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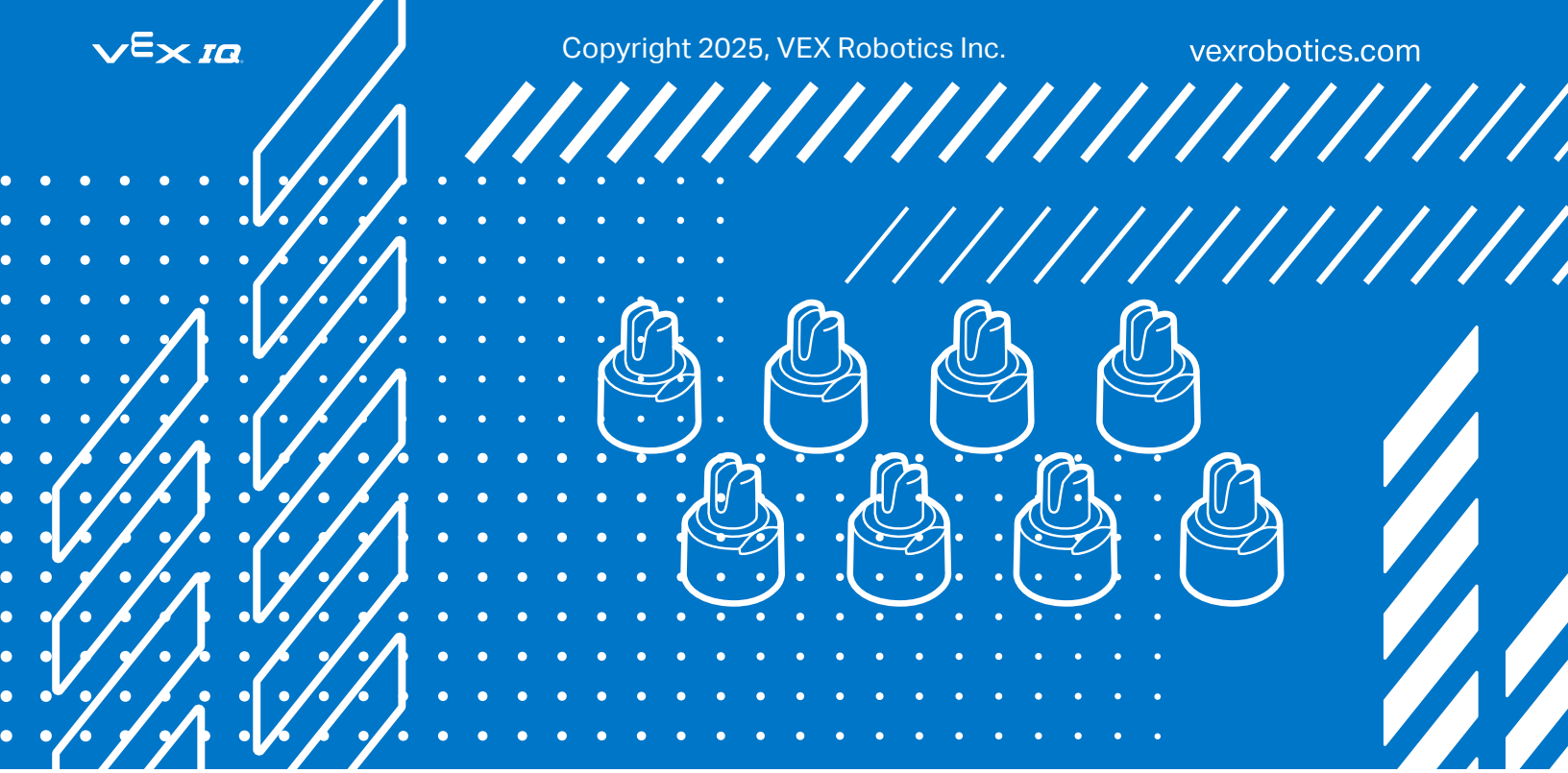
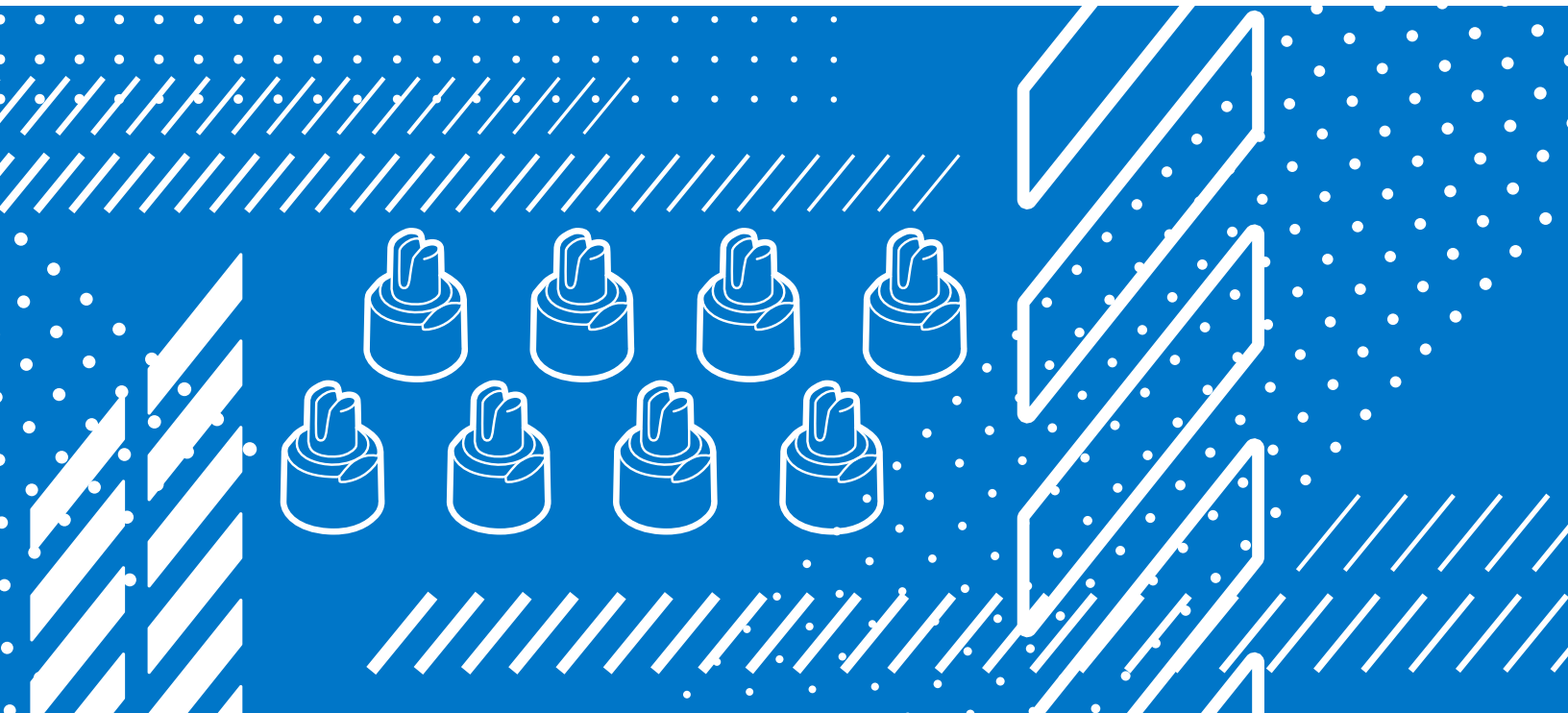


VEX IQ ROBOTICS COMPETITION

MIX & MATCH

2025 - 2026
Game Manual
Version 2.2



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Version 2.2 - Released December 4, 2025

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Prefix

Changelog

Version 2.2 - December 4, 2025

- Updated Figures V-1 and V-3 to clarify intent
- Added new clauses to <SC3> to clarify "roughly vertical"
- Updated <SE3> and <SE9> to reflect the updated guidelines for "roughly vertical"
- Expanded the blue box of <G4> to clarify rule enforcement
- Updated <G5> to clarify "*Drive Team Members*", rather than "*Drivers*"
- Added a new bullet to <GG1> to clarify that anyone who is not a *Drive Team Member* cannot coach or affect the *Match*
- Updated <GG10> and <RSC5> to clarify intent regarding a *Drive Team Member* resetting a *Robot* and *Scoring Objects*
- Updated bullets in <SG1c> to indicate which teams are red and blue in VEXvia
- Added a bullet to <R3> to specify that event staff are allowed to take pictures of *Robots* as needed
- Added a bullet to <RSC7> to clarify that *Teams* cannot use *Robot* controllers for any purpose during *Autonomous Coding Skills Matches*
- Revised <T5> to include *Scoring Object* positions, and specified that *Pin* rotation doesn't matter
- Added significant Q&A boxes throughout the manual
- Minor typo / formatting fixes

Version 2.1 - October 9, 2025

- Updated Figure FO-2 to show correct *Goal* boundaries
- Updated the definition of *Team* to provide clarity
- Updated the definition of *Major Violation* to clarify that *Minor Violations* carry over into *Finals Matches*, unless otherwise specified
- Added *CoC-related Violations* as a defined term
- Added additional flowcharts under the definition of *Violation* to provide guidance
- Added a bullet to <G1>, stating that event attendees are not allowed to record audio or video of *Teams'* discussions with *Head Referees* or other event staff/volunteers
- Split <G4> into two rules and rewrote it, to clarify intent
- Added rule <G5>
- Updated <GG2a> to clarify that *Teams* that participate in zero *Qualification Matches* cannot be considered for judged awards
- Updated <GG10a> to clarify intent
- Updated <SG5b> to clarify intent
- Revise the definition of *Practice Matches* to specify that most *Violations* from *Practice Matches* aren't recorded
- Updated <T7> to clarify that all Robot Skills Challenge *Fields* must be consistent with each other
- Revised <T15a> to clarify intent
- Added significant Q&A boxes throughout the manual
- Minor typo / formatting fixes

Version 2.0 - September 4, 2025

- Revised <GG1> to clarify that only three *Drive Team Members* can attend a *Match*
- Revised <GG2> to clarify that the *Robot* must remain at the *Field* for the entire duration of the *Match*
- Revised <GG4> and added a blue box to remove penalties for reaching over the *Field* in ways that are safe and don't impact the *Match*
- Updated <R13> to clarify that 3D printed parts are allowed for controller attachments
- Updated <RSC5aii> to clarify intent
- Added significant Q&A boxes throughout the manual
- Minor typo / formatting fixes

Version 1.1 - August 7, 2025

- Updated figure FO-2 to show the correct *Floor Goal* outline
- Added a new figure to <SC3> to show examples of nested *Pins*
- Revised and expanded <SC5> to clarify how *Stacks* can qualify as *Placed* in the *Standoff Goal*
- Updated <SG4> to clarify that a neutral object that leaves the *Field* must be given to the Loader in the *Driver Station* closest to where it left the *Field*, and added a Violation Note
- Updated <SG6> and added new bullet points to revise *Loading* criteria
- Updated <RSC3> and added bullet points to clarify the *Field* and *Robot* setup
- Added significant Q&A boxes throughout the manual
- Minor typo / formatting fixes

Version 1.0 - June 26, 2025

- Revised the definition of *Major Violation* to differentiate between intentional actions and intentional *Violations*
- Added a note to <SC3> to clarify the definition of "fully nested"
- Revised <SC6> to clarify cases where *Stacks* are *Connected* to *Beams*
- Updated <SG1d> to clarify intent
- Updated <SG4c> to clarify intent
- Revised <RSC3> to clarify how *Scoring Objects* can be *Loaded* in *Robot Skills Matches*
- Updated <T1e> to clarify that *Head Referees* must follow the rules in the game manual
- Added significant Q&A boxes throughout the manual

Version 0.2 - June 5, 2025

- Added a link to the obsoleted game manual version in the "Updates" section, to use as a reference during update grace periods
- Clarified that the most current version of the English language PDF of the manual (this document) takes precedence over any other supplemental or translated material
- Revised <SC1> to clarify intent regarding driving after the *Match* timer ends
- Updated <GG1a> to clarify that devices are allowed in the *Driver Station*, but may not be used for any reason during a *Match*. Using devices for translation purposes post-*Match* is allowed
- Expanded <GG12> to include starting the *Match* before the timer begins
- Clarified that vertical expansion is unlimited in <SG3>
- Updated <SG6a> to clarify intent for where *Scoring Objects* may be introduced
- Added <RSC4d> to clarify intent

Other minor typo & formatting fixes

Version 0.1 - May 14, 2025

- Initial Release

Quick Reference Guide

Scoring Rules	
<SC1>	All scoring statuses are evaluated after the *Match* ends
<SC2>	All scoring statuses are evaluated visually by a *Head Referee*
<SC3>	A *Scoring Object* can be *Connected* to another *Scoring Object* to form a *Stack*
<SC4>	A *Stack* that includes more than one color of *Scoring Object* receives additional points
<SC5>	A *Stack* is considered *Placed* in a *Goal* if it meets all of the following criteria
<SC6>	*Matching Goal* bonus criteria
<SC7>	*Cleared Starting Pin* criteria
<SC8>	Ending the *Match* in contact with *Scoring Objects*

Safety Rules	
<S1>	Stay safe, don't damage the *Field*
<S2>	*Students* must be accompanied by an *Adult*
<S3>	Each *Student Team* member must have a completed participant release form on file

General Rules	
<G1>	Treat everyone with respect
<G2>	VIQRC is a *Student*-centered program
<G3>	Use common sense
<G4>	All work must represent the skill level of the *Students* on the *Team*
<G5>	Each *Student* can only belong to one *Team*

General Game Rules	
<GG1>	*Drivers* drive your *Robot*, and stay in the *Driver Station*
<GG2>	A *Team's Robot* should attend every *Match*
<GG3>	*Robots* on the *Field* must be ready to play
<GG4>	Hands out of the *Field*
<GG5>	*Match* replays are allowed, but rare
<GG6>	*Disqualifications*
<GG7>	Timeouts
<GG8>	Keep your *Robot* together
<GG9>	Don't damage the *Field*
<GG10>	Handling the *Robot* mid-*Match* is allowed under certain circumstances
<GG11>	A *Team's* two *Drivers* switch *Controllers* midway through the *Match*
<GG12>	Don't start Before the timer, and stop moving at the end of the *Match*
<GG13>	Ending a *Match* early

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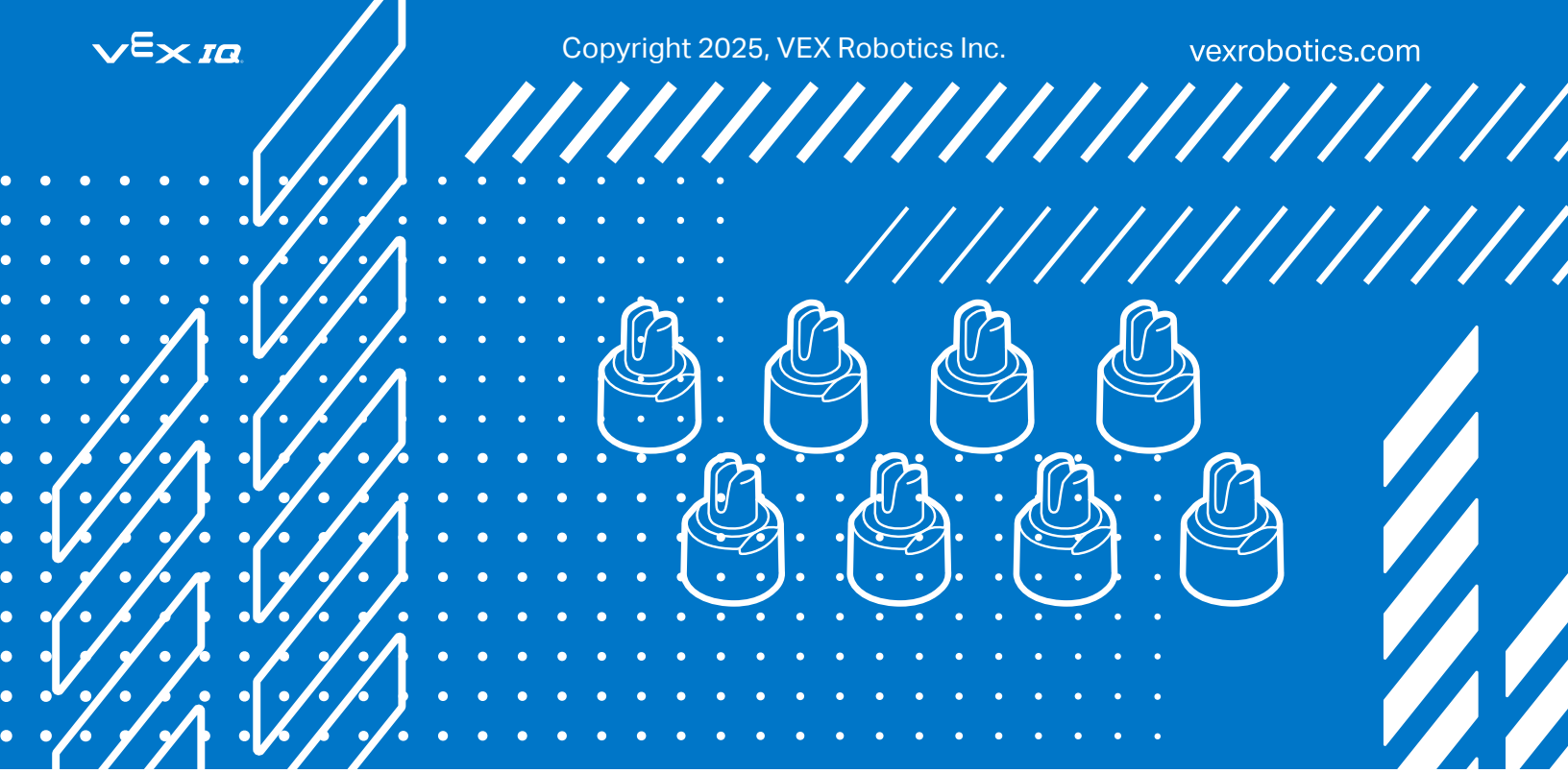
Specific Game Rules	
<SG1>	Starting a *Match*
<SG2>	Horizontal expansion is limited
<SG3>	Vertical expansion is unlimited
<SG4>	Keep *Scoring Objects* in the *Field*
<SG5>	Each *Robot* gets one *Pin* as a *Preload*
<SG6>	Using the *Load Zone*

Robot Rules	
<R1>	One *Robot* per *Team*
<R2>	*Robots* must represent the *Team's* skill level
<R3>	*Robots* must pass inspection
<R4>	There is a difference between accidentally and willfully violating a *Robot* rule
<R5>	*Robots* must fit within an 11" x 20" x 15" (279.4mm x 508mm x 381.0mm) volume
<R6>	Officially registered *Team* numbers must be displayed on *Robot License Plates*
<R7>	Let it go after the *Match* is over
<R8>	*Robots* have one Brain
<R9>	Keep the power button accessible
<R10>	Firmware
<R11>	Motors
<R12>	Batteries
<R13>	One Controller per *Robot*
<R14>	*Robots* are built from the VEX IQ product line
<R15>	Prohibited items
<R16>	Legal Non-VEX IQ components
<R17>	Decorations are allowed
<R18>	Pneumatics
<R19>	Modifications of parts

Robot Skills Challenge Rules	
<RSC1>	Standard rules apply in most cases
<RSC2>	Scoring *Robot Skills Matches*
<RSC3>	*Robot* and *Field* setup for *Robot Skills Matches*
<RSC4>	Loader and *Driver* differences
<RSC5>	Handling *Robots* during an *Autonomous Coding Skills Match*
<RSC6>	Starting an *Autonomous Coding Skills Match*
<RSC7>	Autonomous means "no humans"
<RSC8>	*Skills Stop Time*

Tournament Rules	
<T1>	The *Head Referee* has final authority on all gameplay and *Robot* ruling decisions
<T2>	*Head Referees* must be qualified
<T3>	*Drive Team Members* are permitted to immediately appeal the *Head Referee's* ruling
<T4>	The *Event Partner* have final authority regarding all non-gameplay decisions
<T5>	Be prepared for minor *Field* variance
<T6>	*Fields* and *Field Elements* may be repaired at the *Event Partner's* discretion
<T7>	*Fields* at an event must be consistent with each other
<T8>	*Qualification Matches* will occur according to the official *Match* schedule
<T9>	Each *Team* will be scheduled *Qualification Matches* as follows
<T10>	*Teams* are ranked by their average *Qualification Match* scores
<T11>	*Qualification Match* tiebreakers
<T12>	How *Alliances* are formed for *Teamwork Challenge Matches*
<T13>	*Teams* playing in *Finals Matches*
<T14>	*Finals Match* schedule
<T15>	*Robot Skills Match* schedule
<T16>	No requirement that Skills *Fields* have the same modifications as Teamwork *Fields*
<T17>	Skills rankings at events
<T18>	Skills rankings globally
<T19>	Robot Skills at league events

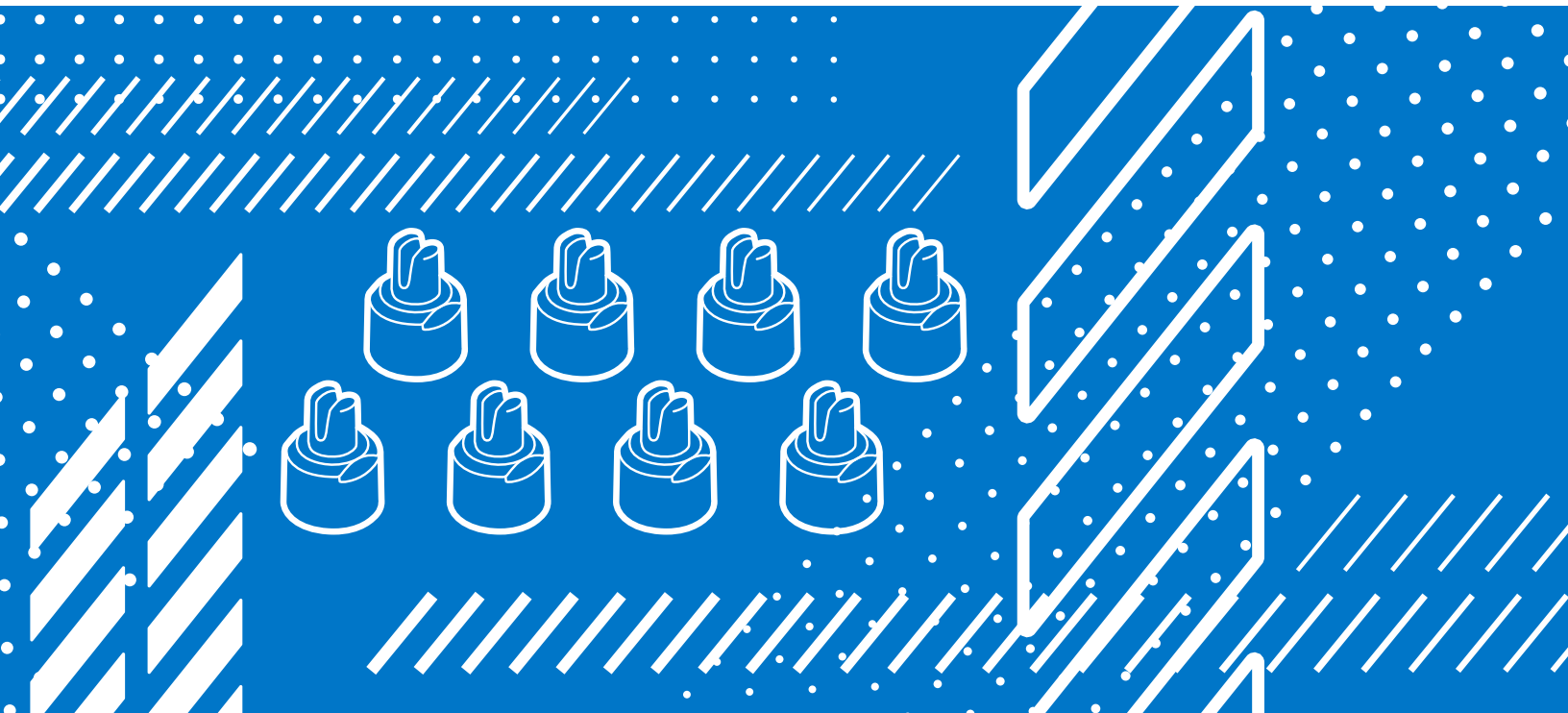


VEX IQ ROBOTICS COMPETITION

MIX & MATCH

2025 - 2026

Section 1 - Introduction



Section 1 - Introduction

Overview

This section provides an introduction to the VEX IQ Robotics Competition (VIQRC) and VIQRC Mix & Match.

The VEX IQ Robotics Competition

The world around us is constantly changing, and so are the ways we learn. Traditional classroom methods don't always capture the hands-on problem solving and collaboration that are essential in STEM fields. Competitive robotics provides an alternative approach—one that engages *Students* in real-world applications of engineering, coding, and design. Instead of just reading about these concepts, you get to experience them firsthand as you test ideas, refine solutions, and work as part of a *Team* to overcome challenges. By combining creativity with technical skills, the VEX IQ Robotics Competition helps make STEM learning more dynamic, practical, and inspiring.

Competitive robotics isn't just about building a *Robot*—it's about learning to approach challenges with confidence, resilience, and teamwork. The same problem-solving mindset that helps you design and refine a VEX *Robot* is the foundation for tackling real-world engineering problems, scientific breakthroughs, and technological innovations. Mix & Match is more than just a game—it's an opportunity to develop skills that will shape the problem solvers and innovators of tomorrow.

Working together with other people—whether it be your own teammates or someone from another organization—can be challenging, but it's just as much a part of the VEX Robotics Competition as building a *Robot*.

Within this manual, you'll find the rules that define Mix & Match. These rules are designed to create a competitive yet fair environment that rewards creativity, strategy, and collaboration. Just like in the real world, constraints exist to challenge you—not to limit your potential, but to inspire innovative solutions.

As you embark on this season, remember that every challenge is an opportunity to grow. Whether you're fine-tuning your design, refining your strategy, or working through unexpected setbacks, the lessons you learn here will stay with you far beyond the competition *Field*.

Good luck, and we look forward to seeing your creativity and innovation in action!

Sincerely,

The VEX Robotics Game Design Committee, composed of members from VEX Robotics, the Robotics Education & Competition Foundation, and DWAB Technology

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VIQRC Mix & Match - A Primer

VEX IQ Robotics Competition Mix & Match is played on a 6'x8' rectangular *Field*, set up as illustrated in the figures throughout this game manual.

The primary objectives of the game are to build *Stacks* out of *Pins* and *Beams*, and *Place Stacks* in *Goals*. Additional *Pins* are introduced to the *Field* by *Drive Team Members* at the *Load Zone*. Points are awarded based on how many *Pins* and *Beams* are *Connected*, how many colors are included in each *Stack*, and for *Stacks* that match the color of the *Goal*.

In the *Teamwork Challenge*, an *Alliance* composed of two (2) *Robots* works together to score as many points as possible in a 60-second *Match*.

Teams may also compete in *Robot Skills Matches*, where one (1) *Robot* tries to score as many points as possible with a slightly different set of rules. See Section 4 for more information.

The REC Library article titled "How to Navigate a Game Manual" describes the conventions and organizational structure used in this game manual, and may help you understand and interpret this Game Manual.

> *Note: The illustrations in this section of the Game Manual are intended to provide a general visual understanding of the game.* ***Some figures may highlight or change the appearance of certain Field and Scoring Elements to emphasize or clarify intent.***
>
> *Teams should refer to official Field specifications, found in Appendix A, for exact Field dimensions, a full Field bill of materials, and exact details of Field construction.*

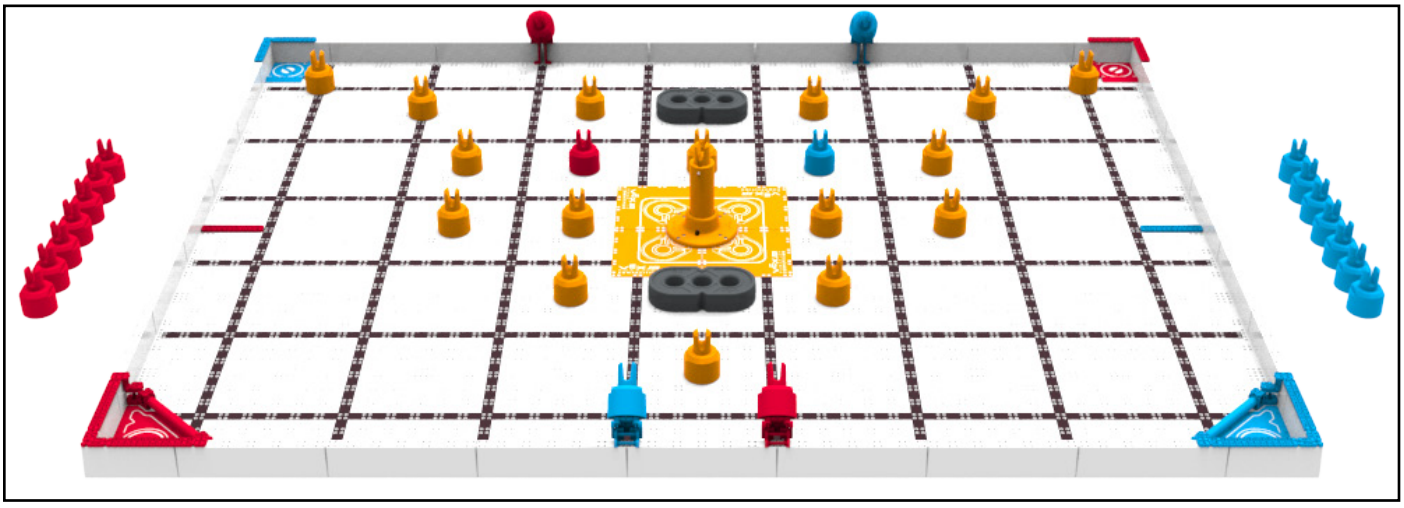

Figure O-1: *Starting configuration of the Field for a VEX IQ Robotics Competition Mix & Match Teamwork Match.*

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About the Game Manual - A Note from the GDC

This Game Manual and its appendices contain everything there is to know about this season's game, VIQRC Mix & Match. It is intended to be a resource for all *Teams*, *Head Referees*, *Event Partners*, and other members of the VIQRC community.

The rules contained in the following pages can be thought of as "constraints" that define this game, just as engineers begin any design project by defining their constraints. At the beginning of a season, constraints are all we have. We don't know what the winning *Robot*, best strategy, or most-frequently-violated rule will be any more than you do. Isn't that exciting?

When exploring a new game, please approach this Game Manual with that mentality of looking at rules as constraints. The Game Manual, its appendices - and the official Q&A on RobotEvents.com - contain the full and complete list of constraints that are available for competitors to strategize, design, and build their *Robots*.

Obviously, all *Teams* must adhere to these rules, and any stated intents of these rules. However, beyond that, there is no "right" way to play. There are no hidden restrictions, assumptions, or intended interpretations beyond what is written here. So it is up to you, the competitor, to find the path through these constraints that best suits your *Team's* goals and ambitions.

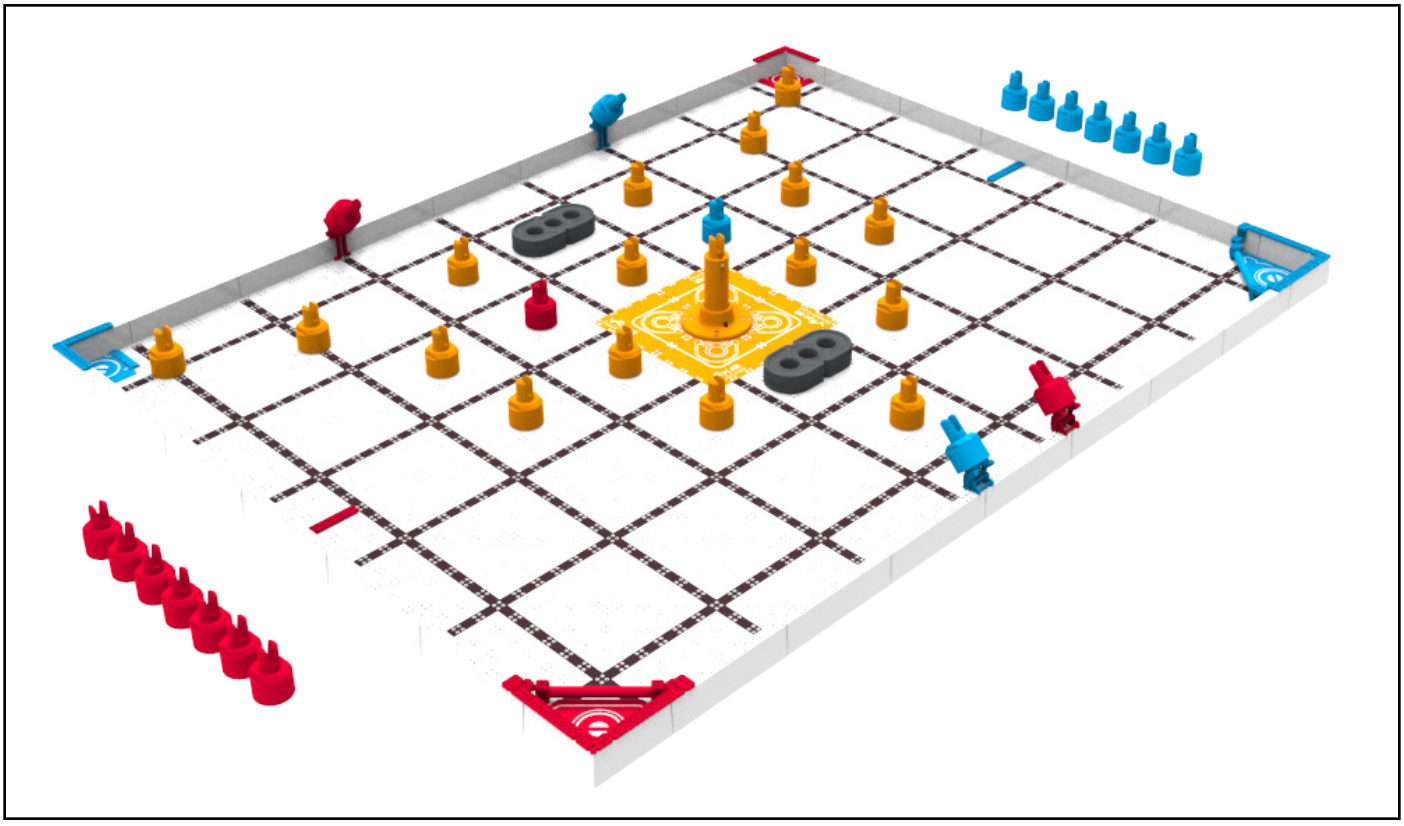

Figure O-2: *Starting configuration of the Field for a VEX IQ Robotics Competition Mix & Match Teamwork Match.*

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Our Intent - How We Want the Game to be Played

The *Game Design Committee* (GDC) carefully crafts each VEX IQ Robotics Competition game with a clear vision of how we believe it should be played. The GDC envisions Mix & Match as an execution-based challenge where *Teams* must collaborate effectively to maximize their scoring potential. The game pieces that are easiest for one *Robot* to obtain are the hardest for the other. *Teams* are encouraged to plan ahead, and work with their partners to develop strategies that help each other gain access to all of the game pieces on the *Field*. With incentives for creating specific patterns, success in Mix & Match depends on both the quality and quantity of *Stacks*—not one at the expense of the other. This design promotes continuous engagement, adaptability, and shared strategy. *Teams* will have to work together to ensure the highest possible score.

