



2017 Kit of Parts

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Content Type: FIRST Robotics Competition

The Kit of Parts (KoP) is split into 3 parts, available to teams through a variety of sources: the Kickoff Kit, the Virtual Kit, and FIRST Choice.

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Kickoff Kit

The Kickoff Kit consists of items distributed at Kickoff.

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Detailed information about the 2017 Kickoff Kits will be available on January 7, 2017.

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Virtual Kit

These items are available to Teams directly from the Supplier either via download or custom order.

Product Donation Vouchers

- AndyMark (<http://www.andymark.com>) Voucher, \$450 (USD): Voucher code available in the Team Registration System (only for teams who opted out of the KOP Drive System). (/robotics/frc/blog/2017-veteran-team-drive-base-option-registration-progress) Shipping not included.
- Armabot (<https://www.armabot.com/>) Voucher, \$25 (USD) towards one or more RS7 Encoders: Click here (<http://www.armabot.com>) and use your team number (i.e. 0002) for voucher code. Shipping not included. Expiration Date: 4/30/17. PDF of Voucher (/sites/default/files/uploads/resource_library/frc/game-and-season-info/kit-of-parts/2017/2017-armabot-voucher.pdf).
- AutomationDirect.com (<https://www.automationdirect.com>) Voucher, \$35 (USD): See detailed instructions here (/resource-library/frc/2017-automation-direct-voucher-instructions). Shipping not included. Expiration Date: 4/30/17.
- BishopWisecarver (<http://www2.bwc.com/firstvoucher>) Voucher, 4 Free MadeWell Wheels for Linear Guides: Click here (<http://www2.bwc.com/FIRSTVoucher>) to redeem your team's voucher. Shipping is not included. Expiration Date: 4/30/17.
- (http://www.ecianow.org) Inventables (<https://www.inventables.com/>) Voucher, \$40 (USD): Use your Team's code in the Team Registration System. Shipping not included. Expiration Date: 4/30/17
- (http://www.maxbotix.com) N (http://store.nextgenrobots.com/) ext Gen (http://store.nextgenrobots.com/) Robots (http://store.nextgenrobots.com/) Voucher, 1 CIM Cooler: Use your team's code in the Team Registration System. Shipping not included. Expiration Date: 4/30/17, but can be extended, if teams need more time.
- TE Connectivity (<http://www.te.com/usa-en/about-te/corporate-responsibility/community/first.html>) Voucher, \$25 (USD) for select products (/sites/default/files/uploads/resource_library/frc/game-and-season-info/kit-of-parts/2017/2017-te-catalog.pdf): To redeem this voucher, use your team's main contact in the Team Registration System and follow the instructions in the Quick Reference Guide (/sites/default/files/uploads/resource_library/frc/game-and-season-info/kit-of-parts/2017/2017-te-sample-center-quick-ref-guide.pdf). Shipping is included. Expiration Date: 4/30/17. PDF of Voucher (/sites/default/files/uploads/resource_library/frc/game-and-season-info/kit-of-parts/2017/2017-te-voucher.pdf).

Software

- CAD Software: software suites including CAD, simulation, and modeling plus CAD libraries of the FIRST STEAMWORKS field (Released January 7, 2017) and 2017 Kickoff Kit items available at Kickoff (Released

January 7, 2017):

- Autodesk (<http://www.autodesk.com/education/free-software/featured>)
- OnShape (https://www.onshape.com/edu/signup?__hssc=77027530.2.1481758420493&__hstc=77027530.393fe98c4f9a0ef3f65d71e2f3481412.1475070754009.1481743511119.1481758420493.7&__hsfp=2277385061&hsCtaTracking=d94214f0-ed87-4c49-afd2-98ffb536acb1%7Cdf9d70c5-3cc3-4038-ad2b-6d2814bff911)
- (<http://usa.autodesk.com/adsk/servlet/pc/item?siteID=123112&id=17575346>) PTC (<http://www.ptc.com/communities/academic-program/k12/students/first>)
- SolidWorks (<https://www.solidworks.com/sw/education/robot-student-design-contest.htm>)
- American Button Machines (<https://www.americanbuttonmachines.com/pages/first-robot>)' Build-a-Button (3-month membership): button design software. Visit here (<https://www.americanbuttonmachines.com/pages/first-robot>) and use your Team's code found in the Team Registration System.
- FRCsim: WPI, with the Open Source Robotics Foundation (<http://osrfoundation.org/>), has developed a free and open-source 3-D simulation environment available to FRC teams using C++ and Java. The FRCsim package is built on top of the Gazebo robotics simulator (<http://gazebo.org/>) that has matured under DARPA funding. Using FRCsim, teams can develop and deploy C++ or Java WPILib robot programs to a set of provided robot models that run in a virtual environment. To run the simulator, teams must have a machine running Ubuntu Linux. Installation instructions are provided by WPI here (<http://wpilib.screenstepslive.com/s/4485/m/23353>). Instructions are also available for importing a 2017 field model (Coming Soon!) and exporting robot models from Solidworks to use with the simulation environment.
- GitHub's Organization Account, which includes unlimited members and repositories: software hosting and collaboration tools. Visit the GitHub Education (<https://education.github.com/robotics>) page for details.
- Mastercam CAD/CAM software. Visit here (<http://events.constantcontact.com/register/event?llr=kftf58bab&oeidk=a07edeitepx0f86a4f8>) to download your team's copy.
- National Instruments' Multisim, Ultiboard, and Statechart Module: integrated circuit simulation, printed circuit board (PCB) prototyping, and a LabVIEW add-on for designing applications using states, transitions, and events. Details are posted here (<https://decibel.ni.com/content/docs/DOC-45560>).
- RoboRealm (<http://www.roborealm.com/FRC2017/>): software for use in computer vision, image analysis, and robotic vision systems. Use your Team's code found in the Team Registration System to register here (<http://www.roborealm.com/FRC2017/>).
- SolidProfessor (<https://solidprofessor.typeform.com/to/ALnjjp>): Library of training and resources for SolidWorks, Autodesk, and Onshape. Register on their website (<https://solidprofessor.typeform.com/to/ALnjjp>).
- Tableau's (<http://www.tableau.com/first-robotics>) Desktop Professional: data analysis and visualization software. Use the code in the Team Registration System for five copies per team. Don't forget to check out Tableau's free online resources (<http://www.tableau.com/first-robotics>) created specifically for *FIRST* Robotics Competition students.

