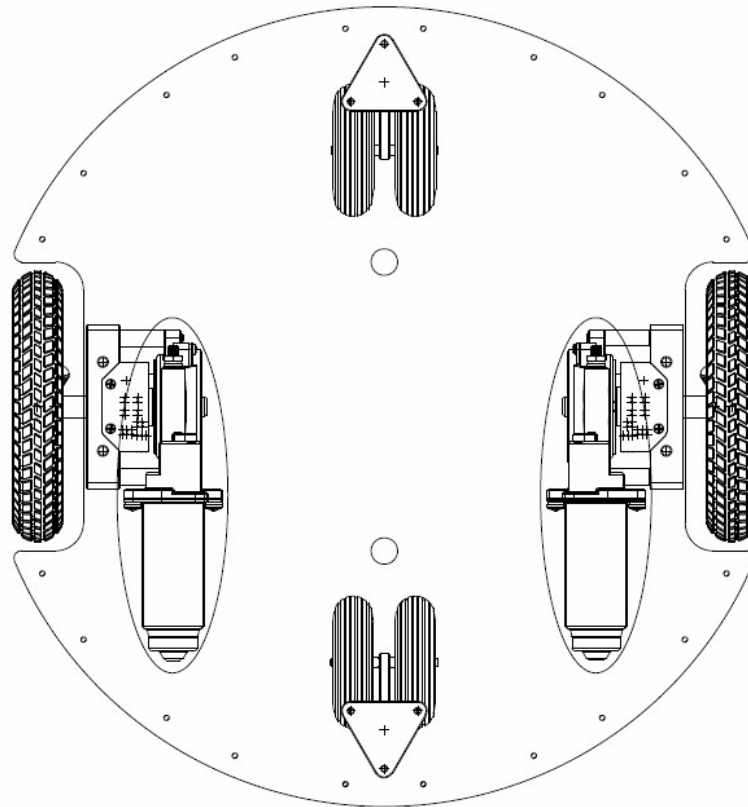


## Robot Base Kit (#28975)

Plywood and hardware set for the 12V Motor Mount and Wheel Kit

### General Overview

The Robot Base Kit is a plywood platform kit for the 12V Motor Mount and Wheel Kit (#27971) and the Caster Wheel Kit (#28971). With this kit you will be able to build a nearly complete robot, pending addition of your choice of processor and sensors. This is not a complete ready-to-run robot kit. Larger, expensive robots are customized and assembled in many unique styles, and no attempt was made to make every decision on behalf of the customer since robot building involves many personal choices.



## Features

- 18" diameter round robot base provides zero-turn radius
- Pre-drilled mounting locations for two motor bearing blocks
- Pre-drilled mounting locations for up to 10 Ping))) Ultrasonic Sensors and Protector Stands
- Pre-drilled mounting locations for two caster wheels
- Under-carriage battery pack mount location for 12V 7Ah batteries (designed for Power-Sonic PS-1270 or PS-1272 sealed lead-acid batteries)

## Kit Contents

- Robot Base made from 1/2" Maple Solid Core 9-layer Plywood
- Battery Pack holder made from 1/4" Maple Solid Core 5-layer Plywood
- (4) 1/4x20 1/2" long stainless steel hex socket button head screws
- (4) 1/4x20 3/4" long stainless steel hex socket button head screws
- (8) 1/4" stainless steel washers
- (6) 6-32 3/4" long stainless steel socket cap screws
- (6) 6-32 nylon insert nuts
- (6) 6-32 stainless steel washers

## Plywood Finishing Tips

The plywood parts in this kit were cut on a CNC router with 0.003" precision. Curved surfaces will have some stepped patterns and edges will have minor splintering and sawdust. The plywood parts should be sanded and sealed prior to being used as a robot. Some tips:

- (1) Initial sanding should be done with 220 grit with the grain of the wood.
- (2) Remove all dust before applying any finish.
- (3) Recommended finish is a brush or spray-on water-based polyurethane (Varathane water-based polyurethane will produce excellent results)
- (4) Sand with 360-600 grit sandpaper after initial finish
- (5) Apply a second and third coat of the same finish
- (6) Paint any colors by masking off areas you wish to protect from spray.

## Assembly Instructions

- (1) Attach the two 12V Motor Mount and Wheel Kit bearing block to the bottom of the robot base using (4) 1/4-20 3/4" long stainless steel button head screws.
- (2) Attach the battery pack holder to the bottom of the bearing block using (4) 1/4-20 1/2" long stainless steel button head screws
- (3) Attach the front and rear Caster Wheel kit using (6) 6/32 x 3/4" socket cap screws and (6) 6/32 nylon insert lock nuts.

Your battery should also be secured to the battery pack holder to prevent fore/aft movement. If you are using the recommended Power-Sonic battery then some double-sided sticky tape or Velcro should do the job. A more permanent solution is to attach some 1/2" x 1/2" angle aluminum to the bottom of the battery pack holder.

## Parts Required to Build a Complete Robot

- (1) Robot Base Kit (#28975)
- (1) 12V Motor Mount and Wheel Kit (#27971)
- (1) or (2) Caster Wheel Kit (#28971)
- (2) HB-25 Motor Controllers (#29144)
- (10 Ping))) Ultrasonic Distance Sensors (#28015)
- (10 Ping))) Protector Stands (#725-28015)
- (10) 14-inch 3-conductor extension cables (#805-00012)
- BASIC Stamp or Propeller Boards with Processors
- Common electronic components and hardware
  - ✓ 16-18 AWG wire for battery
  - ✓ Crimp-style battery terminal connections
  - ✓ Power switches
  - ✓ Machine screws to mount the various boards to the robot base

## Open-Source under Creative Commons

The drawings for this product are available under the Creative Commons Attribution 3.0 license. They may be used as our customer desires, even if they wish to cut their own robot base. The drawings are available in DXF format from the Parallax web site.

Visit our discussion forums <http://forums.parallax.com/forums/default.aspx?f=10&m=414706> for more information and pictures.