



IG42-SB4, 4WD All Terrain Robot Platform

Assembly and Operation

This 4WD wheeled robot platform is equipped with 42mm motors, a motor controller, and Spektrum remote control. By default, the robot handles up to 25lbs of additional payload and travels 400 ft/min. This robot replaces TP-032-042 and TP-033-042.

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

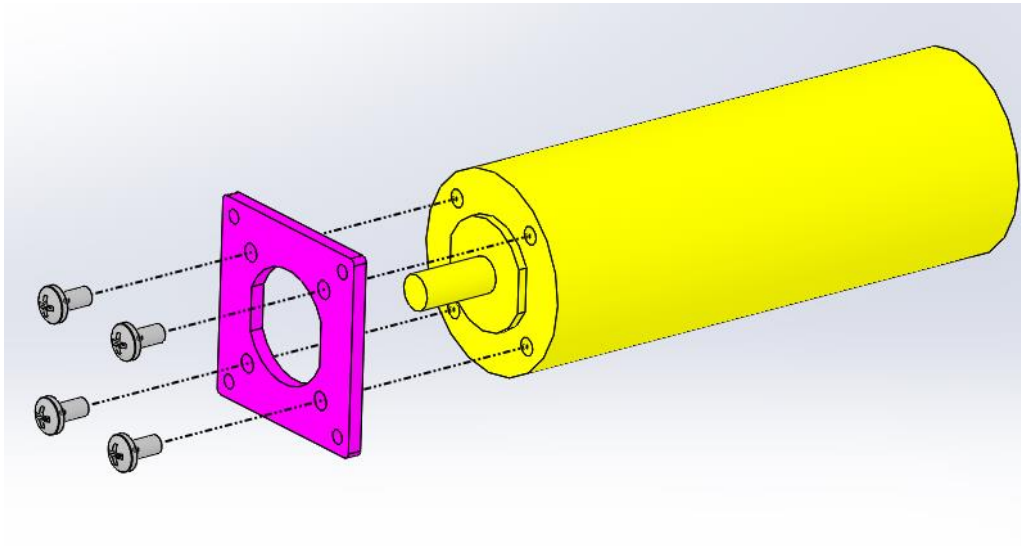


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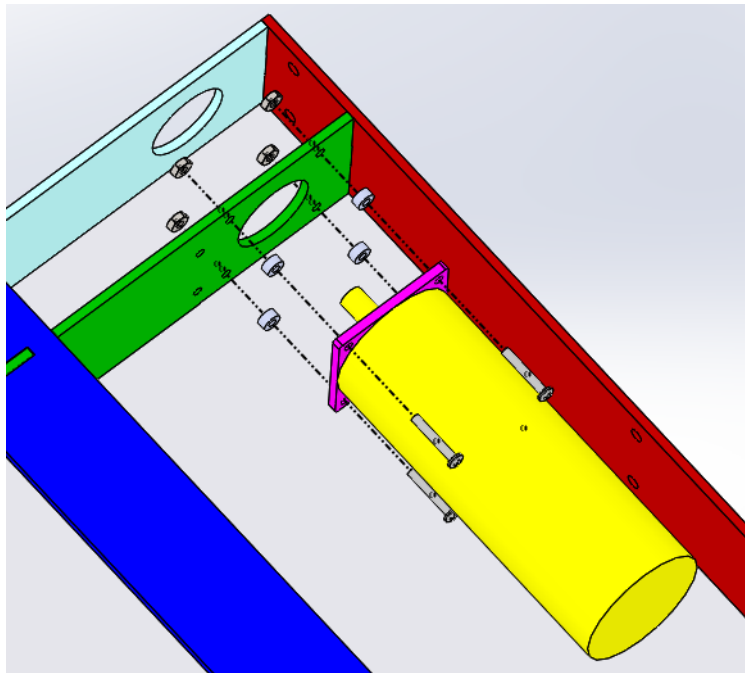
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Mechanical Assembly

