

2005 FIRST Robotics Competition

January 14, 2005

Team Update

02

→ Special Notices ←

Greetings teams! Please help us manage the reported missing parts by double-checking your kit. We believe that many of the parts reported as missing were reported because you cannot find or identify them. Refer to the Kit of Parts photo album at:

<http://www.usfirst.org/robotics/2005/kitpics.htm>

→ General Notices ←

Documents and Updates

FIRST will provide important information to teams via the FIRST web site at:

http://www.usfirst.org/robotics/doc_updt.htm

Please check the team updates portion of the web site on a regular basis to insure that your team does not miss critical information about the 2005 FIRST Robotics Competition.

Our schedule to publish Team Updates is:

- Tuesday by 5PM and Friday by 10AM. We work hard to meet these commitments. Unexpected circumstances may, on occasions, delay their publication.
- Additional updates may be released if required.

Question & Answer System

Please review answers to questions in the Question & Answer System daily before submitting a new question (see instructions below).

The Question & Answer System can be found at: <http://www.usfirst.org/robotics/2005/qa.htm>

1. Please ask one question at a time.
2. Questions are limited to 240 characters.

To **SEARCH** for questions answered after a certain date, do the following:

1. Leave **Section** set to **All**
2. Set **Date** to **After**
3. Enter the appropriate date in the next field
4. Leave **Search** blank
5. Set **Status** to **Answered**
6. Press Update Filter

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Section 0 - Introduction

No changes.

Section 1 - Communication

No changes.

Section 2 – Team Organization

No changes.

Section 3 - The Arena

- **CORRECTION to: Distribution of tetras (the information below is for red or blue)**

New text is bolded and italicized; removed text is lined out

The human player mat areas will have approximately 3 stacks of 6 tetras each = 18.

The loading platform areas will have approximately 2 stacks of 8 tetras each = 16.

1 robot starts with a tetra = 1.

2 vision tetras each side = 2.

2 tetras in each corner goal = 2.

1 tetra on each of 2 loading stations = 2.

This totals ~~39~~ **41** red and blue on the field. Field attendants will make reasonable attempts to ensure that the tetras are evenly distributed during matches, i.e., will attempt to ensure that no areas get depleted of tetras.

- **ADD: Human Player Loading Station Box (like a batter's box) to: The Arena, 3.2.1 Boundaries and Markings, a new last paragraph**

Opposite the 4 human player loading zones on the outside of the field border are 4 human player loading station boxes. These boxes are a mirror image of the loading zone, are triangular in shape, 36" on each side, and colored to correspond to the appropriate alliance color.

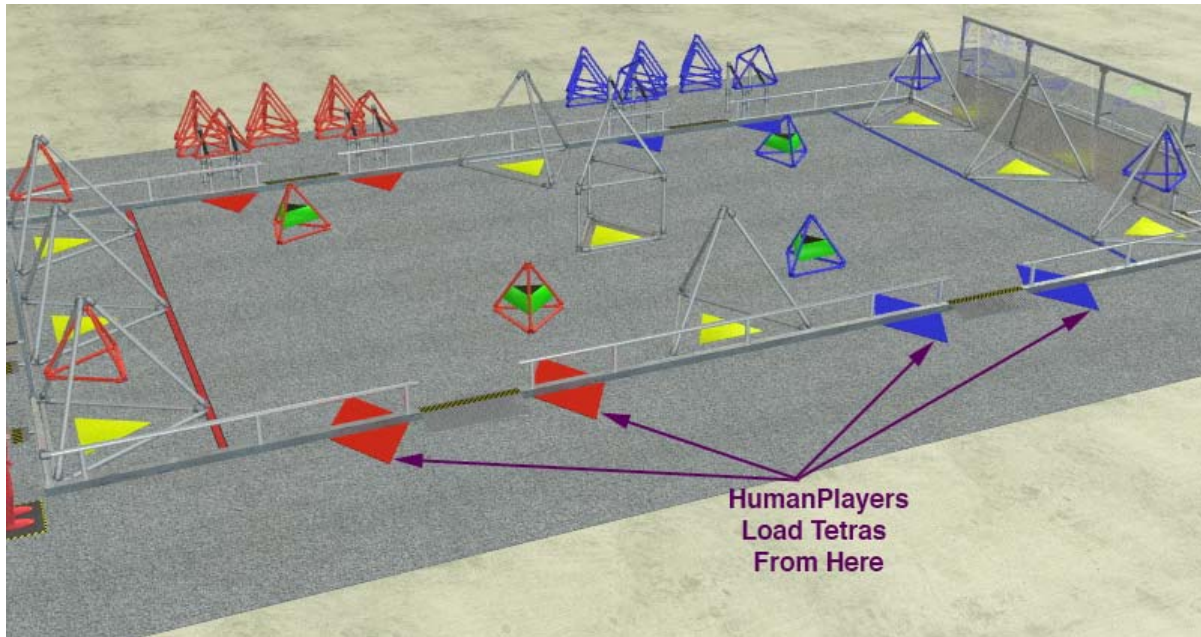
Refer to the illustration immediately following to see the locations of the human player loading boxes.

