

Q&A

VEX V5 Robotics Competition 2026-2027: Override

Welcome to the official VEX V5 Robotics Competition Question & Answer system, where all registered teams have the opportunity to ask for official rules interpretations and clarifications. This Q&A system is the only source for official V5RC rules clarifications, and the clarifications made here from the Game Design Committee (GDC) are considered as official and binding as the written [Game Manual](#) itself.

Please review the Q&A Usage Guidelines before posting. This system is only intended for specific V5RC game rules questions.

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3142: Number of Students in a Team Clarification

15-May-2026

G3

We are a private team with currently two members, but there seems to be a contradiction in the game manual regarding the number of students that make up a team. In Appendix B under the definition of a team it states that "One or more Students make up a Team." However in the first sentence of Appendix D it states, "Three or more Students make up a Team." Which one would be the correct definition of a team so we can recruit another team member if needed?

Since this isn't exactly pertaining to a specific rule listed in the list of tags, I have just chosen G3 so that I am able to submit this.

Respondido por committee

The definition in Appendix B is correct.

The statement in Appendix D is an error, and will be corrected in the June 4 game manual update.

3137: Match Replays for Single Robot Disconnect

14-May-2026

GG5

Point a-v of [GG5](#) states that a valid reason a match replay is (emphasis mine):

Field control disconnecting or Disabling **multiple** Robots. Note, this is sometimes confused with a Robot whose motors have overheated, or bent pins on a controller's competition port causing intermittent drop-outs. In general, any true Field fault will impact both Alliances simultaneously, not one Robot at a time.

The red box below the rule states:

Note: Communication or control issues affecting a single Robot are not considered eligible grounds for a replay.

Suppose that a single Robot experiences a field disconnect during a Match. That Robot is the only Robot affected by a disconnect during the Match. After the Match, the Head Referee examines the Smart Field Controller and determines that the disconnect was caused by bent pins in the port of the Smart Field Controller (in other words, the disconnect was caused by an issue beyond the control of the Team). The Head Referee is sure that no other issues with the smart cable, Controller of the affected Team, or their Robot, could have caused the disconnect. Is rule GG5 stating that the Match should NOT be replayed?

Respondido por committee

This would be more akin to a Field hardware failure than a communications or networking issue between the Robot and the Field affecting a single Robot.

This may be considered grounds for a replay at the discretion of the Event Partner and Head Referee.

3135: Clarification on regarding temporary restriction of Toggle movement using a C-Channel

14-May-2026

Rule Quote: <GG9>

Robots may not intentionally grasp, grapple, hook, attach to or otherwise Entangled with any Field Elements. Strategies with mechanisms that react against multiple sides of a Field Element in an effort to latch or hook onto said Field Element are prohibited. The intent of this rule is to prevent Teams from unintentionally damaging the Field and/or from anchoring to or otherwise Entangling themselves with the Field. Whenever possible, Head Referees should alert Teams to potential Violations before they happen to prevent actual Violations. If a Robot takes immediate action to avoid or resolve the issue, and if the Head Referee determines that the issue had no effect on the Match, no Violation should be recorded.

<SC4>

SC4> A Toggle is considered set to a color when it meets all of the following criteria at the end of the Match:
 a. The Toggle must be fully seated, such that there is a face of the Toggle in contact and parallel with its mounts on the Field Perimeter at rest. (see Figure SC5-1) b. **The Toggle is not in contact with a Robot from either Alliance.**

Question: In the context of the current game, is it legal for a robot to position a piece of C-channel underneath the Toggle mechanism to prevent it from rotating?

The mechanism is not "clamped" or "grasped" in a way that prevents the robot from driving away (no permanent attachment), but the geometry of the C-channel effectively wedges the Toggle so it cannot be turned by an opponent. Does this "jamming" action constitute "attaching to a field element", or is it considered a legal defensive strategy provided the robot can move away freely?

Video I saw on youtube of this idea: <https://www.youtube.com/shorts/Kyow3GVag-0>

Respondido por committee

A Robot mechanism interacting with the Toggle as described is not inherently a GG9 violation.

