Section 4 - Robot Transportation

Section 4 - Robot Transportation

Shipping to Championship - On Wait List

Shipping to Championship - On Wait List

Posted by FRC949 at 02/27/2007 01:16:55 pm

Our team is on the waiting list for entry to the championship. We are competing in the first weekend of regionals in Portland, OR, March 1-3. We will not know until late in March if we will make it off of the wait list and be able to compete at Atlanta.

Do we just ship our robot to the Championship in hopes that we will be added from the wait list?

If we don't make it off of the wait list and we ship the robot to Atlanta, how would be get new airbills on it and addresses to ship it back home (we would not attend the championship in that case)?

Would we be able to use the donated shipping to and from the Championship even if we don't make it off of the waitlist?

Thanks.

Section 8 - The Robot

Section 8 - The Robot

Maxi Fuse block

Maxi Fuse block

Posted by FRC600 at 02/27/2007 08:26:08 pm

Our secondary fuse panel runs off of the maxi panel bus (not breakered). Does using the pass through capability of the maxi fuse block constitute an intermediate connection making this configuration illegal?

BaneBots Transmission Retrofits

BaneBots Transmission Retrofits

Banebot Replacement Plate distribution

Banebot Replacement Plate distribution

Posted by FRC1807 at 02/09/2007 12:33:16 pm

Will teams that purchased additional Banebot 12:1 planetary transmissions be receiving the new plates for those, in addition to the two that were in the kit of parts?

(we happen to be using 4, on our direct-drive system)

Re: Banebot Replacement Plate distribution

Posted by GDC at 02/12/2007 04:28:28 pm

Yes. Per Team Update #10, you will receive replacement carrier plates for the transmissions that you received in your Kit of Parts as well as any additional transmissions you purchased (you must provide an order number when you request your carrier plates).

1.3 Team Support

1.3 Team Support

Forum help

Forum help

Posted by FRC1722 at 01/13/2007 02:31:57 am

I posted two threads yesterday much earlier than the posts I have seen here now but those have not appeared. Can you help with this issue?

Re: Forum help

Posted by GDC at 01/15/2007 05:13:05 pm

Question & Answer Forum Instructions are posted at [URL=http://www.usfirst.org/community/frc/content.aspx?id=456]http://www.usfirst.org/community/frc/content.aspx?id=456[/URL] . They are also available at the top of the main forum page.

In cases where the question or answer may not be straightforward, FIRST staff and/or the GDC need additional time to process the question. This is why some more recent questions have their answers posted earlier than "older" questions.

1.6 FIRST Robotics Competition Website

1.6 FIRST Robotics Competition Website

Updated document information

Updated document information

Posted by FRC237 at 02/08/2007 05:36:49 am

Update #9 showed two documents that had been updated. For future updates, can you link to those documents from the update?

Re: Updated document information

Posted by FRCOPS at 02/09/2007 02:45:46 pm

The revised versions of any updated documents can easily be found on the 2007 FRC Competition Manual page at: [URL=http://www.usfirst.org/community/frc/content.aspx?id=452]http://www.usfirst.org/community/frc/content.aspx?id=452[/URL]

1.7 TIMS - Supplying Information to FIRST

1.7 TIMS - Supplying Information to FIRST

Date change for Judges info

Date change for Judges info

Posted by FRC70 at 02/22/2007 09:35:44 am

I have a copy of the "Calendar of important Deadlines" that I printed on 10/10/2006 and keep on my desk for reference so I don't miss any deadlines. Today I went to the TIMs system to put in the Judges/Yearbook Page information only to find the date had been change to the 21st. How can I get my information into the TIMs system? I could not find any record of this change and it is not in the team updates. I called "Team Support" and there was another person that called with the same problem. This was at 8:30AM 2/22/07. How many more calls will they receive with the same problem, how many people will have the problem and not call

team support?

Re: Date change for Judges info

Posted by FRCOPS at 02/22/2007 03:10:34 pm

The initial wording on the [I]Calendar of Important Deadlines[/I] appeared as, "Submit on line by 22-Feb-2007." This originally implied that it needed to be completed by end of day, 21-Feb-2007. To clarify confusion, it was changed to read, "Complete section in TIMS by 21-Feb-2007 11:59 p.m. EST" Additionally, there was a comprehensive email blast sent to teams on 2/10 pointing them to the [I]Calendar of Important Deadlines[/I] and outlining the process of the Judge's Information section in TIMS.
Read email here:
[URL=http://www.usfirst.org/community/frc/content.aspx?id=4732]http://www.usfirst.org/community/frc/content.aspx?id=4732[/URL]

[B][U]Please note[/U][/B]: Teams will NOT be penalized for not completing the Judge's Information section in TIMS. Prepare and print a 1-page hard-copy document including the various information requested within this section and bring it with you to your event(s). Please also bring a copy of your robot photo. Teams may share all of this information with the judges when they come to interview your team in the Pit.

For specifics on what was requested in the Judge's Information Section (Additional Team Info, Team School Demographics, and Team Essays), please visit this help link from TIMS:
[URL=https://my.usfirst.org/frc/tims/help/judgeinfo.html]https://my.usfirst.org/frc/tims/help/judgeinfo.html[/URL]

3.3 FIRST Safety

3.3 FIRST Safety

safety glasses

safety glasses

Posted by FRC1249 at 01/13/2007 08:02:19 pm

While reading through the manual, i noticed that like in the past, safety glasses are required for everyone our pits. My question is, on one page, it stated that no shaded safety glasses were allowed. Is this correct? All of our glasses are ANSI approved and shaded.

Amber safety glasses

Posted by FRC1763 at 01/15/2007 04:02:42 pm

Section 3.7.1 says that we are to have nonshaded safety glasses. However, may we use ANSI approved amber colored safetey glasses since they actually make indoor spaces appear brighter?

Re: safety glasses

Posted by FRCOPS at 01/24/2007 09:15:59 am

Refer to Team Update #5 for clarification (section 3.3.4):

[URL=http://www2.usfirst.org/2007comp/Updates/2007%20Team%20Update%2005.pdf]http://www2.usfirst.org/2007comp/Updates/2007%20Team%20Update%2005.pdf[/URL]

3.3 FIRST Safety

Safety Glasses

Safety Glasses

Posted by FRC759 at 01/24/2007 09:31:45 am

As a team from the UK are we allowed to use equivalent British standard safety spectacles in the arena and pit area?

Re: Safety Glasses

Posted by FRCOPS at 01/24/2007 01:31:46 pm

British standard safety spectacles will be permitted, but they cannot be shaded.

3.3 FIRST Safety

rules section 3.3.4

rules section 3.3.4

Posted by FRC166 at 02/03/2007 02:58:05 pm

How do we verify that our safety glasses are ANSI approved? They have Z87 on them. Is this enough? How will it be verified that safety glasses are ANSI approved at the venues?

Re: rules section 3.3.4

Posted by FRCOPS at 02/06/2007 09:50:56 am

If they have Z87 printed or embossed on them, they are approved glasses.

3.3 FIRST Safety

Saftey Glasses

Saftey Glasses

Posted by FRC522 at 02/10/2007 09:49:06 am

Hi,

we read that saftey glasses with side shields are required at all competitions. Are prescription glasses with polycarbonate (approved)lenses used with sideshields considered acceptable ? or are non prescription saftey goggles required?

Re: Saftey Glasses

Posted by FRCOPS at 02/12/2007 03:18:33 pm

If the prescription glasses meet the ANSI Z-87 requirements for impact protection they will be acceptable as long as they also have approved side shields attached to them.

3.3 FIRST Safety

Displaying four pairs of safety glasses at registration

Displaying four pairs of safety glasses at registration

Posted by FRC1618 at 02/25/2007 06:09:58 pm

Per a recent FRC email blast ([url=http://www.chiefdelphi.com/forums/showthread.php?p=586188#post586188]source[/url]), we are now required to produce four pairs of safety glasses when registering for an event.

As we are known to use most of our safety glasses at any given time, and since throwing several team members out of the pit in order to collect the required number in our hands seems impractical, can some or all safety glasses that we show at registration be on the heads of team members, provided that they are in fact approved safety glasses (and not the

oft-confused forehead protector)?

Re: Displaying four pairs of safety glasses at registration

Posted by GDC at 02/26/2007 04:22:23 pm

The presentation of the safety glasses at registration does not require that they be new. If the team members are wearing the glasses at the time of registration, and the registrar can easily determine that they meet the requirements, then your proposal is appropriate.

3.6 Team Registration

3.6 Team Registration

Section 3.6.1.2 New Forms

Section 3.6.1.2 New Forms

Posted by FRC716 at 02/07/2007 03:43:23 pm

If we submitted consent forms for members at the kick-off, do we have to re-submit at our first regional? Most of our team attended the UTC remote kick-off.

Thanks

Re: Section 3.6.1.2 New Forms

Posted by FRCOPS at 02/08/2007 09:43:54 am

YES, you must resubmit new forms. All participants (team members as well as adult mentors) are required to submit a signed [I]FIRST [/I]Consent and Release Form at their initial Regional event.

[URL=http://www.usfirst.org/uploadedFiles/Community/Assets/2006-07ConsentandReleaseForm2.pdf]http://www.usfirst.org/uploadedFiles/Community/Assets/2006-07ConsentandReleaseForm2.pdf[/URL]

3.7 The Pit

3.7 The Pit

Pit equipment height

Pit equipment height

Posted by FRC1249 at 01/12/2007 03:24:42 pm

We have used a canopy over our pit in the past and the center extends to 10' and about 7". It is only about 8' around the sides for clearance. Nothing is hanging from the center pop up canopy. It is in our team colors and has our team number on it. Is this legal under 3.7 which stated nothing can be taller than 10'.

Re: Pit equipment height

Posted by FRCOPS at 01/13/2007 11:11:46 am

Per section 3.7.4.1, "No Team Station structures, signs, flags, or displays can be higher than [B]10 feet[/B] above the floor." Therefore, the pit structure that you have discribed is illegal.

3.7 The Pit

Robot crate

Robot crate

Posted by FRC2083 at 01/18/2007 11:47:34 pm

My team and I were curious as to if we could keep our robot's crate with us during competition. This would be instead of sending it off like the other teams would be doing. Thanks,
-Team 2083

Re: Robot crate

Posted by FRCOPS at 01/22/2007 05:09:49 pm

Yes. You may keep your robot crate within your team station during the competition as long as your team station does not "grow" into the aisle or undesignated space. Your team, your robot, and all of your equipment must fit within your team station, a space usually about 10' by 10'. Please see section 3.7.4.3.

3.7 The Pit

Team Station at NJ, NYC Regionals

Team Station at NJ, NYC Regionals

Posted by FRC1807 at 02/25/2007 10:19:57 am

We would like to use an aluminum "tent" structure in our team station / pit area at the NJ and NYC regionals, to help us organize our materials,etc. The structure is 10' x 10' (it will be less than 10' tall).

Will the space at the NJ and NYC regionals accommodate this, or will it infringe upon others?

Re: Team Station at NJ, NYC Regionals

Posted by FRCOPS at 02/26/2007 09:58:45 am

Per section 3.7.4.3, each team is allotted approximately the same amount of workspace, usually about 10' by 10'. Be sure your equipment will fit in a space [I]smaller [/I]than those dimensions.

3.11 Team Spirit And Styl'n

3.11 Team Spirit And Styl'n

Spirt in the Pit Area

Spirt in the Pit Area

Posted by FRC1710 at 01/20/2007 03:40:29 pm

Rule 3.11.A says, "Hang banners in your Pit station only, not on the Pit walls." We would like some clarification of this rule. If we can have banners in the pit station but not on the walls, where are we supposed to put them?

Re: Spirt in the Pit Area

Posted by FRCOPS at 01/22/2007 05:00:06 pm

The Pit is the large room, or area, where each team's own personal team station (section 3.7.4) is located. Your personal team station, within The Pit, is the only place that your team can display banners.

3.11 Team Spirit And Styl'n

Banners in the Stands

Banners in the Stands

Posted by FRC1710 at 01/20/2007 03:41:56 pm

We were wondering if we could hang signs during Regional Competition where our team is

sitting?

Re: Banners in the Stands

Posted by FRCOPS at 01/22/2007 04:44:18 pm

No. As stated in section 3.11.3, teams cannot hang banners in the competition area. This area is designated for official [I]FIRST [/I]sponsors' banners. Teams may only hang banners in their own personal team station (within the pit).

Re: Banners in the Stands

Posted by BThomsen at 02/09/2007 03:33:27 am

I have noticed Team Flags/ Small Banner type things are often carried by the MCs as they introduce the Teams on The Field. This seems like a good way to display your "colors". Each Regional may be different and there may be rules on this, but as I say in my 3 years as Field Supervisor I have seen flags carried aroung the Field by the announcer and that seems ok to me and I was in charge of the Field. Perhaps this is someone else's call. :confused: :)

3.11 Team Spirit And Styl'n

Balloons

Balloons

Posted by FRC228 at 02/04/2007 11:13:41 am

We would like to show our team spirit by displaying balloons at the competition. We would like to hang them in the rear of the bleachers, so that they do not inpair vision or imply the saving of seats. Most likely, the balloons will be tied to the seats. Would balloons like this be allowed in the bleachers or are they only allowed in our pit area?

Re: Balloons

Posted by FRCOPS at 02/06/2007 10:04:52 am

[I]FIRST[/I]'s official ruling is that teams cannot hang or afix anything in the competition area. Please display your team items (banners, flags, balloons, etc.) at your team station in the pit only. Keep the 10' height safety restriction in mind when setting up your team station.

4.2 Battery Packaging

4.2 Battery Packaging

Covering the battery

Covering the battery

Posted by FRC1710 at 01/15/2007 03:21:06 pm

Can we use heat shrink to cover the battery when shipping?

Re: Covering the battery

Posted by GDC at 01/18/2007 04:55:27 pm

As long as the shrink wrap is applied in a manner that permits the batteries to still be shipped in full compliance with the requirements specified in Section 4.2 of the manual, this would be acceptable.

4.2 Battery Packaging

Shipping Batteries

Shipping Batteries

Posted by FRC1861 at 02/03/2007 03:24:38 pm

Section 4.3.4 does not list the batteries as a must be included item, and section 4.2 says "When shipping the 12VDC Batteries...". Both these sections imply that the batteries do not need to be shipped in the crate.

However, later in section 4.2 it states:

"Each time you ship your robot, you must:"

The wording is ambiguous. Some sentences imply that shipping batteries is optional, others appear to imply that it is required. Could you clarify this please?

Thank you,

Team 1861

Confusion between 4.3.4 and 4.2

Posted by FRC930 at 02/03/2007 05:11:28 pm

I was pretty certain based on previous Q and A responses (1/22) by GDC that I understood what to do with batteries this year. It was my understanding that we MUST ship the two KOP batteries with the robot as per 4.2

NOW comes along the wording of 4.3.4 "Required Crate Contents". Nowhere in the list of "Teams must include..." are the batteries mentioned. Instead we get a "when shipping". Some of our engineers think that implies that shipping the batteries is NOT mandatory; as 4.3.4 seems to be the controlling section, only when you ship batteries do you need to follow 4.2.

Please clarify.

Re: Confusion between 4.3.4 and 4.2

Posted by GDC at 02/05/2007 04:02:42 pm

According to Section 4.2 and Team Update #5, the two Kit of Parts 12V batteries must be shipped with the ROBOT.

4.2 Battery Packaging

Battery Shipping

Battery Shipping

Posted by FRC2081 at 02/07/2007 08:42:35 pm

What is the penalty for not shipping the batteries with the robot?

Re: Battery Shipping

Posted by GDC at 02/08/2007 05:01:18 pm

A FIRST credo is Gracious Professionalism. Purposly and thoughtfully choosing to break a rule is not within the spirit of the FIRST competition.

4.2 Battery Packaging

Canadian Battery Transportation

Canadian Battery Transportation

Posted by FRC1305 at 02/08/2007 02:07:52 pm

Section 4.2 “Battery Packaging” and section 4.3.4 “NEW Required Crate Contents” indicate that the 2 12VDC batteries must be packed with the robot and control panel

US Federal regulations have been checked for domestic transportation in the US. Non-North American teams are not allowed to pack the batteries in the crate.

Are Canadian teams required to pack their batteries?

Have Canadian regulations been confirmed for transportation within Canada and between Canada and the US?

Will US Customs allow the batteries to be packed in the crate?

Is the Non-North American rule dealing with Air transportation only?

Several of these questions were asked on the Shipping Conference Call Tuesday night and weren’t able to be answered at that time. We have added a few more to be a little more specific.

Another question was asked regarding arriving at the event with dead batteries packed in the crate. It does indicate that we can bring other batteries but it is our understanding that the 12VDC batteries are not available in Canada.

Re: Canadian Battery Transportation

Posted by FRCOPS at 02/12/2007 11:49:14 am

"US Federal regulations have been checked for domestic transportation in the US. Non-North American teams are not allowed to pack the batteries in the crate."

[COLOR=Blue]Yes they can. Teams are allowed to pack the batteries in the crate as long as they follow the proper packing and proper labeling guidelines provided in the manual. (NON-SPILLABLE BATTERIES ENCLOSED in large lettering)[/COLOR]

"Are Canadian teams required to pack their batteries?"

[COLOR=Blue]Yes[/COLOR]

"Have Canadian regulations been confirmed for transportation within Canada and between Canada and the US?"

[COLOR=Blue]Yes. Teams must following the proper packing and proper labeling instructions provided in the manual. *Please remember to attach a commerical invoice on the crate when entering or exiting the border.[/COLOR]

"Will US Customs allow the batteries to be packed in the crate?"

[COLOR=Blue]Hazmat/DG Department says...Yes[/COLOR]

"Is the Non-North American rule dealing with Air transportation only?"

[COLOR=Blue]No, Air and Ground[/COLOR]

"Another question is regarding arriving at the event with dead batteries packed in the crate. It does indicate that we can bring other batteries but it is our understanding that the 12VDC batteries are not available in Canada."

[COLOR=Blue]To clarify, [I]FIRST [/I]does not mandate that the batteries packed in the crate are fully charged. If you cannot get parts mandated by the [I]FIRST [/I]Competition Manual, please refer to Rule <R25>.[/COLOR]

4.2 Battery Packaging

Shipment of batteries

Shipment of batteries

Posted by FRC1098 at 02/09/2007 07:17:30 pm

We are struggling with the battery shipment requirement. Does the battery box HAVE to be in the corner? If we put it in the corner, then we can't fit the robot. Requiring shipment of the batteries seems like an extra hoop to jump through that is unreasonable. If we drive our batteries to the contest, how will this give us a competitive edge? Also, it will save shipment costs, since the crate will be lighter.

Battery shipping cost

Posted by FRC70 at 02/10/2007 09:46:07 am

We have the same problem as others that have posted on the forum about battery shipping. Not only is space in our crate a problem. It will also put us and many teams over the weight limit, adding another 28 pounds to a shipping crate becomes very expensive for teams. Shipping or not shipping does not effect the competition in any way I can think of other then to make it more expensive for teams. The rules from past years seem to work just fine. Please set an example of Gracious Professionalism and reconsider the mandatory shipping of batteries, or at least help us to understand why this additional expense is required.

shipping battery

Posted by FRC67 at 02/12/2007 10:42:10 am

Why are we adding weight to the shipping crates with the new rule of must ship the 12 volt batteries inside of the crate?

Re: shipping battery

Posted by GDC at 02/12/2007 03:11:37 pm

When shipping the batteries, the box containing the batteries may be positioned anywhere within the crate.

If there are particular concerns regarding the purpose or implementation of any of the rules, we respectfully request that you provide that feedback at the Team Forums during the summer. That will provide adequate opportunity to assess the impact of any and all of the rules over the entire competition season, and will enable you to determine if their is a significant impact to the FIRST experience as a whole.

4.2 Battery Packaging

Spare Batteries

Spare Batteries

Posted by FRC1995 at 02/15/2007 12:44:55 pm

Hi

If we order spare MK-12 batteries for use at competition, but they do not arrive until [B]after[/B] ship date, can we still use them at the event?

Re: Spare Batteries

Posted by GDC at 02/15/2007 04:43:02 pm

You are required to ship two competition batteries with your robot. You are permitted to bring and use extra batteries with you to your event. Spare batteries may be ordered and received at any time.

4.2 Battery Packaging

Battery Shipment.

Battery Shipment.

Posted by FRC2152 at 02/18/2007 06:57:17 pm

We no longer have the original boxes that the batteries came with. They were thrown out at school by the janitors. Is there any other method through which we'll be able to ship the batteries? (i.e. in a box that has the same dimensions, but is not the original.)

4.2 Battery Packaging

Lost a battery

Lost a battery

Posted by FRC2036 at 02/19/2007 04:36:54 pm

The rules state we " Must ship two batteries" but we must have left one at the scrimmage Saturday and did not notice until Monday. Our crate only weighs 325 lbs so for us this is not an issue of weight but of carelessness.

What are our options throw in a 25 lb lead brick? (I have several)

-tim

nevermind- we paid $180 to overnite one from New Hampshire because no one else is allowed to sell them - then ours turned up in Fort Collins

OH WELL

4.3 Crate Information

4.3 Crate Information

Crate Materials

Crate Materials

Posted by FRC1540 at 01/16/2007 03:17:25 pm

We'd like to build a crate from 80/20 and 1/4" ABS Plastic with a wooden base. We have a design for a nifty convertable design making the crate a part of our pit area. Since the strength of this would exceed a normal plywood crate is there any rule problem with undertaking such a project?

4.3 Crate Information

New Crate Rules

New Crate Rules

Posted by FRC1023 at 01/18/2007 05:30:23 pm

According to Section 4.3.1 crates must be constructed of 3/8" or 1/2" plywood or OSB.

[quote=Section 4 - Robot Transportation_RevA]4.3.1. NEW* Crate Construction Specifications
Build your crate(s) with more than one shipment and season in mind. Remember to consider the
weight of your materials. For instance, if 3/8” or 1/2” plywood is sturdy enough, why use the much
heavier, costlier 3/4” product?
All Crates must:
1) Comply with the “Wood Materials Regulations Across U.S. Borders” section below if
the crate ships into the U.S.
2) Loaded crate must weigh 400 pounds or less in order to avoid drayage overage
charges
3) Be sturdily built to prevent damage to your equipment
4) *Use 3/8” or 1/2” plywood
5) *Use 3/8” or 1/2” Oriented Strand Board (OSB), a solid panel product of consistent
quality with no laps, gaps, or voids.[/quote]
In the manual, teams are asked the question why should we would use 3/4" material in a crate when it is heavier and costlier. We already have a crate built of 3/4" plywood that we have sucessfully used for the past 3 years, do we need to build a new crate built of 1/2" or 3/8" material? This would require us to spend a much greater amount of money than simply modifying our current crate to the new height specifications.

[url]http://www.google.com/search?sourceid=navclient&aq=t&ie=UTF-8&rls=GGLD,GGLD:2003-49,GGLD:en&q=plywood+costs[/url]

We realize a crate built of 3/4" plywood may have been slightly overweight in years past but with the new weight limits for 5 foot tall robots this problem should be remedied.

Thank you,
Team 1023

Re: New Crate Rules

Posted by FRCOPS at 01/19/2007 10:40:38 am

The new Crate Construction Specifications, as outlined in section 4.3.1, were put together by [I]FIRST [/I](along with SES and Roadway, Inc.) to encourage teams to build a more sturdy, robust crate for shipping their robot. [I]FIRST [/I]will not disallow any team from shipping their robot crate from being transported, however, if any damage should occur to a robot or a crate that does not meet the specifications as outlined in the manual, the team will be held accountable. Shipping a robot crate which does not meet the specifications as outlined in section 4.3.1 is putting your robot at risk of damage. As always, the crate must also adhere to the size/forklift requirements.

4.3 Crate Information

shipping crate

shipping crate

Posted by FRC2083 at 01/27/2007 03:40:04 pm

We were planning on having our shipping crate open out and into a work station for use in our pit. Is this allowed or will our crate be sent back into drayage once our robot is removed from the crate?

Re: shipping crate

Posted by FRCOPS at 01/29/2007 11:36:13 am

You may keep your robot crate within your team station during the competition as long as your team station does not "grow" into the aisle or undesignated space. Your team, your robot, and all of your equipment must fit within your team station, a space usually about 10' by 10'. Please see section 3.7.4.3.

4.3 Crate Information

Pallet on Crate

Pallet on Crate

Posted by FRC2051 at 01/31/2007 11:23:51 am

Rule 4.3.1 subsection 9 states that the crate must:
"Sit" on 2 pieces of 4" by 4" lumber, spaced at least 28" apart so it can be moved by a forklift.

Would we be allowed to use a pre-existing pallet that is specifically designed for forklifts as our base and build our crate on top?

Shipping Coordinator
Team 2051

Re: Pallet on Crate

Posted by FRCOPS at 02/06/2007 09:47:39 am

Crates undergo a lot of handling and the slats may break, especially during handling at the events when the drayage personnel use hand-operated pallet jacks. Using a pallet as a base for the crate could put your crate at risk of damage.

[I]FIRST [/I]works with our shipping and drayage companies to publish what teams need to do to ensure their robots are safely shipped. If teams elect to deviate from the information published in the manual, they must understand that they assume all risks of possibly not having their robot shipped or possibly having damage from handling.

4.3 Crate Information

Crate Construction Specifications (4.3.1)

Crate Construction Specifications (4.3.1)

Posted by FRC386 at 02/06/2007 10:08:36 pm

Reading through the section on crate construction, everything points to making the crate out of wood...especially plywood. Are we permitted to make our shipping crate out of aluminum as long as we comply with all other restrictions and conditions? It would even have a built-in

pallet-like base that would be completely forklift and manual jack compatable. I know it sounds like overkill, but one of our sponsors is building and donating the thing. How can we say no? If there is a problem with this idea, we need to find out soon!

Re: Crate Construction Specifications (4.3.1)

Posted by FRCOPS at 02/08/2007 09:55:05 am

The new Crate Construction Specifications, as outlined in section 4.3.1, were put together by [I]FIRST [/I](along with SES and Roadway, Inc.) to encourage teams to build a more sturdy, robust crate for shipping their robot. [I]FIRST [/I]will not disallow any team, who has not met the specifications, from shipping their robot crate. If any damage should occur to a robot or a crate, however, the team will be held accountable. Shipping a robot crate which does not meet the specifications as outlined in section 4.3.1 is putting your robot at risk of damage. As always, the crate must also adhere to the size/forklift requirements.

4.3 Crate Information

Mandtory Address Labels

Mandtory Address Labels

Posted by FRC2184 at 02/17/2007 11:33:25 am

I have not been able to find printable mandatory address labels to attach to the shipping crate and battery box. I have tried to follow the directions in the manual, but I am still unable to find them. Any suggestions?

Re: Mandtory Address Labels

Posted by FRCOPS at 02/19/2007 10:19:13 am

Please find your Regional's link to 'Shipping and Drayage' information on the Regional Events page on our website:

[URL=http://www.usfirst.org/community/frc/regionalevents.aspx?id=430]http://www.usfirst.org/community/frc/regionalevents.aspx?id=430[/URL]

4.8 Shipping Your Robot

4.8 Shipping Your Robot

overnight shipment of robot

overnight shipment of robot

Posted by FRC1683 at 02/17/2007 07:38:49 pm

We will need to ship our robot overnight from New Orleans to Atlanta for our 2nd regional event. Will we be able to use any carrier, or are we limited to Roadway, FedEx, or Shepard?

Re: overnight shipment of robot

Posted by FRCOPS at 02/19/2007 10:07:33 am

You must use the Shepard Exposition Services' designated shipper, Roadway, Inc. Please read section 4.8.7 of the Competition Manual.

Please also reference section 4.10 to obtain a freight quote for shipping your crate to a SES/Roadway drayage terminal.

4.8 Shipping Your Robot

Withholding defective parts from shipment

Withholding defective parts from shipment

Posted by FRC1732 at 02/19/2007 03:24:52 pm

We have defective modems that need to be repaired by IFI. Is there an exemption from shipping them with the robot in order to send them in for repair?

Re: Withholding defective parts from shipment

Posted by FRCOPS at 02/19/2007 04:01:09 pm

Per Q&A forum posting: [URL= http://forums.usfirst.org/showthread.php?t=4849] http://forums.usfirst.org/showthread.php?t=4849[/URL]

If you ship components for repair to Innovation First and you do not receive them back in time for the robot ship date, you are permitted to bring them with you to your first event. Future shipments of your robot must include these parts.

4.9 FEDEX® Express Freight System Complimentary Shipping

4.9 FEDEX® Express Freight System Complimentary Shipping

FedEx Login Information?

FedEx Login Information?

Posted by FRC269 at 01/26/2007 10:36:05 pm

When will the FedEx system login appear in TIMS?

Re: FedEx Login Information?

Posted by FRCOPS at 01/29/2007 12:38:44 pm

For teams using the FedEx On-line Shipping Administration System (i.e., teams within the 48 contiguous United States), your specific User ID and Password will appear in TIMS in early February (probably the week of February 5th).

4.9 FEDEX® Express Freight System Complimentary Shipping

FedEx Shipping glitch

FedEx Shipping glitch

Posted by FRC1760 at 02/16/2007 11:47:51 pm

I have been trying to fill out the on-line shipping form at fedex.com. When I list my dimensions as 47x47x68 - the system generates and error saying my lenght must be less than 48 ins.

I talked to a nice man at Fedex tech support who had no idea what was going on. He insisted that my shipment must be less than 150 lbs to use 3 day freight. He insisted that the web site was working fine and everything was due to my 'special deal' or my computer. He also suggested my internet connection was bad or my computer was messed up. He had no 'back-up' support or escalation procedure, so we were pretty much at a stalemate.

I have since tried two other computers and two different browsers. (Firefox seems to have trouble with the service type - so I couldn't even get to the length.)

Any ideas? (I will try again in the morning - both the on-line system and the help desk.)

Re: FedEx Shipping glitch

Posted by FRCOPS at 02/19/2007 10:15:06 am

We have found that this error occurs when your browser's (old) cookies have not been deleted. Your browser also needs to be set to accept (new) cookies as well as allow for pop-ups.

If using Internet Explorer, click on [B]Tools [/B]and then [B]Internet Options[/B]. You will then see a button in the middle of the pop-up which reads, [B]Delete Cookies[/B]. Click on that button, close OUT of your browser entirely and then re-open it and try to login again.

Try to prepare and print your airbill again.

Please call [I]FIRST [/I]Team Support at 800-871-8326 (dial 0) for help with trouble-shooting any FedEx Online Shipping Administration problems.

5.3 The Autodesk Visualization Award (Championship Only)

5.3 The Autodesk Visualization Award (Championship Only)

Section 5.3.2 Animation Image sources

Section 5.3.2 Animation Image sources

Posted by FRC386 at 01/24/2007 06:48:19 pm

Can we use pictures of Dean and Woodie, taken from the web or other FIRST materials, as part of the animation? Is concent required for each use?

Re: Section 5.3.2 Animation Image sources

Posted by FRCOPS at 01/25/2007 02:47:33 pm

Teams may use photos of Dean and Woodie from our Web site or from our flyers (available in the online Communications Resource Centers, accessible from the quicklinks menu) in their animations. We do request that the use be respectful, in conformance with [I]FIRST [/I]values and Gracious Professionalism. They should credit "Images courtesy of [I]FIRST[/I]."

5.3 The Autodesk Visualization Award (Championship Only)

MS Clip Art sounds (5.3.2)

MS Clip Art sounds (5.3.2)

Posted by FRC386 at 02/14/2007 06:37:08 pm

Can we use Microsoft Clip Art sounds in the animation for the AV award?

Re: MS Clip Art sounds (5.3.2)

Posted by FRCOPS at 02/15/2007 02:48:09 pm

Yes, this is acceptable to use.

5.3 The Autodesk Visualization Award (Championship Only)

3ds max technical issues.

3ds max technical issues.

Posted by FRC815 at 02/15/2007 07:41:55 pm

Does anyone know why 3dsmax closes when animating a biped model after I rendered and saved it then re-opened the file. anytime I click on the key-frame the program crashes.

Re: 3ds max technical issues.

Posted by FRCOPS at 02/16/2007 11:51:03 am

According to Autodesk, this is the first time this issue has been reported. They think it might

be a unique bug and they are not sure if the cause is is the software or the hardware that your team is using. There is no suggested answer at this time.

To trouble-shoot Autodesk issues, teams should submit questions via email to [email]first@mail.autodesk.com[/email].

5.4 Chairman's Award

5.4 Chairman's Award

Images

Images

Posted by FRC399 at 02/12/2007 04:12:00 pm

Hello,

What are the requirements for the four images that can be uploaded with the Chairman's entry? We understand that we can have 4 images at 800px by 800px, totaling no more than 1MB. However, are there further requirements about what constitutes an image?

In other words, must we upload single photographs or can we upload a scanned newspaper photo or yearbook page that meets the size requirements?

Thanks!

Re: Images

Posted by FRCOPS at 02/13/2007 09:33:17 am

We have purposely not defined an image. A scanned document is an image by default, however, it might not be very readable.

5.26 Underwriters Laboratories Industrial Safety Award

5.26 Underwriters Laboratories Industrial Safety Award

UL Safety Award

UL Safety Award

Posted by FRC360 at 01/24/2007 04:41:00 pm

Our team takes this seriously but we are always a little confused when a winner is announced. Not so much we were sure we would win we just thought we knew who couldn't win.
What is the criteria for this Award? We assume it is safety in the pits being demonstrated as well as how we answered our team essays and answered judges questions.
Is there some other componant?
thanks

Re: UL Safety Award

Posted by FRCOPS at 01/25/2007 10:49:11 am

Each event has Safety Advisors who are constantly on the lookout for safe behaviors of all team members and mentors in the Pit and while moving the robot to, as well as onto and off, the playing field. In general, we suggest that you read the "2007 [I]FIRST [/I]Robotics Competition Team Safety Manual" and apply the suggestions and good practices you find there. This is the link for the [I]FIRST [/I]Robotics Competition Safety Program page where

you can read about it, then click on the words "Safety Manual" for a copy: [URL=http://www.usfirst.org/community/frc/content.aspx?id=470]http://www.usfirst.org/community/frc/content.aspx?id=470[/URL]

5.28 Website Award

5.28 Website Award

Regional Website Awards

Regional Website Awards

Posted by FRC1450 at 01/19/2007 07:58:32 am

When will the Websites be judged?

Re: Regional Website Awards

Posted by FRCOPS at 01/19/2007 10:25:39 am

We cannot give a definite date for when each judge will be reviewing a web site, prior to the competition. It is best that the web site remain up and running and unchanged after the submission deadline date of February 22nd.

5.28 Website Award

FIRST Logo Use

FIRST Logo Use

Posted by FRC2056 at 02/19/2007 02:53:05 pm

Within a team website, is it legal to use the official FIRST logo without permission?

If no, how can we get this permission?

Re: FIRST Logo Use

Posted by FRCOPS at 02/19/2007 04:05:39 pm

Yes, you may use the offical [I]FIRST [/I]logo. Please adhere to the [I]FIRST [/I]logo standards provided on the FRC Communications Resouce Center: [URL=http://www.usfirst.org/community/resourcecenter.aspx?id=650]http://www.usfirst.org/community/resourcecenter.aspx?id=650[/URL]

5.30 Woodie Flowers Award

5.30 Woodie Flowers Award

Woodie Flowers Award

Woodie Flowers Award

Posted by FRC877 at 01/27/2007 03:51:01 pm

Are Woodie Flowers Award nominees only teachers or engineers? Can mentors active with the program for years be nominated?

Re: Woodie Flowers Award

Posted by FRCOPS at 01/29/2007 12:34:23 pm

The nominee can be any mentor that has brought value to the team. He/She does not have to be a Teacher or Engineer.

5.30 Woodie Flowers Award

Multiple Woodie Flowers Award Submissions

Multiple Woodie Flowers Award Submissions

Posted by FRC111 at 01/31/2007 03:35:40 pm

We were reading over the awards information and we noticed a change in the Woodie Flowers section.

Please let us know if we understand this correctly.

1-We have two past Woodie Flowers regional winners on our team. Last year we were able to submit both of them at the Championship event. This year we have to pick between them and pick only one to submit?

2-When we resubmit, the Judges will only see this new written submission?

3-Will the judges see the past photo's submitted? And/or do we submit new photo's ?

4-Do we have to put all new personal information in again? Or do the judges see what was entered in the past?

5-We may submit a new nominee for a regional event this year?

6- If our new nominee wins at the regional level then we have to decide between all 3 of them (the past two and the new one) which will be represented at the Championship for our team?

Thank You for clearing this up for us.

Re: Multiple Woodie Flowers Award Submissions

Posted by FRCOPS at 02/08/2007 02:35:02 pm

1 - Yes, the student nominators need to choose between these 2 past regional winners, as they know them better than the judges.

2 - Yes, the judges will be focused on the current year's essay.

3 - New photos are encouraged.

4 - Please be sure to input all information the site requests. Do not assume that the past years' information would be seen.

5 - Yes, as long as that mentor is not a Woodie Flowers Finalist Award (WFFA) winner from a past year.

6 - Yes. Only one Finalist per team is eligible for the Championship WFA. The current year students' opinion to put their best candidate forward as their Championship WFA candidate helps bring this award to the most deserving mentor. If the same team with a past WFFA winner has a mentor win a regional award in 2007, then the student nominators will be contacted by the judges and asked to choose which WFFA winner is their candidate for the Championship WFA.

5.30 Woodie Flowers Award

Re-Submitting Past WFA Winners

Re-Submitting Past WFA Winners

Posted by FRC111 at 02/02/2007 10:32:57 am

In prior years, we were under the impression that after winning a Regional Woodie Flowers Award, that winner would be eligible for the next -two- years at the Championship level. This gave them three attempts at winning at the Championships. The 2007 rules do not state this -two- year maximum of re-submissions, but instead states "A team may refresh the submission of any past WFFA winner on their team".

We were also under the impression that after these additional two years, the winner is re-eligible for submission at the Regional level.

So, will a Regional Woodie Flowers Award winner, who won in 2005, still be eligible for re-submission at Championship? If so, for how many years will they be eligible? If that winner is not eligible to be submitted forever at the Championship level, when can they be eligible for submission at the Regional level again?

Re: Re-Submitting Past WFA Winners

Posted by FRCOPS at 02/08/2007 02:29:10 pm

Any past Woodie Flowers Finalist Award (WFFA) winner at the Regional level is eligible for the Championship WFA, if the current students nominate this past winner again by submitting a new essay. No existing WFFA winner is eligible to win the Finalist Award again. There is no expiration date for WFFA winners to be eligible for the Championship WFA. Therefore, yes, 2004, 2005 and 2006 WFFA winners are eligible for the 2007 Championship WFA.

5.30 Woodie Flowers Award

Championship WFA

Championship WFA

Posted by FRC25 at 02/15/2007 01:00:25 am

Let's suppose Team Blueabot makes a submission for Mr. X at a regional. However, Mr. X wins WFFA at another regional. Would Blueabots submissions be taken into consideration at the championship level? Is only the winning submission taken into account at the Championship level or all the nominations if he or she had been nominated by multiple teams at a regional?

Re: Championship WFA

Posted by FRCOPS at 02/16/2007 10:59:14 am

Only the winning submissions from the Regional events are considered at the Championship event. Please read Section 5.30 of the 2007 FRC Manual.

6.2 Playing Field

6.2 Playing Field

Rack parts painted

Rack parts painted

Posted by FRC619 at 01/12/2007 10:46:35 am

Will the spider feet and the bottom 8"X39" panel be painted (if so what color?) or will they be as described in the drawings as bright Alum plate?

Re: Rack parts painted

Posted by GDC at 01/12/2007 02:30:46 pm

As specified in the Official FIRST Drawings, the Spider Feet and bottom panels of the Rack will be bright aluminum diamond plate. The sole exception will be the series of reference numbers painted on the top row of Spider Legs.

6.2 Playing Field

Material of the Spider Legs

Material of the Spider Legs

Posted by FRC111 at 01/16/2007 09:21:33 am

The documentation seems to be inconsistent concerning the material that the spider legs are made of.

In the 'Arena' section of the manual, it states:
[QUOTE]Each SPIDER is made of a central disk of 1/2 inch polycarbonate, two feet in diameter, from which eight 2-inch OD [B]aluminum [/B] “SPIDER LEGS” extend.[/QUOTE]
However, in the document: 2007 Field_Rack_Fabrication_R1.pdf, it states that the spider legs are made of 2" SCH-40 PVC Electrical Conduit.

Which of these is correct? Also, if the SCH-40 PVC is the correct, is there a recommended supplier (McMaster?) and part number?

-Nate

Re: Material of the Spider Legs

Posted by GDC at 01/18/2007 10:52:26 pm

SCH-40 PVC is the correct material for the SPIDER LEGS. The Arena section of the manual will be updated. The recommended vendor is your closest hardware supply store.

6.2 Playing Field

Which Way Does the Stinger Go?

Which Way Does the Stinger Go?

Posted by CMB at 01/17/2007 09:41:46 pm

We are trying to put together our rack completely and do not know which way the rubber hose on the end is pointing. Is the stinger pointing out or is it pointing towards the rack? :confused:

Re: Which Way Does the Stinger Go?

Posted by GDC at 01/18/2007 04:33:39 pm

The objective is to have them straight but this will not always be the case.

The stingers that insist on remaining curved should be mounted to have the curve arching away from the center of the Rack.

6.2 Playing Field

Reaching for the Sky

Reaching for the Sky

Posted by FRC25 at 01/19/2007 03:56:54 pm

Is the light scaffolding & roof of the arena considered to be part of the playing field?

Re: Reaching for the Sky

Posted by GDC at 01/22/2007 04:20:18 pm

The light scaffolding and arena ceiling are out of bounds. You may not, under any circumstances, grasp, grapple, attach to, or hang from, any overhead structures. Any attempt to do so will be considered a violation of <G30> and <S01>, and will result in immediate disabling of the ROBOT and a 10-point penalty.

6.2 Playing Field

Rack - Center Chain to Floor?

Rack - Center Chain to Floor?

Posted by FRC2029 at 01/24/2007 02:15:54 pm

In the kick-off video, the bottom center disk of the rack appears to be tethered to the base of the rack. In the drawings, it shows the bottom center disk with no chain to the base of the rack. There would be a great difference in the movement of the spider legs depending on which configuration is correct. (For instance, if there is no bottom chain and a spider leg is depressed, the center disk would rise and cause the other spider legs to move downwards. That could not happen of the bottom center disk is connected by chain to the base.) Is the video correct, or are the drawings correct?

Re: Rack - Center Chain to Floor?

