2024 VIRTUAL KIT CATALOG

Virtual Kit Catalog brought to you by AMD

together we advance_

CRESCENDO℠

PRESENTED BY HAAS Gene Haas Foundation

FIRST® ROBOTICS COMPETITION

WELCOME

TO THE 2024 *FIRST*® ROBOTICS COMPETITION SEASON

This Voucher Catalog is a reference for your team. Inside, you'll find additional items and value available to your team via the Kit of Parts system. Each page represents a specific voucher and its particular instructions and details. Don't miss out on any of these opportunities.

We are extremely grateful for the generosity and support that our FIRST® Suppliers provide!

More information about the Kit of Parts can be found at our website: firstinspires.org/robotics/frc/kit-of-parts
Questions about the Kit of Parts can be sent to: frcparts@firstinspires.org

VOUCHER CHECKLIST

Supplier	Redeemed
Altair	☐
Altium	☐
Armabot	☐
Autodesk	☐
Automation Direct	☐
Clippard	☐
DevCycle	☐
DigiKey	☐
Mastercam	☐
MathWorks	☐
Next Gen Robots	☐

Supplier	Redeemed
NI	☐
Plummer Industries	☐
PTC	☐
REV Robotics	☐
RoboPromo	☐
SolidProfessor	☐
Tableau	☐
TE Connectivity	☐
Vulcan Spring	☐
Wolfram	☐

ALTAIR

Organization Name	**Altair**
Voucher Detail	**Altair Software Access**
Expiration Date	**12/31/2024**
Shipping	**n/a**
Website	**altair.com/first-robotics**

Open access to many Altair software apps (via renewable 1-year licenses) for all students and mentors. These apps include, but are not limited to, the following:

Altair Inspire™ – *for 3D simulation-driven design & engineering using 3D CAD geometry* – to simulate whether robots will functionally perform as intended via structural analysis, topology optimization / generative design, and motion dynamics.

Altair RapidMiner® – *for code-optional Data Science and AI/ML* – especially helpful for rapidly handling, visualizing and analyzing *FIRST*® team scouting data to select optimal Alliance Partners.

Altair Compose® – *for extremely easy-to-use equation-based (i.e., 0D) engineering modeling & simulation* – like "a calculator on steroids." Serves as an engineering-oriented complement or alternative to Excel, Python, Java, and/or C++.

Altair Twin Activate™ – *for open, multi-disciplinary system simulations, especially of electrified/ electro-mechanical devices such as robots*. Helpful block-diagram-based (1D) modeling with easy integration with 3D modeling tools.

Student Edition Bundle – *provides access to many Altair software products, beyond just those listed above, such as* **Altair PSIM**™ for modeling & simulating power electronics and power conversion between battery- and-motor systems involving direct current (DC) and alternative current (AC) such as *FIRST* robots. Could also help with power management.

Visit Altair's dedicated page in support of *FIRST* robotics teams (altair.com/first-robotics).

FIRST® ROBOTICS COMPETITION

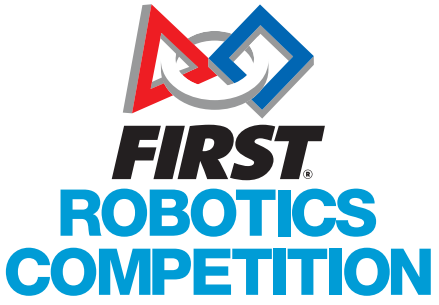
Build Better Robots, Faster.

Get Your Free Software: altair.com/first-robotics

ALTAIR

Altium®

Organization Name	**Altium**
Voucher Detail	**One-year Altium Designer student license**
Expiration Date	**12/31/2024**
Shipping	**Included**
Access Code(s)	**n/a**
Website	**www.altium.com/frc**



Altium is excited to support *FIRST*®, committed to providing every designer and engineer with tools to enable you to turn your ideas into products in the easiest and most productive way.

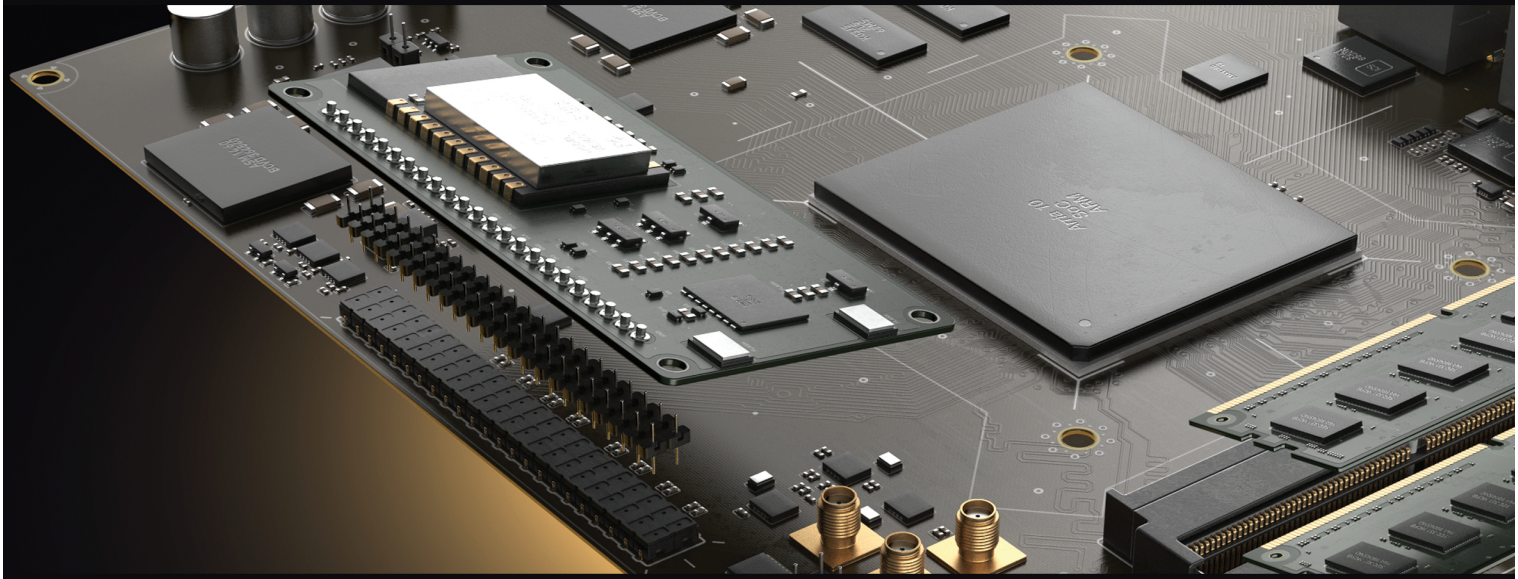
- Altium Designer consists of all the tools required to produce a PCB from concept to manufacturing.
- A PCB development platform supplying both the electrical and mechanical view.
- Integrated access to over a hundred suppliers makes it easy to select the best parts for your design.