Provided the Robot does not violate R18 and/or S1, this may be considered a legal gameplay interaction.

The Game Design Committee will continue to monitor Robot interactions with Toggles throughout the season, and this ruling may be subject to change if needed, based on observed gameplay.

3151: Is the heat dissipation for motor legal?

18-May-2026

R16

A.Is it legal to use active cooling devices for motor during the match? B.Is it legal to use active cooling devices for motor outside of the match? C.Is it legal to use passive cooling devices for motor? D.Is it legal to use thermal paste serves as an aid to heat dissipation for motor?

Respondido por committee

A) There is no rule explicitly preventing cooling devices during a match, however these devices must comply with all Robot Rules, including but not limited to R12, R16, R18, and R19.

B) There are no rules preventing cooling devices from being used before or after a Match.

C) There is no rule explicitly preventing cooling devices during a match, however these devices must comply with all Robot Rules, including but not limited to R12, R16, R18, and R19.

| D) Thermal Paste is not legal for use in the VEX V5 Robotics Competition.

3155: Legality of Vision Sensors

26-May-2026

R16

<R16>

The regular Vision Sensor is no longer on the [V5 Competition Legal Parts List](#) while the AI Vision Sensor is still on the list. Is this change intentional or is it a mistake?

Respondido por committee

This was a mistake. The 276-4850 Vision Sensor has been added to the VEX V5 Robotics Competition Legal Parts List.

3157: R16 Vision Sensor Legality and legal parts list concerns

27-May-2026

R16

R16 states:

Any questions or concerns about legal parts should be directed to the official Q&A System on events.vex.com.

This is both a question and a concern. The VEX V5 vision sensor 276-4850 (sold by vex and used by teams for many years) is no longer listed in the [competition legal parts list](#).

I have several questions/concerns:

- Does this mean that the V5 vision sensor is no longer legal for use in V5RC? If so, why was this change made?
- What other previously legal parts have been removed from the list since last season? It's hard to find previous versions of the list because its updated on a continual basis, and there are zero changelogs whatsoever. So, in order to determine what changed teams somehow must memorize the entire list and compare their memory to what is currently in the list.
- Why are changes to the list not at least announced so that teams can review their parts in use? As it stands, many teams are likely to find out for the first time at a tournament inspection that their parts are no longer legal, because a silent edit to a google doc was made without their knowledge.

Respondido por committee

This was a mistake. The 276-4850 Vision Sensor has been added to the VEX V5 Robotics Competition Legal Parts List.

3140: Legality of Legacy (SMC) Pneumatics

15-May-2026

R19

[<R19>](#) Rule R 19 lists several Non-VEX components that are allowed. In previous years, both the manual and the knowledgebase listed the specific SMC legacy pneumatics components that were legal for competition use. This year there is no mention of the legacy pneumatics in the manual at all. They are not listed as allowed parts in R 19, but there is also no mention of them not being allowed in R 18, so there is a bit of confusion. Several other rules in the manual (GG3, R25, R26, etc) specifically mention VEX pneumatics parts. Am I correct to assume that this means that the legacy SMC pneumatics components are not legal to use this year and the only legal pneumatic components are the VEX branded ones?

Respondido por committee

Legal VEX Parts are listed in the Legal Parts list linked in the Game Manual.

Components not included in that list are not legal for competition use.

3133: Legality of painted screw heads and anodized aluminum standoffs

14-May-2026

R23

[<R23>](#) reads:

Anodizing, painting, dyeing or changing the color of any legal VEX part is prohibited.

Our team has many RoboSource "Color Coded Star Drive Screws" where the screw heads have been painted by the vendor.

Related to this, we also have many RoboSource "Color-Coded Standoffs" which are anodized aluminum.

Technically, none of us painted or anodized the part ourselves - it came brand new painted and/or anodized from a well-known reputable vendor.

Are either or both of these two types of products legal?

Thank you!

