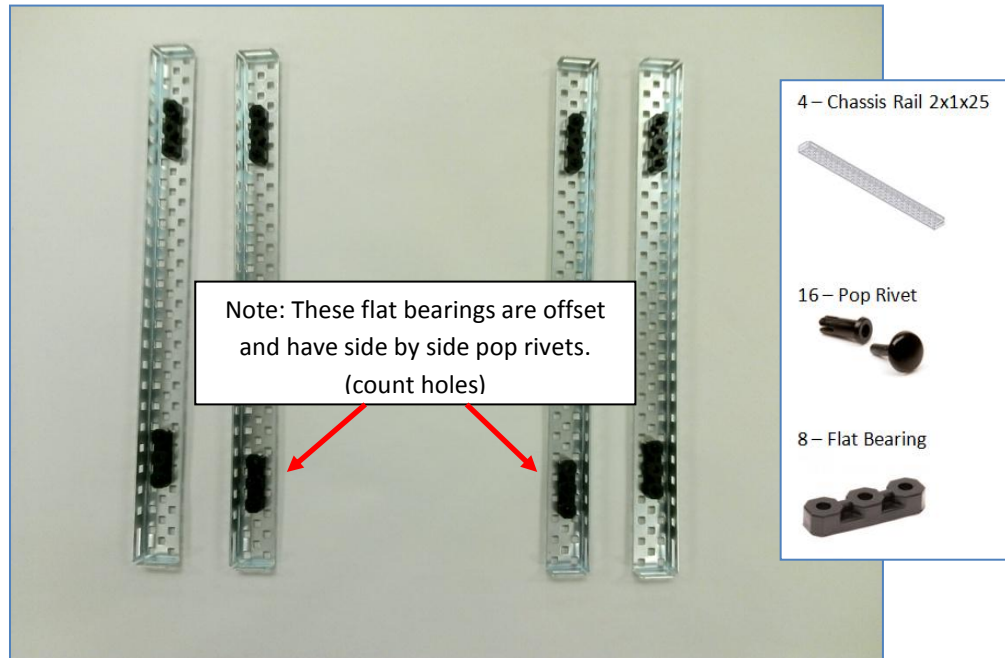


PoeBot Instructions

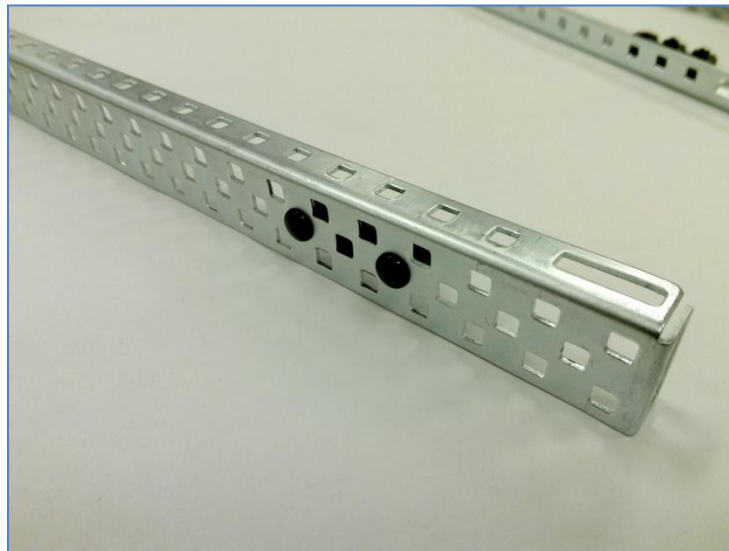
PLTW

Clear Creek ISD

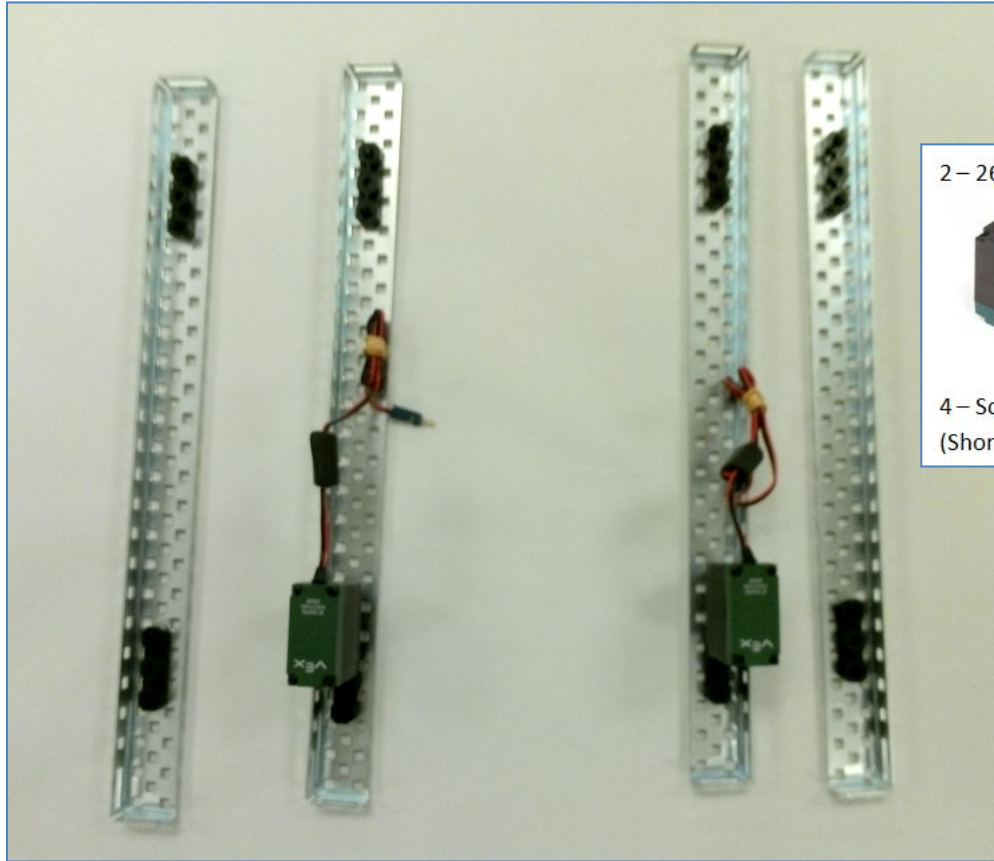
1. Chasis Construction (Split Group with half starting Step 1 and half starting Step 13.)



Note: Assembled (2 pieces) pop rivets should be inserted through the metal side.



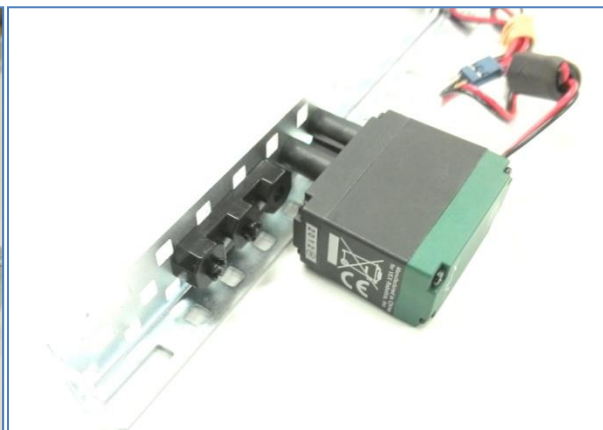
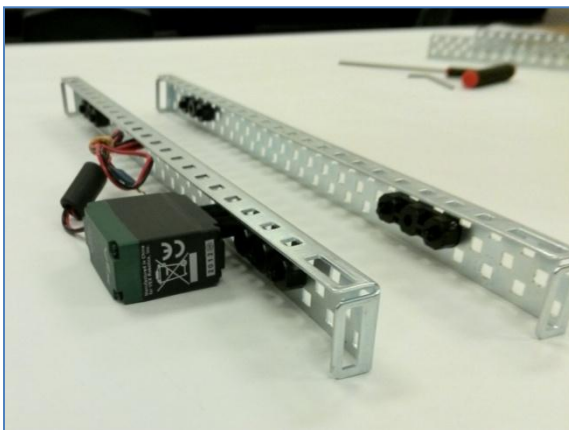
2. Chasis Construction (Continued)



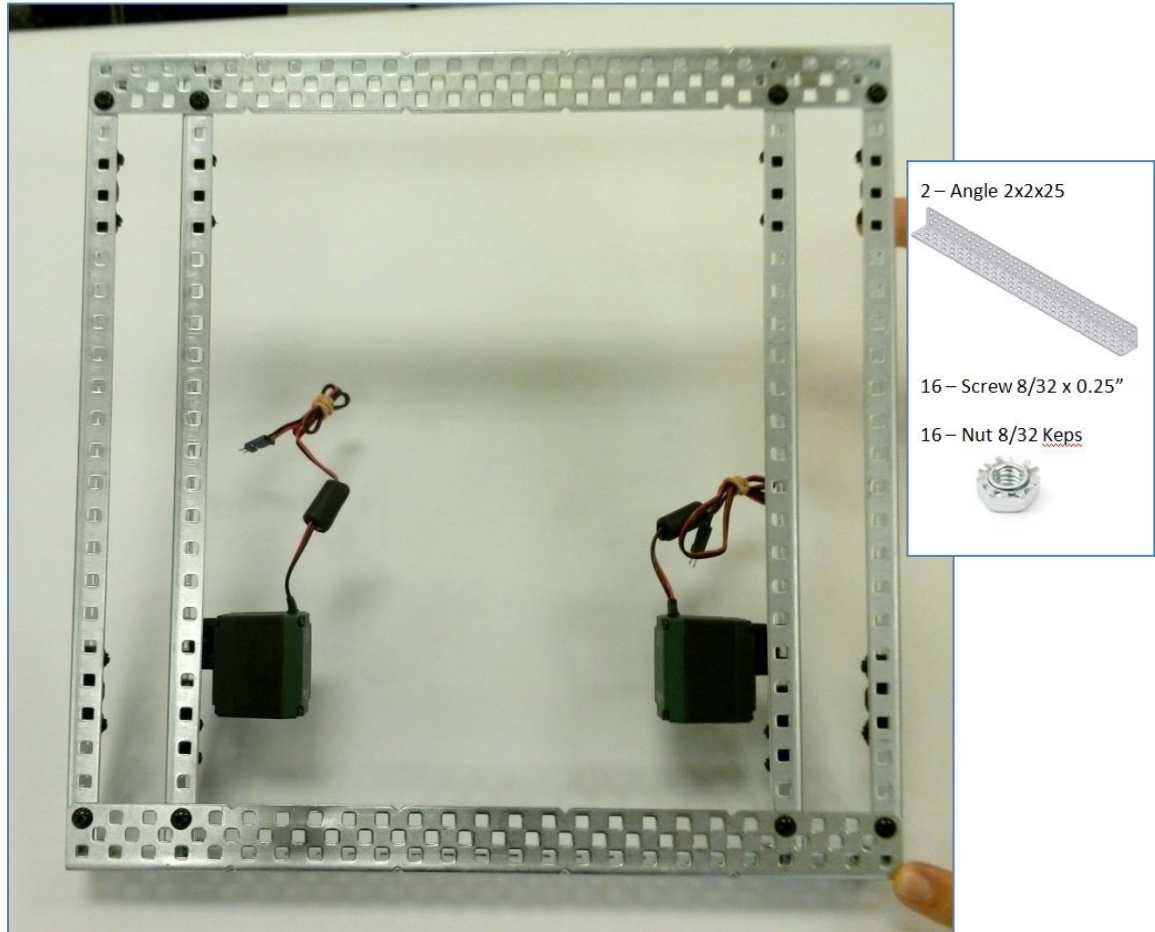
2 – 269 Motors



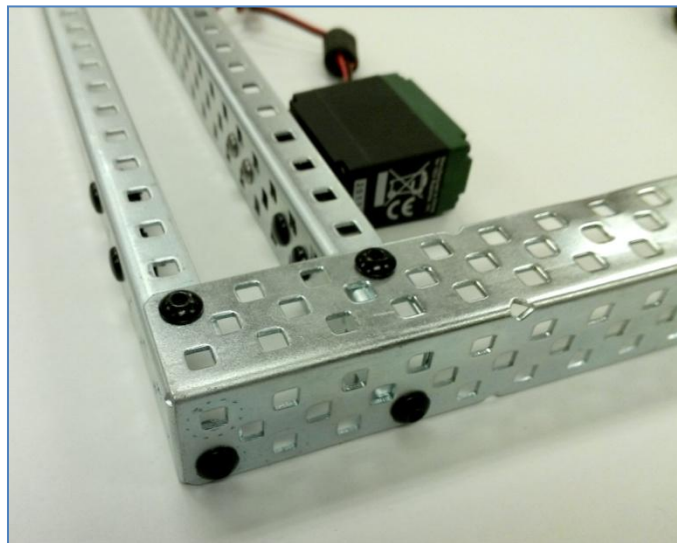
4 – Screw 6/32 x 0.25"
(Short Motor Screws)