As the season progresses and *Teams* develop new strategies, certain aspects of gameplay may evolve in ways that were not initially anticipated. To ensure that the game remains fair, competitive, and aligned with its original intent, the GDC has identified key areas that may be subject to clarification or adjustment throughout the season. While updates are not limited to these areas, the GDC believes these are some of the most critical for maintaining the integrity of gameplay:

- **Game Piece Layout:** The GDC has intentionally designed the Teamwork *Field* layout to spread the game pieces out, and make one color of *Pin* for each *Team* harder to obtain. We reserve the right to adjust the *Field* layout in Major Game Manual Updates if the layout does not properly disperse game pieces around the *Field*.

- **Match Loading:** Match *Loading* is still a new concept for VEX IQ Robotics Competition. The GDC feels like the rules regarding Match *Loading* clearly explains our intent that Match *Loading* should be one at a time, and that each game piece is released at rest before a *Robot* picks it up. If Match *Loading* rules are being abused, we will make this process more strict and the *Violations* more punitive.

- **Beams & Goals:** The four (4) types of *Goals* provide varying levels of difficulty based on *Field* location, heights to overcome, and the challenge of filling them to capacity. If we find that the more challenging types of *Goals* are underutilized throughout the season, we may add new bonus opportunities (or increase existing bonuses) to incentivize using these *Goals*.

Any potential adjustments would be made with the goal of ensuring that the game plays as intended for the duration of the season. While we will try our best to adhere to the self-imposed limits on change per update, we may make larger/broader changes if it is deemed absolutely necessary. Any updates will be communicated through official rule updates.

Updates

This manual will have a series of "major" and "minor" updates over the course of the season. Each version is official and must be used in official VIQRC events until the release of the next version, upon which the previous version becomes void.

The latest version of the Game Manual can always be found at:
https://link.vex.com/docs/25-26/viqrc-mixandmatch-manual.

Known major release dates are as follows:

Release Date	Effective Date	Version #	Details
May 14, 2025	**May 14, 2025**	**Version 0.1**	Initial game release
May 27, 2025	May 27, 2025	N/A	Official Q&A system opens
June 5, 2025	June 12, 2025	Version 0.2	Minor typographical errors or formatting issues found in the initial release. Very few rule changes are expected.
June 26, 2025	**July 3, 2025**	**Version 1.0**	May include gameplay or rule changes inspired by input from the official Q&A system and the VEX community.
August 7, 2025	August 14, 2025	Version 1.1	Clarification / minor update
September 4, 2025	**September 11, 2025**	**Version 2.0**	May include gameplay or rule changes inspired by early-season events.
October 9, 2025	October 16, 2025	Version 2.1	Clarification / minor update
December 4, 2025	December 11, 2025	Version 2.2	Clarification / minor update
January 29, 2026	**February 5, 2026**	**Version 3.0**	May include gameplay or rule changes inspired by mid-season events.
April 2, 2026	**April 9, 2026**	**Version 4.0**	May include gameplay or rule changes pertaining specifically to the VEX Robotics World Championship

In addition to these known major updates, there may also be unscheduled updates released throughout the season if deemed critical by the GDC.

Any scheduled or unscheduled updates will always be released on a Thursday, no later than 5:00 PM CST (11:00 PM GMT). These updates will be announced via the VEX Forum, automatically pushed to the VIQRC Hub app, and shared via VEX Robotics / REC Foundation social media & email marketing channels. Once announced, the new version of the Game Manual will be immediately available at the link above.

Generally, Mix & Match Game Manual updates, scheduled or unscheduled, will include a **grace period** before the updated rules go into effect for competitions. See the Release Table above for specific dates. This grace period does not apply to the **Version 0.1 Release**, which serves as the initial rule set for the season. Any events that begin **before** the 7-day grace period has ended should **continue using the rules from the previous Game Manual Release**. This policy ensures fairness and consistency, allowing *Teams* to adapt their strategies and gameplay accordingly before the changes are enforced in official competitions.

During the 7-day grace period, the previous manual version will be available at https://link.vex.com/docs/25-26/docs/25-26/viqrc-mixandmatch-manual-obsolete. This link will be only be active during the grace period following each manual update, and will be disabled once it ends.

The GDC reserves the right to enforce critical updates to the Game Manual as effective immediately upon release, if we feel that the changes are critical for competitive integrity, safety, and/or other extenuating circumstances.

Multi-week league events (or similar) that cross over a grace period should use the version of the Game Manual that is in effect at the beginning of each league session. Leagues should update to new versions of the Game Manual between sessions as appropriate.

The Q&A System

When first reviewing a new robotics game, it is natural to have questions about situations which may not be immediately clear. Navigating the Game Manual and seeking out answers to these questions is an important part of learning a new game. In many cases, the answer may just be in a different place than you first thought—or, if there is no rule explicitly prohibiting a gameplay strategy, then that usually means it is legal!

However, if a *Team* is still unable to find an answer to their question after closely reviewing the relevant rules, then every *Team* has the opportunity to ask for official rules interpretations in the VEX Robotics Question & Answer System. These questions may be posted by an *Adult* via the RobotEvents account that is associated with that *Team*.

All responses in this Q&A system should be treated as official rulings from the VEX Robotics Game Design Committee, and they represent the correct and official interpretation of the VEX Robotics Competition Rules. The Q&A system is the only source besides the Game Manual for official rulings and clarifications, and is functionally an extension of the Game Manual. Q&A rulings are effective immediately upon release.

The VEX IQ Robotics Competition Question & Answer System will open on May 27th, 2025.

Before posting on the Q&A system, be sure to review the Q&A Usage Guidelines:

1. Read and search the Game Manual before posting.
2. Read and search existing Q&As before posting.
3. Quote the applicable rule from the latest version of the Game Manual in your question.
4. Make a separate post for each question.
5. Use specific and appropriate question titles.
6. Questions will (mostly) be answered in the order they were received.
7. This system is the only source for official rules clarifications.

If there are any conflicts between the English-language PDF of the Game Manual and other supplemental or translated materials (e.g., referee training materials, the VIQRC Hub app, the game reveal video, a translated game manual, etc.), the most current version of the English-language PDF of the Game Manual takes precedence.

Similarly, it can never be assumed that definitions, rules, or other materials from previous seasons apply to the current game. Q&A responses from previous seasons are not considered official rulings for the current game. Any relevant clarifications that are needed should always be re-asked in the current season's Q&A.

Additional Policies

The rules and guidelines in these official documents and policies apply to *Teams* and events in the VEX Robotics Competitions alongside the rules in this Game Manual.

- **Code of Conduct** - Outlines the expectations of behavior and ethical standards for all attendees at REC Foundation-sanctioned events.
- **Student-Centered Policy** - Communicates the REC Foundation's goal of maximizing learning opportunities for *Students*, and the mandate that *Students* use designs, code, and game strategies that are consistent with their abilities and knowledge. The related Important Behavior Guidelines for *Team Adults* provides guidelines for *Adults* to promote *Student*-centeredness when interacting with *Teams*.
- **Commitment to Coach Excellence** - Communicates the partnership and expectations between the REC Foundation and Coaches. Must be agreed to during *Team* registration.
- **Commitment to Event Excellence** - Communicates the partnership and expectations between the REC Foundation and *Event Partners*, with the goal of providing *Teams* with quality and uniform competition experiences throughout our programs.
- **Guide to Judging** - Provides policies and procedures for the judging process, and guidelines for *Teams'* engineering notebooks.
- **Organizational Policy** - Provides guidelines for organization and *Team* numbers that are assigned during *Team* registration.
- **Qualifying Criteria** - Provides the criteria that *Teams* and events must meet to qualify for Event Region Championships and the VEX Robotics World Championship.
- **Youth Protection Policy** - Provides information, guidelines, and procedures to create safe environments for participants in our range of programs.

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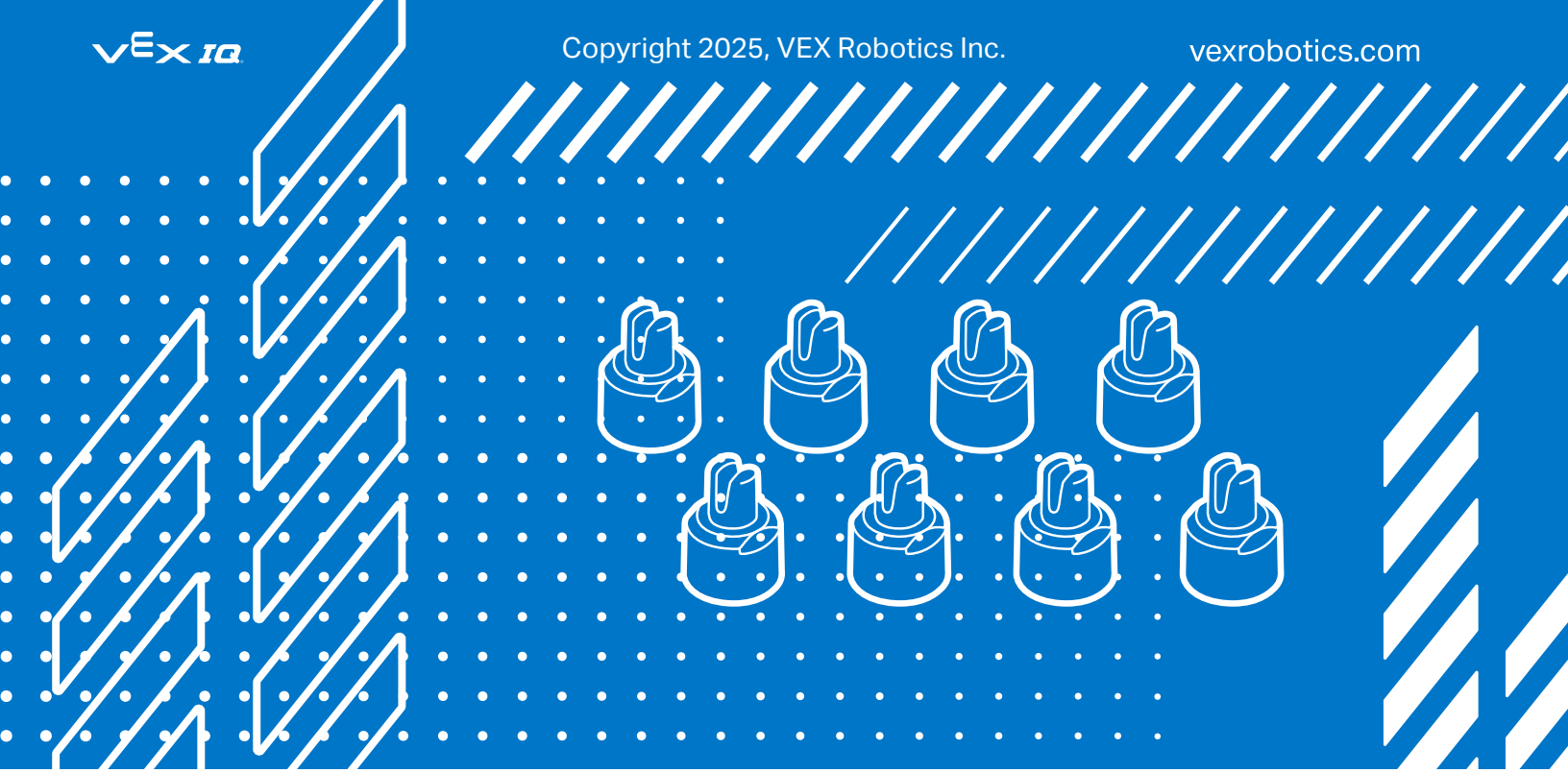
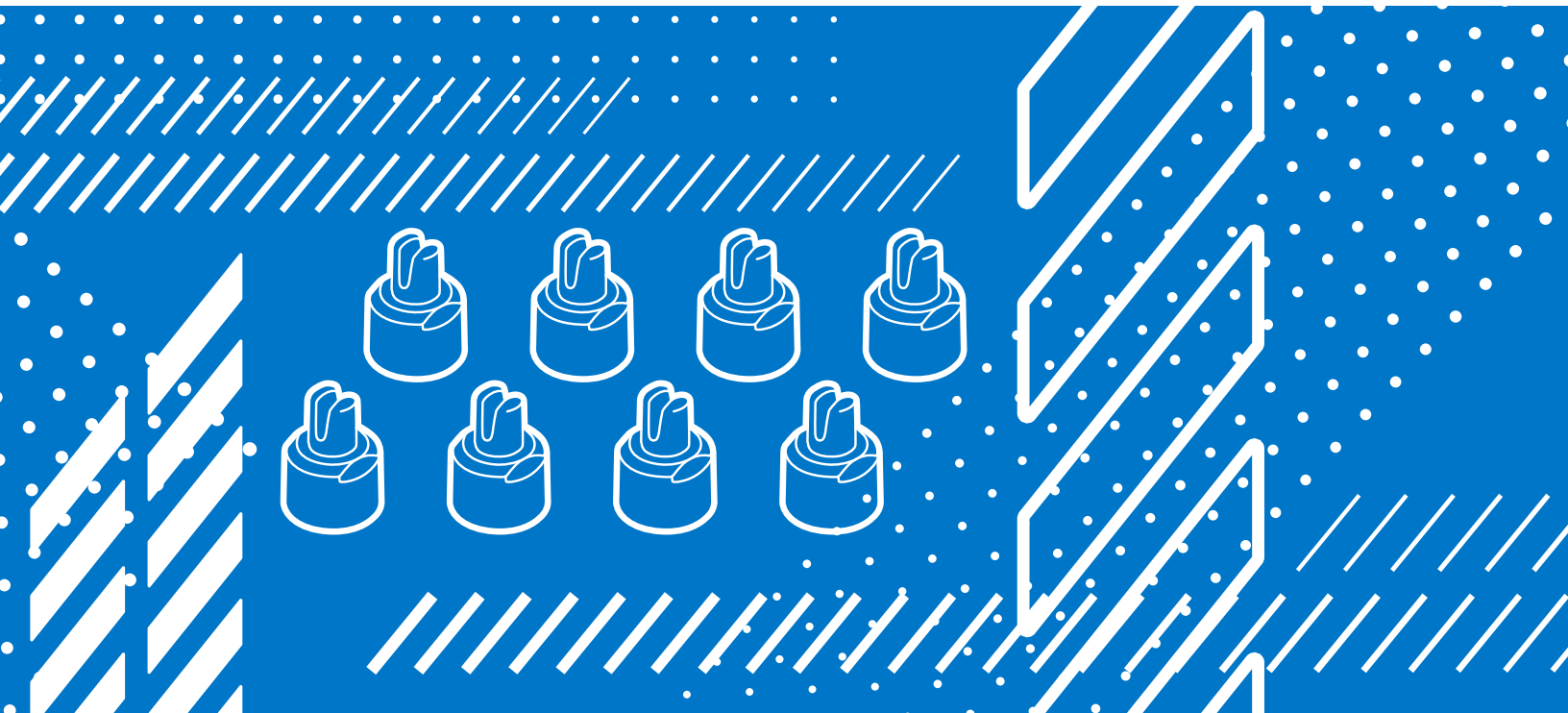


VEX IQ ROBOTICS COMPETITION

MIX & MATCH

2025 - 2026

Section 2 - The Game



Section 2 - The Game

Field Overview

The VEX IQ Robotics Competition Mix & Match *Field* consists of the following:

- 36 *Pins*
  - 10 blue *Pins*
    - 1 *Preload*
    - 6 that can be introduced through the blue *Load Zone*
    - 3 that start in the *Field*
  - 10 red *Pins*
    - 1 *Preload*
    - 6 that can be introduced through the red *Load Zone*
    - 3 that start in the *Field*
  - 16 orange *Pins* that start on the *Field*
- Two (2) *Beams*
- One (1) *Floor Goal*
- Two (2) *Square Goals*, one red and one blue
- Two (2) *Triangle Goals*, one red and one blue
- One (1) *Standoff Goal*
- Two (2) *Load Zones*, one red and one blue
- Four (4) *Starting Pin Supports*

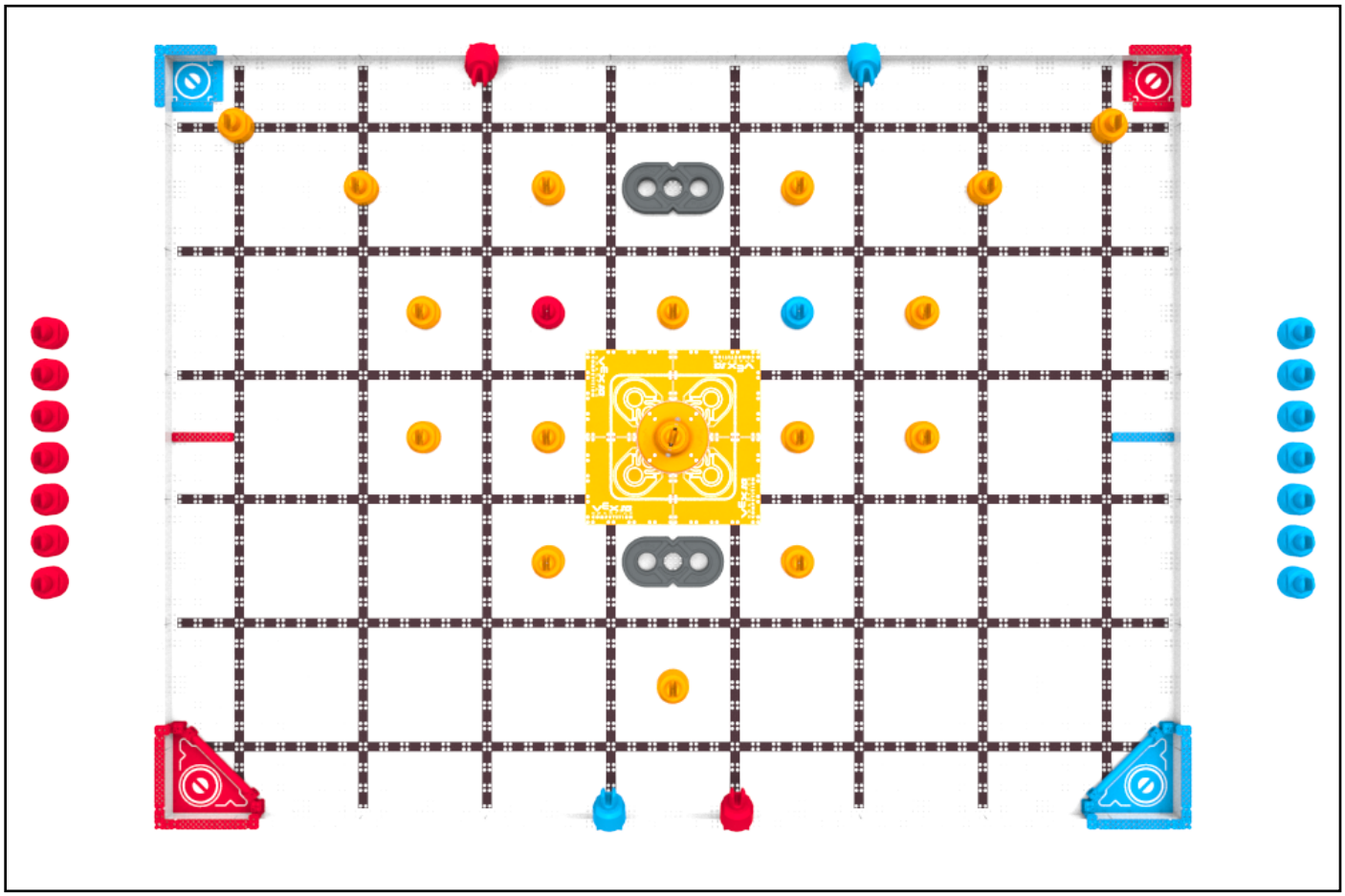


Figure FO-1: *Starting configuration of the Field for a VEX IQ Robotics Competition Mix & Match Teamwork Match.*

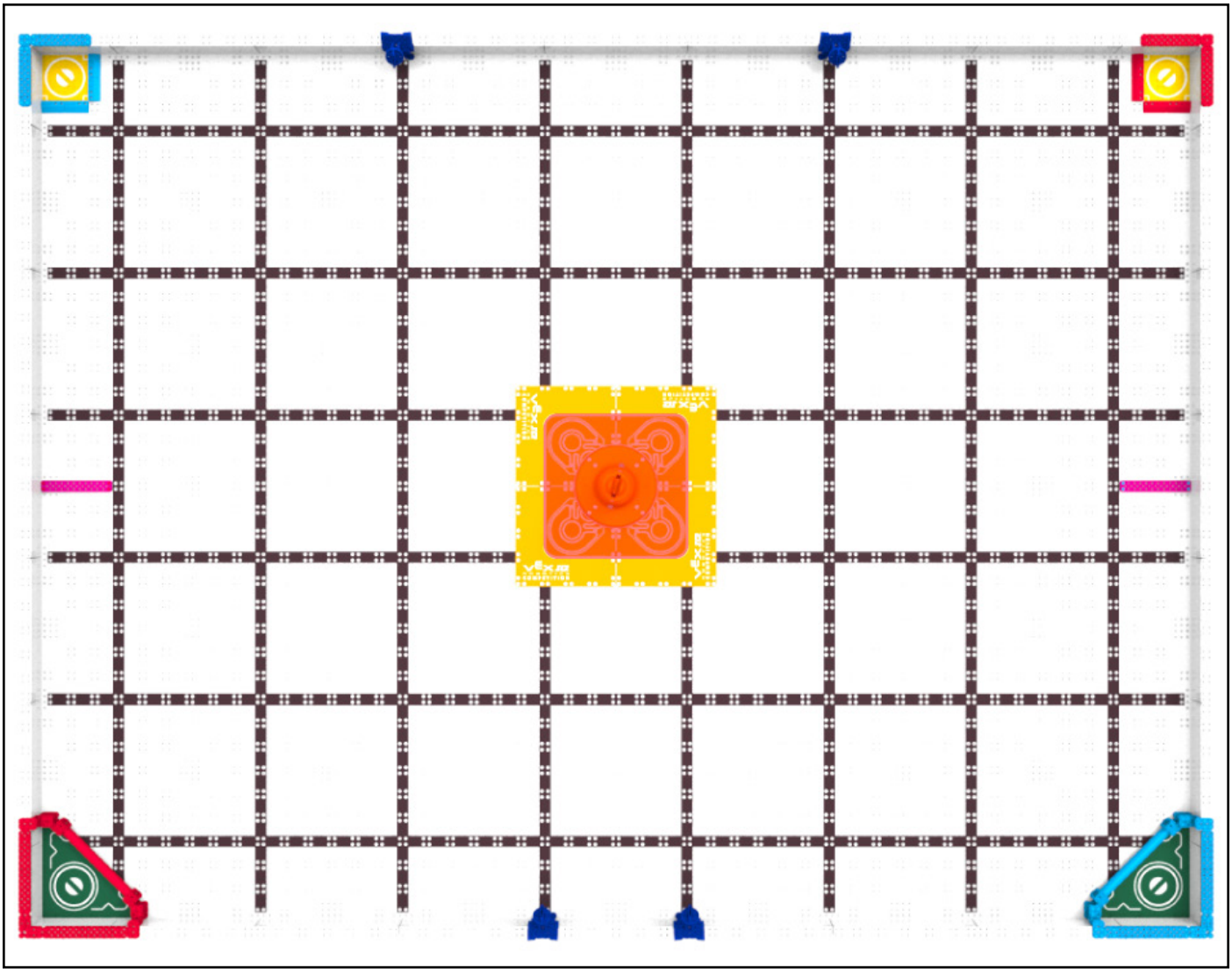


Figure FO-2: *A VIQRC Mix & Match Field, with Field Elements highlighted. Triangle Goals (green), Square Goals (yellow), Starting Pin Supports (blue), Floor Goal and Standoff Goal (orange), and Load Zones (pink).*

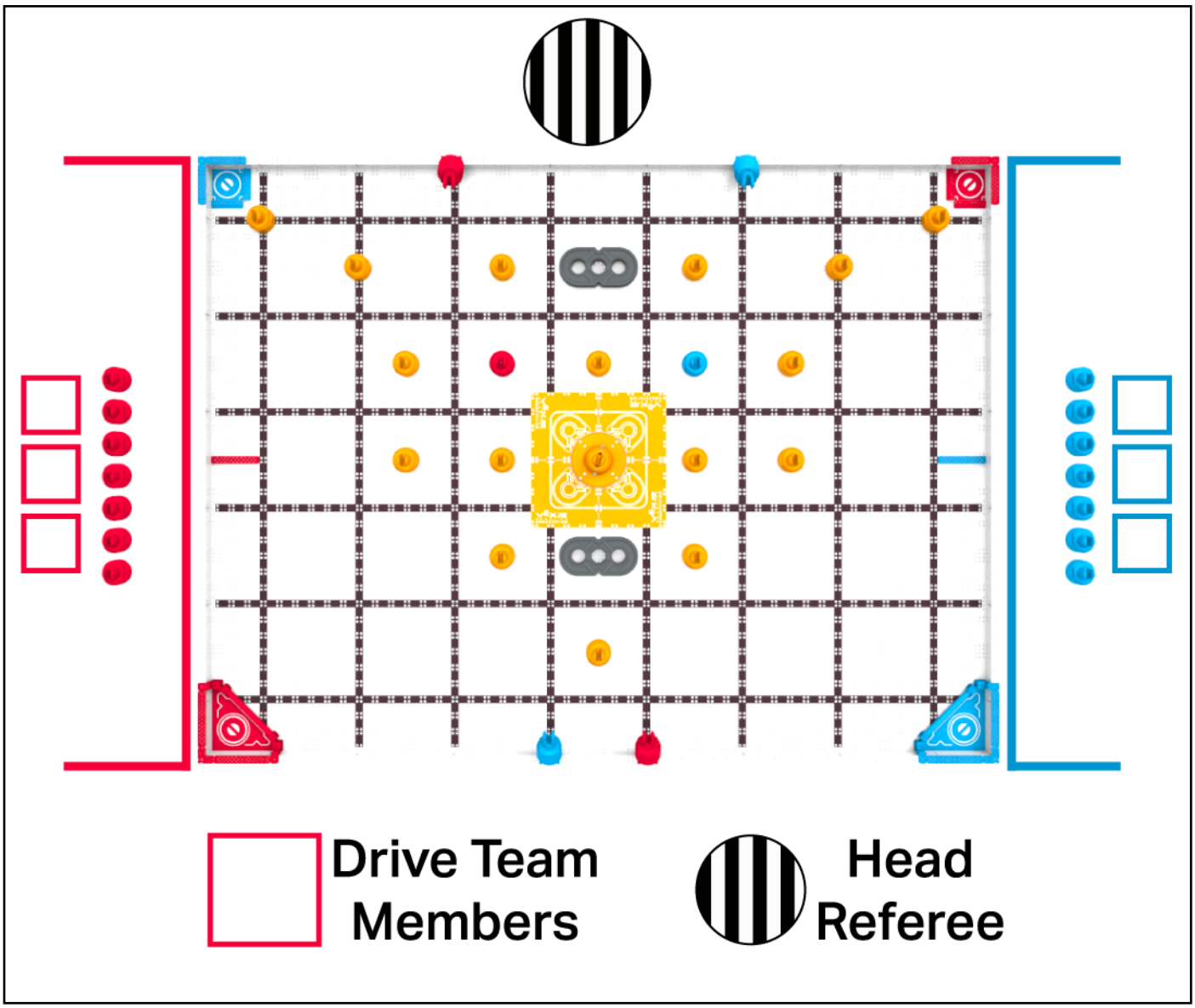


Figure FO-3: *The recommended locations for Drive Team Members and Head Referees during Teamwork Challenge Matches.*

General Definitions

Adult - Anyone who is not a *Student* or another defined term (e.g., *Head Referee*).

Alliance - A pre-assigned grouping of two (2) *Teams* that are paired together during a given *Teamwork Challenge Match*.

Alliance Score - Points scored in a *Teamwork Challenge Match* that are awarded to both *Teams*.

Disablement - A penalty applied to a *Team* for a safety *Violation*. During *Disablement*, a *Team* is no longer allowed to operate their *Robot*, and the *Drivers* will be asked to place their Controller down. A *Disablement* is not the same as a *Disqualification*.

Disqualification - A penalty applied to a *Team* for a rule *Violation* (see <GG6> for more details). If a *Team* receives a *Disqualification* in a *Match*, the *Head Referee* will notify the *Team* of their *Violation* at the end of the *Match*. At the *Head Referee's* discretion, repeated *Violations* and/or *Disqualifications* for a single *Team* may lead to its *Disqualification* for the entire event.

Driver - A *Student Team* member who stands in the *Driver Station* and is responsible for operating and controlling that *Team's Robot*. Up to two *Team* members may fulfill this role in a given *Match* (see <GG1>), and there is no requirement that the same *Students* serve as *Drivers* in multiple *Matches*.

Driver Station - A region beside the *Field* where the *Drivers* must remain during their *Match* unless legally interacting with their *Robot*. The *Driver Stations* are represented by the red and blue lines in Figure FO-3.

Drive Team Members - The two *Drivers* and one Loader who participate in a given *Match* as representatives of their *Team*. No *Student* may fill more than one role on a Drive Team in the same *Match*.

- *Driver* 1 - Drives the *Robot* until the mid-*Match* Driver switch (see <GG11>)
- *Driver* 2 - Drives the *Robot* after the mid-*Match* Driver switch (see <GG11>)
- Loader - Introduces *Scoring Objects* into the *Field* for the whole *Match*

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*.

Field Element - The *Field Perimeter*, *Floor*, PVC pipes, and VEX IQ pieces which comprise and/or are attached to the *Field*.

Field Perimeter - The outer part of the *Field*, made up of four (4) outside corners and twenty-four (24) straight sections.

Floor - The interior flat part of the playing *Field*, made up of the forty-eight (48) *Field* tiles that are within the *Field Perimeter*.

Game Design Committee (GDC) - The creators of VIQRC Mix & Match, and authors of this Game Manual. The GDC is the only official source for rules clarifications and Q&A responses; see Section 1.

License Plate - A physical component on the *Robot* that displays the *Team's* VEX IQ Robotics Competition number. Each *License Plate* must have a length and height of 3.5" x 1.5" (88.9mm x 38.1mm) and must not exceed a width of 0.25" (6.35mm) per <R6>.

Match - A set time period, consisting of *Autonomous Periods* and/or *Driver Controlled Periods*, during which *Teams* play a defined version of Mix & Match to earn points. See Sections 3 & 4.

- **Autonomous Period** - A time period during which *Robots* operate and react only to sensor inputs and/or commands pre-programmed by the *Students* into the *Robot* control system.
- **Driver Controlled Period** - A time period during which *Drivers* operate their *Robot*.

Match Type	Participants	Autonomous Period (m:ss)	Driver Controlled Period (m:ss)
Teamwork Challenge	One *Alliance*, on one *Field*, made up of two *Teams*, each with one *Robot*	None	1:00
Driving Skills Match	One *Team*, with one *Robot*	None	1:00
Autonomous Coding Skills Match	One *Team*, with one *Robot*	1:00	None

Robot - A machine that has passed inspection, designed by *Student Team* members to execute one or more tasks autonomously and/or by remote control from *Drivers*.

Student - Anyone born after May 1, 2010 (i.e., who will be 15 or younger at VEX Worlds 2026). 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.

- **Elementary School Student** – Any *Student* born after May 1, 2013 (i.e., who will be 12 or younger at VEX Worlds 2026). *Elementary School Students* may "play up" and compete as *Middle School Students*.
- **Middle School Student** - Any eligible *Student* that is not an *Elementary School Student*.

Team - Three or more *Students* make up a *Team*. To participate in an official VEX IQ Robotics Competition event, a *Team* must first register on RobotEvents.com and receive a VEX IQ Robotics Competition *Team* number. A *Team's* unique number identifies their organization and their *Team* within that organization. Each *Team* must build their own *Robot*, create their own code, and maintain their own Engineering Notebook if they choose to use one.

- A *Team* is classified as an Elementary School *Team* if all members are *Elementary School Students*.
- A *Team* is classified as a Middle School *Team* if any member is a *Middle School Student*, or if the *Team* is made up of *Elementary School Students* who declare themselves as "playing up" as *Middle School Students* by registering their *Team* as a Middle School *Team*.
- Once a *Team* has competed in an event as a Middle School *Team*, that *Team* may not change to an Elementary School *Team* for the remainder of the season. If a *Team* mistakenly registers as an Elementary School *Team* but is ineligible for that age group, their registration may be revised mid-season with RSM assistance; all prior qualifications for the season will be lost.
- *Teams* may be associated with schools, community/youth organizations, or a group of neighborhood *Students*.

In the context of this Game Manual, *Teams* contain three types of *Student* roles related to *Robot* build, design, and coding. See <G2> and <G5> for more information. *Adults* may not fulfill any of these roles.

- **Builder** - The *Student*(s) on the *Team* who assemble(s) the *Robot*. *Adults* are permitted to teach the *Builder*(s) associated concepts, but should never work on the *Robot*.
- **Coder** - The *Student*(s) on the *Team* who write(s) the computer code that is downloaded onto the *Robot*. *Adults* are permitted to teach the *Coder*(s) associated concepts, but should never work on the code that goes on the *Robot*.
- **Designer** - The *Student*(s) on the *Team* who design(s) the *Robot* to be built for competition. *Adults* are permitted to teach the *Designer*(s) associated concepts, but should never work on the design of the *Robot*.

Violation - The act of breaking a rule in the Game Manual.

- **Minor Violation** - A *Violation* which does not result in a *Disqualification*.
  - Accidental, momentary, or otherwise non-*Score Affecting Violations* are usually *Minor Violations*.
  - *Minor Violations* usually result in a verbal notification from the *Head Referee* during the *Match*, which should serve to inform the *Team* that a rule is being Violated before it escalates to a *Major Violation*.
- **Major Violation** - A *Violation* which results in a *Disqualification*.
  - Unless otherwise noted in a rule, all *Score Affecting Violations* are *Major Violations*.
  - If noted in the rule, egregious or strategic *Violations* or intentional actions that result in *Violations* may also be *Major Violations*.
  - Multiple *Minor Violations* within a *Match* or tournament may escalate to a *Major Violation* at the *Head Referee's* discretion or as specified in a rule. *Minor Violations* carry over into *Finals Matches* unless otherwise specified within a rule

- **Score Affecting** - A *Violation* which improves an *Alliance's* score at the end of a *Match*.
  - Multiple *Violations* within a *Match* can cumulatively become *Score Affecting*.
  - When evaluating whether a *Violation* was *Score Affecting*, *Head Referees* will focus primarily on any *Robot* actions that were directly related to the *Violation*.
  - Determining whether a *Violation* was *Score Affecting* can only be done once the *Match* is complete and the scores have been calculated.
- **CoC-related Violation** - A *Violation* of a rule that relates to the RECF Code of Conduct and related processes. For VIQRC, the included rules are: <S2>, <G1>, <G2>, <G4>, <G5>, <R1> through <R4>, and *Major Violations* of <S1>.
  - Potential *CoC-related Violations* should be brought to the attention of the *Event Partner*, and resolved through the Code of Conduct Reporting Process in coordination with the *Head Referee*, Judge Advisor, and RECF Regional Support Manager. Follow-up investigations are conducted by the RECF Rules & Conduct Committee (RCC). Penalties for confirmed *CoC-related Violations* can range from single-*Match Disqualifications* to removal from the program.