To access one-year student license, fill out the form www.altium.com/frc

Special Instructions: *One to five student licenses to be shared per high school team*

Altium®

Proud to support *FIRST*®
POWERFUL TOOLS FOR NEXT GENERATION ELECTRONIC DESIGN



USE ALTIUM DESIGNER FOR FREE NOW!

www.altium.com/frc

ARMABOT

Organization Name	**Armabot**
Voucher Value	**One (1) RS7 encoder**
Expiration Date	**05/01/2024**
Shipping	**Team Responsibility**
Access Code(s)	**Visit Team Registration Account** (Lead Mentor 1 or 2)
Website	**www.armabot.com**

FIRST® ROBOTICS COMPETITION

1. Go to **www.armabot.com**
2. Select 1 or more RS7 encoders (first unit free with this voucher)
3. Enter your valid code from the *FIRST*® Team Registration System
4. Enter shipping and billing information
5. Place order and wait for arrival (3-5 days in continental USA)
6. Installation instructions at **www.armabot.com**
7. Technology tutorial for encoder implementation at **www.armabot.com**

Valid for purchase of one RS7 encoder indiviually or a multiple product order that includes one RS7 encoder. Limit one per *FIRST*® Robotics Competition Team. Must be registered for the 2024 robotics season. Voucher not transferable to other people or teams.

EASY INSTALL

Worm-Drive Clamp

Secure and simple attachment.

QUICK INTEGRATION

Technology Tutorial

CAN bus PID tuning via Talon SRX controller.

COOL RUNNING

Vented Design

Doesn't interfere with motor air flow.

STRAIN RELIEF

Secure Wiring

Integrated feature for cable tie.

CUSTOM DESIGNED MOUNT

775pro Motor Encoder

Successful use at 2016 & 2017 Championships.

AUTODESK

Make Anything

Organization Name	**Autodesk**
Voucher Detail	**Autodesk Software Access**
Expiration Date	**n/a**
Shipping	**Included**
Website	**www.autodesk.com/first**

Get started at www.autodesk.com/first – a dedicated page for everything *FIRST*® Robotics Competition and Autodesk related, including open access to Fusion, Inventor, Synthesis, AutoCAD, and 3ds Max. Autodesk also provides CAD data sets for the Kit of Parts, tutorials, and other learning resources.

Autodesk® Fusion 360® – *Software or Browser Access*
Cloud-based CAD, CAM, CAE, and PCB software, enables robot designs, assemblies, photorealistic renderings, fabrication, and team collaboration. Install Fusion 360 (multiple languages available) or run Fusion 360 from fusion.online.autodesk.com.

Autodesk® Inventor® – With this professional software, teams can produce 3D models that help with the design and visualization of the robot.

Synthesis: An Autodesk® Technology – Test your CAD designs for driver practice, robot code emulation, strategy, and more with this robotics simulator.

Autodesk® AutoCAD® – Use computer-aided design software to create precise 2D and 3D drawings.

Autodesk® 3ds Max® – With modeling, rendering, and animation capabilities, 3ds Max is an ideal solution for the VRC Game Design Animation Challenge.

