

Q&A

VRC 2019-2020: Tower Takeover

Tagged: G5



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 Tower Takeover 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 Tower Takeover rules questions.

- For event, registration, or other competition support questions, please contact your [REC Foundation Regional Support Manager](#).
 - For VEX technical support, contact support@vex.com or sales@vex.com.
- For game questions, suggestions, or concerns outside of specific and official rules questions, contact GDC@vex.com.

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849: Is the robot tilt legal?

20-Aug-2021

G5

If the robot tilts during driving and its diagonal exceeds 19 inches, will it violate the G5 rule?

<https://www.bilibili.com/video/BV1Bb4y1r7LG?from=search&seid=15436717150755639022>

Answered by Game Design Committee

Please see the answer posted in this similar Q&A: <https://events.vex.com/VIQC/2021-2022/QA/828>

If this does not answer your question, please feel free to rephrase and re-submit.

828: Can the sizing requirements rotate with the bot?

25-Jul-2021

G5

The rule in question is G5:

G5 Expansion is limited during a Match. During the Match, Robots may not expand beyond the following restrictions: a. Horizontally, beyond an 11" x 19" (279.4mm x 482.6mm) area. b. Vertically, beyond 19" (482.6mm) high. This is the same height as the top of the teal T-shaped VEX IQ parts in the center of the Field. This expansion limit does not require that the Robot stay in the same configuration as it was when it began the Match. It simply means that, at any given moment during the Match, it should be able to fit within an 11" x 19" x 19" (279.4mm x 482.6mm x 482.6mm) rectangular prism. Robots will be tested for compliance with this rule, alongside rule R6, during inspection.

Is height always measured perpendicular to the field? Or, can the 11x19x19 rectangular prism twist with the robot if it attempts to switch its length and height?

Answered by Game Design Committee

Is height always measured perpendicular to the field? Or, can the 11x19x19 rectangular prism twist with the robot if it attempts to switch its length and height?

Height should always be measured perpendicular to the field.

The "blue box" in rule G5 states the following:

The intent of testing compliance with this rule during inspection is to reduce the need for judgment calls during a Match. The 19" height restriction is not a "virtual ceiling"; for example, it is legal for a portion of the Robot to extend beyond the T-shaped VEX IQ markers while Hanging, **so long as it never momentarily extends beyond 19" along the way**. If a Head Referee is unsure of a Robot's compliance with this rule, they may request a field-side height check for the configuration that was seen momentarily during the Match.

A more verbose way of clarifying the bolded portion would be as follows:

"...so long as a measurement taken from the "top" of the Robot to the "bottom" of the Robot never exceeds 19", where "top" and "bottom" represent the portions of the Robot which are farthest from and nearest to the Floor,

| respectively."

469: Leaving Parts on the Field

23-Dec-2019

G5

<G5> Keep your Robots together. Robots may not intentionally detach parts during the Match or leave mechanisms on the field. 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. Multiple intentional infractions may result in Disqualification for the entire competition.

At an event I watched teams that had a slide out mechanism that would release using rubber bands and the rubber bands would fly off the robot and fall on the field. Would this be a concern of G5?

Answered by Game Design Committee

A Robot intentionally detaching a part and leaving it on the field is always considered a violation of G5. The specific scenario you have described would likely be considered a minor (non-Match-Affecting) violation, and result in a warning. Teams that receive multiple warnings may receive a Disqualification at the Head Referee's discretion.

407: Blocks on tower

6-Nov-2019

G5

Can a robot flip a block over the top of itself to place it on the tower? The robot meets the 15" maximum for height but the top of the block is above that.

Answered by Game Design Committee

There are no rules preventing this, thus it legal, provided that no other rules are violated in the process.

391: Robot Size and Starting Posistion Problem

24-Oct-2019

G5 R4

Hi all, I spoke with are regional rep, and he directed me here for this question. I notice that there have been similiar problems but people didn't seem to realize what is causing the difficulties.

As stated in the following rules, the robot must be 11 x 19.

<G5> Expansion is limited during a Match. During the Match, Robots may not expand beyond the following restrictions: a. Horizontally, beyond an 11" x 19" (279.4mm x 482.6mm) area. b. Vertically, beyond the 15" (381mm) high starting requirement.

Also as stated by the following rule, it must fit inside the starting area of 11 x 19.

<R4> Robots must fit in the sizing box. At the start of each Match, the Robot must be able to satisfy the following constraints: a. Only be contacting the Floor and/or the Field Perimeter. b. Fit within an 11" x 19" (279.4mm x 482.6mm) area, bounded by the Starting Position. c. Be no taller than 15" from the Floor.

The problem that I have discovered is the following. The starting areas are NOT 11 x 19. On our two fields bought two years apart the starting areas for length and width are both about a 32nd of an inch short in either directions as shown in the two following pictures.