Posted by GDC at 01/29/2007 04:50:43 pm

As noted in the beginning of Chapter 6 of the manual, the illustrations in the manual are there to provide a visual understanding of the field and game. Official field contents and dimensions are provided in the Official Field Drawings found on the FIRST web site. The same is true for the demonstration animation shown during the kick-off broadcast. The purpose of the animation is to provide a basic understanding of the game. It is not intended to provide precise details on the design or construction of the field.

6.2 Playing Field

Power supply to lights

Power supply to lights

Posted by FRC585 at 02/01/2007 09:03:27 pm

Is the power supplied to the green target lights a constant voltage? What is the voltage and the range?

Re: Power supply to lights

Posted by GDC at 02/02/2007 04:34:22 pm

The target lights will be connected to a constant 12v source.

6.3 Game Pieces

6.3 Game Pieces

Tube Inflation

Standard innertube pressure

Posted by FRC25 at 01/11/2007 09:19:32 pm

Will the inner tubes be maintained at a constant pressure? We've found that after some use the tubes may get small punctures and begin to deflate over time. Will they be kept at full pressure or will such a thing be at the discretion of the referees?

Standard innertube pressure

Posted by FRC229 at 01/12/2007 04:43:02 pm

Will there be a set tube pressure (or size?) throughout the matches each day, or will they just be set once at the start of each regional? Regardless, what is the standard pressure and or size to be used?

-Alex

Tube Inflation

Posted by FRC237 at 01/12/2007 07:14:26 pm

What is the inflation for the tubes for competitions?

Re: Standard innertube pressure

Posted by GDC at 01/15/2007 05:10:51 pm

When measured in geologic time, it is virtually certain that gas exchange at a molecular level will occur across a semi-permiable membrane. Therefore, you can anticipate that the pressure within the tubes will change over time.

Tube Inflation

Posted by FRC1693 at 01/15/2007 11:30:37 pm

What is the recommended inflation pressure for the Game Pieces?

Will the pieces be kept fully inflated throughout the competition?

Tube Inflation

Posted by FRC57 at 01/16/2007 10:15:59 am

Cute answers aside, there is NO guidance in the manual about the inflation of game pieces, other than that they will be 32" in diameter. Are we to assume that the field crew will run out of breath, and on Friday morning in round 1, 3 pieces will be inflated to 3 psi, while the remaining will only be inflated enough to leave them 1 inch thick? Does the GDC have any guidance on this or is the desire to force teams to assume that all game pieces will be effectively deflated since the GDC doesn't care how inflated they are?

Teams realize that maintaining inflation during the competition will be difficult, but it seems unfair for the GDC to imply that there will be absolutely no standard for the game pieces and that teams should expect everything from almost bursting to a swiss cheese tube to start a match.

Re: Tube Inflation

Posted by GDC at 01/18/2007 10:41:50 pm

There are very clearly stated standards for the Game Pieces. Section 6.3 of the manual declares that when inflated the Game Pieces are approximately 32 inches across the outer diameter and approximately 9-1/2 inches tall, with an inner diameter of approximately 13 inches.

During the competition all Game Pieces will be inflated to their approximate size, not to a specific pressure. Individual Game Pieces will be replaced as necessary if they are unable to hold sufficient pressure to maintain the size requirement. As previously noted, the pressure within each individual Game Piece can be expected to vary over time should damage, small leaks, or normal wear and tear occur.

Starting tube pressure

Posted by FRC229 at 01/28/2007 03:00:48 pm

"When measured in geologic time, it is virtually certain that gas exchange at a molecular level will occur across a semi-permiable membrane. Therefore, you can anticipate that the pressure within the tubes will change over time." -GDC

Even taking this into account, there must be a standard that all the tubes are filled to at the start. Either a standard of size or pressure. Which is it and to what specification?

-Alex

Re: Tube Inflation

Posted by GDC at 01/28/2007 06:02:04 pm

The answer from January 18th is still valid.

Game pieces

Posted by FRC1535 at 02/08/2007 05:53:01 pm

Hi, I have a question concerning the spoilers, keepers and ringers. How well inflated are they going to be, before a match. Also if they lose air, will they be replaced during a game, or after? by loosing air, i mean decreased psi not unable to hold air like having a hole in it. if you could give a number that would be awesome! thanks.

Re: Game pieces

Posted by GDC at 02/09/2007 01:07:01 am

The answer from January 18th is still valid.

6.4 Alliance Zones

6.4 Alliance Zones

The Chute 6.4.3

The Chute 6.4.3

Posted by FRC49 at 01/18/2007 06:56:41 am

How high is the bottom or center of the chute from the floor. We assume about 51 inches but have not found definate information

Re: The Chute 6.4.3

Posted by GDC at 01/18/2007 10:45:34 pm

The distance from the floor to the bottom of the chute is 41 inches.

6.4 Alliance Zones

The Chute

The Chute

Posted by FRC1722 at 01/19/2007 01:56:03 am

In section 6.4.3 there is reference to four bungee cords to hold the game pieces in place. Can

we get more details regarding that? At what height will they hold the game piece? Will it be in the air? Can the human lower the game piece to the floor height and it be held in position there for retrieval by the robot. Where are the attachment points for the bungee?

Re: The Chute

Posted by GDC at 01/20/2007 05:04:48 pm

Please refer to the updated [I]2007 FIELD_LAYOUT_and_MARKING_R1.pdf[/I] drawing (it is available at [url]www.usfirst.org/frc/2007/officialdrawings[/url]), which details the lcoation of the CHUTE. The bungie cords are attached to the Alliance Station Wall, on the Alliance Zone side of the wall. There are two bungie cords on either side of the CHUTE opening, aligned vertically. The bungie cords are located such that they will hold a GAME PIECE that is placed in the CHUTE in position, so that it is halfway through the Alliance Station Wall.

6.4 Alliance Zones

Real Time Scoring Visibility

Real Time Scoring Visibility

Posted by FRC148 at 01/23/2007 07:03:43 pm

It is our understanding that "Real Time Scoring" will be kept during each match, and that this scoring will be displayed at the events for the benefit of the audience members.

At some venues, this display is visible only from one of the alliance stations. This gives this alliance an advantage.

In this game, the real-time-scoring display will be INCREDIBLY important for coaches and drivers during the match. Will efforts be made such that this display is visible to BOTH alliances, or barring that, visible to NEITHER alliance?

Thank you for your consideration,
Team 148

Re: Real Time Scoring Visibility

Posted by GDC at 01/25/2007 04:06:37 pm

[I]FIRST [/I] has planned for this situation. At venues where the main screen is only visible to one alliance, a monitor will be visible to the opposite alliance.

6.5 Drawing Notes

6.5 Drawing Notes

Stinger length

Stinger length

Posted by FRC1250 at 01/17/2007 05:01:34 pm

How long is the stinger in the spider leg?

Re: Stinger length

Posted by GDC at 01/18/2007 11:07:21 pm

The Stinger is detailed on Sheet 2 of the Field Rack Fabrication drawings on the [URL=http://www.usfirst.org/community/frc/content.aspx?id=3804]Official FIRST Drawings[/URL] web page.

6.5 Drawing Notes

Where do the bungees go?

Where do the bungees go?

Posted by CMB at 01/17/2007 09:44:17 pm

Should the bungees be underneath the spider legs with the lights on them, or is it on the other ones? We can't figure this out.

Re: Where do the bungees go?

Posted by GDC at 01/18/2007 03:33:33 pm

Please refer to the 2007 Field Rack Assembly drawing at [url]http://www2.usfirst.org/2007comp/Drawings/2007_Field_Rack/2007%20Field_Rack_Assembly_R-.pdf[/url].

6.5 Drawing Notes

Height of Spider Foot Height Inconsistent in Official Field Drawings

Height of Spider Foot Height Inconsistent in Official Field Drawings

Posted by FRC1318 at 01/26/2007 03:36:54 pm

I'm trying to get a good model of the rack for dialing in our robot design, but there's a discrepancy in the official drawings.

In "2007 File_Rack_Assembly_R-.pdf", it shows the center of the lower 10" spider foot plate at 2' 3", with the center of the spider leg at 1' 11 13/16". Thus we expect 3 3/16" (3.1875") vertically between the center of the leg and the center of the foot.

However, "2007 Field_Rack_Fabrication(2)_R1.pdf" the two holes for the peg end plate mount at 1.2" and 4.56". Presumably, the center of the spider leg attaches at the midpoint of those two holes, which is 2.88" below the center of the foot.

The difference between 3.1875" and 2.88" is only about 0.3", and everything is plus or minus an inch, but it seems like the field drawings should at least be consistent so we know what the field setup folks are aiming for.

Can you tell us what to expect for the official racks, will the foot be centered at 2' 3" or will the leg be centered at 1' 11 13/16" (lowering the foot center to approximately 2' 2 11/16")?

Re: Height of Spider Foot Height Inconsistent in Official Field Drawings

Posted by GDC at 02/07/2007 07:10:36 pm

Thank you for your insight and detailed review. The appropriate field drawings have been updated. Please refer to Team Update #9 for details.

7.1 Game Overview

7.1 Game Overview

Charging the Pneumatics

Charging the Pneumatics

Posted by FRC1831 at 02/22/2007 05:02:52 pm

We will not have a compressor onboard the robot, but we will be using the storage cylinders. It

is not clear as to when we must charge the cylinders before a match. Can we have the compressor and a separate battery on our cart while in line awaiting our match in order to charge the cylinders just prior to the match? We are concerned that if we charge the cylinders in the pit and somehow the pressure purge value is hit while in line, we will not have the required pneumatics systems on the bot.

Re: Charging the Pneumatics

Posted by GDC at 02/26/2007 04:52:52 pm

You may charge you storage tanks any time before the start of the match.* It is recommended that you fully charge your pneumatic system while in your pit area before being queued up for a match. Then, if necessary, you may quickly "top off" the system just before you put the robot on the field.

Please note that the pneumatics system must be pressurized with the KOP compressor under the control of the Robot Controller, and using the robot battery. Spare off-board batteries, alternative compressors, and compressors not controlled by the Robot Controller are not permitted.

* please note that we respectfully request that this be done in the pit area. You should not wait until the robots take the field to start charging your pneumatics, to avoid potentially delaying the match schedule.

7.2 The Game

7.2 The Game

Scoring on spider legs 1 - 8

Scoring on spider legs 1 - 8

Posted by FRC1089 at 01/10/2007 09:17:05 pm

From: Chris Gregory - Team 1089

When scoring at the end of the round, are spider legs 8 and 1 contiguous? In the diagram in the manual, legs 1 - 8 are listed as a rectangular grid. For example, would having a row of three in positions 7, 8, and 1 count as a row of three or a row of two and a singleton?

Re: Scoring on spider legs 1 - 8

Posted by GDC at 01/11/2007 04:41:33 pm

The numbers on the top row of Spider Legs are for reference purposes only. Potential rows are determined solely by adjacency and "wrap around" the reference locations. So a set of scored Spider Legs 7, 8 and 1 would be considered a row of three.

7.2 The Game

Real Time Scoring

Real Time Scoring

Posted by FRC237 at 01/18/2007 12:25:10 pm

Will the field screen display real-time scoring or as close as possible to realtime scoring?

Re: Real Time Scoring

Posted by GDC at 01/22/2007 04:30:36 pm

FIRST will be implementing a real-time scoring system. This scoring will be visible to players in the Alliance Zone. FIRST advises caution in using this information, as it is for reference only and the official score is not determined until the Match ends.

7.2 The Game

<R12> and tipped robots

<R12> and tipped robots

Posted by FRC1276 at 01/19/2007 05:36:39 pm

Can we have a reasonable amount of clarification as to when a violation of <R12> results in a DQ, and when it results in a disable?

Example 1
BLUEABOT has an arm which extends to 8 feet, allowing him to score on the top rack. REDABOT gets a little overzealous in his defense and hits BLUEABOT a little too hard, causing BLUEABOT to tip. BLUEABOT is unable to retract his arm (although I would assume the penalty would remain the same as if the arm was retracted). Would BLUEABOT recieve a DQ or a disable?

Example 2
BLUEABOT has an arm which extends to 8 feet, allowing him to score on the top rack. During the course of the match, BLUEABOT accelerates a little too hard, and goes over on his back. BLUEABOT is unable to retract his arm (although I would assume the penalty would remain the same as if the arm was retracted). Would BLUEABOT recieve a DQ or a disable?

Re: <R12> and tipped robots

Posted by GDC at 01/22/2007 03:50:05 pm

Hypothetical game situations are highly context-dependent. It is not practical for us to provide definitive answers for all indivual situations that may be presented.

7.3 Rules

7.3 Rules

game piece entry to field

game piece entry to field

Posted by Mr R at 01/10/2007 12:34:12 pm

[FONT=Arial]There seems to be a mismatch in how rings can enter the playing field between <G23> Game pieces may only be entered onto the field through the chute and <G48> If game pieces are thrown, they must be thrown over the top of the Allience Station Wall . . .

Mr[/FONT] [FONT=Arial Black]R[/FONT]

Re: game piece entry to field

Posted by GDC at 01/11/2007 04:18:58 pm

Please refer to Team Update #1, updated Rule <G23>.

7.3 Rules

Spider attachment clarification

Spider attachment clarification

Posted by Rossref at 01/10/2007 01:02:52 pm

Rule G33 says "robots may not grab, grasp, grapple, or attach to any field structure." Am I correct in assuming that applies to the spider leg? Are we not allowed to intentionally grab it for the purpose of scoring?

Re: Spider attachment clarification

Posted by GDC at 01/11/2007 08:25:16 pm

The Spider Legs are considered part of the field structure, and are covered under Rule <G33>. The Spider Legs may be pushed to one side, from the front, or from the bottom, to stabilize them during the process of hanging a game piece. However, they may not be grasped, held, or severely restrained without violating this rule.

7.3 Rules

Tube Herding

Tube Herding

Posted by FRC151 at 01/10/2007 02:46:31 pm

Can a robot herd multiple tubes if it is not in possession (carrying) a tube? This is to clarify <G09> that herding multiple tubes at the same time is permitted.

Also while herding, can a robot have multiple points of contact on the tubes while they are on the floor?

Re: Tube Herding

Posted by GDC at 01/11/2007 04:23:04 pm

Please read the definition of "POSSESSION" and read Rule <G09> in Section 8 carefully. This topic is directly addressed in the definition and rule.

7.3 Rules

Detached Mechanisms <G40>

Detached Mechanisms <G40>

Posted by FRC498 at 01/10/2007 03:05:15 pm

Rule <G40> states that "ROBOTS may not intentionally detach parts or leave multiple mechanisms on the field." Is the definition of detached merely any component no longer connected to the robot? We would specifically like to know if having robot parts that leave the main robot frame but are still connected to it by a small "tether" would violate rule <G40>.

Thank you!

Re: Detached Mechanisms <G40>

Posted by GDC at 01/11/2007 04:04:43 pm

Any mechanisms "attached" to the robot via a tether are likely be considered an entanglement hazard and a violation of Rules <G38>, <R04>, and <R32>.

7.3 Rules

Autonomous Mode

Autonomous Mode

Posted by FRC498 at 01/10/2007 03:12:10 pm

During the autonomous period, it is illegal for human players to enter rings onto the field, and it is the only chance robots have to score keepers. Is it legal to pick up ringers from the opposing alliance's home zone during autonomous and/or try to score them before the teleoperated period?

Re: Autonomous Mode

Posted by GDC at 01/11/2007 03:47:16 pm

There is no prohibition against interacting with game pieces during the autonomous period. If your robot is able to acquire one of your Ringers and attempt to hang it during the autonomous period, that is perfectly acceptable.

7.3 Rules

Placing tubes on opponents <G09>

Placing tubes on opponents <G09>

Posted by FRC151 at 01/10/2007 03:43:48 pm

What happens if the red alliance places a tube on the blue alliance whom is also in possession of a tube causing the blue alliance to be in "possession of 2 tubes?

Re: Placing tubes on opponents <G09>

Posted by GDC at 01/12/2007 11:01:50 pm

Please refer to Team Update #2 and updated Rule <G09> for clarification.

7.3 Rules

Use of opponents tubes

Use of opponents tubes

Posted by FRC151 at 01/10/2007 03:46:33 pm

Is it possible for one alliance to pick up an opposing alliances tube from the floor and score it on the rack? Understanding that the offending alliance will recieve a 10 point penalty per <G21>, will the tube still count?

Re: Use of opponents tubes

Posted by GDC at 01/13/2007 12:10:33 am

If an alliance robot hangs an opposing Ringer in a scoring position on the Rack, the alliance will receive a 10-point penalty per Rule <G21>. If the spider leg is empty and this is the only game piece on it, the game piece will count. If there is already a game piece scored on the spider leg, the second Ringer will be evaluated as specified in Rule <R15>.

7.3 Rules

Clarification on End Game

Clarification on End Game

Posted by FRC1262 at 01/10/2007 06:42:42 pm

Rule G56 states...

<G56> ROBOTS in HOME ZONE - ROBOTS score bonus points at the end of the match if they are
entirely in their HOME ZONE, not in contact with any element of the field (carpet, alliance station, goal etc.).....

Please clarify whether or not the pool tubes are considered field elements.

In the Kickoff video, one robot elevated itself onto a pool tube and was awarded the bonus points.

Is this legal??

Re: Clarification on End Game

Posted by GDC at 01/11/2007 03:07:53 pm

For the purposes of scoring bonus points, the game pieces are considered field elements. Please refer to Team Update #1, updated Rule <G56>. During the Kickoff video and animation, robots were stacked on robots, not on game pieces.

7.3 Rules

<R79> and Coaches with Laptops/PDAs

Rule R79 in 8.3.8 - Laptop uses

Posted by FRC1656 at 01/10/2007 09:27:36 pm

<R79> permits a laptop (or other portable, battery-powered computing device) to be connected to the dashboard port of the OI "for the purpose of displaying feedback from the ROBOT while participating in competition matches."

Can the laptop run, in addition to a dashboard monitor, a program to calculate the current game score for strategy purposes? A whiteboard was included in the kit for such a purpose, but a computer is faster at exponential math and would limit human errors in calculations.

If this is allowed, then would the Coach be allowed to use the laptop? Although the laptop would be on the same board/platform as the OI, the Coach would not be controlling any of the input devices, only monitoring the game and robot status while providing the Drivers with information.

Please clarify the allowed purposes and uses of laptops or PDAs with regard to non-dashboard applications and Coach use.

Thanks,
Max Cutler

Re: <R79> and Coaches with Laptops/PDAs

Posted by GDC at 01/12/2007 11:59:14 pm

The software displaying the status of the dashboard information may also display the state of the field, and any estimated score. A laptop connected to the Dashboard Port of the Operator Interface would be considered part of the Operator Console. As such, the Coach may not touch the dashboard laptop without violating Rule <G49>.

7.3 Rules

Hypothetical tube damage

Hypothetical tube damage

Posted by FRC1629 at 01/10/2007 10:55:23 pm

The rules state that tubes which are deflated are still counted for scoring purposes. In our discussions the question came up: What if a tube was somehow severed or damaged to the point of falling off the spider leg it had been scored on? We realize this is a highly unlikely event, but we'd like clarification of how it would be handled if it ever did happen (knock on wood).

Re: Hypothetical tube damage

Posted by GDC at 01/11/2007 03:20:25 pm

Regardless of the extent of the damage to the game piece, it will be scored per the rules in Section 7.3.6 (as if it was still there). The referees will be responsible for tracking any game pieces (except spoilers) that are removed.

7.3 Rules

Starting Conditions

Starting Conditions

Posted by FRC1618 at 01/11/2007 06:21:22 pm

Section 7.3.3.1 dictates the starting conditions of the robot, but one question remains: Can a robot start on top of another robot, provided that both fit within their respective size restrictions?

Re: Starting Conditions

Posted by GDC at 01/14/2007 11:37:42 am

There is no rule that would prohibit this.

7.3 Rules

Rotation of the Rack

Rotation of the Rack

Posted by FRC25 at 01/11/2007 09:14:23 pm

How much will the rack be rotated every match? (In degrees, turns, or etc.?)

Re: Rotation of the Rack

Posted by GDC at 01/15/2007 05:01:22 pm

We cannot predict the precise rotation of the Rack between each match per <G07>.

7.3 Rules

Robot part on the Spider Foot

Robot part on the Spider Foot

Posted by FRC619 at 01/12/2007 10:58:51 am

Can a robot part lie on top of or touch the Spider Foot/Stinger, but not be held?
There is no mention of the foot or the top of the leg in the below answer.

The Spider Legs are considered part of the field structure, and are covered under Rule <G33>. The Spider Legs may be pushed to one side, from the front, or from the bottom, to stabilize them during the process of hanging a game piece. However, they may not be grasped, held, or severely restrained without violating this rule.

Re: Robot part on the Spider Foot

Posted by GDC at 01/12/2007 02:31:53 pm

The Spider Foot and Stinger are considered sub-parts of the Spider Leg. As such, all rules and rulings regarding the Spider Leg also apply to the Spider Foot and Stinger.

7.3 Rules

Clarification to <G56> After Update #1

Clarification to <G56> After Update #1

Posted by FRC1089 at 01/12/2007 06:06:29 pm

<G56> ROBOTS in HOME ZONE - ROBOTS score bonus points at the end of the match if they are
entirely in their HOME ZONE, not in contact with any element of the field (carpet, alliance station, goal etc.).....

As per update #1, GAME PIECES are now considered FIELD ELEMENTS.

Does this imply that a robot that is elevated to score bonus points, but in posession of a GAME PIECE will not score said points?

Re: Clarification to <G56> After Update #1

Posted by GDC at 01/16/2007 11:57:42 pm

Please refer to Rule <G56> as amended in Update #3. POSSESION of a GAME PIECE will not discount the bonus points earned in the END GAME. However, robots supported by GAME PIECES will not earn bonus points.

7.3 Rules

Robot lifting outside of homezone

Robot lifting outside of homezone

Posted by FRC624 at 01/12/2007 07:41:12 pm

Is it acceptable to lift up disabled or malfunctioning alliance partners and transport them to the homezone in order to score bonus points?

Re: Robot lifting outside of homezone

Posted by GDC at 01/15/2007 03:15:00 pm

There is nothing in the rules that would prohibit this action.

Robot lifting outside homezone

Posted by FRC624 at 01/17/2007 08:40:55 am

If an alliance partner were disabled, incapaciated, or broken, would another alliance partner be allowed to lift them up and bring them inside the home zone with the intent of scoring bonus points?

Re: Robot lifting outside of homezone

Posted by GDC at 01/17/2007 10:15:34 am

The answer posted above is still true.

7.3 Rules

<G40> Detaching and Reattaching

<G40> Detaching and Reattaching

Posted by FRC173 at 01/12/2007 11:05:34 pm

Rule G40 states that there is a 10 point penalty for detaching parts or mechanisms.

How would the rule be enforced if my robot were to detach a ramp and platform that raised my alliance partner 12" off the floor? Would the alliance earn 30 points for the 12" but lose the 10 point penalty for a net gain of 20 points?

Similarly, what if my robot were to reattach to the mechanism before the match ended? Would I still incur the 10 point penalty?

Re: <G40> Detaching and Reattaching

Posted by GDC at 01/15/2007 05:09:12 pm

Once any part of the robot is detached, it is considered a permanent field element (field debris). Therefore, the elevated robots would not earn bonus points and any robot may not attach to the previously detached part.

<G40>

Posted by FRC1902 at 02/08/2007 10:12:18 pm

In reference to rule G40, assuming a robot is designed to intentionally detatch a ramp in the home zone and accept the 10-point penalty:

1. Would this team risk receiving any additional penalties (e.g. a yellow card) for intentionally taking a penalty?

2. Would the detatched ramp be considered part of the robot? Would it be subject to all tipping, blocking, wedging rules of a complete robot? Would it become a field element? Most importantly, could an alliance robot climb on this ramp to gain a 30-point bonus?

Thanks,
Team 1902

Re: <G40>

Posted by GDC at 02/12/2007 07:32:03 pm

Intentionally detaching part of the robot will result in a 10-point penalty, under Rule <G40>. Additional penalties may be received if the situation is determined to be in violation of any other rules. Once any part of the robot is detached, it is considered a permanent field element (field debris). Therefore, the elevated robots would not earn bonus points and robots may not attach to the previously detached part.

7.3 Rules

Entering Game Pieces

Entering Game Pieces

Posted by FRC1511 at 01/13/2007 05:41:43 pm

Rule G48 States that: "Human players may enter a ringer or spoiler onto the field, either by attempting to throw it to a robot or onto the rack..."

What is defined as "to a robot"? if the human player just starts by throwing all of the tubes on the field, and one of their alliance robots is not nearby, does this count as to a robot? is this permitted?

Re: Entering Game Pieces

Posted by GDC at 01/14/2007 11:36:42 am

There is no minimum specified time between when the Human Player may enter the Game Pieces on to the field and when the Robot attempts to retrieve them. Therefore, the Human Player may throw Game Pieces on to the field at any time, without concern about when a Robot may be able to retrieve them.

7.3 Rules

On defense during the end game

On defense during the end game

Posted by FRC1618 at 01/13/2007 06:10:14 pm

Under <G25>, teams are prohibited from occupying the opposing home zone during end game. This raises two questions:

1) Would a clearly intentional violation of <G25> qualify for a yellow card under <T06>?

2) If a team were playing defense outside of the home zone during End Game but were pushed inside, would they be protected under the final sentence of <G25>, provided they were making a bona fide effort to exit the home zone?

Re: On defense during the end game

Posted by GDC at 01/15/2007 04:10:34 pm

A robot that intentionally occupies an opponents HOME ZONE during the END GAME will be penalized according to rule <G25>.

A robot that moves into an opponents HOME ZONE during the END GAME under its own power will be penalized according to rule <G25>.

A robot that is pushed by an opposing alliance's robot into the opponents HOME ZONE during the END GAME will not be penalized according to rule <G25> as long as they make a visible effort to exit.

7.3 Rules

Knocking over tubes and <G09>

Knocking over tubes and <G09>

Posted by FRC1276 at 01/14/2007 02:08:28 pm

If a robot was to drive along an alliance station wall, knocking over ringers as it went, would the contact with the game pieces on the floor (that the robot has knocked down) be considered "inadvertant", assuming the robot is not attempting to herd them?

[QUOTE=<G09>]<G09> POSSESSION - ROBOTS may only have 1 (one) GAME PIECE in their POSSESSION at any time during the match. A 10-point penalty will be assessed for each infraction. Inadvertent bulldozing of GAME PIECES while the ROBOT moves around the field is allowed. Controlled "herding" of a single GAME PIECE lying on the floor is permitted as long as no other GAME PIECE is in the POSSESSION of the ROBOT. Herding of multiple GAME PIECES, or herding of a GAME PIECE on the floor while in POSSESSION of another GAME PIECE is not permitted (as this would be considered POSSESSION of more than one

GAME PIECE). GAME PIECES may fall on to a ROBOT during the course of normal game play (e.g. a RINGER falls on a ROBOT while attempting to HANG it on a Spider Leg). In such cases, GAME PIECES that are already in the POSSESSION of the ROBOT may be played. However, the additional GAME PIECE must be removed from the ROBOT (either by the ROBOT or by an ALLIANCE partner) before it can POSSESS a new GAME PIECE. GAME PIECES may not be intentionally placed on opposing ROBOTS for the purpose of causing a violation of this rule. Any such GAME PIECE placements will not be considered in POSSESSION of the affected ROBOT, and will be ignored.[/QUOTE]

Re: Knocking over tubes and <G09>

Posted by GDC at 01/15/2007 03:10:44 pm

Driving down the length of the Alliance Station Wall, disrupting the location of oppnent Ringers, is a permissible action. However, if multiple Ringers are pushed together toward a common location (e.g. pushed into a corner of the field) the action will be considered "herding" and a violation of Rule <G09>.

7.3 Rules

Referee Interaction

Referee Interaction

Posted by FRC1511 at 01/14/2007 02:36:08 pm

per G51, may a pre-college COACH have discussions with the referee? or are only Drivers or Human Players allowed?

Re: Referee Interaction

Posted by GDC at 01/15/2007 03:08:23 pm

Under Rule <G51> only Drivers and/or Human Players may discuss rules, scores, or penalties with the Head Referee.

7.3 Rules

Speed of the robot

Speed of the robot

Posted by FRC1710 at 01/15/2007 03:58:08 pm

Is there a limit on the speed of the robot?

Re: Speed of the robot

Posted by GDC at 01/18/2007 04:01:16 pm

There is no specific speed limit on the robots. However, robots that accelerate too quickly and/or maintain excessive velocities may be subject to a violation of Rule <S01> if their operation is considered unsafe or hazardous to the field, field personnel, or other robots.

7.3 Rules

Can Human Players reach through the Chute?

Can Human Players reach through the Chute?

Posted by FRC1763 at 01/15/2007 04:23:32 pm

In reference to <G84> robots may not break the plane of the playing field, buy may a human player put hands into the playing field space when entering a game piece into the play?

Ringer entry through slot

Posted by FRC2081 at 01/16/2007 05:27:34 pm

Can a human player insert a ringer through the slot and then rotate the ringer 90 degrees such that the ringer will be in a horizontal plane before releasing it assuming that the human player makes no contact with the robot? This of course would require that the human player's hand break the plane of the end wall of the playing field.

Can the Human Players hand pass through the Chute?

Posted by FRC179 at 01/17/2007 02:17:54 pm

The rules mention the robot cannot pass through the chute, and that the Human Player cannot touch the robot. But can the Human players hand pass through the chute beyond the plane of the driver station wall and manipulate the ringer into/onto the robot holding mechanism as long as they do not make contact with the robot?

The CHUTE & Human Players

Posted by FRC2103 at 01/17/2007 02:36:15 pm

Q:
Without the robot breaking the plane of the CHUTE <S03>, and the
human player not making direct contact with any robot at any time
<S02>, can the human player break the plane of the CHUTE and place
a RINGER on the robot through the CHUTE without every touching the robot?

G32 Question

Posted by FRC1986 at 01/17/2007 04:09:46 pm

G32 prohibits robots from breaking the plane of the chute. Is there a corresponding rule preventing a human player from breaking the plane? G44 says players can't step out of he alliance zone, but can they reach an arm through the chute to the playing field?

Re: Can Human Players reach through the Chute?

Posted by GDC at 01/18/2007 10:54:20 pm

Please refer to <S03>, as amended in Team Update #4.

7.3 Rules

Actively Using Dashboard laptop

Actively Using Dashboard laptop

Posted by FRC111 at 01/15/2007 06:43:32 pm

Is it permissible for a DRIVER to actively control a laptop which is connected to the Dashboard interface (and therefore part of the OPERATOR CONSOLE)? Specifically, can a DRIVER use the keyboard or mouse interface to control the laptop during a match?

Re: Actively Using Dashboard laptop

Posted by GDC at 01/18/2007 03:58:00 pm

Yes.

7.3 Rules

Clarification of Herding

Clarification of Herding

Posted by FRC1276 at 01/15/2007 10:20:51 pm

Would it be permissible for BLUEABOT to knock down BLUE ringers, providing BLUEABOT does not attempt to herd them?

[QUOTE=GDC]Driving down the length of the Alliance Station Wall, disrupting the location of oppnent Ringers, is a permissible action. However, if multiple Ringers are pushed together toward a common location (e.g. pushed into a corner of the field) the action will be considered "herding" and a violation of Rule <G09>.[/QUOTE]

Clarification of Herding

Posted by FRC1710 at 01/16/2007 09:21:59 am

Are we allowed to knock down the tubes that are on the wall and then pick them up from the floor?

If we knock 3 down in one run would that be considered herding?

Re: Clarification of Herding

Posted by GDC at 01/18/2007 04:15:34 pm

Simply knocking down multiple Game Pieces that are leaning against the Alliance Station Wall in order to be able to pick them up off the floor would not be considered herding. However, moving those Game Pieces as a group across the floor (e.g. pushing them together toward the corner of the field) would constitute herding.

7.3 Rules

Passing Tubes Through The Chute

Passing Tubes Through The Chute

Posted by FRC1980 at 01/15/2007 10:36:12 pm

We are considering using a passive hand to hold the ring. This would require applying a small amount of force to the ring when loading the hand. Is it legal for a stationary bot and human player to both be touching the ring at the same time if neither the bot nor player cross the plane of the wall while passing a ring through the port?

Re: Passing Tubes Through The Chute

Posted by GDC at 01/18/2007 10:40:41 pm

It is permissible for both a Human Player and a ROBOT to contact a GAME PIECE simultaneously, provided that neither penetrates through the CHUTE and contact between the two does not occur.

7.3 Rules

Raising Robot Location near Home Zone

Raising Robot Location near Home Zone

Posted by FRC1980 at 01/15/2007 10:37:11 pm

Assume the following condition:

Our bot deploys a platform and ramp for another bot to climb. Our bot is in the home zone but part of our ramp extends past the home zone line. A bot climbs the ramp and sits on the platform. That bot, and the platform, are clearly within the home zone.

Does the bot on the platform score the points even though our ramp extends outside of the home zone?

Raising Robot Location near Home Zone

Posted by FRC111 at 01/16/2007 09:25:47 am

Can the robot that is supporting the raised robot be partially out of the home zone as long as the raised robot is within the home zone?

Re: Raising Robot Location near Home Zone

Posted by GDC at 01/18/2007 05:07:46 pm

Under the provisions of Rule <G56>, each robot entirely within the Home Zone at the end of the match may be eligible for bonus points (depending upon the height off the floor that the robot is raised). If the robot is being supported off the floor by another robot, there is no requirement that the supporting robot be entirely within the Home Zone.

7.3 Rules

Pre-match use of pneumatics <26> and <41>

Pre-match use of pneumatics <26> and <41>

Posted by FRC386 at 01/15/2007 11:40:13 pm

May we use the manual override button(s) on the robot's pneumatic solenoids during the pre-match set-up period to energize parts of the pneumatic system as long as there is obviously no danger to either players or the game staff?

Re: Pre-match use of pneumatics <26> and <41>

Posted by GDC at 01/18/2007 10:36:54 pm

As long as the motion is completed in a safe manner consistent with Rule <S01> and all other applicable rules, this type of configuration would be permitted.

7.3 Rules

Raising Robot touching Field Element

Raising Robot touching Field Element

Posted by FRC111 at 01/16/2007 09:45:28 am

The rules state that the robot cannot be in contact with any field elements to count when 12" off the floor. Can the robot that is supporting the raised robot be in contact with a field element, which includes a ringer?

Re: Raising Robot touching Field Element

Posted by GDC at 01/18/2007 04:03:24 pm

Please refer to Update #3, and revised Rule <G56>. Under the revised rule, the elevated robot must not be supported by a Game Piece. Incidental contact between a Game Piece and the supporting robot may occur without penalty (presuming that the supporting robot is not being supported by the Game Piece).

7.3 Rules

End Period Blocking Question

End Period Blocking Question

Posted by FRC250 at 01/16/2007 11:48:18 am

Consider the following Game strategy:

With 20 seconds left in the Game, the Blue Alliance is ahead by 28 points to 20 points. They know that one of their two robots will not be able to be lifted by the third Alliance partner, hence they have the possibility of 30 more bonus points. The Blue Alliance also knows that the Red Alliance will likely have two robots elevated by the third and will score 60 bonus. The Blue

Alliance decides to park their one robot in front ot the Red Alliances ramp preventing the two Red Alliance robots from climbing the ramp. At the end of the match, the Blue Alliance has one elevated robot for 30 bonus points, plus the 28 points on the rack, minus 30 points in penelties per Rule <G25>, for a total of 28 points. The Red Alliance could not get up the ramp, hence no bonus points were scored, and they end the Game with the 20 points scored on the rack.

While this scenario does not violate any of the actual Rules posted for this game, it also does not align with <G03>, which states that the intent of the End Period is to permit Alliances to score bonus points without undue interference. Perhaps the penelty amount for being in the opposion's end zone during the End Period can be adjusted so that it will really discourage the preceeding strategy as being beneficial and will better align with <G03>.

Re: End Period Blocking Question

Posted by GDC at 01/18/2007 04:53:25 pm

The penalty structure defined for the End Game has been balanced to allow teams to have reasonable opportunities to acquire the bonus points without making it into a "gimme" activity. Given the combination of a potential 30 penalty points for interference plus a potential three-on-one defensive structure, sufficient dis-incentives are in place to prevent this from becoming a predominant strategy.

7.3 Rules

End of Game - disabled robots

End of Game - disabled robots

Posted by FRC45 at 01/16/2007 01:26:29 pm

If a robot breaks down or is disabled in their opponents home zone for any reason, before the end game begins or during the end game, are they penalized under G25?

Per the GDC answer below to the thread "defense during end of game", it describes a robot "intentionally" occupying the opponents home zone. So if 30s into the match a robot breaks down or is disabled for whatever reason in the other home zone, will they be penalized under this rule?

Thanks,

[A robot that intentionally occupies an opponents HOME ZONE during the END GAME will be penalized according to rule <G25>.

A robot that moves into an opponents HOME ZONE during the END GAME under its own power will be penalized according to rule <G25>.

A robot that is pushed by an opposing alliance's robot into the opponents HOME ZONE during the END GAME will not be penalized according to rule <G25> as long as they make a visible effort to exit.]

Re: End of Game - disabled robots

Posted by GDC at 01/18/2007 04:38:45 pm

The penalties are assessed if a robot is in the opponent's Home Zone. The only exception to this rule is if the opponent is preventing the robot from leaving, as specified in Rule <G24> and <G25>. If a robot enters the opponent's Home Zone and then becomes disabled, it would be the responsibility of the disabled robot's alliance partners to push the disabled robot out of the opponent's Home Zone to avoid accruing penalties.

7.3 Rules

<G48> and acceptable ways to enter game pieces onto the field

<G48> and acceptable ways to enter game pieces onto the field

Posted by FRC330 at 01/16/2007 01:37:50 pm

Are the 4 methods defined in <G48> the only acceptable methods of entering a game piece onto the field? If interpreted literally, an errant throw meant to score on the rack but misses the rack (and doesn't go to a robot) would violate <G48>.

Here are two more scenarios that seem to meet the intent of <G48> but would be illegal as written.

1) A human player dropping a game piece over the top of the alliance station wall (without the human penetrating the plane of the alliance station wall).

2) a human player passing a game piece over the top of the wall directly to a robot, assuming that neither the human nor the robot penetrate the plane of the alliance station wall.

Re: <G48> and acceptable ways to enter game pieces onto the field

Posted by GDC at 01/18/2007 03:44:57 pm

Each of these options are acceptable methods for entering Game Pieces onto the field.

7.3 Rules

End Game and Lifting Other Robots

End Game and Lifting Other Robots

Posted by FRC41 at 01/16/2007 07:39:52 pm

Is there any restriction to deploying devices intended to lift alliance partners (ramps, lifts, etc.) in our home zone before the endgame?

Re: End Game and Lifting Other Robots

Posted by GDC at 01/18/2007 03:52:00 pm

Teams do not have to wait for the End Game to begin before deploying any devices intended to elevate their Alliance Partners. However, any such devices must not be detached from the Robot, lest it be considered a violation of Rule <G40>.

7.3 Rules

Accidental Ramming in Autonomous Mode

Accidental Ramming in Autonomous Mode

Posted by FRC41 at 01/16/2007 07:47:33 pm

Rule <G35> states "In all cases involving robot-to-robot contact, the head referee may assess a 10 point penalty and/or the robot may be disqualified..." Does this general statement, and the ones regarding specific interactions, apply to the autonomous period? For example, if

program logic or a sensor fails and a robot rams another in the autonomous period can the aforementioned penalty be assessed?

Re: Accidental Ramming in Autonomous Mode

Posted by GDC at 01/18/2007 03:42:59 pm

There is no exemption from the Robot-Robot Interaction rules (or any other rules) during the Autonomous Period. Penalties will be assessed against robots during the Autonomous Period just as they would be during the Teleoperated Period of the match.

7.3 Rules

Rule G04

Rule G04

Posted by FRC771 at 01/17/2007 01:12:58 pm

Rule <G04> states that a robot starts the match with a "keeper" touching the robot. However, the rule also states that should the team place the "keeper" illegally, the referee is to remove the keeper from the game. Since a team can start the match by intentionally placing the keeper in an illegal position, do teams have the option of choosing not to start with a keeper?

Re: Rule G04

Posted by GDC at 01/18/2007 03:38:15 pm

Teams have the option of not starting the game with their robot in possession of a Keeper. Note that under the provisions of Rule <G04>, any Keeper not in possession by a robot at the start of the game is removed from the game - it may not enter in to play at a later time.

7.3 Rules

Penalty Question

Penalty Question

Posted by FRC1250 at 01/17/2007 04:59:51 pm

Is there any penalty for pushing the rack structure?

Re: Penalty Question

Posted by GDC at 01/18/2007 03:16:22 pm

Per <G33> ROBOTS may push against the rack. Per <G34> any damage to the RACK may cause your ROBOT to be disabled.

7.3 Rules

Power Lost

Power Lost

Posted by FRC1250 at 01/17/2007 05:04:13 pm

If a robot is touching the spoiler when the match ends, does that nullify the spoiler's power?

Re: Power Lost

Posted by GDC at 01/18/2007 03:27:15 pm

Only GAME PIECES that are HANGING, as defined in Section 7.2.1, will be SCORED at the conclusion of the match. If a ROBOT is fully supporting a SPOILER when power is turned off, it is considered removed from the SPIDER LEG. Merely touching a SPOILER will not be considered removal of the SPOILER from the SPIDER LEG.

7.3 Rules

Actions after power is cut

Actions after power is cut

Posted by FRC1985 at 01/18/2007 10:11:59 am

We understand that the field is scored when it comes to rest and a question arised from that.

We were wondering: Would be allowable to have a mechanical action start right before the power is cut to continue lifting another robot after there is no power?

This could be done either though a counterweight system, air bag system, or an airpowered jack.

Also, if this is allowable, how long after power is cut can we continue to have these pieces move?

Thanks
Team 1985

Re: Actions after power is cut

Posted by GDC at 01/19/2007 09:57:36 am

All actions must be initiated during the match period. The referees assess the bonus points as quickly as reasonable following the end of the match. There will be a short time period while they access the field before assessing bonus points, but once in position they will not wait for all motion to complete.

End Game bonus

Posted by FRC1737 at 02/13/2007 04:07:06 pm

Lets say our robot is able to jack up another robot higher than 12 inches at the end of the play in the Home Zone. However when power is cut at the end of match the pneumatics might drain some which allows the robot to fall back down.

If the robot is above 12 inches when play stops will the officials award the bonus points even if the raised robot settles down below the 12 inch mark?

Re: End Game bonus

Posted by GDC at 02/14/2007 05:23:30 pm

The prior answer from January 19 still applies.

7.3 Rules

Ringers in the chute

Ringers in the chute

Posted by FRC1985 at 01/18/2007 03:28:06 pm

According to 6.4.3 THE CHUTE:
"Four bungee cords are positioned at the edges of the CHUTE that can hold GAME PIECES in position in the CHUTE so that they may be retrieved by passing ROBOTS."