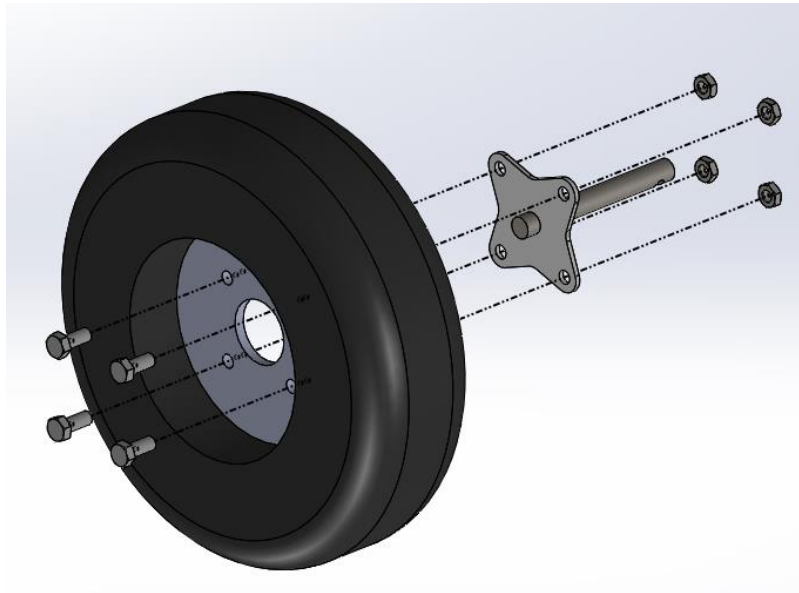
1. Start by mounting the motors to the motor plates. Use the included M4x8 pan head screws and Loctite.



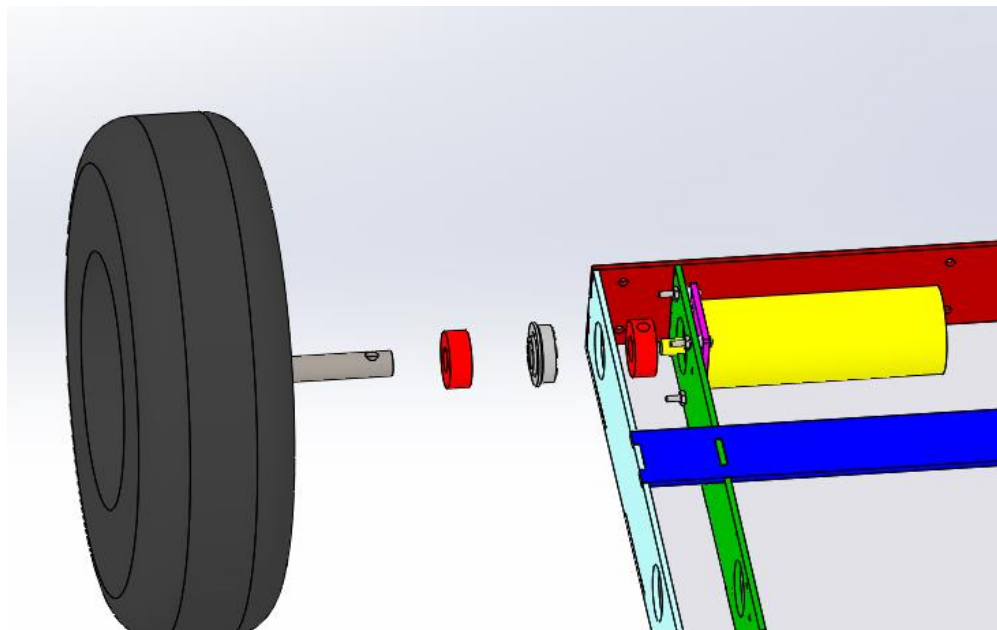
2. Next, mount the motor plate to the chassis using the motor plate hardware kit. Use the plastic spacers between the motor plate and the chassis to space the motor screws away from the chassis. Leave the screws slightly loose until shafts are mounted.



