

Q&A

VRC 2022-2023: Spin Up

Tagged: G10

Welcome to the official VEX Robotics Competition Question & Answer system, where all registered teams have the opportunity to ask for official rules interpretations and clarifications. This Q&A system is the only source for official VRC Spin Up 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.

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Ball inside cube, both are "out of the field"

28-Jan-2020

G10 Scoring

A ball and a cube both leave the field as described in **G10** , with the ball coming to rest inside the cube. Going strictly by the definition of **scored** , the ball meets all conditions.

In <https://www.robotevents.com/VIQC/2019-2020/QA/308> the cube was considered scored because it met all conditions despite touching the actual floor outside of the field

In <https://www.robotevents.com/VIQC/2019-2020/QA/414> the cube that was "out of the field" was determined to be ineligible for gameplay.

Would the ball not be considered scored because the cube is "out of the field"?

Answered by committee

As noted in your linked Q&A 414, a Game Object which is "outside of the vertical projection of the Field Perimeter and no longer in contact with the Field, Field Elements, other Game Objects, or Robots", is now considered "out of the Field", and is ineligible for gameplay. "Ineligible for gameplay" is intended to encompass "ineligible for any Scoring".

No, the Ball would not be considered Scored.

Cube

15-Nov-2019

G10

How many cubes can a robot pick up at one time?

Answered by committee

There are no rules limiting the number of Cubes a Robot may pick up at one time.

Returning Game Elements Back to Field

9-Sep-2019

G10 G17

This year game elements that leave the field during the match are not returned to the field per rule <G10>.

If a robot is still holding onto a cube or ball but it touches the floor outside of the field can the team still bring this element back into the field as long as it never left contact with the robot?

Would a team be able to utilize <G17> to handle their robot and put the cube/ball back into play, or should this cube/ball be considered to have left the field?

Answered by committee

Would a team be able to utilize <G17> to handle their robot and put the cube/ball back into play, or should this cube/ball be considered to have left the field?

In the future, please quote the applicable rules from the Game Manual so that future visitors can have a better understanding of a question's context.

G10 states the following, with a portion bolded for emphasis:

<G10> Keep Game Objects in the Field. Game Objects that leave the Field during a Match will not be returned. "Leaving the Field" means that a Game Object is outside of the vertical projection of the Field Perimeter **and no longer in contact with** the Field, Field Elements, other Game Objects, or **Robots**.

G17 states the following, with a portion bolded for emphasis:

<G17> Handling the Robot mid-match is allowed under certain circumstances. If a Robot goes completely outside the playing Field, gets stuck, tips over, or otherwise requires assistance, the Team's Drivers may retrieve & reset the Robot. To do so, they must:

- a. Signal the Head Referee by placing their VEX IQ Controller on the ground.
- b. Move the Robot to any legal Starting Position.
- c. **Any Game Object being controlled by the Robot while being handled must be removed from the Robot and gently placed in a non-Scored position by the Team.**
- d. Any Game Objects in the Starting Position may be moved out of the Starting Position and gently placed into a non-Scored position by the Team.

This rule is intended so Teams can fix damaged Robots or help get their Robots "out of trouble." It is not intended for Teams to use as part of a strategy to gain an advantage during a Match, including via moving Game Objects per parts c and d above. If a Head Referee sees Teams strategically exploiting this rule, they may be Disqualified from said Match.

Per G10, as long as the Game Object was still in contact with a Robot, then it has not "left the field". Therefore, G17c can be utilized to return the Game Object to a non-Scored position.

Do teams have to put their controllers down at the end of a match?

5-Jul-2018

Tournament Structure Hanging G10

At the 2018 VIQC World Championships teams were asked to put their controllers down at the end of a match. In addition I believe it is common practice for refs to ask them to.

The definition of *match stop time* says that students put their controllers down to set their match stop time if they want to end early.

As far as I can see the manual never states that teams must put their controllers down at the end of a match. This would possibly allow a team to hold onto their controller and keep pressing a button to keep their robot high hanging.

Please could you clarify what teams can/must do with their controllers at the end of a match. I request a rule be added that requires teams to put the controllers down as they can use software to hold the robot up if they want to.

Answered by committee

The end of the match procedure is currently defined by G10:

<G10> When it's over, it's over. Scores will be calculated for all Matches immediately after the Match is complete and once all objects on the Field come to rest. Any Scoring, Removing, Parking, or Hanging that takes place after the Match due to Robots continuing to drive will not count.

The key words in this rule are "Robots continuing to drive". The intent of this rule is for all Driver inputs and all Robot motion to cease at T=0. Holding a button down to continue moving after a Match would be outside the intent of this rule. However, a Robot holding its position steady (i.e. the default Driver Control behavior) would be permissible.

We highly recommend that Drivers place their controllers on the ground, or otherwise let go of them, to make it perfectly clear to referees that they have stopped driving. However, it is not an explicit requirement of the rule. We will look at clarifying this further in the August manual update.

What if a robot continues lifting after the buzzer but the controller is down?

