Section 4 - At the Events

Section 4 - At the Events

Wi-Fi at Regional Competition Venues

Wi-Fi at Regional Competition Venues

Posted by 2011FRC0061 at 02/02/2011 04:12:46 pm

We are interested in creating a scouting system with laptops connected wirelessly to a database server and information kiosk in our team pit. In years past wifi has been completely restricted, but the robots run on 802.11N, our scouting system will run on 802.11G, an entirely different standard. Our question is would this be allowed? It has not been mentioned in any of this season's documents nor in regional-specific communications.

Re: Wi-Fi at Regional Competition Venues

Posted by fmerrick at 02/21/2011 05:10:36 pm

This would not be allowed. See Team Update #11.

Re: Wi-Fi at Regional Competition Venues

Posted by FRCOPS at 02/24/2011 12:01:42 pm

This would not be allowed. See Team Update #11.

Section 4 - At the Events

Admin Manual, Robot Transportation Section

Admin Manual, Robot Transportation Section

Posted by 2011FRC2537 at 02/14/2011 09:12:18 am

Bill's Blog stated that FIRST has arranged for Wed drop-off for all bag-and-tag events. When can we expect to see details on the access schedule and allowed Wed activities?

–

We are attending the DC regional which is one of those events. We are also attending the Chesapeake regional the week before (traditional shipping event) and are arranging transport between these two events. Essentially, we are sharing a truck with several other teams in the same situation. Coordination is not simple; so the sooner you can share details the better off we will be.

–

Thanks,

–

Team 2537

Re: Admin Manual, Robot Transportation Section

Posted by FRCOPS at 02/24/2011 11:16:10 am

Please refer to your event specific agenda for Wednesday drop off times. You can find agendas here: [url]http://usfirst.org/roboticsprograms/frc/regionalevents.aspx?id=430[/url] by clicking on the name of your event(s).

Section 5 - Robot Transportation

Section 5 - Robot Transportation

Robot Access Periods

Robot Access Periods

Posted by 2011FRC1983 at 01/20/2011 02:39:26 pm

In Section 4.2 Robot Access Periods are mentioned.

Are these period ONLY allowed for Michigan teams or do they apply to ANY Bag and Tag event team?

Are teams that are bag and tag teams that are not competing during the early regionals allowed to work on their robots during the hours of the early regionals? (and then rebag their robot?)

thank you

Re: Robot Access Periods

Posted by FRCOPS at 01/31/2011 12:14:11 pm

Thanks for your question. If you are attending a bag and tag event, you must "lock up" your robot on Robot Ship Day (February 22, 2011), and you cannot work/touch/remove your robot from the bag until you arrive at your event.

Section 5 - Robot Transportation

Robot Access Periods

Robot Access Periods

Posted by 2011FRC1983 at 01/20/2011 02:47:25 pm

In section 4.2 Robot Access Periods are discussed.
Is this section only for Michigan teams? (as they are the only 2 day regionals at this point..)

Are other bag and tag teams allowed to utilize the robot access period?

Are teams allowed to access their robot during regional dates that they are not attending regionals? (Same hours as regional?)

Are Michigan (2 day regional) teams allowed to use their robot access period during a week in which they are not competing in a regional?

thank you

Re: Robot Access Periods

Posted by FRCOPS at 02/14/2011 03:43:33 pm

Thanks for your questions. You must be referring to Section 4.2 in the "[URL="http://www.usfirst.org/uploadedFiles/Robotics_Programs/FRC/Game_and_Season__Info/2011_Assets/Attending%20a%20Bag%20and%20Tag%20Regional%20-%20READ%20THIS.pdf"]Attending a Bag and Tag[/URL]" document.

While this Section is applicable to any team that is attending a 2-day event, it just so happens that only Michigan teams have 2-day events this year. Only teams attending a 2-day events (this year: Michigan teams ONLY) can utilize the robot access period.

In accordance with the rules outlined in this section, teams can only utilize the robot access period during the 7 day period preceding their event. Teams have 6 hours allotted to them, and these hours can be broken up however the team wishes. The robot MUST be locked up in between sessions, and this needs to be documents accordingly on the Robot Lock Up form.

Section 5 - Robot Transportation

Robot Transport

Robot Transport

Posted by 2011FRC2506 at 02/05/2011 02:58:23 pm

We will be attending a bag n tag event for regional #2. IF we qualify for championship, do we have to ship our robot directly from the competition, OR can we take it home and ship it from there? Obviously we will have to make arrangements to take our crate with us if so.

Re: Robot Transport

Posted by FRCOPS at 02/14/2011 04:48:52 pm

Thanks for your question. As a rule, there is NO SHIPPING available at Bag and Tag events, so your team would be expected to bag your robot at the end of that event and bring it home. After that, you would need to construct a crate, place your bagged robot inside that crate and ship it to Championship. If you do qualify for Championship at your Bag and Tag event, be sure to ask an Event Coordinator or a Pit Admin representative for your donated FedEx Bill of Lading (if you didn't already use your allotted two shipments at a previous event). Remember-- all teams get a free shipment home from Championship.

Section 5 - Robot Transportation

Secure Robot for Shipping in BAGnTAG Bag

Secure Robot for Shipping in BAGnTAG Bag

Posted by 2011FRC2642 at 02/06/2011 09:50:37 pm

Our first event is a Bag and tag event.
Our next event is a tradional event. After the first event, we'll have to secure our robot in the crate. Normally, we bolt the robot to the floor of the crate, but this is tough through the bag. Can we push bolts through the bag to secure the frame to the crate? I know that they want the bag undamaged, but we want to make sure the robot survives shipping.

Re: Secure Robot for Shipping in BAGnTAG Bag

Posted by fmerrick at 02/21/2011 05:19:22 pm

Small holes through the bag to facilitate securing the robot will not be an issue. Inspectors are trained to look for larger holes/slits through which robot work could be done while the robot is still in the bag. Just be prepared to explain those small holes to the inspectors if they ask.

Re: Secure Robot for Shipping in BAGnTAG Bag

Posted by FRCOPS at 02/24/2011 12:05:47 pm

Small holes through the bag to facilitate securing the robot will not be an issue. Inspectors are trained to look for larger holes/slits through which robot work could be done while the robot is

still in the bag. Just be prepared to explain those small holes to the inspectors if they ask.

Section 5 - Robot Transportation

Bag & Tag Question

Bag & Tag Question

Posted by 2011FRC0470 at 02/09/2011 04:06:53 pm

We are a Michigan team attending Bag & Tag events. We do not currently have access to a vehicle capable of transporting (the volume of) a fully assembled robot. To address this, our robot is designed to be disassembled into two sub-assemblies to facilitate transportation. Our thought was to bag the two assemblies in separate bags, each with a security tag, and transport the robot in two vehicles. Would this be permitted?

Thank You,
Team 470

Re: Bag & Tag Question

Posted by FRCOPS at 02/24/2011 11:07:49 am

We have received several requests to allow teams to use more than one bag to secure their robot and mechanisms. After careful consideration, we have decided we will allow teams to do this. We strongly encourage teams to use a single bag if possible, however, if you feel you need to use a second bag for ease of transportation or other reasons, you may do so. The second bag also must, of course, be secured with a security seal, and be logged on your Robot Lock-Up Form. It would be best to list both bags on a single Lock-Up form to make tracking easier.

Section 5 - Robot Transportation

Shipping crate lumber

Shipping crate lumber

Posted by 2011FRC2052 at 02/12/2011 03:36:53 pm

The Shipping Crate Construction document states
"All crates MUST:
1. Weigh less than 400 pounds when fully loaded.
2."Sit" on 2 pieces of 4" x 4" lumber, spaced at least 28" apart so it can be moved by a forklift."

Q1: Is it permissible to subsitute two stacked and secured 2" x 4" pieces of lumber in place of one 4" x 4"? The only readily available 4" x 4" lumber is treated wood, which is much heavier than the untreated version. The two treated 4" x 4" pieces would constitute a disproportionate amount of the allowed weight of the crate and make the sturdy construction of the remainder of the crate more difficult.

Q2: Is it also permissible to run an additional piece of lumber (2" x 4") across the center of the bottom of the crate, to prevent sag of the crate floor?

Thank you!

Re: Shipping crate lumber

Posted by fmerrick at 02/21/2011 05:17:15 pm

Q1: This is fine.
Q2: Forklifts need clear space between the 4" x 4" (or stacked 2" x 4" lumber) to be able to pick up the crate. If you run a piece of lumber across the center perpendicular to the 4" x 4" lumber you are running the risk that a forklift driver will have trouble moving your crate.

Re: Shipping crate lumber

Posted by FRCOPS at 02/24/2011 12:04:01 pm

Q1: This is fine.
Q2: Forklifts need clear space between the 4" x 4" (or stacked 2" x 4" lumber) to be able to pick up the crate. If you run a piece of lumber across the center perpendicular to the 4" x 4" lumber you are running the risk that a forklift driver will have trouble moving your crate.

Section 6 - The Awards

Section 6 - The Awards

Dean's List Nominations

Dean's List Nominations

Posted by 2011FRC0100 at 01/13/2011 04:07:39 pm

Section 6.6.2 Submissions in the Awards Manual states:
Each FRC mentor is invited to select up to two (2) students (may select only one but not more than two) as FIRST Dean's List Nominees.

Does this really mean up to 2 students per FRC mentor OR is it 2 students per FRC Team?

Re: Dean's List Nominations

Posted by FRCOPS at 01/17/2011 11:29:17 am

Thanks for your question. Up to two (2) students [I]per team[/I] may be nominated for the Dean's List Award.

Section 6 - The Awards

Rookie All Star Ward w/ Veteran Students

Rookie All Star Ward w/ Veteran Students

Posted by 2011FRC3517 at 01/15/2011 11:20:20 pm

We are a rookie team this year that started with the majority of students who were new to FRC. However due to circumstances we have lost a few of those students and gained some veteran ones, who are now the majority. The rookie kids that left did contribute and help prior to build season.

That being said, what is our current ability to submit for the Rookie All Star award?

Thanks

Re: Rookie All Star Ward w/ Veteran Students

Posted by FRCOPS at 01/17/2011 11:13:59 am

Thanks for your question. The teams that are able to compete for the Rookie All Star award, the Rookie Inspiration Award or the Highest Rookie Seed Award must have a rookie team number. If your team number is 3450 or higher, you are considered a rookie team.

Section 1 - Introduction & Glossary

Section 1 - Introduction & Glossary

Section 1, Glossary: Clarification of released game piece

Section 1, Glossary: Clarification of released game piece

Posted by 2011FRC1619 at 02/23/2011 12:54:03 pm

Part of the definition of 'Hanging' includes the game piece being released by the possessing robot. Does being 'released' mean:

- The robot is no longer in contact with the game piece.
- The robot is in contact with the game piece, but the game piece is not gripped/hooked by the robot.
- Something else?

There are several instances where the game piece could clearly be fully supported by the peg and there still be incidental contact between the robot and game piece.

As an example, if right at the end of the autonomous period an ubertube is placed on a peg and is fully supported by that peg, but the robot then gets disabled shortly thereafter (due to the autonomous period ending) before the robot is able to completely eliminate any/all contact between itself and the ubertube, is the ubertube scored?

Thank you in advance for your response.

Re: Section 1, Glossary: Clarification of released game piece

Posted by GDC at 02/24/2011 09:25:31 pm

Yes. No. No.

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.

Section 2 - The Arena

Section 2 - The Arena

Tower Sensor Plate

Tower Sensor Plate

Posted by 2011FRC1511 at 01/13/2011 03:32:36 pm

Pertaining to the Field:

Drawing GE-11036 shows the sensor plates for the tower. How are the switches wired under this plate? At the Manchester kickoff, it appeared to be 3 limit switches in series, such that all 3 would have to be activated in order for the sensor to be triggered. Is this correct?

MINIBOT finish line

Posted by 2011FRC1189 at 01/14/2011 12:40:35 pm

We know that the finish line is two parallel plates with three sensors in between and that a force of 2-4N is required to activate.

Are these sensors in parallel or in series?

Does it require 2N of forse if you contact uniformly around the circumference and 4N of force if you apply it at a point?

Re: Tower Sensor Plate

Posted by GDC at 01/16/2011 11:27:13 am

Only one limit switch needs to be actuated to TRIGGER the TARGET. The minimum estimated contact force of 2-4 Newtons noted in the manual is for a single point of contact.

Section 2 - The Arena

Blue Gaffer Tape

Blue Gaffer Tape

Posted by 2011FRC3506 at 01/15/2011 07:18:41 pm

In searching for suppliers of gaffer tape, I've come across dark blue and electric blue. It seems to me that dark blue is closer to what is on the field. Is my thinking correct?

Field Marking Tape - Source/Manufacturer

Posted by 2011FRC0357 at 01/18/2011 02:02:57 pm

Can you provide the source and/or manufacturer for the various field marking (gaffers) tape used on the 2011 field?

Re: Blue Gaffer Tape

Posted by GDC at 01/18/2011 09:07:29 pm

Please see Team Update 3.

Section 2 - The Arena

Tower Base color details

Tower Base color details

Posted by 2011FRC0836 at 01/17/2011 04:54:51 pm

We are interested in additional details regarding the construction and specifications of the Tower Base. Specifically regarding the projected base colors, we would like to know the following:

1. What is the light source inside of the base?
2. What specific colors are projected in the base?
3. What is the specific pattern of colors projected, and does it differ based on the associated alliance (i.e., Blue to Green, or Red to Green)?
4. What is the timing of the colors, when do they change, and, if they flash, what is the timing of the flashing colors (per cycle)?

Thank you for your kind consideration!

Tower Base Lights

Posted by 2011FRC0836 at 01/17/2011 05:59:47 pm

We understand the Tower Base will begin flashing (either red or blue) at 15 seconds before the end of a match, and will stop flashing and remain static (on) at 10 seconds remaining.

Can additional specifications be made available for the lighting within the Tower Base that

shines through the translucent white LDPE plastic Base side?

Specifically:
Light intensity
Red and Blue light wavelength profiles (or lighting part numbers)
Flashing on/off times

Will the Flash always occur a specific known number of times? If so, how many?

Thank You GDC.

Timing of tower base lights for minibot deployment

Posted by 2011FRC0751 at 01/22/2011 05:04:23 pm

From the note below <G02>:
[quote]
At 10 seconds before the end of the MATCH, when HOSTBOTS may DEPLOY their MINIBOT without penalty, BASES will illuminate with the appropriate ALLIANCE color
[/quote]
From the game demonstration video, we can see that the lights in the base of the tower flash several times before the minibot is deployed and then remain on.

Is there a document that describes in detail the algorithm that manages the lights in the base of the towers?

Is the timing of the tower base lights precise enough that they can be used to trigger (through some kind of sensor) minibot deployment as early as possible in the 10 second period at the end of the match?

Tower Base lights

Posted by FRC1114 at 01/23/2011 04:19:09 pm

<G02> and Section 2.2.5 refer to coloured lights inside the BASE of the TOWER. What are the specifications of these lights?

Re: Tower Base color details

Posted by GDC at 01/24/2011 07:44:46 pm

1. Each base is illuminated with 2 ColorBlast 6 lights from Philips Color Kinetics.
2. The colors are yellow (RGB 255,255,0), blue (RGB 0,0,255), and red (RGB 255,0,0)
3. There is no specific pattern, perhaps we don't understand this question.
4. The bases are illuminated according to the blue box in Rule <G02>. They flash at 1Hz from T=15 seconds to T=10 seconds.

Section 2 - The Arena

Retention Plate & Scoring Peg

Retention Plate & Scoring Peg

Posted by 2011FRC3506 at 01/18/2011 07:30:53 pm

In constructing the scoring rack, we came across a difficulty. The retention Plate DWG No TE-11004 calls for 1-1/2" dia wooden dowel. This is supposed to fit into the scoring peg depicted on DWG No TE-11000 1-1/4" Schedule 40 PVC. We find the wooden dowel is too

large for the hole. Please advise.
Lia Schwinghammer
Team 3506

Re: Retention Plate & Scoring Peg

Posted by GDC at 01/22/2011 09:41:08 am

Please see Team Update #4.

Section 2 - The Arena

Carpet and Grey Gaff Tape Color

Carpet and Grey Gaff Tape Color

Posted by 2011FRC2859 at 01/18/2011 07:37:08 pm

What are the RGB values of the Official Arena carpet (S&S Mills, Sequoia 20 Oz. Level Loop Pile, Color: Ground Pepper)? I do not see Ground Pepper listed as a color on the S&S Mills website.

What are the RGB values of the Pro Gaff Grey tape used for the TRACKING LINES?

We are working on line following and want to ensure we get the contrasting grey colors correct to ensure proper operation.

From the game manual the carpet is approx RGB (129,133,134) and the TRACKING LINES are approx RGB (83,85,84). However the Pro Gaff website shows their grey as approx RGB (163,167,176).

Thanks!

Re: Carpet and Grey Gaff Tape Color

Posted by GDC at 01/20/2011 09:42:05 pm

Given the nature of this question, it has been copied to the technical portion of this forum site and will be addressed [URL="http://forums.usfirst.org/showthread.php?t=16417"]there[/URL].

Section 2 - The Arena

Peg Height

Peg Height

Posted by 2011FRC2115 at 01/19/2011 07:03:28 pm

How high are the pegs? I can't find any specifics in the manual.

Re: Peg Height

Posted by GDC at 01/23/2011 01:42:48 pm

Please refer to the drawings posted at [URL="http://www.usfirst.org/roboticsprograms/frc/content.aspx?id=18763"]http://www.usfirst.org/roboticsprograms/frc/content.aspx?id=18763 [/URL]for full details on field geometry.

Section 2 - The Arena

Which goal is for which team?

Which goal is for which team?

Posted by 2011FRC3592 at 01/23/2011 04:05:08 pm

At first I thought it was like football: you score down at that other end from where you are standing (in this case 54 feet away). The manual wording is not clear to me even upon re-reading and discussing. The Pixar-like video clearly shows red human forms and red robots very close to each other when hanging game pieces...just on the other side of the protective plastic wall/viewing window. That way turning left or right with the robot is backwards and would be tricky, but you could at least see better for fine adjustment when hanging the pieces. Which is correct? (Is the video simulation correct?) (We're rookies -- sorry!)

Re: Which goal is for which team?

Posted by GDC at 01/26/2011 09:09:10 pm

From 2.2.2: "There is one ZONE for each ALLIANCE, located immediately in front of the ALLIANCE WALL for that ALLIANCE."

Section 2 - The Arena

Field Dimensions for Feeder Station to Scoring Pole

Field Dimensions for Feeder Station to Scoring Pole

Posted by 2011FRC2537 at 01/24/2011 07:44:39 pm

What is the distance between the feeder station and the outer pole of the scoring grid; in addition, what is the distance between the two inner scoring poles?

Re: Field Dimensions for Feeder Station to Scoring Pole

Posted by GDC at 01/26/2011 09:12:23 pm

Please refer to the field drawings posted under Section 2 - The Arena for detailed geometry of the ARENA ([URL="Please refer to the field drawings posted under Section 2 - The Arena for detailed geometry of the ARENA (http://www.usfirst.org/roboticsprogr...nt.aspx?id=452)."]http://www.usfirst.org/roboticsprogr...nt.aspx?id=452 [/URL]).

Section 2 - The Arena

Scoring Rack / "Pole" Dimensions

Scoring Rack / "Pole" Dimensions

Posted by 2011FRC1261 at 01/25/2011 07:18:50 pm

This is a follow up to the post and your response to 'The Arena', "Peg Height"

We have read and re-read all the documentation, including the official drawings and low cost drawings. We have been unable to find a drawing showing actual dimensions of the scoring rack, detailing the height of the pegs at each position. The plans show dimensions of individual pieces to put together but no overall dimensions to view/check your construction.

It would also be nice to see a similar drawing for the 'pole' the minibot climbs.

Perhaps a front and side view of each showing dimensions, distance between each scoring rack, dimensions of each scoring peg to the center, dimensions showing size of tubing used.

If there is such a document, please post a direct link to with page/drawing number.

Thank-you

Scoring Peg Height

Posted by 2011FRC3167 at 02/08/2011 10:31:16 pm

How high is the highest peg, exactly? The drawings are not drawn to scale and are incomplete in that they are missing dimensions.

FIRST Team 3167

Re: Scoring Rack / "Pole" Dimensions

Posted by GDC at 02/14/2011 11:09:37 pm

There is no overivew drawing that shows these dimensions. Engineering drawings do not typically show overall dimensions, but instead accuate dimensions of piece-parts, as well as assembly instruction. Such is the case here; it is an expected activity as part of understanding the details of the competition.

To answer your specific question, please refer to the following documents in the drawing pdf package posted at [URL="http://www.usfirst.org/roboticsprograms/frc/content.aspx?id=18763"]http://www.usfirst.org/roboticsprograms/frc/content.aspx?id=18763[/URL]:

GE-11000, page 4
GE-11001, pages 5-6
GE-11002, pages 7-10
GE-11003, page 11
GE-11004, pages 12-13
GE-11005, pages 14-16
GE-11020, pages 18-20

Section 2 - The Arena

Reflective Tape on Scoring Pegs

Reflective Tape on Scoring Pegs

Posted by 2011FRC1717 at 01/26/2011 02:39:35 pm

Secion 2.2.3 of the Game Manual states that the retro-reflective vision targets are "approximately the same size as the foot" (circles). Pictures we have of the actual field at the Manchester Kickoff, however, show otherwise (image attached). Please clarify, thanks!

Re: Reflective Tape on Scoring Pegs

Posted by GDC at 01/31/2011 01:18:51 pm

Dimensions for the retro-reflective targets are posted [URL="http://www.usfirst.org/uploadedFiles/Robotics_Programs/FRC/Game_and_Season__Info/2011_Assets/Vision%20Target%20Dimensions.pdf"]here[/URL].

Section 2 - The Arena

Retro-Reflective Tape on Pegs

Retro-Reflective Tape on Pegs

Posted by 2011FRC1073 at 01/29/2011 11:08:19 am

Hello!

In the manual, it says the retro-reflective tape on the scoring pegs is "approximately" the same

size as the round peg. At Kickoff, the tape on the peg was rounded at top and bottom but cut off on the sides. We know that sometimes what's on the field at Kickoff may be different from what's at the actual competitions, so... Is the retro-reflective tape on the scoring peg A.) completely covering the round peg, B.) like it was at kickoff - rounded at top and bottom but straight leaving some of the peg showing on the sides, or C.) A square within the circle?

Thank you!

-Team 1073

Re: Retro-Reflective Tape on Pegs

Posted by GDC at 01/31/2011 02:28:37 pm

Please see Team Update 6 for the exact dimensions of the VISION TARGET.

Section 2 - The Arena

Inflation Method of Game Pieces

Inflation Method of Game Pieces

Posted by 2011FRC2456 at 01/29/2011 02:50:01 pm

What nozzles, pumps, etc. are going to be officially used at the competition for inflating the game pieces to the correct diameter?