Respondido por committee

R23a is intended to apply to parts made by VEX Robotics. It does not apply to commercially available hardware.

Provided the screws and standoffs meet the stated criteria in R22, these parts are legal for use in the VEX V5 Robotics Competition.

3136: Clarification on and regarding pneumatics with missing identification labels

14-May-2026

R23

[<R23>](#)

Decorations that cover or obscure identifying features of electronics and/or pneumatics parts are not legal. i. Teams will be asked to either replace the electronics and/or pneumatics part entirely, or remove the decoration if possible. ii. Identifying features include, but are not limited to, VEX logos, part numbers, and other distinctive colors or features of the part that allow an inspector to easily confirm it is a legal part.

Question: Over the course of normal use, the plastic protective wrapping/labeling on V5RC pneumatic reservoirs and cylinders can become frayed, damaged, or fall off entirely, removing the VEX logo and part number. If a pneumatic part is otherwise identical in form and function to an official VEX part but is missing its factory label/logo due to wear and tear, is it still considered legal for competition use and furthermore, what secondary identifying features should a team point to during inspection to "easily confirm" the part is legal if the primary logo is missing?

Respondido por committee

Normal wear and tear that damages factory-applied labels does not inherently make an otherwise legal pneumatic component immediately illegal.

Inspectors may use other identifiable characteristics of the part, such as its dimensions, construction, fittings, color, shape, or other distinctive features, to determine whether it is a legal VEX component. Comparing the part to a known-legal component with intact factory labels may help facilitate this process.

The easiest way to ensure inspection of these parts proceeds smoothly is to ensure that factory labels remain clearly visible to Robot inspectors whenever possible.

Teams should expect additional scrutiny if a part cannot be readily identified during inspection, and should understand that inspectors may deem a part illegal if they cannot reasonably verify that it is a legal VEX component.

3147: Inquiry on Broadness of R23 Application

17-May-2026

R23

Our team's questions are as follows, with two specific examples which we would like clarified.

(a) Rule [<R23>](#) states that "Decorations that cover or obscure identifying features of electronics and/or pneumatics parts are not legal." Identifying features are defined following this, with "Identifying features include, but are not limited to, VEX logos, part numbers, and other distinctive colors or features of the part that allow an inspector to easily confirm it is a legal part." In some cases, modifications to VEX parts which remove material may remove the presence of VEX logos, listed as an identifying part. These modifications are not necessarily due to decorations, but they do remove the VEX logo, and may be for either functional or aesthetic reasons otherwise legal. Will such modifications be legal in general in the future?

Now, we would like to ask about specific applications of this rule.

(b) Teams have cut VEX gears for many seasons now in order to reduce drivetrain space and weight. Cutting or modifying these gears as has been standard for past seasons would potentially remove VEX logos, an identifying part. Will cutting of gears in ways that may remove the VEX logo be legal this season and in following seasons?

(c) Many teams have removed the vinyl wrapping on their air tanks and air cylinders. This does not affect the functionality of the air cylinder or air tank, and is usually made for aesthetic reasons or after damage to the vinyl wrapping. Removing the vinyl wrapping will remove VEX logos. Will air cylinders and air tanks with the vinyl wrapping removed be legal this season and in upcoming seasons? If not, how does VEX robotics plan to allow old pneumatics sets with these vinyl wrappings removed to be legal, if at all?

(d) Hypothetically, if a team was to remove the VEX logo from parts for little to no gain, like shaving off the VEX logo off new aluminum C-channels or sandblasting the surface of a VEX gear or sprocket, how would this be ruled?

(e) In the past, teams have been known to use rubber bands or zipties to connect the VEX V5 Smart Motor cap and body, in order to improve maintainability and serviceability in the middle of a competition. This is commonly referred to as allowing a motor to be "hotswapped". However, in some cases, these zipties or rubber bands can cover the VEX logo on these motors, which are electronic parts. Will such hotswapping setups be allowed in this season and onwards? If not, [<R23>](#) also states that the appropriate way to address this is to "remove the decoration if possible". Would this removal be only for inspection, or would it be for the duration of the competition? Broadly applied, since the intent of this rule is to aid in inspection, do restrictions on decorations potentially obscuring VEX identifying features apply only during inspection, or through the full duration of the competition?