FIRST Choice

The timeline for *FIRST* Choice is as follows (all events happen at noon, Eastern):

ROUND 1

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- | | |
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| 11/21/16 | Round 1 begins, <i>FIRST</i> Choice login information in the Team's registration account (for registered teams) and credit allotments live at <i>FIRST</i> ChoiceByAndyMark.com (http://firstchoicebyandymark.com) |
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12/06/16 Round 1 Team Priority Lists due (with any unsecured teams' list discarded)

~~12/08/16~~ AndyMark notifies each Team of the Round 1 draft results

12/9/16

Traditional Ordering

~~12/12/16~~ FIRST Choice opens for traditional live orders

12/13/16

01/06/17 FIRST Choice closes

ROUND 2

1/07/17 Round 2 begins, additional credits issued (unused credits do carry over)

01/13/17 Round 2 Team Priority Lists due

01/17/17 AndyMark notifies each Team of their Round 2 draft results

Traditional Ordering

01/20/17 FIRST Choice opens for traditional live orders

04/7/17 FIRST Choice closes for the 2017 season

Priority Lists are back, and we'll do two rounds (one before Kickoff and one after Kickoff). The Priority List process remains unchanged, and it's illustrated in more detail here (<https://www.lucidchart.com/documents/view/9366fdf7-9e34-4ec3-a62b-fb72f8fbe081>). Based on our experience from the previous two seasons, we believe that what it lacks in simplicity, it makes up for in user experience and satisfaction. The Priority List is optional, and the deadline for Round 1 Priority Lists is noon (Eastern Time) on Tuesday, December 6, 2016.

Each Priority List created by the deadline (one per Team), will be assigned a random rank. The order in which individual teams complete their Priority Lists before the deadline does not affect their rank. All teams that add at least one item to their Priority List by the deadline are put in a common pool and then randomly sequenced. This is what we mean by 'random rank.'

Then, in rank order, AndyMark's auto draft system will query the Team's highest priority item and, provided the Team has the credits and FIRST Choice has the inventory, issue the item to the Team. This applies to each Priority List line item as ranked. If the team doesn't have enough Credits to cover the entire amount (but at least one) or FIRST Choice inventory doesn't have the entire quantity (but at least one), the team will get as many as their credits/FIRST Choice inventory allow. If credits or inventory can't cover one, it will move on to the next ranked item so the team is not skipped for that round.

Once it gets to the last ranked Priority List, the draft system will query that last Priority List's next item and work its way back up the ranks (for Teams that know how we've done Alliance Selection in the past, this serpentine process probably

seems familiar). This draft continues until inventory's gone or Priority Lists have been exhausted. Inventory will be updated for when *FIRST* Choice opens for traditional "first come, first served" live orders.

A few other notes about the process:

Login information will be posted in each Team's registration account (all Coaches/Mentors will see a button labeled "Access Passwords/Voucher Codes"). Only registered *FIRST* Robotics Competition Teams will have access to their login information, and thus only registered Teams will be able to create and submit a Priority List.

Priority Lists will be created using (and only accepted via) the Priority List feature on AndyMark's *FIRST* Choice site.

Shipping charges will apply (details to be posted on FIRSTChoiceByAndyMark.com (<http://firstchoicebyandymark.com/>) before Priority Lists are due), and just like last year, a billing address, shipping address, and credit card information must be provided before creating your Priority List. For international Teams, additional charges may apply, for which the Team is responsible and AndyMark will address on a case by case basis.

Priority Lists are saved each time the user clicks "Update," letting teams add, subtract, and reprioritize items until the deadline.

Upon the deadline, any existing Priority Lists will be locked, processed, and no additional changes may be made (we strongly encourage you complete your list at least a day before the due date to avoid unexpected delays or surprises).

We will not publicly publish Teams' Priority Lists, the assigned rankings, or final order contents.

Any priority list submitted by a Team that has not secured first event registration payment with *FIRST* by noon, 12/6/16 will be discarded before lists are ported in to the auto draft system (please anticipate at least one business day for registration payment to be processed and the updated status to be relayed to AndyMark).