FIRST® ROBOTICS COMPETITION

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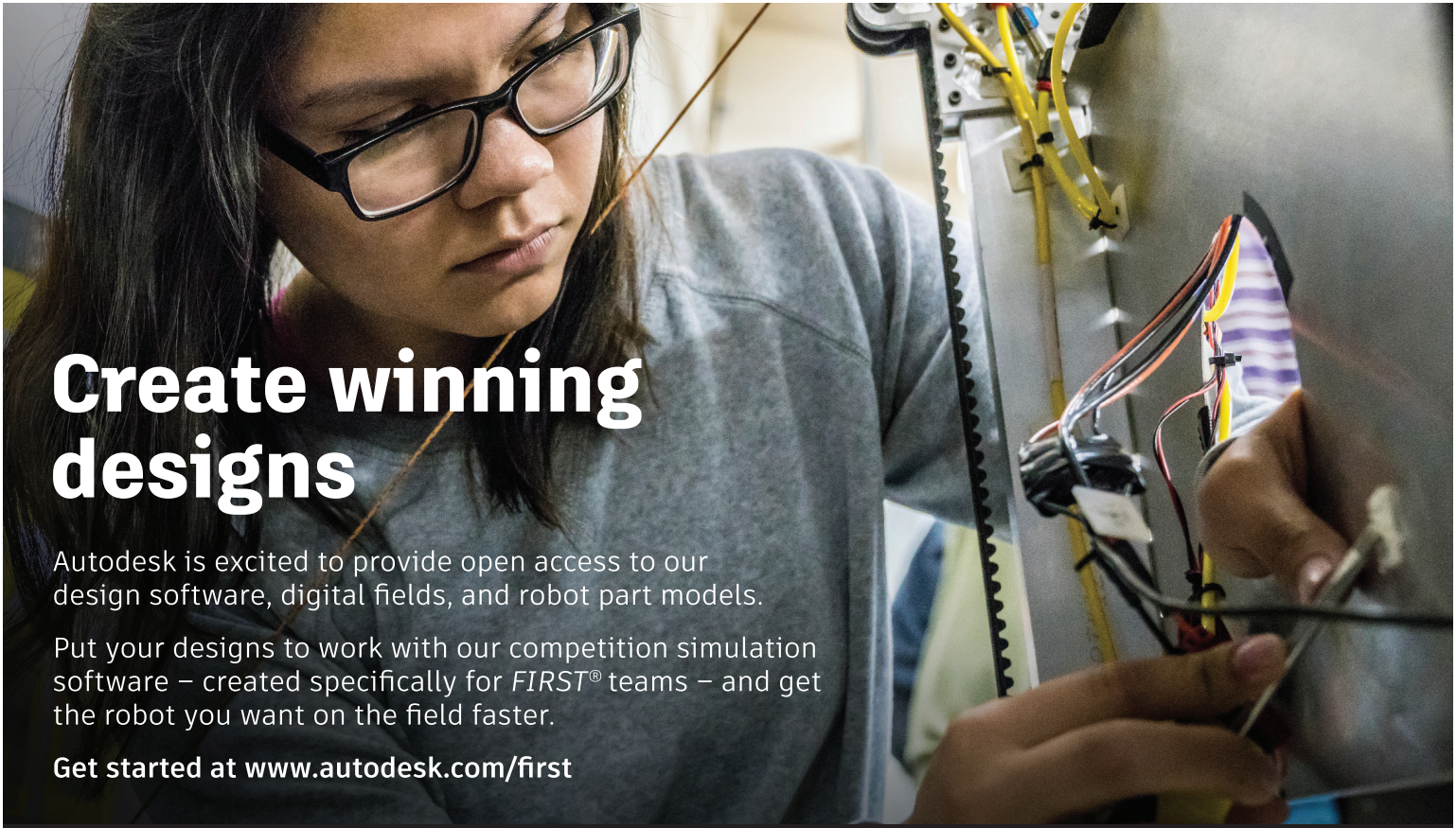

Create winning designs
Autodesk is excited to provide open access to our design software, digital fields, and robot part models.
Put your designs to work with our competition simulation software – created specifically for *FIRST*® teams – and get the robot you want on the field faster.
Get started at www.autodesk.com/first
AUTODESK

Organization Name	**Automation Direct**
Voucher Description	**$50.00**
Expiration Date	**08/31/2024**
Shipping	**Team Responsibility** (see below for details)
Access Code(s)	**Visit Team Registration Account** (Lead Mentor 1 or 2)
More Info	**www.AutomationDirect.com**

Use your $50 voucher toward any items available at www.AutomationDirect.com

IMPORTANT INSTRUCTIONS - We cannot apply the discount AFTER you place an order!

1. Obtain your voucher code at the Mentor Dashboard at www.firstinspires.org
2. Login, OR create a New Account here: www.automationdirect.com/new-user
3. Then visit www.automationdirect.com/Voucher to enter the voucher code. This will enable a one-time $50 credit for your account.

Some Restrictions Apply:

1. Orders **must** be placed online. No 'call-in' orders.
2. Orders **must** ship to a US or Canadian address. Credit card billing address must also be US or Canadian.
3. The voucher cannot be used towards shipping fees. Orders under $49 are shipped via 2-day service to US addresses for a flat rate of $10 (a credit card will be required to pay for shipping). Orders to Canada will incur brokerage fees. Larger orders may qualify for FREE two-day shipping. See website for details: https://www.automationdirect.com/static/specs/adpolicy.pdf
4. The voucher cannot be used to pay sales tax. A credit card (or PayPal) will be required to pay any applicable taxes. If your team/organization is tax exempt, you can submit appropriate documentation online during checkout.

FIRST® ROBOTICS COMPETITION

These items are popular with *FIRST*® teams:

Miniature Pneumatic Devices

go2adc.com/fittings

Pneumatic Cylinders

go2adc.com/cylinders

Belts & Pulleys

go2adc.com/tbp

Ferrules, Terminals, and Crimp Tools

go2adc.com/zfwire

Push connect fittings

go2adc.com/ptcfittings

Ethernet Cables (and crossovers!)

go2adc.com/cat5e

Wire Ties

go2adc.com/sapiselco

Sensors and Encoders

go2adc.com/sensenco

AUTOMATIONDIRECT.com

1-800-633-0405 | www.AutomationDirect.com

Clippard

Organization Name	**Clippard**
Voucher Value	**$20.00**
Offer Expires	**12/31/2024**
Shipping	**Not Included**
Access code	**FIRST2024**
Website	**clippard.com**

FIRST® ROBOTICS COMPETITION

Congratulations on the many successes you have achieved to earn your team a position in the 2024 *FIRST*® Robotics Competition!

As long-time supporters of the *FIRST*® organization, we are proud to provide you with **$20.00 of FREE Clippard products** for your design needs. Simply visit clippard.com to select your products, and use the promotional code above at check out.

Please note that you must create an account AND be logged in for the voucher to be validated.

If you need technical assistance, don't hesitate to contact us at 1-877-245-6247.

Clippard

Pressure Controls • Directional Control Valves • Electronic Valves • Control Valves
Isolation Valves • Pinch Valves • Manual Valves • Fittings • Air Preparation Equipment
Tubing • Custom Valves & Assemblies

PRECISION FLOW CONTROL
PRODUCTS & SOLUTIONS
www.clippard.com

DevCycle

Organization Name	**DevCycle**
Voucher Value	**$100/season per team platform credit**
Expiration Date	**01/01/2025**
Shipping	**Included**
Access Code(s)	**Visit Team Registration Account** (Lead Mentor 1 or 2)
Website	**https://devcycle.com/frc**

Adding an additional 200,000 MAU, or 2,000,000 experimentation events, or 5,000,000 EdgeDB operations in addition to the free tier!

