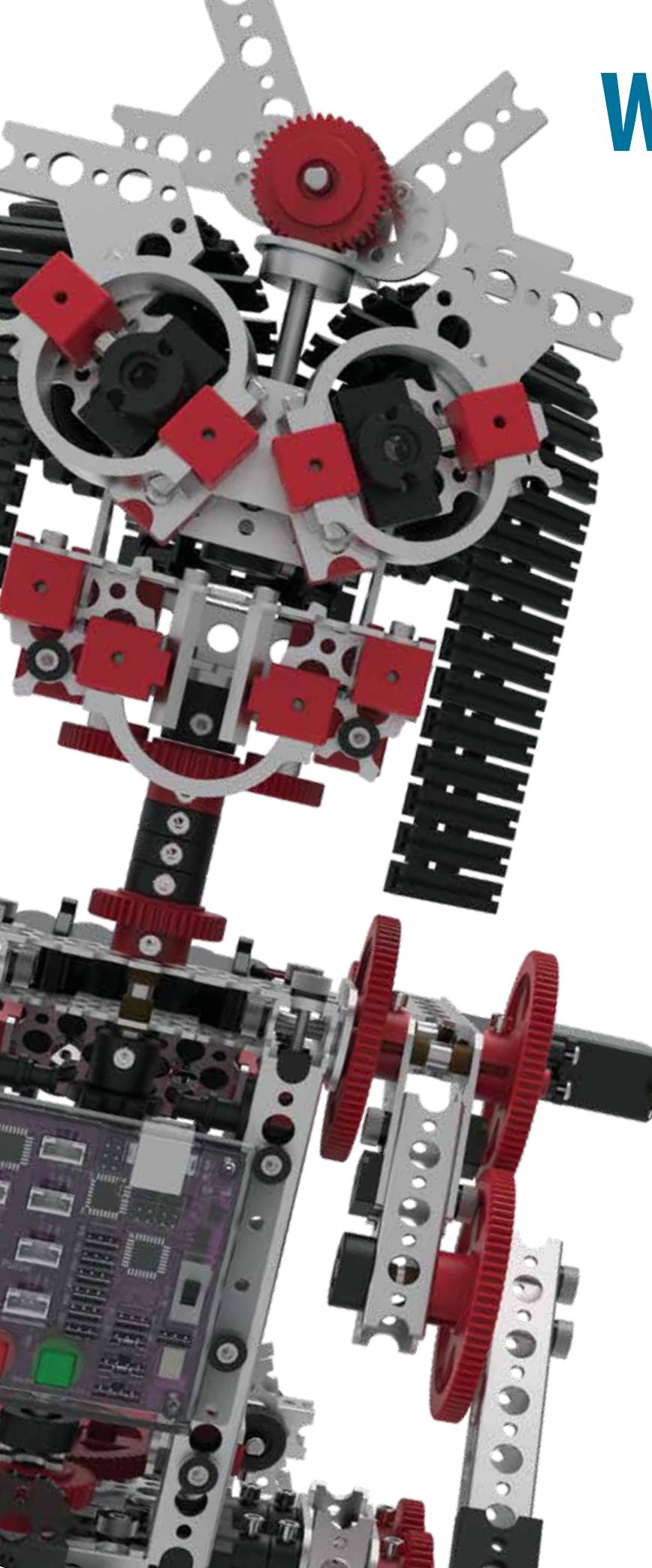




PITSKO
EDUCATION

2018-2019
ROBOTICS CATALOG



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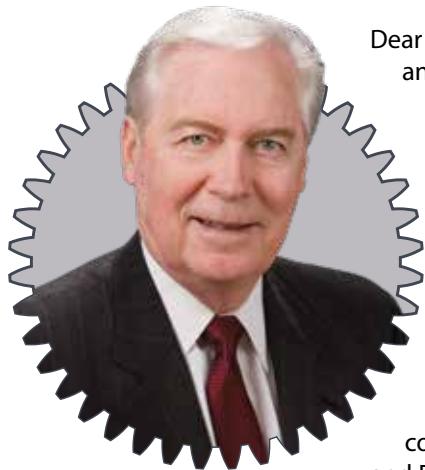
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Thank you for all that you do – to positively impact students!



Dear Teachers, Mentors,
and Coaches,

The 2018-2019 *Robotics* catalog is filled with exciting new additions to the **Pitsco TETRIX® system**. We are committed to innovation as showcased in the development of the new TETRIX PRIME EV3 Module! This module makes the TETRIX PRIME system completely compatible with EV3. The PRIME and EV3 Curriculum Pack, which combines the two systems, will

encourage your students to build larger and more robust robots. It will also challenge students to go beyond the plastic to design solutions using a variety of materials. Learn more about the new Pitsco TETRIX PRIME and EV3 Curriculum on page 26.

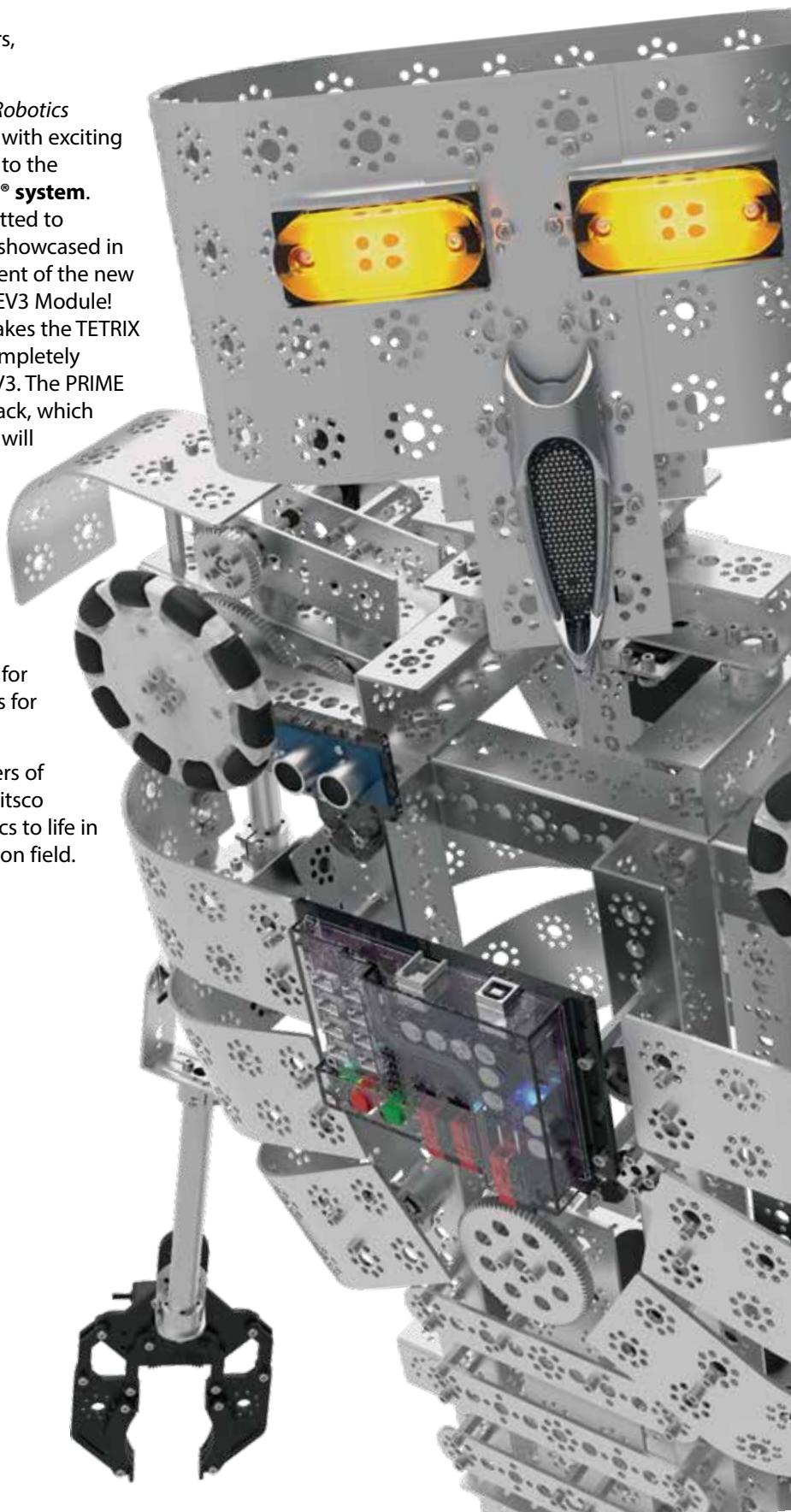
The new TETRIX MAX Gripper Kit adds greater form and function, providing new motion options for your robots. This gripper kit has been designed specifically for the needs of MAX-scale robots. See additional features for the MAX Gripper Kit on page 46.

As teachers and mentors, your dedication to the leaders of tomorrow inspires our continuous innovation of the Pitsco TETRIX system. We are your partner in bringing robotics to life in the classroom, in the makerspace, or on the competition field.

Thank you for all you do to
help students be successful!

Sincerely,

Harvey Dean, CEO
Former Teacher



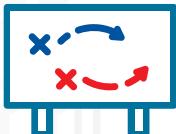
The Robotics Checklist

Creating an engaging classroom powered by robotics in 10 easy steps

Starting a robotics program from scratch can be a daunting task, but the outcomes of delivering such an exciting and hands-on environment for your students are well worth it. We've boiled down what it takes to get started into 10 easy steps that will have you building, driving, coding, testing, iterating, learning, and loving robots in no time.

START!

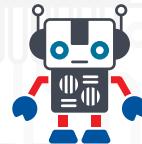
1



BEGIN WITH THE END IN MIND.

We suggest starting your robotics experience by outlining the goals you have for your program. How many students would you like to serve? Do you want to teach coding? Do you want to have a focus on engineering design and/or STEM learning? Do you want to sharpen soft skills such as communication, collaboration, and perseverance? Perhaps you want to conquer all the above? Thinking through the goals of your program will help you determine not only the amount of hardware you might need but also the curriculum options you might want to look into.

2



SELECT A ROBOTICS SYSTEM.

After you have some program goals, then you can move into thinking through some more tactical decisions that must be made, such as selecting a robotics system that is right for you. Consider:

- The age range of students you will be working with – this will assist you in selecting a system that is age appropriate.
- How many kits you will need for your classroom – this depends upon the number of students you will serve and the recommended set-to-student ratio.
- What your control system will be – do you want to start with remote-controlled robots? Or will coding be a focus of your program, and, if you focus on coding, do you wish to do graphic or text-based programming?

4



GET HELP!

Have we lost you already? Not to worry; Pitsco Education has a team of education representatives that help teachers around the world get started with robotics on a daily basis. They are ready and willing to help craft a program that will meet your goals. If you need help, they are just a phone call away. To locate your Pitsco Educational Account Representative, see page 61.

3



SELECT YOUR CURRICULUM MATERIALS.

Everyone has to start somewhere and having a set of activities or curriculum in your back pocket will enable your success. Consider:

- The curriculum targets you are looking to meet.
- The number of hours you have to dedicate toward teaching robotics.

For more information regarding TETRIX curriculum, see pages 24-26 and 58-59.

5

GET ORGANIZED.

After your materials arrive, it is time to get organized. We recommend opening up the sets and getting the parts and pieces sorted using the bins and trays that are provided with all Pitsco robotics sets. It is also a good idea to number the sets and controllers for easier classroom management. You can also determine where your sets will be stored and where assembled robots will be kept at this time. Our TETRIX storage options can be found on pages 23 and 57.

6

GET FAMILIAR.

All Pitsco robotics sets come with guides to familiarize you with the building and programming environments used. We suggest you and your students start your experience by going through these free resources. This will give everyone a baseline to assist in troubleshooting should issues arise down the line. Additionally, to ensure our educators and students feel successful using our solutions, the Pitsco robotics team has created the RoboBench video series, which gives viewers additional insights, tips, and tricks to using our robotics building systems. You can view them all at video.pitsco.com/TETRIX.

8

TRY IT OUT.

Three, two, one, JUMP! All sets are organized, control systems are set up, and your lesson is planned; the only thing left to do is dive right in.

7

GET SET UP.

Make sure that all systems are go! Have any needed handouts and hardware readily available. Charge your robots' batteries. Make sure that software and any needed programming libraries are installed and working on the devices that will be used.

9

TROUBLESHOOT.

The first lesson with students might go over like a lead balloon . . . and that's OK. Some students might fly through the activity. Some might not finish. Software might crash. The important thing is to stay focused on what can be done to make the next session better. Fix what failed and improve upon what is within your control. If the issue you experience is hardware or software related, know that our Pitsco Customer Service Team can help you troubleshoot the challenges that might arise.

10

LET IT GO!

STUDENT SUCCESS!

One of the most common concerns we hear from educators is the fear of not having all the answers in the robotics classroom. We're here to tell you it's OK and all a part of the fun. As your students engage in the engineering design process, they will experience failure, and it will be up to them to come up with unique and creative solutions to the problems they face. This will result in learners who have grit and are knowledgeable and confident in the solutions they invent.

Here are the facts about TETRIX® PRIME and

Whether you are teaching STEM concepts in the classroom or engineering a robot to beat the competition, TETRIX® building systems can help you reach your goals. Choosing a system that will work best for your classroom and students is imperative to overall success, so we're here to deliver the facts and help you select the hands-on tool that will work best for your learning environment.

TETRIX PRIME

For students ages 12 and up

Simple

Designed specifically for ease of use, **TETRIX PRIME** enables students to assemble and disassemble robots easily within a classroom period. Plus, its quick-fasten system makes it a great solution for teaching engineering because students can swiftly test and perform multiple design iterations.

Versatile

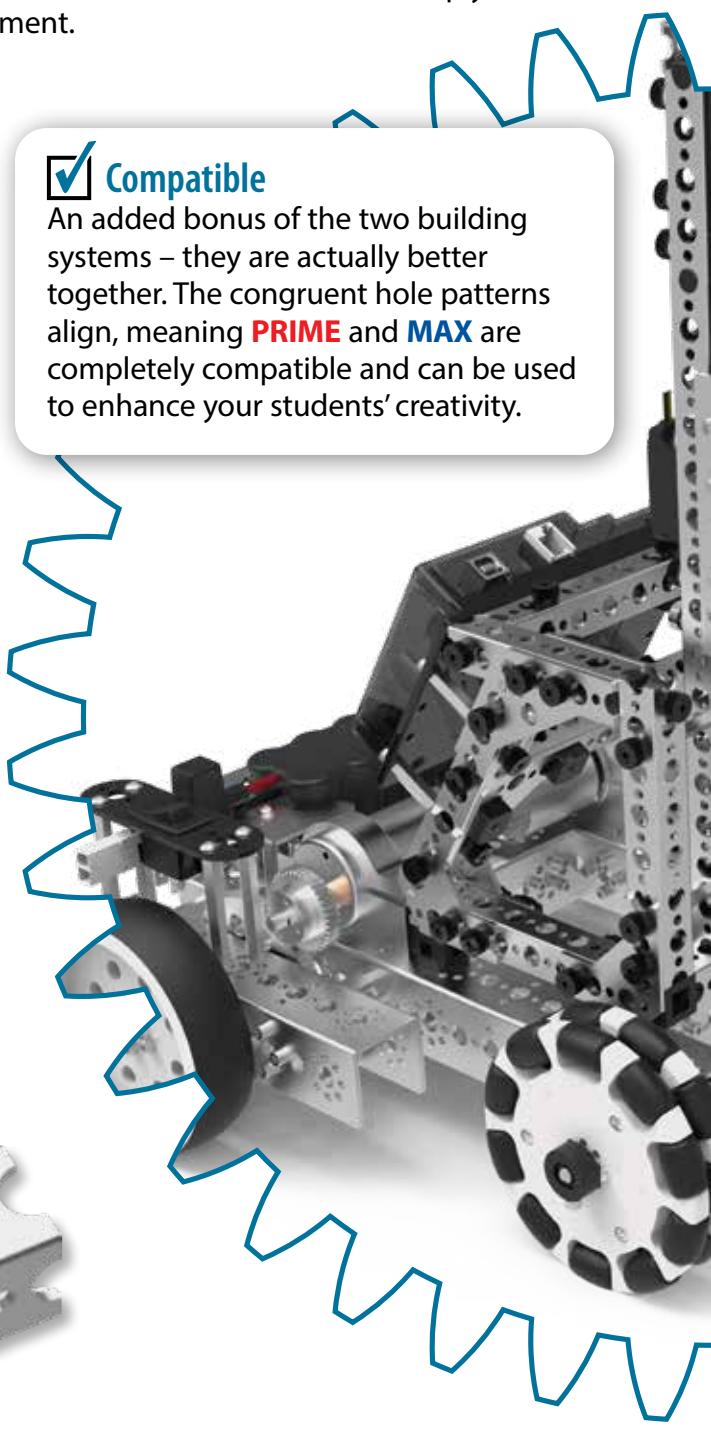
PRIME robotics sets come with everything needed for students to hit the ground running, including builder's guides that teach how to build a robot and use either remote or autonomous control to get it moving within minutes.

Empowering

Its versatile design, ability to integrate with multiple control systems, and curriculum support mean **PRIME** can grow with your students as they hone their engineering and programming capabilities. With the addition of the **PULSE™** controller, the possibilities are endless in the classroom.

Compatible

An added bonus of the two building systems – they are actually better together. The congruent hole patterns align, meaning **PRIME** and **MAX** are completely compatible and can be used to enhance your students' creativity.



TETRIX MAX.



TETRIX MAX

For students ages 14 and up

Comprehensive

With more than 100 elements and growing, **TETRIX® MAX** is a flexible robotics system with endless design possibilities. With **MAX**, students can create robots that are big and tough yet precise. Plus, using the **PRIZM®** controller means you can now autonomously control your robot using the *Arduino Software (IDE)* and a fully integrated, programmable brain developed specifically for the building system.

Robust

Designed with budding engineers in mind, the **MAX** system is refined yet rugged enough to withstand student manipulation day in and day out. Its durability and scalability make it ideal for creating real-world mechanical systems in both the classroom and robotics competitive events.

Transformational

Using **TETRIX MAX** offers students the ability to use real-world tools to learn and apply the engineering design process while boosting problem-solving and critical-thinking skills. The comprehensive system and curriculum available enable educators to deliver an evergreen STEM program that builds career-readiness skills for students – whatever direction their education and career paths might take them.

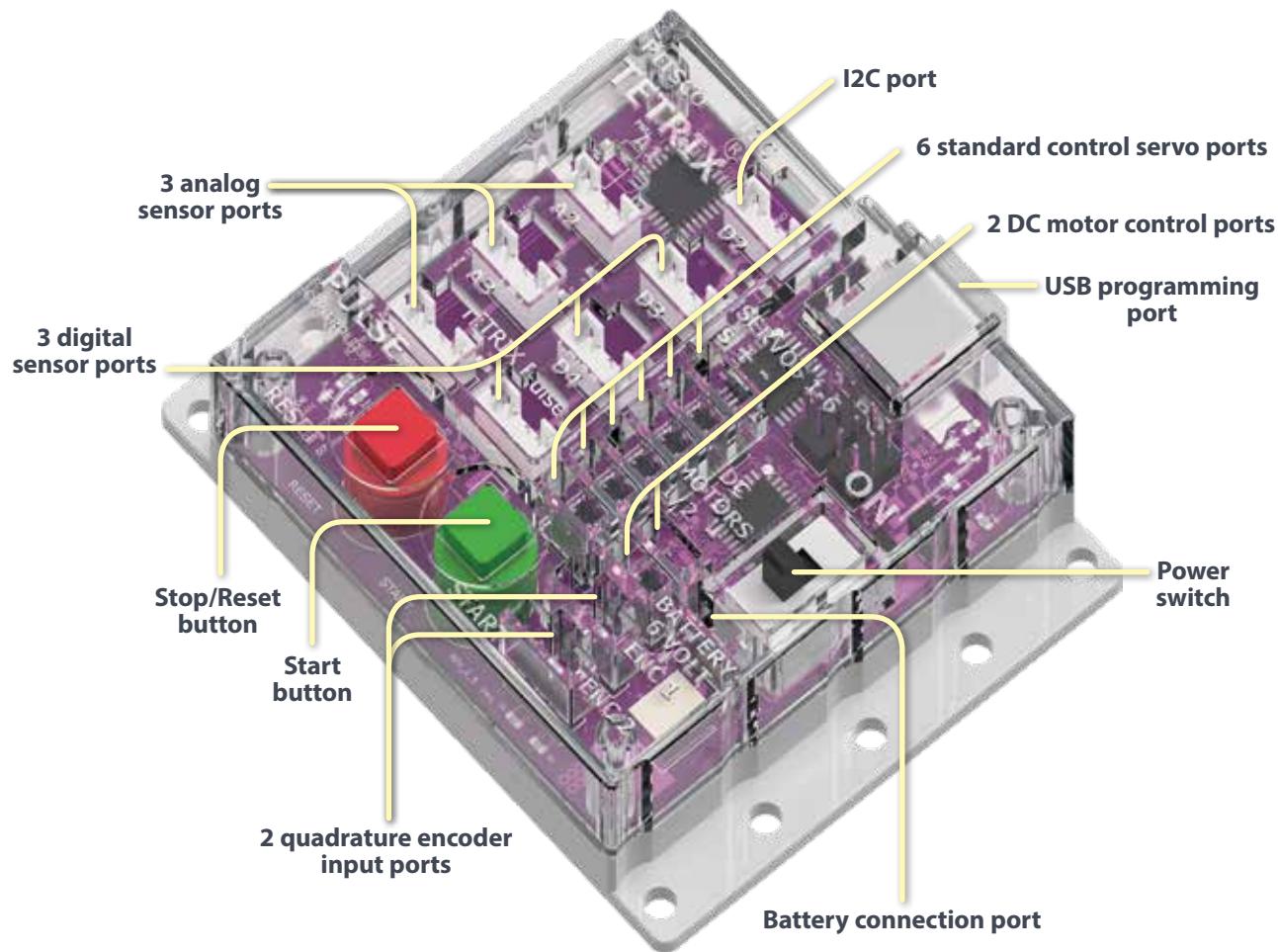
TETRIX® PRIME by Pitsco.

Every robot needs a PULSE!

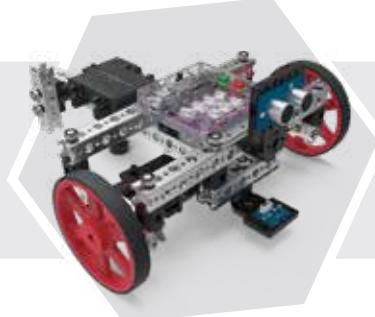
It's our heart's desire to bring your **PRIME** robots to life. The **PULSE™ Robotics Controller** features a variety of motor, servo, encoder, and sensor ports with convenient connectors and is compatible with the free *TETRIX Ardublockly* software – offering students the latest in robotics technology.

PRIME users, get excited – your bot just got a whole new lease on life!

Learn more on pages 13 and 14.



TETRIX® PRIME Programmable Robotics Set – page 9



TETRIX® PRIME Dual-Control Robotics Set – page 9



TETRIX® PRIME Class Packs – pages 11 and 12

Robotics Sets

Getting started with TETRIX® PRIME? Discover how easy it is to deliver real-world STEM experiences with TETRIX PRIME Robotics through remote-controlled or autonomous robots – or both! Whether you need a set for two students or a class pack for 24 students, we have a solution to fit your classroom. Plus, resources such as builder's and programming guides, RoboBench videos, and the *TETRIX Ardublockly Library* will have your students innovating in no time!



TETRIX® PRIME Dual-Control Robotics Set – page 9

TETRIX® PRIME R/C Robotics Set – page 9

TETRIX® PRIME Programmable Robotics Set – page 9

TETRIX® PRIME Dual-Control Robotics Set – page 9

TETRIX® PRIME Class Packs – pages 11 and 12

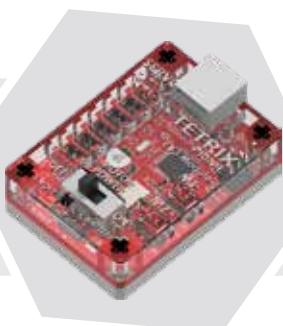
New Items

We want to give you more. More robots with more engineering, more coding, more learning. With the release of the TETRIX® PRIME EV3 Module, you can now go farther with your PRIME system than ever before. Pairing PRIME and EV3 means your students can create robots that are bigger, stronger, more complex and more real world. Add in the curriculum pack for more building, more challenges, and more engaged students.

