

Q&A

VEX IQ Robotics Competition 2024-2025: Rapid Relay

Welcome to the official VEX IQ 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 VIQRC Rapid Relay 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 VIQRC Rapid Relay rules questions.

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 - 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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2514: Clarification on rules

7-Feb-2025

G1 SG4

The latest official ruling in the Q&A have caused some confusion for the kids on our team. Below is how the team have interpreted the game and how they formulated their robot and game strategies.

Referencing the Game Manual Version 3.0

Page 1 — Introduction

The primary objectives of the game are to Pass the Balls between Robots, score Balls through Targets, and Clear Switches. Balls are introduced to the field through the Loading Station or, during the last 15 seconds of a Match, a Rapid Load Zone.

Page 6 — General Definitions

Field – The entire playing Field, being six (6) field tiles wide by eight (8) field tiles long (totaling forty-eight (48) field tiles), including the Field Perimeter.

Page 12 — Game-Specific Definitions

Loading Station – The gray structure, built out of VEX IQ parts, that is attached to the Field Perimeter opposite the Goal Wall. The Loading Station is intended to receive Balls from a human Loader and randomly send them left or right into the Load Zone.

Load Zone – An area of the Field containing the Loading Station, bound by the Field Perimeter and the inside of the second solid black line from the edge of the Field (marked by two yellow VEX IQ beams). The Load Zone is an infinitely tall 3-dimensional volume; "reaching over" the black line without contacting the Floor would still constitute being partially in the Load Zone.

Page 2 — About the Game Manual - A Note from the GDC

Obviously, all Teams must adhere to these rules, and any stated intents of these rules.

In consideration of everything listed above, our team has interpreted the above manual entries as follows:

The team must adhere to all rules and stated intents in the manual, including the intended use of the loading station; it receives balls from a human loader and randomly send them left or right into the 3-dimensional volume of the load zone at which point the robot can pickup the ball.

The team's understanding is any robot action that prevents the completion of the intended use of the Loading Station would be a violation, specifically its ability to randomize.

2052: <SG4d> - Additional Clarification on Robots in Loading Zone

If the human Loader is no longer contacting a Ball that is being (or has been) Loaded, it is legal for a Robot to enter the Load Zone.

In consideration of Q&A 2052, our team's interpretation of the game remained the same.

When a human loader is no longer in contact with a ball that is being loaded, the robot can enter the load zone and its 3-dimensional volume, including contact with the loading station, as long as the robot does not violate the intended use of the loading station to introduce the ball into the field randomly left or right.

2484: Can a robot extend over the front of the Loading Station

There is no rule prohibiting a Robot from making contact with a Ball in the Loading Station before the Ball is "randomized" by falling left or right onto the Floor.

<SG4> clause D simply states, "No Robot(s) may be in the Load Zone at the time the Ball is released by the Loader."

The answer to 2484 counters and negates the intended use of the Loading Station per the definition in the manual as highlighted previously.

The definition of “loading station” applies every time “loading station” is referenced in the manual, therefore, it isn’t defined under any Rules, but defined in the “Game-Specific Definitions” section of the manual.

The ruling in Q&A 2484 changes the definition and intention of Loading Station.

In this case, would the committee be able to reevaluate the official ruling in Q&A 2484 to match the definition of Loading station per the game manual?

Else, which takes precedence—the definition of Loading Station in the latest version of the game manual or the definition of Loading Station without the intent of randomizing as described in the official ruling in the

Answered by committee

Per clause D of rule [<SG4>](#), "No Robot(s) may be in the Load Zone at the time the Ball is released by the Loader."

Per [Q&A 2052](#), if the human Loader is no longer contacting a Ball that is being (or has been) Loaded, it is legal for a Robot to enter the Load Zone.

After the Ball is released by the Loader, per [Q&A 2484](#), there is no rule prohibiting a Robot from making contact with a Ball in the Loading Station before the Ball is "randomized" by falling left or right onto the Floor.

Once the Loader has released the Ball into the Loading Station, there aren't any rules that define how and when a Robot can or can't contact the Ball.

2121: Legality of Crossing Into the Field

6-Sep-2024

G10 SG6 G9

[<SG6>](#) states:

[The Loader] may not reach into the Field until the Ball contacts the Floor [of the Pickup Zone]

Furthermore, the subsequent Note provides advice on keeping hands in a staging area.

1. This implies that "into the Field" means crossing the imaginary plane along the outer edge of the field perimeter. The definition of "Field" in the manual does not state that a Field is an infinitely high 3D volume. Is this the correct interpretation of "into the Field"?
2. Does [<SG6.a>](#) apply to all Loaders in the Match, including ones not near the Pickup Zone? For example, a second Loader is waiting to catch a ball at the Loading Station. May that Loader's body cross the plane "into the Field" while waiting, or must all Loaders wait until a Ball touches the Pickup Zone floor before reaching "into the Field"?
3. Related, [<G10>](#) states "Students cannot step *into the Field* at any time". The term "step" implies a foot is involved. So is it OK for driver hands to pass the plane "into the Field", or must they also take care to never cross the plane?
4. Moreover [<G9>](#) has the heading "Hands out of the Field" but otherwise says nothing about hands merely crossing into the field volume, only about contacting things. Does "Hands out of the Field" also mean that Drivers must never cross the plane?

Thank you for any clarification.

Answered by committee

Loaders should not reach past the Field Perimeter until the Ball contacts the Floor. This limitation only applies to a Loader who is waiting for that Ball at the Pickup Zone.

There is not a rule in the game manual that prohibits hands or other body parts from passing over the Field, although an Event Partner may add additional restrictions under rule [<T4>](#) if they don't affect how the game is played. For example, an Event Partner may request that Students avoid reaching over the Field while not interacting with Robots or Balls, to avoid blocking an overhead camera view.

2152: Definition of controlling in the context of <RSC8> and <G10>

24-Sep-2024

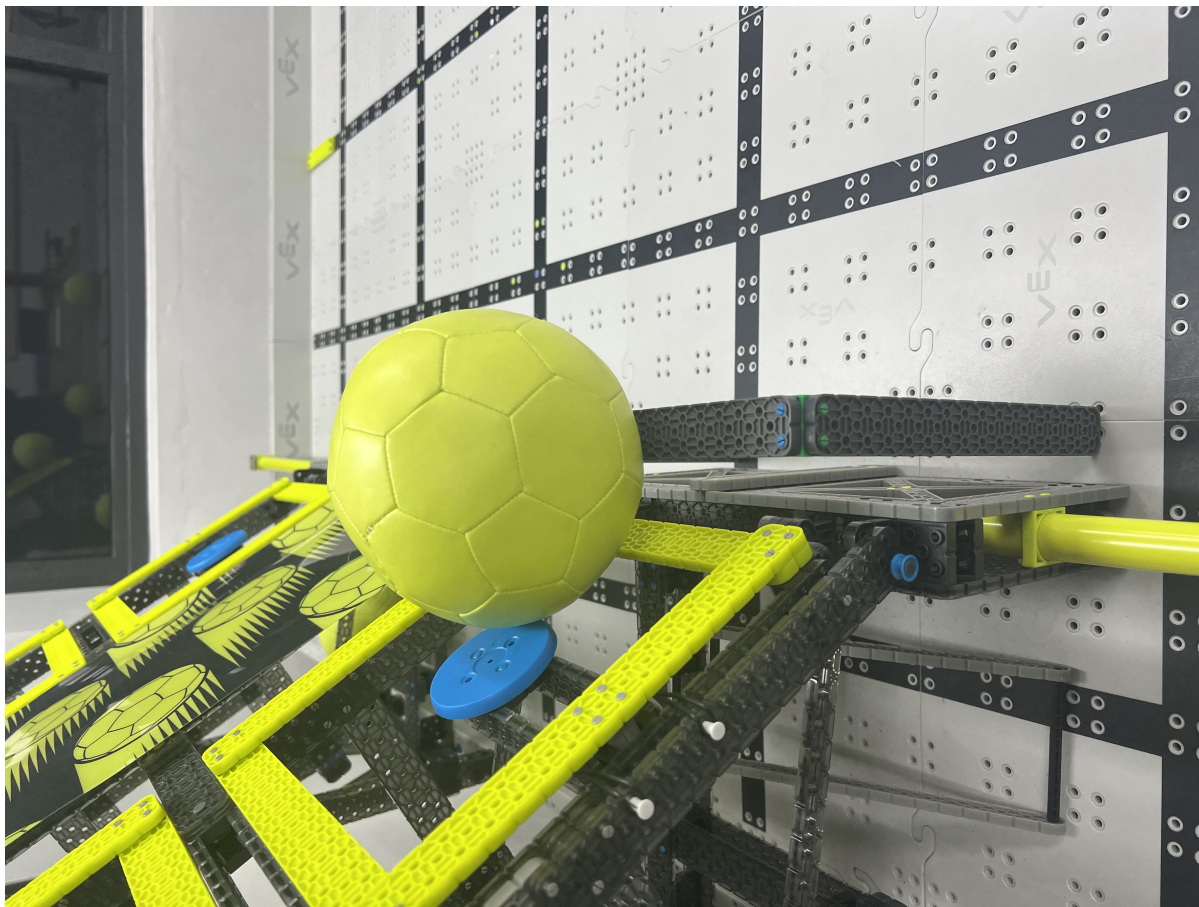
G10 RSC8

<G10> provides a definition of "controlled" for teamwork matches, but <RSC8> is listed as an explicit exception to <G10>. Should the definition for "controlled" from <G10> also apply to <RSC8>?

Secondly, if a robot is partially surrounding a ball, or the ball is in a concave part of the robot but not contacting it, would the ball still be considered being controlled? If the robot's concavity results in the ball being moved when the robot turns as per <G10>, should this still be considered controlling the ball?

Thirdly, if a robot is supporting a ball that is also supported by the goal or goal wall, is this considered controlled by the robot? This could involve three scenarios after the robot is pulled away:

1. the ball remains partially in the goal due to the switch mechanism squeezing it,
2. the ball falls down onto the field tiles, out of the goal once the robot is handled (attached image).
3. the ball falls through the goal wall, would the ball be considered scored or removed?.



Scenario 3 video: <https://sydneyrobotics.sharepoint.com/:v/s/srstaffgroup/Eds6-pBhY01KIh75J2-geoABDPoeJZxbP9Sz3B6WvOEJvg?e=d93bjg>

Answered by committee

Thank you for your questions!

Yes, the definition for "controlled" in rule <G10> applies to rule <RSC8>. The blue box following rule <RSC8> will be revised in the next game manual update to read (bold added here for emphasis), "This rule is an explicit exception to **rule <G9> and the Violation Note for <G10>**, and may be used as part of a Team's strategy for Autonomous Coding Skills Matches. Driving Skills Matches are still governed by <G9> & the **Violation Note for <G10>**, especially

for strategic violations." This change is effective immediately.

Yes, as described in clause Bi of rule [<G10>](#), "... if the Ball moves with the Robot either vertically or while turning, then the Robot is "controlling" the Ball."

If a Ball is supported between the Robot and the Goal Wall at the beginning of a robot reset under either [<G10>](#) or [<RSC8>](#), if the Ball falls through the Goal Wall or remains 'stuck' in a Target after the Robot is removed, that Ball should not be considered as controlled by the Robot. If the Ball falls into the field or otherwise moves with the Robot, it should be considered as controlled by the Robot. Teams should be very careful in these scenarios to avoid intentionally moving a Ball through a Target during a Robot reset to ensure that it is clear to the Head Referee that the Team is not using the reset as a strategy to score the Ball.

2174: Parts Knocked Off Mid-Match

4-Oct-2024

G10 G6

Rule [<G6>](#) includes the note:

Note: Adding or replacing mechanisms on a Robot mid-Match is considered a Violation of the intent and spirit of this rule.

Does this mean that if a piece breaks off a robot Mid-Match the team members are not allowed to repair it, as allowed in [<G10>](#)? What is considered a mechanism? Is it one piece or a collection of pieces(how many?)?

I understand that teams should not use part detachment as a part of their team's strategy, but is the intent of this rule to not allow team members to repair their robots Mid-Match?

Answered by committee

Repairing a Robot, or reattaching parts of the Robot that fall off during a Match, is allowed. Rule [<G10>](#) and its note specifically allow Drive Team Members to fix damaged robots during a match.

The note you quoted from rule [<G6>](#) is intended to prevent Drive Team Members from swapping one mechanism for another or adding entirely new parts to the Robot mid-Match. Swapping one set of parts for another, or adding new pieces to a Robot during a Match, is *not* allowed.

We will attempt to clarify this language in the next game manual update, and for future seasons.

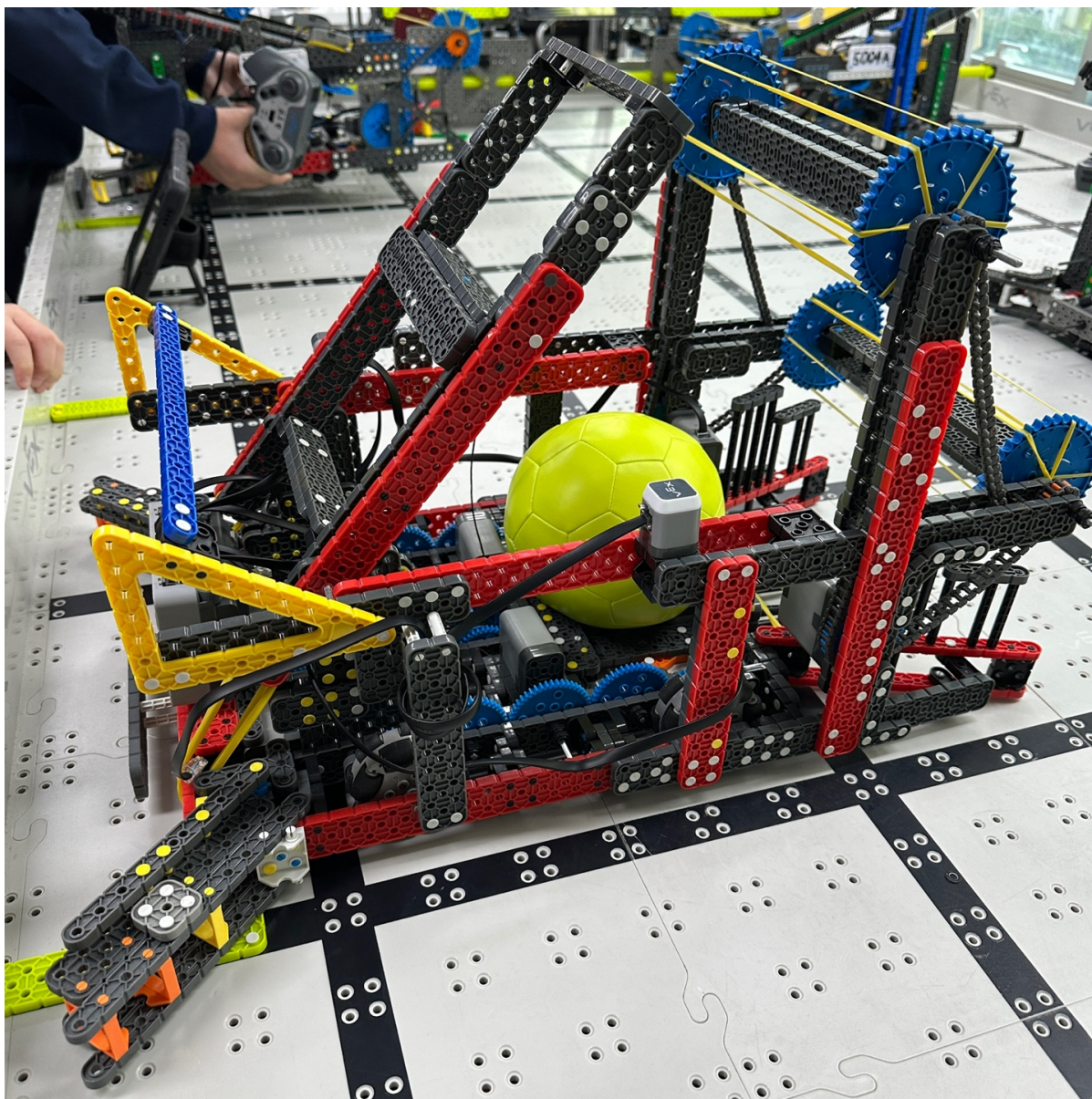
2408: cannot shoot while holding the ball

22-Dec-2024

G10

[<G10>](https://events.vex.com/storage/game_manual/VEX_IQ_Robotics_Competition_2024-2025_Rapid_Relay/rules/G10.html)

In a situation where a robot intakes the ball under the catapult and can no longer perform a shooting action, can the ball be removed according to 'G10' and restarted from the starting zone?



Answered by committee

Yes, an inoperable mechanism could be a legal reason to retrieve and reset the Robot and Ball as described in rule [<G10>](#).

2485: G10: Potential typo, referencing non-existing clause D of SG3

30-Jan-2025

G10

In Version 3.0 of the game manual rule [<G10>](#) still references clause D in [<SG3>](#) which does not exist. Should G10.b.ii be ignored, or does it mean to reference another clause?

- ii. Clause d of [<SG3>](#) applies to Balls that are removed from the Field during the last 15 seconds of the Match

Answered by committee

Thank you for pointing out this error. Clause Bii of rule [<G10>](#) can be disregarded and will be removed in the next game manual update.

2546: Passing with a robot getting fixed

17-Feb-2025

G10 SC5

[<G10>](#)

When a robot needs assistance while on the field a student must:

1. Put their controller down
2. Remove any balls in their possession (getting "controlled" by robot)
3. Assist the robot as necessary
4. Replace the robot in a legal starting position

G10 does not currently require that the robot is removed from the field while assisting it, whether that is reattaching pieces, putting wheels back on etc.

[<SC5>](#)

A pass is counted after:

1. Both robots have independent contact with the ball
2. The ball having met the above criteria has not already been counted for a pass
3. The ball has not been "rapid loaded"

SC5 does not currently exclude robots that are being assisted through G10 from receiving a pass.

Here are a couple important scenarios to consider:

1. Should a pass be counted if the robot still driving on the field grabs a new ball from the load station and pushes it into the robot getting fixed?
2. Should that same pass as described above still count if the robot is moved into the ball by the drivers that are fixing the robot? (My thoughts right now are that 1 should count but that 2 would be in violation of G10 based on the violation notes describing possible exploitation of this action)
3. Should a pass be counted if a robot being assisted touched a ball before being assisted but was not controlling it when enacting G10, and the robot still driving then goes over and touches the ball?
4. Should teams be required to remove their robots from the field if they are fixing something over a length of time?

The questions I'm posing revolve around the specificity of G10, and whether or not robots are treated the same while being assisted or not. I believe that 1 and 3 should be considered passes, and that 2 would be violating G10.

Answered by committee

Robots being handled during a [<G10>](#) interaction are effectively "out of play." Robot contact with a Ball during a [<G10>](#) interaction should not count toward a Pass.

As described in the Violation Notes for [<G10>](#), "Strategically exploiting this rule may be considered a Minor Violation or Major Violation at the Head Referee's discretion." This would include intentionally moving the Robot to affect game play during a Robot reset.

Your scenario 3, in which the Robot was contacting the Ball before being handled through [<G10>](#), could still be recorded as a legal Pass.

Teams are not required to remove their Robots from the Field during [<G10>](#) or [<RSC8>](#) interactions.

2586: can we retrieve the ball after a missed so called "china loading"

27-Feb-2025

G10 RSC8

Many teams are doing so called "China loading" now where the ball is retrieved directly from the loading station after it leaves the loader's hand and before it touches the ground of either left or right side.

Some teams are also use 2 very long wall riders to align the robot, an example of this is shown in <https://www.youtube.com/shorts/mjQIXh7A7rc>.

The drawback of this approach is that if the robot enters the loading zone too late and the ball falls to the ground, the 2 wall riders will block the partner's robot from retrieving that ball as well.

According to <RSC8>, all balls on the field can be retrieved if the robot is reset back to the starting zone, does this apply to team match event as well? It seems didn't mentioned according to <G10>

If this is not allowed, according to <https://events.vex.com/VIQRC/2024-2025/QA/2174>, reattaching parts is allowed, can the team members simple remove the 2 wall riders during a reset, this will unblock the path and at least allow the partner robot to retrieve the ball in the loading zone.

Answered by committee

According to RSC8, all balls on the field can be retrieved if the robot is reset back to the starting zone, does this apply to team match event as well?

No. <RSC8> only applies in Autonomous Coding Skills Matches. Balls on the Field during a <G10> reset remain in play and cannot be contacted by Drive Team Members unless they are being controlled by the Robot that is being handled, as described in clause B of <G10>.

If this is not allowed, according to <https://events.vex.com/VIQRC/2024-2025/QA/2174>, reattaching parts is allowed, can the team members simple remove the 2 wall riders during a reset, this will unblock the path and at least allow the partner robot to retrieve the ball in the loading zone.

No. The Robot in your scenario is not broken, disabled, inoperable, or stuck, and the Violation Note following rule <G10> would apply if the Team were to handle the Robot. Resetting this Robot would count as a strategic exploit, and should result in a Major Violation and Disqualification for the Match if the reset Robot participates in later game play.

Additionally, per rule <G6>, "Robots may not intentionally detach parts or leave mechanisms on the Field during any Match." This would apply in situations where a Team intentionally removes Robot parts or mechanisms during a legal (or illegal) Robot reset under <G10>.

2591: Resetting

1-Mar-2025

G10

<G10> Hello REC!

From the rule G10, it tells us rule about resetting the robot in matches, there are some question that I want to ask if it is legal (Teamwork matches):

1. Robot is stuck in the field, and it is too big which need 2 person to reset the robot, can the two driver place their controller on ground and go reset the robot? 2.Can the driver that is not controlling/driving go reset the robot?
2. Can the student reset the robot without asking the referee?

3. Can the student reset the robot by place or push the robot to the starting zone while didn't affect the balls and your alliance? (I want to ask can we reset while the bot didn't leave the field)
4. Is there a number of limit of resetting in a game match?

Thank you! 5491M

Answered by committee

1. Robot is stuck in the field, and it is too big which need 2 person to reset the robot, can the two driver place their controller on ground and go reset the robot?

Yes, but as described in rules [<S1>](#) & [<G10>](#), Students are not permitted to step into the Field at any time during a Match, including while resetting the Robot.

2. Can the student reset the robot without asking the referee?

No. Signalling the referee is the first step in a legal Robot reset, as listed in rule [<G10>](#).

3. Can the student reset the robot by place or push the robot to the starting zone while didn't affect the balls and your alliance? (I want to ask can we reset while the bot didn't leave the field)

There is no requirement that the Robot be removed from the Field during a [<G10>](#) reset.

4. Is there a number of limit of resetting in a game match?

No, but Teams are not allowed to use rule [<G10>](#) as a strategy. Resetting a Robot that is not stuck, tipped over, damaged, or otherwise inoperable should result in a Major Violation and Disqualification for the Match if the Robot participates in game play after the reset.

2359: Clarification for 2 person teams

7-Dec-2024

G11

My 2 person team is trying to figure out how they could deal with the logistics of being paired with another 2 person team. It may be difficult for them to find a temporary loader for the single match since that would disqualify that person from loading for any other teams (including their own team - I have advocated for a rule change to help here). In the case they only have 2 team members for each alliance, they believe their best strategy would be for one of the drivers to forfeit driving and become a loader. I assume that is legal since its not specified. However, per G11d, it indicates a single driver must "cease robot operation after the first 35 seconds". Can the robot continue to operate after this time? For example, if they wrote code to hit a button before setting the controller down to allow the robot to run autonomously the last 25 seconds, is that legal?

[<G11>](#)

Answered by committee

If a 2-person Team is paired with another 2-person Team for a Rapid Relay Teamwork Match and cannot find a substitute Loader as allowed by clause Cii of rule [<G4>](#), they will be unable to Load Balls during the Match. Coaches and Teams are encouraged to plan ahead to ensure that they are able to field a Drive Team that is capable of meeting the requirements of the game.

Per clause Ciii of rule [<G4>](#), if two Drive Team Members are at a Match, both must serve as Drivers and cannot operate as Loaders (per clause D of rule [<G11>](#)).

In the case of a single-student Drive Team, the Robot must cease operation after the first 35 seconds of the Match. This is a slight change from the current wording of the note in rule [<G11>](#) and is effective immediately. If a Team wishes the Robot to operate autonomously for the 2nd half of the Match, a 2nd Drive Team Member from that Team must be present in the Driver Station and take part in the Driver switch as described in rule [<G11>](#).