! [img](https://events.vex.com/storage/markdown/uploads/V1LBoQXTadECev05s71ZmGlbLwNoDcZm1n6DZHIf.j

! [img](https://events.vex.com/storage/markdown/uploads/8N9M2WQn1YB01Jz9LdjfxkG6bPfk6NUE35Jm0Kn8.j

In previous years and games, this was not a problem. This year though the tolerances are very sma

Making the robot size smaller would not work. The way the pieces are made, the robot would have t

A rule addition allowing the robots to be slightly (thickness of an axel) outside the starting ar

Thanks for the time.

Sam Schursky
Team 6277
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Katonah, New York

Answered by Game Design Committee

First, please review this similar Q&A. Although it is asking a slightly different question than yours, it includes some relevant background information regarding Robot size rulings and tolerances.

<https://events.vex.com/VIQC/2019-2020/QA/382>

It looks like your root question is the following:

We have groups that have robots that are exactly 11 by 19. They would pass inspection (assuming the measuring device does not rely on the field which might have the same problems) but be ever so slightly outside of the starting positions. Their definitely needs to be a rules clarification on this.

A rule addition allowing the robots to be slightly (thickness of an axel) outside the starting area as long as it passes inspection of course would be a good solution.

Thank you for your suggestion, but this rule addition will not be made. The intents of VIQC's sizing rules are for Robot size to be checked during inspection and then enforced at the beginning of each Match. Having a different sizing rule for a Match vs inspection would negate the purpose of the inspection process.

They would pass inspection (assuming the measuring device does not rely on the field which might have the same problems) but be ever so slightly outside of the starting positions.

The official [VIQC Sizing Tool](#) does utilize the field as its reference. Relying on a common field ensures a standardized expectation for Teams, inspectors, and Head Referees, regardless of which event they attend. Some manufacturing variance is to be expected in any physical product, as is variance if using different measuring methods.

For example, the VIQC Field Perimeter has a very slight draft angle as an injection molded plastic part; so, if you lay a ruler from the perimeter to the black line, a difference of less than 1mm could easily occur depending on where you rest the ruler against the wall.

So, as an overarching answer to this question, we are going to refer to rule G3:

<G3> Use common sense. When reading and applying the various rules in this document, please remember that common sense always applies in the VEX IQ Challenge.

The intent of G4, G5, R5, and R6 is to provide a design constraint in the form of Robot size that is reasonably observable by a volunteer inspector/referee, and consistently enforceable across all events worldwide. It is not a reasonable expectation for an event to use digital calipers to measure Robot size; it *is* a reasonable expectation for an event to use the tools that are available to all Teams, such as a standard field, a publicly available physical sizing tool, and human observation. To avoid potential conflicts, we would advise Teams remind mindful of these realities

when designing their VEX IQ Robots such that they do not rely on a possible variance of 0.03" to determine their legality.

348: Detaching robots and entanglement

4-Sep-2019

G5 R3

One of my students wants to build a robot similar to the ones featured in the following video but wants to make sure the design is legal before building it. Specifically in the video we are looking at designs that build a wall that detaches from the robot and the only connection is rope/string. <https://www.youtube.com/watch?v=Rznndditly0>

They are concerned firstly that rule G5 is being violated.

<G5> Keep your Robots together. Robots may not intentionally detach parts during the Match or leave mechanisms on the field.

The designers of these robots have defended at length on forums that their designs don't detach b mechanisms on the field."

Secondly if this sort of design is allowable within G5 they are also concerned that it would viol

<R3> Robots must be safe. The following types of mechanisms and components are NOT allowed: c. Those that pose an unnecessary risk of Entanglement.

Would leaving behind a trail of 20 feet of rope/string be considered an unnecessary risk of entan

Thanks in advance!

Answered by Game Design Committee

The designers of these robots have defended at length on forums that their designs don't detach because they are connected by rope/string. Is that enough to consider your robot parts still attached?

When there is no VRC-specific definition for a term, a dictionary definition should be used. The Oxford dictionary definition for "attached" is "joined, fastened, or connected to something".

Parts connected by rope/string are, by definition, considered "attached" to the Robot. Therefore, G5 is not being violated if a mechanism is attached solely via rope/string.

Would leaving behind a trail of 20 feet of rope/string be considered an unnecessary risk of entanglement?

In addition to R3, Entanglement is also referenced in G12 (i.e. it is possible for a Robot to pass R3 in inspection, but still violate G12 during a Match).

< G12 > Don't destroy other Robots. But, be prepared to encounter defense. Strategies aimed solely at the destruction, damage, tipping over, or Entanglement of opposing Robots are not part of the ethos of the VEX Robotics Competition and are not allowed. If the tipping, Entanglement, or damage is ruled to be intentional or egregious, the offending Team may be Disqualified from that Match. Repeated offenses could result in Disqualification from the entirety of the competition.

