REC for Cortex

1.8 Activity: Chassis Construction

Name: _____ **Class/Period:** _____ **Date:** _____

Overview:

In this activity, you will assemble the chassis of the BaseBot.

Duration:

20 Minutes

Materials:

Qty	Description
1	REC 1 Bundle

Procedures:

1.8.1: Safety

When working with robots large or small, safety is always the first priority.

Be sure to follow all the safety guidelines reviewed in Section 1.4 to protect yourself and others around you, as well as your equipment.

1.8.2: Assembly Techniques

The following tips may assist you in working with the small components of the Vex kit:

- Use a tabletop to align structural components during assembly.

- Use a vise or a clamp to hold parts or assemblies in place while you work on them.

- Get help from a classmate. An extra set of hands can be very helpful sometimes.

The Vex tools are designed to help you get into tight spaces:

- Use the hex wrench and the nut holder together:

  - Insert a nut into the nut holder.

  - Insert a screw in to the hex wrench.

  - Tighten the screw.

- Use the open-ended wrench and the hex wrench together:

  - Hold the nut with the open-ended wrench while turning the screw with the hex wrench, or

  - Hold the screw with the hex wrench while turning the open-ended wrench.

Follow these guidelines when assembling your chassis:

- Make sure the members are square.

- Loosely attach all the hardware.

- Hand-tighten screws.

1.8.3: Using LearnMate Assembly Procedures

This document contains all the necessary instructions for completing the assembly of the BaseBot chassis. In addition, LearnMate offers online features that can assist you in the completion of the activities. If you are using LearnMate, see section 1.8.4 for instructions on using those features.

1.8.4: Assembling the BaseBot Chassis – Rear

1 Assemble the rear of the chassis as shown below.

Align the holes in the end of the two middle rails to the fourth slotted hole from either end of the angle bar.
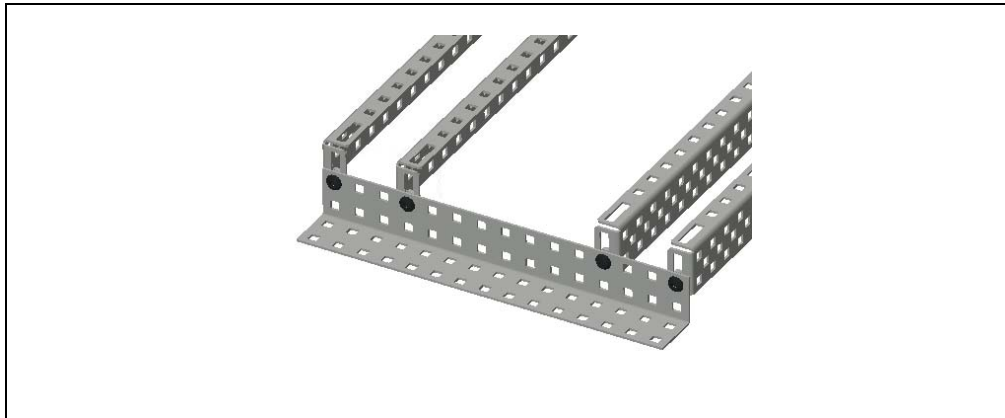
Do not tighten the screws until instructed to do so.

Materials	
4	Chassis rails
1	15-hole angle bar
4	8-32 BHCS x 1/4" (6.4 mm)
4	Keps nuts

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2 Assemble the front of the chassis as shown below.

Materials	
1	Rear chassis assembly from step 1
1	Chassis bumper
4	8-32 BHCS x 1/4" (6.4 mm)
4	Keps nuts

3 Make sure all of the components of the chassis frame are aligned and square, then tighten the hardware.

1.8.5: Engineering Notebook

Make a sketch of the BaseBot chassis in your engineering notebook.

Questions:

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

Question 1 Which tools did you use to assemble the chassis?

Question 2 Why do you think the chassis is the first part to be assembled?

Question 3 Why do you think it is important for all the chassis components to be aligned with each other and straight?

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