



BROWNCOATS

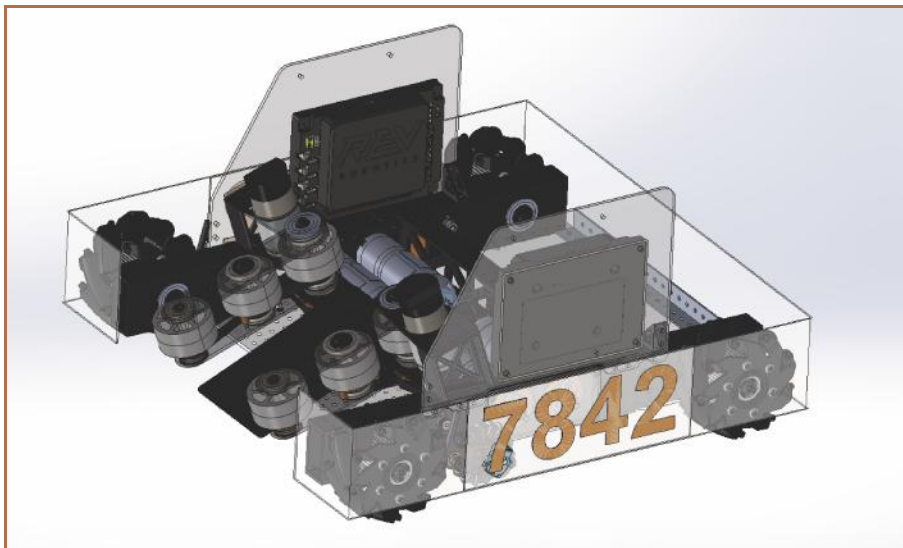
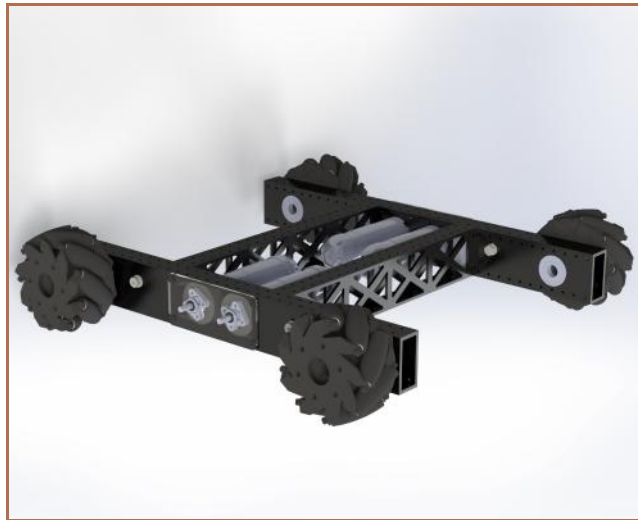
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VERA'S JOURNEY

Weeks 1 - 3

Below are the CAD renderings of the team's vision for what Vera will look like, as imagined at the start of the season.





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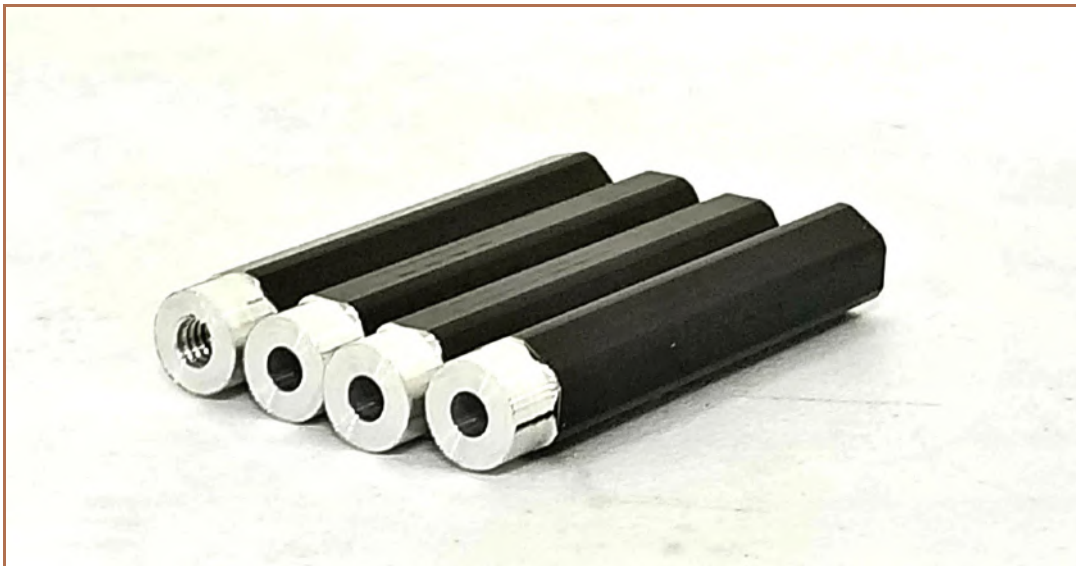
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VERA'S JOURNEY

Week 4

The drive train hex shafts for the mecanum wheels were machined and completed.
"Compact. Simple. I daresay elegant. 10 of 10. Good form." -Jon Rogers, Mentor, FTC Team 7802 Challenge Accepted





