

A teal-colored rectangular banner. On the right side, there is a large gear icon with a sun and a bird in flight inside it. The text 'FLYSET' is written across the sun. On the left side, the text '2018 FLYSET FTC Workshop - Tank Chassis II' is written in white, bold font. Below it, the date '(9/3/2018)' is written in a smaller white font. There are also some faint, light blue circular and rectangular shapes scattered in the background.

2018 FLYSET FTC Workshop - Tank Chassis II

(9/3/2018)

A white rectangular area with a thin black border. On the left side, there is a grey quarter-circle placeholder for a profile picture. To the right of the placeholder, the name 'Connor Mihelic' is written in a bold black font. Below the name, there is a short paragraph of text. At the bottom left, there is a small version of the gear and sun logo. At the bottom right, the text 'technibots 8565' is written in a blue and yellow font.

Connor Mihelic

I joined FTC Team 8114 my Freshman year of highschool, back in 2015.

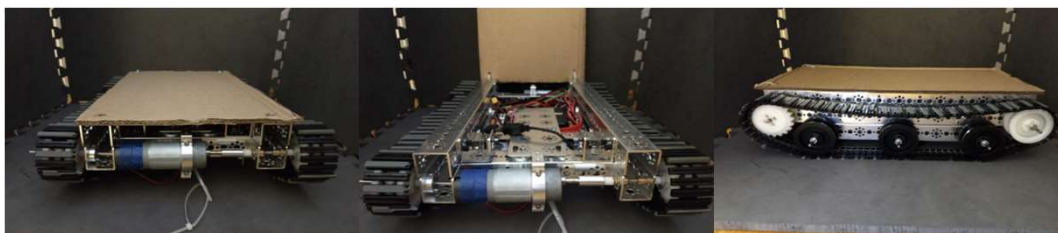


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Chassis Specification

Tank Chassis II

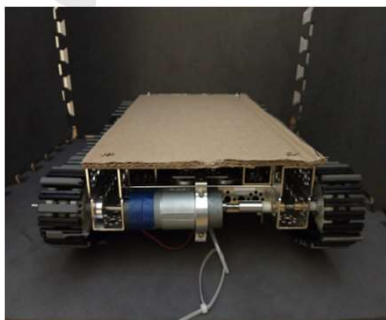


Chassis weighs 9.0 lbs

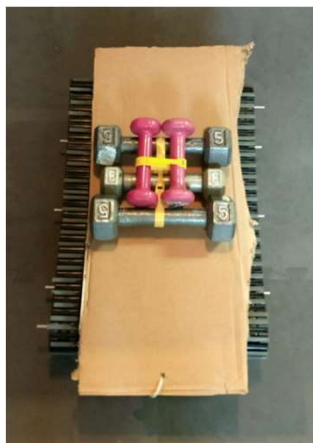


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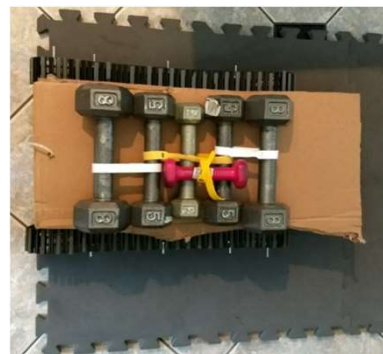
Tank Chassis II