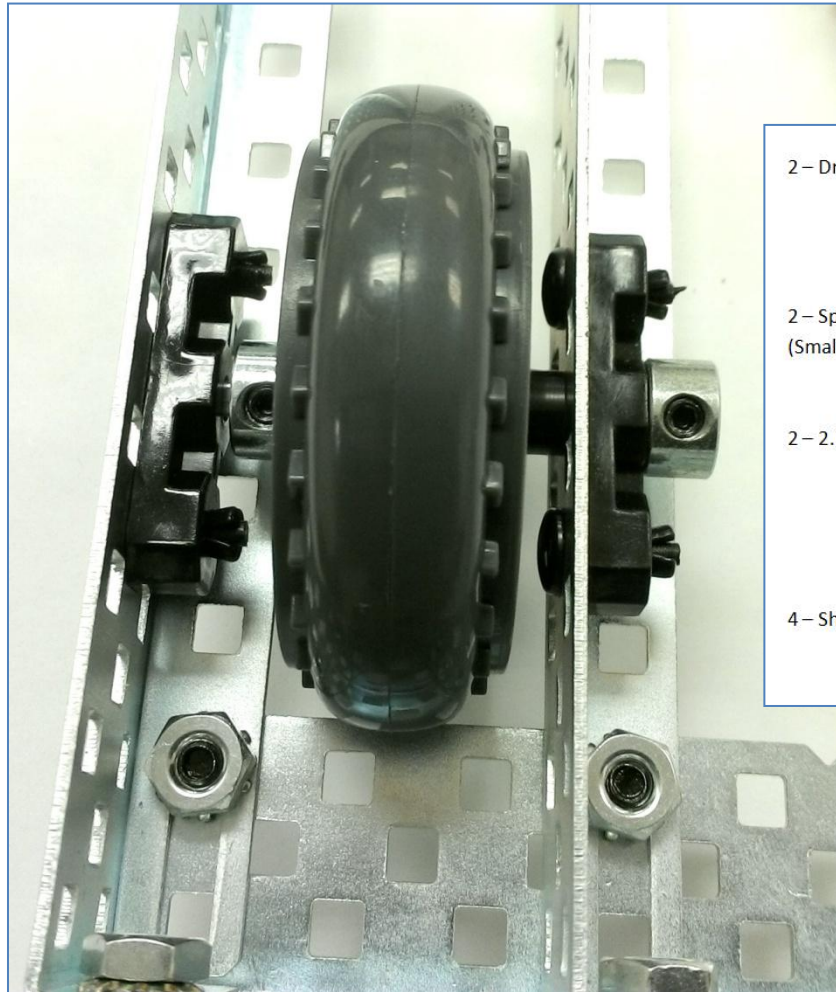
3. Chasis Construction (Continued)



Tip: Always use the shortest screw to get the job done. Saves time!



4. Chasis Construction (Continued)



2 – Drive Shaft 2"



2 – Spacer, 0.19"
(Small Spacer)



2 – 2.75" (diameter) Wheel – without tread

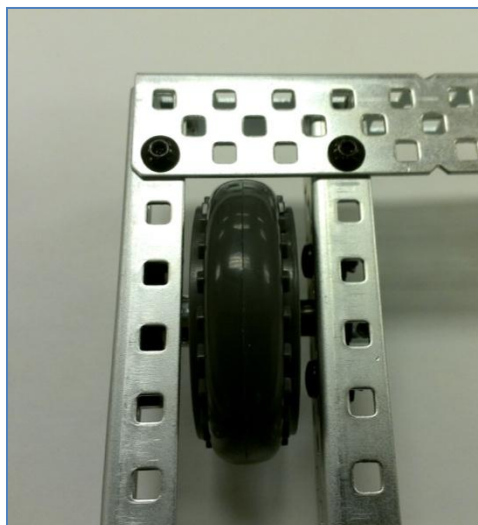


4 – Shaft Collar

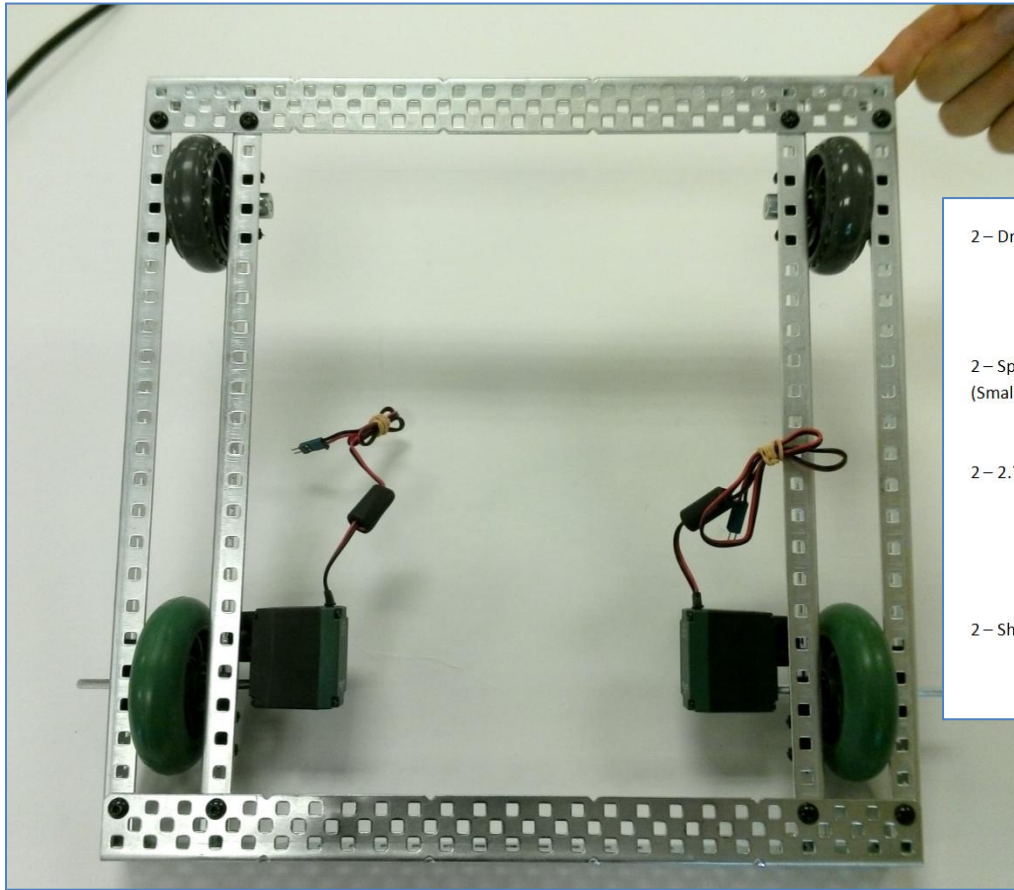


Note: Must remove green tread from this back set of wheels.

Tip: A pair of needle nose pliers really helps hold items in place as axle is pushed through.



5. Chasis Construction (Continued)



2 – Drive Shaft 3"



2 – Spacer, 0.19"
(Small Spacer)



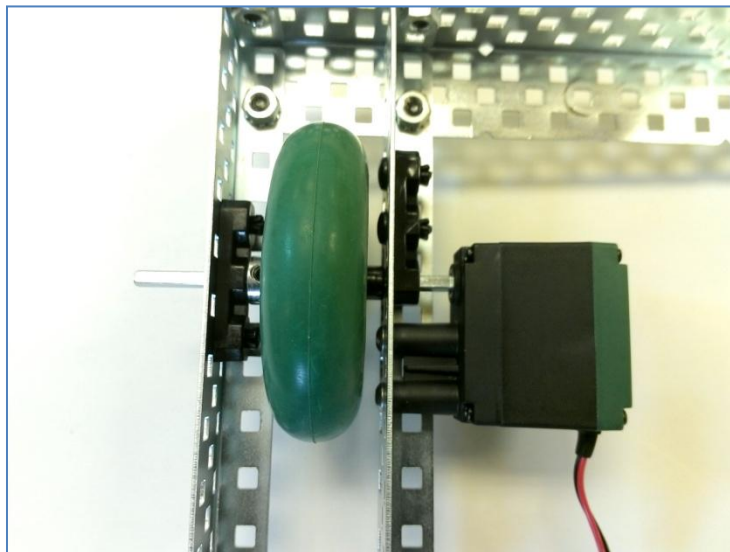
2 – 2.75" (diameter) Wheel – with tread



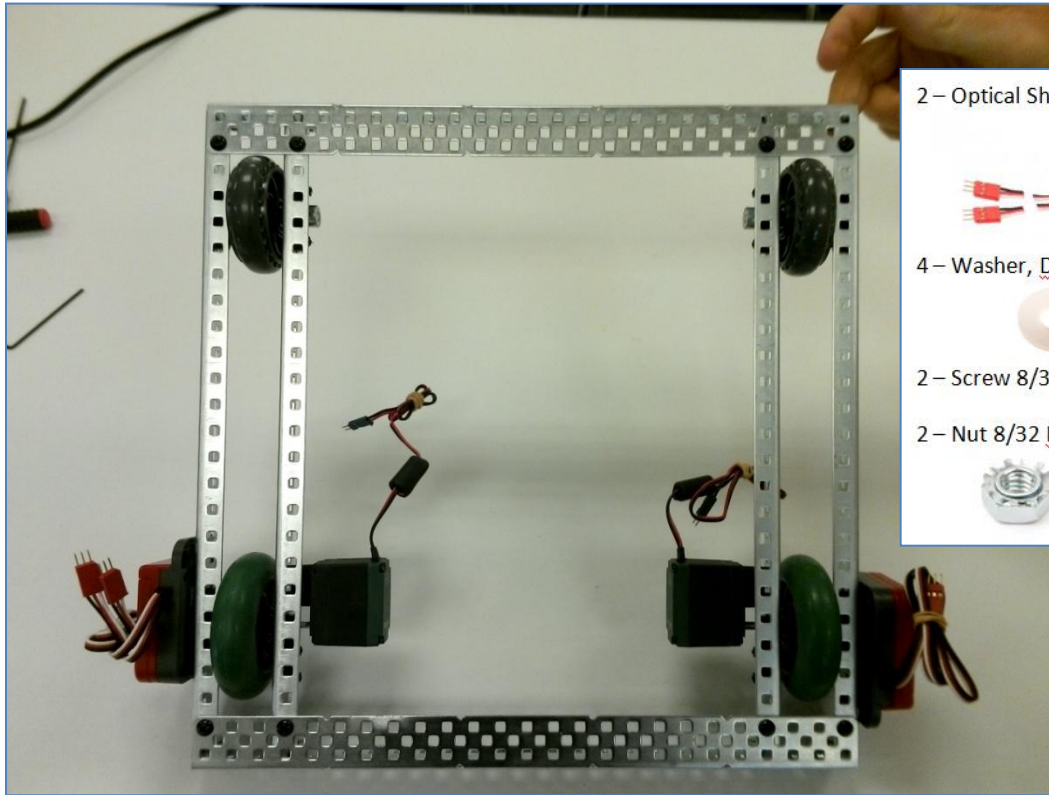
2 – Shaft Collar



Note: Make sure axle is fully inserted into motor.