1. Sign up for an account at **https://devcycle.com/frc**.
2. Under Settings (https://app.devcycle.com/r/settings) - Create an organization with the name being your *FIRST*® Robotics Competition Team Number- ie “FRC 9999”
3. Email frc@devcycle.com with your account email address, *FIRST* Robotics Competition Team Number, Lead Mentor Name, and the PDV Code found on the *FIRST* Robotics Competition Team Registration System to activate your credit!
4. Once confirmed, invite the rest of your team to your organization and start pushing code safely!

FIRST® ROBOTICS COMPETITION

DevCycle

DigiKey

Organization Name	**DigiKey**
Voucher Value	**$65**
Expiration Date	**09/30/2024**
Shipping	**Included (excludes Marketplace products)**
Access Code(s)	**See Team Registration System**
Website	**www.digikey.com/first**

FIRST® ROBOTICS COMPETITION

DigiKey is proud to provide you with $65 of components.

- Visit www.digikey.com/first to redeem your team's voucher.
- The $65 voucher will not display on the total of your order, but will be subtracted from your order during processing.
- This Product Donation Voucher valued at $65 is good for the purchase of components only at www.digikey.com

Taxes not included. This voucher is good for a one time use. Any amount not utilized in your initial transaction will be forfeited.

$65 voucher & free shipping

DigiKey has the product portfolio, service, tools, resources, and know-how to support students, coaches, and mentors on *FIRST*® teams.

Redeem your voucher in 3 easy steps:

1. Visit digikey.com/first
2. Enter your team info
3. Shop at digikey.com

DigiKey

*Free shipping offer does not apply to Marketplace products.

Mastercam

Organization Name	**Mastercam**
Voucher Value	**Three annual licenses of the Mastercam Educational Suite**
Expiration Date	**10/31/2024**
Shipping	**Included**
Access Codes	**Visit Team Registration Account**
Website	**https://www.mastercam.com/community/competitions/first-robotics/**

FIRST ROBOTICS COMPETITION

Mastercam Educational Suite: Three free annual licenses of the current version of the Mastercam Educational Suite. The Mastercam Educational Suite includes Mill, Lathe, Wire, Router, Design and Art.

Mastercam®

MILL

MULTIAXIS

LATHE

MILL-TURN

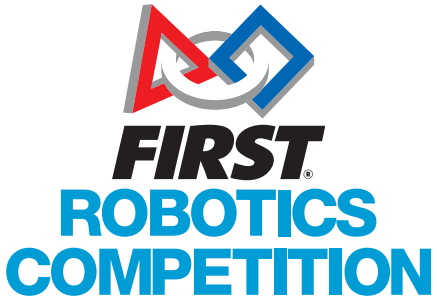
WIRE

ROUTER

DESIGN

ADDITIVE

Organization Name	**MathWorks**
Voucher Value	**MathWorks Resources for *FIRST*® Teams**
Expiration Date	**08/31/2024**
Shipping	**Included**
Access Code(s)	**n/a**
Website	**mathworks.com/first-robotics**



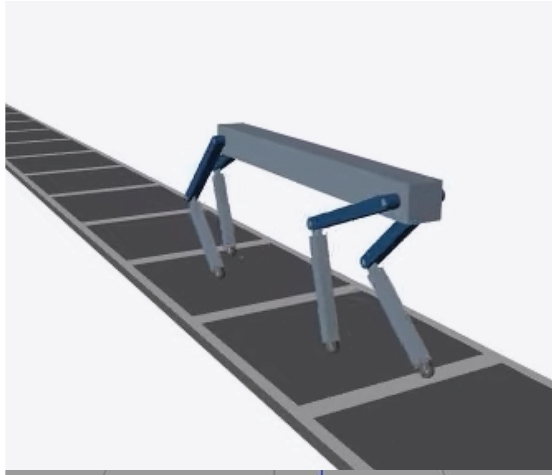
MATLAB and Simulink allow students/participants to simulate robots, develop control and navigation algorithms, and optimize their mechanical designs. Please visit our website to request access to MathWorks software as well as find other resources available to FIRST® teams:

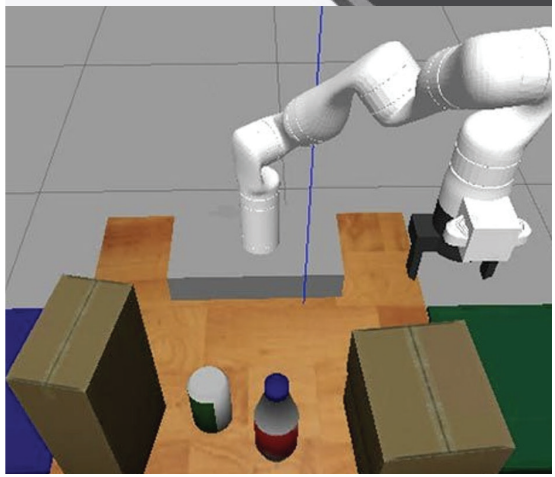
- Software license to over 50 products, including:
  - MATLAB, Simulink, Stateflow, Simscape, MATLAB Coder, Robotics System Toolbox, Navigation Toolbox, Control System Toolbox, Signal Processing Toolbox, Computer Vision Toolbox, Sensor Fusion and Tracking Toolbox and more
- Links to free, 2-hour online courses to get started with MATLAB and Simulink
- Tutorials, videos, and examples for students participating in robotics competitions

MathWorks creates software tools for students, scientists and engineers to design, simulate, analyze, and optimize dynamic systems such as robots