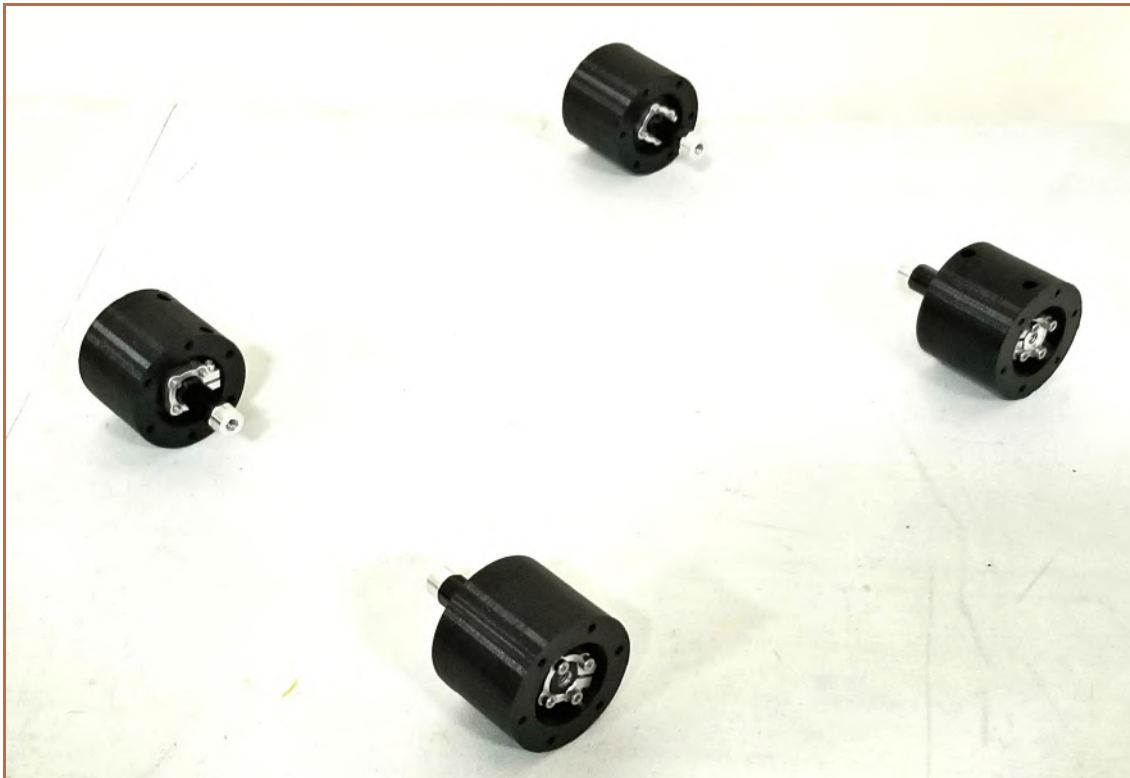
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VERA'S JOURNEY

Week 5

The team inserted the hex shafts into the mecanum hubs. Next week, assembly of the drive train would begin.



See Page E3-25 for reference to Week 5



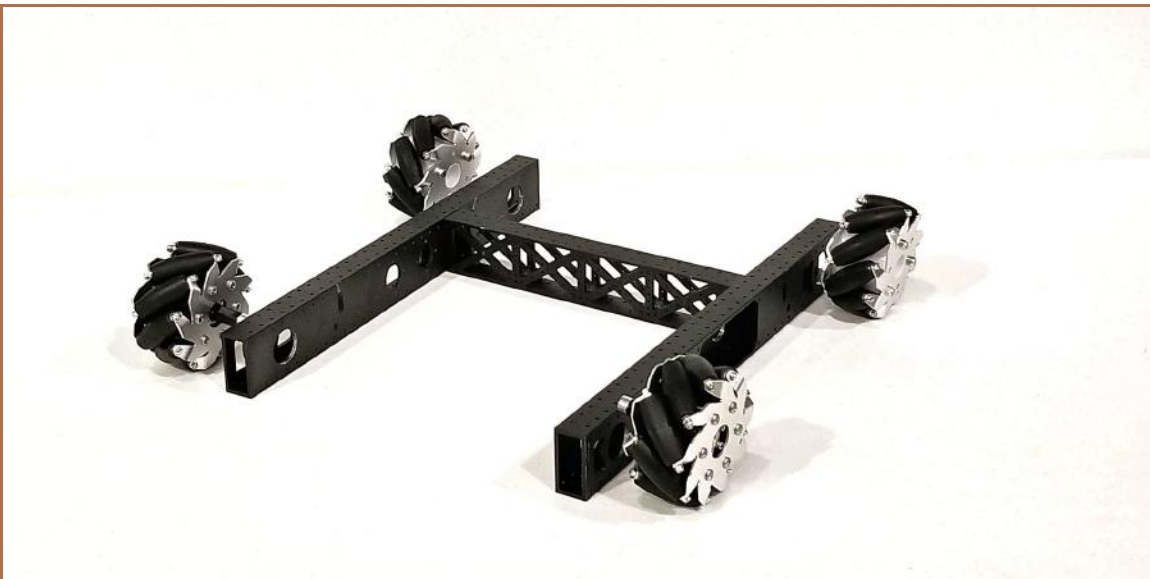
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VERA'S JOURNEY

Week 6

Now that the drive tubes were cut and powder coated, the team was ready to put them together. Originally there were supposed to be two drive tubes and two cross beams, but they decided they only needed one due to the fact that they would need room for the intake at the front of the robot.