Some rules include *Violation* Notes in *red italicized text* to denote special circumstances or provide additional clarifications. If no *Violation* Notes are found in a given rule, then it should be assumed that the default definitions above apply.

To determine whether a *Violation* may have been *Score Affecting*, check whether the *Violation* directly contributed to increasing the score of the *Match*. If it did not increase the *Alliance's* score, then the *Violation* was not *Score Affecting*, and it was very likely a *Minor Violation*.

See the following flowcharts for more information. See the flowcharts in figures V-1, V-2, and V-3 for more information, and this article for full details of the event CoC process.

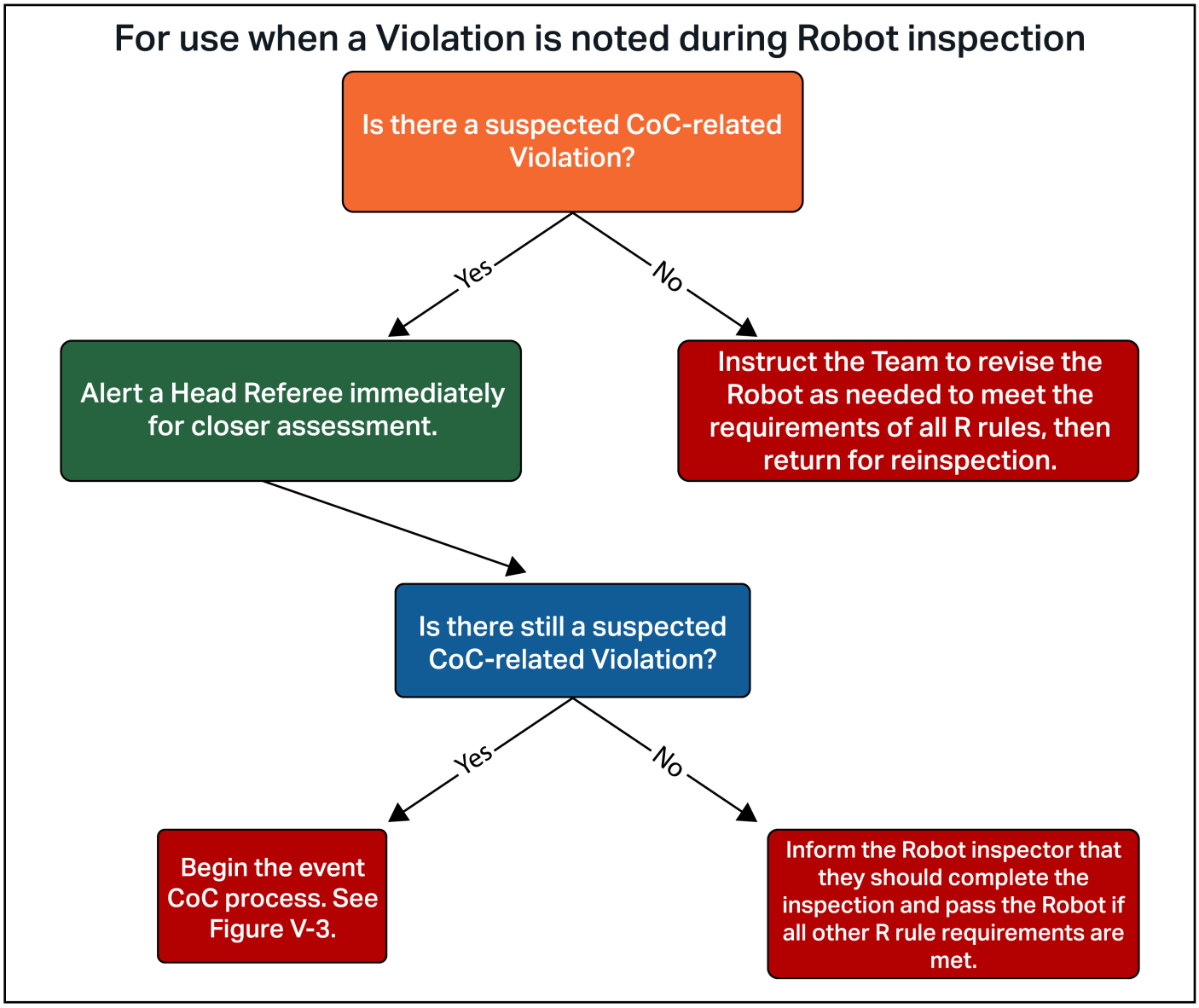


Figure V-1: *The process for determining Violations during Robot inspection.*

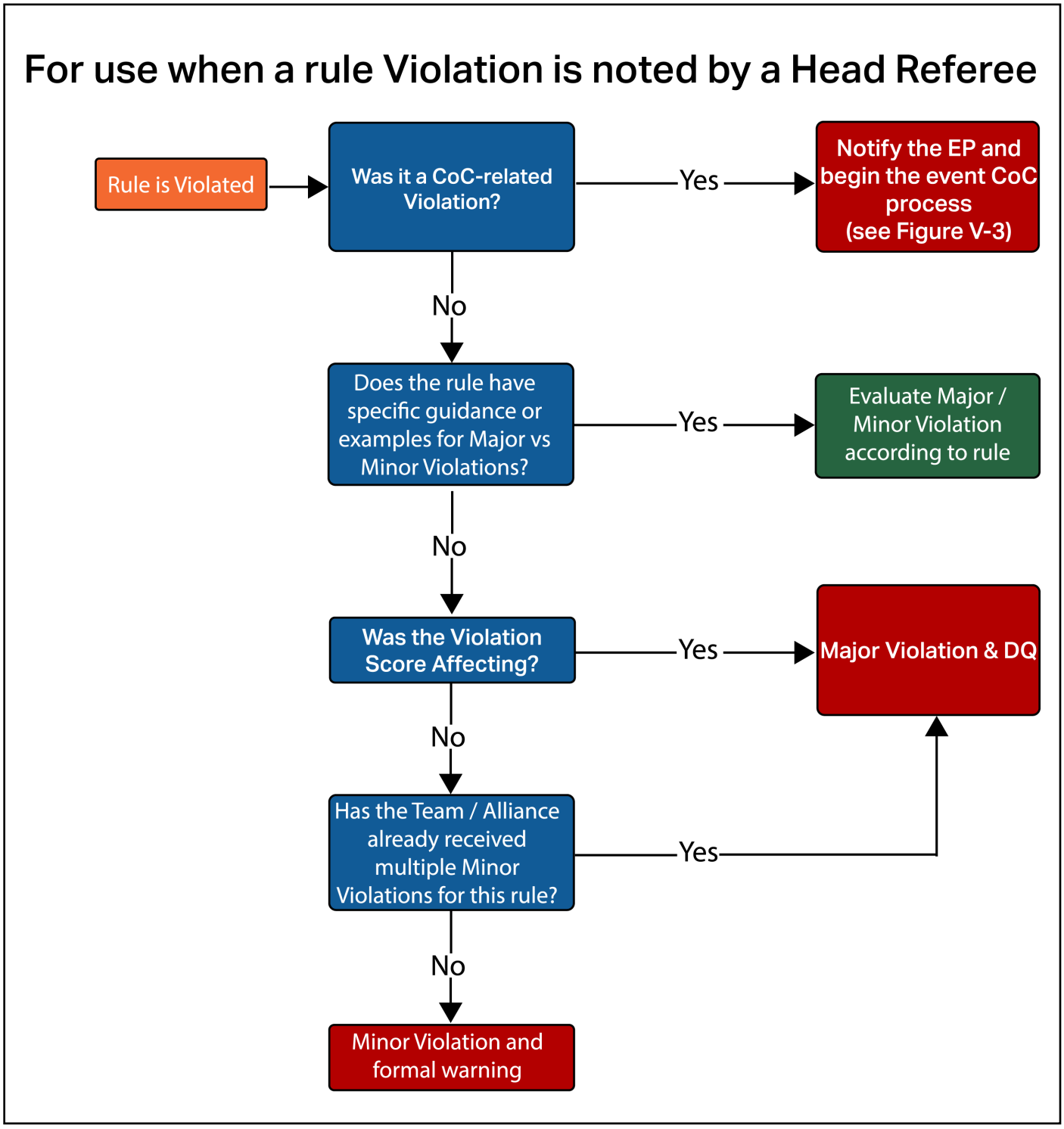


Figure V-2: *The process for determining whether or not an infraction should result in a Major Violation or Minor Violation.*

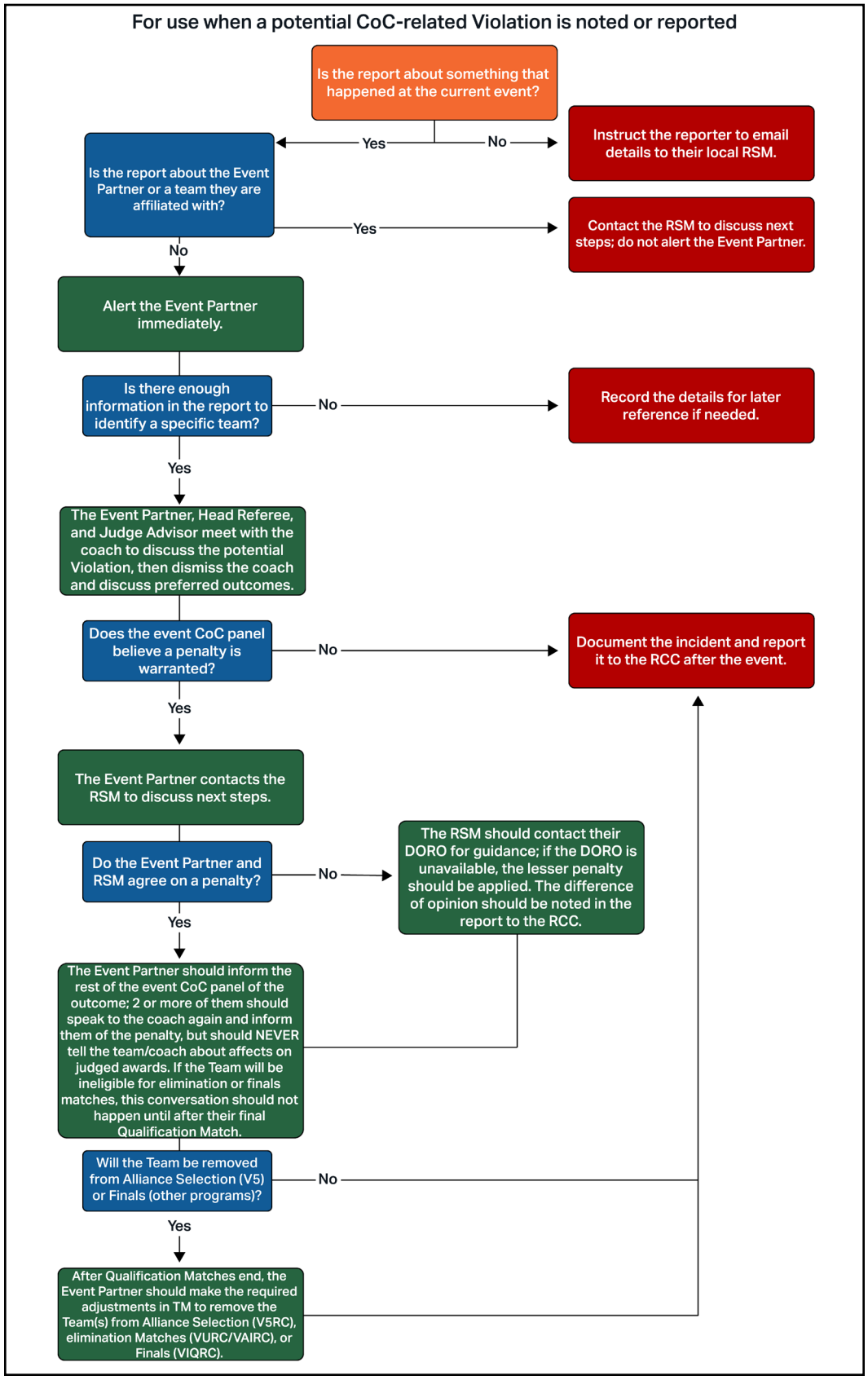


Figure V-3: *The process for determining CoC-related Violations.*

Game-Specific Definitions

Connected - A *Scoring Object* status. See <SC3>.

Cleared - A *Starting Pin* status. See <SC7>.

Goal - A place where *Stacks* can be *Placed*. There are four (4) varieties of *Goal* in VIQRC Mix & Match:

- **Square Goal** - A segment of the *Floor* in a corner of the long side of the *Field* opposite from the audience. Each *Square Goal* is bordered by the inside of the *Field Perimeter* and the inside edges of the VEX IQ pieces connected to the *Floor*. Each *Square Goal* has a color, red or blue, determined by its VEX IQ pieces and PET sheet. Each *Square Goal* can hold a maximum of one (1) *Placed Stack*.
- **Floor Goa**l - A segment of the *Floor* in the center of the *Field* surrounding the *Standoff Goal*. The *Floor Goal* is defined by the center, white-outlined portion of the PET sheet connected to the *Floor* underneath the *Standoff Goal*, and includes that white line. The *Floor Goal* can hold a maximum of four (4) *Placed Stacks*.
- **Triangle Goal** - A segment of the *Floor* in a corner of the long side of the *Field* closest to the audience. Each *Triangle Goal* is bordered by the inside of the *Field Perimeter* and the inside of the PVC pipe that spans the corner of the *Field*. Each *Triangle Goal* has a color, red or blue, determined by its VEX IQ pieces, PVC pipe, and PET sheet. Each *Triangle Goal* can hold a maximum of three (3) *Placed Stacks*.
- **Standoff Goal** - The orange plastic structure mounted to the center of the *Field* with IQ pins or screws.

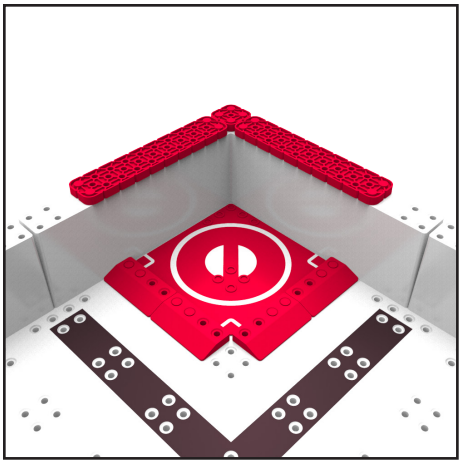


Figure G-1: *A Square Goal.*

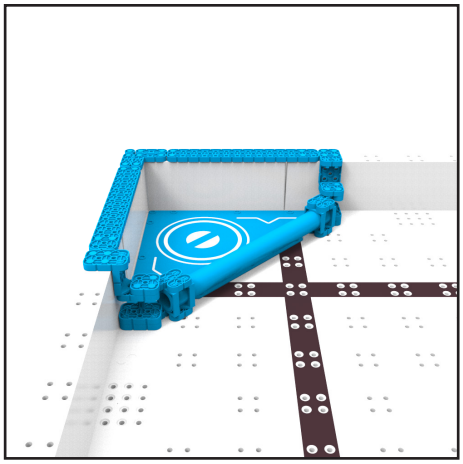


Figure G-2: *A Triangle Goal.*

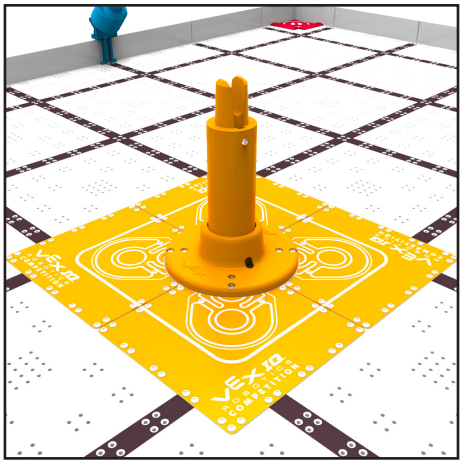


Figure G-3: *A Floor Goal and Standoff Goal.*

Load - The act of legally introducing a *Pin* or *Beam* into the *Field*. See <SG6>.

Load Zone - A red or blue VEX IQ beam that is attached to the *Field* with VEX IQ pins. The *Load Zone* is intended to receive *Scoring Objects* from a human Loader.

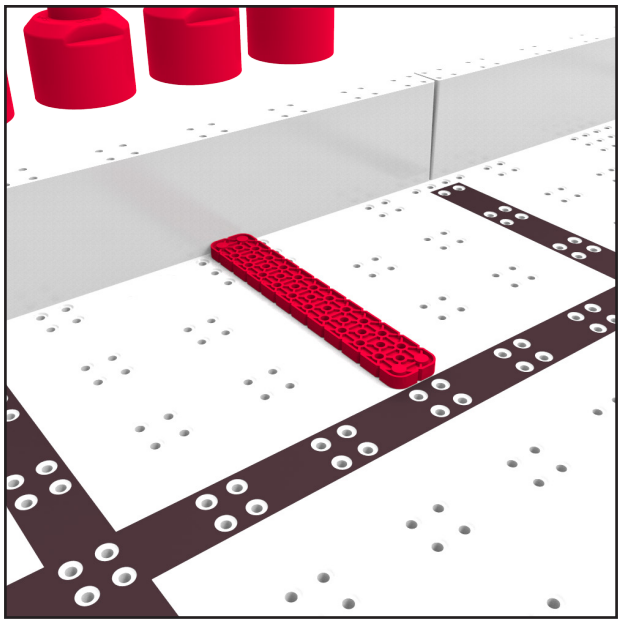


Figure LZ-1: *A Load Zone.*

Matching Goal - A scoring bonus. See <SC6>.

Placed - A *Stack* status. See <SC5>.

Preload - A *Pin* that is *Loaded* into a *Robot* prior to a *Match*. See <SG5>.

Scoring Object - A plastic object that can be added to a *Stack*. There are two types of *Scoring Objects* in VIQRC Mix & Match:

- **Pin** - An orange, blue, or red roughly cylindrical object with a diameter of approximately 3.15" (80mm), height of 4.5" (116mm), and a weight of approximately 2.5 ounces (71g).
- **Beam** - A gray, roughly rectangular object with a size of 9.88" (251mm) x 4.88" (124mm) x 1.97" (50mm) and a weight of approximately 6 ounces (170g).

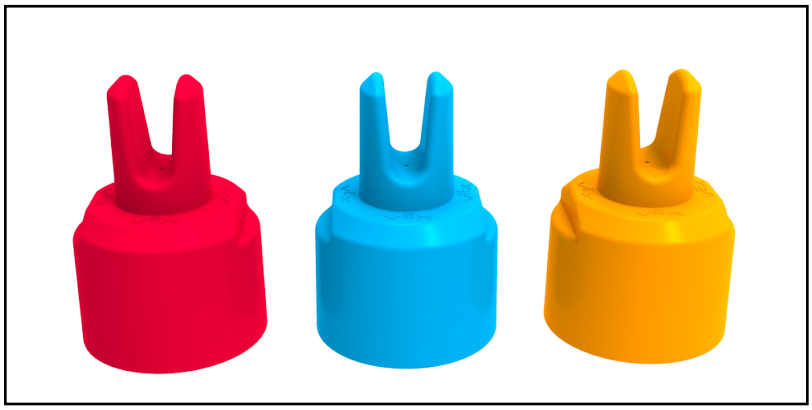


Figure SO-1: *Red, blue, and orange Pins*

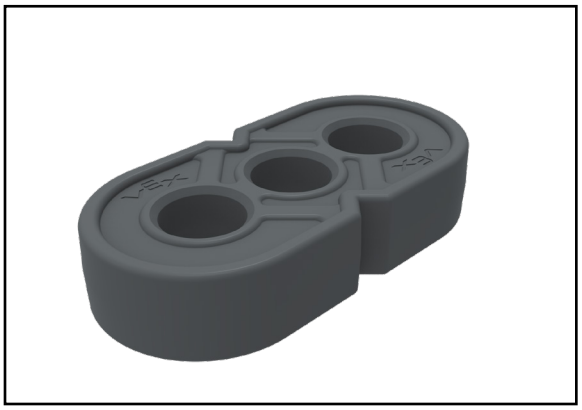


Figure SO-2: *A Beam*

Stack - A set of two or more *Connected Scoring Objects*.

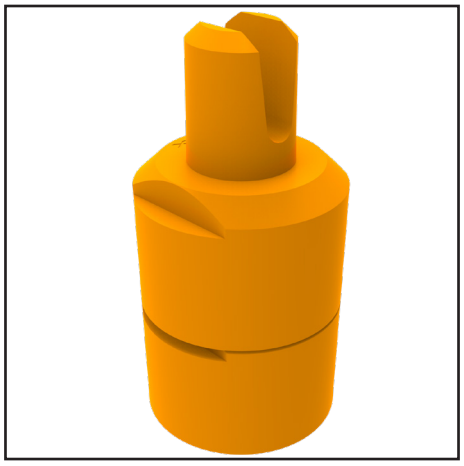


Figure S-1: *A Stack of two Pins.*

Starting Pin - A *Pin* that begins the *Match* on a *Starting Pin Support*.

Starting Pin Support - One of four (4) red or blue structures, built out of VEX IQ parts, that is attached to the *Field Perimeter*. Each *Starting Pin Support* holds a *Pin* of its color at the beginning of the *Match*, and until the *Pin* is removed by a *Robot*.

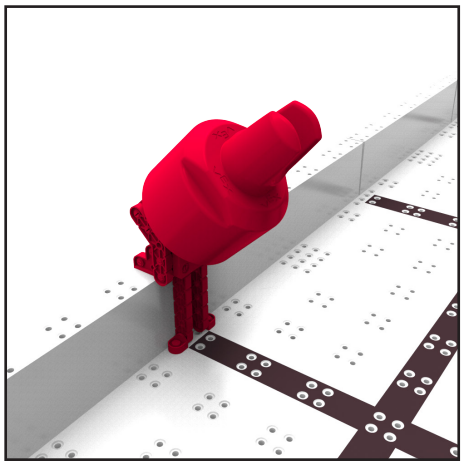


Figure SPS-1: *A Starting Pin.*

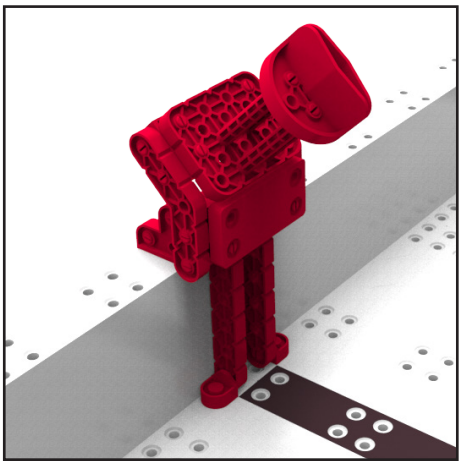


Figure SPS-2: *A Starting Pin Support.*

Scoring

Each *Connected Pin*	1 Point
Each *Connected Beam*	10 Points
Each 2-color *Stack*	5-Point Bonus
Each 3-color *Stack*	15-Point Bonus
Each *Matching Goal* bonus	10-Point Bonus
Each *Stack Placed* on the *Standoff Goal*	10-Point Bonus
Each *Cleared Starting Pin*	2 Points
Each *Robot* in contact with *Scoring Objects* at the end of the *Match*. See <SC8>.	2 Points

<SC1> All scoring statuses are evaluated **after the Match ends**, once all *Scoring Objects*, *Field Elements*, and *Robots* on the *Field* come to rest. See rule <GG12> for more information and *Violation* details.

a. Referees should avoid contacting or moving *Scoring Objects* as much as possible while evaluating Scoring statuses. If an object must be moved to evaluate the status of another object, its status must be agreed upon by all *Teams* and the *Head Referee*, and noted or recorded, before it is moved.

<SC2> All scoring statuses are evaluated **visually by a Head Referee**, to the best of their ability within the context of a given *Match*/event.

a. Referees and other event staff are not allowed to review any videos or pictures from the *Match*. See <T3>.

b. If there is a concern regarding the score of a *Match*, only the *Drive Team Members* from that *Match*, not an *Adult*, may share their questions with the *Head Referee*. See <T3>.

<SC3> **A Scoring Object can be Connected to another Scoring Object** to form a *Stack*. To qualify as *Connected*, the resulting *Stack* must be roughly vertical (i.e., the *Stack* goes 'up' and not sideways) and cannot be in contact with a *Robot*.

a. *Scoring Objects* can be *Connected* in two ways: up from the *Floor* or *Standoff Goal*, or up from a *Beam*.

b. A *Pin* is *Connected* if it is fully nested (see figure SC3-1) with another *Scoring Object* and neither the *Pin* nor the resulting *Stack* is touching a *Robot*.

c. A *Beam* is *Connected* if it is fully nested to one or more *Connected Pins* and/or the *Standoff Goal* and is not touching a *Robot*.

   i. A *Beam* cannot be *Connected* to another *Beam*.

   ii. A *Beam* may be *Connected* to up to three (3) *Pins* simultaneously if all *Pins* are fully nested with the *Beam*.

   iii. Each *Pin* that is *Connected* directly to a *Beam* is considered to be part of a separate *Stack*, and a *Beam* may count as a color in up to three (3) *Stacks* simultaneously.

d. A *Stack* that is resting on one of the following Field Objects in a way that is more "up and down" than sideways should generally be considered as roughly vertical unless it is leaning on / supported by another *Field Element* or a *Scoring Object* that is not part of the *Stack*:
   - *Floor*
   - *Load Zone*
   - The lower portion of the base of the *Standoff Goal*
   - The VEX IQ pieces that are attached to the *Floor* around a *Square Goal*

e. A *Stack* that is leaning on / supported by a *Scoring Object* that is not part of the *Stack* or a *Field Element* other than those listed above should not be considered roughly vertical and should not count as *Connected* or a *Stack*.

f. *Robot* contact with a lower *Stack* in a multi-*Stack* structure has no impact on the higher *Stacks* in that structure for the purposes of clauses D & E. See <SE9> for an example.

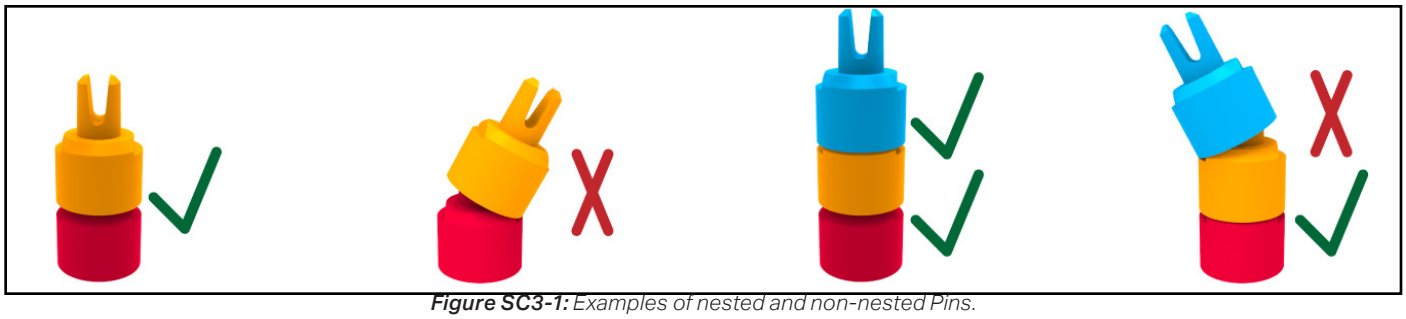


Figure SC3-1: *Examples of nested and non-nested Pins.*

Note: Scoring Objects cannot count as Connected or Placed in Goals if they are not vertical. Scoring Objects that end the Match 'knocked down' or 'tipped' within the Field, or that are not Connected to other Scoring Objects, can only count toward the 2 points earned for a Robot that ends the Match in contact with 2 or more Scoring Objects.

Note 2: A pair of Scoring Objects is considered fully nested if there's no perceptable gap between the two objects, and neither object is being pushed away from the other by an external force or surface.

Significant Q&As:

- Q&A 2664 - Multiple scoring scenarios; Beam on floor generally leads to non-nested Pins
- Q&A 2669 - Scoring example with a Beam supported by the perimeter
- Q&A 2679 - A Beam can earn points if it's Connected to the Standoff Goal with no Pins
- Q&A 2716 - Examples to clarify "fully nested" and "roughly vertical"
- Q&A 2878 - A "U-Beam" structure that's sitting on the floor is usually not nested and worth 0 points
- Q&A 2881 - A "U-Beam" structure that's sitting on a Load Zone (or the bottom of the Standoff Goal, or the IQ pieces around a Square Goal) can potentially be fully nested and count as Connected Scoring Objects and Stacks
- Q&A 2917 - If multiple objects in a single Stack are contacting the Floor, it can't be considered 'roughly vertical' and is worth 0 points

<SC4> A *Stack* that includes more than one color (blue, red, orange, or gray) of *Scoring Object* receives **additional points based on the number of colors** in that *Stack*, up to three colors.

<SC5> A *Stack* is considered **Placed in a Goal** at the end of the *Match* if it meets all of the following criteria.

a. There are at least two (2) *Connected Scoring Objects* in the *Stack*.

b. No part of the *Stack* is contacting a *Robot*.

c. The *Stack* meets one of the following criteria:

   i. The *Stack* is entirely within the center outline that defines the *Floor Goal* (maximum of four (4) *Stacks*).

   ii. The *Stack* is entirely within a *Square Goal* (maximum of one (1) *Stack* per *Goal*).

   iii. The *Stack* is entirely within a *Triangle Goal* (maximum of three (3) *Stacks* per *Goal*).

   iv. The *Stack* is above the *Standoff Goal* in one of the following configurations:

      1. The *Stack* is *Connected* to the *Standoff Goal*
      2. The *Stack* is *Connected* up from a *Beam* that is *Connected* to the *Standoff Goal*
      3. The *Stack* is *Connected* up from a *Beam* that is part of another *Stack* that is *Connected* to the *Standoff Goal*

Significant Q&As:

- Q&A 2714 - Example scoring for a stack on the Standoff Goal and in contact with a Robot
- Q&A 2717 - Example scoring for a Stack that is Placed in the Floor Goal and connected down from a Beam that is Connected to the Standoff Goal
- Q&A 2755 - Clarification of "entirely within" a Goal

<SC6> A *Stack* earns a **Matching Goal** bonus when one or more of the following criteria is met:

a. The *Stack* is *Placed* in a *Goal* with a color that matches the bottom *Pin* in that *Stack*.

b. The *Stack* is *Connected* to a *Beam*.

Each *Stack* can earn a maximum of one (1) *Matching Goal* bonus.

Significant Q&As:

- Q&A 2665 - One Pin connected to a Beam counts as a Stack
- Q&A 2873 - Only a Stack can earn a Matching Goal bonus, and a Stack consists of 2 or more Connected Scoring Objects
- Q&A 2887 - One Pin placed on the Standoff Goal doesn't count as Connected or a Stack, and is worth 0 points
- Q&A 2894 - Scoring example for a "U-Beam" on the Standoff Goal

<SC7> **A Starting Pin is Cleared** if no part of its *Starting Pin Support* is within the volume of a *Pin* at the end of the *Match*.

<SC8> A *Robot* will receive 2 points for **ending the Match in contact with Scoring Objects** in the following scenarios:

a. The *Robot* is directly contacting two or more *Scoring Objects*.

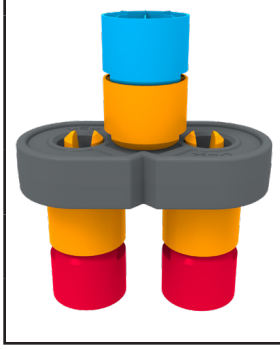
b. The *Robot* is directly contacting a *Scoring Object* that is fully nested with one or more additional *Scoring Objects*.

Significant Q&As:

- Q&A 2758 - Multiple Robots can contact the same Scoring Object or Stack
- Q&A 2759 - Pins on Starting Pin Supports count toward this rule

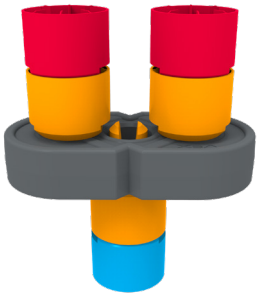
Scoring Examples

<SE1> All *Scoring Objects* in this example are *Connected*, and none are *Placed* in a *Goal*. This example is scored as 6 *Connected Pins*, 1 *Connected Beam*, and three 3-color *Stacks* with a *Matching Goal* Bonus.



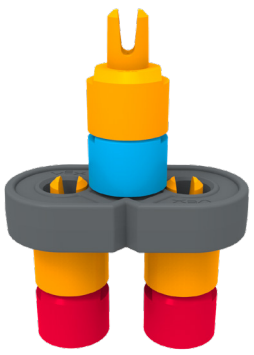
Scoring Category	Points	Quantity	Subtotal
Connected Pin	1 point	6	6
Connected Beam	10 points	1	10
3-color *Stack*	15 points	3	45
Matching Goal Bonus	10 points	3	30
Total Points for this example			**91**

<SE2> All *Scoring Objects* in this example are *Connected*, and none are *Placed* in a *Goal*. This example is scored as 6 *Connected Pins*, 1 *Connected Beam*, and three 3-color *Stacks* with a *Matching Goal* Bonus.



Scoring Category	Points	Quantity	Subtotal
Connected Pin	1 points	6	6
Connected Beam	10 points	1	10
3-color *Stack*	15 points	3	45
Matching Goal Bonus	10 points	3	30
Total Points for this example			**91**

<SE3> The top *Stack* in this example is not *Connected* to the *Beam*, and is supported by a *Scoring Object* that is not part of that *Stack*. All other *Scoring Objects* are *Connected*, and none are *Placed* in a *Goal*. This example is scored as 4 *Connected Pins*, 1 *Connected Beam*, and two 3-color *Stacks* with a *Matching Goal* Bonus.

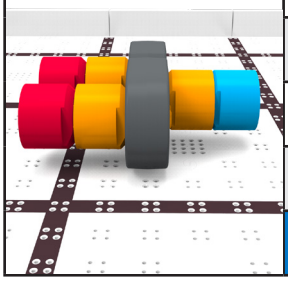


Scoring Category	Points	Quantity	Subtotal
Connected Pin	1 point	4	4
Connected Beam	10 points	1	10
2-color *Stack*	5 points	0	0
3-color *Stack*	15 points	2	30
Matching Goal Bonus	10 points	2	20
Total Points for this example			**64**

<SE4> The *Beam* in this example is not *Connected*, but all of the *Pins* are; no *Stacks* are *Placed* in a *Goal*. This example is scored as 4 *Connected Pins* and two 2-color *Stacks* not *Placed* in a *Goal* and not *Connected* to a *Beam*.

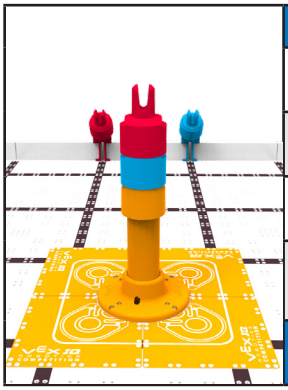
Scoring Category	Points	Quantity	Subtotal
Connected Pin	1 point	4	4
Connected Beam	10 points	0	0
2 -color *Stack*	5 points	2	10
		Total Points for this example	**14**

<SE5> Because none of these *Pins* are vertical, nothing in this example counts as *Connected* or as a *Stack*. No other points are scored. This example would not receive a score.



