Mecanum Wheel Vectoring Robot Platform – IG32 DB

Assembly and Operation

This is a direct drive 4WD base robot kit that uses Nexus mecanum wheels and hubs. It's a great robot platform for indoor robotics. It can vector in any direction.

Images shown may not be an exact representation of the robot's features listed in this document
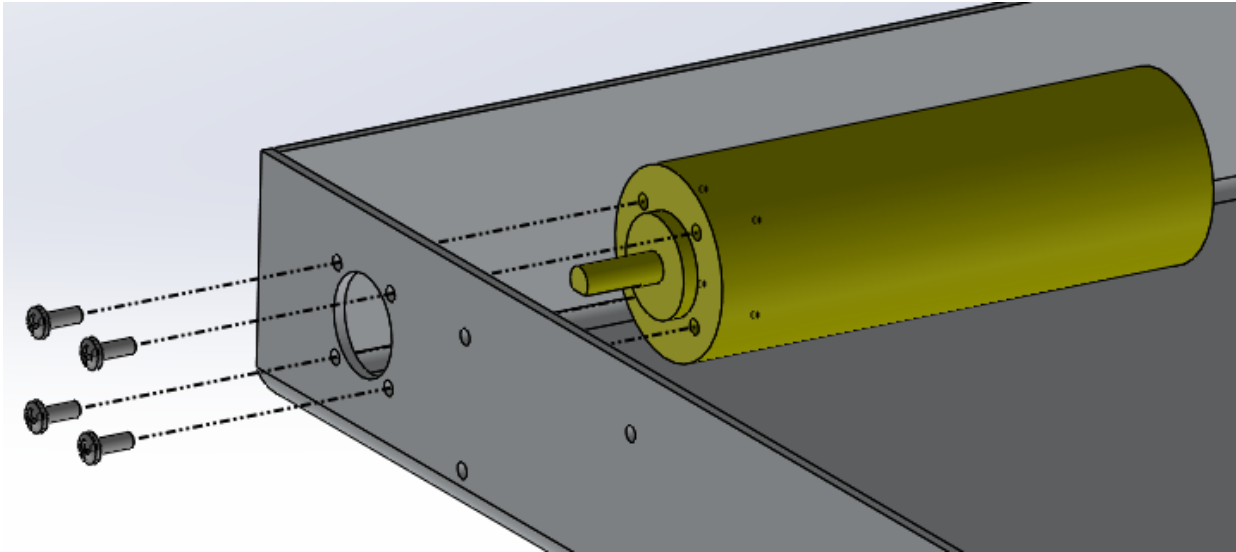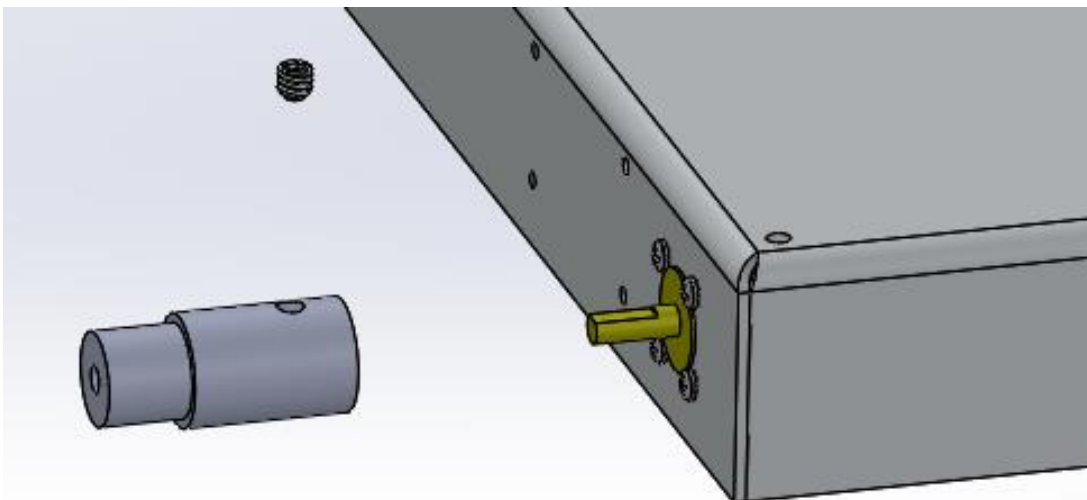
Contents

Mechanical Assembly

1. Start by mounting the motors to the chassis using the M3x8 screws. Use Loctite to insure the screws do not vibrate loose.