Learn more at
mathworks.com/solutions/robotics

MathWorks®
Accelerating the pace of engineering and science

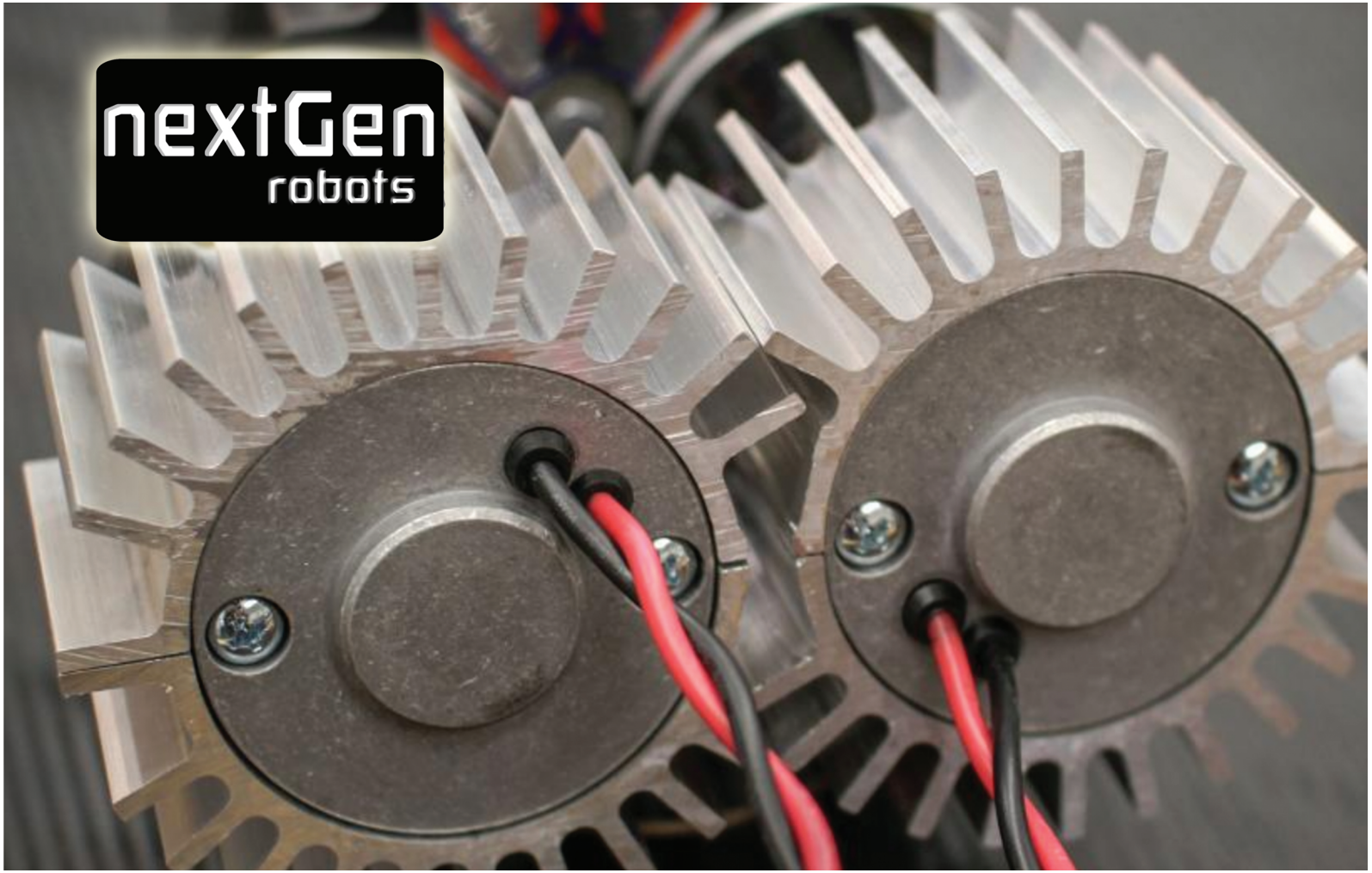




Organization Name	**Next Gen Robots**
Voucher Detail	**1 CIM Cooler 180 or 775 Cooler 360**
Expiration Date	**05/31/2024**
Shipping	**Team Responsibility**
Access Code(s)	**Visit Team Registration Account** (Lead Mentor 1 or 2)
Website	**www.nextgenrobots.com**

Attention *FIRST*® Robotics Competition Teams:

1. Be sure to email sales@nextgenrobots.com with your Lead Mentor Name, *FIRST* Robotics Competition Team Number, and PDV Code found on the *FIRST* Robotics Competition Team Registration System so that we can make sure that your code is active!
2. Once confirmed, enter the team's assigned code from step 1 into "Coupon code" on your order and the discount will appear during checkout. Do not "Checkout as guest".
3. This coupon can be redeemed for one CIM Cooler 180 (an $8.00 value) or one 775 Cooler 360 (an $8.00 value) but products can be purchased in any combination and multiple amounts of the CIM Cooler or the 775 Cooler. After applying the coupon code during checkout, the total will be less $8.00. Before submitting the order make sure the discount has been applied to the total. If the discount is not showing, try clicking "view cart" and reapply the code.


nextGen
robots

Organization Name	**NI**
Voucher Value	**NI LabVIEW Software Suite**
Expiration Date	**01/31/2025**
Shipping	**Included**
Access Code(s)	**Visit Team Registration Account** (Lead Mentor 1 or 2)
Website	**http://www.ni.com/frc**

FIRST® ROBOTICS COMPETITION

This license also provides access to more than a dozen LabVIEW add-ons, NI Multisim for SPICE simulations, and NI Ultiboard for PCB design.

1. Access Your Team's Serial Number

Have your Lead Mentor 1 or 2 log in to your team's account at www.firstinspires.org to access your serial number by clicking on "Passwords/Voucher Codes."

2. Download Software

Get NI LabVIEW for *FIRST*® Robotics Competition via the *FIRST* Robotics Competition Resource Hub at www.ni.com/frc.

3. Learn and Earn

Learn LabVIEW with free online training and earn skills badges at www.ni.com/frc.

ni.com

National Instruments is now NI.

At NI, we believe in the power and potential of making connections – between people, ideas, and technology – to create a path forward.

It's time. Let's Engineer Ambitiously.