Does this restrict the human player from holding the game piece in the chute to help the robot

grasp the game pieces?

I know there would be penalties if the robot passes into the chute and that would work the other way as well (human player passing though the chute onto the playing field.

Thanks!

Re: Ringers in the chute

Posted by GDC at 01/20/2007 04:22:24 pm

The Human Player may hold the GAME PIECE while it is in the Chute, as long as the Human Player does not reach through the Chute and as long as the Human Player does not directly contact a ROBOT.

7.3 Rules

Another Herding Question

Another Herding Question

Posted by FRC997 at 01/18/2007 03:35:22 pm

Our team is considering a system where a loading platform is deployed during the endgame. We are thinking that the possibility exists that the home area may be covered with tubes.

relating to rule <G09> and "herding of tubes"

Our question is: If we need to push tubes randomly out of the way to give our platform room to deploy and a pushed tube pushes into an adjacent tube, again with only the desire to clear a space for deploying our platform, would this be considered "herding"?. thank you.

Another Herding Question

Posted by FRC433 at 01/18/2007 11:15:43 pm

The examples of herding given all relate to moving game pieces to a certain area. How about the converse, what if you wanted to clear an area of game pieces? Do you need to move them one at a time if you are actually dispersing them?

Re: Another Herding Question

Posted by GDC at 01/22/2007 03:52:35 pm

"HERDING" implies that you are attempting to direct multiple Game Pieces to a particular location. Merely driving into an area occupied by multiple Game Pieces in an attempt to clear the area and letting them randomly scatter would not be considered herding.

7.3 Rules

Referee Interaction: Tournament

Referee Interaction: Tournament

Posted by FRC1511 at 01/18/2007 11:38:14 pm

I would like to clarify a question I wrote about G51.

[Quote]#1 01-14-2007, 02:36 PM
FRC1511

per G51, may a pre-college COACH have discussions with the referee? or are only Drivers or Human Players allowed?

GDC Response:

Re: Referee Interaction
Under Rule <G51> only Drivers and/or Human Players may discuss rules, scores, or penalties with the Head Referee. [/Quote]

In the tournament section: Rule T05 Just states that a Pre-College Student from that team should address the head referee. It does not classify Coach, Driver, Human Player. Our Coaches are frequently students and are often in the most understanding position to speak with a referee (ie drivers & HPs are focused). So does G51 cover T05?

Re: Referee Interaction: Tournament

Posted by GDC at 01/20/2007 04:29:02 pm

As Rule <G51> is more restrictive than <T05> it takes precedence. Only Drivers and/or Human Players who are pre-college students may consult with the Head Referee regarding a match ruling.

7.3 Rules

Rule G29

Rule G29

Posted by FRC771 at 01/19/2007 09:22:17 am

Does Rule <G29>, "ROBOT orientation ROBOTS must start the match with their long (maximum) dimension in a vertical orientation. After the start of the match, ROBOTS may change their orientation such that the long dimension is either vertical or horizontal[,]" imply that having a short (under 38") robot, with a standard 28" by 38" base mean that your longest side (now the 38" side of your base) must start vertically? This would mean that a "short" robot would have to start on its side and fall over before being able to start playing the match.

Rule <G29> (Robot Orientation), Clarification

Posted by FRC1248 at 01/20/2007 02:34:12 pm

Accordgin to Rule G29: "Robots must start the match with their long (maximum) dimension in a vertical orientation."

Unfortunately, our team doesn't understand what the rule means by the "maximum dimension". Is it the length of the base of our robot, or the longest appendage on our robot (like a robotic arm, for instance...)?

Or, is it something completely different?

Thank you.

Re: Rule G29

Posted by GDC at 01/22/2007 07:40:39 pm

The long dimension is the greatest of the height, width, or depth measurements. If a robot is particularly short (e.g. the height is less than the length), then it must start the match "on-end"

in order to comply with this rule. If such a robot can not be designed to flop down, you may consider installing a post, bracket, etc that increases the vertical dimension of the robot (and upon which the flag holder may be mounted).

7.3 Rules

Rule <G33>

Rule <G33>

Posted by FRC2051 at 01/19/2007 10:10:03 am

We were thinking of carrying the tube on the "wrist" of our arm, we wanted to have the hand surround the spider foot. Is this acceptable?

Re: Rule <G33>

Posted by GDC at 01/22/2007 04:27:04 pm

It is dependent upon how the "hand" would surround the SPIDER FOOT. The SPIDER FOOT is considered part of the field structure, and covered under Rule <G33>. The SPIDER FOOT may not be grasped, held, or severely restrained without violating this rule.

7.3 Rules

Judging and the Q&A Section

Judging and the Q&A Section

Posted by FRC1700 at 01/19/2007 06:46:06 pm

We were wondering if a judge calls something at compition that is in conflict with clarifications of the rules in the Question and Answer Section, can we use the Section to contest the ruling?

Re: Judging and the Q&A Section

Posted by GDC at 01/22/2007 07:19:17 pm

The answers given in the Q&A are guidance only. Inspectors and referees will use the current revisions of the documents on the FIRST website [URL=http://www.usfirst.org/community/frc/content.aspx?id=452]2007 FIRST Robotics Competition Manual and related documents[/URL] page to perform their jobs at competitions. FIRST updates these documents in [URL=http://www.usfirst.org/community/frc/content.aspx?id=450]Team Updates[/URL] if a question or answer on the Q&A requires. The same guidance given in the Q&A is given in inspector and referee training.

7.3 Rules

Passing "through" the CHUTE

Passing "through" the CHUTE

Posted by FRC1722 at 01/20/2007 01:42:45 am

In rule G48 it says to enter a game piece on the field the HUMAN PLAYER may pass it through the CHUTE to a ROBOT, or pass it through the CHUTE for picking up by a ROBOT. In rule S03 it says ROBOTS can not break the plane of the CHUTE. There is no mention of that rule referring to a HUMAN PLAYER. In another post in this forum it says that neither the human nor the ROBOT may penetrate through the CHUTE.

01-18-2007, 10:40 PM

GDC
Senior Member

Join Date: Jan 2006
Posts: 597
Re: Passing Tubes Through The Chute
It is permissible for both a Human Player and a ROBOT to contact a GAME PIECE simultaneously, provided that neither penetrates through the CHUTE and contact between the two does not occur.

By the use of the word "through" Rule G48 appears to allow the human player to put his or her arm "through" the CHUTE with the GAME PIECE and place it on the ROBOT (without contact) or on the ground. Do you agree? If not, then without a rule change many teams may interpret this the same way we have.

Thank you.

Re: Passing "through" the CHUTE

Posted by GDC at 01/20/2007 04:52:44 pm

Please refer to Team Update #4, and Rule <S03> (as amended).

7.3 Rules

Supporting Robot Outside Home Zone

Supporting Robot Outside Home Zone

Posted by FRC647 at 01/20/2007 06:57:17 pm

The answer to this question has been addressed. I just want to make sure I understand the answer.

It is my understanding that the robot known as the "supporting robot" is the robot that is lifting/ramping another alliance robot. This supporting robot MAY have parts of it OUTSIDE the Home Zone while performing it's "supporting" function as long at the robot being supported is entirely within the Home Zone. Am I correct?

Re: Supporting Robot Outside Home Zone

Posted by GDC at 01/22/2007 12:41:20 am

Please refer to this [URL=http://forums.usfirst.org/showthread.php?t=1521]this question and answer[/URL].

7.3 Rules

Also Applying to rule <G29>

Also Applying to rule <G29>

Posted by FRC1685 at 01/23/2007 08:56:13 am

Does this rule apply to an arm that is to be extended once the match has started?

EX: At the start of the math our robot is X feet high and once the match starts the robots will extend an arm that is Y long so the robots total hight will be greater, is the robots highest

verticle position X or X+Y?

Basically does our robot need to start the match with the arm extended and counting as our total hight, or can it have an arm tucked in that is to be let out to reach higher places taking it above its hight of the designed class 1, 2 or 3 dimension.

Re: Also Applying to rule <G29>

Posted by GDC at 01/25/2007 04:18:46 pm

Yes. The Robots highest vertical starting position as you have described it would be X. The dimensions as measured in your Starting Configuration (i.e. each time the robot is placed on the field) must be consistant with the Class that you declared at initial inspection.

7.3 Rules

Supporting robot touching wall

Supporting robot touching wall

Posted by FRC1001 at 01/25/2007 12:12:20 pm

During the End Game, if the supporting robot gets pushed up against the wall, do the supported robots earn points if they themselves are not touching the wall?

Re: Supporting robot touching wall

Posted by GDC at 01/25/2007 03:09:40 pm

Please notice that <G56> does not address supporting Robots. Bonus points are earned by all Robots that meet the conditions stated in <G56>. You may also want to review <G33> in reference to Robot interaction with the field.

7.3 Rules

Righting a tipped bot

Righting a tipped bot

Posted by FRC1147 at 01/25/2007 02:59:51 pm

In view of both <S04> and <G31> we have a question.

The design of our Robot and the strategies we would like to employ during the game lead us to this question. We would like to know if once a Robot, from either an alliance partner or the opposing alliance, tips over on the field, will they immediately be disabled for the remainder of the match? If not, will we be allowed a limited amount of time to assist them in righting them selves? If they were disabled, would they then be re-enabled once they were righted?

If a Robot is disabled, is it no longer eligible to score bonus points by being lifted during the End Game?

Re: Righting a tipped bot

Posted by GDC at 01/29/2007 04:46:06 pm

If a robot tips over on the field, it will not necessarily be disabled unless it poses a safety concern or it violates a specific rule that results in disabling as a penalty. Robots that have been tipped over may be righted by other robots. Once a robot is disabled, it remains disabled for the rest of the match.

All robots are eligible to earn bonus points per Rule <G56> regardless of whether they are

disabled or disqualified.

7.3 Rules

Beginning Keeper

Beginning Keeper

Posted by FRC2204 at 01/25/2007 05:51:49 pm

<G04> KEEPER locations - Each ROBOT starts the match in POSSESSION of a KEEPER. The
KEEPER does NOT need to be contained within the ROBOT'S starting volume, however it must be in contact with the ROBOT and be entirely within the HOME ZONE. The head referee will require that KEEPERS that do not meet these criteria be removed from the game. It is the responsibility of the head referee to verify that this rule is satisfied prior to the start of the match.

During the beginning of the game, how are the alliance robots given possession of the keeper? Does the referee just randomly place the keeper on the robot/touching the robot? or does the team get to place the keeper anywhere on the robot as a starting position?

Re: Beginning Keeper

Posted by GDC at 01/29/2007 04:31:12 pm

The Keeper will be given to the team, and they will place it in/on the robot prior to the start of the match.

7.3 Rules

G25

G25

Posted by FRC663 at 01/26/2007 03:52:47 pm

The document with the game rules concerning match play (section 7.2.3.2), rule G25, indicates penalty points will be assessed if a robot violates the opponent's Home Zone during the end game time period.

1. Please clarify if this means the entire offending robot must be in the home zone, or any part thereof.

2. If I understand this rule correctly, the penalty would be assessed per robot of the offending alliance, not just one penalty for the alliance. Is this correct?

3. It would seem that the penalty for doing this is not commensurate with the potential scoring opportunity involved. If a robot is designed to lift both (two) alliance team robots, the scoring potential of such a game maneuver would be worth 60 points. Yet one robot from the opposing alliance could attempt to block such a scoring manuever simply by parking next to the robot attempting to lift both his alliance robots, and only incur a 20 point penalty. Furthermore, while a robot is blocking an alliance from scoring 60 points, their alliance partners could gain 30 points by lifting one robot. That would give the offending alliance 10 points:
(30 point lift - 20 points penalties),
while the alliance that had a robot capable of lifting two robots would receive no points!

Is this fair? Is this consistent with the spirit of what FRC is trying to promote, namely to have a team perform what is a technologically challenging maneuver of lifting two alliance robots? I would be sorry to see a team go through the effort to do this, only to be thwarted by a blocking opponent with little penalty. What incentive is there for going through all the hard work, design and expense when one could be so easily defeated by having an opponent adopt a strategy of simply parking in a blocking position. It seems to me that the penalty for doing this should be comensurate with the scoring opportunity posed. If the scoring opportunity is 60 points, and the offending alliance could potentially score 30 points, the penalty assessed would have to be at least 90 points.

It seems to me the intent of rule G25 was to discourage opponents from violating an alliance home zone during the end game time period, such that an alliance could attempt a technologically challenging maneuver of lifting robots without interference. If this is the case, why not simply have a rule that prohibits robots from violating an alliance home zone? No excuses. If any member of the offending alliance violates the home zone during the end game time period, then perhaps the entire alliance should be disqualified, regardless of how many points they have scored. That should provide adequate deterrence to promote the technological challenge of the competition.

If such a rule is adopted, teams should be warned they cannot go into the opposing alliance home zone to retrieve torroid game pieces during the end game time period. It might be a good idea to change the starting position of the game pieces, such that they are propped up against the side walls instead of the rear walls. Then opponents would not have much need to violate the home zone in the first place.

Re: G25

Posted by GDC at 01/29/2007 04:19:18 pm

As indicated in Rule <G25>, penalties are accumulated by each robot in the opposing Home Zone during the End Game. The penalties will be assessed if any part of the robot is in the Home Zone, not just the entire robot.

The penalty structure defined for the End Game has been balanced to allow teams to have reasonable opportunities to acquire the bonus points without making it into a "gimme" activity. Given the combination of a potential 30 penalty points for interference plus a potential three-on-one defensive structure, sufficient dis-incentives are in place to prevent this from becoming a predominant strategy.

7.3 Rules

penalty for exceeding size limits

penalty for exceeding size limits

Posted by FRC525 at 01/27/2007 01:00:27 am

The response to a previous question included the following statement, “If the robot is being supported off the floor by another robot, there is no requirement that the supporting robot be entirely within the Home Zone.” The new game rule <G41A> states that a robot exceeding the 72” dimension requirements out of the Home Zone “will be penalized. A violation of this rule may result in the ROBOT being disabled or disqualified, based on the severity of the

infraction."

Based on these statements, if a robot in the Home Zone slightly exceeds the 72" limit and accidentally extends slightly out of the Home Zone,

A) Will the 72" rule be enforced and enforced consistently or will it generally be left to teams to comply with on their own?
B) If the rule is enforced, how will the robot be penalized? A point deduction or will this be considered severe enough to disable or disqualify?
C) If the robot is disabled or disqualified, and it is supporting alliance robots above 12" from the floor, will these still count for bonus points or does the disqualified robot become a field element?
D) Do the answers to any of these questions change if the infraction is brief and the robot is able to move entirely back into the Home Zone by the end of the match?

Re: penalty for exceeding size limits

Posted by GDC at 01/29/2007 03:49:47 pm

Hypothetical game situations are highly context-dependent. It is not practical for us to provide definitive answers for all indivual situations that may be presented.

Please notice that <G56> does not address supporting Robots. Bonus points are earned by all Robots that meet the conditions stated in <G56>.

If any part of a robot is outside of the Home Zone, then it is subject to the conditions of Rule <G41-A>.

7.3 Rules

Multiple Human Controllers

Multiple Human Controllers

Posted by FRC964 at 01/27/2007 10:32:34 am

Is it legal for a team to have more than one player controlling the robot, but not more players than allowed in the pit? E.G., One person for each joystick.

Re: Multiple Human Controllers

Posted by GDC at 01/29/2007 03:52:19 pm

Please read Rule <G49> very carefully. One or both DRIVERS can operate the robot during the match. The two DRIVERS can distribute their workload however they wish. However, the COACH and HUMAN PLAYER are not allowed to touch the robot controls during the match. If they do, the robot will be disabled and the team will be disqualified.

7.3 Rules

<G32> Interpretation

<G32> Interpretation

Posted by FRC41 at 01/30/2007 04:38:42 pm

Rule <G32> states "Alliance Station Wall - ROBOTS may not extend/cross over the Alliance Station wall for any reason. If a violation of this rule occurs a 10-point penalty will be assessed and the ROBOT may be disabled."

Is the statement "...extend over..." to be interpreted as breaking the plane of the alliance wall?

Re: <G32> Interpretation

Posted by GDC at 02/01/2007 03:34:39 pm

That is correct. The robot is not permitted to break the plane of the Alliance Station Wall.

7.3 Rules

Width/Depth and Direction of travel

Width/Depth and Direction of travel

Posted by FRC2151 at 01/31/2007 08:31:18 am

Our robot is dimensioned as 38 inches wide and 28 inches deep based on the direction of travel. That is the 38" side of the robot is the front of our robot.
Are width and depth related to the direction of travel?

Re: Width/Depth and Direction of travel

Posted by GDC at 02/01/2007 03:29:48 pm

Width and depth are independent of the direction of travel, and used for reference only.

7.3 Rules

Defense and <G35>

Defense and <G35>

Posted by FRC498 at 02/01/2007 01:03:21 am

Rule <G35> states that "A ROBOT may not attach to and/or climb onto a ROBOT on an opposing ALLIANCE", and that doing so may result in penalties. It has been answered in a previous Q&A that a robot occupying an opponents' home zone during the end game will receive penalty points but will be allowed to play defense so that the lifting points are not "gimme" points.

In the event of an opposing robot playing defense in an alliance's home zone, say parking in front of a partner team's ramp, would your robot be permitted to push the opposing robot onto your partner's ramp in an attempt to get your own robot up? Would any robot be assessed a penalty in such a situation?

Thank you.

Re: Defense and <G35>

Posted by GDC at 02/01/2007 04:38:12 pm

Hypothetical game situations are highly context dependent. It is not practical for us to provide definitive answers for all individual situations which may be presented.

7.3 Rules

Endgame Configuration

Endgame Configuration

Posted by FRC2254 at 02/01/2007 10:20:32 am

If a robot designed to stack has a built in-ramp, can the ramp touch the floor of the home zone after it is deployed? (0cm off the ground)

Re: Endgame Configuration

Posted by GDC at 02/01/2007 03:13:31 pm

If by "stacking robot" you mean the robot that is supporting other robots, then yes. If you mean the robot that is elevated in an attempt to score bonus points, then no.

7.3 Rules

Autonomus Mode

Autonomus Mode

Posted by FRC2081 at 02/03/2007 11:47:05 am

Is it allowed to load the robot with a ringer so that we can use it when it come time for teleoperated period? Or do we [B]have[/B] to load it with the keeper?

Re: Autonomus Mode

Posted by GDC at 02/05/2007 03:32:20 pm

The starting locations of the RINGERS is specified in Rule <G05>. RINGERS can not be loaded onto a ROBOT prior to the start of the match.

7.3 Rules

G41

G41

Posted by FRC166 at 02/03/2007 02:52:49 pm

Is it permissable to tether the robot at the end of a match to release the game piece that may be still held?

Re: G41

Posted by GDC at 02/05/2007 03:35:06 pm

No. Please read Rule <G41>.

7.3 Rules

Deploying Ramp

Deploying Ramp

Posted by FRC1182 at 02/06/2007 05:29:56 pm

Would a deployed ramp in front of the inner tubes in our home zone constitute blocking?

Re: Deploying Ramp

Posted by GDC at 02/08/2007 04:44:20 pm

While in their Home Zone, Robots may deploy ramps at any time. There is no prohibition against the deployed ramps blocking access to any Game Pieces that may also be in the Home Zone. Note that if an opposing robot, while attempting to retrieve the Game Pieces pushes your robot/ramps out of the way and they move out of your Home Zone, your Robot may be subject to a violation of Rule <R12> and/or <G41-A>.

7.3 Rules

Scoring Bonus Points

Scoring Bonus Points

Posted by FRC1826 at 02/08/2007 10:35:46 am

Scoring Bonus Points:

Can a robot score bonus points by lifting itself off the field surface?

Consider a lifting device mounted underneath the chassis and between the wheels.
During the END GAME, the robot returns to its HOME ZONE and deploys the lifting device lifting the robot.

Since the lifting device is mounted beneath the robot, is the lifting device considered part of the robot?

Rule <G56> "Robots score bonus points at the end of the match if they are entirely in their HOME ZONE not in contact with any element of the field."

Since the lifting device is mounted beneath the robot would the bonus points be awarded in this case.

Can the robot "release" the lifting device before deploying it?

Rule <G40> Detaching mechanisms - Robots may not intentionally detach parts or leave multiple mechanisms on the field.

Since the HOME ZONE is part of the field, would releasing the lifting mechanism, so it is no longer attached to the robot result in a 10-point penalty.?

Re: Scoring Bonus Points

Posted by GDC at 02/08/2007 05:20:04 pm

No, the robot may not score bonus points by supporting itself off of the field surface.
Yes, a lifting device considered part of the robot.

7.3 Rules

Rack Movement

Rack Movement

Posted by FRC1350 at 02/08/2007 09:04:02 pm

Once the rack is rotated slightly and moved within the limits of the center anchor, will the rack move during the match or remain stationary. Put another way, will the rack be in a fixed position during the match.

Re: Rack Movement

Posted by GDC at 02/09/2007 01:04:50 am

The Rack weighs several hundred pounds, and is held in place on the field by friction and gravity. It is possible, but unlikely, that the Rack may be moved during a match due to the action of the robots.

7.3 Rules

Deploying Ramps - Blocking Ringers - G35

Deploying Ramps - Blocking Ringers - G35

Posted by FRC1346 at 02/09/2007 02:04:24 pm

In the thread "Deploying Ramps", FRC1182 asked if a team could deploy their ramp in their end zone during the game to block opponents from accessing ringers along the back wall. GDC replied,

"While in their Home Zone, Robots may deploy ramps at any time. There is no prohibition against the deployed ramps blocking access to any Game Pieces that may also be in the Home Zone. Note that if an opposing robot, while attempting to retrieve the Game Pieces pushes your robot/ramps out of the way and they move out of your Home Zone, your Robot may be subject to a violation of Rule <R12> and/or <G41-A>."

It seems to me that this is inconsistant with rule G35, which states - in part - "Contact outside of the BUMPER ZONE is generally not acceptable, and the offending ROBOT will be assessed a 10-point penalty.."

My apologies if I have missed something elsewhere that would explain this apparent inconsistancy.

Jason

Re: Deploying Ramps - Blocking Ringers - G35

Posted by GDC at 02/12/2007 03:31:36 pm

Rule <G35> is consistent with the referenced answer. A deployed ramp would (in all likelihood) extend from ground level to either 4 inches or 12 inches above the floor. So a significant portion of the deployed ramp will be within the Bumper Zone (i.e. between 2 1/2" and 8 1/2"). An opposing robot may contact the portion of a deployed ramp that is within the Bumper Zone without penalty.

7.3 Rules

Blocking Driver Vision

Blocking Driver Vision

Posted by FRC57 at 02/10/2007 12:01:08 am

Assuming a robot meets all Robot Rules for design, is it legal for a robot to deploy a large sail of material (presumably about 100" wide by 92" tall) for the sole purpose of preventing the opposing drivers from being about to see the (entire) Rack? Related questions would be if it is legal to use a ramp or other system for the same purpose, and if the distance of said robot from the opposing driver's station affects the legality of this action.

Re: Blocking Driver Vision

Posted by GDC at 02/12/2007 03:46:34 pm

The FRC competition is designed to have robots compete against robots. Strategies such as the one outlined above pitch robots against the human operators, are against the spirit of the game, and are prohibited.

A team that uses a device to cause an opposing robot driver to lose control of their robot (e.g. by blocking their vision so they cannot safely coordinate the operation and movement of their robot) will be determined to be in violation of Rule <S01>. The violating team will be assessed a 10-point penalty, will have their robot disabled, and their robot may not be allowed back on

the field until the device is removed.

7.3 Rules

End Game

End Game

Posted by FRC188 at 02/10/2007 05:58:24 pm

Rule G25 gives examples of robots that stay in the home zone during end game. Could you explain the penalties if a team enters the home zone after the start of end game? My guess is that the team would receive a 10 point penalty on entering and 10 point penalties for every 5 seconds they remain in the zone. Another guess would be the same as my first except that they would receive additional penalties at the 5, 10 and 15 sec mark instead of every 5 seconds after entering and receiving the first penalty.

Re: End Game

Posted by GDC at 02/12/2007 03:43:13 pm

A robot that enters the opposing Home Zone during the End Game will immediately receive a 10-point penalty. If the robot remains in the Home Zone after 5 seconds from the time of entry it will receive another 10-point penalty. If the robot remains in the Home Zone after 10 seconds from the time of entry it will receive another 10-point penalty.

Please note that the time will be counted by the referee and is not subject to appeal.

7.3 Rules

can we attach

can we attach

Posted by FRC1826 at 02/11/2007 06:32:53 pm

If our robot carries a lifting device, can we design an arm th "attach" to a teammates robot and then lift our robot? If so, what does "attach" mean? Can this be a cable or would it need to be a solid piece?

Re: can we attach

Posted by GDC at 02/12/2007 03:52:24 pm

Under Rule <G35>, you may attach to and/or climb on a robot of your own alliance. The exact form of any such attachment must be defined by the participating teams.

7.3 Rules

Releasing Keepers

Releasing Keepers

Posted by FRC956 at 02/14/2007 12:59:57 am

Rule G14 states:
"Any Keepers that a robot may possess must be immediately released and dropped to the floor"

What if the keeper is placed on the robot such that it requires contact with the spider (or anything else) to release, but the vision system fails and the keeper is not released. At the end of Autonomous mode it will still be on the robot but cannot be released "immediately"? In manual mode, the keeper can be jostled loose, by rocking the robot, but it cannot be released

"immediately"? Will a penalty be imposed if the keeper is not released immediately?

Re: Releasing Keepers

Posted by GDC at 02/15/2007 03:35:12 pm

If the first action the robot takes under teleoperated mode is to release the keeper, before taking any other game actions, then that will be considered immediate.

7.3 Rules

<G56> Clarifications

<G56> Clarifications

Posted by FRC425 at 02/14/2007 09:59:54 am

what is the dimensions of the playing field.? does it include the home zone? if yes, does that mean while a robot, entirly in their home zone, lifting one or more robots with pneumatics or other lifting devices, is it still in contact with the playing field? since the carpet is part of the playing field.

Re: <G56> Clarifications

Posted by GDC at 02/15/2007 03:34:20 pm

The dimensions of the Playing Field are provided in [URL=http://www.usfirst.org/community/frc/content.aspx?id=452]Chapter 6[/URL] of the manual, and on the [URL=http://www.usfirst.org/community/frc/content.aspx?id=3804]Official FIRST Field Drawings[/URL]. The Home Zone is part of the Playing Field. If a robot is touching the carpet (or any other element of the Playing Field), then by definition it is in contact with the Playing Field.

7.3 Rules

Elevating robots and detached parts

Elevating robots and detached parts

Posted by FRC1826 at 02/16/2007 01:36:30 pm

...I would like to discuss our common sense approach and understanding of the game relative to elevating our ROBOT during the END GAME.

Once the game was announced our team members watched the simulation several times and I quote: “bonus points are earned for each of the alliance robots that are elevated off the floor…” then everyone poured over the documentation.

No where does it define and/or limit how the robot can be elevated. There are very few references to the how the END GAME is to be completed:

[I]Post quoted G03, 7.2.2, G25, G35, G40, G56, R05, R06, and R12.[/I]

Based on the above information we make the following assumptions:

1) Each of the alliance robots has the opportunity to elevate off the floor and to score bonus points...

2) We read the intent or spirit of G40 as to not detach mechanisms that would cause an

interference...

3) R06 directly states that ramps, platforms as other mechanisms may be deployed during the END GAME for the purpose of elevating the ROBOTS...

4) R12 states that there is no size limit to the deployed mechanisms utilized for the expressed purpose of elevating the robots during the END GAME in the HOME ZONE...

5) G35 states that “A ROBOT may attach to and/or climb onto a ROBOT of its own ALLIANCE”...

6) This would be in the spirit of GDC’s response to: [l]post quotes thread called "can we attach"[/l]

Per your statement above which supports our position where in the rules does it specifically say that your “own alliance” ROBOT excludes yourself...

7) When developing the design strategy for the current competition we considered the last two previous competitions that we are familiar with whereby each of the competing ROBOTS had the direct opportunity to score bonus points individually through driving up on a ramp or lifting themselves off the floor without dependency on another ALLIANCE ROBOT.

8) Our students spent more time engineering a solution to elevating the ROBOT than any other aspect of the competition...

9) None of our mentors or team members ever considered the possibility that we were restricted from lifting ourselves...

...We should not be panelized for a conceptual aspect of the game that was not clearly defined and/or conveyed (i.e. bonus points can only be scored by one team alliance ROBOT elevating another).

I would respectfully ask that careful consideration be given to our team and others in similar circumstance, and grant us the opportunity to compete based on our understanding and interpretation of the game as derived directly from the information/documentation provided.

We can as previously explained lift ourselves by deploying a mechanical device that lifts the ROBOT in the END ZONE during the END GAME. Then at the conclusion of the game the ROBOT can be completely removed from the lifting device providing proof that the lowest point of the ROBOT meets the height requirement, as if on another ROBOT, or per the GDC response to the question “can we attach” we can leave an attachment point per G35. Both methods would satisfy the spirit of the competition as discussed and defined by GDC above.

Should our understanding be found defective please provide a clear explanation supporting your position if it is to the contrary.

My heart felt intent with our request is one of respect both for First and our Team as well as others...

Re: Elevating robots and detached parts

Posted by GDC at 02/19/2007 04:16:25 pm

Unfortunately, there are several mis-interpretations in the assumptions described above.

Rule <G40> is clear: Robots may not intentionally detach parts or leave multiple mechanisms on the field. There is no allowance for detachable parts during the end game, or equivocation about detachable parts that may or may not interfere with opposing robots. Detachable parts are just not allowed. If a part is detached from the robot, it will immediately be considered field debris. As such, it becomes part of the “field” [URL=http://forums.usfirst.org/showthread.php?t=1279](see this question regarding detached items)[/URL]. A robot that is in contact with a previously detached item that is now part of the field is ineligible to receive bonus points, as it would not have satisfied the requirements of Rule <R56>.

Rule <R06> permits the deployment of robot-elevating devices without penalty that might otherwise violate Rule <R05>. But it is important to understand that “deploy” does not mean “detach” – such devices are expected to remain attached to the originating robot as they are deployed.

As has been previously stated, rules from prior FRC competitions do not necessarily apply to the 2007 FRC competition. So assumptions about the ability for robots to score bonus points without dependency on other alliance partners may not be accurate. The bonus activity for this year was specifically designed such that alliance partners had to work together in a joint effort to be able to complete the bonus task.

We are sympathetic to your desire not the have your efforts designing your lifting system wasted. However, we believe that the rules are clear regarding how the bonus task was to be accomplished. If there were any confusion about this, it was clarified when the issue was addressed [URL=http://forums.usfirst.org/showthread.php?t=1279]here[/URL] on January 12. Changing the rules or the game task at this late date would not be fair to all the teams that properly interpreted the rules and have designed their systems to be within the rules.

7.3 Rules

student coaches

student coaches

Posted by FRC141 at 02/17/2007 10:06:33 am

Our team puts a student on the floor as the coach. Is our student coach able to speak with the Head Referree about game play during or after a match?

Re: student coaches

Posted by GDC at 02/20/2007 02:02:54 am

No. Rule <G51> specifies that only the Driver and/or Human Player may discuss rulings or game play with the Head Referee.

7.3 Rules

Bumpers and robot elevation

Bumpers and robot elevation

Posted by FRC57 at 02/20/2007 08:48:45 am

In your response to "Bumpers during end game" you noted that any bumper attached to a mechanism that extends the bumper above the bumper zone is a CUSTOM BUMPER. Several teams appear to employ lifting mechanisms that extend below their frame to bodily elevate their own robot 12" along with two alliance mates. For clarification purposes, would a robot that lifts its own frame 12" such that the bumpers are no longer in the bumper zone be considered to have CUSTOM BUMPERS and have to meet all the restrictions of such?

Re: Bumpers and robot elevation

Posted by GDC at 02/22/2007 03:24:32 pm

That is correct. If the bumper is lifted above the Bumper Zone, then it must be considered a Custom Bumper. Please refer to Rule <R37>.

The Bumper Zone is defined in reference to the Robot resting on the floor, in any possible Playing Configuration. Standard Bumpers must be mounted to the Robot in a manner that keeps the Bumpers in or below the Bumper Zone. A Robot that uses a lifting mechanism to raise its primary frame is still in a Playing Configuration, still in contact with the floor, and still uses that reference. This type of Robot could only use Standard Bumpers if they were mounted on the portion of the Robot that does not elevate with respect to the floor.

7.3 Rules

Bumpers During End Game

Bumpers During End Game

Posted by FRC753 at 02/20/2007 07:29:37 pm

As I understand [url]http://forums.usfirst.org/showthread.php?t=4969[/url] you indicate that bumpers lifted above the bumper zone during end game are considered custom bumpers.

The bumper zone is defined as "...the volumes between two planes parallel to the floor..." and provides the dimensions measured from the floor but goes on to say that the bumper zone is defined with respect to the robot.

Does the bumper zone rotate about the x- and y-axes with the robot? In other words if the robot is on the incline of a ramp (i.e., not parallel to the floor), are the bumpers outside of the bumper zone? Are bumpers mounted on a suspended robot, such as from a crane, outside of the bumper zone? And tipped robots?

Re: Bumpers During End Game

Posted by GDC at 02/22/2007 03:06:33 pm

The Bumper Zone is the volume between two horizontal planes when the robot is resting flat on the floor. If the robot rotates about the X or Y axis (e.g. when climbing a ramp), the Bumper Zone rotates with the robot. If the robot is suspended or inverted, the Bumper Zone still is oriented with respect to the robot as if it were resting on the floor, and is thus suspended or inverted along with the robot.

7.3 Rules

The Game Driver

The Game Driver

Posted by FRC1927 at 02/22/2007 11:31:18 am

Our school includes grades 7 - 12. Can an 8th grader be our driver since they are a member of our Robotics Team? If we use a joy stick and an xbox 360 controller is that ok? We used the chicklet to put our controls on the controller and use the joystick for the arm motion. Is that ok?

Re: The Game Driver

Posted by GDC at 02/22/2007 03:48:27 pm

Yes. Yes. Yes.

7.3 Rules

G 56 rule supported by game piece

G 56 rule supported by game piece

Posted by FRC49 at 02/23/2007 06:42:15 am

If a deflated game piece is under a support lef of a ramp or platform will any robot on the top of the ramp be considered lifted?

Re: G 56 rule supported by game piece

Posted by GDC at 02/26/2007 03:29:42 pm

Under Rule <G56> (as amended in Team Update #3), Robots that are supported by a Game Piece can not earn Bonus Points. Under Rule <G55>, inflated and deflated Game Pieces are evaluated in the same way when determining the match score. Therefore, a Robot supported by a deflated Game Piece would not be able to earn any bonus points. This is a transitive property, and would also be true for any Robot supported by a robot supported by a Game Piece.

7.3 Rules

Pushing a Tube through a Chute

Pushing a Tube through a Chute

Posted by FRC2165 at 02/23/2007 12:53:49 pm

1.1 Is it permissible to push a tube through a chute so that it drops onto the arena floor providing the person's hand pushing the tube does not pass through the plane of the wall?

1.2 Also, is it permissible to use another tube to push a tube already set in a chute through the chute to the floor? If this is permitted, does the rule about not cutting the plane of the wall apply to the tube used to push the "set" tube?

Re: Pushing a Tube through a Chute

Posted by GDC at 02/26/2007 03:28:41 pm

1.1 - Yes.

1.2 - Yes. No.

7.3 Rules

Robots pushed out of end zone while exceding the 72"x72" footprint?

Robots pushed out of end zone while exceding the 72"x72" footprint?

Posted by FRC1276 at 02/23/2007 09:33:07 pm

Imagine the following scenario.

BLUEABOT remains in it's HOME ZONE, and deploys its robot lifting mechanisms at the start of the match. These devices make its footprint larger than 72"x72". Before the start of the END GAME, REDABOT manuevers into BLUE's HOME ZONE, and pushes BLUEABOT outside of BLUE's HOME ZONE.

Will BLUEABOT be penalized for exceeding the 72"x72" virtual box?

Re: Robots pushed out of end zone while exceding the 72"x72" footprint?

Posted by GDC at 02/26/2007 05:00:59 pm

A robot cannot be forced into a penalty by a robot of the opposing alliance.

Therefore, if the blue robot is pushed out of the home zone, they will not be penalized, provided they make every effort to get back into the home zone once released by the red robot. If the blue robot is pushed out of the home zone and then does not immediately return to its home zone, the blue robot will receive the appropriate penalty.

7.3 Rules

Dropping keepers

Dropping keepers

Posted by FRC25 at 02/23/2007 11:45:50 pm

According to <G14>, teams are instructed to drop a keeper immediately after autonomous. However, there is no penalty/consequence mentioned if we do not do this. What happens if a team does not drop a keeper immediately?

Re: Dropping keepers

Posted by GDC at 02/26/2007 03:20:02 pm

There is no explicit penalty if a Robot keeps a Keeper in its posession after the start of the Teleoperated Period, unless the Robot Hangs the Keeper. In that case, it would be a violation of <G14> and would result in a disqualification. If the Robot holds on to the Keeper but does not attempt to Hang it, the Robot is just delaying the time until it is able to take posession of a Ringer and continue play.

7.3 Rules

Wedge Rules as applied to <G25> violators

Wedge Rules as applied to <G25> violators

Posted by FRC1618 at 02/26/2007 01:43:40 pm

If a team is clearly and obviously violating <G25> of their own will, what latitude do drivers of an opposing ramp robot (one that would qualify as a wedge under <R05> if it weren't for <R06>) have? Is the ramp robot required to be careful not to wedge the violator while attempting to adjust and allow its alliance partners up, or has the obvious <G25> violator waived that protection by continuing to violate <G25> in a part of the field where wedges and ramps are expected?

Re: Wedge Rules as applied to <G25> violators

Posted by GDC at 02/26/2007 03:15:38 pm

In such cases, the referees shall defer to the 25-1/2th commandment: "Woe be to ye who doth violate the Home Zone of thyne opponent. For thyne opponent's wedge may reach out and smyte thee, and ye shall be right out of luck."

If a robot (REDABOT) is in an opponent's Home Zone during the End Game, by definition it is already in violation of a game rule. In such cases, it will have given up standard protections offered under the rules. If the opponent (BLUEABOT) is in its own Home Zone and has a deployed ramp, then under the provisions of Rule <R06> the ramp can form a wedge and BLUEABOT will not be penalized. If in the course of normal play, REDABOT encounters the wedge and is upended, then BLUEABOT will not be penalized (since REDABOT should not have been there in the first place).

However, note that this is not an automatic pass for BLUEABOT to agressively pursue REDABOT with the express purpose of tipping over REDABOT. Rule <G35> still applies, and referees will assess any applicable penalties (including assigning red/yellow cards) in the event of overly aggressive play.

8.1 Overview

8.1 Overview

Camera Programming

Camera Programming

Posted by jononamission at 01/08/2007 01:25:13 pm

I was wondering if there is any code out there that can help my team 1778, understand the camera a little bit better. If there is any info on how to include the camera in the C code and how receive info from it. Any help would be awesome!
Thanks

Re: Camera Programming

Posted by GDC at 01/14/2007 07:50:34 am

A series of programming resources (including CMUcam II reference material) can be found on the FIRST website, on the [URL=http://www.usfirst.org/community/frc/content.aspx?id=482]Programming Resources Page[/URL].

8.1 Overview

Specification Documents

Specification Documents

Posted by FRC1722 at 01/12/2007 12:28:42 pm

In a number of places in the Tips and Guidlines a specification document link for the Gear tooth Sensor, Accelerometer, Yaw Rate Gyro, and Vision Sensor is listed as [url]http://www.usfirst.org/robotics/doc_updt.htm[/url] This link takes me back to theFIRST Robotics Competition Documents and Updates page with no other link to the spec docs. Can you help?

Re: Specification Documents

Posted by GDC at 01/17/2007 12:05:41 am

These documents are now at [URL=http://www.usfirst.org/community/frc/content.aspx?id=4054]Related Documents and Resources[/URL] (which you can also get to from the FRC web site by clicking on "Documents and Updates" > "Competition Manual and Related Documents" > "Related Documents and Resources" under Section 8.)

8.1 Overview

Programming Help

Programming Help

Posted by FRC876 at 02/05/2007 10:11:27 pm

We are having a problem with our Autonomous code!!!

Whenever we put in our code, we get errors in some of the lines that we haven't touched, and at the very end of the whole code.

Has anyone had this problem?
Can you help us?

Re: Programming Help

Posted by GDC at 02/08/2007 11:11:00 pm

We are not able to provide specific solutions to software/debugging problems or specific hardware design issues. Developing your own answers to these problems is part of the challenge of the FIRST competition. For possible assistance, you may want to refer the [url=http://www.usfirst.org/community/frc/content.aspx?id=482]FIRST Software Resources list[/url]. You may also want to check with other veteran teams in your area that may be able to mentor you through this process.

8.1 Overview

What Parts Will Be Available?

What Parts Will Be Available?

Posted by FRC613 at 02/22/2007 03:15:39 pm

Hello,

My team has currently shipped their robot as required, but did not think of removing its damaged gearbox first. The drive shaft on one of our gearboxes has magaged to become bent and I was curious as to if FIRST would have any 56mm gearbox parts or the complete assembly available at the NJ Regional in Trenton, NJ on March 1-3.

If you will have this part available, would you be able to put a driveshaft for a 56mm gearbox aside so that my team (team 613) may pick it up when we arrive?

Thank you in advance,

Joe Scheper

Re: What Parts Will Be Available?

Posted by GDC at 02/26/2007 03:31:46 pm

[I]FIRST[/I] cannot guarantee that any particular parts or supplies will be available at any particular competition event. Teams are responsible for obtaining spare/replacement parts that may be necessary (particularly for critical applications such as the drive system), and bringing them to the competition (within the limits specified in Rules <R30> and <R31>).

8.2 Definitions

8.2 Definitions

Small Parts

Small Parts

Posted by cydersr53 at 01/10/2007 12:54:42 pm

Is small parts still a supplier for first and can we order parts from them or do we find our own suppliers. rick

Re: Small Parts

Posted by GDC at 01/11/2007 04:22:00 pm

You may use Small Parts as a supplier of materials for your robot, as well as any other suppliers that satisfy the criteria for "VENDOR" as specified in the definitions in Section 8.2.

8.2 Definitions

R68 Robot Controller positioning

R68 Robot Controller positioning

Posted by FRC498 at 01/26/2007 06:56:44 pm

<R68> "The Robot Controller must be positioned within the ROBOT so that its indicator lights can be seen during inspection and when standing three feet in front of the ROBOT while the ROBOT is in the STARTING CONFIGURATION at the beginning of a match. This will greatly facilitate analysis in case of problems."