6. Chasis Construction (Continued)



2 – Optical Shaft Encoder



4 – Washer, Delrin, 0.04"

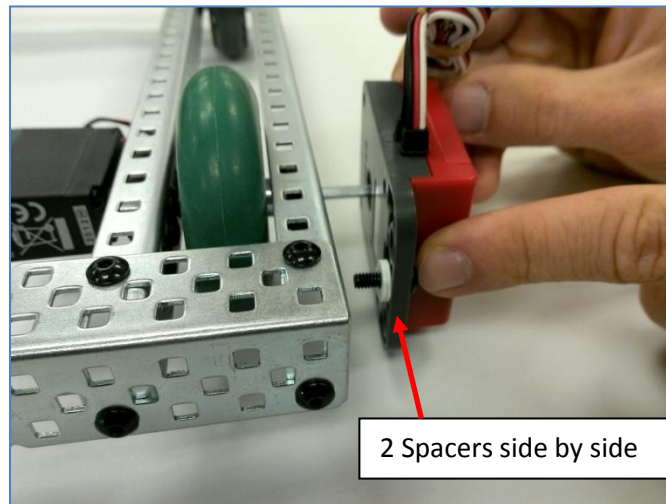


2 – Screw 8/32 x 0.50"

2 – Nut 8/32 Keps

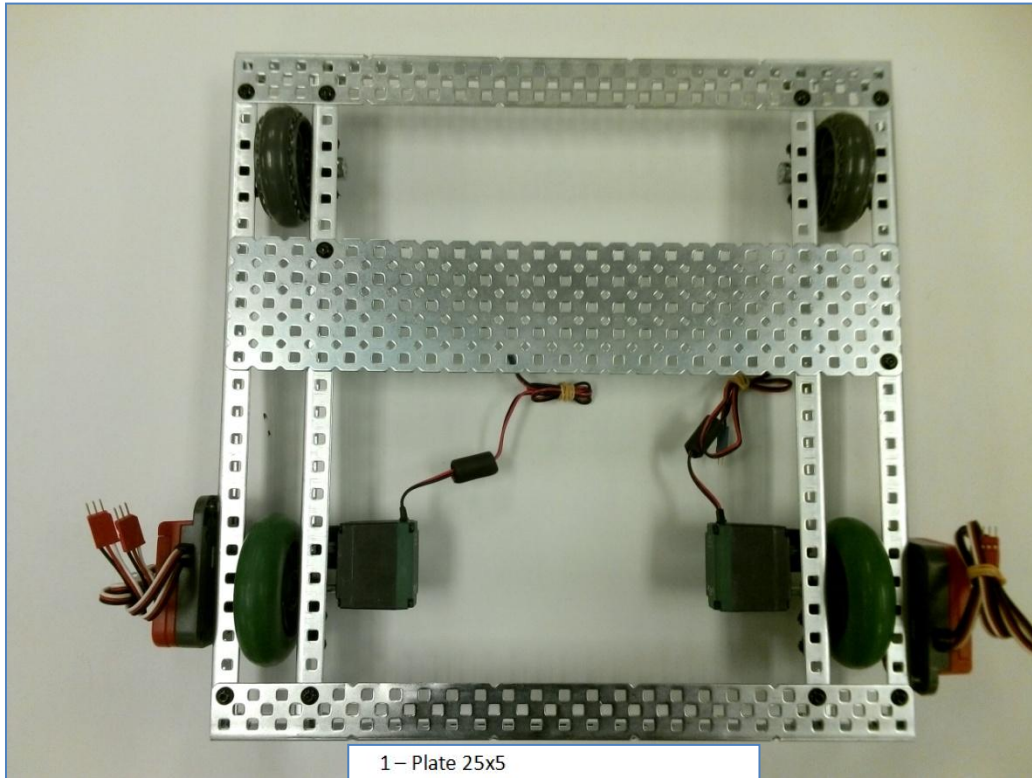


Note: Install with wires pointing up.

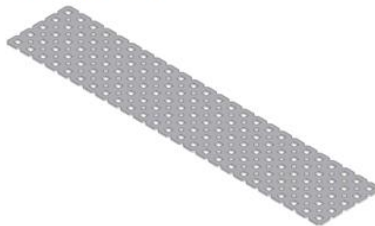


2 Spacers side by side

7. Chasis Construction (Continued)



1 – Plate 25x5

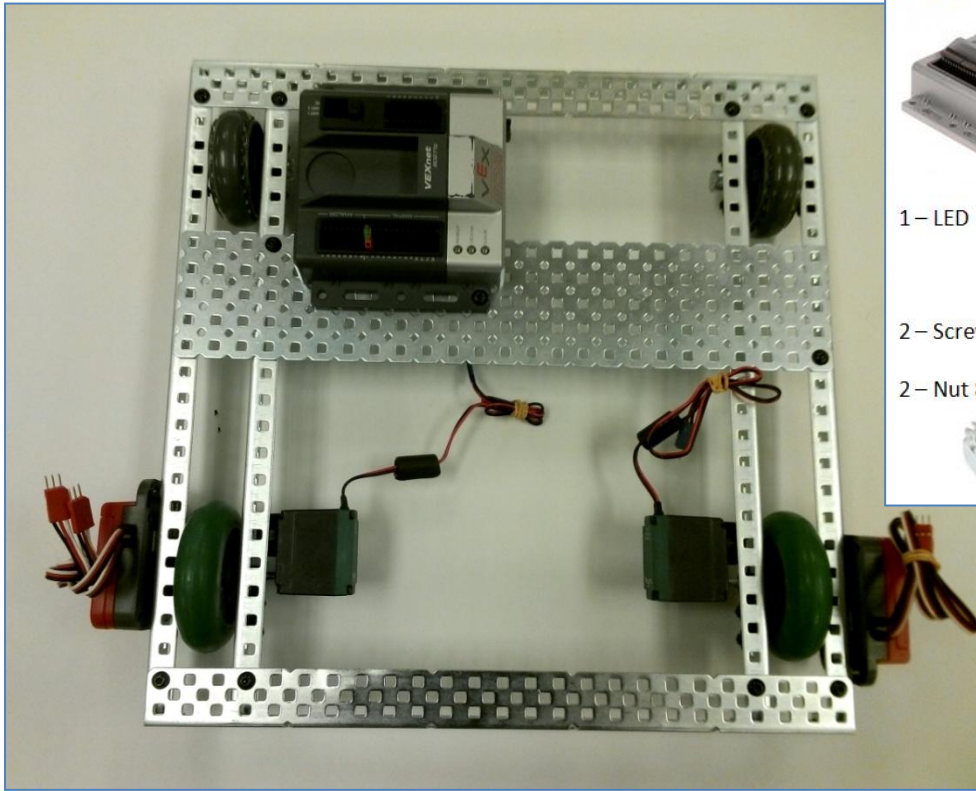


2 – Screw 8/32 x 0.25"

2 – Nut 8/32 Keeps



8. Chasis Construction (Continued)



1 – VEX Cortex (brain)



1 – LED



2 – Screw 8/32 x 0.375"

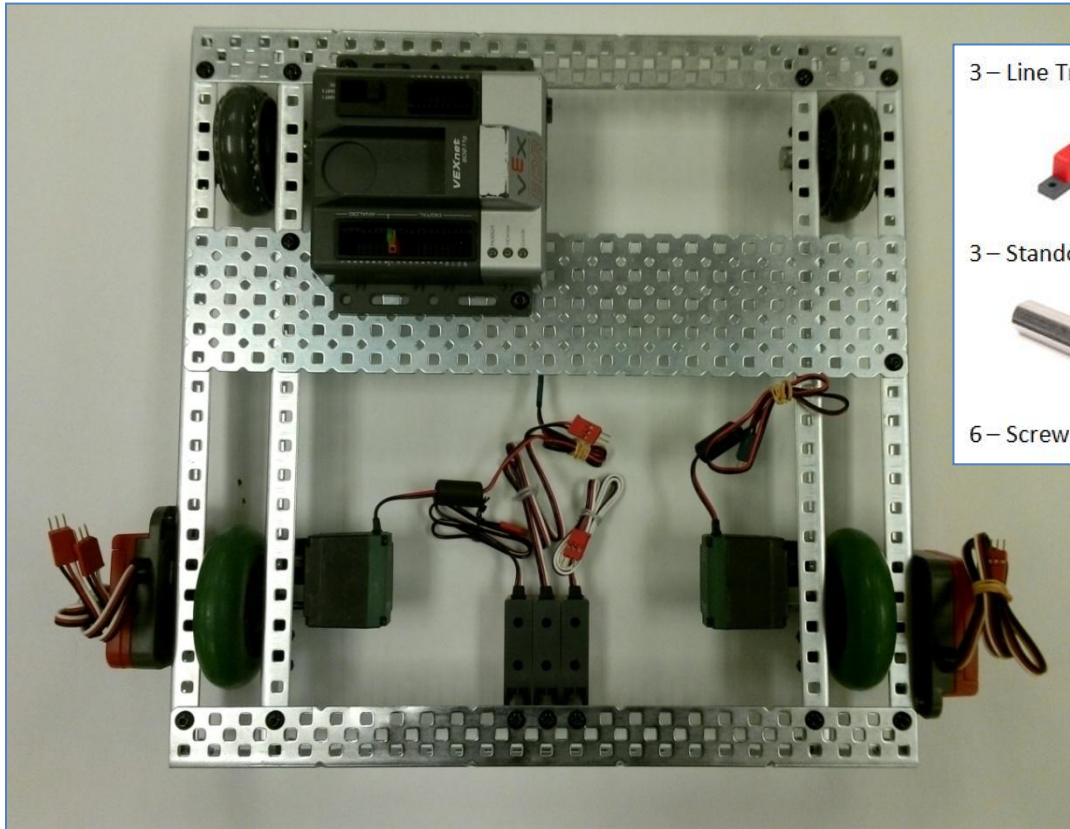
2 – Nut 8/32 Keps



Note: LED inserted in slot Digital 1.



9. Chasis Construction (Continued)



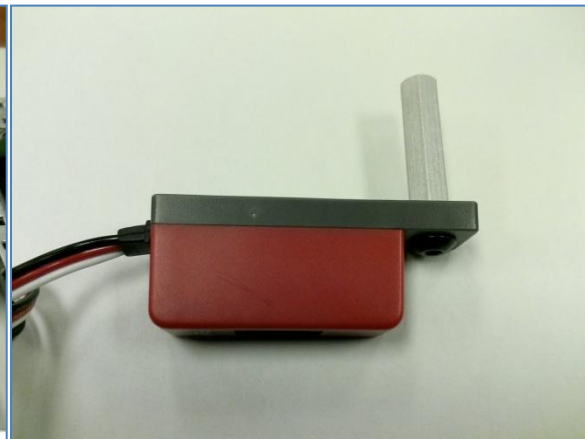
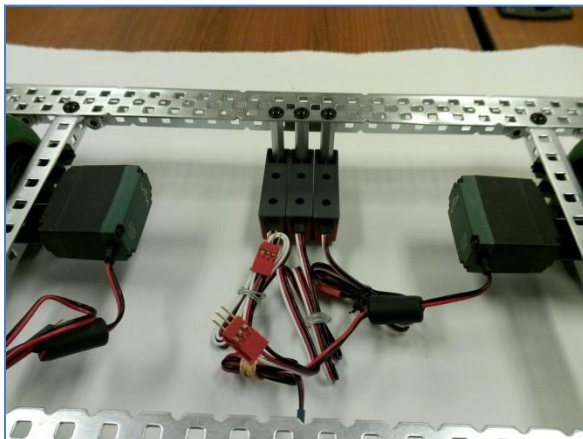
3 – Line Tracker



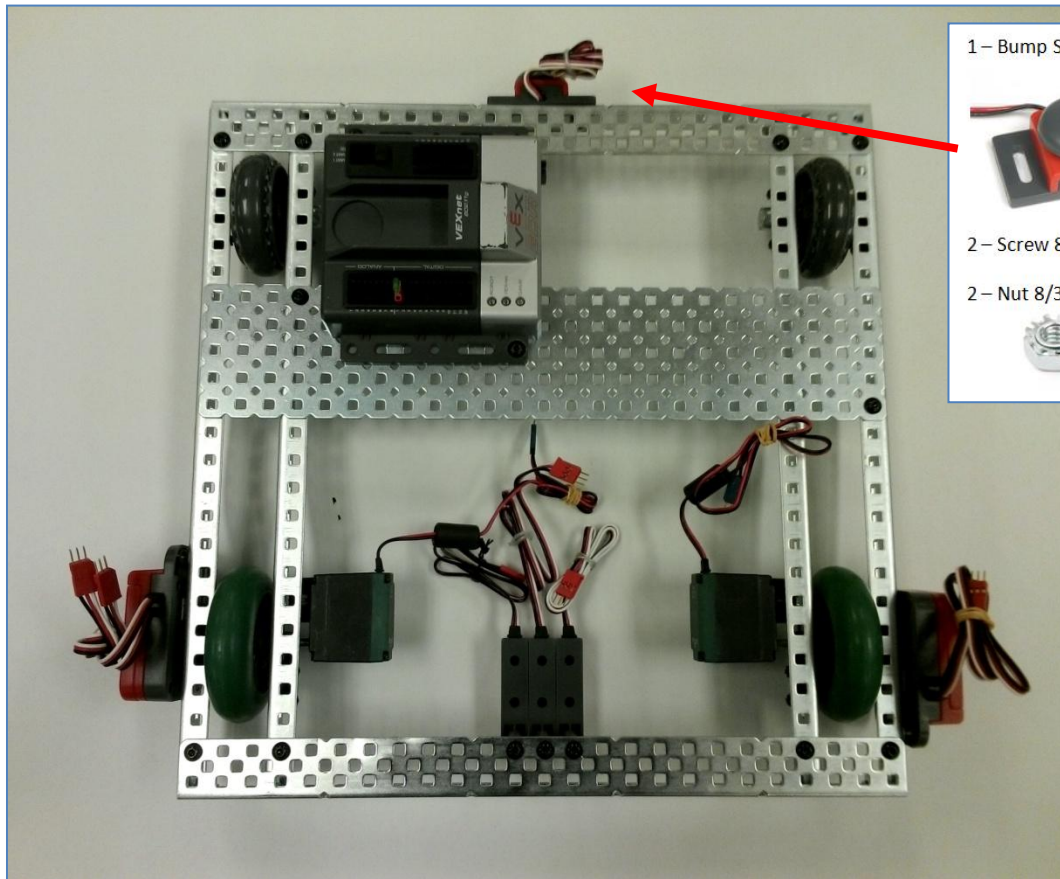
3 – Standoff x 1.00"