9 lbs setup



24 lbs setup



39 lbs setup

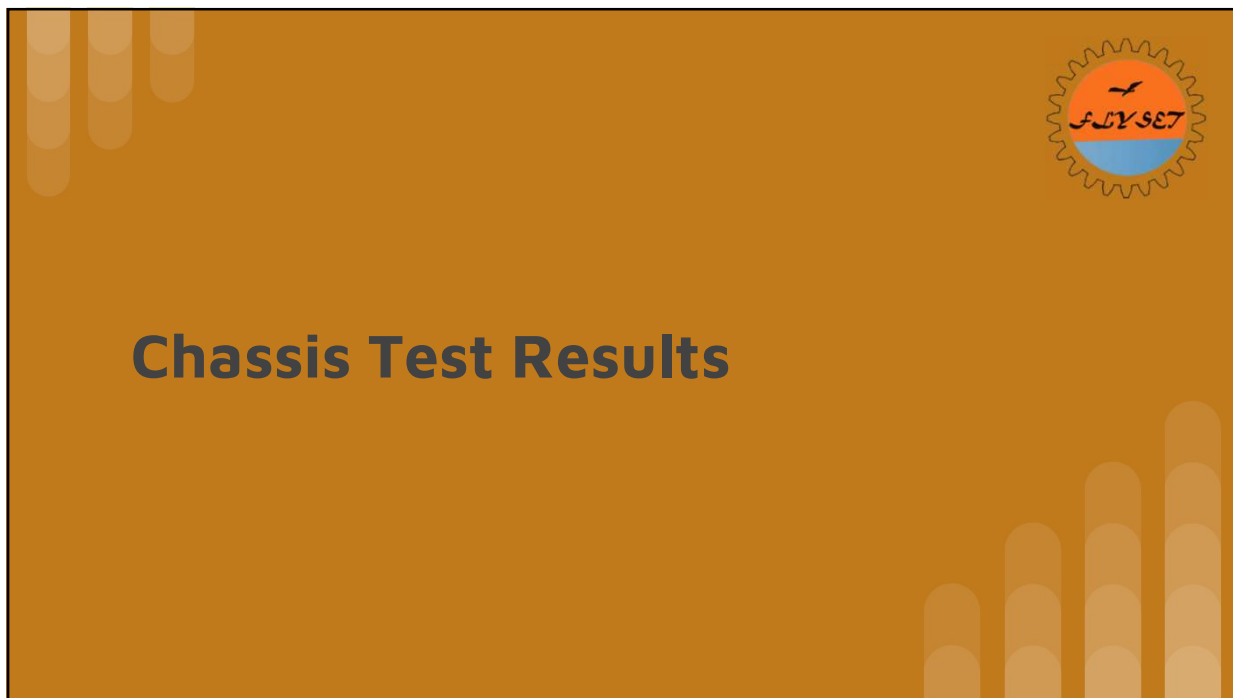
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Tank Chassis II

- Tetrix based chassis
- Two NeveRest 40 motors
- Direct drive to tracks, one motor per track
- Track set up consists of a single drive sprocket, three road wheels, and one tension wheel
- REV expansion hub is horizontally mounted on the robot chassis
- Base chassis weight: 9.0 lbs
- Weights supported by the sides of the chassis



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Tank Chassis II Build Notes

- The robot started as a postseason PR stunt that took much longer to come to fruition than expected. However, we quickly realized after light testing with the original design, that we needed a more compact and maneuverable design, leaving us with the current build.



Test 1: Forward Speed Test

	No load	15 lb load	30 lb load
Distance traveled	2.85 m	2.76 m	2.56 m



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Test 2: Three Second Turn Test

- Weight has a significant effect on turn speed

	No load	15 lb load	30 lb load
Degree turned	474.1	381.2	271.5



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Test 3: Driving up/down a ramp

- We only had time to test the 30lbs configuration, and it only worked when the weights were stacked at the end in the direction of forward

	No load	15 lb load	30 lb load
Up ramp			Yes
Down ramp			Yes



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Test 4: Balance Stone Balancing Ability

- Did not record voltages
- Robot was more sensitive to positioning when weighted

	No load	15 lb load	30 lb load
Go on the stone?	Yes	Yes	Yes
How long on the stone? (forever is settled on the stone)	Settled	Settled	Settled



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Test 5: Pull Strength Test

- We used anything we could find as weights instead of properly measured weights
- The startup causes drift, and although able to pull the weights for 15-40 through 30-40, it was deemed unsafe for the operation of the robot and we had to cancel the test

	No load	15 lb load	30 lb load
10 lb pull weight	7.94	6.91	6.98
20 lb pull weight	N/A	8.87	8.84
30 lb pull weight	N/A	11.2	N/A



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Tank Chassis II Summary

- Performance is heavily dependant on location and the amount of weight on the chassis. Tracks are a possible source of additional drift. Improper weighting (too light, or too heavy) causes track damage. Turning is extremely sensitive to power outputs. The robot is capable of pulling loads much heavier than itself under certain circumstances. Due to the design of the tracks, the robot leaves shredded pieces of rubber, sometimes even full inserts, on the field.



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