< G12b > VEX Robotics Competition Tower Takeover is an interactive game. Some incidental tipping, Entanglement, and damage may occur as a part of normal gameplay without violation. It will be up to the Head Referee's discretion whether the interaction was incidental or intentional.

Note: A Robot which has expanded horizontally in an effort to obstruct the field, or is legally covering the top of a Tower in a solely defensive manner, should expect vigorous interactions from opponent

Robots. Damage that is caused by opponent Robots pushing, tipping, or Entangling with them would not be considered a violation of < G12 >. Gratuitous damage or dangerous mechanisms may still be considered a violation of <R3>, <S1>, or <G1> at the Head Referee's discretion.

Bearing both R3 and G12 in mind, it is impossible to provide a blanket ruling that would cover all possible hypothetical Robot designs and/or on-field interactions. This is the type of question that requires a human observing the context of a specific Robot and/or Match to provide a judgment call.

So, we will provide the following overarching guidelines as starting points for Head Referees, inspectors, and Teams to use when determining whether a given design/interaction is legal.

1. When inspecting for R3, has the Team done their due diligence in the engineering design process to mitigate the risks of unnecessary Entanglement? While it is outside the scope of this Q&A to provide specific design advice, we would recommend that Teams wishing to utilize this strategy test different thicknesses, attachment methods, lengths, etc in different types of robot-to-robot interactions to minimize unnecessary, egregious, or intentional Entanglement.
2. Does the string on the field pose a likely or strategic possibility of Entangling another Robot? That is to say - is Entangling a primary function of the string (is it a "dragnet" mechanism), or is it simply a means-to-an-end?
3. Any Robot with a mechanism such as the one in the linked video would be taking on some risk of incidental Entanglement. Therefore, if incidental Entanglement occurs, was the Entanglement egregious or intentional? If it was not egregious or intentional, was it the result of vigorous interactions from opponent Robots (per the Note in G12)?

2989: Adding Team Member to Serve as a Loader

11-Dec-2025

G5

We have a team that has already qualified for the Event Region Championship. One team member might not be able to attend on the date of the ERC. They will not know until shortly before the ERC takes place.

There are currently only three team members on the team. This may necessitate adding another team member to serve as a Loader.

G5b states "Students can be added as support to the *Team*, but may not be added as Drivers or Coders for the Team." It does not mention Loaders, which are different from Drivers.

The manual also states in G5b "Note: Teams cannot "borrow" Students from other Teams to serve as Drive Team Members, Coders, Designers, Builders, or notebookers. However, Teams can add permanent members throughout the season under the guidelines of this rule."

Is it acceptable, i.e. does it meet the guidelines, to add a team member **permanently** to the team to serve as a Loader, so long as they do not serve as Driver or Coder? The Loader would not switch back to any other team.

Answered by Game Design Committee

Is it acceptable, i.e. does it meet the guidelines, to add a team member **permanently** to the team to serve as a Loader, so long as they do not serve as Driver or Coder? The Loader would not switch back to any other team.

Yes. This meets the requirements for championship events in rule <G5> clause B and would be allowed.

2958: Moving Teams Across Schools

3-Dec-2025

G5

I have a new student who moved from one school in Manila to ISM. He drove in qualifiers for his previous school but has joined the team here at ISM in the Nationals.

- <G5> a.(i) explicitly states he may drive
- <G5> b. states he may not due to not being part of the qualifying team Which rule takes precedence? Can he drive or only participate as a loader? (he doesn't code so that's not a concern)

<G5>

Answered by Game Design Committee

Because your Student is joining an existing Team for a Championship event, clause B applies. That Student cannot participate as a Driver or Coder for their new Team at the Championship event.

2937: Legality of Switching Controllers Between Alliances.

22-Nov-2025

G4 G5

123A and 321A are on the same alliance during a match. During the driver control period, a drive team member from 123A is handed a controller for 321A's robot.

1. Can alliances intentionally swap controllers with their alliance partner during the driver control period?
2. If no, which rules would apply in this scenario?

Thank you for your time.

Answered by Game Design Committee

Alliance Partners cannot legally operate each other's Robots during a Match.

Swapping controllers as you've described would result in Students serving as Drive Team Members for multiple Teams during an event, or a Team borrowing a Driver from another Team, which are Violations of rule <G5>.

2931: Moving teams within same school

19-Nov-2025

G5

Hi, We have a team (who have qualified for the nationals) where 2 of the 3 team members have left leaving 1 remaining.

Can the remaining member one of our other school teams who have also qualified for the nationals.

