

Team Update 01

GENERAL

Playing Field Assets

- The [Playing Field webpage](#) has been updated to include links to [Synthesis by Autodesk](#) and [draft CNC files from REV Robotics](#). Note that these assets were neither developed or validated by FIRST, and differences between fields represented in these tools and the official field may exists.
- **Official Field**
 - GE-23318 has been updated to include a note for sourcing an equivalent COTS part.
 - Drawings and CAD files (Solidworks & STEP) for the CONE (GE-23700), CUBE (GE-23701), and the CUBE measuring jig (GE-23702, GE-23703, & GE-23704) have been added as standalone downloads.
 - The AprilTag coordinate table on page 4 of the [Layout & Marking Diagram](#) has been updated as follows:

ID	X	Y	Z	Z-rotation
1	610.77 in.	42.19 in.	18.22 in.	180°
2	610.77 in.	108.19 in.	18.22 in.	180°
3	610.77 in.	147.19 174.19	18.22 in.	180°
4	636.96 in.	265.74 in.	27.38 in.	180°
5	14.25 in.	265.74 in.	27.38 in.	0°
6	40.45 in.	147.19 174.19	18.22 in.	0°
7	40.45 in.	108.19 in.	18.22 in.	0°
8	40.45 in.	42.19 in.	18.22 in.	0°

- **Team Elements**
 - TE-23020 (*CUBE Shelf Rear Vertical*, used in the *CUBE Shelf*, *GRID*, and *Set of 3 GRIDS* assemblies) has been updated to correct the location of a hole in B4.
 - TE-23038 (*CUBE Shelf Upper Panel*, used in used in the *CUBE Shelf*, *GRID*, and *Set of 3 GRIDS* assemblies) has been updated to correct the location of a hole in A2.
 - The following documents are updated to include part descriptions and quantities alongside the plywood Example Cut Sheets:
 - [TE-23000-Setof3Grids-ReadMe](#)
 - This document also includes the following edit in regard to the quantity of plywood needed: ~~Slightly More than~~ 4 Sheets
 - [TE-23001-GRID-ReadMe](#)
 - [TE-23002-EndConeRamp-ReadMe](#)
 - [TE-23003-MidConeRamp-ReadMe](#)
 - [TE-23004-CubeShelf-ReadMe](#)