2415: 2 Player Team

27-Dec-2024

G11

Dear Vex IQ, I want to ask some situation in skill match(There will be driver A and B, A is the first driver B the second):

1. A put the controller on the ground before 35 seconds, and prepare to rapid reload(before 35 sec), and B pick up the controller
2. A control, and B load the balls, B control A load the balls
3. A control the first 25 seconds, B don't control, so the bot is staying the same position and B become the loader who only loads the ball. Which means that match there is only one driver and one loader, so the bot is moving without any driver contacting to the controller(program).

The second situation is in teamwork: 1.One driver controls the first half of the match or second half, and the other player become the loader. Which means only 1 driver 1 loader(in our team), and the other half of the driving match is runned by program(no one touching the controller) 2.Driver A control first half, driver B be loader at first half, Driver B control the second part, Driver A become the loader.

Please clarify which of the situations are legal or some of specific rule for 2 player teams.

Answered by committee

For Driving Skills Matches:

1. Student A is still considered the active Driver until the Driver switch occurs, at which point Student B becomes the active Driver. Prior to the Driver switch, Student A can set the controller on the ground and reposition themselves in the Driver Station, but Student A cannot leave the Driver Station or perform other actions restricted to a Loader until after the Driver switch occurs.
2. It is legal for Student A to drive while Student B acts as the Loader until the Driver switch is completed, and then for Student B to drive while Student A acts as the Loader.
3. The Controller must be physically passed between Drivers in a Driver switch, and there must always be a Drive Team Member designated as the active Driver at any given moment in the Match. If Student A starts the Match as the active Driver, then Student B must become the active Driver after the Driver switch, meaning Student B cannot act as a Loader after the Driver switch.

For Teamwork Match scenarios, refer to our previously posted answer for [Q&A 2359: Clarification for 2 person teams](#).

2517: Clarification on “score affecting”

9-Feb-2025

G11

i would like clarification on what is considered score affecting for rapid relay? Is it only goals and switches? Passes?

In a recent finals match, a team in the winning alliance swapped controller late (with about 13 seconds to go in the match).

Per G11, it is up to the head ref's discretion if this would be considered a minor violation or if it was score affecting. It was deemed as minor since no goals were scored by the incorrect driver. However, passes were completed with the incorrect driver in control. Should passes be considered score affecting in future cases (in this particular case, there were more goals than passes so the pass points did count)? What about the wrong driver loading a ball that was later scored? Is that

score affecting?

[<G11>](#)

Answered by committee

As stated in the Violation Notes for [<G11>](#), a late Driver switch could escalate to a Major Violation if the Head Referee determines that Score Affecting actions occurred as a direct result of the Violation, "such as the first Driver scoring additional points after 35 seconds of driving."

Scoring a Goal, Clearing a Switch, and completing a Pass should all be considered Score Affecting actions.

As for the wrong Driver Loading a Ball that is later scored, per clauses E & F of [<SG4>](#) and clause g of [<SG5>](#) the improperly Loaded Ball should be retrieved from the Field immediately before it is contacted by a Robot. Per the 2nd Violation Note in [<SG5>](#), "In accidental cases that end up being Score Affecting (i.e., an illegally-Loaded Ball scores a Goal), the first occurrence during a Qualification Match may be treated as a Minor Violation and a "final warning" for any future Violations." Although this note does not appear in [<SG4>](#), it would be reasonable for a Head Referee to apply the same logic for that rule if a judgment call must be made.

2233: Audience Participation in Rapid Relay

28-Oct-2024

[G2](#)

[<G2>](#) During Driving matches (skills and teamwork) can the audience [G2](#) states "During Match play, it is...

Okay for an Adult to provide cheerful, positive encouragement as a spectator. Not okay for an Adult to explicitly shout step-by-step commands from the audience."

1. Would it be allowed for the audience to shout "15 Seconds?" during teamwork matches. A. Seems to be the same as counting down the last 5 seconds, which is common.
2. If that is okay, would it be okay to shout "Rapid Load" at 15 seconds? Or is that more specific than simply stating the time?
3. And if the audience shouting "Rapid Load" is okay at 15 seconds, would it be okay for them to do that at the driver switch during a teamwork match.

I am specifically refering to the audience as a whole, not for a coach to do this and only when their team is driving. It's more of a way to engage the audience and have it still be uniform.

Answered by committee

All of these would qualify as coaching from the stands, and would be considered Violations of rule [<G2>](#).

2386: Is a student allowed to be on a VRC and IQ team at the same time?

12-Dec-2024

[G2](#)

Recently, we have heard some that a student (or students) cannot be on a VRC (Vex robotics competition, aka "metal robotics") and IQ (VIQRC, aka "plastic robotics") team at the same time. There seems to be nothing in the game manual preventing this (and would therefore be legal), and we believed that this has already been clarified in a Q and A in a **previous season**. However, we want to clarify if this it is **still the intent for the GDC to allow students to be both a part of a VRC team and VIQRC team as long as they suffice the definition of a student (under 15 years of age by vex worlds, etc.), and is it officially legal to do this?** (*G2 is tagged, as the question pertains to whether or not a student in metal is considered a legal student but the definitions section cannot be tagged and a tag must be added*)

Thanks in advance! -282S

Answered by committee

The rules for VIQRC and V5RC teams do not prohibit a Student from participating in both competitions.

Students (especially Drive Team Members) on both VIQRC and V5RC Teams that are competing at the same event should be expected to choose which Team they are competing with for the duration of that event. "Our driver is in a VIQRC Match" would not be considered an acceptable justification for being late to a V5RC Match (or vice-versa).

2105: What if I cannot field a loader for one of my teams?

22-Aug-2024

G4

Here's my original question: "The manual is not very clear on this. If there are (2) two person teams that come together to form an alliance, who would be able to be the loader since drivers cannot be loaders? rule <G4 c iii>"<G4>

The answer stated that we can just pull a loader from another team, but that they become a member of that team for the rest of the game now. This would essentially rob one of my other two 3 person teams of a member, and then I would still have the same issue, now with another one of my teams. The loader has a very simple job, I do not understand why my teams cannot help each other out, since we will have to practice this way anyway. So I ask again, in a situation where an alliance has (2) two person teams, and not enough other people on the other teams to field a loader without taking a necessary member from another team, what happens then?

I have (2) three person teams, and (1) two person team.

Answered by committee

As described in Clause D of rule <G11>:

If a Team only has two members, they must exercise one of the substitute Loader options listed in rule <G4c>.

A Loader cannot fill that role for more than one Team during an Event. However, the allowance provided by clause Ciii of rule <G4> does **not** require that the substitute Loader be from a Team within the same organization. It is quite common for VEX IQ Teams to consist of more than three students, and it is likely that a Team from another organization at the event will be able to help.

2136: Substitute Loader for League Event

16-Sep-2024

G4

<G4>

How does rule G4cii apply to a League Event? If a student from another Team A serves as a substitute loader for Team B, then they are classified as part of Team B for the duration of the event. Does this mean that the substitute loader must be a part of the Team B (the team they served as a substitute loader for) for the entire League, meaning all of the League nights (for example if a League will have 5 different nights that they compete)? Or is each League night considered a different event? We have a lot of three person teams and want to make sure we consider which option (G4c i, ii, or iii) is in a team's best interest to use if a student is sick or absent from one of the League nights, but will be there for the other League nights.

Answered by committee

A League is considered a single event, regardless of how many sessions it includes. A substitute Loader provided to a Team through clause Cii of rule [<G4>](#) may only serve as a Loader for that Team for all sessions of that League.

2274: 2 person team cannot play at all?

9-Nov-2024

G4

[<G11>](#)[<G4>] We just went to an Event where a Team member had an emergency, leaving the Team with only 2 members. The Refs said the team could not compete with their Alliance Partner at all (meaning the Alliance Partner Loader could not be shared - do the job of 2 Loaders). Just confirming, this is correct? A 2 member Team is not allowed to field a robot at all? And yes, they asked all the other 40 Teams at the Event but no one was willing to take a member from their own Team and assign it to the 2-member Team for the rest of the day per the Game Manual rules. UPDATE: for the last match, they were kindly allowed to share a Loader, not ideal, but it was nice that the 2-person team could participate SUGGESTION TO CONSIDER: since this 2-person Team experienced no other student at the event being willing to be reassigned as a Loader to them, and we assume this might have happened to others, in this situation maybe allow an impartial Event Volunteer to be Loader since "Loader" has become just a "throw - catch - drop" position at this point requiring no skill or strategy? That way the 3-person team will not be penalized for a 2-person team alliance partner

Answered by committee

Clause C of rule [<G4>](#) provides multiple options that a Team can use to add a Loader if they only have two Students and cannot field a three-Student Drive Team.

The third subclause in that list reads,

There is no requirement for a Drive Team to have a Loader; if desired, they can play the Match with only two Drivers, and rely on their Alliance Partner's Loader.

2597: <G4c> Substituting loaders for final matches

3-Mar-2025

G4

[<G4>](#)

At a tournament this weekend this scenario happened:

1. Team A had two drivers and a loader throughout the day
2. Team B had two drivers and a loader throughout the day
3. Both teams made it to finals, but team A only had their drivers available for finals
4. Team A borrowed a loader from team C- Team C loader had already competed throughout the day with team C as their loader
5. Team A now had their two drivers and a borrowed driver from team C for the finals match

Is this scenario legal? The person from team C had competed with their team all day, but under G4c they went to following this part of the rule "For a given event, they may substitute in a Student from another Team to be their Loader for the duration of the event. This Student will effectively become a member of the new Team for that event, and cannot fill a role on the original Team (or on any other Teams) for the remainder of that event." Since the event was over after finals, there was no need for them to return to their original team. Can you please provide clarification.

Answered by committee

As clarified in [Q&A 2105](#), a Loader cannot fill that role for more than one Team during an Event, except for single Matches as described in clause C of rule [<G4>](#).

2613: Adding loaders for Worlds

10-Mar-2025

G4

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

Our Middle School team qualified for Worlds, and has three students. One student may not be available for Worlds. Can I add two students to be loaders for their team, from our Elementary team? G4cii

This would help if they drive with another team with only two students at Worlds. G4ci

Do I need to do anything to signify this change before Worlds? I don't want to show up in Dallas and find out I did something wrong.

Answered by committee

As described in clause B of rule [<G4>](#), Students can be added to a Team as support for a Championship event, but those additions cannot serve as Drivers or Coders.

If the Students who are added to the Team do not fill the roles of Driver or Coder, they meet the requirements of this rule and can help the Team as Loaders at the VEX Robotics World Championship.

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 committee

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

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 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 Match is addressed by [Q&A 2109](#).

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 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.

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 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.

2576: Length and width

25-Feb-2025

[<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 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.

2056: Unattached parts

6-Jul-2024

G6

G6 states that we cannot detach parts or leave parts on the field, but it does not mention if we could start the match with detached parts that stay contained within the robot itself.

example using detached round pieces to help a contraption roll around the robot sort of like ball bearings

Answered by committee

Provided the detached part remains contained within the Robot and does not separate from the rest of the Robot, this could be allowed. As described in rule [<R3>](#) clause F, the final determination of whether a specific mechanism can be used on a Robot will be made by the Head Referee at the event.

If any part or mechanism, including this one, detaches from the Robot and is left behind on the Field, it is a violation of rule [<G6>](#).

2277: Can EP/JA deny a team's design base on their assumption?

10-Nov-2024

G6 SG1

[<G6>](#)We were at an IQ event yesterday and my team has a string attached on a pulley design, which is attached to their roller shaft. They use this design to start a match having the robot being in the center of the field, while the string is touching the field wall, as they start the roller, the string will be retracted back inside of their robot. The EP/JA did not let our team use this design on the base of this might potentially tangle other robots. So he was assuming that our design will malfunction. Which does not make any sense to me. We see robots coming apart, or pieces falling in the field all the time, should those robot be banned from the matches? And we try to be understanding and respectful, and asked respectfully see if we can use the design in skills at least, there is no other robot for us to tangle in skills. But the answer is no. We can not use the string at all. That threw out our opportunity to do autonomous skills since our route was written based on the robot starting in the middle of the field and all the headings are based on that. This is legal VEX IQ part, even used in the swish bot design, please help me understand why a legal design using legal part would be banned by an EP/JA base on the reason that they think this might not work well.

For your reference, attached is the picture of the design.

During an Autonomous Coding Skills Match, Drivers may move freely around the Field, and are not restricted to the Driver Station when not handling their Robot.

Answered by committee

Manually triggering sensors or activating any controls on the VEX IQ Controller is not allowed during an Autonomous Coding Skills Match, except during <RSC8> interactions (as described in RSC8ai).

Note: this answer was revised on January 16, 2025 to reference RSC8 interactions.

2425: Setting Items Outside the Field Perimeter to mark location

9-Jan-2025

G8

<G8> As head ref I had a team setting a beam on the floor outside the field perimeter to mark where they need to line up their robot to make their shots. I cited <g8> as a rule not allowing them to bring items to the field to simplify the game. They argued that the item they had was like the pre-match alignment aid. I felt it was directly affecting their score and therefore was more significant than that. They removed the item.

Am I wrong to have had them remove the beam?

Answered by committee

Placing beams outside the Field Perimeter to mark ideal Robot locations during a Match falls under clause C of rule <G8>, "Bringing/using additional materials to simplify the game challenge during a Match," and is not allowed.

You're not wrong. Teams should not be allowed to place or use these visual aids in any official Match, including Teamwork and Skills. Repeated / continued Violations may result in a Major Violation and Disqualification from the Match.

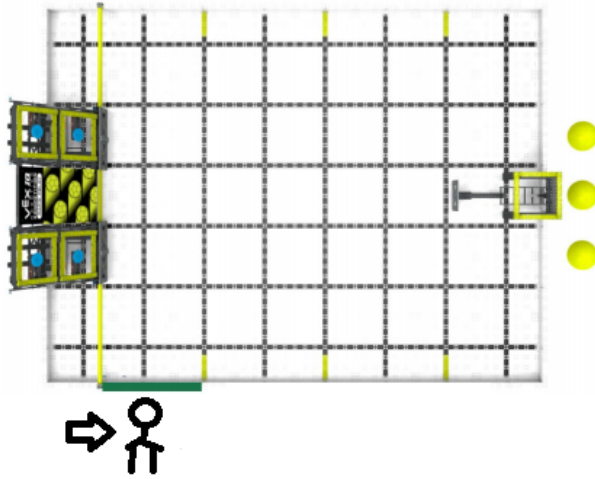
2427: Loading team member position

11-Jan-2025

G8

According to the rules, there is no restriction on the position of the loader. However, in the signing match of the China Asian Open that ended on January 1st, the referee kept asking our loader to stand in the pick-up area of the field,

1. Should QA or the on-site referee's regulations be followed? 2? Can the loader stand in the position shown in the picture?? <G8>



5

Answered by committee

As described in rule [<G8>](#):

Note 2: Loaders are not restricted to the Driver Station, and may move around the Field freely.

2600: Alignment Aid

3-Mar-2025

G8 T6

[<G8>](#)

I have a team asking if there are any restrictions on what alignment aids they could use during pre-match setup. G8 references that pre-match alignment tools are allowed. In the past I have seen tools made from vex pieces, but this group is wanting to use more traditional tools like squares or levels to understand field conditions and robot placement. As long as T6 is followed and pre-match set up is done promptly would this be allowed?

Answered by committee

As long as T6 is followed and pre-match set up is done promptly would this be allowed?

Yes. However, in the interest of keeping the event running on time, we'd advise that your Students work with the Event Partner to do most of this checking on Fields before Matches begin to ensure there's time to address any issues (e.g., un-level Fields) that arise.

2214: Can robot pass outside the field perimeter

22-Oct-2024

G9

I know hands cannot enter field, but can any parts of my robot pass outside the field perimeter (wall) as the match is running as I turn and maneuver

Answered by committee

Other than the requirement that a Robot cannot overhang the wall in its starting position, or when reset during [<G10>](#) or [<RSC8>](#) interactions ([see this related Q&A](#)), there is no rule against portions of a Robot extending over or beyond the Field Perimeter.

2438: Intentional versus unintentional contact with a field element

14-Jan-2025

G9

Hello, I am wishing to have a clarification of what it means to determine the difference between intentional versus unintentional contact with a field element. The VEX IQ manual describes a field element as "the Field Perimeter, Floor, PVC pipes, and VEX IQ elements that are attached to the field." In trying to fairly referee competitions, we already have rules stating that students cannot walk on the field during a competition, as well as they cannot touch the floor during matches or skills runs. Rule G9 states that "during a Match, Drive Team Members are prohibited from making intentional contact with any Field Element, Robot, or Ball that has been introduced to the Field, except for the allowances in G10, RSC8, SG4, and/or SG6." Would it be fair to state that rule G9 could be rewritten by simply removing the word "intentional?" I am trying to understand the difference about what the exact differences are between intentional and unintentional contact with a field element are? I have witnessed students grabbing the field elements in the Target out of frustration or excitement, as well as students touching the Field Perimeter and Floor unintentionally, but it is still contact. I wish to seek clarification as to what exactly is intentional versus unintentional contact and wonder if this word is truly necessary in the definition. I feel that if teams know that they have to avoid contacting the field or field elements for any reason in order to make it doesn't happen. Otherwise, the definition of what is intentional versus unintentional is completely subjective. I guess I am not sure what types of contact would be considered legal. Two other follow up questions are when exactly does the potential contact with the field become a concern. Obviously during a match there is concern, but if a student touches the field by accident while setting their robot on the field before a competition begins, do we need to be critical of this or would accidentally touching the field while setting up a robot not be a concern? Finally, if students bump their feet against the outside of the field perimeter during a match is this a concern or is this not considered to be a problem or score-affecting? I appreciate the exact clarifications. Thank you. [<G9>](#)

Answered by committee

We'll start by asking you to review the [Q&A Usage Guidelines](#) before posting future questions, specifically note 1, "The Q&A system is for rules clarifications only." Put more pointedly - the Q&A platform is intended to be a communication channel for questions such as "is this interpretation of a rule legal", not a discussion forum for questions such as "I disagree with this rule, can it be changed?" For suggestions or concerns outside of specific and official rules questions, please use the official [VEX Forum](#) or email GDC@vex.com. Much of your post is not in line with these guidelines.

We'll address some of your other questions below.

Hello, I am wishing to have a clarification of what it means to determine the difference between intentional versus unintentional contact with a field element.

Head Referees must use their judgment to determine whether a specific action is intentional or unintentional on a case-by-case basis, and we cannot provide a blanket answer beyond what is written in the game manual. However, in most cases accidental or incidental contact that does not affect the Match should not be considered a Violation. The overall intent of this rule is that the game should be played by Robots, not humans.

When exactly does the potential contact with the field become a concern? If a student touches the field by accident while setting their robot on the field before a competition begins, do we need to be critical of this or would accidentally touching the field while setting up a robot not be a concern?

Rule <G9> only prohibits contact with Field Elements, Balls, and Robots during a Match (except as specifically allowed by other specific rules), and there is no rule against contacting the Field while placing a Robot before a Match.

Finally, if students bump their feet against the outside of the field perimeter during a match is this a concern or is this not considered to be a problem or score-affecting?

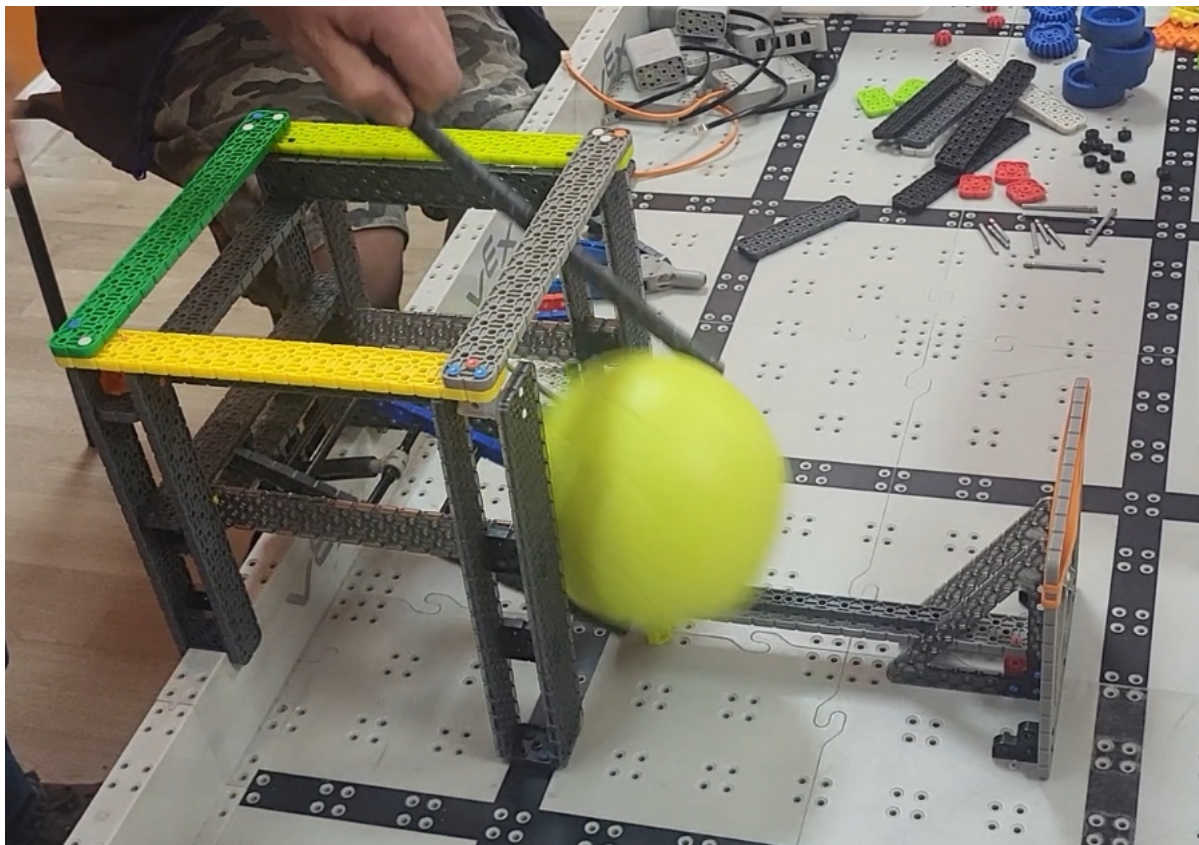
If this affects the Match or its score, it could reasonably be considered an indirect Violation of <G9> at the Head Referee's discretion.

2519: Can a loader use a tool (a 1x20 beam for example) influence the ball to exit the loading station in a particular direction?

9-Feb-2025

G9 SG4

Is the loader allowed to use a something like a beam to influence which way the ball exits the loading station. Example in image:



According to this QA: <https://events.vex.com/VIQRC/2024-2025/QA/2428>

"Provided the human Loader meets all requirements of rule <SG4>, there is no rule against Loaders attempting to influence the Ball to exit the Loading Station in a particular direction."

And SG4 b. states: "The Loader must be the last human to contact the Ball before it is released."

Is this covered by G9?: "During a Match, Drive Team Members are prohibited from making intentional contact with any Field Element, Robot, or Ball that has been introduced to the Field, except for the allowances in <G10>, <RSC8>, <SG4> and/or <SG6>."

Answered by committee

Is the loader allowed to use a something like a beam to influence which way the ball exits the loading station?

No. This is a direct Violation of both [<G8>](#) clause C, which disallows materials that simplify the game challenge, and [<G9>](#), which says that a Drive Team Member cannot contact a Ball after it has been introduced to the Field.

2183: Swapping out Wheels During a Competition

10-Oct-2024

R1

Hello GDC! Our team would like to know if we would able to change wheels during a competition for Autonomous Coding Skills Matches. The second paragraph of [<R1>](#) states that:

Given the above definitions, a minimum Robot for use in any VEX IQ Robotics Competition event (including Skills Challenges) must consist of subsystems 1 and 2 above. Thus, if you are swapping out an **entire subsystem 1 or 2**, you have now created a second Robot and are no longer legal (**BOLDING MINE**)

Would swapping out just the wheels of Subsystem 1 be considered a partial swap or does it violate [<R1>](#)?

Answered by committee

Thanks for your question. Wheels in and of themselves are not considered a subsystem, so you are free to swap them out. Per clauses A & B of rule [<R3>](#), the Robot must be inspected in both configurations.

