

Q&A

VRC 2021-2022: Tipping Point

Tagged: SG5

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

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3066: Does preload pin count toward robot's starting dimensions?

31-Jan-2026

R5 SG1 SG5

I haven't seen it yet this season, but would like a pre-emptive clarification - are robots expected to be inspected with or without a preload pin? If without, can a preload pin legally extend beyond the starting dimensions 11x20x15"? For example, part of the pin sticking above 15" or outside of the 11x20 dimensions?

Answered by committee

The Preload does not have to fit within the starting volume required by clause A of [<SG1>](#).

However, the Robot must be fully contained within that starting size limit even with the Preload in or on the Robot. For example, if the Robot is within size before the Preload is added, but the Robot becomes out of size when the Preload is added, this is a violation of [<SG1>](#) and must be corrected before the Match can begin.

3039: SG1/SG4 - Preload Affecting Starting Size

16-Jan-2026

SG1 SG5

[<SG1>](#) and point a) state:

Prior to the start of each Match, the Robot must be placed such that it meets all of the following criteria: a.
No larger than 18" (457.2mm) long by 18" (457.2mm) wide by 18" (457.2mm) tall.

[<SG5>](#) states that each Robot gets one Block as a Preload.

Suppose a Team arrives at a Match with a Robot that fits within the 18" x 18" x 18" starting size, but then in the process of placing the Preload Block in their Robot, a mechanism on the robot expands outside the stated starting size of 18" x 18" x 18". Should the Head Referee begin the Match with the Robot in this configuration since it came to the field within the legal starting size but only expanded due to the Preload, or should the Team be asked to adjust the Preload so that it causes the Robot to get back inside the 18" x 18" x 18" box before starting the Match?

Thank you for your time!

Answered by committee

The Preload must be adjusted to ensure the robot does not exceed 18"x18"x18" in its starting configuration. The Preload itself does not need to be within the 18" cubic volume, but all parts of the Robot do.

3022: Scoring with Preload Instantly

7-Jan-2026

SG5

[<SG5>](#)

Hi,

Just wondering, if I am red, and have the red pre-load facing the red scoring zone, can I drop the preload on the red corner as soon as the game begins, and therefore get 11points within 1 second or so?

TIA

Answered by committee

There's no rule that dictates when you are allowed to place, stack, or drop Pins during the Match. You can place the Preload Pin into a Goal at the beginning of the Match, at the end, or anywhere in between.

Note, however, that a single Pin in a Goal (not part of a Stack) is worth 0 points.

3017: Starting with a Preload

5-Jan-2026

SG5

[<SG5>](#) When starting with a Preload, in teamwork, or skills challenges. Can the Preload be started in the air above the starting goal as long as all other starting requirements are met.

Example If using the hero bot Huey or other similar robot with a claw and lift. Can it start with the pin raised above the goal before the match begins.

Answered by committee

Yes, a Preload can start the Match in a position above the adjacent Triangle Goal if it meets all requirements of [<SG5>](#) and the Robot meets all requirements of [<SG1>](#).

2869: Must there be a pin loaded at start of the match?

23-Oct-2025

SG5

Must there be a pin pre-loaded at start of the match? [<SG5>](#)

Answered by committee

Every Robot in a Match must begin the Match in contact with a Preload Pin as described in rule [<SG5>](#).

2602: Loading within boundary of the robot

4-Mar-2025

SG5

Our robot has an empty area between two spinners, and we plan to rapidly 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.

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.

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.

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.

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.

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/1VPIXpNWxvtthacCDxdSRjVxsGmASwdGlv/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.

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>](#).

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>](#).

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.

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>](#).

2352: SG1/SG5 question - Both robots touching the same preload to start match

6-Dec-2024

SC8 SG1 SG5

SG1-b states that to start a match a robot can be touching 1 preload and SG1-c states that they can not be touching any other robots. My question is can both robots be touching the same preload?