Re: Inflation Method of Game Pieces

Posted by GDC at 02/14/2011 11:05:50 pm

The purpose of this forum is to answer specific questions about rules. Questions about tooling used to assemble the field and game pieces are not appropriate and will not be answered.

Section 2 - The Arena

Carpet over the tower support

Carpet over the tower support

Posted by 2011FRC2973 at 02/13/2011 09:29:43 am

The description in the arena manual section 2.2.5 says:
[QUOTE]The BASE rests on a 48-inch by 76-inch floor protector made of 3/16-inch HDPE. The floor protector is velcroed to the FIELD surface, and covered with a piece of similar carpet. The edges of the floor protector cover are taped to the FIELD carpet (Pro Gaff Tape, “black”, 2-inch). This taped seam forms a slight (approximately 1/4-inch) ridge in the FIELD around the TOWER.[/QUOTE]

The wording on sheet one of FE-00034 says
[QUOTE]Cover Floor Protectors with extra carpet, tape edges with 2" black gaffers tape.[/QUOTE]
The tape outline on the picture looks to be alot larger than the 48" wide floor protector, and I would guess that if the seam was right at the end of the floor protector the ridge would be alot higher than 1/4-inch when you add the HDPE thickness to the carpet thickness.

Can you provide the dimensions of the carpet covering over the floor protector (and the associated tape seam)?

Re: Carpet over the tower support

Posted by GDC at 02/16/2011 09:50:31 pm

Please see Team Update 11.

Section 3 - The Game

Section 3 - The Game

Feeder limitations?

Feeder limitations?

Posted by 2011FRC3459 at 01/12/2011 05:14:19 pm

Is there any restriction on the Feeder reaching through the slot or how the Feeder interacts with a Robot in the Lane?

-Doug Ivers

Re: Feeder limitations?

Posted by GDC at 01/16/2011 11:29:22 am

Per Rule R27 the FEEDER is absolutely prohibited from coming in to contact with a ROBOT. Per Rule R31, the ROBOT may not touch anything outside the FIELD. Per Rule G55, TEAM members must stay within their assigned stations (and thus not enter the FIELD.

The combination of these rules means that at no point should a ROBOT contact a FEEDER, or should a FEEDER enter the FIELD. Rule G31 permits incidental penetration of the FEEDER SLOT while retrieving LOGO PIECES, but if the ROBOT touches anything within the FEEDER STATION, it will be disabled.

Feeder

Posted by FRC3453 at 01/22/2011 08:08:48 pm

Can the Feeder human player have his or her hands cross the plane of the feeder slot into the field to have a piece be angled to better fit on a robot?

Section 3 - The Game

Ubertube in autonomous

Ubertube in autonomous

Posted by 2011FRC0703 at 01/12/2011 06:19:01 pm

The rule <G06> states the robot has to "be in contact" with the Ubertube. Can the Ubertube be hung on the robot?

Re: Ubertube in autonomous

Posted by GDC at 01/13/2011 11:00:26 pm

Yes. The only requirement is that the UBERTUBE be in contact with the ROBOT, there are no restrictions on how.

Section 3 - The Game

Clarify DEPLOYMENT LINE

Clarify DEPLOYMENT LINE

Posted by 2011FRC0100 at 01/12/2011 09:39:13 pm

Reference: (G22) HOSTBOTS may not contact their ALLIANCE’S MINIBOT once it has climbed above the DEPLOYMENT LINE.

Is "climbed above the deployment line" defined by all or part of the minibot crossing the deployment line?

Re: Clarify DEPLOYMENT LINE

Posted by GDC at 01/15/2011 05:10:53 pm

Please refer to Team Update #2, Rule G22.

Section 3 - The Game

Game Piece Quantities

Game Piece Quantities

Posted by 2011FRC2145 at 01/12/2011 10:43:10 pm

How many of each red triangle, white ring, and blue square game piece can be introduced into the game? For example do the human players on each alliance have a total of 33 pieces they can enter? And are the location of the game pieces fixed at the beginning of the match or can they be moved from side to side possibly by the analyst?
Thanks.

Re: Game Piece Quantities

Posted by GDC at 01/15/2011 05:14:14 pm

Per G10, each FEEDER STATION starts with 3 complete sets of LOGO PIECES. Any attempt to transfer LOGO PIECES between FEEDER STATIONS during a MATCH would be considered a violation of G36.

Section 3 - The Game

Robot Envelope

Robot Envelope

Posted by 2011FRC2145 at 01/12/2011 10:55:09 pm

Where on the robot is the 84" right cylindrical volume referenced? For example, is the center of the 84" volume always coincident with the center of the robot, allowing only 23" and 28" of reach over the outside 38" and 28" dimensions of the starting configuration? Or is the diameter of the cylinder always along the most expanded par of the robot? For example, if the robot had its 28" side tangent to the 84" cylinder at the two corners of the 28" side of bot, could an arm or manipulator extend 55" over the front?
Thank you.

Robot Envelope

Posted by 2011FRC1325 at 01/15/2011 10:21:44 am

In R11 it specifies a 84" diameter restriction. Does this diameter have to be centered around the robot? Also, is this the diameter our robot actually goes in the duration of the game or is it the amount that the robot is physically able to extend?

Re: Robot Envelope

Posted by GDC at 01/16/2011 11:31:02 am

Cylindrical volume is only referenced to the surface of the FIELD, it is not referenced to the ROBOT. At any time, the ROBOT must always fit inside any 84" right cylindrical volume.

Section 3 - The Game

<G32> Hinderance

<G32> Hinderance

Posted by 2011FRC2604 at 01/13/2011 02:24:16 pm

I would like clarification on rule <G32>. If a game piece in possession by a robot breaks the verticle plane of the scoring zone, but not any part of the robot, is that considered a penalty?

Re: <G32> Hinderance

Posted by GDC at 01/22/2011 09:44:30 am

Please see Team Update #4.

Section 3 - The Game

Game Rules for "Occupying"

Game Rules for "Occupying"

Posted by 2011FRC3695 at 01/13/2011 03:17:34 pm

If we are reading this right, robots are able to push a tube when on the field. Is pushing considered occupying?

Re: Game Rules for "Occupying"

Posted by GDC at 01/16/2011 11:32:34 am

Per Rule G34, ROBOTS may only HERD or POSSESS one GAME PIECE at a time. There is no mention of "occupation," so we cannot respond to that part of your question.

Section 3 - The Game

G02 - Match End?

G02 - Match End?

Posted by 2011FRC1511 at 01/13/2011 03:37:08 pm

RE: <G02>

<G02> The AUTONOMOUS PERIOD ends when the ARENA timer displays zero seconds. The MATCH ends [B]if all TOWERS are TRIGGERED[/B] or when the ARENA timer displays zero seconds, whichever comes first.

Does G02 mean that if all 4 towers are triggered within 5 seconds of the END GAME the match is over? meaning the MATCH is essentially 2 minutes 10 seconds long? Will ROBOT/HOSTBOT scores be counted after all 4 towers are triggered?

Minibot Race Time G02 vs G68

Posted by 2011FRC1511 at 01/13/2011 04:08:23 pm

G02 vs G68

Which takes precedence, G02 or G68? G02 says “The MATCH ends if all TOWERS are TRIGGERED or when the ARENA timer displays zero seconds, whichever comes first.” But G68 says “Scores will be assessed when the MATCH ends and all objects in motion come to rest, or 10 seconds elapses, whichever comes first”.

Or perhaps more specifically, is the Minibot considered an object in G68? If the arena clock hits zero, and 5 seconds later a Minibot triggers the Target, will it be counted? Or do the targets shut off at zero seconds?

It would seem that G02 takes precedence as the note states: “…chase sequence will continue until a MINIBOT TRIGGERS the TARGET, or time expires, whichever comes first.” And “If a

MINIBOT TRIGGERS the TARGET within the set time period, the TARGET light will illuminate". But we wish to confirm that it is G02 for the Minibot and arena time is the end of the Minibot race.

Re: G02 - Match End?

Posted by GDC at 01/16/2011 11:34:30 am

You are reading G02 correctly. Note that G68 applies no matter which way the MATCH ends.

Section 3 - The Game

Descoring Tubes

Descoring Tubes

Posted by 2011FRC1511 at 01/13/2011 03:40:47 pm

G39 States that Robots may not descore opponents tubes. Just to confirm, is it legal to descore your alliance’s tubes?

Re: Descoring Tubes

Posted by GDC at 01/15/2011 05:17:36 pm

There is no rule prohibiting descoring of an ALLIANCE's own GAME PIECES. Note that a removed UBERTUBE may not be re-placed on the GRID.

Section 3 - The Game

Opponent Scoring

Opponent Scoring

Posted by 2011FRC1511 at 01/13/2011 03:45:11 pm

Assuming it was possible, without violating G32 (or other rules), can an alliance put a tube on an opponent's Rack?

Scoring for opponents

Posted by 2011FRC0057 at 01/15/2011 07:02:44 pm

Are FEEDERS allowed to score for the opposing alliance? Hitting the top, outermost peg seems a difficult but makeable shot from behind the alliance wall.

If so, what is the disposition of a LOGO PIECE that lands on top of the pole supporting the pegs? Clearly it's not scored, but are there negative consequences for tossing one there?

Scoring for the opponent

Posted by 2011FRC0806 at 01/17/2011 11:30:05 am

Can you score logo pieces on the opposing alliances pegs? Can your robots arm cross over into the opposing alliances zone if you wheel don't cross the tape?

Re: Opponent Scoring

Posted by GDC at 01/22/2011 09:47:13 am

Please see Team Update 4.

Section 3 - The Game

No-Show Robot UberTube

No-Show Robot UberTube

Posted by 2011FRC1511 at 01/13/2011 04:12:29 pm

RE: G06

What happens to the Ubertube of a robot that is a no show? Is it placed on the field (if so, where)? Or just withheld from the game?

Re: No-Show Robot UberTube

Posted by GDC at 01/15/2011 05:19:07 pm

Only one UBERTUBE will be placed on the field for each ROBOT present. In the case of no-show ROBOTS, the UBERTUBES will be kept off the field.

Section 3 - The Game

Minibot Size

Minibot Size

Posted by 2011FRC3218 at 01/13/2011 04:21:01 pm

In looking at the 12" x12" x 12" volume requirement for the mini bot. Is this requirement a starting value "at deployment" or an absolute value "during the whole climb". Can the mini bot exceed this size once deployed?

Mini Bot Volume

Posted by 2011FRC3218 at 01/14/2011 11:21:21 am

The Volume of teh mini bot is 12"x12"x12". Is that at deployment or all through the climb. Can a minibot expand outside this volume once the climbing starts?

Re: Mini Bot Config

Posted by GDC at 01/17/2011 03:40:38 pm

Per Rule R91, the MINIBOT may never exceed the volume defined at any time during the MATCH.

Intrepretation of Rule G41

Posted by 2011FRC2167 at 01/19/2011 07:46:33 pm

My students had a question concerning rule G41. Here is their inquiry:

We were wondering if it would be allowed for a robot to begin in a 12"x12"x12" cube and then expand outside of these dimensions. After doing so, it would then reduce back into the 12"x12"x12" cube. Is this ok, or does the rule state that you cannot at all leave that cube?

I have not had a chance to look and see if this question has been asked by other teams, so if it has, I would appreciate being directed to that information. Thank you for your time.

Minibot Size

Posted by 2011FRC3310 at 01/22/2011 12:08:18 pm

The starting configuration of the minibot is 12"x12"x12" maximum. Does the minibot have to stay within the starting confines or can it extend beyond them after deployment?

Minibot Exact Size

Posted by 2011FRC2462 at 01/23/2011 01:31:59 pm

The envelope for the minibot is 12"x12"x12", must the minibot always remain at this size, or are we allowed to shape it as we see fit?

- such as 12"x6"x10"

Re: Minibot Size

Posted by GDC at 01/24/2011 08:08:48 pm

Per Rule R91, the MINIBOT may never exceed the volume defined at any time during the MATCH. The MINIBOT must always remain in a 12" x 12" x 12" box.

MINIBOT dimensions

Posted by 2011FRC3167 at 01/28/2011 12:43:49 pm

Hello,

We are considering a design for a MINIBOT and deployment platform. The MINIBOT, before deployment would be approximately 16" wide. Obviously this does not fit in the constraints of its size, but this is an unnatural position for the MINIBOT. It is being stretched on the platform beyond its natural 10.75" width. Our question is whether or not this is legal because the robot will fit within the 12"x12"x12" cube at all times other than when it is on the deployment platform. Thanks for your time!

FIRST Team 3167

Section 3 - The Game

Start of Game UberTube <G06>

Start of Game UberTube <G06>

Posted by 2011FRC3753 at 01/13/2011 06:06:34 pm

If I read correctly each robot may be touching an ubertube. However, in the video it shows robots possessing ubertubes before pre-game. Are we allowed to "pre-place" the ubertubes in our robots possession or will we need to plan and pick them up during the autonomous period?

Re: Start of Game UberTube <G06>

Posted by GDC at 01/15/2011 05:20:36 pm

They may be placed in the ROBOT's POSSESSION during setup.

Section 3 - The Game

Minibot Operations

Minibot Operations

Posted by 2011FRC2757 at 01/14/2011 09:44:37 am

Can the minibot be initially boosted upward or does it have to climb on its own power?

Re: Minibot Operations

Posted by 2011FRC1189 at 01/14/2011 12:36:57 pm

To tag along on this question ... as long as the deployment mechanism has completely disengaged before the deployment line, does it matter how the mini-bot gets there?

Is the "out-of-bounds" for autonomous operation when the mini-bot first reaches the line or when the last part of the minibot has left the last bit of tape of the deployment line?

Re: Minibot Operations

Posted by GDC at 01/15/2011 05:22:14 pm

Please see Updates #1 and #2.

Section 3 - The Game

Volume of the deployment area

Volume of the deployment area

Posted by 2011FRC2973 at 01/14/2011 08:22:20 pm

The definition of Deployment states that DEPLOYMENT starts when the MINIBOT breaks the vertical projection of the TOWER BASE circumference, and ends when the HOSTBOT is no longer in contact with the MINIBOT.

G21 states HOSTBOTS may only DEPLOY MINIBOTS onto their ALLIANCE‟S TOWERS and entirely below the DEPLOYMENT LINE.

May the MINIBOT be above the plane of the deployment line after the start of deployment, provided the MINIBOT and HOSTBOT are below the plane of the deployment line at the end of deployment and no other rules are violated (i.e., touching the post)?

In other words, does the deployment line create a plane that cannot be exceed by the MINIBOT from the start of deployment until the end of deployment?

Re: Volume of the deployment area

Posted by GDC at 01/16/2011 11:36:25 am

No.

Yes.

Section 3 - The Game

Throwing Game Pieces

Throwing Game Pieces

Posted by 2011FRC1351 at 01/14/2011 08:25:07 pm

As stated by <G 07> Items other than the ROBOTS and the UBERTUBES shall not be placed on the FIELD prior to or during the MATCH.

We read this rule as saying that Game pieces would not be allowed to be thrown into the middle of the field over the wall by the human player as this would constitute a penalty. We would like to know if this is true, and if so then would we only be allowed to throw game pieces over the protective wall directly to our robot.

As stated by <G57> During the TELEOPERATED PERIOD, FEEDERS may enter LOGO PIECES onto the FIELD by using the FEEDING SLOTS or by throwing the LOGO PIECE over the top of the FEEDER STATION wall.

These rules seem to contradict each other; what is the exact intent?

Re: Throwing Game Pieces

Posted by GDC at 01/18/2011 09:09:35 pm

Please refer to Team Update #3.

Section 3 - The Game

Ubertubes in starting dimensions

Ubertubes in starting dimensions

Posted by 2011FRC2081 at 01/15/2011 11:14:53 am

Does the ubertube that we start with in autonomous need to be within the 28x38 starting dimensions or can it be outside those dimensions as long as the robot mechanism is within the starting dimensions?

Re: Ubertubes in starting dimensions

Posted by GDC at 01/16/2011 11:37:50 am

The UBERTUBE is not considered part of the ROBOT and thus is not part of the STARTING CONFIGURATION size requirement.

Section 3 - The Game

What's the peg score?

What's the peg score?

Posted by 2011FRC3459 at 01/15/2011 04:40:11 pm

For the sake of this question, assume that only one logo piece has been transported by an alliance to the scoring zone (also assume that no ubertubes were hung during autonomous). Initially this logo was successfully hung on the bottom row, then it was moved to the top row before the end of the match. What's the score? 1, 3, or 4?

-Doug

P.S. So I'm only seeing a couple of official answers in the Q&A forum. I know there have been many more than that submitted. Where are all the answers?

Re: What's the peg score?

Posted by GDC at 01/16/2011 11:39:33 am

Under the terms of Rule G68, scores are assessed at the end of the MATCH and after all objects have come to rest. Thus, the score contributed by the placement of a LOGO PIECE would be determined by the final position of the LOGO PIECE, and not any intermediate positions. Thus, a lone LOGO PIECE on the top row of the SCORING RACK at the end of the MATCH would be worth 3 points.

Section 3 - The Game

G59 and ladders

G59 and ladders

Posted by 2011FRC2973 at 01/17/2011 08:48:57 am

May we bring a small step ladder onto the field at the end of the match to retrieve our minibot from the tower?

Re: G59 and ladders

Posted by GDC at 01/22/2011 09:58:56 am

No. This would be a violation of Rule <T25>.

Section 3 - The Game

Clarification on pinning

Clarification on pinning

Posted by 2011FRC0806 at 01/17/2011 11:27:11 am

<G50> - If the pinned robot starts moving or drives away after the pin and drives toward you do you need to maintain 6 feet distance? Are we allowed to pursue if they move away?

Re: Clarification on pinning

Posted by GDC at 01/31/2011 02:32:08 pm

Please see Team Update 6.

Section 3 - The Game

Deployment details

Deployment details

Posted by 2011FRC2159 at 01/17/2011 02:23:16 pm

From Team Update 1:

Question 1

Section 1: "DEPLOYMENT ends when the HOSTBOT is no longer in contact with the MINIBOT."
Section 3: "<G19> MINIBOTS must remain completely autonomous and move up the POST solely through electric energy provided _after_ [emphasis added] DEPLOYMENT..."

Just clarifying: Does this mean that the minibot cannot start to move up the pole until after the contact with the hostbot is broken (presumably by an overt withdrawal action of the hostbot?) In other words, must there be a clean break between the two bots before upward motion starts, or can the upward motion of the minibot itself serve to break the contact (e.g. assuming a stationary hostbot)?

Question 2

Section 3 <G19> Blue Box: "... Energy for vertical movement may not be stored in the MINIBOT before DEPLOYMENT..."

Does this mean before deployment _start_ or before deployment _end_?

Question 3

Section 3 <G19> Blue Box: "... (except that which is contained within the battery and excluding _incidental_kinetic_energy_ [emphasis added] stored in the motors or wheels, but NOT, for example, in a flywheel)."

Since electric energy [for vertical movement] is not allowed to be provided until _after_ deployment (start or end), does this mean that electrical energy _can_ be used to spin up the motors and wheels _before_ deployment (start/end)?

If not, what is the purpose of this clause? How could the motors/wheels otherwise acquire any kinetic energy at all prior to deployment (start/end)?

[I'm used to thinking in terms of FSMs, so perhaps your answers to these questions could use

wording that distinguishes between the state of "deploying" and the transitions at the start and end of that state to help me out? Again, thanks!!]

Re: Deployment details

Posted by GDC at 01/25/2011 09:25:32 pm

Please see Team Update 5.

Section 3 - The Game

Pre-Deployment of Minibot?

Pre-Deployment of Minibot?

Posted by GDC at 01/17/2011 03:27:24 pm

Note: This post was originally posted by Team 135, but accidently deleted. It has been recovered and restated below.

[QUOTE]G17 says: Host may not deploy Minibot during teleop.

The updated definition of deployment is the act of positioning the Minibot on the tower and starts when the Minibot breaks the vertical projection of the tower base circumference.

Does this mean that a Hostbot may cross the tower base circumference before end game? [/QUOTE]

Re: Pre-Deployment of Minibot?

Posted by GDC at 01/17/2011 03:28:23 pm

The rules do not prohibit the HOSTBOT from breaking the projected circumference of the BASE cylinder during the MATCH.

Section 3 - The Game

Ubertube start

Ubertube start

Posted by 2011FRC0088 at 01/17/2011 09:36:51 pm

In the rules, it states that at the beginning of the match, we must be in contact with the ubertube. Just to be clear, does this mean that we can preload it into our grabber/hook/etc..?

Re: Ubertube start

Posted by GDC at 01/18/2011 09:11:21 pm

Yes.

Section 3 - The Game

Ubertubes during teleoperated

Ubertubes during teleoperated

Posted by 2011FRC0088 at 01/17/2011 09:40:34 pm

Ubertubes placed after autonomous are a penalty, but if they are placed during teleoperated and the penalty is given, do the ubertubes still give the peg a multiplier?

Re: Ubertubes during teleoperated

Posted by GDC at 01/18/2011 09:13:25 pm

No. Rule <G16> indicates that an UBERTUBE can not be HUNG during the TELEOPERATED

PERIOD. Even if an UBERTUBE is illegally placed on a SCORING PEG during this period, this rule prevents the UBERTUBE from being considered as HUNG, by definition. As such, it does not then satisfy the necessary criteria in Rule <G65> required to double the points of LOGO PIECES that are HUNG on that SCORING PEG.

Section 3 - The Game

Logo pieces and their pegs

Logo pieces and their pegs

Posted by 2011FRC0088 at 01/17/2011 09:45:20 pm

If a logo piece ends up resting between two pegs of the same row, not with its open center actually around a peg, does it still count towards the score?

Re: Logo pieces and their pegs

Posted by GDC at 01/25/2011 09:26:49 pm

Please see Team Update 5.

Section 3 - The Game

Tube passing

Tube passing

Posted by 2011FRC0088 at 01/17/2011 09:47:27 pm

A robot cannot forcibly remove another robot's tube if it is in their possession, but is it alright to pass a tube you are carrying to an alliance partner during that match? In other words, can a tube be passed to a friendly robot?

<G49> ROBOTS may not attempt to POSSESS

Posted by 2011FRC3737 at 01/18/2011 02:26:01 pm

<G49> ROBOTS may not attempt to POSSESS a GAME PIECE that is being POSSESSED by
another ROBOT.
Violation: PENALTY

Does this mean that we can't have one robot hand a game piece to another robot on the same alliance? I hope this is actually only meant to say that no stealing of pieces is allowed. In fact, if a robot on another alliance dropped a piece, I would hope that my robot could hand it back to them...

<G49> Clarification

Posted by 2011FRC3690 at 01/18/2011 04:51:40 pm

Are we allowed to hand off a game piece to a robot on our own alliance?

Re: Tube passing

Posted by GDC at 01/22/2011 10:04:19 am

Please see Team Update 4.

Section 3 - The Game

What is breaking the plane?

What is breaking the plane?

Posted by 2011FRC0040 at 01/18/2011 10:14:57 am

According to <G04>: Each ROBOT must be positioned on the FIELD so that the BUMPER closest to it's ALLIANCE'S PLAYER STATION breaks the plane formed by the POSTS of the opposing ALLIANCE'S TOWERS.

