

TEAM NUMBER: _____ **INSPECTOR:** _____
INITIALS (after passing): _____ **DATE (after passing):** ____/____/____
REINSPECTION (initial) _____ **FINAL INSPECTION (initial)** _____

Initial Inspection

- _____ **Check over Team Self Inspection Checklist** _____
- _____ **Total Load In Weight-** Robot + mechanisms \leq 150 lbs. _____
- _____ **Robot Weight** (must be \leq 125 lbs (~56kg) excluding bumpers and battery). <R103> _____ **pounds**
- _____ **Bumper Weight (must be \leq 15 pounds (~6kg)).** <R407>**Red Bumper** _____ **Blue Bumper** _____ **pounds**
- _____ **FRAME PERIMETER** – Frame must be non-articulated. Minor protrusions $<1/4$ " (6mm) OK. <R101>
- _____ **Starting Volume** – FRAME PERIMETER Not greater than 120in. (~304 cm) and not taller than 52 in. (~114 cm) <R104>
- _____ **Playing Configuration** – Robot may not extend beyond the FRAME PERIMETER by more than 16 in. (~40 cm) <R105>
- _____ **Standard Bumpers** - must follow all specifications in Sec 9.4, **BUMPER RULES.**

Mechanical

- _____ **No Sharp Edges, Protrusions, or hazards for participants, robots, arena, or field.** <G205, G301, R201, R202, R203 >
- _____ **End Game** – Game pieces can be removed from robot and robot from field without power. <R204>

Electrical

- _____ **Components** – **None** may be modified, except as provided in the rules. <R502, R710>
- _____ **Battery** - A single 12 volt, 17-18.2 Ah robot battery (or listed equivalent), securely fastened inside robot. <R601, R605, R606>
- _____ **Other Batteries** – As allowed per rule R602
- _____ **Allowable PD Breakers** - Only Snap-Action 40A or lower and REV Robotics ATO auto-resetting breakers 40A or lower may be inserted in the PDP/PDH <R619>
- _____ **Robot Radio** – A single OpenMesh OM5P-AN or OM5P-AC radio must be powered by either a VRM +12 volt, 2 amp output or using an Ethernet cable between REV RPM and the "18-24v POE" port on the radio. The VRM/RPM must connect to the dedicated +12 volt output on the PDP or one of the non-switchable fused channels on the PDH with a 10A fuse installed. Radio LEDs are easily visible. <R616, R617, R702, R703, R707, R708>
- _____ **CAN BUS** – The roboRIO and PDP/PDH must be connected via CAN wiring even if no other CAN devices are used. PCM/PH if used) must be connected to main roboRIO CAN bus. <R716>
- _____ **roboRIO Power** – The roboRIO must be the only thing connected to dedicated power terminals on PDP or connected to one of the PDH non-switchable fused channels with a 10A fuse installed. <R615>
- _____ **Wire Size Minimum and Breaker Size** - obey the wiring size rule R622.
- _____ **1 Wire per Terminal on PDP/PDH** - Only 1 wire may be inserted in each terminal on the PDP/PDH, splices and/or terminal blocks, may be used to distribute power to multiple branch circuits. All wires in the splice are subject to the wire size rules <R618>
- _____ **Motors/Actuators** – Only motors and actuators allowed as listed per Table 9-1 <R501>
- _____ **Motor/Actuator Power** – Each motor controller may have one motor connected to the load terminals with exceptions in Table 9-2, <R504>, and single specified motors may be connected to Spike or Automation Direct Relay (however multiple pneumatic valves may be driven by a single Spike). < R503 & Table 9-2>
- _____ **Motor/Actuator Control** – Motors/actuators must be controlled by legal motor controllers and driven directly by PWM signals from roboRIO or through legal MXP board or by CAN bus. <R503, R714-R718>
- _____ **Custom Circuits, Sensors and Additional Electronics** - cannot directly control speed controllers, relays, actuators or servos. Custom Circuits may not produce voltage exceeding 24V. <R614 & R625>
- _____ **Isolated Frame** – Frame must be electrically isolated from battery. (>3k Ohm between either PDP battery post and chassis) <R611>

Pneumatic System using one on-board compressor (n/a for robots that do not use pneumatics)

- _____ **No Modifications** - Actuator mounting pins may be removed, small labels allowed. No painting or large labels. <R803>
- _____ **Compressor** - Only one (on robot only) FRC Legal compressor (max 1.1 CFM flow rate) may be used. <R806>
- _____ **Compressor Power** - must use a PCM/PH or Relay module <R812 & Table 9-2>
- _____ **Compressor Control** – A Pressure Switch must be wired directly to a PCM/PH or roboRIO to control compressor. <R812>
- _____ **Gauges** - must be present at both the high pressure (storage storage) side and low pressure (working pressure) regulator outlet(s) and be readily visible for inspection. <R805-E, R810>
- _____ **Valve Control** - pneumatic solenoid valves must have a max 1/8" NPT, BSPP, or BSPT port diameter, be controlled by either a PCM/PH or Relay Module and valve outputs may not be plumbed together. < Table 9-2, R804-C, & R814>

Power On Check (Driver Station must be tethered to the Robot)

- _____ **Unauthorized Wireless Communication** – no wireless communication to/from ROBOT or OPERATOR CONSOLE without prior FIRST written permission. No radios allowed on the OPERATOR CONSOLE or in the pit <R707, R905 >
- _____ **Software Versions** – The roboRIO image (2022_v4.0 or later), DS (22.0 or later), and REV PH if analog pressure switch used (22.0.2 or later) must be loaded <R701, R812 & R901>
- _____ **Confirm Pneumatics Operation** – With no pressure in system, compressor should start when robot is enabled.
 - _____ **Compressor should stop** automatically at ~120 psi under roboRIO control. <R807>
 - _____ **Check that Main Pressure** <= 120 psi <R807> and Working Pressure <= 60 psi <R808 & R809>
 - _____ **Compressor Relief Valve** – set to 125 psi, attached to (or through legal fittings) compressor outlet port.<R811>
 - _____ **Relieving Pressure Regulator** – Set to <= 60 psi, providing all working pressure. <R808>
- _____ **Robot Signal Light(s)** - The Robot Signal Light (two max.) from the KOP must be visible from 3' in front of the robot, and be plugged into the RSL port on roboRIO. Confirm that the RSL flashes in sync with roboRIO. <R709>.
- _____ **Verify Team Number on DS** – team has programmed the OpenMesh Wireless Bridge at kiosk for this event. < R702>
- _____ **Power Off** – Disable robot and open Main Breaker to remove power from the robot, confirm all LEDs are off, actuate pneumatic vent plug valve and confirm that all pressure is vented to atmosphere and all gauges read 0 psi pressure.

Team Compliance Statement

We, the Team Mentor and Team Captain, attest by our signing below, that our team's ROBOT was built after the 2022 Kickoff, and we are not aware of any rules it violates. We confirm that it and its MAJOR MECHANISMS are products of our team's work.

Team Captain: _____

Team Mentor: _____