

Wire Management

How to route wires

- Good practices

Good practices

“When in doubt, zip tie it out.”

(Danya Liu 2025)

Historically, a LOT of our matches have been lost due to easily preventable wiring issues that turned worse and worse.

So here I write in hopes of it changing in future seasons

Routing: The process of safely passing a wire, series of wires, or bundles of wires through an environment to reach the desired area of connection.

Our Methods of moving/protecting wires

- Snakeskin
 - Allows wires to be protected in possible areas of vulnerability
- Cable Carrier/Umbilical Cord
 - Allows for the linear movement of wires
 - Also protects wires

There are different methods of wire management that allow for a robot to successfully run

Methods of wire management also allow for tracing

Tracing: Seeing where a wire comes from and goes by following it.

Routing standards:

- Battery wires zip-tied 4 inches away from the component.
 - Prevents wires from slowly being shook loose over time.
- All wires are fact-checked (pull tested by another member) to prevent poor crimping and bad connections
- Zipties are used to help the movement of wires towards components
 - Right angles are peak
- Keep connections between wires visible and easy to fix in case of emergency

Mounts:

In the past FRC season, Reefscape, our controls team, had a hard time coordinating with our CADders about device mounts that we needed. Consequently, we are pushing for CAD controls CADders to help fill this gap and prevent any sort of miscommunication. We are planning on using Onshape to fulfill this task.