Question: Is the front of the Robot defined as which way the robot moves when the control stick is pushed forward, or just the positioning of the robot before autonomous mode?

i.e. (The robot controller is positioned on the side of the robot when driving, but that side will face towards the middle rack before a match begins.)

Re: R68 Robot Controller positioning

Posted by GDC at 01/29/2007 04:18:04 pm

Please refer to the definition of STARTING CONFIGURATION provided in Section 8.2 of the manual. When the robot is in this configuration, the indicator lights must be visible when a person is standing three feet in front of the robot. "In front" means the person is standing between the robot and the Rack.

8.3 Robot Rules

8.3 Robot Rules

a question about step motors

a question about step motors

Posted by motzkin at 01/09/2007 05:01:22 am

hello.
we need a step motor and my question is:
can we get a step motor from our sponsor that has motor steps in its stock, is it legal and not breaking the rules.

Re: a question about step motors

Posted by GDC at 01/11/2007 04:08:28 pm

Under Rule <R46>, electric motors different from, or in addition to, those in the Kit Of Parts are prohibited, with the exception of those specifically permitted by Rule <R45>.

8.3 Robot Rules

KOP and AM Transmissions

KOP and AM Transmissions

Posted by William Benson at 01/10/2007 12:21:31 pm

Is it a correct interpretation of section 8.3.4.2 of the game manual that it is illegal to use the transmission kits from the 2005 and 2006 kit of parts because they consistitue part of a pre-packaged mobility system? If so, would it be OK to use some or all of the gears, bearings, etc. in a new transmission system?

Transmissions

Posted by Warren Sellers at 01/10/2007 01:29:37 pm

Is it allowed to use transmissionsfrom past years robots? If not, what is allowed to be bought from IFI?

COTS Transmission

Posted by FRC123 at 01/10/2007 07:38:43 pm

If we have a COTS transmission from our 06 robot and it has not been modified in any manner (still avaliable from the supplier this year) may it be used on our 07 robot?

2006 Kit Bot Gear Box

Posted by FRC1053 at 01/11/2007 07:29:01 pm

Is the use of the 2006 Kit Bot gear box allowed this year?

2005/2006 KOP Transmissions

Posted by FRC649 at 01/12/2007 12:44:46 am

In this year's KOP we were provided with new BaneBots planetary transmissions in place of the transmissions we received from last year and two years ago. Those transmissions seem to be unobtainable (and probably no longer considered COTS), as they were discontinued by IFI Robotics. We would like to know whether or not we can continue to use these transmissions in the 2007 Robot.

Transmission

Posted by FRC527 at 01/12/2007 09:30:17 am

Is it legal to use last year's KOP transmissions, and to buy transmissions from AndyMark.

Re: Transmission

Posted by GDC at 01/12/2007 11:42:19 pm

Under Rule <R28> (as amended in Update #2), the use of transmissions suppplied in the 2006 Kit Of Parts is not permitted, as they were parts custom made for the FIRST competition and not generally available. AndyMark transmissions are generally available COTS

MECHANISMS, and may be used.

2006 Transmission

Posted by FRC1450 at 01/24/2007 01:08:07 pm

Can the 2006 Transmission be used in whole or in part on this years Robot.

Re: 2006 Transmission

Posted by GDC at 01/25/2007 09:41:58 pm

The answer provided on January 12 is still valid.

8.3 Robot Rules

Diffrent camera than KOP camera?

Diffrent camera than KOP camera?

Posted by pmm at 01/10/2007 12:47:41 pm

The flow chart allows us to use a diffrent camera than the one supplied in the KOP as long as it does not cost over $400. Is this correct?

Re: Diffrent camera than KOP camera?

Posted by GDC at 01/11/2007 04:16:52 pm

You may use a different, or additional, camera as long as the new camera is consistent with all custom circuit rules and is valid under the Parts Use Flowchart.

8.3 Robot Rules

Hard drive on robot?

Hard drive on robot?

Posted by pmm at 01/10/2007 12:54:21 pm

Are we allowed to have a hard drive on the robot for processing information? Or would we have to use a storage device that has no motor?

Re: Hard drive on robot?

Posted by GDC at 01/11/2007 08:24:38 pm

No, as a disk drive would include an additional motor and would therefore violate Rule <R46>. Solid state storage devices may be used, as long as they are used in compliance with all rules regarding custom circuits.

8.3 Robot Rules

robot frame

robot frame

Posted by cydersr53 at 01/10/2007 01:00:23 pm

do we only use what is in the KOP or can we use another type of framing such as alulumber for the base and structure thanks rick

Re: robot frame

Posted by GDC at 01/11/2007 03:49:06 pm

You may use any materials for the base and structure of your robot, as long as the material is permitted under the part use rules listed in Section 8.3 and the Parts Use Flowchart.

8.3 Robot Rules

Vacuum

Vacuum

Posted by buickgsxstg174 at 01/10/2007 01:24:12 pm

Are we allowed to use more than the given, one vacuum cup and vacuum generator? thanks

Re: Vacuum

Posted by GDC at 01/11/2007 04:14:53 pm

This would be permitted under Rule <R106>.

8.3 Robot Rules

8.3.4.2 regarding AndyMark transmissions

8.3.4.2 regarding AndyMark transmissions

Posted by FRC2014 at 01/10/2007 01:27:06 pm

After much discussion I am still unclear as to whether the AndyMark transmissions (specifically the AM-2 shifter) would be a legal part.

My own interpretation would be that it is a COTS Mechanism and must fit within the relevant guidelines. Furthermore it is not purely a bolt-on solution, as teams would still have to determine sprocket ratios, wheel diameters, chain paths, etc. However, valid arguements have been made for the contrary opinion, so a ruling would be greatly appreciated.

Re: 8.3.4.2 regarding AndyMark transmissions

Posted by GDC at 01/11/2007 04:16:22 pm

The AndyMark AM-2 shifter would be considered a COTS MECHANISM.

8.3 Robot Rules

Previously Fabricated Parts

Previously Fabricated Parts

Posted by FRC217 at 01/10/2007 03:16:11 pm

My question is regarding Robot Rule R24 and how it applies given all the other rules in Section 8.3. I will first ask my question, then go into detail why I am confused regarding the rule and how it interacts with the other rules.

We want to use a machined aluminum gearbox housing that was designed and fabricated during the 2005 build season and used on our 2005 robot. We have not modified it since the 2005 season. According to rules R24 and R26, we should be able to use this component on our 2007 robot. Is this interpretation correct?

The part that has us confused is the last part of the rule which states "... IF they satisfy ALL of the rules associated with materials/parts use for the 2007 FIRST Robotics Competition."

What sections, exactly, contain the rules regarding materials/parts use? Is it section 8.3.4 only? Is it all of 8.3?

Robot Rule R17 seems to be in direct contradiction to R24. The 4th sentence of rule R17 states, "But absolutely no fabrication or assembly of any elements intended for the final robot is permitted prior to the Kickoff presentation"

R24 reads, "<R24> Individual COMPONENTS from ROBOTS entered in previous FIRST competitions may be used on 2007 ROBOTS IF they satisfy ALL of the rules associated with materials/parts use for the 2007 FIRST Robotics Competition. "

The definition of COMPONENT is, "A ROBOT part in its most basic configuration, which can not be disassembled without damaging or destroying the part, or altering its fundamental function."

Based on R24 and the definition of a COMPONENT, then my 2005 housing is legal, but based on R17 it is not. Please clarify.

Thanks,
Team 217

Re: Previously Fabrication Parts

Posted by GDC at 01/12/2007 11:47:40 pm

Under Rule <R24> (as amended in Update #2), the use of FABRICATED ITEMS from ROBOTS entered in previous FIRST competitions can not be used. Hence, this part would not be permitted.

8.3 Robot Rules

Additional CIM's and/or Banebot 2:1 adapter

Additional CIM's and/or Banebot 2:1 adapter

Posted by FRC1228 at 01/10/2007 03:34:08 pm

Are we allowed to add 2 additional CIM motors through the use of the Banebot 56mm Spur Gearbox, 2 motor adapter? It is listed on their site as a USFirst part.

Re: Additional CIM's and/or Banebot 2:1 adapter

Posted by GDC at 01/12/2007 11:51:15 pm

This is permitted per Rule <R45>. The Banebot 56mm Spur Gearbox is considered a COTS item, and may be used.

8.3 Robot Rules

Nason pressure switch

Nason pressure switch

Posted by FRC563 at 01/10/2007 03:36:14 pm

If we are using pneumatics on our robot but we are filling our tanks with an off board compressor, meaning we will not have a compressor on our robot, do we have to program the pressure switch into our robot controller and /or do we need to use a pressure switch at all ? Also do we need to use a spike relay if our power source is coming from a battery not on our robot.
Thank You, Team 563

Re: Nason pressure switch

Posted by GDC at 01/11/2007 04:24:09 pm

Please refer to Rule <R101>, which directly addresses this topic. If the compressor is left off the robot, and used to pressurize the pneumatic system, then it must be powered and controlled in a manner consistent with ALL other pneumatic system rules, including Rule

<R103>.

8.3 Robot Rules

<R12> - Robot Size

<R12> - Robot Size

Posted by FRC57 at 01/10/2007 03:50:13 pm

The rule states a robot may not exceed 72" in width and depth. Does this mean the robot must at all times fit into a box 72" by 72" at an arbitrary rotation about the vertical axis? Or are we to pretend 72" rulers are glued to the front and sides of the robot? An example would be a robot with a pole the extended horizontally such that the robot is 80" wide, but still 38" in depth. The robot could be oriented so the rod extends along the diagonal of the 72" square and the entire robot would still fit in the square.

Re: <R12> - Robot Size

Posted by GDC at 01/16/2007 02:09:54 pm

The intent of Rule <R12> is that the robot must be able to fit within a 72" x 72" virtual box at all times when outside of the Home Zone. The orientation of the robot within the box is inconsequential.

8.3 Robot Rules

4-wheel drive

4-wheel drive

Posted by FRC1722 at 01/10/2007 06:50:10 pm

Is 4-wheel drive permitted this year? I also cannot find the chassis manual with the many design options including 6-wheel drive from the 2006 season.

Re: 4-wheel drive

Posted by GDC at 01/11/2007 02:05:55 pm

There are no restrictions on the number of wheels that can be used to drive a robot.

8.3 Robot Rules

Acceptable Ramps

Acceptable Ramps

Posted by SECOND at 01/11/2007 12:57:42 am

During the End Game period when we are allowed to deploy some sort of wedge from within our home base what are the limitations of these ramps? Is there a maximum length or allowable angle? Are there any materials we arn't allowed to use?

Re: Acceptable Ramps

Posted by GDC at 01/11/2007 03:54:23 pm

This is directly addressed in Rule <R12> and Section 8.3.4.

8.3 Robot Rules

pneumatics question

pneumatics question

Posted by FRC538 at 01/11/2007 12:28:45 pm

I know we can use 4 clippard tanks on the robot is the 120psi limit spilt between all 4 tanks or

is that limit for each tank?

Re: pneumatics question

Posted by GDC at 01/15/2007 04:52:08 pm

Reading <R102> and <R103> make it clear that multiple tanks may be used to increase the total volume of air stored at 125psi. To become more familiar with how pneumatics work, you may want to read the "Pneumatics Manual" as well as the Pneumatics section of "Tips and Good Practices", both of which are linked off the Robot section of the "2007 FIRST Robotics Competition Manual and related documents" webpage.

8.3 Robot Rules

Curly Pneumatics Tubing

Curly Pneumatics Tubing

Posted by FRC1540 at 01/11/2007 02:40:24 pm

In previous years teams have made their own curly pnumatics tubing with the standard tubing and a heat gun. While we could do that again (unless R99 disallows it), it seems a lot safer to just allow the real thing. Is that allowed this year? Is making your own allowed?

Re: Curly Pneumatics Tubing

Posted by GDC at 01/12/2007 02:57:19 pm

Per Rule <R106> spiral tubing is permitted.

8.3 Robot Rules

Robot Carrying A Light

Robot Carrying A Light

Posted by FRC25 at 01/11/2007 09:12:38 pm

May the robot carry a light (other than those colors that the field uses) for use on its guidance system/to find the spider legs?

Re: Robot Carrying A Light

Posted by GDC at 01/15/2007 03:39:20 pm

This question cannot be answered directly, as it is highly dependent upon the particulars of the light in question. All lasers and other structured light devices are strictly prohibited. Any light-emitting device will be examined carefully for compliance with Rules <R04>, <R33>, <R42>, <R46>, and <R63>. Any device that interferes with the operation of other Robots (including CMUcam II camera systems), or with the visual acuity of team members or field personnel, is absolutely prohibited.

8.3 Robot Rules

Use of Composite materials

Use of Composite materials

Posted by FRC753 at 01/11/2007 09:45:07 pm

Our team would like to use a material made out of honeycombed paper laminated with fiberglass. The company providing us with the material purchases it from some other company (we don't know which one) and would be a sponsor of the team. We would like to know if it is legal to use it.

Re: Use of Composite materials

Posted by GDC at 01/12/2007 11:05:38 pm

The material is legal to use as long as it complies with all rules in Section 8.3 of the 2007 FIRST Robotics Competition Manual and is properly documented under the cost accounting rules.

8.3 Robot Rules

Pneumatic Solenoid Usage

Pneumatic Solenoid Usage

Posted by FRC753 at 01/11/2007 09:47:10 pm

We were wondering if the Rexroth-Bosch solenoids from last year (or ordering new ones the same model as last year) would be allowed.

Re: Pneumatic Solenoid Usage

Posted by GDC at 01/12/2007 02:43:23 pm

Per Rule <R106> these are permitted.

8.3 Robot Rules

Use of magnets

Use of magnets

Posted by FRC229 at 01/11/2007 10:56:12 pm

Is the use of the magnets permitable as a fastener of sorts on the robot. As far as I could tell using the flow chart, it would be.

Thanks,

Alex Crosby
229 Team Leader

Re: Use of magnets

Posted by GDC at 01/12/2007 02:42:18 pm

Yes, magnets are permissible as long as they satisfy all other rules.

8.3 Robot Rules

Purchasing Additional Pneumatic Cylinders

Purchasing Additional Pneumatic Cylinders

Posted by FRC498 at 01/12/2007 07:58:00 am

The rules state that we may buy an unlimited number of pneumatic cylinders and solenoids in addition to those on the "free" pneumatic components order form. The rule also says "However, they must be identical to those listed on the Pneumatic Components Order form (i.e. same part numbers), and obtained from a Bimba or Parker Hannifan distributor." When I viewed Bimba's website, I discovered that part numbers vary based on stroke length. Because of this, would it be legal for us to purchase cylinders that are the same bore and type as those on the pneumatic parts order form, but are a different stroke length than what is available on that (for example, a 3/4" bore 18" stroke cylinder)?

Re: Purchasing Additional Pneumatic Cylinders

Posted by GDC at 01/12/2007 02:32:56 pm

<R105> states, "they must be identical to those listed on the Pneumatic Components Order

form (i.e. same part numbers)." A 3/4" bore 18" stroke cylinder is not listed on the Pneumatic Components Order form and is therefore not legal.

8.3 Robot Rules

R17 & purchased mechanisms

R17 & purchasing systems

Posted by FRC1748 at 01/12/2007 10:17:20 am

We had to purchase AndyMark transmissions before kickoff because if we waited to order them through the Baltimore City School System we wouldn't get them until after build season.

We only opened the box with our AndyMark transmissions on the ninth (after kickoff). We are a second year team in Baltimore City. It is not possible for us to purchase another set of transmissions just to say we purchased them after kickoff.

It seems like we met the intent of the rules, are we still not allowed to use our AndyMark transmissions in our drive train?

Concerning the AndyMark transmissions

Posted by FRC842 at 01/12/2007 10:53:18 am

I have two questions:

Since the AndyMark transmissions are a COTS Mechanism, does this mean that ones purchased on the off season are illegal to use?

And does this rule also make any Omniwheels purchased on the off season illegal too, seeing as they can are a collection of components (The plates, the smaller wheels, etc.)?

Re: Concerning the AndyMark transmissions

Posted by GDC at 01/12/2007 11:26:52 pm

Please refer to Update #2. Unmodified COTS MECHANISMS are permitted, as long as they comply with the requirements of the updated Rule <R28>.

8.3 Robot Rules

Camera servo outputs

Camera servo outputs

Posted by FRC619 at 01/12/2007 10:40:47 am

Can you use the servo outputs on last years (2006) camera's circuit board to track the lights instead of the RC?

Re: Camera servo outputs

Posted by GDC at 01/12/2007 11:09:42 pm

Under Rule <R28> (as amended in Update #2), you are not permitted to use the 2006 CMUcam II camera module, as it was a part custom made for FIRST, and only available for the 2006 competition. Other camera modules with similar functionality are currently available from other commercial sources. Their use would be permitted, and if they include servo drivers they may be used to track the target lights.

8.3 Robot Rules

<R57>Maxi Distribution Blocks

<R57>Maxi Distribution Blocks

Posted by FRC68 at 01/12/2007 11:30:55 am

<R57> The power distribution block must be directly connected to the APP connector and main 120-amp circuit breaker. No other loads may be connected to the main 120-amp circuit breaker.

Based on this rule, is it required to use the Maxi distribution blocks on this years robot?

Re: <R57>Maxi Distribution Blocks

Posted by GDC at 01/15/2007 04:40:53 pm

You quote a rule about the power distribution block, then ask a question about the Maxi-style fuse block. Please reference the Robot Power Distribution Diagram along with the rules to understand the requirements. <R57> is referring to the Power distribution block, which must be used. The Maxi-style fuse block only needs to be used if your robot requires 40A circuits; all electric loads must be protected by an appropriately rated fuse or circuit breaker (as specified in Rules <R93> through <R98>).

8.3 Robot Rules

2006 Kitbot Gear Box

2006 Kitbot Gear Box

Posted by FRC1053 at 01/12/2007 01:07:41 pm

I have seen lots of discussion regarding last years (2006) kit bot gear box but no yes or no. Although it is not available anymore from IFI it is almost exactly like the AndyMark's AM Gear Box. Can it be used in this years competition?

Richard Seniuk

Re: 2006 Kitbot Gear Box

Posted by GDC at 01/12/2007 11:08:05 pm

Please refer to Update #2 and updated Rule <R28>.

8.3 Robot Rules

Rule 105 Pneumatic Cylinders

Rule 105 Pneumatic Cylinders

Posted by FRC63 at 01/12/2007 04:00:39 pm

Rule 105 states that you must use pneumatic cylinders that are identical to the ones on the Pneumatic Components Order Form. The Pneumatic Components Order form also states to check the Bimba web site for available strokes in each bore size. Both the online Free Pneumatic Components Order Form and the online Bimba Product Catalog list more choices for stroke length than are listed on the printed order form from the Pneumatics Manual. Can you use a cylinder that is on the online order form or the product catalog but not on the printed order form in the Pneumatics Manual? For example: 1724-DP is available on the online order form but not listed in the printed manual...is it legal to use? As another example: 3118-DXP is listed as a standard cylinder on the Bimba website but is not listed on the printed pneumatic component order form...is it legal to use? In each case they are both legal types of cylinder

but with strokes different from what is listed on the Pneumatic Components Order Form as printed in the Pneumatics Manual.

Re: Rule 105 Pneumatic Cylinders

Posted by GDC at 01/13/2007 12:20:05 am

As specified in Rule <R105>, additional pistons "must be identical to those listed on the Pneumatic Components Order form (i.e. same part numbers)." Parts 1724-DP and 3118-DXP are not available on the Pneumatics Components Order Form, and therefore are not permitted.

8.3 Robot Rules

Are pnuematic air bellows allowed?

Are pnuematic air bellows allowed?

Posted by FRC1311 at 01/12/2007 07:21:00 pm

Are pressure rated pnuematic air bellows allowed?

[url]http://www.numatics.com/product/specialtyactuators/specialtyactuators.airbellows.asp[/url]

[url]http://www.easystreetair.com/index.asp?PageAction=VIEWPROD&ProdID=405[/url]

Re: Are pnuematic air bellows allowed?

Posted by GDC at 01/13/2007 12:22:03 am

No.

8.3 Robot Rules

Custom Cylinders

Custom Cylinders

Posted by FRC1311 at 01/12/2007 07:32:32 pm

Robot Manual <R105> seems to indicate that all cylinders must be identical to the cylinder provided in the KOP.

Page 7 of the pnuematics manual states that custom cylinders may be ordered from Bimba or Parker (subject to limitations)

Q. Are custom cylinders allowed, pursuant to the pnuematics manual?

Re: Custom Cylinders

Posted by GDC at 01/13/2007 12:16:30 am

Custom pistons are allowed, persuant to the conditions specified in the Pneumatics Manual. Custom pistons must be selected from the options available on Page 16 of the Pneumatics Manual.

8.3 Robot Rules

Question on <R66>, DB-9 cables and radio modems

Question on <R66>

Posted by FRC8 at 01/13/2007 01:00:09 am

<R66> The radio modems provided in the 2007 Kit Of Parts are the only permitted method for communicating with the ROBOTS during the competition. Radio modems from previous FIRST competitions can not be used. The radio modem must be connected directly to the Robot

Controller using one of the DB-9 cables provided in the 2007 Kit Of Parts. No other form of wireless communications can be used to communicate to, from or within the ROBOT (e.g. no Bluetooth devices are permitted on the ROBOT).

Does this mean we are not allowed to extend the DB-9 cable using a freely available similar cable (bought from a store with retailers around the nation)? Are we forced to the length of cable we're given?

Thanks,
Guy Davidson,
[email]guydav2002@yahoo.com[/email]

Re: Question on <R66>

Posted by GDC at 01/14/2007 11:38:45 am

As clearly stated in <R66>, the radio modem must be connected directly to the Robot Controller using one of the DB-9 cables provided in the 2007 Kit Of Parts.

8.3.7 R66 Radio modems

Posted by FRC1722 at 01/17/2007 03:02:14 pm

The rule states that the modem must be connected to the controller using the DB-9 cable provided in the KOP. May we use a shorter DB-9 cable not provided?

Re: Question on <R66>, DB-9 cables and radio modems

Posted by GDC at 01/17/2007 04:37:49 pm

The above answer still applies.

8.3 Robot Rules

Question concerning update 2

Question concerning update 2

Posted by FRC842 at 01/13/2007 01:43:26 am

Does team update 2 allow teams to use AndyMark transmissions bought in the off-season?

Re: Question concerning update 2

Posted by GDC at 01/15/2007 03:16:52 pm

AndyMark is a COTS VENDOR. Their transmissions are COTS MECHANISMS. Therefore, they are allowed IF they meet all the other criteria stated in <R28> (as modified in Update #2).

8.3 Robot Rules

2006 CMUCAM-Pan-Tilt Mechanism <R26>?

2006 CMUCAM-Pan-Tilt Mechanism <R26>?

Posted by FRC1716 at 01/13/2007 02:26:18 am

Can we use the CMU CAM-Pan-Tilt Mechanism from the 2006 kit without the camera unit? This years mechanism is the exact same part number as last year.

Re: 2006 CMUCAM-Pan-Tilt Mechanism <R28>?

Posted by GDC at 01/15/2007 04:48:49 pm

Yes, the Pan/Tilt mechanism is a generally available COTS item.

8.3 Robot Rules

Solonoid Control

Solonoid Control

Posted by FRC84 at 01/13/2007 09:56:17 am

May more than one solonoid be controlled by a single spike?

Re: Solonoid Control

Posted by GDC at 01/15/2007 03:24:30 pm

If you are referring to electric solenoid actuators, then please note that Rule <R46> specifically prohibits the use of these devices (note: electric solenoid actuators are NOT the same as pneumatic solenoid valves).

If you are referring to pneumatic solenoid valves, then under Rule <R91> each valve must be controlled with one, and only one, relay module. It is permitted for one relay to control more than one valve.

8.3 Robot Rules

Can Standard Bumpers from last year be re-used?

Can Standard Bumpers from last year be re-used?

Posted by FRC1015 at 01/13/2007 01:23:40 pm

According to R37, Standard Bumpers constructed according to FIRST requirements "are considered part of the robot" for the purposes of shipping.

Is a bumper considered to be a "component" as defined in Section 8--that is to say, "a ROBOT part in its most basic configuration, which can not be disassembled without damaging or destroying the part, or altering its fundamental function"? If so, can a Standard Bumper from last year be used in this year's competition?

Thanks,
Team 1015

Re: Can Standard Bumpers from last year be re-used?

Posted by GDC at 01/14/2007 08:00:40 am

A bumper (standard or custom) is a Fabricated Item. As such, Rule <R24> (as amended in Update #2) specifically prohibits the use of any bumpers that were constructed and used on prior FRC competition robots.

8.3 Robot Rules

Battery Placement

Battery Placement

Posted by FRC964 at 01/13/2007 02:05:55 pm

Is there any specific rule as to how the battery may be placed on the robot?
Example: Laying the battery horizontal instead of upright.

Re: Battery Placement

Posted by GDC at 01/14/2007 11:35:37 am

There is no restriction on the orientation of the battery on the Robot, provided it is done in a safe manner.

8.3 Robot Rules

Batteries <R46>

Batteries <R46>

Posted by FRC1511 at 01/13/2007 03:47:58 pm

Rule 46 states:
Items Specifically Prohibited from use include:
*Batteries different from or in addition to those provided in the Kit of Parts

Does the "in addition to" mean that we are not allowed to buy any additional batteries and are forced to run ONLY on the ones provided in the kit? ie two batteries for an entire competition?

Batteries

Posted by FRC845 at 01/15/2007 09:01:14 am

I purchased additional batteries as instructed from a local distributor. The batteries are MK ES17-12. The serial number is 12V-17AH/20HR rather than the number (12V-18AH/20HR) of the two provided in the kit. I called MK batteries in Calif. and was told that the batteries are the same. Will there be a problem using the ones I purchased during the competition? I need to know ASAP as I only have three days to return the purchased batteries. Thank you.

Re: Batteries <R46>

Posted by GDC at 01/17/2007 12:02:16 am

Please refer to Rule <R46>, as amended in Update #3.

8.3 Robot Rules

can we use non-skid tape?

can we use non-skid tape?

Posted by FRC1141 at 01/13/2007 05:02:06 pm

We were wondering if we could use non-skid tape to make our robot lifting system safer when a robot is on it. It would be the kind of tape used on staircases so it would be very hard to remove once applied. Thanks!

Re: can we use non-skid tape?

Posted by GDC at 01/14/2007 08:04:52 am

Under Rule <R35> this would not be permitted. There are other materials, coatings, and finishes that would provide this funtionality without violating the rule.

8.3 Robot Rules

Gas Springs

Gas Springs

Posted by FRC476 at 01/13/2007 06:38:33 pm

What is the maximum allowed energy/strength for gas springs?

Re: Gas Springs

Posted by GDC at 01/14/2007 08:16:38 am

There is no specific maximum strength defined for compressed gas springs. However, caution must be exercised when using these devices to ensure that they do not deploy in an unconstrained or too-rapid manner. If the compressed gas spring is too powerful for the application, or used in an unsafe manner, it may be a violation of <R42> and/or <S01>.

8.3 Robot Rules

<R12>72 x 72 foot print

<R12>72 x 72 foot print

Posted by FRC176 at 01/14/2007 10:55:57 am

72 x 72

I have question on this subject. If your robot flips and while to upright yourself using an arm (if you have one) the robot exceeds the 72 x 72 foot print what is the penalty?

Re: <R12>72 x 72 foot print

Posted by GDC at 01/18/2007 05:27:18 pm

Rule <R12> specifies that while outside of the Home Zone, the robot may not exceed 72 inches (width) by 72 inches (length). There is no exception for overturned robots.

In all cases involving a violation of this rule, the ROBOT may be disabled and/or disqualified.

8.3 Robot Rules

Gear Boxes

Gear Boxes

Posted by FRC1401 at 01/14/2007 07:40:20 pm

Hello,

A question: Can the gear boxes from the 2006 season can be used for the robot construction in Rack ´n Roll?

Muchas gracias from team 1401 from Mexico

Re: Gear Boxes

Posted by GDC at 01/14/2007 08:23:41 pm

Please refer to Update #2 and Rule <R28> (as amended in the update).

8.3 Robot Rules

Linear Potentiometer

Linear Potentiometer

Posted by FRC1710 at 01/15/2007 03:33:14 pm

Are we allowed to use either a linear potentiometer or a linear trasducer for our robot?

Re: Linear Potentiometer

Posted by GDC at 01/18/2007 10:51:08 pm

Linear pots and transducers are allowed as input devices as long as they comply with all of the other 2007 Manual rules.

8.3 Robot Rules

Bumper exclusions for R12

Bumper exclusions for R12

Posted by FRC1889 at 01/15/2007 04:25:27 pm

Do the bumper volume exclusions in R11 that apply to the starting envelope in R07 apply to the 72 x 72 maximum envelope in R12 as well?

Re: Bumper exclusions for R12

Posted by GDC at 01/18/2007 11:00:03 pm

No. The 72 x 72 inch size limits specified in <R12> applies to the entire robot, including any bumpers that may be used.

Robot Playing Configuration

Posted by FRC537 at 01/29/2007 10:24:40 pm

There is some dissension among our team as to the interpretation of rules R07, R11, and R12.

To put it briefly, once the game has begun and a robot enters its playing configuration, are the bumpers included in the 72"x72" maximum footprint?

R12 says that a robot in playing configuration can exceed the constraints in R07, to a maximum of 72x72". R11 says that, for determining complaince with R07, standard bumpers are not included. The question comes from the fact that, because R07 specifies starting configuration, does R11 still apply after the match has begun when determining compliance with R12?

Re: Robot Playing Configuration

Posted by GDC at 01/30/2007 12:48:11 pm

Please see previous answer.

8.3 Robot Rules

Shielding the lift mechanism

Shielding the lift mechanism

Posted by FRC1763 at 01/15/2007 04:28:39 pm

Our team is thinking about building a scissor lift mechanism as part of our game piece manipulator. In reference to <R04> would the scissor lift need to be shielded as it operates during a match?

Re: Shielding the lift mechanism

Posted by GDC at 01/18/2007 05:06:49 pm

We cannot provide an answer that would be applicable in all situations.

While scissor lifts don't always present a pinch hazard, per <R04> reasonable care must be exercised in their implementation and appropriate shielding applied.

8.3 Robot Rules

Non-functional operator console parts and the fabrication schedule

Non-functional operator console parts and the fabrication schedule

Posted by FRC1618 at 01/15/2007 09:24:08 pm

Is it permissible for a team to use the structural or decorative elements of past years' operator consoles, provided that the OI is replaced with this year's unit and any custom controls are fabricated after Kickoff?

Re: Non-functional operator console parts and the fabrication schedule

Posted by GDC at 01/18/2007 03:54:15 pm

<R81> specifies only that the Operator Interface itself may not be re-used. The rules do not prevent re-use of other Operator Console elements, functional or not, as long as they comply with all 2007 rules.

8.3 Robot Rules

Using 5V power from RC

Using 5V power from RC

Posted by FRC111 at 01/16/2007 09:11:38 am

Innovation First has indicated that the 5 volt supply line provided on each analog and digital I/O line can provide up to 1 amp of current (combined). We wish to confirm that it is permissible to power 5 volt sensors and/or circuits from the RC's 5 volt line, rather than from a separate 12 volt branch circuit.

Re: Using 5V power from RC

Posted by GDC at 01/17/2007 02:17:47 pm

This is permitted per Rule <R62>.

8.3 Robot Rules

Banebots 64:1 question

Banebots 64:1 question

Posted by FRC842 at 01/16/2007 10:12:42 am

Do you have to use a victor on the Banebots 64:1 motor, or can you use a Spike instead?

Re: Banebots 64:1 question

Posted by GDC at 01/18/2007 03:59:21 pm

The Banebots motor may be controlled with a Spike relay module. Note that under Rule <R98>, only one motor may be controlled by each relay module. Do not connect multiple motors to these devices.

8.3 Robot Rules

Robot rule R60

Robot rule R60

Posted by FRC619 at 01/16/2007 10:27:07 am

I would like to use a microcontroller to collect data from a sensor, have the microcontroller run an onboard program to reduce the data, test for a certain condition reported by the sensor and send a message to the RC only when the certain condition is meet. As an example: an ultrasonic sensor is connected to a BASIC Stamp. The Stamp collects data from the sensor and only reports to the RC when the Stamp determines that a certain distance has occurred. The RC will send output to the robot based on the Stamp's message and the program running on the RC.

Re: Robot rule R60

Posted by GDC at 01/18/2007 04:02:15 pm

As long as all the components and connections are in compliance with the appropriate additional parts and custom circuit rules contained in Section 8.3 of the manual, and properly accounted for in the robot Bill Of Materials, then this would be permitted. Such applications of sensor and computing technology, and similar pre-processor applications, are encouraged and can significantly add to the capability of your robots.

8.3 Robot Rules

Springs as energy storage

Springs as energy storage

Posted by FRC1884 at 01/16/2007 10:31:12 am

Hi,

re:

Storage achieved by deformation of ROBOT parts. Teams must be very careful when incorporating springs or other items to store energy on their ROBOT by means of part or material deformation. A ROBOT may be rejected at inspection if, in the judgment of the inspector, such items are unsafe.

Just for clarity' sake, does this rule mean Tension springs, Compression spring Gas springs, (Latex Tubing?) CAN be used but must start the match in a "relaxed" state? The part about "...store energy...BY MEANS OF part or material deformation" COULD imply that the robot must generate the energy storage state during the course of the match. Or can springs be compressed or expanded before the the match starts in a pre-loaded state?

Perhaps being a bit too picky but the warning agains the rule is quite servere.

Thanks!

Re: Springs as energy storage

Posted by GDC at 01/18/2007 03:57:11 pm

Tension springs, compression springs, gas springs, latex tubing, etc. may be used as a source of energy on your robot. The energy may be stored on the robot by pre-loading any spring devices prior to the start of the match. As noted, any use of springs or similar devices must be done in a safe manner, and wil be subject to close scrutiny by inspectors.

8.3 Robot Rules

Are Dashpots Allowed?

Are Dashpots Allowed?

Posted by FRC1280 at 01/16/2007 12:34:40 pm

<R106> states in part: "For the purposes of the FIRST competition, closed-loop pneumatic (gas) shocks are not considered pneumatic devices, and are permitted additions to the ROBOT."

Question: Dashpots are pneumatic devices similar to gas shocks designed to promote safety and minimize equipment damage, distributing energy discharge over time by venting air out a small orifice to the outside world. Because they vent to the outside world they would normally not be considered "closed-loop" but they would seem to be in the spirit of "Safety First." As such, are dashpots legal to use on our robots?

Re: Are Dashpots Allowed?

Posted by GDC at 01/18/2007 05:01:15 pm

Open loop pneumatic devices other than those provided in the Kit Of Parts or provided a specific exception in Sectin 8.3.10 of the manual are prohibited. As such, pneumatic dashpots are not permitted unless constructed from kit components. Mechanical dashpots would be permited, as long as they are in compliance with all the appropriate additional parts and

materials rules in Section 8.3 of the manual.

8.3 Robot Rules

<R15> Can flag holder mount be flexible?

<R15> Can flag holder mount be flexible?

Posted by FRC1318 at 01/16/2007 01:51:33 pm

<R15> says that the flag holder must be "permanently mounted." Would it be permitted to have the some flexibility in the flag holder mount, via spring or similar, so that the flag holder can bend somewhat if, for example, wacked by another robot's arm? Obviously, we'd make sure the mount is secure and permanent, and also stiff enough that the flag won't get knocked out during reasonably aggressive play.

Re: <R15> Can flag holder mount be flexible?

Posted by GDC at 01/18/2007 03:49:02 pm

As indicated in the illustration accompanying Rule <R15>, the flag holder must be hard-mounted to the body of the robot. Flexible mounting of the flag holder is not acceptable, as it would be too easy for the flag to assume a non-vertical posture which would limit visibility of the flag.

8.3 Robot Rules

Indirect Current Sensors

Indirect Current Sensors

Posted by FRC41 at 01/16/2007 07:54:51 pm

According to rule <R63> "...high impedance voltage sensors and low impedance current sensors are permissable..." Would indirect current sensors, like hall effect based mechanisms, be permissable?

Re: Indirect Current Sensors

Posted by GDC at 01/17/2007 12:53:45 am

Yes.

8.3 Robot Rules

Using DDR as a controller

Using DDR as a controller

Posted by FRC1571 at 01/17/2007 01:52:05 pm

"For this year's competition, our team wishes to use a "Dance Dance Revolution" pad with USB connectivity as its remote controller. The "DDR" pad is a 36" by 32" flat mat that is placed on the floor. There are different buttons that the user can step on in order to determine directions and various other actions. Will this be compliant with rule <R78> in the competition manual, or will we have to find something else?"

Re: Using DDR as a controller

Posted by GDC at 01/18/2007 03:39:26 pm

The intent of Rule <R78> is that Operator Consoles that require support rest entirely on the provided shelf, and not hang on the Alliance Station Wall or other structural elements. A DDR control pad resting on the floor satisfies the intent of the rule, and would be permitted as long as the control pad remains entirely within the player station in the Alliance Zone (e.g. does not cross the Players Line and does not intrude into the player stations of the adjacent teams).

If you do implement this controller, please let us know at which competition events you will be competing. We want to come and see this in action!

8.3 Robot Rules

Pneumatic cylinders

Pneumatic cylinders

Posted by FRC2039 at 01/17/2007 03:16:40 pm

I know that there is a limit on what types of pneumatic cylinders we can use, but this is not very clear. Using the flow chart on page 19 of the <Robot> section of the manual, it says that we can use cylinders that are not on the custom cylinder order form if they are rated for 125 psi and off the shelf or custom made by the team.

1.) When will we get the custom cylinder order form?
2.) Can we order any standard or custom cylinder from Bimba so long as it is rated for 125 psi?
3.)In the catalog many of the cylinders come standard in sizes up to 12" stroke, but are available in up to 36" stroke, can we use these larger stroke lengths?

Please advise. Thanks.

Re: Pneumatic cylinders

Posted by GDC at 01/18/2007 11:02:09 pm

Please review the pneumatics section of the manual (Section 8.3.10) and the Parts Use Flowchart very carefully. The Parts Use Flowchart indicates that you may [b]NOT[/b] use custom cylinders that are not obtained by ordering from the Custom Cylinders Order Form, and you may [b]NOT[/b] use purchased cylinders that are not IDENTICAL to those found on the Custom Cylinders Order Form.

The Custom Cylinder Order Form is on the last page of the Pneumatics Manual, which may be downloaded from the [URL=http://www.usfirst.org/community/frc/content.aspx?id=4054]Related Documents and Resources[/URL] section of the FRC web site.

8.3 Robot Rules

PC as sensor?

PC as sensor?

Posted by FRC1552 at 01/17/2007 07:04:07 pm

We would like to know if a PC running XP could be an included sensor. It would be a small pc powered by the 12v batteries and run through a circuit breaker. The 12 volts would power a dc-dc converter that would plug directly into the motherboard of the PC. The PC would interface to the serial port on the camera. We would use the lab view to interact with the camera. The output would be fed to the Robot Controller that would control any servos that we wanted to control with it's calculations.

Re: Pc?

Posted by GDC at 01/18/2007 04:36:27 pm

Such an application would be allowed if, and only if, it is done in compliance with all applicable rules in Section 8.3 of the manual. In particular, this would fall into the Custom Circuit catagory, and would be closely examined for full compliance with the custom circuit rules. All components of the circuit would have to comply with the cost limitations. The circuit would have to be powerd solely by the primary 12v battery on the robot. No additional batteries would be permitted.

8.3 Robot Rules

Use of wheelchair wheels

Use of wheelchair wheels

Posted by Bruce Light at 01/17/2007 08:39:40 pm

Can we use the wheelchair wheels from last year's competition? I am quite sure they were not made for FIRST and are "off the shelf"

Re: Use of wheelchair wheels

Posted by GDC at 01/18/2007 03:28:31 pm

The wheels supplied in last year's kit are COTS items (manufactured by Skyway) and are allowed, provided the wheels have not been modified, per <R28>.

8.3 Robot Rules

AIR Storage Tanks 8.3.10

AIR Storage Tanks 8.3.10

Posted by FRC49 at 01/18/2007 07:10:17 am

It is our understanding that 4 stroage cylenders may be used this year. Is it acceptable to have seperate activators powered by seperate storage tanks as long as all rukles are followed in each seperate penumatic sub system. We pland on pre loading each seperate sub system.

Re: AIR Storage Tanks 8.3.10

Posted by GDC at 01/18/2007 12:45:39 pm

You may have separate pneumatic subsystems on your robot, as long as each separate circuit is in full compliance with all applicable rules in Section 8.3.10 of the manual. Each pneumatic circuit must include a pressure regulator to limit the working pressure to no more than 60 psi, pressure gauges to show the storage and working pressures, and a manual pressure plug valve.

8.3 Robot Rules

Pneumatic Cylinders

Pneumatic Cylinders

Posted by FRC2039 at 01/18/2007 01:17:18 pm

I had a question according to rule R105 in section 8 of the manual. Out of the Bimba catalog we wanted to purchase some cylinders with the part number 12-DP in a 14" stroke length. This is not a standard stroke length, but they can get it for us and the stroke lengths go up to 32". There was discrepancy on whether or not this would apply to the " off the shelf " devices rule.

Thanks

Rockford Robotics

Re: Pneumatic Cylinders

Posted by GDC at 01/18/2007 03:09:27 pm

This part is not a standard COTS item. It is also not one of the options available on the Custom Cylinder Order Form, or identical to any of the parts that can be ordered with that form. As such, it is not permitted for use in the 2007 FRC competition.

8.3 Robot Rules

Old Circuit Board?

Old Circuit Board?

Posted by FRC1687 at 01/18/2007 01:45:14 pm

Are we allowed to use the smart circuit board from 2 years ago on this years robot in place of this year's power distribution scheme?

Re: Old Circuit Board?

Posted by GDC at 01/18/2007 03:11:37 pm

That part is not a COTS item, it is no longer commonly available, and it was a custom-made part for the 2005 FRC Kit Of parts. So under the provisions of Rule <R28> (as amended in Update #2), you are not allowed to use that part.

8.3 Robot Rules

ramp release system

ramp release system

Posted by FRC2068 at 01/18/2007 02:11:31 pm

Do the rules permit me to have our robot release one end of an attached ramp allowing it to drop to the floor by gravity using a means of dampening the fall, but not using a motor to lower the end of the ramp?

Re: ramp release system

Posted by GDC at 01/20/2007 04:24:02 pm

Yes. Under Rule <R02> this would be utilizing a change in the altitude of the ROBOT center of gravity, and would be an acceptable deployment method. Note that this must be done in a safe manner (Rule <S01>) and must be controlled so that it does not damage the field (Rule <G34>).