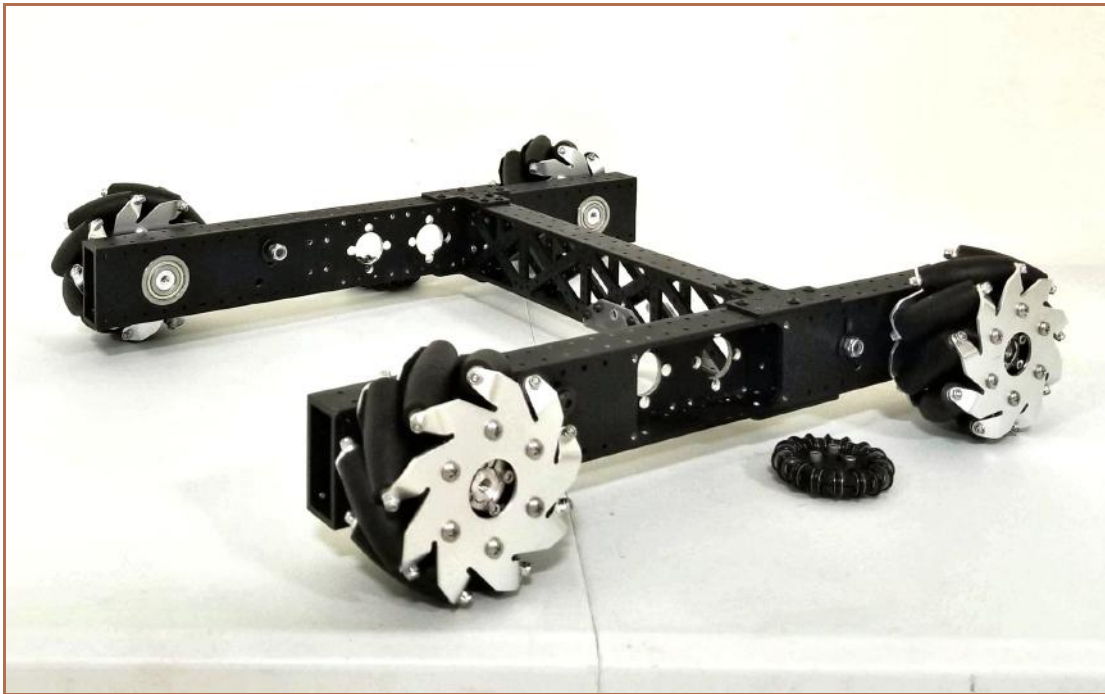
See Page E3-28 for references to Week 6



VERA'S JOURNEY

Week 7

The mecanum wheels were mounted to the robot, they assembled the belt tensioners in the tubes, the drive tubes were counter-bored, and assembly of the odometry wheels was started.

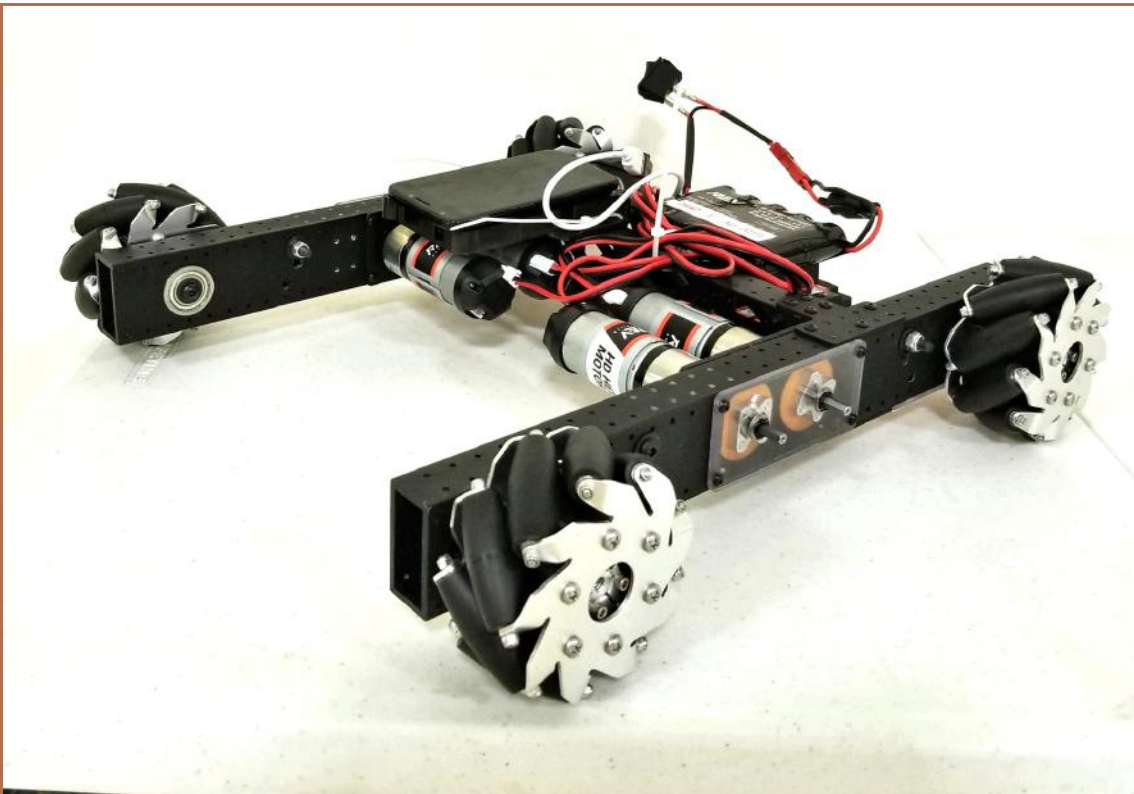


See Pages E3-29 and E3-31 for references to Week 7

VERA'S JOURNEY

Week 8

The drive train assembly was finished this week. Motors were mounted and belts were inserted into the drive tubes. After all of this, electronics and the battery were temporarily mounted so that driving could be tested.