Scenario that I have seen is where robot 1 had no autonomous and robot 2 could complete all steps to get AWP by themselves minus robot 1 breaking the plane of the starting line. So they lined both robots up with both touching one preload. Robot 2 started the autonomous by more less pushing robot 1 off the line by pushing the preload that both robots were touching and then robot 2 went and completed the other 3 steps to get AWP. Is this allowed or a rule violation? [<SG1><SG5>](#)

Answered by committee

Clause A of rule [<SG5>](#) requires that each Robot have a preload placed such that it is (bold added here for emphasis), "Contacting **one** Robot of the same Alliance color as the preload."

Each preload may only be in contact with one Robot, and each Robot may only be in contact with one preload.

2226: <SG5> Starting a match with a preload touching the wall

26-Oct-2024

SG4 SG5

At a recent event, a robot started a match with their preload ring touching the top of the field perimeter wall, as pictured in the link below. <https://imgur.com/a/G60BP15> The preload ring meets all of the criteria for [<SG5>](#), as the ring is touching one alliance robot, not contacting the same robot as another preload, and is not touching a scoring element. Would this placement of the preload ring be legal if it is touching or is being supported by the top of the field perimeter wall? Are there any concerns in this scenario for [<SG4>](#)?

Thank you for your time.

Answered by committee

No rules prohibit this, therefore it is legal.

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).

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.

192: Blocking Opponent Shots

20-Dec-2018

G14 SG5

Hi There,

Would it be legal for a team, let's say BLUE1, to have a large piece of legal material, provided they have passed inspection and are within the expansion limits (18"x18"x18"), on field used *solely* with the intent to block opponent shots. In this hypothetical scenario, RED1 has lined up to take a shot at two flags, and BLUE1 has driven in front of RED1. From here, there are a few scenarios that can occur, I will outline them below.

Scenario 1) BLUE1 is holding a ball and actively pushing RED1, while RED1 is not showing any attempt to escape (eg. no drive motion on joysticks). RED1 fires two balls, both of which hit BLUE1's plate and then bounce off. Would this be legal, or would it go past the possession limits outlined in rule SG5?

Scenario 2) BLUE1 does not have any game objects and is actively pushing RED1, while RED1 is not showing any attempt to escape. Both balls are fired, again bouncing off. Would this be legal?

Scenario 3) BLUE1 has game objects and is actively pushing RED1, while RED1 is actively fighting back. RED1 is approximately 1 tile away from the platforms, and BLUE2 is behind RED1, however they are just "passing through", on their way to score their own game object and in no way showing an intent to block RED1. RED1 fires, again both balls bouncing off BLUE1's blocker. Would this violate SG5 for hoarding, as well as G14 for trapping. Would BLUE be called for trapping if this situation passed 5 seconds? There is an open avenue for escape on both sides of the RED1 robot, RED1's robot may not however, be capable of 'strafing', or sideways motion and are thus unable to back away.

Scenario 4) This is similar to Scenario 3), however BLUE1 is not holding any game objects (scenario 4 is to scenario 3 as scenario 2 is to scenario 1).

Scenario 5) BLUE1 has game objects, and is pushing both RED1 and RED2. RED is being pushed towards the alliance platforms, RED1 and RED2 both fire two balls and both are blocked by BLUE1 - what call (if any) would be made?

Last question - if BLUE1 has this blocker, but RED1 comes underneath and forces the blocker above 18" (for example, by bending a piece of metal). What is the ruling here? Would it be different if RED1 bent it with for example, an arm or lifting mechanism, or if RED1 bent it with the sheer force of hitting it repeatedly with a ball.

Thanks, Anthony.

Answered by committee

We apologize, but it is always difficult to rule absolutely on hypothetical scenarios, and we are having a hard time understanding the root of the question that you are attempting to ask.

Please review the [Q&A Usage Guidelines](#), specifically points 1, 3, 4, and 5, and re-submit your question. It will be much easier to provide a clear interpretation if you phrase your question concisely and in terms of a specific rule.