3. Mount the wheels to the shafts using the included hardware and Loctite.



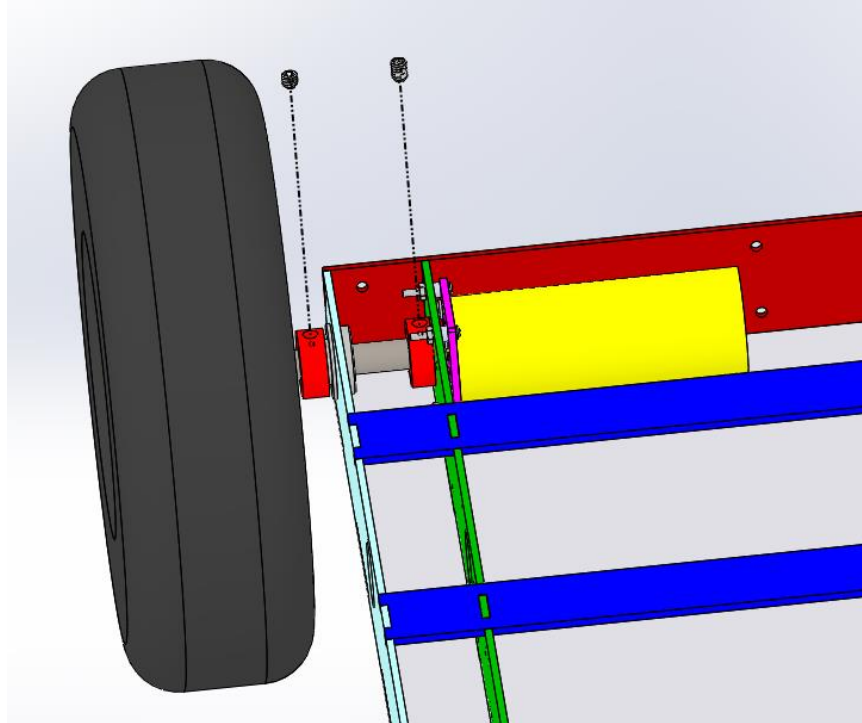
4. Slide the wheel shaft onto the motor shaft with two shaft collars and a ball bearing (see image below for proper order and orientation). Make sure the flat part of the motor shaft is accessible (if it is not use a battery to spin the motor until it is) and line it up with the holes in the inner lock collar and wheel shaft.