Can you please define breaking the plane better? Does the bumper need to start on that line or can the robot start anywhere between that plane and the alliance's player station?

Re: What is breaking the plane?

Posted by GDC at 01/22/2011 10:01:47 am

The BUMPER closest to the ALLIANCE'S PLAYER STATION must intersect the plane.

Section 3 - The Game

End Game Start Time

End Game Start Time

Posted by 2011FRC0230 at 01/18/2011 08:06:20 pm

In rule <G25>, It says "During the END GAME, ROBOTS/HOSTBOTS in contact with their ALLIANCE'S TOWER are protected and may not be contacted by an opponent." At what time does END GAME start? Is it at the 15 seconds when the alliance towers start flashing? Or is it at the 10 seconds when the robot is allowed to deploy the minibot? In other words, if we are lining up at the tower at 15 seconds, are we protected from contact?

Re: End Game Start Time

Posted by GDC at 01/19/2011 07:12:00 pm

As defined in Section 1.6, the END GAME is the last 10 seconds of the MATCH.

Section 3 - The Game

Logo Multiplier

Logo Multiplier

Posted by 2011FRC1398 at 01/19/2011 12:55:08 pm

If the game pieces are arranged to create the FIRST logo then a multiplier of 2 is applied to that row of 3 game pieces. If their is more than one layer of game pieces do all the layers have to be arranged to form the FIRST Logo or only the outermost?

If the first layer formed the FIRST logo and then a piece is placed on top that does not correctly make the FIRST logo would the logo multiplier no longer be valid?

Re: Logo Multiplier

Posted by GDC at 01/23/2011 01:35:41 pm

Per <G63>, if two GAME PIECES are HANGING from a single SCORING PEG, the outermost GAME PIECE will be counted for scoring purposes.

Section 3 - The Game

Minibot Battery Placement

Minibot Battery Placement

Posted by 2011FRC1746 at 01/19/2011 03:18:33 pm

Is the battery providing power to the minibot required to be included in the minibot's structure, or may the battery providing power to the minibot be mounted on the hostbot and connected to the minibot by a tether?

Re: Minibot Battery Placement

Posted by GDC at 01/23/2011 01:55:45 pm

That would be a violation of <G20>.

Minibot Battery

Posted by 2011FRC3637 at 01/27/2011 02:51:22 pm

Does the Minibot's battery have to be attached to it or can we leave the Minibot's battery on the host robot and have a long wire attached to it?

Ethan

Section 3 - The Game

Penalty for scoring Logo pieces in endgame?

Penalty for scoring Logo pieces in endgame?

Posted by 2011FRC0956 at 01/22/2011 02:22:47 pm

G21 appears to forbid robots from doing anything except deploy a minibot during the endgame:'HOSTBOTS may only DEPLOY MINIBOTS onto their ALLIANCE's TOWERS'. The placement of 'only' indicates that deployment is the only action a robot is allowed to take in the endgame.

This would prevent a robot which does not have a minibot from scoring Logo pieces: in endgame, robots may only deploy minibots. Also, a team whose minibot is malfunctioning or unable to deploy would receive a RED CARD for failing to deploy a minibot on an alliance tower.

We assume the intent of this rule is to prevent the deployment of minibots anywhere other than on the alliance's towers. The revision in Team Update # 1 of G19 supports this conclusion, but the original problem with G21 remains.

If 'only' were placed to modify the WHERE of the deployment, rather than WHAT a robot can do, this problem would be solved. We suggest revising G21 to read 'HOSTBOTS may DEPLOY MINIBOTS only onto their ALLIANCE's TOWERS'.

Re: Penalty for scoring Logo pieces in endgame?

Posted by GDC at 01/25/2011 09:27:46 pm

Please see Team Update 5.

Section 3 - The Game

Def. of 'discounted'

Def. of 'discounted'

Posted by 2011FRC0956 at 01/22/2011 02:48:54 pm

What is the definition of 'discounted' as used in the 'Violation' section of G19?
It is not defined. How many points are taken off? Is the entire score of that tower removed from the total alliance score?

Also, is it related to 'disabling' of towers, and if so, how?

Re: Def. of 'discounted'

Posted by GDC at 01/26/2011 01:38:59 pm

In this case, the word "discount" means those points will not be counted.

Section 3 - The Game

Capping the Tower

Capping the Tower

Posted by FRC1114 at 01/23/2011 04:24:41 pm

Is it legal to place a tube on your opponents' tower during the Teleoperated period prior to the End Game?

Re: Capping the Tower

Posted by GDC at 02/01/2011 10:02:56 pm

Please see Team Update 7. This would be considered a violation of Rule <G24>.

Section 3 - The Game

<G32> and <G61>

<G32> and <G61>

Posted by 2011FRC2438 at 01/24/2011 04:10:09 am

<G32> Neither ROBOTS, HOSTBOTS, nor MINIBOTS may break the planes of the vertically projected borders of the opponent’s ZONES. Violation: PENALTY

<G61>The actions of an ALLIANCE shall not cause an opposing ALLIANCE to violate a rule and thus incur PENALTIES. Any rule violations committed by the affected ALLIANCE shall be excused, and no PENALTIES will be assigned.

Unless otherwise noted, all PENALTIES assigned by referees are applied to the entire ALLIANCE.

Given hypothetical scenario: Team A is playing defense on Team B in front of Team B's zone. Team B, in an attempt to get in, shoves Team A into the zone. The penalty that Team A would normally incur is canceled by <G61>. My question is this: is there any restriction on how long Team A may remain in Team B's zone after breaking the plane?

Could a team deliberately drive into a zone with no shoving from the other alliance, take a penalty, and stay there for the duration of the match to play physical defense? Or is there a further penalty for such behavior? If so, after what amount of time is this penalty assessed?

Assuming there is a penalty for the above behavior, would it be canceled by <G61> if the force that originally caused the defensive robot to enter the zone was applied by a robot from the other alliance?

Thank you.

Encroachment Penalty

Posted by 2011FRC1601 at 01/24/2011 11:16:58 am

Will a defending team still receive a penalty if an opposing team pushes the defending team into their (the offending team's) scoring zone?

For example: The blue alliance is trying to stop the red alliance from scoring. In an attempt to score the red alliance pushes the blue alliance into the red alliance scoring zone. Would the blue alliance still receive a penalty even though they did not willingly or purposely encroach?

<G32> and <G61>

Posted by 2011FRC0341 at 01/24/2011 03:00:44 pm

If ROBOT is pushed into OPPOSING ALLIANCE'S ZONE by that alliance, does the robot need to leave, or is <G32> at that point no longer in effect?

Re: <G32> and <G61>

Posted by GDC at 01/31/2011 02:40:20 pm

Please see Team Update 6.

Section 3 - The Game

G05 Question

G05 Question

Posted by 2011FRC1009 at 01/24/2011 12:23:21 pm

1. Is a tape measure that is bolted to the robot allowed?

2. Is an ultrasonic sensor that connects to a PIC microcontroller with a LCD display, and is powered by the robot allowed to be used as an Alignment device? (the sensor is used normally by the cRIO, but we are adding an additional display on it)

<G05> Alignment devices (templates, tape measures, laser pointers, etc.) that are not part of the ROBOT may not be used to assist with positioning the ROBOT. Violation: TEAMS that use external alignment devices to position their ROBOT will have their ROBOT arbitrarily repositioned by a referee before the start of the MATCH.

Re: G05 Question

Posted by GDC at 01/31/2011 02:42:00 pm

Please see Team Update 6.

Section 3 - The Game

<G22>, <G23>, and <G24>

<G22>, <G23>, and <G24>

Posted by 2011FRC0341 at 01/24/2011 02:58:24 pm

1. Rule <G22> specifies that, "HOSTBOTS may not contact their ALLIANCE‟S MINIBOT once any part of it has climbed above the DEPLOYMENT LINE."

A violation means the TOWER is disabled. What if contact with the MINIBOT occurs after the match has ended?

2. Rule <G23> specifies that, "Contact (via ROBOT or GAME PIECE) with the opposing ALLIANCE‟S TOWERS is prohibited."

Are game pieces that may be intentionally or unintentionally put in contact with the opposing ALLIANCE'S TOWERS prior to the END GAME a violation of <G23>?

3. Rule <G24> specifies that, "The opposing ALLIANCE may not interfere with the DEPLOYMENT or climbing of a MINIBOT."

Are actions prior to the END GAME that do not violate any other rules but may make the DEPLOYMENT of certain types of MINIBOTS more difficult in violation of <G24>?

Re: <G22>, <G23>, and <G24>

Posted by GDC at 02/01/2011 10:00:33 pm

Please see Team Update 7.

Section 3 - The Game

Pinning and the Lane Dividers

Pinning and the Lane Dividers

Posted by 2011FRC1983 at 01/24/2011 11:47:38 pm

Section G 50 outlines the rules regarding pinning.
It states that pinning is defined regarding the field border and the towers.

For the purposes of the rules are the lane dividers considered to be part of the field border?

This would then mean that robots cannot be pinned to the lane divider

(This would physically be possible if a robot were pinned to the end of the lane divider by a legally placed defender robot..)

Is this the correct interpretation of pinning in regards to the lane divider?

Re: Pinning and the Lane Dividers

Posted by GDC at 01/26/2011 09:14:23 pm

For the purposes of pinning, the lane dividers are considered to be part of the field border.

Section 3 - The Game

HANGING/de-HANGING/re-HANGING

HANGING/de-HANGING/re-HANGING

Posted by 2011FRC2159 at 01/26/2011 04:42:31 pm

From the definition of HANGING: "... Once a GAME PIECE has been released by the POSSESSING ROBOT (even momentarily) and is HANGING (e.g. it is fully supported by the PEG), it is considered to be HANGING until the end of the match..."

From your reply to a previous question: "Under the terms of Rule G68, scores are assessed at the end of the MATCH and after all objects have come to rest. Thus, the score contributed by the placement of a LOGO PIECE would be determined by the final position of the LOGO PIECE, and not any intermediate positions."

Question 1: Is the intent here to score a previously HANGING piece if it is knocked down (e.g. while trying to hang a different piece), but to discount a previously HANGING piece if a robot takes [or even attempts to take?] possession of that piece (whether still on the peg or not)?

Question 2: Can a robot consistently (i.e. not intentionally, but probably due to its design) knock HANGING pieces off while trying to hang a new piece (e.g. the robot's hanging mechanism consistently intrudes on the likely location of an already hung piece) without loss of points?

GDC rocks/is underpaid ;)

HANGING/de-HANGING/re-HANGING again

Posted by 2011FRC2159 at 01/28/2011 12:21:02 pm

Assuming by the definition of HANGING that a previously hung LOGO piece is still considered to be HANGING, but the actual piece could be lying on the floor somewhere, is the piece back "in play", available for either alliance to attempt possession/re-HANG?

It seems like the definition for HANGING is a little too generous, and maybe should be clarified/constrained to discount a piece that hits the floor or is repossessed?

Thanks folks.

Hanging Tubes clarification

Posted by 2011FRC0842 at 01/28/2011 05:21:29 pm

It appears that if a game piece (ubertube or logo piece) is placed on the peg even momentarily then knocked off for any reason "it would be considered hanging through the end of the game" and therefore scored. If a logo piece was later placed where an Ubertube was knocked off from, would you get the bonus for being placed after an Ubertube was placed on that peg?

Also at the end of the game you placed a logo piece (i.e.: fully supported by the peg) and then the game ends and power is cut to the robots. Your claw then closes back on the game piece because the power was turned off to your robot, the game piece would still be scored because it momentarily was fully supported by the peg, correct?

Thanks From Team 842
-Maria Castro
[email]mariac467@gmail.com[/email]

Re: HANGING/de-HANGING/re-HANGING

Posted by GDC at 02/01/2011 09:58:37 pm

Please see Team Update 7.

Section 3 - The Game

Scoring End

Scoring End

Posted by 2011FRC1073 at 01/29/2011 02:32:16 pm

Hi!

There's been some discussion on when the match really ends, but we'd like to confirm that the towers will remain in a state to send a "triggered" state to the FMS after the match ends per <G02>.

Thanks,
1073

Re: Scoring End

Posted by GDC at 01/31/2011 02:43:58 pm

Per Rule <G02>, "The MATCH ends if all TOWERS are TRIGGERED or when the ARENA timer displays zero seconds, whichever comes first."

Per <G68>, "Scores will be assessed when the MATCH ends and all objects in motion come to rest, or 10 seconds elapses, whichever comes first."

Therefore, the TARGETS will remain active for up to 10 seconds after the conclusion of the MATCH if they haven't all been TRIGGERED and objects are still in motion.

Section 3 - The Game

Starting position of ubertubes

Starting position of ubertubes

Posted by 2011FRC0341 at 02/03/2011 07:58:34 am

It is physically possible to start the match with an UBERTUBE slid down over the POST and resting on the BASE of the tower while satisfying <G06>. This could prevent certain types of MINIBOTS from being able to deploy successfully.

Is this a legal strategy? Neither <G24> nor <G39> as of Team Update 7 would seem to penalize this, but we can't help but to think that the strategy is contrary to how LOGOMOTION was designed to be played.

Re: Starting position of ubertubes

Posted by GDC at 02/11/2011 03:21:11 pm

No.

Section 3 - The Game

Zone and Lane Penalties

Zone and Lane Penalties

Posted by 2011FRC1038 at 02/04/2011 09:51:11 am

We are concerned that rules G32 and G33, as edited in Team Update #6, may, in certain circumstances, severely penalize a team for actions which were not of their own making. We are asking the following questions to ensure that our team understands the implications of rules G32 and G33 as edited in Team Update #6.

A Blue Alliance Robot, in possession of a Game Piece, approaches the Blue Zone. A Red Alliance Robot is traversing the area outside of the Blue Zone between the Red Lanes. Interaction between the two robots occurs.

Scenario 1:
Both robots enter the Blue Zone. The Red Alliance robot contacts another Blue Alliance robot which is in the Blue Zone.

The result is a penalty for the Red Alliance and a Red Card for the Red Alliance team whose robot contacted the Blue Alliance robot.

Scenario 2:
Both robots enter an adjacent Red Lane. The Blue Alliance robot contacts another Red Alliance robot which is in the Red Lane.

The result is a penalty for the Blue Alliance and a Red Card for the Blue Alliance team whose robot contacted the Red Alliance robot.

Do the results described represent an accurate interpretation of the rules?

Re: Zone and Lane Penalties

Posted by GDC at 02/10/2011 01:10:10 pm

Yes.

Section 3 - The Game

Possession for <G32> and <G33>

Possession for <G32> and <G33>

Posted by 2011FRC3173 at 02/05/2011 10:22:03 am

<G32> and <G33> state that only POSSESSED GAME PIECES are disallowed, where possession is defined as a robot's controlling the movement of a GAME PIECE.

1. If a GAME PIECE is pushed by a ROBOT, is it still in possession of it? That is, can a robot push a GAME PIECE, and have it roll into an opposing LANE or ZONE?

2. If a GAME PIECE is thrown by a FEEDER (as allowed in <G57>) into an opposing LANE or ZONE, is the alliance considered in POSSESSION of it? In other words, is it legal for a FEEDER to throw a GAME PIECE into an opposing LANE or ZONE?

Re: Possession for <G32> and <G33>

Posted by GDC at 02/10/2011 01:10:46 pm

1. HERDING is not POSSESSION. Please familiarize yourself with these two definitions and rule <G34>.

2. There are no rules that prohibit a FEEDER from throwing a LOGO PIECE into an OPPONENT'S LANE or ZONE.

Section 3 - The Game

Mini-Bot Predeployment

Mini-Bot Predeployment

Posted by 2011FRC1876 at 02/05/2011 01:19:20 pm

1) Before the endgame begins, is it legal for the host bot to manipulate the mini-bot in preparation for the endgame, as long as it remains in contact with the mini-bot, and the mini-bot does not break the vertical projection of the tower based? That is, getting the mini-bot ready is not considered DEPLOYMENT under the definition as long as the mini-bot

doesn't break the tower projection.

2) In an earlier GRC posting, which I just want to check to make sure I understand correctly, it is legal for the host bot to break the tower position and position itself (including contacting the tower pole) before the endgame begins, as long as the MINI-BOT does not break the projection until the end-game.

Re: Mini-Bot Predeployment

Posted by GDC at 02/08/2011 10:09:02 pm

1) Provided no other rules are broken, e.g. Rule <G19>, there are no rules that explicitly prohibit this.

2) Yes.

Section 3 - The Game

Mini Bot Deployment - G21

Mini Bot Deployment - G21

Posted by 2011FRC0234 at 02/08/2011 11:08:52 pm

This is to confirm an interpretation of the previous response to a question on G21.

G21 - HOSTBOTS may only DEPLOY MINIBOTS onto their ALLIANCE‟S TOWERS and entirely below the DEPLOYMENT LINE

The response provided states that the minibot must be deployed completely below the PLANE of the 18" deployment line. This means the only deployment ZONE is the area formed by the TOP of the tower platform and this PLANE 18" above it. ANY movement of the minibot while still a part of the Hostbot above this PLANE must occur away from the vertcle plane of the tower sides.

If this interpretation is true, this is a significant change going from the statement of "line", which most interpreted as we cannot be above the line and touching the pole, to "plane", which has just created a tunnel for deployment.

Re: Mini Bot Deployment - G21

Posted by GDC at 02/14/2011 10:51:15 pm

The combination of <G21> and <G22> indicate that a plane is referenced; the phrases "entirely below" and "any part of it is above" both imply a plane, as neither is qualified by contact with any specific surface.

Section 3 - The Game

Minibot penalties

Minibot penalties

Posted by 2011FRC1983 at 02/09/2011 01:25:06 pm

1.)If, either in the course of deployment or during the climb to the top or the "race" to the bottom...a minibot loses contact with the tower and falls to the floor or back onto the hostbot... will a penalty be assessed for improper deployment of the minibot not on the tower.

I can imagine quite a few failed attempts at getting the minibots on the towers...or falling minibots...

Can you clarify whether this will be a penalty or a tower disable...

2.) If prior to the minibot deployment time, a minibot is "deployed" somewhere else on the field... (please read that as "dropped" from the hostbot..) unintentionally... will this be penalized?

Thank you for your help!
And for a great game!

Re: Minibot penalties

Posted by GDC at 02/13/2011 09:54:44 pm

The only rules that might potentially be violated under this scenario are G31, G32, G33, G42 and G45. If none of those are violated, then no PENALTY would be assessed.

Section 3 - The Game

<G32> Iterpretation

<G32> Iterpretation

Posted by 2011FRC1771 at 02/10/2011 12:50:59 pm

G32 states: Neither ROBOTS, HOSTBOTS, nor MINIBOTS may break the planes of the vertically projected borders of the opponent’s ZONES, including a GAME PIECE in their POSSESSION. Momentary incursions by a POSSESSED GAME PIECE will not be penalized if they do not make contact with anything in the ZONE. Violation: PENALTY. G61 does not apply to this rule, however strategies aimed at taking advantage of this exception will result in a YELLOW CARD. If a ROBOT enters the opponent's ZONE and does not make immediate effort to leave OR if it contacts another ROBOT (or GAME PIECE in its POSSESSION) also in the ZONE, then the intruding TEAM will receive a RED CARD

We interpret this rule to mean that if robot A is blocking or impeding opposing robot B from entering its own zone, and robot B pushes against robot A in an attempt to enter its zone, and that action causes robot A to enter the opposing zone, robot A will receive a penalty even though it was pushed there by robot B.

1) Is this interpretation correct?

We also interpret the rule to mean that if a referee believes that robot B was utilizing a strategy to cause penalties on robot A by forcing them into the zone, robot B will receive a yellow card.

2) Is this interpretation correct?

3) If so, how will a referee determine robot B’s intent?

4) Suppose a team has a strategy of making as many trips as possible from the feeder station to the home zone to place tubes. The robot is constantly impeded by the opposing robots attempting to prevent them from entering their zone or lane. Assume this robot has a

strong drive-train and can push other robots at will. As a result, this robot pushes opposing robots into the zone (causing them to incur a penalty) multiple times during a match while trying to enter into its own zone or lane. While the strategy is to place as many logo tubes as possible, the result might be multiple penalties on the opposing team. Would this result in a yellow card?

Re: <G32> Iterpretation

Posted by GDC at 02/13/2011 09:55:38 pm

1) Yes

2) Yes

3) They will judge whether the ROBOT is trying to accomplish one of the goals of the game, or whether they are not (i.e., solely trying to cause their opponent to be penalized).

4) 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.

Section 3 - The Game

Aid in Vertical Lift by Hostbot

Aid in Vertical Lift by Hostbot

Posted by 2011FRC0135 at 02/10/2011 08:50:55 pm

G19 states that the HOSTBOT may not aid the MINIBOT in vertical lift.

Would it still be considered "aiding" in vertical lift if our Hostbot were to position the Minibot on the pole just below the deployment line even if our minibot is positioned at a lower height on the Hostbot?

Re: Aid in Vertical Lift by Hostbot

Posted by GDC at 02/14/2011 10:53:50 pm

We don't understand this question and cannot answer without making many assumptions which we choose not to do.

Section 3 - The Game

End Game Timing

End Game Timing

Posted by 2011FRC0836 at 02/11/2011 05:20:05 pm

When attempting to deploy a Mini-Bot, we understand that we may not break the plane of the Tower Base before the final 10 seconds of the match (to avoid penalty).

The provided LabVIEW code framework contains a Match Info data cluster with a 'TeleOp Elapsed Seconds' data element.

If we ensure we do not break the Tower Base plane prior to the last 10 seconds of the match, as indicated by the TeleOp Elapsed Seconds data element in our robot program, will we avoid this penalty? Is the timebase used in the LabVIEW code synchronized with the Tower Base lighting state change (flashing to solid on)? If so, should we anticipate this timing will be respected by any field referee who observed this deployment to be 'close' to the timing specification?

Thanks.

Re: End Game Timing

Posted by GDC at 02/14/2011 11:12:33 pm

1) There is no synchronization between the timer on the field and the robot code. The FMS-to-DS control packets do not include match time. While a team could start their own timer running on the robot when they receive the indication for Teleop start, there is no guarantee that their timer will be synced with the FMS server.

2) Deployment time will be judged based on observations in each MATCH, not on ROBOT design or programming.

Section 3 - The Game

Scoring Tubes during End Game (re G21 and others)

Scoring Tubes during End Game (re G21 and others)

Posted by 2011FRC1712 at 02/12/2011 01:08:16 pm

Is this legal ? (Y/N)

I have read the posted question on this and the terse Game Committee reply referring to update #5 and IMHO they do not directly answer the question.

Tried to quote the posts here but the system forgot them after I requested multi-quote.

Thanks

Re: Scoring Tubes during End Game (re G21 and others)

Posted by GDC at 02/14/2011 11:15:19 pm

There are no rules that prohibit HANGING LOGO PIECES on PEGS during the END GAME.

