Q&A

VRC 2023-2024: Over Under

Tagged: R25

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 Over Under 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 Over Under rules questions.

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

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3098: Tolerance for tools to measure plastics

17-Feb-2026
R25

<R25>

I know as a head referee we can reinspect teams for plastic. The question is if we use calipers do they need calibrated, if so what traceability is required, and what tolerance should we allow. I noticed some thick plastics in use.

> **Answered by committee**
>
> No, calipers don't need to be calibrated.

3083: Melting Zipties

5-Feb-2026
R25

<R25>(https://events.vex.com/storage/game_manual/VEX_V5_Robotics_Competition_2025-2026_Push_Back/rules/R25.html)

I had a team ask me a question today regarding zipties - they asked if they could heat them to the point of "melting" in order to fuse multiple zipties together. R25 mentions that you cannot melt plastic to change it, but doesn't say anything about melting zipties. Would this be allowed?

> **Answered by committee**
>
> Melting zip ties to fuse them together is a Violation of clause E of rule <R27>, which prohibits attaching parts to each other in any way that is not provided within the VEX platform.

2900: V5 Robot Brain parts uses elsewhere on robot as functional elements.

6-Nov-2025
R6 R25 R28

<G3>I have seen posts about using V5 Brain accessories on other parts of the robot not related to mounting or protecting the V5 Robot Brain.

1. Screen protector used as part of intake mechanism - is this permitted?
2. If it is permitted, does it count against plastic use? If not, how many screen protectors may be used on the robot?
3. Can the magnets be used from screen protector as functional use on robot? 4. if magnets be used from screen protectors, how many may be used by a team?
4. Flanges from V5 Brain may they be used on other parts of the robot not related to mounting of V5 Brain?
5. If they are permitted to be used, any limit on number of flanges used on robot?
6. If they are permitted, may they be used as substitute for IQ pins to mount License Plates?

Robot rules does not prohibit these cases, nor limits it. Yet, it seems that V5 Brain parts should be used for the Brain, as screen protectors and flanges do not individual SKU with V5RC legal designation.

Answered by committee

Thanks for these questions, Pascal!

The December 4 game manual update will include two new clauses to reflect Q&A guidance from prior seasons. These changes are effective immediately.

- A new clause in rule <R8> will specify that V5 Robot Brain accessories (short flanges, long flanges, and the magnetic screen protector) are part of the V5 Robot Brain and are only legal for use on Robots as part of the V5 Robot Brain.
- A new clause in rule <R28> will specify that all V5 Robot Brain accessories (short flanges, long flanges, and the magnetic screen protector) are considered "part of the V5 Robot Brain" and cannot be modified.

The answers to your questions are therefore:

1. Screen protectors can only be used to protect the V5 Robot Brain screen as intended.
2. The one screen protector used to protect the V5 Robot Brain does not count against the custom plastic limit. Only one screen protector can be used per V5RC Robot Brain.
3. Because the screen protector is part of the V5 Robot Brain, it cannot be modified in any way, including removing the magnets.
4. Magnets cannot be removed from the screen protector for other uses on the Robot.
5. Flanges are part of the V5 Robot Brain and cannot be used for other purposes on the Robot.
6. Each V5 Robot Brain includes two Short Flanges and two Long Flanges, all of which can be used to mount the V5 Robot Brain on other materials. Flanges are not required.
7. The V5 Robot Brain flanges cannot be used for other purposes on the Robot, including attaching License Plates.

2872: Heating other plastics to aid bending <R25>

24-Oct-2025
R25

<R25> Per <R25d> and <R25e> "Plastic may be mechanically altered by cutting, drilling, bending, etc. It cannot be chemically treated, melted, or cast. Heating polycarbonate to aid in bending is acceptable. Legal plastic types are polycarbonate (Lexan), acetal monopolymer (Delrin), acetal copolymer (Acetron GP), POM (acetal), ABS, PEEK, PET, HDPE, LDPE, Nylon (all grades), Polypropylene, PTFE, and FEP."

"Heating polycarbonate to aid in bending is acceptable." Does this mean ONLY polycarbonate can be heated to aid bending, or is it legal to bend other legal plastics with the aid of heat?

Thanks GDC!

Answered by committee

Thanks for this question, Team 1523C!

We'll revise clause D of rule <R25> in the next game manual update to read, "Heating non-shattering plastic to aid in bending is acceptable." This change is effective immediately.