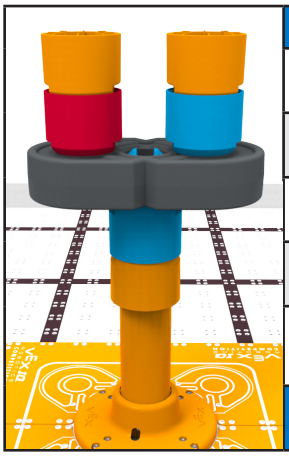
Scoring Category	Points	Quantity	Subtotal
Connected Pin	1 point	0	0
Connected Beam	10 points	0	0
3-color *Stack*	15 points	0	0
Matching Goal Bonus	10 points	0	0
		Total Points for this example	**0**

<SE6> The *Pins* in this example are *Connected*, *Placed* in a *Matching Goal*, and *Placed* on the *Standoff Goal*. This example is scored as 3 *Connected Pins*, one 3-color *Stack* with a *Matching Goal* Bonus, and *Placed* on the *Standoff Goal*.



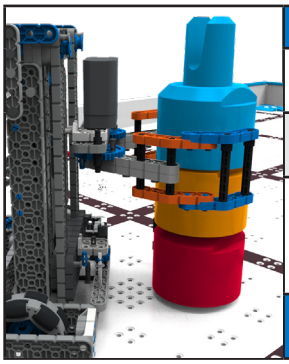
Scoring Category	Points	Quantity	Subtotal
Connected Pin	1 point	3	3
3-color *Stack*	15 points	1	15
Matching Goal Bonus	10 points	1	10
Stack Placed on the *Standoff Goal*	10 points	1	10
		Total Points for this example	**38**

<SE7> All *Scoring Objects* in this example are *Connected*, and all three *Stacks* are *Placed* on the *Standoff Goal* via the *Connected Beam*. This example is scored as 6 *Connected Pins*, 1 *Connected Beam*, three 3-color *Stacks* with a *Matching Goal* Bonus and three *Stacks Placed* on the *Standoff Goal*.



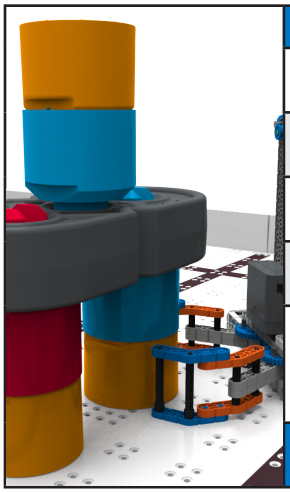
Scoring Category	Points	Quantity	Subtotal
Connected Pin	1 point	6	6
Connected Beam	10 points	1	10
3-color *Stack*	15 points	3	45
Matching Goal Bonus	10 points	3	30
Stack Placed on the *Standoff Goal*	10 point	3	30
Total Points for this example			**121**

<SE8> The *Pins* in this example are nested together, but part of the *Stack* is in contact with a *Robot* at the end of the *Match*. None of the *Pins* qualify as *Connected*. This example is scored as a *Robot* in contact with *Scoring Objects* at the end of the *Match*.



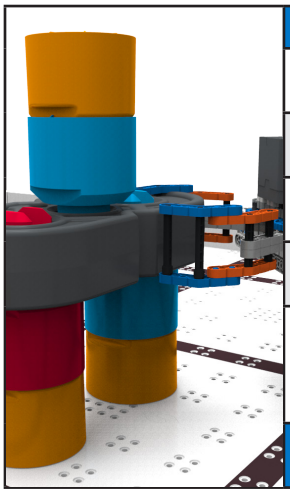
Scoring Category	Points	Quantity	Subtotal
Connected Pin	1 point	0	0
3-color *Stack*	15 points	0	0
Robot in contact with *Scoring Objects* at the end of the *Match*	2 points	1	2
Total Points for this example			**2**

<SE9> All of the *Scoring Objects* in this example are nested together, but a *Pin* in one of the *Stacks* is in contact with a *Robot* at the end of the *Match*. The *Pins* in the one *Stack* that is in contact with the *Robot* do not qualify as *Connected* to each other or to the *Beam*; however, as described in clause F of <SC3> the other *Stacks* still qualify as roughly vertical. This example is scored as 4 *Connected Pins*, 1 *Connected Beam*, two 3-color *Stacks* with a *Matching Goal* Bonus, and a *Robot* in contact with *Scoring Objects* at the end of the *Match*.



Scoring Category	Points	Quantity	Subtotal
Connected Pin	1 point	4	4
Connected Beam	10 points	1	10
3-color *Stack*	15 points	2	30
Matching Goal Bonus	10 points	2	20
Robot in contact with *Scoring Objects* at the end of the *Match*	2 points	1	2
Total Points for this example			**66**

<SE10> All of the *Scoring Objects* in this example are nested together, but the *Beam* is in contact with a *Robot* at the end of the *Match*. Because the *Beam* is part of all three *Stacks*, none of the *Scoring Objects* qualify as *Connected*. This example is scored as a *Robot* in contact with *Scoring Objects* at the end of the *Match*.



Scoring Category	Points	Quantity	Subtotal
Connected Pin	1 point	0	0
Connected Beam	10 points	0	0
3-color *Stack*	15 points	0	0
Matching Goal Bonus	10 points	0	0
Robot in contact with *Scoring Objects* at the end of the *Match*	2 points	1	2
Total Points for this example			**2**

Safety Rules

<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 *Scoring Objects*, 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*.

Note: Teams may not step onto the Field at any time. If a Team's Robot requires stepping onto the Field during pre-Match setup, this will be considered a Violation of <S1>, <GG3>, and/or <SG1>. The Team's Robot may be removed from the current Match at the Head Referee's discretion.

Violation Notes: Major Violations should be reported to and/or discussed with the Event Partner during the event, and should be reported to the REC Foundation Rules and Conduct Committee following the event.

<S2> Students must be accompanied by an Adult. No *Student* may attend a VEX IQ Robotics Competition event without a responsible *Adult* supervising them. The *Adult* must obey all rules and be careful to not violate *Student*-centered policies, but must be present for the full duration of the event in the case of an emergency. *Violations* of this rule may result in removal from the event.

Violation Notes: <S2> Violations should be reported to the Event Partner during the event, and should be reported to the REC Foundation Rules and Conduct Committee following the event.

<S3> Each Student Team member must have a completed participant release form on file for the event and season. A *Student Team* member cannot participate in an event without a completed release form on file.

General Rules

<G1> Treat everyone with respect. All *Teams* are expected to conduct themselves in a respectful and professional manner while competing in VEX IQ Robotics Competition events. If a *Team* or any of its members (*Students* or any *Adults* associated with the *Team*) are disrespectful or uncivil to event staff, volunteers, or fellow competitors, they may be *Disqualified* from a current or upcoming *Match*. *Team* conduct pertaining to <G1> may also impact a *Team's* eligibility for judged awards. Repeated or extreme *Violations* of <G1> could result in a *Team* being *Disqualified* from an entire event, depending on the severity of the situation.

This rule exists alongside the REC Foundation Code of Conduct. *Violation* of the Code of Conduct can be considered a *Major Violation* of <G1> and can result in *Disqualification* from a current *Match*, an upcoming *Match*, an entire event, or (in extreme cases) an entire competition season. The Code of Conduct can be found here.

a. Event attendees are not allowed to record audio or video of *Teams'* discussions with *Head Referees* or other event staff/volunteers.

More information regarding the event Code of Conduct process can be found at the RECF Library.

We all can contribute to creating a fun and inclusive event experience for all event attendees. Some examples include:

When dealing with difficult and stressful situations, it is...

- Okay for *Teams* to be gracious and supportive when your *Alliance* partner makes a mistake.
- Not okay for *Teams* to harass, tease, or be disrespectful to your *Alliance* partner when a *Match* does not go your way.

When a *Team* does not understand a *Match* ruling or score, it is...

- Okay for *Drive Team Members* to consult with a *Head Referee* to discuss a ruling per the process outlined in <T3> in a calm and respectful manner.
- Not okay for *Drive Team Members* to continue arguing with the *Head Referee* after a decision has been finalized, or for *Adults* to approach a *Head Referee* with ruling/scoring concerns.

When *Teams* are getting ready for an upcoming *Match*, it is...

- Okay for *Teams* in an *Alliance* to develop a game strategy that utilizes the strengths of both *Robots* to cooperatively solve the game.
- Not okay for one *Team* in an *Alliance* to ask another *Team* to sit in a corner during the *Match* or to intentionally play beneath their abilities.

Violation Notes: Any Violation of <G1> may be considered a Major Violation and should be addressed on a case-by-case basis. Teams at risk of a <G1> Major Violation due to multiple disrespectful or uncivil behaviors will usually receive a "final warning", although the Head Referee is not required to provide one. All <G1> Major Violations/Disqualifications should be reported to and/or discussed with the Event Partner during the event, and should be reported to the REC Foundation Rules and Conduct Committee following the event.

<G2> VIQRC is a student-centered program. *Adults* should not make decisions about the *Robot's* build, design, or gameplay, and should not provide an unfair advantage by providing 'help' that is beyond the *Students'* independent abilities. *Students* must be prepared to demonstrate an active understanding of their *Robot's* design, construction, and programming to judges or event staff. *Students* should build, design, and code the *Robot* with minimal *Adult* involvement.

Some amount of *Adult* mentorship, teaching, and/or guidance is an expected and encouraged facet of VEX competitions. No one is born an expert in robotics! However, obstacles should always be viewed as teaching opportunities, not problems for an *Adult* to solve for the *Team*.

When building or designing the *Robot*, it is…

- Okay for an *Adult* to help a *Student* consider why something failed, so it can be improved.
- Not okay for an *Adult* to provide step by step instructions or photos for the *Student* to copy.

When a mechanism falls off, it is…

- Okay for an *Adult* to help a *Student* consider why it failed, so it can be improved.
- Not okay for an *Adult* to investigate or put the *Robot* back together.

When a *Team* encounters a complex programming concept, it is…

- Okay for an *Adult* to guide a *Student* through a flowchart to understand its logic.
- Not okay for an *Adult* to write a premade command for that *Student* to copy / paste.

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.

This rule operates in tandem with the REC Foundation Student Centered Policy, which is available in the REC Library for *Teams* to reference throughout the season.

Violation Notes: Potential Violations of this rule will be reviewed on a case-by-case basis. By definition, all Violations of this rule become Score Affecting as soon as a Robot which was built or programmed by an Adult scores points in a Match. All reported and/or suspected <G2> Violations should be reported to the Event Partner during the event, and should be reported to the REC Foundation Rules and Conduct Committee following the event.

Significant Q&As:

- Q&A 2819 - Adults cannot transcribe or type notebook entries for Students

<G3> Use common sense. When reading and applying the various rules in this document, please remember that common sense always applies in the VEX IQ Robotics Competition.

Some examples may include:

- If there is an obvious typographical error (such as "per <T5>" instead of "per <GG5>"), this does not mean that the error should be taken literally until corrected in a future update.
- Understand the realities of the VEX IQ *Robot* construction system. For example, if a *Robot* could hover above the *Field* for a whole *Match*, that would create loopholes in many of the rules. But… they can't. So… don't worry about it.
- 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. On the other hand, if there's not a rule that makes a *Robot* part legal, it's not allowed.
- In general, *Teams* will be given the "benefit of the doubt" in the case of accidental or edge-case rules infractions. However, there is a limit to this allowance, and repeated or strategic infractions will still be penalized.

<G4> All work must represent the skill level of the Students on the Team. The *Team's* design, *Robot*, coding, strategy, and ongoing work must represent the skill level of the *Students* currently on the *Team*.

a. *Teams* must avoid academic dishonesty and should not copy a *Robot* or mechanism that has been provided for them. This includes, but is not limited to, the use of instructions, pictures & videos, notebooks, CAD designs, and/or any other documentation useful to the design process provided by anyone that is not a *Student* on the *Team* (including *Students* on another *Team*).

b. *Teams* may be inspired by designs by other *Teams*, and use an idea from someone else to spark innovation, but are expected to document and demonstrate this in their engineering notebook alongside evidence of iteration. *Teams* are required to present this evidence if asked to do so by a *Robot* inspector, *Head Referee*, *Event Partner*, or Judge.

   i. Using elements of another design as a starting point is acceptable if the *Team* is capable of demonstrating evidence of iteration, innovation, and/or modification that makes the design uniquely their own. Documentation should clearly demonstrate the idea that was used for inspiration, and how it was changed for the final implementation on the *Team's Robot*. It should be clear that this final implementation is not an exact copy of ANY other original design.

   ii. Failure to demonstrate evidence of iteration, innovation, and/or modification will result in a *Violation*.

c. *Teams* may use *Robot* plans and code (e.g., the annual Hero Bot, VEXcode configurations, etc.) provided by VEX Robotics or the RECF, but are encouraged to use these *Robots*, mechanisms, and code only as a starting point that *Students* modify, improve, or replace as their skills increase. Plans provided by VEX Robotics or the RECF are the only legal plans available for use in competition.

d. This rule still applies to *Teams* within the same school, organization, or club. *Robots* and/or code sets that are identical or substantially similar to one another across *Teams* within the same school/organization/club will be considered in *Violation* of this rule, regardless of whether they compete in the same or different events.

For more information, including acceptable and unacceptable examples of mechanical design, construction, coding, and strategy solutions, please refer to the Student Centered Policy in the RECF Library.

The VEX IQ Robotics Competition and the Robotics Education & Competition Foundation (RECF) recognize that many third-party individuals and organizations produce and distribute robot designs, instructions, and/or other materials that are not under our direct control. We cannot legally regulate or restrict the activities of these external entities. However, when *Teams* use these resources in ways that violate the spirit and letter of the VEX Robotics Game Manual—particularly Rules <G2> and <G4>—they undermine the core mission of the program: to provide *Students* with hands-on opportunities to learn, design, and innovate.

While it is never our intent to punish *Students*, we can legally regulate and restrict the activities of the *Teams* in our competitions, and we must preserve the fairness, educational value, and integrity of the competition. Therefore, *Teams* found to be in *Violation* of these rules will be held accountable to the strictest interpretations of <G2> and <G4>.

It is the responsibility of each *Team* to be able to explain and defend the design, construction, and programming of their *Robot* if questioned by referees, inspectors, *Event Partners*, or judges. *Teams* should be prepared to describe their design process, justify design decisions, and demonstrate a full understanding of how their *Robot* and code function.

If a *Team* is unable, for any reason, to provide reasonable evidence (when requested by event staff) that their *Robot* and code are the result of their own work, it is appropriate to assume that the *Team* is in violation of <G2> and/or <G4>.

Event organizers cannot reasonably know the origins of every design or independently verify whether a *Robot* was created from scratch, purchased online, or copied from pictures of another *Team's* design. When questions of authenticity arise, the only direct and fair approach is to require *Students* to explain and defend their work. This is not unlike academic honesty concerns in schools, and intellectual property concerns in business. By requiring *Students* to defend their designs, we ensure that they are developing not only technical skills, but effective communication skills and accountability, as well.

Consequences may include disqualification from matches, removal from events, and/or escalation of the investigation to VEX Robotics and the RECF for further disciplinary action, which may include sanctions up to and including removal from the program.

Event staff should bear in mind <G3>, and use common sense when enforcing this rule. It is not the intent to actively hunt for *Violations* of this rule, compare every *Robot* at an event to all other known *Robot* designs, or closely question every *Team* at an event about their *Robot's* code. This rule is a set of tools for use if potential *Violations* are noted by or reported to event staff, and it is expected that most *Teams* will never be required to defend their *Robot* design or code.

Teams or individuals who deliberately weaponize, manipulate, or falsely report <G4> *Violations* for competitive gain or to harass another *Team* may be subject to a separate RECF Code of Conduct investigation. Misuse of this rule is considered a serious *Violation*.

Significant Q&As:

- Q&A 2677 - Teams may only use custom parts that were designed and created by the Students on that Team
- Q&A 2930 - Additional info on how much change to a mechanism is "enough"

Violation Notes:

- *Teams believed to be in Violation of this rule should be reported to the Judge Advisor, Head Referee, or Event Partner for further investigation in coordination with the RSM. Based on the investigation the Team may be removed from further Matches, have their Robot Skills Challenge scores removed, and/or be removed from consideration from judged awards.*
- *Violations of this rule will be evaluated on a case-by-case basis, in tandem with the RECF Student Centered Policy as noted in <G2>, and the REC Foundation Code of Conduct as noted in <G1>. All reported and/or suspected <G4> Violations should be reported to the Event Partner during the event, and should be reported to the RECF Rules and Conduct Committee following the event.*

<G5> Each Student can only belong to one Team. Each *Team* must include *Drive Team Members*, *Coder*(s), *Designer*(s), and *Builder*(s). Many also include notebooker(s). No *Student* may fulfill any of these roles for more than one VEX IQ Robotics Competition *Team* in a given competition season. *Students* may have more than one role on the *Team*, e.g., the *Designer* may also be the *Builder*, the *Coder*, and a *Driver*.

a. *Team* members may only move from one *Team* to another for non-strategic reasons outside of the *Team's* control.
   i. Examples of permissible moves may include, but are not limited to, changing schools, conflicts within a *Team*, or combining/splitting *Teams*.
   ii. Examples of strategic moves in *Violation* of this rule may include, but are not limited to, one *Coder* "switching" *Teams* in order to program multiple *Robots*, one *Student* designing multiple *Teams' Robots*, or one *Student* writing the Engineering Notebook for multiple *Teams*.
   iii. If a *Student* leaves a *Team* to join another *Team*, <G4> still applies to the *Students* remaining on the previous *Team*. For example, if a *Coder* leaves a *Team*, then that *Team's Robot* must still represent the skill level of the *Team* without that *Coder*. One way to accomplish this would be to ensure that the *Coder* teaches or trains a "replacement" *Coder* in their absence.
   iv. Points ii and iii are intended to represent real-world situations that are found in industry engineering. If a vital member of a professional engineering team were to suddenly leave, the remaining members of the team should still be capable of working on / maintaining their project.

b. When a *Team* qualifies for a Championship event (e.g., States, Nationals, Worlds, etc.) the *Students* on the *Team* attending the Championship event are expected to be the same *Students* on the *Team* that was awarded the spot. *Students* can be added as support to the *Team*, but may not be added as *Drivers* or *Coders* for the *Team*.
   i. An exception is allowed if only one (1) member of the *Team* is able to attend the event. The *Team* can make a single substitution of a *Driver* or *Coder* for the Championship event with another *Student*, even if that *Student* has competed on a different *Team*. This *Student* will now be a member of this new *Team* and may not substitute back to the original *Team* during the season.

Note: Teams cannot "borrow" Students from other Teams to serve as Drive Team Members, Coders, Designers, Builders, or notebookers. However, Teams can add permanent members throughout the season under the guidelines of this rule.

Violation Note: Teams believed to be in Violation of this rule should be reported to the Judge Advisor, Head Referee, or Event Partner for further investigation in coordination with the RSM.

Event Partners should bear in mind <G3>, and use common sense when enforcing this rule. It is not the intent to punish a *Team* who may change *Team* members over the course of a season due to illness, changing schools, conflicts within a *Team*, etc.

Event Partners and referees are not expected to keep a roster of any *Student* who has ever been a *Driver* for one day. This rule is intended to block any instance of loaning or sharing *Team* members for the sole purpose of gaining a competitive advantage.

General Game Rules

<GG1> Drivers drive your Robot, and stay in the Driver Station. During a *Match*, *Robots* may only be operated by that *Team's Drivers* and/or software running on the *Robot's* control system. Each *Team* may send up to three (3) *Drive Team Members* to their *Driver Station* for a *Match*: two (2) *Drivers*, and one (1) Loader. Those *Drive Team Members* must remain in their *Driver Station*, except when legally interacting with their *Robot* per <GG10>.

a. *Drive Team Members* are prohibited from any of the following actions during a *Match*:

   i. Using any sort of communication device in the *Driver Station*. Non-headphone devices with communication features turned off (e.g. a phone in airplane mode or a walkie talkie turned off) are allowed. If communication features are needed for translation apps during post-*Match* discussions, it should not be considered a *Violation*.

   ii. Standing or sitting on any sort of object during a *Match*, regardless of whether the *Field* is on the *Floor* or elevated, except as required by an official accommodation request that has been approved by the REC Foundation.

   iii. Using additional materials to simplify the game challenge during a *Match*.

   iv. To ensure that *Drive Team Members* are aware of verbal calls during a *Match* (as an application of rules <T1>, <G1>, <S1>, and <G3>), powered headphones, earbuds, and/or passive earpieces connected to electronic devices cannot be worn/used in the *Driver Station* except as required by an official accommodation request that has been approved by the REC Foundation.

b. Individuals who are not *Drive Team Members* for a *Match* cannot provide directions, commands, or advice to the *Drive Team Members* during that *Match*. They're welcome to provide cheerful, positive encouragement, but should not affect *Match* play or strategy.

Point iii is intended to refer to non-*Robot*-related items that directly influence gameplay, such as using a ramp to assist with the *Load Zone*. Provided no other rules are violated, and the items do not pose any safety or *Field* damage risks, the following examples are not considered *Violations* of <GG1>:

- Materials used before or after a *Match*, such as a pre-*Match* alignment aid
- Strategic aids, such as a whiteboard or clipboard
- Earplugs, gloves, or other personal accessories

Note: Drive Team Members are the only Team members that are allowed to be in the Driver Station during a Match. Adults (other than event staff) are not permitted to be in the Driver Station during a Match.

Violation Notes: Major Violations of this rule are not required to be Score Affecting, and could invoke Violations of other rules, such as <G1>, <G2>, <G5> or <GG11>.

<GG2> A Team's Robot should attend every Match. The *Team's Robot* must report to the *Field* for the *Team's* assigned *Match*, even if the *Robot* is not functional. If the *Robot* is not at the *Field* for the entire duration of the *Match*, that *Team* is considered a "no show" and will receive zero (0) points. The other *Team* in the *Alliance* will still play and receive points for the *Match*.

a. *Teams* are expected to participate in all scheduled *Qualification Matches* and, if they're ranked high enough to be included in a Finals *Alliance*, *Finals Matches*. Failure to attend scheduled *Matches* may be considered a *Violation* of <G1> and the Code of Conduct. *Teams* that participate in zero *Qualification Matches* cannot be considered for Judged Awards.

<GG3> Robots on the field must be ready to play. When a *Team* puts their *Robot* on the *Field*, it must be prepared to play (i.e., batteries charged, sized within the starting size constraint, etc.).

a. *Robots* must be placed on the *Field* promptly. Repeated failure to do so could result in a *Violation* of <G1> and/or removal of the *Robot* from the current *Match* at the *Head Referee's* discretion.

b. If a *Robot* is not placed on the *Field* prior to the start of a *Match*, it cannot be placed on the *Field* during that *Match*.

> The definition of the word "promptly" is at the discretion of the *Event Partner* and *Head Referee*, who will consider event schedule, previous *Violations* or delays, etc. As a general guideline, five seconds to check *Robot* alignment would be acceptable, but five minutes to assemble multiple parts together would not.

<GG4> Hands out of the Field. During a *Match*, *Drive Team Members* are prohibited from making intentional contact with any *Field Element*, *Robot*, or *Scoring Object* that has been introduced to the *Field*, except for the allowances in <GG10>, <RSC5>, and/or <SG6>.

a. *Drive Team Members* are not permitted to reach into the 3-dimensional volume of the *Field Perimeter* at any time during the *Match*, apart from the actions described above. Rule <S1> applies.

b. Transitive contact, such as contact with the *Field Perimeter* that causes the *Field Perimeter* to contact *Field Elements* or objects inside of the *Field*, could be considered a *Violation* of this rule.

> If a *Drive Team Member's* hands extend over the *Field* and/or *Field Perimeter* in a way that is safe and doesn't contact anything in the *Field*, it's unlikely to be a *Violation*. However, *Head Referees* may still ask *Drive Team Members* to step back and remain completely outside the *Field* when necessary (e.g., for safety reasons or to reduce the chances of gameplay interference).

Note: Any concerns regarding Field Element or Scoring Object starting positions should be raised with the Head Referee prior to the Match. Team members may never adjust Scoring Objects or Field Elements themselves.

<GG5> Match Replays are allowed, but rare. *Match* replays (i.e., playing a *Match* over again from its start) are at the discretion of the *Event Partner* and *Head Referee*, and will only be issued in the most extreme circumstances. Some examples that may warrant a *Match* replay are as follows (note that this is not an exhaustive list):

a. *Score Affecting* "Field fault" issues.
   i. *Scoring Objects* not being reset before the *Match* starts.
   ii. *Field Elements* detaching or moving beyond normal tolerances, not a result of *Robot* interactions.

b. *Score Affecting* game rule issues.
   i. A *Field* is reset before the score is determined.
   ii. A *Match* is run before its scheduled time without a *Team*.

<GG6> Disqualifications. A *Team* that is issued a *Disqualification* in a *Qualification Match* receives zero (0) points for the *Match*. The other *Team* on their *Alliance* will still receive points for the *Match*.

a. In *Finals Matches*, *Disqualifications* apply to the whole *Alliance*, not just one *Team*. An *Alliance* that receives a *Disqualification* in a *Finals Match* will receive zero (0) points.

b. A *Team* that receives a *Disqualification* in a *Robot Skills Match* will receive a score of zero (0).

<GG7> Timeouts. There are no timeouts in VIQRC tournaments.

<GG8> Keep your Robot together. *Robots* may not intentionally detach parts or leave mechanisms on the *Field* during any *Match*.

a. 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 *Drive Team Member* during a *Robot* reset using <GG10>.

<GG9> Don't damage the Field. *Robot* interactions which damage the *Field* or any *Field Elements* are prohibited. For the purpose of this rule, "damage" is defined as anything which requires repair in order to begin the next *Match*, such as causing part of a *Goal* to detach from the *Field*.

> *Teams* are responsible for the actions of their *Robots* at all times, especially when interacting with the *Goals*. If a *Team* chooses to repeatedly ram full-speed into a *Field Element*, it will be hard to convince a *Head Referee* that any damage caused was "accidental."

Violation Notes:

- *In most cases, accidental Field damage should only be considered a Minor Violation*
- *Egregious, intentional, or repeated accidental/Minor Violations may escalate to a Major Violation at the Head Referee's discretion*

<GG10> 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 *Drive Team Members* may retrieve & reset their *Robot*. To do so, the *Team* must do the following:

a. Signal the Referee by placing their VEX IQ Controller on the ground. The *Head Referee* may ask the *Driver* to demonstrate the problem using the Robot Controller before approving the *Robot* reset (e.g., confirming that the *Robot* is broken, undriveable, or stuck on an obstacle) if the issue with the *Robot* isn't obvious.

b. Any *Scoring Objects* being controlled by the *Robot* while being handled must be removed from the *Field*, and can be returned by a Loader in accordance with <SG4>. No other *Scoring Objects* should be moved or adjusted.

   i. In the context of this rule, "controlled" implies that the *Robot* was manipulating the *Scoring Object*, and not simply touching it. For example, if the *Scoring Object* would move with the *Robot* either vertically or while turning, then the *Robot* is "controlling" that *Scoring Object*.

c. The *Robot* must be placed back into a legal position that meets the criteria listed in clauses a,b, c, & d of <SG1>. If any *Scoring Objects* are preventing the *Robot* from being legally placed, they should be removed from the *Field* and reintroduced by a Loader in accordance with <SG4>. The *Robot* does not get a new *Preload Pin* during this reset.

d. Swapping one set of parts for another, or adding new pieces to a *Robot* mid-*Match* during a <GG10> or <RSC5> interaction is considered a *Violation* of the intent and spirit of this rule. Repairing a *Robot*, or reattaching parts of the *Robot* that fall off during a *Match*, is allowed.

e. As described in rule <S1>, *Students* cannot step into the *Field* at any time during a *Match*. If the *Drive Team Members* cannot reach the *Robot* due to the *Robot* being in the center of the *Field*, they may ask the *Head Referee* to pick up the *Robot* and hand it to the *Drive Team Members* for placement according to the conditions above.

Violation Notes: This rule is intended to allow Teams to fix damaged Robots or help get their Robots "out of trouble." Strategically exploiting this rule may be considered a Minor Violation or Major Violation at the Head Referee's discretion.

Significant Q&As:

- Q&A 2883 - If a Pin is accidentally knocked off of a Starting Pin Support during a legal Robot reset, a Head Referee should put it back

<GG11> A Team's two Drivers switch Controllers midway through the Match. In a given *Match*, up to two (2) *Drivers* may be in the *Driver Station* per *Team*. The two *Drivers* must switch their controller between thirty-five seconds (0:35 on the *Match* timer) and twenty-five seconds (0:25 on the *Match* timer) remaining in the *Match*.

a. No *Driver* shall operate a *Robot* for more than thirty-five (35) seconds.

b. The second *Driver* may not touch their *Team's* controls until the controller is passed to them.

c. Once the controller is passed, the first *Driver* may no longer touch their *Team's* controls.

d. A *Driver* cannot also be a Loader in the same *Match*.

e. If a Drive Team for a *Match* only has two members, one must serve as the *Driver* until the mid-*Match Driver* switch. The second *Drive Team Member* may serve as either the 2nd *Driver* (after the mid-*Match Driver* switch) or the Loader for the full *Match*, but cannot fill both roles. If the 2nd *Driver* position is unfilled, the *Robot's* operation (even prewritten commands) must cease after the first thirty-five (35) seconds of the *Match*.

f. If only one *Drive Team Member* is present, the *Robot's* operation (even prewritten commands) must cease after the first thirty-five (35) seconds of the *Match* and the *Team* will not have a Loader during that *Match*.
Violation Notes: At a minimum, any Violation of this rule is considered a Minor Violation. Whether it escalates to a Major Violation or not is dependent upon the Head Referee's judgment regarding:
- *Prior Violations*
- *Any Score Affecting actions that were a direct result of the Violation, such as the first Driver scoring additional points after 35 seconds of driving or a Driver also serving as a Loader in the same Match.*

<GG12> Don't Start Before the Timer, and Stop Moving at the end of the Match. *Driver* inputs and *Robot* may not begin before the *Match* timer starts, and must cease at the end of the *Match*, when the timer reaches 0:00.

a. A pre-programmed routine which causes *Robot* motion to start before the *Match* or continue after the end of the *Match* would violate this rule.

b. 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.

It is expected that many Mix & Match *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 *Stack* 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.

In cases where a last-second scoring attempt is "too close to call," *Teams* will generally be given the "benefit of the doubt" and the score will be counted. *Teams* are advised to *Place* and release *Stacks* a second or two before the timer reaches zero to avoid the need for referee judgment calls.

Violation Notes:
- *Because scoring that happens after the Match is not counted, all Violations of <GG12> should be recorded as Minor Violations.*
- *If a Team receives three Minor Violations within the same event, all future <GG12> Violations at that event will be considered Major Violations and Disqualifications.*

- *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.), but does not include Violations that occur in Robot Skills Matches*

Significant Q&As:

- Q&A 2778 - For Skills, points scored after the Match don't count, but aren't a Violation

<GG13> **Ending a Match early.** If an *Alliance* wants to end a *Qualification Match* or a *Finals Match* early, both *Teams* must signal the referee by ceasing all *Robot* motion and placing their controllers on the ground. The referee will then signal to the *Teams* that the *Match* is over and will begin to tally the score. If the *Match* is a tiebreaker *Finals Match* for first place, then the *Match Stop Time* will also be recorded (see <T14b>).

Specific Game Rules

<SG1> Starting a Match. At the beginning of a *Match*, the *Robot* must be placed such that it meets all of the following criteria:

a. Fit within an 11" wide x 20" long x 15" high (279mm x 508mm x 381mm) volume, as checked during inspection per <R5>.

b. Not contacting any *Goals* other than the one specified in clause c, other *Robots*, or *Scoring Objects* other than a maximum of one (1) *Preload*. See rule <SG5>.

c. Contacting the structure of one of the two *Triangle Goals*.

   i. For *Teamwork Challenge Matches*, the *Team* listed as *Team* 1 (printed *Match* list), listed as Red *Team* (RobotEvents.com), or listed first (VEXvia) must place their *Robot* in contact with the red *Triangle Goal*.

   ii. For *Teamwork Challenge Matches*, the *Team* listed as *Team* 2 (printed *Match* list), listed as Blue *Team* (RobotEvents.com), or listed second (VEXvia) must place their *Robot* in contact with the blue *Triangle Goal*.

d. Only be contacting the *Floor* and the structure of the *Goal*.

e. Completely stationary (i.e., no motors or other mechanisms in motion) until the *Match* timer starts. Pre-charging a pneumatic system (i.e., having the Pneumatic Pump running prior to the *Match*) is the only permitted exception to this rule.

f. The starting configuration of the *Robot* at the beginning of a *Match* must be the same as a *Robot* configuration that was checked during *Robot* inspection.

Violation Notes: The Match will not begin with any conditions in this rule unmet. If a Robot cannot meet these conditions in a timely manner, the Robot will be removed from the Field and rules <R3d> and <GG2> will apply until the situation is corrected. In most cases, they will not receive a Disqualification, but they will not be permitted to play in the Match.

Significant Q&As:

- Q&A 2721 - The VEX IQ pieces that support the PVC pipe are part of the Triangle Goal's structure

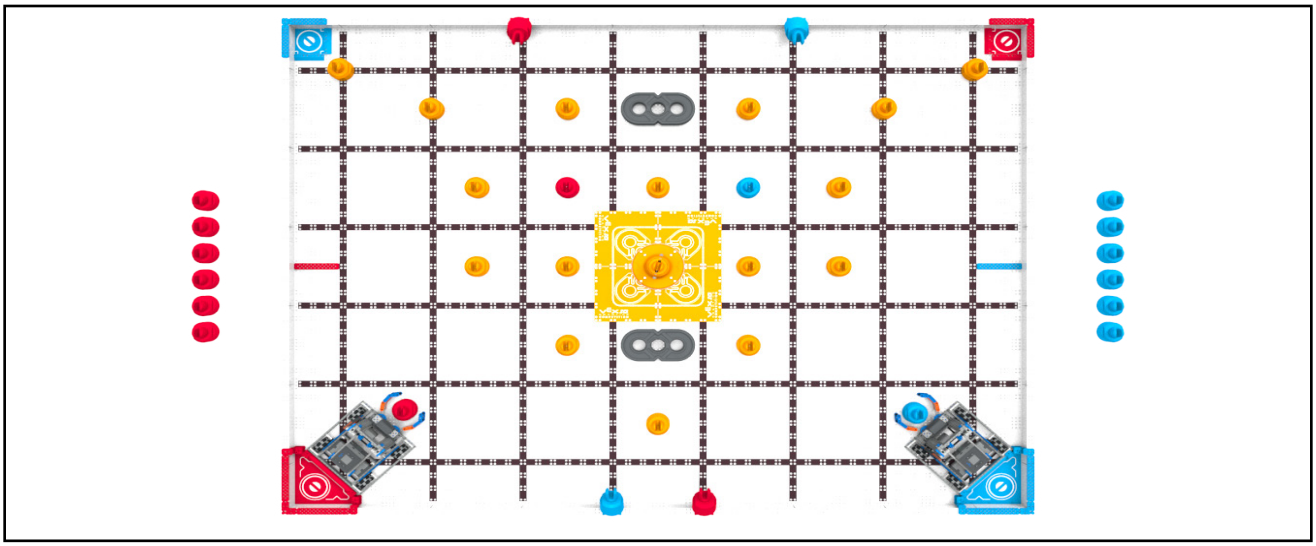


Figure SG1-1: *Robots in a legal pre-Match starting position.*

<SG2> Horizontal expansion is limited. *Robots* cannot expand horizontally beyond the 11" x 20" starting size limit at any time in the *Match*.