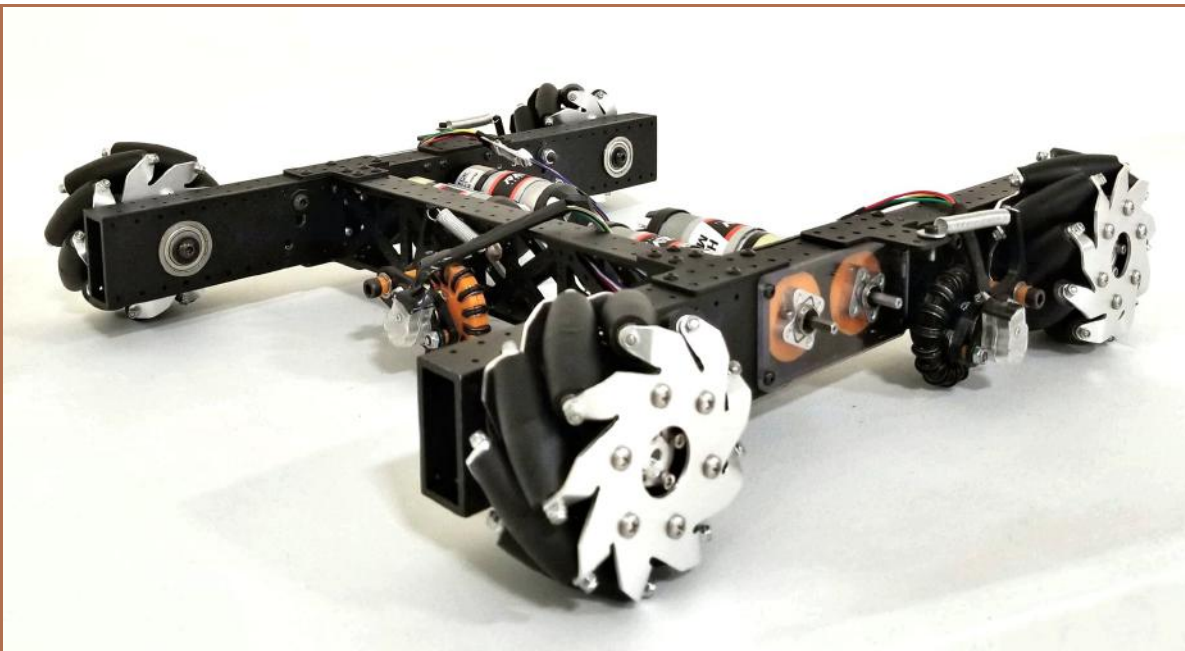
See Pages E3-33 and E3-35 for references to Week 8



VERA'S JOURNEY

Week 9

The odometry wheels were finished and added to the drive train assembly. A temporary solution was made for spring loading odometry wheels to test going over the bump underneath the skybridge.



See Page E3-37 for references to Week 9

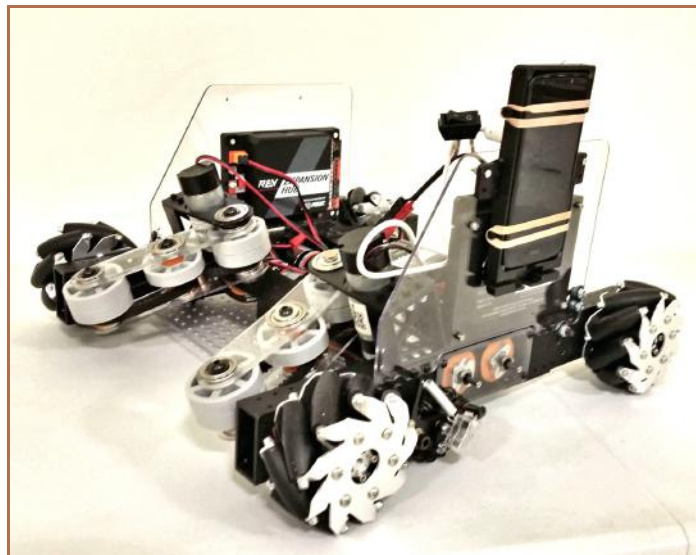
VERA'S JOURNEY

Week 10

Assembly of the intake was completed, aside from a few minor adjustments that will be made in the future. The belly pan for the intake was mounted, along with two temporary electronics panels and a phone mount for testing.



*See Pages E3-39,
E3-41, and E3-43 for
Week 10*





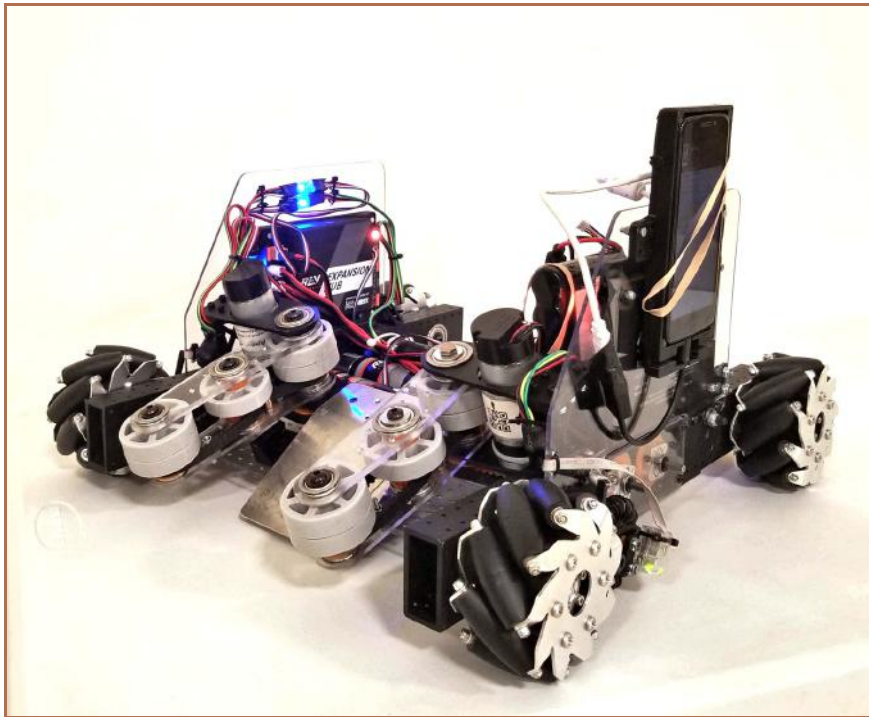
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VERA'S JOURNEY

Week 11

The intake ramp went through many iterations and testing, until they found the most optimal position and mounted it to the robot. The ramp works as a guide for the intake, lifting the stones over the drive motors and into the interior of the robot.