Section 3 - The Game

Returning tubes back through the feeder slot-

Returning tubes back through the feeder slot-

Posted by 2011FRC1771 at 02/12/2011 04:09:09 pm

If during a match, the human feeder gives the wrong game piece to the robot (If a triangle is needed for a complete logo, but the feeder gives the robot a circle), is the robot allowed to return the tube through the feeder slot?

According to G36 "GAME PIECES may not be intentionally placed out of bounds."

Would pulling the tube back through a slot be considered intentionally placing out of bounds?

I can think of 2 distinct situations where this would occur-

Situation one: The feeder places a tube in the robots grasp, but the robot has not driven away yet. The tube is halfway through the feeder slot. Can it be pulled back into the feeder station, assuming the robot never breaks the plane of the feeder station?

Situation two: The game piece is fully past the vertical plane. May it be returned through the slot, assuming the robot never breaks the plane of the feeder station?

Re: Returning tubes back through the feeder slot-

Posted by GDC at 02/14/2011 11:17:05 pm

Once a LOGO PIECE completely exits the FEEDER SLOT, it may not be reinserted as that would be considered a violation of Rule <G36>.

Section 3 - The Game

Autonomous Period Ubertube Pre-Match Placement

Autonomous Period Ubertube Pre-Match Placement

Posted by 2011FRC3464 at 02/13/2011 10:51:57 am

Need clarification on who places the Ubertube during the pre-match, the team or officials. Assuming that we physically place our robot in a legal position as stated, do we (the team) also place the Ubertube "in contact" with our Robot at a position of our choice. That is, can we place it on our arm as long as the Robot still is in its starting configuration?

Re: Autonomous Period Ubertube Pre-Match Placement

Posted by GDC at 02/16/2011 09:52:44 pm

The TEAM members are expected to place the UBERTUBE before the MATCH so that it is in contact with their ROBOT. The UBERTUBE may contact the ROBOT at any point, provided the requirements of Rule <G06> are met.

Section 3 - The Game

Rule G57

Rule G57

Posted by 2011FRC1203 at 02/14/2011 11:39:06 am

Can we feed the Logo Pieces over the top of the Feeder to our robot?
The rule states that we can throw Logo Pieces over.
Thanks,
Team 1203

Re: Rule G57

Posted by GDC at 02/18/2011 08:26:18 am

Per <G57>, FEEDERS may enter LOGO PIECES onto the FIELD by using the FEEDING SLOTS or by throwing the LOGO PIECE over the top of the FEEDER STATION wall.

Section 3 - The Game

Section 3, Rule G50: Clarification regarding a pinned robot

Section 3, Rule G50: Clarification regarding a pinned robot

Posted by 2011FRC1619 at 02/14/2011 01:33:12 pm

Rule G50 sets pinning time limits based on the pinned robot being in contact with a field border or tower. Does that distinction permit continuous and indefinite pinning if it occurs per one of the following two scenarios?

1. An opponent robot is pinned between two or more robots, and the opponent (pinned) robot is not in contact with a field border or tower.

2. An opponent robot is pinned between a robot and a game piece that is in contact with a field border or tower, and the opponent (pinned) robot is not in contact with a field border or tower.

Thank you in advance for your response.

Re: Section 3, Rule G50: Clarification regarding a pinned robot

Posted by GDC at 02/18/2011 08:27:26 am

Scenario 1 is not a pin.

Scenario 2 is a pin.

Section 3 - The Game

Hanging tubes on robots

Hanging tubes on robots

Posted by 2011FRC2485 at 02/15/2011 05:47:40 pm

We are worried about the following (hopefully illegal) strategy:

1) Can ROBOTS or FEEDERS attempt to intentionally hang GAMEPIECES on non-alliance ROBOTS in an attempt to take them out of the offensive portion of the game? For example, if a FEEDER tossed a GAMEPIECE on to the field and it became stuck on top of an opponent ROBOT, then that ROBOT would possess a GAMEPIECE. This would prevent the ROBOT from grabbing new pieces (since you can only POSSESS one piece) and therefore prevent the ROBOT from scoring on pegs for the rest of the game. Is that a legal strategy for teams? If it is not legal, what would the penalty(s) be?

2) If that is not a legal strategy (again, hopefully not legal), then what happens if a GAMEPIECE becomes accidentally lodged or hung on a ROBOT? With FEEDERS tossing GAMEPIECES onto the field, this is bound to happen at least once. Will this prevent the ROBOT from possessing other GAMEPIECES? Will there be a penalty for the ROBOT or FEEDER that does the hanging?

3) In a related issue, is it ok for the GAMEPIECES tossed on to the FIELD by FEEDERS to come into contact with non-alliance ROBOTS? I am assuming that this is ok; if it is not ok, what is the penalty?

Thanks!

Re: Hanging tubes on robots

Posted by GDC at 02/18/2011 08:25:30 am

1) They would not be penalized per Rule <G61>. If this is a strategy aimed at entanglement of a ROBOT (per <G48>), the TEAM using this strategy would receive a YELLOW CARD.
2) See answer part 1.
3) There is no penalty unless the action interferes with MINIBOT DEPLOYMENT per Rule <G24>.

Section 3 - The Game

Breaking the plane of the Center Line after autonomous

Breaking the plane of the Center Line after autonomous

Posted by FRC1114 at 02/15/2011 10:55:57 pm

Greetings,

Rule <G02> from Section 03 of the 2011 FIRST Game Manual states:

[I]<G02> The AUTONOMOUS PERIOD ends when the ARENA timer displays zero seconds.[/I]

While Section 3.1.3 and Rule <G11> state:
[I]
3.1.3 AUTONOMOUS PERIOD
<G11> ROBOTS may not break the plane of the CENTER LINE.[/I]

If a ROBOT has not broken the plane of the CENTER LINE when the ARENA timer displays zero seconds, but drifts past and breaks the plane of the CENTER LINE after the ARENA timer displays zero second, will this be considered a violation of <G11>?

Thank you for your time and consideration.

Re: Breaking the plane of the Center Line after autonomous

Posted by GDC at 02/16/2011 09:53:38 pm

No.

Section 3 - The Game

Section 3, Rule G22: Clarification of Minibot contact when deploying

Section 3, Rule G22: Clarification of Minibot contact when deploying

Posted by 2011FRC1619 at 02/17/2011 04:02:48 pm

Rule G22 indicates that the Hostbot may not contact its Minibot when the Minibot is above the deployment line.

Our Hostbot has a nest that the Minibot sits down into several inches. The purpose of the nest is to hold the Minibot for deployment purposes. Knowing that, please consider the following three-step scenario (as an example):

1. Prior to deployment, the Minibot will be resting on the nest with the top of the Minibot 28" above the arena floor. The Minibot sits down into the nest 3".

2. Once deployed, the Minibot will start climbing the tower, and once the Minibot reaches 29" above the arena floor (meaning it has climbed 1"), the Minibot will no longer be in contact with the nest. Since the Minibot sits down into the nest 3", the Minibot will still be in the nest vertically by 2" when the Minibot is 29" above the arena floor (but there will be no actual contact between the Minibot and nest by that point in time).

3. Once the Minibot has climbed to 31" above the arena floor (meaning it has climbed 3"), the Minibot will be completely above the nest (since the Minibot originally was 3" down into the nest).

By step #2, our current solution satisfies G22 since the Minibot is not in contact with the Hostbot's nest by the time the Minibot is 29" above the arena floor. However, it will be nearly impossible for a referee to actually determine if the Minibot was in contact with the nest at the point in time when the Minibot passed the deployment line, since the clearance between the Minibot and nest overlaps and is somewhat close.

To help illustrate the above comment regarding the close overlap between the Minibot and the nest, please consider the following analogy: If I had a 0.250" OD pin in a 0.313" diameter hole, and I pulled the pin out of the hole, could a person 20' away from the pin/hole confidently determine if I pulled the pin out without ever contacting the hole's perimeter? Almost certainly not.

The nest is passive and does not contribute any vertical motion to the Minibot (or aid the Minibot in climbing the tower in any other form that could impact the outcome of the match), so we believe the referee would err on the "spirit of the rule" side of G22, since he/she would realistically not be able to confidently determine that G22 was violated (that is, illegal contact), and the contact that "might" have occurred would not have affected the outcome of the match anyway. Of course, compliance with G20 and G21 would be maintained, too.

Summarizing:

- the nest does not contribute any vertical motion to the Minibot
- the Minibot starts climbing while completely below the deployment line.
- the Minibot is not in contact with the Hostbot by the time the Minibot reaches the deployment line.
- the referee will realistically not be able to confidently determine that there is contact between the Hostbot and Minibot when the Minibot goes above the deployment line.

Basically, we want to know if we have an issue to be concerned about or not. Per the rules, we clearly do not, but in reality, we are unsure how the referee will react to the situation outlined above.

Thank you in advance for your response.

Re: Section 3, Rule G22: Clarification of Minibot contact when deploying

Posted by GDC at 02/21/2011 09:29:38 pm

This purpose of this forum is to answer specific game questions, not to perform design reviews.

Section 3 - The Game

84" Perimeter

84" Perimeter

Posted by 2011FRC2468 at 02/20/2011 01:40:07 pm

We have an extending arm on end of the robot that fits within the 84" when extended.

On the opposite of the robot, we have our minibot deployer that when extended, the robot fits within the 84".

We will never have both extended at the same time. Is our robot legal for the 84" rule? We will be able to demonstrate this for inspection.

Thanks,

Team 2468

Re: 84" Perimeter

Posted by GDC at 02/21/2011 09:30:47 pm

Per Rule <G40>, ROBOTS may not exceed PLAYING CONFIGURATION at any time. The PENALTY is only applied if a ROBOT exceeds PLAYING CONFIGURATION, not if a ROBOT has the potential to exceed the PLAYING CONFIGURATION.

Section 3 - The Game

<G39> - Hitting the TOWER in TELEOPERATED PERIOD

<G39> - Hitting the TOWER in TELEOPERATED PERIOD

Posted by 2011FRC1073 at 02/20/2011 02:52:08 pm

Rule <G39> says "ROBOTS and FEEDERS may not SCORE on their opponent's PEGS or descore their opponent's GAME PIECES, or interfere with their opponent's TOWERS. Violation: RED CARD."

Our question is really what is the definition of to "interfere", but here are some questions using official terminology:

1.) If a FEEDER throws a LOGO PIECE during the TELEOPERATED PERIOD and it hits the TOWER (assuming BASE is part of the TOWER as well) in any way, would that team would receive a RED CARD?

2.) What about ROBOTs during the TELEOPERATED PERIOD, if they come in contact at all with the tower (again the BASE is included) will that be a RED CARD? What about entering the projection of the BASE at all?

Re: <G39> - Hitting the TOWER in TELEOPERATED PERIOD

Posted by GDC at 02/21/2011 09:17:42 pm

The scenarios presented are general and have various answers depending on other parameters.

Section 3 - The Game

Tube sizing box

Tube sizing box

Posted by FRC2775 at 02/21/2011 01:26:33 pm

We have noticed alot of discussion in regards to the scrimmages from this past weekend and

tube size. It was stated that there is an "official FIRST tube inflation box " which is used for filling tubes.

Can you please provide a drawing for this box so that we can ensure we have properly inflated tubes in our shop?

Re: Tube sizing box

Posted by GDC at 02/24/2011 09:31:55 pm

There is no official "box." There are jigs that will ship with the fields that are 7" and 8" wide so that the tubes are inflated per Section 2.2.9 of the [B][I]FRC Game Manual[/I][/B].

Section 3 - The Game

Tube inflation

Tube inflation

Posted by 2011FRC0095 at 02/21/2011 01:34:40 pm

From Section 2: The Area in the game manual I quote:

2.2.9 GAME PIECES
While playing LogoMotion, HOSTBOTS manipulate GAME PIECES to accomplish the objectives of the game. Each GAME PIECE is an inflatable object constructed of 0.3 mm thick vinyl. The body of each GAME PIECE has a tubular cross-section, nominally between 7 and 8 inches in diameter at their narrowest. The GAME PIECES are inflated to nominal size, not a specific pressure.

At a Week 0 practice competition very nearly all of the game pieces we used were much larger than "nominally between 7 and 8 inches in diameter at their narrowest". In fact, all of the tubes that we measured were 9 inches or more. The over-infaltion caused our robot's (and other teams') manipulator to function improperly. This caused much difficulty for our drivers because they could not control the game pieces the way the robot was designed to. In some cases the tube was popped because it was so over-inflated.

My questions are:
1) What does "nominally 7-8 inches" mean? As a team we assumed that the average tube would be inflated to a diameter of between 7 and 8 inches and designed our robot accordingly.
2)Will tube dimensions be enforced or checked during regional events? Is there a formal way to address this situation at a regional event should the same problem arise?

Thank you.

Re: Tube inflation

Posted by GDC at 02/24/2011 09:27:35 pm

1) We don't know how to be more descriptive than 7-8". Note that the cross-sections of the GAME PIECES are not necessarily uniform and the 7-8" dimension is at the narrowest part of the GAME PIECE (at the same place as the "This is not a life-saving device" text).

2) Please address concerns with the Head Referee.

Section 3 - The Game

Inflation levels of tubes

Inflation levels of tubes

Posted by 2011FRC0341 at 02/22/2011 05:31:29 pm

At Suffield Shakedown, many teams encountered what they felt were over-inflated tubes. In extreme cases, many tubes were inflated to be 4-5" larger in diameter than the quoted specifications from the manual. Some tubes were even inflated so large they could not fit through the feeder slots.

See image at: [url]http://www.chiefdelphi.com/media/photos/36416[/url]

Was the inflation of the tubes at the Week 0 Event indicative of typical inflation levels at official FIRST events, or will the specifications in the manual be (more or less) enforced in some way at official events?

Re: Inflation levels of tubes

Posted by GDC at 02/24/2011 09:28:35 pm

GAME PIECES will be inflated and checked with jigs that will ship with the fields that are 7" and 8" wide so that the tubes are inflated per Section 2.2.9 of the [I][B]FRC Game Manual[/B][/I].

Section 3 - The Game

Section 3, Rule G22: Clarification of Minibot contact when deploying

Section 3, Rule G22: Clarification of Minibot contact when deploying

Posted by 2011FRC1619 at 02/23/2011 12:22:10 pm

Regarding the GDC response to the post titled "Section 3, Rule G22: Clarification of Minibot contact when deploying", we were not requesting a design review, and we were in fact asking specifically about Rule G22. The intent of explaining a possible robot design was to help illustrate the question to better enable you to provide an accurate response. Here is our original question rephrased to more direct regarding Rule G22:

If a Hostbot/Minibot complies with G22, but the referee is unable to confidently determine such compliance (or inversely, confidently determine noncompliance) during the match, what does the referee specifically do? For instance:

- Does the referee issue a penalty due to not being able to confidently determine compliance?
- Does the referee not issue a penalty due to not being able to confidently determine noncompliance?
- Does the referee inspect the robot for compliance/noncompliance after the match, but before the match is scored, so the match can then be scored appropriately (that is, no penalty)?
- Does the referee inspect the robot for compliance/noncompliance after the match, but after the match is scored? If so, is a penalty for that match issued or not?
- Something else?

The same question could be posed about the playing configuration limit regarding the 84" diameter restriction. There is currently not a practical way during a match for a referee to

determine if a robot was just inside/outside the 84" diameter limit.

Thank you in advance for your response.

Re: Section 3, Rule G22: Clarification of Minibot contact when deploying

Posted by GDC at 02/24/2011 09:30:51 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.

Minibot

Minibot

Minibot wiring

Minibot wiring

Posted by 2011FRC2973 at 01/12/2011 04:04:57 pm

Rule R92.O - wire of appropriate gauge (see Rule <R40>); Rule R40 does not address wiring to the mini-bot motors, and none of the constraints in the table (fuse protection, PD board) apply. Can you please define appropriate gauge? Can the motors be wired directly to the battery using the allowable switches without using a motor controller and/or NXT controller?

Re: Minibot wiring

Posted by GDC at 01/15/2011 05:27:00 pm

Please refer to Team Update #2. There are no restrictions on wire gauge or connectivity for the MINIBOT.

Minibot

MiniBot Climbing

MiniBot Climbing

Posted by 2011FRC2484 at 01/12/2011 05:27:49 pm

Does the MiniBot, once it has hit the top of the tower, and triggered the sensor, have to stay at the top until the end of the match, or can it climb the pole, hit the sensor, and immediately fall back down the pole to the bottom?

Re: MiniBot Climbing

Posted by GDC at 01/13/2011 10:58:59 pm

Per the definition of TRIGGERED, once the disk sensors are tripped, the MINIBOT RACE on that TOWER is complete. Therefore, the MINIBOT does not need to stay at the top of the tower. It is encouraged that you design your MINIBOT so that it's easily retrieved at the end of the MATCH.

Minibot End Game Race

Posted by 2011FRC1746 at 01/19/2011 03:23:06 pm

In the minibot race during the final 10 seconds of the match, is the minibot required to remain at the top of the tower after activating the contact sensors in the target, or may the minibot then descend the post?

Minibot

Minibot required materials?

Minibot required materials?

Posted by 2011FRC0100 at 01/12/2011 09:41:58 pm

Reference: (R92) The following items are the only permitted materials for use on the MINIBOTS: ...

Are there any parts that the minibot is required to have, rather than what it's limited to?

Re: Minibot required materials?

Posted by GDC at 01/18/2011 09:15:37 pm

No, please see Team Update 3.

Minibot

MiniBot Motor Control

MiniBot Motor Control

Posted by 2011FRC1598 at 01/12/2011 10:46:02 pm

Is this legal for the MiniBot? Battery – Fuse – Household Light Switch – Motor
This is how we want to control the power on our MiniBot --- NO NXT Brick.

Re: MiniBot Motor Control

Posted by GDC at 01/17/2011 03:37:27 pm

The purpose of this forum is to answer specific questions about the 2011 LOGO MOTION rules.

If your specific question is "Are we required to include an NXT brick on the MINIBOT?" then the answer is No. However we make no comment about your proposed circuit.

Minibot

Metal on the Minibot

Metal on the Minibot

Posted by 2011FRC3454 at 01/13/2011 01:37:30 pm

The Tetrix part kits are sold out at both Tetrix and Lego Education. We were able to order the wheels, motors, switches and controller.

My questions: Can we use other erector set type parts that are not Tetrix components?

Metal on the Minibot

Posted by 2011FRC3450 at 01/18/2011 05:49:24 pm

Are we allowed to use Vex metal on the minibot?

Metal on the Minibot

Posted by 2011FRC3450 at 01/20/2011 11:47:29 pm

Are we allowed to use metal from VEX kits on the minibot?

Re: Metal on the Minibot

Posted by GDC at 01/23/2011 01:46:02 pm

Please see Team Update 4.

Minibot

<r92> d.& e.

<r92> d.& e.

Posted by 2011FRC2073 at 01/13/2011 02:45:29 pm

Do these statements [in R92, parts D & E] indicate that the components mentioned are allowed, but not required to be on the robot, and limited to the maximum number stated?

Re: <r92> d.& e.

Posted by GDC at 01/16/2011 11:44:37 am

Yes.

Minibot

Minibot shipping

Minibot shipping

Posted by 2011FRC3660 at 01/13/2011 02:47:43 pm

When you bag and tag your robot on the ship date, the minibot will be in with the host robot unless it is part of the 30 lbs Withholding Allowance, correct?

Minibot Withholding Allowence

Posted by 2011FRC0806 at 01/17/2011 11:28:30 am

Does the minibot count as part of the withholding allowance weight?

Re: Minibot shipping

Posted by GDC at 01/23/2011 01:48:12 pm

The MINIBOT is included as part of the WITHHOLDING ALLOWANCE. Under Rule <R33>, the MINIBOT is not included in the 30-pound weight restriction of the allowance.

Minibot

The Mini Robot Motor Part Number

The Mini Robot Motor Part Number

Posted by 2011FRC1793 at 01/13/2011 03:59:28 pm

We ordered Tetrix P/N "739083" as a motor for our minibot, but when the package arrived, we noticed that the P/N on the bag was correct but the part number on the motor label reads, "739023". We called Tetrix and they said the part number on the bag is the correct number and we should disregard the number on the motor housing.

Can anyone suggest a way to ensure that the disparity in part numbers does not become an issue during inspection?

Minibot Motor: 739083 whereas we get 739023?

Posted by 2011FRC2537 at 01/14/2011 06:50:15 pm

Greetings Teams and FIRST Folks:

We have received a kit of parts from AndyMark FIRST Choice, the FTC mini kit, and enclosed are two motors labeled on a bag #739083, but has enclosed motor part number #739023 sticker on the motor. I am assuming that #739083 is #739023 since I also ordered part number #739083 from Texrix (Pitsco LEGO Education) to get these motors #739023.

Please advise.

I am thinking that I have the correct motor... but IDK if judges are going to reference parts

specifically used by the part number label sticker on the motor. Can it be said that motor part number #739083 is #739023?

Possibly incorrect FTC motor in mini-FTC kit?

Posted by 2011FRC1729 at 01/15/2011 02:28:02 pm

Our mini-FTC kit had two motors with packaging identifying the motor as P/N 739083. The motor itself is labeled as P/N 739023.

Is this a legal part? Do we need to send them back to AndyMark?

Thank you,

Brighid Wood,
mentor Team 1729

Pitsco Motor Number

Posted by 2011FRC1983 at 01/17/2011 06:31:25 pm

In (R92) B. no more than two motors (PN W739083)

In our FTC kits and in extra motors ordered from Pitsco, the motors we have received have all been marked with P/N 739023 and NOT 739083

We actually have spare motors in unopened bags from PITSCO that the BAG is marked 739083 and the motor inside the bag is marked 739023.

Are FTC motors marked P/N 739023 legal for use on the minibot?

Thank you!!

Re: The Mini Robot Motor Part Number

Posted by GDC at 01/18/2011 09:21:25 pm

Please see Team Update 3.

Minibot

Tetrix Motor/Gearbox

Tetrix Motor/Gearbox

Posted by 2011FRC2775 at 01/13/2011 05:10:19 pm

In regards to to R47 and R93 Is the Gearbox on the Tetrix motor considered to be integral to the motor? Can the gearbox be removed and/or modified as long as the motor itself is not changed.

Re: Tetrix Motor/Gearbox

Posted by GDC at 01/16/2011 11:47:05 am

No, the gearbox is not considered integral to the motor. Yes, the gearbox may be removed and modified.

Clarification: "Motor" includes gearbox?

Posted by 2011FRC3302 at 01/24/2011 02:14:54 pm

In this post ([url]http://forums.usfirst.org/showthread.php?t=16247[/url]), modification of motor

output shaft gear teeth is allowed per R47. The only output shaft on the Tetrix motors that has gear teeth is the one driving the attached gearbox.

We would like clarification as to what defines the motor. Is the gearbox that comes attached to the Tetrix motor considered a separate component, or integral to the motor? Removal of the 3 mounting screws on the gearbox allows removal from the motor with no structural or electrical alterations to the motor itself.