(f) Finally, what are some general guidelines our team can apply to decide the legality of modifications which remove identifying features in the future? We ask this on an understanding that not every edge case can be covered here, but the

manual is vague on these guidelines as well.

Respondido por committee

- a. Please note that [<R23>](#) clause F applies to decorations that cover or obscure identifying features of *electronics and/or pneumatic parts*, and [<R28>](#) prohibits modifications to electronic or pneumatic components.
- b. Gears are not considered electronic or pneumatic parts and are therefore not subject to [<R23>](#) clause F.
- c. Teams should not intentionally remove or cover the labels/logos on their pneumatic cylinders or tanks. Regarding damaged or missing labels/logos, please see our response to [Q&A 3136](#).
- d. Gears, sprockets, and C-channels are not considered electronic or pneumatic parts and are therefore not subject to [<R23>](#) clause F.
- e. Rubber bands and/or zip ties used to secure V5 Smart Motor Caps would be considered functional parts. [<R23>](#) clause F specifically restricts non-functional decorations.

If you have any remaining questions that you believe we have not adequately addressed with the answers above, please feel free to submit a follow-up question.

3148: Inquiry on the Application of R23 Part (a) on COTS and Previously Anodized Parts

17-May-2026

R23

Our question relates to the application of [<R23>](#); specifically, [<R23>](#) part (a), stating that "Anodizing, painting, dyeing or changing the color of any legal VEX part is prohibited."

(a) The VEX manual clearly states that some commercial off-the-shelf parts are legal, as has been standard for past seasons. Some of these parts come in color; for example, some companies sell nuts which come in color, and many teams choose to use screws with colored heads to aid in identification of screw lengths. These COTS colored parts can be considered to be outside the category of "legal VEX part", as they are not manufactured by VEX. Will these parts be legal? Broadly applied, does legal VEX part apply only to parts sold and distributed by VEX Robotics, Inc.?

(b) i. Many teams in the past have used anodized metal parts like C-channels or dyed parts like gears. Before the 2026-27 season, these parts were **already dyed or anodized**. The language of [<R23>](#) states that the action of anodization/painting/dyeing/coloring is not legal, but it does not state that the use of previously anodized/painted/dyed/colored parts is illegal. This part of the rule was not present before the 2026-27 season. Does [<R23>](#) forbid the action of anodizing, painting, dyeing, or changing the color of any legal VEX part from the 2026-27 season onwards, or is it meant to be applied in retrospect, overriding previous game manuals, thereby banning **all** parts that have been anodized, painted, dyed, or color-changed, including ones teams already owned, and that were previously legal?

(b) ii. This is a follow-up to (b) i. IF all anodized/dyed/painted/colored parts are banned. Does VEX have a plan to compensate or alleviate the financial burden on organizations which have a large amount of these parts? [<R23>](#) (a) was added to the rulebook without warning, and many teams operated under the expectation that these previously unambiguously legal parts would be continually reusable for future seasons, as is the intent with purchasing these parts; they are an investment towards students' education for the season the parts are bought in and many seasons following. How does VEX intend these teams to deal with the sudden financial burden of needing new parts?

Respondido por committee

Please see the following statement from VEX Robotics and the VEX Robotics Game Design Committee regarding R23a, alongside the June 4 Game Manual update.

<https://www.vexforum.com/t/a-message-from-vex-robotics-r23a-and-smc-pneumatics/146777>

If you still have any questions regarding rules clarifications, feel free to submit a follow-up question. For questions, suggestions, or concerns that go beyond rules clarifications/interpretations, please direct them to gdc@vex.com.