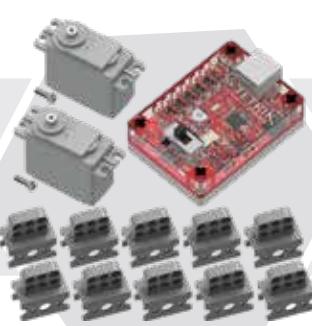
44519 TETRIX® PRIME EV3 Module – page 15

44590 TETRIX® PRIME and EV3 Component Set – page 26

44466 TETRIX® PRIME and EV3 Curriculum Pack – page 26



TETRIX® PRIME EV3 Module –
page 15



TETRIX® PRIME and EV3 Component Set – page 26

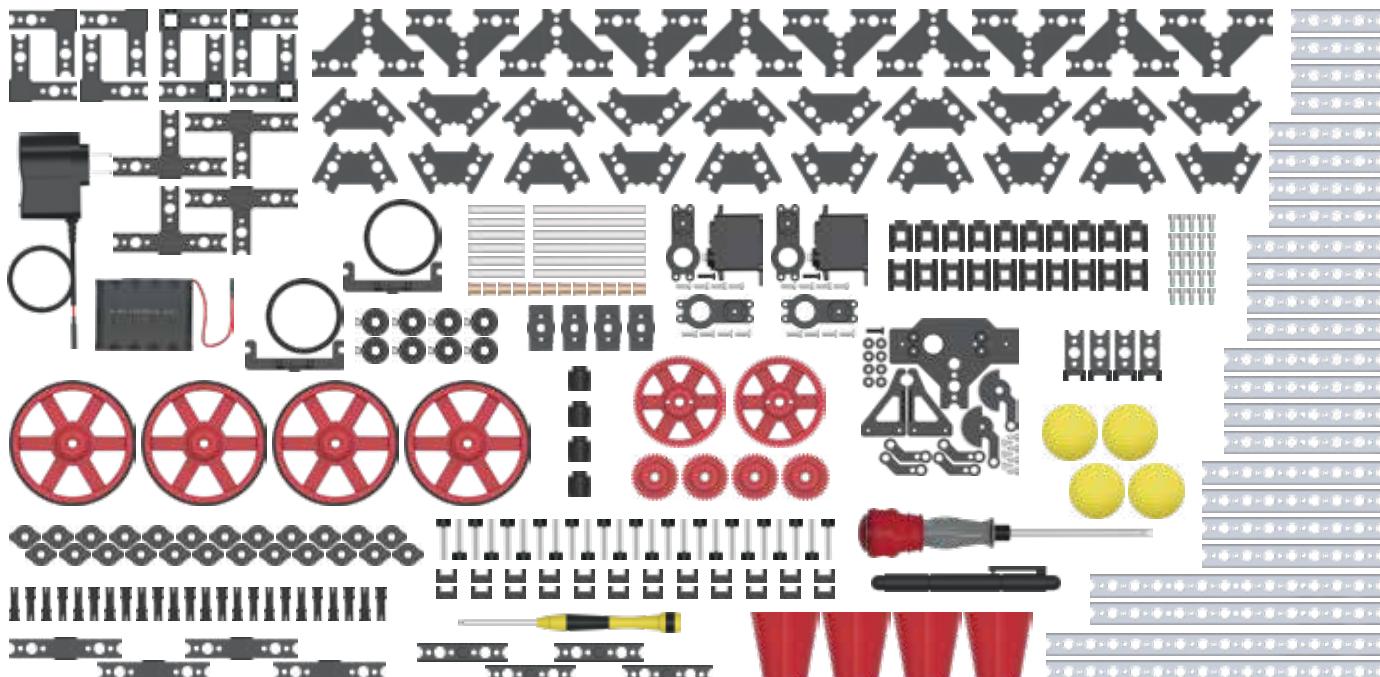


TETRIX® PRIME and EV3 Curriculum Pack – page 26

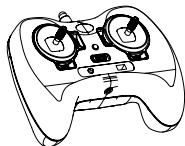
Science, Technology, Engineering, and Math – tackle them all with robotics.



When students are immersed in STEM learning and understand how it affects their daily lives, that's when they really engage. Robotics offers an excellent tool for building and sustaining STEM interests because students are constantly challenged to solve real-world problems that require critical thinking, collaboration, and innovation using tools that are relevant to them. **TETRIX® PRIME** offers a great entry into teaching and learning through robotics – its simple and intuitive design enables robotic creations to come to life quickly and easily, meaning students can focus more on problem-solving and applying STEM knowledge. Plus, our ready-made classroom sets, builder's guides, and RoboBench video series make getting started a snap.

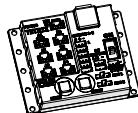


Watch your bot come to life with the **PULSE™ Robotics Controller!**
We're excited to offer you three robotics sets to choose from.



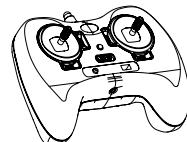
TETRIX® PRIME
R/C Robotics Set

- Remote controlled
- Autonomous controlled



TETRIX® PRIME
Programmable Robotics Set

- Remote controlled
- Autonomous controlled



TETRIX® PRIME
Dual-Control Robotics Set

- Remote controlled
- Autonomous controlled

TETRIX® PRIME R/C Robotics Set

RS44320—\$329

 Remote controlled**A Pitsco Exclusive**

Set includes everything you need to create driver-controlled robots right out of the box.

Includes:

- 290+ building elements plus Gripper Kit
- Gamepad-style, four-channel wireless controller
- 2 standard servos and 2 continuous rotation servos
- Rechargeable battery pack and charger
- On/off switch
- 4-in-1 screwdriver, 2-in-1 screwdriver, and hex nut driver
- Balls and cups for robot course
- Sturdy storage bin
- Detailed and graphic builder's guide

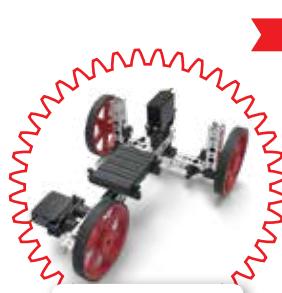


Success right out of the box. Every PRIME R/C Robotics Set includes a builder's guide that contains:

- Step-by-step instructions for building three models intended to familiarize students with all elements in a set.
- Tips and tricks to develop sound building habits.
- Nine exciting activities that challenge students to build, iterate, and compete with their designs.

Guides available for download at Pitsco.com/TETRIX.

WARNING: Cancer – P65Warnings.ca.gov



**TETRIX® PRIME
Wheelee Bot**



**TETRIX® PRIME
Pickee Bot**



**TETRIX® PRIME
Buggee Bot**

TETRIX® PRIME Programmable Robotics Set

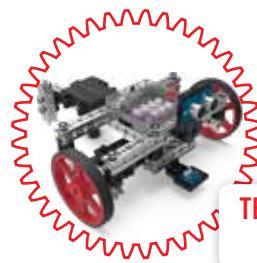
RS44321—\$449

 Autonomous controlled**A Pitsco Exclusive**

This set includes what you need for students to start building programmable robots with the TETRIX® PULSE™ Robotics Controller.

Includes:

- TETRIX PULSE Robotics Controller with USB cable
- Grove Line Finder and Ultrasonic Sensors
- 290+ TETRIX PRIME aluminum and plastic pieces including structural elements, connectors, hubs, brackets, wheels, and gears plus a Gripper Kit
- Rechargeable battery pack and charger
- 2 standard servos and 2 six-volt DC motors
- 4-in-1 screwdriver, 2-in-1 screwdriver, and hex nut driver
- Sturdy storage bin
- Balls and cups for robot course
- Detailed and graphic programming guide



Success right out of the box. The included programming guide will teach you the essentials of using the *TETRIX Ardublockly* software with the TETRIX PULSE Robotics Controller.

**TETRIX® PRIME Codee Bot with
PULSE™ Robotics Controller**

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TETRIX® PRIME Dual-Control Robotics Set

RS44322—\$499

 Remote controlled **Autonomous controlled****A Pitsco Exclusive**

This set includes everything you need for students to start building remote-controlled and autonomous robots with the TETRIX® PRIME system.

Includes:

- TETRIX PULSE™ Robotics Controller with USB cable
- Grove Line Finder and Ultrasonic Sensors
- Gamepad-style, four-channel wireless controller for easy operation of the motors and servos
- 290+ TETRIX PRIME aluminum and plastic pieces including structural elements, connectors, hubs, brackets, wheels, and gears plus a Gripper Kit
- Rechargeable battery pack and charger
- 2 standard servos, 2 continuous rotation servos, and 2 six-volt DC motors
- On/off switch
- 4-in-1 screwdriver, 2-in-1 screwdriver, and hex nut driver
- Sturdy storage bin
- Balls and cups for robot course
- Detailed and graphic programming and builder's guides

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Ready for more?

More building, more learning, more creativity?



TETRIX® PRIME Expansion Set

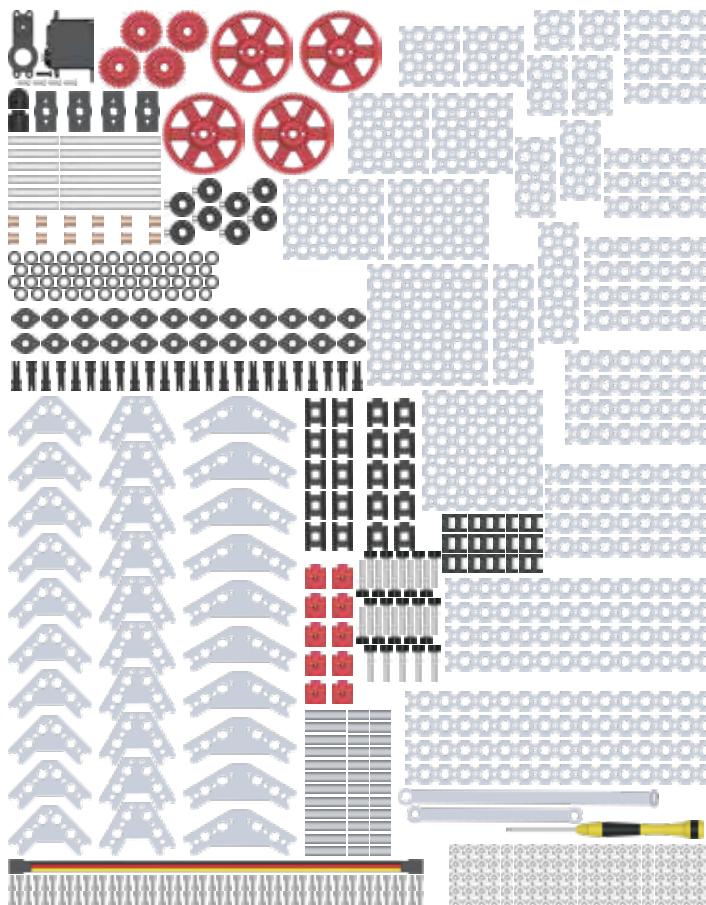
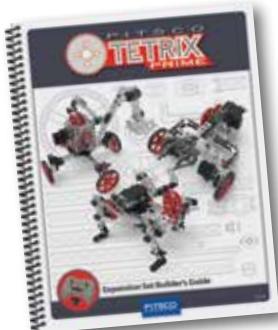
RS41549—\$179

A Pitsco Exclusive

Set includes a large variety of building elements that enable students to take their robotic creations to the next level.

Includes:

- 530+ total building elements
- Variety of linkages, plates, and gussets not found in the robotics set
- 1 standard servo motor
- Additional gears, axles, and connecting hardware
- Wrench set and hex nut driver
- Sturdy storage bin
- Printed builder's guide

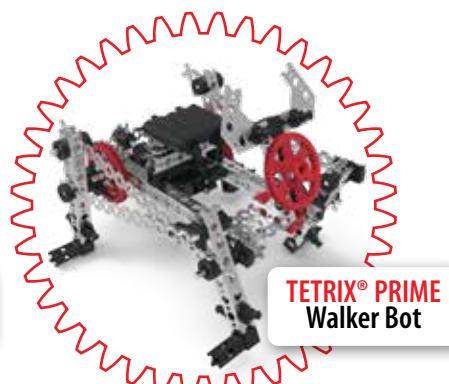


Build bigger, more complex robots. We'll teach you how.

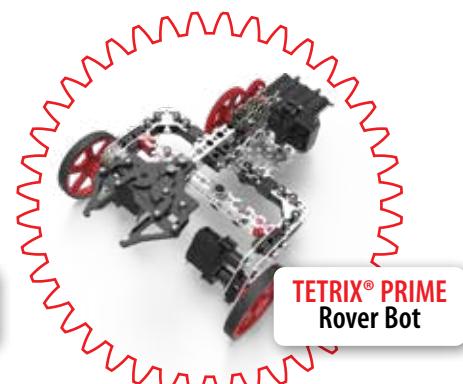
Like the robotics set, every PRIME Expansion Set includes a printed builder's guide with instructions for building three models along with three corresponding activities for each. This guide can also be downloaded for free online.



**TETRIX® PRIME
Crane Bot**



**TETRIX® PRIME
Walker Bot**



**TETRIX® PRIME
Rover Bot**

Did you know there's much more online?

The Pitsco Education robotics team is committed to ensuring our educators and students feel successful using our solutions. As a part of this commitment, we have created the RoboBench video series, which gives viewers additional insights, tips, and tricks to using our robotic building systems. View them all at video.pitsco.com/TETRIX.



Classroom Solutions

Our turnkey offerings make outfitting an entire classroom a cinch. These preconfigured solutions feature our most popular and classroom-friendly products and are designed to make getting started as easy as possible. The included builder's guides provide a great introduction to building and control systems along with activities that offer novice roboticists instant success.

TETRIX® PRIME R/C Class Pack

RS41028—\$3,895

- Remote controlled
- Serves 24 students

A Pitsco Exclusive

The TETRIX® PRIME R/C Class Pack serves 12 teams of two students, offering each pair of students their own TETRIX PRIME R/C Robotics Set to work with. Using the sets and the instructions from the included builder's guide, students work collaboratively to engineer fully functioning, remote-controlled robots.

Includes:

- 12 TETRIX PRIME R/C Robotics Sets
- 12 builder's guides

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Remote-Controlled Packages



TETRIX® PRIME Getting Started Package

RS41946—\$5,995

- Remote controlled
- Serves 24 students

A Pitsco Exclusive

The TETRIX® PRIME Getting Started Package offers the ultimate robotics experience. Teams of two work to design fully functioning, remote-controlled robots, with each student pair having access to both a TETRIX PRIME R/C Robotics Set and a TETRIX PRIME Expansion Set. The included TETRIX PRIME Engineering Mobile Robotics Curriculum Pack and Engineering Design Loop Poster Set provide an added bonus to the builder's guides.

Includes:

- 12 TETRIX PRIME R/C Robotics Sets
- 12 TETRIX PRIME Expansion Sets
- 12 builder's guides
- 12 expansion builder's guides
- TETRIX PRIME Engineering Mobile Robotics Curriculum Pack
- Engineering Design Loop Poster Set

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Classroom Solutions

NEW!

TETRIX® PRIME Programmable Class Pack

RS44585—\$4,895

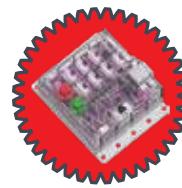
- Autonomous controlled
- Serves 24 students

A Pitsco Exclusive

The TETRIX® PRIME Programmable Class Pack serves 12 teams of two students, offering each pair of students their own Programmable Robotics Set to work with. Using the sets and the instructions from the included guide, students work collaboratively to engineer and code autonomous robots.

Includes:

- 12 TETRIX PRIME Programmable Robotics Sets
- 12 detailed and graphic programming guides



Programmable Package



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NEW!

TETRIX® PRIME Dual-Control Class Pack

RS44586—\$5,945

- Remote and autonomous controlled
- Serves 24 students

A Pitsco Exclusive

The TETRIX® PRIME Dual-Control Class Pack serves 12 teams of two students, offering each pair of students their own Dual-Control Robotics Set to work with. Using the sets and the instructions from the included guide, students work collaboratively to engineer and control both remote and autonomous-controlled robots.

Includes:

- 12 TETRIX PRIME Dual-Control Robotics Sets
- 12 detailed and graphic programming and builder's guides



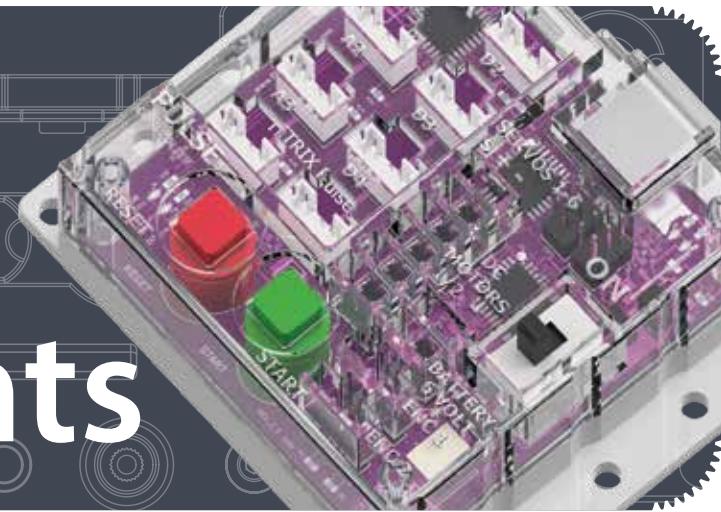
Dual-Control Package



 **WARNING:** Cancer – P65Warnings.ca.gov



Control Elements



Whether you're new to robotics or a seasoned programmer, when it comes to controlling your PRIME robot, you've got options.

Remote controlled

Also referred to as driver controlled or radio controlled, R/C technology uses a transmitter and receiver to enable an operator to govern the robot's every move.

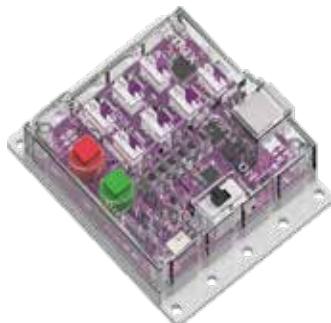
A gamepad and receiver are included in every PRIME R/C Robotics Set.



Autonomous controlled

An autonomous-controlled robot is able to perform tasks on its own using a set of preprogrammed instructions or code. Autonomous robots can move, perform work, and even gain information about their surroundings without the need for human interaction.

The TETRIX® PULSE™ Robotics Controller is included in all PRIME Programmable Robotics and Dual-Control Robotics Sets. TETRIX PRIME is also compatible with LEGO® MINDSTORMS®.



TETRIX® PULSE™ Robotics Controller

- PRIME users can program their robots with the new PULSE™ Robotics Controller and the graphical *TETRIX ArduBlockly* software.
- PULSE can also be programmed with a syntax-based coding method using the *Arduino Software (IDE)* and the PULSE controller Arduino library.
- The *Arduino Software (IDE)* must be downloaded from its proprietary site. *TETRIX ArduBlockly* and the PULSE Arduino library can be found at Pitsco.com/TETRIX-PULSE-Robotics-Controller#downloads.



LEGO® MINDSTORMS® EV3 Brick

- Current MINDSTORMS® users can program PRIME robots using their EV3 Brick in combination with the following:
 - The **TETRIX® PRIME EV3 Module** (shown on page 15) enables EV3 users to program TETRIX PRIME using the native EV3 programming language.
 - Additional resources including software blocks and sample programs are available on Pitsco.com/TETRIX.

TETRIX® Wireless Joystick Gamepad System

RS40239—\$39.95

A Pitsco Exclusive

- Four-channel, gamepad-style controller with dual joysticks and R2004GF receiver included
- Features interference-free performance, servo-reversing abilities built into the controller, and motor trim adjustment
- Gamepad and receiver are delivered paired to one another but can be linked to other receivers when needed.
- Designed for compatibility with both TETRIX® MAX and TETRIX PRIME systems
- Controller is 2.4 GHz and includes four AA batteries.
- Controller color might vary.



TETRIX® R/C Receiver

RS42084—\$11.95

A Pitsco Exclusive

- Offers a replacement for a lost or damaged 2.4 GHz receiver
- This version of the R/C receiver is compatible with only the 40239 gray wireless gamepad and is not compatible with previous versions of the joystick controller.
- Comes with built-in mounting tabs that align with the TETRIX® hole pattern

TETRIX® PULSE™ Robotics Controller

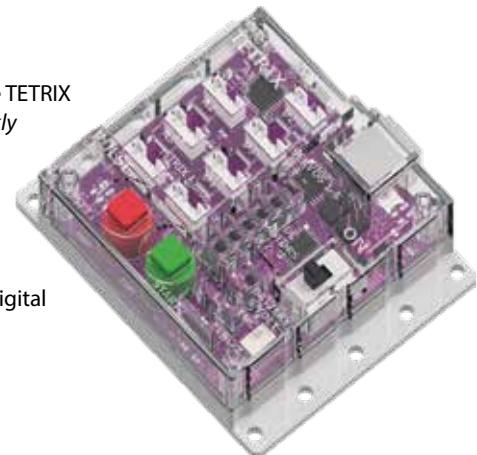
RS44268—\$99

A Pitsco Exclusive

The TETRIX® PULSE™ offers a fully integrated brain for your robot, specifically developed for the TETRIX PRIME system, that is powerful yet easy to use and, when combined with the *TETRIX Ardublockly* software and *Arduino Software (IDE)*, can provide an ideal learning tool for teaching graphic or syntax-based coding.

Features:

- 2 DC motor control ports and 6 standard control servo ports
- 3 digital sensor ports that can be configured as digital input, digital output, or serial communication and 3 analog sensor ports (A1-A3 can be configured as analog input or digital input or output.)
- 1 I2C port, 1 USB programming port, and 2 quadrature encoder input ports
- 1 battery connection port
- 1 power on/off switch
- 1 programmable Start push button and 1 Stop/Reset push button
- 3 LED indicators: red, green, and yellow
- Includes USB cable



TETRIX® PULSE™ Component Set

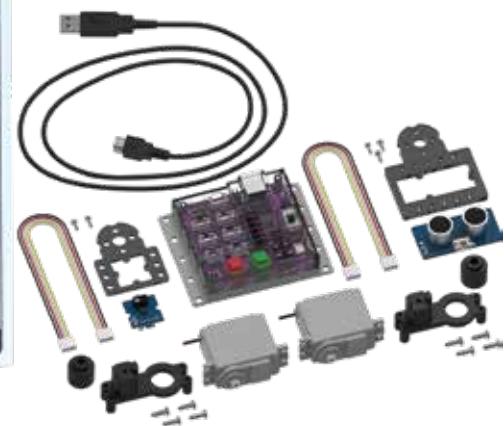
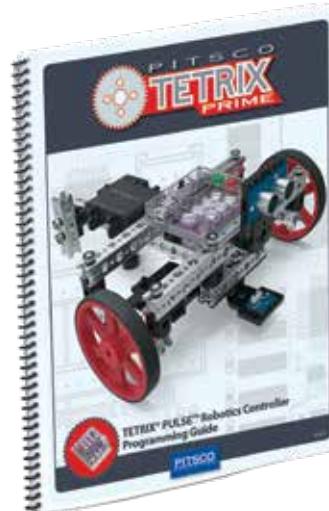
RS44305—\$179

A Pitsco Exclusive

This set has everything you need to turn a TETRIX® PRIME R/C Robotics Set into a TETRIX PRIME Programmable Robotics Set.