<SG3> Vertical expansion is unlimited. Once the *Match* begins, *Robots* may expand vertically beyond the 15" starting size limit with no limits.

<SG4> Keep Scoring Objects in the Field. *Scoring Objects* that leave the *Field* during a *Match* may be reintroduced by a Loader in accordance with <SG6> with the following restrictions:

a. A blue *Pin* that leaves the *Field* may only be reintroduced by the blue Loader at the blue *Load Zone*; a red *Pin* that leaves the *Field* may only be reintroduced by the red Loader at the red *Load Zone*.

b. An orange *Pin* or *Beam* that leaves the *Field* must be given to the Loader in the *Driver Station* closest to where it left the *Field*, and can only be reintroduced by that Loader.

c. "Leaving the *Field*" means that a *Scoring Object* is outside of the *Field Perimeter*, no longer in contact with the *Floor* or *Field Elements*, and not supported by *Robots* or *Scoring Objects* that are still inside the *Field*.

d. If a *Scoring Object* is removed from a *Robot* during a <GG10> interaction, it is considered "out of the *Field*" as soon as it is no longer in contact with any *Robots*.

e. If a *Scoring Object* is on its way out of the *Field* (as determined by the *Head Referee*), but is deflected back into the *Field* by a *Drive Team Member*, field monitor, ceiling/wall, or other external factor, <SG4> would still apply. This *Scoring Object* should be considered "out of the *Field*," removed by a *Head Referee*, and given to a Loader.

f. If a set of *Connected Scoring Objects* leaves the *Field*, they must be separated and reintroduced one at a time by the appropriate Loader(s).

Violation Note: Violations that are deemed by the Head Referee to be intentional or strategic should immediately escalate to a Major Violation.

Significant Q&As:

- Q&A 2707 - Drive Team Members should not leave their Driver Station to retrieve Scoring Objects

<SG5> Each Robot gets one Pin as a Preload. For Teamwork Challenge *Matches*, the *Team* listed as *Team* 1 (printed *Match* list) or Red *Team* (RobotEvents.com) will use a red *Pin*. *Team* 2 / Blue *Team* will use a blue *Pin*. Prior to the start of each *Match*, each *Preload* must be placed such that it meets all of the following criteria:

a. Contacting exactly one *Robot*.

b. Not contacting any *Field Elements* (excluding the *Floor*), *Goals*, or other *Scoring Objects*.

If a *Robot* is not present for a *Teamwork Match*, its *Preload* should be placed in the matching *Load Zone*.

Significant Q&As:

- Q&A 2869 - Preloads are required, not optional

<SG6> Using the Load Zone. *Scoring Objects* may be *Loaded* through the *Load Zone* during the *Match*, and must meet all of the following criteria.

a. Red and blue *Pins* may only be Loaded into the *Load Zone* that matches the color of that *Pin*. *Beams* and/or orange *Pins* that leave the *Field* during a *Match* may be reintroduced at either *Load Zone* as described in rule <SG4>.

b. The *Scoring Object* must be placed in contact with the VEX IQ beam attached to the *Floor*.

c. The Loader may only put a *Scoring Object* into a *Load Zone* if no other *Scoring Objects* are in contact with that *Load Zone*.

d. A *Robot* may not contact a *Scoring Object* in the *Load Zone* if that *Scoring Object* is being contacted by a human.

e. Once a *Scoring Object* is *Placed* into a *Load Zone* and released, it may no longer be contacted by a Loader.

f. If a *Scoring Object* is introduced improperly (e.g., while another *Scoring Object* is in contact with the *Load Zone*), it must be retrieved by the Loader and reintroduced.

g. A *Loaded Pin* or *Beam* must be placed in a stationary position, and must remain in contact with the VEX IQ beam after it is released by the Loader until it is contacted by a *Robot* or another *Scoring Object* that is being manipulated by a *Robot*.

h. *Pins* that begin the *Match* outside the *Field* cannot break the plane of the *Field Perimeter* until the *Match* begins.

Note: Although it is not required, Robots are highly recommended to remain some distance away from the Scoring Object until the Loader's hand has clearly been removed. This will make clauses d & e abundantly clear to Head Referees.

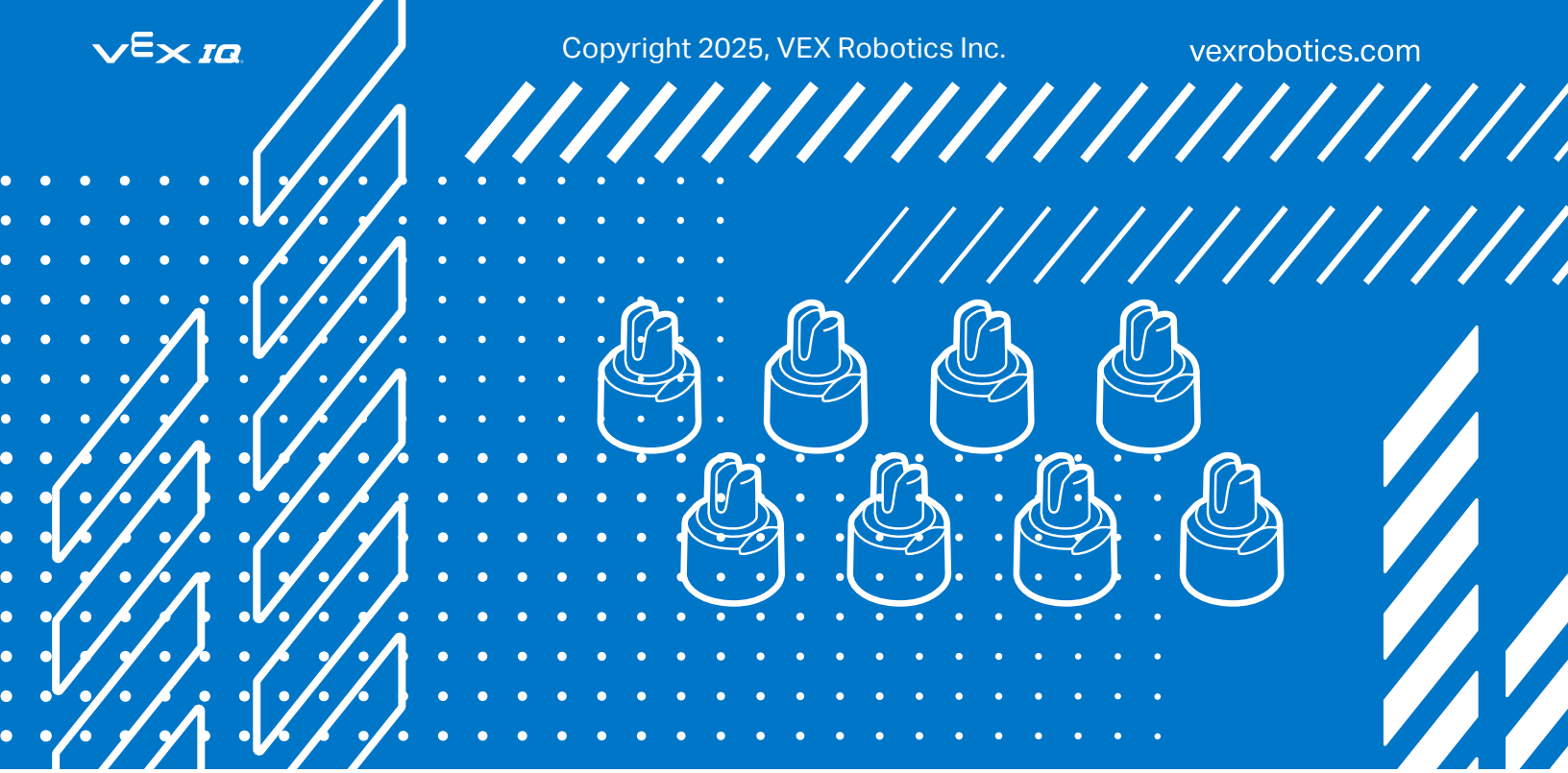
Violation Notes:

- *Teams are responsible for their own actions. Violations that involve a Loader and Robot from opposite Teams will be given to both Teams.*
- *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 Scoring Object is Connected to another Scoring Object), the first occurrence during a Qualification Match may be treated as a Minor Violation and a "final notice" that any future Violation will result in Disqualification for the Match.*
- *Any Score Affecting Violation during a Finals Match (accidental and intentional) must be treated as a Major Violation.*
- *Repeated, intentional, or egregious Violations may escalate to a Major Violation at the Head Referee's discretion. One example of an egregious Violation would be placing a Scoring Object directly onto a Robot without ever contacting the Load Zone.*

Significant Q&As:

- Q&A 2659 - Match Loads do not have to be placed in vertical positions
- Q&A 2726 - Scoring Objects must be Loaded one at a time

vexrobotics.com

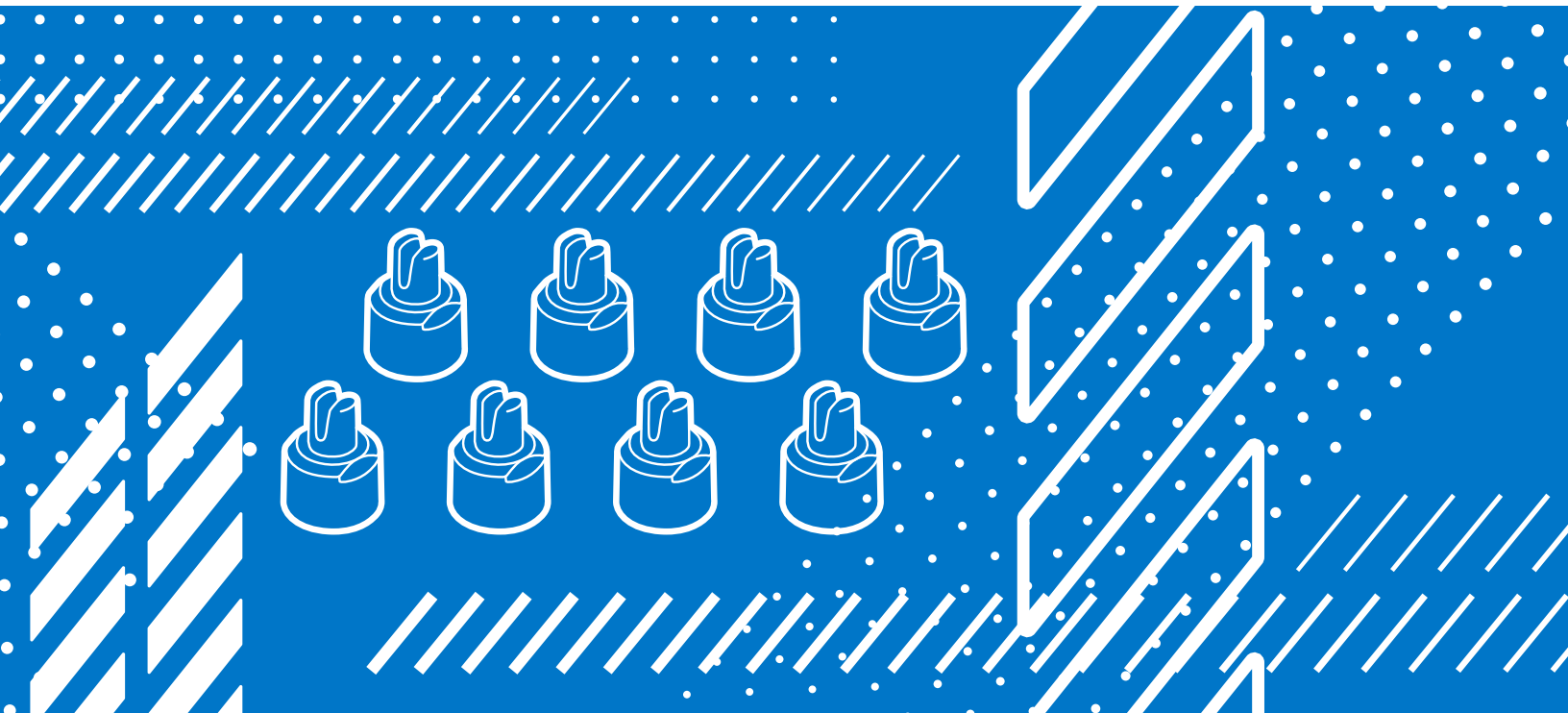


VEX IQ ROBOTICS COMPETITION

MIX & MATCH

2025 - 2026

Section 3 - The Robot



Section 3 - The Robot

Description

Every *Robot* must pass a full inspection before being cleared to participate in the VEX IQ Robotics Competition. This inspection will ensure that all *Robot* rules and regulations are met. Initial inspections will typically take place during *Team* check-in / practice time. Every *Team* should use the rules below as a guide to pre-inspect their *Robot* and ensure that it meets all requirements.

Comprehensive lists of legal and illegal VEX IQ Robotics Competition parts can be found in the VEX IQ Robotics Competition Legal Parts and VEX IQ Robotics Competition Illegal Parts supplements. These documents are updated as needed if/when new VEX IQ parts are released, and may not coincide with scheduled Game Manual updates.

See Figure V-1 for more information on how to handle *Violations* of inspection rules and CoC-related rules during *Robot* Inspection.

Inspection Rules

<R1> One Robot per Team. Each *Team* can only bring one (1) *Robot* to a given event. Though it is expected that *Teams* will make changes to their *Robots* at the event, a *Team* is limited to only one (1) *Robot*, and a given *Robot* may only be used by one (1) *Team*. The VEX IQ system is intended to be a mobile robotics design platform. As such, a VEX IQ Robotics Competition *Robot*, for the purposes of the VEX IQ Robotics Competition, has the following subsystems:

- 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. Also includes the VEX IQ pneumatic air pump and solenoids if used on the *Robot*.
- Subsystem 3: Additional mechanisms (and associated Smart Motors) that allow manipulation of *Scoring Objects* or navigation/manipulation of *Field Elements*.

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.

a. *Teams* may not compete with one *Robot* while a second is being modified or assembled at a competition.

b. *Teams* may not have an assembled second *Robot* on hand at a competition that is used to repair or swap parts with the first *Robot*.

c. *Teams* may not switch back and forth between multiple *Robots* during a competition. This includes using different *Robots* for *Robot Skills Matches*, *Qualification Matches*, and/or *Finals Matches*.

d. Multiple *Teams* may not use the same *Robot*. Once a *Robot* has competed under a given *Team* number at an event, it is "their" *Robot*; no other *Teams* may EVER compete with it.

The intent of <R1a>, <R1b>, and <R1c> is to ensure an unambiguous level playing field for all *Teams*. *Teams* are welcome (and encouraged) to improve or modify their *Robots* between events, or to collaborate with other *Teams* to develop the best possible game solution.

However, a *Team* who brings and/or competes with two separate *Robots* at the same tournament has diminished the efforts of a *Team* who spent extra design time making sure that their one *Robot* can accomplish all of the game's tasks. A multi-*Team* organization that shares a single *Robot* has diminished the efforts of a multi-*Team* organization that puts in the time, effort, and resources to undergo separate individual design processes and develop their own *Robots*.

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.

<R2> Robots must represent the Team's skill level. The *Robot* must be designed, built, and programmed by members of the *Team*. *Adults* are permitted to mentor and teach design, building, and programming skills to the *Students* on the *Team*, but may not design, build, or program that *Team's Robot*. See rules <G2>, <G4>, and <G5>.

In VIQRC, we expect *Adults* to teach fundamental *Robot* principles like linkages, drivetrains, and manipulators, then allow the *Students* to determine which designs to implement and build on their *Robot*.

Similarly, *Adults* are encouraged to teach the *Students* how to code various functions involving applicable sensors and mechanisms, then have the *Students* program the *Robot* from what they have learned.

<R3> Robots must pass inspection. The *Team's Robot* must pass inspection before being allowed to participate in any *Matches*. Noncompliance with any *Robot* design or construction rule will result in removal from *Matches* or *Disqualification* of the *Robot* at an event until the *Robot* is brought back into compliance, as described in the following subclauses.

a. Significant changes to a *Robot*, such as a partial or full swap of Subsystem 3, must be re-inspected before the *Robot* may compete again.

b. All possible functional *Robot* configurations must be inspected before being used in competition.

c. *Teams* may be asked to submit to spot inspections by *Head Referees*. Refusal to submit will result in *Disqualification*.

d. If a *Robot* is determined to not be legal before a *Match* begins and cannot be brought into compliance before the scheduled *Match* start time, the *Robot* will be removed from the *Field*. The *Robot* may remain at the *Field* so that the *Team* does not get assessed a "no-show" (per <GG2>).

e. *Robots* which have not passed inspection (i.e., that are in *Violation* of one or more *Robot* rules) will not be permitted to play in any *Matches* until they have done so. <GG3> will apply to any *Matches* that occur until the *Robot* has passed inspection.

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>/<GG3> 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. <R3d> will apply until the *Violation* is remedied and the *Team* is re-inspected.

g. All inspection rules are to be enforced at the discretion of the *Head Referee* within a given event. *Robot* legality at one event does not automatically imply legality at future events. *Robots* which rely on "edge-case" interpretations of subjective rules, such as whether a decoration is "non-functional" or not, should expect additional scrutiny during inspection.

h. Event staff and volunteers are allowed to photograph *Robots* during inspection and/or at other times as needed.

<R4> There is a difference between accidentally and willfully violating a Robot rule. Any *Violation* of *Robot* rules, accidental or intentional, will result in a *Team* being unable to play until they pass inspection (per <R3d>).

However, *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.

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.

<R5> Robots must fit within an 11" x 20" x 15" (279.4mm x 508mm x 381.0mm) volume.

a. *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").

b. A *Team* may NOT have its *Robot* inspected in one configuration and then place it in an uninspected configuration at the start of a *Match*.

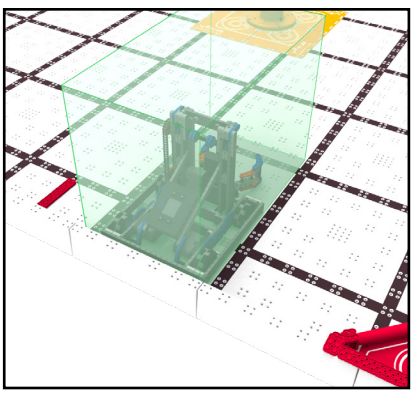


Figure R5-1: *The approximate size that a Robot should start the Match in.*

<R6> Officially registered Team numbers must be displayed on Robot License Plates. To participate in an official VEX IQ Robotics Competition Event, a *Team* must first register on RobotEvents.com and receive a VEX IQ Robotics Competition *Team* number.

This *Team* number must be legibly displayed on exactly two (2) VEX IQ Robotics Competition *License Plates* on opposing sides of the *Robot*. *Teams* may use the official VEX IQ Robotics Competition License Plate (VEX Part Number 228-7401) or a plain paper version of matching size, such as this template in the REC Library.

a. *License Plates* are considered functional components, and must meet the requirements of all *Robot* rules.

b. *License Plates* must be clearly visible at all times. For example, *License Plates* must not be in a position that would be easily obstructed by a *Robot* mechanism during standard *Match* play.

c. Additional *License Plates* cannot be used on the *Robot* for any purpose.

Significant Q&As:

- Q&A 2814 - Paper License Plates cannot be attached with tape
- Q&A 2870 - Team numbers on legal plates can be stickers or hand-written, but can't make the plate thicker and have to be clearly legible
- Q&A 2896 - Illegal license plate examples, including V5 plates, 2x8 smooth panels, and laminated paper

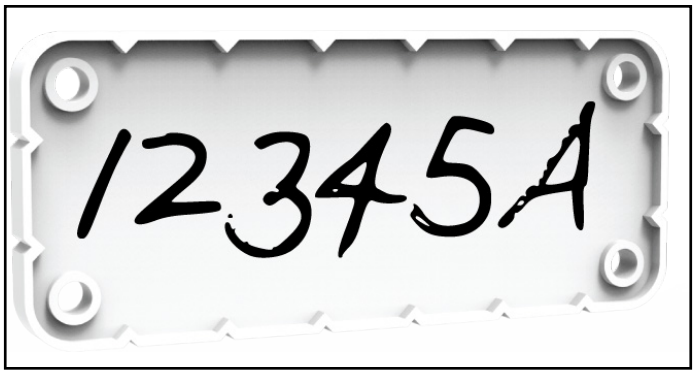


Figure R6-1: *A VEX IQ Robotics Competition License Plate with a VEX IQ Robotics Competition Team Number written upon it.*

<R7> Let it go after the Match is over. *Robots* must be designed to permit easy removal of *Scoring Objects* from their *Robot* without requiring that the *Robot* have power or remote control after the *Match* is over.

<R8> Robots have one Brain. *Robots* are limited to one (1) VEX IQ Robot Brain. Any other microcontrollers or processing devices are not allowed, even as non-functional decorations.

This includes microcontrollers that are part of other VEX product lines, such as VEX Cortex, VEX EXP, VEXpro, VEX CTE, VEX RCR, VEX V5, VEX GO, or VEX Robotics by HEXBUG*. This also includes devices that are unrelated to VEX, such as Raspberry Pi or Arduino devices.

a. If using a first generation VEX IQ Brain, *Robots* must use one (1) VEX IQ 900 MHz radio, VEX IQ 2.4 GHz radio, or VEX IQ Smart Radio in conjunction with their VEX IQ Robot Brain. The VEX IQ Brain and VEX IQ Controller may not be physically connected during a *Match*, and may only communicate through the radio.

b. Additional Robot Brains cannot be used on the *Robot* (even Robot Brains that are not connected).

<R9> Keep the power button accessible. The on/off button on the VEX IQ Robot Brain must be accessible without moving or lifting the *Robot*. All screens and/or lights must also be easily visible by competition personnel to assist in diagnosing *Robot* problems.

> This rule is in place to ensure the safety of both competitors and field staff. In the event that a *Robot* needs to be quickly powered off—whether due to a malfunction, entanglement, or other safety concern—it is crucial that the power button remains easily accessible. This allows competitors and/or field personnel to safely Disable the *Robot* without putting their hands near moving parts or other hazards inside the *Robot*. Additionally, keeping screens and indicator lights visible helps officials diagnose issues efficiently, minimizing downtime and ensuring a smooth competition experience.

<R10> Firmware. *Teams* must use VEXos version 2.2.1 or newer on Gen1 Brains, or VEXos version 1.0.8 or newer on Gen2 Brains. The latest firmware can be found at https://link.vex.com/firmware. Custom firmware modifications are not permitted.

a. The minimum version requirement is subject to change over the course of the season.

b. When the minimum version is updated, *Teams* have a two week (14 calendar day) grace period from the time the minimum version is changed to update their firmware to the latest minimum version.

c. VEX Robotics reserves the right to deem any firmware update critical, and remove the allowable grace period.

<R11> Motors. *Robots* may use up to six (6) VEX IQ Smart Motors.

a. Additional motors cannot be used on the *Robot* (even motors that aren't connected).

<R12> Batteries. The only allowable sources of electrical power for a VEX IQ Robotics Competition *Robot* are one (1) VEX IQ Robot Battery (first or second generation) or six (6) AA batteries via the Robot AA Battery Holder (228-3493).

a. Additional batteries cannot be used on the *Robot* (even batteries that aren't connected).

b. *Teams* are permitted to have an external power source (such as a rechargeable battery pack) plugged into their VEX IQ Controller during a *Match*, provided that this power source is connected safely and does not violate any other rules (such as <GG1>).

Note: Although it is legal, the Robot AA Battery Holder (228-3493) is not recommended for use in the VEX IQ Robotics Competition.

<R13> **One Controller per Robot.** No more than one (1) VEX IQ Controller may control a single *Robot*.

a. No physical or electrical modification of the Controller is allowed under any circumstances.
   i. Attachments which assist the *Drivers* in holding or manipulating buttons/joysticks on the IQ Controller (including 3D-printed controller attachments) are permitted, provided that they do not involve direct physical or electrical modification of the Controller itself.

b. No other methods of controlling the *Robot* (light, sound, etc.) are permissible.
   i. Using sensor feedback to augment *Driver* control (such as motor encoders or the Vision Sensor) is permitted.
   ii. See <RSC5>, <RSC6>, and <RSC7> for more information about operating the *Robot* during *Autonomous Coding Skills Matches*.

<R14> **Robots are built from the VEX IQ product line.** *Robots* may be built ONLY from official *Robot* components from the VEX IQ product line, unless otherwise specifically noted within these rules.

a. Official VEX IQ products are ONLY available from VEX Robotics. To determine whether or not a product is "official" and legal for competition use, consult the following sources:
   i. VEX IQ Robotics Competition Legal Parts Appendix
   ii. VEX IQ Robotics Competition Illegal Parts Appendix
   iii. www.vexiq.com

b. If an inspector or *Head Referee* questions whether something is an official VEX IQ component, the *Team* will be required to provide documentation that proves the component's source. Such documentation may include receipts, part numbers, or other printed documentation.

c. Only VEX IQ components specifically designed for use in *Robot* construction are allowed. Using additional components outside their typical purpose is against the intent of the rule (i.e., please don't try using VEX IQ apparel, *Team* or event support materials, packaging, *Field Elements*, or other non-*Robot* products on a VEX IQ Robotics Competition *Robot*).

d. Official Robotics components from the VEX IQ product line that have been discontinued are still legal for *Robot* use. However, *Teams* must be aware of <R14b>.

e. Additional VEX IQ products that are released during the season are legal for use, unless otherwise noted on their product pages.

f. VEX IQ Smart Cables may only be used for connecting legal electronic devices to the VEX IQ Robot Brain.

Note: A comprehensive list of legal VEX IQ parts can be found in the VEX IQ Robotics Competition Legal Parts Appendix, at https://www.vexrobotics.com/iq/competition/viqc-current-game. This Appendix is updated as needed if/when new VEX IQ parts are released, and may not coincide with scheduled Game Manual updates.

<R15> Prohibited items. The following types of mechanisms and components are NOT allowed:

a. Those that could potentially damage *Field Elements* or *Scoring Objects*.

b. Those that could potentially damage or entangle other *Robots*.

c. Grease, oil, graphite, and/or any other lubricant or plastic additive.

d. Tape and/or any other material that adheres to or changes a legal part, other than non-functional decorations as permitted by <R17>.

e. Products from the VEX 123, VEX V5, VEX CTE, VEX EXP, Cortex, or VEXpro product lines, unless specifically allowed by a clause of <R16>.

f. Electrical components from the VEX Robotics by HEXBUG* product line.

g. Electrical components from the VEX GO product line.

h. 3D printed parts for any purpose, including non-functional decorations.

i. Additional illegal parts are listed in the VEX IQ Robotics Competition Illegal Parts Appendix, at https://link.vex.com/ docs/viqrc/illegal-parts. This Appendix is updated as needed, and may not coincide with scheduled Game Manual updates.

<R16> Legal Non-VEX IQ components. *Robots* are allowed to use the following additional "non-VEX IQ" components:

a. Rubber bands that are identical in length and thickness to those included in the VEX IQ product line (#32, #64, #117B, & #170).

b. ⅛" metal shafts from the VEX V5 product line.

c. Other products from the VEX V5 product line that are also cross-listed as part of the VEX IQ product line are legal. A "cross-listed" product is one which can be found in both the VEX IQ and VEX V5 sections of the VEX Robotics website.

d. Mechanical/structural components from the VEX Robotics by HEXBUG* product line are legal for *Robot* construction.

e. Mechanical/structural components from the VEX GO product line are legal for *Robot* construction.

f. Aerosol-based cooling/freeze spray may be used to assist in cooling motors. *Teams* using freeze spray or similar products in ways that may reasonably be deemed unsafe could be subject to <S1> *Violations*.

g. Cleaners, disinfectants, and/or sanitizers may be used to assist in cleaning *Robots*, parts, components, etc. VEX Robotics recommends these procedures for cleaning/disinfecting/sanitizing *Robot* parts.

<R17> Decorations are allowed. *Teams* may add non-functional decorations, provided that they do not affect *Robot* performance in any significant way or affect the outcome of the *Match*. These decorations must be in the spirit of the competition. Inspectors and *Head Referees* will have final say in what is considered "non-functional." Unless otherwise specified below, non-functional decorations are governed by all standard *Robot* rules.

a. Decorations must be in the spirit of an educational competition.

b. To be considered "non-functional," any decorations must be backed by legal materials that provide the same functionality. For example, a giant decal cannot be used to prevent *Scoring Objects* from falling out of the *Robot* unless it is backed by VEX IQ material. A simple way to check this is to determine if removing the decoration would impact the performance of the *Robot* in any way.

*** The HEXBUG brand is a registered trademark belonging to Spin Master Corp**

c. The use of non-toxic paint is considered a legal non-functional decoration. However, any paint being used as an adhesive or to impact how tightly parts fit together would be classified as functional.

Teams should be mindful of any non-functional decorations which could risk "distracting" an *Alliance* partner *Robot's* Vision Sensor or other sensors.

Significant Q&As:

- Q&A 2862 - Using a marker to draw on the Robot for driver feedback is considered a functional decoration and isn't legal

<R18> Pneumatics. *Robots* using parts from the VEX IQ Pneumatics Kit (228-8795) must satisfy all of the following criteria:

a. No more than two (2) Air Tanks, including any that aren't connected.

b. No more than (1) Air Pump, including any that aren't connected.

c. No additional parts that are not included in the VEX IQ Pneumatics Kit (e.g., unofficial tubing or fittings).

There is no limit on the number of Pneumatic Cylinders or Pneumatic Solenoids that may be used, provided that no other rules are violated. There are no restrictions on running the Air Pump prior to (or during) *Matches*.

The intent of <R18a> is to limit *Robots* to the air pressure stored in two Air Tanks, as well as the normal working air pressure contained in any Pneumatic Cylinders and tubing on the *Robot*. *Teams* may not use other elements for the purposes of storing or generating air pressure.

Using Pneumatic Cylinders or additional tubing solely for additional air storage is in *Violation* of the spirit of this rule. Similarly, using Pneumatic Cylinders and/or tubing without an actual pneumatic system (e.g., Air Tanks and/or a Air Pump) is also in *Violation* of the spirit of this rule.

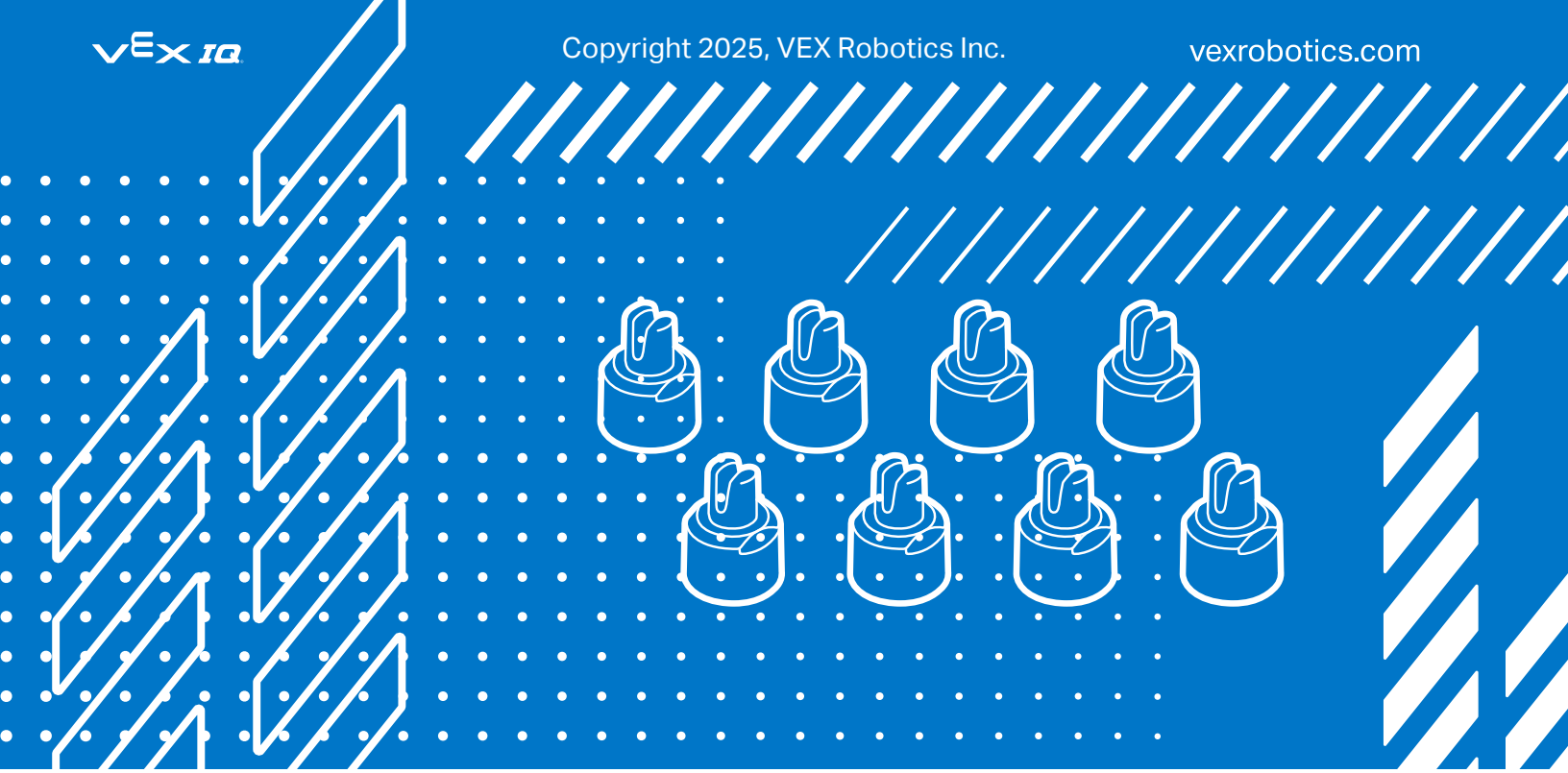
<R19> Modifications of parts. Parts may NOT be modified unless specifically listed as an exception in this rule. Examples of illegal modifications include, but are not limited to, bending, cutting, sanding, gluing, lubricating, taping, and melting. The following exceptions are the only legal modifications of parts:

a. Cutting metal VEX IQ or VEX V5 shafts to custom lengths.

b. Bending parts which are intended to be flexible, such as string, rubber bands, or thin plastic sheets.

c. Cutting VEX IQ pneumatic tubing to custom lengths.

d. Tying knots to shorten or connect string or rubber bands.