20-Jun-2018

Hanging G10

Let's say that a team has latched onto the bar and they can push a button to lift the robot autonomously. So the team pushes the button and sets the controller down with 1 second left. The robot earns a low hang at the time the buzzer rings, but continues to lift until the robot high hangs. Should the robot get credit for this as the team was not controlling it, or should the referee try to determine where the robot would be hanging if it had stopped with the buzzer?

Thanks!

Answered by committee

Please see G10, quoted here for reference:

<G10> When it's over, it's over. Scores will be calculated for all Matches immediately after the Match is complete and once all objects on the Field come to rest. Any Scoring, Removing, Parking, or Hanging that takes place after the Match due to Robots continuing to drive will not count.

Initiating an autonomous routine just before the timer hits zero that caused the Robot to continue moving would be considered Hanging after the Match, and would not count. In the case where a Robot does continue to move after the match, the referee should use their best judgment to determine if the Robot had made it to the High Hang point when the timer hit zero. If it is too close to call, then it should be considered a Low Hang.

Must drivers put controller down at the end of the match and do they lose a high hang if robot drops only because of putting controller down

11-Feb-2019

G10 Hanging

Hello,

At a recent match, another team was told they must put their controller down. Their robot was clearly high hanging. However, when releasing the button controlling the arm motors, it dropped. Only One point for parking was awarded. However, the rules state the scoring should occur immediately at the conclusion of the match after all components have come to rest. They were until being forced to drop their controller. Another rule says common sense should dictate enforcement of the rules. As it was ruled, both teams lost 3 points that was there when the match ended. It changed the placement of teams for Finals and resulted in a team earning a state spot that might not have otherwise. Followup question to be specific to Grant Cox's suggestion: Should the team have received a high hanging score?

Answered by committee

We believe that this general question is answered by [this similar Q&A post](#), and that your specific question is answered by this portion of that post:

The intent of this rule is for all Driver inputs and all Robot motion to cease at T=0. Holding a button down to continue moving after a Match would be outside the intent of this rule. However, a Robot holding its position steady (i.e. the default Driver Control behavior) would be permissible.

Thus, a Robot which can not High Hang without Driver inputs after T=0 should not receive points for High Hanging.

Accidentally Knocking Off Red Block

2-Nov-2023

G10 T8

According to the rules, a red block is considered scored if it is removed from the starting peg at the end of the match.

Removed – A red Block status. A red Block is considered Removed if it is no longer fully supported by a Starting Peg at the end of the Match.

What should be the result of a red block being accidentally knocked off the starting peg, either by a student interacting with their robot as allowed by [<G10>](#) or by bumping the edge of the field?

This should obviously be a DQ for the team that caused the red block to be removed. But based on [<QA1697>](#) it seems like the non-offending team should still get the points for the red block being removed. Is that the correct resolution?

Answered by committee

You are correct. If a Driver accidentally knocks a red Block off of its starting peg while interacting with the Robot or the Field, it should be handled as a Score Affecting Violation of rule [<G9>](#) and the Team should receive a Major Violation and Disqualification for the Match.

If the Disqualification occurs in a Qualifying Match, their Alliance Partner should receive the points for the red Block being removed. If the Disqualification occurs in a Finals Match, both Teams in the Alliance will be Disqualified as described in rule [<T8>](#).

Driving the Robot while one team member ("non-active driver") is outside of the Driver Station

1-Nov-2023

G8 G10 SG3

[<G10>](#)[<G8>](#)[<G10>](#) Allows for driver interaction with ("rescuing") the robot under certain circumstances. To do so, they must signal the Referee by placing their Vex IQ Controller on the ground. If the non-active driver is the one who leaves the Driver Station to "rescue" the robot, once the robot has been "rescued" and prior to the non-active driver returning to the Driver Station is the active driver allowed to pick up the Controller and start driving the robot? If not, when Blocks leave the field [<SG3>](#), if the non-driver leaves the Driver Station to place a block that has left the field into the Supply Zone, is the active driver allowed to continue to drive the robot?

Answered by committee

Thank you for your questions! Based on the requirements in rule [<G10>](#) the active Driver can resume driving once their Robot has been returned to a legal starting position, providing the Driver switch is correctly made as described in rule [<G11>](#).

The active Driver may continue operating the Robot while the non-active Driver returns a Block to the field. Rule [<G8>](#) will be revised in an upcoming game manual update to correctly reflect that Drivers may leave the Driver Station to return a Block to the Supply Zone as per rule [<SG3>](#).

Hanging robots

30-Nov-2018

Hanging G10

Some teams at one of my leagues are arguing that the Game Manual does not explicitly say that **Low Hanging** and **High Hanging** are scored **at the end of the match** the way **Low Scored** and **High Scored** do. They are claiming that they should get credit for hanging if they hang at the beginning of the match and then score hubs until the end of the match. The Referee Training Video Chapter 6 clearly states that referees score parking and hanging at the end of the match, but that video is not usually viewed by teams. My argument that referees can only check whether a robot is parked, low hanging or high hanging at the end of the match did not satisfy them. They are also not convinced that Rule G10 excludes their loophole. I ultimately relied on G10 in combination with the **object of the game** statement on page 3 to justify that referees only score robots hanging at the end of the match. It would help us put this issue to rest if you could provide a clarification that robots only score as **Low Hanging** and **High Hanging at the end of the match**.