Includes:

- TETRIX PULSE™ Robotics Controller with USB cable
- 2 six-volt DC motors and motor mounts
- Line Finder Sensor, Ultrasonic Sensor, and sensor mounts
- Sensor connector cables
- Printed programming guide





Line Finder Sensor Pack

RS43056—\$11.95

A Pitsco Exclusive

- Line-tracker module that transmits a digital signal to the TETRIX® PULSE™ Robotics Controller, enabling a robot to follow a black line on a white background or vice versa
- Comes with mount, connecting sensor cable, and hardware for attaching the sensor to the TETRIX hole pattern



Ultrasonic Sensor Pack

RS43055—\$34.50

A Pitsco Exclusive

- Noncontact distance measurement module that works at 42 kHz to transmit a digital signal to the TETRIX® PULSE™ Robotics Controller
- Detects range of an object within 3 to 400 cm
- Comes with mount, connecting sensor cable, and hardware for attaching the sensor to the TETRIX hole pattern

Accessories



Line Finder Sensor Mount

RS43076—\$4.35

A Pitsco Exclusive



Ultrasonic Sensor Mount

RS43077—\$4.95

A Pitsco Exclusive



Sensor Extension Cable

RS43338—\$2.95

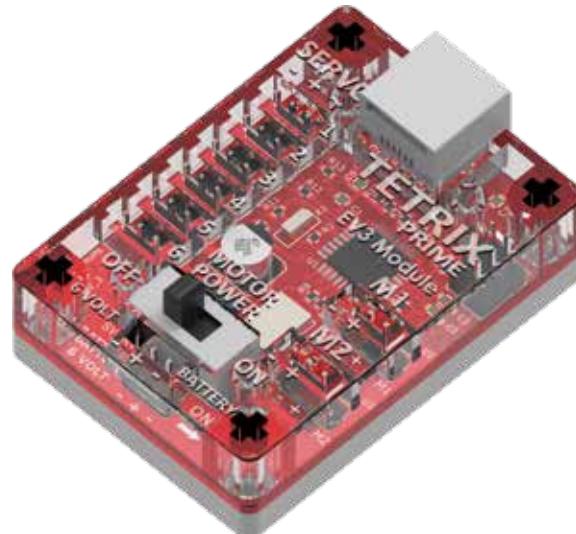
NEW!

TETRIX® PRIME EV3 Module

RS44519—\$59

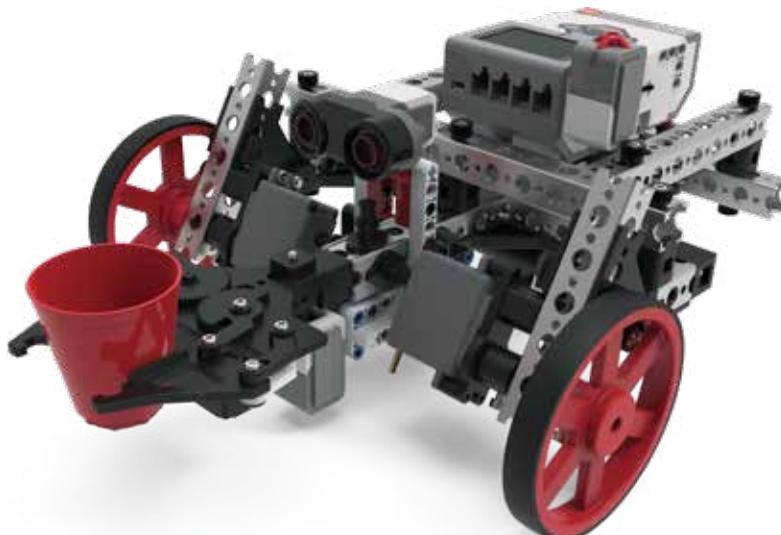
A Pitsco Exclusive

- Designed to work with LEGO® EV3 Brick
- Enables you to add programming and sensors to your TETRIX® PRIME robots
- Controls the speed and position of up to six TETRIX PRIME servo motors and two TETRIX PRIME DC motors
- Powered by the TETRIX PRIME 6-volt battery
- Software blocks and programming examples for EV3 can be downloaded from the product page on Pitsco.com/TETRIX.



PRIME in action

We've made our TETRIX® PRIME system completely compatible with EV3. This pairing means you can create robots that are bigger, stronger, more complex, more real world, and more advanced. Use your EV3 Brick, sensors, motors, and LEGO® elements; combine them with the PRIME metal system; and watch your students conquer feats that cannot be done with plastic alone. Simply put, you can do more with metal.





Structural Elements

TETRIX® PRIME Square Beams

These four-sided, 16 mm, aluminum beams are the structural building blocks for creating PRIME robots. Available in seven lengths to provide flexible building options, the beams can also be cut to custom lengths with a metal-cutting blade.

4-Hole Square Beam

RS40201 (pkg of 2)—\$4.95
16 mm x 16 mm x 64 mm

5-Hole Square Beam

RS40202 (pkg of 2)—\$5.95
16 mm x 16 mm x 80 mm

6-Hole Square Beam

RS40203 (pkg of 2)—\$6.95
16 mm x 16 mm x 96 mm

7-Hole Square Beam

RS40204 (pkg of 2)—\$7.95
16 mm x 16 mm x 112 mm

8-Hole Square Beam

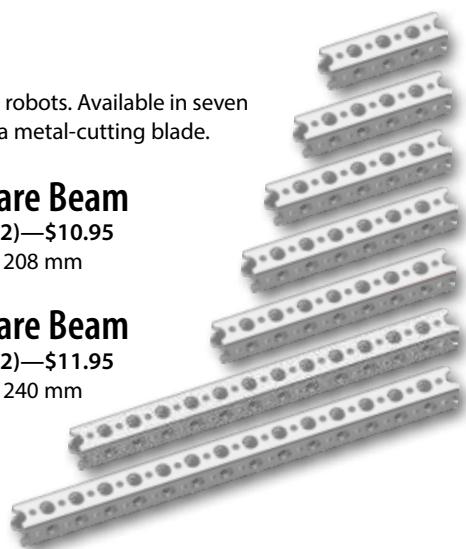
RS40205 (pkg of 2)—\$8.95
16 mm x 16 mm x 128 mm

13-Hole Square Beam

RS40206 (pkg of 2)—\$10.95
16 mm x 16 mm x 208 mm

15-Hole Square Beam

RS40207 (pkg of 2)—\$11.95
16 mm x 16 mm x 240 mm



TETRIX® PRIME Aluminum Plates

Create a variety of attachment surfaces with these sturdy, aluminum, 2 mm thick building plates.

2 x 2 Hole Plate

RS41251 (pkg of 2)—\$2.95
32 mm x 32 mm

2 x 3 Hole Plate

RS41254 (pkg of 2)—\$3.50
32 mm x 48 mm

2 x 4 Hole Plate

RS41255 (pkg of 2)—\$3.95
32 mm x 64 mm

2 x 6 Hole Plate

RS41256 (pkg of 2)—\$4.50
32 mm x 96 mm

3 x 3 Hole Plate

RS41257 (pkg of 2)—\$4.95
48 mm x 48 mm

4 x 4 Hole Plate

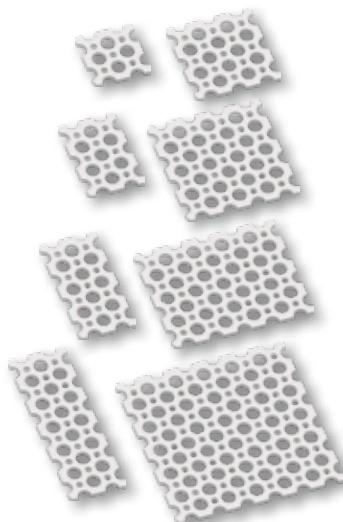
RS41261 (pkg of 2)—\$5.50
64 mm x 64 mm

4 x 5 Hole Plate

RS41262 (pkg of 2)—\$5.95
64 mm x 80 mm

6 x 6 Hole Plate

RS41263 (pkg of 2)—\$6.50
96 mm x 96 mm



TETRIX® PRIME Aluminum Linkages

Create custom links and pivoting connection points with these flat linkages that can also be cut and shaped into various angles or curves with ease for customized applications.

4-Hole Flat Linkage

RS41244 (pkg of 2)—\$2.95
64 mm x 16 mm

7-Hole Flat Linkage

RS41247 (pkg of 2)—\$4.50
112 mm x 16 mm

15-Hole Flat Linkage

RS41250 (pkg of 2)—\$5.95
240 mm x 16 mm

5-Hole Flat Linkage

RS41245 (pkg of 2)—\$3.50
80 mm x 16 mm

8-Hole Flat Linkage

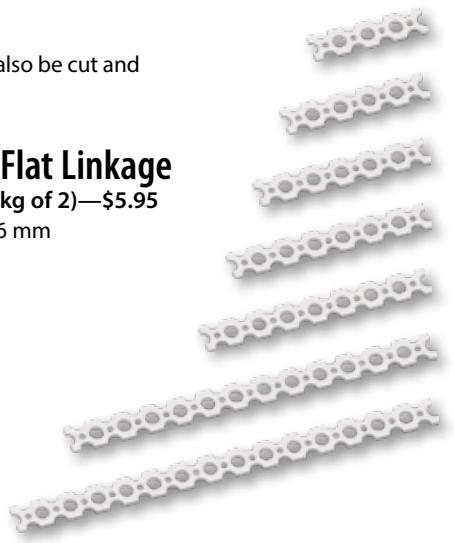
RS41248 (pkg of 2)—\$4.95
128 mm x 16 mm

6-Hole Flat Linkage

RS41246 (pkg of 2)—\$3.95
96 mm x 16 mm

13-Hole Flat Linkage

RS41249 (pkg of 2)—\$5.50
208 mm x 16 mm



TETRIX® PRIME 3-Way Beam Connector

RS40212 (pkg of 2)—\$3.25

- Connects three beams at 90-degree angles to create a three-dimensional corner
- Slides inside the beams to create a strong connection
- ABS plastic



TETRIX® PRIME 90-Degree Beam Connector

RS40211 (pkg of 2)—\$2.95

- Joins two beams at a 90-degree angle
- Slides inside the beams to create a strong connection
- ABS plastic



TETRIX® PRIME Beam Extension Connector

RS40322 (pkg of 2)—\$2.75

- Aligns square aluminum beams end to end, enabling builders to create a larger variety of beam lengths
- Slides inside the beams to create a strong connection
- ABS plastic



TETRIX® PRIME Tee Beam Connector

RS40213 (pkg of 2)—\$3.25

- Connects the ends of three beams at 90 degrees to create a T joint on a two-dimensional plane
- Slides inside the beams to create a strong connection
- ABS plastic



TETRIX® PRIME Beam End Connector

RS40214 (pkg of 2)—\$2.50

- Joins a beam end to a beam side at 90 degrees
- Connects square PRIME beams to flat plates
- Slides inside the beams to create a strong connection
- ABS plastic



TETRIX® PRIME Beam Straight Connector

RS40215 (pkg of 2)—\$2.95

- Connects two square beams end to end with a joint in the middle that adds one beam length in between
- Slides inside the beams to create a strong connection
- ABS plastic



TETRIX® PRIME 60-Degree Beam Bracket

RS40209 (pkg of 10)—\$4.95

- Connects two beams at a 60-degree or 120-degree angle depending on the beam positioning
- Aids with aligning beams quickly
- ABS plastic



TETRIX® PRIME 90-Degree Beam Bracket

RS40208 (pkg of 10)—\$4.95

- Connects two beams at a 90-degree angle
- Aids with aligning beams quickly
- ABS plastic



TETRIX® PRIME Tee Beam Bracket

RS40210 (pkg of 10)—\$5.95

- Connects along the length of one beam to the end of another beam to create a T joint
- Aids with aligning beams quickly
- ABS plastic



NEW! TETRIX® PRIME EV3 Mounting Bracket

RS44535 (pkg of 2)—\$2.95

Want to connect a TETRIX® PRIME robot to LEGO® elements? It's not a problem with this TETRIX PRIME EV3 Mounting Bracket that was designed to enable LEGO technic elements to be connected to the TETRIX PRIME building system.



TETRIX® PRIME Straight Block Beam Connector

RS40216 (pkg of 10)—\$7.95

- Connects two beams parallel to one another while maintaining a single beam width of separation
- Built-in wing nuts aid in aligning beams quickly.
- ABS plastic



TETRIX® PRIME 90-Degree Cross Block Connector

RS40217 (pkg of 10)—\$7.95

- Connects two beams perpendicular to one another while maintaining a single beam width of separation
- Built-in wing nuts aid in aligning beams quickly.
- ABS plastic



TETRIX® PRIME 16 mm Anchor Block

RS41267 (pkg of 10)—\$5.50

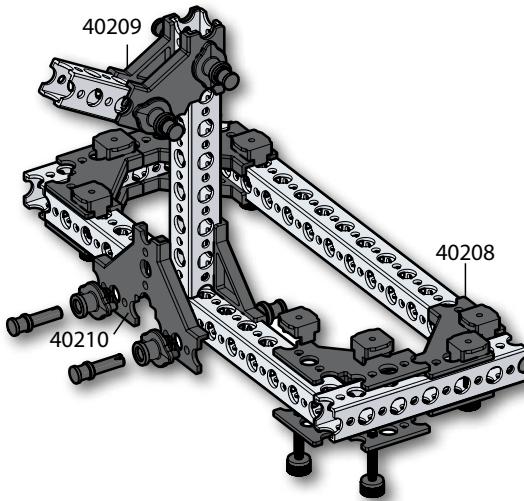
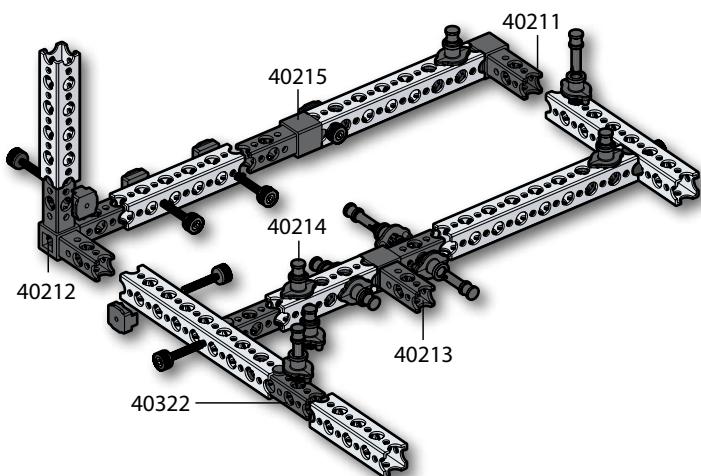
- Connects multiple beams in a variety of positions while maintaining a single beam width of separation
- Built-in wing nuts on a single side to aid in aligning beams quickly
- Versatile building component that expands connection options
- ABS plastic



16 mm Stand-Off

RS41253 (pkg of 12)—\$5.95

- Creates space between building components while maintaining a single beam width of separation
- Measures 6-32 x 16 mm
- Aluminum, threaded on both ends



PRIME in action

These two subassemblies showcase the internal and external connectors used in the PRIME building system. The connectors are designed to deliver strength and robustness to builds while aiding in aligning building components. This means that PRIME robots can be built with structural integrity and in record time.



TETRIX® PRIME 60-Degree Gusset

RS41264 (pkg of 10)—\$9.95

- Connects PRIME flats and beams at a 60-degree angle
- Expands building options and increases strength of design
- Heavy-duty aluminum



TETRIX® PRIME 90-Degree Gusset

RS41265 (pkg of 10)—\$9.95

- Connects PRIME flats and beams at a 90-degree angle
- Expands building options and increases strength of design
- Heavy-duty aluminum



TETRIX® PRIME 120-Degree Gusset

RS41266 (pkg of 10)—\$9.95

- Connects PRIME flats and beams at a 120-degree angle
- Expands building options and increases strength of design
- Heavy-duty aluminum



TETRIX® PRIME Quick Rivet Connector

RS40219 (pkg of 24)—\$6.95

- Used with quick rivet pegs to enable rapid assembly and disassembly of robots
- Easy-to-use system that encourages students to try out many robotic designs
- Compatible with LEGO® Connector Pegs, enabling you to attach LEGO EV3 elements to your design
- ABS plastic



TETRIX® PRIME Quick Rivet Peg

RS40220 (pkg of 24)—\$4.25

- Used with quick rivet connectors to quickly secure and tighten building elements into place
- Easily removable and reusable
- ABS plastic



TETRIX® PRIME Wing Nut

RS40221 (pkg of 24)—\$8.50

- Used with the thumbscrews to securely fasten building elements
- ABS plastic



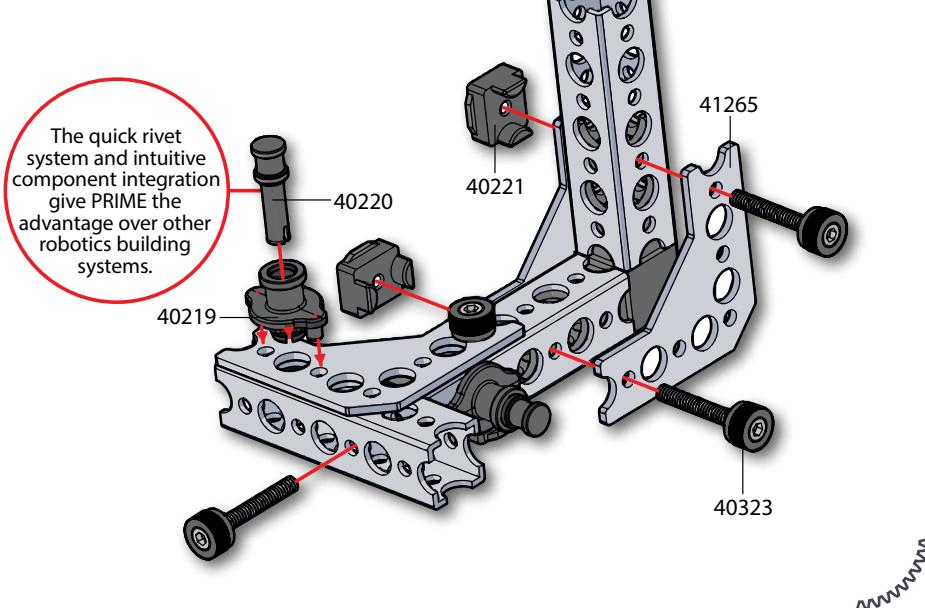
TETRIX® PRIME Thumbscrew

RS40323 (pkg of 25)—\$7.95

- Used with wing nuts to securely fasten building elements
- Aluminum

PRIME in action

TETRIX® PRIME uses a patented fastening system that is simple, intuitive, secure, and quick. This system provides greater flexibility in classroom implementation as it greatly reduces the time required to assemble and disassemble robots. In this subassembly you see the quick rivet snap fasteners and thumbscrews in action. For most construction, the quick rivets will be the hardware of choice; however, elements can also be connected with a specialized thumbscrew that provides additional strength and durability when it might be needed.





Motion Elements



TETRIX® Standard-Scale Servo Motor

RS40538—\$16.95

- Allows for exact positioning within a 180-degree range of motion
- Operates on six volts
- Combines with the servo mounting bracket to easily attach to the PRIME structural and motion elements



TETRIX® Continuous Rotation Servo Motor

RS40379—\$24.50

- Allows for continuous direction of movement, both forward and backward
- Operates on six volts
- Features stall torque of 42 oz/in.
- Combines with the servo mounting bracket to easily attach to the PRIME structural and motion elements



TETRIX® PRIME DC Motor

RS44298—\$17.95

- High-quality six-volt DC motor featuring a stall torque of 51 oz/in.
- Has a two-wire DC gear head motor built into a servo case
- Possesses full-range PWM speed and directional control
- Combines with the servo mounting bracket



TETRIX® PRIME Servo Mounting Bracket

RS40232—\$3.50

- Easily attaches the standard and continuous rotation servo motors to PRIME structural elements
- Each mount holds one servo in place.
- ABS plastic



TETRIX® PRIME Wheel with Tire

RS40222—\$7.95

- 90 mm wheels with rubber tread for high traction
- Removable tread creates low-friction wheel.
- Built-in hub matches the 6 mm D-shaft steel axles.
- Used with the 6-32 socket head cap screw to secure axles
- Features 12 mm tire width
- ABS plastic



TETRIX® PRIME 40-Tooth Plastic Gear

RS40223 (pkg of 2)—\$5.95

- High-strength plastic gears that can withstand substantial levels of stress
- Intended to complement the robust characteristics of the aluminum structural elements
- Built-in hub matches the 6 mm D-shaft steel axles.
- Used with the 6-32 socket head cap screw to secure axles
- ABS plastic



TETRIX® PRIME 80-Tooth Plastic Gear

RS40224 (pkg of 2)—\$7.95

- High-strength plastic gears that can withstand substantial levels of stress
- Intended to complement the robust characteristics of the aluminum structural elements
- Built-in hub matches the 6 mm D-shaft steel axles.
- Used with the 6-32 socket head cap screw to secure axles
- ABS plastic

TETRIX® PRIME Gripper Kit

RS40234—\$9.95

- Grab, pick, place, and manipulate objects.
- Includes everything needed to build a robotic gripper with a jaw that opens to 63 mm.
- Easily connects to a robot using a thumbscrew and wing nut.
- Requires a standard servo motor (40538), sold separately.
- Compatible with the entire assortment of PRIME building elements.
- ABS plastic



TETRIX® Beam and Thumbscrew used in Gripper Kit sold separately.

TETRIX® PRIME Steel Axles

Attach wheels and gears to servo motors with these precision-ground steel D-shaft axles. Incredibly durable, the PRIME axles can stand up to high-torque applications. Available in two lengths.

40 mm Axle

RS40226 (pkg of 6)—\$10.95
40 mm x 6 mm

80 mm Axle

RS40225 (pkg of 6)—\$12.95
80 mm x 6 mm

TETRIX® PRIME 16 mm Ball Skid Point

RS41260—\$.95

- Great low-friction contact point for differential-drive robots
- Offers an alternative for when omni-wheels or pivoting caster wheels are not available

**TETRIX® PRIME Beam Attachment Hub**

RS40228 (pkg of 2)—\$3.95

- Attaches the 6 mm axles to aluminum beam elements to form a pivot
- Used with thumbscrews and the socket head cap screw to securely fasten building elements
- ABS plastic

TETRIX® PRIME D-Shaft Set Collar

RS40229 (pkg of 2)—\$2.50

- Holds elements attached to rotating axles in position when constructing pivot joints
- Used with the socket head cap screw to secure into place
- ABS plastic

**Socket Head Cap Screw**

RS40516 (pkg of 25)—\$3.25

- Secures rotating axle-mounted elements in place
- 6-32 dimensions
- Requires 7/64" hex driver, which is included in the TETRIX® PRIME R/C Robotics Set

**TETRIX® PRIME Shaft Servo Hub**

RS40230—\$1.50

- Creates a connection from the standard or continuous rotation servo motor to a 6 mm D-shaft axle
- ABS plastic

**TETRIX® PRIME 6 mm Plastic Bushing Spacer**

RS41665 (pkg of 50)—\$4.50

- Creates separation when used in conjunction with the 6 mm D-shaft axles to keep your mechanism's drive systems running smoothly
- Can also create a 2 mm space between aluminum structural elements

**TETRIX® PRIME Bronze Bushing**

RS40227 (pkg of 12)—\$9.95

- Keep things running smoothly with this lightly lubricated bronze bushing
- Reduces wear and tear on axles
- Measures 8 mm x 6 mm





Power, Tools, and Accessories



TETRIX® PRIME 6 V NiMH Battery Pack

RS40235—\$16.95

- Rechargeable five-cell, six-volt, 1,500 mAh battery pack
- Provides long-lasting power to TETRIX® PRIME motors and electronics
- Battery charger sold separately

WARNING: Cancer – P65Warnings.ca.gov



TETRIX® PRIME 5-Cell NiMH Battery Pack Charger

RS40378—\$18.95

- Offers a replacement or an additional charger for the 6 V NiMH battery pack



TETRIX® PRIME Battery Mount Bracket

RS40236—\$3.95

- Mounts the 6 V NiMH battery pack with ease to your PRIME robot
- Features two heavy-duty plastic clips used together with a bungee band to secure a battery pack
- Includes one additional band



TETRIX® PRIME Battery Pack On/Off Switch

RS40457—\$4.95

- Easily connects the battery pack to the gamepad receiver to control power with the flip of a switch



Miniature Ball-Point Hex Driver

RS40341—\$3.25

- Secures thumbscrews and socket head cap screws to TETRIX® PRIME and MAX elements
- 6" blade length
- 7/64" hex size



4-in-1 Screwdriver

RS36404—\$2.15

- Versatile tool for tightening screws in small spaces, such as for wiring and sensor applications
- Features two capped ends – an end with a Phillips head and an end with a flat head
- Each end features a small and extra-small size.