Dropping Platform

Posted by FRC1784 at 01/25/2007 06:40:04 pm

wrt rule <S01> Does the description "uncontrolled motion" include dropping platforms to lift our allies while entirely in the endzone?

Re: Dropping Platform

Posted by GDC at 01/26/2007 12:26:19 am

See prior answer.

Free-fall ramp

Posted by FRC1182 at 02/03/2007 12:44:57 pm

Are robots allowed to use free-fall ramps or use ramps that deploy with only the help of gravity, as long as no other robots or field pieces are damaged in the process?

Re: Free-fall ramp

Posted by GDC at 02/03/2007 11:25:55 pm

See prior answer.

8.3 Robot Rules

Concerning rule R57

Concerning rule R57

Posted by FRC709 at 01/18/2007 02:29:10 pm

Must we include the Rockwell Power Distribution block on our robot? We can satisfy our needs by having the Red awg 6 wire from the 120-amp breaker go into the 40 AMP breaker block and then another awg 6 red wire comes out from that block (hot side) and into the regular black breaker panel, and the Black awg 6 wire from the APP connector goes directly into the regular black breaker panel ground connection, where all black wires from the motors terminate.

Re: Concerning rule R57

Posted by GDC at 01/20/2007 04:23:17 pm

Under Rule <R57>, the Rockwell Power Distribution Block must be used and connected as shown in the 2007 Power Distribution Diagram.

8.3 Robot Rules

Direct Acting Valve in Vacuum?

Direct Acting Valve in Vacuum?

Posted by FRC306 at 01/18/2007 03:00:38 pm

We have a direct acting solenoid valve rated for 100 psi that we wish to use expressly in our vacuum loop.Though not rated for 125 psi, it is more than adequate for the vacuum it will be operating in. Is it acceptable to use?

Re: Direct Acting Valve in Vacuum?

Posted by GDC at 01/19/2007 09:52:57 am

No. Under Rule <R105>, all "off the shelf" pneumatic devices must be rated for at least 125 psi. There is no exception for devices that are used for vacuum applications.

8.3 Robot Rules

Allowable Actions Per R05 and R06

Allowable Actions Per R05 and R06

Posted by FRC2010 at 01/18/2007 03:22:04 pm

I would like a few clarifications related to rules R05 and R06.

Regarding the ruling addressed here - [url]http://forums.usfirst.org/showthread.php?t=1261[/url]

Question: "Is it acceptable to lift up disabled or malfunctioning alliance partners and transport them to the homezone in order to score bonus points?"

GDC Answer: "There is nothing in the rules that would prohibit this action."

My questions:

1. Keeping in mind the wording of R05, is it legal to deploy a ramp mechanism outside of the home zone in an attempt to perform the allowable "lifting up" of a hobbled alliance partner mentioned above? You would not actively or intentionally be using the ramp to come in contact with any opposing robots during this maneuver.

2. Is it legal to deploy a ramp mechanism outside of the home zone to allow an alliance partner a pathway to climb up on top of you to score on higher spider legs on the rack? Would that be considered an example of an "offensive wedge" per R05? The ramp bot is not directly scoring via this maneuver, so from its point of view, it is not being offensive.

3. If #2 is legal, in the course of executing the maneuver, if the ramp is still fully deployed, and the ramp robot is stationary, an opposing robot comes into contact with the ramps, will any penalties be incurred on the ramp-bot alliance?

4. Since R06 states that "ramps...are exempt from Rule R05 when they are deployed in the home zone", does that mean it is legal to actively use your ramps as "defensive wedges" if an opposing bot is harassing your robot within your home zone?

5. If any of strategies 1, 2, and 4 are deemed legal, are there any other penalty caveats teams should be aware of before they execute any of these maneuvers during a match?

Thanks,

FRC2010

Re: Allowable Actions Per R05 and R06

Posted by GDC at 01/22/2007 04:06:10 pm

If any ramp mechanism is deployed outside the Home Zone, it may (depending upon the actual construction) be considered a plausible wedge and subject to Rule <G35> and <R05>. If it is used to interfere with an opposing robot, it will considered a violation of Rule <G35>. Note that any robot with a wedge-like device deployed outside the Home Zone will autonomatically be determined to be "at fault" if there is any interference with an opposing robot - no matter which robot moved into the other.

Elevating an alliance partner robot while outside the Home Zone is not, in and of itself, a prohibited action. However, while this action is taken, both the supporting or elevated robot must still comply with all game rules (particularly <G35>).

The Rule <R06> exemption permits the use of assemblies with sloped surfaces (which would normally be prohibited under Rule <R05>) to elevate partner robots. The intent is that Rule <R06> provides an exemption to the parts of Rule <R05> that address the construction of those devices. It is not intended that Rule <R06> provides a blanket immunity, nor an exemption for Rule <G35>. Robots will not be permitted to dash willy-nilly around the Home Zone overturning opposing robots.

8.3 Robot Rules

Re: Rule 105 Pneumatic Cylinders

Re: Rule 105 Pneumatic Cylinders
Posted by FRC2150 at 01/18/2007 03:22:19 pm

The answer from GDC fails to take into account that the larger stroke lengths (12" and 24") for the 1.5" cylinders were included on the order form in 2004. The 2007 Parts Use Flowchart clearly indicates that a previous year's cylinder can be used even if it is not identical to those on the custom order form. If you really intend to disallow the 12" and 24" stroke 1.5" cylinders, you also need to change the 2007 Parts Use Flowchart. I think that would be the wrong way to resolve the conflict.

The problem started with a change to the 2005 Pneumatics Manual that omitted the 12 and 24 stroke lengths for 1.5" cylinders from the order form, but left the comma following the 11 stroke length. The comma still appears after the 11 stroke length on the 2007 order form, and it still suggests that additional stroke lengths are available but not visible. I suspect that the omission was an unintentional glitch caused by Adobe Acrobat. It makes no sense to delete these stroke lengths if they are available from Bimba, especially since the same stroke lengths are available for 2" cylinders.

The Bimba web site continued to offer the 12 and 24 stroke cylinders in 2005 as it does in 2007. Teams pointed out that the 2005 Manual indicated that any cylinder size available on the Bimba website was OK. After a long discussion on the forum about whether the manual, the pneumatics manual or the Bimba website should take precedence, teams were ultimately allowed to use the 12 and 24 stroke cylinders in 2005. The resolution was summarized in the following excerpt from 2005 FRC Team Update 08:

"Question & Answer Items of Note

> #1335 and #1385

There has been significant discussion regarding pneumatics, in particular what Bimba cylinders were allowable. The revised answer to #1335 and the answer to #1385 follow:

#1335
CORRECTED ANSWER 2/3/2005 AT 1330.

CORRECTED ANSWER
The manual is correct. It tells you to go to the Bimba site for all of the available sizes.

Old Answer
The pneumatics manual takes precedence.

#1385
WE APOLOGIZE FOR THE OBVIOUS CONFUSION WE HAVE INFLICTED
UPON TEAMS, PARTICULARLY BY OUR ANSWER TO #1335. We were correct in our answer (the manual takes precedence) as it points you to the Bimba site, but we were far from clear. We will clarify the answer to #1335.

As the Pneumatics Manual states very clearly on P19...
Please check the Bimba web site for available strokes in each bore size.
These are the cylinders you can use."

I can not understand why the conflict between the order form and Bimba website is still not resolved after 3 years. Why not just restore the two missing stroke lengths to the order form and be done with it?

LeRoy Nelson
Lead Mentor, Team 2150
2005 Southern California Woodie Flowers Award

Re: Rule 105 Pneumatic Cylinders

Posted by GDC at 01/22/2007 03:39:51 pm

Please remember that rules from prior FIRST Robotic Competitions do not apply to the 2007 competition. Under Rule <R105>, the only pneumatic cylinders permitted are those that are identical to those shown in the table on the "[I]FIRST [/I] Free Pneumatic Components Order Form". Rule <R106> and availability listed on Bimba's website do not override this. Therefore, any parts scavenged from prior year robots, as permitted by Rule <R106>, must still be in compliance with Rule <R105>.

8.3 Robot Rules

Robot transportation

Robot transportation

Posted by FRC223 at 01/18/2007 03:46:08 pm

Due to possible losses of crate, is it necessary to include controlers?

Re: Robot transportation

Posted by GDC at 01/19/2007 09:44:21 am

Yes. As specified in Rule <R18>, the entire Robot and the Operator Console must be shiped in the crate with the robot. The IFI Robot Controller is considered part of the robot, and must go in the crate. The IFI Operator Interface is considered part of the Operator Console, and must go in the crate.

8.3 Robot Rules

Carbon Fiber

Carbon Fiber

Posted by FRC1212 at 01/18/2007 05:02:38 pm

Can we use Carbon fiber? If yes, can we make it ourselves or do we have to buy it so we personally doesn't use epoxy? It requires epoxy to glue the textile piece to the foam/wood/etc.

Carbon Fiber Epoxy

Posted by FRC1212 at 01/20/2007 12:30:58 pm

We are planning to create our own carbon fiber which requires the use of epoxy, we would like to know if this epoxy is allowed in the creation of the carbon fiber. All carbon fiber is created with epoxy, we would just like to create it ourselves. So essentially is it allowed for us to use carbon fiber created with epoxy on our robot?

1212 Seton Catholic

Re: Carbon Fiber Epoxy

Posted by GDC at 01/22/2007 04:23:53 pm

Yes, you may use carbon fiber elements to construct your robot. If your team has access to the appropriate technolgy and expertise so that it may be done safely, the team may make the parts themselves.

Once at the event, hazardous materials related to carbon fiber are not permitted. This includes uncured epoxies as defined by their MSD sheets as well as any dust generated by machining, sanding, or altering.

8.3 Robot Rules

the 72" x 72" box

the 72" x 72" box

Posted by FRC2083 at 01/18/2007 11:49:46 pm

There was a question tat came up in our mechanical team and we were stumped on how far the arm can reach outside the robot. Outside the robot as in how far away from the robot chassie is the mechanical arm aloud to reach.
-Thank you, Team 2083

the 72" x 72" box

Posted by FRC1700 at 01/19/2007 06:33:16 pm

Hi, this is 1700 and we are wondering if the 72" x 72" box that the robot must not exceed refers to the footprint (as in the part of the robot touching the floor must not exceed 72" x 72") or the entire robot (as in any part of the robot, regardless of height)?

For example, if we have an arm that extends beyond 72", but does not touch the ground, is that within regulation?

Thank You!

Confirmation About <R12>

Posted by FRC8 at 01/20/2007 01:38:55 pm

Since the new team updates spells penalties and potential disqualifications for a team whose robot break R12, I'd like to know if the conclusion reached here ([url]http://www.chiefdelphi.com/forums/showpost.php?p=553276&postcount=26[/url]) is indeed the right one, and hence, for a team whose robot's long dimension is about 38", the maximum arm length (from the point in which it breaks the plane of the front of the robot) is in fact about 49". Is that correct?

Thank you,
Guy Davidson,
FRC8

Robot footprint outside of HOMEZONE

Posted by FRC1178 at 01/20/2007 01:39:54 pm

Related to Rule <R12>
The rule states that your robot must be within a 72 inch X 72 inch footprint. Does this mean

that there is an imaginary "box" that is 72 inches X 72 inches by no limit for height that we must always remain inside? For example if we had an appendage that swung through the imaginary box for a small portion of time without touching the ground, would we be in violation?

Another clarivication on <R12> 72 X 72 rule

Posted by FRC292 at 01/20/2007 08:21:53 pm

Say we have an 8' (96") articulated arm. In the starting position it stays within the 28 X 38 foot print. When we have the arm in the extended horizontal position the end of the arm would be out 106" from the back of the robot. Does the arm in extended position violate <R12> the 72 X 72 rule? Yes or No.

Re: Confirmation About <R12>

Posted by GDC at 01/22/2007 07:48:14 pm

The purpose of Rule <R12> is to define a 72 inch wide x 72 inch deep x infinite height (save as may be practically limited by the venue ceiling height) three-dimensional box. When the ROBOT is not in the HOME ZONE, it must maintain a configuration that will allow it to fit within this virtual box at all times. The virtual box moves with the ROBOT, and the ROBOT may be oriented within the virtual box in any direction. But if any part of the ROBOT, at any height, ever extends outside of the virtual box while the ROBOT is not in the HOME ZONE it will be considered a violation of Rule <R12>. There is no case in which an object measuring greater than 102" horizontally will fit within the 72 x 72 inch limits specified. Any such device will violate the rule if it is used outside the Home Zone.

Clarify <R12>

Posted by FRC1606 at 02/03/2007 05:36:33 pm

<R12> States that while the robot is outside its home zone it may expand up to 72 inches in depth. We use an arm to lift the rings, and the arm plus robot base may sometimes exceed 72 inches temporarily as the arm raises or lowers. Does this violate <R12>?

Re: Clarify <R12>

Posted by GDC at 02/03/2007 11:48:02 pm

The prior answer still applies.

8.3 Robot Rules

R66 Clarification

R66 Clarification

Posted by FRC1511 at 01/18/2007 11:58:14 pm

Given your answer to the question on R66

[Quote] Re: Question on <R66>
As clearly stated in <R66>, the radio modem must be connected directly to the Robot Controller using one of the DB-9 cables provided in the 2007 Kit Of Parts. [/Quote]

What do we do if we sever our DB9 cable(s), or they bend and break? IFI replaces all of their cables [b]twice a day[/b] on the field, are robots expected to retain the same KOP DB9 cables for the entire 2007 season?

Re: R66 Clarification

Posted by GDC at 01/20/2007 04:30:51 pm

The provided DB-9 cable is a specific Kit Of Part component. Under rule <R39>, if it is damaged, it may be replaced with an identical replacement part. Replacement cables may be obtained from Innovation First, through the IFI Store [url]http://www.ifirobotics.com/ifi-store.shtml[/url]

8.3 Robot Rules

Cost accounting

Cost accounting

Posted by FRC1722 at 01/19/2007 03:35:56 am

Are the free Bimba cylinders considered part of the KOP for cost accounting purposes?

Re: Cost accounting

Posted by GDC at 01/19/2007 09:37:43 am

Yes. The three free Bimba cylinders are considered Kit Of Parts items. Any additional cylinders must be fully accounted for in the robot Bill Of Materials.

8.3 Robot Rules

Battery Shipping

Battery Shipping

Posted by FRC1618 at 01/19/2007 08:31:42 am

For at least the past two years, it has been permissible for teams to bring their 12V batteries with them to competition (with some standard warning for teams who're flying to plan ahead). However, as Last Year Is Not This Year, I'll ask: Can teams not ship their 12V batteries and bring them with the team to their events?

Re: Battery Shipping

Posted by GDC at 01/22/2007 07:52:05 pm

Per Rule <R11> and Section 4.2, the two 12V batteries supplied in the kit must ship with the robot. Any additional batteries you purchase as spares may be either brought to the event, or shippped with the robot.

8.3 Robot Rules

servos

servos

Posted by FRC1158 at 01/19/2007 03:48:53 pm

Are we able to use any other servos besides the 322?

other servo motors?

Posted by FRC1552 at 01/20/2007 11:47:17 am

Are other servo motors such as those found at

[url]http://www.robotstore.com/store/default.asp?catid=1563[/url]

allowed???

Tanks, team 1552

Re: other servo motors?

Posted by GDC at 01/20/2007 04:32:25 pm

As defined in Rule <R45> and <R46>, only HS-322HD servos may be used on the ROBOT.

8.3 Robot Rules

Use of Non-Red colored Zip Wire

Use of Non-Red colored Zip Wire

Posted by FRC100 at 01/19/2007 04:35:14 pm

According to Rule <R86>:
All wires distributing power with a constant polarity (i.e., except for relay module, speed controller, or sensor outputs) must be color-coded as follows:
-Use red, white, or brown wire for +12 Vdc and +5 Vdc connections.
-Use black or blue wire for common (-) connections.

Here is the question:
Is it permissible to use standard ZIP wire in other colors for +12VDC motor wiring?
Example: 10GA zip wire as Yellow/Black, 12GA zip as Violet/Black.
We would like to use color to document and clarify the different gauge wiring for each of 40/30/20 amp circuit breaker paths. The ZIP wires all have Black for the (-) connection.

Re: Use of Non-Red colored Zip Wire

Posted by GDC at 01/22/2007 12:39:41 am

The rule clearly states what is permissable. You might consider using another method such as wire labels to accomplish your goal.

8.3 Robot Rules

Shielding a Chain Lift Mechanism

Shielding a Chain Lift Mechanism

Posted by FRC1807 at 01/20/2007 01:32:25 pm

We would like to use a motor-driven chain to raise a multi-stage lift mechanism that will enable our robot to lift the scoring tubes to the top of the rack. The chain will reside within the boundaries of our robot. Does the chain need to be completely enclosed, as per <R32> ?

Re: Shielding a Chain Lift Mechanism

Posted by GDC at 01/22/2007 04:08:07 pm

It is impossible to answer this question without a complete, detailed inspection of the specific implementation. We must ask you to use your best engineering judgement to assess whether your particular mechanism poses any type of entanglement or other hazard. If there is any question, you may want to ask one of the experienced veteran teams in your area to consult with you to help you determine the best course of action.

8.3 Robot Rules

<R15>Flag Holder

<R15>Flag Holder

Posted by FRC111 at 01/20/2007 03:03:16 pm

1) R15 says that the flag holder must be permanently mounted to the "central mass" of the robot. Can I assume central mass is any part that does not move or is it any structure that

starts the match within the allowed starting box even if it might move and tilt the flag?

2) R15 say that arms and appendages may "temporarily intrude" above the flag. Does this mean that you can start the match within the legal starting box but with an appendage that is well above the flag as long as it is intended to move sometime during the match? My concern is the word "temprorary" since this condition may exist for the majority of the match during scoring when appendages may always be above the central mass of the robot.

Re: <R15>Flag Holder

Posted by GDC at 01/22/2007 05:20:03 pm

During the match the flag must remain approximately vertical. If it is mounted to a body part that tilts significantly, then this is not an appropriate mounting point.

The intent of Rule <R15> is that during the majority of match play the flag is the tallest point on the robot, so that it may be easily seen and the alliance assignment of the robot may be easily determined. If an appendage or manipulator spends most of the match higher than the flag, then this is not a "temporary" condition. This would be considered a violation of Rule <R15>, and would need to be corrected before the robot would be allowed to play in another match.

8.3 Robot Rules

Legal Servo Control

Legal Servo Control

Posted by FRC111 at 01/20/2007 03:04:13 pm

In 2005, it was permissible to connect servos directly to the CMUcam. The new 2007 CMUcam does not have servo headers installed. Rule R69 seems to be most relevant, however it does not specifically address servos. For clarification, what devices may directly control a servo:

* Is it the Robot Controller only? If not:

* Is it permissible to connect them to an older CMUcam?

* Is it permissible to connect them to a custom circuit?

Re: Legal Servo Control

Posted by GDC at 01/22/2007 03:25:53 pm

Servos can only be controlled by the provided IFI Robot Controller.

Re: Legal Servo Control

Posted by GDC at 02/19/2007 07:06:51 pm

UPDATE:

Servos must be controlled by the IFI Robot Controller. The only exception is a COTS camera that controls pan and tilt of the camera itself (the camera provided in the Kit of Parts does not have this capability).

8.3 Robot Rules

Operator Interface

Operator Interface

Posted by FRC1015 at 01/20/2007 05:55:16 pm

Is tape allowed to be used on the board for the Operator Interface?
Thanks,
Team 1015

Re: Operator Interface

Posted by GDC at 01/22/2007 03:57:54 pm

Under Rule <R11> the Operator Console is considered part of the Robot, and all associated rules apply. Rule <R35> prohibits the use of adhesive tape, except under certain circumstances. If the use of the tape on the Operator Console is not permitted by one of these exceptions, then it can not be used.

8.3 Robot Rules

Power Distribution Blocks

Power Distribution Blocks

Posted by FRC1346 at 01/20/2007 06:50:09 pm

n the power distribution diagram it shows the power distribution blocks having four black and four red blocks.

My understanding of this type of power distribution block is that it is modular, and that the number of distribution blocks can be reduced, or augmented, to suit the needs of the application.

We have determined, based on the wiring requirements described on page 2 of the Battery Terminal Distribution Block documentation on the manual web page that we will only require two red distribution blocks and three black blocks.

Are we required to place all 8 of the supplied blocks on the DIN rail, or may we take advantage of the modular nature of the Rockwell power distribution system so long as we follow the wiring requirements posted in the accompanying documentation?

Thanks,

Jason

Re: Power Distribution Blocks

Posted by GDC at 01/22/2007 12:40:30 am

As long as <R57> is followed, unused red and black terminal blocks of the power distribution block may be omitted.

8.3 Robot Rules

Batteries allowed on the robot

Batteries allowed on the robot

Posted by FRC1311 at 01/21/2007 08:06:14 pm

Team Update #3, <R46> amendment.....

"I interpret this to mean that ONLY the two 12V batteries in the KOP are allowed to be used in

competition.

Any additional battery obtained (even if the same manufacturer and type) is NOT allowed to be used."

Is this the correct interpretation ?

Re: Batteries allowed on the robot

Posted by GDC at 01/22/2007 05:02:51 pm

No. <R46> states that a team is prohibited from using primary 12v batteries different from those provided in the KOP on the robot during competition matches. If a team wishes to purchase additional primary batteries identical to those that came in the 2007 KOP they may be used on the robot during match play.

8.3 Robot Rules

Clarification of rule 99 - pneumatic cylinder mounting

Clarification of rule 99 - pneumatic cylinder mounting

Posted by FRC272 at 01/21/2007 09:40:43 pm

The intent of the rule, as I read it, is to make sure we do not modify the pneumatic portion of the air cylinders for obvious safety reasons. As it says they are sacred. Agreed...

But we have leway for mounting options that are confusing.

From the rule....
Mounting and connecting pneumatics components using the pre-existing threads, mounting brackets, etc., is not considered a modification of the components. Removing the pin from the rear of an air cylinder is allowed as long as the cylinder itself is not modified.

Do not, for example, file, machine, or abrasively remove any part of an air cylinder. Consider pneumatic components sacred. They must remain in “out of the shipping box” condition.

Question....
If I wanted to modify the threads on the bottom of the rod or drill a hole in the bottom of the rod for mounting purposes, would that be ok. I will not touch the cylinder because I agree it is sacred.

Re: Clarification of rule 99 - pneumatic cylinder mounting

Posted by GDC at 01/22/2007 01:15:12 am

The only permitted modification to the cylinders is removal of the mounting pin on the back of the cylinder. Modifying the cylinder in any other way is expressly prohibited. Any alteration of the threads on the piston rod, or drilling holes into the body of the cylinder, or any other modification, will be a violation of Rule <R99>.

8.3 Robot Rules

Compressor weight included?

Compressor weight included?

Posted by FRC2028 at 01/22/2007 11:33:12 am

Rule R11 says the items that are exempt from being included in the weight and volume calculations.

Rule R101 says the compressor may be "onboard" or "offboard". It implies the reason for having an offboard compressor is some weight savings. But Rule 10 says that weight must include all mechanisms of all configurations.

Is the weight of the air compressor and any other "offboard" tube and fittings included in the weigh-in?

Re: Compressor weight included?

Posted by GDC at 01/22/2007 05:05:54 pm

As <R101> states, the intent of this rule is to permit teams to take advantage of the weight savings associated with keeping the compressor off-board. An off-board compressor is not considered to be part of either a Starting Configuration or a Playing Configuration and therefore does not need to be weighed. It must however be controlled and powered by the ROBOT when being used to pre-charge tanks on the ROBOT.

8.3 Robot Rules

Follow-up to supporting robot question

Follow-up to supporting robot question

Posted by FRC2014 at 01/22/2007 11:45:39 am

You answered the question regarding the supporting robot being entirely within the Home Zone. My follow-up to that response is this: would a supporting robot that is not entirely within the Home Zone still be confined to the 72"x72" game constraints or would it be allowed the unrestricted size of a robot within the Home Zone?

Re: Follow-up to supporting robot question

Posted by GDC at 01/22/2007 05:04:44 pm

<R12> states that a ROBOT must be entirely within its HOME ZONE to be allowed to become larger than the 72" x 72" envelope.

8.3 Robot Rules

Robot Inflatables

Robot Inflatables

Posted by FRC2075 at 01/22/2007 01:33:59 pm

Our team #2075 was wondering if inflatable tubes or inflatable devices of any type are allowed in the FIRST robotics competition this year? I do not see anything listed in the rulebook that bans them. However, in a discussion forum I see some talk that they may not be allowed. I just wanted this to be confirmed one way or the other.

Team #2075 (Enigma)

Re: Robot Inflbtables

Posted by GDC at 01/22/2007 05:01:22 pm

The inflatable tube/device would be considered a pneumatic component therefore according to

the flowchart in <R48> they may not be used on the robot.

8.3 Robot Rules

Regarding recent post about operator console

Regarding recent post about operator console

Posted by FRC329 at 01/22/2007 08:34:16 pm

According to <R11> the operator console is NOT part of the robot:

... these items are NOT considered part of the ROBOT ...

... The OPERATOR CONSOLE ....

This contradicts what was said at [url]http://forums.usfirst.org/showthread.php?t=1752[/url]

I do not see any rule that states that the operator console is part of the robot.

Re: Regarding recent post about operator console

Posted by GDC at 01/25/2007 04:24:53 pm

Please read ALL of Rule <R11> which, in the final paragraph, states that for all other purposes, these items are considered part of the ROBOT.

8.3 Robot Rules

Modifying the Backup Battery Charging Circuit

Modifying the Backup Battery Charging Circuit

Posted by FRC1501 at 01/22/2007 08:58:15 pm

Rule <R56> states:

<R56> The 7.2v backup battery may be charged on or off the ROBOT. When off the ROBOT, the battery is to be charged with the provided 7.2V backup battery charger. When mounted on the ROBOT, the backup battery may be charged from the 12VDC primary battery by using the custom charging circuit available from Innovation First Inc. (note: IFI will provide the design for this circuit on the IFI website, however teams must obtain the parts for this circuit and assemble it themselves). The use of this circuit is strongly encouraged.

The interpretation of this sentence, "The use of this circuit is strongly encouraged." could be interpreted two ways by our team and argued.

One meaning, suggesting that we use the IFI circuit design, or a second meaning that we can use a custom charging circuit other than the IFI design (as long as we use "some" circuit) and follow the custom circuit rules.

Are we allowed to design our own custom 7.2 charging circuit for use ON BOARD the robot rather than the provided IFI circuit?

Modifying the Backup Battery Charging Circuit

Posted by FRC111 at 01/24/2007 11:45:26 am

R56 states that "When mounted on the ROBOT, the backup battery may be charged from the

12VDC primary battery by using the custom charging circuit available from Innovation First Inc. (note: IFI will provide the design for this circuit on the IFI website, however teams must obtain the parts for this circuit and assemble it themselves). The use of this circuit is strongly encouraged."

We interpret this rule to mean that if a team wishes to charge the backup battery while on-board the robot, they can do so if (and only if) they use the circuit exactly as designed by Innovation First (without modification). Is this the correct interpretation, or are teams allowed to modify the charging circuit as they see fit?

Backup Battery Charger

Posted by FRC2014 at 01/25/2007 06:31:31 pm

There appears to be some confusion about the wording of <R56>.

When it says that the backup battery [B]MAY[/B] be charged on the robot using the custom circuit from IFI, does that mean a) you don't have to charge on board, but if you do the only allowed charging circuit is the one provided by IFI, or b) you don't have to charge on board, but if you do the circuit provided by IFI is the [U]type[/U] of circuit to use, allowing the use of alternative charging circuits that achieve the same purpose.

Re: Backup Battery Charger

Posted by GDC at 01/29/2007 08:45:50 pm

Please refer to Team Update #6.

8.3 Robot Rules

Manifold Mounted SMC Solenoid Valves

Manifold Mounted SMC Solenoid Valves

Posted by FRC1501 at 01/22/2007 09:34:30 pm

Realizing in the rules it says we can use unlimited air cyclinders / air valves, we are wondering if we are allowed to use the manifold base option for SMC valves that are supplied rather than the single base "sub-plate SY3000-27-1T" option that was provided. We have seen robots in the past with manifold mounting style for multiple solenoids. Although we realize previous rules don't apply to 2007, it's unclear if we are allowed to change the base style that was supplied, but use the KOP SMC double solenoid valve. This would simplify air line plumbing to our "unlimited air cylinders/valves"

The part in question is the sub-plate:
SY3000-27-1T

An example part number for a stackable manifold would be:
SS5Y3-45-04B-N7, this item would replace the SY3000-27-1T part number above, however the KOP valves would be used and mounted ontop of the stackable manifold part number above.

The unit above would mount QTY (4) double soleniods:
PART NUMBER:
SY3240-6HZ-X70 (included in the KOP)

So the actual KOP valves would be used, however the base unit would be different.

Re: Manifold Mounted SMC Solenoid Valves

Posted by GDC at 01/25/2007 04:30:17 pm

Rule <R105> permits the use of additional "off-the-shelf" valves. The base manifold would be considered an integral part of the valve. So under this rule, valves that are purchased with multi-port manifold bases as an "off-the-shelf" option would be permitted.

8.3 Robot Rules

Other Valves allowed than KOP Valves?

Other Valves allowed than KOP Valves?

Posted by FRC1501 at 01/22/2007 09:56:27 pm

According to the 2007 Parts Use FlowChart, are we allowed to use another valve other than the SMC supplied KOP valve?

"Other" valves fail into the flow chart as "yes".

So long as it was rated for 125 PSI, so long as it's a COTS item, and does not exceed the cost or qty limits the flow chart indicates it's allowed.

Re: Other Valves allowed than KOP Valves?

Posted by GDC at 01/25/2007 04:28:41 pm

Please read Rule <R105>.

8.3 Robot Rules

How Many Banebots RS-540 Can We Use?

How Many Banebots RS-540 Can We Use?

Posted by FRC115 at 01/23/2007 12:38:00 am

This question came up today. Is it just wishful thinking?

Can we use two Banebots RS-540 motors on the robot.

Addtional Motors

Posted by FRC2205 at 01/24/2007 12:35:39 pm

Rule <R46> states that teams are prohibited from using "electric motors different from, or in addition to, those in the Kit".
Our team wants to build a robot that uses two Banebots motor/gearbox assemblies (PN: MP-06364-545). The KOP only contains one motor/gearbox assembly, but contains an additional motor (PN: M1-RS540-12). If we order an additional motor/gearbox assembly from Banebots, would we be permitted to use it in addition to the one contained in the KOP since the motor in the assembly is an exact replacement for the M1-RS540-12? To clarify: We would only have a total of two M1-RS540-12 motors in total and therefore will not be exceeding the original quantity in the KOP.

Re: How Many Banebots RS-540 Can We Use?

Posted by GDC at 01/25/2007 03:12:28 pm

Per the KOP Checklist and Rule <R46>, teams are allowed to use two M2-RS540-120

Banebots motors. One was provided as an individual item, and a second motor was provided as a Gearmotor unit (PN: MP-36064-540).

Additional gearboxes for this motor would be considered as COTS item and must be accounted for as such.

8.3 Robot Rules

Additional 24 tooth #35 sprockets

Additional 24 tooth #35 sprockets

Posted by FRC931 at 01/23/2007 07:16:59 pm

To power all six of the wheels in our robot's drive train, we would like to use four additional sprockets identical to the two 24 tooth #35 sprockets that were included in the kit-of-parts. We have been unable to find a vendor that sells identical sprockets; however, we have found two other FRC teams that do not plan to use the sprockets that came in their kits and are willing to barter them to us in exchange for other parts. May we use additional kit-of-parts sprockets that we obtain from other teams?

Wheel Sprockets

Posted by FRC771 at 01/24/2007 10:21:53 am

It appears that wheel sprockets that came in the KOP are not COTS items, as they have a custom bore and bolt circle. $@#R43 states that "teams may only use non-Kit-of-Parts $@#items that are generally available from suppliers such that any other FIRST team, if it so desires, may also obtain them at the same price." Would this mean that teams are not allowed to use KOP wheel sprockets obtained from other teams?

Re: Additional 24 tooth #35 sprockets

Posted by GDC at 01/25/2007 03:50:57 pm

The sprockets provided in the 2007 Kit of Parts were custom manufactured for [I]FIRST [/I] and are not COTS parts. As such, only the two 24-tooth sprockets received in the Kit may be used on your Robot. Teams are welcome to fabricate equivalent parts from COTS items.

8.3 Robot Rules

Flow Control Valves

Flow Control Valves

Posted by FRC1598 at 01/23/2007 08:24:33 pm

Are we required to use flow control valves on the pneumatics system. ie..on each cylinder ?

Re: Flow Control Valves

Posted by GDC at 01/25/2007 04:02:12 pm

This is not required by any rule.

8.3 Robot Rules

Continuous Bumpers?

Continuous Bumpers?

Posted by FRC306 at 01/24/2007 08:05:38 am

The FIRST manual specifies that no material may extend into the coners of the bumper zone. We interpret the rule intent is to specify, that like no other place in the bumper, hard material may protrude so as to damage other robots.

We wish to build a more robust continuous bumper that encircles our robot, attached at the corners, but the specification that no material may extend into the corners seems to disallow a design such as this. We would be sure to heavily pad the corners with tubes. It seems that a continuous bumper is no more damaging than individual bumpers *nearly* extending into the corners.

Would this design be permissable under the intent of the rule?

Re: Continuous Bumpers?

Posted by GDC at 01/25/2007 09:54:41 pm

Doing so would be legal on the robot, but those bumpers would be custom bumpers since their design is inconsistent with the design elements stated in Rule <R37>.

Note that Figure 8-2 in Rule <R37> provides a design that accomplishes the objective you are attempting, but in a permissible manner. You may want to consider that design.

8.3 Robot Rules

IMPORTANT 1.5" Bore x 24" Stroke

IMPORTANT 1.5" Bore x 24" Stroke

Posted by FRC1598 at 01/24/2007 11:05:29 am

The GDC stated "The only additional cylinders allowed are those listed on the Bimba web site for FIRST teams." With that said we placed our order for two M-1724-DP cylinders that were on the order form at that time -- order placed on 1/15/07. Since the order was placed and recieved the cylinders in question have been removed from the order form. Are these legal for use ?

If not then how do we rectify this with Bimba to get replacements ? This is a very frustrating situation and needs to be resolved quickly. We are not trying to use parts from previous years -- these were ordered legally this year. Please note the manual states "Please check the Bimba web site for available strokes in each bore size"

Re: IMPORTANT 1.5" Bore x 24" Stroke

Posted by GDC at 01/25/2007 03:38:14 pm

As stated in the previous post by GDC, the two sizes (1 1/2" bore, 12" and 24" stroke lengths) inadvertently offered on the Bimba website that were not on the "[I]FIRST[/I] Free Pneumatic Components Order Form" are not permitted on competition robots.

Bimba will be contacting those teams who ordered these two sizes and will provide replacement cylinders of their choice.

8.3 Robot Rules

Use of Titanium (and other exotic materials)

Use of Titanium (and other exotic materials)

Posted by FRC151 at 01/24/2007 12:01:22 pm

Understanding that the robot has certain cost limitations specified in the manual, can we use a limited amount of titanium as long as we stay within those limitations? i.e. A team could not build the ENTIRE robot out of titanium, but could make a couple drive shafts.

Re: Use of Titanium (and other exotic materials)

Posted by GDC at 01/25/2007 03:39:24 pm

If the raw material is available for purchase by all teams, and you apply the titanium to the Parts Use Flowchart, you will find that it may be used as long as it meets accounting limits for material and labor as indicated in 8.3.4.2 and 8.3.4.3.

Any "exotic material" must comply with all rules in the manual.

8.3 Robot Rules

Sensor questions

Sensor questions

Posted by FRC2272 at 01/24/2007 02:16:14 pm

Hello,
I have two sensor questions:

1) In response to an early email blast, I requested the gyro and accelerometer, but I still haven't received them. I sent my request on Jan 6. Have these items been sent out? When might we expect them?

2) Are we allowed to use other kinds of sensors other than the gyro, the accelerometer and the gear tooth sensor? For instance, can we use ultrasonic or infrared range finders?

I've read through an awful lot of documentation and I'm not entirely clear on these issues.

Re: Sensor questions

Posted by GDC at 01/25/2007 09:43:15 pm

In response to question #1, all sensors will have been shipped by Monday, January 29. If you do not receive the accelerometer/gyro boards by February 1, please contact [email]FRCparts@usfirst.org[/email].

In response to question #2, additional sensors to those provided in the kit are permitted. However, sensors not provided with the Kit of Parts should be evaluated using <R47> and <R48> and installed per <R72>.

8.3 Robot Rules

Bumpers, Ramps, and Numbers

Bumpers, Ramps, and Numbers

Posted by FRC1276 at 01/24/2007 04:40:22 pm

Is it permissible for teams to display their numbers on their bumpers, provided they meet the conditions set forth in <R14>?

Is it still permissible if a bumper that displays the number is covered by a robot lifting device at the end of the match?

Re: Bumpers, Ramps, and Numbers

Posted by GDC at 01/25/2007 03:28:01 pm

If the numbers are applied to the cloth of the bumbers with ink or dye, they would still be

considered Standard Bumpers. If addition material is added to the bumpers in order to display the number, they would no long be considered Standard Bumpers but would instead be considered custom bumpers.

<R14> must be met at all times. If a robot lifting device is designed such that one or more of the team numbers are no longer visible when it is deployed, this would not be meet the requirements of Rule <R14>. If another instance of the number became visible on that same side of the robot after deployment, this would be in compliance with Rule <R14>.

8.3 Robot Rules

Extra Camera

Extra Camera

Posted by FRC2152 at 01/24/2007 04:57:30 pm

Are we able to have a wireless camera mounted on our robot that would be used to broadcast/record footage for a sponsor (ex. NASCAR). If so, would this camera be considered as a decoration, and would we be able to broadcast the footage via the computer that will be used at our home base station?

Re: Extra Camera

Posted by GDC at 01/25/2007 03:23:03 pm

Please refer to <R109>.

8.3 Robot Rules

Passive control devices routed through computer.

Passive control devices routed through computer.

Posted by FRC2152 at 01/24/2007 05:00:40 pm

Are we able to have our passive control devices (Joystick, etc.) connected one way to our computer in the home base area? To put this into context, are we allowed to use the hat on a joystick to control view of something like a picture on our computer?

Re: Passive control devices routed through computer.

Posted by GDC at 01/25/2007 03:21:55 pm

<R83> prohibits you from designing your Operator Console in this way.

8.3 Robot Rules

using casters for wheels

using casters for wheels

Posted by FRC2116 at 01/25/2007 06:27:48 am

can heavy duty casters be used for wheels on the robots?

Re: using casters for wheels

Posted by GDC at 01/25/2007 03:17:18 pm

Casters may be fabricated or purchased for use as wheels on the Robot as indicated by <R34>, as long as they meet all of the rules in the manual. Please pay special attention to Sections 8.3.4.2 and 8.3.4.3.

8.3 Robot Rules

Reaching for the Sky (Part II)

Reaching for the Sky (Part II)

Posted by FRC25 at 01/25/2007 02:48:28 pm

I believe the GDC misunderstood--say we do not "grasp, grapple, attach to, or hang from, any overhead structures" but instead happen to 'touch' them(it) accidentally--what would the case be?

Re: Reaching for the Sky (Part II)

Posted by GDC at 01/29/2007 04:49:24 pm

The light scaffolding and arena ceiling are still out of bounds. Under Rule <R30> any contact with any surface out of bounds will result in immediate disabling of the robot. In addition, if the contact is "accidental" then the referees will interpret that as an out-of-control motion and determine that it is a violation of Rule <S01>. In this case, a 10-point penalty will be assessed and the robot will not be allowed back on to the field until the ability to make physical contact with the overhead structures is removed from the robot.

The overhead structures are significantly higher than the Rack and all other field elements. There is absolutely no valid reason for your robot to extend to a height that would cause it to contact the overhead structures. Do not permit your robot to extend to an height that would cause it to contact these structures. Do not grasp, grapple, attach to, hang from, or even touch the overhead structures. Any attempt to do so will be dealt with harshly. No exceptions.

8.3 Robot Rules

Follow-Up to Legal Servo Control

Follow-Up to Legal Servo Control

Posted by FRC470 at 01/25/2007 03:16:53 pm

In your previous reply to a question on Camera Servo Outputs posed by FRC619 you stated:

"Re: Camera servo outputs
Under Rule <R28> (as amended in Update #2), you are not permitted to use the 2006 CMUcam II camera module, as it was a part custom made for FIRST, and only available for the 2006 competition. Other camera modules with similar functionality are currently available from other commercial sources. Their use would be permitted, and if they include servo drivers they may be used to track the target lights."

Could you please clarify if servo drivers available on a cots camera may be used to control the Pan and Tilt servos as the above reply appears to state?

Thanks.

Re: Follow-Up to Legal Servo Control

Posted by GDC at 01/29/2007 05:32:44 pm

Yes, servo drivers available on a COTS camera may be used to control the camera's Pan and Tilt servos.

8.3 Robot Rules

Feedback Camera

Feedback Camera

Posted by FRC2204 at 01/25/2007 05:40:29 pm

<R79> Teams are permitted to connect a portable computing device (Laptop computer, PDAs, etc.)
to the RS232 Output of the dashboard port of the Operator Interface for the purpose of displaying feedback from the ROBOT while participating in competition matches.

<R109> Any decorations that involve broadcasting a signal to/from the ROBOT, such as remote
cameras, must be cleared with FIRST Engineering prior to the event and tested for communications interference at the venue. This is the one permissible exception to Rule <R66>. Note that 900 MHz camera systems will not be approved, and are not permitted at any time.

Could we put a camera on our robot with a video feed to the alliance box/control box, so that our drivers can use it to drive with? This assumes that the monitor/laptop is within the limits of the control board. Can this laptop be used for video feed?

Re: Feedback Camera

Posted by GDC at 01/29/2007 04:32:54 pm

The cameras discussed in Rule <R109> must be "non-functional" in terms of their utility to the team during a match. Any video display used by the team to assist in the operation of the robot would be considered "functional" and would not be covered by the Rule <R109> exemption. Therefore, a camera with a video feed to the alliance station would be a violation of Rule <R66> and not permitted.

8.3 Robot Rules

Ramp Question

Ramp Question

Posted by FRC2204 at 01/25/2007 05:55:36 pm

If a ramp mechanism is accidently activated in the playing field (not in the home zone), but quickly reattached, will our team lose points/ be disqualified even though no other robot was affected by the ramp?

Re: Ramp Question

Posted by GDC at 01/29/2007 04:30:29 pm

If a ramp mechanism is deployed outside the Home Zone, it will immediately be subject to Rule <R12>. If the ramp mechaism detaches from the robot (whether inside or outside of the Home Zone), it will immediately be subject to Rule <G40>.

