

Team Update 06

General

Field Manual

The [Field Manual](#) has been posted to the [Playing Field webpage](#) and the link has been added to section 5.1 of the Game Manual. This document is intended for use at official events by a FIRST Technical Advisor (FTA) or Field Supervisor but, new this season, it is available for teams to use as a supplemental reference. This document will be updated as needed throughout the season.

Q&A

The answer to [Q31](#) has been updated with a corrected response.

Kit of Parts

The Formlabs voucher information has been updated. See the [Kit of Parts webpage](#) for full details.

Game Manual

7.4.3 ROBOT

G413 Expansion limits. A ROBOT may not extend beyond any of the horizontal or vertical expansion limits described in [R105](#), [R106](#), and [R107](#).

Exceptions to this rule:

- If the over-expansion that violates [R105](#) or [R107](#) is due to visible damage and not used for strategic benefit, it is an exception to this rule, and no penalty is imposed.
- If an expansion that contributes to a violation of [R106](#) is due to visible damage the team may extend a different component in a different direction, and no penalty is imposed.

Violation: MINOR FOUL, or MAJOR FOUL if the over-expansion is used for strategic benefit, including if it impedes or enables a scoring action. Corrective action (such as removing the offending MECHANISM, and/or re-inspection) may be required before the ROBOT will be allowed to compete in subsequent MATCHES.

The intent of the exception to this rule is to prevent piling on a punitive response to a ROBOT that's already experienced hardship and not leveraging that hardship for gain.

Exceptions are only given for visible damage, as perceived by a REFEREE. Teams should not assume that REFEREES will give an exception for unobservable damage even if ROBOT function is affected.

Teams exploiting the exception to part B by designing in something to "break" will not be given an exception and will likely also be given a violation of [G211](#).

Examples for this rule include the following:

- a physical device on a team's ROBOT, whose purpose is to restrain their TOWER mechanism from extending beyond the 30in (76.2cm) height limit imposed by [R107](#), breaks after a collision with another ROBOT. Provided the

ROBOT does not use the now-too-long extension to climb the TOWER, no violation is assigned.

- B. a vertical structural member of a ROBOT breaks at the bottom and rotates out such that it exceeds the 12in (30.48cm) limit imposed by [R105](#). The ROBOT then parks such that its extension blocks opponent ROBOTS from reaching the OUTPOST. A MAJOR FOUL is issued.
- C. a part of a ROBOT is damaged causing a panel to extend out less than 12in (30.48cm) on one side of the ROBOT. The ROBOT then extends out in another direction to intake FUEL. As visible damage has caused an expansion that contributes to the violation of [R106](#), no penalty is imposed.
- D. a mechanism that controls a ROBOT'S intake is damaged in a way that's not visible to a REFEREE and the team can no longer bring their intake back in. The team then extends out in another direction to climb the TOWER. The intake is not visibly damaged, so a violation of a MAJOR FOUL is issued.

Note that [G211](#) may apply if a team is intentionally exceeding the expansion limits for strategic benefit.

At the conclusion of the MATCH, the Head REFEREE may elect to visually inspect a ROBOT and remove the violation if the damage is verified.

14.4 Load In

E401 ***Load in during Load-In.** Teams must load in the ROBOT and all ROBOT elements into the event by the end of the last designated Load-In period on the Public Schedule. ROBOT and all ROBOT elements that are loaded in, may not be brought back out until Load-Out. Exceptions are as follows:

- A. raw stock
- B. OPERATOR CONSOLES, BUMPERS, battery assemblies
- C. COTS items with minor modifications (attachment of connectors, assembly of COTS items per manufacturer instructions, labeling or decoration, etc.)
- D. 3D printed parts
- E. gearboxes attached to associated motor(s)
- F. exceptional circumstances that result in a team not being able to make the Load-In time and has made arrangements with Event Management.

Public Schedules can be found in the additional info section via the [Team & Event Search](#).

There are no rules that explicitly restrict items that may be brought into the venue during the designated Load-In period. During Load-In, teams are not limited to a single trip, and are encouraged to be as efficient and safe as possible.

Violation: Item will not be permitted into venue.