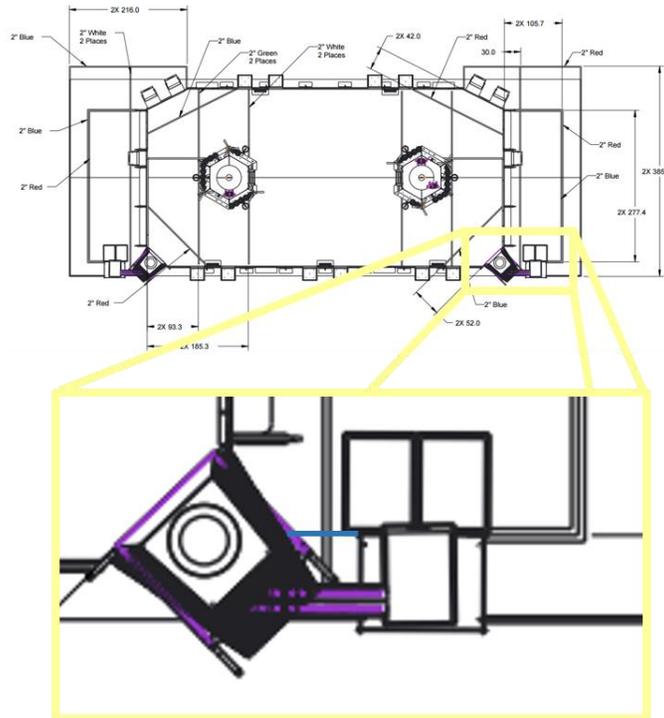




Team Update 14

General Notes

- Drawings:** FE-00040 in the [Field Assembly drawing package](#) has been updated to extend the ALLIANCE STATION tape border to the BOILER (blue example shown below).



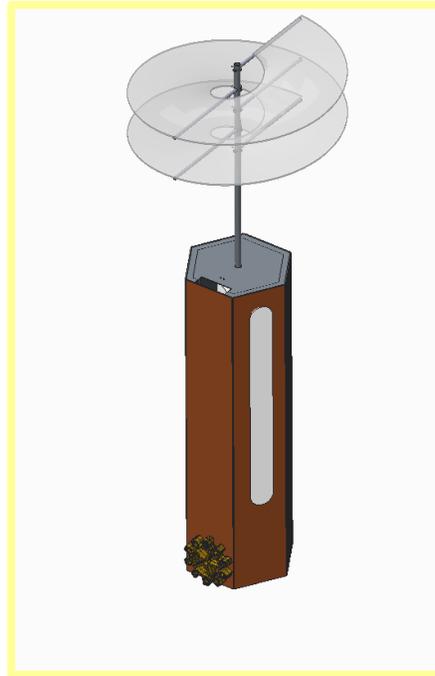
- Q&A:** The answer to [Q597](#) has been revised to be consistent with the edit to *Section 8.1* detailed below. Our apologies for any confusion!
- Crib Sheet.** G11, edited in this Team Update, has been updated in the [FIRST STEAMWORKS Crib Sheet](#).

Section	#	Headline	Verbal Warning	FOUL	TECH FOUL	DISABLED	YELLOW CARD	RED CARD	Other
7. Game (Robot to Robot)	G11	There's a 5-count on pins.		√ + every 5s ¹	√ + every 5s ²			if extended/egregious	1) If pinning ROBOT is not in the opponent's KEY 2) If pinning ROBOT is in the opponent's KEY

Section 3.4.2 GEAR Sets

Figure 3-12 has been updated to change the Reserve GEAR from the base of the STEAM TANK opposite its slot to the base of the STEAM TANK on the same side as its slot.

Figure 3-12: Reserve GEAR location

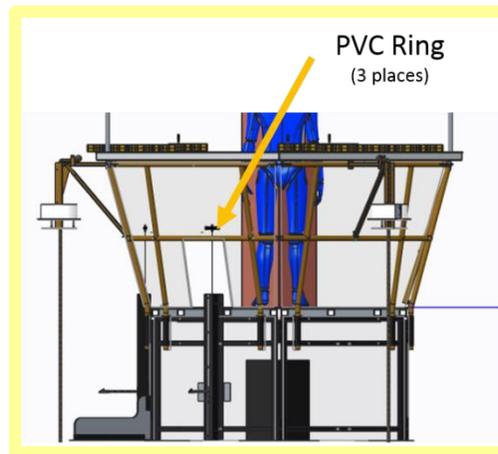


Section 3.5 LIFTS

LIFTS are used to transfer GEARS from the ROBOTS to the PILOTS. One (1) LIFT is mounted to each of the three (3) sides of the deck that face the PLAYER STATIONS. Each LIFT consists of a peg, steel guide frame, carriage assembly, and cable. The cable is pulled by the PILOT to raise the carriage to a PORT where the GEAR can be safely accessed. Each carriage has a peg designed to hold the GEAR during the transition. The peg is 1 ft. 1 in. (~33 cm) from the FIELD carpet when the carriage is all the way down, protrudes 10½ in. (~27 cm) from the carriage and is 1⅜ in. (~3 cm) wide. It is constructed from ⅞-in. (nominal) diameter extension spring (McMaster P/N: [9664K68](#)). A PVC ring, centered on and mounted to the lower rung of the AIRSHIP rail as show in Figure 3-15, loosely holds the pull cord and prevents the LIFT handle from falling out the PORT.