2207: Modification and swapping of robot subsystems

21-Oct-2024

R1 R3

Hello!! this question is intended to find a universal interpretation of how you are allowed to modify or swap subsystems at an event. Mainly due to the vagueness in some rule wording and they lack of Q/A clarifications on subsystem 1/2. This aims to build on top of [<R1>](#), [<R3>](#) and Q/A 2130, 2134, 2183

- <https://events.vex.com/VIQRC/2024-2025/QA/2134>
- <https://events.vex.com/VIQRC/2024-2025/QA/2183>
- <https://events.vex.com/VIQRC/2024-2025/QA/2130>

1. when a team makes a legal modification to their robot, such as entirely switching out a subsystem 3 for skills vs teamwork. if they get fully inspected in both configurations at the start of comp. Q - would the team be okay to switch back and forth between both configurations at will (implied from R3) or do they need to get reinspected every time they change it (from R1) even if it's a config inspected at the start of comp
2. what, if any, components of subsystem 1&2 may you modify or add/remove during a comp? (Q/A 2183 and 2134 says that wheel and gear changes are okay. what about things such shafts, motors, brain, sensors used for field navigation, half a chassis, the entire chassis frame getting rebuilt, a guide to align with the goal, etc.) Basically, what can you do to those systems and what's the limit. 2.1) also is the rule intending for partial modification to be legal but swapping out the ENTIRE system be okay? a 2.2) also, is swapping out a subsystem 1/2 for an identical replacement that was either built at home OR built at comp be legal?

3. if a robot has a guide on the robot that interacts with the floor and the field elements at the floor level, Q- would the guide be considered part of subsystem 1?

Answered by committee

1. would the team be okay to switch back and forth between both configurations at will (implied from R3) or do they need to get reinspected every time they change it (from R1) even if it's a config inspected at the start of comp

As described in clause B of [R3](#), "All possible functional Robot configurations must be inspected before being used in competition. This especially pertains to modular or swappable mechanisms (per [R1](#)) and Match starting configurations/sizes (per [R4](#))." There is no requirement that a Robot be reinspected each time a Robot is revised to match a pre-inspected configuration.

2. what, if any, components of subsystem 1&2 may you modify or add/remove during a comp? 2.1) also is the rule intending for partial modification to be legal but swapping out the ENTIRE system be okay? 2.2) also, is swapping out a subsystem 1/2 for an identical replacement that was either built at home OR built at comp be legal?

As described in rule [R1](#), "... if you are swapping out an entire subsystem 1 or 2, you have now created a second Robot and have Violated this rule." There is no rule against swapping out a component or portion of subsystems 1 or 2. We are unable to make a blanket ruling that will apply to all cases.

3. if a robot has a guide on the robot that interacts with the floor and the field elements at the floor level, would the guide be considered part of subsystem 1?

It could be considered part of either subsystem 1 or subsystem 3, but if its primary purpose is alignment rather than navigating the playing field it would be considered part of subsystem 3 in most cases.

2297: About gear switching

15-Nov-2024

R1

I'm sorry that no picture can be inserted here. Please describe it in words. In my machine design, there are three axes, input shaft No. 1, output shaft No. 3, and shaft No. 2 are connected to the motor and a gear. In the competition, as a passing vehicle, I will move the gear on shaft No. 2 to the left and engage the gear on shaft No. 1. In the other case, as a pitching cart in the game, I will move the gear on the No. 2 axis to the right and engage the gear on the No. 3 axis. In this case, the No. 2 axis drives the No. 3 axis while the No. 1 axis does not move. [R1](#)

Answered by committee

We're not quite sure what you're asking, but what you describe would generally be legal if designed and built by student team members.

2335: no mobile system.

29-Nov-2024

R1

[<R1><R1>](#) Hello! May I ask if it is possible to design a machine with a pure conveyor belt that does not move? That is to say, there is no mobile system.

Answered by committee

Yes, this would be possible and legal. As described in the definition of Subsystem 1 in rule [<R1>](#) (bold added here for emphasis):

Subsystem 1: Mobile robotic base including wheels, tracks, or any other mechanism that allows the Robot to navigate the majority of the flat playing Field surface. **For a stationary Robot, the robotic base without wheels would be considered Subsystem 1.**

2453: Subsystem 1 - if it is legal for a robot to secure to the playing field

22-Jan-2025

R1

Subsystem 1: Mobile robotic base including wheels, tracks, or any other mechanism that allows the Robot to navigate the majority of the flat playing Field surface. For a stationary Robot, the robotic base without wheels would be considered Subsystem 1.

We have an idea, but it requires the stationary Robot to be secured to the playing Field with the help of connector pins. Based on <R1>, we would like to confirm whether this idea will be considered a violation?

[<R1>](#)

Answered by committee

Securing the Robot to the Field with VEX IQ connectors would put the Robot in contact with the *inside* of the Field tiles, in Violation of clause A of rule [<R4>](#), which specifies that the Robot can only be in contact with the Floor and the inside face of the Field Perimeter at the start of each Match.

2545: Subsystem definition

17-Feb-2025

R1

Dear judges? Hello? I'd like to ask you a few questions

1. Is there a more clear definition of the control system in subsystem 2? Do air pumps, valves and cylinders count as subsystem 2
2. Does the cylinder belong to Subsystem 3
3. Is it illegal to change only part of subsystem 1 or subsystem 2, such as removing two of the four motors that control the chassis movement and installing them on the additional structure of the control ball
4. According to QA2183, the replacement of wheels will not be regarded as the replacement of subsystems. Can it be understood in this way that subsystem 3 on the machine also has wheels in contact with the site, but the wheels cannot be actively rotated and only serve as training wheels for the machine to move

Answered by committee

Hello!

The current text of <R1> does not make it clear how VEX IQ Pneumatics fit into the subsystem definition, and for that, we apologize. This answer will serve to help clarify how pneumatics components best fit into the subsystem definitions in that rule. This will be revised in the next game manual update.

The air pump and pneumatic solenoids best fit as a part of subsystem 2. They are the "power/control system" for pneumatics.

Pneumatic cylinders, tubing, and fittings would most likely be a part of subsystem 3, unless they are integral parts of the 'Mobile Robotic Base,' in which they could be considered part of subsystem 1 or 2, as well.

Removing or moving motors from subsystem 1 or 2 does not inherently mean <R1> has been violated, but rather if the entire subsystem 1 and/or 2 is replaced as a whole, it would be considered a Violation. Swapping components and/or moving components to a different place on the Robot is not a Violation of <R1>.

Direct quote from <R1>:

Given the above definitions, a minimum Robot for use in any VEX IQ Robotics Competition event (including Skills Challenges) must consist of subsystems 1 and 2 above. Thus, if you are swapping out an entire subsystem 1 or 2, you have now created a second Robot and are no longer legal.

We don't understand the 4th bullet point in your question. Please rephrase and resubmit if it wasn't clarified by the above answers.

2560: Moving a smart motor from one component to another between skills and team work matches

21-Feb-2025

R1

GDC,

From the game manual

Subsystem 1: Mobile robotic base including wheels, tracks, or any other mechanism that allows the Robot to navigate the majority of the flat playing Field surface. For a stationary Robot, the robotic base without wheels would be considered Subsystem 1. Subsystem 2: Power and control system that includes a VEX IQ legal battery, a VEX IQ control system, and associated Smart Motors for the mobile robotic base. Subsystem 3: Additional mechanisms (and associated Smart Motors) that allow manipulation of Balls or navigation/manipulation of Field Elements.

> To help determine whether a Robot is a "separate Robot" or not, use the Subsystem definitions found in <R1>. Above that, use common sense as referenced in <G3>. If you can place two complete and legal Robots on a table next to each other, then they are two separate Robots. Trying to decide if changing a pin, a wheel, or a motor constitutes a separate Robot is missing the intent and spirit of this rule.

Based on the above definitions in the game manual - "Is it safe to assume that a team can move a smart motor from one component of the robot (say, during skills) to another component of the robot (for teamwork matches)?"

Thank you,

Answered by committee

Is it safe to assume that a team can move a smart motor from one component of the robot (say, during skills) to another component of the robot (for teamwork matches)?"

Yes.

2581: Questions about robot subsystems 1, 2, and 3?<R1> One Robot per Team.?

27-Feb-2025

R1

<R1>

As shown in the figure (<https://drive.google.com/file/d/1PZBe4MgGiPOnKt6HAOAm49eFZtlyWoYd/view?usp=sharing>) There are two machines, their subsystem 1 and subsystem 2 are the same, and both can pass the machine inspection. My question is, in a competition, can the same team modify the left machine into the right machine according to different competition events? Please note that it is not a replacement of a robot, but retaining the subsystem 1 and subsystem 2 of the left robot, and then modifying it on the spot to become the right robot.

Answered by committee

This would technically be legal if both pass Robot inspection, although it pushes the limits and intent of the rule.

2618: Clarification on R1 - Subsystems and Motor Usage

12-Mar-2025

R1

Hello GDC, We would like to ask some questions of rule R1 about subsystems. From the rule R1, it define motors that are used for subsystem 1 as subsystem 2, and it say we cannot swap the whole subsystem 1 or 2 which will cause violate. So I would like to ask some questions about it:

1. Motor Shared Between Subsystem 3 and Subsystem 1:

- If a motor is used for both Subsystem 3 and Subsystem 1, does this mean it is considered part of Subsystem 2?
- If so, does this imply that we cannot move or replace this motor, since it would be classified as a permanent part of the robot?

2. Repositioning a Motor Within Subsystem 1:

- Suppose we have a drivetrain that uses only two motors.
- If we move one of these motors to a different mounting position while still exclusively powering Subsystem 1 (drivetrain), would this be considered a violation of R1?

Thank you for your time and clarification!

Answered by committee

If a motor is used for both Subsystem 3 and Subsystem 1, does this mean it is considered part of Subsystem 2?

No.

If we move one of these motors to a different mounting position while still exclusively powering Subsystem 1 (drivetrain), would this be considered a violation of R1?

No. As stated in the blue box in rule <R1>, "Trying to decide if changing a pin, a wheel, or a motor constitutes a separate Robot is missing the intent and spirit of this rule."

2161: <R15> Shortening a rope by cutting it and re-tying it, or re-tying a broken rope?

30-Sep-2024

R15

Can a VEX IQ rope be shortened or repaired by re-tying it?

If not, I would propose considering this as an additional exception to the <R15> modification of parts rule, to allow ropes to be cut and re-tied in order to shorten the rope, or to repair the rope in case of a breakage. This seems within the "spirit" of some of the other exceptions (e.g. shortening metal shafts and cutting pneumatic tubing to custom lengths). It seems like the "spirit" of these exceptions are to allow certain parts to be shortened for fit, not for unfair advantage. The "Winch and Rope Pack" (currently unavailable with no ETA of re-stock) is the only way to purchase replacement ropes or different length ropes, and also the hero bot itself calls for a specific length rope which is not included in any other kits.

Answered by committee

Can a VEX IQ rope be shortened or repaired by re-tying it?

Shortening a legal VEX IQ rope by tying knots in its length is a legal modification. Cutting it is not. The ropes included with the Winch and Rope Pack and the VEX IQ Education and Competition Kits are the only rope or string legal for use in competition. These must be used in a non-cut form, and must include the built-in connectors on both ends.

2551: Non VEX IQ Pneumatic tubing

18-Feb-2025

R16

<R16><R16><R16>

Can you use non VEX IQ Pneumatics silicon tubing, if it's exactly the same as the VEX IQ tubing?

Answered by committee

As described in clause C of rule <R16>, non-VEX tubing and/or fittings are not allowed on Robots for the VEX IQ Robotics Competition.

2130: Modifications to Subsystem 3 and multiple inspections during the competition

10-Sep-2024

R3

If a team shows at inspection a robot that has 25in arms (both sides) to accomplish the "touch the field perimeter" rule during autonomous skills matches, but they totally remove those arms for driving skills and teamwork matches. Is that modification legal during the tournament? Although the changes may be considered as "subsystem 3", it modifies in a significant way how the robot drives through the field.<R3>

Answered by committee

The modification you describe would be legal under rule <R1> as a change to subsystem 3. Per Clauses A & B of rule <R3>, the Robot must be inspected in both configurations.

2134: Modification of Subsystems

15-Sep-2024

R3

[<R3>](#)

If a team shows at inspection a robot that has direct drive for autonomous skills matches, but they change their gear ratio for driving skills and teamwork matches to increase their robot speed. Is that modification legal during the tournament? Although the changes may be considered as "subsystem 2", it modifies in a significant way how the robot drives through the field.<R3>

Answered by committee

The modification you describe would be legal during a tournament. Per Clauses A & B of rule <R3>, the Robot must be inspected in both configurations.

2447: Removal or Modification of Subsystem 3 - Inspection Clarification

18-Jan-2025

R4

[<R4>](#)

Our team has a removable intake extension used for Driver Skills and Autonomous. At a recent competition, they were informed that <R4.d.i> requires re-inspection of the robot every time the intake extension is added or removed.

Q&A 2207: Modification and swapping of robot subsystems (1) states: "There is no requirement that a Robot be reinspected each time a Robot is revised to match a pre-inspected configuration."

Can you please clarify? Is there a disconnect between <R4> and Q&A 2207 or should <R4> be interpreted that re-inspection is only required if the robot is brought to the field in an a) uninspected and/or b) noncompliant configuration?

Answered by committee

Rule [<R4>](#) states that:

Teams using more than one possible Robot configuration at the beginning of Matches must tell the Inspector(s) and have the Robot inspected in all configurations. Rule R3c will apply if a Robot is placed in an uninspected configuration (i.e., will not be permitted to play until re-inspected, but will not be considered a "no-show").

Per [Q&A 2207](#):

As described in clause B of R3, "All possible functional Robot configurations must be inspected before being used in competition. This especially pertains to modular or swappable mechanisms (per R1) and Match starting configurations/sizes (per R4)." There is no requirement that a Robot be reinspected each time a Robot is revised to match a pre-inspected configuration.

If a Robot configuration has been pre-inspected and has not been modified, it does not need to be re-inspected.

should R4 be interpreted that re-inspection is only required if the robot is brought to the field in an a) uninspected and/or b) noncompliant configuration?

| Yes

2172: Lubrication for Controllers

2-Oct-2024

R5

[<R5>](#)

The game manual [<R5>](#) prohibits grease, oil, graphite, and/or any other lubricant or plastic additive

Does this include the controllers themselves as well? We have one controller that, as my son says, is "janky" and one of the sticks doesn't move smoothly. Before we open it up and try to fix it, we wanted to confirm that this is not against the intention or spirit of [<R5>](#). This would only apply to the drive controller and not to any part of the robot on the field.

Answered by committee

Rule [<R5>](#) prohibits lubricants for any use in the VEX IQ Robotics Competition. Additionally, rule [<R15>](#) prohibits modification of parts, which would include changing the performance of a controller by applying lubricant. We suggest that you reach out to support@vex.com for assistance and advice regarding your faulty controller.

2404: Regarding controversial judgement of VEX-IQ competition result

20-Dec-2024

R5

[<R5>](#)[<R5>](#) For VEX-IQ competition? during the pre-competition robot check-up, the head referee did not find lubricating oil on the robot, however, the lubricating oil was found on the axle after the competition. How should the teams be penalized? Should both teams get DQ? Thanks.[<R5>](#)

Answered by committee

The penalty for Violation of a Robot rule--including clause C of rule [<R5>](#), which prohibits grease or other lubricants/additives--depends on when the Violation is identified.

If a Violation of a Robot rule is identified during Robot inspection, that Robot cannot pass inspection or participate in Matches until the Violation is addressed and the Robot complies with all rules.

If a Violation of a Robot rule is identified before a Match, clauses D & E of rule [<R3>](#) specify that the Robot will be removed from the Field and cannot participate in Matches until the Robot can pass another inspection.

If a Violation of a Robot rule is identified during or immediately following a Match, per clause F of rule [<R3>](#) it should receive a Disqualification from that Match and cannot participate in Matches until the Robot can pass another inspection.

If a Violation of a Robot rule is identified after the conclusion of all Matches, the Event Partner or Head Referee should file a Code of Conduct report regarding the Violation. Per rule [<R17>](#), "Teams who intentionally and/or knowingly circumvent or violate rules to gain an advantage over their fellow competitors are in violation of the spirit and ethos of the competition. Any Violation of this sort should be considered a violation of [<G1>](#) and/or the REC Foundation Code of Conduct."

2463: Cleaning Bot

27-Jan-2025

We are seeking clarification on rule <R5> Prohibited items. The following types of mechanisms and components are NOT allowed: Those that could potentially damage Field Elements or Balls. Those that could potentially damage or entangle other Robots. Grease, oil, graphite, and/or any other lubricant or plastic additive. Tape and/or any other material that adheres to or changes a legal part, other than non-functional decorations as permitted by <R8>.

At a recent tournament the team used water to clean friction residue. This was ruled as illegal and they were disqualified. In order to clean wheels and such many teams use water, lysol wipes, etc. etc as recommended by vex, as it suggests these and things that leave no residue.

We need to know how we can legally clean bots. and parts. A dry cloth would require disassembling bot and does not remove all.

So further clarification is needed: not what is not allowed (as it was believed these solutions were fine), but what IS legal? Also, how may we clean fields then as they also get very dirty?

Photo of sample wear: <https://docs.google.com/presentation/d/1gJxUcDJnfSsvSbK85c0J0FeeKOclbM1U2z6i-6f69QA/edit?usp=sharing>

Answered by committee

If VEX IQ Robot components must be cleaned after becoming dirty during use, we recommend one or more of the following:

- Compressed air to remove debris and dust
- Mild soap and water
- Dry or slightly damp cloth

Any cleaning method should leave no visible or otherwise detectable residue after drying, and the Robot and all parts must be completely dry before arriving at a Match.

Any cleaning residue or moisture will be ruled as an illegal additive as described in clause C of rule <R5>, and the Robot will be removed from the Field and all further Matches until it has been reinspected and approved for Matches. Rule <R17> may apply in extreme cases.

Teams are advised to clean Robots and parts before arriving at events to avoid any possibility of doubt.

2467: Legal and Approved ways to clean robot parts

28-Jan-2025

I was curious what is the legal and appropriate way to clean robot parts? As stated in <R5> with prohibited items, "Grease, oil, graphite and/or any other lubricant or plastic additive" are not allowed. However, what would be considered allowable?

The following link was posted during COVID, are these products still considered legal?

<https://kb.vex.com/hc/en-us/articles/360047126751-VEX-Product-Disinfecting-Guide#:~:text=VEX%20note%3A%20The%20appropriate%20disinfectant,compounds%20as%20the%20active%20ingredient>

As a head referee, I do not want to get into a situation where I do not know the actual approved items to inform a team on how they may clean their robot if it becomes dirty.

Thank you

<R5>

Answered by committee

Our response to [Q&A 2463: "Cleaning Bot"](#) addresses situations in which a Robot component is dirty and needs to be cleaned.

The VEX Library article linked in your question provides ways to disinfect VEX IQ parts in cases where they've been exposed to germs or other contaminants. The methods described in the Library article may be used on competition Robots if necessary, but the Robot must be dry and free of residue when it arrives at a Field for a Match.

2098: 3x20 beam (228-2500-039) Part Legality

13-Aug-2024

R6

There are two (2) 3x20 beams (228-2500-039) included in the field kit for Rapid Relay that don't appear in the **VEX IQ Robotics Competition 2024-2025 Legal Parts** or the **VEX IQ Robotics Competition 2024-2025 Illegal Parts** appendix documents. Are those legal for competition use on robots?

It would appear R6 i. might address this but wanted to clarify here and possibly get an update to the respective appendix document above.

R6 1. Additional VEX IQ products that are released during the season are legal for use, unless otherwise noted on their product pages and/or in the VEX IQ Robotics Competition Legal Parts Appendix.

Answered by committee

Thank you for your question! Yes, the 3x20 beam (228-2500-039) is legal for use on competition Robots and will be added to the Legal Parts Appendix.

2155: Rubber band issue in competition kit

25-Sep-2024

R6

[<R6>](#)

A local team has a set of Gen 2 competition kits with the expansion/upgrade kit. This kit includes 2 'large silicone rubber bands' in the competition kit. These rubber bands at first appear to be 117b rubber bands which are legal in Vex IQ. However, when I was checking them, the rubber bands are not actually 117B size. They are the correct 7" long, but are 1/4" wide, not 1/8" wide.

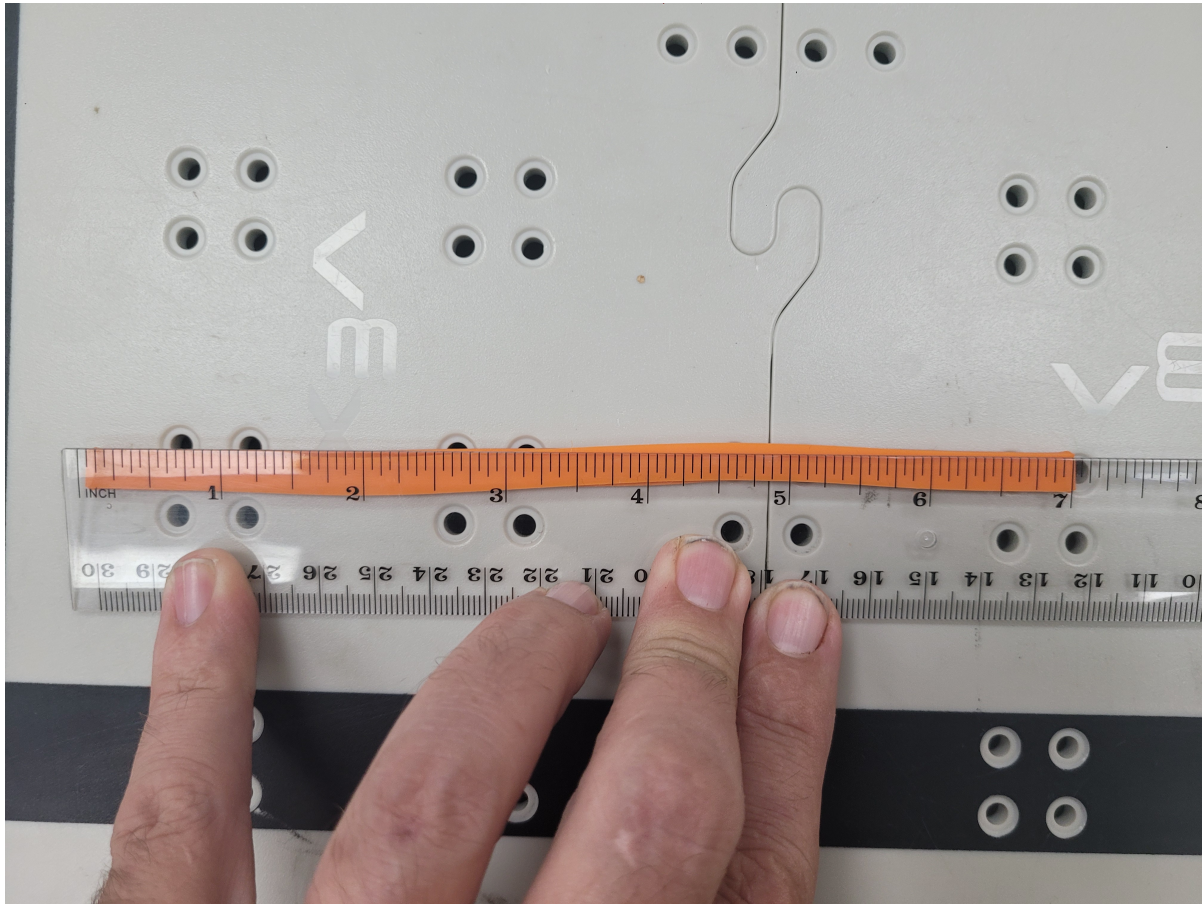
I double checked the most recent legal/illegal parts lists and onlt standard 117B rubber bands (7" x 1/8") are on the list. I also checked the Vex website, and that size (7" x 1/4") bands are not for sale anywhere on the website, except it would appear, in the competition kit.