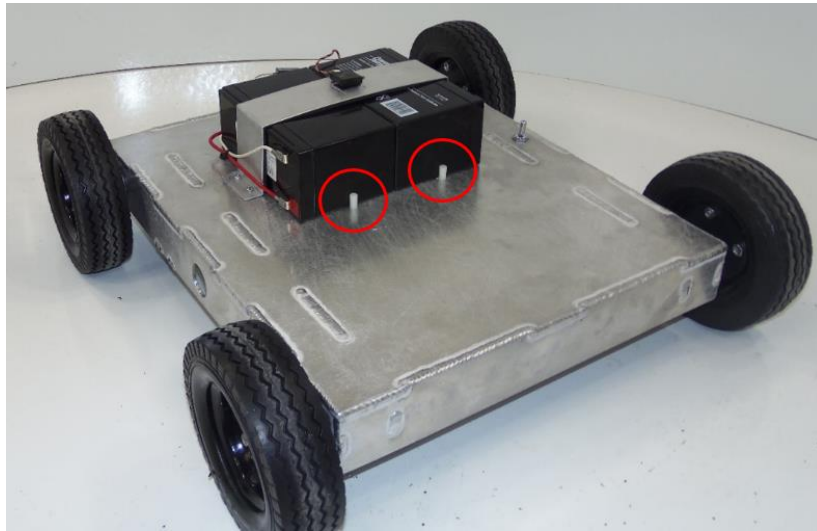


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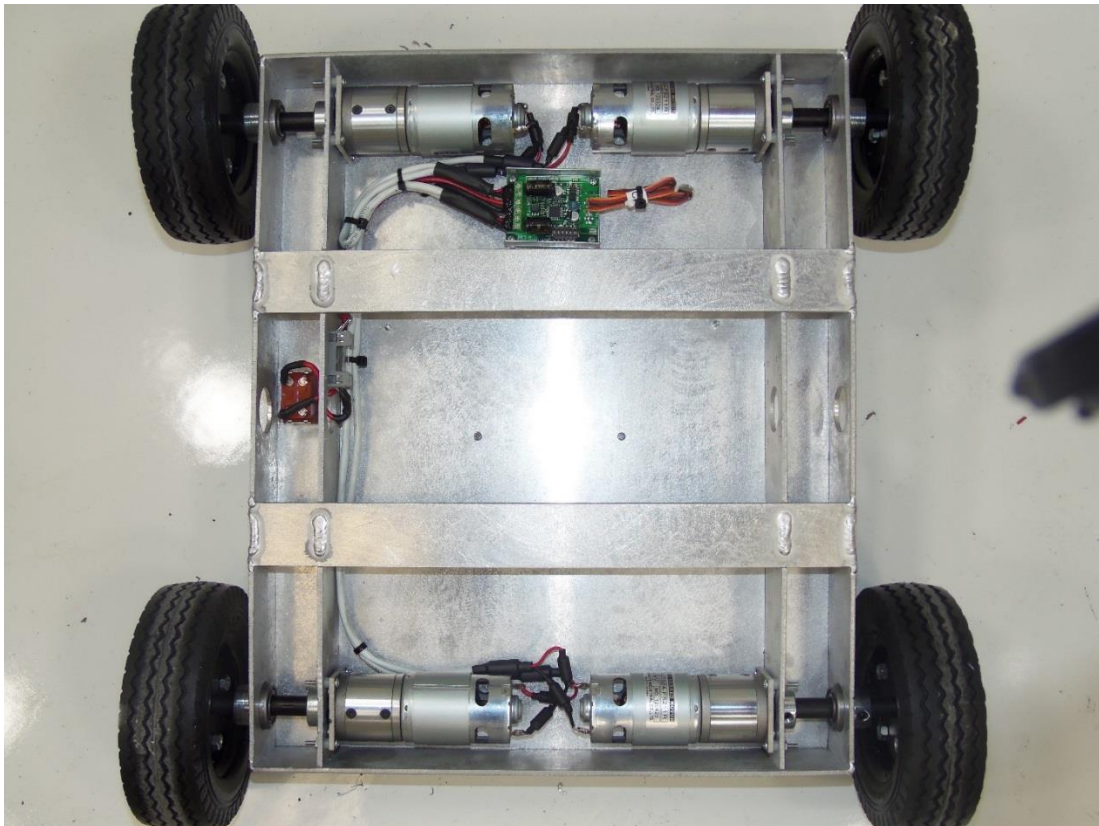
5. Tighten the set screws in the lock collars using Loctite. The inner lock collar should get the longer set screw ($3/8$ " long). Make sure the longer set screw is tightened down through the hole in the wheel shaft and onto the center of the flat spot on the motor shaft.