6 – Screw 8/32 x 0.25"



10. Chasis Construction (Continued)

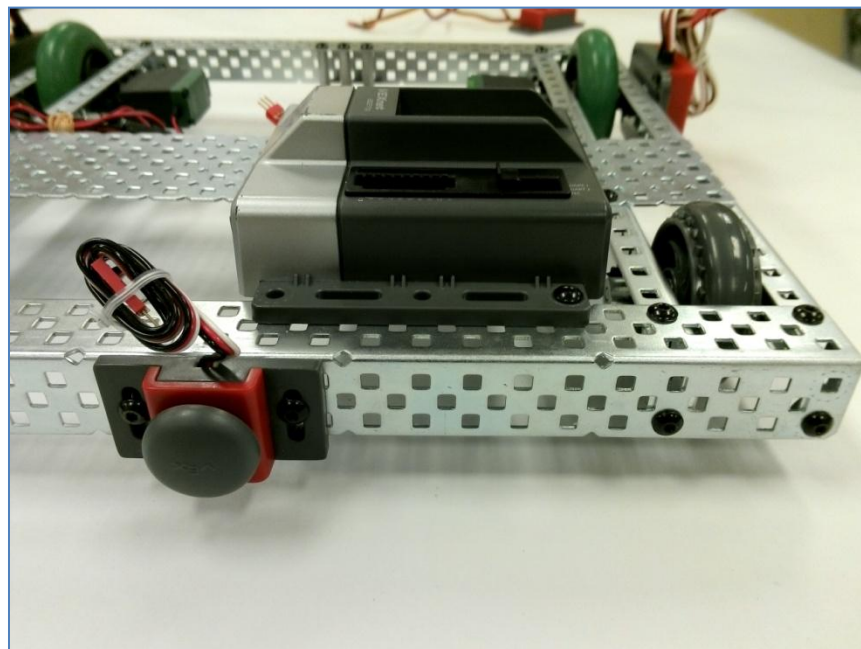


1 – Bump Switch

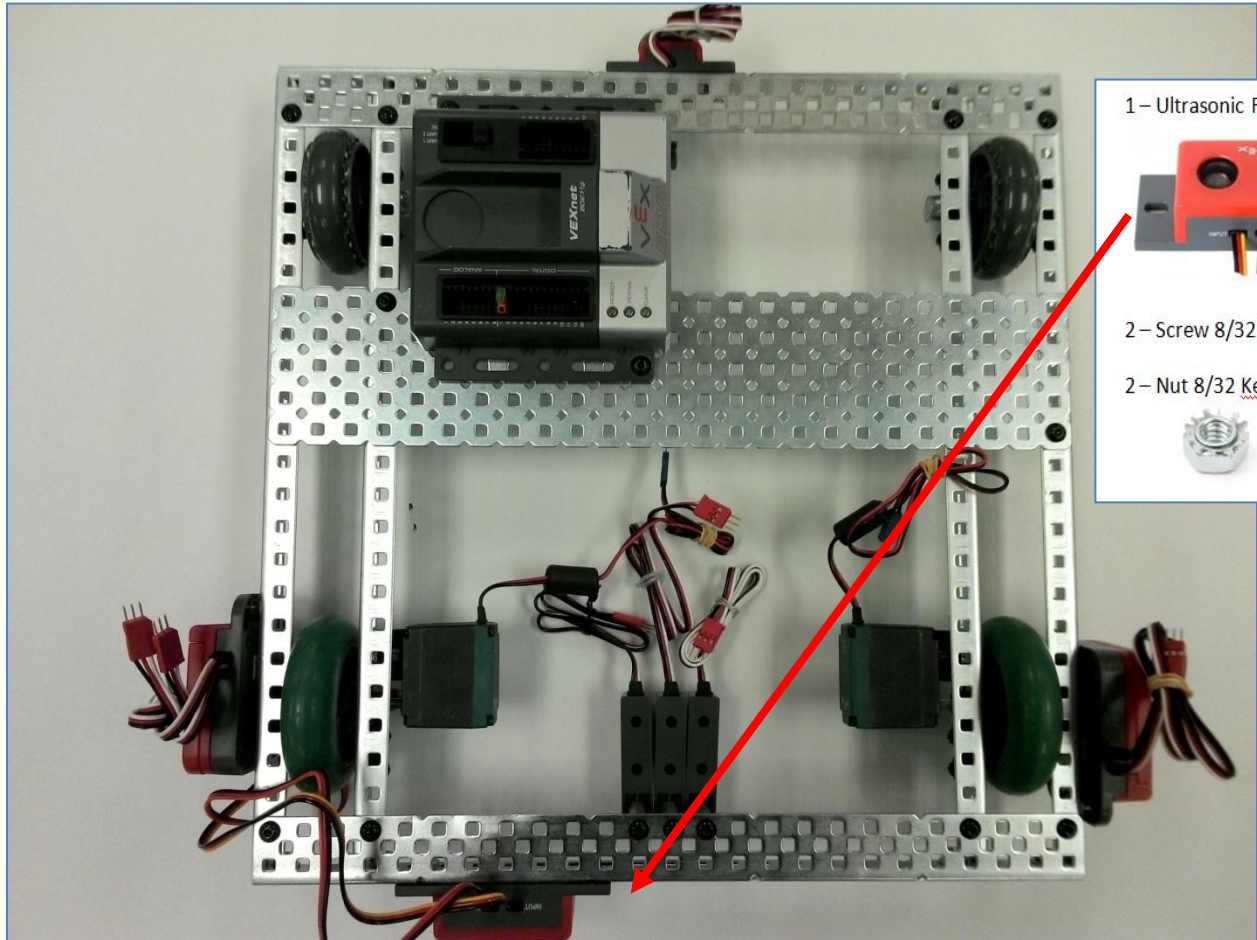


2 – Screw 8/32 x 0.375"

2 – Nut 8/32 Keps



11. Chasis Construction (Continued)

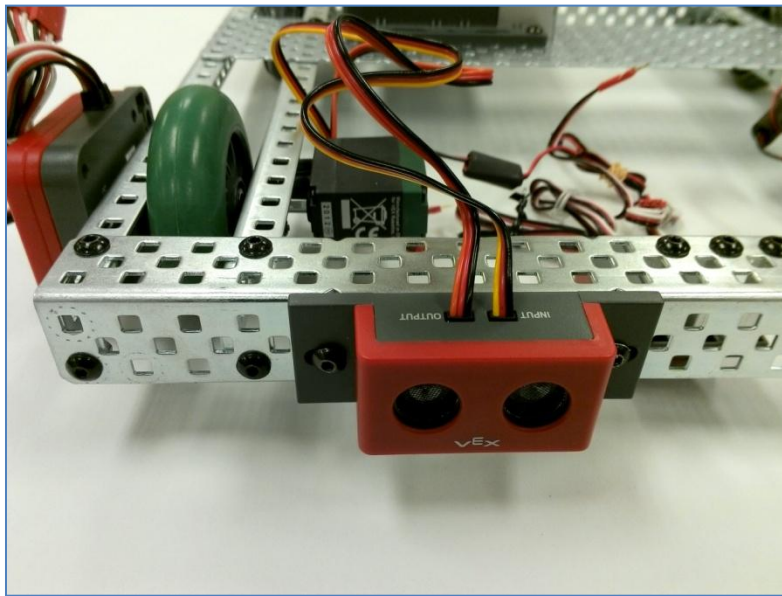


1 – Ultrasonic Range Finder

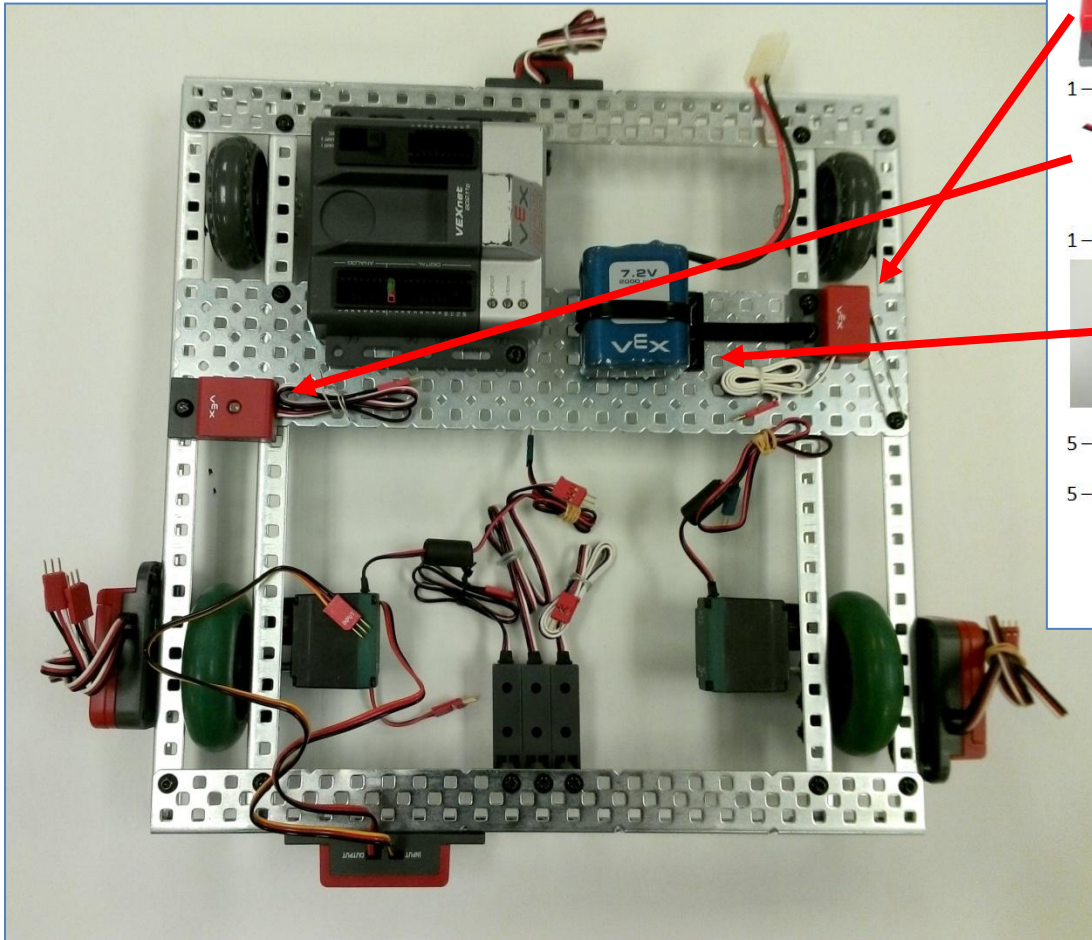


2 – Screw 8/32 x 0.375"

