

# Q&A

## VRC 2021-2022: Tipping Point

Tagged: SG4

Welcome to the official VEX 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 VRC Tipping Point 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 VRC Tipping Point rules questions.

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- For VEX technical support, contact [support@vex.com](mailto:support@vex.com) or [sales@vex.com](mailto:sales@vex.com).
- For game questions, suggestions, or concerns outside of specific and official rules questions, contact [GDC@vex.com](mailto:GDC@vex.com).

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## <SG4> introducing match loads with new all gray anti static tiles

SG4

Now with the releasing of the all gray anti static tiles, does that mean now we can introduce match loads on the previous colored tiles?

[www.robotevents.com/VEXU/2019-2020/QA/412](http://www.robotevents.com/VEXU/2019-2020/QA/412)

In this QA it was ruled that match loads **cannot** be introduced onto colored tiles.

<SG4> Match Load entry. Drive Team Members may introduce Match Loads during the Driver Controlled Period by placing them gently onto a gray foam field tile such that they satisfy the following conditions: a. Contacting the field perimeter wall on the side that coincides with their Alliance's Goal Zones and Alliance Station.

- b. Contacting the **gray** foam field tiles.
- c. Not contacting a Tower.
- d. Not contacting any Cubes besides another Match Load.
- e. Not contacting a Goal Zone or a Barrier.
- f. Not contacting a Robot.

### Answered by committee

SG4 should be ruled as applicable for the fields at any given event. If the event is using anti-static tiles (i.e. all gray), then the Match Loads may be placed on the tile that would have otherwise been red/blue (provided that all other conditions in SG4 are met). Teams should be cognizant of the possibility that an event may use either of the two possible sets of field tiles, and plan to accommodate accordingly.

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## Introducing match loads, GRAY tiles <SG4>

SG4

SG4 b. specifies match loads are required to be introduced onto GRAY foam tiles. The VRC Tower Takeover - Referee Training - Chapter 8: Cube Do's & Don'ts, at 1:22, it gives the thumbs up and a green check for match loads being introduced on a BLUE tile ( [youtu.be/ksrJ1\\_rdv0?t=80](https://youtu.be/ksrJ1_rdv0?t=80) ).

Are teams not allowed to introduce match loads onto red and blue foam field tiles? If they are restricted from those tiles, can you clarify that teams ARE allowed to introduce match loads onto their alliance's inner protected zone gray foam tile (providing the cubes satisfy SG4 and specifically aren't touching a barrier or goal zone)?

<SG4> Match Load entry. Drive Team Members may introduce Match Loads during the Driver Controlled Period by placing them gently onto a gray foam field tile such that they satisfy the following conditions: a. Contacting the field perimeter wall on the side that coincides with their Alliance's Goal Zones and Alliance Station. **b. Contacting the gray foam field tiles.** c. Not contacting a Tower. d. Not contacting any Cubes besides another Match Load. e. Not contacting a Goal Zone or a Barrier. f. Not contacting a Robot.

### Answered by committee

Well.... good catch. Thank you for noticing this and bringing it to our attention!

Please see rule G22, which was primarily written to account for the unfortunate realization that we on the GDC are only human and mistakes sometimes happen:

The 2019 - 2020 Q&A is the ONLY official source for rulings besides the Game Manual. If there are any conflicts between the Game Manual and other supplemental materials (e.g. Referee Training videos, VRC Hub app, etc), the most current version of the Game Manual takes precedent.

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## < SG4 > Accidental Ball Possession Limit Exceeded and Remediation Options

SG4

This is a multi-part question around < SG4 > The Possession limit of balls, and disqualifications.

These questions are related to the "Match Effecting" interpretations of excess ball possession.

< SG4 > Watch your Possession limit. Robots may Possess a maximum of one (1) Cap and two (2) Balls at a time. Note: Robots that interact with High Scored Caps while already Possessing a Cap will undergo additional scrutiny regarding this rule. Minor violations of this rule that do not affect the Match will result in a warning. Match Affecting offenses will result in a Disqualification. Teams that receive multiple warnings may also receive a Disqualification at the Head Referee's discretion.

During recent events as the pace of the game has picked up, it has become fairly common for robots to accidentally ingest more than the two-ball possession limit as the balls bounce around and ricochet into the intake mechanisms. At a recent event a team was disqualified for possessing 4 balls at the end of the match that were never used to score. Since the difference in the final score was 4-points and the two extra balls could have been used to score those 4 points the referee called for the disqualification as the possession was match effecting.

Definition: Part 1: Is there a scenario where accidentally possessing 3 or more balls is considered match effecting even if the balls are never used to score a flag? it has been argued that simply possessing excess balls is match effecting since the robot is now controlling balls that are not available for the opposing alliance to score (effectively "hoarding"). Therefore, If the balls in possession have the potential to score points that are equal to, or greater than the match differential, then should this be considered match effecting? (also similar to the point differential when caps that are knocked out of bounds being a match effecting disqualification)

Remediation Options?: Part 2: If simply exceeding the possession limit is not match effecting (i.e. Part 1), is it then permissible for a team announce to the referee that they are have excess capacity and they intend to safely discharge the excess balls in such a way as to not attempt to score? (either through reversing the intake, or if that isn't possible, discharge the excess balls with the launcher directly and safely into the net while avoiding changing the state of any flag)

Part 3: Finally, if a team does score a flag while unintentionally possessing more than 2 balls, could the team: a. announce to the referee they intend to de-score the illegal flag (that is return the scored flag to its previous state) before scoring additional points so as to make the accidental score impossible to affect the match? b. after scoring the flag, announce to the referee they intend to safely discharge all remaining balls in possession before scoring additional points?