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Section 4 - The Game

➤ MODIFY: rule <G14>

New text is bolded and italicized; removed text is lined out

<G14> Field attendants will place TETRAS on the Tetra Loading Stations on the side of the field opposite the HUMAN PLAYERS (i.e. the “automated” LOADING ZONE). ~~At any time, a~~ A ROBOT ~~must~~ **may** enter the corresponding LOADING ZONE, **to** retrieve the TETRA from the Loading Station, and enter it into play. The HUMAN PLAYER does not have to leave the pressure pad sensor during this operation. When the TETRA is removed from the Loading Station and the ROBOT has left the LOADING ZONE, the field attendant will place a new TETRA on the Loading Station **at the first safe opportunity**. Robots may not intentionally interfere with field attendant’s efforts to place TETRAS on the Loading Stations.

➤ MODIFY: rule <G20>

New text is bolded and italicized; removed text is lined out

ROBOTS may push or react against any elements of the field, provided there is no damage or disruption of the field elements. ROBOTS may not grab, grasp, grapple or attach to the GOALS or any other field structure. Robots may not extend under **the portion of the goal contacting the carpet**, lift up or tip over a GOAL. If a ROBOT violates this rule, the referee will give one warning. If the referee determines that the team is disregarding the warning, or the actions affect the outcome of the match, the team’s ROBOT will be disabled for the remainder of the match. If a GOAL is tipped over, it is automatically OWNED by the opposing alliance for the remainder of the match.

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➤ ADD: new rule <G27>

<G27> A human player in the act of loading a tetra on a robot must have both feet in contact with the human player loading box. Violation of this rule will result in a 10-point penalty.

Section 5. The Robot (includes the Kit of Parts)

ROBOT

➤ CHANGES to: 5.2 DEFINITIONS Vendor

New text is bolded and italicized; removed text is lined out

VENDOR – A legitimate business source for COTS items that as a minimum, satisfies the following criteria:

- The VENDOR must have a Federal Tax Identification number.
 - The Federal Tax Identification number establishes the VENDOR as a legal business entity with the IRS and validates their status as a legitimate business.
- The VENDOR must be ***normally*** able to ship ~~the~~ ***any general (i.e., non-FIRST unique)*** product within five business days of receiving a valid purchase request. ***It is recognized that certain unusual circumstances, such as 1,000 FIRST teams all ordering the same part at once from the same VENDOR, may cause atypical delays in shipping due to backorders for even the largest VENDORS. Such delays due to higher-than-normal order rates are excused.***
 - The FIRST Robotics Competition build season is only six weeks long, so the VENDOR must be able to get their product, ***particularly FIRST unique items***, to a team in a timely manner.
- ***The business should maintain sufficient stock or production capability to fill teams orders within a reasonable period during the build season (<1 week).***

Note that this criterion may not apply to custom-built items from a source that is both a VENDOR and a fabricator. For example, a VENDOR may sell flexible belting that the team wishes to procure to use as treads on their drive system. The VENDOR cuts the belting to a custom length from standard shelf stock that is typically available, welds it into a loop to make a tread, and ships it to a team. The fabrication of the tread takes the VENDOR two weeks. This would be considered a FABRICATED ITEM, and the two weeks ship time is acceptable. Alternately, the team may decide to fabricate the treads themselves. To satisfy this criterion, the VENDOR would just have to ship a length of belting from shelf stock (i.e. a COTS item) to the team within five business days and leave the welding of the cuts to the team.

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- The VENDOR makes their products available to all FIRST Robotics Competition teams.
- VENDORS must not limit supply or make a product available to just a limited number of FIRST Robotic Competition teams.
- Ideally, chosen VENDORS should have national distributors.