If so what roles are they not allowed to undertake?

Thanks you, <G5>

Answered by Game Design Committee

Thanks for your questions, Team 77177C.

Clause B of rule [<G5>](#) directly addresses these situations.

The student in your example could join another existing team for the championship event, but could not serve as a Drive Team Member or Coder on that new Team.

However, if that new Team also consists of a single member, the transferred Student could serve as a 2nd Drive Team Member or Coder. In this case, the resulting Team would then only have two Drive Team Members, and would have to choose whether to use a Driver for the 2nd half of the Match or a Loader for the entire Match (see clause E of [<GG10>](#)).

We encourage you to reach out to your [RECF Regional Support Manager](#) for more information if needed.

2898: Can a team borrow a Loader from another team during a Teamwork Match?

3-Nov-2025

G5

In the VEX IQ Mix & Match competition, each alliance is composed of two teams that work together in a Teamwork Match.

According to rules <G4> and <G5>, all work must represent the skill level of the students on the team, and each student may only belong to one team during a season.

We would like to confirm whether a team is allowed to borrow a Human Loader from another team (for example, when a team's own Loader cannot attend or is absent) during an official match.

If this is not allowed, could you please clarify whether:

The alliance partner's student can temporarily serve as the Loader for both teams during the match?

Or must each team's Loader strictly come from that specific team's registered students only?

We would appreciate clarification so we can ensure proper staffing for our future events.

Thank you!

Answered by Game Design Committee

Thanks for these questions!

The next game manual update will revise rule [<G5>](#) to correct two inadvertent changes that were made in version 2.0 of the game manual. These changes are effective immediately.

The beginning of the rule will be revised to match the language from v1.1, and will read (bold added to emphasize the change):

Each Student can only belong to one Team. Each Team must include **Drive Team Members**, Coder(s), Designer(s), and Builder(s). Many also include notebooker(s). No Student may fulfill any of these roles for more than one VEX IQ Robotics Competition Team in a given competition season.

The note at the end of the rule will be revised to match the language from v1.1, and will read (bold added to emphasize the change):

Teams cannot "borrow" Students from other Teams to serve as **Drive Team Members**, Coders, Designers, Builders, or notebookers. However, Teams can add permanent members throughout the season under the guidelines of this rule.

The answers to your questions are as follows:

- A Team is not allowed to borrow a human Loader from another Team, regardless of the reason.

- A Team cannot use an extra member of their Alliance Partner's Team as their Loader
- All Drive Team Members, including Loaders, must be members of that Team

2897: Question on Team Member Registration (switching teams)

3-Nov-2025

G5

Hello there,

I am a school teacher and VEX IQ coach. I am in the process of registering 3 teams for the national championship in our country based on qualifications from a recent event.

I am trying to understand exactly what is or isn't permissible in terms of team member registration when students switch teams in the middle of the season.

Each of our qualifying teams has exactly 3 students. Assuming it is legal, our exact goal is to increase teams from 3 students to 4, adding a 4th student who was on another team that didn't qualify.

We don't want that member to be a driver or a coder, but to be either an extra loader or just the 'standby' member. For example, if one of the original team members was sick during the day(s) of the competition, the new 4th student could fulfill the role of loader and the two original members fulfill the roles of drivers.

Can you please confirm if this is allowed and hopefully explain the exact policies in more detail than what is found in the rulebook?

Thank you very much for your time and attention[Example Image]

Answered by Game Design Committee

Thanks for this question, Team 54345A!

Adding Students to a Team for a Championship Event is legal, as long as those new Students do not serve as Drivers or Coders. They are allowed to participate in Matches as Loaders or in other support roles. For additional information, please reach out to your [RECF Regional Support Manager](#).

2891: Ownership of preseason prototype if <G5> legal team split puts equal team members into two new teams.

31-Oct-2025

G5

[<G5>](#)

Our team is school based. Teams are determined by classes which students have no control over. 2025/26 Preseason brainstorming, prototyping and documentation was created by 4 students in class during the months of May and June last year (2025). This year those 4 students then were placed in 2 different classes (2 in one period, 2 in a different period). The School went from 1 team to 3 teams. Team A (last year's team) has zero returning students (they are all new). Team B has 2 students from last year's team. Team C also has 2 students returning from last year. Who retains ownership of the previous year's IP (brainstorming, prototyping and documentation)?

Q+A # 2843: 'Ownership of Ideas when Students Move Teams G4/G5' determined that the team itself retains the information.

Question:

1. Does this mean that no one retains the preseason work because there is no one on team A who originated the information, or should team B + C each include the preseason documentation and then proceed to document the

iterations made since returning to school and starting in a new team?

Answered by Game Design Committee

Hello, Team 22736C. Thanks for these questions.