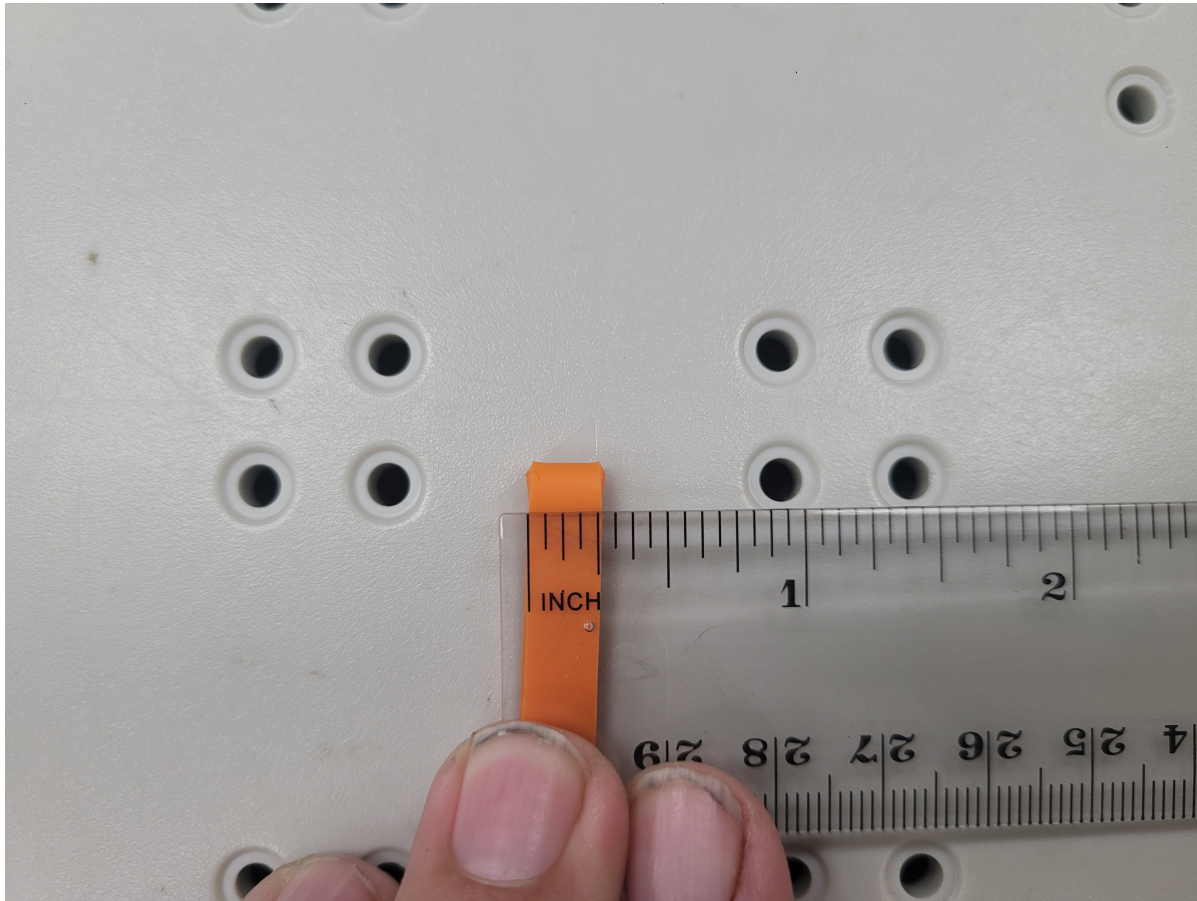
I need to know if these rubber bands are considered legal for competition. As it stands now, I can see having to disqualify a lot of teams who purchased the competition kit thinking everything in it was a legal part.

So my questions are:

1. Is the 7"x1/4" band that comes in the competition kit legal?

2. When will that part be added to the legal parts list so I will not have issues as an EP when someone uses one? (Or the QA? I may have missed it if this has already come up)
3. Where can teams get these 1/4" wide 7" rubber bands?





Answered by committee

Thank you for your question! We agree that part number 228-2500-470, Silicone Rubber Band #117B, was named incorrectly and that it should be updated to denote the correct size, #170.

1. Is the 7"x1/4" band that comes in the competition kit legal?

Yes, the band that comes in the competition kit is legal for use in the VEX IQ Robotics Competition.

2. When will that part be added to the legal parts list so I will not have issues as an EP when someone uses one? (Or the QA? I may have missed it if this has already come up)

Clause A of rule [<R7>](#) will be revised in the next game manual update to include #170 rubber bands.

3. Where can teams get these 1/4" wide 7" rubber bands?

This Silicone Rubber Band (228-2500-470) is not currently available for purchase from VEX Robotics as a standalone part. With the addition of #170 to the allowable rubber band sizes found in clause A of [<R7>](#), teams may purchase #170 rubber bands as an equivalent size, although performance may vary based on the specific material of the rubber band.

2189: Is PET film from 2023-2024 Full Volume goals legal to use?

11-Oct-2024

R6

Is the large PET film labeled with "VEX IQ" from 2023-2024 Full Volume goals legal to use? I can not find it in the legal parts list but they are truly from VEX IQ product line. please advise. Thank you!

Answered by committee

No. The PET goal walls from Full Volume are listed on the last page of the [VEX IQ Illegal Parts Appendix](#). We will add this link to the game manual in the next update.

2506: (228-5583-1381) Part Legality

5-Feb-2025

R6

There were Hexagonal plates of 3 colors and part numbers ie:(228-5583-1381) included in the field kit for Rise Above that don't appear in the VEX IQ Robotics Competition 2024-2025 Legal Parts or the VEX IQ Robotics Competition or 2024-2025 Illegal Parts appendix documents. Are those legal for competition use on robots? [<R6>](#)

Answered by committee

Thank you for your question. The part you're asking about is simply an alternate color of part 228-2500-1381, which is found on page 11 of the VEX IQ Legal Parts Appendix and is legal for use on Rapid Relay Robots.

For reference, parts are coded in a format like "228-WXYZ-ABCD." WXYZ is a color code and does not matter for legality. The last set of digits (ABCD) is a part identifier that is important for legality.

2539: Illegal Part Question

16-Feb-2025

R6

If a robot that has already passed inspection is later found to have an illegal part—specifically one that is part of its scoring mechanism—when we are already 60% into the tournament, what happens to their previous matches? Are their scores retroactively adjusted, or do the matches stand?

Answered by committee

As described in clauses D & F of rule [<R3>](#),

D: If a Robot is determined to not be legal before a Match begins, the Robot will be removed from the Field. A Driver may remain so that the Team does not get assessed a "no-show" (per T5).

F: If a Robot has passed inspection, but is later found to be in Violation of a Robot rule during or immediately following a Match, then they will be Disqualified from that Match and R3d/T6 will apply until the Violation is remedied and the Team is re-inspected.

This is the only Match that will be affected; any prior Matches that have already been completed will not be revisited. R4d will apply until the Violation is remedied and the Team is re-inspected.

Additionally, if the Head Referee determines that the illegal part is a willful Violation of a Robot rule as described in [<R17>](#), it should be considered a Violation of [<G1>](#) and the Code of Conduct. As described in [<R17>](#),

A Team that circumvents a Robot rule for a competitive advantage should receive an immediate Disqualification for the current Match and be reported to the Event Partner for discussion with the REC Foundation Regional Support Manager. As a result of that discussion, the Team may be Disqualified

from the event. The Violation should also be reported to the REC Foundation Rules and Conduct Committee following the event.

2087: 2x30 mm square silicone band

5-Aug-2024

R7

Is there an alternative replacement part for the 2x30 square silicone bands (228-2500-1225) or is there a way VEX will sell these separately as replacement parts? Currently I only see them in the larger kits or the winch and rope kit. An alternative would be great when they need to be replaced when they break (instead of needing to purchase the kits with extra items that are not needed as frequently).

Answered by committee

The 2x30 square silicone band (228-2500-1225) is not currently available as a standalone part, and there are no approved non-VEX replacements at this time.

2494: Is rubber band 117B legal?

1-Feb-2025

R7

(https://events.vex.com/storage/game_manual/VEX_IQ_Robotics_Competition_2024-2025_Rapid_Relay/rules/R7.html)

R7 says #117b and #170 rubber bands to be legal, although they are not sold on vex store. can you please confirm both of these are legal and can be purchased outside of vex store?

Answered by committee

Yes. As clearly stated in rule [<R7>](#), it is legal to use non-VEX rubber bands "that are identical in length and thickness to those included in the VEX IQ product line (#32, #64, #117B & #170)."

2497: Controller Scuff

2-Feb-2025

R7

[<R8>](#)

Hello! I want to ask are we allowed to use controller scuffs for vex iq controller?

<https://www.thingiverse.com/thing:4905782> Something look like this, a tool on controller that makes driver easier to click the buttons.

Answered by committee

Clause Ci of rule [<R11>](#) permits use of attachments that assist Drivers in holding or manipulating buttons & joysticks on the IQ Controller.

2445: SC1: Scoring after the match ends

16-Jan-2025

RSC1 SC1

<SC1> Violation Notes (bullet points 2 & 3) under <SC1> states: "If a team receives three Minor Violations within the same event, all future <SC1> Violations at that event will be considered Major Violations and Disqualifications." and, "This count does not reset for any reason within an event (e.g., Qualification vs Finals Matches, one of the Team's "dropped score" Matches, etc.)."

Do shots taken after the Timer reaches 0:00 and scored during Skills Matches (Driving/Autonomous) count towards violating SC1 and, if so, result in a Major Violation and Disqualification if the cumulative total of SC1 violations during Skills and Qualification/Finals matches exceed three (3)?

If a Team has fewer than three SC1 Minor Violations prior to participating in a Finals Match and violates SC1 in their Finals Match, does that count as a Minor Violation (does not receive a disqualification) or as a Major Violation (receives a disqualification)?

Answered by committee

Yes, <SC1> also applies to Skills Matches. The first, second, and third <SC1> Violations received by a Team at an event in any Match type should be recorded as Minor Violations. The fourth and all subsequent <SC1> Violations received by the Team at that event should be considered Major Violations and Disqualifications. For a Skills Match, a Disqualification results in a zero score for that Skills Match.

In your provided example, the team receiving an <SC1> Violation in their Finals Match has not yet exceeded three <SC1> Minor Violations, so the <SC1> violation received in the Finals Match should be a Minor Violation.

Note: We acknowledge that many events do not record Minor Violations that occur in Robot Skills Challenge Matches due to event and staffing logistics, although we recommend that they be recorded alongside Teamwork Match Violations whenever possible.

2109: Waiting to place the 2nd ball in Robot Skills

25-Aug-2024

RSC3

According to <RSC3>, during Skills setup:

In addition to the Preload, Teams may place a second Ball anywhere in Starting Zone 1 (i.e., the one closest to the Pickup Zone) to begin the Match.

We see two possible interpretations:

1. Mandatory: the team **must** (implicit) place the second ball and it **may** be placed anywhere in the Starting Zone, or
2. Optional: the team **may** choose *not to place the second ball* at match start, possibly waiting until sometime after the timer starts - or even never. If so, it would be good to clarify whether the 2nd ball would start Loader-controlled: to be loaded Rapidly or not depending on whether the Loader chooses to place the ball during a Rapid Load period.

Motivation for inquiry: We have a team that wants to delay placing the second ball until after the match timer starts, and they want to confirm that it's OK for the Loader to hold onto the 2nd ball on match start in order to wait for an autonomous routine to move their robot to a desired location first.

As a side note, the Head Ref Certification Test includes a question in Unit 7 that asks, "How many Balls begin the Match on the Robot or on the Field for a Robot Skills Challenge Match?"

The accepted answer is: "2; one on the Robot, and one in Starting Zone 1"

If placing the 2nd ball at Match start is optional, then the question should be slightly updated.

Answered by committee

If the Team chooses not to begin a Robot Skills Challenge Match with a second Ball pre-placed in Starting Zone 1, as allowed by clause A of rule [<RSC3>](#), that Ball may be Loaded during the Match using the options provided in rule [<RSC4>](#).

2145: Skills Challenge Positioning Clarification

21-Sep-2024

RSC3

[<RSC3>](#)

Per <RSC3> Parts (a) and (b) seem to conflict with each other in wording.

Can you please clarify which zone is the "Pickup Zone" and which area is the "Loading Station"? (a) states " ... anywhere in Starting Zone 1 (ie., the one closest to the Pickup Zone)" (b) states " ... Robots must begin in the Starting Zone 1 (ie., the one closest to the Loading Station)"

In this case, is the "Pickup Zone" referring to behind the Goal Wall where the Loaders would "pickup the ball for reloading?" Or does it refer to the zone where robots can pick up the balls from the field?

Apologies if the wording is clear but my brain is conflating the two zones inaccurately.

Answered by committee

As shown in Figure PZ-1, the Pickup Zone is located on the same end of the field as the Goal Wall. As shown in Figure LZ-1, the Load Zone contains the Loading Station, which is on the opposite side of the field from the Goal Wall.

[<RSC3>](#) correctly denotes the locations of Starting Zones 1 and 2 (shown in Figure SZ-1) relative to the Pickup Zone and Load Zone.

2021: RSC4: 3 loaders in Autonomous Coding Skills?

21-May-2024

RSC4

[<RSC4>](#):

Note: In both Driving Skills Matches and Autonomous Coding Skills Matches, any Driver who is not currently operating the Robot may also serve as a Loader (i.e., a Team may have two Loaders at any given time).

What does it mean to be "operating the robot" during an Autonomous Coding Skills match? Assuming the robot is not being actively repositioned, would it be acceptable for all 3 drive team members to serve as Loaders during an Autonomous Coding Skills match?

Answered by committee

Because the game manual does not place limits on the number of Drive Team Members who may serve as Loaders in a Robot Skills Match, it is legal for all 3 to serve as Loaders during an Autonomous Coding Skills Match.

2125: Driver switch clarification

7-Sep-2024

RSC4

For the purposes of [<RSC4>](#), is the Mid match driver switch defined as the moment the controller physically changes hands or a specific point in the driver switch period (such as the end)

Answered by committee

As described in [<RSC4>](#),

In Driving Skills Matches, the Rapid Load Period is defined as any time after the mid-Match Driver switch takes place.

Per rule [<G11>](#), the Driver switch may occur at any time "between twenty-five seconds (0:25) and thirty-five seconds (0:35) remaining in the Match."

Balls may be introduced as Rapid Loads in a Driving Skills Match at any time after the controller has been passed to the second Driver under clauses B & C of rule [<G11>](#)

2135: Rapid Load Period Begins When?

15-Sep-2024

RSC4

[<RSC4>](#)

If a drive team in Skills, waits until there is 28 seconds left on the clock, does that mean they only have 28 seconds of Rapid load period?

Answered by committee

Yes. If a Team completes the Driver switch with 28 seconds left on the clock, they will have 28 seconds of Rapid Load period. We believe our answer to [this recent Q&A](#) also addresses this question.

2137: Rapid loading during robot skills (driving and autonomous) challenges

16-Sep-2024

RSC4

[<RSC4>](#)RSC4a states, "Starting Zone 2 (i.e., the one closest to the Loading Station) is the only Starting Zone that may be used for Rapid Loading." Does that mean the robot must come in contact with the ball in zone 2 prior to the ball leaving zone 2 or does it mean the ball must touch down in zone 2 but could roll into zone 1 prior to the robot coming in contact with the ball?

Answered by committee

A Rapid Load Ball must be retrieved from the specific Starting Zone it was introduced into, and may not leave that Starting Zone until it is removed by a Robot action. For example, a Ball that is Rapid Loaded into Starting Zone 2 cannot leave Starting Zone 2 until it is removed by a Robot action.

2163: About the number of players in the driving skills competition

30-Sep-2024

RSC4

[<RSC4>](#) About <RSC 4>; if a 4-player team is available, can two players play driver and two players play loader in a driving skill competition? Please help me, thank you.

Answered by committee

Per the definition of Drive Team Members in the game manual, each Team is limited to three (3) Drive Team Members (two Drivers and one Loader) for each Match.

2192: Skills Challenge - Rapid Loading Placement- RSC4

14-Oct-2024

RSC4

For skills challenges (both Driver and Autonomous), during the Rapid Load periods, balls can be loaded in Starting Zone 2. What is considered legal loading of the ball in rapid loading before a robot may retrieve it?

Does the full volume of the ball have to be within the full volume of SZ2? Does the ball just have to be touching somewhere in starting zone 2? Can the Ball be overhanging outside of the starting zone 2 as long as it's touching somewhere in SZ2? Can the ball be placed to the side of SZ2 as long as part of the ball is over the volume of SZ2?

Early videos of skill matches shows team are toeing the line of far forward they can stretch it to save time, so having a clear definition of 'placed' could be helpful.

(this could also pertain to <rsc3> based on response)

[<RSC4>](#)

Answered by committee

What is considered legal loading of the ball in rapid loading before a robot may retrieve it?

As described in clause B of rule [<SG5>](#), "Rapid Load Balls must be released by the Loader directly onto the Floor inside a Starting Zone before being contacted by a Robot." There is no requirement that the Ball be placed entirely within the volume of that Starting Zone, only that the Ball be contacting the Floor inside that Starting Zone. This would also apply to the the Ball described in clause A of rule [<RSC3>](#).

Clause D of [<SG5>](#) always applies, and Rapid Load Balls may only be removed from its Starting Zone by a Robot action. A Ball is removed from its Starting Zone when it is has fully left the vertical projection of that Starting Zone.

2392: Final Clarification on Rapid Load location (hopefully) - Qualification and Final rounds

16-Dec-2024

RSC4 SG5

For rule <SG5> Loading During the Rapid Load Period, it states that loaders "have the option to introduce Balls directly onto the Starting Zone (i.e. without using the Loading Station)." Please clarify that the teams can rapid load into EITHER starting Zone 1 or 2, or just starting Zone 2. Rapid Loading from Starting Zone 1 seems to give a decided advantage in terms of proximity to the Goals so I just wanted to verify WHERE teams can rapid load during the Rapid Load period, from Starting Zone 1, 2, or either. Thank you for your guidance.

Answered by committee

<SG5> does not restrict Rapid Loading to one Starting Zone or the other. During Teamwork Challenge Matches, Teams can Rapid Load into either Starting Zone 1 or Starting Zone 2.

For Driving Skills Matches and Autonomous Coding Skills Matches, <RSC4> restricts Rapid Loading to only Starting Zone 2.

2414: Rapid Loading During Elimination and Finals Matches

26-Dec-2024

RSC4 SG5

<SG5> Q&A 2137 addresses <RSC4> Rapid Loading differences during Skills Matches (Autonomous and Driving) and states that the balls must be removed from the zone they are introduced into (Zone 2) by robot action. Does this apply to Elimination and Qualification matches as well or is it legal to introduce a Ball in one starting zone and have the robot remove it from another starting zone (i.e., introduce the ball into Starting Zone 2 and roll it into Starting Zone 1 where, by robot action, it is removed from Starting Zone 1)?

Answered by committee

A Ball introduced into Starting Zone 2 has left / been removed from Starting Zone 2 once the Ball has fully left the vertical projection of Starting Zone 2.

If the Ball is introduced into Starting Zone 2 by the Loader and rolls fully out of Starting Zone 2 into Starting Zone 1, the Ball has been removed from Starting Zone 2 via means other than a robot action, making this a violation of <SG5>.

2417: Driver skills - Student stops driving to load during their drive time

30-Dec-2024

RSC4

<RSC4>

Once the controller hand off is complete, can the second driver set the controller down and be a loader?

The note under RSC4 says: Note: In both Driving Skills Matches and Autonomous Coding Skills Matches, any Driver who is not currently operating the Robot may also serve as a Loader (i.e., a Team may have two Loaders at any given time).

In other words, in driving skills, if the person who can drive the bot has set the controller down, can they serve as a loader?

Answered by committee

As described in the third paragraph of our answer to [Q&A 2359](#), "If a Team wishes the Robot to operate autonomously for the 2nd half of the Match, a 2nd Drive Team Member from that Team must be present in the Driver Station and take part in the Driver switch as described in rule [<G11>](#)." The current Driver cannot serve as a Loader simultaneously.

2476: Clarification for Q&A 2192

28-Jan-2025

RSC4 SG1

[<RSC4>](#)

Q&A 2192 states that "there is no requirement that a Rapid Load ball must be placed entirely within the volume of that Starting Zone, only that the Ball be contacting the Floor inside that Starting Zone"

Does this also apply to the optional second ball in Starting Zone 1 for Drivers Skills? Or does this ONLY apply to Rapid Load?

- Could the 2nd ball for Drivers Skills be placed directly in front of the robot in Starting Zone 2, where it touches not only Starting Zone 1 but also Starting Zone 2 at the same time? To be in compliance with <SG1> it cannot also contact the robot as a second pre-load, correct?

Answered by committee

Q&A 2192 states that "there is no requirement that a Rapid Load ball must be placed entirely within the volume of that Starting Zone, only that the Ball be contacting the Floor inside that Starting Zone"

Does this also apply to the optional second ball in Starting Zone 1 for Drivers Skills? Or does this ONLY apply to Rapid Load?

This logic also applies to the optional 2nd Preload Ball in a Skills Match. If used, the 2nd Preload must be touching the Floor in Starting Zone 1 to start the Match, but it doesn't have to be fully contained within Starting Zone 1.

Could the 2nd ball for Drivers Skills be placed directly in front of the robot in Starting Zone 2, where it touches not only Starting Zone 1 but also Starting Zone 2 at the same time? To be in compliance with SG1 it cannot also contact the robot as a second pre-load, correct?

Yes. The 2nd Preload could be in contact with both Starting Zones, but cannot be in contact with the Robot.

2557: Rapid loading rule violation

19-Feb-2025

RSC4 T7

During our last VEX IQ competition, we noticed a significant rule violation that led to an unusual ruling. During autonomous a team was rapid loading from Starting Zone 1 instead of Starting Zone 2, which violates Rule [<RSC4>](#). However, when we raised this issue, the judges allowed the team to redo both of their autonomous runs despite Rule [<T7>](#) stating that match replays should only be granted under specific conditions.

This raises important questions: Should match replays be granted for rule violations that went unnoticed?

Answered by committee

As stated in rule [<T7>](#),

Match replays (i.e., playing a Match over again from its start) are at the discretion of the Event Partner and Head Referee.

The examples in [<T7>](#) are not all-encompassing, and the Head Referee and Event Partner can declare a Match be replayed at their discretion.

2141: Question about Auto Part for skills challenges

19-Sep-2024

RSC8

[<RSC8>](#) First, does the robot have to touch the inner wall of the field at the beginning of the competition? Second, after the team member touches the robot, must the robot retouch the inner wall of the external wall of the site again? Or the robot can be placed directly in the Zone 2?

Answered by committee

Yes, the Robot has to meet criteria A & B of rule [<SG1>](#) at the beginning of every Match and after every use of rules [<G10>](#) and/or [<RSC8>](#) to legally reset the Robot during a Match. This includes contacting the inside of the Field Perimeter wall.

2213: <SG1> Using string to contact Starting Zone in Autonomous Skills

22-Oct-2024

RSC8 SG1

Hello!

Recently at a competition we had a team that had a really impressive autonomous run and was using a strategy where they would pull the robot back to Starting Zone 2 but instead of contacting the inside of the field perimeter they would pull a piece of string that would contact the wall to satisfy the starting conditions in [<SG1>](#), contacting the inside of the field perimeter. Given robot expansion sizes, this would remain within the horizontal expansion limits specified in the game manual.

Would this approach be legal and does it fit within the spirit of the rules?

Cheers

Answered by committee

Assuming the Robot meets all of the following conditions, there is no rule against this strategy.

- Uses only VEX IQ-legal string (with connectors on the ends, as included in the [VEX IQ Winch and Rope Pack](#))
- Follows the guidelines for Robot resets in [<G10>](#), [<RSC8>](#), and [Q&A 2141](#)
- Meets the requirements of clauses A & B of [<SG1>](#) for each reset
- Remains within the size limits in [<SG2>](#)
- Breaks no other rules

2232: Clarification of removal of balls due to RSC8 and Q&A 2193

28-Oct-2024

RSC8

Given the change to [<RSC8>](#) from [Q&A 2193](#), are the balls in the scenarios listed in [Q&A 2152](#) considered in the field and must be removed when resetting the robot via [<RSC8>](#)?

Answered by committee

When a Robot is reset under rule [<RSC8>](#) in an Autonomous Coding Skills Match, all Balls should be removed from the Robot and the Field. Balls can then be reintroduced through the Loading Station or as Rapid Loads.

If a Ball is stuck in a Switch at the time of a Robot reset in an Autonomous Coding Skills Match, it should be removed from the Field by a referee or Drive Team Member when the Robot is reset. If a Switch is held in a Cleared position (no longer parallel with the front face of the Goal Wall) by the Ball that will be removed, that Switch should be manually moved into a "fully" Cleared position during the reset. The Ball that was stuck in the Switch should not be counted as a Goal.

2243: Balls In The Field After Robot Reset- Autonomous Match

30-Oct-2024

RSC8

What happens with the balls that are not scored but end up on the field perimeter when retrieving and resetting the robot during Autonomous Match? Can the loader retrieve and "Rapid Load" the balls as well? Thank you

Answered by committee

When a Robot is reset in an Autonomous Coding Skills Match as described in rule [<RSC8>](#), every Ball should be collected and handed to a Loader, regardless of its current location. Balls can then be returned to the Field through the Loading Station or as Rapid Loads, with a maximum of 2 Balls "in play" at any one time.

2317: Autonomous Skills Rapid Load Clarification

20-Nov-2024

RSC8

Per our understanding, after the match has begun, adding balls to the field can be done either by the (1) loading station or (2) Rapid Load.

