	
3/8" id bearing, shielded (R6ZZ)	1	am-0516	
CIMple Box Shaft Plate	1	am-0738	
CIMple Box Housing	1	am-0739	
CIMple Box Output Shaft	1	am-0740	
12x520 CIM Gear	2	am-0741	
56 Tooth Output Gear	1	am-0742	

1/4 id Washer	1	am-1027	
1/4-20 x 1/2 BHCS	1	am-1039	
10-32 Nylock Nut	4	am-1042	
1/8 x 1/8 x 0.7 machine key	1	am-1043	
10-32 x 5/8 SHCS w/ nylon thread lock patch	8	am-1120	
12x2x10mm machine key	2	am-1121	

On www.andymark.com, the fasteners in this Bill of Materials can be purchased in larger quantities.

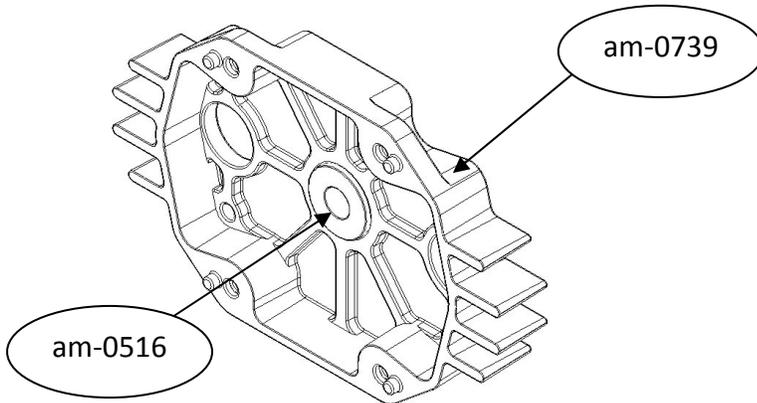
[am-1217](#) = 100 of am-1027

[am-1202](#) = 10 of am-1039

[am-1212](#) = 50 of am-1042

CIMple Box Assembly Instructions

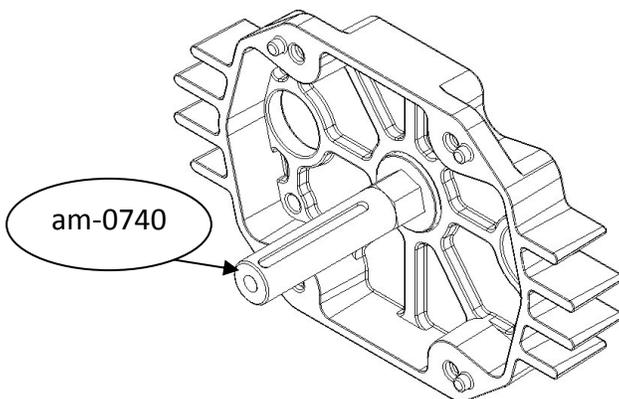
Step 1: Press R6ZZ bearing into CIMple Box Housing.



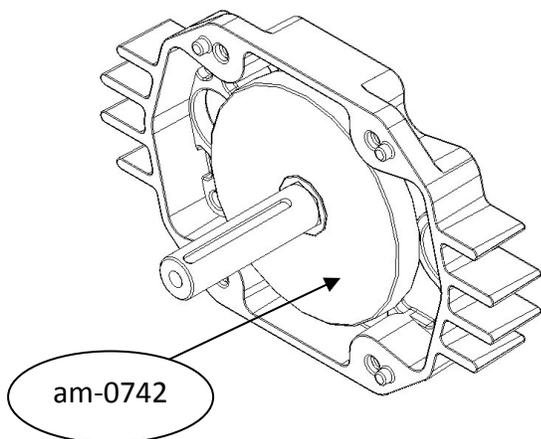
Tip:

Use an arbor press, or tap lightly with a wood block (to avoid damage to the bearing).

Step 2: Insert Output Shaft into bearing.