Part of the intent of rules [<G4>](#) and [<G5>](#) is that each Team, in each season, does its own independent brainstorming, prototyping, and documentation. Information from prior seasons, or any content or ideas from anyone other than a current Student Team Member, can be used as reference material but should be properly cited as described in the [RECF Guide to Judging](#).

As described in clause B of rule [<G4>](#),

Teams may be inspired by designs by other Teams, and use an idea from someone else to spark innovation, but are expected to document and demonstrate this in their engineering notebook alongside evidence of iteration.

2850: G4/G5 follow up

13-Oct-2025

G4 G5

[<G4><G5><G4>](#)

This is a followup to <https://events.vex.com/V5RC/2025-2026/QA/2834>

In part, the GDC's answer includes the following quote, which seems entirely unsatisfying given the potential consequences up to and including removal from the program, where the burden of proof falls on the team to defend themselves.

Neither the game manual nor the GDC provide guidelines for what should be included in a Team's engineering notebook, should they choose to use one. We recommend that Teams review the related content in the RECF Library, including the pertinent portions of the RECF Guide to Judging.

In response to one scenario that I posted:

A team "hole counts" a mechanism based on YouTube content. The mechanism is made entirely of Vex-branded parts and is identical to the YouTube version.

The GDC's response was:

This would be a clear violation of rule [<G4>](#) clause B that could lead to penalties up to and including removal from the program if recognized by or reported to event staff.

If the team had an Engineering Notebook and in that notebook the team describe finding the video, building it, creating various iterations, before concluding that the original version (the copy of the YouTube implementation) is optimal, would that be sufficient to overcome G4.2.i

Using elements of another design as a starting point is acceptable if the Team is capable of demonstrating evidence of iteration, innovation, and/or modification that makes the design uniquely their own. Documentation should clearly demonstrate the idea that was used for inspiration, and how it was changed for the final implementation on the Team's Robot. It should be clear that this final implementation is not an exact copy of ANY other original design.

Especially given that there are only so many permutations of reasonably combining Vex parts?

Replace "mechanism" from the original question to "drivetrain", where there seem to be a limited number of reasonable drivetrain choices. Are all teams at risk of program removal if their drivetrain is an exact copy of some other popular drivetrain?

Answered by Game Design Committee

Thanks, Team 355U, for this follow-up question.

There is a difference between finding inspiration from a design or Robot mechanism and building a direct copy (hole counting) from a video. Being inspired by a design means learning from others and creating your own version of mechanisms or other elements of a build. Attempts to recreate entire Robot builds from videos can quickly move beyond inspiration.

Student Team members are the only individuals who know their inspiration, learning, and how they worked through the engineering design process to arrive at an independent solution. As such, it is up to the Team to determine the proper level of documentation needed to prove their iteration through the engineering design process.

To more directly answer your questions:

If the team had an Engineering Notebook and in that notebook the team describe finding the video, building it, creating various iterations, before concluding that the original version (the copy of the YouTube implementation) is optimal, would that be sufficient to overcome G4.2.i

Only if the Team could demonstrate that they created their own version of the Robot or mechanism that inspired them. Hole counting is a Violation of rule [<G4>](#), even if Teams try other thing before deciding to copy someone else's work. We'll once again state that the V5RC Game Manual and GDC do not provide guidelines for what Teams should or should not include in their engineering notebooks. That guidance can be found in the [RECF Guide to Judging](#) and the [notebook judging rubric](#). If you have additional questions about engineering notebooks, please post them in the [Judging Q&A](#).

Are all teams at risk of program removal if their drivetrain is an exact copy of some other popular drivetrain?

Similar drive trains built independently by different Teams will reflect different choices and utilize different parts and spacing and would not represent [<G4>](#) Violations. However, using an "exact copy of some other popular drivetrain" may raise questions about whether the drivetrain represents the Team's work, and may lead to penalties for a [<G4>](#) Violation.

2576: Length and width

25-Feb-2025

G5

[<G5><G5>](#)

The robot can be 23" wide and 73" long. What determines which direction is width and which direction is length? Does it matter as long as one direction is 23" and one 73" or are there specifics on which direction is deemed length and width?

Answered by Game Design Committee

The length and width values are effectively interchangeable if at every point in the Match the Robot could fit inside a hypothetical sizing box. As long as the Robot size never exceeds 23"x73"x15" or 73"x23"x15", the Robot meets the game's size requirements.

2543: Extender Piece

16-Feb-2025

G5

<G5> Can a robot have an extender piece 1 ft from and is touching the wall before a match then retracts after the match begins?

Answered by Game Design Committee

Yes. As long as no rules are being violated, and the Robot remains within the maximum legal size throughout the Match, this is legal.