[<RSC8>](#)

There is nothing in the [<SG4>](#) rules that prohibit the robot from being in Starting Zone 2 when the Rapid Load balls are loaded. Can you confirm that this is allowed?

Specifically, we're looking at code that would require resetting the robot in Starting Zone 2 per the rules, placing two Rapid Load balls on the field (also) in Starting Zone 2, and then running the robot forward to pick them up before continuing to the Goal Wall to score.

Answered by committee

You are correct. There is nothing in the rules that prohibit the Robot from being in Starting Zone 2 when a Ball is Rapid Loaded in a Match, provided the human Loader and the Robot are not in contact with a Ball at the same time.

2338: Autonomous Skill reset

30-Nov-2024

RSC8

According to RSC8 [<RSC8>](#) The team can reset the robot in the autonomous skill, do the team have to take the robot of the field and move it to the zone 2? or can the student just push the robot on the field and make it slide to the other student. So in conclusion is that do the reset need the robot to move while it is off the field? or can we remain contact to the field and pass it to the other teammate?

Answered by committee

... can the student just push the robot on the field and make it slide to the other student. ... can we remain contact to the field and pass it to the other teammate?

There are no rules preventing this, therefore it is legal.

2377: Autonomous driving question

11-Dec-2024

RSC8

[<RSC8>](#) During autonomous driving, after you drive the first ball up to the goal and shoot can you then pick up the robot and place it into loading zone 2 so that it can take another ball from there? Or does it have to be autonomously driven in to this zone? If you can pick it up and put it in zone 2 can you then begin a new program that drives the robot to the goal again?

Answered by committee

When a Team chooses to reset their Robot during an Autonomous Coding Skills Match under rule [<RSC8>](#), they may pick up the Robot, reset it to a legal starting position in Starting Zone 2, and resume or start any precoded routine by pressing a button on the Robot Brain or manually activating a sensor (as described in rule [<RSC9>](#)).

Students may also repair the Robot during a reset, or interact with the Robot Brain to select a new program.

2406: Rapid reload during auto

20-Dec-2024

RSC8

With the rule change allowing a missed shot to be retrieved and either returned through the loading station or rapid reloaded, I have a question: If a team is running their autonomous code and a ball misses its shot (requiring the team to reach into the playing field), does the robot need to be reset to its legal starting position during this process?

Answered by committee

Initiating the process of handling the Robot as laid out in [<RSC8>](#) is what allows a Team to retrieve Balls from on the Field. Teams cannot retrieve missed shots from the Field unless the Robot is also being handled and reset.

2475: Clarification for Q&A 2232

28-Jan-2025

RSC8 SG6

[<RSC8>](#)

Is the answer to Q&A 2232 from October 28, 2024 still accurate? I am confused about whether this is correct:

"When a Robot is reset under rule <RSC8> in an Autonomous Coding Skills Match, all Balls should be removed from the Robot and the Field. Balls can then be reintroduced through the Loading Station or as Rapid Loads.

If a Ball is stuck in a Switch at the time of a Robot reset in an Autonomous Coding Skills Match, it should be removed from the Field by a referee or Drive Team Member when the Robot is reset. If a Switch is held in a Cleared position (no longer parallel with the front face of the Goal Wall) by the Ball that will be removed, that Switch should be manually moved into a "fully" Cleared position during the reset. The Ball that was stuck in the Switch should not be counted as a Goal."

This is the only place that I have seen the option to remove a ball that is stuck in a Switch vs being stuck in the Goal Wall. <SG6> seems to contradict this ability to remove the ball.

Does this only apply during Autonomous? And is the intent to not just retrieve the ball but also result in a cleared switch?

Answered by committee

Does this only apply during Autonomous?

Yes. This only applies in Autonomous Coding Skills Matches.

And is the intent to not just retrieve the ball but also result in a cleared switch?

Yes, but this only applies in Autonomous Coding Skills Matches.

2554: Handling Robots during an Autonomous Coding Skills Match.

18-Feb-2025

RSC8

Handling Robots during an Autonomous Coding Skills Match. per the rulebook "A Team may handle their Robot as many times as desired during an Autonomous Coding Skills Match. Upon handling the Robot, it must be immediately brought back to Starting Zone 2. Drive Team Members may reset or adjust the Robot as desired from this position, including pressing buttons on the Robot Brain or activating sensors." Does readjusting the robot include extending out the extenders on the robot that may have been disrupted during an earlier run of the robot. Intent behind the question - the team intends to pick up the robot and reset the robot in another place within the starting zone, and will again extend the extenders on the robot to be in contact with the perimeter wall . [<RSC8>](#)

Answered by committee

Does readjusting the robot include extending out the extenders on the robot that may have been disrupted during an earlier run of the robot.

Yes, a Team can "re-extend" a retracted or folded part of the Robot during a reset under rule [<RSC8>](#), providing no new parts are added during the reset.

2225: Skills autonomous - resting robot and the balls

26-Oct-2024

RSC9

[<RSC9>](#) It has recently been noted that if a robot is reset during an autonomous skills run, balls can be taken off the field as well. When the robot is reset to the starting position, is the robot allowed to restart with one ball in its possession? is the second ball allowed to be placed in starting zone 1 again? If it could be clarified what happens to the balls after resetting.

Answered by committee

As mentioned in the revised rule from [Q&A 2193](#), Balls removed during this [<RSC8>](#) interaction can be returned to the Field through the Loading Station or by being Rapid Loaded.

RSC8aii. All Balls must be removed from the Robot and from the Field, and can be returned through the Loading Station or Rapid Loaded.

- Is the robot allowed to restart with one ball in its possession? ---> No.
- Is the second ball allowed to be placed in starting zone 1 again? ---> No.

2577: Compressing the Ball for Rapid Load

26-Feb-2025

S1 SC5

There are teams that are trying to compress the ball to a point of being near flat to Rapid Load directly under their Rubberband roller so that when the ball reforms to its correct dimensions of the intake roller. This also can run the risk of an EP needing replacement objects due to the high stress on the seams of the ball and students running the risk of breaking the ball in the middle of the run.

Sc5 the ball can NOT be in motion to be legally rapid loaded would this action count as motion of the ball?

"Note: Although it is not required, Robots are highly recommended to remain some distance away from the Ball entirely until the Loader's hand has clearly been removed. This will make clauses "B" and "C" abundantly clear to Head Referees, and help them to verify clauses "A" and "D".

The revised intent of this rule is that the human Loader should not impart any motion to a Rapid Load Ball. However, because Balls are round, it is possible that they may move slightly after being placed by the Loader. This incidental and unintentional motion is acceptable, and there is no need to retrieve and reload the Ball in this scenario."

<S1> Stay safe, don't damage the Field. If, at any time, the Robot operation or Team actions are deemed unsafe or have damaged any Field Elements or Balls, the offending Team may be Disabled and/or Disqualified at the Head Referee's discretion. The Robot will require re-inspection before it may again take the Field.

Answered by committee

... would this action count as motion of the ball?

No.

The strategy you describe does not directly violate any rules in the game manual, although Teams that use it should not receive the benefit of the doubt if it's not abundantly clear to a Head Referee that the Ball is being Loaded in compliance with clauses A-D and F of rule [<SG5>](#).

Additionally, Teams risk Violations of [<S1>](#) if their actions damage Balls (e.g., cause stitching to break) with this or any other strategy.

Note: This strategy may be restricted in the April 2, 2025, game manual update pertaining to the VEX Robotics World Championship.

2187: Clarification regarding the definition of a student/IQ eligibility

10-Oct-2024

[S2](#)

[<S2>](#)

Please note that there is no option to tag the general definitions area of the game manual, so S2 is tagged as it has the link to the definition of a student. The definition of a student is as follows: Student – Anyone born after May 1, 2009 (i.e., who will be 15 or younger at VEX Worlds 2025). Eligibility may also be granted based on a disability that has delayed education by at least one year. Students are the individuals who design, build, repair, and program the Robot with minimal Adult assistance.

Based on this definition, would students who are technically in high school but are under the age of 15 be eligible for Vex IQ? Some people say that High schoolers cannot participate in IQ despite meeting these constraints, but others say it is completely fine.

Thanks! -282S

Answered by committee

Based on this definition, would students who are technically in high school but are under the age of 15 be eligible for Vex IQ?

Yes. Because the VEX Robotics Competitions are global, and the term "high school" is specific to the United States, age limits are the only restriction on student participation for specific programs.

2209: Switches becoming Un-Cleared During the Game

21-Oct-2024

[SC1](#) [SC4](#) [SC7](#)

Per [<SC4>](#) a switch is cleared once it has been struck by a ball and is no longer parallel with the front face of the goal wall. If a switch is cleared and then through normal game play the switch returns to the uncleared position where it remains till the end of the match, per [<SC1>](#) scoring statuses are evaluated after the match ends should the switch be evaluated based on the final position, even though [<SC7>](#) states that rapid relay is designed to be scored in real time.

Example: A ball becomes wedged in the switch, without fully passing through the target, holding the switch in a partially flipped position. The ball is later dislodged by a robot and falls back into the field, which causes the switch to return to its starting position, and is untouched till the end of the match.

How should cleared switches be scored with respect to [<SC1>](#) and [<SC7>](#)?

Answered by committee

Based on the nature of the game, Passes and Goals must be scored in real-time, so [<SC7>](#) states that "Passes and Goals should be recorded at the time they occur." Cleared Switches are only evaluated and recorded at the end of the Match, per [<SC1>](#).

2389: Autonomous Skills - Scoring After Buzzer

15-Dec-2024

SC1

[<SC1>](#)

Per Rule SC1 "It is expected that many Rapid Relay Matches will have last-second "buzzer-beater" moments. The key moment occurs when the timer display shows 0:00. At many events, a buzzer sound will also play at T=0:00; however, the field timer display takes precedence in the event of any audio discrepancies.

If a Ball is released from a Robot before this moment, it will be allowed to finish its path and the score will be calculated once it comes to rest. However, if it is released after this moment (i.e., the Robot was still moving past T=0:00) it will not count and the Team will receive a Violation as described below."

The question we ran into at a recent competition is does SC1 apply in autonomous skills, and if so result in a violation if the ball is shot after the buzzer. In autonomous other robot movements are not expected to stop at the buzzer but instead slightly after as a player gains control of the robot, due to the potential for that robot not being near the player at the 0:00 mark. If there is expectations autonomous would not release a ball after 0:00 are there exceptions no movements should occur after 0:00 in autonomous.

Answered by committee

The question we ran into at a recent competition is does SC1 apply in autonomous skills, and if so result in a violation if the ball is shot after the buzzer.

Rule [<SC1>](#) applies in all Matches, including Autonomous Coding Skills Matches. Per the 2nd paragraph in that rule, "Any Scoring which takes place after the Match due to Robots continuing to move will not count toward the score and is a Violation of this rule." Per the Violation Notes in that rule, "Because scoring that happens after the Match is not counted, all Violations of [<SC1>](#) should be recorded as Minor Violations."

The additional Violations Notes for [<SC1>](#) also apply. The 3rd and any subsequent Violations of this rule will be considered Major Violations and result in Disqualifications (or 0 scores, for Skills Matches) for those Matches.

2454: SC4 Switch Scoring Clarification

22-Jan-2025

SC1 SC4

[<SC4>](#)

Hello GDC thank you for your tireless work so far this season! We've seen two different interpretations of SC4 / SC1 in our region:

1. Anytime a switch meets the description in SC4 the teams should receive credit for that switch being cleared (even if it later becomes uncleared and doesn't end the match cleared).
2. A switch only counts if the switch is in a cleared position after the match ends.

Based on other scoring rules, we can see either as reasonable and justified. Which is correct?

Answered by committee

Thank you for your question! Your second interpretation is correct, and a Switch should only be recorded as Cleared if the Switch is in a Cleared position after the Match ends.

2455: Robots in motion prior to the game clock starting or the timer buzzer going off

22-Jan-2025

SC1

Should a team be penalized for beginning a match prior to the start of the countdown clock or starting buzzer? If so, what is the penalty?

Starting prior to the beginning of the match gives that team a competitive advantage, albeit ever so slight. If the team who started early passes and/or scores a goal during the match, then starting early becomes score affecting? Would it be appropriate, prior to the team passing or scoring a ball, to have the offending robot disabled and the team told to put their robot back into a legal starting position before continuing with the match? Should the team be disqualified if they pass or score a ball during the match? Issue a warning and, if it happens again, disqualify the team?

Answered by committee

Thank you for your question! We plan to update the game manual based on this response, and the change is effective immediately.

Clause D of rule [<SG1>](#) will be revised to indicate that Robots must remain completely stationary (other than the current allowance for pneumatic pumps) until the Match timer starts.

Additionally, a new Violation Note for [<SG1>](#) will specify that the first Violation for a Team be recorded as a Minor Violation unless the Violation is egregious (e.g., beginning the Match more than 1-2 seconds early), and any additional Violations at that event be recorded as Major Violations and a Disqualification.

2083: Can I reload immediately after scoring

4-Aug-2024

SC3 SG4

According to SC3, the ball can be scored by passing through the goal, while according to SG4, the ball can be considered 'loaded' if it scores or leaves the field. Does this imply that loading can occur after the ball has passed through the goal rather than after it has landed? [<SC3><SG4>](#)

Answered by committee

As described in clause A of rule [<SG4>](#), the 'next' Ball can be Loaded after a previous Ball has been Scored or has left the Field. As described in rule [<SC3>](#), a Ball is considered to have been Scored when it

... is no longer in contact with a Robot and has fully passed through a Target (i.e., from the "outside" of the Goal Wall structure into the "inside" of the Goal Wall).

There is no requirement that a Scored Ball land in the Pickup Zone before the next Ball is Loaded.

2203: Balls failed to score and not left the field

18-Oct-2024

SC3

If a failed scoring attempt puts ball back inside the field, can it be retrieved by loader off the field or does it have to be picked up by robot? in scoring example SE3 - 4th bullet mentions ball that is not scored can be retrieved by loader If answer to above is No, Can such a ball be removed from by loader if the robot is reset to starting position mid match?

Answered by committee

If a failed scoring attempt puts ball back inside the field, can it be retrieved by loader off the field, or does it have to be picked up by robot?

In this scenario, Loaders are not allowed to reach into the Field to remove the Ball. The Ball must be picked up by the Robot.

Can such a ball be removed from the field by a loader if the robot is reset to starting position mid-match?

In Autonomous Coding Skills Matches, a Loader is only allowed to remove a Ball from inside the Field during [<RSC8>](#) interactions, when Balls must be removed from both the Field and from the Robot. In Teamwork or Driving Skills Matches, a Loader is only allowed to remove a Ball from inside the Field during rare [<G10>](#) interactions when a Ball is preventing the Robot from being legally placed. (Most [<G10>](#) interactions usually result in Balls being removed only from the Robot, not from the Field.)

2310: End of Game - Final Shot - 2 Balls Stuck - Switch Stuck

18-Nov-2024

SC3 SC4

At the end of a finals match recently, a robot capable of throwing a two balls at once launched balls before the buzzer. One ball went fully through the top goal, one ball went through the bottom goal, but not fully. If a straight edge across the face of the goal was used it would have contacted the ball that went through the bottom goal, but it did stay in this position after the match and the majority of the ball was through the goal. The top switch had been cleared earlier in the game, but the bottom switch had not. In the process of this final two ball shot, the switch was pinned between the two balls after the match at a 45 degree angle. Again, this was the final state of the match.

Per the most the game manual: [<SC3>](#) An Alliance Scores a Goal once a Ball is no longer in contact with a Robot and has fully passed through a Target (i.e., from the "outside" of the Goal Wall structure into the "inside" of the Goal Wall).

A. Ball that passes through a Target and then bounces back out into the playing Field does not count as a Scored Ball, and the Ball remains in play.

[<SC4>](#) A Switch is Cleared once it has been struck by a Ball and is no longer parallel with the front face of the Goal Wall. Robots may not Clear Switches by contacting them directly (i.e., without it being part of the process of scoring a Ball through that Target).

My expectations for this situation is:

1 - The ball that passed through top goal counts as a goal as it fully went through the goal.

2 - The switch is considered cleared as it ended the match no longer being parallel with the front face of the goal wall per SC4.

3 - The bottom goal does not count as it still had a small portion of the ball that had not fully passed the plane of the goal established by its border and a straight edge going across would have touched the ball. The ball has not fully passed

through the goal per SC3.

Please determine if this is the correct interpretation.

If this is the correct interpretation, please define passing through the goal in more detail for this static end of game occurrence? If a straight edge across the more forward 2x plates that create the border of the goal count as the goal plane for this situation or is it the 2x plates that are further back? Not to be too specific, but I am sure a situation where this difference determines an outcome will inevitably occur.

However, Q&A 2081 states If a Scored Ball gets stuck inside the Goal Wall structure and does not make it to the Pickup Zone, a referee must free it by carefully reaching into the Goal Wall. If this action takes place the ball that has not fully passed through the goal is likely to fall. If the second ball that is teetering then falls, is this ball scored as well?

If neither is correct, could you please explain how an end of game situation like this should be scored. I would also expect the possibility of the balls falling during inspection of this situation. What would be the correct procedure if the balls fell after the match ended and prior to touching the balls during inspection of a close call that was not visually obvious?

Answered by committee

My expectations for this situation is:

- 1 - The ball that passed through top goal counts as a goal as it fully went through the goal.
- 2 - The switch is considered cleared as it ended the match no longer being parallel with the front face of the goal wall per SC4.
- 3 - The bottom goal does not count as it still had a small portion of the ball that had not fully passed the plane of the goal established by its border and a straight edge going across would have touched the ball. The ball has not fully passed through the goal per SC3.

We agree with these interpretations.

In a case where a Head Referee must determine whether or not a Ball has fully passed through a Target, they should move a straight-edged tool or beam across the 2x beams that define the top and bottom boundaries of the Target. If a Ball falls during this assessment, it is likely that the straight edge contacted that Ball in order to move it, meaning that Ball had not passed fully through the Target and would not count as Scored.

2324: Robot Pushes ball through Goal

24-Nov-2024

SC3 SC4

[<SC6>](#) ***At league this past week we had a robot that would shoot the ball into the goal and it would miss occasionally hitting the target and go back into their loader. They would then use their flywheel to push the ball in. The robot touched the ball as it pushed it the entire way through goal. The robot was contacting the ball through its journey into the goal.

I took this to mean this is score impacting because according to SC3 below-- a scored goal is once a ball is no longer in contact with a robot and has fully passed through the target. I also conferred with our REC rep who was at league to make sure my interpretation was correct and he agreed with me. *

SC3--An Alliance Scores a Goal once a Ball is no longer in contact with a Robot and has fully passed through a Target (i.e., from the "outside" of the Goal Wall structure into the "inside" of the Goal Wall).----

**** However- as I read on it says an addendum under SC4 of---don't over think this rule---- and there is no restriction on what type of robot action, mechanism, strategy or technique is used to score balls or clear switches. Which I think leaves some gray area as to is pushing considered a technique or strategy??? (See reference to SC4 below) **** We have some new teams who designed a Clawbot for this and I am afraid this may become a bigger issue at our league as they want to push the ball into the goal and drop it too. ** So clarification on if the robot is pushing a ball through the target/goal with a shooter, arm, flywheel, or another mechanism from their robot and the robot is still contacting the ball as it is going through goals is this illegal????

I believe what is trying to be said above in SC3 is that students are to engineer or program a solution that would make it so the ball is to not be touching both robot and goal to be considered scored, but the over thinking rule and part of SC4 leaves some gray area and the rule open to some debate on if this is strategy or action. Thanks**

<SC4> A Switch is Cleared once it has been struck by a Ball and is no longer parallel with the front face of the Goal Wall. Robots may not Clear Switches by contacting them directly (i.e., without it being part of the process of scoring a Ball through that Target).

Please don't over-think this rule.

Sometimes a Switch gets Cleared without scoring a Ball through the Target, or a Ball is Scored through a Target but the Switch is not Cleared. That's okay. Switches must be Cleared as part of normal gameplay, and by Balls, not Robots or humans. Beyond that, there are no restrictions on what type of Robot action, mechanism, strategy, or technique is used to Score Balls and Clear Switches.

[<SC3>](#)



<SC3> An [Alliance Scores a Goal](#) once a [Ball](#) is no longer in contact with a [Robot](#) and has fully passed through a [Target](#) (i.e., from the “outside” of the [Goal Wall](#) structure into the “inside” of the [Goal Wall](#)).

- a. A [Ball](#) that passes through a [Target](#) and then bounces back out into the playing field does not count as a [Scored Ball](#), and the [Ball](#) remains in play.

Effectively, this should correspond with the [Ball](#) falling through the [Goal Wall](#) and landing in the [Pickup Zone](#), and that “land in the [Pickup Zone](#) moment” can be used for most scoring needs. However, in the event of any jams or other malfunctions, the [Ball](#) is still considered [Scored](#) even if it does not touch down to the [Pickup Zone](#). See [<SG6>](#).

<SC4> A [Switch is Cleared](#) once it has been struck by a [Ball](#) and is no longer parallel with the front face of the [Goal Wall](#). [Robots](#) may not [Clear Switches](#) by contacting them directly (i.e., without it being part of the process of scoring a [Ball](#) through that [Target](#)).

Please don't over-think this rule.

Sometimes a [Switch](#) gets [Cleared](#) without scoring a [Ball](#) through the [Target](#), or a [Ball](#) is [Scored](#) through a [Target](#) but the [Switch](#) is not [Cleared](#). That's okay. [Switches](#) must be [Cleared](#) as part of normal gameplay, and by [Balls](#), not [Robots](#) or humans. Beyond that, there are no restrictions on what type of [Robot](#) action, mechanism, strategy, or technique is used to Score [Balls](#) and [Clear Switches](#).

Violation Notes:

- *All [Violations](#) of this rule are inherently [Score Affecting](#), and therefore [Major Violations](#).*

Answered by committee

[<SC3>](#) specifies that a Ball cannot count as Scored while it is in contact with a Robot, even if the Ball meets the other requirement of having fully passed through a Target. Once the Robot in your scenario drops the Ball so they are longer in contact with it, the Ball will count as Scored. It is legal for a Robot to be in contact with the Ball as it is going through the Target.

[<SC4>](#), including the blue box note within it, defines the requirements for a Cleared Switch and makes it abundantly clear that a Robot is not allowed to directly contact a Switch to Clear it. It is legal for a Switch to be Cleared by a Ball that is in contact with or in the possession of a Robot.

It is also legal (but extremely risky) for a Robot to hold the Ball as the Ball passes through a Target and Clears a Switch; if the Robot directly contacts the Switch while Clearing it, the result will be a Major Violation of rule [<SC4>](#) and a Disqualification for that Match. That extreme risk is why the game manual includes the following [<SC4>](#) violation note:

Violations of this rule should be rare, as Robots should never be designed to contact Switches directly.

2495: Ball Returning Out of Lower Goal

1-Feb-2025

SC3

We experienced a unique situation at a competition. A bot that is capable of launching two balls concurrently - one into the top goal and one into the bottom goal - launched both balls. The bottom ball cleared the switch, and fell to the floor behind the Goal Wall in the Pickup Zone. However, the TOP ball cleared the upper switch, went into the Goal Wall, and bounced back OUT of the lower goal. This ball was now back on the field.

[<SC3>](#) States that a ball that passes through a Target and then bounces back out into the playing field does not count as a scored ball and the ball remains in play.

Our question is since the ball passed into the Goal Wall, should it be counted as scored? This wasn't just bouncing off the switch and back in but physically went into the Wall and back out the other Goal.

What SHOULD happen in this situation? The ball has already been scored once and was not eligible for scoring again but we were unable to load another ball into the field.

- Should the referee pull the ball from the field?
- Should the referee direct a team member to pull the ball from the field?
- Should the team pick up the ball with the robot and throw it out of the field?

Everyone was uncertain about what should happen, so the team picked it up with the robot again and relaunched it into the Goal Wall. However, the score did not include the second score of the ball.

[<SC3>](#)

Answered by committee

[<SC3>](#) Clause A applies in this scenario, which is a failed scoring attempt. The first half of our response to [Q&A 2203](#) explains what should happen after a failed scoring attempt, and it sounds like the situation was handled correctly at your event by requiring the Robot to retrieve the Ball.

2023: Should a switch's status be "fixed"?

22-May-2024

SC4

[<SC4>](#)

It's rare, but we have seen already that a ball can go through a goal and not flip the switch.

It's also rare, but we have also seen a ball clear a switch but not go into the goal.

Should the switch's status reflect if a ball has scored in the goal, or should it be left as it is?

Answered by committee

Referees should not manually alter the status of a Switch, even in cases where a Goal is Scored without Clearing the Switch or a Switch is Cleared without a Goal being Scored.

