

## 1. Introduction

# Easy Roller Module

## Versatile Robot Wheel Mounting System

### Features

- ◆ 12V – 200RPM – 3.6KG•CM torque DC gearhead motor
- ◆ High traction plastic O-ring wheel, or neoprene foam wheel
- ◆ Sturdy aluminum wheel mount
- ◆ Mounting hardware included

### 1.1 Description

The Easy Roller Module was designed to simplify mechanical mounting requirements for small robotic projects. This product replaces mechanical mounting systems with a dependable solid structure and provides an easy-to-implement method of engineering a skid-steering drive system.

The Easy Roller kits include a 12V DC motor with a .25" motor shaft and a 2mm rear encoder shaft. The rear shaft can be used with our ENC300 optical encoder if motor position control is desirable.

When used in conjunction with a 1-2A DC motor controller a complete skid-steering drive control system may be rapidly implemented.

### 1.2 Parts List

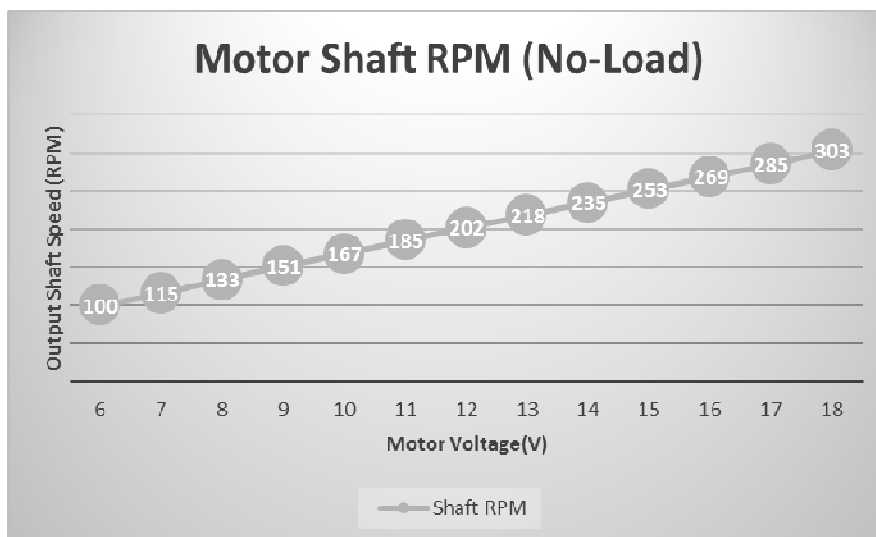
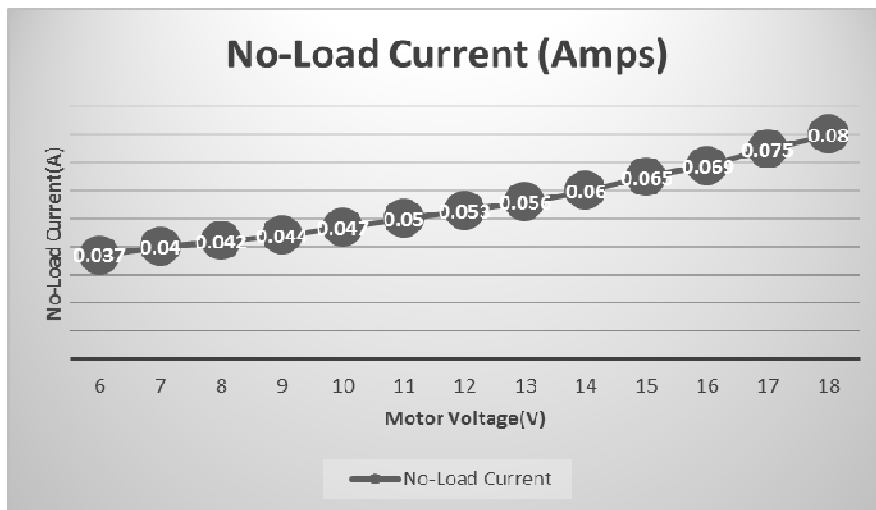
If you purchased an Easy Roller Module your product should have been shipped with the following hardware and components. If you are missing components and you purchased the product from Solutions Cubed, call Solutions Cubed immediately and request the missing components. If you purchased your product from one of our distributors please return your product to the distributor.