3129: Legality of reinforced plastic - R24

14-May-2026

R24

Rule <R24> governing custom plastics states: Legal plastic types are polycarbonate (Lexan), acetal monopolymer (Delrin), acetal copolymer (Acetron GP), POM (acetal), ABS, PEEK, PET, HDPE, LDPE, nylon (all grades), polypropylene, PTFE, and FEP.

Certain manufacturing styles, such as SRPP (Self-Reinforced Polypropylene) or SR-PET, use a woven structure of a specific polymer embedded within a solid base of that exact same polymer to increase strength. These materials do not contain any glass, carbon, or other foreign additives. They are made physically and chemically of 100% pure polymer. If a material is made entirely of a single plastic explicitly listed in <R24>, but utilizes this internal self-reinforced woven structure, is it considered legal provided it meets all other rule requirements (such as being non-shattering, staying within the maximum 0.070" thickness, and adhering to the individual piece limits)?

Respondido por committee

The Game Design Committee is reviewing materials such as those described in this question. Additional clarification regarding allowable plastic materials, specifically in regards to the plastics mentioned in the question, will be included in a future Game Manual update.

3146: 2mm thickness plastic legal?

16-May-2026

R24

Do 2mm thickness plastic legal?

Respondido por committee

2mm Plastic is not legal, per R24.

Plastic thickness is limited to 0.070" (1.78mm)

A metric conversion will be added in the June 4 game manual update.

3152: VEX Pressure Gauge must goes on the robot?

18-May-2026

R26

VEX Pressure Gauge on the e high pressure side count as part of the robot or it can arbitrary disassembly like a pump?

Respondido por committee

The VEX Pressure Gauge must be plumbed to the High Pressure side of the pneumatics system, and must remain on the robot during the match.

3150: V5RC Skills Scoring - Starting Quadrant vs Toggle State

18-May-2026

RSC3

I noticed a possible discrepancy regarding Skills scoring for Pins in V5RC Push Back.

When reviewing the Skills scoring system on V5RC-Hub, it appears that red Pins are only counted as scored when they are in a red Quadrant *and* the Toggle is set to red. However, <RSC3> in the game manual states: "Red Pins only score points if they are Placed in a red Quadrant or in the Midfield." The rule does not appear to mention any requirement for the Toggle to also be set to red in order for the Pin itself to count as scored.

Could the GDC please clarify whether:

1. A red Pin in a red *starting* Quadrant scores regardless of Toggle state, or
2. The Toggle must also be set to the matching color for the Pin to score?

Thank you.

Respondido por committee

This was a bug in the V5RC Hub app that was recently fixed, so the scoring behavior within the app should now correctly align with the rules in the game manual.

For future reference, if there are any conflicts between the English-language PDF of the game manual and other supplemental or translated materials, such as the V5RC Hub app, the most current version of the English-language PDF of the game manual takes precedence, as stated in the game manual.

3154: Clarification of AWP Criteria

23-May-2026

SC8

In rule <SC8>, the first two criteria for the Autonomous Win Point are listed as (emphasis mine):

1. At least seven (7) Pins **Placed** for your Alliance (does not include Pins scored in Quadrants on the opposing side of the Autonomous Line)
2. At least three (3) Goals each contain at least two (2) Pins **scored** for your Alliance (does not include Goals in Quadrants on the opposing side of the Autonomous Line)

<SC3>states:

Each Placed Pin can have one or two Scored halves.

If a Pin (not in a Quadrant on the opposing side of the Autonomous Line) meets the definition of Placed but not the definition of Scored, does it count as "Placed for your Alliance" when regarding criteria 1 of the Autonomous Win Point?