2 – Nut 8/32 Keps



12. Chasis Construction (Continued)



1 – Limit Switch



1 – Light Sensor



1 – Battery Strap



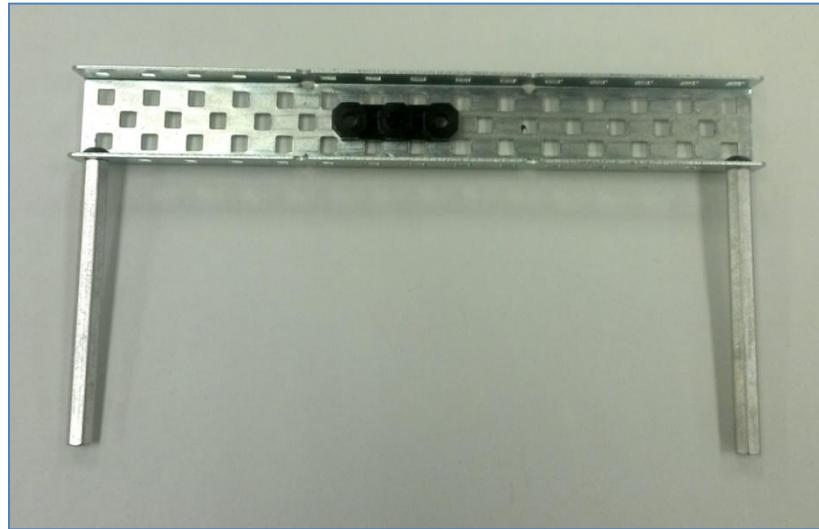
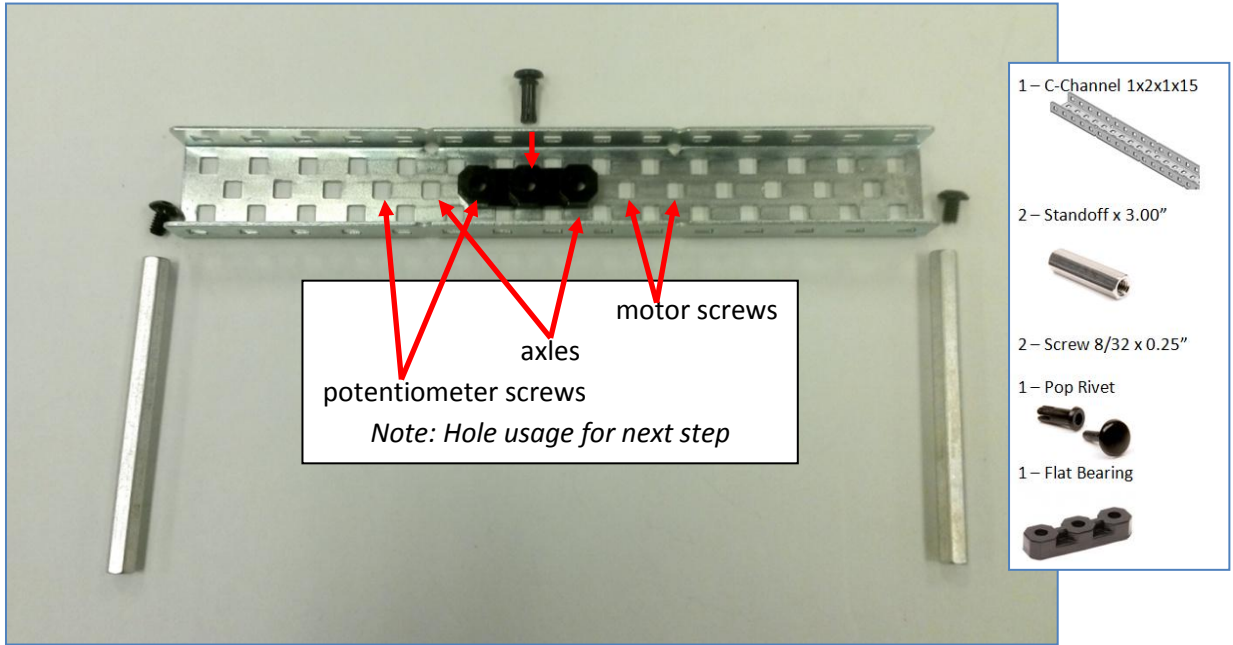
5 – Screw 8/32 x 0.375"

5 – Nut 8/32 Keps

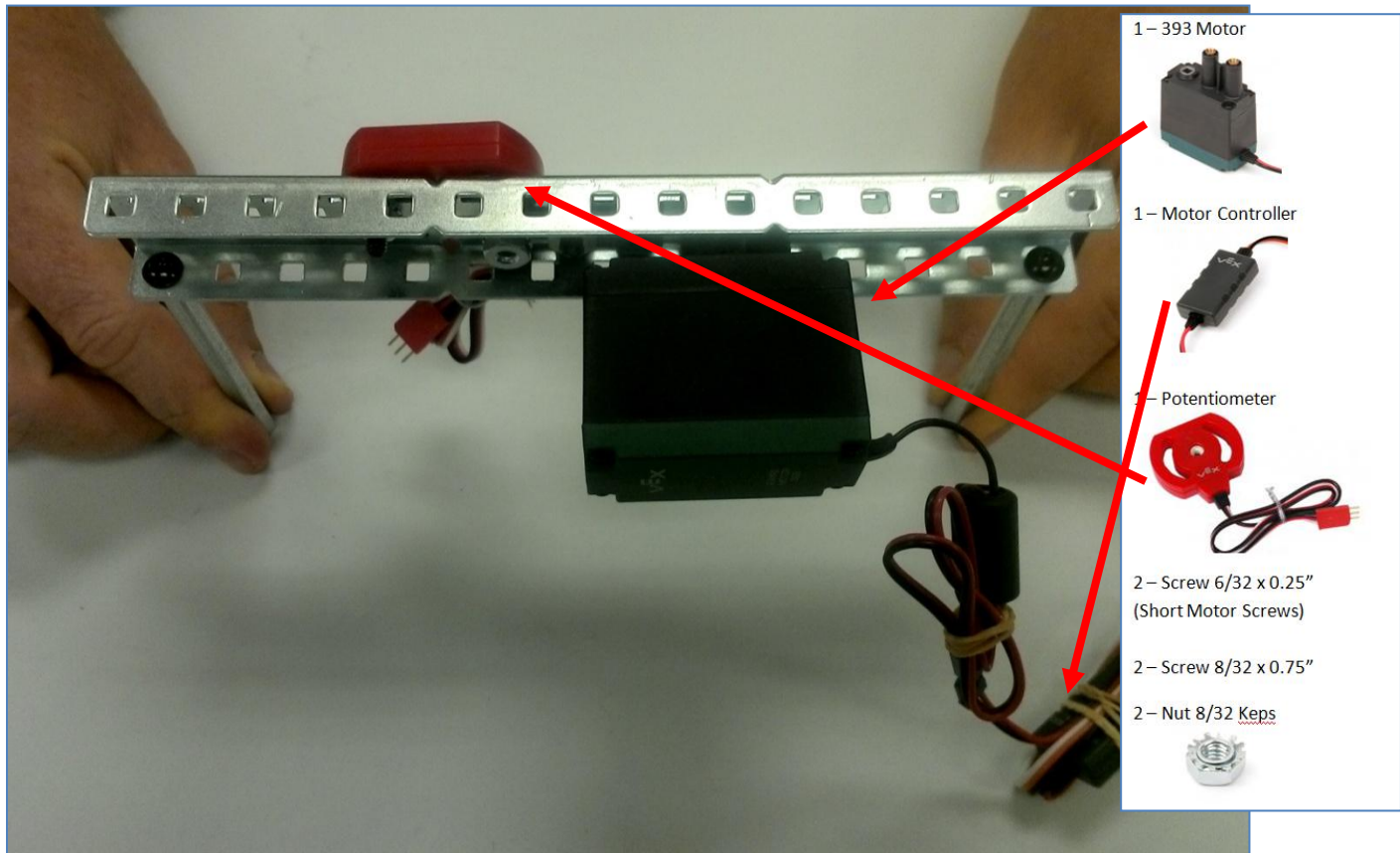


Tip: Loosen Battery Strap by pressing small black lever on the Strap base.

13. Arm Construction (continued)

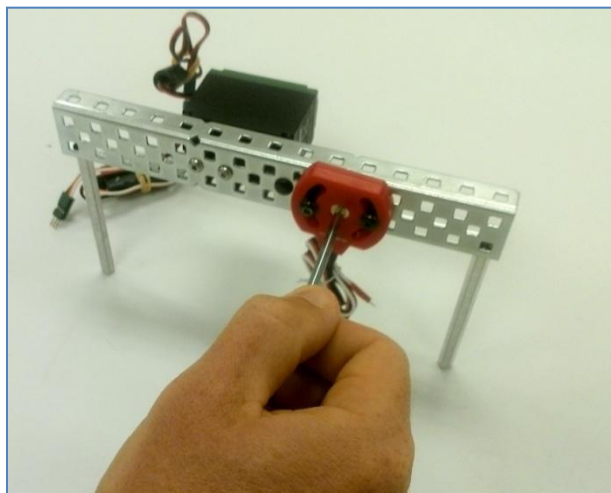


14. Arm Construction (continued)

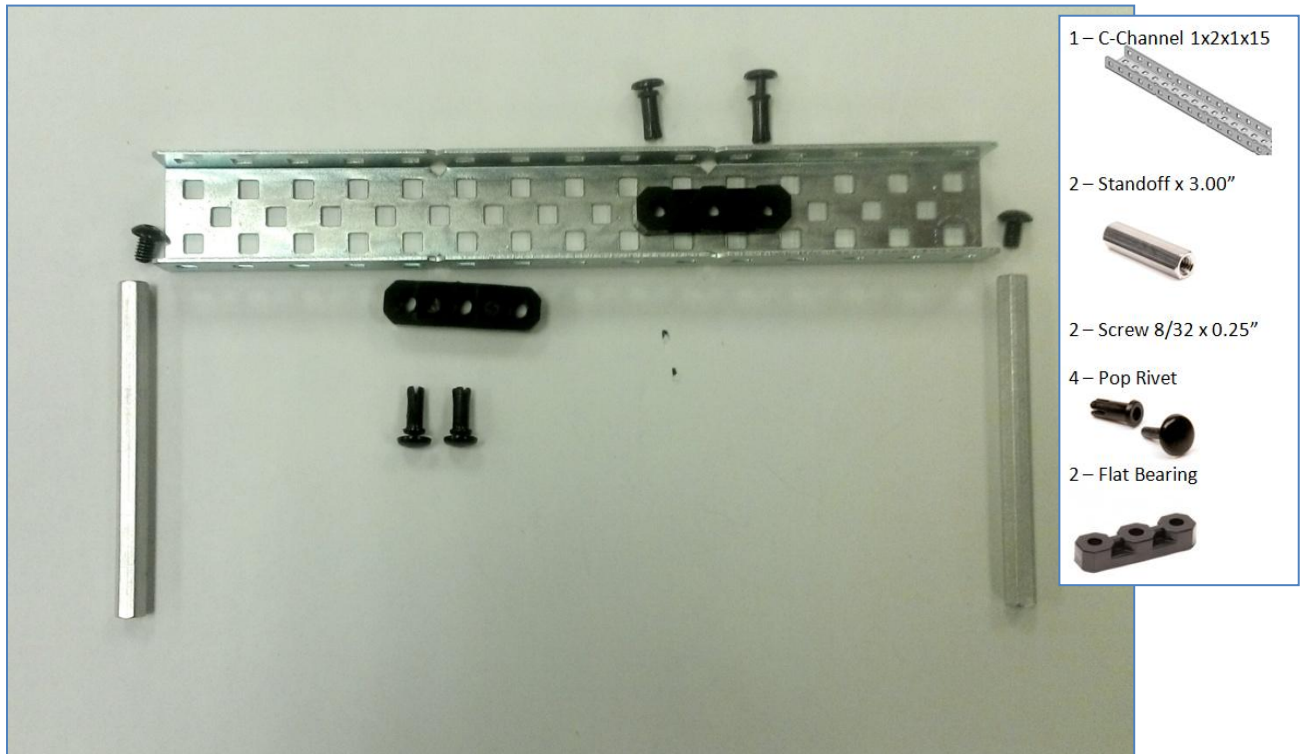


Note 1: The Motor Controller turns 2-wire motor into a 3-wire motor. Make sure to line up the black and red wires.

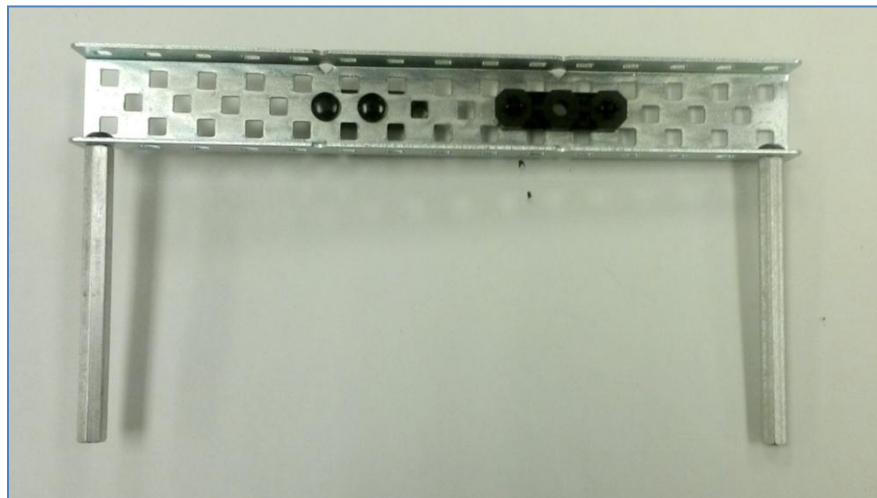
Note 2: The Potentiometer has limited range of motion. After installing, add a temporary shaft and "twist" shaft as far clockwise as possible (See Picture below).