2-in-1 Screwdriver

RS42991—\$3.25

- Ideal tool for mounting TETRIX® MAX and PRIME servo motors to mounts and for assembling the PRIME Gripper Kit
- Features an end with a No. 1 Phillips drive and an end with a 1/8" flat head



Practice Golf Balls

RS14041 (pkg of 4)—\$6.45

- Offers a replacement for the soft foam, golf-size balls included in the TETRIX® PRIME R/C Robotics Set
- Used throughout the activities in the *TETRIX PRIME Builder's Guide*



Plastic 2 oz Cups

RS41769 (pkg of 4)—\$1.75

- Offers a replacement for the cups included in the TETRIX® PRIME R/C Robotics Set
- Used as cones and ball catchers throughout the *TETRIX PRIME Builder's Guide* activities



22" Portable Storage Solution

RS44149—\$55

- Features 27 removable bins
- Durable resin construction with metal handle and latches
- Built-in legs for stability when in the open position
- Measures 22" x 12-1/8" x 6-5/8"



TETRIX® PRIME Storage Bin and Lid

RS40666—\$12.95

- Measures 12" W x 16-1/2" D x 5-3/4" H and is black in color
- Offers additional storage for TETRIX® spare parts
- Includes 11-1/8" x 17" translucent lid



Sorting Tray (6 compartments)

RS40682—\$8

- Fits within the blue, red, black, and gray storage bins
- Offers six different sections for keeping elements organized



Mobile Storage Unit

RS38757—\$695

A Pitsco Exclusive

- Designed to house TETRIX® storage bins in three sections
- Unit measures 44" x 41" x 19-1/2"
- Features 36 adjustable rails to fit any bin configuration
- Made of melamine with a 2 mm PVC edge band
- Sits on 2" rolling casters
- Assembly required



Storage Bins

RS39358 Shallow Red Bin with Lid—\$7.50

RS43222 Standard Gray Bin with Lid—\$10.50

RS39356 Extra Deep Blue Bin with Lid—\$13.50

RS43223 Jumbo Blue Bin with Lid—\$13.50



WARNING: Cancer – P65Warnings.ca.gov

Whole-class, world-class curriculum solutions

Convert the excitement and engagement of robotics into learning outcomes with the PRIME Robotics STEM Units. Developed to provide educators with teacher-led, team-based curriculum that delivers interconnected science, technology, engineering, and math lessons, these units span three or nine weeks with no prerequisites. What's more, everything you need is included.



NEW!

TETRIX® PRIME Robotics: Remote Control STEM Unit

RS44591—\$5,350

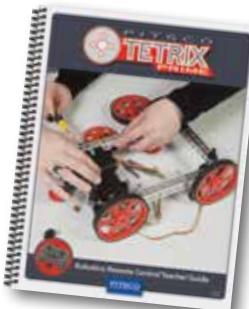
- Offers 3 weeks of curriculum
- Serves 24 students
- Remote controlled

A Pitsco Exclusive

The principles of building a remote-controlled robot and using this robot to complete various engaging challenges are the focus of this STEM Unit. The TETRIX® PRIME R/C Robotics Set is used for the basic building parts for students to construct various robots and complete challenges while addressing science, technology, engineering, math, and language arts standards. The PRIME building system enables students to quickly prototype a variety of robots, test them, and engineer them for improved performance.

Curriculum features:

- 15 hours, or fifteen 50-minute class periods, of hands-on activities with scope and sequence
 - Middle and high school correlations to Next Generation Science, Common Core Math and Language Arts, and ITEEA standards
 - Extensive coverage of mechanisms and mechanical systems concepts
 - Application of STEM knowledge and 21st-century skills
- Add-ons are available for classes larger than 24.



NEW!

TETRIX® PRIME Robotics: Autonomous STEM Unit

RS44592—\$7,995

- Offers 3 weeks of curriculum
- Serves 24 students
- Autonomous controlled



A Pitsco Exclusive

Using the TETRIX® PRIME building system and adding sensors and the PULSE™ controller, this unit focuses on creating a robot to complete tasks without operator input. Using the *TETRIX Ardublockly* software along with ultrasonic and line-follower sensors, students write programs to complete various tasks that increase in complexity. Students use PRIME parts to quickly prototype and test different configurations and overcome additional obstacles. STEM standards are addressed with the engaging activities provided in this unit.

Curriculum features:

- 15 hours, or fifteen 50-minute class periods, of hands-on activities with scope and sequence
- Middle and high school correlations to Next Generation Science, Common Core Math and Language Arts, and ITEEA standards
- Programming with PULSE controller using the graphic-based *TETRIX Ardublockly* along with sensor integration
- Extensive coverage of mechanisms and mechanical systems concepts
- Application of STEM knowledge and 21st-century skills
- Progressive series of activities with culminating challenge

Add-ons are available for classes larger than 24.

STEM Unit now uses TETRIX® PULSE™ Robotics Controller!

WARNING: Cancer – P65Warnings.ca.gov

Best Value

Looking for the best value?
Get all three Robotics STEM Units for a combined nine weeks of curriculum!

NEW!

TETRIX® Robotics: Remote Control, Autonomous, and Automation Manufacturing STEM Unit
RS44597—\$9,995

Includes:

- 12 TETRIX® PRIME Dual-Control Robotics Sets
- All curriculum, additional materials, and activities from the three packages

We've made adding on and replacing materials easy.

NEW!

RS44594 Remote Control STEM Unit – 4-Student Add-On—\$865

NEW!

RS44595 Autonomous STEM Unit – 4-Student Add-On—\$1,295

NEW!

RS44596 Automation Manufacturing STEM Unit – 4-Student Add-On—\$1,250



NEW!

TETRIX® PRIME Robotics: Automation Manufacturing STEM Unit

RS44593—\$8,225

- Offers 3 weeks of curriculum
- Serves 24 students
- Autonomous controlled

A Pitsco Exclusive

Combining the quick prototyping capabilities of the TETRIX® PRIME building system with the strength and ruggedness of the MAX parts, this unit focuses on activities and builds that might be used in manufacturing plants. Using a PULSE™ controller and *TETRIX Ardublockly* software along with various sensors, students program a work cell robot to accomplish tasks that might normally be found in a manufacturing environment. By combining parts from the two products, students build quick prototypes with the strength to accomplish automated activities that address STEM standards.

Curriculum features:

- 15 hours, or fifteen 50-minute class periods, of hands-on activities with scope and sequence
- Middle and high school correlations to Next Generation Science, Common Core Math and Language Arts, and ITEEA standards
- Programming with PULSE controller using the graphic-based *TETRIX Ardublockly* along with sensor integration
- Extensive coverage of mechanisms and mechanical systems concepts
- Application of STEM knowledge and 21st-century skills
- Progressive series of activities with culminating real-world manufacturing challenge

Add-ons are available for classes larger than 24.

STEM Unit now uses TETRIX® PULSE™ Robotics Controller!



TETRIX PRIME & EV3

Already have the **TETRIX® PRIME R/C Robotics Set?**

(Find the set on page 9.)



and the **LEGO® MINDSTORMS® Education EV3 Core Set?**



To use EV3 with **TETRIX PRIME**, all you need is the **TETRIX PRIME and EV3 Components Set**.



Add the **TETRIX PRIME and EV3 Curriculum Pack** for a complete solution.

Bring PRIME robots to life in 2018 through STEM curriculum

Integrating robotics into your STEM curriculum can seem daunting; that's why we work hard to equip educators with the tools they need to bring robotics to life in the classroom. Our project-based curriculum involves hands-on learning while actively engaging students in the engineering design process.

NEW!

TETRIX® PRIME Engineering Mobile Robotics Curriculum Pack

RS44465—\$149

Remote controlled

A Pitsco Exclusive

Take the next step in engineering design and robotics with the TETRIX® PRIME Engineering Mobile Robotics Curriculum Pack. This curriculum is designed to help teachers guide students into problem-solving within the world of engineering design and robotics. The guide includes seven activities spread over three units with different challenges for designing remote-controlled TETRIX PRIME robots.

Curriculum features:

- 30-45 hours of curriculum
- 1 teacher guide and 13 student guides to serve a classroom of 24 students working in pairs
- Items required but not included: TETRIX PRIME R/C or Dual-Control Robotics Sets, stopwatches, tape measure, tape, cardboard, and painter's tape



NEW!

TETRIX® PRIME and EV3 Curriculum Pack

RS44466—\$199

Autonomous controlled

A Pitsco Exclusive

Take your TETRIX® PRIME system and LEGO® MINDSTORMS® EV3 lessons to the next level with the TETRIX PRIME and EV3 Curriculum Pack. Students build larger, more robust, and more complex robots with the advanced capabilities of the two systems together. Students will build robots to perform unique tasks and face challenges that put their critical thinking to the test.

Curriculum features:

- 45-70 hours of curriculum
- 1 teacher guide, 13 student guides, and LEGO EV3 Content Editor programs to serve a classroom of 24 students working in pairs
- Items required but not included: LEGO MINDSTORMS EV3 Core Set with sensors, education software, TETRIX PRIME R/C or Dual-Control Robotics Sets, TETRIX PRIME and EV3 Component Set, cardboard, tape measure, markers, construction paper, cotton balls, masking tape, chart paper, and boxes



NEW!

TETRIX® PRIME and EV3 Component Set

RS44590—\$105

A Pitsco Exclusive

The PRIME and EV3 Component Set gives you everything you need to connect a TETRIX® PRIME EV3 Module to the TETRIX PRIME robotics system.

Includes:

- TETRIX PRIME EV3 Module
- 5 TETRIX PRIME LEGO® Mounting Brackets (2-pack)
- 2 TETRIX PRIME DC Motors

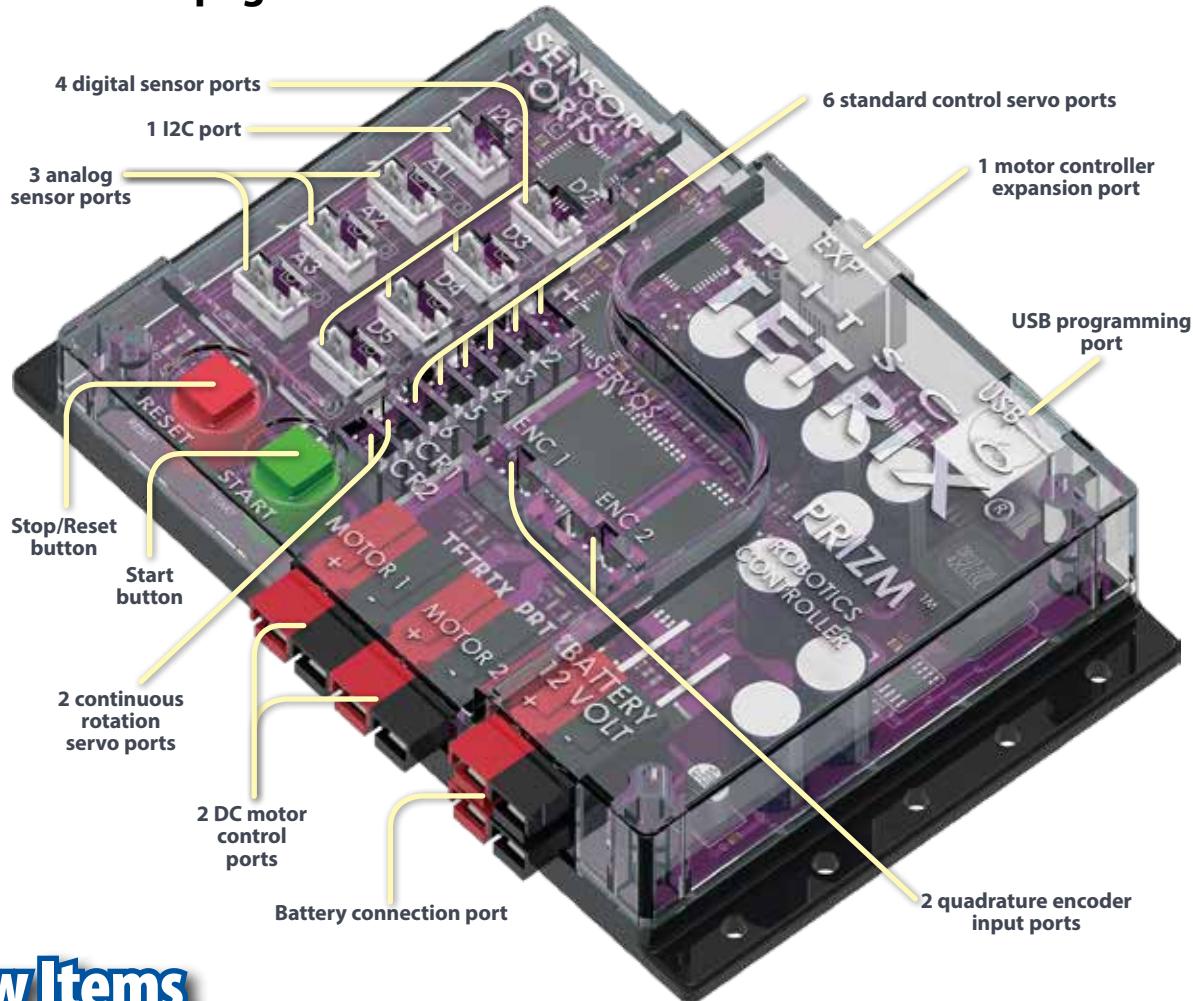


TETRIX® MAX by Pitsco.

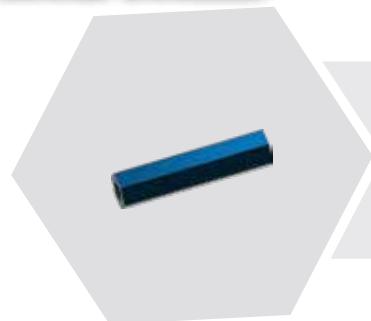
The choice in robotics control is clear.

The **TETRIX® PRIZM® Robotics Controller** is a fully integrated, programmable brain for your bot that features a variety of motor, servo, encoder, and sensor ports with convenient connectors. This controller offers the best of both worlds – a learning tool that is powerful yet easy to use. With **PRIZM** you and your students can take learning to new heights by creating robots that are smarter, more precise, and as real world as it gets.

Learn more on pages 34 and 36.



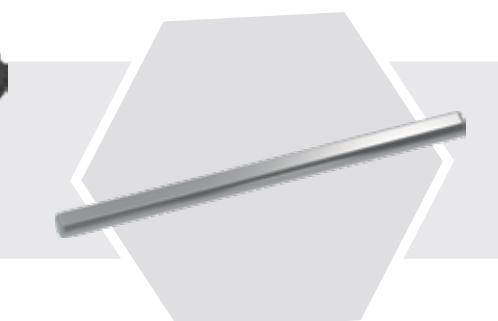
New Items



28 mm Stand-Off – page 41



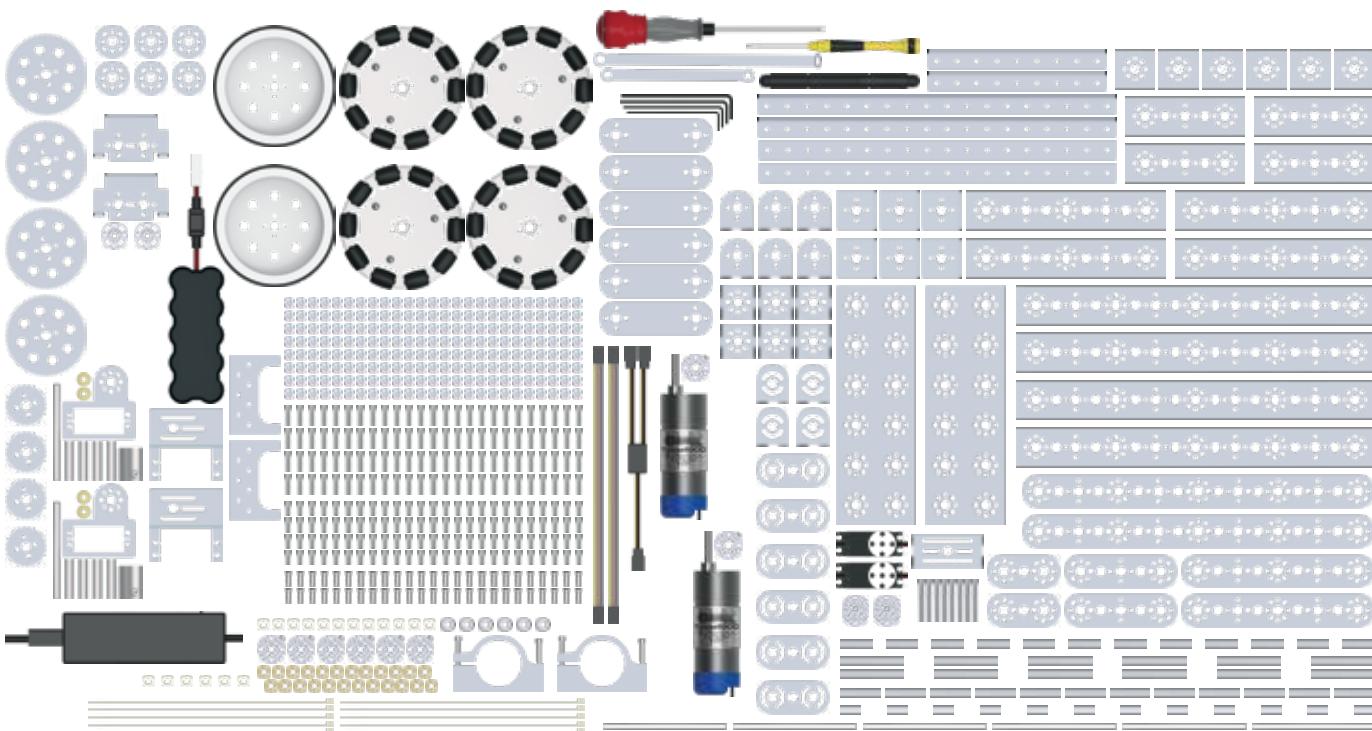
TETRIX® MAX
Gripper Kit – page 46



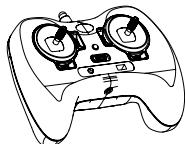
TETRIX® MAX 6 mm Steel Axle
– page 52

Robotics sets designed with teachers in mind

If you can dream up a design, you can build it with the TETRIX® MAX robotics system. Our sets offer an easy entry point into teaching and learning through robotics. The MAX system features heavy-duty, aluminum elements for construction; powerful drive motors; and a huge assortment of motion and structural spare parts, making it an ideal platform for creativity and real-world engineering design. **TETRIX MAX sets, class packs, and getting started packages now include the TorqueNADO® Motor!**



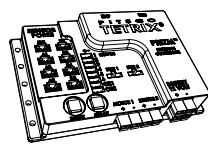
Add the **PRIZM® Robotics Controller** to your robotics collection and **control your bot like never before.**



TETRIX® MAX R/C Robotics Set

Remote controlled

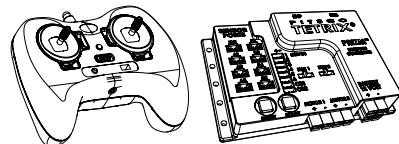
Autonomous controlled



TETRIX® MAX Programmable Robotics Set

Remote controlled

Autonomous controlled



TETRIX® MAX Dual-Control Robotics Set

Remote controlled

Autonomous controlled

TETRIX® MAX R/C Robotics Set

RS41990—\$580

 Remote controlled**A Pitsco Exclusive**

Set contains everything needed for a team of four students to create remote-controlled robots right out of the box.

Includes:

- Gamepad-style, four-channel wireless controller
- R/C motor controller and mounting kit
- 670+ building elements
- Structural, motion, and hardware elements including a variety of wheels, gears, channels, flats, and connectors
- Two TorqueNADO® motors, motor cables, and two 180-degree standard-scale servo motors
- Rechargeable battery pack and charger
- On/off switch and assembly tools
- Sturdy storage bin, lid, and sorting tray
- Printed builder's guide

**Success right out of the box. The MAX R/C Robotics Set Builder's Guide offers:**

- Step-by-step building instructions for three models.
- Tips and tricks to develop sound building habits.
- Nine exciting activities that challenge students to build, iterate, and compete with their designs.

Guide available for download at Pitsco.com/TETRIX.



WARNING: Cancer – P65Warnings.ca.gov

TETRIX® MAX Programmable Robotics Set

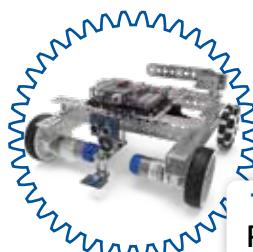
RS43053—\$650

 Autonomous controlled**A Pitsco Exclusive**

Set contains everything needed for a team of four students to create programmable robots using the PRIZM® Robotics Controller.

Includes:

- TETRIX® PRIZM Robotics Controller with USB cable
- Grove Line Finder and Ultrasonic Sensors
- 670+ building elements
- Structural, motion, and hardware elements including a variety of wheels, gears, channels, flats, and connectors
- Two TorqueNADO® motors, motor cables, and two 180-degree standard-scale servo motors
- Rechargeable battery pack and charger
- Battery switch and assembly tools
- Sturdy storage bin, lid, and sorting tray
- Printed guide to programming the PRIZM controller using the *Arduino Software (IDE)*



Success right out of the box. The included programming guide will teach you the essentials of using the *Arduino Software (IDE)* to program TETRIX PRIZM.

TETRIX® MAX TaskBot with PRIZM® Robotics Controller



WARNING: Cancer – P65Warnings.ca.gov

TETRIX® MAX Dual-Control Robotics Set

RS43054—\$775

 Remote controlled **Autonomous controlled****A Pitsco Exclusive**

Get the best of both worlds with this set that contains everything needed for a team of four students to create robots that are both programmable and remote controlled.

Includes:

- TETRIX® PRIZM® Robotics Controller with USB cable
- Grove Line Finder and Ultrasonic Sensors
- Gamepad-style, four-channel wireless controller
- R/C motor controller and mounting kit
- 670+ building elements
- Structural, motion, and hardware elements including a variety of wheels, gears, channels, flats, and connectors
- Two TorqueNADO® motors, motor cables, and two 180-degree standard-scale servo motors
- Rechargeable battery pack and charger
- Battery switch and assembly tools
- Sturdy storage bin, lid, and sorting tray
- Printed builder's guide and guide to programming the PRIZM controller using the *Arduino Software (IDE)*



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Expand your students' creativity and learning.



TETRIX® MAX Expansion Set

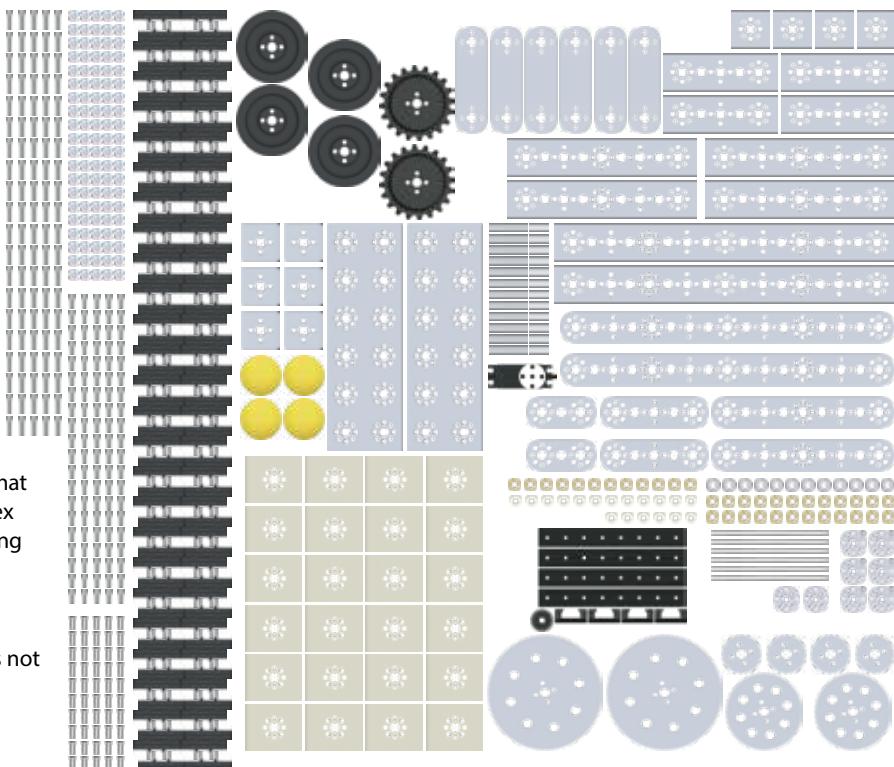
RS41979—\$249

A Pitsco Exclusive

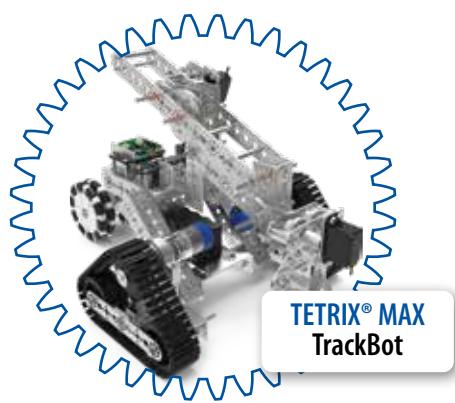
Set contains a large variety of building elements that enable students to build bigger and more complex robots and complete more challenging engineering projects.