Answered by committee

Let's look at the referenced portion of G10:

<G10> When it's over, it's over. Scores will be calculated for all Matches immediately after the Match is complete and once all Robots and Game Objects on the Field come to rest.

Then, a portion of the definition of Low Hanging (although this point will also apply to High Hanging, Parking, and all other forms of scoring):

Low Hanging – A Robot is Low Hanging if it is contacting the Hanging Bar, not contacting the Floor, and not Supported by any Hubs.

So - scores are calculated at the end of the Match, and Low Hanging has a very specific definition.

Thus, in order for a Robot to receive the points for Low Hanging, it must meet the definition of Low Hanging at the end of the Match.

Your interpretation was correct. Referees are not expected to remember if points have or have not accumulated during a Match, as points are not officially assigned until the Match is complete.

<G10> and the Vision Sensor

17-Feb-2023

G10

<G10> states: "During the Autonomous Period, Drive Team Members are not permitted to interact with the Robots in any way, directly or indirectly. This could include, but is not limited to: • Activating any controls on their V5 Controller(s) • Unplugging or otherwise manually interfering with the field connection in any way • Triggering sensors (including the Vision Sensor) in any way, even without touching them"

At our last competition during the autonomous period of a qualification match, someone on the drive team of the opposing alliance deliberately revealed a red shirt which triggered our vision sensor and caused our turret to aim at them and shoot them with a disc.

I have talked to some other people about this problem, and they think that <G10> only applies to a Drive Team that interacts with/triggers the sensors of their **own** robot. To me, the fact that "Drive Team Members" and "Robots" are plural

means that it doesn't matter who is interacting with what robot. Am I interpreting this rule correctly in that no Drive Team Member is allowed to trigger our vision sensor during the autonomous period, whether it's our own Drive Team or another Drive Team?

I hope I have explained this well. Thanks!

Answered by committee

As you quoted in your question, rule [<G10>](#) prohibits Drive Team Members from interacting with **the Robots** (emphasis added here), including triggering sensors. This rule refers to all Robots on the Field for a Match, regardless of their Team affiliation or Alliance.

Deliberately triggering a Vision Sensor during the Autonomous Period of a Match is a violation of rule [<G10>](#) and potentially [<G11>](#). If the Head Referee determines that triggering the Vision Sensor affected the outcome of the Autonomous Bonus, the Autonomous Bonus should be awarded to their opponent as described in [<G11>](#). If the Head Referee determines that the violation was Match Affecting, the Team should receive a Major Violation and a Disqualification for the Match.

Can the Vision sensor be used to sense a disc on the loader in Programming Skills?

31-Jan-2023

G10 SG6 RSC2

Can the vision sensor be used to sense whether a disc has been placed on the loader in programming skills?

Rule G10 states that:

[<G10>](#) Autonomous means "no humans." During the Autonomous Period, Drive Team Members are not permitted to interact with the Robots in any way, directly or indirectly. This could include, but is not limited to: Triggering sensors (including the Vision Sensor) in any way, even without touching them

And rule SG6a states:

Match Load Discs may only be introduced once the Driver Controlled Period has begun

But in the programming skills section, RSC2 Note allows the use of Match load discs during Programming, but also references SG6

Note: This rule applies to both Driving Skills Matches and Programming Skills Matches.

The Team may utilize fourteen (14) Match Load Discs, within the guidelines set forth by [<SG6>](#).

My team would like to sense, during Programming Skills, when the disc has been placed on the loader to then run part of their program that does not violate any other match load/robot interaction as per SG6. Is placing a disc on the loader "triggering the sensor", or is this acceptable use of the sensor during play (just like using the sensor to "see" discs on the field)?

Answered by committee

As you quoted in your question, rule [<G10>](#) prohibits Drive Team Members from interacting with the Robots during an Autonomous Period, including triggering sensors.

Placing a Disc on the Match Loader to trigger a sensor on the Robot is a violation of [<G10>](#) and is not allowed.

Non-attached parts

19-Jan-2023

G10

[<G10>](#)

Would it be OK if there was a part of the robot that was functional but not actually attached to the robot? It is contained within the bot and does not fall off, but it isn't attached to anything.

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 [<G10>](#).

Detachment?

20-Oct-2022

G10

Rule [<G10>](#) States.... Keep your Robot together. Robots may not intentionally detach parts or leave mechanisms on the Field during any Match. Parts that become unintentionally detached from the Robot are no longer considered to be part of the Robot and can be either left on the Field or collected by a Driver (utilizing [<G12>](#)).

If a part is still connected via Smart Cable is it considered detached? The part would remain attached to the body via Smart Cable to the brain. We're looking at options for expansions when in the expansion zone.

Answered by committee

Thank you for your question. Per rule [<G10>](#), Robots may not intentionally detach parts during a Match. This includes parts or mechanisms that remain connected to the Robot only by a Smart Cable. Using a Smart Cable as the means to "tether" a detached component to the Robot is not allowed.