This post is for clarification for future occurrences, and in no way trying to modify a previous ruling.

Thank you!

### Answered by committee

Part 1: Is there a scenario where accidentally possessing 3 or more balls is considered match effecting even if the balls are never used to score a flag?

Yes, for exactly the reason you imply - in a game with neutral Game Objects of a limited quantity, any additional Possession has the potential to limit the opposing Alliance's ability to play the game.

Part 2: If simply exceeding the possession limit is not match effecting (i.e. Part 1), is it then permissible for a team announce to the referee that they are have excess capacity and they intend to safely discharge the excess balls in such a way as to not attempt to score?

Discharging the extra Game Objects would not just be permissible, it would be required. If a Robot comes into Possession of more than the permitted number of Game Objects, then they should immediately attempt to rectify the situation. We would expect that the Head Referee would instruct the Team to do so, not the other way around as proposed here, but the philosophy is the same.

Part 3: Finally, if a team does score a flag while unintentionally possessing more than 2 balls, could the team: a. announce to the referee they intend to de-score the illegal flag (that is return the scored flag to its previous state) before scoring additional points so as to make the accidental score impossible to affect the match? b. after scoring the flag, announce to the referee they intend to safely discharge all remaining balls in possession before scoring additional points?

First, <SG4> does not contain "intentional" or "unintentional" verbiage, so whether they intentionally or unintentionally Possessed the extra Game Object is irrelevant; Toggling the Flag in this situation is a clear-cut violation of <SG4> (see [this similar Q&A](#) for more thoughts on this topic).

In general, it is a Team's responsibility to ensure that:

- a) Their Robots are designed to mitigate the possibility of controversial rulings (e.g. they cannot Possess more than the permitted Game Object limit), and
- b) Their strategies during a Match mitigate the possibility of controversial rulings (e.g. they do not Toggle Flags while Possessing three Balls).

We typically try not to comment on previous rulings (and appreciate that you did not ask us to). However, given the explanations above, the example that you provided is actually a pretty good one to demonstrate these principles.

At a recent event a team was disqualified for possessing 4 balls at the end of the match that were never used to score. Since the difference in the final score was 4-points and the two extra balls could have been used to score those 4 points the referee called for the disqualification as the possession was match effecting.

It is always difficult to provide a blanket ruling without the full context of a Match; however, based on the information given in this snapshot, this would be a correct interpretation of the answer provided above.

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## Blocking Opponent Shots, Possession limit.

SG4

Hi There, per request of the GDC, I am not splitting up my questions.

This is the first question, and concerns "Possession", with the definition benign "a robot has possession of a game object if it is carrying, holding, or encompassing it". rule <SG4> outlines specific limits, where <robots may possess a maximum of one (1) cap and two (2) balls at a time>. The game manual also states that <Minor violations of this rule that do not affect the Match will result in a warning. Match Affecting offenses will result in a Disqualification. Teams that receive multiple warnings may also receive a Disqualification at the Head Referee's discretion.>. If a team were to block opponent shots while at the possession limit, would they be breaking the rule.

In this instance, blocking a shot may involve interacting with 1 opponent shot, or 2 opponent shots using a legal vex material. If it is impossible to give a blanket ruling, if the balls were to glance off of a piece of aluminum or otherwise rigid material, would the robot be breaking the possession limit?

**Answered by committee**

In this instance, blocking a shot may involve interacting with 1 opponent shot, or 2 opponent shots using a legal vex material. If it is impossible to give a blanket ruling, if the balls were to glance off of a piece of aluminum or otherwise rigid material, would the robot be breaking the possession limit?

It is always difficult to provide a blanket ruling on a snapshot description of a hypothetical Robot and interaction. However, a "blocked shot" would typically not be considered Possession, provided the following assumptions are met:

- A "shot" is a Ball which has been launched through the air in the direction of the Flags.
- The "blocking Robot" is not violating any other rules, such as <SG2>.
- The "blocking Robot" does not meet the definition of Possession in order to block the shot:

A Robot has Possession of a Game Object if it is carrying, holding, or encompassing it.

The relevant [Referee Training video](#) provides the following "rule of thumb": if the Game Object turns with the Robot as the Robot turns, then it is probably being Possessed. For example, a flat vertical wall would not be considered Possession; a "catcher" would be considered Possession.

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## Indirect Possession

G11 SG4 SG6

In a recent tournament, an opposing robot shot a ball at a flag. When the ball ricocheted off of the flag, it bounced into our robot into a place on the robot where it couldn't be dislogged. There was also another ball in the robot in a place where it couldn't be dislogged, as well as one more ball in the our robot's intake system or shooter. The referee warned our robot that it was over the possession limit and because the team didn't immediately fire the one ball out of their shooter, the referee made the decision to disqualify them from the match. They didn't get the win points for the match but their teammate did.