Includes:

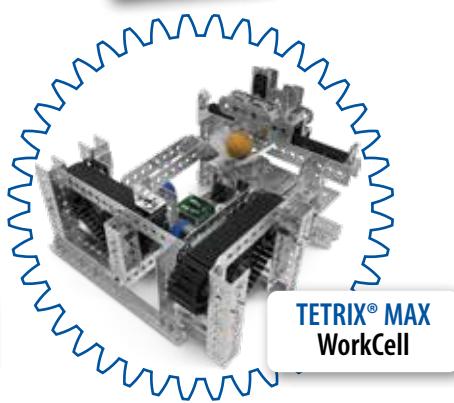
- 630+ total building elements
- Variety of channels, plates, flats, and brackets not found in the robotics sets
- Tank treads, sprockets, idler wheels, and conveyor paddles
- Additional 40-, 80-, and 120-tooth gears, along with rack and pinion linear slide pack
- 1 continuous rotation servo motor
- Axles, bushings, stand-offs, and connecting hardware
- Sturdy storage bin
- Printed builder's guide and activity accessories



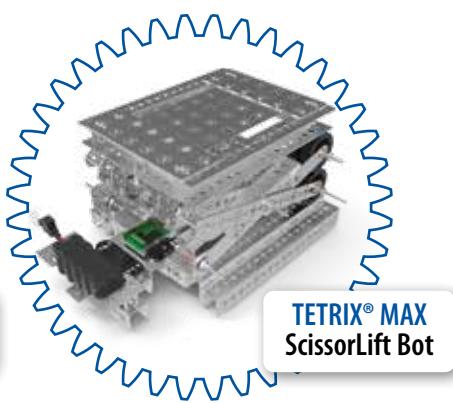
Build bigger, stronger, more complex robots. We'll teach you how. We want every educator and student to feel confident using the TETRIX® system; this is why every MAX Expansion Set comes with a printed builder's guide with instructions for building the three models shown along with corresponding activities for each. This guide can be downloaded for free online.



TETRIX® MAX TrackBot



TETRIX® MAX WorkCell



TETRIX® MAX ScissorLift Bot



Want to learn more about a part or pack available online and in this catalog? Check out our RoboBench video series, which gives viewers additional insights, tips, and tricks to using our robotic building systems. View the series at video.pitsco.com/TETRIX.

Classroom Solutions

Our turnkey offerings make outfitting an entire classroom a breeze. These preconfigured solutions are designed to make implementing TETRIX® MAX in your learning environment easy. Simply choose a package that suits your needs based on how you want to control your bot. With options for remote-controlled robots, programmable robots, and even solutions that come with both, getting started has never been easier.



Remote-Controlled Packages

TETRIX® MAX R/C Class Pack

RS41982—\$3,375

- Remote controlled
- Serves 24 students

A Pitsco Exclusive

The TETRIX® MAX R/C Class Pack offers classrooms a basic solution for introducing R/C robotics.

Includes:

- 6 TETRIX MAX R/C Robotics Sets
- 6 builder's guides



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TETRIX® MAX R/C Getting Started Package

RS41944—\$4,950

- Remote controlled
- Serves 24 students

A Pitsco Exclusive

The TETRIX® MAX R/C Getting Started Package offers classrooms a comprehensive solution including hardware and curriculum geared toward engineering remote-controlled robotics.

Includes:

- 6 TETRIX MAX R/C Robotics Sets
- 6 TETRIX MAX Expansion Sets
- 6 builder's guides
- 6 expansion builder's guides
- Engineering Mobile Robotics Curriculum Pack
- Engineering Design Loop Poster Set



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Classroom Solutions



Programmable Packages

TETRIX® MAX Programmable Class Pack

RS43416—\$3,775

- Autonomous controlled
- Serves 24 students

A Pitsco Exclusive

The TETRIX® MAX Programmable Class Pack offers classrooms a basic solution for introducing and learning through programmable robotics.

Includes:

- 6 TETRIX MAX Programmable Robotics Sets
- 6 programming guides



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TETRIX® MAX Programmable Getting Started Package

RS43417—\$5,395

- Autonomous controlled
- Serves 24 students

A Pitsco Exclusive

The TETRIX® MAX Programmable Getting Started Package offers classrooms a comprehensive solution including hardware and curriculum geared towards introducing and learning through programmable robotics.

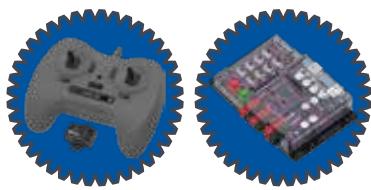
Includes:

- 6 TETRIX MAX Programmable Robotics Sets
- 6 TETRIX MAX Expansion Sets
- 6 expansion builder's guides
- 6 TETRIX PRIZM® programming guides
- TETRIX PRIZM Coding Essentials Curriculum Pack
- Engineering Design Loop Poster Set



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Classroom Solutions



Dual-Control Packages

TETRIX® MAX Dual-Control Class Pack

RS43418—\$4,495

- Remote and autonomous controlled
- Serves 24 students

A Pitsco Exclusive

The TETRIX® MAX Dual-Control Class Pack offers classrooms a basic solution for introducing both remote- and autonomous-controlled robotics.

Includes:

- 6 TETRIX MAX Dual-Control Robotics Sets
- 6 builder's guides
- 6 programming guides



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TETRIX® MAX Dual-Control Getting Started Package

RS43419—\$6,195

- Remote and autonomous controlled
- Serves 24 students

A Pitsco Exclusive

The TETRIX® MAX Dual-Control Getting Started Package offers classrooms a comprehensive solution including hardware and curriculum geared towards introducing and learning through remote-controlled and programmable robotics.

Includes:

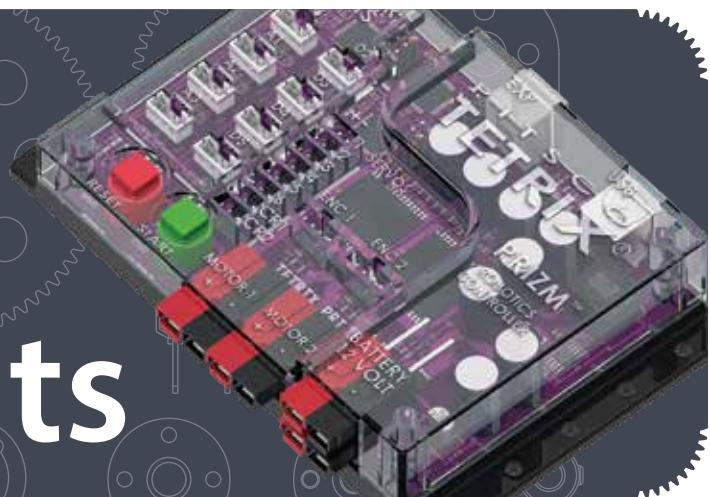
- 6 TETRIX MAX Dual-Control Robotics Sets
- 6 TETRIX MAX Expansion Sets
- 6 builder's guides
- 6 programming guides
- 6 expansion builder's guides
- Engineering Mobile Robotics Curriculum Pack
- TETRIX PRIZM® Coding Essentials Curriculum Pack
- Engineering Design Loop Poster Set



 **WARNING:** Cancer – P65Warnings.ca.gov



Control Elements



Whether you're new to robotics or a seasoned programmer, when it comes to controlling your MAX robot, you've got options, and we're here to help you crack the code.

Remote controlled

Also referred to as driver controlled or radio controlled, R/C technology uses a transmitter and receiver to enable an operator to govern the robot's every move.

A gamepad and receiver are included in all MAX R/C Robotics and Dual-Control Robotics Sets.



Autonomous controlled

An autonomous-controlled robot is able to perform tasks on its own using a set of preprogrammed instructions or code. These robots are able to move, perform work, and even gain information about their surroundings without the need for human interaction.

The TETRIX® PRIZM® Robotics Controller is included in all MAX Programmable Robotics and Dual-Control Robotics Sets. TETRIX MAX is also compatible with LEGO® MINDSTORMS® technology, meaning with a few additional components you can integrate and control TETRIX MAX using your EV3 Brick and sensors.



TETRIX® PRIZM® Robotics Controller

- Users looking to program their TETRIX® MAX robots can do so with the PRIZM® Robotics Controller (43000) (shown on page 36). PRIZM offers users a fully integrated brain for your robot with no additional servo or motor controllers required.
- The PRIZM Robotics Controller enables users to program TETRIX MAX elements using the *Arduino Software (IDE)*, which is compatible with Windows, Mac OS X 10.7 or newer, and Linux devices that contain a USB port.
- The *Arduino Software (IDE)* must be downloaded from its proprietary site. The TETRIX PRIZM plug-in library for the *Arduino Software (IDE)* is available at Pitsco.com/TETRIX-PRIZM-Robotics-Controller#downloads.



LEGO® MINDSTORMS® EV3 Brick

- Control MAX robots using EV3 technology in combination with the TETRIX® MAX DC Motor Expansion Controller (44354) and the TETRIX MAX Servo Motor Expansion Controller (44355) (shown on page 37).
- Users can program MAX using the EV3 programming language.
- Software blocks and sample programs for EV3 are available on Pitsco.com/TETRIX.

TETRIX® Wireless Joystick Gamepad System

RS40239—\$39.95

A Pitsco Exclusive

- Four-channel, gamepad-style controller with dual joysticks and R2004GF receiver included
- Features interference-free performance, servo-reversing abilities built into the controller, and motor trim adjustment
- Gamepad and receiver are delivered paired to one another but can be linked to other receivers when needed.
- Designed for compatibility with both TETRIX® MAX and TETRIX PRIME systems
- Controller is 2.4 GHz and includes four AA batteries.
- Controller color might vary.

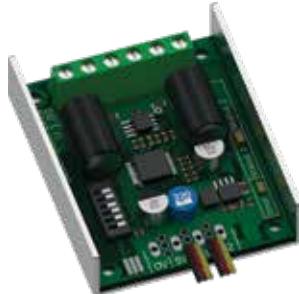


TETRIX® R/C Receiver

RS42084—\$11.95

A Pitsco Exclusive

- Offers a replacement for a lost or damaged 2.4 GHz receiver
- This version of the R/C receiver is compatible with only the 40239 gray wireless gamepad and is not compatible with previous versions of the joystick controller.
- Comes with built-in mounting tabs that align with the TETRIX® hole pattern

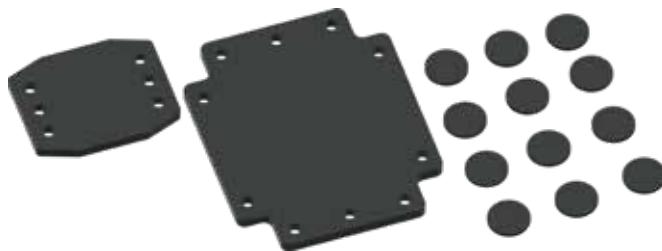


TETRIX® MAX R/C Motor Controller

RS42073—\$89.95

A Pitsco Exclusive

- Controls speed and direction of the 12-volt DC motors
- Plugs into the TETRIX® wireless gamepad receiver (sold separately) to create remote-controlled robots



TETRIX® R/C Components Mounting Kit

RS41928—\$9.95

A Pitsco Exclusive

- Includes the components needed for mounting the R/C receiver and R/C speed controller to structural elements
- Comes with mounting decks and attachment components needed for aligning with the TETRIX® hole pattern



Idea: Make MiniMAX smart by adding the PRIZM® controller and sensors! Code him to move, sense, and even respond to commands!

Check out our smart version of MiniMAX on YouTube by searching for TETRIX® PRIZM MiniMAX Bot.

TETRIX® PRIZM® Robotics Controller

RS43000—\$179

A Pitsco Exclusive

This programmable robotics controller, specifically developed for the TETRIX® MAX system, enables teachers and students to program their robots using the *Arduino Software (IDE)*.

Features:

- 32 KB flash programmable memory
- ATmega328P processor with Arduino Optiboot bootloader installed
- 4 digital sensor ports (D2 can be used as a serial port) and 3 analog sensor ports
- 1 I2C port, 1 USB programming port, 1 motor controller expansion port, and 2 quadrature encoder input ports
- 2 high-current DC motor control ports
- 6 standard control servo ports and 2 continuous rotation (CR) servo ports
- Battery connection port (additional port used to daisy-chain power to other devices)
- Programmable Start button (green) and a non-programmable Stop/Reset button (red)
- Comes with USB cable, power switch, and motor cables
- Includes Quick-Start Guide with instructions for downloading the *Arduino Software (IDE)*, which is compatible with Windows, Mac OS X 10.7 or newer, and Linux devices that have a USB port



NEW!

TETRIX® PRIZM® Component Set

RS43052—\$220

A Pitsco Exclusive

This set has everything you need to turn a TETRIX® MAX R/C Robotics Set into a TETRIX MAX Programmable Robotics Set.

Features:

- TETRIX PRIZM® Robotics Controller with USB cable, power switch, and motor cables
- Line Finder Sensor, Ultrasonic Sensor, and sensor mounts
- Sensor connector cables
- Printed programming guide



Line Finder Sensor Pack

RS43056—\$11.95

A Pitsco Exclusive

- Line-tracker module that transmits a digital signal to the TETRIX® PRIZM® Robotics Controller, enabling a robot to follow a black line on a white background or vice versa
- Comes with mount, connecting sensor cable, and hardware for attaching the sensor to the TETRIX hole pattern



Ultrasonic Sensor Pack

RS43055—\$34.50

A Pitsco Exclusive

- Noncontact distance measurement module that works at 42 kHz to transmit a digital signal to the TETRIX® PRIZM® Robotics Controller
- Detects range of an object within 3 to 400 cm
- Comes with mount, connecting sensor cable, and hardware for attaching the sensor to the TETRIX hole pattern

Accessories



Line Finder Sensor Mount

RS43076—\$4.35

A Pitsco Exclusive



Ultrasonic Sensor Mount

RS43077—\$4.95

A Pitsco Exclusive



Sensor Extension Cable

RS43338—\$2.95



TETRIX® MAX DC Motor Expansion Controller

RS44354—\$129.95

A Pitsco Exclusive

- Connects to the PRIZM® expansion port, enabling users to control up to two additional 12-volt DC motors
- Up to four motor controllers can be connected to the PRIZM expansion port
- Has two H-bridge outputs to control the speed and direction of two DC motors
- Includes two quadrature encoder input ports
- Additional power and expansion ports support daisy-chain configurations.
- Supported programming languages include Arduino and EV3.
- Can be connected to the LEGO® EV3 Brick. Software blocks can be downloaded from the product page for this controller at Pitsco.com/TETRIX.



TETRIX® MAX Servo Motor Expansion Controller

RS44355—\$99.95

A Pitsco Exclusive

- Designed to use with TETRIX® PRIZM® Robotics Controller
- Connects to the PRIZM expansion port, enabling users to control up to six additional R/C servo motors and two additional continuous rotation servo motors
- Up to four motor controllers can be connected to the PRIZM expansion port.
- Additional power and expansion ports support daisy-chain configurations.
- Supported programming languages include Arduino and EV3.
- Can be connected to the LEGO® EV3 Brick. Software blocks can be downloaded from the product page for this controller at Pitsco.com/TETRIX.

MAX in action

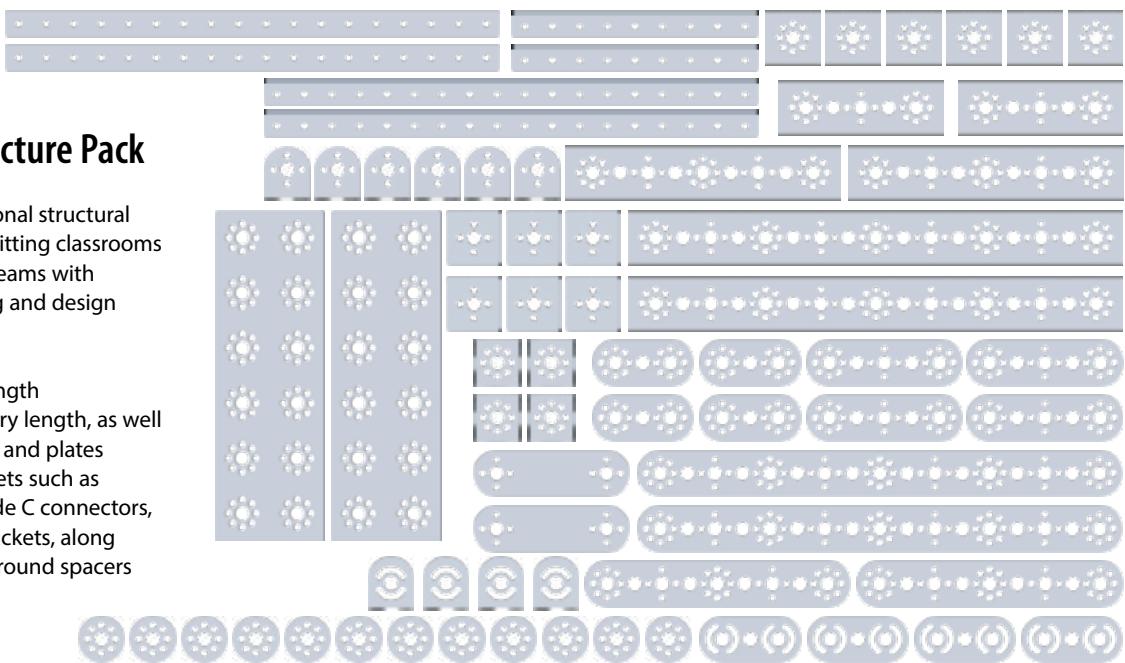
EV3 users looking to move to a more robust building system can use the brick to control TETRIX® MAX.

This platform compatibility allows for infinite avenues of robot design, such as our walking RhinoBot!





Structural Elements



TETRIX® MAX Structure Pack

RS42998—\$119

This pack offers 70 additional structural elements, perfect for outfitting classrooms or robotics competition teams with an assortment of building and design components.

Includes:

- Channels in every length
- Variety of flats in every length, as well as flat brackets, bars, and plates
- Assortment of brackets such as corner brackets, inside C connectors, and angle corner brackets, along with angle bars and round spacers

TETRIX® MAX Channels

Made of heavy-duty aluminum, these channels are the structural base for the TETRIX® MAX building system. Available in five lengths to provide flexible building options, the channels can be cut to custom lengths with a metal-cutting blade.

32 mm Channel

RS39065 (pkg of 2)—\$9.95

32 mm x 32 mm x 32 mm

96 mm Channel

RS39066 (pkg of 2)—\$11.95

96 mm x 32 mm x 32 mm

160 mm Channel

RS39067 (pkg of 2)—\$14.95

160 mm x 32 mm x 32 mm

288 mm Channel

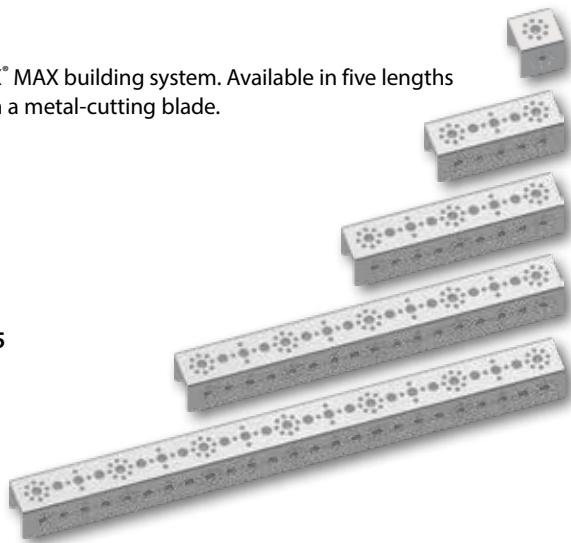
RS39068 (pkg of 2)—\$16.95

288 mm x 32 mm x 32 mm

416 mm Channel

RS39069 (One Channel)—\$17.95

416 mm x 32 mm x 32 mm





TETRIX® MAX Inside Corner Bracket

RS39281 (pkg of 2)—\$4.95

- Two-sided bracket
- Attaches to the outside of TETRIX® Channels and secures them to other structural elements
- Heavy-duty aluminum



TETRIX® MAX Inside C Connector

RS39270 (pkg of 2)—\$4.95

- Three-sided bracket that fits inside TETRIX® Channels
- Connects channels to other structural elements to create perpendicular joints
- Creates a strong connection point by attaching to two sides of a structural element
- Heavy-duty aluminum



TETRIX® MAX Adjustable Angle Corner Bracket

RS41790 (pkg of 2)—\$4.95

- Slotted corner brackets
- Enables structural elements to be connected at custom angles
- Heavy-duty aluminum

TETRIX® MAX Flats

Made of heavy-duty aluminum, TETRIX® Flats are versatile elements that can be used to create flat surfaces, scoops, rails, braces, brackets, gussets, and other custom pieces. Available in four lengths to provide flexible building options, the flats can be shaped into various angles using the Metal-Bending Tool (38562), found on page 55.

64 mm Flat

RS39274 (pkg of 2)—\$4.95

64 mm x 27 mm



96 mm Flat

RS39273 (pkg of 2)—\$6.95

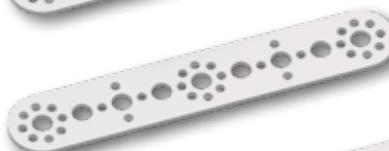
96 mm x 27 mm



160 mm Flat

RS39272 (pkg of 2)—\$7.95

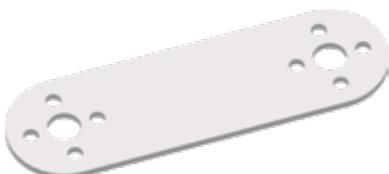
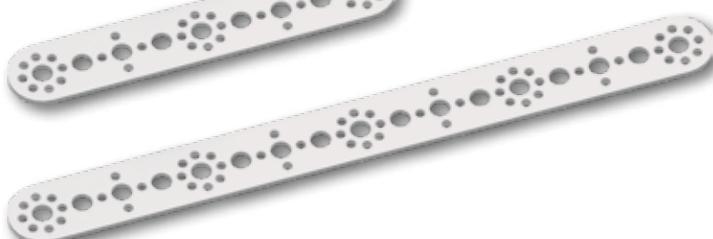
160 mm x 27 mm



288 mm Flat

RS39271 (pkg of 2)—\$9.95

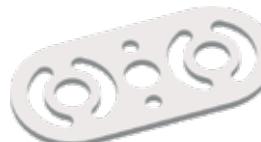
288 mm x 27 mm



TETRIX® MAX Flat Bracket

RS39061 (pkg of 2)—\$5.95

- Connects structural elements, such as channels, to one another
- Can be used to create flat building surfaces
- Heavy-duty aluminum



TETRIX® MAX Adjustable Angle Flat Bracket

RS41791 (pkg of 2)—\$5.95

- Enables the connection of structural elements at custom angles
- Measures 64 mm x 27 mm
- Heavy-duty aluminum



TETRIX® MAX L Bracket

RS39062 (pkg of 2)—\$4.95

- Enables the connection of structural elements at 90-degree angles
- Accommodates for the standard wall thickness of TETRIX® MAX structural elements to ensure hole-pattern alignment
- Heavy-duty aluminum

TETRIX® MAX Angles

Made of heavy-duty aluminum, these channels are the structural base for the TETRIX® MAX building system. Available in five lengths to provide flexible building options, the channels can be cut to custom lengths with a metal-cutting blade.

