

2022 Pearce Robotics "unbag" Checklist

Checklist Directions

The purpose of this checklist is to get the robot "unbagged" and inspected as quickly as possible to give the drive team and programming team as much time on the practice field as is possible.

This Checklist should start as soon as the unbag team arrives at the venue.

It is recommended to have our FRC Pit set up before you start.

Tools Needed

- **Mentor/ Team Lead**
 - Clip Board
 - PreBag Inspection
 - Pen
 - **Mechanical**
 - Pen
 - Allen Key (
 - Crescent Wrench (
 - 242 Red Loctite
 - **Electrical**
 - Pen
 - Wire stripper
 - Wirecutter
 - 221 connectors
 - Ferrule terminals and crimps
 - Wire ties
 - **Controls**
 - Pen
 - Driver station
 - Laptop
 - Charger
 - Joystick
 - Charged main battery
 - **Branding**
 - Pen
 - 50/50 isopropanol spray bottle
 - Microfiber cloth
 - Updated branding
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Process

- This checklist is broken into multiple checklists and on separate pages so you can split up the work between many SMEs.
- For each check have the SME perform the check and initial the box to show it has passed.
- Once you are done Head to the practice field to get as much practice and field tuning as you can

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The purpose of this document is to serve as a Read/Do checklist to verify full functionality of the production robot as it comes out of the bag, and to get the robot inspected and on the practice field as quickly as possible.

For each step perform the check and initial the box to show it has passed.

These are "Pass/Fail" tests

Mentor/Team Lead

The Role of the Mentor/Team Lead is to coordinate the unbagging and inspection process. They keep the cadence and overall focus and serve as a check for the checklists.

- ☐ Verify your Student Team Lead and Student SMEs are in the Pit
- ☐ Start the Mechanical, Electrical, and Controls Checklists
- ☐ **PAUSE FOR MECHANICAL, ELECTRICAL, AND CONTROLS CHECKLISTS**
- ☐ Put the Robot and Bumpers on the cart and get the robot officially sized and weighed in to start the inspection process
- ☐ **PAUSE FOR WEIGHT AND SIZE INSPECTION**
 - ☐ Have the inspectors put the start of an inspection sticker on the correctly labeled decal
- ☐ Start the Controls Checklist
- ☐ **PAUSE FOR CONTROLS CHECKLIST**
- ☐ Have a Student Team Lead inform the inspection table we are ready for our full inspection
- ☐ **Start the BRANDING CHECKLIST while you wait for an inspector.**
- ☐ Get the Pre Competiton inspection checklist.
- ☐ **PAUSE FOR FULL INSPECTION**
 - ☐ It may be helpful to follow along with the inspector with the [Pre Competiton inspection form](#)
- ☐ Head to the Practice Line with Robot and Practice Batteries
- ☐ Allow Branding Checklist to be completed before Qualification Matches start

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Mechanical

- ☐ Visually inspect all bearings and shafts for good contact
- ☐ Visually and manually inspect all shaft collars and clamps that they are tight and secure
- ☐ Visually and manually inspect all gears, sprockets, and chains are tight and secure
 - ☐ Left Gearbox
 - ☐ Right Gearbox
 - ☐ Lift
 - ☐ Pneumatics
 - ☐ Arm
 - ☐ Intake
- ☐ Visually and manually inspect all rivets and gussets. Replaced loose items
- ☐ Manually check all nuts and bolts
 - ☐ Properly tight
- ☐ Replace all wheels with new wheels
 - ☐ Deferred to after practice matches

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Electrical

Check the FIRST website and note the latest versions of all hardware firmware

RoboRio: _____(2022_v4.0)

PDH: _____(22.0.3)

Driver Station: _____(2022f1)

PH: _____(22.0.4)

SparkMAX: _____(1.5.2)

RHC: _____(1.4.2)

☐ **Place all competition batteries on the chargers**

☐ **Manually verify ALL connections on the robot**

☐ **Driver Station**

- ☐ Plug the Driver Station in
- ☐ Updated to the latest version
- ☐ Labels updated

☐ **Place a Charged Practice Battery on the Robot**

☐ **Speed Controllers**

- ☐ Flashed with the latest firmware
- ☐ Labels replaced with the new firmware

☐ **Radio**

- ☐ Take the Radio to the Radio Programming station and flash the radio

☐ Labels updated

☐ **Motors**

- ☐ All mounted correctly
- ☐ Labels still on them

☐ **RoboRio**

- ☐ Flashed with the latest firmware
- ☐ Labels updated
- ☐ All unused ports are covered

☐ **RPM**

- ☐ Labeled

☐ **PDH**

- ☐ Flashed with the latest firmware
- ☐ Labels updated

☐ **Branding/LEDS**

- ☐ All LEDs Correctly plugged in

☐ **Remove the Practice Battery**

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Controls

Check the FIRST website and note the latest versions of all Software Tools

WPILib: _____(2022.4.1) REV Hardware Client: _____ (1.5.2)

FRC Game Tools: _____(2022f1)

- ☐ Update WPILib to Latest Version (2022.4.1)
- ☐ Pull latest main branch of Github Repository
- ☐ Verify latest main branch is built with the latest WPILib
- ☐ Place a Practice Battery on the Robot
- ☐ Update REV Hardware Client to Latest Version(1.5.2)
 - ☐ Download ALL firmware
- ☐ Robot Turns on
 - ☐ Radio connects
 - ☐ Driver station connects
 - ☐ LEDs turn on
 - ☐ Pneumatics holds pressure for 1 min
- ☐ Robot works
 - ☐ Drive controls work
 - ☐ Arm controls work
 - ☐ Climber controls work
 - ☐ LEDs correctly change states
- ☐ If possible run the auton
 - ☐ Unable to test the auton. Reason: _____
- ☐ The main power switch turns off the robot
- ☐ Pneumatic dump valve relieves all robot pressure

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Branding

- ☐ If needed, update the branding on The Robot
- ☐ If needed, add sponsor logos to The Robot
- ☐ The robot looks clean and professional