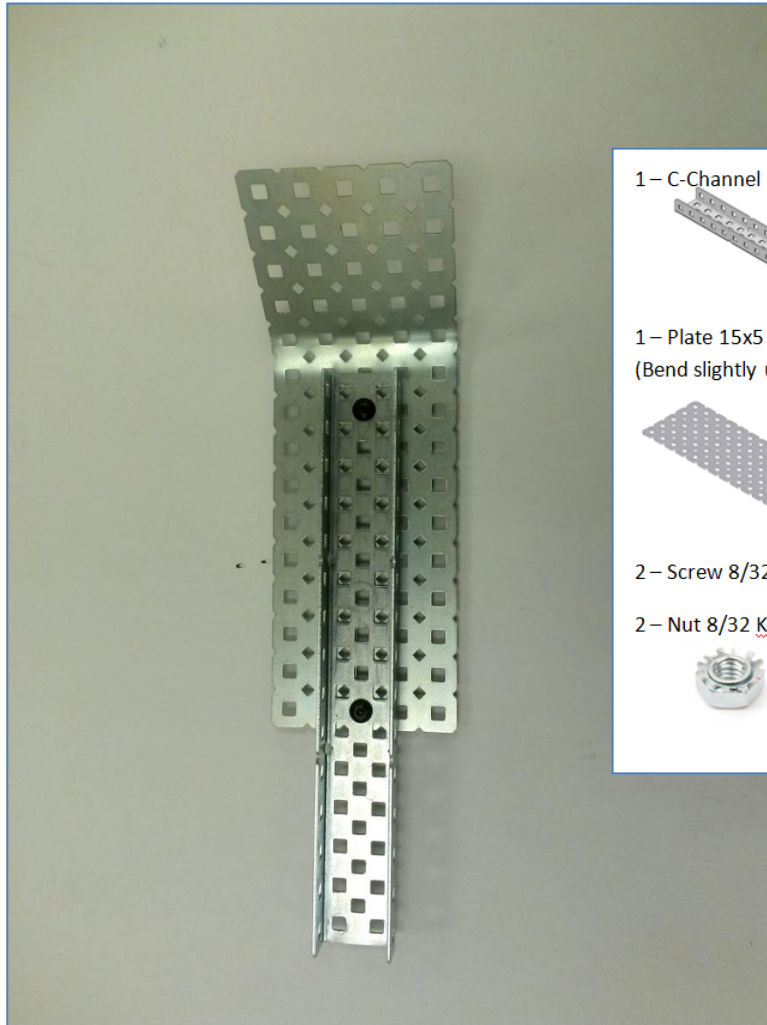
15. Arm Construction



Note: Pop rivets should be inserted through the metal side.



16. Arm Construction (continued)

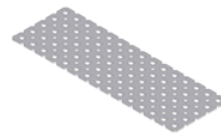


1 – C-Channel 1x2x1x15



1 – Plate 15x5

(Bend slightly upward ~30° after attaching)

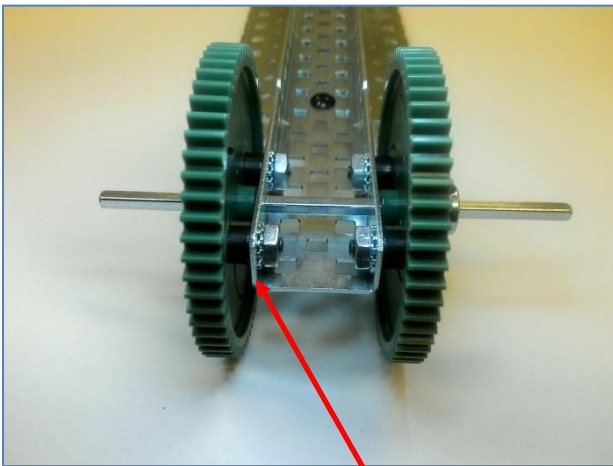
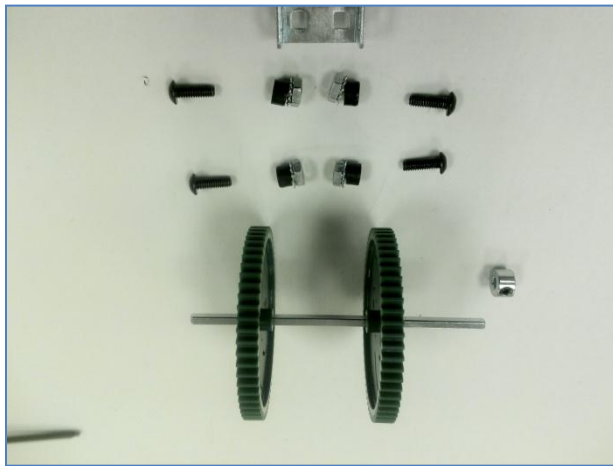
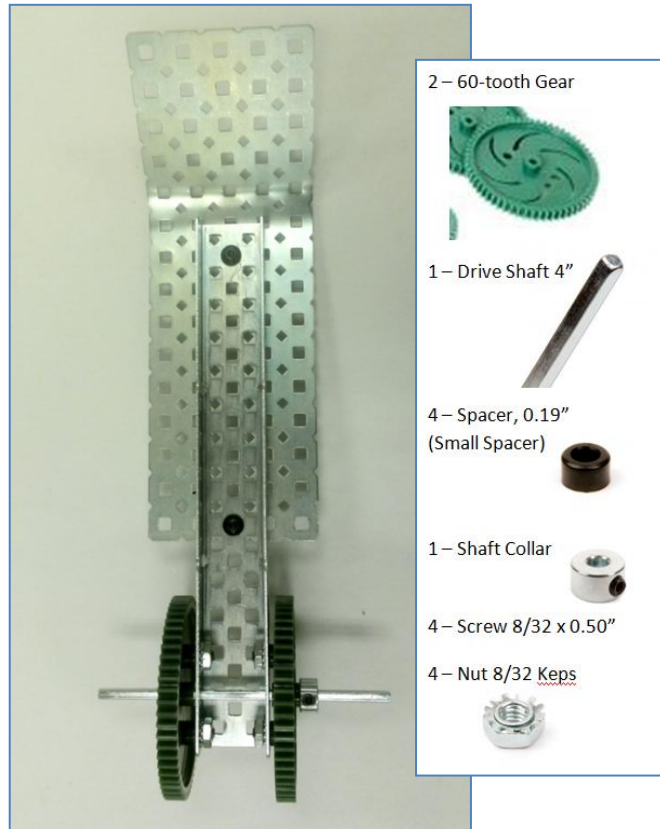


2 – Screw 8/32 x 0.25"

2 – Nut 8/32 Keeps



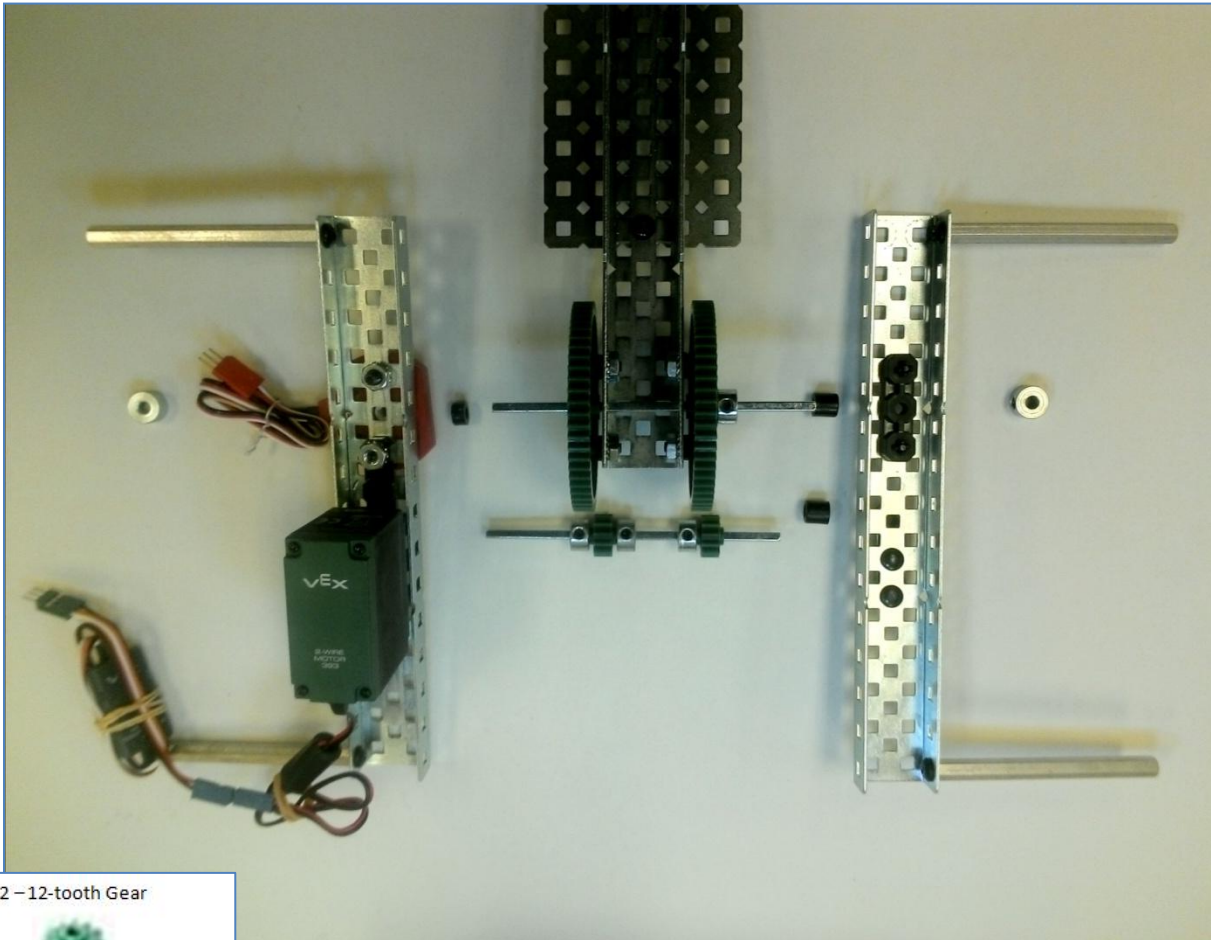
17. Arm Construction (continued)



{Gear, spacer, C-Channel, Keps nut}

Note: It's easier to add the screws, spacers and gears before adding the axle and lock collar.

18. Arm Construction (continued)



2 – 12-tooth Gear



2 – Drive Shaft 4"



1 – Spacer, 0.19"
(Small Spacer)



2 – Spacer, 0.33"
(Large Spacer)



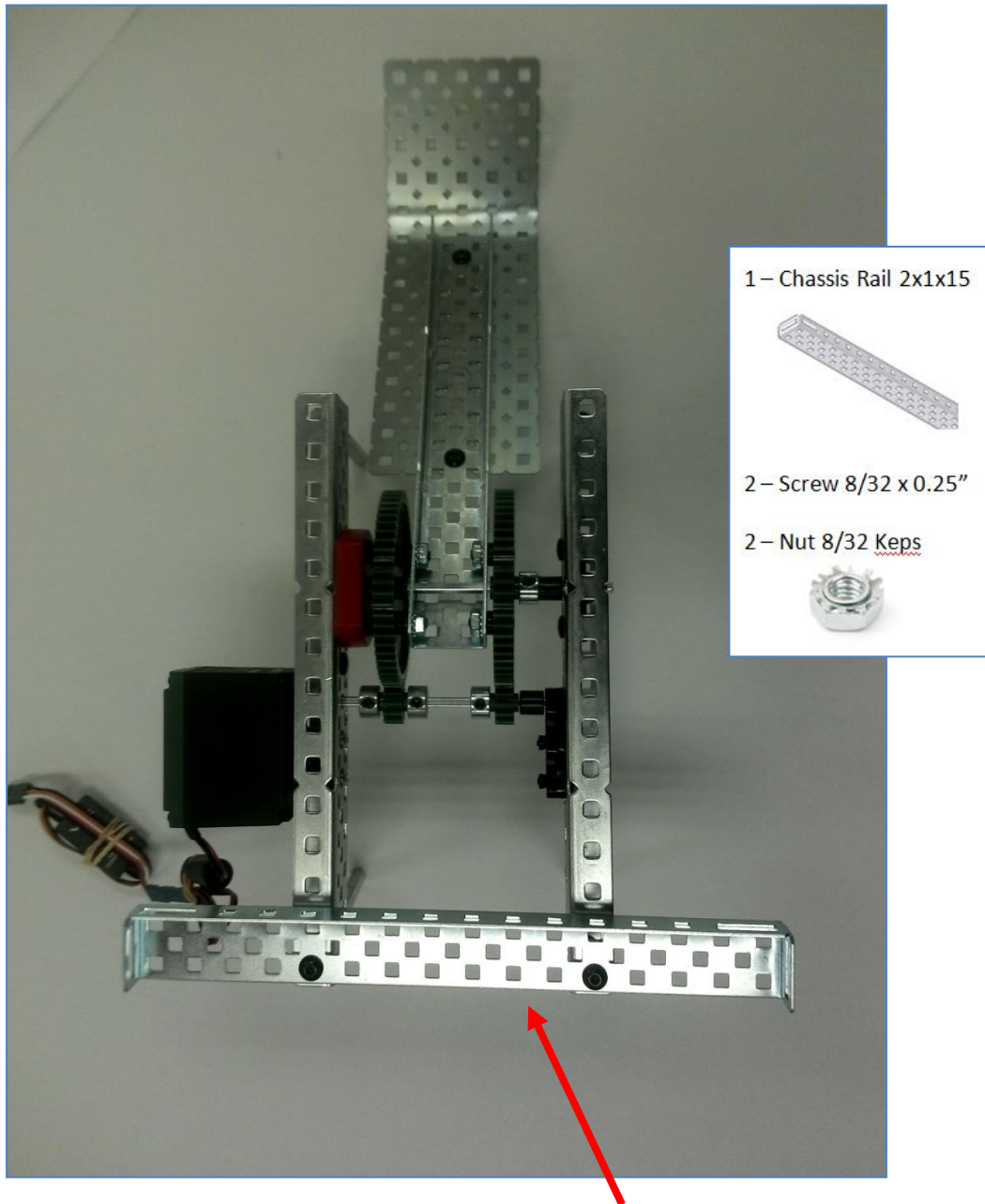
5 – Shaft Collar



Tip: Insert shafts into motor side first. Make sure to insert the axle with the "lower spatula" in the down position since that is how you set up the potentiometer.