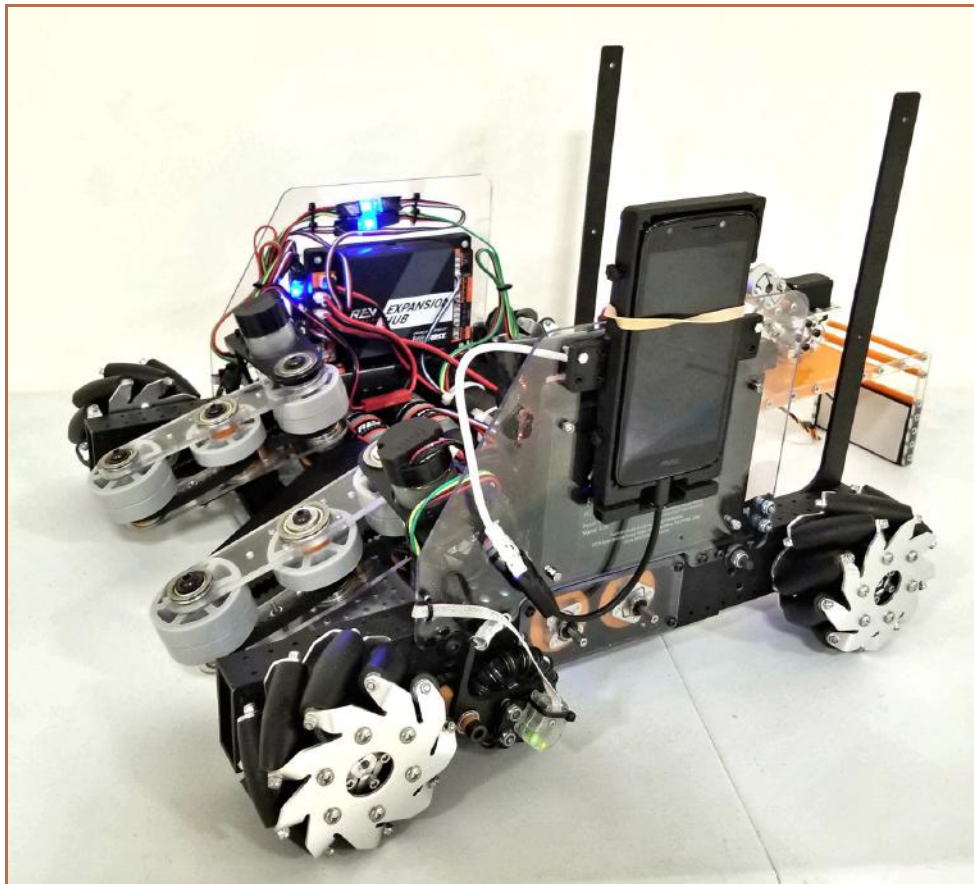


See Pages E3-46 and E3-47 for references to Week 11

VERA'S JOURNEY

Week 12

The stone clamp was assembled and completed, though not yet mounted to the robot, as the arms still needed to be built. The mounts for the lift were powder coated and added to the robot.



See Pages E3-51 and E3-55 for references to Week 12



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VERA'S JOURNEY

Week 13

The hopper to hold stones in position within the robot was finished and mounted, while assembly of the lift began. The lift slides were completed as well as the belly pan which held the motors, belts, spool and V-bearing guides. The stringing didn't go quite as planned, and they were unable to retract the lift (restringing was required). The final phone mount was printed and put on the robot, along with the battery box and power switch holder. A temporary solution for the foundation catch intended for their first qualifier was also added.



*See Pages E3-59, E3-60,
E3-61, E3-62, E3-63, E3-64,
and E3-69 for references to
Week 13*



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VERA'S JOURNEY

Weeks 14 and 15

During Week 14, they were able to test their subsystems with software and found some failure modes. The first being that one of the bearing blocks on the lift broke under stress. Another was that the arm and clamp didn't have enough clearance to make it between the lift due to several reasons. Because of this, both the lift and the arm and clamp were taken off the robot for revisions to be made.

On Week 15, the lift was removed from the robot so a stage could be removed, bringing them down to five to make room for the revised arm and clamp.

Weekly pictures were not taken due to the disassembly of certain subsystems.