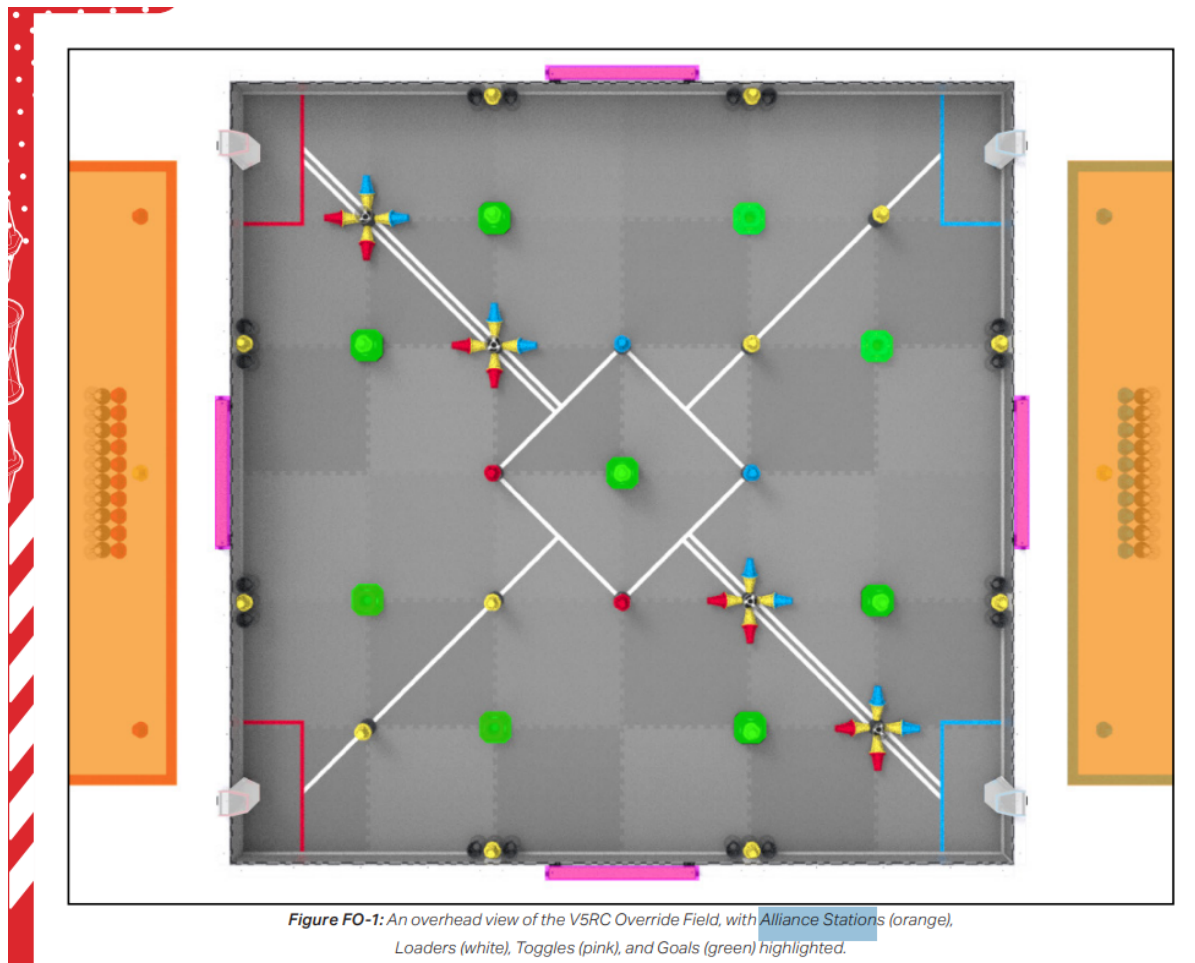
Respondido por committee

AWP criteria were revised in the June 4 Game Manual update, clarifying that Pins must be Scored, not just Placed, in order to meet these requirements.

3161: Position of Alliance Station with reference to loader position.

7-Jun-2026
SG11

<SG11>



The Driver's Station appears to be about a foot from the field and a foot from the end of the field. It would be difficult for a drive team member to stay in the driver's station as drawn and interact with the loader as intended. Are Event Partners allowed to change the Driver's Station so that it is against the field and goes to the end of the field?

Thanks!

Respondido por committee

The Alliance Station tape lines, as depicted in the Game Manual, are not intended to represent exact dimensions or positioning relative to the rest of the field.