Example distributors include Home Depot, Lowes, MSC, Radio Shack, and McMaster-Carr. FIRST competition events are not usually near home. When parts fail, local access to replacement parts is often critical.

FIRST desires to permit teams to have the broadest choice of legitimate sources possible, and to obtain COTS items from the sources that provide them with the best prices and level of service available. The intent of this definition it to be as inclusive as possible to permit access to all legitimate sources, while preventing *ad hoc* organizations from providing special-purpose products to a limited subset of teams in an attempt to circumvent the cost accounting rules.

➤ CORRECTION to: 5.3.1 <R02> 2nd bullet

New text is bolded and italicized; removed text is lined out

- Compressed air stored in the pneumatic system, but only supplied by the compressor included in the kit, and stored at a maximum pressure of 120 PSI only in ~~the~~ two Clippard Instruments tanks. ***One was*** provided in the Kit ***and a 2nd one is available from Innovation First.***

KIT

➤ CMU Camera Tip

When using your camera software: If your picture appears cut-off at the bottom or squashed, change your display resolution on your PC until the entire picture is shown.

➤ Spare Parts Source and Availability

Innovation First will be providing fulfillment for FIRST on the flowing items: Skyway wheel hubs, CIM Motors, CIM Motor Brackets, Couplers to Nippon-Denso Motor, Clippard Cylinders, and Parker Accessories. These parts will be available early next week at www.InnovationFirst.com.

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Section 6 – Robot Transportation

No changes.

Section 7 – At the Events

No changes.

Section 8 – The Tournament

No changes.

Section 9 – The Awards

➤ UPDATED: Section 9

Section 9 has been updated and reposted on the FIRST website.

Section 10 - Scholarships

No changes.

FIRST Guidelines, Tips & Good Practices

➤ CORRECTION to: 1.2.1 General, Item #1

New text is bolded and underlined; removed text is lined out

1. ***Remember; Thy Robot Weight Limit***- All of the elements of the robot such as the drive system, frame, battery & electrical system, pneumatics, and other mechanisms share a portion of the overall total weight. The robot weight limit is **120 pounds** **without the battery and ½ of the Anderson connector pair**. Set a weight budget for each element or segment such as 25% drive train, electrical 15%, etc. Stay within the budget throughout the build cycle. At the end of the project you might have some excess weight to spend to enhance a robot system or two as needed rather than a panic weight reduction project.

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E-Mail Blasts Sent Since Last Update

1/13/2005

Please read the below parts update. Please note that some of these may be repetitive from the 1/11/2005 Team Update #01.

Transmission Collars

This item was never intended to be in the Kit of Parts. It is team supplied.

The specifications were actually sent out in the Advanced Purchased Items list. Item #4 on the list states that you will need a 3/4" inch PVC Schedule 80 pipe (or a 3/4" Schedule 80 PVC pipe nipple). This information is also shown in the design details shown in the FIRST 2005 Transmission Manual - RevA, Drawing # FRC-2005-112-010 available on the Innovation First Web site at:

http://www.ifirobotics.com/docs/FIRST-2005-Transmission_Manual_RevA.pdf

Fisher Price Motors

There was a typo in the Kit of Parts list. It states that the Fisher Price Motor is a w/21T #7, stall torque 532.19 mNm. This is incorrect. Teams have been sent a w/13T, stall torque 647.2 mNm.

Master Link, Chain (in the Innovation First, Inc Item 1 Transmission Kit)

Teams should find 2 master links. One is in the box with the chain located in the transmission box. The other master link is in a separate bag located in the transmission box.

Clippard Tank (pneumatics)

Teams can order them from IFI for the cost of postage and a small handling fee.

1/14/2005

Please pay very close attention to the information below. We know teams are having some difficulty finding the parts described in the following message.

Pneumatics Components

Apparently some teams are having difficulty finding the **pilot** and **double solenoid valves** and their **lead wires** that were included in the Kit. These items are shown in the picture at the top of page 5 of the 2005 FIRST Pneumatic Manual, and are listed and described in the **SMC Pneumatic Kit** in the Bill of Material on page 17 of the manual. These items are packaged in a bubble packet about 3.5" x 6" in size that was placed in the SMC Bag in the Black Kit Container.

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Teams that have requested Missing Parts using the on-line order form will potentially receive two (2) shipments.

- FIRST shipments will be sent from New Hampshire.
- Innovation First deliveries will be marked box 2 of 2 and will be sent from Texas.