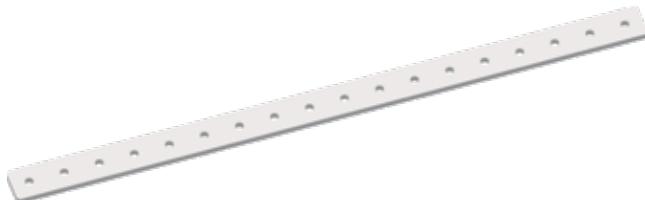
144 mm Flat Angle

RS39072 (pkg of 2)—\$10.95
144 mm x 16 mm x 16 mm



288 mm Flat Angle

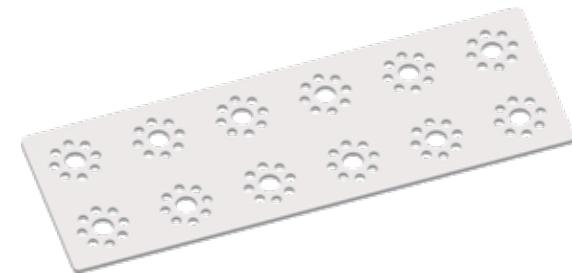
RS39071 (pkg of 2)—\$13.95
288 mm x 16 mm x 16 mm



TETRIX® MAX Flat Bar

RS39070 (pkg of 2)—\$9.95

- Bar with holes used to connect structural elements to one another
- Aids in creating strong joints due to its increased thickness
- Measures 288 mm long and approximately 3 mm thick
- Can be cut to custom lengths with a metal-cutting blade
- Heavy-duty aluminum



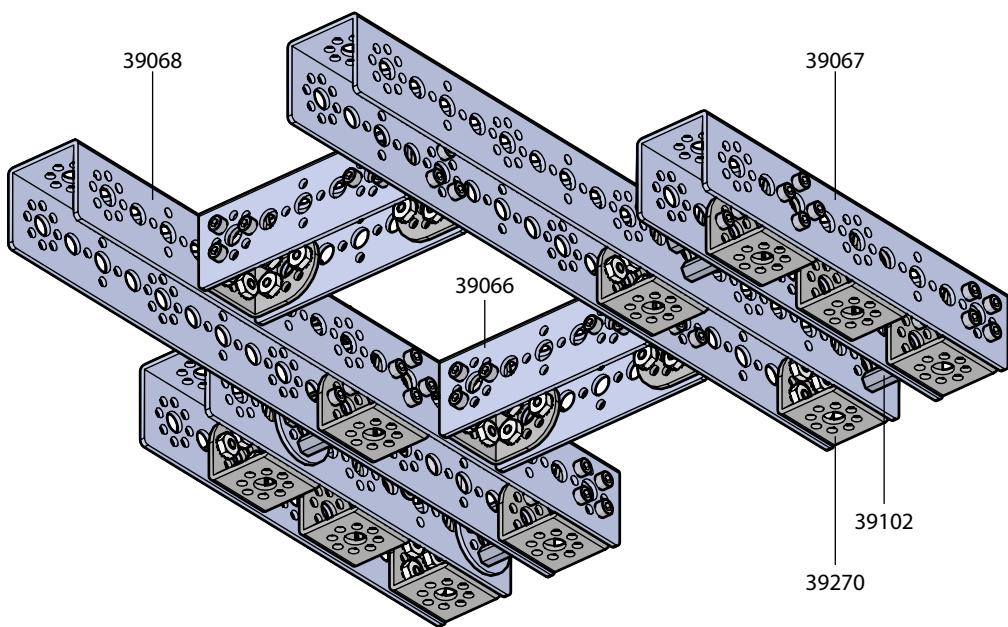
TETRIX® MAX Flat Building Plate

RS39073 (pkg of 2)—\$12.95

- Creates flat building surfaces
- Measures 64 mm x 192 mm
- Can be cut to custom lengths with a metal-cutting blade
- Heavy-duty aluminum

MAX in action

This subassembly shows the use of the inside C connectors and channels to create a sturdy robot chassis. The C connectors are being used in two different ways. The first is to box in the outer channels in the design to provide additional structural strength. The second can be seen in the middle of the chassis where they are used to connect channel elements together at an end point. The multiple building opportunities provided by the connectors make them very versatile elements.



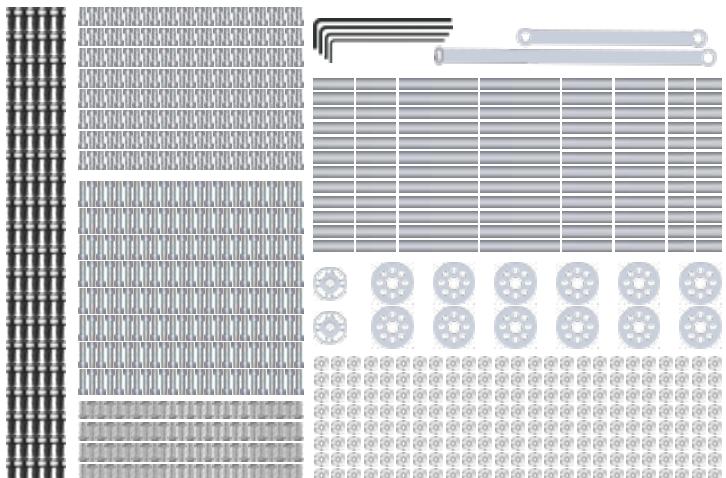
TETRIX® MAX Hardware Pack

RS42999—\$99

This pack offers more than 900 pieces of TETRIX® hardware, perfect for outfitting entire classrooms or robotics competition teams with all the connector spare parts needed for designing robots.

Includes:

- Stand-off posts in every length
- Variety of screws and fasteners in various sizes, including socket head cap screws, button head cap screws, kep nuts, and quick rivets
- Assortment of spacers
- Assembly tools such as hex keys and wrench set



TETRIX® Stand-Off Posts

Create consistent spacing between structural elements with these hex stand-off posts. Made of aluminum, the posts are female/female and feature a 6-32 thread.



1" Stand-Off

RS39102 (pkg of 12)—\$3.95



32 mm Stand-Off

RS39107 (pkg of 12)—\$4.95



28 mm Stand-Off NEW!

RS44707 (pkg of 12)—\$5.95



16 mm Stand-Off

RS41253 (pkg of 12)—\$5.95



TETRIX® MAX Threaded Round Spacer

RS39592 (pkg of 2)—\$11.95

- Features four 6-32 thread tapped holes and is half the width of the channel
- Provides 16 mm spacing between structural elements, ensuring hole-pattern alignment
- Useful for obtaining proper gear mesh spacing on servo mechanisms
- Aluminum



TETRIX® MAX Flat Round Spacer

RS39387 (pkg of 6)—\$5.95

- Maintains proper spacing between two elements attached on either side of a structural component
- Measures 2 mm thick – the same wall thickness as structural elements
- Aluminum



Button Head Cap Screw

RS39111 (pkg of 50)—\$9.75

- Features a low-profile head – great for areas where elements are close to the screw head
- 6-32 thread
- Requires 5/64" Hex Key, which can be purchased separately (39104), to tighten and loosen the screw



Kep Nut

RS39094 (pkg of 100)—\$3.25

- Features star washer, which locks onto structural elements
- 6-32 thread



TETRIX® MAX Plastic Quick Rivet

RS39277 (pkg of 100)—\$7.95

- Makes prototyping robot designs quick and easy
- Reusable pop rivet requires no tools and is faster than tightening nuts and bolts when testing out designs.
- Insert pin in rivet to secure to structural elements.
- Easily removable
- Nylon

Socket Head Cap Screws

These 6-32 Socket Head Cap Screws connect your robot design. Requires hex keys, sold separately, to tighten and loosen the screws.

5/16" SHCS

RS39098 (pkg of 100)—\$10.75



1/2" SHCS

RS39097 (pkg of 100)—\$10.75



1-1/2" SHCS

RS39195 (pkg of 20)—\$8.65



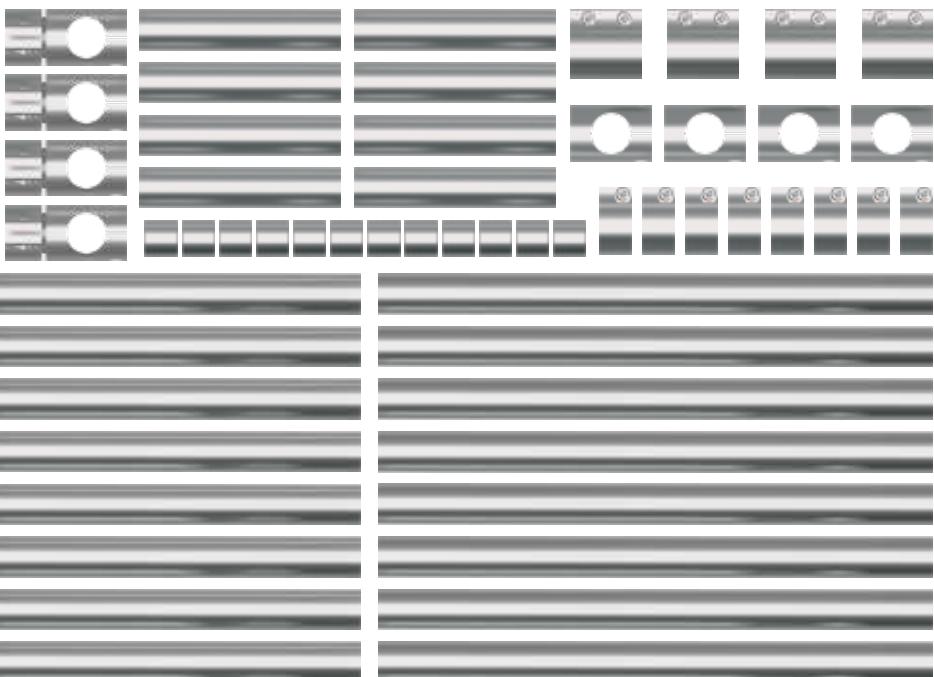
TETRIX® MAX Tubes Pack

RS43002—\$99

This pack offers 50+ tubing structural elements, perfect for outfitting classrooms or robotics competition teams with an assortment of building and design components.

Includes:

- Tube elements in every length
- Corner blocks, anchor blocks, tubing couplers, tube reinforcers, and clamps



TETRIX® MAX Tubes

Made of heavy-duty aluminum, these lightweight yet strong tubes are great for maximizing strength-to-weight ratio. Available in three sizes, they can also be cut to custom sizes with a metal-cutting blade.

80 mm Tube

RS39074 (pkg of 2)—\$2.95



145 mm Tube

RS39075 (pkg of 2)—\$5.95



220 mm Tube

RS39076 (pkg of 2)—\$8.95





TETRIX® MAX Tube Clamp

RS39077 (pkg of 2)—\$6.95

- Fastens tubes to structural elements from one end
- Creates perpendicular joints between tubes and structural elements
- Heavy-duty aluminum



TETRIX® MAX Tubing Anchor Block

RS39377 (pkg of 2)—\$7.95

- Connects structural elements, brackets, and motor mounts anywhere along the entire length of a tube
- Creates parallel joints between tubes and structural elements
- Heavy-duty aluminum



TETRIX® MAX Tubing Corner Block

RS39378 (pkg of 2)—\$9.95

- Creates perpendicular joints between tubes
- Heavy-duty aluminum



TETRIX® MAX Tubing Coupler

RS39379 (pkg of 2)—\$6.95

- Connects two tubes end to end to create extra-long components
- Heavy-duty aluminum



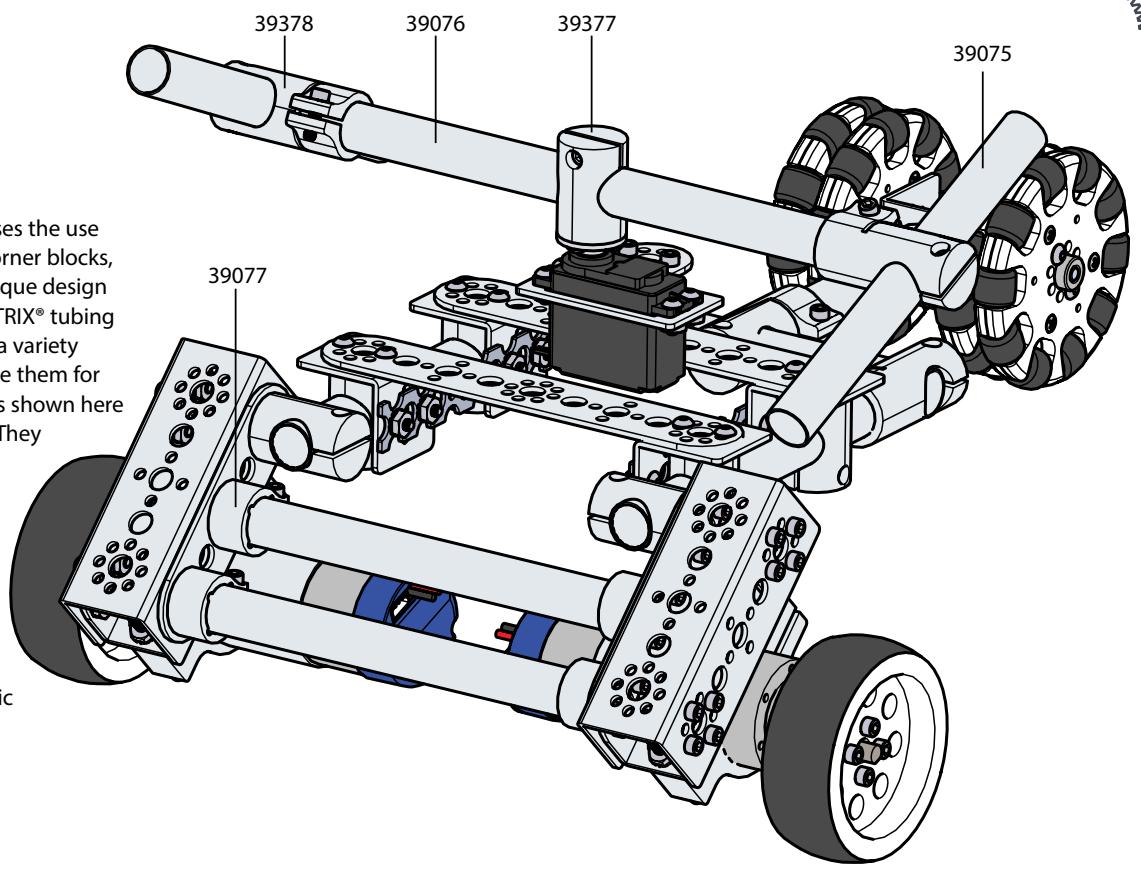
TETRIX® MAX Tube Reinforcers Pack

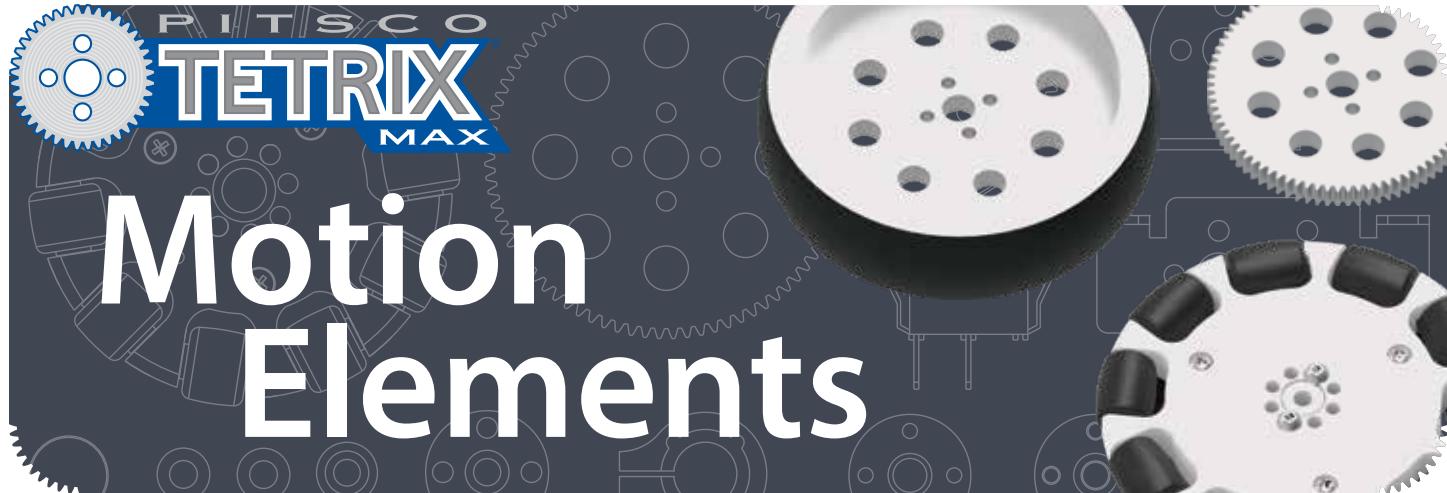
RS39193 (pkg of 2)—\$1.95

- Reinforces tubes, ensuring clamps don't compromise structural integrity of tubing elements
- Precision-machined aluminum

MAX in action

This subassembly showcases the use of tubes, anchor blocks, corner blocks, and clamps to create a unique design for a robot chassis. The TETRIX® tubing components are great for a variety of applications. You can use them for structural reinforcement as shown here between the two motors. They also offer the opportunity to create some interesting structural designs as the blocks and clamps enable you to position the tubing elements at a variety of angles. Tubes are also useful when you need to create a lightweight robotic arm or sweeper element.





TorqueNADO® Motor

Heavy-duty Powerpole connection

High-strength gear box



Built-in quadrature encoder
Encoder cable included

700 oz-in. of torque

TETRIX® MAX TorqueNADO® Motor

RS44260—\$29.95

- Take your TETRIX® robots to the next level with a stronger 12-volt DC motor with 100 rpm and 700 oz-in. of torque.
- Designed with a built-in, high-resolution Hall effect encoder for precise motor control
- Based on user feedback and created specifically to withstand the stress of intense robotics competitions
- Includes encoder cable
- Compatible with all TETRIX MAX DC Motor Mounts, sold separately.

TorqueNADO® Motor Specifications

Physical:

Overall Length	134.1 mm (5.28 in.)
Maximum Diameter	37 mm
Body Material	Steel with plastic encoder housing
Motor Weight	324 g
Output Shaft Diameter	6 mm with 0.5 mm deep flat
Output Shaft Style	D shaft
Output Shaft Length	26 mm
Gear Ratio	60:1
Gear Material	All steel
Gear Box Style	Spur

Electrical and Performance:

No-Load Speed	100 rpm
Voltage (nominal)	12 volts DC
Stall Torque	700 oz-in.
Motor Type	DC brushed
Electrical Connection	Powerpoles for motor, 4-pin encoder connector

Encoder:

Encoder Voltage	3.3/5 volts DC
Encoder Type	Hall effect
Countable Events per Revolution (output shaft)	1,440
Gear Box Style	Spur

**NEW!****TETRIX® MAX TorqueNADO® Motor Pack**

RS45121—\$155

Keeping spare motors on hand is always a good idea. Keeping TETRIX® TorqueNADO® motors with 100 rpm and 700 oz-in. of torque is an even better idea. We've made stocking up on these critical elements easy with this bulk pack.

Includes:

- Four TETRIX MAX TorqueNADO Motors
- Four motor mounts
- Four motor hubs

**TETRIX® MAX Motor Mount**

RS39089—\$7.95

- Attaches the 12-volt DC motor to your robot
- Includes the TETRIX® MAX Motor Mount, two kep nuts, and two cap screws

**TETRIX® MAX DC Motor Mount**

RS39376—\$15.95

- Attaches the 12-volt DC motor to your robot
- Features more attachment holes, enabling this two-piece motor mount to be integrated into builds in a variety of ways – such as between two structural elements
- This versatile mount can be used as a structural element for attaching two channels together.
- Enables you to place motors between or alongside channels as well as on top of them

**NEW!****FIRST® Control Hub Cable Conversion Pack**

RS45066—\$16.95

This pack of eight cables enables direct connection of the TETRIX® MAX TorqueNADO® Motor to the FIRST®-approved control hub.

**TETRIX® MAX Powerpole Motor Cable**

RS41352—\$3.25

- Attaches the 12-volt DC motor to the power source
- Connects to the TETRIX® PRIZM® Robotics Controller (43000)
- Features Anderson Powerpole Connectors
- Cable is 18" in length

**TETRIX® MAX Powerpole Extension Cable**

RS43390—\$11.95

- Extends the length of the TETRIX® DC motor and battery cables
- Comes equipped with Powerpole connectors on both ends
- Each cable is 18" long.
- Connects multiple cables together to create longer lengths

**TETRIX® MAX Powerpole Adapter Cable**

RS44531—\$3.50

- An adapter cable for the TorqueNADO® Motor
- Connects to the screw terminals of the TETRIX® MAX R/C Motor Controller and the Powerpole cable of the TorqueNADO so they can be used together
- 100 mm cable

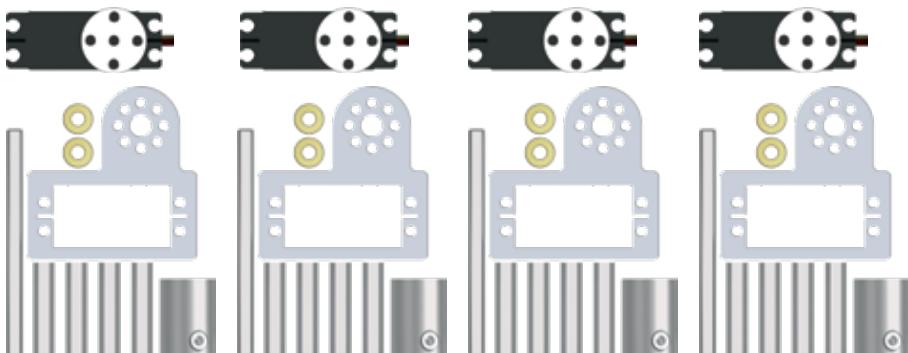
TETRIX® MAX Servo Motor Pack

RS43050—\$139

For when additional servo motors are needed to bring a robotic creation to life, this bulk pack provides you with a number of extra motors and mounting brackets.

Includes:

- 4 TETRIX® MAX Standard-Scale Servo Motors (39197)
- 4 standard servo mounting kits (41789)

**Servo Extension**

RS39081—\$2.15

- Offers extended servo motor connector length for building larger-scale robots
- Features 18" extension

**TETRIX® MAX Pivot Bearing**

RS39093—\$2.95

- Offers replacement pivot bearing for all TETRIX® pivot arms and brackets
- Measures 3 mm

**TETRIX® MAX Servo Horn**

RS39020—\$5.95

- Enables servo motors to connect to TETRIX® motion or structural elements
- Heavy-duty aluminum

**Servo Y Connector**

RS39082—\$3.85

- Connects two servo motors to a single channel

TETRIX® MAX Standard-Scale Servo Motor

RS39197—\$26.50

- Allows for exact positioning within a 180-degree range of motion
- Features controllers capable of generating a pulse range from 600 usec to 2,400 usec
- Huge selection of compatible mounting brackets means you have a variety of attachment options.
- Combine with 41789, 39381, 39382, 39280, or 39060 to attach this servo motor to MAX structural and motion elements.
- Comes with servo horn

**TETRIX® MAX Continuous Rotation Servo**

RS39177—\$19.95

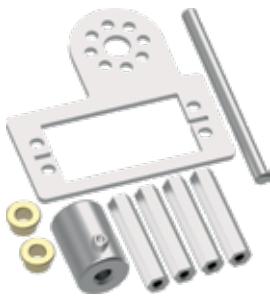
- Allows for continuous direction of movement, both forward and backward
- Features fully proportional forward and reverse speed control
- Designed with a wide neutral dead band to eliminate the creep that occurs in many other continuous rotation servos
- Huge selection of compatible mounting brackets means you have a variety of attachment options.
- Combine with 41789, 39381, 39382, 39280, or 39060 to attach this servo motor to MAX structural and motion elements.

**NEW!****TETRIX® MAX Gripper Kit**

RS44609—\$12.95

- Add form and functionality to your TETRIX® MAX robot with the TETRIX MAX Gripper Kit.
- Allows for a variety of mounting options with integrated MAX hole pattern
- Increases range of motion to accommodate picking up larger items
- Grips round objects as well as flat objects with the gripper's curved jaw and flat surfaces, which provide a more versatile gripping surface
- Provides removable gripper extension rails to increase strength and versatility
- Requires a standard servo motor (39197), sold separately.