My interpretation of Rule G11 is that the other team forced our robot into a "possession" penalty and therefore our team should not have been penalized. The other team did not do this intentionally, so therefore they should not have been penalized either. Here is the exact wording of the rule. <G11> You can't force an opponent into a penalty. Intentional strategies that cause an opponent to violate a rule are not permitted, and will not result in an infraction on the opposing Alliance. Minor violations of this rule that do not affect the Match will result in a warning. Match Affecting offenses will result in a Disqualification. Teams that receive multiple warnings may also receive a Disqualification at the Head Referee's discretion.

Please clarify whether my interpretation of the rule is correct.

### Answered by committee

Let's look at the specific rules in question, partially quoted here for reference:

<SG4> Watch your Possession limit. Robots may Possess a maximum of one (1) Cap and two (2) Balls at a time.

<SG6> Keep Game Objects to yourself. Robots may not intentionally drop or place Game Objects on an opponent Robot.

<G11> You can't force an opponent into a penalty. Intentional strategies that cause an opponent to violate a rule are not permitted, and will not result in an infraction on the opposing Alliance.

All three of these include the standard warning/Disqualification verbiage:

Minor violations of this rule that do not affect the Match will result in a warning. Match Affecting offenses will result in a Disqualification. Teams that receive multiple warnings may also receive a Disqualification at the Head Referee's discretion.

It is impossible for us to provide blanket rulings based on a written description of a specific Match, which is why it's important to defer to the Head Referee who witnessed the interactions in person.

You note that the ricochet of the Ball into your Robot was incidental, so <SG6> and <G11> would not typically apply, as they both include "intentional" verbiage. <SG4> would then be the key rule to consider.

<SG4> does not include any "intentional" or "un-intentional" verbiage; thus, if the Robot in question is objectively Possessing (3) Balls, then it is objectively in violation of <SG4>. To ensure that the penalty for this violation remains a warning, we would advise Teams who find themselves in this situation to avoid doing anything which would be considered Match Affecting, such as using one of those Game Objects to impact their Alliance's score (i.e. shoot a Ball at a Flag).

In general, we would advise Teams to design their Robots to minimize these types of incidental or questionable interactions, thus minimizing the possibility of rulings that you would consider controversial.

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## Indirect Possession?

SG4 SG7

Possession "...carrying, holding or encompassing" At a recent event a team was penalized for flipping a cap that had two ball resting on with another in their intake. They were said to be in violation of SG4 "Possess a maximum of one Cap and two balls at a time". Is flipping a cap with two balls on it considered possession of those two ball if there was no direct control of those balls?

### Answered by committee

It is always difficult to issue a blanket ruling on a snapshot description of an action during Match. With that in mind, in addition to the definition of Possession, SG7 should also be considered.

Possession - A Game Object status. A Robot has Possession of a Game Object if it is carrying, holding, or encompassing it.

<SG7> Game Objects cannot be used to accomplish actions that would be otherwise illegal if they were attempted by Robot mechanisms.

A Robot which is using a Game Object to carry, hold, or encompass other Game Objects would be considered Possessing them.

Momentarily flipping a Cap, such that the two Balls on top of it fall off, would not be considered Possession. Lifting that Cap, such that the two Balls were lifted with it, would be considered Possession.

The relevant [Referee Training video](#) also uses the following guideline: if the Game Object turns with the Robot as the Robot turns, then it is probably being Possessed. This rule of thumb applies to the two examples given in the above paragraph.

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## SG4 SG7 Robot Action Vs. Robot Movement after Early Expansion or 4 Discs Possession

SG4 SG7

Hello, At one of the events our teams went to, the head referee defined Robot Action as any movement away from the position the robot is in. However, in SG4 notes: • Teams can prevent an accidental or momentary expansion that does

not result in an <S2> Violation from becoming a Major Violation by immediately **moving** to rectify the Violation, and / or removing themselves from gameplay (e.g., parking in a corner of the field without impacting gameplay for other Robots).  
<SG4>

This wording means that the player is allowed to MOVE around to recollect their endgame expansion as to rectify the violation. Are robots allowed to physically move from it's current position to cover over or recollect early expanded string?

If it is allowed, then for SG7, when a robot accidentally possesses 4 discs, are they allowed to move to a safer location to remove their excess disc, or purposefully bump against the wall to remove a 4th disc that may be stuck on top of their robot? <SG7>

### Answered by committee

Thank you for your question! As you described, the 1st Violation note for rule <SG4> indicates that Robots may **move** to rectify a Violation, and rule <SG7> indicates that a Robot may **take actions** to attempt to remove excess Discs.

However, both of these rules also indicate that any gameplay by a Robot that is in Violation of the rule may be deemed a Major Violation (and earn a DQ) at the Head Referee's discretion. Until the Violation is remedied, Teams are advised to avoid actions & movements that may be considered either offensive or defensive gameplay by the Head Referee based on the context of the Match. For example, bumping against the wall to remove a stuck 4th Disc could be interpreted by a Head Referee as an attempt to descore Discs from an opponent's High Goal, depending on the context.

## SG4 - Further Clarification on Endgame Expansion outside of field

### SG4

During Endgame, a robot shoots an object on a string outside the field. It is legally expanding during Endgame, but obviously that team is disqualified,. The question that came up this weekend is: do their covered tiles count toward the alliance's total score?