Item Number	Quantity	Part Reference	Description
1	1	MM1_BLUE, MM1_BLAk, or MM1_SILV	Aluminum motor mount, blue, black, or silver
2	1	MOTOR1	12V gearhead motor with 2mm encoder shaft
3	4	B1, B2, B3, B4	6-32 x 5/8" machine screw – UNC
4	4	N1, N2, N3, N4	6-32 hex nut – UNC
5	4	W1, W2, W3, W4	#6 split lock washer
6	4	W5, W6, W7, W8	#6 flat washer
7	4	B5, B6, B7, B8	M3-0.5 x 8mm screw
8	4	W9, W10, W11, W12	M3-0.5 lock washer
9	1	WHEEL1 or WHEEL2	Foam wheel 2.5" x 1.5" (WHEEL1) or plastic friction wheel 2.125"D x 0.5" (WHEEL2) plus required mounting hardware and tools

## 2. Easy Roller Specifications and Assembly

### 2.1 DC Gearhead Motor Characteristics

Characteristic	Value	Unit
<b>MOTOR1</b>		
Operating voltage	4.5-18	V
Startup torque (kilogram-force centimeter)	3.6	KG•CM
Startup torque (inch-pound)	3.1	Inch•lbf
Gear ratio	30:1	
No-Load Current (12V)	0.053	A
Stall Current	1.5	A
No-Load Speed (12V)	200	RPM

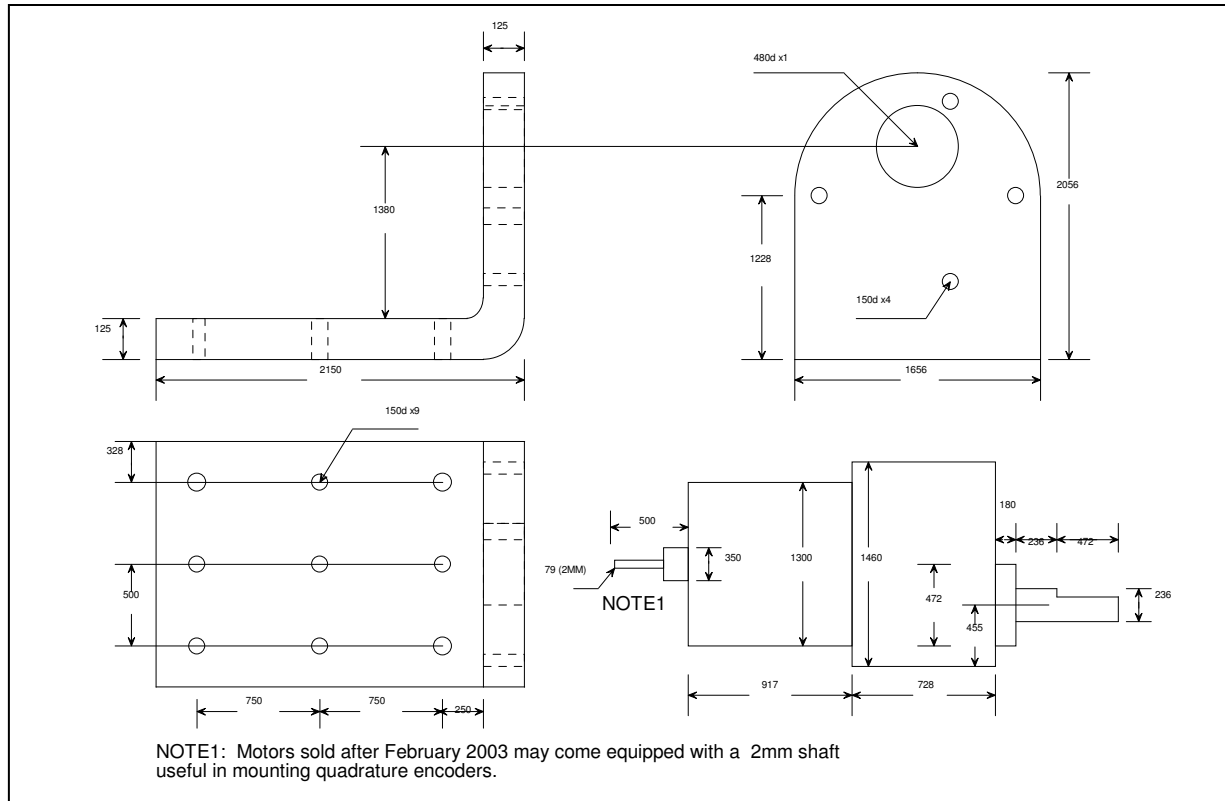


**2.2 Wheel Dimensions**

Characteristic	Value	Unit	Characteristic	Value	Unit
<b>WHEEL2</b>			<b>WHEEL2</b>		
Wheel width	0.688	Inch	Wheel width	1.5	Inch
Wheel diameter	2.125	Inch	Wheel diameter	2.5	Inch
Color	White		Color	Black	
Material	Plastic/O-ring		Material	Foam	
Set screw tool	1/16		Set screw tool	3/32	