We do not provide exact dimensions or positioning for the Alliance Stations since they are typically not critical to gameplay, which provides EPs more leeway when taping off these areas. However, these tape lines should always be placed such that Drive Team Members can reasonably view and interact with the Field from within the Alliance Station during a Match, so the tape lines should extend far enough for Drive Team Members to reach the Loaders with relative ease.

We recognize that this is not made clear in the game manual, so we're planning to incorporate this guidance in the July 2 game manual update. Though the Alliance Station tape lines shown in the game manual are not intended to be exact representations, we plan on updating the images with extended Alliance Stations to provide a better reference for their expected size/positioning.

3164: Match Load Placement Clarification

16-Jun-2026
SG11

[<SG11>](#)

In rule SG11 it states "introduce' refers to the moment when a Drive Team Member has released a Scoring Object into a Loader." However, point b of SG11 states "A Match Load Scoring Object may not be contacted by a Robot prior to being introduced into a Loader." Since the only definition of matchloading is when someone releases a game object into a loader, is it legal for a robot to be sitting under a raised loader and a driveteam member releasing a game object into the loader and it falls directly into the robot without it first touching the ground?

Respondido por committee

Yes, it is legal for a Scoring Object released into a Loader to fall directly into the Robot. There is no requirement for Match Load Scoring Objects to contact the Floor after being introduced.

3166: SG6 - Clarification on Possession vs Plowing

18-Jun-2026
SG6

[<SG6>](#)

SG6 limits Possession to a maximum of one (1) Pin and one (1) Cup, and SG6a clarifies that Plowing multiple Scoring Objects is permitted.

Appendix B defines Possession as a status where "a Robot's change in direction would result in controlled movement of the Scoring Object," typically requires at least one of the following:

- the object is fully supported
- moved in a preferred direction inside a concave face...
- held against the Floor or a Field Element.

Plowing is defined as intentionally moving an object in a preferred direction with a flat or convex face or **with another Scoring Object** (emphasis mine).

Consider a stack consisting of several Pins and Cups. A Robot uses a concave mechanism such as a claw, to grab a single Scoring Object at the bottom of that stack. The bottom cup or pin is contacting the robot and meets the definition of possession, however the remaining pins and cups only meet the first dot point, and is "moving with another Scoring Object."

Is the Robot considered to be Possessing only the single Scoring Object it has directly grasped, with the remaining stacked objects treated as plowed? Or, because the Robot's change in direction results in controlled movement of every object in the stack, is the Robot considered to be Possessing all of those Pins and Cups placing it in Violation of SG6 once the count exceeds one Pin and/or one Cup?

Respondido por committee

If a Robot picks up a stack of Pins and Cups by grabbing only the bottom Scoring Object in that stack, the Robot's change in direction would result in controlled movement of every Scoring Object in that stack. Therefore, the Robot is considered to be in Possession of every Scoring Object in that stack, and the Robot would incur an [<SG6>](#) Violation if this results in Possessing more than one Pin and/or more than one Cup.

3138: Substituting Colored Field Tape for White Tape

14-May-2026

T6

<T6> states (emphasis mine):

Fields may be repaired at the Event Partner's discretion. All competition Fields at an event must be set up in accordance with the specifications in Appendix A and/or other applicable Sections. **Minor aesthetic customizations or repairs are permitted, provided that they do not impact gameplay** (see <T4>).

An example of a permissible modification to the Field listed in the rule is:

Using non-VEX electrical tape to add required lines to the Field

Would substituting the red and blue tape lines that define the Load Zones with white tape lines be a permissible modification to the Field?

Respondido por committee

This will be added as a permissible Field modification under <T6> in the June 4 game manual update.

Event Partners should keep <T7> in mind when making this modification. Fields at a given event must remain consistent with one another.

Note: Load Zones were included on the Field in case rule modifications are needed later in the season to create a more protected area for retrieving Scoring Objects. They are colored to aid referees in understanding Robot interactions if these zones become more critical to gameplay later in the season. If future rule changes utilize these zones more heavily, the red and blue tape lines may become required.