2802: Polycarbonate modification

22-Sep-2025
R25

New in rule <R25> this season, it states that all individual pieces of polycarbonate may not exceed an overall footprint of 8” x 4” x 0.070”. With that said, let’s say we cut a piece of polycarbonate that is exactly 8” x 4” (assuming less than 0.070” thickness), and then we modified it in ways that would allow it to extend out past this limit (i.e. cutting segments and bending them outward). Would this be legal? Does this 8” x 4” limit only account for the base piece of polycarbonate that is used, or does it also include additional modifications that you make to it? Thank you

> **Answered by committee**
>
> Hello, Team 4478B, and thanks for this question!
>
> Bent parts can be legal, but Teams must be prepared to clearly demonstrate how their 3-dimensional part fits within the 4"x8" flat piece limit (e.g., bring an identical but 'unbent' 2nd part plus a 4"x8" piece to show how the part fits within the 4"x8" piece, or bring a 4"x8" piece marked with the outline of the unbent part).

2784: R25: "Larger than" vs "Cut from"

15-Sep-2025
R25

<R25b>:

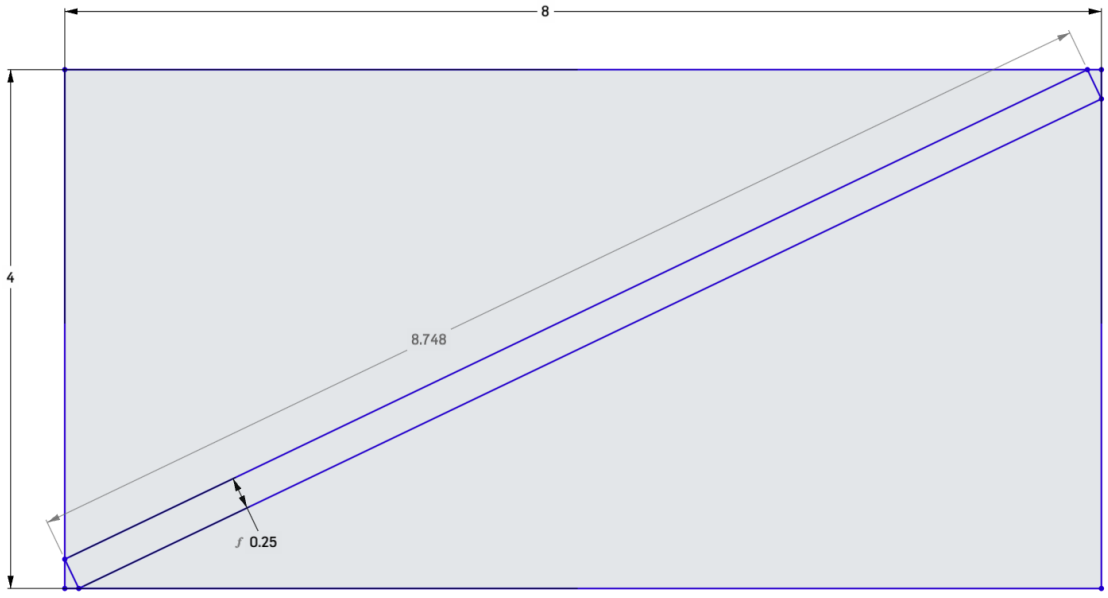
> Each individual piece of non-shattering plastic cannot be larger than 4” x 8” x 0.070”.

Excerpt from the answer to Q&A 2730:

> As long as you start with a piece of plastic that fits within the 4" x 8" x 0.070" sizing, you can cut and bend that into whatever resulting size/shape you want.

The attached image shows a part that, when viewed and measured on its own, is "larger than" 4" x 8"; however it is still possible to cut the part from a 4" x 8" piece.

Does this part meet the size requirement of R25b?



Answered by committee

Hi, John, and thanks for your question!