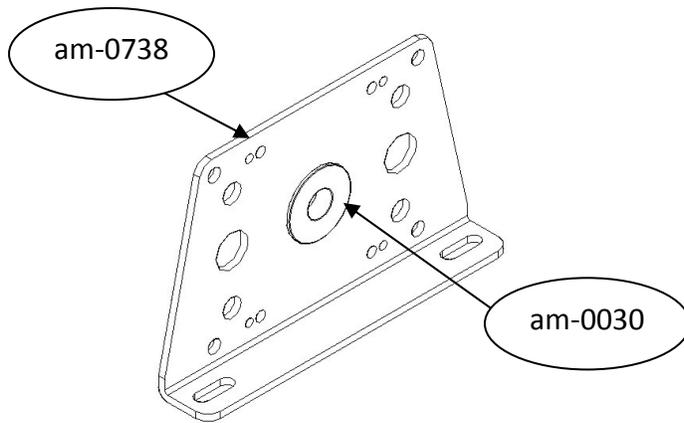
Step 3: Insert 56 Tooth Output Gear onto Output Shaft.



Tip:

The 1/2" hex hole in the gear should slip over the 1/2" hex portion of the Output Shaft.

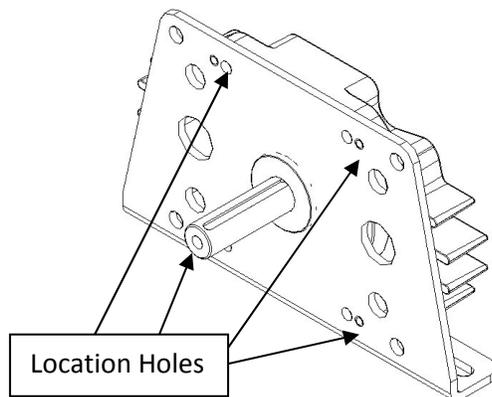
Step 4: Insert FR8ZZ Bearing into Shaft Plate.



Tip:

Use an arbor press, or tap lightly with a wood block (to avoid damage to the bearing).

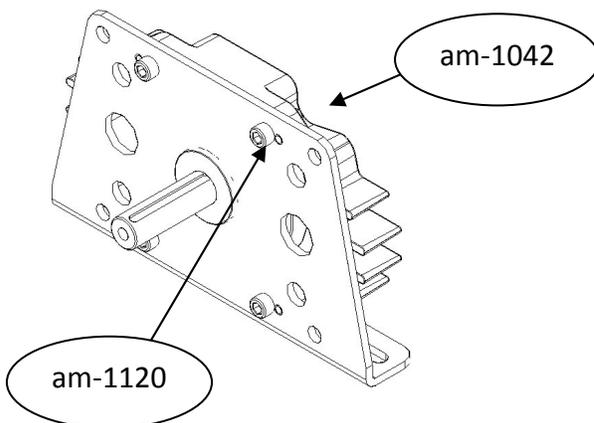
Step 5: Slide the Shaft Plate and FR8ZZ Bearing onto the Output Shaft. This will be a tight slip fit. The four locating nubs on the Housing will line up with the four location holes on the Shaft Plate.



Tip:

Be sure that the FR8ZZ flange is inside of the housing. If it is on the outside of the plate, this bearing will eventually fall out.

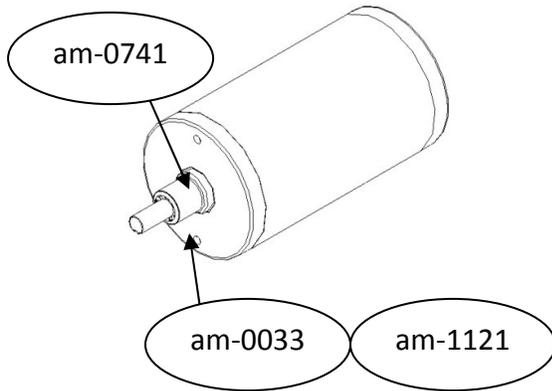
Step 6: One at a time, install 4 Nylock Nuts in the hex pockets on the back side of the Housing. Screw a 10-32 x 5/8" screw into each nut.