Figure 3-15: LIFT handle ring location



Section 3.7 DAVIT

These fingers are 1¼ in. (~3 cm) apart and have a hole for a **wire locking retaining pin** (McMaster P/N: **98416A009** or similar). The ROPE passes through the fingers with the top knot on the AIRSHIP side of the fingers.

Section 4.2 MATCH Setup

Each MATCH begins with GAME PIECES, elements used to score points, staged as shown in Figure 4-1. Staging details are as follows:

- FUEL
 - A. Ten (10) available for each TEAM to preload in their ROBOT (any not preloaded are staged in the bin referenced in the next bullet, B)
 - B. Twenty (20) in each LOADING LANE (in a bin staged between the LOADING STATION and the STARTING LINE)
 - C. One hundred (100) **plus or minus four (4)** in each HOPPER (i.e. fifty (50) **plus or minus two (2)** in each HOPPER container)
- GEARS
 - D. One (1) available to each team to preload in their ROBOT (any not preloaded are staged with GEARS in E)
 - E. Eighteen (18) in each LOADING LANE (staged on the carpet between the LOADING STATION and the STARTING LINE)
 - F. One (1) in each AIRSHIP (**as described in Section 3.4.2**)

Note from Frank Merrick, FRC Director, about G11 and G17 edits:

Many folks probably know that we had our Week Zero event last Saturday here in New Hampshire. What you may not know is that we use these Week Zero events to train our Head Referees. During their discussions, our Head Refs noted a problem with G11 and G17. G11 says pinning longer than 5 seconds is against the rules, while G17 says being in your opponent's KEY longer than 5 seconds is against the rules. But it may not be uncommon for both of these things to be happening at the same time, in the same place, involving the same two robots. It would even be possible for the same robot to be violating both rules, but with different start times for each 5 second count.



This is not something the Refs could realistically keep track of fairly and is likely to be confusing to Teams. So, you will see in the changes below, we essentially eliminated the possibility that Refs would need to keep track of both penalties at the same time and place with the same two robots. However, while we wanted to eliminate the possibility that both penalties could be called in this situation, we did not want to eliminate the additional consequence to an alliance should one of their robots pin an opponent longer than 5 seconds while simultaneously being in that opponent's KEY. So, we bumped the penalty for pinning in an opponent's KEY to a TECH FOUL. We recognize this penalty increase is significant, compared to two FOULS, but it does get the message across that this is to be avoided, while at the same time allowing our Refs to do their jobs fairly.

Section 7.3 ROBOT to ROBOT Interaction

G11. There's a 5-count on pins. ROBOTS may not pin an opponent's ROBOT for more than five (5) seconds. A ROBOT will be considered pinned until the ROBOTS have separated by at least six (6) feet. The pinning ROBOT(s) must then wait for at least three (3) seconds before attempting to pin the same ROBOT again. Pinning is transitive through other objects. If the pinned ROBOT chases the pinning ROBOT upon retreat, the pinning ROBOT will not be penalized, and the pin will be considered complete.

Violation: If pinning ROBOT is not in the opponent's KEY, FOUL, plus an additional FOUL for every five (5) seconds in which the situation is not corrected. If pinning ROBOT is in the opponent's KEY, TECH FOUL, plus an additional TECH FOUL for every five (5) seconds in which the situation is not corrected. In either scenario, if extended and egregious, RED CARD.

There is no *FIRST*® Robotics Competition specific definition of pin, so a general definition applies; "to prevent or stop something from moving." As a result, contact is not required for pinning to occur. For example, a ROBOT parked right behind an opponent that is between dividers could be considered pinning because the dividers and the parked ROBOT prevent the opponent from moving.

Generally, pins that exceed fifteen (15) seconds are considered extended and egregious, regardless of a pinning ROBOT's mobility, however circumstances vary and the assessment is open to REFEREE discretion.

Section 7.4 FIELD Interaction

G17. Opponent's KEY: a no parking zone. A ROBOT may not be in their opponent's KEY for more than five (5) seconds (if the ROBOT is breaking the plane of the line with BUMPERS, it is considered in the KEY).

A ROBOT that is being pinned is exempt from G17. Once the pin is over, the G17 5-second count begins.

Violation: FOUL. For every five (5) seconds in which the situation is not corrected, FOUL.

In a scenario where a ROBOT is pinning (per G11) and in the opponent's KEY, REFEREES are instructed to disregard G17 so they can focus on the pinning.

Section 7.6 AUTO Period Rules

A05. PILOTS: don't take the "free" GEAR yet. During AUTO, PILOTS may not remove the reserve GEAR from the starting position slot in which it begins the MATCH.



Violation: TECH FOUL.

Section 8.1 Overview

Many rules in this section reference Commercial-Off-The-Shelf (COTS) items. A COTS item must be a standard (i.e. not custom order) part commonly available from a VENDOR for all Teams for purchase. To be a COTS item, the COMPONENT or MECHANISM must be in an unaltered, unmodified state (with the exception of installation or modification of any software). Items that are no longer commercially available but are functionally equivalent to the original condition as delivered from the VENDOR are considered COTS and may be used.

Section 10.7 YELLOW and RED CARDS

Figure 0-1: Audience Screen Graphic Showing YELLOW and RED CARD Indicators