8.3 Robot Rules

Power multiple relay modules from one breaker?

Power multiple relay modules from one breaker?

Posted by FRC834 at 01/25/2007 07:15:52 pm

We are trying to figure out how many breakers/breaker panels we will need to run our pneumatic valves. Can one breaker be used to power more than one relay module if the relay module is only used for controlling the pneumatic valves. Rule R94 and R95 explain that the

robot controller and the air compressor respectively each need their own breaker, but we were wondering what the rules are about multiple low-current devices on the same breaker?

Re: Power multiple relay modules from one breaker?

Posted by GDC at 01/29/2007 04:29:01 pm

Multiple pneumatic valves may be powered through a single breaker. These are low power devices (approximately 1.2 We), and may be safely ganged together.

8.3 Robot Rules

<R12>: Further Clarification

<R12>: Further Clarification

Posted by FRC1510 at 01/26/2007 12:38:10 am

The response to questions about <R12> make it clear that no part of the robot may extend out of the virtual 72"x72" box around the robot. However, according to part of the response:
[quote]There is no case in which an object measuring greater than 102" horizontally will fit within the 72 x 72 inch limits specified. Any such device will violate the rule if it is used outside the Home Zone.[/quote]

We take this to mean that, if a robot had an arm measuring greater than 102", that arm would not be allowed to be used in competition outside the Home Zone under any circumstances, regardless of whether the use of the arm actually causes it to extend farther than allowed. Is this a correct interpretation? If so, would this interpretation hold true for any device with the potential to violate <R12>?

Assuming our interpretation does NOT hold true for all cases, which of the following mechanisms would teams be allowed to use? Assume that the robot is not in the Home Zone.

1. An arm that, when completely horizontal, violates <R12>, but whose driver never extends the arm outside the allowed box during match play.

2. An arm that, when completely horizontal, violates <R12>, but that is unable to extend outside the allowed box during match play due to its programming.

3. An arm that, when completely horizontal, would violate <R12>, but is physically unable to extend outside of the allowed box at any time due to the design of the arm.

4. An arm that, when completely horizontal, violates <R12>, but is physically unable to extend outside of the allowed box during normal use. However, under certain circumstances (i.e. the arm is accidentally snagged and extended in a way that the robot would be unable to manage on its own), the arm would theoretically be able to extend outside the allowed box.

Re: <R12>: Further Clarification

Posted by GDC at 01/29/2007 05:10:53 pm

There is no case in which a device with a horizontal dimension of greater then 102" and used outside the Home Zone will not violate Rule <R12>. Therefore, if a device has a horizontal dimension more than 102" and it is used outside the Home Zone, then it will automatically be assessed as a violation of Rule <R12>. In all other cases, each robot will be assessed in real

time as they operate outside the Home Zone to identify any confgurations in which they violate the dimension constraints specified in Rule <R12>. A robot/device that has the physical potential to violate the dimension constraints, but does not actually do so during the match, would not be in violation of Rule <R12>.

8.3 Robot Rules

<R35> - Not using adhesive backing

<R35> - Not using adhesive backing

Posted by FRC1510 at 01/26/2007 12:52:14 am

According to <R35>, adhesive-backed tape is not allowed on robots. Does this apply to any tape with an adhesive backing, regardless of whether or not the adhesive backing is used to attach the tape to the robot? For example, would non-skid tape attached to the robot with screws or nails be allowed, if the adhesive backing is not used for attachment in any way? What if the adhesive backing is completely removed before the tape is attached to the robot?

Re: <R35> - Not using adhesive backing

Posted by GDC at 01/29/2007 04:28:04 pm

Rule <R35> prohibits adhesive-backed tapes, with certain exceptions listed in the rule. There is no exception for tapes in which the adhesive is not used to adhere the tape to the robot. If the adhesive backing (including ALL adhesive material) is completely removed, then the remaining material would no longer be a "adhesive backed tape."

8.3 Robot Rules

<R51> Old CH Flightsticks/Other Analog Joysticks

<R51> Old CH Flightsticks/Other Analog Joysticks

Posted by FRC269 at 01/26/2007 01:00:53 am

Are the old CH flightsticks that were included in past kits allowed for this year's OI? Also what about analog joysticks found on eBay or other used parts sources? It is almost impossible to find manufacturers who still widely make analog joysticks...Are we forced into using the USB Chicklet to use COTS joysticks?

Use of CH Flightstick joystick

Posted by FRC696 at 01/26/2007 01:36:26 am

Is it permissible to use the now out of production gameport style CH flightstick that was included in previous year's kit of parts on the operator console?

If not, can you recommend a source for other gameport style joysticks? Many teams cannot afford the cost of USB chicklets.

Re: <R51> Old CH Flightsticks/Other Analog Joysticks

Posted by GDC at 01/29/2007 04:25:46 pm

Unmodified CH flight joysticks are allowed per <R28>.

8.3 Robot Rules

One solenoid- two cylinders

One solenoid- two cylinders

Posted by FRC585 at 01/26/2007 01:31:53 pm

Is it permissible to actuate two small pneumatic cylinders with one solenoid, such as the gear

change cylinders used with the AndyMark transmissions?

Re: One solenoid- two cylinders

Posted by GDC at 01/26/2007 02:21:00 pm

Yes.

8.3 Robot Rules

Embroidery on Bumpers

Embroidery on Bumpers

Posted by FRC1276 at 01/26/2007 04:03:03 pm

[QUOTE=GDC]If the numbers are applied to the cloth of the bumbers with ink or dye, they would still be considered Standard Bumpers. If addition material is added to the bumpers in order to display the number, they would no long be considered Standard Bumpers but would instead be considered custom bumpers. [/QUOTE]

Does thread count as additional material? More specifically, if we were to embroider our bumpers would they be considered custom bumpers?

Re: Embroidery on Bumpers

Posted by GDC at 01/29/2007 04:21:35 pm

Per <R37>, Standard Bumpers must be covered with a tough, smooth cloth. If embroidering the cloth still leaves it tough and smooth, then embroidery would be acceptable.

Can Team numbers be painted on standard bumpers?

Posted by FRC2116 at 02/05/2007 10:05:00 am

can we paint our team number on the face of the material of our standard bumpers? - will that be acceptable if the numbers are 4" high and 3/4" stroke?

ROb Team 2116

Re: Can Team numbers be painted on standard bumpers?

Posted by GDC at 02/05/2007 08:43:31 pm

Per <R37>, Standard Bumpers must be covered with a tough, smooth cloth. If painting the cloth still leaves it tough and smooth, then it would also be acceptable.

8.3 Robot Rules

Urgent Pneumatic Piston Legality Question!

Urgent Pneumatic Piston Legality Question!

Posted by FRC1394 at 01/26/2007 04:16:46 pm

Alright...

This question is regarding legal pneumatic piston sizes. While the 12" throw, 1 1/2" bore pneumatics have been clearly defined as illegal despite their initial offering on the Bimba website. The Bimba website still offers 2" bore, 12" throw pneumatics on their site, are these cylinders considered legal under the FRC rules for the 2007 season?

A prompt response would be appreciated, as we are currently undergoing a complete redesign after being notified two days ago by Bimba RE: illegal 1 1/2" bore, 12" throw pistons.

Thank you,
FRC Team 1394

Re: Urgent Pneumatic Piston Legality Question!

Posted by GDC at 01/29/2007 03:47:51 pm

2" diameter by 12" stroke pistons are listed on the Custom Cylinder Order Form found on the last page of the Pneumatics Manual as a permitted size. Therefore, under Rule <R105>, they are permitted.

8.3 Robot Rules

Tolerance on 2.5" Pool Noodles

Tolerance on 2.5" Pool Noodles

Posted by FRC1318 at 01/26/2007 04:22:04 pm

What's the allowable tolerance on 2.5" foam pool noodles?

We purchased 2.5" pool noodles from the same vendor we used last year, but when we measure them in the shop, we see they are more like 2.25" OD.

Can we build standard bumpers with pool noodles that are a little under 2.5" OD if everything else (especially the 5" tall backing board) is as specified?

Re: Tolerance on 2.5" Pool Noodles

Posted by GDC at 01/29/2007 04:22:30 pm

If these items are sold as 2.5" diameter pool noodles, and the smaller diameters are a result of normal variences in production (ie. they are being used as received from the manufacturer and have not been shaved down), then they would be acceptable.

8.3 Robot Rules

Sprockets

Sprockets

Posted by FRC771 at 01/26/2007 05:48:13 pm

In this post, you say that you may only use the two 24-tooth sprockets received in the kit of parts. However, in this post:

[url]http://forums.usfirst.org/showpost.php?p=3805&postcount=7[/url]

you say that "you may want to check with some nearby teams and see if they will be using these parts. Many teams choose not to use the Kit Of Parts-supplied drive system, and may have them as spares"

We were wondering which one was correct. Are we allowed to use sprockets acquired from another team?

Re: Sprockets

Posted by GDC at 01/29/2007 05:26:48 pm

We acknowledge that we gave conflicting Q&A answers regarding the wheel sprockets. These sprockets were custom made for FIRST, are not COTS items, and additional quantities would

not normally be available. Therefore, additional sprockets obtained from other teams would not normally be permitted. However, considering the conflicting statements, we will allow more than two kit sprockets on robots, provided they are accounted for per the manual (use a price of $10 per sprocket).

8.3 Robot Rules

Question on acceptable motors

Question on acceptable motors

Posted by FRC670 at 01/26/2007 08:21:19 pm

One of our mentors thought that we are allowed to use any vex parts (servos, motors, limit switches etc) except for the controller. Does anyone know if this is a true statement? (we can't find it in the rulebook)

Thank you very much,

Team 670 - HRT
[url]http://hrt670.com[/url]

Re: Question on acceptable motors

Posted by GDC at 01/29/2007 04:16:50 pm

Please refer to Rule <R45> and <R46>. Motors and servos other than those explicitly permitted by Rule <R45> and/or Rule <R46> are prohibited. Other items from the VEX product line would be considered COTS items, and may be used if they satisfy all other applicable rules (e.g. the cost limitations in Rule <R51>).

8.3 Robot Rules

Batteries

Batteries

Posted by FRC237 at 01/27/2007 09:38:08 am

Are we allowed to use a battery with the same part number (according to the MSDS), but that doesn't say MK Battery on it?

Re: Batteries

Posted by GDC at 01/29/2007 04:15:21 pm

No.

8.3 Robot Rules

Bimba Cylinder part number

Bimba Cylinder part number

Posted by FRC1716 at 01/27/2007 01:31:02 pm

We have been given some Bimba cylinders in which their part numbers all start with SR. The SR references a Stainless Steel Rod, and this is the same rod you get if you select the “M” option on the order form. An example is SR-171.5-DP compared to M-171.5-DP or just 171.5-DP for the option without the magnet. Our question is, would these SR numbered cylinders be considered illegal since the cylinder is the not really identical to the one with the “M” option, the rod is the same just without the magnets?

Re: Bimba Cylinder part number

Posted by GDC at 01/29/2007 04:11:24 pm

Per <R105> only the part numbers on the Pneumatic Components Order Form are allowed.

8.3 Robot Rules

Sprocket use

Sprocket use

Posted by FRC2083 at 01/27/2007 03:28:36 pm

Re: Sprocket teeth count and requirement to use KOP 24 tooth only?

Are we allowed to purchase and use COTS belt and sprocket drives for our drive motor connection to the wheels.

Re: Sprocket use

Posted by GDC at 01/29/2007 04:12:40 pm

Yes.

8.3 Robot Rules

potentiometer

potentiometer

Posted by FRC2083 at 01/27/2007 03:32:03 pm

Are we allowed to use a Potentiameter as a stop for directional control and attach the potentiameter to the robot controller?

Re: potentiameter

Posted by GDC at 01/29/2007 04:13:26 pm

Yes.

8.3 Robot Rules

School Logo

School Logo

Posted by FRC2083 at 01/27/2007 03:34:07 pm

How big does the school logo need to be on the robot and are we required to have the school logo on all collateral materials?

Re: School Logo

Posted by GDC at 01/29/2007 05:02:52 pm

There is no minimum size requirement in order to comply with <R13>. We do not dictate the layout, content, or sizing of your marketing collateral materials.

Please remember, Rule <R13> states that "the support provided by the corporate sponsors and mentors on your team is important, and is to be acknowledged..." We recommend that the logo be of a size sufficient to be easily read by audience members 25 feet (or so) away.

8.3 Robot Rules

LED Diagnostic Lights

LED Diagnostic Lights

Posted by FRC2083 at 01/27/2007 03:35:13 pm

Where do we put the LED Diagnostic Lights?

Re: LED Diagnostic Lights

Posted by GDC at 01/29/2007 04:14:11 pm

Please reference <R16> for the answer to your question.

8.3 Robot Rules

<R12> Question

<R12> Question

Posted by FRC1480 at 01/27/2007 04:00:05 pm

Does the ringer count toward the 72" by 72" box limit while the robot has the ringer in its grip.

Team 1480

Re: <R12> Question

Posted by GDC at 01/29/2007 04:14:38 pm

No.

8.3 Robot Rules

IFI Hubs for Wheelchair Wheels

IFI Hubs for Wheelchair Wheels

Posted by FRC1318 at 01/27/2007 06:33:36 pm

As a follow-up to the previous question about wheelchair wheels...

Is it legal to use the hubs that were commerically available (from IFI) for use with the Skyway (wheelchair) wheels? I'm not sure if these items fall into the second bullet item in <R28>.

Re: IFI Hubs for Wheelchair Wheels

Posted by GDC at 01/29/2007 04:59:15 pm

These items were COTS parts from Small Parts, Inc. and are therefore legal per Rule <R28>.

8.3 Robot Rules

Rule 35 Clarification

Rule 35 Clarification

Posted by FRC1552 at 01/28/2007 11:32:09 am

Rule 35 has been a source of heated debate with our team. Specifically, we are building a lifting arm from u-shaped aluminum channel. I suggested that we line the sliding surfaces with adhesive backed Teflon or UHMW. All but one mentor stated that this is a violation of rule 35 since it is thin, long and adhesive backed. It is my interpretation that the spirit and purpose of the rule is to prohibit teams from using adhesive tape as a means to assemble their robot. So by my interpretation, an expanded version of rule 35 would go something like this:

-

"Teams are prohibited from using adhesive tape, such as duct tape, masking tape and packing tape as a replacement for mechanical fasteners such as screws, nuts and bolts, rivets or adhesives in the construction or repair of their robot. The only exceptions to this rule are the use of foam mounting tape and velcro used to surface mount components. Adhesive backed

materials such as Teflon tape, traction tape or adhesive backed foam rubber are allowed provided that they are not used in the manner prohibited above."

-

As it currently stands, the term tape is extremely ambiguous and its application is problematic. For example, it is a violation of the rule I apply a strip of Teflon tape as a bearing surface on an aluminum channel. However, if I apply glue then apply the tape, is it still tape? Another example involves COTS components. If I purchase a gripper that has adhesive-backed neoprene rubber on its gripper, does that tape need to be removed? If any component uses adhesive backed materials in their design are they prohibited? What defines tape? If I want to apply traction tape to a ramp to improve the ability of a robot to climb the ramp, I'm violating rule 35. If I apply a sheet of adhesive backed traction material, is it still tape and am I still in violation? If I apply glue then apply the sheet of material, where do I stand?

You can see that this issue is a slippery slope (unless we cover it with traction tape). Is the prohibition to be applied to all materials with an adhesive back or is it its purpose that is the issue? My concern is that there are a range of high-performance adhesive-backed materials that, if this rule is interpreted strictly, would be excluded. If the issue is adhesive backed materials in general, an explanation for the aversion to this particular class of materials would be helpful as would an explanation why foam mounting tape and Vecro are permitted.

Thank you for your time and I look forward to your response and insights.

Sincerely,
Deland Craven
Mentor - Team 1552

Re: Rule 35 Clarification

Posted by GDC at 01/29/2007 04:09:25 pm

Rule <R35> is explicit in the prohibition against adhesive-backed tapes of any type, except those specifically allowed by the rule. The purpose for which the tape is used is not a consideration in the applicability of the rule, and no exception is provided. Adhesive-backed teflon tapes are prohibited by this rule. Note, however, that if the purpose for which the tape might otherwise be used is to provide a low-friction surface for a sliding joint, there are many alternative techniques and materials that can provide this function without violating the rule.

8.3 Robot Rules

Relays, Breakers, and Pneumatics

Relays, Breakers, and Pneumatics

Posted by FRC229 at 01/28/2007 03:03:04 pm

Is it permissible to connect multiple spike relays to one 20A breaker? If so, then what is the maximum number of spikes that should be run through one breaker? The spikes will be driving solenoids to control various pneumatic cylinders.

-Alex

Re: Relays, Breakers, and Pneumatics

Posted by GDC at 01/29/2007 04:05:04 pm

There is no rule limiting the number of spike relay modules that may be connected to one 20A circuit breaker. You should calculate your worst case loads of your design and ensure that you are not exceeding the capability of the breaker.

8.3 Robot Rules

Andersen Connectors Wire Size

Andersen Connectors Wire Size

Posted by FRC1622 at 01/28/2007 05:04:23 pm

Can we make up new Anderson connectors using 4 guage wire?

Can we use 4 guage wire from the main switch to the distibution block as long as it fits without trimming.

Can we use 4 guage wire from the distibution block to the maxi blocks as long as it fits without trimming?

We are looking at a very high strand count wire that can be twisted tight to fit,

Thanks!

Re: Andersen Connectors Wire Size

Posted by GDC at 01/29/2007 04:01:49 pm

Yes, 4AWG wire is legal as long as it is implemented safely. Please note, however, that the manufacturer's specification sheet does not recommend anything larger than 6AWG.

8.3 Robot Rules

window motors

window motors

Posted by FRC1158 at 01/29/2007 01:06:26 pm

Are we able to modify the gear teeth coming out of the motor? We would like to put a srocket on versus the current teeth.

Re: window motors

Posted by GDC at 01/29/2007 03:41:36 pm

Yes. This is permitted under Rule <R38>.

8.3 Robot Rules

chain

chain

Posted by FRC1158 at 01/29/2007 01:07:18 pm

Are we able to run different size chains then #35? We would like to use #25.

Re: chain

Posted by GDC at 01/29/2007 03:42:08 pm

Yes. There is no restriction on the size of chains that you may use.

8.3 Robot Rules

Gas cylinder springs

Gas cylinder springs

Posted by FRC2016 at 01/29/2007 02:33:53 pm

Can gas cylinder springs be used on the robot?

Re: Gas cylinder springs

Posted by GDC at 01/29/2007 03:42:42 pm

Yes. Please see Rule <R106>.

8.3 Robot Rules

Antiskid tape

Antiskid tape

Posted by FRC885 at 01/29/2007 02:36:51 pm

Is it permissible to use anti skid tape on the ramp of the robot? It will never come in contact with the arena's floor.

Re: Antiskid tape

Posted by GDC at 01/29/2007 03:43:12 pm

No. Please see Rule <R35>.

8.3 Robot Rules

Fastening of the Bumper

Fastening of the Bumper

Posted by FRC1507 at 01/29/2007 04:29:44 pm

Can studs protrude from the back of the standard bumper so they can be fastened to the robot frame with a nut to facilitate mounting?

If so, can we have an L bracket on the back of the bumper so to bolt to the robot frame from the top?

Re: Fastening of the Bumper

Posted by GDC at 02/01/2007 03:39:56 pm

Bumpers must be attached to the robot with a robust bolt-and-fastener system that can withstand rigorous interactions during the match. The "bolt" can be on either side of the connection (i.e. the robot side or the bumper side).

You may use an L-bracket as your mounting point, however it is not considered part of the standard bumper design and would mean that either your bumpers are non-standard, or the L-bracket must be part of your robot and it's weight part of the robot's weight.

8.3 Robot Rules

Further Clarification On R12

Further Clarification On R12

Posted by FRC8 at 01/29/2007 08:29:56 pm

The current understanding about R12 says "the ROBOT may be oriented within the virtual box in any direction." Our question is, does direction mean we could also orient the robot such that

the robot is perpendicular to the ground, hence its unlimited dimension is its depth, hence an object measuring over 102" could fit? Or does the base of the robot must remain parallel to the ground or touching the ground when the virtual box is considered?

Thanks,
FRC8

Re: Further Clarification On R12

Posted by GDC at 02/01/2007 03:47:47 pm

The intent of Rule <R12> is to define a 72 inch wide x 72 inch deep x infinite height (save as may be practically limited by the venue ceiling height) three-dimensional box. When the ROBOT is not in the HOME ZONE, it must maintain a configuration that will allow it to fit within this virtual box at all times. The virtual box moves with the ROBOT. The orientation of the ROBOT within the box is inconsequential and may change, but the orientation of the virtual box does not change (ie. the box is always 72 inches wide x 72 inches deep x infinite height). But if any part of the ROBOT, at any height, ever extends outside of the virtual box while the ROBOT is not in the HOME ZONE it will be considered a violation of Rule <R12>. There is no case in which an object with a horizontal dimension greater than 102" will fit within the 72 x 72 inch limits specified. Any such device will violate the rule if it is used outside the Home Zone.

8.3 Robot Rules

Gas (pneumatic) shocks

Gas (pneumatic) shocks

Posted by FRC66 at 01/30/2007 11:43:23 am

Under <R106> , Gas shocks are permitted on the robot
Under <R46> , Hydraulic Fluids or Components are not permitted on the robot
Since Gas (pneumatic) shocks contain hydraulic fluid, are they permitted under the current rules?

Gas Operated Shock

Posted by FRC877 at 01/31/2007 12:46:13 pm

May we use a gas operated shock similar to the ones used in rear left gates or the back window of an SUV?

damper question

Posted by FRC623 at 01/31/2007 04:01:00 pm

This question is in relation to rule 8-46, specifically the part that prohibits "Hydraulic fluids or hydraulic components" from use in the robot. We have purchased a damper from [url] http://www.guden.com[/url]. This is the page for the type of damper we bought: [url] http://www.guden.com/display-GSD.asp?zoom_query=GDE60%20E[/url]. We are hesitan to commit these viscuos dampers to use in our robot because of the risk of not being allowed to use them at the competition if they are deemed "hydraulic."

Thank you for your help.

Re: damper question

Posted by GDC at 02/01/2007 03:26:31 pm

Gas shocks (compressible gas springs) are permitted under Rule <R46>. Models of the shocks that contain small amounts of hydraulic fluid that is used as a lubricant, and which are

completely sealed to prevent any escape of the fluid (and therefore not violate Rule <R36>), are acceptable. Hydraulic springs which utilize hydraulic fluid as the major damping fluid, and are therefore not really "pneumatic shocks," are not permitted.

8.3 Robot Rules

Capacitive Load

Capacitive Load

Posted by FRC41 at 01/30/2007 04:39:44 pm

Is there a limit to the capacitive load we can use in custom circuits?

Re: Capacitive Load

Posted by GDC at 02/01/2007 03:34:05 pm

There is no specific limit to the capacative load incorporated into custom circuits. However, note that all custom circuits must be built and operated in a safe manner under the terms of Rule <S01>.

8.3 Robot Rules

Additional Sprockets

Additional Sprockets

Posted by FRC316 at 01/30/2007 06:34:59 pm

Our team is using a custom fabricated gear that has 72 teeth. According to update 10 it states that "The sprockets provided in the 2007 Kit of Parts were custom manufactured for FIRST and are not COTS parts. As such, only the two 24-tooth sprockets received in the Kit may be used on your Robot. Teams are welcome to fabricate equivalent parts from COTS items." Does this mean that we are only limited to using 24 tooth gears? According to rule R43 it states "a specific device fabricated by a team from non-2007 KOP materials for their use does not have to be available to others; however, the materials it is made from must be available to other teams."

Re: Additional Sprockets

Posted by GDC at 02/01/2007 03:24:43 pm

The note in Section 10 of Team Update #6 was addressing the question of using more Kit Of Parts sprockets than were provided in each Kit (i.e. by obtaining them from another team that might not be using their Kit sprockets). It was not intended to be a general prohibition against the use of any other sprockets. You may use any other COTS or team-fabricated sprockets that you like (provided they are in compliance with all other applicable rules). It was just a caution about using the specific 24-tooth "Wheel Sprockets" provided in the Kit Of Parts.

Note also that this caution was superceded in Section 8 of Team Update #7, to compensate for conflicting answers that had been provided in the Q&A system.

8.3 Robot Rules

Bumper things

Bumper things

Posted by FRC2156 at 01/30/2007 07:39:40 pm

We can't find a 1/4" inch aluminum angle and were wondering if we could use 1/2"

Re: Bumper things

Posted by GDC at 02/01/2007 03:31:45 pm

If we understand the question correctly, you are asking about the dimension of the aluminum angle recommended in Figure 8-1, to be used to clamp the fabric covering to the bumpers. Rule <R37> does not define a specific size for the aluminum angle. Therefore either 1/2" or 1/4" aluminum angle would be acceptable for this purpose.

8.3 Robot Rules

Glue and "Tape"

Glue and "Tape"

Posted by FRC329 at 01/30/2007 11:59:35 pm

According to a recent Q&A "If the adhesive backing (including ALL adhesive material) is completely removed, then the remaining material would no longer be a "adhesive backed tape.""

According to the flowchart, glue is an acceptable way to attach things. If this is the case, once all the adhesive is removed from the tape, can the tape be glued on a substrate?

If no, can "tape" that is non adhesive to begin with be glued to a substrate (Such as teflon tape that is non adhesive, strips of sandpaper or video "tape").

If both are no what constitutes "tape" vs any other material and what can be glued?

Re: Glue and "Tape"

Posted by GDC at 02/01/2007 04:23:29 pm

Yes, however you must be able to prove to inspection that this process was performed.

8.3 Robot Rules

MX5 with LED

MX5 with LED

Posted by FRC2016 at 01/31/2007 10:18:13 am

Can the version of the MX5 circuit breaker with LED indicators be used on the robot?

Re: MX5 with LED

Posted by GDC at 02/01/2007 03:25:19 pm

No. Under Rule <R46>, circuit breakers different from those provided in the Kit Of Parts are explicitly prohibited.

8.3 Robot Rules

8.3.9 <R92> - Use of Speed Controllers

8.3.9 <R92> - Use of Speed Controllers

Posted by FRC1018 at 01/31/2007 01:26:20 pm

Regarding the motors which are required to use speed controllers (rather than spikes), I believe this rule applies to ALL FP motors and not just the "Big CIM"/Minibike motor (FP801-005). We would like to control the Fisher Price/"Power Wheels" (FP 9012) motors with a spike if possible. While their stall current (FP 9012) is significantly higher than most of the other motors, it is much less than the FP801 (Big CIM).

We are trying to watch our budget closely and would like to avoid purchasing additional speed controllers. Please clarify.

Thanks!

Re: 8.3.9 <R92> - Use of Speed Controllers

Posted by GDC at 02/01/2007 03:27:10 pm

Rule <R92> applies to all models of "Fisher-Price motors" suppied in the 2007 Kit Of Parts (as well as all models of "CIM" motors in the Kit). All of these motors must be controlled with Speed Controllers. Relay Modules may not be used to control them.

8.3 Robot Rules

camera for autonomus mode

camera for autonomus mode

Posted by FRC1805 at 01/31/2007 01:29:57 pm

Once we get our camera working is there anywhere that tells us how to program it in autonomus mode?

Re: camera for autonomus mode

Posted by GDC at 02/01/2007 03:27:44 pm

There are programming tools posted on the FIRST website at [url]http://www.usfirst.org/community/fr...ent.aspx?id=482[/url].

8.3 Robot Rules

Purchased Transmissions

Purchased Transmissions

Posted by FRC815 at 01/31/2007 02:25:25 pm

We have hooked up a "Kit" Fisher Price Motor wo a power antenna gearbox. Per Section 8.3.4.2, paragraphs 2 &3, we believe that we canuse this COTS for the competition. The power antenna gearbox is an off the shelf item.
Please confirm that we may use this gearbox with the fisher price motor.

Re: Purchased Transmissions

Posted by GDC at 02/01/2007 03:29:02 pm

This item provides general functionality that can be utilized in any of several possible configurations or applications and is also a COTS item. Provided it conforms to other rules in the manual, this item would be permitted.

8.3 Robot Rules

Fluorescent light on robot

Fluorescent light on robot

Posted by FRC696 at 01/31/2007 09:02:16 pm

Is it permissable to have a fluorescent light on the robot for ther purposes of non-functional decoration? The light would be securely mounted, fully enclosed in a strong metal enclosure, and would be filtered through red or blue acrylic.

Re: Fluorescent light on robot

Posted by GDC at 02/01/2007 03:17:36 pm

This question cannot be answered directly, as it is highly dependent upon the particulars of the light in question. Any light-emitting device or decoration will be examined carefully for compliance with Rules <R04>, <R33>, <R63>, <R108>, and <R110>. Any device that interferes with the operation of other Robots (including CMUcam II camera systems), or with the visual acuity of team members or field personnel, is absolutely prohibited.

8.3 Robot Rules

Replacement Terminal Block Sections

Replacement Terminal Block Sections

Posted by FRC753 at 01/31/2007 09:20:50 pm

After contacting local distributors (Rockwell Automation Distributor Locator lists two for the populated areas of Oregon and Washington) we have been unable to locate red and black terminal blocks to replace some that have been damaged. They do carry grey but red and black are special orders for them, hence the minimum orders for those colors are 50 per part number - that's about $400 to replace a half dozen $5 parts.

Where can we get some without breaking the bank? Or would appropriately labelled grey blocks be accepted?

Thank You
Team 753

Re: Replacement Terminal Block Sections

Posted by GDC at 02/05/2007 04:21:08 pm

You may use the grey terminal blocks if you need more.

8.3 Robot Rules

Bumper additions

Bumper additions

Posted by FRC1511 at 01/31/2007 09:33:53 pm

We are pretty sure that this is prohibited as part of standard bumpers (would only be allowed in custom bumpers) but we want ask. As part of Standard bumpers can we add in touch sensors to the outsides of the bumpers, or even just inside the fabric? Or would that fall in the custom bumper category?

Re: Bumper additions

Posted by GDC at 02/01/2007 03:20:34 pm

No. This type of modification is outside the specific design presented in Rule <R37>, and would therefore be considered a Custom Bumper.

8.3 Robot Rules

Cylinders

Cylinders

Posted by FRC188 at 01/31/2007 10:08:46 pm

Are previous years' cylinders allowed on 2007 robots, provided that they are not purchased? (This question applies principally to the Parker cylinders included in FIRST kits in past years, and to Bimba cylinders that were

available using past years' pneumatics order forms, but which are unavailable on the 2007 form.)...

Re: Cylinders

Posted by GDC at 02/01/2007 04:18:34 pm

Unmodified Parker-Hannifan and/or Bimba cylinders that are sourced from prior-year FRC Kit Of Parts, and which are one of the sizes listed on the 2007 Pneumatic Components Order Form, and which are identical in size, shape and function to any of the specific part number combinations listed on the 2007 Pneumatic Components Order Form, and which are rated for at least 125 psi, may be used on a 2007 FRC robot. The relevant rules (<R28>, <R48>, <R105> and <R106>) are satisfied. If the cylinder has been modified, it can not be used. If the cylinder is from other than Parker-Hannifan or Bimba, it can not be used. If the cylinder is of a diameter/stroke combination that is not listed on the 2007 Pneumatic Components Order Form, it can not be used. If the cylinder is not the same as one of the Bimba part numbers listed on the 2007 Pneumatic Components Order Form (e.g. it has a different mounting configuration, different piston rod configuration, different sensor integration, etc.), it can not be used. If the cylinder is rated for less than 125 psi, it can not be used.

8.3 Robot Rules

Check Valves

Check Valves

Posted by FRC1598 at 01/31/2007 10:53:51 pm

Are check valves allowed in the pneumatics system ?

Re: Check Valves

Posted by GDC at 02/01/2007 03:21:57 pm

Yes. Check valves are not prohibited by the rules.

8.3 Robot Rules

?’s on Team designed assemblies , <R51> & <8.3.4.4>

?’s on Team designed assemblies , <R51> & <8.3.4.4>

Posted by FRC1716 at 02/01/2007 01:50:10 am

If we design and constructed a ramp system that only lifts other robots and when the costs of the raw materials are accounted for exceeds $400 is this assembly illegal even when no one component is greater than $400? The same question could apply for the assembly that would deliver a game piece to the rack. Do all of the materials and parts used for this assembly need to total $400 or less? Does it matter if the delivery system has more than one axis of motion? Is the only way to avoid the $400 limit for an assembly is to have it perform more than one function? Would this not be an issue for the delivery system/arm cost limit if we also used it to lift another robot? If this is true is the limit now $800 since two functions are being performed by the assembly or would the total additional cost limit of $3500 apply?

We really need to have this answered very quickly since it may force us to do a major redesign on our entire robot.

Thanks

Re: ?’s on Team designed assemblies , <R51> & <8.3.4.4>

Posted by GDC at 02/01/2007 03:16:53 pm

Please review Rule <R51> very carefully. The $400 price limit is applied to each individual COMPONENT (as defined in Section 8.2 of the manual), and not to entire MECHANISMS or ROBOTS. The total cost of raw materials for a MECHANISM or assembly may exceed $400, as it is made of multiple COMPONENTS. However, the total cost of all materials used on the entire ROBOT may not exceed $3500 (as defined in Rule <R51>).

8.3 Robot Rules

Bumper Materials?

Bumper Materials?

Posted by FRC2056 at 02/01/2007 08:45:20 am

I have two questions about the bumpers.
Do the "pool noodles" need to have a hole in them?
Can I use a stronger heavy duty nylon fabric than the 1000 Denier Cordura Plus?

Re: Bumper Materials?

Posted by GDC at 02/01/2007 03:15:42 pm

Either "solid" or "hollow" pool noodles may be used for the bumpers, as long as they are of the correct diameter. A stronger fabric may be used.

8.3 Robot Rules

Pneumatic Grippers

Pneumatic Grippers

Posted by FRC1334 at 02/01/2007 09:54:27 am

Does SMC pneumatic gripper part number MHC2-250 count as a cylinder?

-Alex

Re: Pneumatic Grippers

Posted by GDC at 02/01/2007 03:14:23 pm

No.

8.3 Robot Rules

IR LEDs

IR LEDs

Posted by FRC329 at 02/01/2007 11:00:51 am

Is it acceptable to use IR LEDs on the operator interface LED outputs?

Re: IR LEDs

Posted by GDC at 02/01/2007 03:09:48 pm

There is no rule that specifically prohibits IR LEDs from being connected to the OI LED outputs. Note, however, that the IR LEDs can not be used to communicate to your robot, nor can they interfere in any way with any other robots or teams.

8.3 Robot Rules

Previous Year Maxi Fuse Block

Previous Year Maxi Fuse Block

Posted by FRC1086 at 02/01/2007 01:48:07 pm

Are we allowed to use previous year's maxi fuse blocks on the 07 robot even if it has multiple outputs instead of the single like this years?

Re: Previous Year Maxi Fuse Block

Posted by GDC at 02/05/2007 04:17:29 pm

If you need to use additional maxi style fuse blocks, they must be identical to the one provided in the Kit of Parts (per Rule <R57>).

8.3 Robot Rules

Operator Interface

Operator Interface

Posted by FRC240 at 02/01/2007 02:28:42 pm

During the autonomous mode can we use our program to look at the operator interface for switch settings or is this ability disabled during autonomous mode?

Re: Operator Interface

Posted by GDC at 02/01/2007 04:49:08 pm

OI data is transmitted during disabled mode, but not during autonomous mode.

8.3 Robot Rules

Pneumatic parts

Pneumatic parts

Posted by FRC1672 at 02/01/2007 04:24:24 pm

Can we use a pneumatic piston with one air input at one end and a spring in the other end that will make the rod come back from the extended position and if so do they sell those on the bimba website ????

Re: Pneumatic parts

Posted by GDC at 02/02/2007 04:29:50 pm

No. Spring action pistons are not available on the Pneumatic Components Order Form. Therefore, under Rule <R105> they can not be used.

8.3 Robot Rules

Servo modifications

Servo modifications

Posted by FRC1018 at 02/01/2007 07:16:50 pm

I thought I had seen this in the manual earlier in the year, but after searching today I can't find any reference to servo modifications.

Is it allowable to modify the servos to make them capable of continuous rotation?

Re: Servo modifications

Posted by GDC at 02/02/2007 04:32:09 pm

No, you may not modify the servos.

8.3 Robot Rules

LED's on Muffin fans

LED's on Muffin fans

Posted by FRC395 at 02/01/2007 07:41:29 pm

I want to make the electronics board look cool. can I switch out the muffin fans on the Victors for ones purchased with LED decoration lights?

Re: LED's on Muffin fans

Posted by GDC at 02/02/2007 04:33:26 pm

No. The small muffin fans are integral parts of the Victor Speed Controllers. Under rule <R65>, they may not be modified.

8.3 Robot Rules

Brake/Coast header to Digital Output

Brake/Coast header to Digital Output

Posted by FRC116 at 02/01/2007 09:48:46 pm

<R75> states "Digital outputs of the Robot Controller may be connected directly to brake/coast headers on the speed controllers to permit programmable control of this controller function." Is it permissible to connect more than one brake/coast header to a single Digital Output?

Re: Brake/Coast header to Digital Output

Posted by GDC at 02/01/2007 09:53:10 pm

This will work and does not violate any rules, but the worst case noise margin is getting so small that IFI recommends against connecting two Victor brake/coast headers per RC Digital Output.

Therefore, IFI and FIRST recommend connecting no more than one Victor brake/coast header per RC Digital Output.

8.3 Robot Rules

Camera and Servo Power

Camera and Servo Power

Posted by FRC470 at 02/02/2007 03:08:10 pm

Is it permissable to power the camera from the main 12 Volt battery via a custom circuit (regulator) instead of drawing power from a PWM output on the Robot Controller?

Also, would it be permissable to power the servos in a similar mannor if the servo's control input (yellow wire) was connected only to the FRC PWM output and only power was provided by a custom (regulator) circuit?

Re: Camera and Servo Power

Posted by GDC at 02/05/2007 04:10:54 pm

Per Rule <R61>, you cannot power the camera through a custom circuit. Per Rule <R63>, you cannot power the servos through a custom circuit.

Camera Power

Posted by FRC238 at 02/07/2007 10:52:46 pm

A previous post from FRC470 asked

"Is it permissable to power the camera from the main 12 Volt battery via a custom circuit (regulator) instead of drawing power from a PWM output on the Robot Controller?"

The reply was
"Per Rule <R61>, you cannot power the camera through a custom circuit. "

It would seem that the intent of <R61> is for custom circuits used for control logic. Using a custom power regulator for input power to the camera is not fundamentally different than <R56>.

All we want (as probably Team 470) is a nice clean steady power signal so the camera doesn't flake out :-)

Re: Camera Power

Posted by GDC at 02/08/2007 04:13:30 pm

As indicated in Rule <R60> the purpose of the custom circuits is to provide enhanced sensor feedback to the Robot Controller, and thereby enable the use of augmented logic for the computer-aided operations of the robot. Custom circuits are not permitted to alter the pathways between the primary power system and other elements of the control system. Under Rule <R61>, power output from a custom circuit can not be supplied to the camera.

8.3 Robot Rules

15-Pin to USB Adaptors

15-Pin to USB Adaptors

Posted by FRC1612 at 02/02/2007 03:59:20 pm

Are we allowed to use a generic 15-Pin to USB adaptor instead of the USB-Chicklet adaptor?

Re: 15-Pin to USB Adaptors

Posted by GDC at 02/02/2007 04:39:03 pm

If this device does not require external power, then yes. If the device requires external power, then no. Per Rule <R83>, the only device allowed that requires external power is the USB Chicklet available from Innovation First.

8.3 Robot Rules

Can we use....

Can we use....

Posted by FRC168 at 02/02/2007 04:03:42 pm

Can we use an additional window motor on our robot?

Re: Can we use....

Posted by GDC at 02/02/2007 04:35:20 pm

Please refer to Rule <R46>.

8.3 Robot Rules

Brake/Coast Header Cable

Brake/Coast Header Cable

Posted by FRC41 at 02/02/2007 04:25:19 pm

Would it be permissible under the rules to modify the 3 pin PWM style cable to direct the signal and ground pins on the RC digital output to the appropriate pins on the Victor's brake/coast header? Or, would such a modification be considered a custom circuit?

Re: Brake/Coast Header Cable

Posted by GDC at 02/05/2007 03:33:15 pm

Yes, this is permissible. Please read Rule <R75>.

8.3 Robot Rules

Tape and sheets

Tape and sheets

Posted by FRC1466 at 02/02/2007 05:44:17 pm

The reply to a team 1141 post said that staircase tape could not be used on a lifter or ramp assembly, yet team 1388 was given the thumbs up to use "a rubberized non-skid sheet with an adhesive backing".

My question, when does tape metamorphose into a sheet. We too want to use the non-skid material commonly used on stairs. This material is available as a "sheet with an adhesive backing". So can we use a sheet?

This is for our ramp/deck assembly that will allow a passive lift for alliance partners. A follow up: if the answer is "no", how about sandpaper sheets glued in place?

Thanks!

Re: Tape and sheets

Posted by GDC at 02/05/2007 03:30:00 pm

The referenced question by Team 1388 was submitted for the 2006 FRC game. Rules (and Q&A responses) from prior years do not apply to the 2007 game.

With regard to the use of non-skid tape, this material is not permitted under Rule <R35>. There are other adhesive-backed materials, coatings, and finishes (that are not sold as tapes) that would provide this funtionality without violating the rule. Non-adhesive sheets of sandpaper that are glued in place (or otherwise attached to the robot) would be permitted as long as the application does not violate any other rule.

8.3 Robot Rules

Flag Holder Rule <R15>

Flag Holder Rule <R15>

Posted by FRC834 at 02/03/2007 01:04:56 pm

We have a question concerning the placement of the flag. One of our ideas is to have a large unfolding ramp, onto which we would mount the flag. Throughout the majority of the match, our ramp will be folded up, and is by far the highest point on the robot. When our ramp unfolds in the last 15 seconds of the match, the flag would be lower than the rest of our robot, and would be pointed horizontally. Since this is a temporary condition, only at the end of the match, would this be permissible?

Re: Flag Holder Rule <R15>

Posted by GDC at 02/05/2007 03:34:26 pm

No. That would be a violation of Rule <R15>.

8.3 Robot Rules

Can we use an electric actuator?

Can we use an electric actuator?

Posted by FRC1645 at 02/03/2007 02:31:52 pm

We have a need for a short linear actuator much like a pneumatic cylinder would provide. We would prefer to not include an accumulator, pnuematic value and cylinder. We would like to use an eletric actuator used on electronic car door locks. Is such a device legal?

Re: Can we use an electric actuator?