The blue box for rule [<SC4>](#), was revised in the October 8 game manual update to read as follows:

Sometimes a Switch gets Cleared without scoring a Ball through the Target, or a Ball is Scored through a Target but the Switch is not Cleared. That's okay. Switches must be Cleared as part of normal gameplay, and by Balls, not Robots or humans. Beyond that, there are no restrictions on what type of Robot action, mechanism, strategy, or technique is used to Score Balls and Clear Switches.

In cases where a Switch is Cleared directly by a Robot (not with a Ball) in Violation of rule [<SC4>](#), it should still be counted as Cleared but should also be recorded as a Major Violation and Disqualification in accordance with the Violation Notes for [<SC4>](#).

2033: Rapid Relay - Ball stuck in the switch mechanism

11-Jun-2024

SC4

[<SC4>](#) What is the course of action if a ball is stuck in the switch mechanism. We have seen the ball balance on the frame of the goal without dropping into the collection area. Is it left to balance?

Thanks for any clarification on this issue.

Answered by committee

If a Ball becomes stuck in a Switch mechanism, it should be cleared by a Robot as part of game play and should not be manually adjusted by a referee or Drive Team Member.

2081: Ball stuck in the goal wall after scoring

2-Aug-2024

SC4

[<SC4>](#)



Based on question asked earlier that a robot can possess two balls and score at once, if a ball gets stuck in the goal wall (Attached picture) and if robot is unable to clear it, can the drive team member or referee reset the switch/balls and allow start over? There is no specific mention of this scenario in SC4 or Violation notes. Appreciate clarity on this situation.

<https://events.vex.com/VIQRC/2024-2025/QA/2014>

<https://events.vex.com/VIQRC/2024-2025/QA/2033>

Answered by committee

As described in the blue box in rule [<SG6>](#),

If a Scored Ball gets stuck inside the Goal Wall structure and does not make it to the Pickup Zone, a referee must free it by carefully reaching into the Goal Wall.

This only applies to Balls that have passed through a Target, and which meet all of the criteria for a Scored Goal in rule [<SC3>](#). Balls that have not passed entirely through the Target may not be retrieved by a referee, although it is expected that they may fall into or out of the Goal Wall after the already-Scored Ball is removed.

Note: This answer was revised on 11/13/2024 to specify that a referee **must** free a Scored Ball that is stuck inside the Goal Wall structure. Additionally, the December 3 game manual update will specify that the referee should retrieve the Ball as quickly as possible when it's safe to do so.

2236: Switch Force

28-Oct-2024

SC4

I am asking this as a coach and an event provider.

Out of the box the pulley rubber that is used to hold the switches are new and tight. A ball rolled onto the lower switch may not cause the switch to clear. A ball launched to the top switches has a very high probability of bouncing off. After being used for some time the pulley rubber stretches and switches are much easier to clear. Teams in their facility will therefore have very easy to clear switches and events that do not use all of their equipment regularly will have either all tight switches or a random combination of loose and tight switches. This will be the case at worlds also.

As an event provider I have seen new fields cause some very low scores because teams are not used to them but I don't want to figure out how to stretch out all these pulleys. As a coach I can't switch out pulleys every week to make sure that teams are getting an accurate indication of robot performance.

What is the force intended to have a switch cleared? Is it meant to be radically different? I know there are field variations but in this one could cause confusion at events and I want to be able to point to a Q&A.

[<SC4>](#)

Answered by committee

Teams must be prepared for variance in the tension of Switch mechanisms, which do change over time with use, and should anticipate that any event they attend might use new Field Elements.

If the event schedule allows it, Teams may ask for (and events may offer) opportunities to calibrate Robots to the Field. This allowance, if offered, is at the discretion of the Event Partner and/or the Head Referee, and should not delay the Match schedule.

Note: If Field Elements must be repaired or replaced (e.g., the elastic component of a Switch), Event Partners should ensure that replacement parts match those included with the original game set. [<T11>](#) clause a, "Replacing a damaged or missing VEX IQ Field component with an identical part of any color" still applies.

2273: <SC4> Is a ball touching a switch considered cleared?

9-Nov-2024

SC4

per <sc4> Since a switch is scored when it "is no longer parallel with the front face of the Goal Wall"

Q- Would a ball touching the switch mean it no longer being parallel? Such as in the image on QA 2152

The specific positioning and state of the ball may or may not cause the switch to move by tiny amounts since it would need to overcome the force of the switch rubber bands. Therefore it is hard to surmise which case it would be with eyes alone.

Answered by committee

For a Switch to qualify as Cleared (<SC4>), it must no longer be parallel with the front face of the Goal Wall, in a way that is clearly visible to the referee/scorekeeper.

Merely being contacted by a Ball is not enough to consider a Switch Cleared. Referees and scorekeepers are not expected to check this status with "paper tests" or other methods that give the Team the benefit of the doubt. If the referee or scorekeeper cannot clearly determine that a Switch has moved out of being parallel with the Goal Wall, then that Switch should not be considered Cleared.

On the other hand, contact with a Ball does not make a Switch ineligible to be considered Cleared. If the Switch meets the criteria of rule <SC4>, it should be considered Cleared. If it does not, it cannot be considered Cleared.

2323: When is a ball considered in play?

24-Nov-2024

SC4

<SG4>The field is defined as the entire playing Field, being six (6) field tiles wide by eight (8) field tiles long (totaling forty-eight (48) field tiles), including the Field Perimeter. The Pickup Zone is defined as the area of the Floor underneath the Goal Wall, bound by the Field Perimeter and the yellow PVC pipe that runs the length of the Field. The Pickup Zone refers to the Floor itself; it is not a 3-dimensional volume. See <SG6> With these two definitions in mind in either teamwork or skills: • A robot scores a ball through the goal, it lands in the pick up zone, which is part of the field. • Another ball is still on the field "in play" SO.. • A loader cannot load a ball through the loading station or in rapid load until the ball in the pick up zone is picked up and off the field otherwise there would be 3 balls on the defined field. Is this correct? It would be helpful if committee defines if there is any part of the field that considers a ball out of play.

<SG4> Using the Loading Station. Balls Loaded through the Loading Station must meet the following criteria:

1. No more than two (2) Balls may be in play at any one time (i.e., the next Ball should not be Loaded until a previous Ball is either scored or leaves the Field). 2083 - Loaders can load new ball immediately after current ball is Scored

SG4 seems to support that three balls could be on the field if one of those balls is in the pick up zone

Answered by committee

SG4 seems to support that three balls could be on the field if one of those balls is in the pick up zone

This is correct. The third Ball can be Loaded after one of the two Balls in play has been Scored (i.e., has passed completely through the Goal Wall).

2556: Is it legal to reach into the Target with your robot?

19-Feb-2025

SC4

Our team is thinking about a design that would extend into the low Target without touching the switch. We would like to confirm whether this is legal. The action in question is shown in the following image: [img](#)

We couldn't find any rules disallowing it, although the manual does clearly state that the robot should never come in contact with the switch. As long as there is absolutely no robot contact with the switch, would this be considered legal?

[<SC4>](#)

Answered by committee

Yes, this would be legal. Much of our answer to [Q&A 2324: Robot Pushes ball through Goal](#) applies your question as well.

2019: Marking of Balls to Help with Pass Scoring

17-May-2024

SC5 T11

There exist rules about decorations on robots ([<R8>](#)), but no rules I can find on "decorating" field elements. The closest rules I could find are [<T11>](#), which relates specifically to repairs.

The manual authors appear to be *aware* of the potential referee-ing challenges associated with [<SC5>](#) sections (c) and (d). The manual makes specific note of cases where "a referee is uncertain."

In both (c) and (d) cases, referees have to be able to distinguish between two identical balls that are in motion simultaneously, in addition to dealing with their other duties.

To assist referees with tracking balls, would it be OK for EPs and other field element providers to "decorate" the balls in a manner to permit easier in-match identification? For example, a permanent marker to draw different shapes or numbers on each ball in a match or set of matches (assuming balls will get mixed up). This way a referee can short-term memory recall quickly that "ball #2" or "the one with the red triangle" was the Rapid Loaded ball, and has recorded a Pass already.

One potential concern I can see is if there are teams hoping to use sensors to find balls based on color. In this case, guidelines may be needed on the extent to which a Ball may be modified, and/or a warning for programmers that events may have variations on the Ball colors and patterns. BTW, for autonomous, or Skills in general, EPs could just provide unmarked Balls - if this is an issue. Those kinds of matches don't need referees to track Passes.

I'm sure the GDC has done a lot of match testing, probably discussed this already, and perhaps there are reasons for not being too concerned about the need to mark Balls? If it's not OK to "mark" balls, then please make that clear as well. Although, one could "get around" this perhaps by "repairing" balls with different colored thread, or even use different colored hexagonal or pentagonal repair patches as permitted by [<T11>](#).

Answered by committee

Currently, marking/decorating the balls is not an approved modification. However, as we progress through the season we will monitor feedback regarding difficulty of tracking passes and rapid loaded balls, and we may re-evaluate this topic if tracking these details proves to be an issue for referees.

2046: airborne pass

25-Jun-2024

SC5

Can the balls touch the ground while being transferred from robot to robot during a pass or does the ball have to remain airborne throughout the whole pass because the rule does not specify [SC5](#)

Answered by committee

As stated in the blue box in rule [G3](#),

When in doubt, if there is no rule prohibiting an action, it is generally legal. However, if you have to ask whether a given action would violate S1, G1, or T1 then that's probably a good indication that it is outside the spirit of the competition.

Because the rules do not require that a Ball remains airborne throughout a Pass, and letting a Ball touch the Field would not violate rules [S1](#), [G1](#)<G1>, or [T1](#) <T1>, this would be legal.

2053: Can the preload ball count as pass?

28-Jun-2024

SC5 SG1

At the beginning of the match, one ball can be preloaded to each of the robots. If each robot passes their ball to another robot when the match begins, does it count as a pass? Or all the passes have to count from the ball through the loading zone.

Answered by committee

Yes. Each Preload Ball in a Teamwork Match can count for a maximum of one Pass, and is subject to all clauses of rule SC5.

Note: This answer was revised for clarity on September 12, 2024.

2108: Multipass

24-Aug-2024

SC5

Can we do multiple passes with one ball before scoring it?

Example: Two robots score 20 goals combined without any passes then one robot passes to the other robot then passes it back and so forth until there are 20 passes and then finally scores the last ball.

Can we earn points for all those passes in the example?

Answered by committee

Can we do multiple passes with one ball before scoring it? Can we earn points for all those passes in the example?

A Ball can be passed between Robots an unlimited number of times before it leaves the Field, but per clause C of rule [SC5](#), "A Ball can count for a maximum of one Pass each time it is Loaded through the Loading Station." The

interaction in your example will only receive credit for one Pass.

2127: Does a pass have to occur before a ball is scored?

9-Sep-2024

SC5

<SC5> Nothing in the game manual states that a pass has to occur before a ball is scored as a goal, only that the pass has to happen before the ball leaves the field. Based upon the definition of passing and loading, it appears that it would be legal to pass a ball after it has been scored as a goal before being picked up by the match loader.

Would this scenario be a legal pass in a Teamwork match: If Robot A scores the ball through a target, Robot B touches the ball once it rolls into the pickup zone before a loader retrieves it. (This would only be valid from balls introduced from the loading station since rapid load balls are not eligible for passes)

<SG5>[<SC5>]

Answered by committee

Thank you for your question, and for highlighting this unintended loophole in the rules! The following changes will be reflected in the next game manual update, and are effective immediately:

- The first sentence of <SC5> will be revised to read (bold used to emphasize new text), "An Alliance receives credit for a Pass once both Robots independently contact a Ball before it **is Scored or** leaves the Field."
- Clause B of <SG6> will be revised to read (bold used to emphasize new text), "A Ball which has been Scored through a Target may not be used for additional scoring, **passing**, or Switch Clearing until it is retrieved by a Loader and legally re-Loaded."

2220: What counts for independent contact of a pass?

24-Oct-2024

SC5

<SC5> What are the parameters of independent contact for a pass? Does the ball have to be lifted? Or can a ball be passed by hitting it with a robot? <SC5>

Answered by committee

Clause A of rule <SC5> defines independent contact as "a moment where only one Robot is contacting the Ball." If a Robot in the Match touches the Ball at a moment when the other Robot in the Match is *not* touching that Ball (and before that Ball leaves the Field), it counts as independent contact.

2240: Passing and scoring

29-Oct-2024

SC5

<SC5> For example, in the collaboration play, when there is one switch cleared and Robot1 passes the ball to Robot2, the team will score 4 points.

If Robot2 shoots the ball and it lands in the pickup zone (not the goal), can the ball be placed back on the loading station and passed again to score another 4 points? Or does the ball need to go through the goal and into the pickup zone before

being loaded back onto the loading station to score another 4 points?<SC5>

Answered by committee

Rule <SC5> specifies (bold added here for emphasis):

An Alliance receives credit for a Pass once both Robots independently contact a Ball before it **leaves the Field**.

Per rule <SG6>, a Loader may retrieve a Ball that lands in the Pickup Zone even if it has not been scored. That Ball becomes eligible for another Pass after it is Loaded through the Loading Station.

Per rule <SC6>, at the end of the Match in this scenario (in which 1 Switch is Cleared), the Alliance can receive points for a number of Passes up to the number of Goals scored in the Match. If no Goals have been scored during a Match with one or more Cleared Switches, the Team cannot earn points for Passes.

2286: Further clarification of SC5 - independent contact requirement for passing

11-Nov-2024

SC5

<SC5> <2220>

The answer to question 2220 implies that the fact that both robots touched the ball at some point in time doesn't negate a pass as long as before both robots touched the ball robot A indepenently touched it and after robot B independently touched it. However, the wording in SC5.a is ambiguous enough that we have seen differing interpretations of this nuance. Please clarify that the scenario outlined below counts as a pass:

1 - robot A alone is touching the ball 2 - robot A pushes the ball against robot B (i.e. for a moment in time both robots are touching the ball) 3 - robot A backs up, and robot b intakes the ball (and is the only robot touching the ball)

If the above scenario does not count as a pass can SC5.a be clarified to call out that any contact with both robots at the same time negates a pass even if moments in time exist where both robots independently control the ball?

Answered by committee

Please clarify that the scenario outlined below counts as a pass:

1 - robot A alone is touching the ball 2 - robot A pushes the ball against robot B (i.e. for a moment in time both robots are touching the ball) 3 - robot A backs up, and robot b intakes the ball (and is the only robot touching the ball)

Because each Robot in this scenario has independently contacted the Ball, this qualifies as a Pass (assuming all other criteria of <SC5> are also met).

2305: Even further clarification of SC5 - Independent Contact for Passing

17-Nov-2024

SC5

<SC5> <2220> <2286>

During our most recent tournament yesterday, the judges were requiring that the ball must have a moment with no robot contacting it, between the two contacts, to truly count as "independent contact." So, for example, if one robot drove up

with a ball and then pushed the ball directly into the second robot's intake (a direct "hand off"), and then the second robot drove away with the ball, the judge would say this was NOT a valid pass.

To give a very clear scenario that does happen in practice, and needs clarification:

Robot A parks in front of the Goal Wall and never moves after that. Robot B travels back to the Loading Zone repeatedly and picks up balls. Robot B drives over to Robot A with each ball and stuffs it directly into the loading mechanism on the back of Robot A. Robot A feeds the ball through its mechanism, during which time B no longer contacts the ball, and Robot A throws the ball through a goal, scoring it. Does this scenario, if repeated over and over throughout a match, count as a pass for each ball exchanged between the robots?

Note that this is further clarification beyond what was given in [<2286>](#), specifically because in their example, the receiving robot "backs up" before intaking the ball, which might imply there's a moment between contacts when no robot is touching the ball.

Answered by committee

Robot B travels back to the Loading Zone repeatedly and picks up balls.

Robot B has made independent contact with the Ball in this moment.

Robot A feeds the ball through its mechanism, during which time B no longer contacts the ball.

If Robot B is no longer contacting the Ball, then Robot A is making independent contact with the Ball in this moment.

Both Robots have made independent contact with the ball, so this qualifies as a Pass (assuming all other criteria of [<SC5>](#) are also met).

2361: Further Clarification of Independent Contact and Scoring

8-Dec-2024

SC5

<SC5> <2220> <2286> <2305> In our recent competition we ran into a understanding of this rule that I would like clarified.

One team, robot 1, spit the ball at another team so that it bounced off robot 2 and considered that a pass then robot 1 got the ball and scored.

Technically they both independently contacted it. Can the first robot get the ball again to score. Would this count as one goal and one pass?

In this same competition, Robot 1 attempts to score but misses then Robot 2 picks up that ball and counts it as a pass and then scores. Would this count as one goal and one pass?

Answered by committee

One team, robot 1, spit the ball at another team so that it bounced off robot 2 and considered that a pass then robot 1 got the ball and scored. Technically they both independently contacted it. Can the first robot get the ball again to score. Would this count as one goal and one pass?

Yes.

In this same competition, Robot 1 attempts to score but misses then Robot 2 picks up that ball and counts it as a pass and then scores. Would this count as one goal and one pass?

Yes.

If each Robot has contacted the Ball (at any time between that Ball being Loaded and leaving the Field) while the other Robot is *not* contacting the Ball, they have achieved a Pass.

2504: <SC5> Pass criteria - is scoring a ball required for a pass?

4-Feb-2025

SC5

<SC5> states that "An Alliance receives credit for a Pass once both Robots independently contact a Ball before it is **Scored or leaves the Field.**"

Question: is it required for a ball to be scored or leave the field before it counts for a pass?

For example, during the last seconds of a match

- Robot 1 makes independent contact with the ball
- The ball is passed to robot 2
- Robot 2 makes independent contact with the ball
- The timer expires before the ball is scored or leaves the field

Should this ball be counted as passed?

Answered by committee

The intent of this language in rule <SC5>, "before it is Scored or leaves the Field," is to require both Robots to make independent contact with the Ball during the same Rapid Relay "cycle" in order to count as a Pass. This is further explained in <SC5> clause B, stating that "any previous Robot contact and/or Pass tracking is 'reset'" for a Ball when that Ball is Scored or leaves the Field.

In your example, a Pass should be recorded for that Ball since both Robots made independent contact with the Ball during the same Rapid Relay "cycle" (that period of time after the Ball is Loaded and before the Ball is Scored or leaves the Field). The Pass is counted at the moment independent contact has been made with both Robots. As such, there is no requirement for the Ball to be Scored or leave the Field in order to complete the process of a Pass.

2129: Scoring Clarification for <SC6> clause C situations, please

9-Sep-2024

SC6

<SC6> clause c states: *If no Switches have been Cleared at the end of the Match, the maximum number of points that can be received for Passes is four (4). The only way this can occur is if Balls are repeatedly Passed and then sent out of the Field without being Scored.

This clause only addresses Passes ("the maximum number of points that can be received FOR PASSES is"). There is nothing in the scoring information that indicates that GOALS scored (in the odd case that the switch did not clear and <SC6> clause c. comes into play) will not receive points. Yet, in both the VIQRC Hub app scoring calculator as well as in one of the questions in the Head Referee Exam, scored goal(s) are not being accumulated in the absence of a cleared switch. Since this is likely the intended case based on the VIQRC Hub scoring calculator, then it should be clarified both here and in the manual that the goal points are not counted until a switch IS cleared (or vice-versa--if it never should have had that limitation, that the scored goals are being accurately counted in the software points accumulation).

Example: 1 Goal scored, 0 switches cleared, 3 passes = only 3 points (which is based solely on the clause c provision of no switches being cleared and passes being counted up to four points). Yet there is nothing in the scoring information that specifically addresses WHY the 1 scored goal is not being counted, yet that is the case. I feel this is important just in case anyone has need to use paper forms for scoring, since this is not clear.

Answered by committee

There is no requirement that a Goal be Scored for a Switch to count as Cleared, or for a Switch to be Cleared for a Goal to count as Scored. This scoring logic should be correct in both Tournament Manager and VIQRC Hub for all Match types following an upcoming software update.

2144: Preload Positioning within Robot

21-Sep-2024

SG1

[<SG1>](#)

<SG1> Per the Game Manual - "part c: contacting exactly one (1) Preload"

Can the robot move or manipulate the preload ball so it is "internal" to the robot prior to beginning the match? Or does the Preload have to be placed vertically onto the robot? IE - if there are rubber band rollers to move the ball up a ramp, can the motors be run to pre-position the ball midway up the ramp prior to the start of the match? Likewise, could the ball be "wedged" into position somewhere on the robot as a Preload (which would not require using the motors to get in position)?

Answered by committee

Clause C of rule [<SG1>](#) requires the Robot to be contacting exactly one Preload, and does not include any other stipulations or limitations.

Therefore, the Preload can be internal or external to the robot, as long as the Preload is contacting the Robot and the Robot still falls within the size limitations in [<SG1>](#) and [<R4>](#) (e.g., can't be taller than 15").

Provided the Team meets the requirements of rule [<T6>](#) and clause D of [<SG1>](#) and is both ready to play and completely stationary at the beginning of the Match, there is no rule that prohibits running a motor before the Match to position the Preload.

2146: Starting Location Requirements

21-Sep-2024

SG1

[<SG1>](#)

Per <SG1>, part (a) and part (b), is the robot allowed to overhang the wall in any capacity prior to starting the match?

IE - if the robot wheel is touching the inside of the Field Perimeter Wall but an attached motor is overhanging above the field perimeter, is this allowed? Or do the field walls function as an infinitely tall barrier that cannot be crossed for Pre-match setup?

Answered by committee

Clause B of rule [<R4>](#) and clause A of rule [<SG1>](#) both specify (bold added here for emphasis) that at the start of each Match, the Robot must fit **within** the volume of a Starting Zone, which is defined as:

Starting Zone – One of two areas of the Field where Robots may begin the Match. Starting Zones are infinitely tall 3-dimensional volumes, bound by the inside of the Field Perimeter walls and the inside edges of the black lines marked by yellow VEX IQ beams. See Figure SZ-1.

To answer your three questions directly:

1. The Robot cannot overhang the wall in its starting position.
2. No part of the Robot, even a motor, can expand over or beyond the field perimeter at the start of a Match.
3. Yes, the inside edge of the field perimeter corresponds to an infinitely tall plane that cannot be crossed by a Robot in its pre-Match setup.

2159: Robot part inside the Pick up zone

26-Sep-2024

SG1

Is it legality that any part of robot can break "under" the plane of the yellow PVC bar inside the "pick up" zone?

Answered by committee

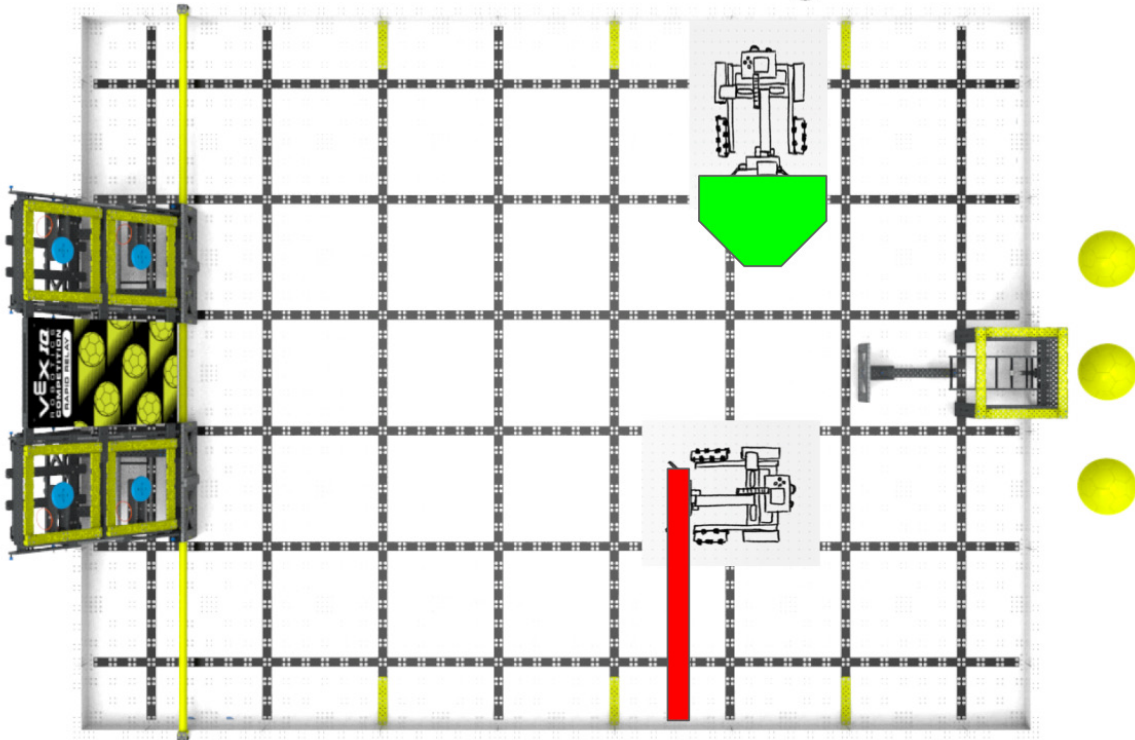
There are no rules that prohibit a Robot from reaching over or under the PVC bar that defines the front edge of the Pickup Zone, therefore it is legal. However, per the 2nd Violation Note for rule [<SG6>](#), Robots should not retrieve Balls from the Pickup Zone.