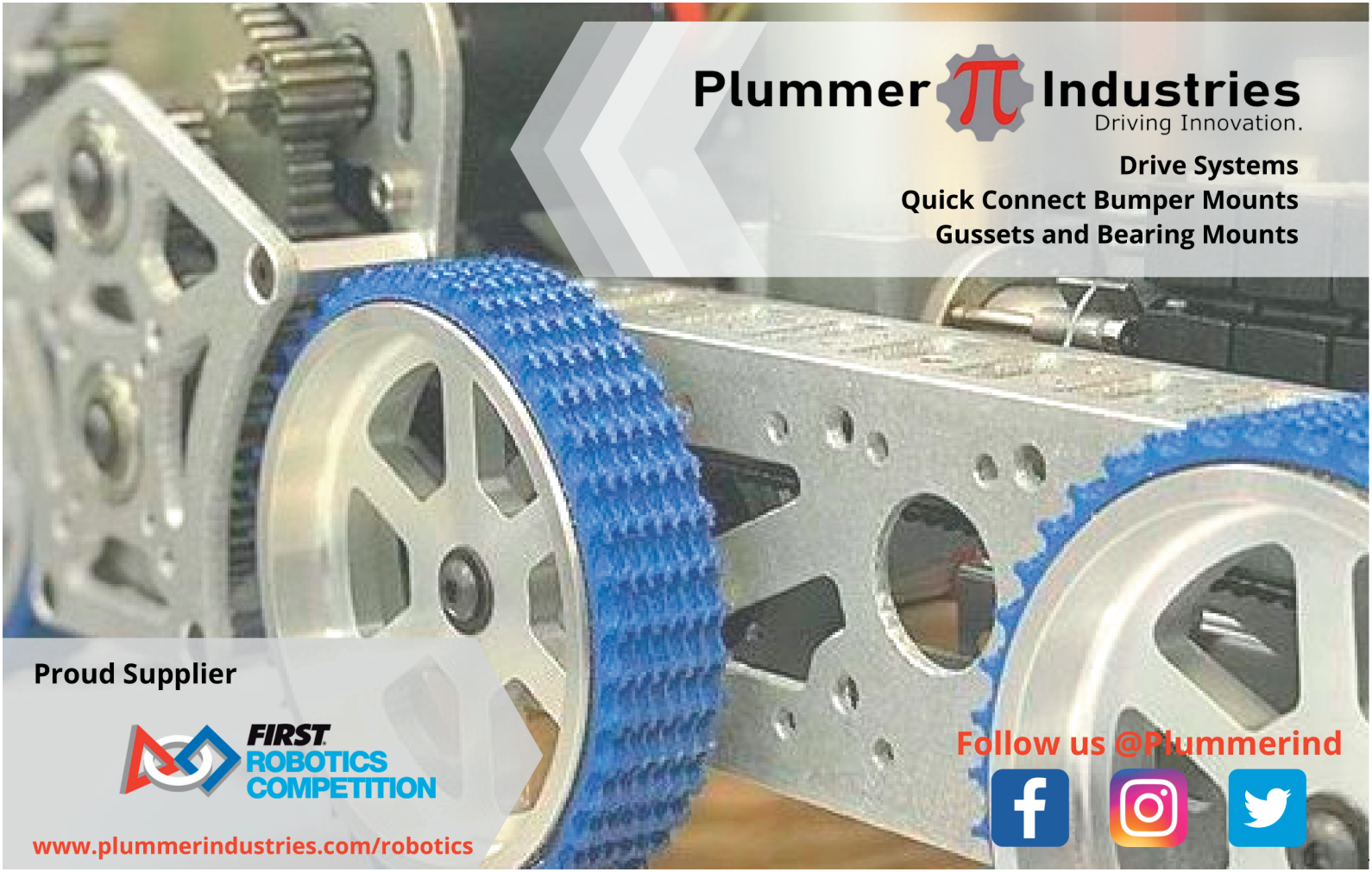
Plummer Industries
Driving Innovation.

Organization Name	**Plummer Industries**
Voucher Detail	**$50.00**
Expiration Date	**09/30/2024**
Shipping	**Team Responsibility**
Access Code(s)	**Visit Team Registration Account** (Lead Mentor 1 or 2)
Website	**https://plummerindustries.com/robotics/shop**

FIRST® ROBOTICS COMPETITION

$50.00 for FIRST® Robotics Competition Teams to receive Plummer Industries products

To redeem: *At the start of checkout teams can apply the Voucher code in the promo coupon box.*


Plummer Industries
Driving Innovation.
Drive Systems
Quick Connect Bumper Mounts
Gussets and Bearing Mounts
Proud Supplier
FIRST ROBOTICS COMPETITION
www.plummerindustries.com/robotics
Follow us @Plummerind

Organization Name	**PTC**
Voucher Detail	**CAD and Collaboration Software**
Expiration Date	**12/31/2024**
Shipping	**Included**
Access Code	**n/a**
Website	**ptc.com/en/academic-program/student/first**

FIRST® ROBOTICS COMPETITION

Visit the FIRST® webpage at ptc.com to access to the following PTC Software:

- ***Onshape*** – Cloud-native 3D CAD software
- ***Vuforia Chalk*** – Application to facilitate AR remote assistance between team members
- ***Creo*** – 3D CAD software
- ***Mathcad*** – Software for engineering calculations