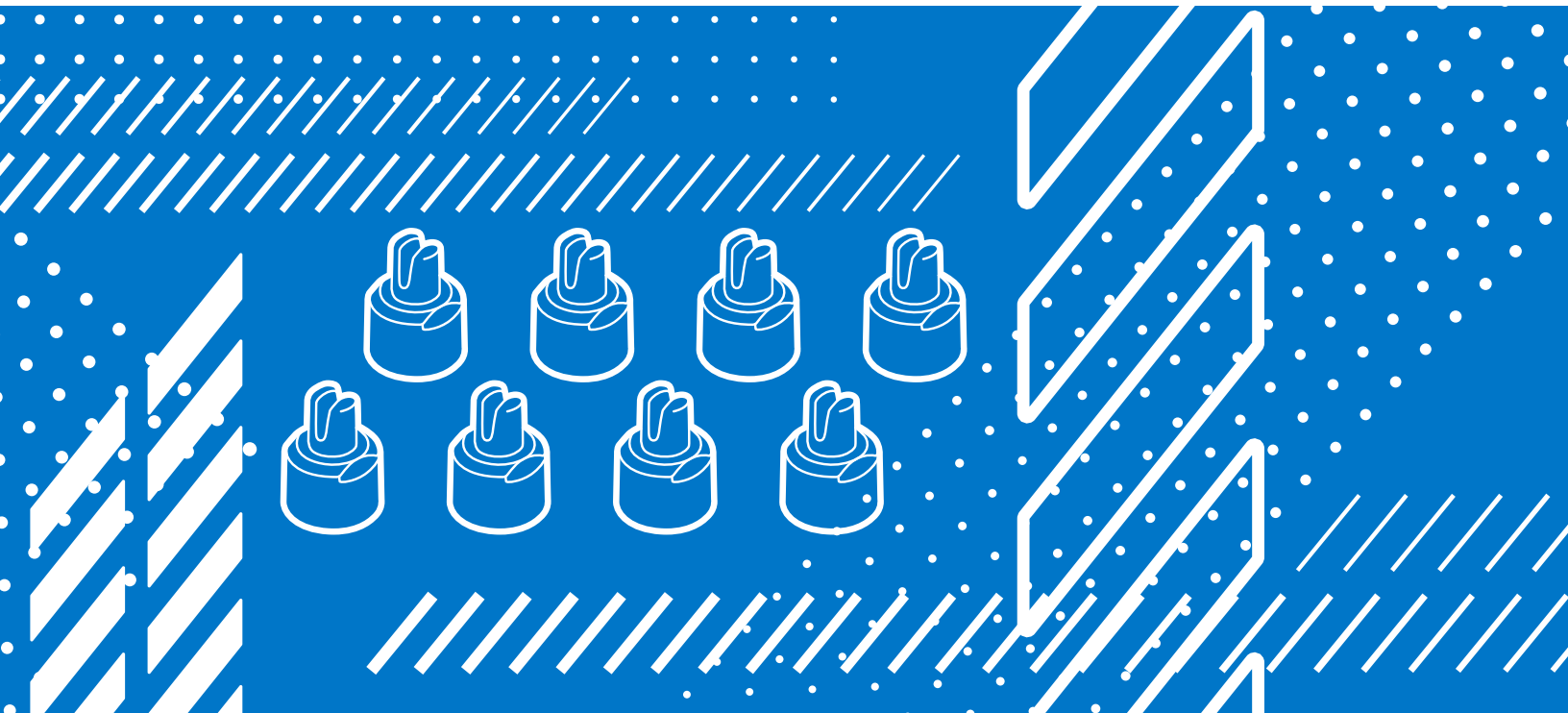


VEX IQ ROBOTICS COMPETITION

MIX & MATCH

2025 - 2026

Section 4 - Robot Skills Challenge



Section 4 - Robot Skills Challenge

Overview

In this challenge, *Teams* will compete in sixty-second (one minute) *Matches* in an effort to score as many points as possible. These *Matches* consist of *Driving Skills Matches*, which are entirely *Driver* controlled, and *Autonomous Coding Skills Matches*, which are autonomous with limited human interaction. *Teams* will be ranked based on their combined score in the two types of *Robot Skills Matches*.

The *Robot Skills Challenge* is an optional event for all *Teams*. *Teams* who do not compete will not be penalized in *Qualification Matches* or *Finals Matches*. However, participation in the *Robot Skills Challenge* may impact eligibility for judged awards at the event.

At events that include *Qualification Matches*, *Teams* may only participate in the Robot Skills Challenge if they also participate in the *Qualification Matches*. See rule <T15>.

Robot Skills Challenge Definitions

All definitions from previous sections of the manual apply to the *Robot Skills Challenge*, unless otherwise specified.

Driving Skills Match - A *Driving Skills Match* consists of a sixty-second (one minute) *Driver Controlled Period*. There is no *Autonomous Period*. *Teams* can elect to end a *Driving Skills Match* early as described in rule <RSC8> if they wish to record a *Skills Stop Time*.

Autonomous Coding Skills Match - An *Autonomous Coding Skills Match* consists of a sixty-second (one minute) *Autonomous Period*. There is no *Driver Controlled Period*. *Teams* can elect to end an *Autonomous Coding Skills Match* early if they wish to record a *Skills Stop Time*.

Robot Skills Match - A *Driving Skills Match* or *Autonomous Coding Skills Match*.

Skills Stop Time - The time remaining in a *Robot Skills Match* when a *Team* ends the *Match* early.

a. If a *Team* does not end the *Match* early, they receive a default *Skills Stop Time* of 0.

b. The moment when the *Match* ends early is defined as the moment when the *Robot* and *Scoring Objects* have come to a rest and the *Driver* has provided the agreed upon visual and audio signal to the Referee. See <RSC8> for more details.

c. If a Tournament Manager display is being used for field timing, then the *Skills Stop Time* is the time shown on the display when the *Match* is ended early (i.e., in 1-second increments).

d. If a manual timer is being used that counts down to 0 with greater accuracy than 1-second increments, then the time shown on the timer should be rounded up to the nearest second. For example, if the *Robot* is *Disabled* and the timer shows 25.2 seconds, then the *Skills Stop Time* should be recorded as 26.

Robot Skills Challenge Rules

<RSC1> Standard rules apply in most cases. All rules from previous sections apply to the *Robot Skills Matches*, unless otherwise specified in this section.

Violation Notes:

- *Violations of <GG>, <SG>, and <RSC> rules that occur during a Robot Skills Match should only affect the outcome of that Match and should not be considered when determining whether a Violation has been repeated during the event.*

<RSC2> Scoring Robot Skills Matches. For each *Robot Skills Match*, *Teams* are awarded a score based on the standard scoring rules.

<RSC3> Robot and Field setup for Skills Matches. The *Robot* and *Field* are set up the same as a *Teamwork Challenge Match*, with the following modifications:

a. The layout of *Scoring Objects* for a Mix & Match *Robot Skills Match* differs from the layout for Teamwork Challenge *Matches*, as shown in Figure RSC3-1.
   i. *Pins* and *Beams* start in different locations on the *Field*.
   ii. The *Robot* receives one red *Pin* as a *Preload*.
   iii. Six *Pins* (two red, two blue, and two orange) begin the *Match* in the Red *Driver Station* for *Loading*.

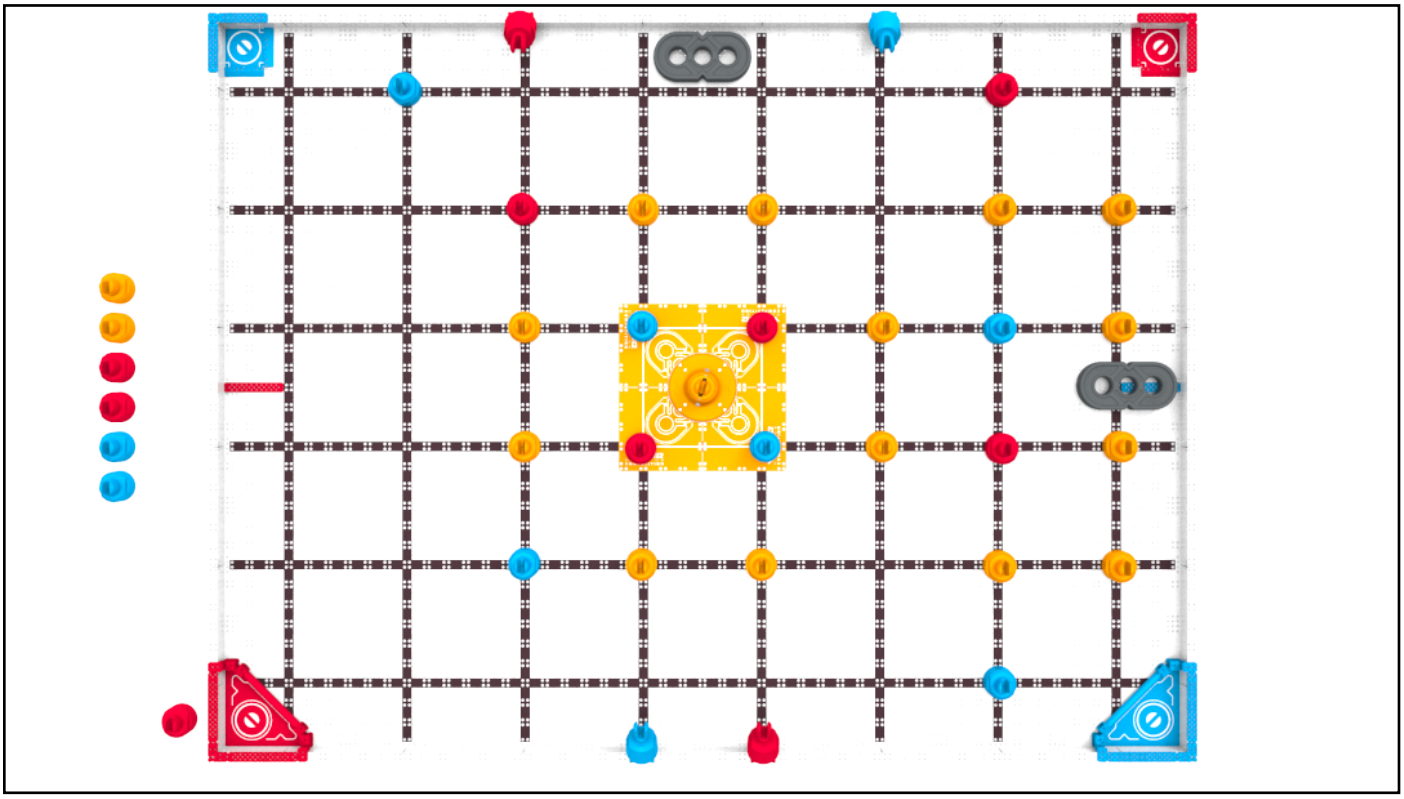


Figure RSC3-1: *The Field Configuration for a VIQRC Mix and Match Robot Skills Match.*

b. The blue *Load Zone* is not used in *Robot Skills Matches*. *Scoring Objects* of any color may be introduced into the red *Load Zone* only. This includes any *Scoring Object* that is reintroduced after leaving the *Field* during the *Match*.

c. The *Robot* must be placed in contact with the structure of the red *Triangle Goal* at the beginning of the *Match* and after the *Robot* is reset under rule <GG10> or <RSC5>.

<RSC4> Loader and Driver differences. All criteria listed in <SG6> apply as written (e.g., a Loader cannot put a *Scoring Object* into a *Load Zone* if there's already a *Scoring Object* there). *Loading* is modified as follows:

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

b. The blue *Load Zone* is not used in *Robot Skills Matches*, and *Scoring Objects* may only be introduced into the red *Load Zone*. This includes any *Scoring Object* that is reintroduced after leaving the *Field* during the *Match*.

c. Any *Scoring Object* that leaves the *Field* during a *Robot Skills Match* should be given to the *Team's* human Loader for reintroduction at the red *Load Zone*, regardless of that object's color.

d. *Drive Team Members* must remain in the red *Driver Station* during *Driving Skills Matches*, except when legally interacting with their *Robot* per rule <GG10>.

<RSC5> Handling Robots during an Autonomous Coding Skills Match. A *Team* may handle their *Robot* as many times as desired during an *Autonomous Coding Skills Match*.

a. Upon handling the *Robot*, it must be immediately brought back to a legal starting position. The *Robot* does not get a new *Preload Pin* during this reset.

   i. *Drive Team Members* may reset or adjust the *Robot* as desired from this position, including pressing buttons on the Robot Brain or activating sensors.

   ii. Any *Scoring Objects* being controlled by the *Robot* while being handled must be removed from the *Field*, and can be reintroduced by a Loader in accordance with <SG6> and <RSC4>. In the context of this rule, "controlled" implies that the *Robot* was manipulating the *Scoring Object*, and not simply touching it. For example, if the *Scoring Object* would move with the *Robot* either vertically or while turning, then the *Robot* is "controlling" that *Scoring Object*. No other *Scoring Objects* should be moved or adjusted.

   iii. As described in rule <S1>, *Students* cannot step into the *Field* at any time during a *Match*. If the *Drive Team Members* cannot reach the *Robot* due to the *Robot* being in the center of the *Field*, they may ask the *Head Referee* to pick up the *Robot* and hand it to the *Drive Team Members* for placement according to the conditions above.

b. 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*.

   i. The rest of <GG1>, which states that *Drive Team Members* are not allowed to use any communication devices during their *Match*, still applies.

ii. An intent of this exception is to permit *Drivers* who wish to "stage" *Robot* handling during an *Autonomous Coding Skills Match* to do so without excessive running back and forth to the *Driver Station*.

This rule is an explicit exception to rules <GG4> and the Violation Note for <GG10>, and may be used as part of a *Team's* strategy for *Autonomous Coding Skills Matches*. *Driving Skills Matches* are still governed by <GG4> & the Violation Note for <GG10>, especially for strategic *Violations*.

Significant Q&As:

- Q&A 2883 - If a Pin is accidentally knocked off of a Starting Pin Support during a legal Robot reset, a Head Referee should put it back

<RSC6> Starting an Autonomous Coding Skills Match. *Drivers* must start a *Robot's Autonomous Coding Skills Match* routine by pressing a button on the Robot Brain or manually activating a sensor. Because there is no VEX IQ Controller hand-off, only one (1) *Driver* is required for an *Autonomous Coding Skills Match* (though *Teams* may still have two (2) if desired).

a. Pre-*Match* sensor calibration is considered part of the standard pre-*Match* setup time (i.e., the time when the *Team* would typically be turning on the *Robot*, moving any mechanisms to their desired legal start position, etc.).

b. Pressing a button on the VEX IQ Controller to begin the routine is not permitted. To avoid any confusion, *Teams* are advised not to bring controllers to *Autonomous Coding Skills Matches*.

In accordance with <GG3>, *Teams* should be mindful of event schedules and set their *Robot* up as promptly as possible. The definition of "prompt" is at the discretion of the *Event Partner* and *Head Referee*, and could depend on things like how much time is left for the Skills Challenge *Field*(s) to be open, how many *Teams* are waiting in line, etc. As a general guideline, three seconds to calibrate a Gyro Sensor would be acceptable, but three minutes to debug a program would not.

<RSC7> Autonomous means "no humans." During an *Autonomous Coding Skills Match*, *Drive Team Members* are not permitted to activate any controls on their VEX IQ Controller, and cannot manually trigger sensors (including the Vision Sensor) in any way, even without touching them.

a. *Teams* cannot use VEX IQ Controllers for any purpose in *Autonomous Coding Skills Match*, and are advised not to bring controllers to the *Field*. If there is a controller at the *Field* during an *Autonomous Coding Skills Match*, it should be placed on the *Floor* outside the *Field* and remain untouched until after the *Match*.

<RSC8> Skills Stop Time. If a *Team* wishes to end their *Robot Skills Match* early, they may elect to record a *Skills Stop Time*. This is used as a tiebreaker for *Robot Skills Challenge* rankings. A *Skills Stop Time* does not affect a *Team's* score for a given *Robot Skills Match*. *Drivers* and field staff must agree prior to the *Match* on the signal that will be used to end the *Match* early.

a. As noted in the definition of *Skills Stop Time*, the moment when the *Match* ends early is defined as the moment when the *Robot* and *Scoring Objects* have come to a rest and the *Driver* provides the agreed upon visual and audio signal to the *Scorekeeper Referee*.

b. *Teams* who intend to attempt a *Skills Stop Time* must "opt-in" by verbally confirming with the *Scorekeeper Referee* prior to the *Robot Skills Match*. If no notification is given prior to the start of the *Match*, then the *Team* forfeits their option to record a *Skills Stop Time* for that *Match*.

c. This conversation should include informing the *Scorekeeper Referee* which *Driver* will signal the stop. The *Match* may only be ended early by a *Driver* for that *Match*.

d. The agreed-upon signal to stop the *Match* must be both verbal and visual, such as *Drivers* crossing their arms in an "X" or placing their VEX IQ Controller on the ground.

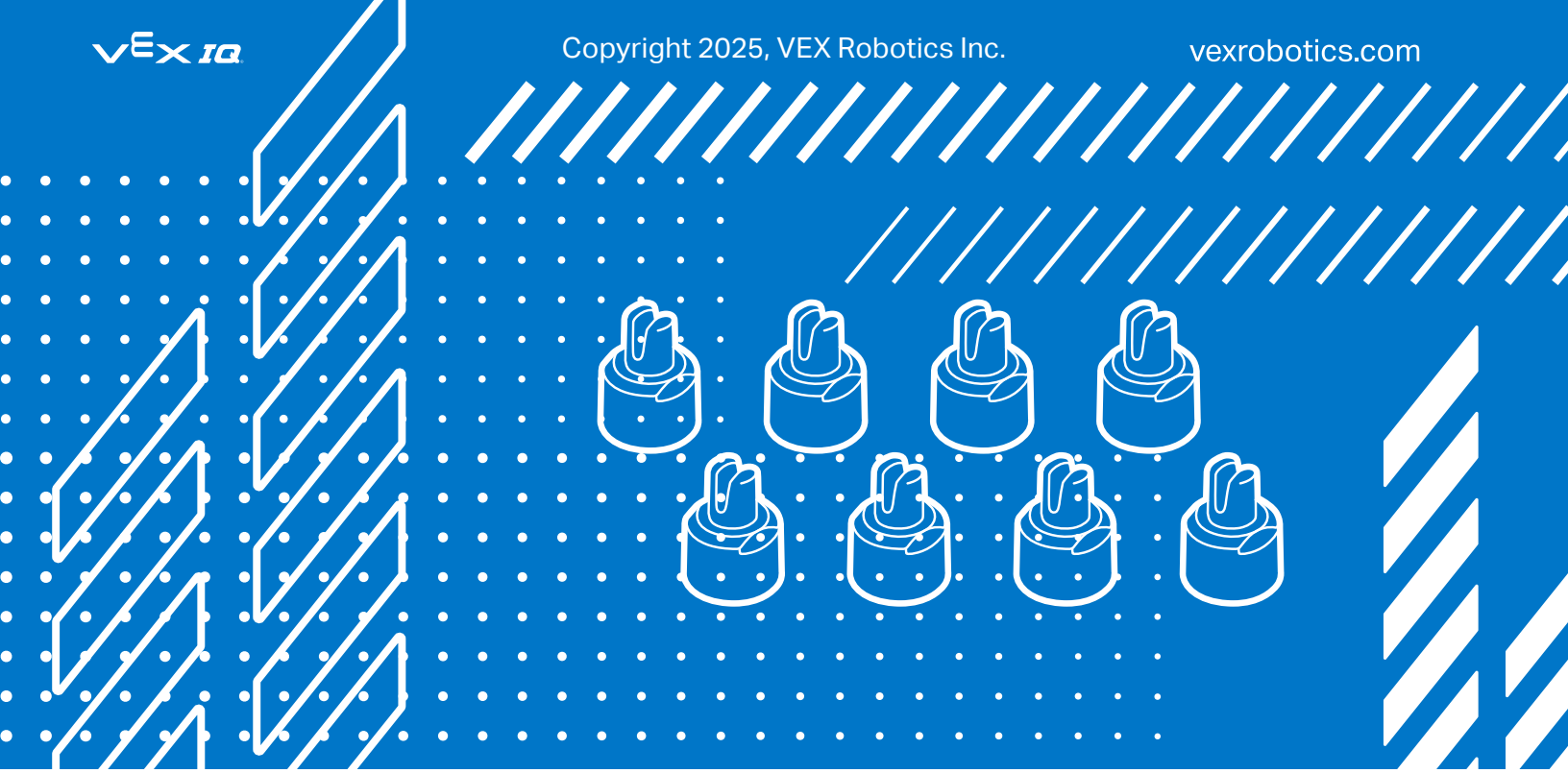
e. It is recommended that the *Driver* also provides a verbal notice that they are approaching their *Skills Stop Time*, such as counting out "3-2-1-stop."

f. If a *Team* runs multiple *Robot Skills Matches* in a row, they must reconfirm their *Skills Stop Time* choice with the *Scorekeeper Referee* prior to each *Match*.

g. Any questions regarding a *Skills Stop Time* should be reviewed and settled immediately following the *Match*. <T1> and <T3> apply to *Robot Skills Matches*.

Significant Q&As:

- Q&A 2888 - Example of how to use a Skills Stop Time in an Autonomous Coding Skills Match



VEX IQ ROBOTICS COMPETITION

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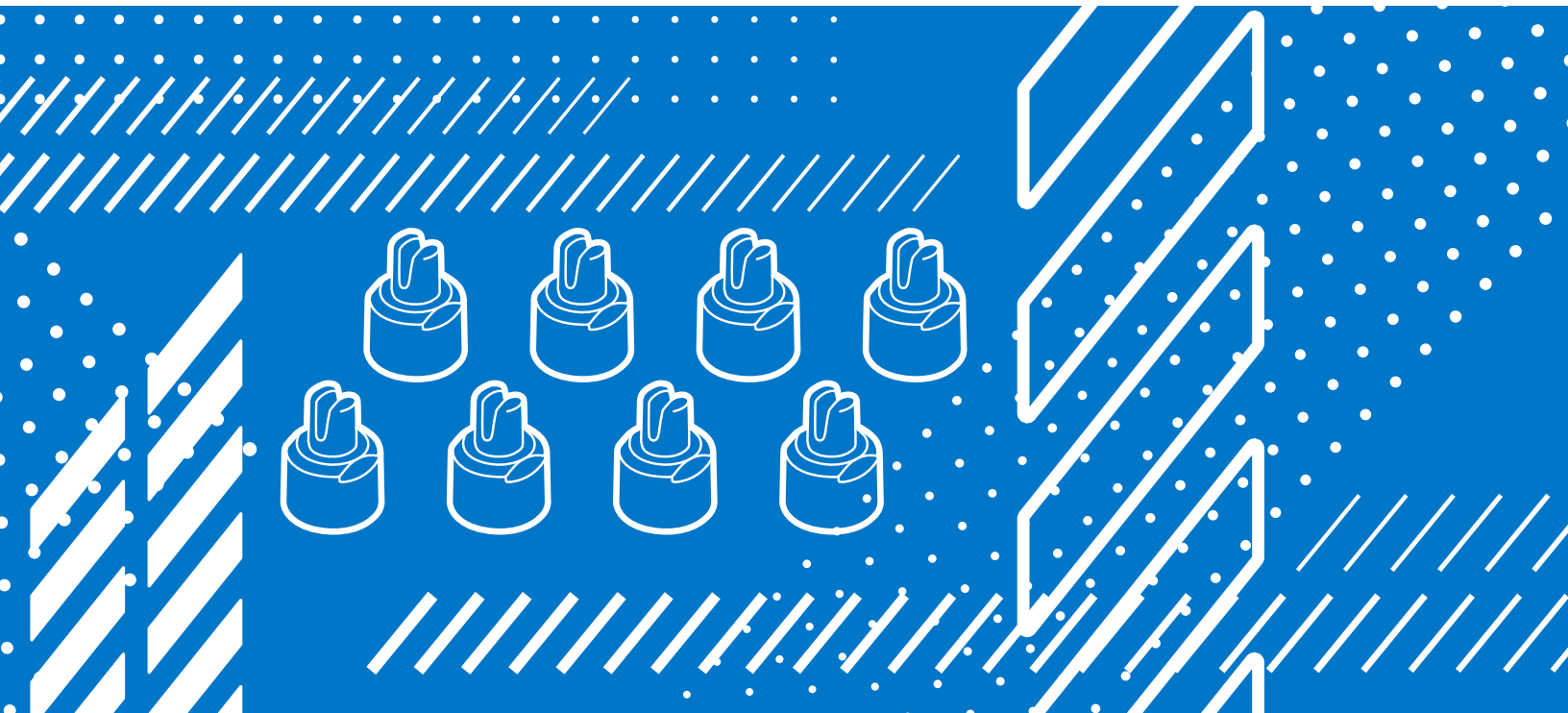
Section 5 - The Event



Section 5 - The Event

Description

The VEX IQ Robotics Competition encompasses both the *Teamwork Challenge* and the *Robot Skills Challenge*. This section describes how the *Teamwork Challenge* and *Robot Skills Challenge* are to be played at a given event. For information about the requirements for tournaments that qualify *Teams* to championship events, visit this article in the REC Library.

Awards may be given to top *Teams* in each format, as applicable. Awards may also be given for overall performance in the judged criteria. Please review the Guide to Judging: Awards article in the REC Library for more details.

Tournament Definitions

Event Partner - The volunteer VEX IQ Robotics Competition tournament coordinator who serves as an overall manager for the volunteers, venue, event materials, and all other event considerations. *Event Partners* serve as the official liaison between the REC Foundation, the event volunteers, and event attendees.

Finals Match - A *Teamwork Challenge Match* used to determine the *Teamwork Challenge* champions.

Head Referee - A certified impartial volunteer responsible for enforcing the rules in this manual as written. *Head Referees* are the only people who may discuss ruling interpretations or scoring questions with *Teams* at an event. Large events (e.g., Signature Events, World Championships, etc.) might include multiple *Head Referees* at the *Event Partner's* discretion.

Match Stop Time - The time remaining (i.e., displayed on the timer or audience display) in a tiebreaker *Finals Match* (which only occurs for 1st place) when an *Alliance* ends the *Match* early by placing their controllers on the ground. The *Match Stop Time* is rounded down to the nearest even number. For example, if controllers are set down when the displayed time is 13 seconds, the *Match Stop Time* is recorded as 12 seconds. If an *Alliance* does not finish the *Match* early, they receive a default *Match Stop Time* of 0 seconds.

Practice Match - A non-scored *Match* used to provide time for *Teams* to get acquainted with the official playing *Field*. *Head Referees* should not record or track standard gameplay *Violations* that occur during *Practice Matches*. *Violations* that are egregious, unsportsmanlike and/or unsafe may be recorded and tracked at the discretion of the *Head Referee*.

Qualification Match - A *Teamwork Challenge Match* used to determine the event rankings.

Robot Skills Challenge - A portion of the VEX IQ Robotics Competition. The *Robot Skills Challenge* consists of *Driving Skills Matches* and *Autonomous Coding Skills Matches* as described in the General Definitions.

Scorekeeper Referee - An impartial volunteer responsible for tallying scores at the end of a *Match*. *Scorekeeper Referees* do not make ruling interpretations, and should redirect any *Team* questions regarding rules or scores to the *Head Referee*.

Teamwork Challenge - A portion of the VEX IQ Robotics Competition. The *Teamwork Challenge* consists of *Teamwork Challenge Matches* and *Finals Matches*, and may include *Practice Matches*.

Tournament Rules

<T1> Head Referees have ultimate and final authority on all gameplay and robot ruling decisions during the competition.

a. *Scorekeeper Referees* score the *Match*, and may serve as observers or advisers for the *Head Referees*, but may not determine any *Violations* directly.

b. When issuing a *Disqualification* or *Violation* to a *Team*, the *Head Referee* should attempt to notify the *Team* as the *Violation* occurs, and after the *Match* must provide the rule number of the specific rule that has been Violated and record the *Violation* in the Match Anomaly Log.

c. *CoC-related Violations* require additional escalation beyond the *Head Referee's* initial ruling, including (but not limited to) investigation by RECF representatives.

d. *Event Partners* may not overrule a *Head Referee's* gameplay or *Robot* decisions.

e. Every *Qualification Match* and *Finals Match* must be watched by a certified *Head Referee*. *Head Referees* may only watch one *Match* at a time; if multiple *Matches* are happening simultaneously on separate *Fields*, each *Field* must have its own *Head Referee*. *Head Referees* must follow the rules in this game manual and the Q&A, and must make rulings consistent with the intent of the game manual and Q&A.

f. At a minimum, every *Robot Skills Match* must be watched by a trained *Scorekeeper Referee*, who may only watch one *Match* at a time. If multiple *Robot Skills Matches* are happening simultaneously on separate *Fields*, each *Field* must have its own *Scorekeeper Referee*. A certified *Head Referee* must be available at the event to explain a rule, *Disqualification*, *Violation*, or other penalty to *Teams* in *Robot Skills Matches* as needed in support of the *Scorekeeper Referees* at skills *Fields*.

Note from the VEX GDC: The rules contained in this Game Manual are written to be enforced by human *Head Referees*. Many rules have "black-and-white" criteria that can be easily checked. However, some rulings will rely on a judgment call from this human *Head Referee*. In these cases, *Head Referees* will make their calls based on what they and the *Scorekeeper Referees* saw, what guidance is provided by their official support materials (the Game Manual and the Q&A), and most crucially, the context of the *Match* in question.

The VEX IQ Robotics Competition does not have video replay, our *Fields* do not have absolute sensors to count scores, and most events do not have the resources for an extensive review conference between each *Match*.

When an ambiguous rule results in a controversial call, there is a natural instinct to wonder what the "right" ruling "should have been," or what the GDC "would have ruled." This is ultimately an irrelevant question; our answer is that when a rule specifies "*Head Referee's* discretion" (or similar), then the "right" call is the one made by the *Head Referee* in the moment. The VEX GDC designs games, and writes rules, with this expectation (constraint) in mind.

<T2> Head Referees must be qualified. VEX IQ *Head Referees* must have all of the following qualifications:

a. Be at least 16 years of age.

b. Be approved by the *Event Partner*.

c. Be an REC Foundation Certified VIQRC *Head Referee* for the current season. Visit the REC Library for more details.

d. Cannot be the *Event Partner* or a Judge Advisor for the event.

Note: Scorekeeper Referees must be at least 15 years of age, and must be approved by the Event Partner.

<T3> The Drive Team Members are permitted to immediately appeal the Head Referee's ruling. If *Drive Team Members* wish to dispute a score or ruling, they must stay in the *Driver Station* until the *Head Referee* talks with them. The *Head Referee* may choose to meet with the *Drive Team Members* at another location and/or at a later time so that the *Head Referee* has time to reference materials or resources to help with the decision. Once the *Head Referee* announces that their decision has been made final, the issue is over and no more appeals may be made (see rule <T1>).

a. Referees are not permitted to review any photo or video *Match* recordings when determining a score or ruling.

b. *Head Referees* are the only individuals permitted to explain a rule, *Disqualification*, or *Violation* to the *Teams* in a *Teamwork Challenge Match*. *Teams* should never consult other field personnel, including *Scorekeeper Referees*, regarding a ruling clarification.

Communication and conflict resolution skills are an important life skill for *Students* to practice and learn. In VEX IQ Robotics Competitions, we expect *Students* to practice proper conflict resolution using the proper chain of command. *Violations* of this rule may be considered a *Violation* of <G1> and/or the Code of Conduct.

Some events may choose to utilize a "question box" or other designated location for discussions with *Head Referees*. Offering a "question box" is within the discretion of the *Event Partner* and/or *Head Referee*, and may act as an alternate option for asking *Drive Team Members* to remain in the *Driver Station* (although all other aspects of this rule apply).

However, by using this alternate location, *Drive Team Members* acknowledge that they are forfeiting the opportunity to use any contextual information involving the specific state of the *Field* at the end of the *Match*. For example, it is impossible to appeal whether a game element was scored or not if the *Field* has already been reset. If this information is pertinent to the appeal, *Drive Team Members* should still remain in the *Driver Station*, and relocate to the "question box" once the *Head Referee* has been made aware of the concern and/or any relevant context.

<T4> The Event Partner has ultimate authority regarding all non-gameplay decisions during an event. The Game Manual is intended to provide a set of rules for successfully playing VIQRC Mix & Match; it is not intended to be an exhaustive compilation of guidelines for running a VEX IQ Robotics Competition event. Rules such as, but not limited to, the following examples are at the discretion of the *Event Partner* and should be treated with the same respect as the Game Manual:

- Venue access
- Pit spaces
- Health and safety
- *Team* registration and/or competition eligibility
- *Team* conduct away from competition *Fields*

> This rule exists alongside <G1>, <S1>, and <G3>. Even though there isn't a rule that says "do not steal from the concession stand," it would still be within an *Event Partner's* authority to remove a thief from the competition.

<T5> Be prepared for minor field variance. *Field Element* tolerances and *Scoring Object* positions may vary from nominal by up to ±0.5" [12.7mm], unless otherwise specified. The rotation of *Pins* is not specified. If a *Pin* is within tolerance, either on the *Field* or on a *Starting Pin Support*, it should not be adjusted before the *Match*. *Teams* are encouraged to design their *Robots* accordingly. Please make sure to check Appendix A for more specific nominal dimensions and tolerances.

> The *Field* and *Field Elements* are designed to be assembled and disassembled multiple times each year. *Event Partners* store and transport *Fields* between events, and the individuals setting up the *Field* at one event may differ from those at the next. While every effort will be made to ensure minimal variance, *Teams* should expect that any *Field* may be slightly different than another, and prepare accordingly. Just because something works on one *Field* does not fully guarantee it will work on the next, and is not enough evidence alone to determine if a *Field* is out of tolerance.

<T6> Fields and Field Elements may be repaired at the Event Partner's discretion. All competition *Fields* and other *Field Elements* at an event must be set up in accordance with the specifications in Appendix A and/or other applicable support materials. Minor aesthetic customizations or repairs are permitted, provided that they do not impact gameplay (see <T4>).

Examples of permissible modifications include, but are not limited to:

a. Replacing a damaged or missing VEX IQ component with an identical part of any color.
b. Elevating the playing *Field* off of the *Floor* (common heights are 10" to 24" [254mm to 609.6mm]).
c. Using off-the-shelf PVC to replace a damaged or missing pipe.

> Significant Q&As:
>
> - Q&A 2801 - Accommodation requests for color-blindness and marked Pins

<T7> Fields at an event must be consistent with each other. There are many types of permissible aesthetic and/or logistical modifications that may be made to competition *Fields* at the *Event Partner's* discretion. If an event has multiple *Teamwork Challenge Fields*, they must all incorporate the same permissible/applicable modifications. If an event has multiple Robot Skills Challenge *Fields*, they must all incorporate the same permissible/applicable modifications. For example, if one Teamwork Challenge *Field* is elevated, then all *Teamwork Challenge Fields* must be elevated to the same height.

Examples of these modifications may include, but are not limited to:

- Elevating the playing *Field* off of the *Floor* (common heights are 12" to 24" [30.5cm to 61cm])
- Field display monitors
- *Field Perimeter* decorations (e.g., LED lights, sponsor banners attached to risers)

Note: If an event has dedicated Fields for Robot Skills Matches, there is no requirement for them to have the same consistent modifications as the Teamwork Challenge Fields. See <T16> for more details.

<T8> Qualification Matches will occur according to the official match schedule. This schedule will indicate *Alliance* partners, *Qualification Match* times, and, if the event has multiple *Fields*, which *Field* each *Qualification Match* will be played on.

a. *Practice Matches* may be included in the *Match* schedule at some events, but are not required. If *Practice Matches* are run, every effort will be made to equalize practice time for all *Teams*.
b. A *Qualification Match* can only start before its scheduled time if all *Teams*, *Robots*, and assigned volunteers are at the *Field* and ready to play.
c. Any multi-division event must be approved by the REC Foundation RSM prior to the event, and divisions must be assigned in sequential order by *Team* number.

Note: The official Match schedule is subject to changes at the Event Partner's discretion.

