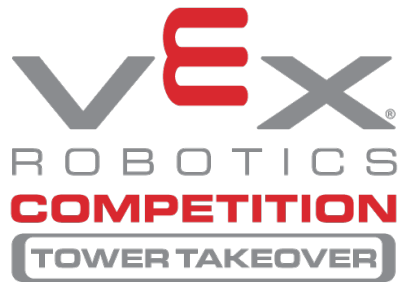


# Q&A

## VRC 2019-2020: Tower Takeover

Tagged: Other



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

Please review the [Q&A Usage Guidelines](#) before posting. This system is only intended for specific VRC Tower Takeover rules questions.

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

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## Parking Questions

### Other

We have two questions about parked robots. 1) Is it acceptable for the robot to be touching the vertical structures that hold the hanging rod? 2) Is it acceptable for both robots to be parked in the same zone (the same side of the hanging structure)? Thank you!

### Answered by Game Design Committee

There are no rules prohibiting either of these questions. Thus, they are legal.

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## robot control working backwards

### Other

The control of our robot moves in the opposite direction as we are expecting. What can we do to fix this problem?

### Answered by Game Design Committee

The purpose of the VIQC Q&A system is to answer specific rules clarifications regarding this year's VIQC game. For technical support, please feel free to post on the community-based VEX IQ Forum ([www.vexiqforum.com](http://www.vexiqforum.com)), or contact [support@vex.com](mailto:support@vex.com).

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## Parking Zone

### Other

In regards to the parking zone, how much of the robot must be in the parking zone to count for 1 point? Does part of the robot need to cross the grid line or must at least one part of the robot touch the ground "to make contact" with the parking zone?

### Answered by Game Design Committee

Please review the [Q&A Usage Guidelines](#) before posting, specifically point 1, "Read and search the [Game Manual](#) before posting."

This question is answered by the definition of Parked, quoted below and bolded for emphasis:

A Robot is considered Parked if it is **contacting the Parking Zone**.

So, to directly answer your question, yes, at least one part of the robot must touch the Floor inside the Parking Zone in order to count for points. Just "reaching across" (breaking an invisible vertical plane) is not sufficient to count for points.

This is also covered in more detail in the relevant Referee Training video: [youtu.be/04I09YDimKc?t=261](https://youtu.be/04I09YDimKc?t=261)

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## Robot Build

### Other

Is there a preferred robot build for the Next Level Challenge? We are new this year to robotics. As of now my kids have built the Clawbot IQ but I wasn't sure if that would be the best build for the competition.

### Answered by Game Design Committee

Please see this similar question: [www.robotevents.com/VIQC/2018-2019/QA/73](http://www.robotevents.com/VIQC/2018-2019/QA/73)

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

Of course, the robot referenced in the above answer is only intended to be a basic starting point. The true intent of the VEX IQ Challenge is for students to experience the engineering design process as they develop and test their own solutions to the game!

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## Robot Design

### Other

Is there a "preferred" (basic) design for the 2018-2019 Vex IQ robot? If so, where can I find it?

### Answered by Game Design Committee

We recommend the "Flex" robot build, which can be found here:

[www.vexrobotics.com/vexiq/resources/robot-builds](http://www.vexrobotics.com/vexiq/resources/robot-builds)

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## Clarification of VUR3 materials allowed

### Other VEX U

<VUR3> Teams are allowed to fabricate their own unique components from the following additional items, for each of their robots: a. An unlimited amount of non-shattering plastic, such as PVC, Delrin, and ABS. b. An unlimited number of plastic 3D printed parts. c. An unlimited amount of steel and aluminum.

Clarification on point "a": are Fiber Reinforced Plastics (i.e. carbon fiber reinforced epoxy tube, rod, sheet, etc) acceptable as non-shattering plastics? Clarification on point "c": does the "unlimited steel and aluminum" include commercial fabricated components, such as steel springs, extruded aluminum shapes, and commercially available aluminum products (such as Andy Mark aluminum wheels [www.andymark.com/Performance-s/101.htm](http://www.andymark.com/Performance-s/101.htm))?

### Answered by Game Design Committee

Yes, composites and fiber-reinforced plastics are legal.

No, commercially-purchased items that are not captured by VUR2, VUR4, or VUR6 are not permitted.

As quoted, VUR3 lists the raw materials from which "Teams are allowed to fabricate their own unique components". It does not state that all products made from these materials are legal, only that teams are allowed to use these raw materials to create their own parts.

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## Is STEM Video the required method of Judging

### Tournament Structure Other

Is the video submission for the STEM Presentation Awards a requirement? Can a local event skip the video judging process and do in person judging on the day of the event, instead?

If video judging is a requirement, would we be able to narrow down the top 5 STEM Presentations videos and perform in person judging with the top 5 video judging submissions?

Or must the determination of the STEM Presentation Award be made solely on the Video Submission prior to the start of the event?

### Answered by Game Design Committee

The purpose of the VEX IQ Challenge Q&A System is to clarify rules for the VEX IQ Challenge game, Next Level. For questions related to judging, please post in the official Judging Q&A, located on the VEX IQ Forum:

[www.vexiqforum.com/forum/vex-iq-challenge-discussion/general-vex-iq-challenge-discussion/judging-q-a](http://www.vexiqforum.com/forum/vex-iq-challenge-discussion/general-vex-iq-challenge-discussion/judging-q-a)

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## Pneumatics for VEX-U robots

Other VEX U

From the VEX-U appendix,

<VUR5> There is no restriction on the number of V5 Smart Motors that Robots may use. No other motors, servos, or actuators are permitted, including those sold by VEX (e.g. the 2-Wire 393 Motor).