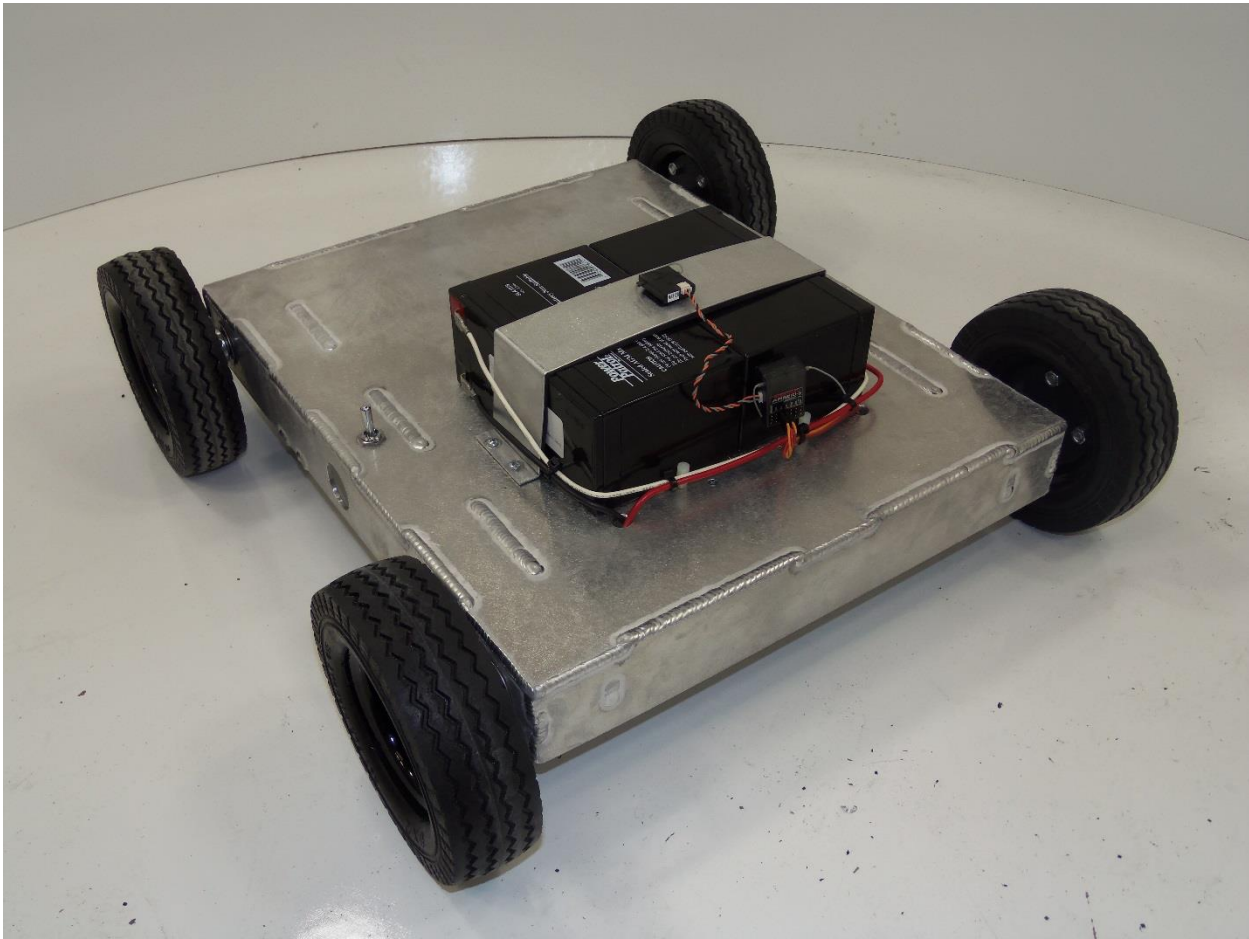


6. At this point, go back and tighten the motor plate screws. Use Loctite or silicone caulk to keep the screws from loosening.
7. Position the batteries on the chassis where you want them to be mounted. Use the battery bracket to mark the necessary mounting holes to be drilled (typically these will be $1/8$ " holes). Drill the holes in the chassis and mount the battery bracket using the included hardware and, if necessary, foam tape to ensure a tight fit. Also included in the battery bracket hardware kit are some plastic spacers. These are to keep the batteries from sliding underneath the battery bracket (see picture below). Position the spacer against the end of each battery and use a $3/32$ drill bit through the spacer to mark the hole in the correct place. Drill out hole to $1/8$ " and mount the spacers with the included hardware.



8. Pick a spot to mount the switch and motor controller. Mark and drill holes (1/8" for motor controller, 1/2" for switch).





Electrical Assembly

For electrical assembly please find the appropriate 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 Aileron 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

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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.