2. Slide the steel hub onto the motor shaft so that it is very close the chassis and the screw heads but not touching. Tighten the set screw down onto the flat part of the motor shaft. Use Loctite.

Revised: April 25, 2018

3. Before mounting the wheels, note that they need to be oriented correctly for the robot to work properly. See the figure below for the correct orientation.

Direction of Movement	Wheel Actuation
Forward	All wheels forward same speed
Reverse	All wheels backward same speed
Right Shift	Wheels 1, 4 forward; 2, 3 backward
Left Shift	Wheels 2, 3 forward; 1, 4 backward
CW Turn	Wheels 1, 3 forward; 2, 4 backward
CCW Turn	Wheels 2, 4 forward; 1, 3 backward

To the right: This is a top view looking down on the drive platform. Wheels in Positions 1, 4 should make X- pattern with Wheels 2, 3. If not set up like shown, wheels will not operate correctly.
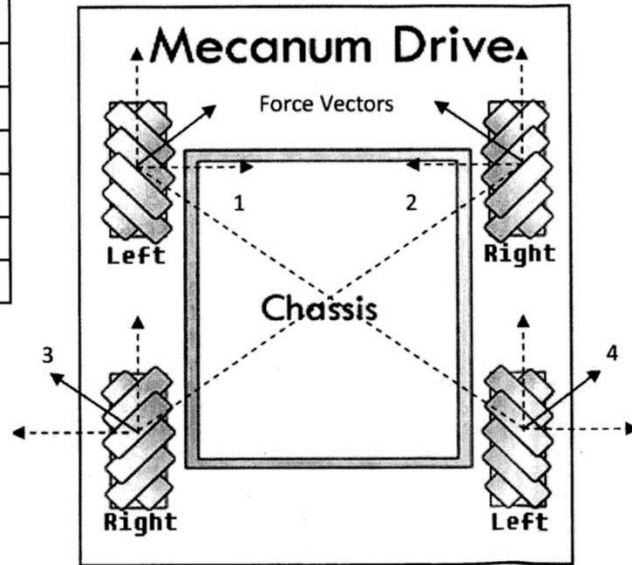

4. Now slide the wheel on over the hub, slide the aluminum washer in the other side of the wheel, and pinch in place using the socket head screw and lockwasher. Repeat these steps for other three wheels.
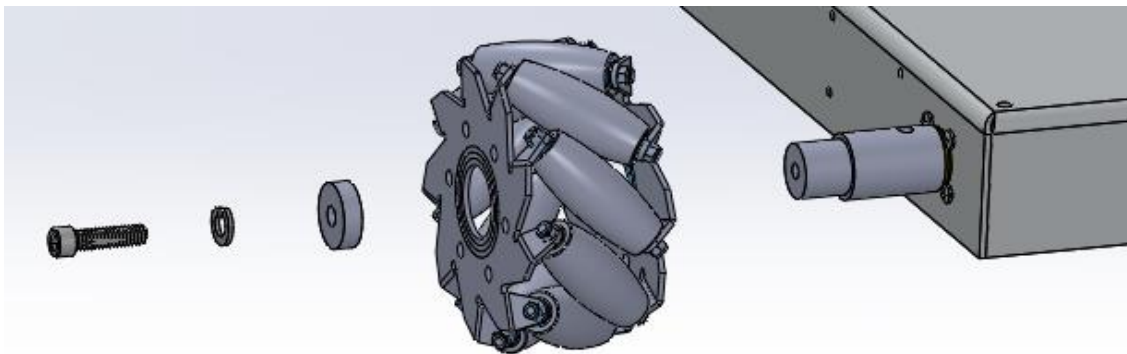
5. Mount batteries using battery brackets and hardware provided. Use foam tape on the bracket and underneath the battery to ensure a snug fit. Mark and drill 1/8" holes that match up with the holes in the battery bracket(s).
6. Measure a place on the chassis to mount the switch. The rear plate of the chassis is a good place for it Make sure that it is mounted low enough that it doesn't interfere with the lid. Drill a ½" hole.

