8.0 Robot Inspection

8.1 Overview
This section describes Robot Inspection for the FIRST Tech Challenge competition. It also lists the inspection definitions and inspection rules.

8.2 Description
The FIRST Tech Challenge Robot will be required to pass Robot and Field inspections before being cleared to compete. These inspections will ensure that all Robot rules and regulations are met. Initial inspections will take place during Team check-in/practice time. The official “Robot Inspection Checklists” are located in Appendices B and C.

8.2.1 Team Self-Inspection
Teams are highly recommended to conduct a self-inspection of their Robot and submit the completed Robot Inspection forms to the Robot Inspectors. Teams should go through each checklist at least a week before the competition to make sure their Robot is made up of legal parts.

8.3 Definitions
Robot Initialization Routine – A set of programming instructions that runs after Init is pressed on the Driver Station, but before Start for both Driver Controlled and Autonomous periods.

Robot Sizing Tool – A sturdily constructed device with the interior dimensions: 18 inches (45.72 cm) wide by 18 inches (45.72 cm) long by 18 inches (45.72 cm) high that has one open side with an interior opening size of 18 inches (45.72 cm) wide by 18 inches (45.72 cm) long. The Sizing Tool is used for Robot Inspection as outlined in section 7.3.1.

8.4 Inspection Rules
8.4.1 Inspection - Every Robot is required to pass a full inspection before being cleared to compete. This inspection ensures that all FIRST Tech Challenge Robot rules are met.

All Robot configurations must be inspected before being used in competition.

a. If significant changes are made to a Robot after passing initial inspection, it must be re-inspected before it can compete.

b. Referees or inspectors may request the re-inspection of a Robot. The Robot cannot participate in a Match until it passes re-inspection. Refusal to submit to re-inspection will result in Team disqualification from the tournament.

c. A Robot may be rejected at inspection if the Lead Inspector considers it unsafe.

8.4.2 Practice Matches - FIRST Tech Challenge Teams must submit their Robot for inspection before participating in Practice Matches. A Robot may be allowed to participate in Practice Matches before passing inspection if allowed by the Lead Robot Inspector.

8.4.3 Qualification Matches - The Team’s Robot must pass all inspections before participating in Qualification Matches. Refusal to follow any Robot design, construction rule, or programming rules may result in disqualification of the Team at a FIRST Tech Challenge tournament.

8.4.4 Re-Inspection – Physical changes to a Robot that improve performance or add capability must pass re-inspection prior to being eligible to play in the next Match.
<l5> Safety - It is the Inspector’s responsibility to evaluate Robots to ensure each Robot is designed to operate safely. Section 7 of this manual, and Game Manual Part 2, section 4.6.1 outline the safety rules and limits that apply to the design and construction of all Robots.

<l6> Passing Inspection - Robot inspection is a Pass or Fail process. A Robot has passed inspection when all requirements listed on the official FIRST Tech Challenge “Robot and Field Inspection Sheets” are successfully met and recorded as passed by an Inspector.

<l7> All Mechanisms are Inspected - For Inspection, the Robot must be presented with all mechanisms (including all parts of each, configurations, and decorations that will be used on the Robot during the competition. Robots are allowed to play Matches with a subset of the mechanisms that were present during inspection. Only mechanisms that were present during inspection may be added, removed, or reconfigured between Matches. The Robot should be assembled in a typical configuration used for Matches play when reporting for inspection.

a. Robot and all mechanisms must be inspected in every starting configuration.

b. If mechanisms are swapped out between Matches, the reconfigured Robot must still meet all Robot and inspection rules.

c. The total of all electronics (motors, servos, Core modules, Android devices, etc.) used to build all mechanisms and base Robot, whether they are used on the Robot at the same time or not, may not exceed the constraints specified in the Robot rules.

<l8> Wheel or Tread Playing Field Damage Test - Robot Inspectors have the authority to ask that a Team test their wheels or treads that they feel might cause damage to the Playing Field. Not every tread or wheel can be evaluated and posted as a legal or illegal part. Therefore, the tread test is a quick way to find out if a Team’s wheels or treads are competition legal.

The Robot Inspector should place the Robot on top of a field tile and against an immovable surface (wall) and run the wheels at full power for 15 seconds. If there is any physical damage to the floor tile, the wheels will not be allowed. Discoloration or black marks alone are not considered field damage. The test must be made with the Robot at the weight it will be at during the competition since this will affect the degree of damage.

<l9> Team Supplied Scoring Element Inspection - Team Supplied Scoring Elements will be inspected before the start of the competition, when Robot inspection takes place. A Team Supplied Scoring Element must be re-inspected if it is changed after initial inspection.