Thanks,
FRC3302

Altering Tetrix Motors

Posted by 2011FRC3167 at 01/31/2011 12:24:06 am

Hello,

Would it be appropriate to remove the gearboxes from the Tetrix motors for the MINIBOT? <G19> States that the MINIBOT can only get mechanical energy from the unaltered motors, yet <R47> says nothing of removing gearheads from motors. It would appear that this is both legal and illegal. Could you please inform us which it is? This could greatly effect our designs. Thanks for your time!

FIRST Team 3167

Minibot

Minibot Wiring

Minibot Wiring

Posted by 2011FRC2775 at 01/13/2011 05:12:07 pm

What are the permitted ways to wire the minibot motors (direct wiring motor to battery, a switch, FTC speed controllers, etc)?

Mini-bot Question

Posted by 2011FRC2358 at 01/15/2011 05:13:35 pm

Would it be permissible to build a Mini-bot that used no controller, and use the motors wired directly to the battery with a high current on-switch and a similar high current off-switch on the top of the bot?

If this is not acceptable what is the minimum amount of motor current regulation required? (i.e. fuse, circuit breaker, etc.)

Thank you

Re: Minibot Wiring

Posted by GDC at 01/16/2011 11:48:47 am

There are no rules governing how the MINIBOT is wired.

Minibot

Minibot Light switch

Minibot Light switch

Posted by 2011FRC2775 at 01/13/2011 05:14:13 pm

Please define what a standard light switch is. Would any COTS light switch sold at home depot or Lowes be considered standard? What about the small switch out of a lamp? Please provide more clarifications on what is allowed.

Re: Minibot Light switch

Posted by GDC at 01/16/2011 11:50:11 am

For the purposes of FRC 2011, a standard light switch is considered any standard switch which is normally installed in a wall box to control lights in a home.

Minibot

Minibot Standardization?

Minibot Standardization?

Posted by 2011FRC1816 at 01/13/2011 09:12:08 pm

Dear GDC

We had the idea to standardize the mount between a MINIBOT's "cradle" and the HOSTBOT's "delivery system". This way we would not limit the creative potential of the MINIBOT by forcing it into a standard cradle. The cradles and their respective MINIBOTS could then be switched from team to team. Can you advise on how this applies to rule <R81>?

Re: Minibot Standardization?

Posted by GDC at 01/17/2011 03:47:10 pm

MINIBOTS will be inspected separately and are not considered a MECHANISM in reference to Rule R81. Any cradle or vessel for carrying or DEPLOYING the MINIBOT is considered part of the HOSTBOT. If this piece changes during competition, the HOSTBOT will have to be reinspected.

Minibot

Allowed energy during MINIBOT RACE

Allowed energy during MINIBOT RACE

Posted by 2011FRC0025 at 01/13/2011 09:29:52 pm

Team update #1 states that MINIBOTS must climb up the POST soley through electrical energy provided after deployment. Is it legal for the MINIBOT to use surgical tubing under tension, if the sole intent of said tension is to adhere the MINIBOT to the TOWER?

Re: Allowed energy during MINIBOT RACE

Posted by GDC at 01/19/2011 07:15:52 pm

Yes

Minibot

Weight restrictions on minibot/deployment system

Weight restrictions on minibot/deployment system

Posted by 2011FRC1983 at 01/14/2011 03:25:36 pm

If a team builds multiple minibots that are intended to be given to other teams to use (coopertition) does the 15 lb weight restriction cover ALL of these bots or just the minibot that is intended to be paired with the team's own hostbot?

We assume that if a team designs a minibot and gives it to a single team to be used throughout the competition by that team only, that, in this case, said minibot(and associated deployment mechanism) would count towards both the minibot weight for the team that is using it and its hostbot weight. Is this correct?

Lastly, if we design minibots that have a deployment system that are intended to be used by other teams, Will that team need to be reweighed prior to the match that it will be used in? In order to add in any deployment mechanism that is ____ed to them...

thank you for your hard work!!

Re: Weight restrictions on minibot/deployment system

Posted by GDC at 01/16/2011 11:56:27 am

The 15lb weight restriction applies to an individual MINIBOT, not a collection of several MINIBOTS built by the same team.

No, the MINIBOT weight only applies to the MINIBOT itself and is not allocated across the TEAMS using the MINIBOT.

Any changes made the the HOSTBOT (i.e. addition of a DEPLOYMENT MECHANISM) will require reinspection of the HOSTBOT.

Minibot

Minibot Materials & Modification

Minibot Materials & Modification

Posted by 2011FRC3082 at 01/14/2011 07:05:54 pm

Our team has a couple questions regarding the minibot materials and modification:

Q1) List under Rule <R92>, it states that the following items are the only permitted materials for use on the minibots. Next to the “S” category it lists “Mechanical Hardware” (i.e. screws, bolts, etc.). Would this also include hardware such as bearings and springs?

Q2) List under Rule <R93> it states that “Motors may not be modified with exceptions of those in Rule <R47>. Would teams be allowed to modify the gear teeth or any other external components of the motor?

Thank You,

Team 3082

Minibot Material and Modification

Posted by 2011FRC3082 at 01/15/2011 02:41:57 pm

Our team has a couple questions regarding the minibot materials and modification:

Q1) List under Rule <R92>, it states that the following items are the only permited materials for use on the minibots. Next to the “S” category it lists “Mechanical Hardware” (i.e. screws,

bolts, etc.). Would this also include hardware such as bearings and springs?

Q2) List under Rule <R93> it states that “Motors may not be modified with exceptions of those in Rule <R47>. Would teams be allowed to modify the gear teeth or any other external components of the motor?

Thank You,
Team 3082

Re: Minibot Materials & Modification

Posted by GDC at 01/18/2011 09:29:02 pm

1) No.
2) R47-A allows modification of gear teeth on output shafts. We cannot comment on the general "other external components" clause.

Minibot

NXT on Minibot

NXT on Minibot

Posted by 2011FRC1058 at 01/15/2011 11:03:20 am

We are permitted to use one NXT on the Minibot, however, are we required to use one NXT? If we build our Minibot such that other circuitry can handle the starting and stopping of the motors, is that allowed?

Re: NXT on Minibot

Posted by GDC at 01/16/2011 11:57:49 am

There is no rule that requires that the MINIBOT have an NXT.

Minibot

Clarification of Servo usage

Clarification of Servo usage

Posted by 2011FRC1893 at 01/15/2011 11:54:29 am

According to the rules, you can use two motors in a minibot. Is a Tetrix Servo considered to be a motor?

Minibot <R92> usage of TETRIX Component Servo Motors

Posted by 2011FRC1501 at 01/15/2011 07:34:52 pm

Before Team Update #2, the wording for <R92> stated "TETRIX components" as allowed components for use to construct the minibot. After team update #2 the wording has been changed to "TETRIX components that are not in violation of any other rules,".

We are questioning if the intent of this wording change was to limit "some" TETRIX components" such as a PN: W739197 180 degree servo or PN: W739177 continuous rotation servo.

Would a SERVO be considered a "MOTOR"? and thus be in violation of <R92> B. no more than two motors (PNW739083)? If a SERVO is not a MOTOR or allowed because it is a "TETRIX component, then would the Hitec PN: W991445 Servo Controller be allowed to control the SERVO"s"?

Re: Clarification of Servo usage

Posted by GDC at 01/18/2011 09:30:59 pm

Please see Team Update 3.

Minibot

Springs on Minibots?

Springs on Minibots?

Posted by 2011FRC2670 at 01/15/2011 05:56:05 pm

Hi, we would want to know if the use of springs is allowed on the minibot for the sole purpose of a support system. These springs would not, in any way, have energy stored for the purpose of propelling the robot up the pole. These springs would be used to force some hinges closed and make sure they stay closed. Would this be permitted?

Thanks in advance,
Team 2670

Spring usage under <R92> S. Mechanical hardware for Minibot

Posted by 2011FRC1501 at 01/15/2011 07:23:34 pm

Would a small coiled spring be classified as mechanical hardware under the "S." ruling of allowed parts for a minibot so long as the spring does not break rule <G19>, as the intent of the compression spring would be used as a latching mechanism to lock it in place?

Springs on Minibots?

Posted by 2011FRC2231 at 01/17/2011 08:50:16 am

Hi,
We were wondering if springs were allowed on the minibot for tightening and fastening? (Of course not for climbing up the tower, or any vertical movement of the minibot)
Thanks

Mechanical hardware

Posted by 2011FRC2429 at 01/17/2011 07:13:29 pm

would springs be considered mechanical hardware and usable as long as they were not propelling the minibot up the pole?

can hinges be considered mechanical hardware

thanks

Re: Springs on Minibots?

Posted by GDC at 01/18/2011 09:35:18 pm

No. Only the materials explicitly identified in Rule <R92> are permitted on the minibot.

Minibot

Minibot Construction and Size

Minibot Construction and Size

Posted by 2011FRC0057 at 01/15/2011 06:48:32 pm

A few points we'd like to clarify on the MINIBOT:

1. No PLAYING CONFIGURATION is listed for the MINIBOT in R91. Are we correct in

assuming that the MINIBOT must always remain in a 12" x 12" x 12" box?

2. R92 lists several "raw material" items like aluminum and polycarbonate. Are we allowed to machine these materials? (Eg. milling flat aluminum bar to make wheels) Are there any limits to this?

3. Is welding an allowable joining method for the minibot?

4. Does "common household light switch" include "Decora" style switches with large paddle actuators? What about three-way light switches? Double pole light switches?

Re: Minibot Construction and Size

Posted by GDC at 01/16/2011 12:06:40 pm

1. Yes.

2. Yes, they may be machined.

3. Yes.

4. For the purposes of the 2011 FRC competition, "light switches" refer to any commonly available (i.e. available from a commercial source such as Home Depot or Lowes) household light switch that would normally be used in a wall mounting box.

Re: Minibot Construction and Size

Posted by GDC at 01/31/2011 06:28:13 pm

Updated per [B][I]Team Update 7[/I][/B].

1. Yes.

2. Yes, they may be machined.

3. Yes.

4. For the purposes of the 2011 FRC competition, "light switches" refer to any commonly available (i.e. available from a commercial source such as Home Depot or Lowes) household light switch that would normally be used in a wall mounting box.

Minibot

Clarification of 4.3.5 blue box (Team Update 1)

Clarification of 4.3.5 blue box (Team Update 1)

Posted by 2011FRC2036 at 01/16/2011 10:13:04 am

I see that an FTC team can provide a mini-bot to compete with an FRC robot. It would be good to have more details about this collaboration. For example, can a team take its FTC mini kit to an FTC team, form an FTC/FRC "mini-team", and work together to complete the mini-bot after the Bag & Tag / ship date? Thanks.

Re: Clarification of 4.3.5 blue box (Team Update 1)

Posted by GDC at 01/26/2011 09:19:36 pm

There are no requirements or restrictions around who builds the MINIBOT.

Minibot

Mini-Bot Polycarbonate

Mini-Bot Polycarbonate

Posted by 2011FRC1876 at 01/16/2011 01:04:33 pm

The list of approved materials for the minibot includes polycarbonate. Does that mean only raw stock (and if so, what specific thickness, etc), or is a part cast/molded from polycarbonate acceptable?

Is the general intent that what is not acceptable for the 2010/2011 First Tech Challenge - Get Over It competition, is not acceptable for the mini-bot? Meaning, there are specific rules on raw material stocks that are not in the mini-bot rules, but are in the Tech rules.

Mini-Bot Raw Materials

Posted by 2011FRC1876 at 01/16/2011 04:15:40 pm

The polycarbonate referenced in the Mini-bot acceptable materials - does that refer to raw material of a specific width, or is a polycarbonate cast part acceptable.

In general, the 2010 First Tech Get Over Rules are much more specific on raw materials, like aluminum and PVC - is the spirit of the rules that what is not allowed in the 2011 Get Over It also not allowed in the mini-bot?

Re: Mini-Bot Polycarbonate

Posted by GDC at 01/26/2011 01:45:40 pm

There are no restrictions on the size, shape or form of polycarbonate used in the construction of the MINIBOT. FTC rules do not apply to the FRC game.

Minibot

Minibot Materials

Minibot Materials

Posted by 2011FRC1648 at 01/16/2011 03:02:50 pm

We are allowed to use Tetrix components, per <R92A>. Are LEGO parts included in the FTC kit included in this category?

Re: Minibot Materials

Posted by GDC at 01/17/2011 10:29:23 pm

Please refer to Rule R92 as updated in Team Update #3.

Re: Minibot Materials

Posted by GDC at 01/27/2011 12:18:55 pm

[QUOTE=GDC;45556]Please refer to Rule R92 as updated in Team Update #3.[/QUOTE]

Please see Team Update 5.

Minibot

Minibot "upward motion" clarification

Minibot "upward motion" clarification

Posted by 2011FRC0116 at 01/16/2011 04:13:47 pm

We are requesting a clarification regarding Rule <G19> as modified in Team Update #1. Will "moving up the POST" be determined by a change in the point(s) of contact between the MINIBOT and the POST, or by a change in the altitude of the MINIBOT center of mass? If the latter, at what level of resolution will this be determined? Specifically, if the MINIBOT makes changes to its configuration via means other than the two permitted motors (for example, appendages that are deployed by pre-tensioned surgical tubing) that do not directly alter the location of the MINIBOT on the POST, but may inherently make small changes in the center of mass of the MINIBOT, would this be a violation of Rule <G19>?

Re: Minibot "upward motion" clarification

Posted by GDC at 01/24/2011 07:50:29 pm

A MINIBOT will be considered having achieved upward vertical movement if, to a reasonably astute observer, the distance between the MINIBOT and the TARGET decreases.

Minibot

bolt as minibot axle

bolt as minibot axle

Posted by 2011FRC2973 at 01/17/2011 07:57:38 am

If a steel bolt is used as an axle rather than to joint material together, is it still considered mechanical hardware per R92.S?

Re: bolt as minibot axle

Posted by GDC at 01/19/2011 07:22:08 pm

Yes, the bolt would be considered a fastener per <R92-S>, as amended in Team Update #3.

Minibot

Minibot construction

Minibot construction

Posted by 2011FRC1189 at 01/17/2011 09:19:01 am

Before we destroy our First Choice Tetrix kit, I want to confirm that the ONLY pieces that cannot be altered are the motor and the battery pack.

Also confirming that the entire Tetrix catalog is in play, not just the FTC kit.

Re: Minibot construction

Posted by GDC at 01/19/2011 07:27:13 pm

There is no prohibition against altering components from the Tetrix kit, other than motor modifications strictly prohibited by Rule <R93> and the battery pack modifications prohibited by Rule <R92>.

Legal Tetrix parts include all the items identified in the Tetrix on-line catalog found at [URL="http://www.tetrixrobotics.com/Building_System/Downloads/default.aspx?moid=533"]http://www.tetrixrobotics.com/Building_System/Downloads/default.aspx?moid=533[/URL].

Re: Minibot construction

Posted by GDC at 01/27/2011 12:19:51 pm

[QUOTE=GDC;45834]There is no prohibition against altering components from the Tetrix kit, other than motor modifications strictly prohibited by Rule <R93> and the battery pack modifications prohibited by Rule <R92>.

Legal Tetrix parts include all the items identified in the Tetrix on-line catalog found at [URL="http://www.tetrixrobotics.com/Building_System/Downloads/default.aspx?moid=533"]http://www.tetrixrobotics.com/Building_System/Downloads/default.aspx?moid=533[/URL].[/QUOTE]

Please see Team Update 5.

Minibot

Minibot

Minibot

Posted by 2011FRC0806 at 01/17/2011 11:27:42 am

Do we have to make a minibot?

Re: Minibot

Posted by GDC at 01/19/2011 07:31:49 pm

There is no requirement to make a MINIBOT. It is an option, to be considered based on your strategic priorities for your teams solution to the game.

Minibot

Minibot

Minibot

Posted by 2011FRC0806 at 01/17/2011 11:29:06 am

Are we allowed to drive, or transfer, or handover our minibot onto another robot in our alliance during teleoperated? Would we get coopertition points for this?

Re: Minibot

Posted by GDC at 01/19/2011 07:33:42 pm

No. This would be considered a violation of Rule <G47>.

Minibot

Common Household Light Switches

Common Household Light Switches

Posted by 2011FRC0263 at 01/17/2011 11:41:29 am

Is the assumption that a Common Household Light Switch is one that would be mounted in an outlet box and not a toggle switch mounted on a lamp correct?

If it is a wall switch, may it be modified in any way?
e.g. removal, cutting or bending of the metal mounting / grounding plate
or removing any other material for weight saving.

Thank you

Re: Common Household Light Switches

Posted by GDC at 01/23/2011 01:49:52 pm

For the purposes of the 2011 competition, a common household light switch is any electrical switch that would normally be mounted in a wall outlet box with household wiring, typically available at a home supply center (e.g. Lowes or Home Depot).

Minor modifications of the switch (e.g. removing the mounting tabs) are permitted, as long as the basic structural integrity and overall safety of the switch are not compromised.

Minibot

Any limits on number of minibots/contributors?

Any limits on number of minibots/contributors?

Posted by 2011FRC2159 at 01/17/2011 01:10:48 pm

1) Are there any limits on the number of minibots a team (either FRC or FTC) can:
a) bring to an event?
b) submit for inspection?
c) share with/____ to other teams?
And if so, what are the limits in each case?

2) Can an FRC team not registered for an event contribute minibots to teams that are?

3) Will the registration of FTC teams submitting a minibot for inspection be checked/verified somehow?

Thank you for a great game design!

Re: Any limits on number of minibots/contributors?

Posted by GDC at 01/20/2011 09:29:33 pm

1a) No.
1b) No.
1c) No.
2) Yes, but only teams registered for the event are eligible for awards.
3) Yes.

Minibot

Tetrix components

Tetrix components

Posted by 2011FRC1983 at 01/17/2011 06:26:16 pm

In the allowed components for the minibot
(R92) Tetrix components are called out as allowed.
Does this mean that any Tetrix components (with the limitations stated in (R92) B,C,D and E) are allowed for use on a minibot?

Re: Tetrix components

Posted by GDC at 01/18/2011 09:41:42 pm

Please see Team Update 3.

Re: Tetrix components

Posted by GDC at 01/27/2011 12:20:32 pm

[QUOTE=GDC;45730]Please see Team Update 3.[/QUOTE]

Please see Team Update 5.

Minibot

Servos on minibot

Servos on minibot

Posted by 2011FRC2348 at 01/17/2011 07:49:39 pm

According to Rule 92A, we can use any other Tetrix components not in violation with any other rules.

We just wanted to clarify:
(1) Is the HiTechnic Servo Controller different from the HiTechnic DC Motor Controller?
(2) If the answer to question (1) is yes, am I correct that we can use the Servo Controller (and ONE Motor Controller) along with Tetrix servos on the minibot?

Re: Servos on minibot

Posted by GDC at 01/24/2011 08:50:47 pm

1) Yes.
2) Yes.

Minibot

<R92> subpart S.

<R92> subpart S.

Posted by 2011FRC1730 at 01/18/2011 09:01:53 am

1. Are bearings considered "Mechanical Hardware"
2. Are gearboxes considered "Mechanical Hardware"
3. would a non-powered roller such as a conveyor roller that consists of 2 or more different materials (i.e. bearing surface ID with a spongy traction surface OD) be considered "Mechanical hardware"

Re: <R92> subpart S.

Posted by GDC at 01/20/2011 09:32:34 pm

Please see Team Update 3.

Minibot

Minibot deploy

Minibot deploy

Posted by 2011FRC0175 at 01/18/2011 09:37:13 am

At what point can the MINIBOT be “turned on” to climb? Can this happen at any time after DEPLOYMENT begins or is there a restriction to only after DEPLOYMENT is complete? Can MINIBOT mechanism used to climb, be turned on prior to DEPLOYMENT completion.

Re: Minibot deploy

Posted by GDC at 01/24/2011 07:38:33 am

There is no restriction on when the MINIBOT may be powered.

Minibot

Minibot Removal

Minibot Removal

Posted by 2011FRC2377 at 01/18/2011 09:58:17 pm

Is a team allowed to bring and utilize a special tool for removing its minibot from the tower (for instance, a pole with a hook or similar)?

T25 and minibot retrieval

Posted by 2011FRC2973 at 01/24/2011 09:13:24 am

[QUOTE] May we bring a small step ladder onto the field at the end of the match to retrieve our minibot from the tower?
No. This would be a violation of Rule T25.[/QUOTE]

Okay

1) May we stand on the tower base in order to retrieve our minibot from the tower?

2) May we design a feature on our operator console to retrieve our minibot from the tower, since it is allowed to be brought onto the field per Rule T25?

How to get the Minibot down

Posted by 2011FRC2484 at 01/25/2011 05:50:40 pm

Are teams allowed to bring some kind of pole grabber mechanism to use to get the minibot off the tower after the end of the match?

Minibot retrieval

Posted by 2011FRC1983 at 01/25/2011 06:14:59 pm

Is a team allowed to bring a pole on the field at the end of the match to help them retrieve their minibot? (IE to reach up and flip a switch...etc..)

If this pole is a part of the robot and is detached at the end of the match by team members is this pole legal?

If the pole is part of the drive console and is detached at the end of the match is it legal to use to retrieve the minibot.

An aid such as this would only make things safer on the field and does not give a competitive edge to any team.

thank you

Minibot Removal From Tower

Posted by 2011FRC0801 at 01/30/2011 12:18:03 am

Would you please provide clarification on new wording "without special equipment" added to <G59> per Team Update #6. Is it permissible to use a team provided implement (such as a pole, yardstick, etc) to activate a release mechanism on the minibot?

MiniBot Removal Tool

Posted by 2011FRC1922 at 01/30/2011 10:04:46 pm

A special tool is not defined in latest update but not allowed. An example or two examples would help. We are designing a minibot that relies on leverage. A small poke with a broom handle will release the robot and it will safely slide down the post. Is this a special tool? Is a a special tool a tool specifically made to retrieve the minibot?

jan 28 update

Posted by 2011FRC3336 at 01/31/2011 01:17:01 pm

says that you can not use anything to get your minibot except someone standing on the floor. What happens if no one on the team is tall enough to reach the miniBot from the floor. can they use a stick or graber to reach it

Re: Minibot Removal

Posted by GDC at 01/31/2011 03:35:31 pm

Please see Team Updates 6 and 7.

Minibot

Minibot sprockets

Minibot sprockets

Posted by 2011FRC0175 at 01/19/2011 02:17:22 pm

Can we fabricate our own sprockets out of stock hardware, i.e. Aluminum sheetmetal? If so, please define "sheetmetal" (vs. plate).

Re: Minibot sprockets

Posted by GDC at 01/24/2011 08:53:56 pm

There are no rules that would disallow this. "Raw aluminum sheet" is anything marketed as "aluminum sheet" that is not sold in pre-perforated or pre-punched form.

Minibot

Minibot materials R92.p "non slip pad"

Minibot materials R92.p "non slip pad"

Posted by 2011FRC2028 at 01/19/2011 09:38:19 pm

Non slip pad is a broad term. Would any rubber faced material that came in a flexible backed, cloth-like form be accepted? What about such a material that may be used for tread or conveyor surfaces and isn't customarily called "non slip pad"?