Posted by GDC at 02/03/2007 11:43:17 pm

No. Please read Rule <R46>.

8.3 Robot Rules

Gears and chain safety

Gears and chain safety

Posted by FRC1606 at 02/03/2007 03:45:43 pm

Do all exposed gears and/or sprockets and chains need to be protected by guards?

Re: Gears and chain safety

Posted by GDC at 02/03/2007 11:28:20 pm

It is impossible to answer this question without a complete, detailed inspection of the specific implementation. We must ask you to use your best engineering judgement to assess whether your particular mechanism poses any type of pinch point or other hazard. While exposed mechanisms don't always present a pinch hazard, per Rule <R04> reasonable care must be exercised in their implementation and appropriate shielding applied where necessary. If there is any question, you may want to ask one of the experienced veteran teams in your area to consult with you to help you determine the best course of action

8.3 Robot Rules

Operator Interface definition and Dashboard

Operator Interface definition and Dashboard

Posted by FRC41 at 02/03/2007 06:13:27 pm

Is the dashboard computer considered part of the OI? If so, does the cost of the computer count under cost accounting rules?

Does the dashboard computer have to ship with the robot?

Is the software on the dashboard computer considered part of the robot? Must development of dashboard software cease after the robot ships?

Re: Operator Interface definition and Dashboard

Posted by GDC at 02/05/2007 03:37:56 pm

Any portable computer connected to the Operator Interface and used to display the robot status would be considered part of the OPERATOR CONSOLE. The OPERATOR CONSOLE, and all associated elements, are excluded from the robot cost determination (see Rule <R51>). A portable computer that is part of the OPERATOR CONSOLE may be removed and does not have to ship with the OPERATOR CONSOLE when it goes in the crate with the

ROBOT. However, software for the OPERATOR CONSOLE is subject to the same development schedule as the rest of the ROBOT software.

8.3 Robot Rules

mounting of Team numbers on the robot

mounting of Team numbers on the robot

Posted by FRC2116 at 02/05/2007 09:37:31 am

We are placing our numbers on a light weight board - can we use L-brackets to attach our team number boards on top of our standard bumpers?

Rob - Team 2116

Re: mounting of Team numbers on the robot

Posted by GDC at 02/05/2007 03:13:26 pm

Nothing can be attached to Standard Bumpers that is not in the design provided in Rule <R37>. We would suggest that you attach the team number display to the main structure of the Robot.

8.3 Robot Rules

Alternatives Motors

Alternatives Motors

Posted by FRC1831 at 02/05/2007 11:19:30 am

Question 1: From the posts in 10.3 it states that we can not buy additional Keyang motors because they are not available. If we have keyang motors from previous years, may we use them??

Question 2: If we find a window motor with similar characteristics, at say NAPA Auto Supply, Can we use this as a replacement or additional motor?

Team 1831

motors

Posted by FRC1805 at 02/05/2007 04:41:31 pm

Is it permitted to use motors from last year on the robot for this year if we did not use them on the robot.

Re: motors

Posted by GDC at 02/05/2007 05:03:35 pm

Motors with identical part numbers from prior year Kits Of Parts may be used as replacements for 2007 Keyang motors. Other models of motors may not be used, per Rule <R45> and <R46>.

8.3 Robot Rules

Slip Rings

Slip Rings

Posted by FRC1511 at 02/05/2007 11:38:27 am

Last Year the GDC provided this answer in Regards to the Use of Slip Rings:
[quote]As long as they are left in the standard, off the shelf condition so that there is no

potential for escape of the mercury, and they satisfy the constraints in the 2006 parts use flowchart and the parts constraints in Section 5.3.5, they are permissible.[/quote]

Would this still be valid for 2007?

Re: Slip Rings

Posted by GDC at 02/05/2007 05:05:04 pm

Rules from the 2006 (and prior year) games, as well as FIRST Q&A System answers, do not apply to the 2007 game. If there is a question about applicability of a specific part for the 2007 game, please tell us what part you are inquiring about.

8.3 Robot Rules

Operator Interface

Operator Interface

Posted by FRC1791 at 02/05/2007 02:50:51 pm

How visible does the operator inface have to be? Does it have to be seen from 10 feet away, or if someone walks up does it have to be easily visible?

Re: Operator Interface

Posted by GDC at 02/05/2007 05:02:47 pm

The Operator Interface must be visible with the Operator Console when an observer is standing in the normal operating position.

8.3 Robot Rules

Acts like a 2.5" CIM motor but is marked differently

Acts like a 2.5" CIM motor but is marked differently

Posted by FRC291 at 02/05/2007 03:18:37 pm

We purchased a 2.5" CIM motor from Banebots which they said was FIRST compliant and legal. However, when it arrived we found that, although it looked and acted the same as the CIM motors provided by FIRST, it was marked with a part number whose nomenclature was different from that used by FIRST. Is this motor still permitted or do we need to buy another motor? Thanks for any clarification you can provide.

Re: Acts like a 2.5" CIM motor but is marked differently

Posted by GDC at 02/05/2007 05:13:23 pm

Please refer to Team Update #9.

8.3 Robot Rules

884 modification

884 modification

Posted by FRC2016 at 02/05/2007 05:23:19 pm

Is it allowed to file down the sleeves where the PWM cables plug into the 884 Victors?

Re: 884 modification

Posted by GDC at 02/08/2007 04:21:55 pm

This would be considered a modification of the Speed Controller, and is prohibited by Rule <R65>. You are permitted to modify the PWM cable's connector.

8.3 Robot Rules

Dropping ramp

Dropping ramp

Posted by FRC1722 at 02/06/2007 01:06:13 am

I read this post response today and we to are considering dropping a ramp. Can you clarify this for us. The response below seems to make the assumption that if the ramp deployment is not controlled the field will in fact be damaged. Is the concern being the field or the amount of control we have over the ramp deployment. If we flip a light weight ramp with a rubber bottom feet onto the field there would be no damage. Can we do this? We believe it is also safe.

Re: ramp release system
Yes. Under Rule <R02> this would be utilizing a change in the altitude of the ROBOT center of gravity, and would be an acceptable deployment method. Note that this must be done in a safe manner (Rule <S01>) and must be controlled so that it does not damage the field (Rule <G34>).

Re: Dropping ramp

Posted by GDC at 02/15/2007 04:59:30 pm

Please refer to Team Update #11.

It is impossible to answer this question without a complete, detailed inspection of the specific implementation. We must ask you to use your best engineering judgement to assess whether your particular mechanism poses a realistic potential for damage to the field or field equipment. If there is any question, you may want to ask one of the experienced veteran teams in your area to consult with you to help you determine the best course of action.

8.3 Robot Rules

Tape again

Tape again

Posted by FRC1466 at 02/07/2007 03:56:15 pm

I don’t want to belabor this point, but for obvious reasons, our team wants to be clear on the proscriptions involved with adhesive backed traction materials for our platform. We have located “Safety Track” at the Gilmore-Kramer Company. It looks like it might be very similar to the “Antislip Tape” at e.g. McMaster-Carr, but it is not called “tape” anywhere in its name or description. Acceptable?

Re: Tape again

Posted by GDC at 02/08/2007 04:18:29 pm

If the material is not marketed and/or sold as "tape" then for the purposes of Rule <R35> it will not be considered "tape." If you suspect that questions may arise from inspectors regarding the material, we suggest you take any packaging or descriptions that show the material is not "tape" with you to the competition events.

adhesive non-skid abrasive

Posted by FRC2068 at 02/09/2007 08:11:15 am

We would like to use a 3M product called Pres-on-step on our deployable ramp to aid in traction. It is described as a non-skid abrasive film backed with pressure sensitive adhesive.

Would this be permitted?

Re: adhesive non-skid abrasive

Posted by GDC at 02/09/2007 12:01:22 pm

See answer above.

8.3 Robot Rules

36 mm Bane Bot Motors

36 mm Bane Bot Motors

Posted by FRC1828 at 02/07/2007 07:17:01 pm

We received 1 36 mm 64:1 Bane Bot motor in our kit of parts. It is possible to order more motors of the same type, and of different gearings, from the Bane Bots website in their "approved by FIRST" section.

In our group, there has been some confusiong surrounding rule 45 and 46, we would like to know if we are allowed to use more than 1 Bane Bots 36 mm 64:1 and/or 125:1 motor if we order them.

Re: 36 mm Bane Bot Motors

Posted by GDC at 02/08/2007 04:17:32 pm

You are limited to the number and type of motors provided in the Kit Of Parts, plus the specific additions permitted by Rule <R45>. In the case of the BaneBots motors, you were provided with two BaneBots RS540 motors (one of which came with a 64:1 gearhead) in the KOP. You can not use more than two BaneBots RS540 motors on your robot. You may purchase additional RS540 motors to have as spares/replacements. However, they can not be used if the total number of RS540 motors on the robot exceeds two (2).

You may use any gearheads that you like with these motors (or any other KOP motors), as long as they don't violate any other rules.

8.3 Robot Rules

Multiple Spikes and Gear tooth on one Circuit Breaker

Multiple Spikes and Gear tooth on one Circuit Breaker

Posted by FRC190 at 02/07/2007 07:21:02 pm

RE: [url]http://forums.usfirst.org/showthread.php?t=2478[/url], R98 and R96

Is it permissible to connect multiple spike relay modules and the Kit
provided Gear Tooth sensors to the same 20A circuit breaker?

Re: Multiple Spikes and Gear tooth on one Circuit Breaker

Posted by GDC at 02/08/2007 04:16:28 pm

That is not prohibited by the rules. Note that if teams gang multiple devices together on the same breaker, it is the responsibility of the teams to calculate the worst case loads of the circuit and ensure they are not exceeding the capability of the breaker.

8.3 Robot Rules

Use of previously used and discontinued parts

Use of previously used and discontinued parts

Posted by FRC442 at 02/07/2007 07:30:34 pm

If we use a COTS item that was provided in the kit and part of a previous robot used in competition, do we need to add the value to our bill of materials? Are items purchased at a junkyard or parts warehouses considered COTS if they are no longer manufactured?

Re: Use of previously used and discontinued parts

Posted by GDC at 02/08/2007 04:15:49 pm

Provided that the parts are compliant with Rule <R28>:

Please read Section 8.3.4.4 of the manual carefully. Items provided in the 2007 Kit Of Parts should be listed on your robot Bill Of Materials, but would have an assigned cost of $0.00. Items provided in prior-year Kits must be listed and must be assigned the appropriate value (as determined in Section 8.3.4.4). Scrap or salvaged items that are scavenged and used on your robot must be assigned their fair market value, as best you can determine it.

8.3 Robot Rules

blue tooth sensor

blue tooth sensor

Posted by FRC1158 at 02/08/2007 01:57:11 pm

We would like to ask FIRST if we could once again use a blue tooth sensor to check performance and camera use during the practice rounds? We will also be providing other teams access, if permitted, to use our bluetooth to diagnostic their robot with our lab view software/hardware during practice rounds at Phoenix and Denver.

Re: blue tooth sensor

Posted by GDC at 02/08/2007 10:55:57 pm

Rule <R66> specifically prohibits the use of Bluetooth devices to communicate to, from or within the robot. There is no exception to this rule.

8.3 Robot Rules

PWM cables

PWM cables

Posted by FRC383 at 02/08/2007 05:29:23 pm

Is it legal to create custom PWM cables using the commonly available red/orange/brown/black 24 AWG flat cables, or do we have to use the virtually non-existent in Brazil white/red/black flat cables?

Of course, one could always wire the cables with three separate conductors, but using a flat cable helps to attain a neater wiring in the robot.

Best regards,

Team 383
The Brazilian Machine

Re: PWM cables

Posted by GDC at 02/12/2007 04:03:49 pm

There is no prohibition against manufacturing your own PWM cables. You may use either flat

cable or individual conductors.

8.3 Robot Rules

Motor Use Question

Motor Use Question

Posted by FRC1713 at 02/08/2007 05:47:59 pm

Are we allowed to use a KR26 Bosch Motor - 16636815 on our robot?

Team 1713

Re: Motor Use Question

Posted by GDC at 02/09/2007 12:59:19 am

No. Please read Rule <R46>.

8.3 Robot Rules

pneumatic pressure gauges

pneumatic pressure gauges

Posted by FRC425 at 02/09/2007 11:40:53 am

we are hooking up our pneumatics on our robot and on the diagram
inside the pneumatics manual it shows us 3 pressure gauges, yet we only recieved 2 and it shows 2 pressure gauges in the invetory list.
we need the 3 bacause we are donig 2 different air pressures and we need the 3rd at the high air side. is first going to supply this or can we use our own?

Re: pneumatics

Posted by GDC at 02/12/2007 03:58:17 pm

Each team is provided with two pressure gauges in the Kit Of Parts. Under Rule <R105> you may use as many pressure regulators as needed. For the purposes of this rule, pressure gauges used to show the working pressure downstream of a regulator will be considered part of the regulator. So you may use additional gauges to show the pressure in each segment of your pneumatic circuit. If additional gauges are used, the team must obtain them.

8.3 Robot Rules

Pre-2007 FRC batteries in the pits

Pre-2007 FRC batteries in the pits

Posted by FRC1618 at 02/09/2007 01:33:09 pm

Just to be crystal clear, can a team utilize a battery other than the 2007 FRC-legal batteries for pre-charging a pneumatics system before a match, provided a legal battery is swapped in before the robot takes the field? For moving some appendage of the robot into position before a match under similar circumstances?

Re: Pre-2007 FRC batteries in the pits

Posted by GDC at 02/12/2007 07:14:16 pm

Non-competition batteries may be used on the practice day, and in the pits for development, debugging, etc. However, all operations of the robots during the competition matches (qualifier matches and elimination matches), and done to prepare the robot for competition (e.g. charging the pneumatic system for a match, or positioning an arm for the start of a match) must be conducted with the competition batteries.

We allow teams to have an offboard compressor to reduce the weight of the robot. However, control and power must come from the competition robot, and therefor the competition batteries. Per Rule <R46>, you must use competition legal batteries in preparation for a competition match.

8.3 Robot Rules

Accounting For Cost

Accounting For Cost

Posted by FRC1764 at 02/09/2007 01:51:35 pm

We are working on the accounting cost for our robot and we have referenence rule 8.3.4.3 and rule 8.3.4.4, stating

"A team purchases steel bar stock for $10.00 and has it machined by a local machine shop that is a recognized sponsor of the team. The machinists are considered members of the team, so their labor costs do not apply. The total applicable cost for the part would be $10.00."

However, our sponsor has purchased our metal for us and is dontating it to our cause. Will we have to account for this material or is it considered a partner cost and therefore not accounted for as part of our $3500 limit. Thank you.

Team 1764

Re: Accounting For Cost

Posted by GDC at 02/12/2007 03:26:55 pm

The discussions referenced have to do with accounting for labor associated with machining of raw materials into finished parts. But in all cases, the cost of the raw materials must be included in the robot Bill Of Materials. Metal that is purchased by a sponsor and donated to the team must still be accounted for, and the assigned cost would be the original purchase price paid by the team sponsor.

8.3 Robot Rules

Banebot Purchase

Banebot Purchase

Posted by FRC1764 at 02/09/2007 01:58:31 pm

Section 8 limits the number of motors allowed on the robot to those in the kit plus 2 cims and one other. However, we are looking at buying the banebot motor from Banebot.com with a gear ratio of 1:125 instead of the provided 1:64. The motors for each are the same, but with different gear reductions. Would this count as a COT as mentioned in another post, would it be an excess motor and not allowed, or could it be considered the same motor with COT gear reduction. Thank you for your time.

Team 1764

Re: Banebot Purchase

Posted by GDC at 02/12/2007 03:13:39 pm

Using an additional motor not specifically permitted would be a violation of Rule <R46>. However, alternate gearheads may be used on the motors provided in the Kit Of Parts. In this case, you could purchase the BaneBots 125:1 gearhead/motor combination, remove the extra motor, and place the purchased gearhead on the motor provided in the Kit Of Parts.

8.3 Robot Rules

Vacuum-only pneumatics system requirements

Vacuum-only pneumatics system requirements

Posted by FRC931 at 02/09/2007 02:19:41 pm

If a robot's pneumatics system is used only to power the vacuum pump, must it include a manual relief valve and pressure gages as required by <R100>? Must it include a Norgren adjustable pressure regulator as required by <R104>?

Re: Vacuum-only pneumatics system requirements

Posted by GDC at 02/12/2007 04:00:37 pm

The Kit Of Parts compressor and pneumatic system is the only source of pressurized air permitted on the robot. If a vacuum generator is used that requires pressurized air to create the vacuum (e.g. a venturi generator), then it must use the supplied pneumatics components as the source of pressurized air. All the elements of the pneumatic circuit up to the vacuum generator would constitute a pneumatics system, and would be subject to all applicable pneumatics rules. As such, the system must include pressure gauges to display the stored and working pressures, a manual pressure vent valve, and any other applicable hardware.

8.3 Robot Rules

LED Diagnostic Signal

LED Diagnostic Signal

Posted by FRC2037 at 02/09/2007 04:06:15 pm

Reading section 8 of the FRC manual, there is a confusion on the diagnostic signal LED and the indicator lights on the Robot Controller. Are they one in the same or are they two different sets of LED hardware? They are referenced in two different visibility rules as follows:

"<R16> ROBOTS must use the diagnostic signal LED provided in the Kit of Parts. Field personnel will use the LED during the matches for diagnostic purposes. It must be mounted on the ROBOT such that it is easily visible while standing three feet in front of the ROBOT in its' STARTING CONFIGURATION. ..."

"<R68> The Robot Controller must be positioned within the ROBOT so that it's indicator lights can be seen during inspection and when standing three feet in front of the ROBOT while the ROBOT is in the STARTING CONFIGURATION at the beginning of the match ... "

No where in the Kit of Parts did we find a diagnostic signal LED. The only thing close was a Panel Signal Device 12V Light. Is this what you are referring to in Rule 16?

Re: LED Diagnostic Signal

Posted by GDC at 02/12/2007 03:34:03 pm

We apologize for the confusing nomenclature. The diagnostic signal light referenced in Rule <R16> is identified in the Kit Of Parts Checklist as the "Panel Signal Device 12v Light." Rule

<R68> discusses the status indicator lights that are visible on the front panel of the Innovation First Robot Controller (and integral to that controller).

8.3 Robot Rules

Custom Circuits- Can you use a terminal block

Custom Circuits- Can you use a terminal block

Posted by FRC1798 at 02/09/2007 06:19:27 pm

May we use Phoenix brand terminal blocks for the wiring?

Re: Custom Circuits- Can you use a terminal block

Posted by GDC at 02/12/2007 03:23:22 pm

Phoenix brand terminal blocks may be used to organize and structure your power system. However, they may not be used as replacements for the Rockwell Automation Power Distribution Blocks. The may not be used to circumvent the requirements of Rule <R57>.

8.3 Robot Rules

Globe Motor backup

Globe Motor backup

Posted by FRC1736 at 02/09/2007 07:41:42 pm

I know that replacement Globe motors are not available.
Can we use a globe motor from another team as a backup only?
We are worried that if one of the globe motors fails we will not be able to do anything.
Thanks!

Re: Globe Motor backup

Posted by GDC at 02/12/2007 03:35:06 pm

Globe motors that are the same make and model as the ones provided in the Kit Of Parts may be obtained (purchased, traded from other teams, scavanged from prior year Kits, etc) as spare/replacement parts. Note that while spare/replacement motors can be obtained, a maximum of two Globe motors can be used on the robot at any one time.

8.3 Robot Rules

Rockwell Automation Power Distribution Block

Rockwell Automation Power Distribution Block

Posted by FRC522 at 02/10/2007 09:20:12 am

The rules state that nothing may be connected between the main circuit breaker and the fuse pannel(s), except the power distribution block. What we were wondering is if the power distribution block is NECESSARY? or may we connect the main breaker directly to the fuse fuse pannel(s),as we have been allowed to do in the past? thus saving weight

Power Distribution Block

Posted by FRC522 at 02/10/2007 09:47:02 am

Hi,

It is stated that nothing may be connected between the 120A main breaker and the fuse except for the power distribution block. MUST we use the power distribution block , or may we connect the fuse pannel (s) directally to the 120A main breaker?

Re: Power Distribution Block

Posted by GDC at 02/12/2007 03:22:43 pm

Please review Rule <R57> carefully. The power distribution block must be directly connected to the APP connector and main 120-amp circuit breaker. All circuit breaker distribution panels must be connected directly to the power distribution block. Use of the power distribution blocks is not optional.

8.3 Robot Rules

40A maxi fuse block

40A maxi fuse block

Posted by FRC522 at 02/10/2007 09:44:05 am

Hi

provided we are using only 2 of the 4 spaces of the Maxi Fuse block, may we remove the 2 extra terminals, as they simply add weight?

Re: 40A maxi fuse block

Posted by GDC at 02/12/2007 03:15:42 pm

Yes.

8.3 Robot Rules

pneumatic cylinders

pneumatic cylinders

Posted by FRC522 at 02/10/2007 09:44:55 am

It is stated that we may remove the pin from the pneumatic cylinders, may we remove the tab from the rear of the cylinder as well , or must this remain?

Re: pneumatic cylinders

Posted by GDC at 02/12/2007 04:03:18 pm

The mounting pin at the rear of the cylinder may be removed. But as specified in Rule <R99>, you can not make any other modifications to the cylinder. Removing the mounting tab at the rear of the cylinder would be a violation of the fourth bullet of this rule.

8.3 Robot Rules

Slip Rings

Slip Rings

Posted by FRC1511 at 02/10/2007 07:26:34 pm

Can We Use Slip Rings In 2007?

Re: Slip Rings

Posted by GDC at 02/12/2007 03:53:46 pm

The is no general-case prohibition against slip rings. As long as the particular model of slip ring satisfies the constraints in the 2007 Parts Use Flowchart and the parts constraints in Section 8.3, they are permissible.

8.3 Robot Rules

Power distribution block connections

Power distribution block connections

Posted by FRC2023 at 02/10/2007 10:24:36 pm

Is it ok to have multiple ground connections on a single terminal block as long as the current rating of the terminal block isn't exceeded? According to the specs, they are rated at 85A.

Specifically, we have four 40A and one 30A returns but only have four terminal blocks and haven't been able to get any more.

Re: Power distribution block connections

Posted by GDC at 02/12/2007 03:21:45 pm

Yes, this is permitted. Electrically, this is the same thing that happens when return lines from the circuit breaker panels are combined on the panel, and the brought as a single connection from the breaker panel to the power distribution block.

Note that additional power distribution block modules are available from Rockwell Automation distributors. You may use blocks of any color, not just red and black.

8.3 Robot Rules

OI/RC use during fixit window

OI/RC use during fixit window

Posted by FRC418 at 02/12/2007 08:15:02 am

Is it permissible to use a previous year's OI and RC to develop/test software for our control system during our FIX-IT windows each week after the first regional has completed?

Re: OI/RC use during fixit window

Posted by GDC at 02/12/2007 03:12:41 pm

Yes. You may use any resources at your disposal to develop/test software during the Fix-It windows.

8.3 Robot Rules

COTS Charger

COTS Charger

Posted by FRC418 at 02/12/2007 08:16:40 am

Is it permissible to use a COTS 7.2v NiCad charger if the COTS 7.2v NiCad battery being used does not have the same connector as the charger provided for the 7.2v battery included in the kit? The reason I ask is because the 7.2v NiCad batteries I purchased include a 4-hour 7.2v charger with an appropriate connector for the battery. If I must use the 7.2v charger in the KOP and only the 7.2v charger included in the KOP then I must create an adaptor for my 7.2v NiCad battery so that I may charge both adaptor types, but I assume we may purchase additional chargers in case we would like to have multiple batteries charging at once?

Re: COTS Charger

Posted by GDC at 02/12/2007 03:09:43 pm

Under Rule <R56>, the 7.2v back-up battery must be charged with the charger provided in the 2007 Kit Of Parts, or via the primary battery and the IFI-defined charger circuit. No other charging options are permitted.

Re: COTS Charger

Posted by GDC at 02/21/2007 02:14:17 am

Please note: This answer has been superceded by [url="http://forums.usfirst.org/showthread.php?t=4925"]this one[/url]. The use of alternate back-up battery chargers, including those supplied as KOP items in 2006, is permitted.

Please see Team Update #13 for more information.

8.3 Robot Rules

Sensor Quantities

Sensor Quantities

Posted by FRC228 at 02/12/2007 12:17:05 pm

Are teams limited to the quantities of KOP sensors that came in the kit? 2 encoders, 1 gyro, 1 acceleromter, or can we use additional KOP sensors?

Re: Sensor Quantities

Posted by GDC at 02/12/2007 03:12:02 pm

You may obtain and use additional sensors, as long as they conform to the 2007 Parts Use Flowchart and the Additional Materials Use rules in Section 8.3 of the manual.

8.3 Robot Rules

Maxi Fuse Block

Maxi Fuse Block

Posted by FRC229 at 02/12/2007 03:42:08 pm

Regarding the kit Maxi Fuse Block,

For mounting purposes are we allowed to drill holes in the corners of the peice (just the clear plastic), or are we only allowed the holes provided in the center?

-Alex

Re: Maxi Fuse Block

Posted by GDC at 02/12/2007 04:38:38 pm

Yes, you may add mounting holes to the corners of the plastic base of the Maxi Fuse Block. However, please exercise extreme caution in doing so, to ensure that any inserted fasteners can not contact any of the fuse block conductors.

8.3 Robot Rules

Power distribution terminal strip wiring

Power distribution terminal strip wiring

Posted by FRC1018 at 02/13/2007 01:19:40 pm

Please clarify:

The Rockwell power distribution system is designed for wires to be attached on either side of the distribution blocks. Is it permissible to route power leads from either side of the blocks, or must we use only one side as illustrated on the 2007 Robot Power Distribution Diagram?

Re: Power distribution terminal strip wiring

Posted by GDC at 02/15/2007 03:33:16 pm

You can route wires to either or both screw connectors on the individual power distribution blocks.

8.3 Robot Rules

Radio Modems

Radio Modems

Posted by FRC1552 at 02/13/2007 02:17:14 pm

Our radio modems have the same issue as other radio modems & have been sent back to IFI at their request. What are we supposed to do if they are not back prior to our ship date?

URGENT!!! Bad Microcontroller

Posted by FRC1472 at 02/15/2007 12:21:33 pm

Our microcontroller will not communicate with our ifi downloader; preventing us from downloading our program from the computer. The ifi downloader doesn't even recognize that the microcontroller is attached. We have troubleshooted by successfully downloading our program to an older FRC microcontroller. It may be possible the microcontroller was defective from the start.

We have talked with Andrea Winegar from first who directed us to Innovation First and to post out question on this site. We have talked with Tom from Innovation First as well.Tom says that we need to send them the microcontroller and they will determine whether the board is defective or not. We can send the microcontroller, but we will not have it back in time before ship-off.

I understand the deadline to send the robot is February 20th, but the state of Louisiana considers the 19th and 20th holidays so we are not in school. We have been able to get an employee to open the school in order to ship the robot for Monday, but no one for Tuesday. Saying this, we have the following concerns:

1. Can we send the robot with the old microcontroller? Will we get disqualified?
2. Or, do we have to send the robot without a microcontroller? Would we be able to get a microcontroller at competition in order to compete?
3. What other options do we have?

Re: Radio Modems

Posted by GDC at 02/15/2007 04:10:21 pm

If you ship control system components for repair to Innovation First and you do not receive them back in time for the robot ship date, you are permitted to bring them with you to your first event. Future shipments of your robot must include these parts.

8.3 Robot Rules

Power Distribution block

Power Distribution block

Posted by FRC522 at 02/13/2007 03:20:17 pm

The Power Distribution Diagram, shows the neutrals being connected to the power distribution block. In the past we have connected them to the neutral bus on the Fuse Panel. May we do this again? or must we connect them to the Rockwell Automation distribution block ? And also

to that end, must we mount all of the bays of the power distribution block?

Re: Power Distribution block

Posted by GDC at 02/15/2007 03:28:32 pm

As answered in [URL=http://forums.usfirst.org/showthread.php?t=4394]this question[/URL] on February 12, yes, combining the return lines on the circuit breaker panel and running a single line to the power distribution block is permitted.

As answered in [URL=http://forums.usfirst.org/showthread.php?t=1755]this question[/URL] on January 22, unused red and black terminal blocks of the power distribution block may be omitted as long as Rule <R57> is followed.

8.3 Robot Rules

<R56> and Previous Year's Chargers

<R56> and Previous Year's Chargers

Posted by FRC498 at 02/13/2007 03:22:26 pm

Yesterday the GDC gave this answer to a question regarding the use of COTS chargers for the 7.2v back-up battery:

"Under Rule <R56>, the 7.2v back-up battery must be charged with the charger provided in the 2007 Kit Of Parts, or via the primary battery and the IFI-defined charger circuit. No other charging options are permitted."

Also, <R56> states "When off the ROBOT, the battery is to be charged with the provided 7.2V backup battery charger."

Our team has two questions regarding back-up batteries:
1. Since they were not included in the 2007 kit, would previous year's back-up battery chargers be illegal for charging the 2007 back-up battery?
2. COTS 7.2V NiCad batteries (and previous year's back-up batteries) are allowed under <R73>. Must they also be charged with ONLY the 2007 charger, or may additional chargers be used for these batteries?

Thank you!

Re: <R56> and Previous Year's Chargers

Posted by GDC at 02/15/2007 03:30:37 pm

Yes, battery chargers from prior years would be illegal for charging the 2007 back-up battery.

Yes, the back-up battery (either the one supplied, or a permitted COTS back-up battery) must be charged with ONLY the 2007 charger or IFI-defined charger circuit, as specified in Rule <R56>.

Re: <R56> and Previous Year's Chargers

Posted by GDC at 02/21/2007 02:11:25 am

Please note: This answer has been superceded by [url="http://forums.usfirst.org/showthread.php?t=4925"]this one[/url]. The use of alternate back-up battery chargers, including those supplied as KOP items in 2006, is permitted.

Please see Team Update #13 for more information.

8.3 Robot Rules

MAXI FUSE pannel

MAXI FUSE pannel

Posted by FRC522 at 02/13/2007 03:25:46 pm

Providing we are using only 2 of the posistions of the maxi fuse block, May we cut away the plastic of the unused part? As well, may we trim the bus bar of the maxi fuse block, if we are not using the entire thing provided we do not leave terminals uninsualted.

Re: MAXI FUSE pannel

Posted by GDC at 02/19/2007 04:47:09 pm

As long as this modification is done safely and is not a violation of Rule <S01>, this is permitted.

8.3 Robot Rules

Robot Checklist

Robot Checklist

Posted by FRC25 at 02/13/2007 05:11:14 pm

In the Mechanical systems section, I believe you ought to correct the following error:

Specifically Prohibited Mechanical Parts: refer to...the playing field (including balls)

I believe by balls you meant tubes.

Re: Robot Checklist

Posted by GDC at 02/15/2007 04:03:17 pm

Thank you for identifying this error. The checklist will be updated.

8.3 Robot Rules

Help

Help

Posted by FRC2029 at 02/14/2007 11:15:35 am

How does the robot know when to start it's functions? Is the robot supposed start when an audio signal is set of, or is it a light signal at the begining at the match?

Re: Help

Posted by GDC at 02/15/2007 03:53:50 pm

The robot will get its instructions from the Arena controllers via the Radios. Please refer to Team Update 12 and the IFI programming documentation available on their website for more detail.

8.3 Robot Rules

EduBot 2004 RC as a co-processor only?

EduBot 2004 RC as a co-processor only?

Posted by FRC571 at 02/14/2007 03:16:19 pm

Our team would like to know if running an Edubot 2004 RC as a co-processor off the serial/ttl port of the 2007 FRC RC to offload camera/sensor data calculations is allowed?

We have scrubbed the rules and believe it complies with all rules: additional electronics parts, COTS item availability and cost ($249), etc. The EduBot RC would not have any other connections other than dc power and a serial/ttl link, no outputs would be connected.

Please advise. Thank you.

Re: EduBot 2004 RC as a co-processor only?

Posted by GDC at 02/15/2007 03:25:42 pm

Use of an EduBot RC as a custom co-processor would be allowed if, and only if, it is done in compliance with all applicable rules in Section 8.3 of the manual. In particular, this would fall into the Custom Circuit catagory, and would be closely examined for full compliance with the custom circuit rules. All components of the circuit would have to comply with the cost limitations. The circuit would have to be powerd solely by the primary 12v battery on the robot. No additional batteries would be permitted.

8.3 Robot Rules

When is a motor a motor?

When is a motor a motor?

Posted by FRC930 at 02/14/2007 05:30:43 pm

In order to more gently lower our lifting platforms, one of our engineers developed a neat system but we're not sure of it's legality.

We would like to use a modified, old fisher price motor and gearbox to act as a dynamic brake.

This device would not be powered in any way. It would not even be connected to the electrical or control system of the robot. In other words, we are not using it as a motor, though it was designed as such.

Would we be allowed to do this?

Re: When is a motor a motor?

Posted by GDC at 02/15/2007 03:15:50 pm

Rule <R46> specifically prohibits the use of any motors different from or in addition to those provided in the Kit Of Parts (with the exceptions detailed in <R45>). There is no allowance for motors that are not powered or connected to the control system. So this system would not be permitted.

8.3 Robot Rules

Victor 884 Speed controller connected to two window motors

Victor 884 Speed controller connected to two window motors

Posted by FRC562 at 02/14/2007 05:44:48 pm

Is it permisible to connect two window motors to one Victor 884 speed controller? I have read the following:

<R91> Each motor, actuator, and compressor must be connected to one, and only one, speed controller or relay module

But on page 22 of the 2007 FIRST Guidelines, Tips, & Good Practices Manual (G.6.3.1) it states :

In some cases, more than one low current small motor (window/Mabuchi) or actuator may be optionally connected to a single speed controller.

I need to know because if <R91> prevails, we will have to add another speed controller before we ship.

Re: Victor 884 Speed controller connected to two window motors

Posted by GDC at 02/15/2007 03:14:52 pm

Connecting multiple motors to a single speed controller is not recommended, but is permitted. Per Rule <R91>, you may connect more than one motor to a speed controller, but not more than one speed controller to a motor.

8.3 Robot Rules

USB camera

USB camera

Posted by FRC70 at 02/14/2007 06:54:00 pm

We are using a USB camera connected to a custom circuit in our robot. There seems to be no power connection to the camera, only a standard USB cable. Do we have to open up the camera and some how connect it to the pwm outputs on the controller or is it ok not to open it up?

Re: USB camera

Posted by GDC at 02/15/2007 03:21:45 pm

The USB connection includes power/ground leads that provide power to the camera in addition to the signal lines. The use of this type of connection is dependent upon how it is connected to the robot. If the USB power leads are connected to a custom circuit, then this would be a violation of Rule <R61>. If the USB power leads are connected directly to a legal power source (e.g. to a breaker-protected branch circuit from the main power system), then this would be permitted.

8.3 Robot Rules

<R15> -Flying Flags

<R15> -Flying Flags

Posted by FRC57 at 02/14/2007 08:18:24 pm

Our robot has a permanently extending appendage that will spend the entire match as the tallest part of our robot. In keeping with R15, we are mounting our flag holder to it so the flag will always be above our robot. Unfortunately, our appendage is powered by stretched surgical tubing and extends rapidly enough that we are concerned that the flag will simply fly upwards out of a regulation flag holder.

The question: Are we allowed to put a piece of rubber, rubber band, or other simple device on top of our flag holder to help restrain the flag? Or are we required to heavily re-engineer our appendage and/or create a flag elevator to ensure our robot doesn't launch flags out of our flag holder?

Re: <R15> -Flying Flags

Posted by GDC at 02/15/2007 03:17:09 pm

If the appendage is moving so quickly that it would throw the flag out of the holder, it may constitute a safety concern and/or violation of Rule <S01>. Although a definitive assessment can not be made without a direct examination of your implementation, you may receive a very detailed scrutiny from the competition inspectors. To avoid any problems, we would urge that you consider if there is any way to slow and/or control the movement of your appendage so that this does not become an issue.

In direct answer to your question, no modifications to the provided design of the flag holder are permitted.

8.3 Robot Rules

Is burn wire considered safe?

Is burn wire considered safe?

Posted by FRC121 at 02/14/2007 09:30:52 pm

Would burn wire, a small guage wire that disenegrates when current is applied to it be allowed? A few inches would be used for the sole purpose of ramp release and would be replaced each match. The part passes the flow chart as long as it is considered safe.

Re: Is burn wire considered safe?

Posted by GDC at 02/15/2007 03:48:45 pm

Per Rule <R85> if this wire is not copper, it is not permitted.

If it is copper wire, it is impossible to answer this question without a complete, detailed inspection of the specific implementation. We must ask you to use your best engineering judgement to assess whether your particular application poses a realistic potential for damage to the field or field equipment. If there is any question, you may want to ask one of the experienced veteran teams in your area to consult with you to help you determine the best course of action.

8.3 Robot Rules

Storing Air in a cylinder

Storing Air in a cylinder

Posted by FRC997 at 02/15/2007 03:40:09 pm

(same question asked on 2/14, please ignore this one if the answer is in the works.)

As per rules <R104> and <R105> it would appear that unlimited cylinders can be added that have no function besides to hold air, as long as they are located downstream from a 60psi regulator (they are not pressurized to 115psi) and are listed in the Pneumatics Components order form.

What is the official take on this, and if not legal, why not?

thanks for all your efforts.

Team 997

Re: Storing Air in a cylinder

Posted by GDC at 02/15/2007 04:39:26 pm

Rule <R02> limits your compressed air storage at the beginning of the match to a maximum of four Clippard storage tanks. Per Rule <R105>, if you choose to use cylinders to store compressed air after the start of the match, that would be permitted.

8.3 Robot Rules

Bumpers during end game

Bumpers during end game

Posted by FRC1501 at 02/15/2007 08:21:12 pm

<R37> permits the bumpers to go below the bumper zone during the end game in the home zone. Can the bumpers be lifted as part of the chassis above the allowable bumper zone during the end game in the home zone?

Re: Bumpers during end game

Posted by GDC at 02/19/2007 04:04:25 pm

If the bumpers are attached to a mechanism that lifts them above the Bumper Zone, then they are in violation of the Rule <R37> constraints. The bumpers would thus be considered Custom Bumpers, and would not enjoy the benefits of Standard Bumpers.

8.3 Robot Rules

Is a servo a motor?

Is a servo a motor?

Posted by FRC330 at 02/15/2007 08:47:53 pm

<R91> seems to imply that servos are not motors, because they don't have to be driven by a speed controller or spike. Is that interpretation correct?

Re: Is a servo a motor?

Posted by GDC at 02/19/2007 04:02:34 pm

Servos are considered motors. However, Rules <R69> and <R91> do not apply to servos, as the provided speed controllers and relay modules are incapable of controlling servos.

8.3 Robot Rules

Item #5 on inspection list

Item #5 on inspection list

Posted by GDC at 02/15/2007 09:53:21 pm

[I]Originally posted by FRC47...[/I]

Please define "Rigid Assembly".

The entire robot is a "Rigid Assembly" and therefore illegal as most of us will spend more than $400.00 total on the machine. You use the example of ie only useful together. Why would

anyone use an assembly that was not useful with the other components?

Re: Item #5 on inspection list

Posted by GDC at 02/15/2007 09:53:36 pm

Please see the updated Inspection Checklist, Revision C.

8.3 Robot Rules

limit switch

limit switch

Posted by FRC1158 at 02/16/2007 10:10:56 am

Are we able to place a limit switch between the the victor 884 and the motor?

Re: limit switch

Posted by GDC at 02/19/2007 04:03:42 pm

Any switch placed in-line between a Speed Controller and motor would be a custom circuit (as the switch was not provided in the Kit Of Parts). Under Rule <R63>, custom circuits are not permitted to alter the power pathways between the speed controllers and motors. Thus, this circuit would be a violation of the rule.

8.3 Robot Rules

Controlling servos (conflict in Q/A responses)

Controlling servos (conflict in Q/A responses)

Posted by FRC330 at 02/16/2007 11:48:09 am

The following Q/A response says that you may only control servos with the IFI controller: [url]http://forums.usfirst.org/showthread.php?t=1747[/url] while this thread says you can control them with a COTS camera: [url]http://forums.usfirst.org/showthread.php?t=1936[/url]

Re: Controlling servos (conflict in Q/A responses)

Posted by GDC at 02/19/2007 05:03:32 pm

Thank you for pointing out this discrepancy.

Servos must be controlled by the IFI Robot Controller. The only exception is a COTS camera that controls pan and tilt of the camera itself (the camera provided in the Kit of Parts does not have this capability).

8.3 Robot Rules

Storing Air follow up

Storing Air follow up

Posted by FRC997 at 02/16/2007 12:24:31 pm

We are using Pneumatics and this question will decide if we leave the compressor on board or not, so it may be important.

By rule <101>"The compressor may be mounted on the ROBOT, or it may be left off the ROBOT and used to pre-charge compressed air in the storage tanks prior to bringing the ROBOT onto the playing field. "

This means that if the system is pre-charged. I.E. that down stream of the 60psi regulator your cylinders will be at 60psi (some of ours are further regulated down to 10 lbs) at the most. This

is done to hold our cylinders in until a lift platfom is deployed (This air being expelled when platforms are raised).

Further, when your system is pre-charged, using the SMC 3/2 valves one side of your cylinder is always under pressure from this pre-charged compressed air (Say 60psi), it is unavoidable.

If the valve controlling that cylinder is never actuated, the contents of that cylinder will help offset pressure drop of other actuated cylinders, if say only 30 psi is necessary to operate your system.

Combining <R101> and <R103> and <R104> it would appear that this is a legal strategy if you wanted to remove the compressor and needed a bit more air.

At this point our team is not contemplating this strategy (this could change based on your answer), but we know of several teams WHO ARE, and may show up at regionals doing just this.

The arguments on our team are if this IS legal, and if not why not according to the rules and how will it be detected by the judges at a regional?

Maybe an update is necessary to clarify this probable situation.

your consideration is appreciated
(Wouldn't want to have your job)

thanks

Re: Storing Air follow up

Posted by GDC at 02/20/2007 02:52:36 am

Please refer to Rule <R102>. Only the Clippard tanks can be used to store pressurized air. Extraneous cylinders that are intended for only storage of prssurized air, and will not be used otherwise are the functional equivalent of extraneous tubing, which is prohibited.

8.3 Robot Rules

Use of VEX Pneumatic Cylinder

Use of VEX Pneumatic Cylinder

Posted by FRC1885 at 02/16/2007 01:37:41 pm

Can we use the VEX Pneumatic Cylinder in a way similiar to a gas shock, it has no connection to a pneumatic system and it has a flow control valve on it (movement dampening system)

.....on the 2007 FRC robot?