<T9> Each Team will be scheduled Qualification Matches as follows.

a. When in a tournament, the tournament must have a minimum of six (6) *Qualification Matches* per *Team* at local qualifying events and eight (8) for a Championship event.
b. When in a league, there must be at least three (3) league ranking sessions, with at least one (1) week between sessions. Each session must have a minimum of two (2) *Qualification Matches* per *Team*. The suggested number of *Qualification Matches* per *Team* for a standard league ranking session is four (4). *Event Partners* may choose to have *Qualification Matches* as part of their league finals session.

<T10> Teams are ranked by their average Qualification Match scores.

a. When in a tournament, every *Team* will be ranked based on the same number of *Qualification Matches*.

i. For tournaments that have more than one (1) division, *Teams* will be ranked among all *Teams* in their specific division. Each division will have its own set of *Finals Matches*. The winners of each division will then have an overall event Finals. Any multi-division event must be approved by the REC Foundation Regional Support Manager prior to the event, and divisions must be assigned in sequential order by *Team* number.

b. When in a league, every *Team* will be ranked based on the number of *Matches* played. *Teams* that participate in less than 60% of the total *Matches* available will be ranked below *Teams* that participate in at least 60% of the total *Matches* available (e.g., if the league offers 3 ranking sessions with 4 *Qualification Matches* per *Team*, *Teams* that participate in 8 or more *Matches* will be ranked higher than *Teams* who participate in 7 or fewer *Matches*). Being a no-show to a *Match* that a *Team* is scheduled in still constitutes participation for these calculations.

c. A certain number of a *Team's* lowest *Qualification Match* scores will be excluded from the rankings based on the quantity of *Qualification Matches* each *Team* plays. Excluded scores do not affect participation for leagues. "No show" *Matches*, as described in <GG2>, are not considered lowest scores for the purposes of calculating a *Team's Qualification Match* ranking and will never be excluded from the calculation.

Number of Qualification Matches per Team	Number of excluded Match scores
4-7	1
8-11	2
12-15	3
16+	4

d. In some cases, a *Team* will be asked to play an additional *Qualification Match*. The extra *Match* will be identified on the *Match* schedule with an asterisk and will not impact the *Team's* ranking (or participation for leagues). *Teams* are reminded that <G1> is always in effect and *Teams* are expected to behave as if the additional *Qualification Match* counted.

<T11> Qualification Match tiebreakers. *Team* rankings are determined throughout *Qualification Matches* by:

a. Removing the *Team's* lowest score and comparing the new average score.

b. Removing the *Team's* next lowest score and comparing the new average score (on through all scores).

c. If the *Teams* are still tied, the *Teams* will be sorted by random electronic draw.

<T12> How Alliances are formed for Teamwork Matches. During each *Teamwork Challenge Match*, two (2) *Teams* form an *Alliance* that will play on the *Field*.

a. *Qualification Match Alliances* are randomly assigned by the tournament software.

b. *Finals Match Alliances* are assigned as follows based on *Teams*' rankings after all *Qualification Matches* have concluded (see <T10>):

i. The first- and second-ranked *Teams* form an *Alliance*.

ii. The third- and fourth-ranked *Teams* form an *Alliance*.

iii. And so on, until all *Teams* participating in *Finals Matches* have formed an *Alliance*.

<T13> Teams playing in Finals Matches. The number of *Finals Matches*, and therefore the number of *Teams* who will participate in *Finals Matches*, is determined by the *Event Partner*. Events that qualify teams directly to the VEX Robotics World Championship must have a minimum of five (5) *Finals Matches* if there are ten (10) or more *Teams* in attendance.

<T14> Finals Match Schedule. *Finals Matches* are played sequentially, starting with the lowest-ranked *Alliance*. Each *Alliance* will participate in one (1) *Finals Match*. The *Alliance* with the highest *Finals Match* score is the *Teamwork Challenge* champion.

a. *Alliances* are ranked by their *Finals Match* score. The highest-scoring *Alliance* is in first place, the second-highest-scoring *Alliance* is in second place, etc.

b. Ties for first place will result in a series of tiebreaker *Finals Matches*, starting with the lower-seeded *Alliance*. The *Alliance* with the highest tiebreaker *Finals Match* score will be declared the *Teamwork Challenge* champion.

   i. If the tiebreaker *Finals Match* scores are tied, the *Alliance* with the higher *Match Stop Time* will be declared the winner.

   ii. If the *Match Stop Time* is also tied, a second series of tiebreaker *Finals Matches* will be played. If this second series of tiebreaker *Finals Match* is also tied, then the higher-seeded *Alliance* will be declared the winner.

   iii. If there is a tie for a place other than first, the higher-seeded *Alliance* will receive the higher rank.

> Example 1: *Alliance* 6 and *Alliance* 3 are tied for first place. During the tiebreaker *Finals Match*, *Alliance* 6 scores 13 points and has a *Match Stop Time* of 12 seconds. *Alliance* 3 scores 13 points and has a *Match Stop Time* of 10 seconds. *Alliance* 6 is the *Teamwork Challenge* winner.
>
> Example 2: *Alliance* 4 and *Alliance* 5 are tied for third place. *Alliance* 4 is the third place winner and *Alliance* 5 is the fourth place winner. In this way, the lower ranked *Alliance* must "overcome" the higher ranked *Alliance* in order to become the *Teamwork Challenge* champion.

<T15> Skills Match Schedule. *Teams* play *Robot Skills Matches* on a first-come, first-served basis. Each *Team* will get the opportunity to play exactly three (3) *Driving Skills Matches* and three (3) *Autonomous Coding Skills Matches*.

Teams should review the event agenda and their *Match* schedule to determine when the best possible time is to complete their *Robot Skills Matches*. If the *Robot Skills Challenge* area closes before a *Team* has completed all six (6) *Robot Skills Matches*, but it is determined that there was adequate time given, then the *Team* will automatically forfeit those unused *Matches*.
Details regarding logistics of Skills-Only Events can be found in the REC Foundation Qualifying Criteria document.

a. *Robot Skills Matches* are only available to *Teams* who participate in *Qualification Matches*, unless the event is an approved Skills-Only Event. *Teams* who participate in *Qualification Matches* during a specific League Ranking Session are the only *Teams* who can participate in *Robot Skills Matches* at that session.

b. Skills scores recorded by ineligible *Teams* will be deleted from Tournament Manager before the event is finalized on RobotEvents.com.

<T16> There is no requirement that Skills Challenge fields have the same consistent modifications as the Teamwork fields. For example, there is no requirement that *Robot Skills Challenge Fields* are elevated to the same height as *Teamwork Challenge Match Fields*.

In order to use non-conforming *Teamwork Challenge Fields* for *Robot Skills Challenge Matches* (e.g. during lunch), the following steps should be taken:

- *Teams* must be informed that the *Teamwork Challenge Fields* may have some differences from the *Robot Skills Challenge Fields* (e.g., they might be elevated).
- *Teams* must be given an opportunity to select which type of *Field* they want to use, i.e. they cannot be required to use a *Teamwork Challenge Field* for any *Robot Skills Challenge Match*.

<T17> Skills Rankings at events. *Teams* will be ranked at an event based on the following scores and tiebreakers:

1. Sum of highest *Autonomous Coding Skills Match* score and highest *Driving Skills Match* Score.
2. Highest *Autonomous Coding Skills Match* score.
3. Second-highest *Autonomous Coding Skills Match* score.
4. Second-highest *Driving Skills Match* score.
5. Highest sum of *Skills Stop Times* from a *Team's* highest *Autonomous Coding Skills Match* and highest *Driving Skills Match* (i.e., the *Matches* in point 1).
6. Highest *Skills Stop Time* from a *Team's* highest *Autonomous Coding Skills Match* (i.e., the *Match* in point 2).
7. Third-highest *Autonomous Coding Skills Match* score
8. Third-highest *Driving Skills Match* score.
9. If the tie cannot be broken after all above criteria (i.e., both *Teams* have the exact same scores and *Skills Stop Times* for each *Autonomous Coding Skills Match* and *Driving Skills Match*), then the following ordered criteria will be used to determine which *Team* had the "best" *Autonomous Coding Skills Match*:
    i. Points for *Stacks* in the *Standoff Goal*
    ii. Points from *Matching Goal* Bonus
    iii. Points for 2-color and 3-color *Stacks*
10. If the tie still cannot be broken, the same process in the step above will be applied to the *Teams'* highest *Driving Skills Matches*.
11. If the tie still isn't broken, the *Event Partner* may choose to allow *Teams* to have one more deciding *Match*, or both *Teams* may be declared the winner.

<T18> Skills Rankings globally. *Teams* are ranked based on their Robot Skills scores from Tournaments and Leagues that upload results to RobotEvents.com, according to the following tiebreakers.

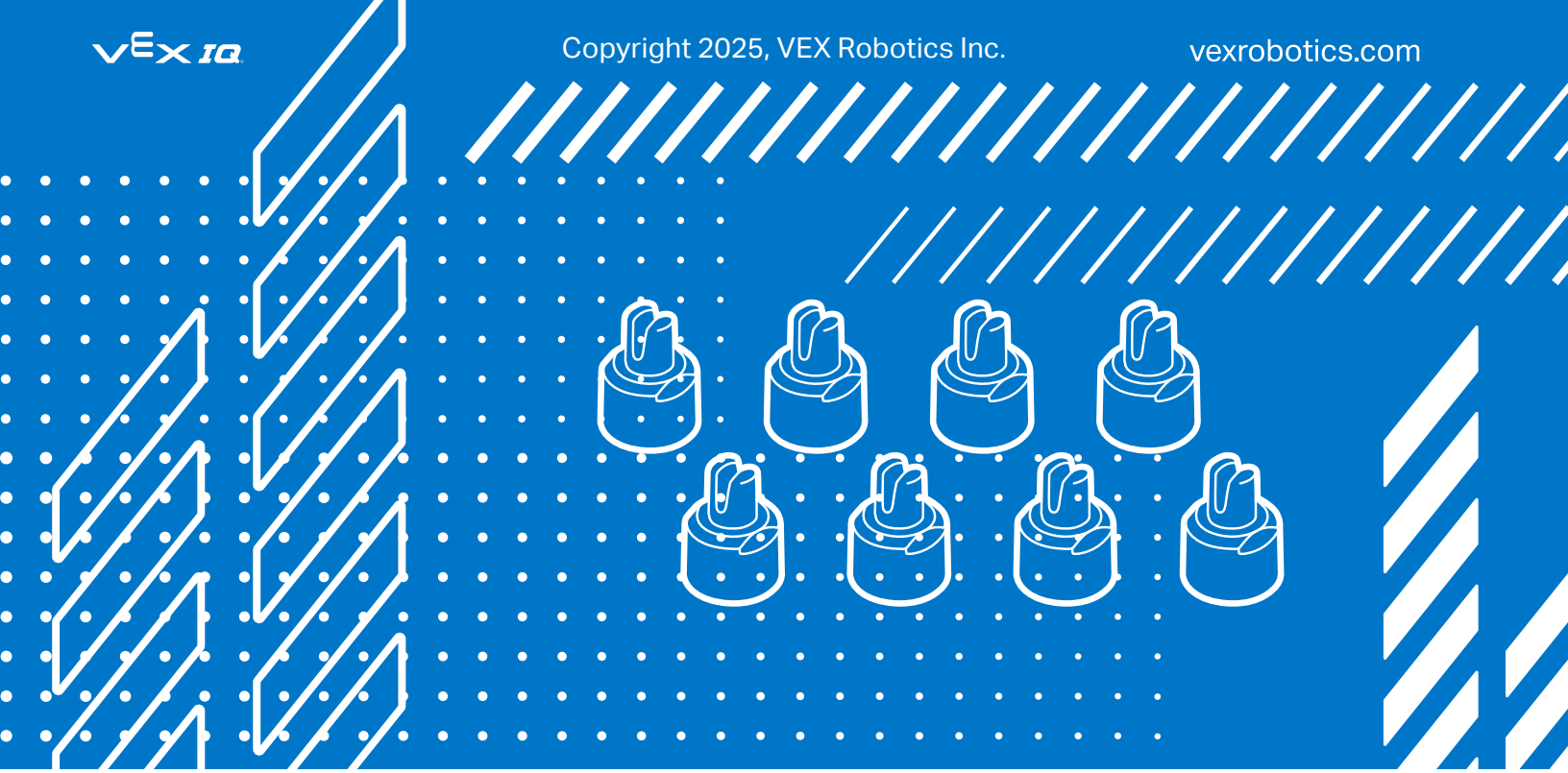
1. Highest Robot Skills score (combined *Autonomous Coding Skills Match* and *Driving Skills Match* Score from a single event).
2. Highest *Autonomous Coding Skills Match* score (from any event).
3. Highest sum of *Skills Stop Times* from the *Robot Skills Matches* used for point 1.
4. Highest *Skills Stop Time* from the *Autonomous Coding Skills Match* used for point 2.
5. Highest *Driving Skills Match* score (from any event).
6. Highest *Skills Stop Time* from the *Driving Skills Match* score used in point 5.
7. Earliest posting of the highest *Autonomous Coding Skills Match* score.
    i. The first *Team* to post a score ranks ahead of other *Teams* that post the same score at a later time, all else being equal.
8. Earliest posting of the highest *Driving Skills Match* score.
    i. The first *Team* to post a score ranks ahead of other *Teams* that post the same score at a later time, all else being equal.

<T19> Robot Skills at League Events. At league events in which *Teams* may submit *Robot Skills Challenge* scores across multiple sessions, the Robot Skills scores (combined highest *Autonomous Coding Skills Match* and *Driving Skills Match* scores) used for rankings will be calculated from *Matches* within the same session.

For example, consider the following scores for a hypothetical *Team* across two league event sessions:

	Autonomous Coding Skills Match	Driving Skills Match	Robot Skills Score
Session 1	25	45	70
Session 2	30	42	72

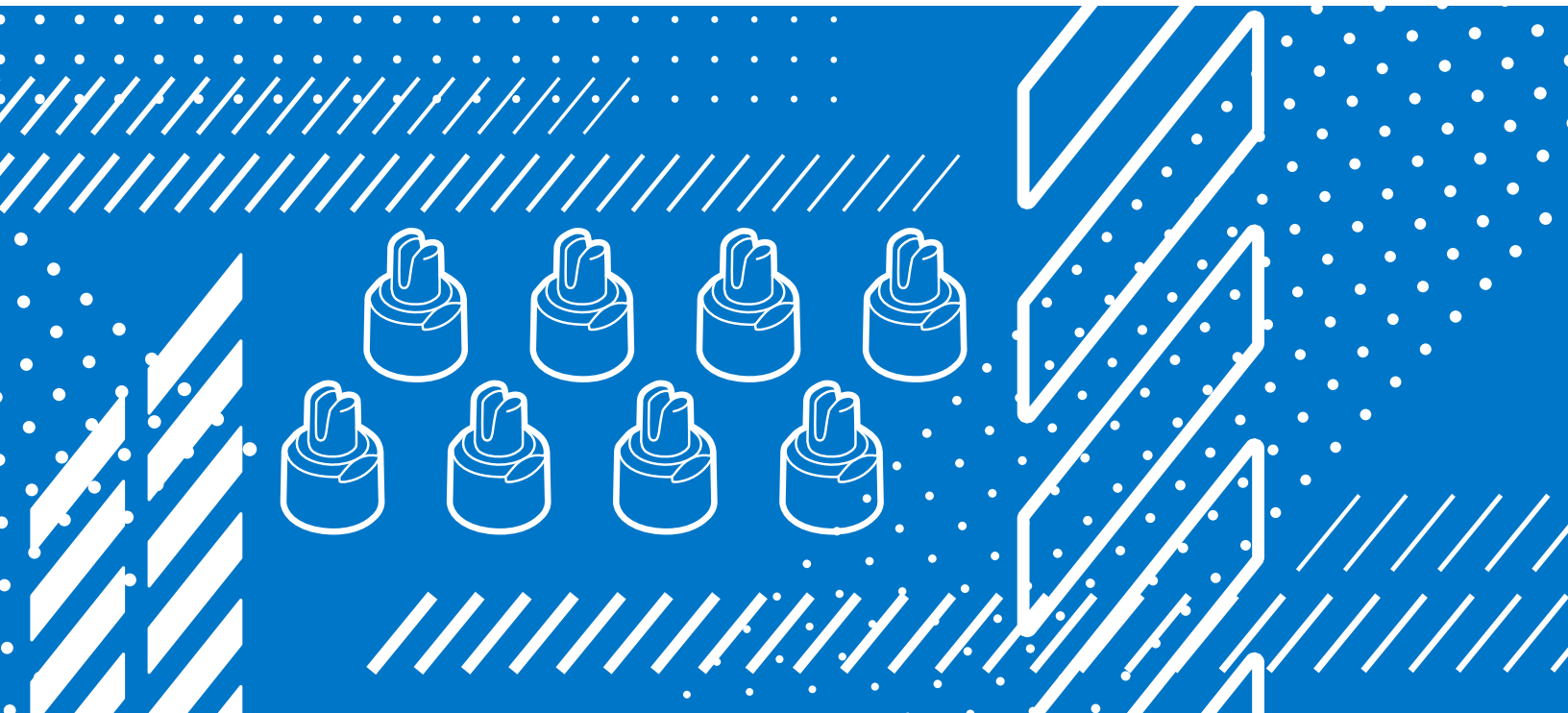
This *Team* would have a Robot Skills score of 72 for this event's rankings, and their scores from Session 2 would be used for the event and global tiebreakers listed in <T17> and <T18>.