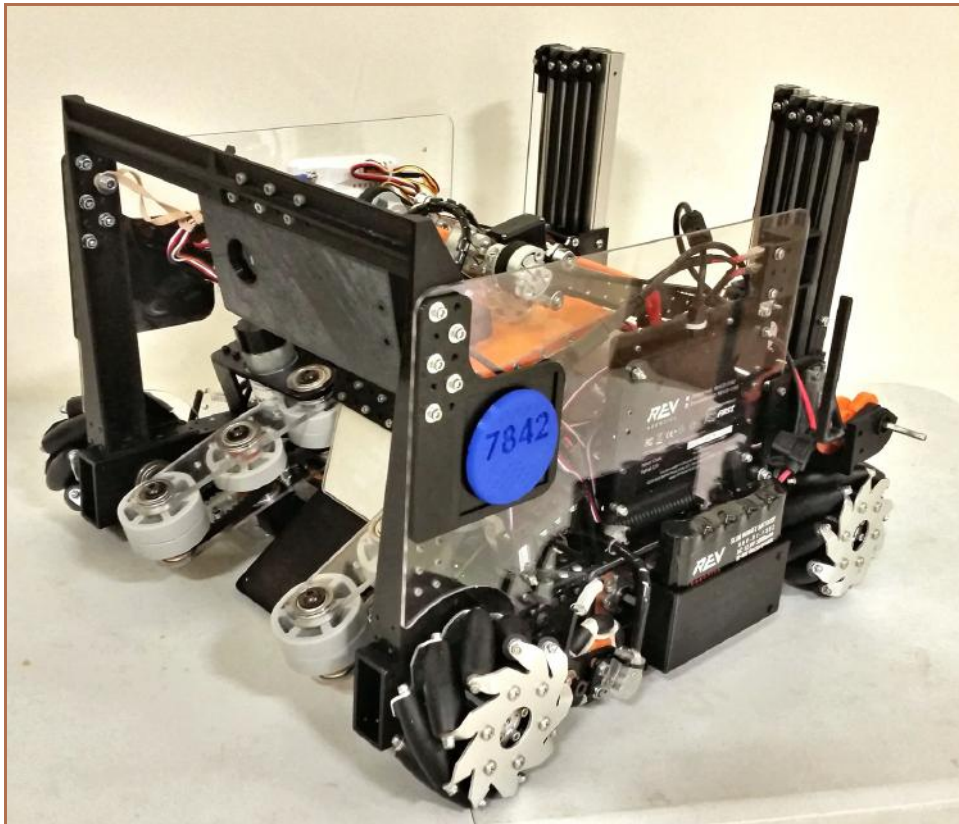
See Pages E3-71, E3-72, E3-73, E3-74, E3-77, E3-79, E3-82, and E3-84 for references to Weeks 14 and 15



VERA'S JOURNEY

Week 16

The orange battery box was changed out for a black one, and once the lift's belly pan was re-mounted, the rigging of the lift was completed. The custom odometry wheels had to be switched out with REV omnis for more accurate feedback. After this, the newest version of the arm and clamp was mounted to the robot. After some minor adjustments, everything fit well.

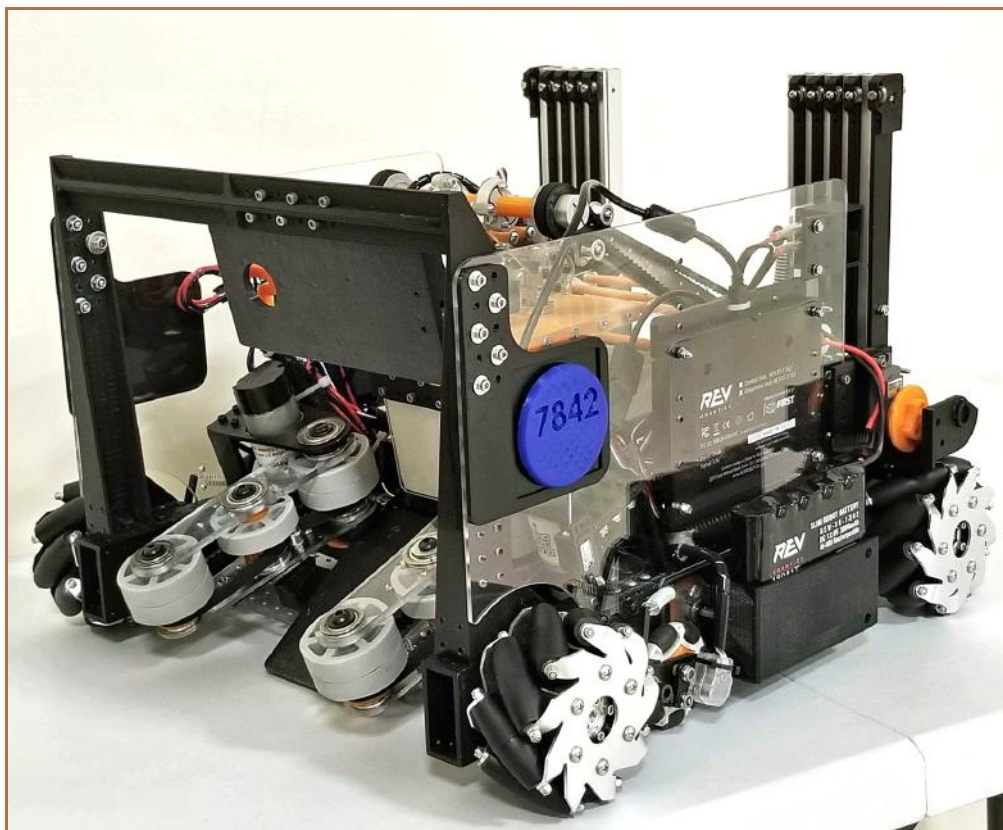


See Pages E3-85, E3-87, E3-88, E3-89, E3-90, E3-92, E3-93, and E3-94 for references to Week 16

VERA'S JOURNEY

Week 17

The arm and clamp was spring-loaded to help keep stress off the servo, and aid the clamp on its way back to its stored position. The foundation catch was mounted to the robot, but a failure mode was discovered and it needs to be revised.



