

# 18 TIPS for in the PITS for FIRST Teams

1. **Wear safety glasses.** Make sure to bring enough for your whole team and visitors to wear while in the **pit** area.

2. **Keep **pit** area neat and organized.** This will make it much easier to find tools when last minute fixes are required and judges love to see it. Be courteous to the teams around you and keep your gear separate.

3. **Develop a pre and post match robot checklist.** This list should include all high maintenance items on the robot as well as a basic list of things to check before and after matches to ensure the robot is in it's best working condition. Include:

- i. Wiring connections
- ii. Structural integrity
- iii. Pneumatic pressure/line integrity
- iv. Battery power
- v. Tightness of bolts, connectors, etc
- vi. Working condition of mechanical systems
- vii. Program run through (include test with control system)

4. **Limit number of people in **pit**.** Pits are small so keep only essential personnel. You can even have a **pit** rotation schedule to get more people time in the **pit**.

5. **Label all tools with team number.** Tools get borrowed or misplaced at competitions all the time. Having the label will make it easier for others to return your tools. The same applies for batteries as well. Track tools and parts you borrow so the Pit Chief can write thank you notes.

6. **Don't be afraid to ask for help.** If you don't have the tool you need, the part you need, and/or don't know how to solve a problem, ask around. There is a lot of expertise at FIRST competitions and always people willing to help out.

7. **Keep aisles clear.** Robots on carts, people, judges, and inspectors all need to be able to move through the aisles. Keeping everything out of the aisle makes things easier on everyone.

8. **Charge extra batteries.** Make sure to always have charged batteries including power tool batteries.

9. **Use available resources.** Most competitions have professional machinists and a machine shop available to teams. Make use of them and their expertise. Many competitions also have a practice field available for teams that is a great way to work out programming and mechanical issues as well as provide extra driver practice.

10. **Be careful when testing your robot.** Many robots have large moving parts. When testing those in the **pit**, make sure to keep the area clear and to warn those around you.

11. **Use the tether.** Never use the radio modem in the pits, always use the tether.

12. **Know where your field crew is.** Always keep tabs on the field crew so that they are aware of robot issues before matches and make sure they are available for pre-match strategy.

13. **Don't lose field buttons.** Collect the buttons at the end of the day and put them in a safe place that everyone knows to make sure they aren't forgotten at the hotel the next morning.

14. **Keep essential tools on cart.** Tools that may be needed for last minute repairs on the field should be kept on the cart.

15. **Use time wisely.** For instance, when the robot leaves for match queue is a perfect time to clean up the **pit** area. Use slow times to make extra spare parts. Make a plan for repairs and wanted changes. Keep a running list of items to be purchased, supplies to be replaced.

16. **Nourishment for pit crew.** Have someone make sure that the **pit** crew gets a break for food and drink throughout the day. It tends to get very hectic in the **pit** and food/drinks tend to get forgotten.

17. **Have a pre-set plan.** Have set responsibilities assigned including **pit** crew, awards, scouting, field team, etc. Also have a plan for robot repairs and changes to be done. Get all these plans set before going to competition.

18. **Post your team's match times** so you stay on schedule. Many teams use a small white, dry erase board.

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