Minibot materials--Non-slip pad

Posted by FRC233 at 01/20/2011 11:08:16 am

Does a material such as castable polyurethane fall under the definition of "non-slip pad" as per <R92> P?

Re: Minibot materials R92.p "non slip pad"

Posted by GDC at 01/26/2011 02:12:07 pm

Any product sold and/or marketed as a pad, with "non-slip" indicated as a property would be legal under this rule.

Minibot

Posted by 2011FRC1736 at 02/08/2011 09:12:18 pm

R 92. We would like some clarification on what it is meant by a non-slip pad

Anti-Slip pad?

Posted by 2011FRC2410 at 02/22/2011 06:27:21 pm

Does padding marketed as "anti-slip pad" qualify as "non slip pad" and is it therefore legal for the minibot?

Minibot

Grease on the Minibot

Grease on the Minibot

Posted by FRC1114 at 01/19/2011 09:49:46 pm

Is the grease listed on this page from the following page of the online Tetrix catalogue legal for use on the Minibot?

[url]http://shop.pitsco.com/store/detail.aspx?CategoryID=62&by=9&ID=5488&c=1&t=0&l=0[/url

]

Would it be legal to use other COTS greases or lubricants on the Minibot, solely to be used on gears in order to protect from damage? Considering the potential loads and stresses teams will be applying to the aluminum Tetrix gears, it seems like grease would be necessary to ensure that teams do not damage and grind these gears.

Thank you for your consideration.

Re: Grease on the Minibot

Posted by GDC at 01/23/2011 01:57:32 pm

Please see Team Update 5.

Minibot

Minibot Questions

Minibot Questions

Posted by 2011FRC0599 at 01/20/2011 05:11:26 pm

Hello GDC -

These questions all pertain to the Minibot:

1) Are there any restrictions to the polycarbonate? Can we use tube, bar, sheet, precut elements, etc?

2) Are there any limits to the thickness of the allowed aluminum?

3) Are the connector and fuse part of the unaltered battery?

4) Can you clarify "limit switch"? Are micro switches or button switches legal?

5) Are lubricants legal on the Minibot?

Thank you!

-Robodox

Re: Minibot Questions

Posted by GDC at 01/24/2011 09:03:22 pm

1) No, Yes

2) Per R92-H, anything made of aluminum and marketed as sheet, 90° angle, u-channel, tube, or bar is allowed, as long as it is not pre-perforated or pre-punched.

3) Please see Team Update 5.

4) A limit switch is anything marketed as a "limit switch".

5) Please see Team Update 5.

Minibot

Confirm tetrix catalog

Confirm tetrix catalog

Posted by 2011FRC0175 at 01/20/2011 05:25:28 pm

Yesterday the GDC responded to a question from 2011FRC1189 on minibot construction.

In that answer as well as in TU #3, GDC stated "Legal Tetrix parts include all the items identified in the Tetrix on-line catalog found at http://www.tetrixrobotics.com/Buildi....aspx?moid=533"

Please confirm that this is the only legal catalog to order from and not the generally more expansive Lego Education store site at [url]http://www.legoeducation.us/store/default.aspx?groupID=159[/url] -- "TETRIX Robotics Parts for FRC Teams"

Minibot construction

Posted by 2011FRC0175 at 01/20/2011 05:40:52 pm

Follow-up due to more confusion.

Just received FIRST EMAIL BLAST which states:

To Bot or Not to Bot: If you did not opt to receive an FTC Minikit .....or need additional items to complete your minibot, you have a few options:

.

.

2) Purchase full TETRIX kits or individual components from LEGO Education at [url]www.legoeducation.us/frc[/url]

.

.

So both
[url]www.legoeducation.us/frc[/url]
and/or
[url]www.tetrixrobotics.com/Building_System/Downloads/default.aspx?moid=533[/url]

are now OK?

Minibot Clarification of parts/Tetrix parts

Posted by 2011FRC2375 at 01/22/2011 02:55:33 pm

We would like clarification of what "tetrix components" mean? Many keep saying no legos, but isn't that part of FTC and FLL? We are wanting to know if it is legal to use lego parts, and if so, does it have to be the legos that come in these kits or any legos? We are encouraged to work with FLL and FTC teams, so wouldn't that mean legos? Please clarify what "tetrix components" mean?

Re: Confirm tetrix catalog

Posted by GDC at 01/25/2011 09:47:10 pm

See Team Update 5.

Minibot

Limit switches on Minibot

Limit switches on Minibot

Posted by 2011FRC3320 at 01/20/2011 08:40:53 pm

Do the allowed limit switches have to be physical switches or can they be electronic (infrared, etc.)?

Re: Limit switches on Minibot

Posted by GDC at 01/24/2011 09:04:34 pm

A limit switch is anything marketed as a "limit switch".

Minibot

Minibot rubber bands

Minibot rubber bands

Posted by 2011FRC1983 at 01/20/2011 10:48:41 pm

Rubber bands are allowed under the minibot rule.
We would like to use a bicycle inner tube and cut rubber bands out of it.

This is rubber and it would be a band.
Is this legal...for use on the minibot

Re: Minibot rubber bands

Posted by GDC at 01/23/2011 02:46:49 pm

No, this would not be permitted. Rubber bands are items marketed and sold as "rubber bands." Slices of inner tube do not satisfy that definition.

Minibot

Minibot NXT Power Source

Minibot NXT Power Source

Posted by 2011FRC1540 at 01/20/2011 11:29:34 pm

Even though they are not in the Tetrix catalog nor in the materials expressly allowed to be used on a minibot, we are assuming the minibot materials are also meant to include AA batteries or the NXT rechargable battery pack. Is this assumption correct?

Re: Minibot NXT Power Source

Posted by GDC at 01/23/2011 02:45:31 pm

Yes. The batteries are an integral part of the NXT controller, and are permitted as long as they are used solely for that intended purpose (i.e. they are not used to power anything other than the NXT controller).

Minibot

Minibot Hinge

Minibot Hinge

Posted by 2011FRC0876 at 01/22/2011 10:41:01 am

We have small piano type hinges on our minibot. Per R92, letter S, are they considered fasteners?

Hinge on the MiniBot

Posted by 2011FRC0876 at 01/23/2011 10:15:07 pm

We planned on using small piano-type metal hinges on our miniBot. Will they qualify as fasteners and be legal?

Re: Minibot Hinge

Posted by GDC at 01/24/2011 08:09:21 am

Hinges are not considered mechanical fasteners.

Minibot

Minibot and Bag + Tag

Minibot and Bag + Tag

Posted by 2011FRC0956 at 01/22/2011 11:51:42 am

In Bag & Tag, do you put the minibot in the same bag as the main robot? A different bag? Is it packed up at the same date as the main robot? Is it part of the withholding allowance? If we were to construct several minibots, could we make these in the month-long window between the deadline and our regional?

Thank you!

Re: Minibot and Bag + Tag

Posted by GDC at 01/31/2011 03:37:05 pm

MINIBOT(s) meet the definition of FABRICATED ITEMS you may choose to include as part of your WITHHOLDING ALLOWANCE. Per R24, teams may continue development of WITHHOLDING ALLOWANCE items after ship date. If you choose to include your MINIBOT(s) as part of your WITHHOLDING ALLOWANCE, it does not need to be bagged or shipped. Also, Per R33, the weight of your MINIBOT(s) is not included in the incoming parts weight restriction.

Minibot

R92 question

R92 question

Posted by 2011FRC2577 at 01/22/2011 01:07:00 pm

R92AA specifically allows for the use of magnets in the MINIBOT. But the list of allowed parts does not seem to clearly allow for any way to attach them. Does "mechanical fasteners" per R92S include adhesives or tape? Or would a magnet need to be sandwiched between other materials that are fastened by screws, bolts, etc?

Re: R92 question

Posted by GDC at 02/03/2011 08:09:27 pm

Tape is not considered a mechanical fastener. There is no one prescribed way to attach magnets to the MINIBOT.

Minibot

Minibot non-functional decorations

Minibot non-functional decorations

Posted by 2011FRC1676 at 01/22/2011 02:44:40 pm

May the minibot use materials not allowed in <R92> to construct non-functional decorations for the minibot?

Re: Minibot non-functional decorations

Posted by GDC at 01/25/2011 09:48:40 pm

Please see Team Update 5.

Minibot

Permitted Minibot Materials

Permitted Minibot Materials

Posted by 2011FRC0190 at 01/22/2011 02:51:07 pm

Per R92 are teams allowed to use any stock Aluminum alloy on the Minibot?

Are materials such as paint, paper, and/or cardboard which are only used for non-functional decorative purposes allowed on the Minibot?

May teams use solder on the Minibot?

Re: Permitted Minibot Materials

Posted by GDC at 01/25/2011 09:49:51 pm

Please see Team Update 5.

Minibot

Minibot Energy During Deployment

Minibot Energy During Deployment

Posted by 2011FRC0190 at 01/22/2011 02:58:38 pm

Per G19 MINIBOTs must move up the POST solely through electric energy provided after DEPLOYMENT. The intent clarification states that MINIBOTs are not allowed to store energy before DEPLOYMENT or receive any sort of assistance from the HOSTBOT in the vertical assent.

Because DEPLOYMENT is defined as a discrete period of time, are MINIBOTs allowed to use mechanical energy from the motors during DEPLOYMENT?

One example of this would be the third MINIBOT shown at kickoff that drove itself across the tower base to the POST.

Re: Minibot Energy During Deployment

Posted by GDC at 01/25/2011 09:51:06 pm

Please see Team Update 5.

Minibot

typo in def. of Minibot

typo in def. of Minibot

Posted by 2011FRC0956 at 01/22/2011 03:11:21 pm

The latest revision of Section 1.6 incorrectly references the minibot section as 4.4.14.

This section does not exist: the correct reference is 4.3.14.

Re: typo in def. of Minibot

Posted by GDC at 01/25/2011 09:51:53 pm

Thank you. Please see Team Update 5.

Minibot

Solder and crimps on the minibot

Solder and crimps on the minibot

Posted by 2011FRC3173 at 01/22/2011 04:54:57 pm

Since they are commonly used in wiring FRC robots, are solder and crimps allowed on the minibot, or would they not be included per <R92>?

Re: Solder and crimps on the minibot

Posted by GDC at 01/25/2011 09:52:55 pm

Please see Team Update 5.

Minibot

Minibot Fuses

Minibot Fuses

Posted by FRC1114 at 01/23/2011 11:22:49 am

Considering the stall current of a Minibot motor is ~7A, would it be legal to replace the existing 20A fuse in line with the battery with a smaller fuse? This would be done as both a safety precaution as well as to protect the motor(s).

If it is not legal to switch the existing fuse, would it be legal to place a new fuse in line with each motor for the same reasons mentioned above?

Thank you for your consideration.

Re: Minibot Fuses

Posted by GDC at 01/25/2011 09:53:54 pm

Please see Team Update 5.

Minibot

Rubber Bands

Rubber Bands

Posted by 2011FRC1746 at 01/24/2011 10:11:57 am

The provided material allowance for elastic elements on the minibot are stated in the rules as follows:

<R92> The following items are the only permitted materials for use on the MINIBOTS:
...
U. Rubber bands,
V. Surgical tubing,
...

Also, a previous clarification on the Q&A clarified that the rubber bands must be advertised

and sold as such and cannot be formed from other materials.

May narrow rubber tubes (such as those allowed as elastic components for VEX, which are similar to surgical tubing but much thinner) be used as elastic elements on the minibot? If so, is there a Tetrix equivalent of these bands?

Re: Rubber Bands

Posted by GDC at 01/26/2011 09:27:12 pm

Rubber bands are items marketed and sold as "rubber bands." Surgical tubing is an item marketed and sold as "surgical tubing."

Minibot

TETRIX Components

TETRIX Components

Posted by 2011FRC1746 at 01/25/2011 10:06:50 am

The following parts are TETRIX components:

W739071 TETRIX Angles (288mm)
W739073 TETRIX Flat Building Plates
W739174 TETRIX Sprockets and Chain Pack
W736468 TETRIX Tank Tread Kit
W739103 TETRIX Stand-Off Posts (2")

Are all of these parts allowable materials for the minibot as per <R92>?

Re: TETRIX Components

Posted by GDC at 01/26/2011 09:28:23 pm

Please see Team Update 5.

Minibot

Can PVC Sheet be used for Mini Bot?

Can PVC Sheet be used for Mini Bot?

Posted by 2011FRC3218 at 01/25/2011 01:55:17 pm

The mini bot rules say we can use PVC pipe and Acrylic sheet for mini bot. We have 1/2 PVC sheet that we would like to use. Is this within the spirit of the rules?

Re: Can PVC Sheet be used for Mini Bot?

Posted by GDC at 01/26/2011 09:29:16 pm

PVC sheet does not appear in R92, and therefore may not be used.

Minibot

Minibot Shipping

Minibot Shipping

Posted by 2011FRC0175 at 01/25/2011 02:45:43 pm

Does the minibot have to ship with the hostbot, or can it be brought to each competition along with the withholding allowance by FRC teams? Here is the text from the Game Manual that speaks somewhat to the issue:

4.3.15 Blue Box

"MINIBOT use is independent of the ROBOT inspection. For example, any FTC team can bring a MINIBOT to an event, get it inspected, and if legal, that MINIBOT can compete with any FRC ROBOT (that has passed ROBOT inspection). There are legal HOSTBOTS and legal MINIBOTS; they are independent of each other regarding inspection."

Re: Minibot Shipping

Posted by GDC at 01/31/2011 03:38:45 pm

The MINIBOT is not required to ship with the HOSTBOT.

Minibot

Minibot battery modification

Minibot battery modification

Posted by 2011FRC3238 at 01/25/2011 07:25:54 pm

Is it permitted to separate the cells of the minibot battery (keeping the electrical configuration intact)?

Re: Minibot battery modification

Posted by GDC at 01/31/2011 03:39:37 pm

This would be a violation of R92-C.

Minibot

Stored Energy in the MINIBOT

Stored Energy in the MINIBOT

Posted by 2011FRC0135 at 01/25/2011 08:49:21 pm

G19 clearly states that energy may NOT be stored in a flywheel or in any other form other than the battery BEFORE minibot deployment. Would charging a length of surgical tubing, rubber band, or flywheel on the minibot using only the stored energy from the minibot's battery be legal if the energy is converted once the end game has been initiated?

In other words there is no stored energy other than the battery on the minibot before end game, but once end game has started, the minibot converts it's stored energy in the battery into another form of potential energy.

Re: Stored Energy in the MINIBOT

Posted by GDC at 01/26/2011 09:30:35 pm

Please see G19, as modified in Team Update 5.

Minibot

Polycarbonate Glue

Polycarbonate Glue

Posted by 2011FRC2338 at 01/26/2011 12:14:59 am

Can you provide more specifics on what glues are allowed? Searchs on Polycarbonate Glue provide a wide variaty of products including several loctite products and other brands of super glues.

Re: Polycarbonate Glue

Posted by GDC at 01/31/2011 03:40:09 pm

Any glue that is marketed as specifically for bonding polycarbonate is allowed per R92-G.

Minibot

Minibot Circuitry

Minibot Circuitry

Posted by 2011FRC0295 at 01/26/2011 12:37:57 am

Can can custom circuitry be placed between the motor and battery? If so, are there any restrictions.

Re: Minibot Circuitry

Posted by GDC at 01/31/2011 03:48:58 pm

Only the items listed in R92 are allowed on the MINIBOT.

Minibot

Using magnets with the minibot motors

Using magnets with the minibot motors

Posted by 2011FRC0341 at 01/26/2011 08:26:31 am

One of the acceptable materials for minibot construction is "magnets". Is adding magnets to the outside of the Tetrix motors (increasing the strength of the flux from the built-in permanent magnets) considered a modification of the motor - even if said magnets are external to the motor itself?

(Our team makes no claims that the science behind this technique is or isn't flawed, we're just asking if it's legal)

Re: Using magnets with the minibot motors

Posted by GDC at 01/31/2011 03:40:54 pm

There are no rules that would prohibit this.

Minibot

Are we allowed to modify Minibot wheels?

Are we allowed to modify Minibot wheels?

Posted by 2011FRC2543 at 01/26/2011 01:44:32 pm

Are we allowed to modify the tetrix wheels in order to get more traction on the pole?

Re: Are we allowed to modify Minibot wheels?

Posted by GDC at 01/31/2011 03:49:29 pm

There are no rules that would prohibit this.

Minibot

Welding Minibot Frame

Welding Minibot Frame

Posted by 2011FRC2035 at 01/26/2011 07:06:43 pm

Hello,

Are we allowed to weld the frame of the mini bot? Section 4, R92 states the materials we are allowed, however it has no mention to welding the Frame or any other component in reference

to the mini bot.

Any advice in this field would be much appreciated.

Sincerely,
Team 2035

Adhereing minibot components together

Posted by 2011FRC2035 at 01/28/2011 06:57:15 pm

Hello,
Are we allowed to weld mini bot components together(IE the frame) or do we have to use nuts and bolts?

Minibot aluminum

Posted by 2011FRC0639 at 01/29/2011 01:14:54 pm

Under rule R92 in the Minibot section of the manual, bullet H states that only aluminum can only be used if it is fabricated from its raw state. Our question is if aluminum rod should be under this section in addition to the other forms stated, such as angle, bar and sheet.

Re: Welding Minibot Frame

Posted by GDC at 01/31/2011 03:50:08 pm

Yes, per [B][I]Team Update 7[/I][/B], aluminum welding rod is allowed.

Minibot

Liquid Electrical Tape

Liquid Electrical Tape

Posted by 2011FRC1515 at 01/26/2011 08:01:03 pm

Would the use of liquid electrical tape such as the product found at the following link be permissible per <R92-W>?

[url]http://www.plastidip.com/home_solutions/Liquid_Tape_-_Electrical_Insulation[/url]

Thank you,
Team 1515

Re: Liquid Electrical Tape

Posted by GDC at 01/31/2011 03:50:55 pm

This would not be legal as it is not 'electrical tape'. The manufacturer describes it as "a rubber coating for use as electrical tape".

Minibot

Minibot Motor

Minibot Motor

Posted by 2011FRC0008 at 01/27/2011 01:07:37 am

Is there any alternative for the Tetrix motor or battery? We are burning through motors due to the high battery weight. Even with two motors, the Minibot only uses 0.5% of its initial energy during its run.

Re: Minibot Motor

Posted by GDC at 01/31/2011 03:51:41 pm

No. However, See Team Update #5 for options that may help reduce the chance of motor burn out.

Minibot

Minibot Gears

Minibot Gears

Posted by 2011FRC0008 at 01/27/2011 01:09:34 am

Can gears for the minibot be machined from aluminum raw stock? We would like to have a right angle bevel gear or pinion gear but Tetrix only has three spur gears.
Thanks

Re: Minibot Gears

Posted by GDC at 01/31/2011 03:52:15 pm

There are no rules that would prevent this as long as the aluminum is compliant with R92.

Minibot

Minibot Fabrication

Minibot Fabrication

Posted by 2011FRC3309 at 01/27/2011 02:26:32 am

1) Can the aluminum components on the minibot be welded or fused together?

2) Is Painting or Coating Minibot components considered non-functional decorations?

Re: Minibot Fabrication

Posted by GDC at 01/31/2011 03:53:15 pm

1) No, as aluminum welding rod is not a permitted item per R92.
2) Yes, as long as the paint or coating is non-functional.

Minibot

All Thread on Mini Bot

All Thread on Mini Bot

Posted by 2011FRC1391 at 01/27/2011 04:29:54 pm

Does 1/4-20 all thread qulify as acceptable hardware for the Mini Bot ? Hardware is acceptable so is all thread acceptable since its like a bolt without a head?

Re: All Thread on Mini Bot

Posted by GDC at 01/31/2011 03:53:47 pm

"All thread" is considered a fastener, and therefore legal per R92-S.

Minibot

Tetrix component

Tetrix component

Posted by 2011FRC3059 at 01/28/2011 03:26:45 pm

Since this is the first time we are using Tetrix, we need clarification
for list of approved Tetrix components. Are we allowed to use sensors such as: touch sensor, ultrasonic devices; or the Lego sensors; or no sensors at all are allowed on the minibot.

Re: Tetrix component

Posted by GDC at 01/31/2011 03:54:42 pm

Please see Rule <R92-BB>.

Minibot

Minibot limit switches

Minibot limit switches

Posted by 2011FRC0639 at 01/29/2011 01:14:11 pm

Does the Cherry E79-20A push-pull (on-reset) switch qualify as a maintained-contact limit switch? In the Digikey catalog, it is in their category of “Snap Action, Limit, Lever” switches.

Re: Minibot limit switches

Posted by GDC at 02/03/2011 08:47:13 pm

Only items sold as "limit switches" are allowed on the MINIBOT. Documentation and/or packaging material should be used to document items that may not be clearly identified as such.

Minibot

Minibot LED

Minibot LED

Posted by 2011FRC0639 at 01/29/2011 01:15:24 pm

On the minibot, can we use one or two LEDs to indicate state (is the minibot “Ready” to be deployed”), since, strictly speaking, they wouldn’t be purely decorational?

Re: Minibot LED

Posted by GDC at 01/31/2011 03:57:03 pm

Component LEDs are not listed in R92.

Minibot

Minibot Retrieval

Minibot Retrieval

Posted by 2011FRC2465 at 01/29/2011 10:33:09 pm

Two questions:

- First, it seems there has been a change in the rules, which is very disturbing this late in the season. We designed our minibot so that it could be retrieved "quickly and safely" from the tower at the end of the match, using a broomstick-like pole with a hook on the end. Would this now be a violation of the new rule <G59>?

- Second, in a prior answer you wrote that the minibot may not exceed the 12"x12"x12" volume "at any time during the match". Please confirm that it would not be a violation for the minibot to exceed this volume AFTER the match has ended (but before it is retrieved from the pole).

Thank you!

- Kauaibots

Minibot configuration

Posted by 2011FRC2465 at 02/01/2011 11:02:18 pm

Would it violate the rules if the minibot were to exceed the 12"x12"x12" configuration only AFTER the match ends (but before it is retrieved from the tower)?

(I asked this together with another question which has now been answered by Update 7, but I didn't see an answer to this one, so I thought it might have been overlooked.)

Re: Minibot Retrieval

Posted by GDC at 02/03/2011 08:58:40 pm

The volume constraint on the MINIBOT does not apply once score assessment begins, per G67.

Minibot

minibot materials

minibot materials

Posted by 2011FRC2544 at 01/31/2011 06:31:40 am

We have found 2.5" magnetic rollers that are originally intended for conveyor lines. Would these be permitted on the minibot as "magnets" or not because they are not the legal type of wheel?

Re: minibot materials

Posted by GDC at 02/03/2011 08:49:48 pm

As there were not sold as "magnets", but as "magnetic rollers", they would not be legal per R92.