2228: With a Subsystem 3 change, can the inspection size orientation also change?

26-Oct-2024

SG1

Driving Orientation



Autonomous Orientation with extension

At a recent competition I had a team who had an alternate setup for autonomous. It was a subsystem 3 that was an extension that touched the inside of the wall so they did not need to program a turn like in the image below. They tried demonstrating this in inspection and were told by Head Judge and a on site Rec Foundation employee this was not a legal size. If measured as separate setups both were within size restrictions meeting SG1 and SG2. Based on the part they removed and added the robot needed to be put in different orientations to fit though, one direction for driving and one for autonomous like the [<SG1>](#) picture. Is there a requirement that when a subsystem 3 is changed it needs to be oriented in the same direction and meet size requirements, or is it ok to be oriented differently to meet size restrictions?

Answered by committee

There is no rule that requires different Robot configurations to fit in the Starting Zone in the same orientation. As long as each configuration is inspected, fits within the Starting Zone ([<SG1>](#)), and does not exceed the maximum legal size ([<SG2>](#)), this is legal.

2339: SG1

2-Dec-2024

SG1

<G1>

Concerning SG1, item D...I want to have a feeder moving before the round begins. I will be "Completely stationary", but the feeder will be spinning. Is this okay?

Answered by committee

Clause D of rule [<SG1>](#) specifically requires that no mechanisms be in motion. This would include a "spinning feeder" and would definitely **not** be okay.

2473: Clarification on Q&A's 2144 & 2157

28-Jan-2025

SG1

[<SG1>](#) 2144 - A Preload can be contacting the inside and/or outside of a Robot, but can't make the Robot exceed the size limits.

2157 - The Preload is not part of the Robot and does not have to be within the starting size limit.

The response to these Q&A's seem to contradict each other. These two responses specifically addressed the height limitation. Which is the correct application of the rule? Also, if the ball is placed outside of but in contact with the robot, must the ball be fully contained within the starting zone the robot begins the match in?

Answered by committee

[Q&A 2144](#) states that the Preload Ball cannot be positioned in such a way that makes the Robot exceed the starting size limit.

[Q&A 2157](#) states that the Preload Ball is not part of the Robot, so the Preload Ball does not have to be within the Robot starting size limit.

The logic is consistent. The Robot always has to start the Match within the starting size limit. The Preload Ball is not considered part of the Robot, so the Preload Ball does not have to fit within the Robot starting size limit.

2527: Preload Zone Requirements

12-Feb-2025

SG1

In a teamwork or skills match is there a portion of the preload ball that is required to be within the same starting zone as a robot or is the only requirement that the preload ball be touching the robot which is legally in the zone? Trying to understand is there a requirement for preloads similar to Q&A 2192 which is referencing rapid loads where it requires a portion of the ball to still touch that zone.

Example 1: If the robot was all the way against the edge of the zone 1, touching the preload ball that was sitting majority in zone 2 and barely crossing the vertical plane and not touching zone 1, is this legal?

Example 2: If the robot is in zone 1, holding the ball in the air but majority of the ball is in zone 2 in the air, is this legal?

Q&A 2473 tries to ask a similar question but the answer only references the ball is not required to be in the size limit, but does not reference zone. I am asking again because we have seen Refs interpret this differently and do not think SG1 Answers this.

Answered by committee

The only requirements for a Preload Ball's position at the start of the Match comes from the definition in the Game-Specific Definitions in Section 2 of the game manual, "Preload – A Ball that is placed in contact with a Robot prior to a Match. See [<SG1>](#)" and clause C of rule [<SG1>](#) that says a Robot can only be contacting one Preload.

There is no requirement that a Preload be in a specific Starting Zone, or in a single Starting Zone. If each Robot is contacting exactly one Preload at the start of the Match, all requirements have been met.

2567: Alliance Starting Positions - Opposite Sides Required?

24-Feb-2025

SG1

According to <SG1> in the VEX IQ Game Manual, it outlines the pre-match setup requirements, including:

- a. Satisfying starting zone constraints.
- b. Contacting the field perimeter wall.
- c. Contacting a preload.
- d. Being stationary.
- e. Not occupying the same starting zone as the alliance partner. <SG1> does not explicitly state that alliance robots must start on opposite sides of the field.

Therefore, is it legal for alliance robots to start on the same side of the field, provided:

One robot starts in Starting Zone 1 and the other in Starting Zone 2. Both robots meet all other requirements of <SG1> (preload contact, wall contact, etc.)? [<SG1>](#)

Additionally, at two recent tournaments, the head referees required teams to set up their robots on opposite sides of the field. This interpretation, while enforced, appears to contradict the literal wording of <SG1>. We are seeking official clarification to ensure consistent application of the rules. Hopefully we can have clarification prior to our regional tournament

Answered by committee

There is no rule requiring the two Robots to start the Match contacting the Field Perimeter wall on opposing sides of the Field. Therefore, it is legal for both Robots to start the Match contacting the Field Perimeter wall on the same side of the Field, assuming all requirements of rule [<SG1>](#) are met by both Robots.

2268: Robot expansion direction

7-Nov-2024

SG2

[<SG2>](#)

Is following expansion/contraction sequence during a match considered valid?

1. Robot expands horizontally along X-axis such that robot satisfies dimensions of 732315
2. Robot contracts the x-axis expansion
3. Now robot expands horizontally along Y-axis such that robot satisfies dimensions of 237315

Basically can robot expand along 2 horizontal dimensions separately during a match such that each expansion is limited to one dimension only at a time?

Answered by committee

The expansion/contraction sequence you have described is legal. As long as the robot size never exceeds 23"x73"x15" or 73"x23"x15", then the robot is not in violation of [<SG2>](#). The x and y values are effectively interchangeable if at every point in the Match the Robot could fit inside a hypothetical sizing box.

2287: Touching the outer field wall during a match

11-Nov-2024

SG2

Is it legal to touch the outer field wall with the robot during a match?<SG2>

Answered by committee

If the Robot meets all of the criteria of rule <SG1> at the beginning of a Match (and after any robot resets) and does not pose a safety risk as described in rule <S1>, there are no rules that prohibit a Robot from contacting the Field Perimeter or extending above or beyond the Field Perimeter during a Match.

2436: Problem with Vex IQ Herobot "Swish" height

14-Jan-2025

SG2

<SG2> I am a head referee and have a question regarding the 2024-2025 Vex IQ Herobot, "Swish." I observed twice in a tournament I refereed that it is possible for a ball to get stuck between the top edge of the catapult and the underside of the intake, which pivots. If a ball is taken in by the intake, but doesn't line up properly and isn't centered as it enters the robot, it can get stuck on the side between the intake and the catapult. When the catapult fires, the robot can get jammed by the stuck ball and the intake can swing all the way up. When this happens, the height of the robot can reach about 17". Rule SG2 states "the 15" height limit is a "virtual ceiling," meaning that no part of the Robot may exceed 15" above the floor, regardless of robot orientation." Because this happened with the Vex IQ recommended Herobot, I did not disqualify the two teams that this happened to. I figured this was an oversight that may not have been thought of when this robot was designed. However, I will be serving as a referee for another couple of meets and should have a full understanding of this rule as it applies to the "Swish" robot if this were to happen again. If this were to happen during a meet, should the team technically be disqualified from the match and/or meet unless this is fixed? When judges inspect this robot, they often may not anticipate this scenario. If this were to happen to another type of robot, I would have to disqualify the robot until the problem is rectified so this loophole in the build of "Swish" needs clarification if this common problem occurs. Can you please clarify this rule relative to this robot? Thank you.

<SG2>

Answered by committee

We would generally consider the scenario you describe, in which a Robot (of any design) becomes inoperable when a Ball is stuck in an undesired location, a valid reason for a Team to handle and reset their Robot as described in rule <G10>. A Team in this scenario is, by definition, struggling and should generally not be penalized for something having gone wrong. If the Team can fix the Robot during a reset, and return it to a legal height, no penalty should be assessed if no points were scored while the Robot was too tall.

Any Robot can break or malfunction in a way that would cause them to unintentionally and non-strategically Violation rule <SG2>. This possibility should never prevent a Robot from passing inspection if the Robot meets the requirements of all Robot rules.

If a Robot scores points in a Match while in Violation of rule <SG2>--either intentionally or accidentally--the Team should receive a Disqualification from that Match due to the Score Affecting Violation. The Robot should be reinspected before its next Match to ensure it meets the requirements of all Robot rules.

2014: SG4 and AG5: Can one Robot possess both balls?

16-May-2024

SG4

<SG4>

<SG5>

Rule SG4 a. Just states "No more than two (2) Balls may be in play at any one time" I cannot find any limits to possession by one robot.

Answered by committee

There are no rules preventing this, therefore it is legal.

2032: Clarification on Ball Transfer Between Loaders During a Match

9-Jun-2024

SG4

In a regular match with two loaders, is it legal for one loader to retrieve balls from the pickup zone and then throw them to the other loader in the loading zone to reintroduce them back into the field? We could not find any rules in the game manual that prohibit this action.

Answered by committee

Currently, there are no rules that prohibit throwing Balls from one Loader to another in a safe and controlled manner. Rules [<S1>](#) and [<G3>](#) apply. As we progress through the season we will monitor feedback regarding thrown Balls, and we may re-evaluate this topic if it proves to be unsafe or undesirable.

2052: <SG4d> - Additional Clarification on Robots in Loading Zone

28-Jun-2024

SG4

This question re-presents unanswered questions that I had added to [QA-2035](#) after the release of v1.0 of the Game Manual, but before that question was marked as answered.

[<SG4d>](#) reads:

No Robot(s) may be in the Load Zone at the time the Ball is released by the Loader.

In the v1.0 update to the Game Manual the image in Figure SG-4 now shows a Ball that is far enough into the Loading Station that it is unlikely the Loader has *just* stopped contacting the Ball. This seems to clearly indicate that the Loader releasing contact with the Ball is not the condition referred to by <SG4d>, which is a helpful clarification. The prior image showed a Ball on the Floor of the Field completely within the Loading Zone, but not contacting the Loading Station. This still leaves a significant gray area in the rule.

Is it legal for Robots to be in the Loading Zone when...

1. ...the Loader stops contacting the Ball, it is still contacting the Loading Station, but has not yet contacted the Floor of the Loading Zone? (This is at least strongly implied to be **NO** by the 1.0 update, but explicit clarification would definitely be appreciated)
2. ...the Ball has proceeded through the Loading Station, and is contacting the Floor of the Loading Zone, but is also still (or again) in contact with the Loading Station?
3. ...the Ball is in contact with the Floor of the Loading Zone (after being properly Loaded through the Loading Station), but not in contact with the Loading Station?

Additionally, if the answer to item 2 above is Yes, for the purposes of the Violation Note reading...

Robot contact with the Loading Station while a Ball is being Loaded is considered an egregious Violation of point D for the Robot's Team, and is an exception to all previous notes. Repeated occurrences by the same Robot, even if not Score Affecting, may escalate to a Major Violation for that Robot's Team at the Head Referee's discretion.

...would incidental contact with the Loading Station by a Robot retrieving the Ball be legal (subject to [<G7>](#))?

In other words, would it be correct to say that a Ball is considered as "*being* Loaded" from the time a Loader stops contacting the Ball (in accordance with [<SG4c>](#)) until the time it touches the Floor of the Loading Zone, at which point it should be considered as "*having been* Loaded"?

Answered by committee

Is it legal for Robots to be in the Loading Zone when...

1. ...the Loader stops contacting the Ball, it is still contacting the Loading Station, but has not yet contacted the Floor of the Loading Zone?
2. ...the Ball has proceeded through the Loading Station, and is contacting the Floor of the Loading Zone, but is also still (or again) in contact with the Loading Station?
3. ...the Ball is in contact with the Floor of the Loading Zone (after being properly Loaded through the Loading Station), but not in contact with the Loading Station?

The answer to all three is "Yes." If the human Loader is no longer contacting a Ball that is being (or has been) Loaded, it is legal for a Robot to enter the Load Zone.

A Ball is considered as "*being* Loaded" while it is in contact with a human Loader.

2168: Loaders Hand in the Volume of the Loading Station

1-Oct-2024

SG4

[<SG4>](#)

SG.4.C States: "c. The Loader's hand may not cross into the volume of the Loading Station at any time. And the loading station is in the loading zone and the load zone is described as "An area of the Field containing the Loading Station, bound by the Field Perimeter and the inside of the second solid black line from the edge of the Field (marked by two yellow VEX IQ beams). The Load Zone is an infinitely tall 3-dimensional volume; "reaching over" the black line without contacting the Floor would still constitute being partially in the Load Zone."

Our students and coaches and head ref are interpreting this as the loader must load the ball without breaking the plane of the load zone. (Roll it or toss it in from completely outside the field wall).
Is that correct?

We are seeing many tournament feeds where loaders have their hands clearly in the volume of the loading station. So we want clarification on the ruling. Thanks,

Answered by committee

The Loader's hand may not cross into the volume of the Loading Station, which is the structure built out of IQ parts. The Loader's hand can break the plane of the Load Zone, allowing Loaders to reach out and drop the Ball into the Loading Station.

2291: 3rd Ball accidentally being added to the field

12-Nov-2024

SG4

The question I have is what happens if a 3rd ball ever enters the field of play during a teamwork match or skills match. I have had some discussion with coaches about this rule to make sure to give our teams the correct guidance on how to approach the issue. The rule reads:

[<SG4>](#)

a. No more than two (2) Balls may be in play at any one time (i.e., the next Ball should not be Loaded until a previous Ball is either scored or leaves the Field).

1. If the loader didn't catch the ball while it was tossed to them from another loader and the 3rd ball fall onto the field during a match?
2. If the loader drops the ball early before checking the ball has made it through the goal?
3. If the loader doesn't see a ball because it is inside a robot

I've heard some teams say that if a third ball ends up on the field it is an automatic disqualification because the rules states (NO MORE THAN TWO)

My students and I have interpreted the rule as the 3rd ball was improperly introduced and:

From SG4 E and F point this out:

e. If a Ball is introduced improperly through the Loading Station, the Head Referee will verbally notify the Loader as soon as possible (e.g., "your hand crossed, load that one again"). The Ball must then be removed from the Load Zone by a Loader before it is retrieved by a Robot and legally Loaded again.

f. If a Ball is introduced improperly outside of the Loading Station (e.g., into the middle of the Field prior to the Rapid Load Period), the Ball must be retrieved by a referee and handed to a Loader.

By adding a third ball does nothing for score affecting or anything else I can find in the rules about being a major violation and causing a team to receive a disqualification.

Answered by committee

If a Ball is introduced improperly through either the Loading Station (rule [<SG4>](#)) or as a Rapid Load Ball (rule [<SG5>](#)), it should be removed from the Field and reintroduced by a Loader.

As described in the Violation notes for [<SG4>](#), "Most Violations which are not Score Affecting (i.e., where a Robot never retrieves the illegally Loaded Ball) are considered Minor Violations, even after repeated occurrences. The primary penalty is intended to be the Match time that is lost from retrieving and re-introducing the Ball." If a Ball is mis-loaded through the Loading Station or before the Rapid Load Period and is then Scored through a Target or used to Clear a Switch, the Violation becomes Score Affecting and should result in a Disqualification for that Match.

As described in the Violation notes for [<SG5>](#), "It is expected that most Violations of this rule will be accidental. In accidental cases that end up being Score Affecting (i.e., an illegally-Loaded Ball scores a Goal), the first occurrence during a Qualification Match may be treated as a Minor Violation and a "final warning" for any future Violations." This allowance only applies to Balls introduced as Rapid Loads during a Rapid Load Period.

2294: SC4 - Switch cleared by ball, but ball fails to go into the goal - Disqualification

13-Nov-2024

SG4

[<SC4>](#)[<SC4>](#)

This has come up in a discussion with other local coaches.

If a ball is launched and the ball causes the switch to be cleared, but the ball itself doesn't go into the goal, is this a disqualifying event? Would it disqualify the team for the match if it happens twice or more times?

Again, the robot is not touching the switch. The ball is launched, hits the switch, the switch clears, but the ball doesn't go into the goal: Is this a violation and would it result in a disqualification?

Thank you!

Answered by committee

As described in the blue box for rule [<SC4>](#), which was revised in the October 8 game manual update:

Sometimes a Switch gets Cleared without scoring a Ball through the Target, or a Ball is Scored through a Target but the Switch is not Cleared. That's okay. Switches must be Cleared as part of normal gameplay, and by Balls, not Robots or humans. Beyond that, there are no restrictions on what type of Robot action, mechanism, strategy, or technique is used to Score Balls and Clear Switches.

The scenarios you describe do not violate any rules, and the Switches should be recorded as Cleared if they remain Cleared at the end of the Match.

2316: A new idea on the basis of < SG4>2.1

20-Nov-2024

SG4

[<SG4>](#) According to SG4 and Q&A 2052,

d. No Robot(s) may be in the Load Zone at the time the Ball is released by the Loader. 2052 - If the human Loader is no longer contacting a Ball that is being (or has been)Loaded, it is legal for a Robot to enter the Load Zone

it means that as soon as human loader opens his/her hands, Robot can go into Load Zone and load the ball. However, some umpires think that base on Figure SG-4, Robot has to wait untill the ball go on the field.

Our team want to design a new Robot to achieve the following target: Robot waits near by the Load Zone. As soon as human loader open his/her hands, the driver controls the Robot, and the robot goes into the Load Zone and gets the ball, before the ball touch the field.

Is this idea legal?

Answered by committee

Because there may be Loading methods in which a human Loader "opens their hands" but is still in contact with the Ball, we cannot agree with your rephrasing of our ruling from [Q&A 2052](#).

If the human Loader is still in contact with the Ball, the Robot cannot legally enter the Load Zone. Any strategy, including the one you've described, in which the Robot remains outside of the Load Zone until the human Loader has released the Ball is likely to be legal.

2351: Clarification on <SG4> Point D Regarding Ball Release in Loading Station

6-Dec-2024

SG4

<SG4>

Dear VEX IQ Team,

I am writing to seek clarification regarding rule <SG4>, specifically point D, which states: "No Robot(s) may be in the Load Zone at the time the Ball is released by the Loader."

I would like to confirm the interpretation of the phrase "the time the Ball is released by the Loader." Does this refer to the moment the Ball leaves the Loader's hand, or the moment the Ball makes contact with the Field?

This distinction is crucial for understanding gameplay. Allowing robots to enter the Load Zone as soon as the Ball leaves the Loader's hand significantly impacts the competition's challenge and fairness. For example, it reduces the unpredictability and skill required for robot design and operation, as robots can pick up balls in predictable patterns mid-air before they land. This may lead to less diversity in robot designs and strategies, diminishing the overall excitement and competitiveness of the event.

At the same time, the note in Q&A2052 contradicts the entire <SG4> clause, and even more so the picture and explanation: "Figure SG-4: This Robot is breaking the plane of the Loading Zone while the Ball is being entered. This Ball would need to be removed from the Loading Zone, and legally reintroduced."

In some matches, I have observed teams allowing robots to enter the Load Zone as soon as the Ball leaves the Loader's hand (example in these videos: <https://github.com/Aaron-Man/VEX-IQ/tree/32ec5530340f4e3b4474c72f89ac113db26b80ee/Game%20Rules>).

In addition, I would like to understand how this rule aligns with rule 2052, which states: "If the human Loader is no longer contacting a Ball that is being (or has been) Loaded, it is legal for a Robot to enter the Load Zone."

These two statements seem contradictory. For example:

1. If the Loader has released the Ball but the Ball is still in the process of being Loaded (e.g., in mid-air or rolling toward the Field), does this mean the Robot can legally enter the Load Zone?
2. In Violation Note under <SG4>, it is mentioned: "Robot contact with the Loading Station while a Ball is being Loaded is considered an egregious Violation of point D for the Robot's Team, and is an exception to all previous notes. Repeated occurrences by the same Robot, even if not Score Affecting, may escalate to a Major Violation for that Robot's Team at the Head Referee's discretion."
3. Figure SG-4 in the Game Manual suggests that even if the Loader has released the Ball but the Ball has not yet fully entered the Field (e.g., still inside the Ball chute), this would result in a Violation. It further states: "This Robot is breaking the plane of the Loading Zone while the Ball is being entered. This Ball would need to be removed from the Loading Zone and legally reintroduced."

Given these scenarios, I am seeking clarification on the following:

1. When precisely is it legal for a Robot to enter the Load Zone after a Ball is released by the Loader?
2. How should the rules be interpreted to ensure consistency in enforcement across all competitions?
3. Considering the importance of fairness and maintaining the competitive spirit of the game, is there any consideration for refining these rules to enhance the clarity and challenge of the event?

Thank you for addressing these questions. I look forward to your guidance and clarification to help ensure the integrity and excitement of the competition.

Answered by committee

I would like to confirm the interpretation of the phrase "the time the Ball is released by the Loader." Does this refer to the moment the Ball leaves the Loader's hand, or the moment the Ball makes contact with the Field?

This refers to the moment the Ball leaves the Loader's hand and is no longer in contact with the human Loader. [Q&A 2052](#) asks the same question, and provides several specific examples of legal interactions with Loaded Balls that are

no longer in contact with the human Loader.

Figure SG-4 will be replaced in the next game manual update to show that the Ball is still in contact with the human Loader's hand.

Considering the importance of fairness and maintaining the competitive spirit of the game, is there any consideration for refining these rules to enhance the clarity and challenge of the event?

Please review the [Q&A Usage Guidelines](#), specifically note 1, "The Q&A system is for rules clarifications only." Put more pointedly: the Q&A platform is intended to be a communication channel for questions such as "is this interpretation of a rule legal", not a discussion forum for questions such as "I disagree with this rule, can it be changed?" For suggestions or concerns outside of specific and official rules questions, please use the official [VEX Forum](#) or email GDC@vex.com.

2428: Excessive force when match loading

11-Jan-2025

SG4

[<SC4><SG4><SG4>](#)

When placing a ball into the loader, the intent is for the ball to be able to randomly move right and left. If a loader instead of placing a ball into the loader, throws the ball into the loader with the intent to influence the random nature of the output, would this be a violation of SG4? Or with the nature of the VEX IQ piston, would this be considered a violation of S1 in which this will, and did, break the piston in the loader by this process being repeated?

Answered by committee

Provided the human Loader meets all requirements of rule [<SG4>](#), there is no rule against Loaders attempting to influence the Ball to exit the Loading Station in a particular direction.

However, if excessive force causes damage to the Loading Station, another Field Element, or a Ball, the Team should receive a Major [<S1>](#) Violation and a Disqualification from the Match. The human Loader should not be allowed to continue using excessive force--during the current **and** any future Matches--while Loading after causing damage.

2452: Waiting to deliver balls into the Loading Station

21-Jan-2025

SG4

According to rule SG4d, which states that "No Robot(s) may be in the Load Zone at the time the Ball is released by the loader," I would like to ask a question. If another robot is interacting with and trying to pick up one ball in the Load Zone, does the Human Loader have to wait for this robot to complete interacting with the ball and get out of the Load Zone before the second ball is dropped into the Loading Station during a qualification or finals match? If waiting is required and one robot is taking a considerable amount of time to interact with the ball and leave the Load Zone, this will prevent a second ball from being reintroduced back into the field after any scoring with the target happens, delaying the second robot from being able to do anything. For judging purposes, am I interpreting this correctly that the Human Loader will have to wait to place the ball into the Loading Station until the first robot is completely out of the Load Zone, even if it was interacting with another ball? Enforcement of this may mean if it takes a while for one robot to finish an interaction with a ball and get out of the Load Zone, there could be a period of time during which only one ball is actually legal to be in the field during this time, if my interpretation of this rule is correct. Thank you.

Answered by committee

As described in clause D of rule [<SG4>](#):

No Robot(s) may be in the Load Zone at the time the Ball is released by the Loader.

If a Robot is in the Load Zone (for any reason), a Ball cannot be legally Loaded through the Loading Station. There are no exceptions to this requirement.