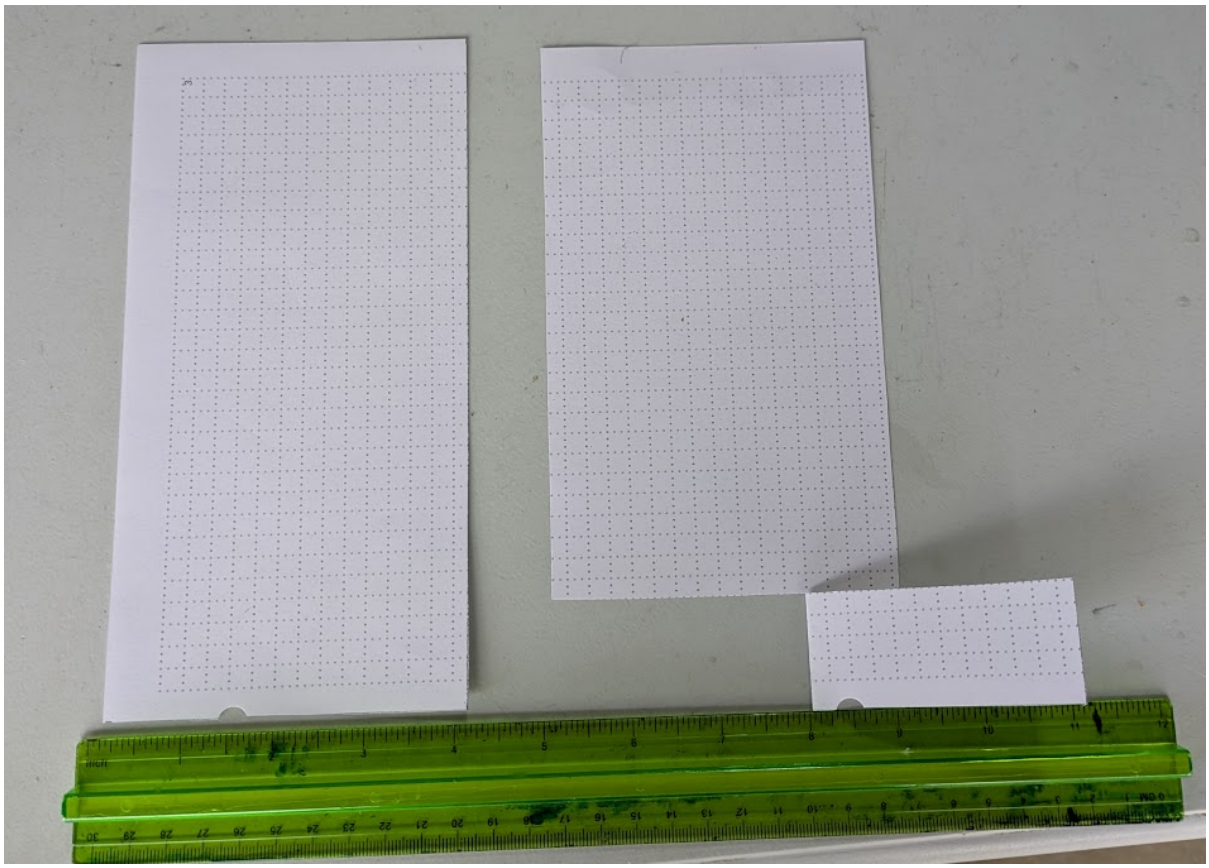
This part would be legal, but Teams must be prepared to demonstrate how their part can fit within the 4"x8" limit (e.g., bring an identical 2nd part plus a 4"x8" piece to show how the part fits within the 4"x8" piece, or bring a 4"x8" piece marked with the outline of the part).

2730: Legal size of mechanically altered plastic

22-Jul-2025
R25

<R25>In R25, it's stated that: b. Each individual piece of non-shattering plastic cannot be larger than 4" x 8" x 0.070" and d. Plastic may be mechanically altered by cutting, drilling, bending, etc. <R25>

Does each plastic piece need to be within the 4" x 8" x 0.070" size limit after being mechanically altered? For example, would the following alteration on the right be legal?



Answered by committee

The 4" x 8" x 0.070" sizing is based on the flat pattern prior to any cutting, bending, etc. As long as you start with a piece of plastic that fits within the 4" x 8" x 0.070" sizing, you can cut and bend that into whatever resulting size/shape you want.

To aid in the inspection of any plastic pieces where bends result in complex, difficult to judge sizes/shapes, we recommend that Teams bring separate plastic pieces to inspection, in both flat and bent forms, that are identical to those found on their Robot. Inspectors can then compare the extra bent piece to the one on the Robot to verify that it's identical. The extra flat piece can be easily compared to the extra bent piece and measured for legality if

> necessary. Having the secondary bent part may also assist Teams in quickly replacing that part on the Robot if it's damaged in competition.

1867: What is an "easily visible" Robot Brain screen?