See Pages E3-99, E3-100, and E3-101 for references to Week 17



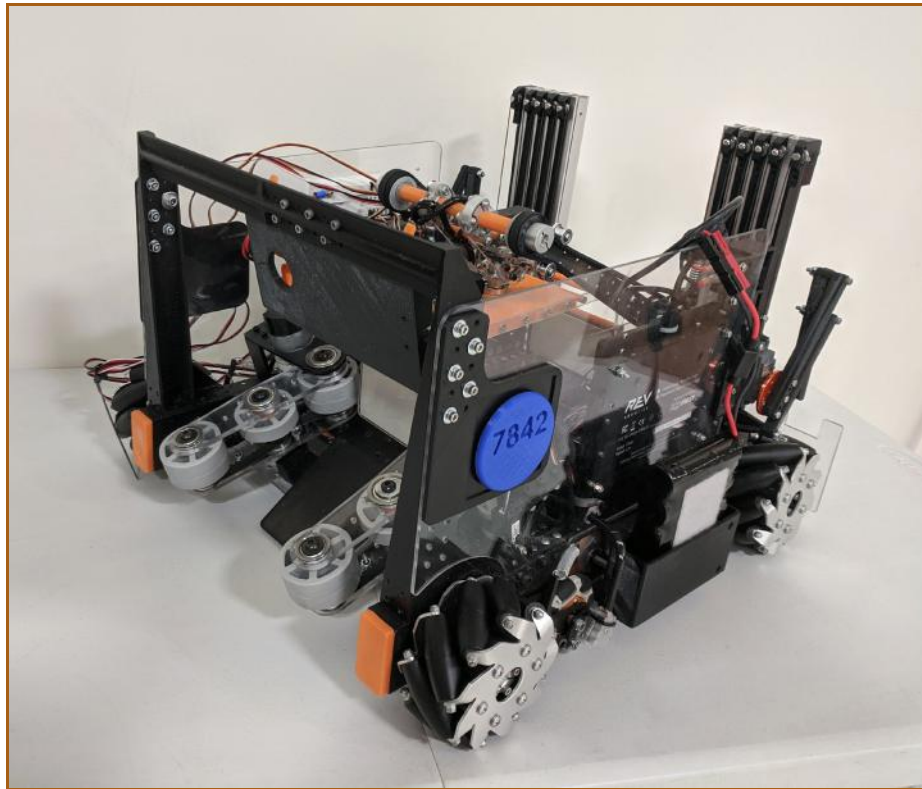
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VERA'S JOURNEY

Week 18

The lift subsystem was nearly finished—a new, re-enforced spool was added and 3.7 motors were changed out for 20s, and the new foundation catch was added to the robot.



See Pages E3-103, E3-105, and E3-107 for reference to Week 18



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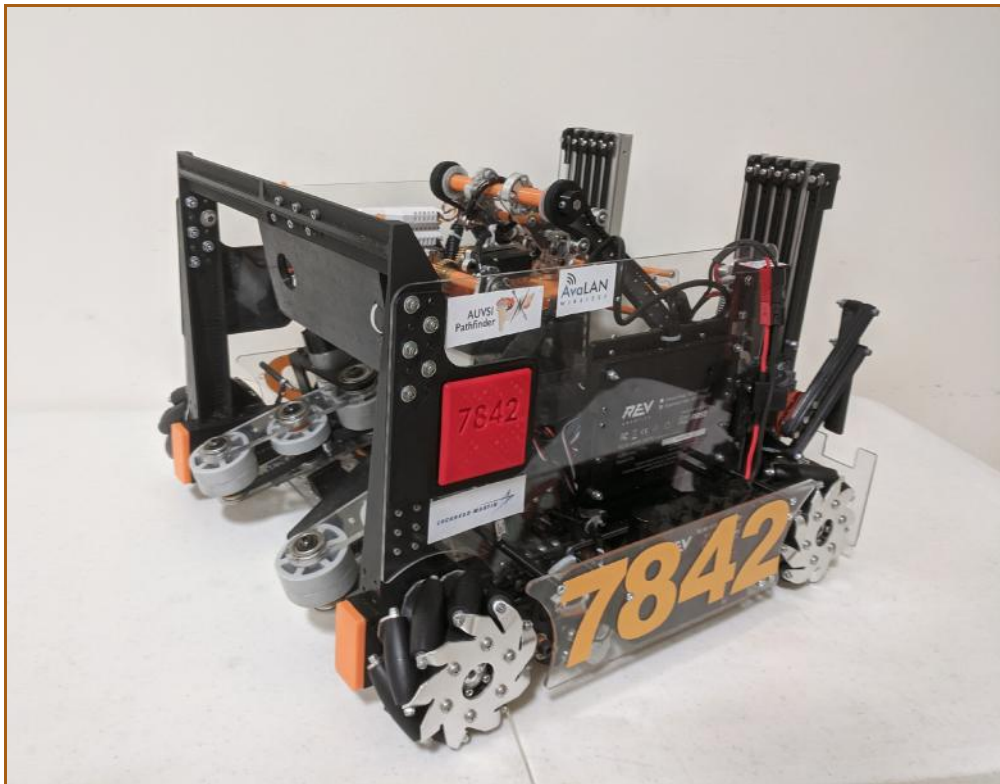
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VERA'S JOURNEY

Week 19

The belly plan was mounted back onto the robot after changing out the spool, and the lift was rigged again. The small diameter pulleys on the motors were changed out for larger ones, and a wire management accordion was made and mounted to the robot for the lift. The side plates with the team's numbers were countersunk and then mounted.