2349: Robot Height Restrictions

5-Dec-2024

G5

Can a robot's catapult extend past the 15" height restriction during game play if it is well below the 15" height when collapses, such as before game play.

The official Rapid Relay Game video appears to show a robot catapult extending past 15", but the rules are unclear.

At 1min34sec [https://youtu.be/aa0B7kNHpg8?si=jpR-Dy7_3lrWVpKI&t=94\[<G5>\]\(https://events.vex.com/storage/game_manual/VEX_IQ_Robotics_Competition_2024-2025_Rapid_Relay/rules/G5.html\)](https://youtu.be/aa0B7kNHpg8?si=jpR-Dy7_3lrWVpKI&t=94[<G5>](https://events.vex.com/storage/game_manual/VEX_IQ_Robotics_Competition_2024-2025_Rapid_Relay/rules/G5.html))

Answered by Game Design Committee

<SG2> Robot expansion is limited. Robots may not expand beyond the 23" x 73" horizontal or 15" vertical starting size limits at any time during a Match. The 15" height limit is a "virtual ceiling," meaning that no part of a Robot may exceed 15" above the Floor, regardless of Robot orientation.

The rule clearly states that no part of a Robot may *ever* exceed 15" above the Floor. As described on page 4 of the game manual, if there are any conflicts between the game manual and other materials, including the game reveal video, the current version of the game manual takes precedence.

2346: Where can we preload a ball on the field in autonomous skills?

4-Dec-2024

G5

<RSC3> Where can we preload a ball on the field in autonomous skills? Under RSC3 it says that in skills matches start the ball in Zone 1. However if all of autonomous is Rapid Load (RSC4-C) and the Rapid load zone is Zone 2, <RSC3> does that mean you need to start the ball in Zone 2 on the field?

Answered by Game Design Committee

Rule <RSC3> applies in all Autonomous Coding Skills Matches and Driving Skills Matches. The Preload starts in contact with the Robot in Starting Zone 2. Placement of the optional second ball (in Starting Zone 1) prior to a Skills

2157: Preload Height Restrictions?

26-Sep-2024

G5

[<G5>](#)

Per <G5> Robots begin the match in the starting size

Can the preloaded ball exceed the 15" height ceiling for the requirements? IE - if the robot build itself is below the height threshold but a preload ball is sitting on TOP of the robot and would break the 15" plane, is that a violation?

Answered by Game Design Committee

The Preload Ball is not part of the Robot, and is not subject to the 15" height limit for the Robot.

2078: <G5> Robot Length While Rotating

31-Jul-2024

G5

The note of <SG2> states: "Horizontal expansion is measured from the Robot's perspective; i.e., it does 'rotate with the Robot.' Robots that tip over, or rotate while Climbing, are still restricted to expanding from the chosen "side" that was measured during inspection."

Does this same logic apply to <G5> and the Robot's 18"x18"x18" starting volume (mainly as it pertains to rotating while Climbing)?

I have included two figures below of different interpretations. Figure A is for reference; it represents an 18"x18"x18" Robot on the Floor. Figure B depicts a Robot vertically rotated 45°, measured relative to the base of the Robot. Figure C also depicts a Robot vertically rotated 45°, but it is still measured relative to the Floor, putting it an illegal 25.5" length. Would Figure B or C be the correct interpretation?

Figure A:

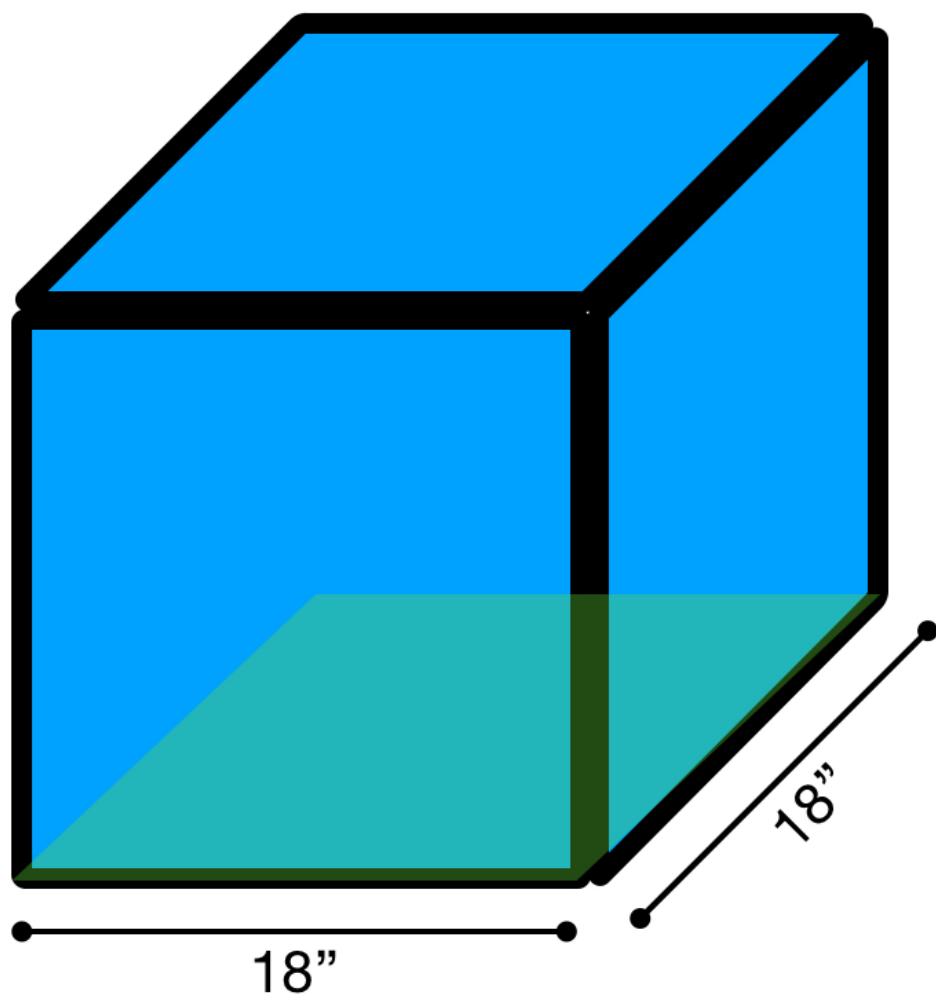


Figure B:

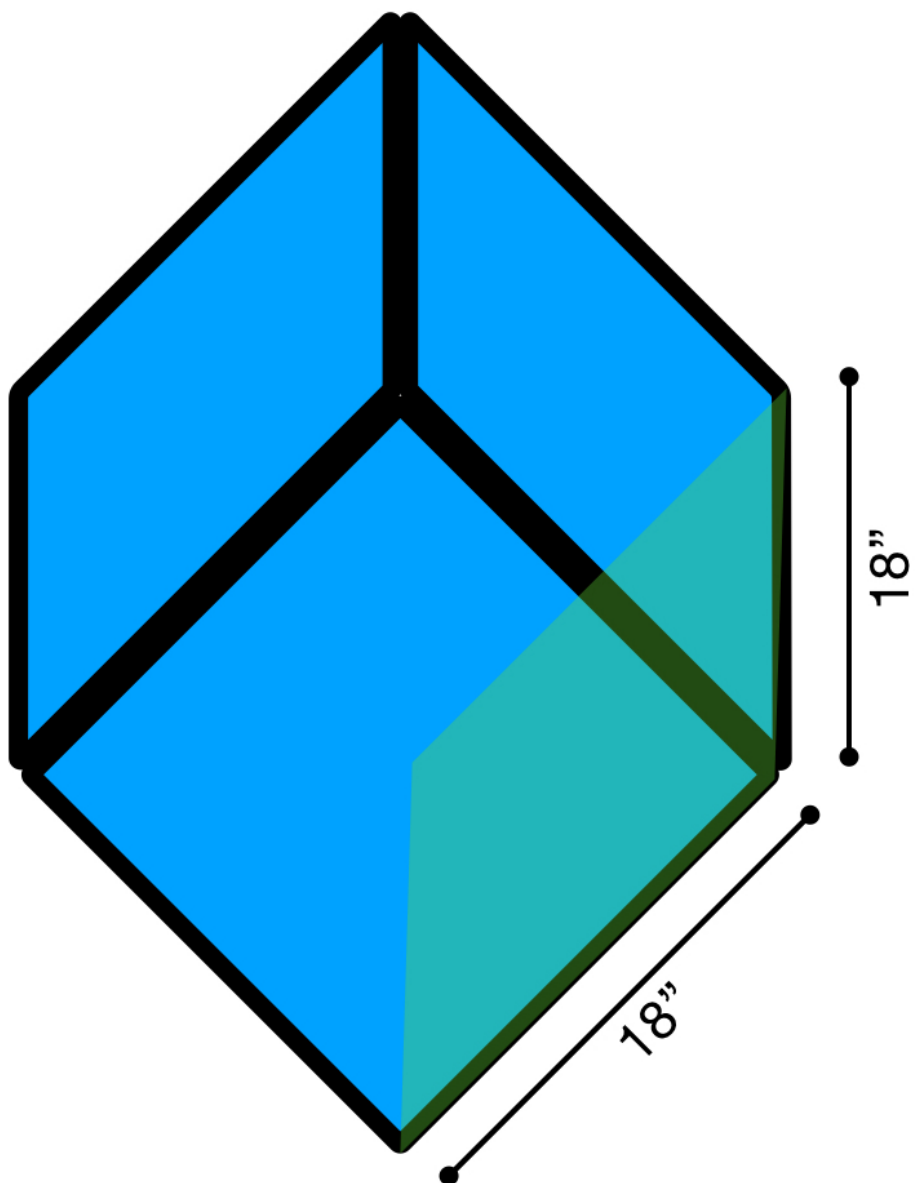
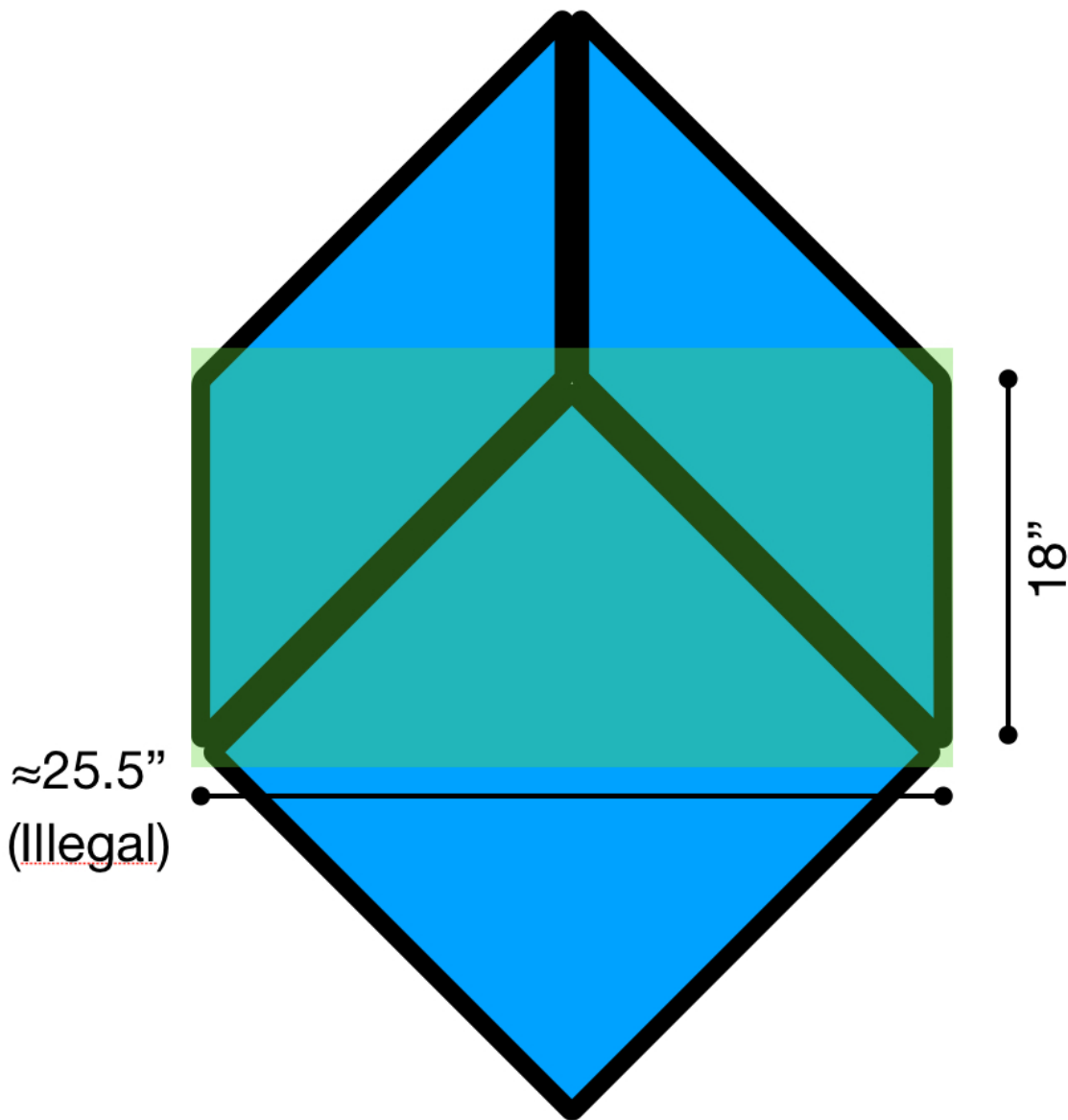


Figure C:



Answered by Game Design Committee

Does this same logic apply to <G5> and the Robot's 18"x18"x18" starting volume (mainly as it pertains to rotating while Climbing)?

No. The full text of <G5> reads as follows, with a few portions bolded for emphasis: "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**."

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.

Therefore, your Figure C would be closest to the correct interpretation, and would be both illegally long and illegally tall in that starting configuration.