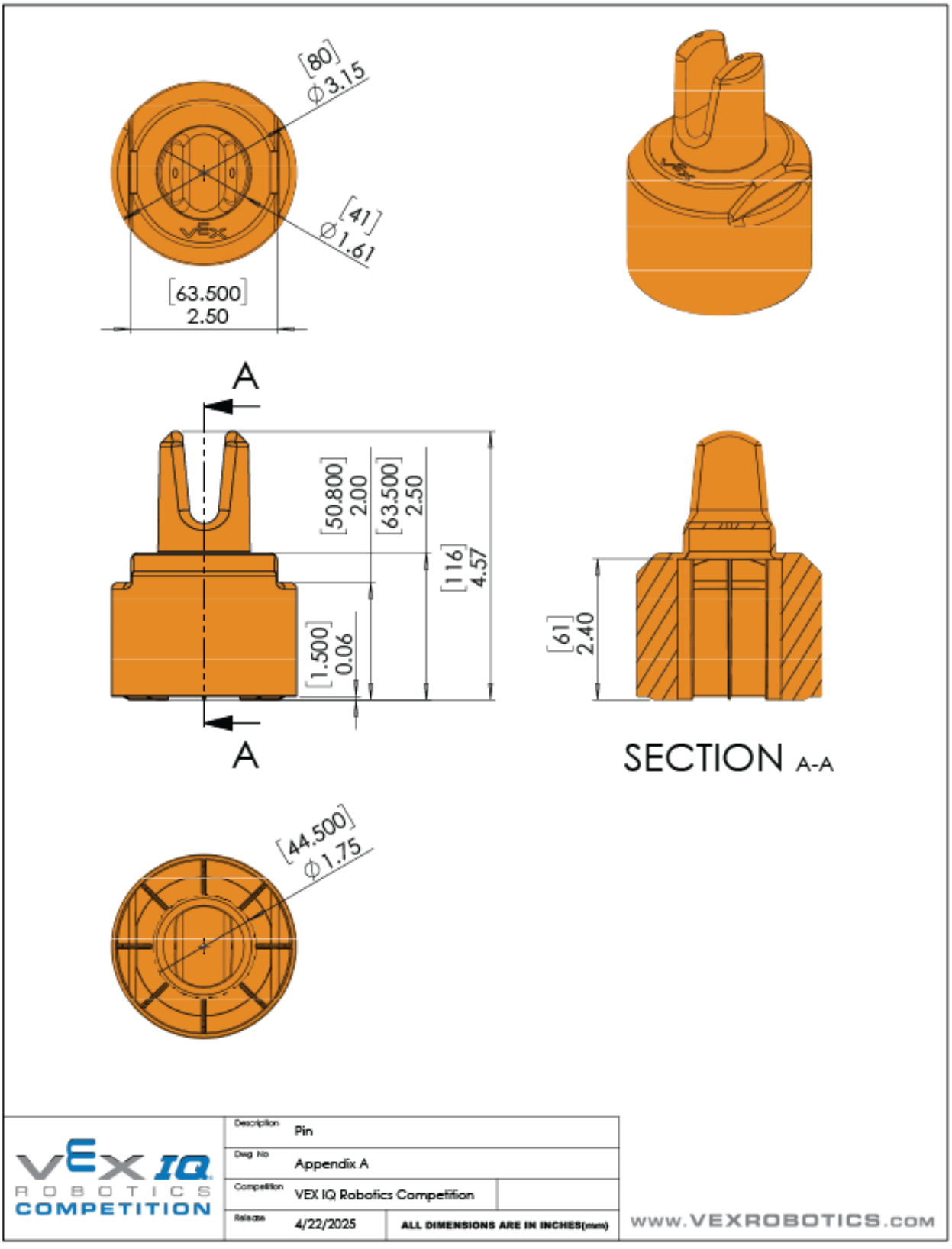
VEX IQ ROBOTICS COMPETITION

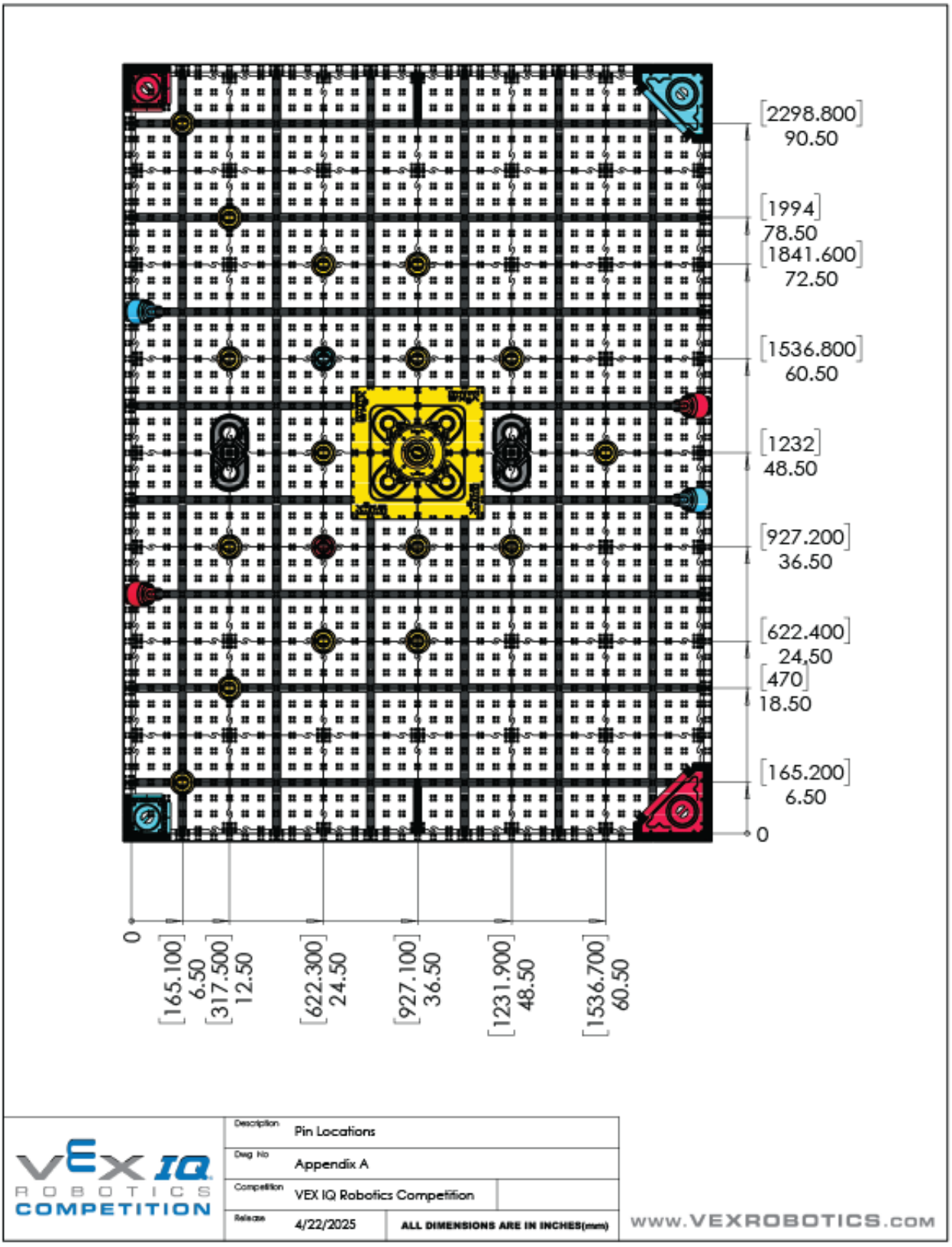
MIX & MATCH

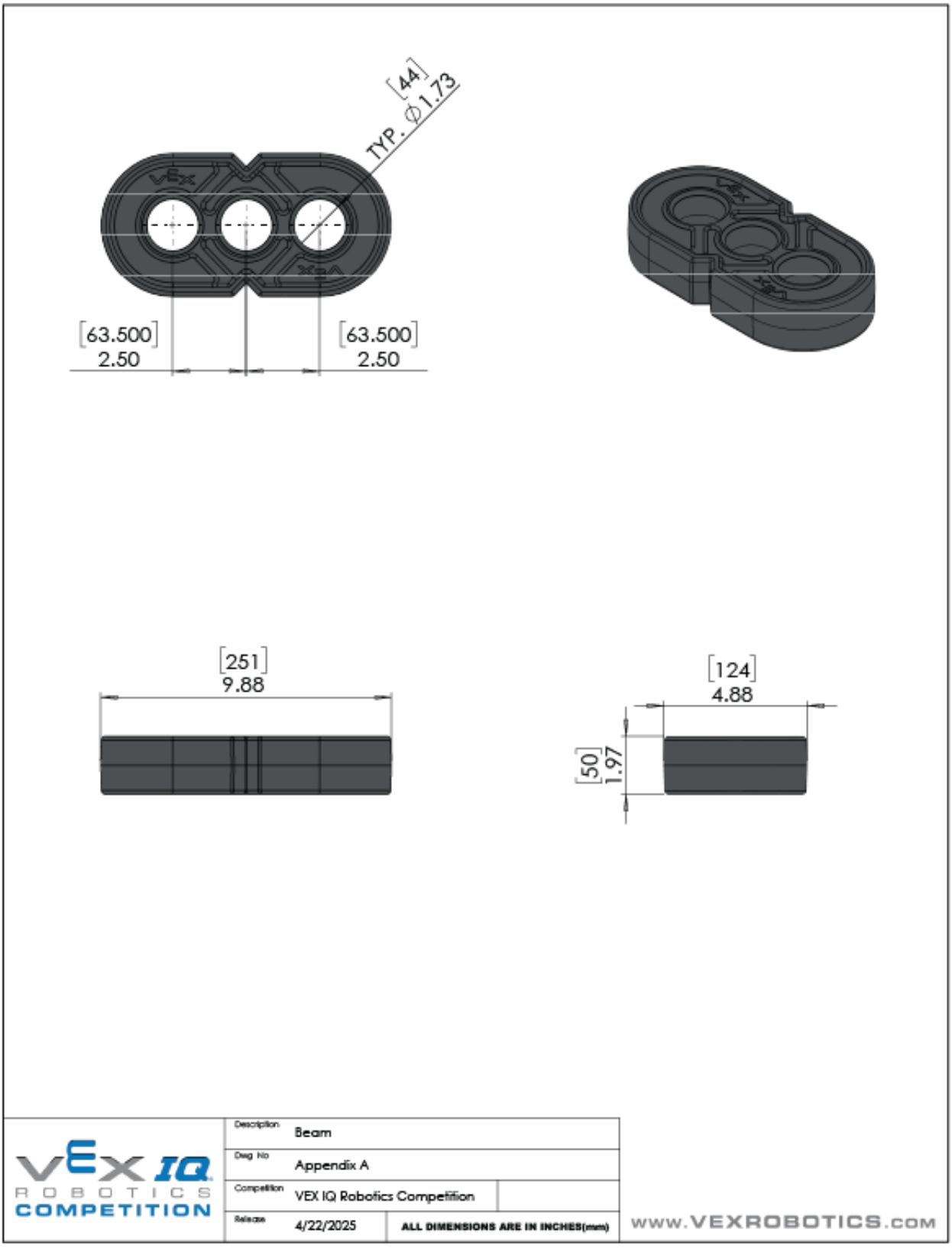
2025 - 2026
Appendix A - Field Overview

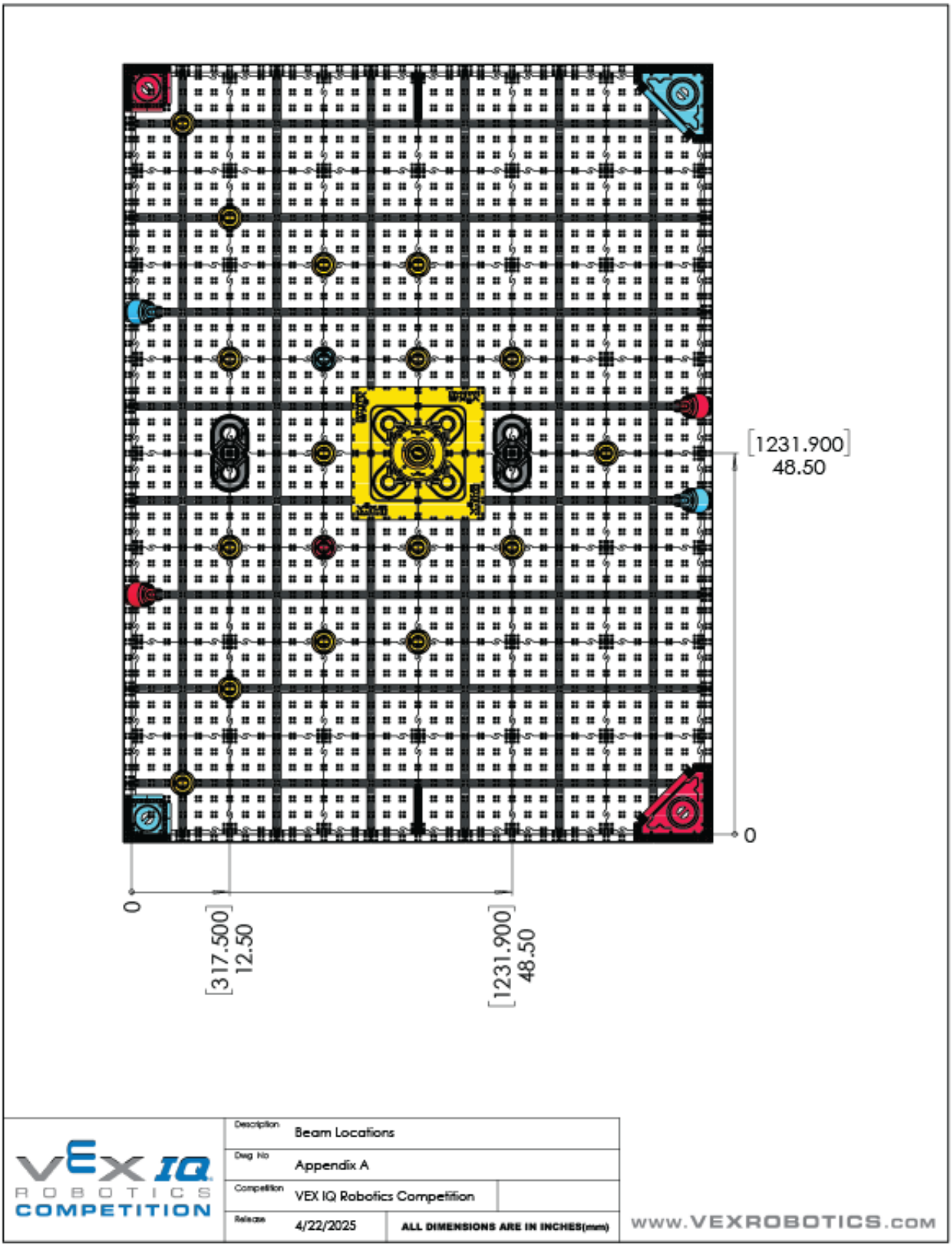


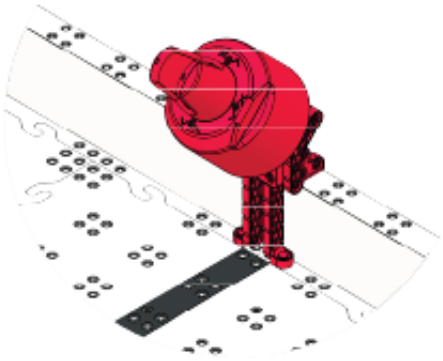
Appendix A - Field Overview

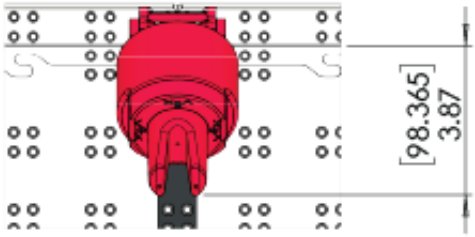


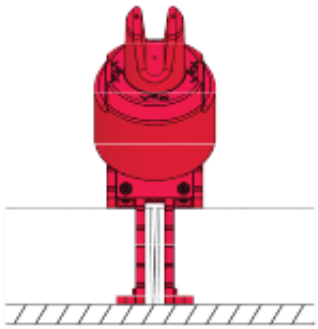


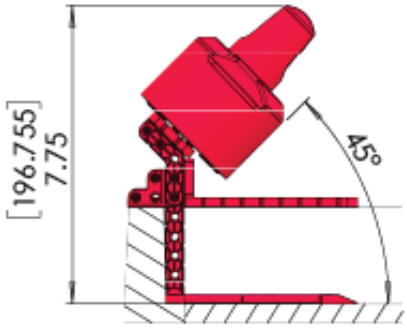




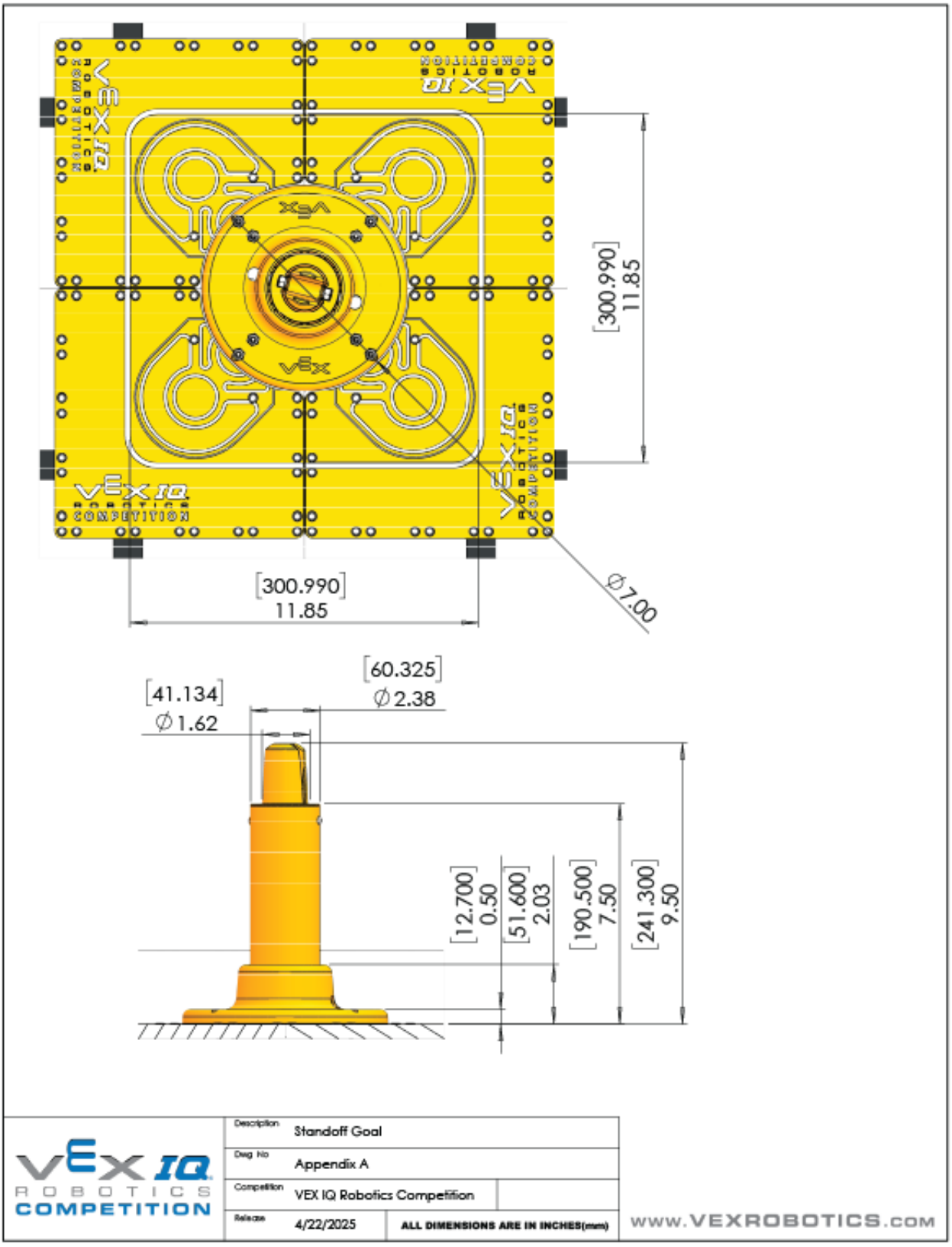


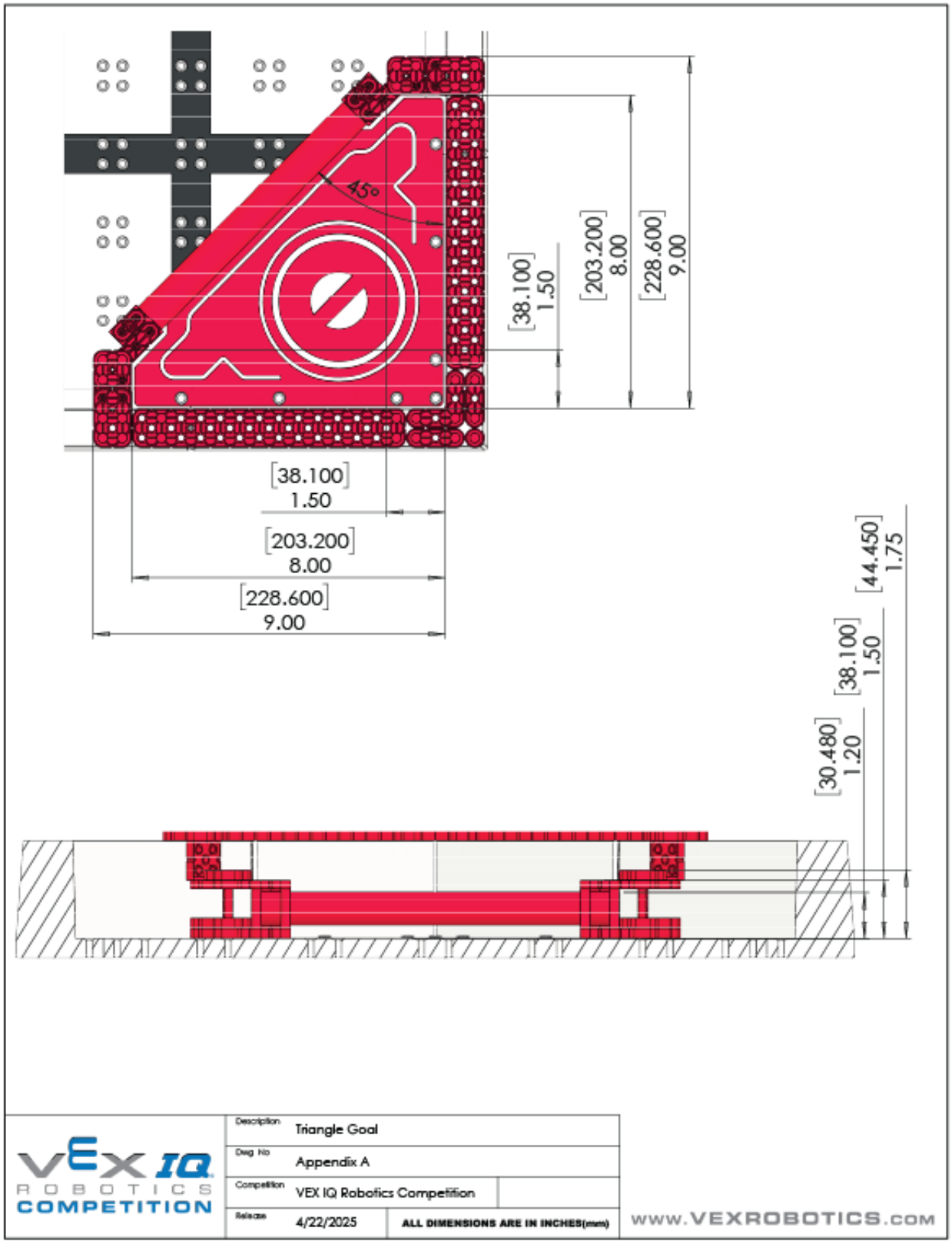


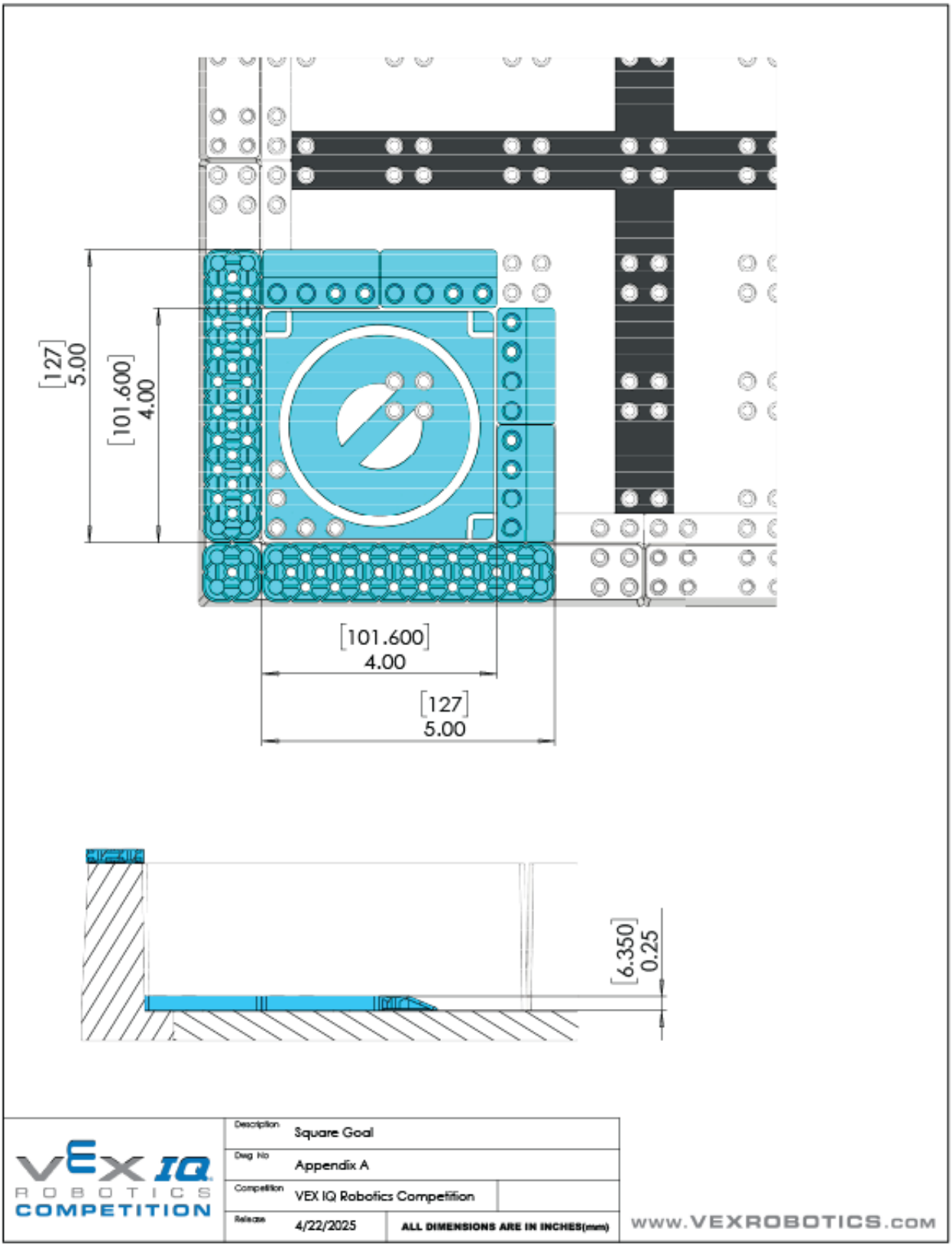


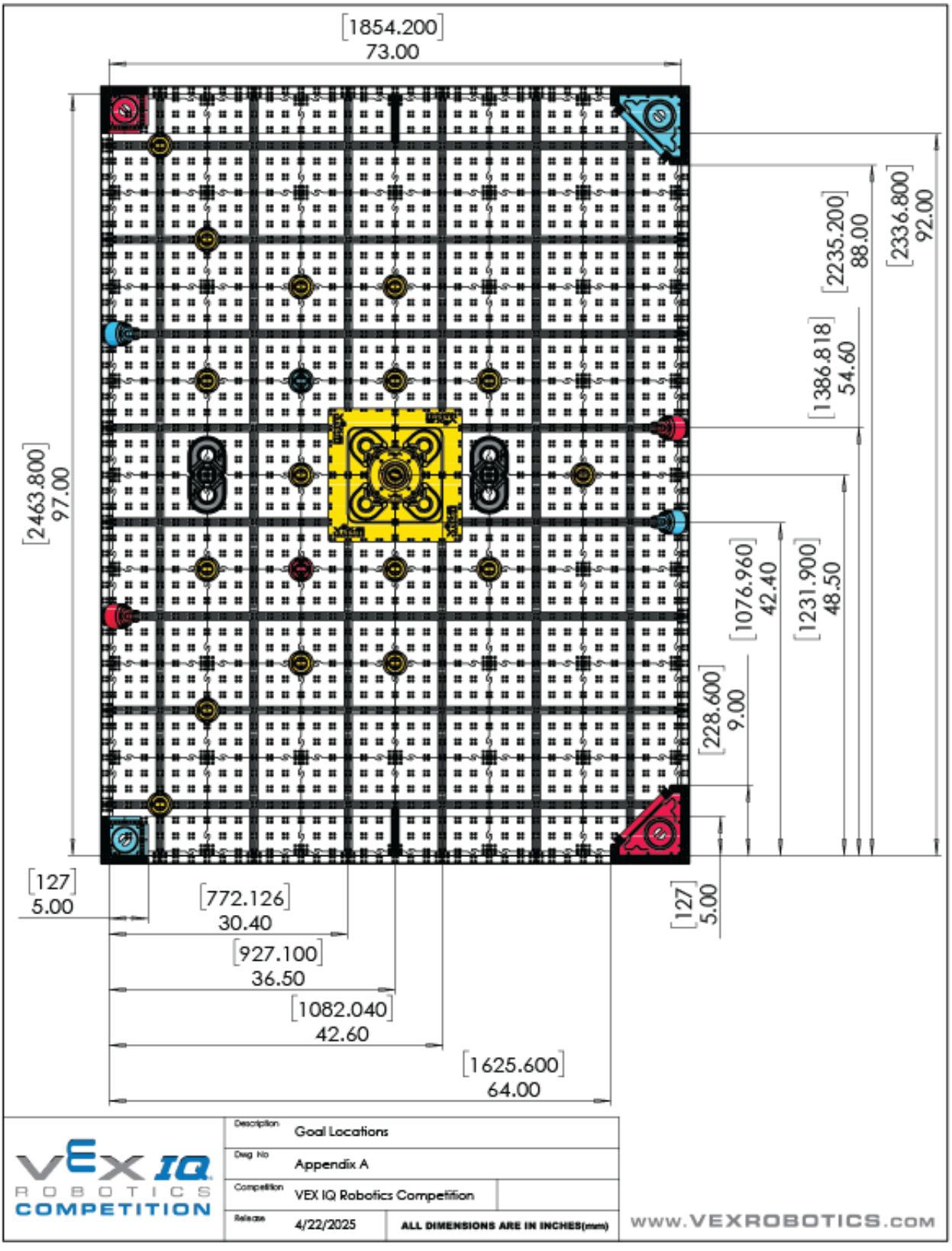


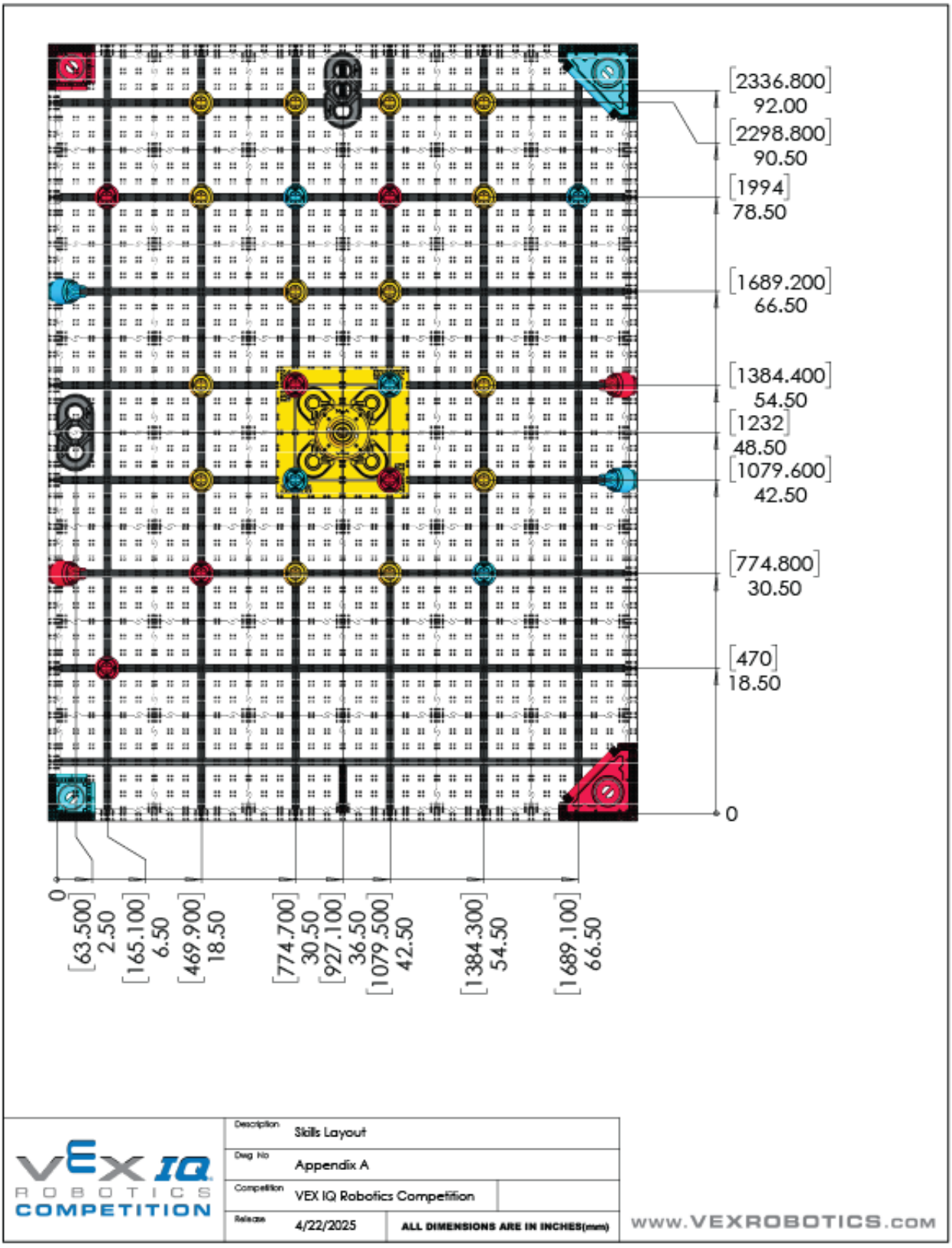
VEX IQ ROBOTICS COMPETITION	Description: Starting Pin Supports		
	Dwg. No: Appendix A		
	Competition: VEX IQ Robotics Competition		
	Release: 4/22/2025	ALL DIMENSIONS ARE IN INCHES(mm)	www.VEXROBOTICS.com



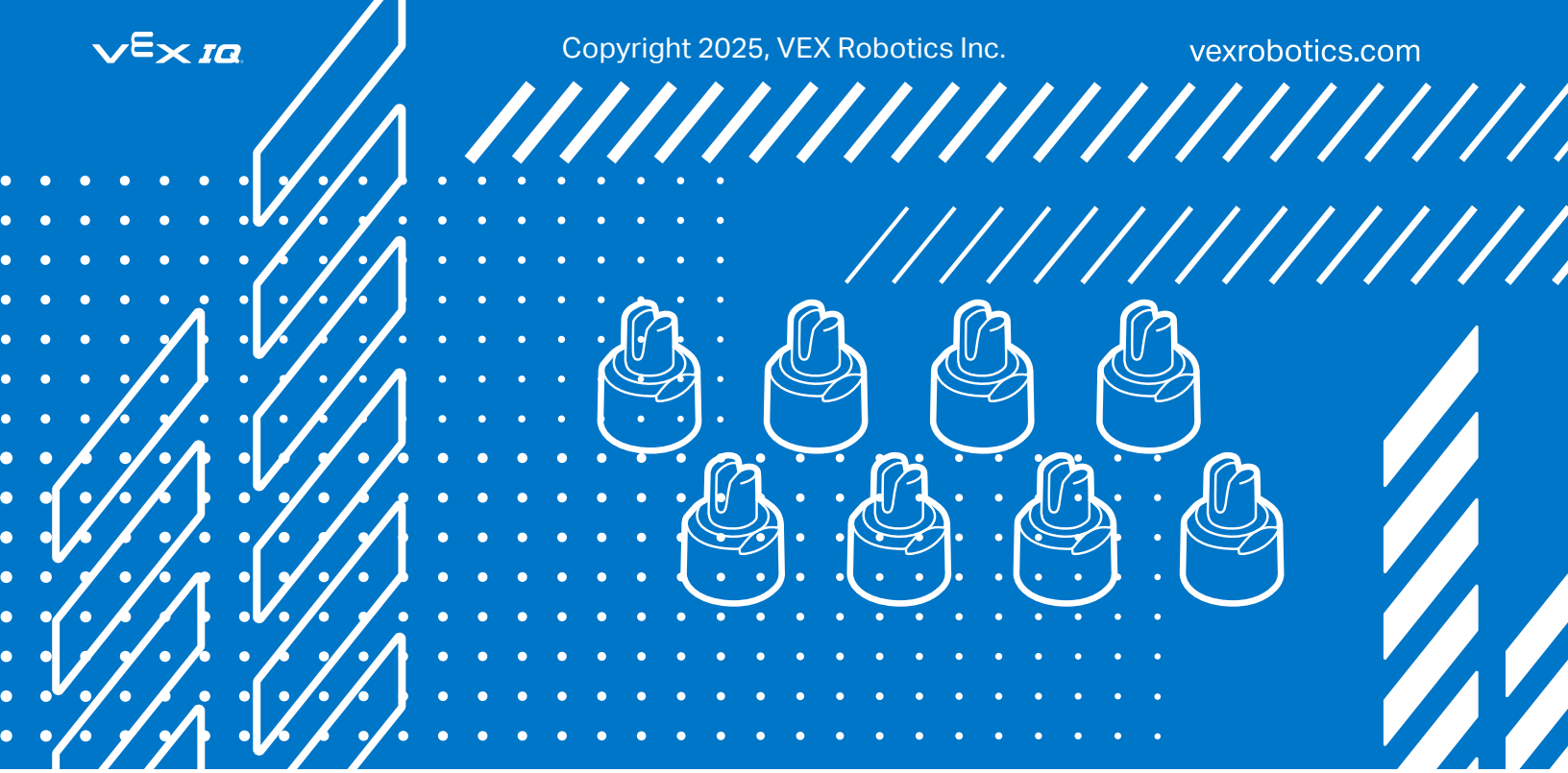








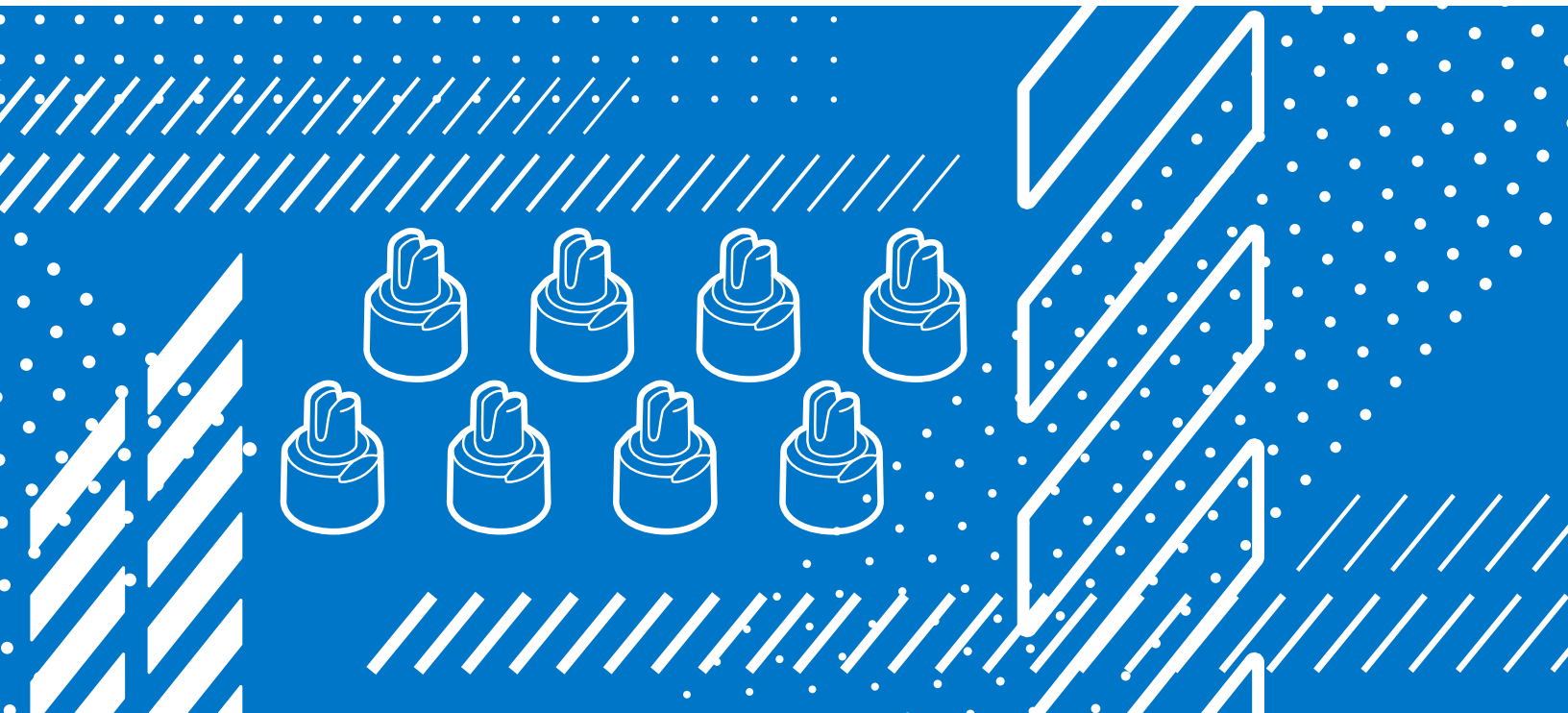
vexrobotics.com



VEX IQ ROBOTICS COMPETITION

MIX & MATCH

2025 - 2026
Appendix B - Simplified Edition



Appendix B - Simplified Edition

Using this Appendix

Hey *Students*!

Welcome to the VEX IQ Robotics Competition. We're excited to see you play Mix & Match! We know that learning new things can be hard, and that the "big game manual" can be kind of a lot. So, we're here to help!

You and your teammates can start here and work together to learn about the important parts of the *Field*, how to earn points, study basic rules, and see different ways to play the game. But these are only some of the rules of this year's game, and you will need to know them all! So after you understand everything here, and before you go to your first event, head over to the official game manual to make sure you understand all of the rules.

We hope that you have fun, make lots of friends, and work together to build your best *Robot* ever! Have an awesome season!

Hi *Adults*!

This unofficial version of the VEX IQ Robotics Competition manual is a print-friendly resource for you and your *Teams* to help introduce *Students* to this season's game, Mix & Match.

It's very important to note that this is NOT a replacement for reading the official manual in its entirety. We encourage you to use this Appendix to support *Team* members who may be overwhelmed by the full game manual, and use it to aid in building a basic understanding of the game. Once *Students* are comfortable with this appendix and the rules outlined here, you should transition them to reading and using the full game manual, where they will gain a full-depth comprehension of the VEX IQ Robotics Competition.

We hope that you'll find this guide helpful and that more *Students* feel welcomed, supported, and empowered to join your *Teams*.

Your Robotics friends,
The VEX Robotics Competition Game Design Committee

Version 2.2 - Released December 4, 2025

Important Rules

It's very important to understand that all of the rules of Mix and Match must be followed, not just by *Students*, but by *Adults*, too. The choices that *Students* and *Adults* make go hand-in-hand, so be sure to follow the rules together.

Treat everyone with respect. <G1>

- Be kind and do your best. This is one of the most important parts of VEX IQ.
- Be respectful. It's okay for *Students* and *Adults* to disagree, but it's never okay to be disrespectful.
- Be a good sport. Think about how you make other people feel.
- Include everyone. *Alliances* should always work together to come up with a plan, and telling another person how they have to play the game is not allowed.

VIQRC is a student-centered program. <G2>

- The *Student*-Centered Policy is very important because VEX IQ is a competition for *Students*.
- This means that the *Students* come up with the ideas, build the *Robots*, write the code, troubleshoot, and compete.
- *Adults* can teach, but can't do the work. *Adults* should give *Students* tips, not answers, and cannot directly work on *Robots*, code, engineering notebooks, or in-*Match* strategy.
- *Students* should respectfully speak up when an *Adult* is doing too much, and give a reminder that when it comes to VEX IQ, *Student*-Centered is a rule all the time and everywhere.

How do you play Mix & Match?

Mix & Match is a game where two *Robots* work together to make *Stacks* of *Pins* and *Beams* to score points. During each *Match*, all of the points that both *Robots* earn are added together to come up with a *Teamwork Challenge Match* score. *Teams* are ranked based on their scores in *Teamwork Challenge Matches*, and the top *Teams* will compete in the *Finals Matches* to determine a Teamwork Champion.

Teams can also play in *Robot Skills Matches* to see how well their *Robot* does in a *Match* by itself. There are two kinds of *Robot Skills Matches*, one for driving the *Robot* (called a *Driving Skills Match*) and another (called an *Autonomous Coding Skills Match*) where the *Robot* can only run using pre-written programs created by the *Students* on the *Team*.

Game Pieces and Goals

Pins and Beams

- There are 36 *Pins* in each *Match*. *Pins* can be orange, blue, or red.
- Some *Pins* begin on the *Field*, some are put into the *Field* by Loaders, and each *Robot* can start with a *Preload* <SG5>.
- There are two gray *Beams* that start the *Match* on the *Field*.

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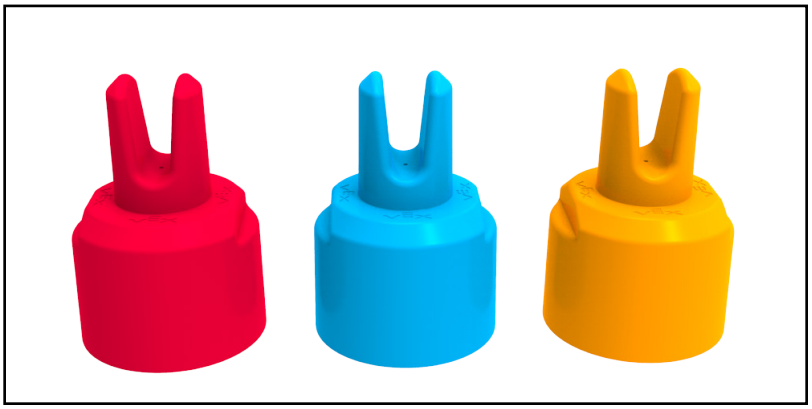
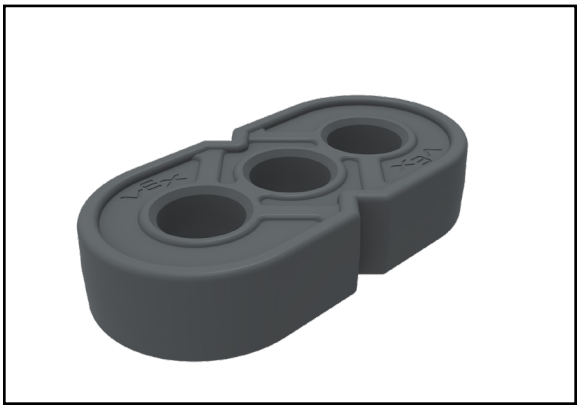


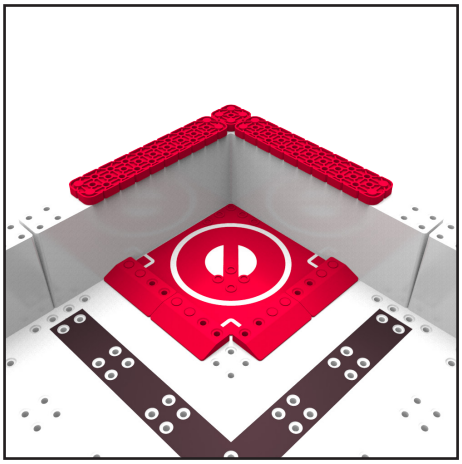
Red, blue and orange Pins



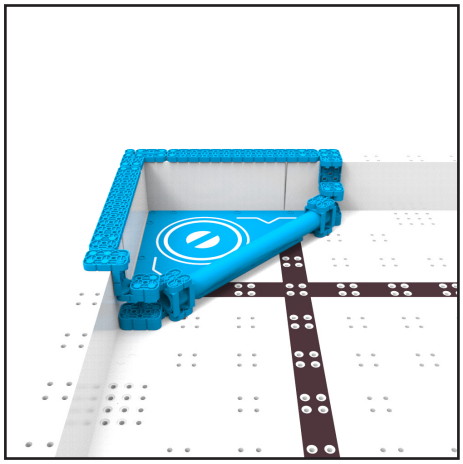
A Beam

Goals

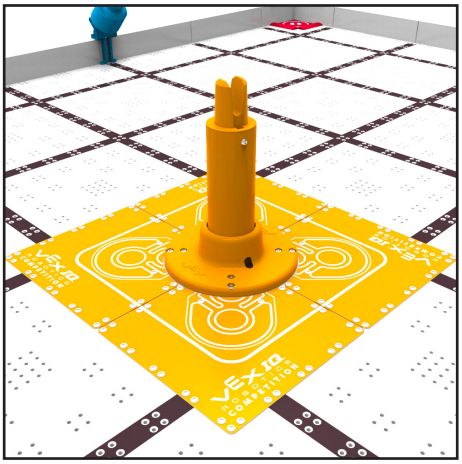
- There are four (4) types of *Goals*: Square, Triangle, Floor, and Standoff.



A Square Goal.



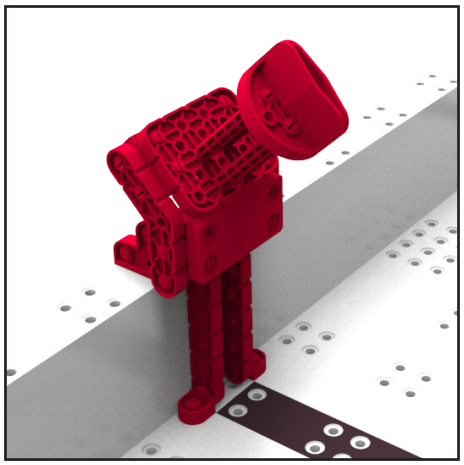
A Triangle Goal.



A Floor Goal and Standoff Goal.

Starting Pins

- 4 *Pins* start the *Match* on *Starting Pin Supports.*



A Starting Pin Support.

How to Earn Points

Robots build Stacks <SC3>

- Make *Stacks* of two or more *Pins* anywhere on the *Field* to earn points
- Make *Stacks* with more colors to earn more points <SC4>
- Include *Beams* in *Stacks* to earn even more points <SC3>

Robots put Stacks into or onto Goals <SC5>

- *Place Stacks* into or on *Matching Goals* to earn more points <SC6>

Robots can touch two or more *Scoring Objects* (*Pins* or *Beams*) at the end of the *Match* to score two points.

Robots can *Clear Starting Pins* to earn points <SC7>

Robot Rules

Robots can't get bigger than 11 inches by 20 inches during a *Match*, but can follow rule <SG3> to get taller than 15 inches after the *Match* starts.

Your *Robot* has to be designed, built, and programmed by the *Students* on your *Team*, not by *Adults* <R2>, using only VEX IQ parts <R14>.

Drive Team

Three *Students* make up the Drive Team for each *Match*:

- *Driver* 1 - Drives the *Robot* for the first 30 seconds <GG11>
- *Driver* 2 - Drives the *Robot* for the last 30 seconds
- Loader - Places *Pins* into the *Field* for the whole *Match* <SG6>

Your *Team's Driver* 1, *Driver* 2, and Loader can be different for each *Match*, but all of them have to be members of your *Team*. <G5> and <GG11f>

Referees and Scoring

- *Drive Team Members* should know who the *Head Referee* is each *Match* <T1>.
- *Robots* must stop moving at the end of the *Match* <GG12> and can end the *Match* early <GG13>.
- Scores are added up at the end of the *Match* and are shown to the *Drive Team Members* by a Scorekeeper or *Head Referee* <SC1>.
- Only *Drive Team Members* can talk to the *Head Referee* about any questions they have from the *Match*, and have to do it right after the *Match*. *Team Adults* are not allowed to be a part of this conversation. <SC2>
- What the *Head Referee* says goes. *Students* are encouraged to respectfully ask questions after a *Match*, but it's not okay to argue after the Referee makes their final decision <T3>.