SuperDroid Robots, Inc
224 Technology Park Lane
Fuquay Varina, NC 27526
www.SuperDroidRobots.com

Contact
(919) 557-9162
SDR@SDRobots.com

Revised: April 25, 2018

Page 4 of 6

7. Mark the holes for the motor controller and drill them out to 1/8". Use the hardware in the provided hardware kit to mount it.
8. Mark and drill a hole to mount the fuse block (also 1/8").
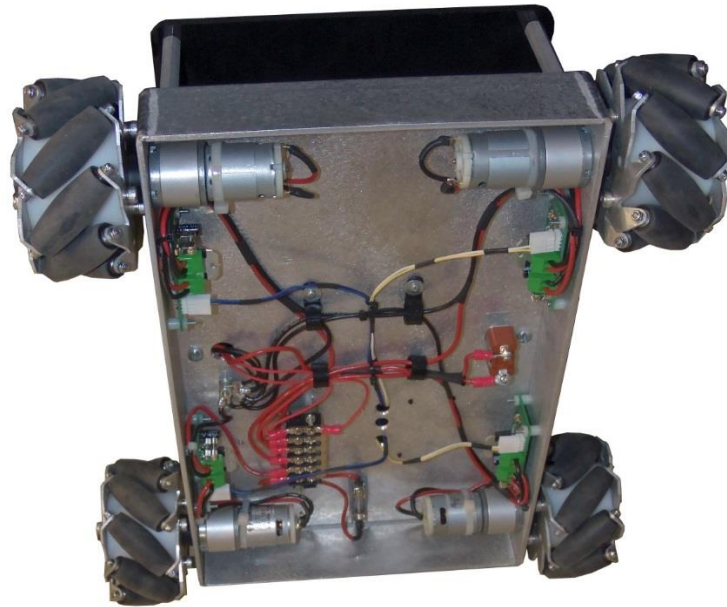
Electrical Assembly

For electrical assembly please follow the provided schematic on our website:

Schematics

For additional support on wiring, soldering, and crimping, please read the following support pages:

Electric Motor Hookup Support

Electric Power Hookup Support

Soldering Tips

Crimping Wires

Operation

1. Before powering on the robot make sure it is up on blocks so the wheels can spin freely. Occasionally some or all of the wheels start as soon as the motor controller gets power. In this case the settings of the motor controller need to be changed.
2. Make sure to use the correct DIP switch settings. If using a Sabertooth motor controller in R/C mode switch 1 should be DOWN (closest to the number) and all other switches should be UP. If using a different mode see the manual for the motor controller you are using on Dimension Engineering's website.

Binding a Spektrum Remote

3. Insert the bind plug into the receiver and power on the robot.
4. While pressing the Bind button, power on the transmitter.
5. Release the Bind button after the receiver's LED stays illuminated. This indicates the receiver is bound to the transmitter.
6. While the robot and transmitter are still powered on, remove the bind plug from the receiver.
7. If the wheel aren't moving as desired, it may be necessary to swap the Alieron and Elevator plugs or to reverse the channels on the transmitter. To reverse channels see the instructions for "Servo Reversing" in the Spektrum documentation.

General Terms

1. SuperDroid Robots, Inc is not responsible for special incidental or consequential damages resulting from any warranty or under any legal theory, including, but not limited to lost profits, downtime, goodwill, damage to, or replacement equipment or property, or any cost of recovering, reprogramming, or reproducing any data stored. ANY LIABILITY SHALL BE LIMITED TO REPLACEMENT OF DEFECTIVE PARTS. SuperDroid Robots, Inc. is further not responsible for any personal damages, including, but not limited to bodily and health damages resulting from any use of our products.
2. SuperDroid Robots, Inc. makes no representations as to the fitness of its products for specific uses. ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS HEREBY EXCLUDED.
3. Agreements shall be construed in accordance with the laws of the State of North Carolina, and the rights and obligations created hereby shall be governed by the laws of North Carolina.
4. In the event a dispute or controversy arises, such dispute or controversy (including claims of default) shall be brought in the courts of Wake County, North Carolina and the plaintiff hereby agrees to this choice of venue.

SuperDroid Robots, Inc
224 Technology Park Lane
Fuquay Varina, NC 27526
www.SuperDroidRobots.com

Contact
(919) 557-9162
SDR@SDRobots.com

Revised: April 25, 2018

Page 6 of 6