Minibot

Polycarbonate definition for minibot

Polycarbonate definition for minibot

Posted by 2011FRC2544 at 01/31/2011 10:00:48 am

In the rulebook it states polycarbonate as an allowed item for the minibot. In one of the rule clarification posts it is stated that PVC sheet would not be allowed as it does not meet the requirements? Which is correct. We are using a composite polycarbonate for the base of our minibot. Now I want to know if this is allowed?

Re: Polycarbonate definition for minibot

Posted by GDC at 02/03/2011 08:50:36 pm

They both are correct. Per R92, legal PVC may be in the form of pipes and fittings only. Also per R92, polycarbonate may be used in any form. Therefore, PVC sheet would not be legal, but polycarbonate sheet would.

Minibot

Working on items after ship date

Working on items after ship date

Posted by 2011FRC0178 at 01/31/2011 02:40:04 pm

Hi,

R23 and R24 both indicate that only items permitted under R33 can be worked on after build

season. In R33, the minibot and the driver station are listed as exceptions to the weight limit of the witheld parts, which R33 deals with. Are the minibot(s) and driver station exceptions to rule R33? In other words, are we able to work on minibots and driver stations after ship date?

Re: Working on items after ship date

Posted by GDC at 02/03/2011 08:53:10 pm

Per <R33> the OPERATOR CONSOLE and MINBOT are not required to be shipped or bagged with the ROBOT and are not weighed as part of the WITHHOLDING ALLOWANCE. TEAMS are able to develop their OPERATOR CONSOLE and MINIBOT after ship date and between competitions.

Minibot

Tetrix Motor/Gearbox Clarification

Tetrix Motor/Gearbox Clarification

Posted by 2011FRC2165 at 01/31/2011 05:03:48 pm

If we take the Tetrix motor and gearbox (Part No W739023) and remove the gearbox, change the internal gears to make a different gear ratio, and then re-attach the modified gearbox to the original motor - is that legal?

Thanks.

Re: Tetrix Motor/Gearbox Clarification

Posted by GDC at 02/03/2011 08:54:55 pm

Yes, as long as any new parts introduced are compliant with R92.

Minibot

Mini bot components

Mini bot components

Posted by 2011FRC0145 at 01/31/2011 06:05:51 pm

Are we able to fashion components for the minibot out of wood??

Re: Mini bot components

Posted by GDC at 02/03/2011 09:00:37 pm

No. Please see Rule <R92>.

Minibot

Minibot aluminum "bar"

Minibot aluminum "bar"

Posted by 2011FRC0639 at 01/31/2011 06:48:41 pm

Our previous question...

"Under rule R92 in the Minibot section of the manual, bullet H states that only aluminum can only be used if it is fabricated from its raw state. Our question is if aluminum rod should be under this section in addition to the other forms stated, such as angle, bar and sheet."

...appears to have been erroneously placed in the welding forum, and not raw material forum, since the response was...

"No, as aluminum welding rod is not a permitted item per R92."

Rule R92-H is stated as "Raw aluminum sheet, 90° angle, u-channel, tube, bar, that is not sold in pre-perforated or pre-punched form."

While tube (hollow material) usually includes both round and rectangular forms, bar usually has flat sides. Rod is usually round (or at least curved).

What we are trying to find out, is if solid, cylinderical, aluminum rod is legal as a raw material, or at least fits under the FIRST definition of bar stock.

Re: Minibot aluminum "bar"

Posted by GDC at 02/03/2011 08:20:42 pm

Any product sold and/or marketed as a bar, would be legal under this rule.

Minibot

Minibot wiring connection

Minibot wiring connection

Posted by 2011FRC0876 at 01/31/2011 07:43:04 pm

can we use a small terminal block in making wire connections in our minibot?
Can we use individual terminal connectors?

Re: Minibot wiring connection

Posted by GDC at 02/03/2011 08:22:38 pm

1) No.
2) Yes, provided they are crimp connectors.

Minibot

Welding the minibot - reprise

Welding the minibot - reprise

Posted by 2011FRC0116 at 01/31/2011 10:55:47 pm

We are very confused and trying to understand the logic behind the answer to these questions – [url]http://forums.usfirst.org/showthread.php?t=16638[/url] and [url]http://forums.usfirst.org/showthread.php?t=16652[/url] and [url]http://forums.usfirst.org/showthread.php?t=16288[/url]

We are trying to understand why a fabrication technique is prohibited based on the specifications of a selectable, optional material. To better understand why this is decision has been made so that we may avoid problems with similar materials, we have a series of questions:

1 – Do you understand that aluminum welding rod is simply a rod of aluminum alloy, and as such, it completely satisfies the requirements of Rule <R92-H>?

2 – We have a box of material sold as “Aluminum Welding Rod.” Per the MSDS sheet, it is composed of AWS AS.10 alloys 4043, 4047, 5183, 5356, 5554, and 5556. Thus, it is an aluminum alloy, commonly referred to as aluminum. It is in the form of rods. It completely

satisfies the requirements of Rule <R92-H>. So, is this material legal to use if we do not use it as weld filler metal, but just as aluminum raw stock for other parts of the robot?

3 – If the answer to #2 is “no” that can you please provide a complete, comprehensive list of the aluminum alloys that are permitted for use and satisfy the requirements of Rule <R92-H>? If the material referenced in #2 is prohibited, then we honestly do not know what you are asking us to use.

4 – We have several lengths of 6061 aluminum rod, which were purchased as raw stock aluminum. It is presumed to satisfy the requirements of Rule <R92-H>, and is legal to use. Can we weld parts of the minibot if we use this material as the weld filler metal?

5 – It has been determined that 288mm-long Tetrix flat bar is legal to use on the minibot (Rule <R92-A>). Can we weld parts of the minibot if we use this material as the weld filler metal?

MiniBot Material and Fabrication Question

Posted by 2011FRC0041 at 01/31/2011 11:46:39 pm

In previous posts about materials and welding of the minibot the following was given as an answer.

* No, as aluminum welding rod is not a permitted item per R92.

My question consists of the difference between aluminum welding rod and aluminum bar, the only difference is the alloy of the aluminum material and the size. What differentiates welding rod from any other type of bar. Are you limiting the aluminum that can be used on the minibot by size and alloy?

Also welding can be accomplished without the addition of any filler material at all, if this method was used would it then be legal?

Thank you very much,
Jim Giacchi
Head Coach

MIG welding the Minibot?

Posted by 2011FRC0522 at 02/01/2011 09:54:46 am

The rulings on welding the minibot frame, are a bit confusing. First,the GDC stated that the minibot frame could be welded. Then, GDC stated that it could NOT be welded becasue aluminium "welding rod" was not an approved material. We would like to know if MIG welding the minibot frame would be permitted, as only raw aluminium wire is used in the process, not welding rod. Also, what about any welding done before the decision was reversed?

minibot welding

Posted by 2011FRC1280 at 02/01/2011 08:57:31 pm

QandA threads 16652 and 16638 exclude welding
as a method on the minibot using the argument that
aluminum welding rod is not on the list of allowed
materials. Aluminum can be welded with aluminum

bar, an allowed construction material, although it is
more difficult. May we use aluminum bar to weld our mini-bot?

Re: Welding the minibot - reprise

Posted by GDC at 02/03/2011 09:14:01 pm

Please see Team Update 7.

Minibot

Minibot Deployment

Minibot Deployment

Posted by 2011FRC0175 at 02/01/2011 11:21:44 am

Can the minibot motor(s) be turned on BEFORE breaking the tower base plane? There appears to be an inference in Team Update #3, G19, Blue box with the exception of "stored energy within the battery and excluding incidental kinetic energy stored in the motors and wheels, but NOT, for example, in a flywheel."

Re: Minibot Deployment

Posted by GDC at 02/03/2011 09:02:35 pm

Yes.

Minibot

Minibot Limit Switch

Minibot Limit Switch

Posted by 2011FRC3138 at 02/01/2011 11:59:55 am

Q. Would the p/n V7-2B17D8-048 microswitch, supplied in the KoP, be considered a limit switch.

In an earlier answer by the GDC a limit switch is anything marketed as a "Limit Switch". Honeywells data sheet shows one of the uses for this switch as an end of limit switch, see below:

MICRO SWITCH™ V5 and V7 Series basic switches are used for simple or precision on/off, end of limit, presence/absence, pressure, temperature and manual operator interface application needs.

Re: Minibot Limit Switch

Posted by GDC at 02/14/2011 11:35:57 pm

Please use same method described in [URL="http://forums.usfirst.org/showthread.php?t=16722"]http://forums.usfirst.org/showthread.php?t=16722[/URL].

Minibot

MiniBot Special Tool

MiniBot Special Tool

Posted by 2011FRC1922 at 02/01/2011 09:03:49 pm

What is the definition of a special tool for Minibot removal? We would like to use a broom handle to take weight of one side of a leverage Minibot so it slides back down the pipe. Is this considered a special tool or is this OK?

Thanks

Re: MiniBot Special Tool

Posted by GDC at 02/11/2011 03:48:37 pm

For the purposes of removing a MINITBOT from the TOWER, a broom would be considered "special equipment".

Minibot

Mini Robot magnets

Mini Robot magnets

Posted by 2011FRC0155 at 02/02/2011 10:53:25 am

Our team was experimenting with real earth magnets from a hard drive on our mini bot. We would like to know if we need to remove the magnets from the hardware, metal mounting plate, before we use it on the robot.

Mini Robot magnets

Posted by 2011FRC0155 at 02/04/2011 07:52:58 am

Our team would like to use rare earth magnets that ore found on a hard drive. Can we use the magnet and it's attached hardware(a fixed plate) as is?

Re: Mini Robot magnets

Posted by GDC at 02/11/2011 03:51:24 pm

Per Rule <R92>, magnets are permitted. All other materials (i.e. mounting plates) must meet requirements presented in Rule <R92> to be used on the MINIBOT.

Minibot

Tetrix motor protection

Tetrix motor protection

Posted by 2011FRC1189 at 02/03/2011 12:26:40 pm

We currently have two methods to protect motors, reducing the fuse on the battery to 10 amp and the Tetrix motor protection cable.

Would it be acceptable to use a mini-fuse holder, identical to the one wired into the battery cables to protect each of the two motors.

We find that this protects our motors better and more economically than the other alternatives.

Re: Tetrix motor protection

Posted by GDC at 02/11/2011 03:52:20 pm

No, a mini-fuse holder is not one of the permitted items listed in Rule <R92>.

Minibot

Bayonet switches on Minibot

Bayonet switches on Minibot

Posted by 2011FRC3238 at 02/03/2011 06:33:34 pm

Is it legal to use a bayonet switch on the Minibot?

Re: Bayonet switches on Minibot

Posted by GDC at 02/13/2011 10:09:58 pm

No, a bayonet switch is not listed as an approved item in Rule <R92>.

Minibot

Minibot fasteners

Minibot fasteners

Posted by 2011FRC0122 at 02/03/2011 06:49:51 pm

Can you please clarify, does the term fasteners in R92 item S include common nylon screws, bolts, washers, spacers, etc available at a retail hardware store?

Re: Minibot fasteners

Posted by GDC at 02/11/2011 03:27:51 pm

Common nylon screws, bolts, and washers are all fasteners. A spacer is not a fastener.

Minibot

Minibot Cable Ties

Minibot Cable Ties

Posted by 2011FRC0122 at 02/03/2011 06:52:42 pm

Someone on our team has asked if cable ties approved in R92 item L include only cable ties approved for use in FTC, or can any cable ties be used?

Re: Minibot Cable Ties

Posted by GDC at 02/11/2011 03:52:54 pm

There are no explicit restrictions on what kind of cable ties are permitted per Rule <R92>.

Minibot

Minibot cushion

Minibot cushion

Posted by 2011FRC0876 at 02/03/2011 09:26:42 pm

can we use pool noodle parts to cushion and protect the minibot at the bottom of its downward travel down the pole?

Re: Minibot cushion

Posted by GDC at 02/11/2011 03:53:28 pm

No, pool noodles are not one of the items permitted per Rule <R92>.

Minibot

G59 - special equipment

G59 - special equipment

Posted by 2011FRC1466 at 02/05/2011 12:44:22 pm

I have a question about G59, and I suppose also about T25. We don't have anyone on the team that can reach to 10 feet flat-footed. If our minibot doesn't bring itself down the pole, we are going to need at least a stick to bring it down. One scenario has the minibot brake after its ascent and we will just trip a mechanism with a plain old wooden dowel, releasing the brake and letting the minibot descend. So, does the "special equipment" in G59 include a plain old stick?

Re: G59 - special equipment

Posted by GDC at 02/13/2011 10:10:54 pm

Yes.

Minibot

Minibot Decorations

Minibot Decorations

Posted by 2011FRC1747 at 02/05/2011 01:28:51 pm

Are non-functional decorations allowed on the Mini-bot?

Re: Minibot Decorations

Posted by GDC at 02/11/2011 03:54:26 pm

Yes, please read Rule <R92> as updated in [B][I]Team Update 5[/I][/B].

Minibot

MiniBot Parts

MiniBot Parts

Posted by 2011FRC3824 at 02/05/2011 02:01:43 pm

We are using a uPrint (3D printer) from Dimensions. It uses a plastic (ABS) that is equivalent to polycarbonate as specified in the FIRST rules documentation. The students have used the provided AutoDesk software to design and print parts for the minibot. In the spirit of FIRST, is there an option to allow these student design and created parts on the minibot?

Re: MiniBot Parts

Posted by GDC at 02/11/2011 03:54:59 pm

ABS is not the same as polycarbonate and is not listed as an approved material for the MINIBOT in rule <R92>.

Minibot

Minibot energy storage

Minibot energy storage

Posted by 2011FRC3132 at 02/06/2011 04:51:09 am

Is it legal to use the mechanical energy generated by the electric (tetrix) motor to store as potential mechanical energy while the minibot is climbing the pole?

Re: Minibot energy storage

Posted by GDC at 02/11/2011 03:55:31 pm

Yes.

Minibot

MiniBot PVC heated

MiniBot PVC heated

Posted by 2011FRC0876 at 02/07/2011 12:39:40 pm

We made our minibot frame by cutting a 4" PVC pipe in half and heating it to create a flatter surface. R92 states that PVC or CPVC pipe is allowed. Your answer to an earlier question seems to say that the pipe has to remain in its pipe shape. Does that mean that it cannot be cut, bent or shaped? Thanks

Re: MiniBot PVC heated

Posted by GDC at 02/13/2011 10:11:59 pm

There are no restrictions as to which manufacturing processes teams may perform on PVC pipe or fittings.

Minibot

Limit switches on Minibot

Limit switches on Minibot

Posted by 2011FRC0178 at 02/07/2011 02:39:05 pm

Is it permissible to physically modify the outside of a limit switch in such a way so that when it is pressed once, it remains held down?

Re: Limit switches on Minibot

Posted by GDC at 02/11/2011 03:56:03 pm

There are not rules that prohibit this.

Minibot

Minibot parts

Minibot parts

Posted by 2011FRC3623 at 02/07/2011 04:48:08 pm

Can we use "Vex" parts in construction of the mini bot?

Re: Minibot parts

Posted by GDC at 02/11/2011 03:56:37 pm

Only parts listed in Rule <R92> are permitted for use on the MINIBOT.

Minibot

threaded standoffs

threaded standoffs

Posted by FRC2775 at 02/08/2011 11:09:35 am

Are hex standoffs (threaded female from both ends) considered fasteners. There are 2 lengths 1" and 2" in the textrix catalog but would like to use other lengths can we buy standoffs or do we need to make them from aluminum hex bar?

Re: threaded standoffs

Posted by GDC at 02/11/2011 03:27:06 pm

Standoffs are not considered mechanical fasteners.

Minibot

minibot

minibot

Posted by 2011FRC0843 at 02/08/2011 06:12:18 pm

Is the minibot required to carry its own power source (i.e. - 12V battery) while moving up the pole?

minibot rules

Posted by 2011FRC0843 at 02/10/2011 08:56:02 pm

Is the minibot required to carry its own power supply (i. e. - 12V battery) while climbing up the pole?

Re: minibot

Posted by GDC at 02/21/2011 09:19:21 pm

Not explicitly, the but requirement of the MINIBOT being smaller than 12" x 12" x 12" and completely autonomous indirectly mean that the MINIBOT must contain its own power source.

Minibot

Switches on Minibot, part 2

Switches on Minibot, part 2

Posted by 2011FRC0386 at 02/10/2011 10:51:31 am

I just finished replacing a push-button light switch on the hood light over my stove. Are there enough of these in use to qualify as "common household light switches?" If so, would any push on/off switch be legal to use on our minibot?

Re: Switches on Minibot, part 2

Posted by GDC at 02/21/2011 09:41:27 pm

Please see Team Update 12.

Minibot

MiniBot Wheels

MiniBot Wheels

Posted by 2011FRC1598 at 02/10/2011 12:05:40 pm

Can teams fabricate powered and nonpowered wheels from allowed materials for the MiniBot?

Re: MiniBot Wheels

Posted by GDC at 02/13/2011 10:14:00 pm

Yes.

Minibot

Light Switch Modification

Light Switch Modification

Posted by 2011FRC0639 at 02/10/2011 08:09:18 pm

"Minor modifications of the switch (e.g. removing the mounting tabs) are permitted, as long as the basic structural integrity and overall safety of the switch are not compromised."

We would like a clarification on the note of about the structural integrity of the light switch. Is it legal to drill a hole (1/16") into the handle of a standard light switch for the minibot?

Re: Light Switch Modification

Posted by GDC at 02/13/2011 10:14:34 pm

Yes.

Minibot

Technic beams and pins

Technic beams and pins

Posted by 2011FRC2976 at 02/11/2011 06:14:44 pm

Based on the <R92> and the "Approved Tetrix Parts" document the Tetrix Hard-Point Connector is allowed but Technic beams and pins that are used with that connector are not.

Which means we must come up with some other means of connecting things such as the NXT brick and sensors to the mini-bot. Is that correct?

Re: Technic beams and pins

Posted by GDC at 02/16/2011 10:01:18 pm

These would be allowed for mounting of the NXT and attached sensors per R92-BB.

Minibot

Minibot

Minibot

Posted by 2011FRC3824 at 02/11/2011 07:08:34 pm

Are we allowed to modify the light switch by making the toggle arm on the switch longer?

Re: Minibot

Posted by GDC at 02/14/2011 09:40:59 am

Yes.

Minibot

Minibot

Minibot

Posted by 2011FRC0378 at 02/12/2011 09:42:25 am

Minibot

Competition Manual Section 4 <R92> N

Is a single pole push button (on/off) lamp switch considered a common household light switch?

Re: Minibot

Posted by GDC at 02/21/2011 09:42:30 pm

Please see Team Update 12.

Minibot

DC Motor Controller - Minibot

DC Motor Controller - Minibot

Posted by 2011FRC0316 at 02/12/2011 09:46:02 am

Does the minibot need to use the DC Motor Controller with the NXT Lego Brick to run the motor?

Reply With Quote

Re: DC Motor Controller - Minibot

Posted by GDC at 02/14/2011 09:42:24 am

No.

Minibot

Programming - Minibot

Programming - Minibot

Posted by 2011FRC0316 at 02/12/2011 09:47:37 am

Which programming language is the minibot able to be programmed with?

Re: Programming - Minibot

Posted by GDC at 02/14/2011 09:43:06 am

There are no rules controlling this.

Minibot

Part replacement WITHIN Minibot motor

Part replacement WITHIN Minibot motor

Posted by 2011FRC2849 at 02/12/2011 10:48:41 am

Although there are numerous posts regarding the minibot motor part that keeps blowing, we could not find the answer to several key questions by a FIRST official:
- Is the motor part that keeps blowing due to power constraint a limit resistor, or an inductor?
- What is the inductance (or resistance) of that part?
- Can a team replace the blown part with the same part (i.e., so we don't have to buy a new motor), and still be competition legal?
- Can a team replace that part with a more robust (read: higher power) part of the same type (inductor or resistor) and still be competition legal?

Finally, because there have been a rather significant number of failures by numerous teams, does the GDC plan on allowing a different motor to be used?

Thanks much for your help.

Re: Part replacement WITHIN Minibot motor

Posted by GDC at 02/15/2011 10:31:56 pm

Please see Team Update 11.

Minibot

Spring as a mechanical Fastener..instead

Spring as a mechanical Fastener..instead

Posted by 2011FRC1769 at 02/12/2011 07:15:12 pm

We have used surgical tubing as a "mechanical fastener", would it be legal to use spring instead as a mechanical fastner instead of the surgical tubing?

Thank you

Re: Spring as a mechanical Fastener..instead

Posted by GDC at 02/14/2011 11:38:30 pm

No, springs are not considered mechanical fasteners.

Minibot

Welding Material

Welding Material

Posted by 2011FRC2068 at 02/14/2011 07:13:11 am

Because J.B. Weld can bond non-porous materials, does it meet the ruling for polycarbonate glue?

also

Because welding rod is allowed, can J.B. Weld be used as a material?

Re: Welding Material

Posted by GDC at 02/15/2011 10:32:51 pm

J-B Weld is not polycarbonate glue nor is it the same as aluminum welding rod and cannot be used.

Minibot

<R18> Prior year's KOP costing for this year's BOM

<R18> Prior year's KOP costing for this year's BOM

Posted by 2011FRC0885 at 02/14/2011 08:27:45 am

<R18> Prior year's KOP costing for this year's BOM

We are using some chassis metal from a prior year's KOP material. The question is do we value this material at $0.00 just as if it were from this year's KOP? If we have to value it how would you recommend we determine the value?

Thanks for your efforts!

Re: <R18> Prior year's KOP costing for this year's BOM

Posted by GDC at 02/15/2011 10:34:04 pm

Per <R21>, chassis metal in addition to that which is listed on the [B][I]2011 Kit of Parts Checklist[/I][/B] must be costed in the BOM. Per Section 4.3.5 - C, the part should be costed at the Fair Market Value.

Minibot

hose clamp as a fastener

hose clamp as a fastener

Posted by 2011FRC1559 at 02/14/2011 09:11:32 am

We would like to mount our minibot motor in a PVC pipe. The intent is to split the pipe and use a hose clamp as a radial fastener - much like the motor mount that is in the kit. Would a hose clamp be considered a fastener if used this way?

Re: hose clamp as a fastener

Posted by GDC at 02/15/2011 10:34:52 pm

Hose clamps are not mechanical fasteners.

Minibot

Wheel free minibot

Wheel free minibot

Posted by 2011FRC1559 at 02/14/2011 09:44:03 am

Our team has been working on a radically different minibot design leveraging work done at University of Maryland to create a monowing helicopter. The concept is based on maple tree seeds and is described better at this web site: [url]http://www.eng.umd.edu/media/pressreleases/pr101909_mapleseed.html[/url]

We have constructed the minibot totally from PVC tubing for the frame and Polycarbonate for the wing and propeller. The gearbox has been removed from the required motor and the

single propeller is mounted directly on the exposed spur gear. There is a polycarbonate cowl around the propeller and we intend to add a loose weave (~2.5in square holes) of polycarbonate rods as a further safety feature. We also intend to add an interlock that will only allow the motor to spin when on the pole.