Note: See next Step for a constructed view of this Step.

19. Arm Construction (continued)

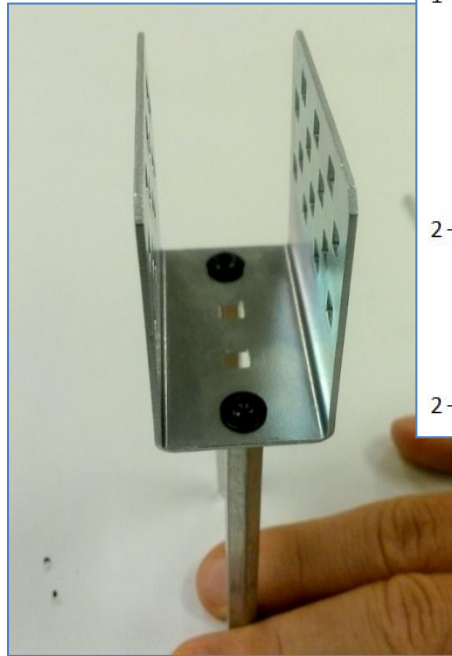


Note 1: The only thing new on this step is the stabilizer bar across the top.

Note 2: After this Step, set the lower assembly aside until Step 26.

Tip: You will probably need to add a wire extender to the servo motor when wiring. Make sure that the black wire extender matches with the black servo wire.

20. Arm Construction (continued)



1 – Rack Gearbox Bracket



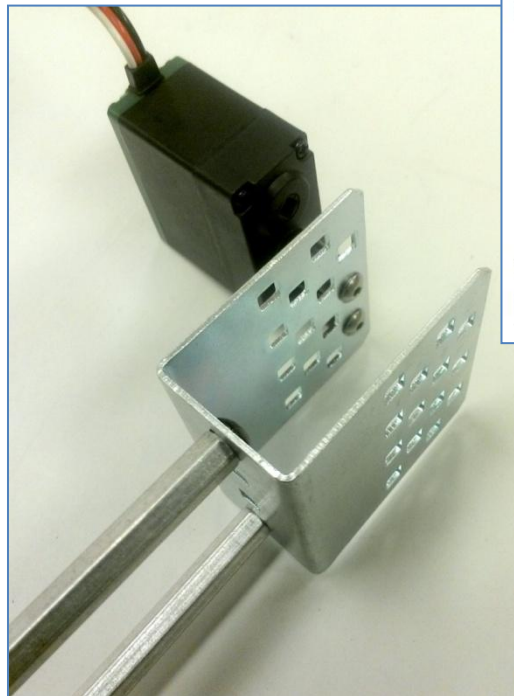
2 – Standoff x 3.00"



2 – Screw 8/32 x 0.25"

Note: The height of the Standoff may change depending on that year's competition.

21. Arm Construction (continued)

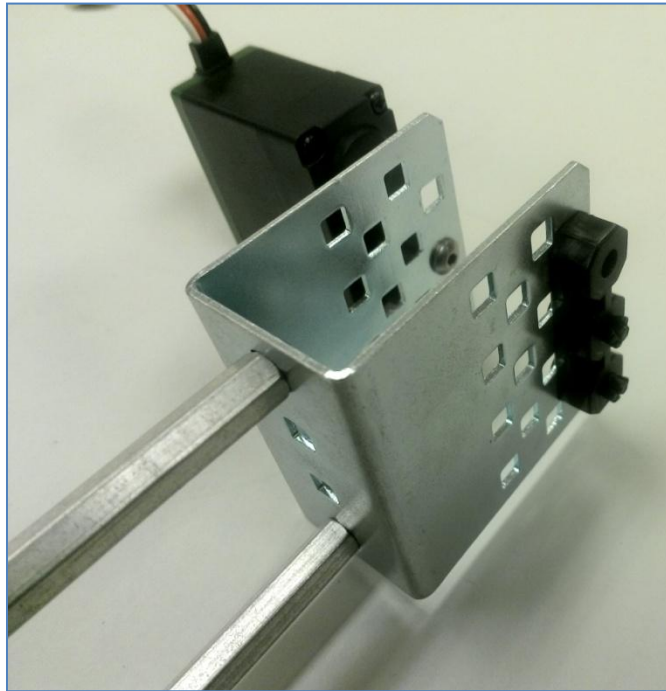


1 – 3-wire Servo Motor



2 – Screw 6/32 x 0.25"
(Short Motor Screws)

22. Arm Construction (continued)



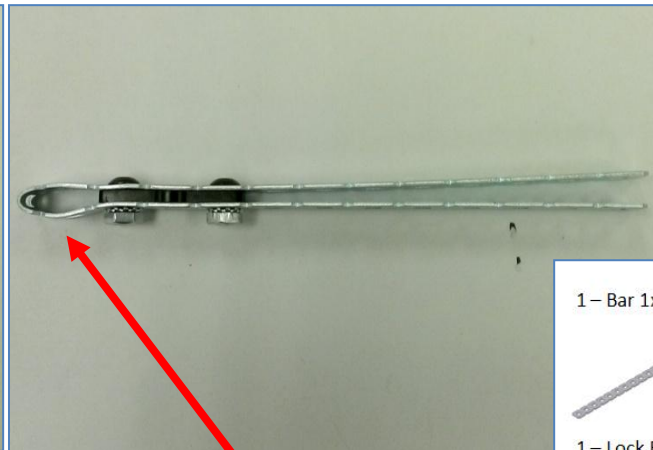
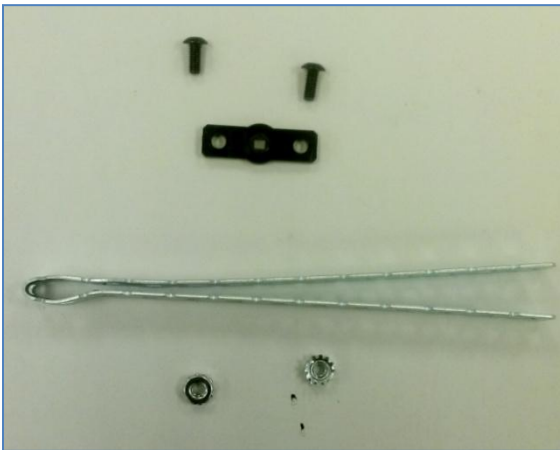
2 – Pop Rivet



1 – Flat Bearing



23. Arm Construction (continued)



1 – Bar 1x25



1 – Lock Bar



2 – Screw 8/32 x 0.375"

2 – Nut 8/32 Keps



Note: When bending bar, make sure holes line up and a rounded 'bulge' remains at the end.

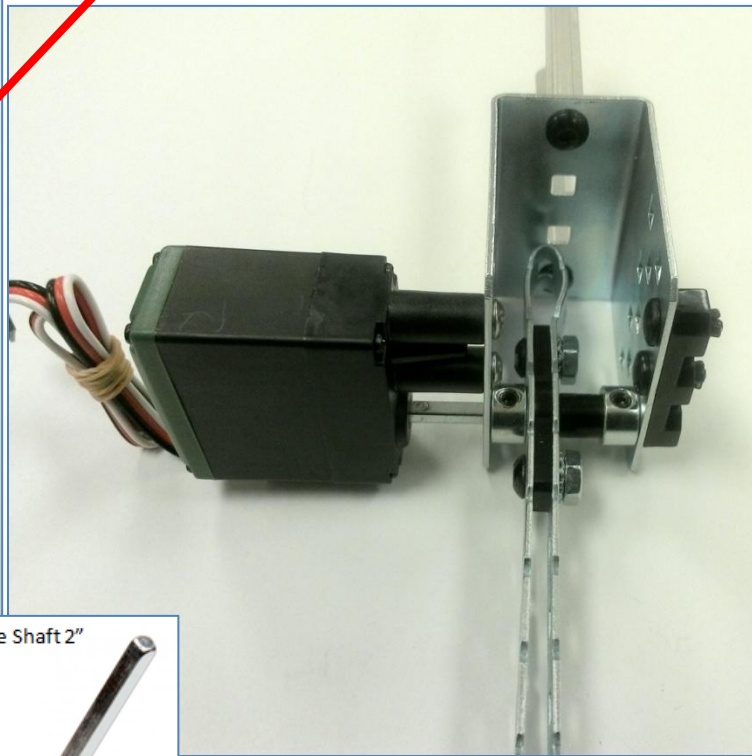
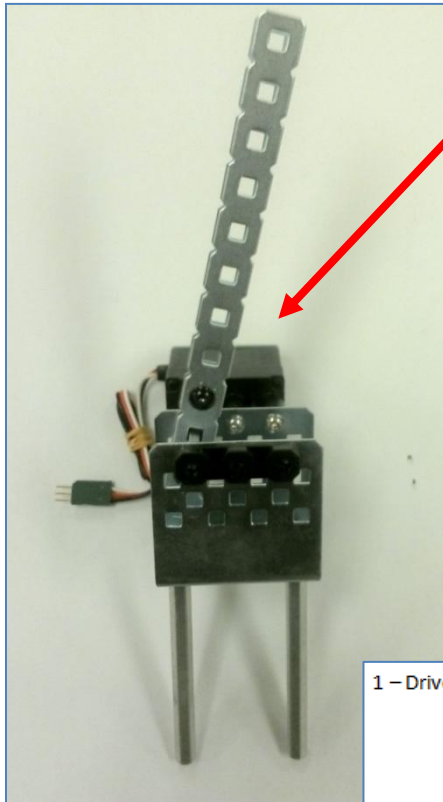
Don't put a crease in the bar or you will ruin it.

24. Arm Construction (continued)

A servo is similar to a potentiometer (Step 14) in that it too has a limited range of motion. This step is only to set the servo range so that the “hard stop” while rotating clockwise is vertically up. Once done, remove shaft and use in next step.