TETRIX® MAX Standard Servo Mounting Kit

RS41789—\$10.95

- Enables easy alignment of standard-scale servo motors (39197 and 39177) shafts to the TETRIX® MAX hole pattern
- Features front-facing mounting holes, enabling the output shaft to be supported by a structural element, eliminating side load, and increasing efficiency of the standard-scale servo motors (39197 and 39177)
- Includes a mounting plate, bronze bearings, stand-offs, aluminum servo shaft adapter, a 64 mm steel D-shaft axle, and an inspiration card with mounting options
- Heavy-duty aluminum



TETRIX® MAX Standard-Scale Servo Front Mounting Bracket

RS39381—\$5.95

- Features front-facing mounting holes, enabling the output shaft to be supported by a structural element, eliminating side load, and increasing efficiency of the standard-scale servo motors (39197 and 39177)
- Easily attaches either standard-scale servo motor (39197 and 39177) to MAX structural elements
- Each mount holds one servo in place.
- Includes two brackets and six stand-off posts (32 mm)
- Heavy-duty aluminum



TETRIX® MAX Standard-Scale Servo Frame Mounting Bracket

RS39382—\$11.95

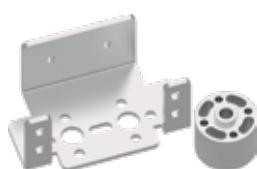
- Features multiple mounting points, which offer a variety of attachment and positioning opportunities for the standard-scale servo motors (39197 and 39177)
- Used with the 16 mm threaded round spacer to attach the standard-scale servo motors (39197 and 39177) to a structural element
- Each mount holds one servo in place.
- Includes one bracket and two threaded round spacers (39592)
- Heavy-duty aluminum



TETRIX® MAX Standard-Scale Pivot Arm with Bearing Pack

RS39593—\$8.95

- Used with the standard-scale servo frame mounting bracket (39382) or the standard-scale servo motor bracket (39060), the pivot arm creates strong, durable pivot joints while minimizing side load on the output shaft of the standard-scale servo motors (39197 and 39177).
- Easily attaches structural elements to the pivoting mechanism of either standard-scale servo motor (39197 and 39177)
- Includes 3 mm bearing pack
- Heavy-duty aluminum



TETRIX® MAX Single Standard-Scale Servo Motor Bracket

RS39060 (pkg of 2)—\$9.95

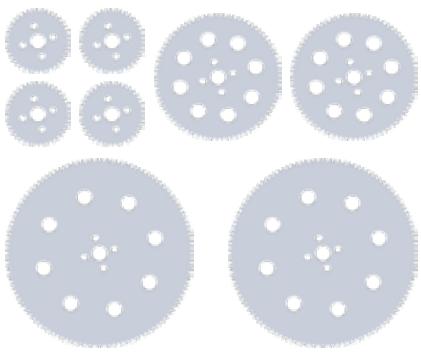
- Used with the 16 mm threaded round spacer to attach the standard-scale servo motors (39197 and 39177) to a structural element
- Each mount holds one servo in place.
- Includes two brackets and two threaded round spacers (39592)
- Heavy-duty aluminum



TETRIX® MAX Adjustable Servo Bracket

RS39280 (pkg of 2)—\$10.95

- Allows for precise servo motor placement to ensure proper gear alignment
- Features 16 mm of horizontal adjustability
- Works with either standard-scale servo motor (39197 and 39177)
- Heavy-duty aluminum



TETRIX® MAX Gear Pack

RS31901—\$89.95

RS39028 40-Tooth Gear—\$22.95

RS39086 80-Tooth Gear—\$17.95

RS39085 120-Tooth Gear—\$27.95

This pack comes with all three sizes of the standard TETRIX® Gears.

Includes:

- Four 40-tooth gears
- Two 80-tooth gears
- Two 120-tooth gears

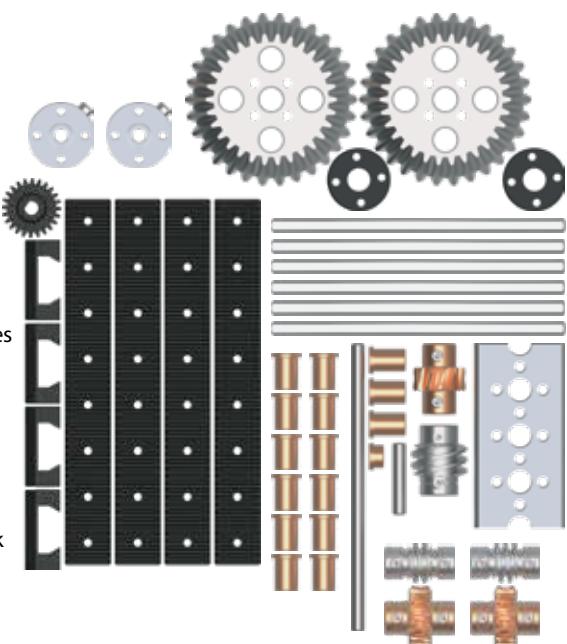
TETRIX® MAX Advanced Gear Pack

RS43001—\$125

This pack offers a comprehensive assortment of the advanced gearing mechanisms available in the TETRIX® MAX building system. Featuring 48 total elements, this parts pack enables students to take their exploration of transmission and motion to a whole new level.

Includes:

- Worm gear box as well as a 10:1 and a 20:1 worm gear
- Rack and pinion linear slide pack
- Bevel gear and acetal bearings
- Assortment of axles, bushings, and hubs



TETRIX® MAX Bevel Gear & Acetal Bearing

RS38007—\$29.95

- Allows for the transfer of the direction of motion at 90 degrees
- Includes two extremely sturdy bevel gears and two acetal bearings
- Heavy-duty aluminum

TETRIX® MAX Rack and Pinion Linear Slide Pack

RS39300—\$19.95

- Enables the transformation of rotational motion into linear motion
- Adds a conveyor system or forklift to your robotics creations
- Rack gears can be laid end to end or used individually and attached to structural elements.
- Includes four GF nylon rack gears (5" long), four GF nylon slide blocks, and one aluminum pinion gear



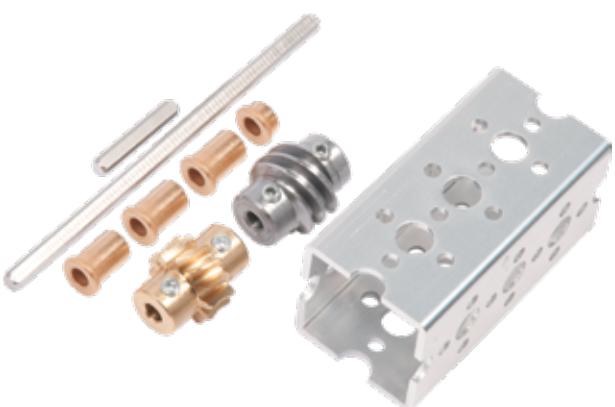
TETRIX® MAX Worm Gear Box

RS39375—\$34.95

RS39900 10:1 Worm Gear—\$15.95

RS39901 20:1 Worm Gear—\$15.95

- Utilizes a 4:1 gear ratio for slow and smooth rotational motion
- Contains helical spur gears that match the pitch of the worm gear. This minimizes backlash and greatly reduces the chance of a back-driving gear motor, so a position can be held even when power is not applied.
- All-metal construction with heavy-duty, boxed-in channel for durability and power
- Includes a channel, one helical spur gear, one steel worm gear, three bronze bushings, one 6 mm bushing, one 25 mm axle, one 100 mm axle, and an inspiration card
- Additional gearing options are available for when more power is needed. The TETRIX® 10:1 Worm Gear (39900) or TETRIX 20:1 Worm Gear (39901) can be purchased separately, and both are compatible with the components of this gear box.



TETRIX® MAX Sprocket and Chain Pack

RS39174—\$69.95

Featuring the entire variety of sprocket sizes and five feet of steel chain, this pack not only gives you everything you need to create a chain drive system – it's also a great value.

Includes:

- 2 of each of the 32-tooth sprockets, 24-tooth sprockets, and 16-tooth sprockets
- 4 master connecting links to go with five feet of 0.250" steel chain
- Requires the Chain Breaker Tool (44713), which is sold separately



TETRIX® MAX Sprocket Packs

Sprockets and chains are ideal for creating drive systems that need to transfer power over a distance or for powering multiple elements by a single source. We have a variety of sprocket sizes, all made of heavy-duty aluminum to fit your every need. All sprockets are designed specifically for the TETRIX® MAX building system and work with the 0.250" steel chain.



16-Tooth Sprocket Pack

RS39165 (pkg of 2)—\$16.95
35.8 mm outside diameter



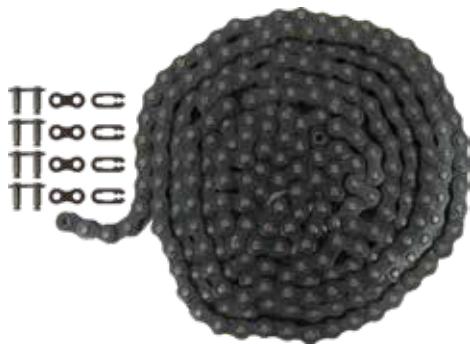
24-Tooth Sprocket Pack

RS39169 (pkg of 2)—\$22.95
51.9 mm outside diameter



32-Tooth Sprocket Pack

RS39171 (pkg of 2)—\$29.95
67.8 mm outside diameter



TETRIX® MAX Chain with Links

RS39173—\$13.95

- Works with all ratios of TETRIX® sprockets
- Includes five feet of 0.250" steel chain and four master connecting links
- Custom lengths of chain can be created using the Chain Breaker Tool (44713), sold separately.



TETRIX® MAX Chain Breaker Tool

RS44713—\$16.95

- Quickly and easily changes the length of the 0.250" TETRIX® Chain with Links
- Measure the length you need for your application, position the chain in the breaker block, and turn the side-mounted screw to remove a chain-linking pin.
- Use a connecting link (included in the TETRIX Chain with Links pack [39173]) to reconnect the chain.

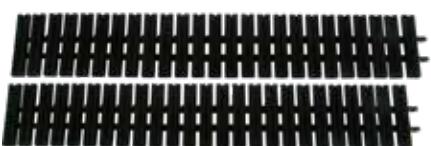
TETRIX® MAX Tank Tread Kit

RS36468—\$99.95

This pack provides everything needed to create robots that feature a tank tread drive or conveyor belt system.

Includes:

- 200 tank tread chain links
- 2 tank tread sprockets
- 6 idler wheels
- 4 TETRIX® Channels (32 mm)
- 6 steel axles (100 mm)
- 12 axle set collars
- 12 axle spacers (1/8")
- 24 bronze bushings



TETRIX® MAX Tank Tread Chain Links

RS36460—\$28.95

- Use these links to create the length of tread needed for your application.
- Features snap-together TETRIX® chain links
- Includes 100 chain links, which create up to 3.25 feet of tread
- ABS plastic



TETRIX® MAX Tank Tread Rubber Insert

RS36464 (pkg of 50)—\$17.95

- Slide the T-shaped ends of these inserts into the tank tread chain links for additional traction.
- Rubber



TETRIX® MAX Tank Tread Idler Wheel

RS36462 (pkg of 2)—\$10.95

- Keeps your tank tread belt in alignment while providing support for the treads
- ABS plastic



TETRIX® MAX Tank Tread Accessory Pack

RS39250—\$32.95

- Turns your tank tread into a conveyor belt system
- Includes 24 tank tread conveyor paddles and 50 tank tread rubber inserts



TETRIX® MAX Tank Tread Conveyor Paddle

RS36463 (pkg of 24)—\$17.95

- Features T-shaped ends that slide into the tank tread chain links
- Creates conveyor-type mechanisms
- Each paddle measures 50 mm x 40 mm.
- Nylon



TETRIX® MAX Tank Tread Sprocket

RS36461 (pkg of 2)—\$9.95

- Creates the drive system for tank treads
- Attaches to TETRIX® DC Motors, motor hubs, and servos
- Each sprocket has 20 teeth.
- ABS plastic

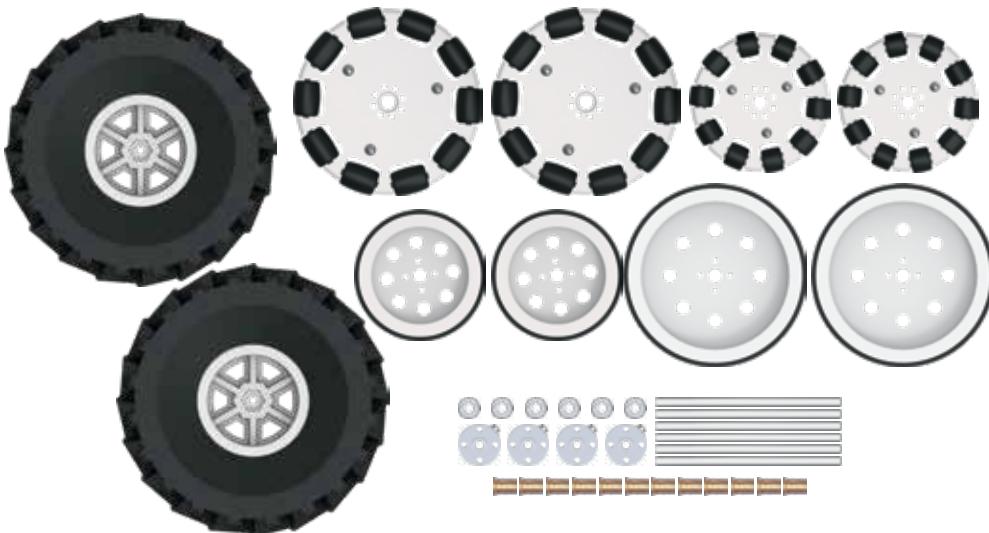
TETRIX® MAX Wheel Pack

RS43003—\$115

This pack offers a comprehensive assortment of wheels available in the TETRIX® MAX building system. Featuring 38 total elements, this parts pack enables students to get their robots moving in style.

Includes:

- 3" and 4" omni wheels
- 3" and 4" wheels
- Set of all-terrain tires
- Assortment of axles, bushings, hubs, and set collars

**TETRIX® MAX Wheels**

Add some mobility to your TETRIX® robot with these standard, heavy-duty wheels. Available in two sizes.



3" Wheel
RS39025—\$7.95



4" Wheel
RS39055—\$9.95

TETRIX® MAX Omni Wheel Packs

Featuring 10 rollers, these omni wheels have the ability to drive forward like typical wheels but also laterally with limited friction. Available in two sizes.



3" Omni Wheel Pack
RS31132 (pkg of 2)—\$19.99



4" Omni Wheel Pack
RS36466 (pkg of 2)—\$24.99

**TETRIX® MAX All-Terrain Tire**

RS39282—\$21.95

- Features aggressive tread design best for climbing or taking on uneven, rough, and soft surfaces
- Offers unique monster-truck look
- Tire tread has a little squish factor to help grab surfaces.
- Has 5" outside diameter and 2-1/2" width
- Includes a nylon rim, foam insert, TETRIX® all-terrain axle hub, TETRIX all-terrain motor hub, and mounting hardware

**TETRIX® MAX Hub/Axle Adapter**

RS39279—\$6.95

- Connects the TETRIX® All-Terrain Tire (39282) to an axle
- Features the industry-standard 12 mm hex pattern
- Includes two adapters and mounting hardware

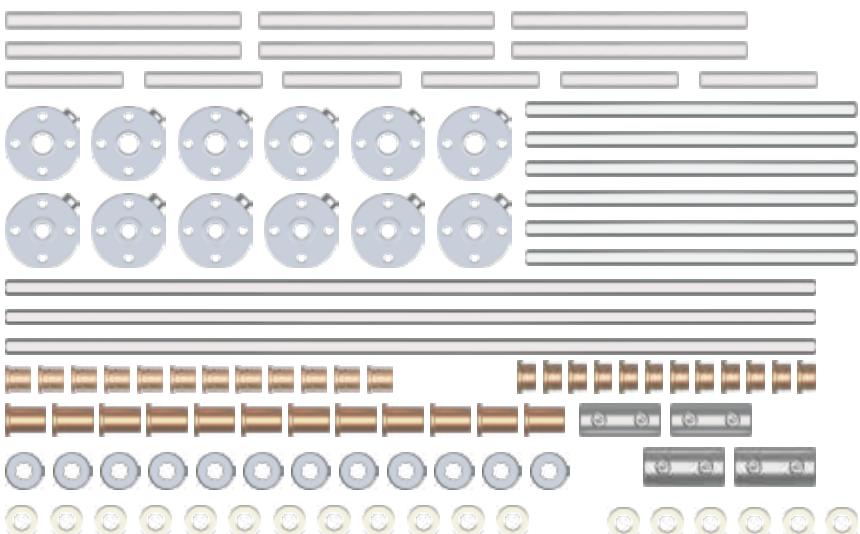
TETRIX® MAX Hub and Axle Pack

RS43004—\$79

This pack offers more than 100 TETRIX® motion elements recommended for use with an assortment of gears and wheels. Perfect for outfitting entire classrooms or robotics competition teams with all the hub and axle spare parts needed for getting robots running smoothly.

Includes:

- Variety of axles in every length and diameter offered
- Assortment of spacers, bushings, hubs, couplers, and set collars



TETRIX® MAX Axles

Attach wheels and gears to motors with these precision-ground steel D-shaft axles. Available in two lengths, the axles can also be cut to custom lengths with a metal-cutting blade.

4.75 mm x 100 mm Axle

RS39088 (pkg of 6)—\$15.95



4.75 mm x 250 mm Axle

RS35871 (pkg of 3)—\$15.95



6 mm x 100 mm Axle

RS44708 (pkg of 6)—\$16.95

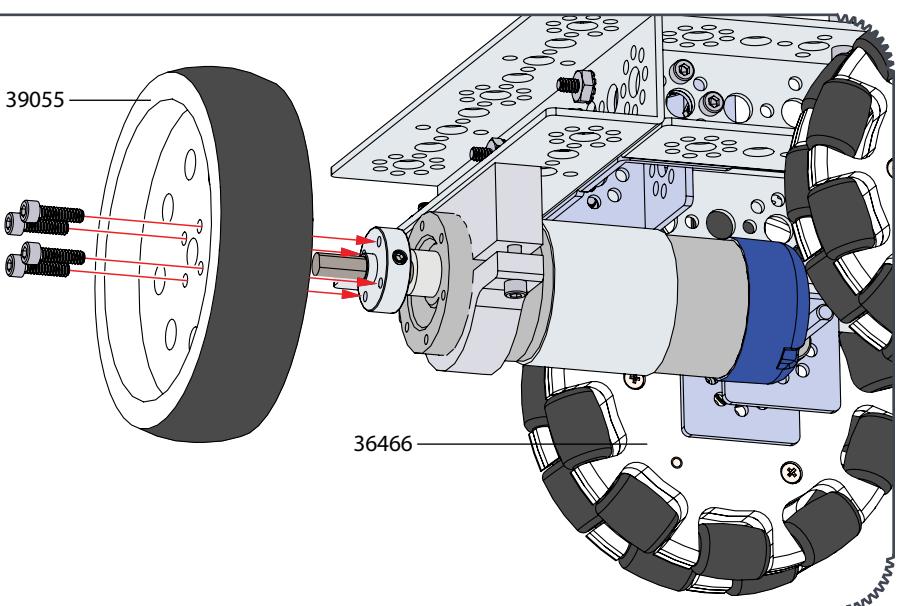
NEW!



MAX in action

This subassembly showcases how the TETRIX® MAX Wheels can be connected to a 12-volt DC motor using a motor shaft hub.

Also shown in this image are the TETRIX MAX Omni Wheels. These wheels are outlined with free-spinning discs that run perpendicular to the turning direction. This design is how omni wheels enable robots to move laterally with great ease.





TETRIX® MAX Axle Shaft Coupler

RS39275 (pkg of 2)—\$4.95

- Connects two axles end to end to create extra-long components
- Heavy-duty aluminum



TETRIX® MAX Motor/Axle Shaft Coupler

RS39276 (pkg of 2)—\$4.95

- Connects a 6 mm motor shaft to a 5 mm axle shaft
- Features one side that fits the motor shaft while the other side fits the axle shaft



TETRIX® MAX Axle Hub

RS39172 (pkg of 2)—\$6.95

- Attaches gears and wheels to axles and axles to structural elements
- Fits 4.75 mm D-shaft axles
- Comes with set screws
- Heavy-duty aluminum



TETRIX® MAX Motor Shaft Hub

RS39079 (pkg of 2)—\$5.95

- Attaches wheels and gears to motor shafts
- Comes with a set screw
- Fits 6 mm D-shaft axles
- Heavy-duty aluminum



TETRIX® MAX Axle Set Collar

RS39092 (pkg of 6)—\$3.95

- Locks a rotating axle to secure the horizontal alignment
- Heavy-duty aluminum



1/8" Spacer

RS39100 (pkg of 12)—\$1.95



3/8" Spacer

RS39101 (pkg of 6)—\$.95



TETRIX® MAX 11 mm Bronze Bushing

RS39091 (pkg of 12)—\$13.95

- Reduces friction between steel axles and structural elements
- Measures 11 mm long and is lubricated
- Bronze



TETRIX® MAX 4 mm Bronze Bushing

RS41792 (pkg of 12)—\$13.95

- Reduces friction between steel axles and structural elements
- Measures 4 mm long and is lubricated
- Handy for tighter space requirements
- Bronze



TETRIX® MAX Gear Hub Spacer

RS39090 (pkg of 2)—\$6.95

- Provides consistent spacing between wheels and gears
- Includes four cap screws for each spacer



TETRIX® MAX Acetal Bearing

RS38008 (pkg of 2)—\$7.95

- Provides extra support when building mechanisms that interact with heavy-duty loads
- Aligns with the hole pattern
- Measures 22 mm diameter x 9.25 mm
- Acetal



Power, Tools, and Accessories



TETRIX® MAX 12-Volt Battery Pack

RS41135—\$29.95

- Rechargeable 10-cell, 12-volt AA battery pack
- 2,000 mAh NiMH pack features a built-in, 15-amp replaceable fuse for safety.
- Charger (41399) for battery sold separately

WARNING: Cancer – P65Warnings.ca.gov



TETRIX® MAX 12-Volt Rechargeable NiMH Battery Pack

RS39057—\$49.95

- Rechargeable 10-cell, 12-volt battery pack
- 3,000 mAh NiMH pack features a built-in, 20-amp replaceable fuse for safety
- Charger (41399) for battery sold separately

WARNING: Cancer – P65Warnings.ca.gov



Global NiMH Battery Pack Charger

RS41399—\$24.95

- Charges both the 41135 and 39057 TETRIX® MAX rechargeable battery packs
- Comes with two detachable plug adapters, one for North America and one for Europe



TETRIX® MAX Battery Clips

RS38009—\$5.95

- Provides safe and sturdy housing for the TETRIX® MAX 12-Volt Rechargeable NiMH Battery Pack (39057)
- Made of heavy-duty aluminum



TETRIX® R/C Switch Kit

RS39129—\$6.95

- Controls the power from the battery pack with the flip of a switch
- Intended for use with the R/C Motor Controller (42073)



TETRIX® Switch Mounting Bracket

RS39176—\$2.95

- Mounts the on/off power switch (39129) with ease to your MAX robot
- Made of black acrylic



TETRIX® PRIZM® On/Off Switch Kit

RS43169—\$12.95

- Controls the power from the battery pack to the PRIZM® Robotics Controller with the flip of a switch
- Intended for use with the PRIZM Robotics Controller (43000)

**Battery Holder**

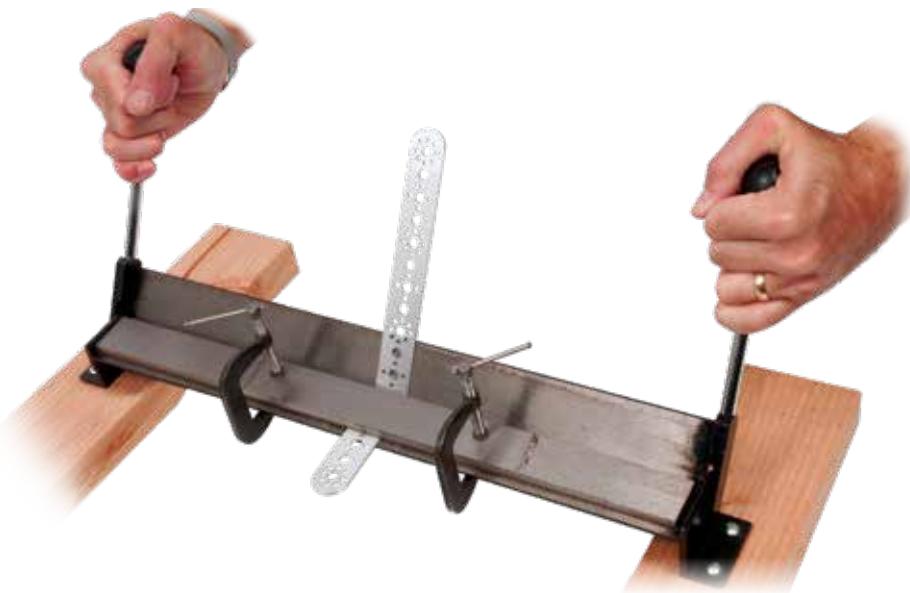
RS39136—\$4.95

- Holds eight AA batteries

**AA Batteries**

RS51046 (AA cell, pkg of 2)—\$2.15

- Lasts up to three times longer than ordinary dry cells

**Metal-Bending Tool**

RS38562—\$71.75

- Bends TETRIX® Flats or 16-gauge steel pieces up to 90 degrees
- Designed for benchtop use; wood base and clamps not included
- Measures 21" L x 3" W x 3-1/2" D

**Miniature Ball-Point Hex Driver**

RS40341—\$3.25

- Secures thumbscrews and socket head cap screws to TETRIX® PRIME and MAX elements
- 6" blade length
- 7/64" hex size

**Multi-Nut Pliers**

RS39130—\$26.50

- Holds nuts in place while bolts are tightened
- Long, narrow neck helps reach into tight places.