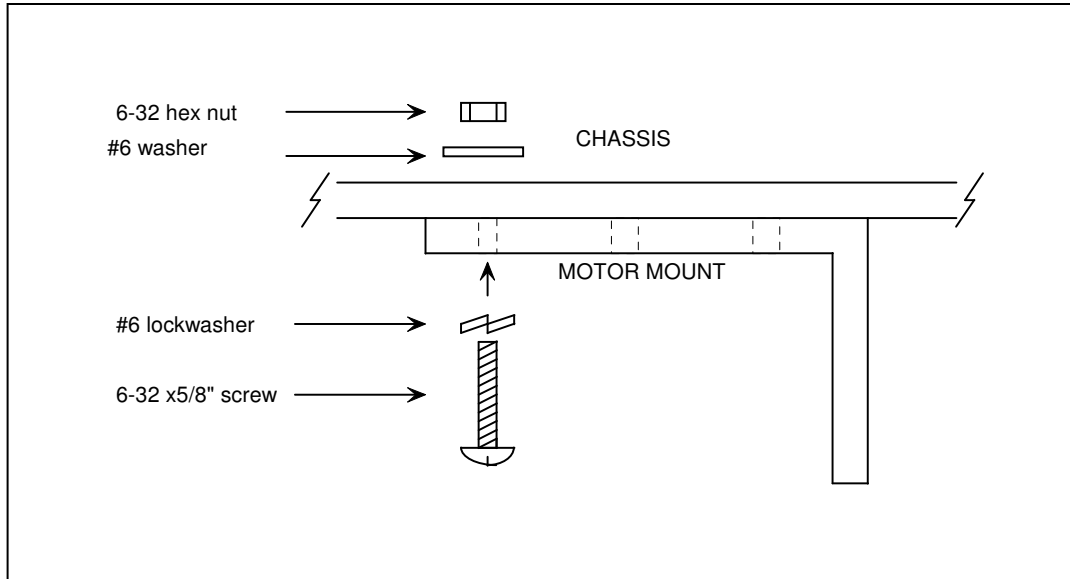
**2.3 Mechanical Dimensions**

All dimensions listed below are in mils (0.001 inches).