<SG4> ... **A Robot that expands early in a head-to-head Match and cannot rectify the Violation cannot participate in further gameplay and will not receive points for tiles Covered in the Endgame.** There are no horizontal expansion limits during the Endgame. However, any Robot that comes in contact with anything outside of the field during the Endgame period or due to an early expansion, including the floor or the outside face of the Field Perimeter, will automatically receive a Disqualification for that Match under rule <S2>.

<S2> Stay inside the field. If a Robot is completely out-of-bounds (outside the playing field), it will be Disabled for the remainder of the Match. If a Robot comes in contact with anything outside of the field during the Endgame period or due to an early expansion, including the floor or the outside face of the Field Perimeter, it will automatically receive a Disqualification for that Match.

<SC5> A field tile is considered Covered if it is being contacted by a Robot at the end of a Match. ... b. **Each Alliance** may only receive points for one Cover per field tile, regardless of how many of their Robots are contacting that field tile.

However, the disqualification occurs after the end of the match, not during the match.

<SC1> All Scoring statuses are evaluated immediately after the Match ends. For determination of the Autonomous Bonus and Autonomous Win Point, all Scoring statuses are evaluated immediately after the Autonomous Period ends, unless otherwise noted.

a. For the purposes of this rule, "immediately after" means when all Discs, Field Elements, and Robots on the field come to rest.

Both Q&A 1181 and 1225 focus on pre-Endgame expansion and are also silent on this specific scenario.

Given that the expansion occurred during Endgame, covered tiles are by alliance, not individual robot and that the DQ occurs after all objects have come to rest, it seems as though tiles covered by the robot that shot the object out of the field should benefit that alliance.<SC5><SC4>



### Answered by committee

During Endgame, a robot shoots an object on a string outside the field. It is legally expanding during Endgame, but obviously that team is disqualified,. The question that came up this weekend is: do their covered tiles count toward the alliance's total score?

The only rules that affect an Alliance's score for tiles Covered during the Spin Up Endgame are [<SG4>](#) and [<SG7>](#), which both specify that an un-remedied Violation negates Covered tiles.

If a Robot expands outside of the field during Endgame but is not in Violation of [<SG4>](#) or [<SG7>](#), the Team should be issued an [<S2>](#) Violation and Disqualification. All tiles Covered by the Disqualified Robot should still be scored for their Alliance.

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## <SG4> Horizontal expansion vs. Loss of Parts

SG4

Is it an early horizontal expansion if a part of your intake, collar, or another part falls off your robot? The ref was unsure of this and declared all of these issues as early expansion and removed these robots from game play.

### Answered by committee

As described in the note following rule [<G5>](#), parts that become detached unintentionally are ignored for the purposes of any rules involving Robot contact or size, including horizontal expansion.

However, because leaving mechanisms on the field is specifically disallowed by rule [<G5>](#), the Team should receive a Minor Violation as described in the [<G5>](#) Violation Notes (which can become a Major Violation after multiple Minor Violations).

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## <SG4> Early expansion and participation in endgame

SG4

[<SG4>](#)

This is a follow up to a [question](#) asked on 12 Oct regarding early expansion and [<SG4>](#) violation. The committee answered:

a Robot that is in violation of rule [<SG4>](#) in a head-to-head Match cannot participate in further gameplay and will not receive points for tiles Covered in the Endgame.

My question is regarding the phrase "further gameplay". Does this mean the team cannot engage in gameplay for the duration of the match, or just until the endgame portion begins? At our last couple of tournaments, referees have been interpreting this to mean that, once the endgame begins, teams in violation of [<SG4>](#) **can** start moving and scoring rollers and discs (although they get no credit for covered tiles). Is this correct?

Thank you!

### Answered by committee

We believe that the final paragraph of the response to [Q&A 1290](#), quoted below for convenience, answers your question. If you have further questions, please feel free to rephrase and resubmit.

Teams in Violation of rule [<SG7>](#) or [<SG4>](#) may be able to prevent an accidental or momentary Violation from becoming a Major Violation and Disqualification by immediately rectifying the situation and/or removing themselves from gameplay. Note that this removal from gameplay is not the same as a Disablement, and Teams are still responsible for the ongoing actions of their Robots .... Teams are not strictly required to actively move away from gameplay in these situations, but as described in these rules, if they fail to do so they will likely receive a Major Violation and Disqualification.

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## <SG4><SG7> "Gameplay" and "Robot Actions" Clarification

SG4 SG7

As a referee, I would like some clarification on the meaning of "Gameplay" and "Robot Actions" as they pertain to [<SG4>](#) and [<SG7>](#)

1. **Would defensive play be classified as gameplay?** *I believe that the answer is yes as they are affecting the outcome of the match.*
2. If the answer to #1 is yes: **Would the robot in possession of four disks be required to avoid all aspects of gameplay, offensive and defensive, until they are either able to remove the extra disk or the match ends?** *I believe that the answer is yes as well. They would need to attempt to remove the disks, not interfere with any robot movement for the opposing alliance or for their partner, not block access to the low goals or to the rollers, etc.*
3. **What is defined as "Robot Actions"?** *For example, shooting a disk is an action, but would sitting in front of a roller be classified as an action because you chose to sit there.*
4. **When removing yourself from gameplay, either for having four or more disks or for expanding early, would you be required to actively move away from gameplay?** *If Robot A were to expand early or have four disks, they would be required to be removed from gameplay. Robot A moves to the corner of the field with two rollers, as sitting in one of the Low Goals would cause a disk to be scored/descored. Robot B comes into the corner to attempt to score with the rollers. Robot A should be required to drive out of that corner and find a different location away from gameplay. Is this interpretation correct?*

As stated in the Violation Notes under [<SG4>](#)

Teams can prevent an accidental or momentary expansion that does not result in an <s2> Violation from becoming a Major Violation by immediately moving to rectify the Violation, and/or removing themselves from gameplay (e.g., parking in a corner of the field without impacting gameplay for other Robots.