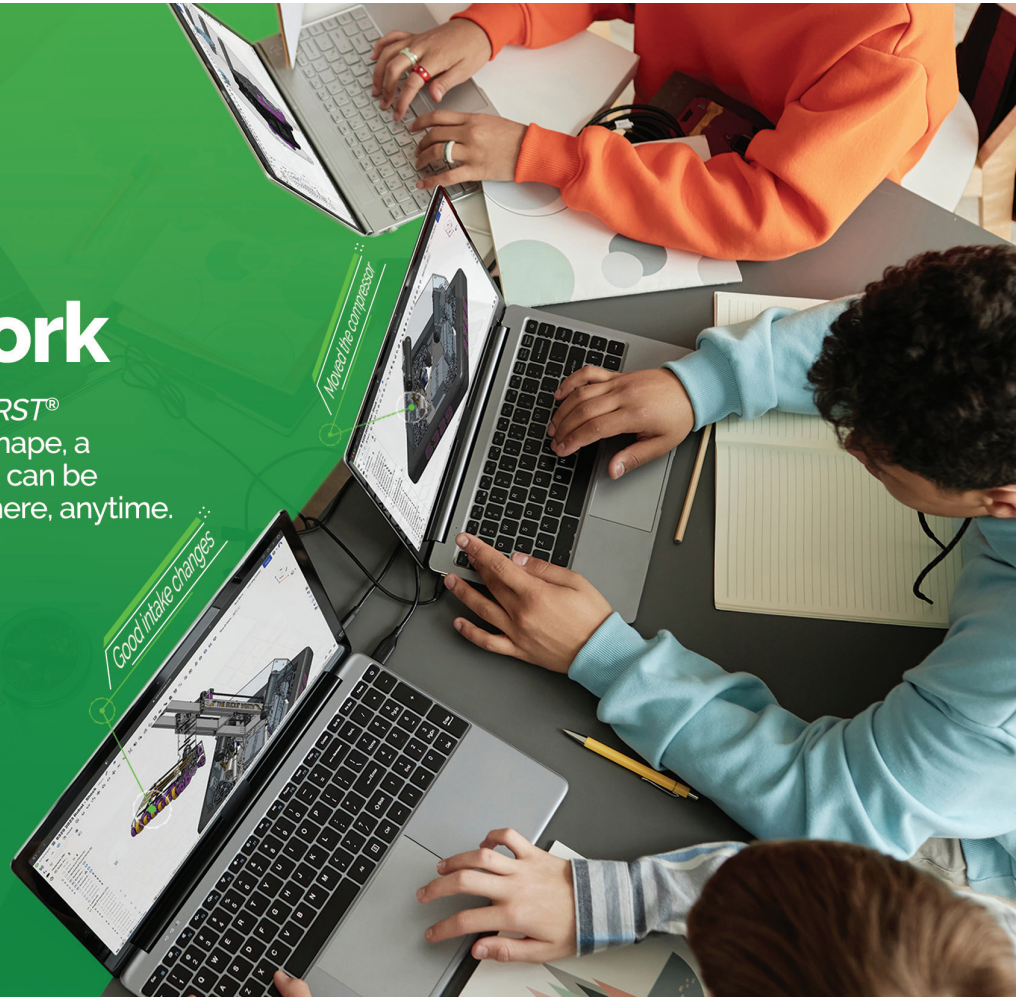
Visit the FIRST PTC webpage for more information:
https://www.ptc.com/en/academic-program/student/first

Send comments or questions to FIRST@ptc.com

onshape™

CAD Built for Teamwork

Onshape is proud to support *FIRST*® Robotics Competition with Onshape, a cloud-native CAD platform that can be accessed on any device, anywhere, anytime.



REV ROBOTICS

Organization Name	**REV Robotics**
Voucher Value	**$50.00**
Offer Expires	**05/31/2024**
Shipping	**Team Responsibility**
Access code	**Visit Team Registration Account** (Lead Mentor 1 or 2)
Website	**www.revrobotics.com**