Tip:

You won't need a wrench to hold the nut. Just hold it into the pocket with your finger as you are driving the screw with a 5/32" allen driver.

Step 7: Insert the 2x2x10mm Machine Key onto the CIM Motor keyway. Then, slide on the 12x520 CIM Gear so that it almost touches the motor. Lastly, press on the 5/16" Retaining Ring onto the motor shaft to keep the CIM Gear in place.

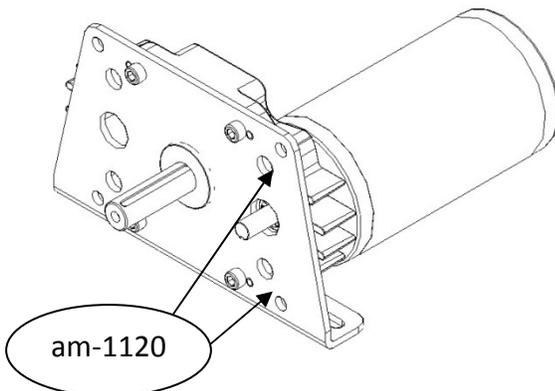


Tips:

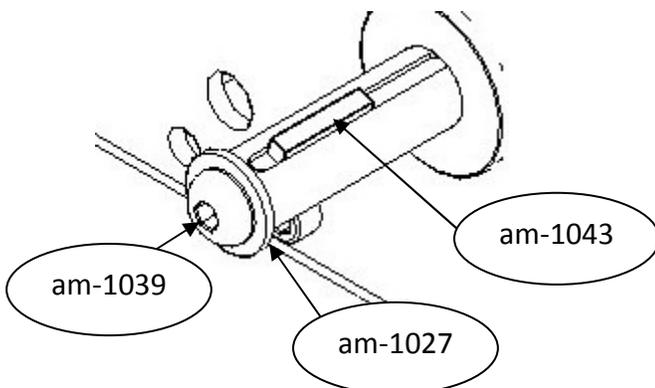
The retaining clip has small tongs on its interior. Line up one of these tongs to fit into the keyway, and the machine key won't back out.

Use a 3/8" socket driver to push the retaining ring into position.