Thank you for your time,

"Cowboy" Chris

### Answered by committee

1. Would defensive play be classified as gameplay?

Yes. Defensive play is classified as gameplay.

2. If the answer to #1 is yes: Would the robot in possession of four disks be required to avoid all aspects of gameplay, offensive and defensive, until they are either able to remove the extra disk or the match ends?

Yes. As indicated in rule [<SG7>](#), Robots in Violation of this rule must immediately stop all Robot actions except for attempting to remove the excess Disc(s).

3. What is defined as "Robot Actions"?

In the context of a Spin Up Match, a Robot action is any Robot behavior that occurs during a Match. Blocking an opponent's access to a Roller or Low Goal, either actively or passively, is considered to be a defensive Robot action. Teams are generally responsible for the actions of their Robots at all times during a Match. Rules [<G14>](#) and [<G3>](#) still apply, however, unless specifically noted by another game rule.

4. When removing yourself from gameplay, either for having four or more disks or for expanding early, would you be required to actively move away from gameplay?

Teams in Violation of rule [<SG7>](#) or [<SG4>](#) may be able to prevent an accidental or momentary Violation from becoming a Major Violation and Disqualification by immediately rectifying the situation and/or removing themselves from gameplay. Note that this removal from gameplay is not the same as a Disablement, and Teams are still responsible for the ongoing actions of their Robots as described in the response to #3 above. Teams are not strictly **required** to actively move away from gameplay in these situations, but as described in these rules, if they fail to do so they will likely receive a Major Violation and Disqualification.

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## <SG4> Horizontal expansion clarifications

### SG4

SG4> Horizontal expansion is limited until the Endgame. Robots may not expand beyond a horizontal area of 18" x 18" at any point during the Match prior to the Endgame. There are no horizontal expansion limits during the Endgame. Violation Notes: • Teams can prevent an accidental or momentary expansion from becoming a Major Violation by immediately moving to rectify the Violation, and / or removing themselves from gameplay (e.g., parking in a corner of the field without impacting gameplay for other Robots). • Even if an expansion was accidental, it can still be considered a Major Violation if the Head Referee judges that the expansion was intentional, strategic, and / or Match Affecting.

Two scenarios were encountered in our league night play and I want to make sure that everyone rules the same way.

1. A robot's end game falls off their robot so the robot is dragging it - thus illegally expanding horizontally. There are no other robots around, but the offending robot is in the opponents low goal area and is carrying three discs. To "remove themselves from gameplay" and drive to a portion of the field to avoid other robots (ex, a corner) they would have to leave the low goal. In doing this, the robot would essentially be descoring the three discs from the opposing alliance. Is this allowed? Or should the offending robot be required to either stay in the low goal (or leave the three discs in the low goal)?
2. If this offense took place with 29 seconds left in the match and the robot successfully removes themselves from gameplay, when there is 10 seconds left and the end game begins, they are no longer violating the horizontal expansion limit. Can they now be involved in gameplay (ex. Manipulation/scoring discs) as long as they were doing so in a way that their accidental early horizontal expansion was not an advantage to doing so (ex. Driving out of the low goal or shooting the discs that they already have in their robot into the high goal)?

### Answered by committee

Thank you for your questions!

1. It is impossible to issue a blanket ruling, as scenarios like the one you describe will be highly context-specific. Ideally, the offending Robot should find a way to rectify the situation (e.g., by retracting the expansion) or move to a more neutral position on the Field, but as you described this may not be possible. Descoring Discs from the Low Goal would violate <SG4>, and should be avoided. Depending on context, remaining in the Low Goal could impact gameplay for other Robots, and may be penalized by the Head Referee.
2. A Robot that does not succeed in rectifying an early horizontal expansion (e.g., by retracting the expansion) must remove themselves from gameplay. Because it is impossible in many cases to gauge the overall impact of an early expansion on the outcome of a Match, **a Robot that is in violation of rule <SG4> in a head-to-head Match cannot participate in further gameplay and will not receive points for tiles Covered in the Endgame.** If a Robot successfully rectifies the early expansion, they may resume playing other portions of the game.

Teams may still be Disqualified for violations of <SG4> that are deemed Match Affecting, intentional, or egregious by the Head Referee.

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## Clawbot violates SG4 horizontal expansion rule by lifting claw. Reveal video appears to violate game rules.

SG4 Robot Rules and Inspection

We're in the middle of a beginner robotics camp. Some are building Disco as best they can without instructions, some are building their own designs, and some are building clawbots since we have the instructions.

My understanding is that VEX designs each game to be able to be played by the clawbot or the season's herobot. Imagine half my campers when they're told that they're building a robot that is illegal as soon as it picks up the claw.

The clawbot being used in [the reveal video](#) is violating this very rule, if I'm not mistaken.

