

REC for Cortex

1.12 Activity: Wiring the Vex Controller and Battery

Name: _____ Class/Period: _____ Date: _____

Overview:

In this activity, you will mount the Vex controller and battery onto the BaseBot.

Duration:

25 Minutes

Materials:

Qty	Description
1	REC 1 Bundle

Procedures:

1.12.1: Mounting the Controller and Battery Shelf

- 1 Mount the angle bar to the controller as shown below.



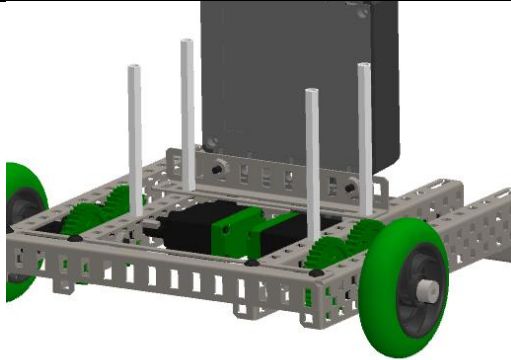
Materials

1	Vex controller
1	10-hole angle bar
2	8-32 BHCS x 1/2" (12.7 mm)
2	Keps nuts

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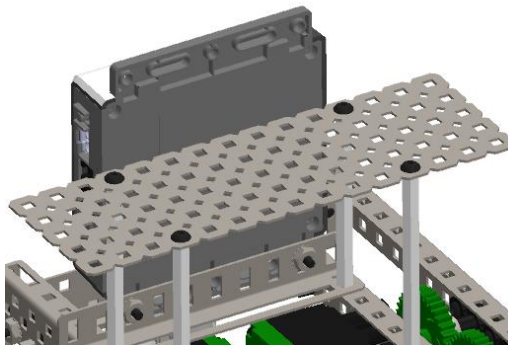
- 2 Mount the threaded beams and the lower controller bracket to the base of the chassis as shown below and tighten the mounting screws.



Materials

4	3" Threaded Beams (7.3 cm)
4	8-32 BHCS x 3/8" (9.5 cm)

- 3 Attach the battery shelf to the threaded beams as shown below and tighten the mounting screws.



Materials

1	Base plate
4	8-32 BHCS x 1/4" (6.4 mm)

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- 4 Attach the controller to the battery shelf as shown below.
Use the 1/4" screws for the threaded beams and the 3/8" screws for the top of the controller.



Materials

2	1" Threaded beams (2.5 cm)
1	5-hole angle bar
4	8-32 BHCS x 1/4" (6.4 mm)
2	8-32 BHCS x 3/8" (9.5 mm)
2	Keps nuts

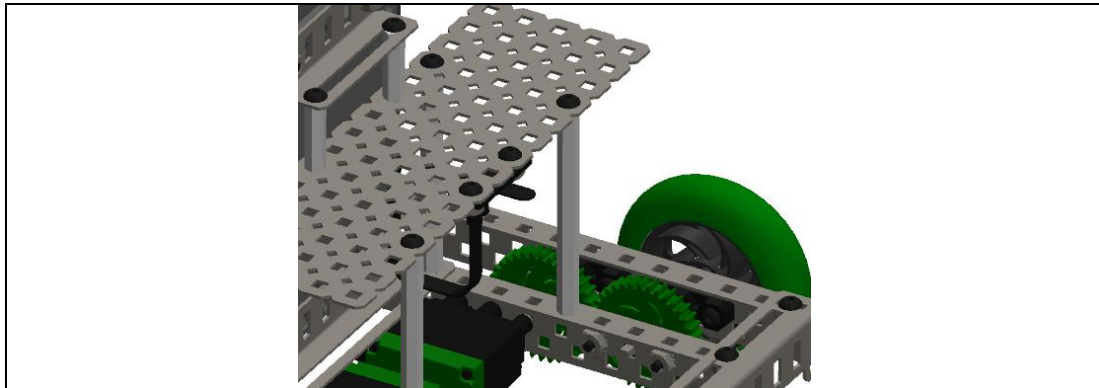
- 5 Tighten all the mounting hardware.

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1.12.2: Installing the battery

- 1 Slide the end of each battery strap into its locking mechanism.
- 2 Mount the battery straps underneath the battery shelf as shown in below and tighten the hardware.



Materials

1	Reusable battery strap
1	7.2V robot battery
4	8-32 BHCS x 3/8" (9.5 mm)
4	Keps nuts

- 3 Slide the 7.2V battery through the battery straps underneath the battery shelf. Make sure the battery connector is on the same side as the power switch on the Vex controller.
- 4 Pull the end of each battery strap to tighten the battery into place.
- 5 Plug the battery into the controller.

Note: To remove the battery, push in the locking mechanisms and the end of the battery strap.

1.12.3: Connecting the Motors to the Controller

- 1 Looking down on the BaseBot, connect the motors as follows:
 - left motor to port 1
 - right motor to port 10

Note: When connecting the motor to the controller, you may need to bend the port guard slightly to reach the port.

- 2 Gather the excess wire and tighten down the motor controller straps. This will keep the motor cables safe from entanglement with other robots and gears.

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1.12.4: Engineering Notebook

Make a sketch of the BaseBot in your engineering journal showing the new battery shelf and controller. Also indicate which motor ports are used for the left and right drive motors.

Questions:

Write the answers to the following questions on your question sheet. Add the completed question sheet to your robotics binder.

Question 1 What design advantages can you identify in the location of the battery?

Question 2 What design advantages can you identify in the location of the controller?