

9 Inspection & Eligibility Rules

This section describes the rules governing MATCH participation. A Team has participated in a MATCH if any member of their DRIVE TEAM is in the ALLIANCE STATION or PORTAL, with or without the ROBOT on the FIELD, at the start of the MATCH.

At each event, the Lead Robot Inspector (LRI) has final authority on the legality of any COMPONENT, MECHANISM, or ROBOT. Inspectors may re-Inspect ROBOTS to ensure compliance with the rules.

ROBOTS are permitted to participate in scheduled Practice MATCHES prior to passing Inspection. However, the *FIRST* Technical Advisor (FTA), LRI, or Head REFEREE may determine at any time that the ROBOT is unsafe, per safety rules, and may prohibit further participation in Practice MATCHES until the condition is corrected and/or the ROBOT passes Inspection.

Prior to the start of a MATCH, any ROBOT which is unable or ineligible to participate in that MATCH as determined by the FTA, LRI, or Head REFEREE is declared to be BYPASSED and is DISABLED. A Team whose ROBOT is BYPASSED remains eligible to receive Qualification Ranking Points or Playoff MATCH points provided that its ROBOT has passed Inspection, per I02.

- I01. The ROBOT must be built by the Team to play *FIRST*[®] POWER UPSM.** The ROBOT is an electromechanical assembly built by the *FIRST*[®] Robotics Competition Team to perform specific tasks when competing in *FIRST*[®] POWER UPSM. The ROBOT must include all of the basic systems required to be an active participant in the game – power, communications, control, BUMPERS, and movement. The ROBOT implementation must obviously follow a design approach intended to play *FIRST* POWER UP (e.g. a box of unassembled parts placed on the FIELD, or a ROBOT designed to play a different game, does not satisfy this definition).

I01 requires that the ROBOT a Team uses in competition was built by that Team, but isn't intended to prohibit assistance from other Teams (e.g. fabricating elements, supporting construction, writing software, developing game strategy, contributing COMPONENTS and/or MECHANISMS, etc.)

- I02. Get inspected before playing a Qualification/Playoff MATCH.** A Team is only permitted to participate in a Qualification or Playoff MATCH and receive Ranking or MATCH Points respectively if their ROBOT has passed an initial, complete Inspection.

Violation: If prior to the start of the MATCH, the Team is not eligible to participate in the MATCH. If after the start of the MATCH, the entire ALLIANCE receives a RED CARD for that MATCH.

Please take note of this rule. It is important that *FIRST* Robotics Competition Teams ensure their ALLIANCE partners have passed Inspection. Allowing a partner that has not passed Inspection to play puts the ALLIANCE at risk of RED CARDS. Teams should check with their ALLIANCE partners early, and help them pass Inspection before competing.

- I03. Bring it all to Inspection.** At the time of Inspection, the ROBOT must be presented with all MECHANISMS (including all COMPONENTS of each MECHANISM), configurations, and decorations that will be used on the ROBOT without re-inspection. It is acceptable, however, for a ROBOT to play MATCHES with a subset of the MECHANISMS that were present during Inspection. Only MECHANISMS that were present during the Inspection may be added, removed



or reconfigured between MATCHES. If MECHANISMS are changed between MATCHES, the reconfigured ROBOT must still meet all Inspection criteria.

- 104. Unless the change is listed below, any change to a ROBOT must get re-inspected.** If a ROBOT is modified after it has passed its most recent Inspection, that ROBOT must be re-Inspected before the ROBOT is eligible to participate in a MATCH. Exceptions are listed in A through F (unless they result in a significant change to the ROBOT'S size, weight, legality, or safety).
- A.** addition, relocation, or removal of fasteners (e.g. cable ties, tape, and rivets)
 - B.** addition, relocation, or removal of labeling or marking
 - C.** revision of ROBOT code
 - D.** replacement of a COTS COMPONENT with an identical COTS COMPONENT
 - E.** replacement of a MECHANISM with an identical MECHANISM (size, weight, material)
 - F.** additions, removals, or reconfiguration of ROBOT with a subset of MECHANISMS already inspected per I02.

When in doubt, the Team should ask to be re-Inspected.

Inspectors prioritize ROBOTS that have not yet completed initial inspection over ROBOT changes.

While every effort will be made to re-inspect Teams in a timely manner, Teams need to consider that they may need to play with the previously inspected configuration if re-inspection cannot be completed before a MATCH. Teams should work with Inspectors when making changes to minimize the chance of this occurring.

Example 1: Team A's ROBOT has passed Inspection, but burns out a motor controller during a MATCH. Team A replaces it with an identical motor controller. Team A does not have to get their ROBOT re-Inspected per exception I04-D.

Example 2: Team B would like to add weight to their ROBOT to lower their center of gravity. Team B adds a large amount of fasteners to their ROBOT as ballast. Team B must get their ROBOT re-Inspected because they have significantly changed their weight per I04.

Example 3: Team D has decided to move their motor controller to a different location on their ROBOT, and must use a different length wire to make the proper connections. Team D must get their ROBOT re-Inspected because rewiring is not an exception in I04.

Example 4: Team E decides to relocate their battery on their ROBOT to change their center of gravity. Team E must be re-Inspected as the relocation of COMPONENTS or MECHANISMS is not an exception I04.

Example 5: Team F realizes they can gain necessary functionality by building a new MECHANISM at an event and adding it to their ROBOT. Their ROBOT must be re-Inspected.

If an observation is made that another Team's ROBOT may be in violation of the ROBOT rules, please approach *FIRST* officials to review

the matter in question. This is an area where Gracious Professionalism® is very important.

- 105. Document your costs.** A Cost Accounting Worksheet (CAW), listing all items on the ROBOT except those listed in R11 and their relevant costs per [Section 8.4 Budget Constraints & Fabrication Schedule](#), must be presented at the time of Inspection.

Teams are encouraged to use the [CAW Template](#) posted on the *FIRST* website. Please note that while CAWs must be shown to Inspectors, Teams are not required to submit their CAWs to the Inspectors.

- 106. ROBOTS are off for Inspection, mostly.** For the safety of all those involved, Inspections must take place with the ROBOT powered off, pneumatics unpressurized, and springs or other stored energy devices in their lowest potential energy states (e.g. battery removed).

Power and air pressure should only be enabled on the ROBOT during those portions of the Inspection process where it is absolutely required to validate certain system functionality and compliance with specific rules (firmware check, etc.). Inspectors may allow the ROBOT to be powered up beyond the parameters above if both criteria below are met.

- A.** The ROBOT design requires power or a charged stored energy device in order to confirm that the ROBOT meets volume requirements, and
- B.** The Team has included safety interlocks that mitigate unexpected release of such stored energy.

The Team may be asked to demonstrate these interlocks during the inspection process.

- 107. No student, no Inspection.** At least one student Team member must accompany the ROBOT for any Inspection efforts.

Exceptions may be made for major conflicts, e.g. religious holidays, major testing, transportation issues, etc.