11-Jan-2024
R25

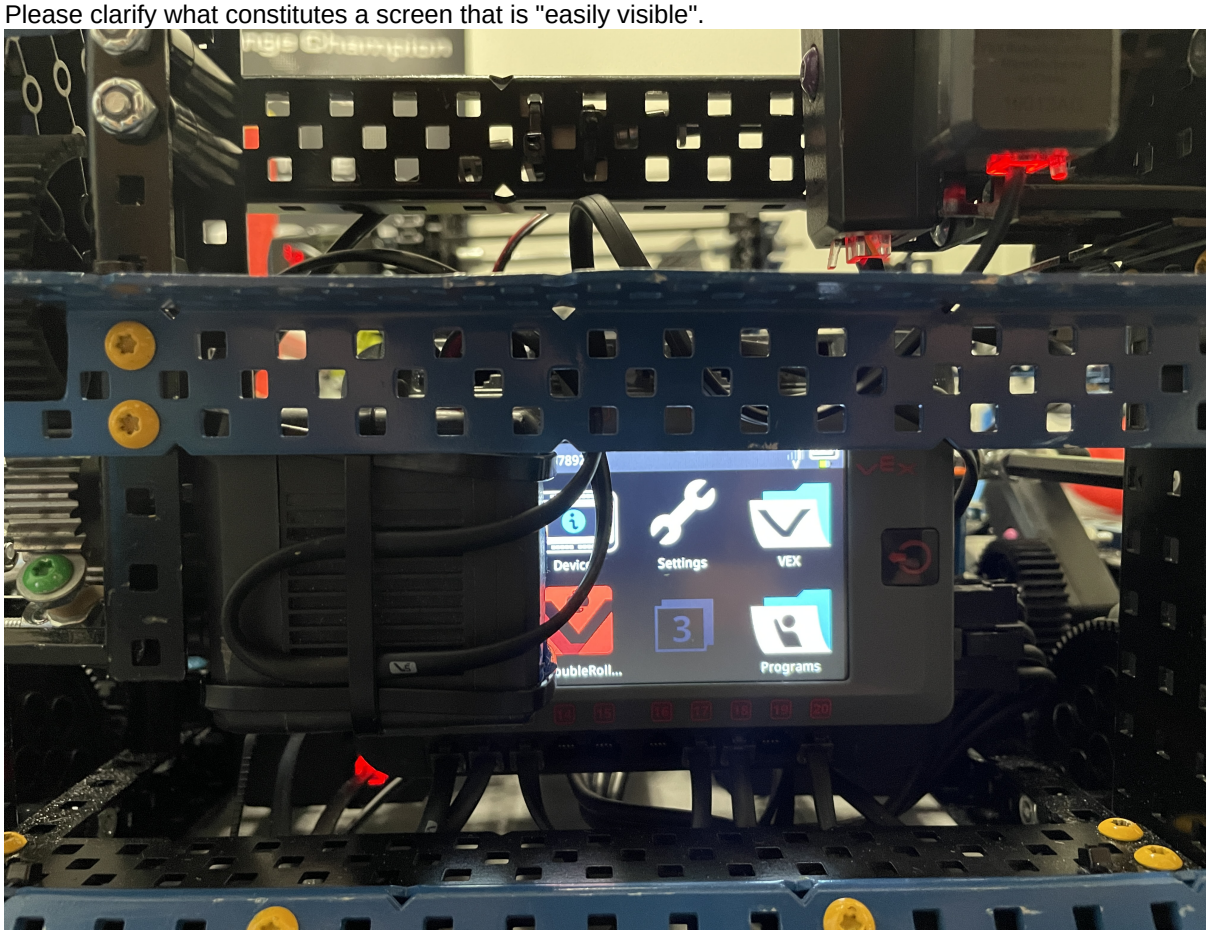
<R25>

A portion of Rule <R25> states that all screens and/or lights must be easily visible by competition personnel to assist in diagnosing Robot problems.

Does the screen need to be fully visible without handling the Robot (e.g. moving or lifting the Robot) or repositioning items such as Smart Cables?

For example, a Robot's V5 Robot Brain screen is partially obscured when viewed directly behind the Robot. However, when viewed from an angle, the entire screen can be seen. See sample images.

Please clarify what constitutes a screen that is "easily visible".



Answered by committee

We will not be able to provide an absolute or explicit list of requirements that satisfy the phrase "easily visible". Ultimately, this requirement is at the discretion of the inspector and Head Referee.

As quoted in your post, one intent of R25 is to allow competition personnel to assist in diagnosing Robot problems. One option for an "edge case" scenario, such as this example, would be to inform the Team that they are waiving any "benefit of the doubt" for assistance or consideration in the case that it is needed.