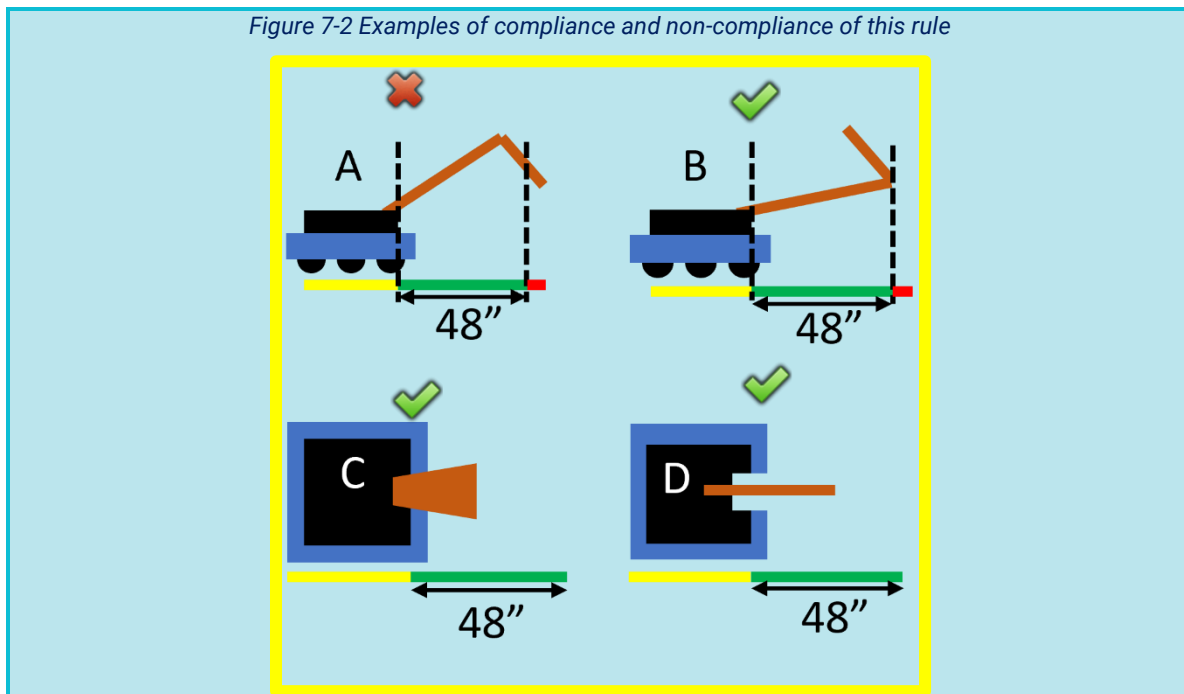
Kit of Parts

- **FIRST Choice:** A [steel adapter for the PLG \(Power Lift Gate\) motor from Johnson Electric](#) was added to FIRST Choice Round 2 (inventory is 260 pieces).
- **Kickoff Kit:** The [User Guide for the drive base chassis kit](#) has been updated to correct errors in gear tooth counts and part numbers on page 10, steps 5 and 8. These errors also existed in the [Gearbox assembly video](#) and are corrected.

GAME MANUAL

Section 7.1 ROBOT Restrictions

G107 Don't overextend yourself. Figure 7-2 is updated to show the green 48 in. extension limits in examples C and D originating at the FRAME PERIMETER instead of the BUMPERS.



Section 7.4 GAME PIECES

G403 1 GAME PIECE at a time (except in LOADING ZONE and COMMUNITY). ROBOTS completely outside their LOADING ZONE or COMMUNITY may not have ~~greater than-MOMENTARY~~ CONTROL of more than 1 GAME PIECE, either directly or transitively through other objects.

A ROBOT is in CONTROL of a GAME PIECE if:

- the GAME PIECE is fully supported by the ROBOT, or
- the ROBOT is intentionally moving a GAME PIECE to a desired location or in a preferred direction

Violation: FOUL per additional GAME PIECES. If egregious, YELLOW CARD.

Section 9.5 Motors & Actuators

R501 *Allowable motors. The only motors and actuators permitted include the following (in any quantity):

Table 9-1 Motor allowances

Motor Name	Part Numbers Available
REV Robotics NEO Brushless	REV-21-1650 (v1.0 or v1.1) am-5258 am-4258a
REV Robotics NEO 550	REV-21-1651 am-4259

R503 *Power (most) actuators off of approved devices. With the exception of servos, fans, or motors integral to sensors of COTS computing devices permitted in [R501](#), each actuator must be controlled by a power regulating device. The only power regulating devices for actuators permitted on the ROBOT include:

- A. motor controllers,
- ...
- e. Spark Motor Controller (P/N REV-11-1200, am-4260),
- f. Spark MAX Motor Controller (P/N REV-11-2158, am-4261),
- ...

Section 11.7.2 Playoff MATCH Bracket

Table 11-3 Typical Playoff MATCH Schedule

MATCH	Blue	Red	Blue Gap (minutes)	Red Gap (minutes)	Winner moves to	Loser moves to
Lower Bracket – Round 4 - MATCH 12	Winner of MATCH 10 9	Winner of MATCH 9 10	17m 24m	24m-17m	Blue – MATCH 13	

Section 11.8.1 District Events

Table 11-8 District Playoff Round Performance

ALLIANCE Finish	ALLIANCE Advancement Points
Winner	30
Finalist	20
3 rd Place (loser of MATCH 13)	13
4 th Place (loser of MATCH 11 12)	7