25. Arm Construction (continued)



1 – Drive Shaft 2"



1 – Spacer, 0.33"
(Large Spacer)

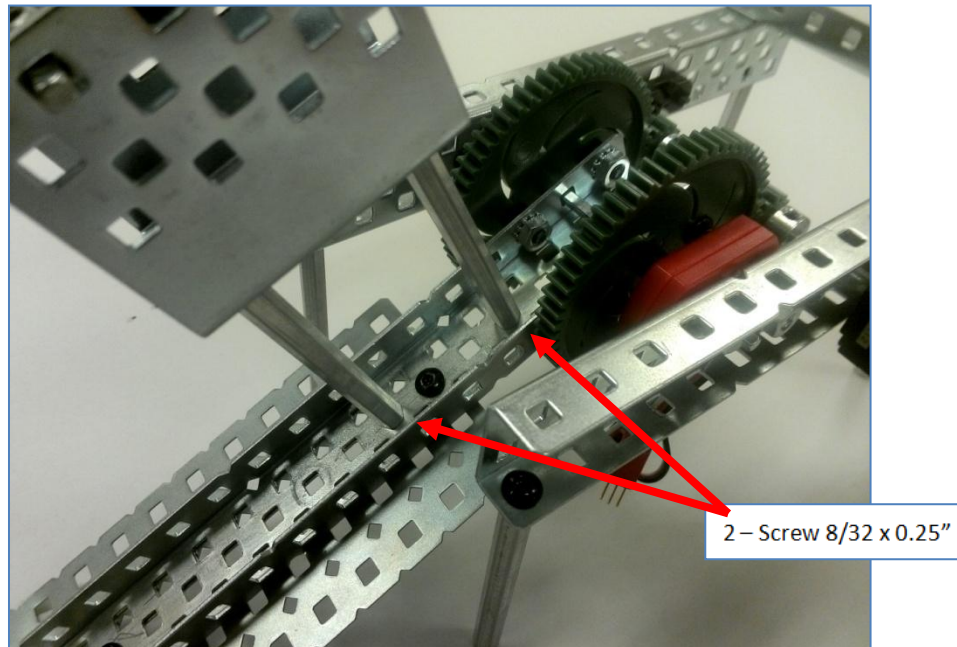


2 – Shaft Collar

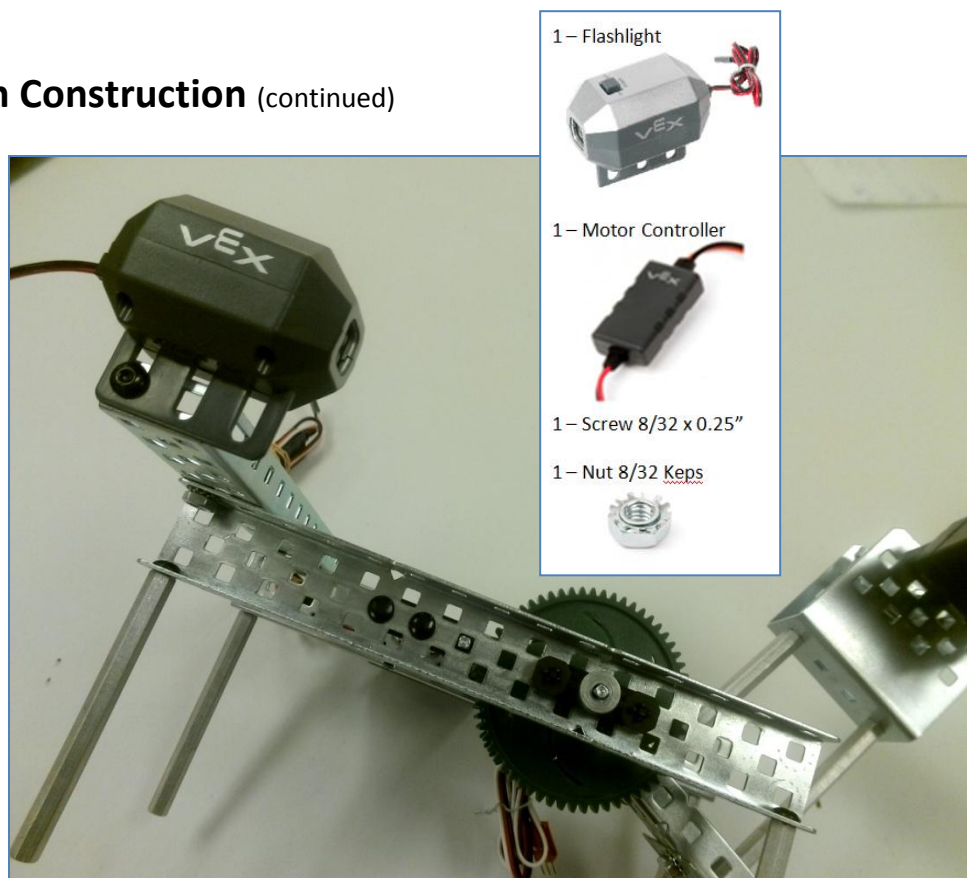


Note: Install the Step 23 bar so that upper gripper is vertically up.

26. Arm Construction (continued)

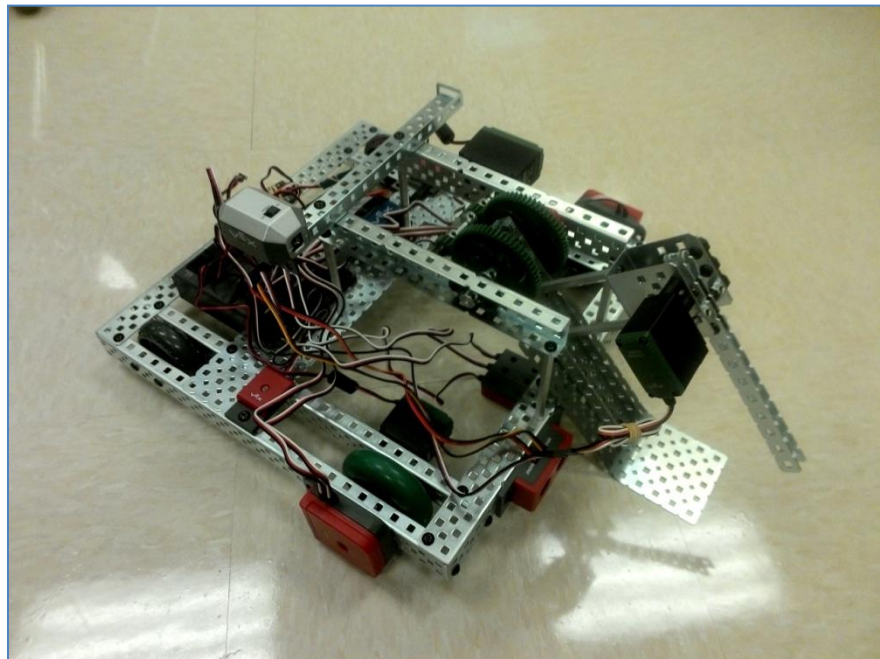
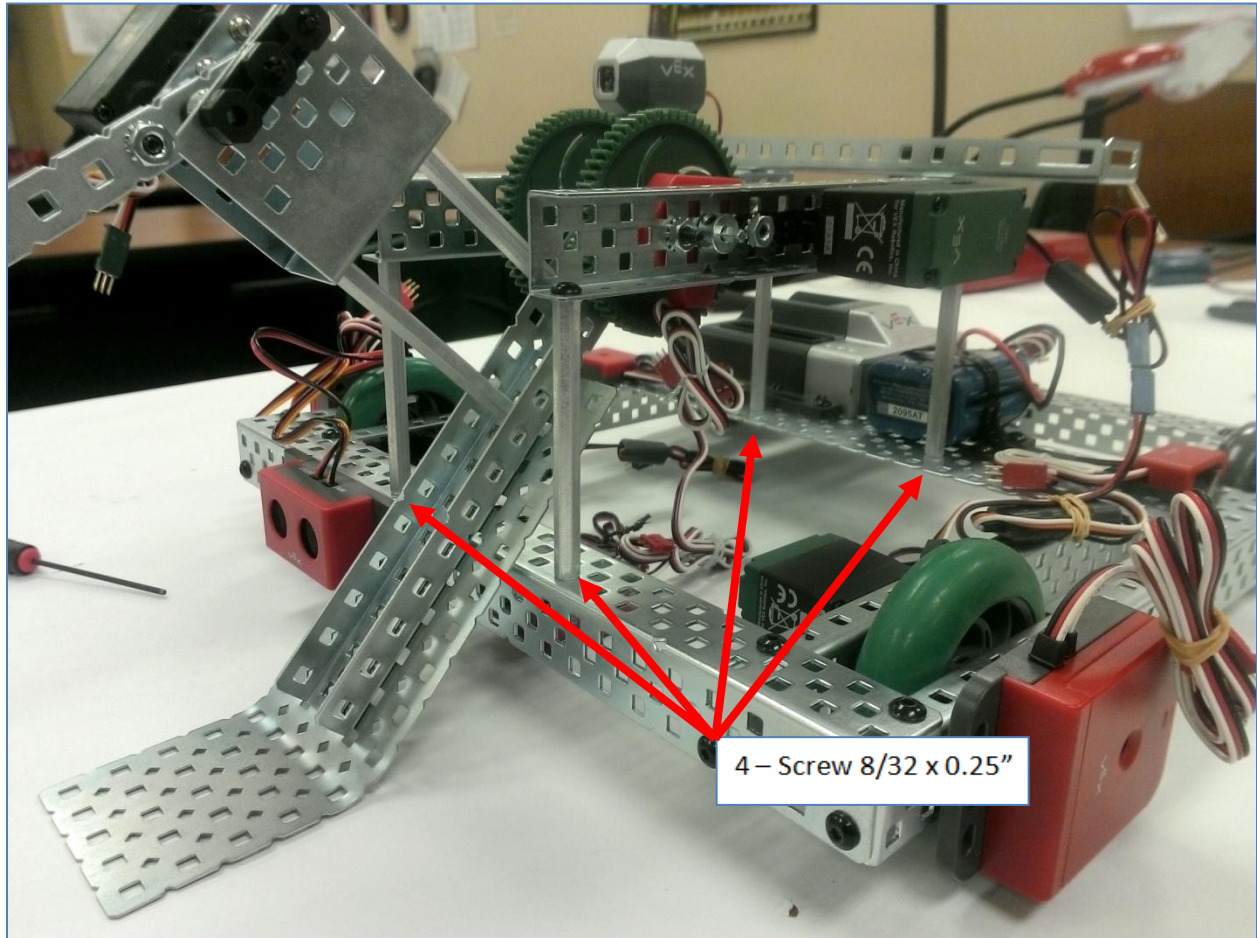


27. Arm Construction (continued)

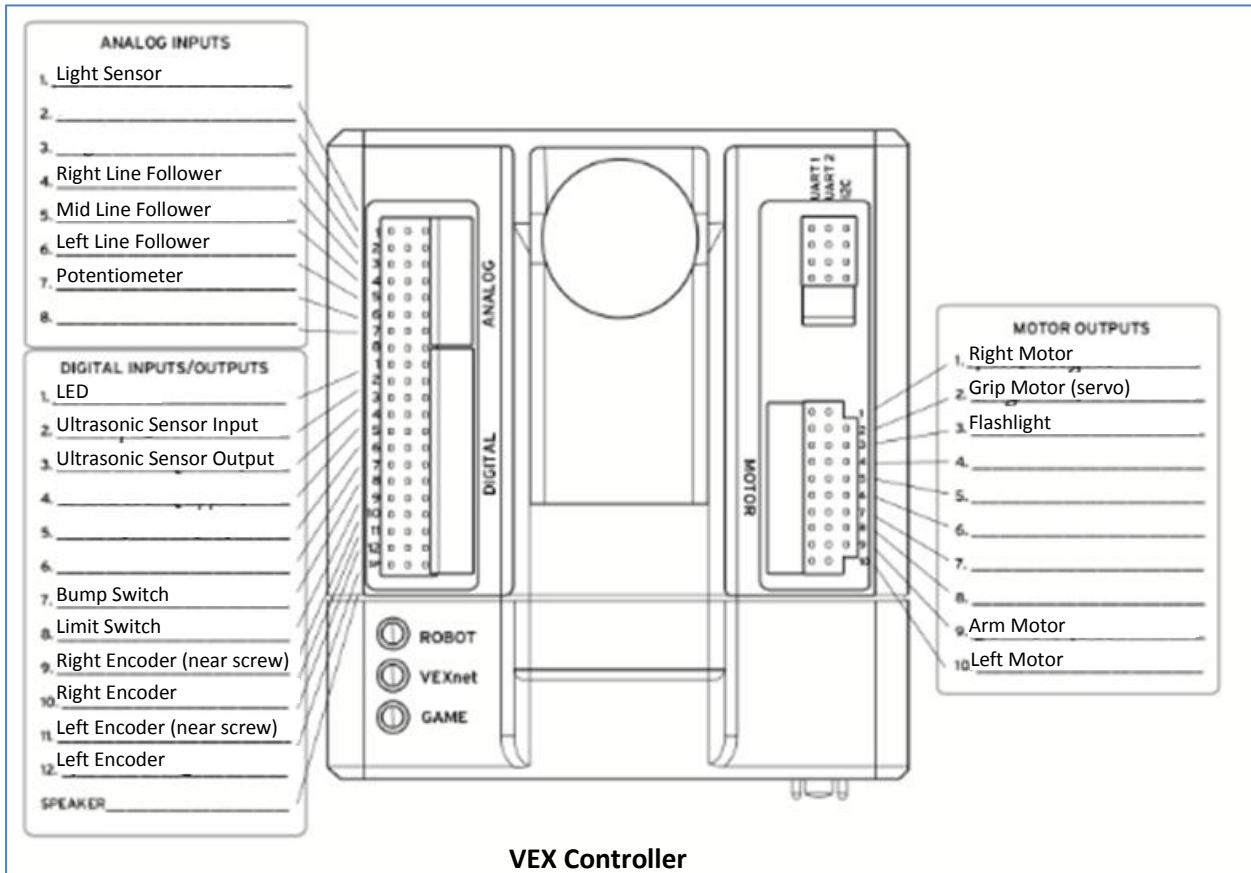


Note: Add the wire controller to the end of the flashlight.

28. Combine Chassis and Arm



28. The Wires!



Note: When installing wires, make sure the black wire is always pointing towards the outside of the VEX Controller.