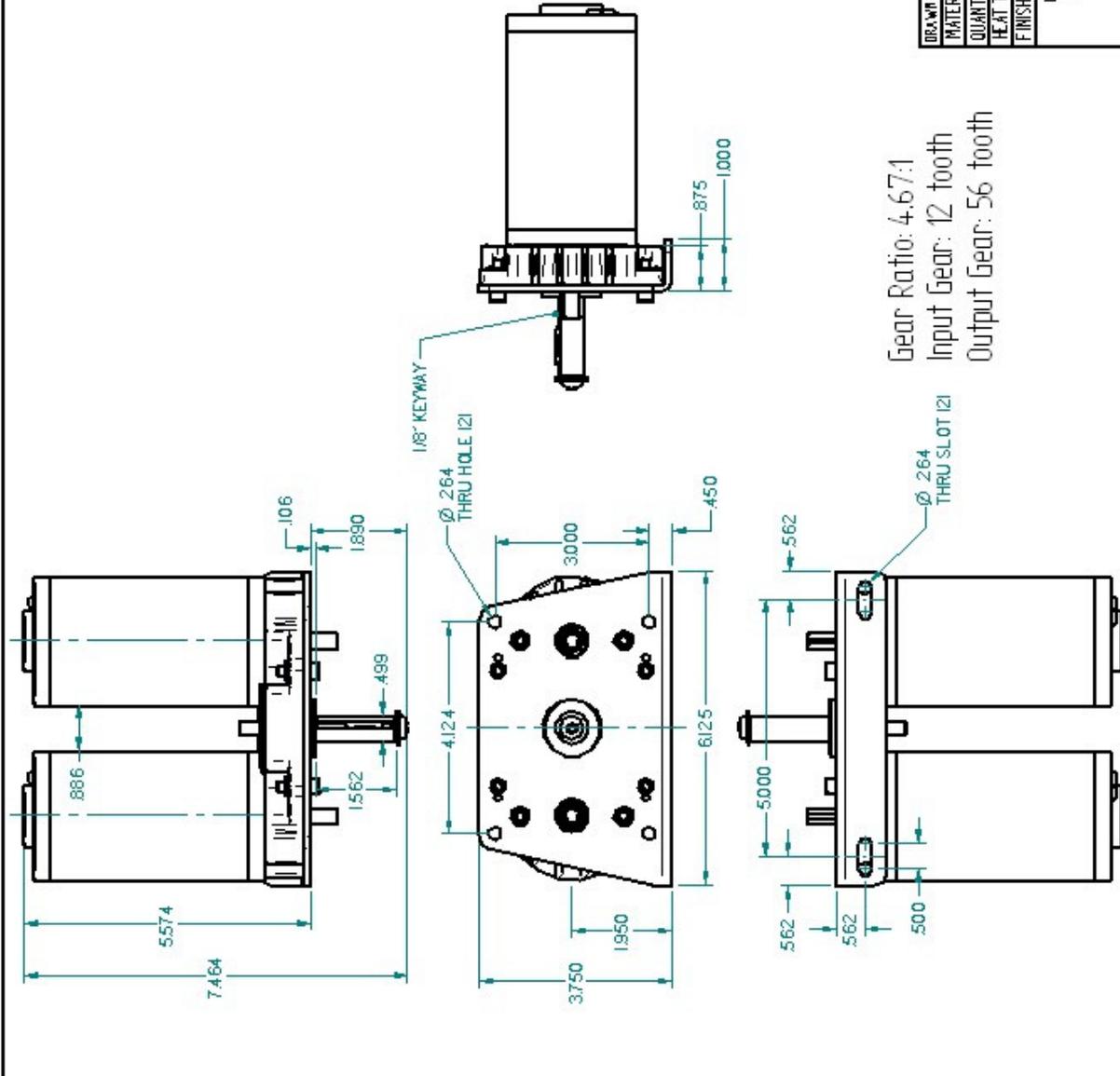
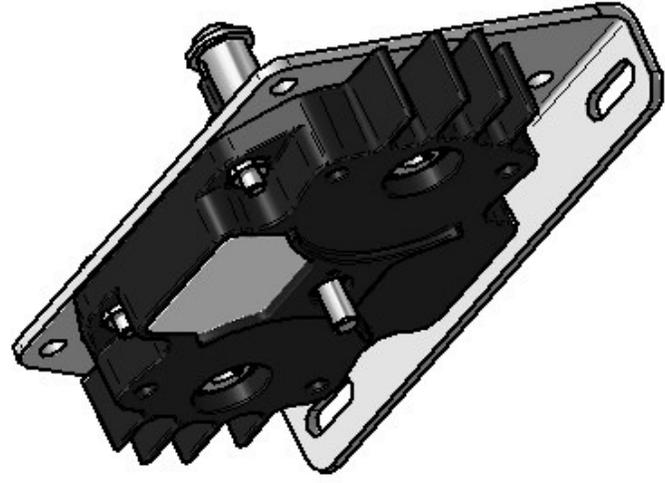
Step 8: Slide the CIM Motor into one of the two motor locations on the back side of the Housing. Use two 10-32x5/8" Screws to fasten the motor in place.



Step 9: Place the 1/8x1/8x0.7" Machine Key into the 1/8" wide keyway on the Output Shaft. Don't keep it there, since you won't really install this machine key until you put the sprocket on the Output Shaft. Use the 1/4" Washer and Button Head Screw to capture the sprocket on this shaft (eventually).



REVISION HISTORY		DATE	APPROVED
REV	DESCRIPTION		



DRAWN	Andy Baker	11/26/10
MATERIAL	ANDYMARK.BIZ	
QUANTITY	STANDARD SOLUTIONS FOR COMPETITOR ROBOTS	
HEAT TREAT	Cimple Box	
FINISH	TUMBLER OR BRUSHED	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES ANGLES =05°		
SIZE	T00610	REV
AS		1
FILE NAME:	Cimple Box.dft	SCALE:
WEIGHT:	SHEET 1 OF 1	