See Pages E3-109, E3-110, E3-111, E3-113, E3-114, and E3-115 for references to Week 19



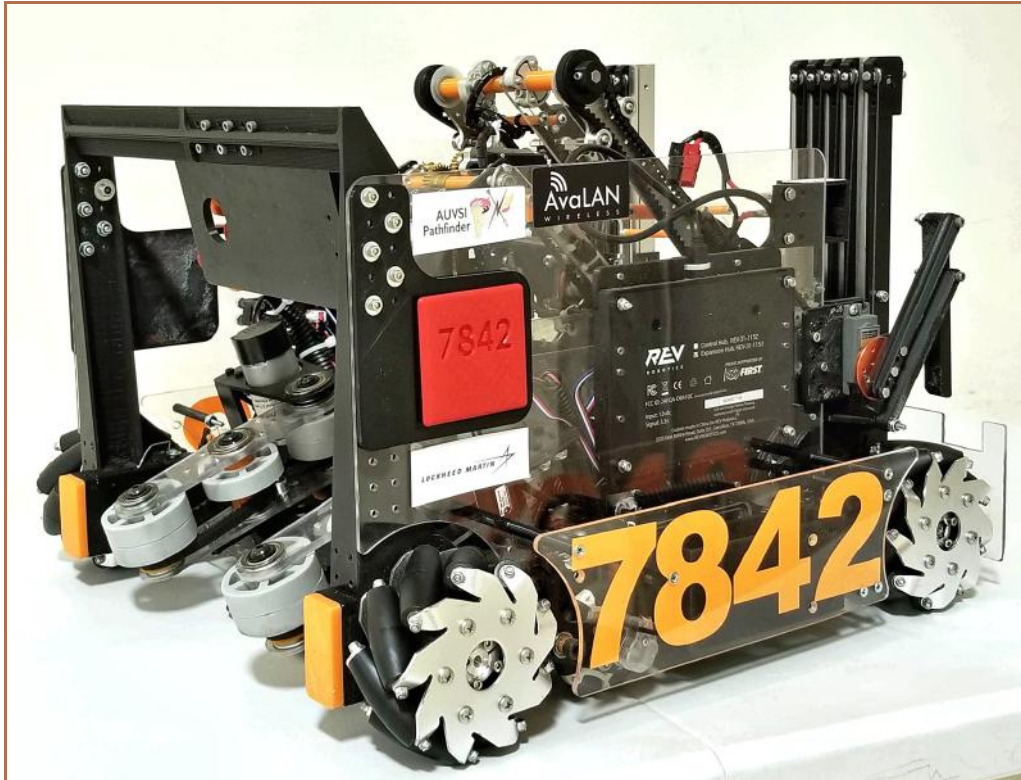
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VERA'S JOURNEY

Week 20-21

Week twenty was spent changing out the broken servo from our Springdale Qualifier which broke during our semi-finals. Other than that, both week twenty and week twenty one were mostly spent on tuning the drive train and working on autonomous.



See Pages E3-121, E3-23, E3-24, E3-25, and E3-27 for references to Weeks 20-21



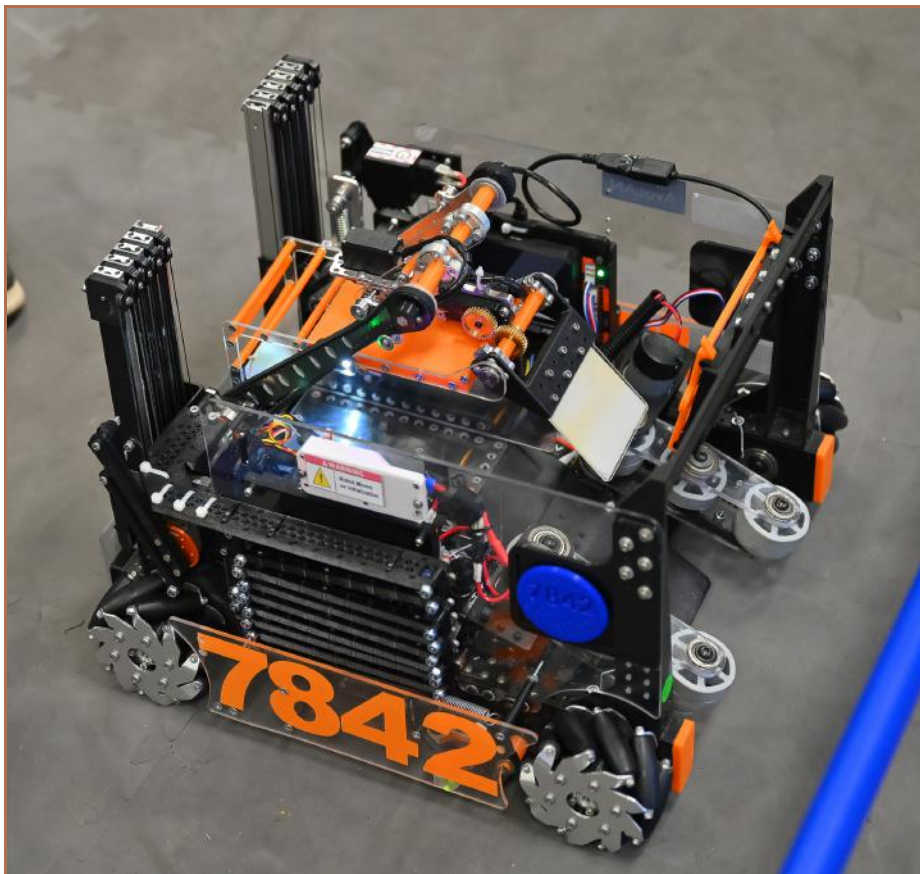
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VERA'S JOURNEY

Week 22-25

Week twenty-two through twenty-five were mostly dedicated to continued work on autonomous and software. Week twenty-four and twenty-five were also competition weeks, during which the team competed in Arkansas and Alabama. No changes were made to the robot's appearance, so it remains the same as it did during week twenty and twenty-one.



See E3-129, E3-131, E3-132, E3-133, E3-134, E3-135, E3-136, E3-137, E3-139, E3-140, {AL State page numbers here} for reference to Weeks 22-25



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VERA'S JOURNEY

Week 26

This week's meeting was spent discussing the lessons we learned from Alabama State and making a list of modifications we want to make before going to Worlds in April. Therefore, there were no changes made to the robot and no picture was taken.