Is the term "actuator" referring also to pneumatic cylinders (often called actuators in industry), meaning that VEX-U is not permitted to use a pneumatic system this season? Or is VEX-U permitted to use pneumatics as in past years: 2 air tanks at 100 psi and unlimited number of air cylinders?

### Answered by Game Design Committee

Yes, VEX U teams are still permitted to use pneumatic systems. This will be clarified in the June 15th Game Manual update.

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## Multiple Intentional Infractions

Other

Is there a metric to quantify what the GDC considers 'multiple' when it relates to the game manual? Two, three, 33% of qualification matches for example?

### Answered by Game Design Committee

"Multiple" is usually used in circumstances that rely upon a Head Referee judgment call in the context of a specific Match or event. We cannot provide a specific metric that would apply to all hypothetical scenarios, rulings, or conditions.

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## Shoulder Screws

R11 Other

Would commercially available shoulder screws, 8-32 thread, up to 2" long, for VRC be legal by R11? How about shoulder screws 1/4-20 thread, unlimited length, for VEX-U be legal by VUR8?

Thanks for you time!

### Answered by Game Design Committee

In the future, please separate questions for VRC / VEX U into separate threads.

Would commercially available shoulder screws, 8-32 thread, up to 2" long, for VRC be legal by R11?

Rule R11 states the following, with a portion bolded for emphasis:

<R11> Certain non-VEX screws, nuts, and washers are allowed. Robots may use any commercially available #4, #6, #8, M3, M3.5, or M4 screw up to 2" (50.8mm) long (nominal), and any commercially available nut, washer, and/or spacer (up to 2" / 50.8mm long) to fit these screws.

The intent of the rule is to allow teams to purchase their own commodity hardware **without introducing additional functionality not found in standard VEX equipment**. It is up to inspectors to determine whether the non-VEX hardware has introduced additional functionality or not.

A shoulder bolt is a good example of a fastener that could introduce additional functionality in some cases, and could not in others. It is impossible to issue a blanket ruling that would apply to all use cases based on a snapshot description of a hypothetical Robot; therefore, it will be at the inspectors' discretion whether it has introduced additional functionality.

Examples of additional functionality could include (but are not limited to) using the shoulder as an attachment point for something else, using the shoulder to provide an additional bearing surface that a standard VEX screw would not provide.

How about shoulder screws 1/4-20 thread, unlimited length, for VEX-U be legal by VUR8?

Rule VUR8 states the following:

<VUR8> Teams may use the following fasteners on their Robot:

- a. Any commercially available #4, #6, #8, #10, M2, M2.5, M3, M4, or ¼-20 screw (of any length), and any commercially available nut, washer and/or spacer to fit these screws.
- b. Any commercially available aluminum or steel rivet, up to ¼" nominal diameter.

Therefore, yes, this would be legal.

Thanks for you time!

You're welcome.

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## RE: Updating Legal Parts File with Omni-Directional Wheels

### Other

My students recently discovered that the 200 mm Travel VEX IQ Omni-Directional wheels that we have purchased directly from the VEX official website (228-2536) wasn't listed on the legal parts index for the last few years. Since we have seen it in competition for years, we figured it was a mistake and we wanted to give you a heads up so you can update the legal parts list for clarity.

### Answered by Game Design Committee

Thank you for bringing this to our attention - the VIQC Legal parts Appendix has been updated to include the VEX IQ Omni-Directional Wheels. Slide-drive away!

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## New Scoring Rubric

### Other

Hello, Our question is regarding the change in the scoring rubric. When do you expect to release the new rubric? Will the expert scoring requirements of 5 be similar to the high score of 3 for the current rubric? Our team has set some crazy goals to do well in this area and we are in the middle of our first build iteration process. We have concerns about not being scored as high if the rubric is changed.

Thank you 41091A

### Answered by Game Design Committee

Per the [Q&A Usage Guidelines](#), the Q&A system is intended for VRC game rule clarifications only. Please direct any questions related to awards or judging to the official [Judging Q&A](#).

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## Students with Disabilities: Accommodations (velcro)

### Other

Is it acceptable for a student to have velcro on the controller and wear velcro gloves to assist them with holding the controller during the match?

### Answered by Game Design Committee

There are no rules prohibiting this, thus it is legal.

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## Students with Disabilities: Accommodations (sitting)

### Other

1. Is it okay for a student with physical disability to sit in a wheelchair or on a walker during the match?

### Answered by Game Design Committee

There are no rules prohibiting this, thus it is legal.

Rule <T15> states the following (bolded for emphasis):

<T15> Fields may be raised or on the floor. Some tournaments may choose to place the playing field on the floor, or elevated off the floor (common heights are 12" to 24" [30.5cm to 61cm]). **No Drive Team Members may stand on any sort of object during a Match, regardless of whether the field is on the floor or elevated.**

The intent of this rule is to help ensure Student safety; standing on a stepstool could pose a trip/fall hazard. This rule is not intended to restrict Students who require medical accommodations, such as a wheelchair, walker, crutches, etc.

It is always helpful to review any specific requests or accommodations with your Event Partner and/or Head Referee at the beginning of an event to ensure that there is no confusion when it comes time for a Match.