Credit to Jonathan Monahan of 663T for pointing this out.

Thanks in advance for clarifying whether the robot in the reveal video violates SG4.



Answered by committee

The clawbot being used in the reveal video is violating this very rule, if I'm not mistaken.

Credit to Jonathan Monahan of 663T for pointing this out.

Thanks in advance for clarifying whether the robot in the reveal video violates SG4.

This is correct. Please note the following passage from page 5 of the Game Manual:

If there are any conflicts between the Game Manual and other supplemental materials (e.g., Referee Certification courses, the VRC Hub app, etc.), the most current version of the Game Manual takes precedence.

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## <R5> Starting Size Orientation

### SG4 Robot Rules and Inspection

<R5> declares that

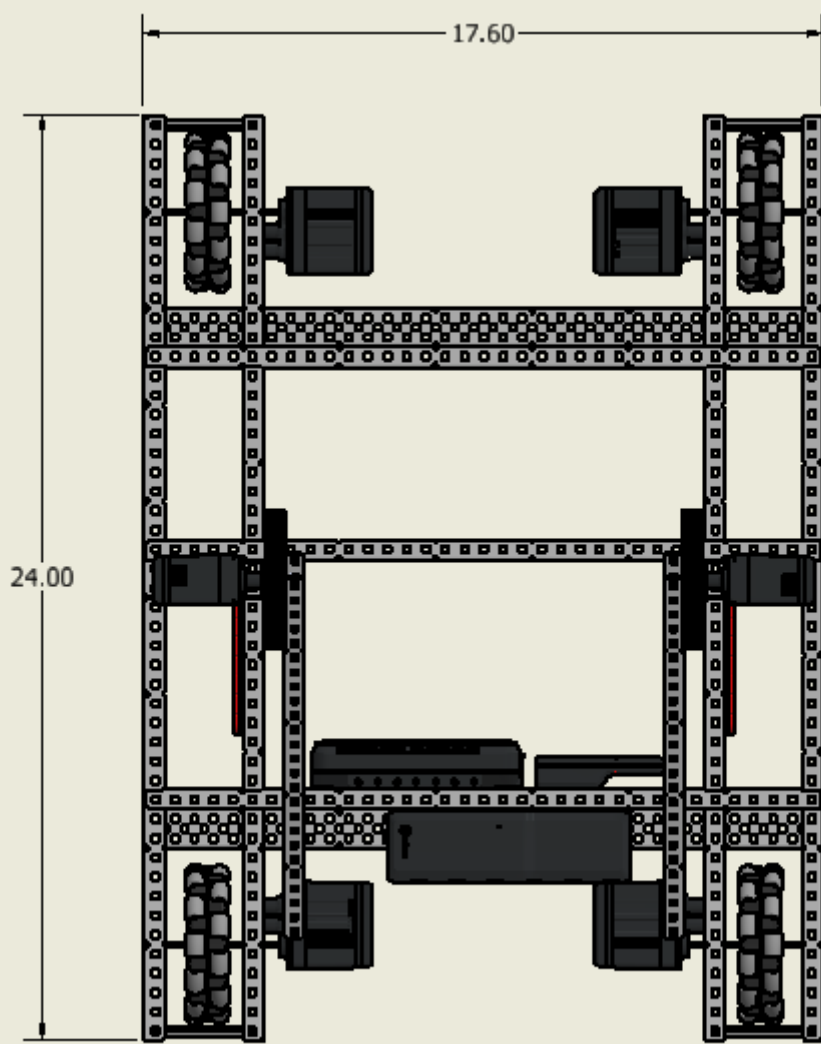
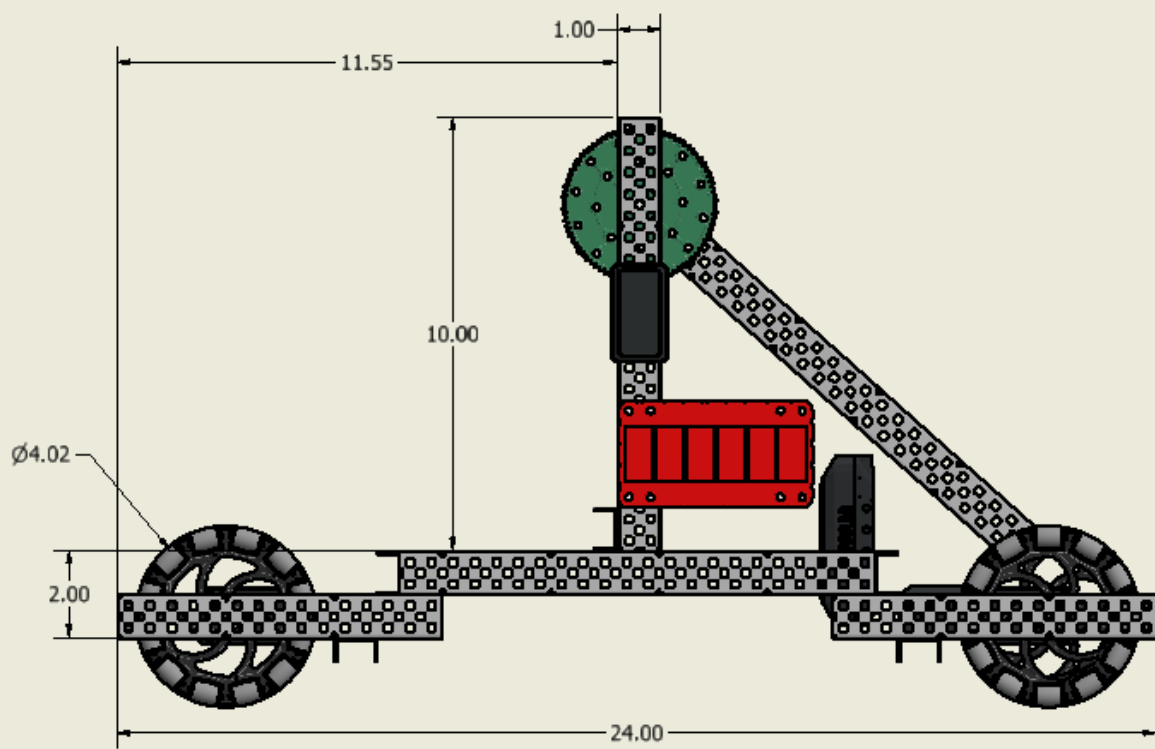
Robots must fit in a sizing box. Robots must be able to satisfy <G4>, and begin each Match in a volume smaller than 18" (457.2 mm) long by 18" (457.2 mm) wide by 18" (457.2 mm) tall.