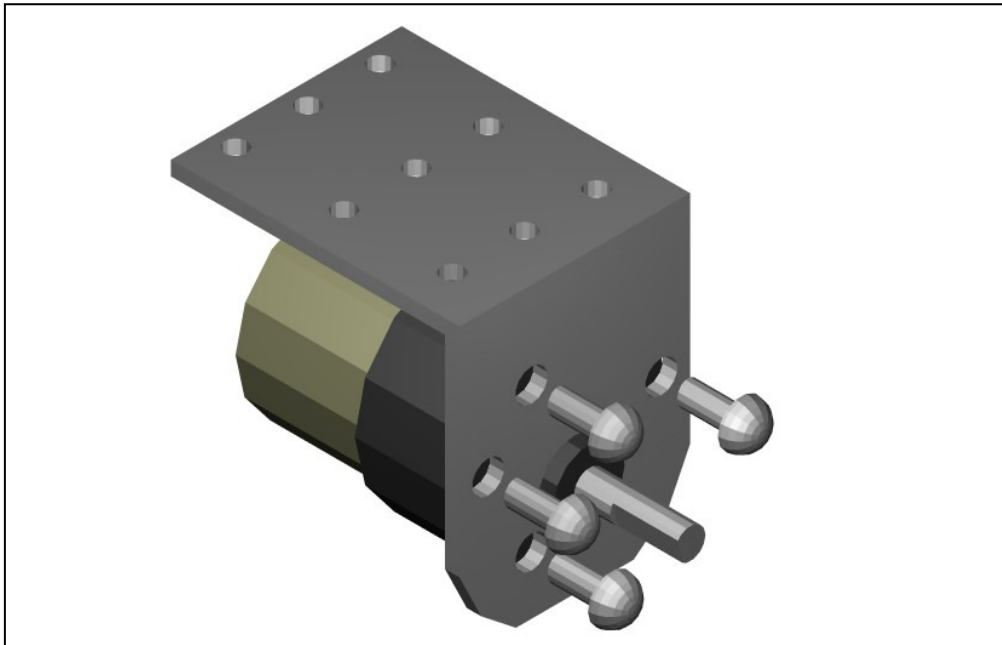


## 2.4 Assembly Instructions

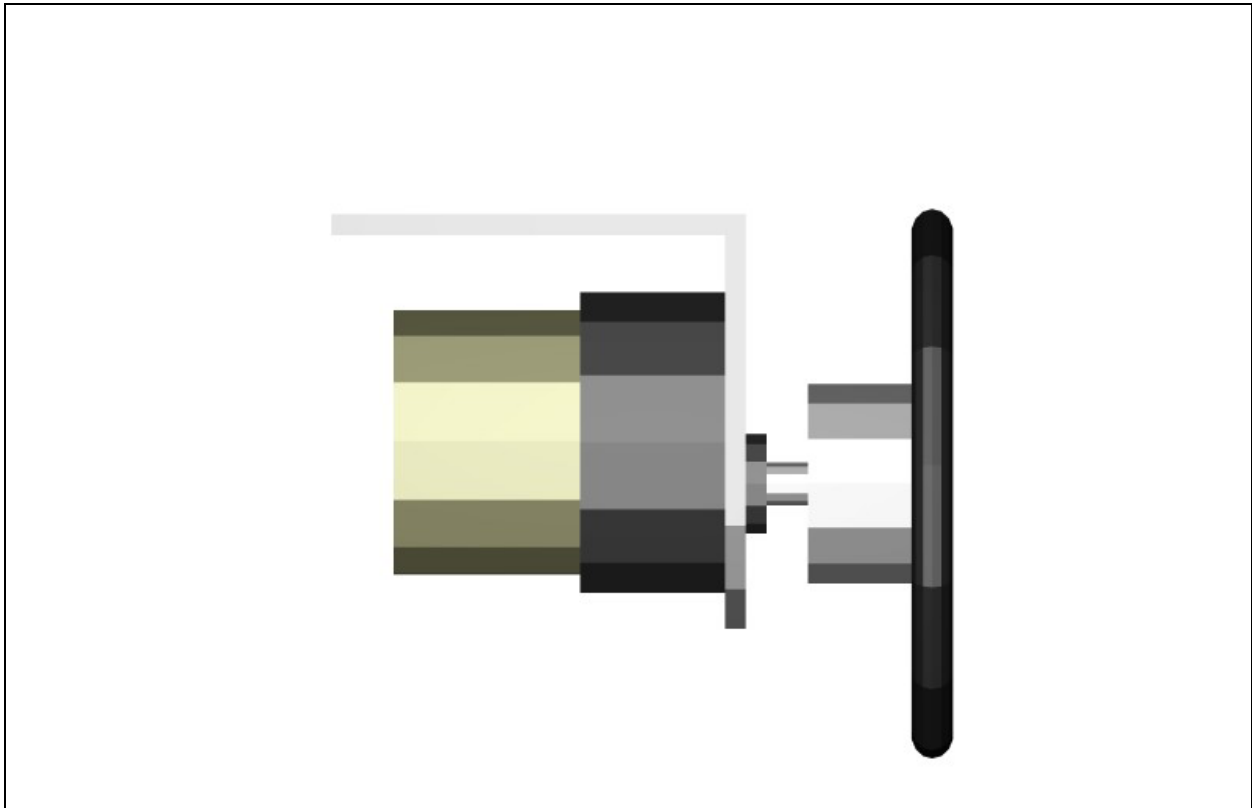
**STEP1:** Drill two to four mounting holes in your robot chassis using the aluminum motor mount as a template for marking the holes. The holes should be large enough to fit the 6-32 x5/8" machine screws. Then apply the mounting hardware as shown in the diagram below.



**STEP2:** Mount the DC gearhead motor to the aluminum motor mount. Rotate the motor so that all four mounting holes can be seen through the holes in the face of the motor mount. Apply the M3-0.5 x 8mm screws and lockwashers. All four motor mount screws should be applied.



**STEP3:** WHEEL2 shown. For WHEEL1 mount foam wheel to aluminum hub then attach hub to motor shaft. Use the “L” shaped Allen wrench to tighten the set screw against the flat of the motor shaft for both wheels.



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**Life Support Policy:** Solutions Cubed does not authorize any Solutions Cubed product for use in life support devices and/or systems without express written approval from Solutions Cubed.

**Warranty:** Solutions Cubed warrants all Easy Roller Modules against defects in materials and workmanship for a period of 90 days. If you discover a defect, we will, at our option, repair or replace your product or refund your purchase price. This warranty does not cover products that have been physically abused or misused in any way.