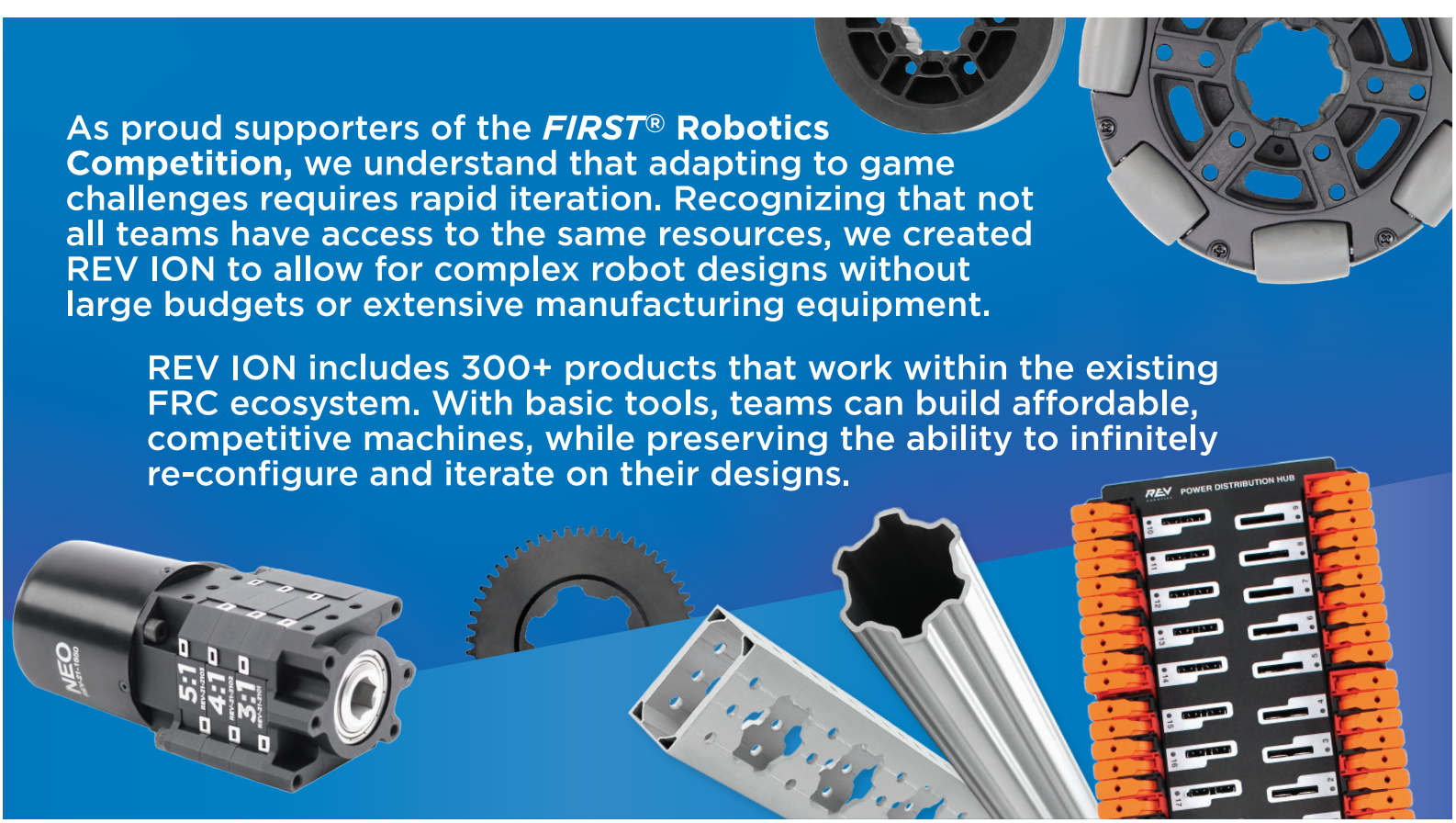
FIRST® ROBOTICS COMPETITION

Receive $50 towards any product on www.revrobotics.com

Enter the voucher code you received from your FIRSTInspires Account under “coupon code” at checkout. For more information, please visit **www.revrobotics.com/frc-voucher/**

As proud supporters of the ***FIRST*®** **Robotics Competition,** we understand that adapting to game challenges requires rapid iteration. Recognizing that not all teams have access to the same resources, we created REV ION to allow for complex robot designs without large budgets or extensive manufacturing equipment.

REV ION includes 300+ products that work within the existing FRC ecosystem. With basic tools, teams can build affordable, competitive machines, while preserving the ability to infinitely re-configure and iterate on their designs.



Motors, Electronics, Structure, and the entire REV ION Build System available at: www.revrobotics.com/ION

REV ION

Organization Name	**RoboPromo**
Voucher Detail	***FIRST*® Iron-On Bumper Logos** (set of 8)
Expiration Date	**09/01/2024**
Shipping	**Team Responsibility**
Access Code	**LOGO24**
Website	**www.robopromo.com**

Instructions:

- Go to **www.robopromo.com** and enter access code **LOGO24** at checkout (include team number) to receive (1) pack of (8) iron-on logos: 3.75” x 5”
- *Available to FIRST® Robotics Competition Teams only.*
- *Available 01/01/2024 (one order per team)*

ROBOPROMO
PROMOTING SUCCESS

Organization Name	**SolidProfessor**
Voucher Detail	**One Free Individual Annual Membership**
Expiration Date	**10/31/2024**
Shipping	**Included**
Access Code(s)	**Visit Team Registration Account** (Lead Mentor 1 or 2)
Website	**https://www.solidprofessor.com/first-robotics-competition-sponsorship/**

With this voucher, your team will receive one free individual annual membership to SolidProfessor ($490 value).

This membership will give you access to SolidProfessor's comprehensive learning library of over 15,000 video tutorials.

To access your free membership:

1. Complete the form on this page: **https://www.solidprofessor.com/first-robotics-competition-sponsorship/**
2. After submission, you will receive an email from a SolidProfessor team member within 2 weeks with login details.

1-Year SolidProfessor Membership

Voucher available for *FIRST*® teams in the 2024 Virtual Kit of Parts. Access online CAD, CAM, BIM, AEC, and Manufacturing training today!

SOLID Professor

Organization Name	**Tableau**
Voucher Detail	**One copy of Tableau Desktop**
Expiration Date	**08/31/24**
Shipping	**Included**
Access Code(s)	**Visit Team Registration Account** (Lead Mentor 1 or 2)
Website	**www.tableau.com/first-robotics**

(One free copy of Tableau Desktop) Complimentary access to the full professional version of Tableau Desktop for data analysis and visualization, and Tableau Prep for data preparation.

Get ahead with Tableau. Visualize your data. Quickly answer questions. Play better defense, pick alliance partners, analyze robot performance, target your fundraising, and reduce inventory waste.

- Use the product code found in your Lead Mentors' 1 and 2 *FIRST*® registration accounts for five activations per team.
- Make the most of it with Tableau's free online resources (https://www.tableau.com/first-robotics) created specifically for *FIRST*® Robotics Competition students.

These access codes are for educational use only. Please do not share your key with anyone outside your team.

+ tableau
from Salesforce

Place first with Tableau

Get ahead of the competition with free access to Tableau Desktop

Discover more exclusive resources at www.tableau.com/first-robotics

Organization Name	TE Connectivity
Voucher Detail	$25.00
Expiration Date	01/31/2028
Shipping	Included
Access Code	n/a
Website	www.te.com/first

FIRST® ROBOTICS COMPETITION

$25.00 for FIRST® Robotics Competition Teams to receive TE Connectivity products

To redeem: All instructions are available on the on the website, where you can find the product catalog. *FIRST*® teams will use the TE Connectivity sample program to acquire parts. Explore our catalog for suggested and popular pieces!

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VULCAN SPRING

Organization Name	**Vulcan Spring & Manufacturing Co.**
Voucher Value	**Six Free Springs**
Expiration Date	**12/31/2024**
Shipping	**Included** (U.S. and Canada)
Access Code(s)	**Visit Team Registration Account** (Lead Mentor 1 or 2)
Website	**https://www.vulcancares.com**

FIRST® ROBOTICS COMPETITION

We are offering six constant force springs to each team participating in the competition. Mix and Match any springs from our constant force stock offering. The offer also includes free shipping within the USA and Canada! Orders are limited to 1 per team per year.

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Students: Please use the program code "**FRCW1SysPro2023STU**" and complete the team name and coach name fields in the form.

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NOTES

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