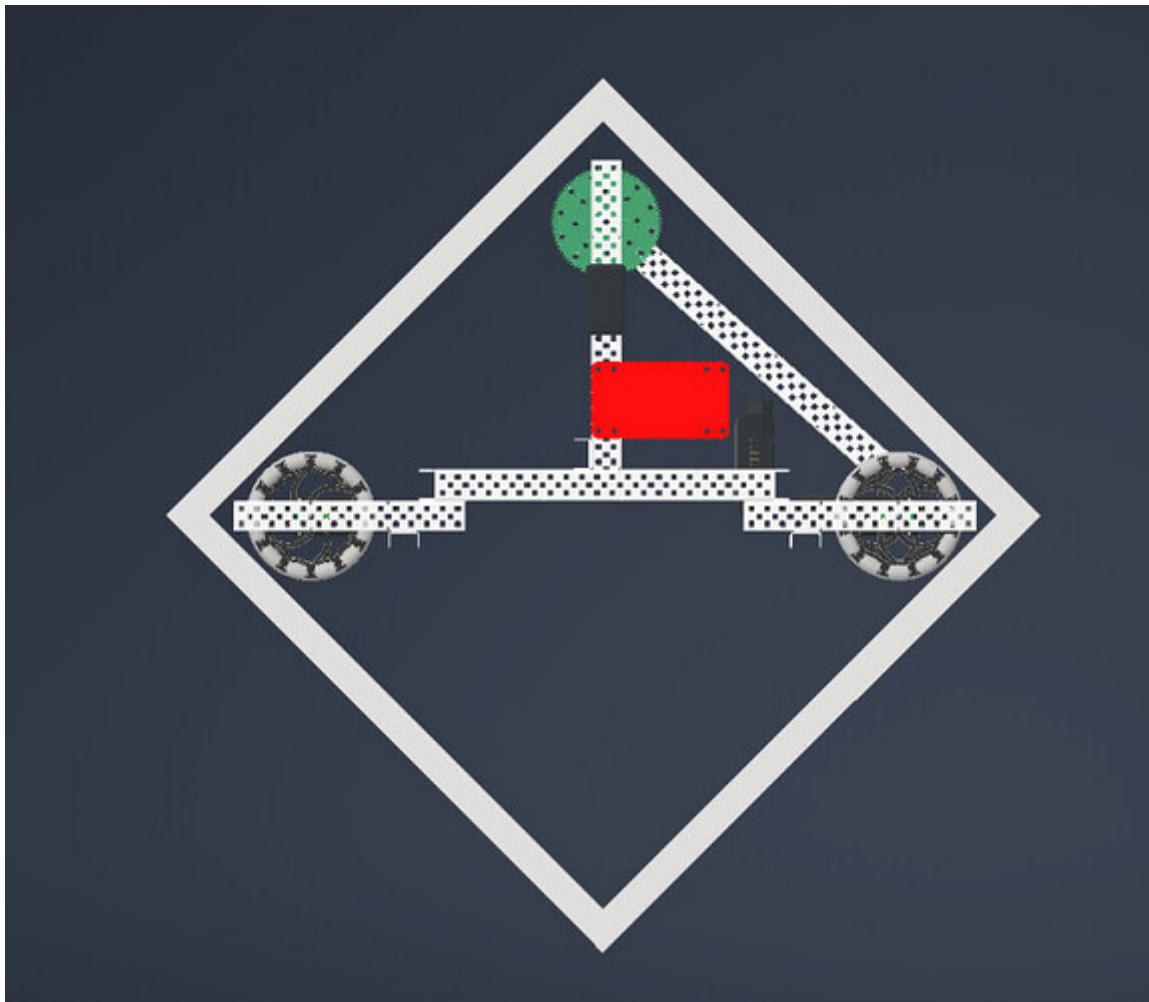
The robot in the attached images, when rested on its four wheels, has a greatest size of 29.76" in the two dimensions parallel to the foam field tiles. It is able to fit into an 18" cube, just not in the customary way. I see nothing in the rules that suggests an orientation that the sizing cube must be relative to parts of a robot or to the field. The square in one of the pictures has internal dimensions of 18"x18".