Re: Use of VEX Pneumatic Cylinder

Posted by GDC at 02/19/2007 04:01:04 pm

No. Rule <R106> specifically permits only closed-loop gas shock devices (i.e. unmodiifed COTS items marketed and sold as gas shocks). VEX cylinders would not fall into this catagory, and so would be prohibited under <R105>.

8.3 Robot Rules

<R38> Big CIM end plate modification

<R38> Big CIM end plate modification

Posted by FRC1533 at 02/16/2007 04:40:02 pm

Would it be permissible, instead of drilling into the existing end plate of the big CIM motor, to fabricate a replacement end plate? The replacement plate would not provide a weight advantage and would be safer than a modified one, so it would seem to comply with the intent of <R38>.

Re: <R38> Big CIM end plate modification

Posted by GDC at 02/19/2007 04:40:47 pm

The manufacturing of a new end plate would be in violation of Rule <R38> and would therefore not be permitted.

8.3 Robot Rules

size limitations (again)

size limitations (again)

Posted by FRC1828 at 02/16/2007 05:45:07 pm

Alright, this is going to seem like a fairly stupid question. Our robotic arm is pretty long. It needs to be in order to reach the top leg of the rack. There is the possibility of extending past the 72 inch depth limit, but it is possible to maneuver/rotate it without doing so.

If a part has the ability to extend past size limitations, but will NEVER be used to do so, will we still be in jeopardy of being penalized?

Re: size limitations (again)

Posted by GDC at 02/19/2007 04:06:10 pm

If a part has been designed to extend outside the virtual 72 inch x 72 inch box, then it always has the potential to do so. It will be watched carefully by the referees during the course of the match. If it extends outside the virtual box, then it will be penalized as specified in Rules <R12> and <G41-A>.

8.3 Robot Rules

Solenoid Wires

Solenoid Wires

Posted by FRC229 at 02/16/2007 06:08:46 pm

The solenoid wires that come in the solenoids are a gauge too small according to the FIRST regulations. Are we supposed to retrofit these? If so, how?

Re: Solenoid Wires

Posted by GDC at 02/19/2007 04:08:24 pm

Connecting wires pre-integrated into devices by the manufacturer do not have to be retrofit. However, any feeder wires connected to these conductors must be of the appropriate gauge as required by the FRC rules.

8.3 Robot Rules

Diagnostic Signal Light does not do anything

Diagnostic Signal Light does not do anything

Posted by FRC2192 at 02/17/2007 03:32:03 pm

We wired up the diagnostic signal light according to the diagrams in the manual, but it does not appear to do anything. What is normal operation of the signal light - what should it be doing? We have double checked all of our connections, are there any likely causes of it not working?

Thanks,
Team 2192

Re: Diagnostic Signal Light does not do anything

Posted by GDC at 02/19/2007 04:37:29 pm

Please be sure that you're using the circuit diagram provided with the official FIRST documents (2007_ROBOT_SIGNAL_LIGHT_R1.pdf).

If you are using the correct drawing, please check the part number of your solid state relay and refer to Team Update #9.

8.3 Robot Rules

<R46> - Why?

<R46> - Why?

Posted by FRC1248 at 02/17/2007 07:05:06 pm

Our team has misread rule R46, and we've placed an Electronic Solenoid Actuator on our robot to act as the medium for releasing a ramp for other robots to then climb.

After re-reading R46, it's come to our attention that we can't do that. The section of the guidebook (and the checklist) containing this rule are sorely lacking in explanation, and thus we've become confused.

Why can't we use electronic solenoid actuators; what's the reason?

Thank you.

Re: <R46> - Why?

Posted by GDC at 02/19/2007 04:29:35 pm

As clearly stated in Rule <R46>, electronic solenoid actuators are not permitted. If an electronic solenoid is on the robot, it must be removed before the start of the competition.

If there are particular concerns regarding the purpose or implementation of any of the rules, we respectfully request that you provide that feedback at the Team Forums during the summer. That will provide adequate opportunity to assess the impact of any and all of the rules over the entire competition season, and will enable you to determine if their is a significant impact to the FIRST experience as a whole.

8.3 Robot Rules

Pneumatic Modification

Pneumatic Modification

Posted by FRC229 at 02/17/2007 10:25:10 pm

Are modifications of a pneumatic's clevis allowed?

Re: Pneumatic Modification

Posted by GDC at 02/19/2007 03:59:51 pm

The clevis that comes with pneumatic cylinders is an optional fitting, and not an integral part of the cylinder. It may be modifed to suit your purposes, as long as the modifications do not cause a violation of any of the rules.

8.3 Robot Rules

custom bumpers

custom bumpers

Posted by FRC1373 at 02/18/2007 12:44:19 pm

Hi

I am curious what defines a custom bumper. My team is in the process of building our bumpers and we noticed that they conflict with a function of our robot. I was wondering if using only one pool noodle in the bumper or not using bumpers on the entire length of the robot wound be considered 'custom'

Thank you

Re: custom bumpers

Posted by GDC at 02/19/2007 03:59:17 pm

Standard bumpers must be constructed according to the design specified in Rule <R37>. Standard Bumpers do not have to surround the entire perimeter of the ROBOT, and may be segmented into lengths shorter than the side of the robot. Constructing the bumpers with only one pool noodle would be inconsistent with the specified plan, and would be a custom design. All other parameters in Rule <R37> must be met.

8.3 Robot Rules

vacuum created with no pressure

vacuum created with no pressure

Posted by FRC1011 at 02/19/2007 04:39:34 pm

We want to use a bimba cylinder to manually create a vacuum pre-game by pulling the piston out. The vacuum will be stored only in the piston itself and later released using one of the kit part pneumatic solenoids. There will be no pressurized air anywhere. My reading of the rules leads me to believe that under these conditions we do not need any of the required pneumatic components (regulator, gauges, etc). Can you confirm?

Re: vacuum created with no pressure

Posted by GDC at 02/22/2007 03:27:48 pm

Under Rule <R105>, this type of vacuum-generating mechanism would be permitted, and would not be considered part of a pneumatic device. Based on that, the design would not need to include a regulator, pressure gauge, etc in the vacuum-based portion of the system.

8.3 Robot Rules

Bumper indentation?

Bumper indentation?

Posted by FRC971 at 02/19/2007 08:05:40 pm

Can we bore a small indentation in the back of the plywood for a bumper so that it will fit neatly over the head of a bolt or shaft that protrudes from the frame of the robot and still have it count as a standard bumper?

Re: Bumper indentation?

Posted by GDC at 02/22/2007 03:26:36 pm

Yes, this would be permitted as long as there is no protrusion past the plywood.

8.3 Robot Rules

R103 - Nason Pressure Switch

R103 - Nason Pressure Switch

Posted by GDC at 02/19/2007 08:45:16 pm

[I]Originally posted by FRC1612: [/I]

We require clarification regarding rule R103; If we are using an off-robot compresser must we still use the Nason Pressure Switcher on the robot itself?

Re: R103 - Nason Pressure Switch

Posted by GDC at 02/19/2007 08:45:58 pm

Under Rule <R103> the Nason Pressure Switch must be included in the pneumatic system and used to control the compressor to ensure that they system is not over-pressurized. Rule <R101> permits the compressor (and parts that must be directly connected to the compressor, like the pressure relief valve) to be moved off-board, but not any other parts of the pneumatic system. If the compressor is kept off-board the robot, the pressure switch must be kept in the on-board portion of the pneumatic system.

8.3 Robot Rules

Location of Operator Control board

Location of Operator Control board

Posted by FRC418 at 02/20/2007 11:14:24 am

Under Rule <R78>, are we allowed to have any part of the OI start the match extended past the 12" shelf?

Re: Location of Operator Control board

Posted by GDC at 02/22/2007 03:08:45 pm

The intent of Rule <R78> is that the Operator Console must be supported solely by the console shelf, not require attachment to any other portion of the Alliance Station, not intrude into your Alliance Partners' Player Stations, and not extend so far into the Alliance Zone that it offers a competitive advantage when taking the controls at the start of the Teleoperated Period (e.g. putting the controls so close to the Players Line that the team does not have to use any time to step forward and grab the controls). Controls that extend an inch or two past the shelf would be fine. Controls that extend three feet past the shelf and across the Players Line would not be permitted.

8.3 Robot Rules

Robot Size

Robot Size

Posted by FRC1450 at 02/20/2007 12:49:23 pm

once the game has begun and a robot enters its playing configuration, does the 72"x72" maximum footprint include an "arm" that may reach beyond the 72"s?

Re: Robot Size

Posted by GDC at 02/20/2007 08:16:23 pm

Please refer to the answers previously provided in [url="http://forums.usfirst.org/showthread.php?t=1718"]this thread[/url] and [url="http://forums.usfirst.org/showthread.php?t=4988"]this thread[/url] and [url="http://forums.usfirst.org/showthread.php?t=2858"]this thread[/url] and [url="http://forums.usfirst.org/showthread.php?t=2033"]this thread[/url] and [url="http://forums.usfirst.org/showthread.php?t=1121"]this thread[/url].

8.3 Robot Rules

Ship items vs. fix it window

Ship items vs. fix it window

Posted by FRC2028 at 02/22/2007 02:40:24 pm

First, forgive my misunderstanding if anything, I'm a rookie teacher.

We had a last minute problem and I kept one part of our robot out of the shipping crate. I thought I could "fix it" during the two 5-hour fix it windows. We had the rest of the robot in the crate ready to go.

I've called my mentor team's Main Contact and they were uncertain if what I'm doing is legal or not. That team's Captain and another team member were here at the time that the Fed Ex truck came. I explained our dilema and they witnessed the shipment of the crate and the robot part left out of the crate. We haven't worked on it yet in any way.

I just called our state FIRST director, and she was also uncertain what to do. She called FIRST "organization" and they told her I was OK, but not sure what I do with the part after the two 5-hour "fix-it" window periods.

Are we allowed to work on this part now during the two 5-hour "fix-it" window periods? And what do we do with it after this?

Re: Ship items vs. fix it window

Posted by GDC at 02/26/2007 04:27:45 pm

The answer is dependent upon the item in question. All items that are part of the "baseline" robot (i.e. an item that is expected to be on the robot during match play, and intended to be present as part of the robot design) are to be packed in the crate with the robot, and out of the hands of the team by the shipment deadline. The only parts that you may use at the competition are those packed in the crate with the robot, those manufactured on-site at the event, COTS items, any spare/replacement parts legally fabricated during the first Fix-It Window, and any spare/replacement/upgrade parts legally fabricated during the other Fix-It Window (as limited in Rule <R31>).

If the item is an unmodified COTS part, then under Rule <R30> you may bring it with you to the competition and use it on your robot. If the item is a Spare Part or Replacement part for

one of the elements of the robot, then you may bring it with your to the competition and use it on your robot (within the total limit on the amount of Spare/Replacement parts allowed under Rule <R31>). If the item is a Fabricated Part built or customized by the team intended for the "baseline" robot configuration, then it may only be used if it has been fabricated during one of the permitted periods outlined above. Otherwise, the item may not be brought to the competition and may not be used on the robot.

8.3 Robot Rules

Additional work on spare parts

Additional work on spare parts

Posted by FRC1033 at 02/26/2007 09:53:21 am

Are we allowed to work on any spare parts after we have shipped the robot, such as allowing a machine shop to reduce weight on a replacement gear?

Re: Additional work on spare parts

Posted by GDC at 02/26/2007 03:19:04 pm

Please refer to Section 8.3.3 of the manual for a complete, precise description of when you are permitted to work on Spare Parts, Replacement Parts, and Upgrade Parts.

8.3 Robot Rules

Electrical - fuse block

Electrical - fuse block

Posted by FRC600 at 02/26/2007 10:54:00 am

We have the lead from the Anderson connector connected directly to the maxi fuse block. The secondary fuse block runs from the opposite side of the maxi block. The Anderson connector is bolted to the frame of the robot close enough to the maxi block that negated the need for us to have additional connections though the terminal blocks. We do use the blocks for a negative buss, just not a positive. Does using the pass through capability of the maxi fuse block constitute an intermediate connection?

Electrical Question

Posted by FRC600 at 02/26/2007 11:27:02 am

We have the lead from the 120 amp breaker connected directly to the maxi fuse block. The secondary fuse block runs from the opposite side of the maxi block. We do use the terminal blocks for a negative buss, just not a positive. Does using the pass through capability of the maxi fuse block constitute an intermediate connection?

Re: Electrical - fuse block

Posted by GDC at 02/26/2007 04:51:01 pm

As you have described it, the installed electrical configuration is illegal. Under the terms of Rule <R57>, the power routing from the battery MUST be connected as shown in the 2007 Power Distribution Diagram. The Anderson connector MUST be connected to the Rockwell Power Distribution Blocks and the 120 amp main breaker - it can not be directly connected to the Maxi fuse block(s). The 120 amp main breaker MUST be connected to the Rockwell Power Distribution Blocks - it can not be directly connected to the Maxi fuse block(s).

9.3 Qualification Matches

9.3 Qualification Matches

Seeding

Seeding

Posted by FRC1722 at 02/13/2007 01:13:34 am

Does the tier supersede the ranking? Do you add the your qualifying score to your ranking score to get your total score to find your seed? Are all teams with the highest qualifying score if that is the same score seeded higher than the other teams? I've read 9.3.10 and its not clear to me. Thank you.

Re: Seeding

Posted by GDC at 02/15/2007 03:36:49 pm

Please read 9.3 carefully. Teams are first placed into tiers using their qualifying scores; then each tier is ranked according to its ranking score.

9.6 Tournament Rules

9.6 Tournament Rules

Laptops/PDAs in the Alliance Zone

Laptops/PDAs in the Alliance Zone

Posted by FRC8 at 01/10/2007 11:16:59 pm

<R79> Teams are permitted to connect a portable computing device (Laptop computer, PDAs, etc.)to the RS232 Output of the dashboard port of the Operator Interface for the purpose of displaying feedback from the ROBOT while participating in competition matches. Please note that AC power will not be available at the playing field so these devices will have to run on internal batteries.

The above is the only reference to laptops and similar devices being on the field with teams. Our team is in the process of designing a program that will help a coach keep track of the rack and make strategy decisions in real time. However due to this ruling, we aren't sure if we could actually bring that out with the coach on the field.

Is the team member marked as the coach allowed to have a computer/laptop with him? What about a different device that in some ways acts like one? (e.g. if we design and build some gameboy-like device to assist the strategy decision making.) Could you please clarify everything a coach can and can't have with him on the field?

Thanks,
Guy Davidson,
[email]gudyav2002@yahoo.com[/email]

Coach's strategy aides

Posted by FRC1002 at 01/11/2007 07:40:35 pm

The rules state that the only laptop use by a team on the field is for use with the dashboard from the controller.
Is the team coach allowed to create a device that is battery powered and uses only switches and leds to track the placement of the tubes on the rack? The device would have no computational or communication capabilities.

Jeff Rosen Team 1002 [email]jeffrey.rosen@cobbk12.org[/email]

Writing Utensils/White Boards Behind Player's Station

Posted by FRC25 at 01/11/2007 09:11:14 pm

May the Coach/Human Player use a white board or other writing implement & media (non-electronic) for the purposes of scouting & keeping track of score?

Neil Parikh
[email]neilparikh@gmail.com[/email]

Clarification on <T23>

Posted by FRC8 at 01/11/2007 11:00:04 pm

<T23> The only equipment that may be brought on to the field is the OPERATOR CONSOLE, reasonable decorative items, and special clothing and/or equipment required due to a disability. Other items, particularly those intended to provide a competitive advantage for the HUMAN PLAYER, are prohibited.

The video shown during Kickoff clearly shows the coach or human player having a clipboard in his hands. According to T23, this seems like it should fall under "other items." Will clipboards and dry-erase markers be allowed? Or was there some mistake in the animation?

Thanks,
Guy Davidson,
[email]guydav2002@yahoo.com[/email]

Re: Laptops/PDAs in the Alliance Zone

Posted by GDC at 01/17/2007 12:00:18 am

Please refer to Rule <T23> as amended in Update #3.

9.6 Tournament Rules

Communications

Communications

Posted by FRC1922 at 01/22/2007 12:20:11 pm

Am I to assume the Section 9 <T23> Update 3 only refers to electronic communications.

Re: Communications

Posted by GDC at 01/22/2007 05:03:59 pm

This is not a correct interpretation. <T23> refers to all types of communication.

9.6 Tournament Rules

Rule <T16>

Rule <T16>

Posted by FRC1188 at 01/23/2007 11:26:21 am

<T16> says the higher seeded alliance will be allowed to adjust robot starting position last. How does this rule apply during qualification matches?

Re: Rule <T16>

Posted by GDC at 01/25/2007 04:17:12 pm

ALLIANCES are only seeded during elimination matches, thus <T16> does not apply to qualification matches.

10.1 The Kit Of Parts

10.1 The Kit Of Parts

KOP FP motor/s

KOP FP motor/s

Posted by pmm at 01/10/2007 12:34:13 pm

We received two Fisher Price motors in our kit, as did all the teams I have spoken to. The checklist only lists one. Did FP donate one or two? Are we allowed to use two FP motors that we received in this years KOPs?

Re: KOP FP motor/s

Posted by GDC at 01/11/2007 04:18:06 pm

Each team should have received two Fisher-Price motors. This is addressed in Team Update #1.

10.1 The Kit Of Parts

Radio Modem Antenna - Rubber or Metal?

Radio Modem Antenna - Rubber or Metal?

Posted by FRC753 at 01/10/2007 01:57:47 pm

According to the Kit of Parts checklist the radio modem for the robot controller is supposed to have a rubber antenna. The radio modem we received has a metal antenna as does the picture in the checklist. Which is correct?

Re: Radio Modem Antenna - Rubber or Metal?

Posted by GDC at 01/11/2007 04:49:49 pm

The wording on the Checklist is an error and will be revised. The 2007 radio modem has a metal antenna.

10.1 The Kit Of Parts

need help in finding items

need help in finding items

Posted by avishai at 01/11/2007 08:18:01 am

Hi guys,
we need help with finding the next items to make an order:
from the "checklist-KITBOT
Transmission Angle Bracket PN kitbot-bbmnt-angle
Transmission hardware kit PN frc-kitbot-bb-hdwr
Transmission supoprt plate, bottom PN kitbot-bbmnt-bot
Transmission supoprt plate, top metal plate PN kitbot-bbmnt-top

Thanks you very much!

2211 group.

Re: need help in finding items

Posted by GDC at 01/11/2007 08:19:51 pm

All of the Kitbot and E-kit components can be purchased through Innovation First, Inc. Please refer to their website, [url]www.ifirobotics.com[/url]

10.1 The Kit Of Parts

2007 Tips and Guidlines or KOP

2007 Tips and Guidlines or KOP

Posted by FRC1722 at 01/12/2007 12:17:04 pm

On page 35 of the Tips and Guidelines manual it is indicated that a Parker cylinder is supplied in the KOP. My KOP manual does not have this item nor is it in my KOP. Is the TIPS and Guidlines in error?

Re: 2007 Tips and Guidlines or KOP

Posted by GDC at 01/16/2007 11:55:41 pm

The Parker Cylinder is not in the 2007 Kit of Parts. The Tips, Guidelines, and Good Practices will be updated.

10.1 The Kit Of Parts

Banebot Gearbox part number

Banebot Gearbox part number

Posted by FRC173 at 01/14/2007 04:22:49 pm

On Page 1 of the Blue tote Kit-of-Parts checklist it lists the part number for the Banebots gearbox as MP-06364-545. I could not find that part at the Banebots website.
Is MP-36064-545 the correct part number, which would be this ([url]http://www.banebots.com/pc/MP-36XXX-545/MP-36064-545[/url]) gearbox?

Re: Banebot Gearbox part number

Posted by GDC at 01/20/2007 04:25:42 pm

The correct part number for the BaneBots gear motor is MP-36064-540. The KOP Checklist has been updated to Rev D and incorporates this edit.

10.1 The Kit Of Parts

Kit of Parts Sprockets and Vendors

Drive Sprocket

Posted by FRC1722 at 01/15/2007 11:34:34 am

We would like to convert 4-wheel drive and need additional spockets. The kit of parts does not indicte the vendor or part# for the KOP sprockets. Where can I get them. I also cannot find the key to put the sprocket on the transmission shaft. Is that included? What size is it? Thank you.

Kit of Parts Vendors

Posted by FRC1693 at 01/15/2007 07:20:01 pm

What are the part numbers, and where can we order, the Output Sprocket 15 Tooth and the Wheel Sprocket 24 Tooth in the Kit of parts?

Sprocket Identification

Posted by FRC1980 at 01/15/2007 10:38:14 pm

Can you identify the part numbers and supplier of the Kitbot supplied transmission sprockets and wheel sprockets?

24 tooth wheel sprocket

Posted by FRC1842 at 01/16/2007 11:09:56 pm

We are trying to find extras of the 24 tooth wheel sprocket that came in the kit. As far as I can tell, it is not available from FIRST, IFI, or AndyMark. (IFI does have a similar sprocket, but it has no spacer) Does it actually exist somewhere that we can buy?

Motor shaft sprockets

Posted by FRC1722 at 01/17/2007 12:47:46 pm

We are looking for additional motor drive sprockets for the Banebots KOP transmission to go 4-wheel drive. Banebots does not have this. Can you tell me the vendor for this item?

Additional Wheel Sprockets

Posted by FRC2103 at 01/17/2007 08:09:45 pm

Q:
we wish to purchase additional wheel sprockets that were supplied in the KOP:

Wheel sprocket, 24 tooth
Blue Tote 2
Drive train bag #35, 1.25” bore, 1/4” hub, #10 mntg
holes in a 1.875” D circle

Can you please provide the Vendor and Part Number P/N?
Thank You
Team 2103

Re: Additional Wheel Sprockets

Posted by GDC at 01/20/2007 05:44:07 pm

15-tooth and 24-tooth #35 roller chain sprockets are available from a number of sources. Check in the motion control section of your preferred industrial supply catalog. Depending on the exact source, some parts may require minor additional machining (broaching keyways, enlarging bores, etc.) to fit the particular configuration of your robot. Altenately, you may want to check with some nearby teams and see if they will be using these parts. Many teams choose not to use the Kit Of Parts-supplied drive system, and may have them as spares (note that if you do obtain them from another team, they still must be fully accounted for the in Robot Bill Of Materials).

10.1 The Kit Of Parts

SMC Pneumatics

SMC Pneumatics

Posted by FRC1598 at 01/15/2007 07:34:53 pm

When should teams expect to receive the "SMC Pneumatics Bag" ?

Concerning the pnuematics bag

Posted by FRC842 at 01/18/2007 07:19:11 pm

Do you know when teams are going to get the pneumatics bag? And what is in the bag?

SMC pneumatics

Posted by FRC1983 at 01/18/2007 09:01:18 pm

When can we expect to receive the additional pneumatic parts that were not included in the

KOP? I can only assume that they contain the valves and additional pneumatic solenoids.. thank you

Pneumatics Kit

Posted by FRC1699 at 01/19/2007 09:48:12 am

I'm looking to see when we can expect the 2007 Pneumatics Kit. We haven't recieved it yet and I was looking to find an expected date of arrival. Any help in this situation would be greatly appreciated, since our pneumatics person is getting a little ancy.

Re: SMC Pneumatics

Posted by GDC at 01/19/2007 12:30:40 pm

SMC will be shipping out their donated products (a combination of fittings and solenoid valves) to you on Monday, January 22.

We apologize for the delay and appreciate your patience. SMC has been a dedicated and valuable supporter of FIRST and we're very grateful for their continued support.

10.1 The Kit Of Parts

Fisher Price motor 9003 vs 9012

Fisher Price motor 9003 vs 9012

Posted by FRC175 at 01/16/2007 11:57:56 am

The F-P motors that we received in our kit have the 9003 part number on them. They are black not white as shonw in the kit of parts check list. Did FIRST run out of the 9012 and substituted these or is this an error. Can we use the 9003.

Re: Fisher Price motor 9003 vs 9012

Posted by GDC at 01/25/2007 03:08:15 pm

It appears that a small number of teams may have received the -9003 FisherPrice motor instead of the -9012. If your motor is labeled with the -9003 part number, please contact [email]FRCparts@usfirst.org[/email] and we will work to get you a replacement.

10.1 The Kit Of Parts

output gear on Keyang window motor

output gear on Keyang window motor

Posted by FRC175 at 01/16/2007 12:01:01 pm

Can you provide information for the output gear on the Keyang window motor. Pitch, pressure angle, is it metric, etc.

Re: output gear on Keyang window motor

Posted by GDC at 01/25/2007 07:38:57 pm

The manufacturer did not supply FIRST with this information.

10.1 The Kit Of Parts

Batteries

Batteries

Posted by FRC188 at 01/19/2007 08:04:22 am

As per the Q&A the GDC has said that we must follow the Update #3 to determine if our batteries are legal. We must use batteries the same as those provided in the KOP. The issue

arises when the manufacturer says that the same part number has 17 and 18 amp/hour and that there is no difference. During inspection will we be checked on the part number or the rating of the batteries? We want to comply with the rules so could you inform us on how to make sure that the supplier will ship the right batteries as they are supposedly the same to them?

Re: Batteries

Posted by GDC at 01/22/2007 03:48:54 pm

Batteries will be inspected by part number, not by rating or serial number. The battery provided in the Kit Of Part is part number ES17-12, and any MK Battery battery labeled with the "ES17-12" part number is legal.

10.1 The Kit Of Parts

Pistons

Pistons

Posted by FRC562 at 01/19/2007 11:25:55 am

Team 562 was wondering if we were going to be getting pistons for the robot.Were we supposed to get the pistons in the kit or order them seperately.

Re: Pistons

Posted by GDC at 01/20/2007 04:27:27 pm

There were no cylinders placed in the kit this year.

BIMBA Manufacturing is again offering pneumatic cylinders to teams for no charge. Teams have the option of ordering three cylinders or two cylinders and a rotary actuator. These items must be ordered from the Bimba website ([url]www.bimba.com[/url]) or via the Custom Cylinder Order Form in the back of the Pneumatics Manual. This document is available at [url]http://www.usfirst.org/community/frc/content.aspx?id=4054[/url].

10.1 The Kit Of Parts

Replacement of back up battery

Replacement of back up battery

Posted by FRC1887 at 01/19/2007 12:34:37 pm

Our back up battery doesn't hold a charge, and we were wondering if there is anyway to get a replacement. The problem is that it is after the deadline and we have already used our form to submit reqest for new parts. What should we do?

Re: Replacement of back up battery

Posted by GDC at 01/20/2007 04:30:10 pm

Unless replacement parts are requested through TIMS by the due date, FIRST will not replace damaged parts.

Under Rule <R73> you may obtain a replacement back-up battery from any COTS battery source.

10.1 The Kit Of Parts

Transmission performance and quality issue

Transmission performance and quality issue

Posted by FRC1178 at 01/22/2007 06:01:36 pm

One of the two transmissions provided with the KOP is not performing like the other, (KOP part # GP-56012). We are concerned because it is bogging down and appears to have metal filings in it after 2 hours of normal test driving. We are wondering if other teams are having a similar problem? Is there a special grease we should be using? Is this part under a waranty? What should be done to ensure quality performance from this part?

Re: Transmission performance and quality issue

Posted by GDC at 01/29/2007 05:42:47 pm

Please refer to Team Update #6.

10.1 The Kit Of Parts

Output Shaft Keystock

Output Shaft Keystock

Posted by FRC116 at 01/23/2007 04:39:12 pm

We cannot locate the two shaft keys to connect the sprockets to the output shaft of the CIM motors Were these included in the Kit Of Parts or do we need to obtain them ourselves this year (no problem either way, we just want to know if we missed something)? Were any other keys/keystock included that we should be looking for?

Re: Output Shaft Keystock

Posted by GDC at 01/23/2007 04:40:14 pm

The only keys that come in the kit are the keys that mate the motor shaft to the transmission pinion (2mm keystock x 0.730" length). These keys are located in the hardware bag packed in the Banebots box (it is pictured next to the transmission on the checklist). All other keys must be procured by the team at a local hardware store.

10.1 The Kit Of Parts

connector for Nippon-denso motors

connector for Nippon-denso motors

Posted by FRC484 at 01/27/2007 01:45:50 pm

Where can we get the appropriate or acceptable connector for the Nippon-Denso window motor? Motors are on the Innovation First site but not the connectors.

Beatle Ben

Nippon Denso Motor Connector

Posted by FRC178 at 01/29/2007 06:30:44 pm

We need extra nippon denso motor connectors. Innovation FIRST says they don't have them available. Where should we purchase this part?

Re: Nippon Denso Motor Connector

Posted by GDC at 01/30/2007 10:34:07 am

These are not available, but you're welcome to solicit other teams for use as spares.

10.1 The Kit Of Parts

Hydraulic tanks

Hydraulic tanks

Posted by FRC2222 at 01/27/2007 08:46:27 pm

Where does the Team Mentor need to go in order to request the air tanks for use in the Competition?

Thanks!

Re: Hydraulic tanks

Posted by GDC at 01/29/2007 03:46:43 pm

Two of the tanks were made available in the Kit of Parts (in the Red Tote). Additional tanks can be purchased from any Clippard Instruments distributor or from [url]http://www.ifirobotics.com/first-store.shtml[/url] (where they are called "Clippard Cylinders"). Remember that per <R45> up to four, and no more, Clippard air storage tanks can be used on the ROBOT. Also, note that these are pneumatic (air) storage tanks, not hydraulic (fluid) tanks. Hydraulic systems are not permitted on your robot.

This information can be found in the FIRST Guidelines, Tips, and Good Practices document posted on the FIRST website: [url]http://www.usfirst.org/community/frc/content.aspx?id=4054[/url]

10.1 The Kit Of Parts

Keyang Motor

Keyang Motor

Posted by FRC1124 at 01/28/2007 08:41:03 pm

How may our team purchase spare Keyang motors? how may our team purchase the 'adapter' which is in the KOP for the Keyang motor?

Re: Keyang Motor

Posted by GDC at 01/29/2007 05:38:32 pm

Spare Keyang motors and the couplers are not available.

10.1 The Kit Of Parts

Lead screw specs?

Lead screw specs?

Posted by FRC223 at 01/29/2007 12:59:20 pm

Is there a possiblity that anyone could provide our team with the specs for the lead screw that was provided in the Kit of Parts?

Thank you,
Team 223

Re: Lead screw specs?

Posted by GDC at 01/29/2007 08:56:18 pm

The specifications for Kerk Motion Product's 8050 series, 13" lead screw are at the following url:
[url]http://www.kerkmotion.com/products/lead-screw/lead-screw-sizelist/inches/8000series.asp[/url]

Click on the following url for the nut's specification:

[url]http://www.kerkmotion.com/products/lead-screw/bz.asp[/url]

10.1 The Kit Of Parts

Current rating on the power distribution block

Current rating on the power distribution block

Posted by FRC291 at 01/29/2007 03:22:26 pm

What is the current rating for the Center Jumpers on the Power Distribution Block Assembly? It would seem that the connection to the Maxi Style Circuit Breaker Panel should be connected to the same block segment as the input from the 120A Hi-Amp Circuit Breaker. As it is shown in the Drawing (E07-101), the jumper could be carrying nearly120 amps (or more). The jumper seems to have a much smaller cross section than each of the individual block terminal strips.

Re: Current rating on the power distribution block

Posted by GDC at 02/08/2007 11:39:57 pm

The center jumper is rated for 85 amps continuous.

The manufacturer has assured us that the performance ratings for the device are sufficient for use in FIRST applications.

10.1 The Kit Of Parts

Fisher Price motor and Gearbox part number

Fisher Price motor and Gearbox part number

Posted by FRC330 at 01/29/2007 05:23:50 pm

Our local Power Wheels Service Center says that the PN provided for the Fisher Price motor and gear box is not a valid Power Wheel's Part Number. The PN in the KOP Checklist RevD is 00968-9012.

Is there another source for the motors or is there a different part number that should be used when ordering from a Service Center?

Re: Fisher Price motor and Gearbox part number

Posted by GDC at 02/05/2007 03:19:49 pm

Please see Team Update #8. You can find a list of authorized Mattel/Fisher-Price service centers here: [url]http://service.mattel.com/us/powerwheels_info.asp[/url]

10.1 The Kit Of Parts

gear tooth sensors and circuit boards

wheel counter sensors

Posted by FRC1158 at 01/31/2007 11:25:52 pm

Where can we purchase additional wheel count sensors? Can we use previous years light sensors?

Re: wheel counter sensors

Posted by GDC at 02/01/2007 03:23:16 pm

Shaft encoders are available from any of a number of electronics product supply sources (e.g. DigiKey, Akrobotics, Sick, BaneBots, Allen-Bradley, Newark, BEI, etc.).

Light sensors used on prior FRC competition robots may be re-used, as long as they conform to ALL of the requirements of Rule <R28> as amended in Team Update #2.

10.1 The Kit Of Parts

Sources for Globe Motor

Sources for Globe Motor

Posted by FRC111 at 02/01/2007 03:12:40 pm

After contacting various local distributors for Globe Motors (found on the suggested [url]www.globemotors.com[/url] website), we have found that we can not purchase the globe motor, part number 409A587, as it is a proprietary motor used exclusively by the automotive industry.

Is there a different source available for purchasing this motor? Is there an agreement between FIRST and Globe that we can reference in order to gain approval to purchase these motors?

Re: Sources for Globe Motor

Posted by GDC at 02/01/2007 05:01:18 pm

Spare Globe motors are not available.

10.1 The Kit Of Parts

Sources for gear tooth sensors

Sources for gear tooth sensors

Posted by FRC116 at 02/02/2007 02:11:00 pm

In regard to the gear tooth sensors/boards provided in the Kit Of Parts, are teams limited to just the ones we received in the KOP? If not, will additional ones be made available and can you help identify any sources? We have located a source for the specific ATS642LSH sensor chip, but would like to obtain the curcuit board (and ideally, the full sensor/board assembly). This used to be provided by IFI and was available for purchase by teams, but they indicate they are not the source this year.

Re: Sources for gear tooth sensors

Posted by GDC at 02/02/2007 04:37:47 pm

Additional kit gear tooth sensors are not available, however there are commercial gear tooth sensors available from a number of electronic supply houses.

10.1 The Kit Of Parts

Signal Light Solid State Relay Issue

Signal Light Solid State Relay Issue

Posted by FRC1712 at 02/02/2007 06:30:10 pm

While FRC1712 did receive the solid state relay in the kit of parts, we have been unable to get the signal light to work. After careful study of wiring diagrams, attempts with old robots, and a new pwm cable, we discovered a subtle issue with the part number.

The kit of parts checklist lists 700-SKOC2Z25 as the relay part number.
The relay I'm holding has a part number of 700-SKOZ2Z25 (Notice the difference between "C" and "Z". The part we have looks and fits exactly the same way, but checking the Rockwell website, both parts are listed here:

[url]http://www.ra.rockwell.com/en/epub/catalogs/12768/229240/229266/229641/229677/print.html[/url]

...and it looks like the specs are different enough that the light will not work with the product I have. Will my team be responsible for paying for/procuring the correct part? We're also concerned that this could affect other teams as well.

Re: Signal Light Solid State Relay Issue

Posted by GDC at 02/05/2007 04:24:13 pm

Please refer to Team Update #9.

10.1 The Kit Of Parts

gear tooth sensors/boards

gear tooth sensors/boards

Posted by FRC1158 at 02/03/2007 12:46:03 pm

I am really concerned about the availability of the gear tooth sensors/boards for this years competition. Last year we had a robot fall on us and broke one of our auonomous gear tooth sensors. If we would not have purchased a spare from IFI, our autonomous would have been lost. Are there going to be spares at the regionals?

Re: gear tooth sensors/boards

Posted by GDC at 02/03/2007 11:30:55 pm

The gear tooth sensors provided in the Kit Of Parts are a limited-supply item. Additional KOP gear tooth sensors are not available. However, there are commercial gear tooth sensors that provide similar functionality that are available from a number of electronic supply houses.

10.1 The Kit Of Parts

keyang motors

keyang motors

Posted by FRC1158 at 02/03/2007 12:47:26 pm

At the regional competitions will there be replacement motors if one goes bad or is damaged?

Re: keyang motors

Posted by GDC at 02/05/2007 03:30:43 pm

FIRST can not guarantee that supplies of spare motors (or any other parts) will be available at any of the competition events. In general, it is the responsibility of the teams to obtain any spare/replacement parts that they may need during the competitions, and bring them to competition events if necessary.

10.1 The Kit Of Parts

BaneBots 12:1 Planetary Gearbox

BaneBots 12:1 Planetary Gearbox

Posted by FRC41 at 02/03/2007 06:19:38 pm

We have found that the chrome on the inside of the gearbox housing is flaking off causing binding in the transmission. This has happened with gear boxes that were shipped via air freight from another team. We suspect the gearboxes are temeperature sensitive, and this flaking may make the transmission seize. This would render the drivetrain inoperable.

Please let us know if FIRST has a solution for this problem (removing the chrome, etc.)

Re: BaneBots 12:1 Planetary Gearbox

Posted by GDC at 02/08/2007 04:57:28 pm

It is possible that you may be seeing residue from the manufacturing process. If, after cleaning the inside of the transmission, the problem persists, we recommend you contact BaneBots AND [email]FRCParts@usfirst.org[/email].

10.1 The Kit Of Parts

Fisher Price Motors

Fisher Price Motors

Posted by FRC151 at 02/06/2007 01:57:14 pm

The Team needs to understand this better. The Team was shipped 2 Fisher Price Motors, both 9003. Can we still use them? Will they harm the robot if we use them? i.e. are they 6V motors? Do they pose a safety hazard? Do they have more or less torque than the 9012? We would still like to use the motors as shipped in our KOP, is this possible?

Thanks,

Re: Fisher Price Motors

Posted by GDC at 02/08/2007 04:49:34 pm

If you received the -9003 motors in your kit, then we sent you the wrong parts. You may refer to Team Update #??. Please contact [email]FRCParts@usfirst.org[/email], and we will send you the correct -9012 motors.

You may use the -9003 motors, but not in during the Competition matches.
The -9003 motors are 12VDC motors and will not harm your robot if used correctly.
The -9003 motors do not pose a safety hazard.
The -9003 and -9012 motor specifications are similar, however the -9012 has a thermal fuse and will shut the motor down if it gets to hot. The -9003 will allow you to run it until it dies.
You must use the -9012 motors for all Competition matches.

10.1 The Kit Of Parts

1665 festo valve kits

1665 festo valve kits

Posted by FRC1665 at 02/06/2007 07:06:26 pm

How do we order these? Having trouble ordering online can't find website. Festo valve kit part# 13026684

Re: 1665 festo valve kits

Posted by GDC at 02/08/2007 11:03:00 pm

Check the [url=http://www.festo.com/INetDomino/us/en/44e19dbfe14c5bf6c1256c8b004fc634.htm]FIRST Competition Page[/url] on the [url=http://www.festo.com/]Festo Web Site[/url].

10.1 The Kit Of Parts

Solenoid valves

Solenoid valves

Posted by FRC810 at 02/09/2007 04:41:20 pm

The separate pneumatics kit we recieved in the mail says it comes with 12vdc solenoid valves, but ours are 24. Where can we order the correct ones?

Re: Soledoid valves

Posted by GDC at 02/12/2007 08:49:08 pm

In your pneumatics kit you should have received a small bag of five 12vdc solenoids. The 24vdc solenoids mounted on the valve bodies must be swapped out with the 12vdc versions. The 24vdc solenoids, if left on the valves, may not work predictably with the 12vdc power system on your robot.

This information was documented in the "SMC Pneumatics Kit Content List" e-mail blast sent out to all teams on January 25, 2007. However, we realize that not all teams may have seen this important note. To make sure teams know they have to swap out the solenoids, this information will be included in the next Team Update.

10.1 The Kit Of Parts

Replacement for LED

Replacement for LED

Posted by FRC1015 at 02/10/2007 10:14:56 pm

Hi,

We've lost our LED signal light. Where can we buy a replacement?

Thanks,
Team 1015

Re: Replacement for LED

Posted by GDC at 02/12/2007 07:35:34 pm

Please refer to Section G.4 of the 2007 Guidelines, Tips, and Good Practices document.

10.1 The Kit Of Parts

Labview description incorrect in KOP checklist

Labview description incorrect in KOP checklist

Posted by FRC330 at 02/14/2007 10:34:49 am

The description of Labview in the KOP Checklist (Rev E) says student edition. However, the Full Development Edition was supplied.

Re: Labview description incorrect in KOP checklist

Posted by GDC at 02/15/2007 04:05:15 pm

Thank you for noticing the upgrade. The Checklist will be updated.

10.1 The Kit Of Parts

Backup battery charger (off-robot) and <R56>

Backup battery charger (off-robot) and <R56>

Posted by FRC330 at 02/14/2007 03:53:25 pm

The backup battery charger in the kit does not seem to be a very good charger. After leaving the new kit battery plugged into the supplied charger overnight, we found that the backup

battery was warm and that it no longer held a good charge. There is at least one other team that has reported this same thing on the chiefdelphi forums.

It seems the charger has no trickle charge or even a way to shut it off (and no visual feedback so that it can be unplugged manually). With that in mind, it does not seem safe to mandate the use of the supplied charger as in <R56>. Batteries can get to be quite "explosive" when abused. The charger from IFI that was provided in years past seems to be a much safer alternate.

On the other hand, if our battery charger is just defective and it is supposed to shut off, where can we purchase a replacement charger so that we can be in compliance with <R53>.

Alternate Back-up Battery and charger

Posted by FRC1676 at 02/20/2007 11:51:15 am

As per <R73> we are using a non-KOP 7.2V NiCd back-up battery. <R56> states that when charging off the robot, the battery is to be charged with the provided 7.2V charger. However, the provided charger is less suitable for charging our non-KOP battery than the COTS charger offered by the non-KOP supplier.

May we use the COTS charger offered by the non-KOP battery supplier to charge the back-up bettery off the robot?

Thank you.

Re: Alternate Back-up Battery and charger

Posted by GDC at 02/21/2007 02:05:57 am

Thank you for identifying this issue.

Rule <R56> has been updated to permit the use of alternate backup battery chargers.

Please refer to Update 13 for more information about the rule update.

10.1 The Kit Of Parts

O I question

Oiu

Posted by FRC600 at 02/26/2007 10:55:55 am

As we completed our robot in the 11th hour we found out that we had a problem with one of our KOP's. Apparently we have a short in our Operator Interface Unit (ROBOT-O1). We have trouble sending radio signals to the Robot Interface Unit. It appears to have a short because sometimes it would work and other times it would not.

What do I need to do to get a replacement before our competition?

Re: Oiu

Posted by GDC at 02/26/2007 03:16:45 pm

Please contact Innovation First, Inc. (903-453-0800) immediately to determine if you have a faulty unit, and coordinate a possible part swap at your first competition event.