To legally Load a Ball through the Loading Station, all Robots in the Load Zone must be fully removed from the Load Zone by driving out or—in the case of a stuck, tipped over, damaged, or otherwise inoperable Robot—through a Robot reset as allowed by rule [<G10>](#).

2458: Stuck ball in the loading station.

24-Jan-2025

SG4

At a recent competition, the ball being introduced by the loader into the loading station became stuck within the loading station and didn't exit from the randomizer and floor. The loader is not allowed to put their hands in the volume of the loading station when loading, so the loader sat their looking at the referee who had no clue what to do either. After a few seconds the referee told the loader to pull it out and reload. Can this be clarified for what (and who) is allowed in this situation?

Two side notes: First, the referee is standing behind the goal in order to watch for balls getting stuck in the goal, that expecting a referee to try to run around to the loading station to get it would take a good 5+ seconds.

The second comment which i think is called out already, is if a ball becomes stuck in a loading station, it is likely due to a build error, which it was in this case and fixed after the match. Should this type of build error qualify for a match replay if discovered after the match but before teams scores are agreed on?

Answered by committee

If a Ball becomes stuck in the Loading Station, the Drive Team Members should notify the Head Referee. The Head Referee should then allow the Loader to remove the stuck Ball from the Loading Station, at which point the Ball can be legally Loaded back into the field.

As always, Match replays are at the discretion of the Event Partner and Head Referee. A Ball becoming stuck in an improperly built Loading Station for a period of time could reasonably be considered a Score Affecting field fault, which could warrant a match replay under clause A of rule [<T7>](#).

2484: Can a robot extend over the front of the Loading Station

30-Jan-2025

SG4

[<SG4>](#)

As long as the robot doesn't break the plane of the load zone prior to the ball being released, can a robot extract the ball from the loading station before it is 'randomized' into the load zone.

For example, is this legal? https://youtu.be/SNF6m3-aY_U?si=ibUy6luElcfCgLL5A

Answered by committee

There is no rule prohibiting a Robot from making contact with a Ball in the Loading Station before the Ball is "randomized" by falling left or right onto the Floor.

[<SG4>](#) clause D simply states, "No Robot(s) may be in the Load Zone at the time the Ball is released by the Loader."

2542: How can a team rectify an SG4 violation?

16-Feb-2025

SG4

During a recent competition, a question came up that we couldn't answer. If a ball is improperly loaded, following rule SG4, it states in part e: "The Ball must then be removed from the Load Zone by a Loader before it is retrieved by a Robot and legally Loaded again.". The question came up of what should be the recommended course of action if it is retrieved by a robot. From our understanding, if the ball is scored in anyway (a goal or a pass), that is score affecting, then the team or teams involved should be disqualified. But, what if it isn't. Can the team rectify the situation?

- A. Can the team remove the ball from their robot? Would that require a full robot reset?
- B. Can the team's robot remove it from itself? By shooting it out or by unloading it? Can the loader then retrieve the ball from the field and have it remain a minor violation?
- C. What if the robot shot it outside of the field? Can the loader retrieve it then?

In all three cases, it is assumed the offending ball was not scored in any way.

Answered by committee

The Team could use any of the methods you describe to remove the incorrectly-Loaded Ball from play before it is Passed or used to score a Goal. If the Ball is removed from play before it is used for a Score Affecting action, the Team should only receive a Minor Violation.

If the Ball is directly removed from a Robot by a Drive Team Member, it must be as part of a full Robot reset as described in rules [<G10>](#) and [<RSC8>](#).

2572: SG4 Complications for finals

24-Feb-2025

SG4

How are we handling illegally loaded balls in the finals matches.

SG4 Says that it is head ref discretion. So I guess my question is: How can all of the head refs be consistent in the finals with Disqualifications and calls for things such as starting early, switching late, and illegally loaded balls.

Answered by committee

Balls that are Loaded improperly through the Loading Station are handled as described in clauses E & F of rule [<SG4>](#), regardless of the type of Match.

Balls that are Rapid Loaded improperly are handled as described in clause G of rule [<SG5>](#), regardless of the type of Match. As described in the 2nd Violation Note for [<SG5>](#), all Score Affecting Violations of [<SG5>](#) in Finals Matches and repeated Score Affecting Violations in Qualification Matches are treated as Major Violations.

As to consistency of calls, the blue box following rule [<T1>](#) describes the intent of rules that may require Head Referee judgment. In short, when judgment is required there is no "right" ruling beyond the one made by the Head Referee.

2579: Ball Loading Through the Load Station

26-Feb-2025

SG4

Once a ball legally enters the loading station and passes through it does the robot have to retrieve ball from the load zone itself, or can it be loaded in a way that bypasses the load zone and enters the field directly -similar to a spin entry? According to the Q&A, the ball does not need to make contact with the load zone floor [<SG4>](#)

Answered by committee

We're not certain that we're understanding your question, but we believe that our answer to [Q&A 2428](#) applies here as well.

Provided the human Loader meets all requirements of [<SG4>](#) and causes no damage to the Loading Station, Ball, or other Field Element, there is no rule against Loaders attempting to influence how the Ball exits the Loading Station.

2050: Rapid Load Period

27-Jun-2024

SG5

If you load a ball through the Loading Station during the Rapid Load Period, are you still eligible to score points by passing with the ball the ball that was loaded through the Loading Station?

Answered by committee

Yes.

2208: Rapid load question - Team alliance

21-Oct-2024

SG5

[<SG5>](#)

There is a [previous question](#) which discusses that during last 15 seconds (Rapid load) of an alliance matches team can choose to use the loading station instead of starting zones, can the team then pass the balls to get the passing points instead of gaining 1 point per goal?

Let's say team has knocked off 4 switches and in the last 15 seconds of rapid load time loading station is used. Each ball can be passed and then scored to get 12 points per goal instead of 1 point per goal?

Please also point out any rule that is covering this scenario?

Answered by committee

Once the Rapid Load Period begins, Teams may choose to Load Balls via the Loading Station (making them eligible to count for Passes) or via Rapid Loading directly into a Starting Zone (not eligible for Passes). Teams may freely

switch between the two Loading methods during this period.

[<SG5>](#) states (bold added here for emphasis):

Loading during the Rapid Load Period. During the last fifteen (15) seconds of the Match, Loaders have the **option** to introduce Balls directly onto the Starting Zone (i.e., without using the Loading Station).

2367: Rapid loading clarification

9-Dec-2024

SG5

[<SG5>](#)

Dear VEX IQ, Due to the rule SG5 d, the rapid load ball can only be remove from the loading zone by the robot. Here is some situation:

1. The ball is placed by the loader, and a rolling roller intake the ball.
2. The ball is placed by the loader, a one way gate go through it, and pull back the ball which let the ball roll toward the robot itself
3. The ball is roll by the loader, but it touch some part of the robot that is not moving, for example a plastic sheet and leave the load zone
4. The ball is roll by the loader, but it touch some part of the robot that is not moving but can be move, for example a roller unconnecting to the motor and leave the load zone
5. The ball is roll by the loader, but it touch some part of the robot that is moving(connecting to the motor) and leave the load zone

Please clarify the situation above

Thank you, by 5491M

Answered by committee

Note: As of the January 28, 2025, game manual update, Rapid Load Balls cannot be rolled or bounced, and must be placed in stationary positions. Portions of this answer no longer apply.

The final decision of whether a specific Robot and mechanism meets the requirements of rule [<SG5>](#) must be made by the Head Referee at the event. Some factors that can help Head Referees make this decision are:

- Would the Rapid Load Ball still be removed from the Starting Zone if the Robot wasn't turned on? If the answer is yes, then that motor-driven, moving Robot part is not much different from a passive mechanism and is probably not removing Balls from the Starting Zone. Even when that part is moving, the Ball is being removed due to some other action, such as being rolled by the Loader, which would be a Violation of [<SG5>](#).
- Could the Robot obtain the Rapid Load if it was put in a stationary position by a Loader? If rolling or some other motion caused by a human Loader is required for the Robot to obtain the Ball, that Ball is probably not being removed by a Robot action, and it's a Violation of [<SG5>](#).

To address your examples:

1. A motor-driven, moving roller intake could be considered a Robot action. Removing a Rapid Load Ball from the Starting Zone with a moving roller intake would generally not be a Violation of [<SG5>](#).
2. We're not 100% certain what is being described in this example. A Robot that retracts a mechanism to grab the Ball or drives with the Ball in its control could be considered a Robot action. Removing a Rapid Load Ball from the Starting Zone via one of these methods would generally not be a Violation of [<SG5>](#).
3. Contacting a Ball with a passive part of a Robot does *not* qualify as a Robot action. Removing a Rapid Load Ball from the Starting Zone via means other than a Robot action would result in a Violation of [<SG5>](#).
4. Contacting a Ball with a passive roller on a Robot does *not* qualify as a Robot action. Removing a Rapid Load Ball from the Starting Zone via means other than a Robot action would result in a Violation of [<SG5>](#).

5. A motor-driven, moving part of the Robot could be considered a Robot action. Removing a Rapid Load Ball from the Starting Zone with a moving part of the Robot would generally not be a Violation of [<SG5>](#).

2450: Forcefully Rolling Balls Into Robot During Rapid-Loading

20-Jan-2025

SG5

[A video has started making the rounds that shows a team getting 484 points during a driving skills match and 532 points for autonomous. For "1016 skills points"](#)

The team's strategy relies on forcefully rolling the ball from starting zone 2 into the intake on the robot, which is positioned just at the edge of the starting zone 2.

This seems to violate [<SG5>](#)d:

Rapid Load Balls may only be removed from the Starting Zone by a Robot action (e.g., picked up by an intake, pushed by a moving Robot, etc.). Rapid Load Balls cannot be bounced or rolled out of that Starting Zone by a Loader).

The primary force removing the ball from the starting zone is the force applied by the loader, not the robot mechanism. If the robot was not present the ball would clearly be capable of travelling much further than the distance to the goal, and without the loader rolling the ball, the robot would have a much more difficult time removing the ball from the starting zone, if it would even be capable of doing so.

[Q&A 2367](#) states:

A motor-driven, moving part of the Robot could be considered a Robot action. Removing a Rapid Load Ball from the Starting Zone with a moving part of the Robot would generally not be a Violation of SG5.

But it's not clear in this video how much the motor is contributing to the removal of the ball vs the action of the loader.

[<SG5>](#) Note 2 seems to further indicate that this type of loading is not acceptable:

Note 2: Although it is not required, placing the Ball gently down onto the Field without any additional motion is highly recommended. Unorthodox strategies, such as "tossing" or "rolling" the Ball, will not receive any "benefit of the doubt" if the Head Referee cannot clearly confirm that all criteria have been met (especially clauses "B" and "D").

Is this method of loading allowed? As a head ref I would like to be able to make a fair and correct ruling if a team uses this strategy in one of my competitions.

Answered by committee

Note: As of the January 28, 2025, game manual update, Rapid Load Balls cannot be rolled or bounced, and must be placed in stationary positions. Parts of our original answer to this question no longer apply.

We believe the strategy you describe would not meet the guidance provided in our answer to [Q&A 2367](#) (the pertinent portion of that answer is included below), and should be considered a Score Affecting and/or intentional [<SG5>](#) Violation that results in a Disqualification for the Match.

From Q&A 2367: The final decision of whether a specific Robot and mechanism meets the requirements of rule [<SG5>](#) must be made by the Head Referee at the event. Some factors that can help Head Referees make this decision are:

- Would the Rapid Load Ball still be removed from the Starting Zone if the Robot wasn't turned on? If the answer is yes, then that motor-driven, moving Robot part is not much different from a passive mechanism and is probably not removing Balls from the Starting Zone. Even when that part is moving, the Ball is being removed due to some other action, such as being rolled by the Loader, which would be a Violation of [<SG5>](#).

- Could the Robot obtain the Rapid Load if it was put in a stationary position by a Loader? If rolling or some other motion caused by a human Loader is required for the Robot to obtain the Ball, that Ball is probably not being removed by a Robot action, and it's a Violation of <SG5>.

2457: Ball feeding

24-Jan-2025

SG5

There is lot of inconsistency observed regarding the ball feeding rule during several events we participated till now. In one of the event there were 3 fields and we found the inconsistency between the fields as well. To make sure that the rule is clear to all. we captured 3 videos in which we could feed the robot during autonomous or 2nd half of manual skill event. I have already seen the similar questions asked earlier but there was no video was shared.. since video will be very easy to explain I am attaching the videos here. Pls let me know which video method of feeding the robot is allowed?<SG5>

1. <https://drive.google.com/file/d/1inScGSUQzxIHN37YzURaMpy6BQsJeV9G/view?usp=drivesdk>
2. <https://drive.google.com/file/d/1VPIXPnWXvtacCDxdSRjVxsGmASwdGlv/view?usp=drivesdk>
3. <https://drive.google.com/file/d/1D2eyEmjFpWQe1U5zlrM6uL7NeGJq917M/view?usp=drivesdk>

Here is the another video reference of 71638 https://www.youtube.com/watch?v=WoO0y_FWusQ which is similar to (1) video case. This clarification is very important to all the teams as this impact the scoring the way drivers feed the robot.

Answered by committee

With the changes to <SG5> and Rapid Loading in the January 28, 2025, game manual update, only your 3rd example is legal. Rapid Load Balls must be placed by a Loader in a stationary position, and may not be rolled or bounced into a Robot.

2471: Loading Balls During Autonomous Programming

28-Jan-2025

SG5

Can I please get a clarification on the loading of the balls for autonomous programming?

Revised <SG5b>, <SG5d> and Note 2 of <SG5> to state that Rapid Load Balls must be placed by a Loader in a stationary position, and may not be rolled or bounced into a Robot

So according to this the balls cannot be rolled to the intake. So can the balls be placed directly in front of the intake by a human loader from outside the field in a continuous method for the robot to intake the balls and shoot from one position on the field?

<SG5>

Answered by committee

So can the balls be placed directly in front of the intake by a human loader from outside the field in a continuous method for the robot to intake the balls and shoot from one position on the field?

If Rapid Load Balls are introduced in a way that meets the requirements of all rules, including <SG5>, there are no guidelines for the speed at which Balls are introduced or how the Robot operates.

2478: Rapid Load in v3.0

29-Jan-2025

SG5

For the Rapid Load revision in 3.0 (SG5b, SG5d and SG5) - can you please confirm it applies to all gameplay? Alliance AND Skills (driver and autonomous) rapid loading? Thanks!

[<SG5>](#)

Answered by committee

As stated in [<RSC4>](#), "all criteria listed in [<SG4>](#) and [<SG5>](#) apply as written" to Skills Matches. Any modifications to Rapid Loading that are listed in [<RSC4>](#) apply only in Skills Matches.

This means that the revised [<SG5>](#) clauses requiring Rapid Load Balls be placed in a stationary position apply to both Teamwork and Skills Matches. Rapid Load Balls can no longer be rolled by the Loader in any Match type.

2501: Question regarding ball loading during rapid loading

4-Feb-2025

SG5

[<SG5>](#)

We have seen the video where loader forcefully roll the rapid loading ball into the robot which leads to above 1000 points in skills. We have also seen more gentler version of that on most of the competitions and online resources. especially, when the second ball is loaded into the robot. We understand all these loading is a violation of updated rule 3.0. But under time pressure, we are not quite sure what situation of the rapid loading ball after being loaded on the field by a loader would be considered as stationary especially giving the fact the rule acknowledges the ball could roll or move after the loader releases his/her hand from the ball. I don't have a good example, but attached is a video (starting from 17 seconds) which shows a reasonable loading into robot, the ball is primarily moved by the motor on the robot, is this loading skill would be considered as a violation under the updated rule 3.0?

<https://www.youtube.com/watch?v=TaaXSEce-QI>

Answered by committee

As described in the first note in rule [<SG5>](#):

Although it is not required, Robots are highly recommended to remain some distance away from the Ball entirely until the Loader's hand has clearly been removed. This will make clauses "B" and "C" abundantly clear to Head Referees, and help them to verify clauses "A" and "D".

While the final decision is up to the Head Referee, we feel that the Rapid Load method shown in this video does NOT meet the requirements of rule [<SG5>](#), and the Ball is being rolled into the Robot by the human Loader. Methods like this should result in a Score Affecting Violation and a Disqualification for the Match.

Loaders are advised to make it abundantly and visually obvious that they are not rolling or bouncing Rapid Load Balls, that the Ball is never in contact with both the Loader and Robot at the same time, and that the Ball is being removed from the Starting Zone by a Robot action.

2550: Question about rapid load with the long intake

18-Feb-2025

SG5

With the Game Manual update to version 3.0, rolling a ball during the rapid load process is no longer permitted. However, many teams continue to use the long intake rack for rapid loading. We would like clarification on the legality of the following scenario: If the robot remains stationary, places the ball down, and then uses the intake to collect the ball, does this violate SG5, which states that 'Balls may never be in contact with both a Robot and a human Loader at the same time'? Alternatively, should the robot move back and forth to ensure the ball does not simultaneously contact both the loader and the robot? For reference, in this video (<https://www.youtube.com/live/Aq0K4jyupWc?si=iaQdwdozdCGhbNCH>), at 58:24, a team performs a rapid load using the long intake while keeping the robot stationary. Is this considered a legal load? Additionally, at 1:59:04, another team moves the robot back and forth to load the ball, seemingly to comply with SG5. Could you clarify which method aligns with the current rules?

Answered by committee

If a Robot is not driving to the Ball or actuating some mechanism in order to reach the Ball each time a Ball is Rapid Loaded, then the Rapid Loading method is very likely violating either [<SG5>](#) clause B or C.

Consider a scenario involving a Robot using rubber bands for an intake roller. With a large enough intake roller and wide gaps between rubber bands, it is technically possible for a Ball to be legally Rapid Loaded (Ball is stationary, Ball never touches both Robot and Loader simultaneously, etc.) in the gaps between rubber bands as the intake roller spins, such that neither the Robot nor the Ball needs to move to achieve contact. In reality, this is highly unlikely given the size of the Ball, common sizes of rubber band roller intakes used by Teams, and the speed/precision required to make this Loading method legal.

It should be clear to the Head Referee that a Team's method of Rapid Loading does not violate [<SG5>](#). If the Head Referee doubts the legality of a Team's Rapid Loading method, that Team should not receive any benefit of the doubt when determining whether [<SG5>](#) violations have occurred.

2602: Loading within boundary of the robot

4-Mar-2025

SG5

Our robot has an empty area between two spinners, and we plan to rapid load a ball on the floor in this empty area, as soon as the autonomous match starts. We will make sure that the ball does not touch any parts of the robot when we load, and the ball will be picked up by the robot's intake. It does not seem to us that this violates any rules, but we want to double check this is legal.

Answered by committee

This strategy could be legal if the Team is careful to meet the requirements of all clauses of rule [<SG5>](#). Teams that use this strategy must accept the risk that it won't be abundantly clear (as described in the first Note following [<SG5>](#)) that they're meeting these requirements, and risk unfavorable judgment calls and related Minor and/or Major Violations and Disqualifications.

2256: Autonomous when Driving?

4-Nov-2024

SG6

Can a team code the robot to drive to a specific location during the Driving Challenge? For example, once the team collects the ball they click a button on the controller and it automatically drives to a set position on the field. I don't see an

appropriate tag for this question. Thank you all in advance.

Answered by committee

Yes. There is no rule against running autonomous programs during a Driver controlled period. For example, a Team could run a full Driving Skills Match using only an autonomous program with no Driver input if they chose to.

2298: Preparation for field variances

15-Nov-2024

T10

<T10> At a recent event, the fields were placed on risers made of inverted 5 gallon buckets with 1/2" particle board placed on them. Our team noticed one or more of the field's **Floor** was not level/dipped in the center. <T10>, in part, states "Field Element tolerances may vary from nominal by up to +/- 0.5" (25.4 mm) unless otherwise specified." In the case of the field floor not being level, over what distance is the tolerance allowed to be up to 0.5" off?

Answered by committee

The Field cannot be more than .5" from flat at any point and cannot have two heights that are more than 0.5" apart, across either the entire length or width of the field.

Two practical ways to assess this are:

1. Lay a yardstick or other similar object on its long edge on the field, and run it across all parts of the Floor in both directions. Gaps between the straight edge and the Floor at any point will highlight measurable spaces where the Floor is uneven.
2. Use a yardstick or measuring tape to check the distance between the Field and the floor of the venue at various points around the perimeter.

2302: Rapid relay ball tolerance and related match replays

16-Nov-2024

T7 T10

<T10> Section T10 of the game manual states that Field element tolerances (likely including the ball) can vary between +/- 0.5 inches ("Field Element tolerances may vary from nominal by up to ± 0.5 " [25.4mm], unless otherwise specified."), and it only specifies ball weight, so therefore the 0.5 inch rule likely applies to ball width/diameter. Suppose that an ball was outside of this tolerance. T7 states that match reruns may occur if "Field Elements detaching or moving beyond normal tolerances, not as a result of Robot interactions". If a match started with a ball outside this tolerance, and the head referee was notified in time, could a match rerun occur?



Answered by committee

The Rapid Relay Balls are manufactured to a +2, -13mm specification. Because they are soft and plush, actual dimensions may vary, and it is impossible to guarantee exact specifications/dimensions/tolerances in any given Match. Teams should be prepared for variance in Ball shape/size, and it is expected that Balls will change shape during the course of a Match and/or event. Event staff may periodically or at a Team's request attempt to re-shape the Balls, but are not required to do so.

Ball dimensions should not generally lead to a replay, except potentially in cases where the Ball is significantly damaged in a way that impacted game play.

2241: Marking of Balls (Revisited)

30-Oct-2024

T11

On May 17th a QA post was made about marking balls for identification for the scoring referees. On June 6th the GDC replied and stated that marking/decorating balls is not an approved modification but would later revisit the topic if needed.

<T11> now specifically mentions this QA post and outlines that ball decorations for identification are not permitted.

<https://events.vex.com/VIQRC/2024-2025/QA/2019>

Has the GDC reconsidered/revisited this stance since the posting? The volunteers at my events are older/retired individuals and have specifically asked if we could mark the balls so tracking them during passes would be easier for them. I unfortunately had to decline and say that under the current rules, this modification was not allowed.

Some teams also loan/borrow field elements to various events. In the past, these field elements sometimes have initials on the field elements written in permanent pen so that they can be returned to the correct school at the end of the event. Should these writings also not be allowed?

Answered by committee

Adding a small mark (for example, a Team number) to identify the team or organization that owns a Rapid Relay ball is permissible, but marking a Ball in a larger way to differentiate one Ball from another during Match play is still not permitted.

2124: No Show Pass Points

7-Sep-2024

T5

<T5>If one team in a teamwork event receives a "No Show", does the other team automatically get points for passes, like in a skills match?

Answered by committee

No. Rules and scoring do not change for a Teamwork Match in which one of the Teams is marked as a "No Show." Because there is only one Robot in the resulting Match, only Goals and Cleared Switches can receive points.

2443: Special Needs Team Member

16-Jan-2025

T5

<T5><T5><T5> One of my students would like to be a driver at an event, but his hands were not formed correctly at birth and his hands are too weak for him to stand up, hold the controller, and drive at the same time. In order to drive well, he needs to sit down to use his legs to support his hands. Is it allowable for him to sit down while driving? This question would also apply to a child confined to a wheelchair. The definition of "driver" states that the person "stands" in the driver station, while other rules such as T5, just state that the driver needs to be "present" in the driver's station.

Answered by committee

Thank you for your question. A variance like the one you're requesting can be obtained through a [Needs-based Special Accommodation as described in this article in the REC Library](#).

2094: Clarification on external impacts on matchplay and replays.

7-Aug-2024

T7

[<T7>](#)

Hello!

This morning we had an event and also experienced an earthquake in our state. Currently as per T7, the only grounds for a replay are

Score Affecting "Field fault" issues (Switches not being reset before the Match starts / Field Elements detaching or moving beyond normal tolerances not as a result of Robot interactions) Score Affecting Game Rule issues (A field is reset before the score is determined)

Our interesting experience this morning does raise the question: In the event of external forces such as minor earthquakes impacting scores and moving non-field elements out of tolerance (like a switch, which is meant to be scored/toggled) should a match be replayed?

Cheers,

Answered by committee

We're happy to point out that the list in [<T7>](#) only represents "some examples" (quoted from the game manual) that may warrant a replay.

In any situation where the Head Referee and the Event Partner agree that a replay is warranted, it's within their discretion to grant one "in the most extreme circumstances."

Non-gameplay issues like fire alarms---and earthquakes!---that have a negative impact on Matches could reasonably be called extreme circumstances, and replays would be entirely reasonable.