I have the following questions about this robot

1. Given that it fits within an 18" cube and does not violate the 24" "virtual ceiling", is it legal to use a robot with the dimensions of the robot in the attached images as-is with all 4 wheels contacting the ground?
2. If the answer to part 1 is no, would this robot be legal to use if it started the match in a different orientation? Would there be any constraints on how the robot could move or orient itself once a match starts?
3. Regardless of how it is used or not used during actual matches, should a robot with the dimensions of the robot in the attached images pass inspection?

Thank you for your time.





### Answered by committee

I see nothing in the rules that suggests an orientation that the sizing cube must be relative to parts of a robot or to the field.

Typically we would try to only respond to the specific questions being asked, but in this case, all of the specific questions are based upon this initial assumption, which is incorrect.

The full text of R5 reads as follows, with a few portions bolded for emphasis:

<R5> Robots must fit in a sizing box. Robots must be able to satisfy <G4>, and begin each Match in a volume smaller than 18" (457.2 mm) **long** by 18" (457.2 mm) **wide** by 18" (457.2 mm) **tall**.

- Compliance with this rule must be checked using the official VEX Robotics On-Field Robot Expansion Sizing Tool: [www.vexrobotics.com/276-5942.html](http://www.vexrobotics.com/276-5942.html).
- Any restraints used to maintain starting size (i.e., zip ties, rubber bands, etc.) must remain attached to the Robot for the duration of the Match, per <G5>.
- For the purposes of this rule, it can be assumed that Robots will be inspected and begin each Match **on a flat standard foam field tile**.

The full text of G4 reads as follows, with a few portions bolded for emphasis:

<G4> Robots begin the Match in the starting volume. At the beginning of a Match, each Robot must be smaller than a volume of 18" (457.2 mm) **long** by 18" (457.2 mm) **wide** by 18" (457.2 mm) **tall**. Using Field Elements, such as the field perimeter wall, to maintain starting size is only acceptable if the



Robot would still satisfy the constraints of <R5> and pass inspection without the Field Elements.

A common-sense interpretation (G3) of the words "long", "wide", and "tall" make it clear to any reasonably astute inspector / Head Referee that the sizing "cube" in question is resting flat on a foam tile.

1. Given that it fits within an 18" cube and does not violate the 24" "virtual ceiling", is it legal to use a robot with the dimensions of the robot in the attached images as-is with all 4 wheels contacting the ground?

With that common-sense interpretation of the sizing rule in mind, the two parts of this question are in conflict with each other. The depicted Robot, with all four wheels contacting the ground, would not fit within a cube which is 18" wide.

2. If the answer to part 1 is no, would this robot be legal to use if it started the match in a different orientation? Would there be any constraints on how the robot could move or orient itself once a match starts?

Yes. If the Robot started on its side, as depicted in the [third attached image](#) (assuming that the image is from a top-down angle), it would satisfy the constraints of G4. However, as pictured, it would likely be unable to move once the Match has begun without violating SG4 or SG5.

3. Regardless of how it is used or not used during actual matches, should a robot with the dimensions of the robot in the attached images pass inspection?

This would depend on if the inspector was only strictly following the technical interpretation of R5, in which case the Robot would likely pass if inspected while resting on its side. However, a secondary purpose of the inspection process is to help Teams identify potential problems with their Robots before reaching the field and committing an illegal action. We would hope that this inspector would notice that the Robot would immediately violate G4 when it is placed with all four wheels on the ground, and advise the Team to modify their design.

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## Referee Certification - SG4

SG4

There are some discrepancies between the game manual and the Tipping Point Referee Certification Exam with respect to SG4. The specific question I am referring to is attached as an image to this post.

VRC Tipping Point Head Referee Certification Course - Unit 8 Exam

5 minutes

If the red Alliance commits a violation during the autonomous period that results in the blue Alliance receiving the Autonomous bonus, the blue Alliance also automatically receives the Autonomous Win Point.

True

False

Next Question >

SG4 states:

Stay out of the opponent's Home Zone during Autonomous. During the Autonomous Period, Robots may not contact the foam tiles, Scoring Objects, Robots, or Platforms which are fully contained in the opposing Alliance Home Zone.

Violations of this rule will result in the Autonomous Bonus being awarded to the opposing Alliance. **The opposing Alliance will also receive an Autonomous Win Point, regardless of whether they completed the Autonomous Win Point tasks.** Intentional, strategic, or egregious violations, such as intentional contact with an opposing Robot completely within their Alliance Home Zone, will result in a Disqualification.



Emphasis mine.

Considering the majority of rules violations in the autonomous period that cause the autonomous bonus to be awarded to the opposite alliance are SG4 violations, the question is potentially misleading. Is it possible for the GDC to reword this question to specify whether or not an SG4 violation has taken place?

### Answered by committee

Thank you for bringing this to our attention. In the future, please email Referee Certification feedback/corrections to [GDC@vex.com](mailto:GDC@vex.com). In the event of a discrepancy between the Referee Certification materials and the Game Manual, please refer to rule G22:

If there are any conflicts between the Game Manual and other supplemental materials (e.g. Referee Training videos, VRC Hub app, etc), the most current version of the Game Manual takes precedent.