**TETRIX® Wrench Set**

RS38001 (pkg of 2)—\$5.95

- Holds kep nuts and stand-off building components in place while robot is assembled
- Includes 2 stamped wrenches



Tube Cutter

RS43037—\$10.75

- Cuts the 5/8" diameter structural tubing for TETRIX® MAX robots
- Cutting diameter range of 1/8" to 7/8"



Cable Ties

RS58335—\$15.85

- Comes with 500 colorful cable ties in a variety of lengths from 4" to 8"
- Great for organizing and fastening down loose robot wires
- Includes screw-on lid for secure storage



Balldriver Hex Keys

RS35859—\$12.65

- Features a ProHold tip to make screwing and unscrewing faster and easier – even when dealing with awkward angles
- Made of high-torque steel
- Comes in the following inch sizes: 0.050, 1/16, 5/64, 3/32, 7/64, 1/8, 9/64, and 5/32



Hex Keys

RS39104—\$1.25

- Comes with all four sizes of Hex Keys needed for TETRIX® hex pieces
- Includes one each of 7/64", 3/32", 1/16", and 5/64" keys



4-in-1 Screwdriver

RS36404—\$2.15

- Versatile tool for tightening screws in small spaces, such as for wiring and sensor applications
- Features two capped ends – an end with a Phillips head and an end with a flat head
- Each end features a small and extra-small size.



2-in-1 Screwdriver

RS42991—\$3.25

- Ideal tool for mounting TETRIX® MAX and PRIME servo motors to mounts and for assembling the PRIME Gripper Kit
- Features an end with a No. 1 Phillips drive and an end with a 1/8" flat head



X300 Safety Glasses

RS34190—\$2.15

- Protects eyes from potential harm when manipulating robotics elements
- Lightweight, anti-scratch glasses in a sleek design
- Provides impact strength, optical clarity, and 99.9% UV protection
- Meets ANSI Z87.1-2003 and ANSI with High Impact Standards



Hook-and-Loop Fastener

RS51974—\$27.50

- Includes a 10-foot strip of material that is 3/4" wide
- Helps hold wires and robot accessories in place



Wide Rubber Bands

RS56136 (pkg of 50)—\$2.15

- Measure approximately 1/2" width x 2" length
- Stretch around wheels for enhanced traction or friction, or use as a pulley belt.

**22" Portable Storage Solution**

RS44149—\$55

- Features 27 removable bins
- Durable resin construction with metal handle and latches
- Built-in legs for stability when in the open position
- Measures 22" x 12-1/8" x 6-5/8"

**Extra Deep Bin**

RS31130—\$9.65

- Measures 12" W x 16-1/2" D x 8-3/4" H
- Offers additional storage for TETRIX® MAX spare parts

**Lid for Standard Tray**

RS31131—\$3.85

- Measures 11-1/8" x 17"
- Translucent lid fits on top of the Extra Deep Bin (31130).

**TETRIX® PRIME Storage Bin and Lid**

RS40666—\$12.95

- Measures 12" W x 16-1/2" D x 5-3/4" H and is black in color
- Offers additional storage for TETRIX® spare parts
- Includes 11-1/8" x 17" translucent lid

**Sorting Tray (6 compartments)**

RS40682—\$8

- Fits within the blue, red, black, and gray storage bins
- Offers six different sections for keeping elements organized

**Mobile Storage Unit**

RS38757—\$695

A Pitsco Exclusive

- Designed to house TETRIX® storage bins in three sections
- Unit measures 44" x 41" x 19-1/2"
- Features 36 adjustable rails to fit any bin configuration
- Made of melamine with a 2 mm PVC edge band
- Sits on 2" rolling casters
- Assembly required



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Curriculum that makes learning come to life

Robotics provides a great hook for getting students totally engaged in STEM learning, but without the right instructional materials, the opportunity to apply the knowledge gained can fall by the wayside. Our project-based curriculum not only involves hands-on exploration, it also actively engages students in the engineering design process, helping them to better grasp the concepts and to apply the skills they are learning.

TETRIX® PRIZM® Coding Essentials Curriculum Pack

RS43378—\$149

Autonomous controlled

A Pitsco Exclusive

Intended for use with the TETRIX® MAX Programmable (43053) or Dual-Control (43054) Robotics Sets*, the TETRIX PRIZM® Coding Essentials Curriculum Pack enables teachers to deliver engaging robotics lessons that challenge students to take their engineering and coding knowledge to the next level. Designed to build student confidence and generate enthusiasm for the fields of programming, engineering, and robotics, the curriculum delivers more than 60 hours of standards-based, project-based activities and related assessment materials.



Curriculum features:

- More than five activities and six open-ended challenges
- Extensive coverage of programming concepts using the TETRIX PRIZM Robotics Controller and Arduino Software (*IDE*)
- Application of STEM knowledge and 21st-century skills
- Progressive series of activities that culminate with open-ended challenges
- High school correlations to the Next Generation Science, Common Core Math and Language Arts, Skills for the 21st Century, and ITEEA standards
- Resources such as building instructions, assessment tools, and glossary along with teacher and student procedure outlines

Delivered with one teacher guide and seven student guides to serve a classroom of 24 students.

*TETRIX MAX Programmable and Dual-Control Robotics Sets sold separately.

TETRIX® MAX Engineering Mobile Robotics Curriculum Pack

RS59793—\$119

Remote controlled

A Pitsco Exclusive

Intended for use with the TETRIX® MAX R/C Robotics Set* (41990), the TETRIX MAX Engineering Mobile Robotics Curriculum Pack applies students' creativity to the field of robotics, helping them explore engineering, simple machines, torque, and power through a series of hands-on activities.



Curriculum features:

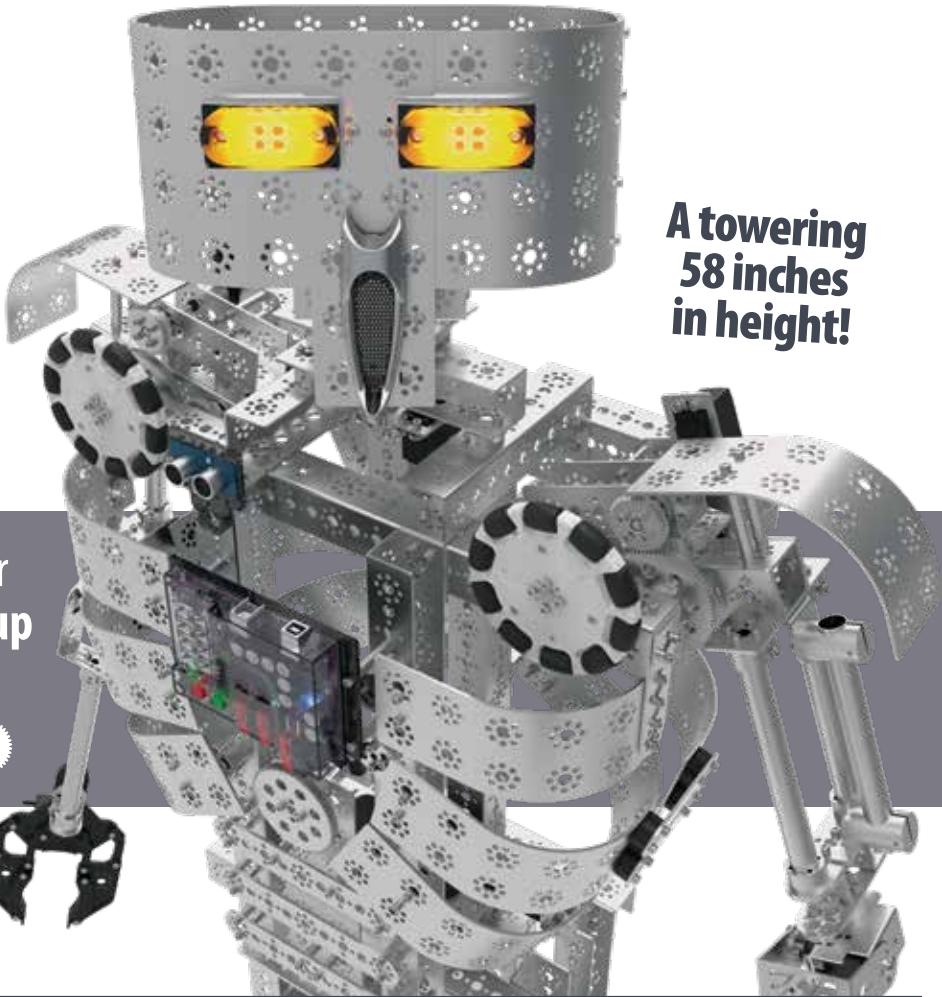
- More than six activities and four open-ended challenges that task groups of two to four students with creating robots that draw, dance, herd golf balls, and more
- More than 35 hours of curriculum
- Extensive coverage of mechanisms and mechanical systems concepts
- Application of STEM knowledge and 21st-century skills
- Progressive series of activities that culminate with open-ended challenges
- Middle and high school correlations to Next Generation Science, Common Core Math and Language Arts, and ITEEA standards
- Resources such as building instructions, assessment tools, and glossary along with teacher and student procedure outlines

Delivered with one teacher guide and seven student guides to serve a classroom of 24 students.
*TETRIX MAX R/C Robotics Set is sold separately.



Mr. Robot Reboot

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classroom near you!



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NEW!

TETRIX® MAX Competition in a Box

RS44587—\$545

RS44588 TETRIX® Competition Arena—\$375

A Pitsco Exclusive

Bring robotics competitions to the classroom with the Competition in a Box. This package consists of a guide that introduces students to robotics competitions, numerous competition components, and a highly customizable competition arena system. The competition arena system is quick and easy to set up for a multitude of sizes and layouts depending on the type of competition and the space available. The curriculum contains more than 45 hours of activities and competitions divided among three competition zones. Zones 1 and 2 focus on R/C robotics while Zone 3 has students programming autonomous robots using PRIZM® and the Arduino Software (IDE). All activities and competitions are open-ended, allowing students to design and build their own robots while incorporating the engineering design process and systems thinking to solve each challenge.

Includes:

- Competition Arena (44588) that consists of floor tiles, wall panels, and posts to build a 10' x 10' arena that can be altered to fit the classroom
- Student guides (7) that walk students through 10 activities and three competitions
- Teacher's guide with setup instructions, tips, competitions guidelines, and standards correlations
- White tape for line following
- Competition elements including Ping-Pong balls (16), foam golf balls (16), spools (20), and 9 oz cups (40)
- Rulers (2) and spring scales (2) for robot testing and analysis
- Rubber bands
- Containers for storage

*Recommended for use with TETRIX® MAX Dual-Control Robotics Sets.



The platform of choice for robotics competitions worldwide

Strength, flexibility, and real-world application make TETRIX® the building system of choice for competitive robotics events across the globe. Pitsco Education is proud to partner with the following organizations, all with the common goal of creating the next generation of great problem solvers, innovators, and creative thinkers.



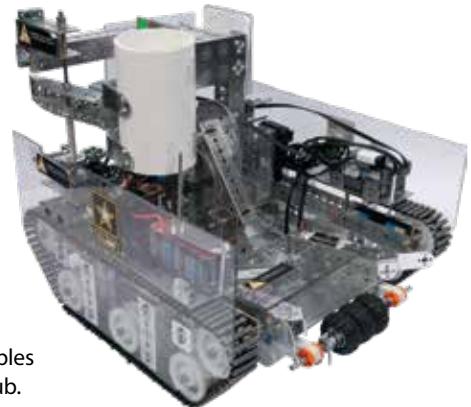
TETRIX® FIRST® Tech Challenge Competition Set

RS44706—\$709.95

The TETRIX® FIRST® Tech Challenge Competition Set was the first approved kit of parts that was cocreated and designed with US FIRST partners and teams. This set contains a large array of building elements that enables teams to create rumble-ready robots year after year.

In addition to the TETRIX FIRST Tech Challenge Competition Set, you will receive a pack of eight cables that enable you to connect the TETRIX TorqueNADO® Motors and encoders to the FIRST Control Hub.

Get your students involved in FIRST Tech Challenge and learn more at Firstinspires.org/robotics/ftc.



SkillsUSA® Robotics: Urban Search & Rescue

RS37410—\$675

SkillsUSA® is a partnership of students, teachers, and industry working together to ensure America has a skilled workforce. The Robotics: Urban Search & Rescue (USAR) competition challenges students to design a tactical search and rescue robot such as those employed by emergency service personnel (fire, police, and military). As the demand for designers, skilled technicians, and manufacturing workers who are fluent in mechanical design and electrical systems continues to grow, it is imperative that our future labor force be on the leading edge of current and emerging technologies and possess the technical and team skills necessary to maintain industry leadership in design, manufacture, maintenance, and operation of life-saving robotic equipment. Developing these skills is what the USAR competition is all about. Camera not included in set.

Additional parts, including the TETRIX MAX Wireless Camera Kit, are available at Pitsco.com/USAR. Find out how you can challenge your students at SkillsUSA.org.



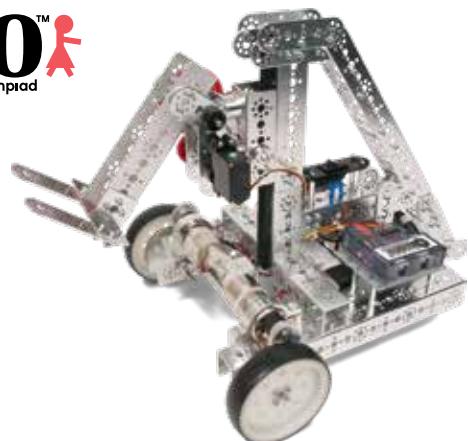
World Robot Olympiad™

RS44620 WRO™ Competition Set —\$999

RS44621 WRO™ Competition Set with myRIO—\$1,695

Much like an Olympics for robotics, World Robot Olympiad™ (WRO™) brings together young people from all over the world to develop their creativity, design, and problem-solving skills through challenging and educational robot competitions. With 36 participating countries and more than 15,000 teams across four competition levels, WRO is a global force focused on developing the skills needed for students to be future innovators and leaders. Pitsco Education is a proud sponsor of the Advanced Robotics Challenge (ARC), an open competition for students ages 17-25.

Explore more about the WRO Advanced Robotics Challenge at Wroboto.org.



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Go to our online catalog at Pitsco.com/TETRIX. Shop online with confidence on our secure e-commerce site.

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Simply complete the order form and drop it in the mail. Please fill out the form completely and accurately. This enables us to serve you better. If paying with a PO, please supply a copy of the PO via email or mail. Mail your order to:

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P.O. Box 1708
Pittsburg, KS 66762

4. Email

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Answerline: 800-358-4983

Contact us. We'll help. We promise.

Our friendly customer service staff will assist you in resolving any concerns. We want you to be completely satisfied.

Curriculum Assistance

If you need help finding curriculum or activities for a specific aspect of your class, we're ready to help.

Right to Know

If you need "Right to Know" information, we have SDS (Safety Data Sheets, also referred to as Material Safety Data Sheets) for any product that falls under the statutes of federal legislation. SDS information may be obtained from the website or by emailing a request to Pitsco.com/help.

California Proposition 65

Pitsco Education complies with the California Proposition 65 law and has labeled any products in this catalog that fall under that law with a warning. The applicable warnings are listed below. Please visit P65Warnings.ca.gov for complete details.

Warnings:

Cancer – P65Warnings.ca.gov

Reproductive Harm – P65Warnings.ca.gov

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Fast Turnaround!

Orders are normally shipped within 48 business hours. In peak seasons (July-October) there might be some delay. Placing your order before July helps speed up the process.

Every order is a RUSH order to us. However, if you need overnight delivery, we're prepared to serve you. We will be glad to ship your order next day whenever possible. Additional charges will apply.

Most orders are shipped parcel carrier. The shipping charges are prepaid by us and then included on your invoice.

We gladly accept MasterCard, Visa, Discover, and American Express cards for your convenience.



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When you receive your order, please check the contents immediately. Please check the box thoroughly. (Sometimes small items get hidden at the bottom.)

If you discover a problem with your order, you must call us immediately (within 30 days). Please keep all packaging material for inspection by the carrier.

If there is a need to return any merchandise, please call, and we will give you a Return Authorization Number. A 25% return charge will be assessed. Opened software cannot be returned. On truckline orders, shipment damage must be stated on bill of lading at time of delivery or shipment refused in order to submit a damage claim. Please don't return items without calling first.

Pitsco provides a one-year limited warranty against defects in manufacturing on all items purchased unless otherwise specified by the manufacturer. In a warranty situation, Pitsco will arrange for the return of defective items for evaluation. Qualified Pitsco staff will determine warranty coverage and notify the customer. Items under warranty will be repaired or replaced at Pitsco's discretion. Customers will be billed for all costs associated with non-warranty items.

Notice:

Although every precaution was taken, errors in pricing and/or specifications can occur in printing. We reserve the right to correct any such errors. We sincerely hope this does not cause you any inconvenience.

Prices are subject to change without notice. Products with prices that change more than 15% will not be shipped until we have obtained your school's authorization to ship the items at the increased price.

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Age marks are indicators of average development, which does not necessarily reflect suitability for the exceptional child. A parent or teacher remains the best judge of whether the child is at the appropriate development stage for safe interaction with a product.

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*Thank you for being our
customer and friend.
We're committed to
serving you.*

Sincerely,


Harvey R. Dean
CEO, FOUNDER

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Applies to items that can be purchased from the catalog and via the Pitsco.com website. Any expedited shipping will be charged at actual cost. Unless billing to a tax-exempt school, school district, or other entity, applicable sales tax will be applied. If billing to a tax-exempt school, school district, or other entity, a copy of the state sales tax certificate is required.

Shipping rates for 2018	
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*LTL shipments must be quoted.

TETRIX® by the Numbers

At least some of the numbers! These are answers to some of our most-asked questions and provide a little insight in the metal building system known as TETRIX.

70

The TETRIX building system and the Pitsco family of products are sold around the globe. Classrooms and competitors in more than 70 countries count on the quality and durability of TETRIX every day.

1,500

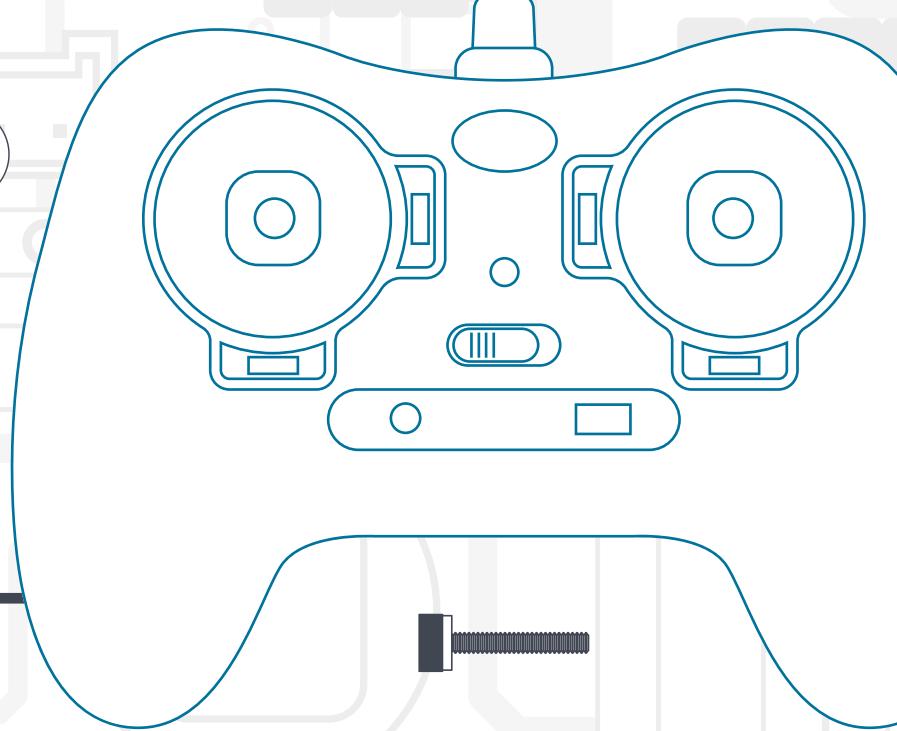
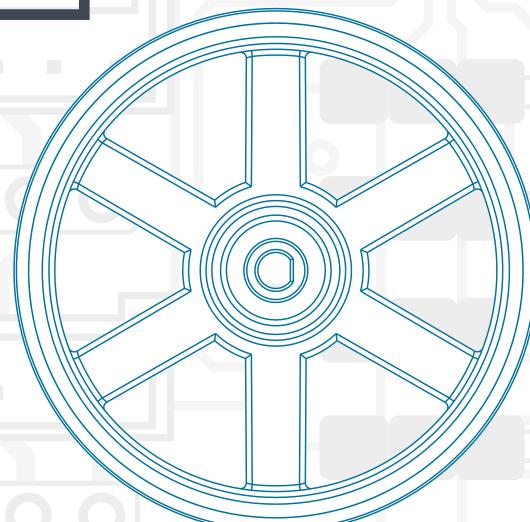
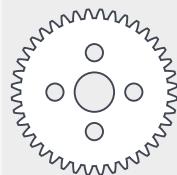
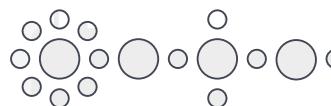
Quality customer service is a pillar of Pitsco. The TETRIX support team receives more than 1,500 calls each year. Don't have us on speed dial? We have a dedicated support team available eight hours a day, Monday through Friday (except holidays), to answer your burning TETRIX questions or to help troubleshoot programming errors. Call us at 800-358-4983, and our friendly customer service staff will assist you in resolving any concerns.

285

Want to know what to do with your sets beyond the builder's and programming guides? Between TETRIX MAX and TETRIX PRIME, we offer more than 285 hours of activities that explore engineering and project-based learning through remote-control and autonomous robotics curriculum. To learn more, visit pages 24-26 and 58.

7005

The majority of TETRIX metal parts are made of 7005 aluminum alloy, which is the same material used in many bicycle frames. If it can support a human riding on two wheels, imagine the strength it can provide for your bot!



180

A 180-degree servo motor is offered for both TETRIX PRIME and MAX. Ever wonder why you can't always travel the full 180 degrees? When you use the servo with a remote control, the range is limited to approximately 120-130 degrees because of the signal from the controller. When you program with an autonomous controller, such as PULSE™ or PRIZM®, you can benefit from the full range of motion.

200

With more than 200 elements in the TETRIX building system's assortment of parts, we can help you reach your teaching or competition goals. Look no further than TETRIX for sturdy channels, beams, and connectors to build rock-solid robots. Take motion to the next level with motors, servos, sensors, and grippers, and amp up your game with our control system options. Whatever your need, we've got you covered.

2008

Supporting classrooms, competitions, and STEM enthusiasts, the TETRIX building system landed in the hands of users in 2008. Since then, the original TETRIX was rebranded TETRIX MAX to allow for the birth of TETRIX PRIME. MAX is suggested for ages 14 and up, while PRIME is suitable for ages 12 and up.

12

The 12-volt battery supplies power to the TETRIX MAX system of parts. To get the best charge out of your battery, our experts suggest you regularly charge and discharge it. Similar to the battery in your car, even if you don't plan to utilize the battery for an extended period, to maintain battery life, we suggest discharging and then charging it. This same advice applies to the 6-volt battery that supplies power to the TETRIX PRIME system of parts.

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