



of two Encoders

They were the best encoders, they were the worst encoders



# The Problem



- Last year, during the 2017 FRC season, Team 302 tried using a new type of encoder, to assist with precision autonomous operation by allowing the robot to know how far the wheels have rotated.
- We tried AndyMark's CIMcoders, and thought that this would solve our problems with auton.
- Unfortunately, the open design of the CIMcoder allowed carpet debris to collect within the units.
- By the time the season was over, there was only one working encoder left.

# The Solution



- This year we have a new solution.
- We are using sealed Grayhill 63R256 encoders, paired with Team 302's own custom circuit boards, for easy interface with our Talon SRX motor controllers.
- This way, we can save money and guarantee reliability, as it is impossible for these encoders to accumulate carpet residue.
- Our custom encoder boards also cost much less than the Talon SRX Encoder Breakout Boards we were using previously. These custom boards allow us to solder a connector onto the board, and run a ribbon cable directly to the Talon.

# The Board

- The boards that we attached to the Grayhill encoders were designed and ordered through easyEDA.com. They adapt the 5 pins on the encoder to the 10 present on the ribbon cables, and can be used with encoders that require 3.3 volts or 5 volts.