The minibot team feels that this configuration using a plastic spinning propeller with a 10W motor poses significantly lower safety risk than the unguarded metal chains and sprockets powered by a >500W motor on most hostbots. We understand this might not be enough information, but we would like a preliminary ruling (or better yet official ruling) to minimize risk of safety disqualification at inspection due to the radically different approach taken. Please advise how/if we should proceed with this design.

Re: Wheel free minibot

Posted by GDC at 02/18/2011 08:28:11 am

Sounds interesting, but the purpose of this forum is to answer questions about specific rules. We will not perform design reviews and legality of a specific assembly will be determined by the Inspectors at your event.

Minibot

Mini Bot

Mini Bot

Posted by 2011FRC0292 at 02/14/2011 06:44:38 pm

In reference to rule R92, may we use a resistor on the mini bot.

Re: Mini Bot

Posted by GDC at 02/15/2011 10:37:51 pm

Rule <R92> does not list a resistor as a legal part.

Minibot

Minibot powering

Minibot powering

Posted by 2011FRC0639 at 02/14/2011 08:13:19 pm

Rule <G19> states that "MINIBOTS must remain completely autonomous and move up the POST solely through electric energy provided after the start of DEPLOYMENT by the permitted, unaltered battery and converted to mechanical energy by the permitted unaltered motors (and associated, appropriate circuitry)."

There is also an associated explanation - "<G19> means that HOSTBOTS are not allowed to launch the MINIBOT up the pole at the TARGET, or otherwise contribute to the vertical movement of the MINIBOT. Energy for vertical movement may not be stored in the MINIBOT before DEPLOYMENT (except that which is contained within the battery and excluding incidental kinetic energy stored in the motors or wheels, but NOT, for example, in a flywheel)."

If our minibot changes configuration after deployment, without violating the 12" cube limit on playing configuration, must that change in configuration also be powered solely by the motor(s) and battery, or can it be from some other source (rubber band, surgical tubing)?

In other words, while <G19> covers the power source for moving the minibot up the post, it's not clear how it applies to a change in the relationship between minibot motion (which is what the rule covers) and contact with the sensor plate (which is what is actually being measured) that results from a change in minibot geometry.

Re: Minibot powering

Posted by GDC at 02/21/2011 09:43:16 pm

There are no rules governing the power source for motion of and within the MINIBOT with the exception of motion of the MINIBOT up the POST per Rule <G19>.

Minibot

Minibot Limit Switch

Minibot Limit Switch

Posted by 2011FRC0399 at 02/14/2011 10:25:19 pm

Would it be legal to remove the internal spring of a limit switch to allow it to stay actuated when pressed?

Re: Minibot Limit Switch

Posted by GDC at 02/15/2011 10:38:27 pm

There are no rules preventing this.

Minibot

iglide bearings on the minibot?

iglide bearings on the minibot?

Posted by 2011FRC3454 at 02/15/2011 07:22:05 pm

Would it be legal to use the iglide bearing parts #JFI-1012-08 and/or #JSI-1012-08 found in the kit of parts be legal to use on the minibot?

Re: iglide bearings on the minibot?

Posted by GDC at 02/16/2011 10:02:19 pm

No.

Minibot

Limit switch questions

Limit switch questions

Posted by 2011FRC0639 at 02/15/2011 07:58:32 pm

On the R-S Electronics site ([url]www.rselectronics.com[/url]), does selecting one of the switches listed on their "Limit Switch" page ([url]http://www.rselectronics.com/Products/Switches/Limit_Switches.aspx[/url]) meet the minibot requirement for "sold or marketed as a limit switch"?

For the vex robotics limit switches (used in the past by FIRST), is it legal to remove the plastic overcase, and use the contained microswitch/basic switch, or must it be used "as-is"?

Re: Limit switch questions

Posted by GDC at 02/16/2011 09:55:20 pm

1) Yes.

2) There are no rules that prohibit this.

Minibot

Minibot Motor Protection

Minibot Motor Protection

Posted by 2011FRC0175 at 02/16/2011 03:58:35 pm

Can the GDC explain why they will not allow the minibot motors to be protected with a fuse as is required on every other electrical system on the robot? Installing fused leads to the motors promotes good engineering electrical design practice and safety.

Re: Minibot Motor Protection

Posted by GDC at 02/21/2011 09:25:27 pm

Per Rule <R92-F> the 20 amp fuse on the battery may be replaced with an equivalent type of lower amperage and per Rule <R92-A> may use a thermal-protected DC motor power cable (p/n W736465) to limit current to the MINIBOT motors.

Minibot

Mini Bot Resistor

Mini Bot Resistor

Posted by 2011FRC0292 at 02/16/2011 07:38:06 pm

May we use an electrical resistor on the mini bot? It would be in line with a switch?

Re: Mini Bot Resistor

Posted by GDC at 02/21/2011 09:43:59 pm

Resistors are not permitted per Rule <R92>.

Minibot

Minibot limit switch

Minibot limit switch

Posted by 2011FRC1676 at 02/16/2011 08:22:15 pm

We are a little unsure of what exactly constitutes a limit switch with
respect to permitted materials on a minibot. We have identified several
switches described by our vendor (DigiKey) as belonging to the Category
"Switches" and the Family "Snap Action, Limit, Lever" (typical example:
[url]http://search.digikey.com/scripts/DkSearch/dksus.dll?Detail&name=CH392-ND[/url]).
Based on the vendor's description (and the general construction of the switch) we would
classify these as Limit Switches, thus making them legal for minibot use.
However, the manufacturer calls this switch a "Panel Mount Pushbutton". Is
the fact that our vendor calls this a limit switch sufficient to make it a
limit switch and thus allowable on a minibot?

Re: Minibot limit switch

Posted by GDC at 02/21/2011 09:44:33 pm

If it is marketed and sold as a limit switch, it is a limit switch. If it is called a pushbutton switch, it is not a limit switch.

Minibot

Minibot Inspection

Minibot Inspection

Posted by 2011FRC0639 at 02/18/2011 08:24:32 pm

Our question is about the inspection checklist that was released. It states that "Modifications only to mounting brackets and electrical leads..."

We wondered if this is supposed to include everything from rule <R47>, since it excludes that the output shaft may be modified. We would like to have a clarification if this modification the motor shaft is allowed.

Re: Minibot Inspection

Posted by GDC at 02/21/2011 09:45:18 pm

The output shafts on the MINIBOT motors may be modified per R47A-D. The MINIBOT inspection checklist will be corrected.

Minibot

2 "Normal" switches on a Minibot.

2 "Normal" switches on a Minibot.

Posted by 2011FRC2443 at 02/18/2011 11:22:10 pm

Are we allowed to have 2 "normal" switches on a minibot. Normal meaning, just a basic on and off switch…

Something that looks like of like this
[url]http://www.carlmartin.com/Images/octa_on_off_switch.jpg[/url]

Thank you,

Re: 2 "Normal" switches on a Minibot.

Posted by GDC at 02/21/2011 09:46:03 pm

Switches on the MINIBOT must be either the on/off switch shown on the Approved TETRIX parts list found here [url]http://www.usfirst.org/roboticsprogr...nt.aspx?id=452[/url] or common household light switches per Rule <R92-N>. See [B][I]Team Update 12[/I][/B] for additional information about light switches permitted on the MINIBOT.

Minibot

80/20 aluminum

80/20 aluminum

Posted by 2011FRC3450 at 02/20/2011 11:25:48 pm

Is 80/20 aluminum an allowed material on the minibot?

Re: 80/20 aluminum

Posted by GDC at 02/22/2011 08:39:16 am

No, as aluminum extrusion is not listed in Rule <R92-H>.

Minibot

capaciter in the minibot

capaciter in the minibot

Posted by 2011FRC0696 at 02/21/2011 05:51:40 pm

My Minibot team wants to use a capacitor, it will have no energy stored before the minibot is deployed. Is this permitted?

Re: capaciter in the minibot

Posted by GDC at 02/22/2011 08:39:48 am

No, capacitors are not included in permitted items per Rule <R92>.

Minibot

MINIBOT Deployment Dock Shipping

MINIBOT Deployment Dock Shipping

Posted by 2011FRC3396 at 02/22/2011 06:33:35 pm

As per R33 B, "the MINIBOT is not included in the incoming parts weights restriction", and it does not have to be shipped with the HOSTBOT.
However, if we have a deployment dock of the MINIBOT that's attached to the HOSTBOT, do we have to ship this deployment dock with the HOSTBOT? If not, would it be counted as part of the 30 pounds WITHHOLDING ALLOWANCE?

Re: MINIBOT Deployment Dock Shipping

Posted by GDC at 02/24/2011 09:48:05 pm

Any FABRICATED ITEM that is not part of the MINIBOT and is carried into an event must be counted towards the WITHHOLDING ALLOWANCE.

Minibot

External reverising switch on Mini-Bot

External reverising switch on Mini-Bot

Posted by FRC1501 at 02/24/2011 12:11:10 pm

Greetings almighty GDC

We would like to design a mini-bot with an external switch that reverses the motor and allows for easy retrieval.
If we asked very politely, would it be permissible, for one of our drive team, to ask a Field Reset crew to flip the switch?

Thank you and keep up the great work.

Re: External reverising switch on Mini-Bot

Posted by GDC at 02/24/2011 09:48:44 pm

Per <G59>, if the MINIBOT cannot be retrieved by a TEAM member while standing on the floor without special equipment, it will be retrieved by the field crew using a retrieval hook.

Pneumatics

Pneumatics

Pneumatic Cylinder / Actuator Restrictions

Pneumatic Cylinder / Actuator Restrictions

Posted by 2011FRC1784 at 01/12/2011 04:52:04 pm

Hi GDC,

Are there any restrictions on size, diameter, or stroke of pneumatic cylinders or rotary actuators?

Rule R66 lists the pneumatic items allowed for use, in addition to those in the KOP, but these devices are not described.

Rule R70-A addresses only the placement of working devices in the pneumatic system.

Rule R74 addresses commanded motion of cylinders and rotary actuators but does not limit their size or stroke.

Thank You
1784

Pneumatic Cylinder Limits

Posted by FRC1114 at 01/13/2011 12:19:03 am

This year's pnuematic rules don't mention any limits or allowable quantities of cylinders other than in <r66>

[I]<r66> In addition to the items included in the KOP, pneumatic system items specifically permitted on 2011 FRC ROBOTS include the following items. All included items must be “off the shelf” COTS pneumatic devices rated by their manufacturers for working pressure of at least 125psi and burst pressure of 250psi, and used in their original, unaltered condition (except as required for assembly with other components).</r66>[/I]

So since there's no mention of any additional cylinders in the manual, it appears that we're limited to what's in the Kit of Parts. Looking at the Kit of Parts checklist we see that the only cylinders listed are the three provided with the Bimba order form. So my question are:

1. Are we only allowed to use a maximum of three cylinders this year?
2. Must the cylinders we use be identical to cylinders available on the Bimba order form?

Thanks for your time and consideration.</r66>

Re: Pneumatic Cylinder / Actuator Restrictions

Posted by GDC at 01/15/2011 05:28:42 pm

Please refer to Team Update #2, Rule R66.

Pneumatics

Accumulator Tanks

Accumulator Tanks

Posted by 2011FRC2484 at 01/12/2011 05:31:28 pm

In the past, we have been able to use four of the accumulator tanks that were provided in the KoP. This year, there is a different, larger accumulator in the kit, and we can't find anything in the manual about using extra ones. How many accumulators (this year's or previous year's) can we use on the robot?

Re: Accumulator Tanks

Posted by GDC at 01/15/2011 05:30:17 pm

Please refer to Team Update #2, Rule R66.

Pneumatics

Pneumatic Component Restrictions

Pneumatic Component Restrictions

Posted by 2011FRC1784 at 01/13/2011 05:59:21 pm

What are the restrictions on pneumatic cylinders and rotary actuators?
Applicable rules R65 thru R74 do not address sizing or stroke of cylinders or rotary actuators.

Thank You
1784

Pneumatics Storage Tanks

Posted by 2011FRC3144 at 01/14/2011 01:46:38 pm

Is there currently a limit to the amount of storage tanks we have? Are we only allowed to use the one in the KOP?

Pneumatics Storage Tanks

Posted by 2011FRC2496 at 01/15/2011 03:44:56 pm

How many storage tanks are allowed on the robot this year?

Re: Pneumatic Component Restrictions

Posted by GDC at 01/16/2011 11:51:44 am

Please refer to Rule <R66>, as amended in Team Update #2.

Pneumatics

Pneumatics

Pneumatics

Posted by 2011FRC1983 at 01/14/2011 03:09:42 pm

In reading the Robot rules for pneumatics R67 states that no parts can be used other than those that are explicitly mentioned in the rules (including the KOP)

As there are no cylinders in the KOP... AND there is no mention of cylinders in the Pneumatic rules.....
A reader might assume that no cylinders are allowed to be used this year. (Unless of course I am missing something which is certainly possible....)

I am almost certain that this is not the intent of the rules.

We can get cylinders again from Bimba as in years past.

Could we have some enlightenment about sizes of cylinders and what is legal? and what is not?

in section 4.3.11 there is also mention of "storage tankS" (emphasis added) but they are also not mentioned in the rules other than that one is in the KIT.

Is this the intent? or can we use multiple storage tanks as in years past.

Thank you for your hard work!!

Re: Pneumatics

Posted by GDC at 01/16/2011 11:55:01 am

Please see Team Update 2.

Pneumatics

Pneumatic Ram Stroke Length

Pneumatic Ram Stroke Length

Posted by 2011FRC1325 at 01/15/2011 11:33:09 am

Is there a maximum stroke length for pneumatic rams? If so, what is it?

Re: Pneumatic Ram Stroke Length

Posted by GDC at 01/16/2011 11:59:20 am

There is no limit on the stroke length for legal pneumatic cylinders.

Pneumatics

Pneumatic Storage Tank Restrictions

Pneumatic Storage Tank Restrictions

Posted by 2011FRC3777 at 01/18/2011 11:42:27 am

Team Update #2 specifies that pneumatic storage tanks are permissible, but I do not see any restriction on what kind/type of tank is allowed. Are we limited to tanks similar to what is included in the KOP, or are we allowed to use any unmodified COTS storage tank as long as it meets the pressure ratings of the <R66> heading. For example, a 68ci tank rated to hold 4500psi (5Kpsi burst disk), with an 850psi regulated output (1Kpsi burst disk), pressurized solely by the KOP compressor (not pre-pressurized).

Re: Pneumatic Storage Tank Restrictions

Posted by GDC at 01/19/2011 07:38:22 pm

You may use any unmodified COTS storage tank as long as it meets the requirements defined in Rule <R66>.

Pneumatics

Unlimited Pneumatic storage tanks

Unlimited Pneumatic storage tanks

Posted by 2011FRC2484 at 01/18/2011 05:44:24 pm

Team Update #2 makes doesn't give a limit to the number of pneumatic storage tanks a team can use. This makes it sound like teams can use an unlimited number of storage tanks on the hostbot. Is this true?

Re: Unlimited Pneumatic storage tanks

Posted by GDC at 01/24/2011 08:43:12 pm

Correct, there is no explicit limit on volume of stored air permitted on the ROBOT.

Volume tanks on robot

Posted by 2011FRC0145 at 01/31/2011 06:42:32 pm

Is there a limit to the number of air volume tanks we can use, if so what would that be? Also, is there a limit to the amount of pressure that can be stored on the robot?

Pneumatics

Clarification About Pneumatics

Clarification About Pneumatics

Posted by 2011FRC0854 at 01/22/2011 08:25:36 pm

We have reviewed the past seasons rules, and we have not found a consistency with the legality of check valves for use in the pneumatics system.

Are check valves legal this year?

We are also considering using the compression of a cylinder to pressurize our pneumatic reservoir over the course of the match. Would such a system be legal provided all other pneumatic regulations are satisfied?

Re: Clarification About Pneumatics

Posted by GDC at 01/24/2011 07:44:31 am

Please review R65 through R68 for legality of pneumatics parts for the 2011 competition. Using a cylinder to pressurize a reservoir would be a violation or R69.

Pneumatics

New Air Compressor

New Air Compressor

Posted by 2011FRC1764 at 01/22/2011 10:24:35 pm

The new air compressor, the Viair 90C is backordered at the suppliers that I have been able to identify. However, they have the Viair 92C. The links to the specs for both are below. The only difference between the two is that the Viair 92C has an air filter installed. Would it be legal for us to use this model so that we can take advantage of the lowered weight to air output ratio?
[url]http://www.viaircorp.com/OffRoad/90C.html[/url]
[url]http://www.viaircorp.com/OffRoad/92C.html[/url]

Re: New Air Compressor

Posted by GDC at 01/24/2011 08:00:28 am

Please refer to <R69>.

Pneumatics

Allowed Pneumatic Cylinders

Allowed Pneumatic Cylinders

Posted by 2011FRC1547 at 01/24/2011 07:59:13 pm

As per rule <R66>, "off the shelf" COTS pneumatic cylinders are allowed. We would like to know if we are allowed to use off the shelf rod lock pneumatic cylinders?

Re: Allowed Pneumatic Cylinders

Posted by GDC at 01/26/2011 09:20:42 pm

COTS rod lock pneumatic cylinders are COTS pneumatic cylinders, and are therefore legal for use.

Pneumatics

Center Off Pneumatic Valve

Center Off Pneumatic Valve

Posted by 2011FRC1515 at 01/26/2011 08:43:57 pm

In the interest of safety we would like to use a "center off" pneumatic valve so in the event of a system de-pressurization or system power loss all of our pneumatic cylinders will "freeze" in place and will not move until system pressure and/or power is restored.

Assuming the robot is off and/or no signal is bring sent to the valve:
We believe this setup is in direct compliance with <R73> which would allow all "stored" pressure to be released from the system but the "working" pressure in the cylinder will be trapped creating the "freeze" effect.

Although we believe we are in compliance with <R73> we would like to confirm that we are in compliance with the intent of <R73>

Thank you,
Team 1515

Re: Center Off Pneumatic Valve

Posted by GDC at 01/31/2011 03:05:35 pm

Trapping the air under pressure as described would be a violation of R68/R73. The rule clearly states that when the required relief valve is opened, it will vent to the atmosphere to relieve [B]all[/B] stored pressure.

Pneumatics

Off-board compressor

Off-board compressor

Posted by 2011FRC3173 at 01/29/2011 09:35:29 am

The blue box in <R69> says that there are "weight savings" associated with using an off-board compressor. Does this mean that an off-board compressor would not be counted toward the weight limit, even though it would be powered and controlled by the robot, and <R11> requires "all elements of all additional mechanisms that might be used in different configurations of the ROBOT shall be weighed together"?

Re: Off-board compressor

Posted by GDC at 01/31/2011 03:25:29 pm

If the compressor is not mounted on the ROBOT in any of the configurations in which the ROBOT would compete in a MATCH, then it does not need to be included in the weigh-in.

Pneumatics

Piston as a Shock Absorber

Piston as a Shock Absorber

Posted by 2011FRC2443 at 01/29/2011 11:05:23 pm

Can we use a Pneumatic piston that is not hooked up to any tubes or air compressors as a shock absorber?

Pneumatic Piston as Shock Absorber

Posted by 2011FRC2443 at 01/31/2011 08:15:07 pm

Can we use a Pneumatic piston that is not hooked up to any tubes or air compressors as a shock absorber?

Re: Piston as a Shock Absorber

Posted by GDC at 02/03/2011 08:34:52 pm

This is not permitted.

Pneumatics

Gas shocks

Gas shocks

Posted by FRC3139 at 01/31/2011 09:21:46 am

Are gas shocks used on the robot arm legal or considered illegal as stored energy?

Gas shocks

Posted by FRC3139 at 02/01/2011 10:14:26 am

Are gas shocks used on the robot arm legal or considered illegal as stored energy?

Re: Gas shocks

Posted by GDC at 02/03/2011 08:37:13 pm

Rule R66-H explicitly allows closed-loop COTS pneumatic (gas) shocks.

Pneumatics

Pneumatics - Festo Valves

Pneumatics - Festo Valves

Posted by 2011FRC0829 at 02/01/2011 01:12:47 pm

The valves included in the KOP are VUVG-L10-B52-T-M5
The valves from FIRST Choice are VUVG-L10-B52-T-M7

According to Festo documentation the M7 valves flow more than the M5 valves (both are over the CV 0.32CV limit for nor-KOP valves.)

Are these M7 valves legal for use this year?

Thanks

Re: Pneumatics - Festo Valves

Posted by GDC at 02/15/2011 10:44:38 pm

Please see Team Update 11.

Pneumatics

Pneumatics Regulations

Pneumatics Regulations

Posted by 2011FRC1717 at 02/01/2011 01:52:06 pm

Rule <R66> states that "COTS pneumatic devices rated by their manufacturers for working pressure of at least 125psi and burst pressure of 250psi" may be used.

We have contacted three major air cylinder manufacturers, including Bimba, and none of them

provide "burst pressure" and all were quite surprised that we even asked about the burst pressure.

The reason we ask the question is that we would like to use a Bimba cylinder that has a maximum "working pressure" of 200 PSI._ Given a working pressure of 200 PSI, and standard factor of safety, it seems improbable that this cylinder would burst at 250 PSI._ This cylinder satisfies the first part of <R66> regarding working pressure, but not the second part regarding burst pressure.

With that said we would like clarification as to rule <R66>._ Based on our inquiries, industry standard does not appear to include burst pressure._ We would like to request that this rule be restated to simply call out the requirements for working pressure and not include a requirement for burst pressure._ Our reason for this request is that no manufacture, including Bimba, a FIRST supplier, is able or willing to provide.

Thank you for any assistance you can provide regarding this matter.

Team 1717

Air Cylinder Burst Pressure

Posted by 2011FRC1717 at 02/10/2011 01:06:16 pm

Rule <R66> states that "COTS pneumatic devices rated by their manufacturers for working pressure of at least 125psi and burst pressure of 250psi" may be used.

We have contacted three major air cylinder manufacturers, including Bimba, and none of them provide "burst pressure" and all were quite surprised that we even asked about the burst pressure.

The reason we ask the question is that we would like to use a Bimba cylinder that has a maximum "working pressure" of 200 PSI. Given a working pressure of 200 PSI, and standard factor of safety, it seems improbable that this cylinder would burst at 250 PSI. This cylinder satisfies the first part of <R66> regarding working pressure, but not the second part regarding burst pressure.

With that said we would like clarification as to rule <R66>. Based on our inquiries, industry standard does not appear to include burst pressure. We would like to request that this rule be restated to simply call out the requirements for working pressure and not include a requirement for burst pressure. Our reason for this request is that no manufacture, including Bimba, a FIRST supplier, is able or willing to provide.

Thank you for any assistance you can provide regarding this matter.

Team 1717

Re: Pneumatics Regulations

Posted by GDC at 02/15/2011 10:45:37 pm

Please see Team Update 11.

Pneumatics

Pneumatic COTS

Pneumatic COTS

Posted by 2011FRC0304 at 02/01/2011 05:34:51 pm

For pneumatics the rules state that: "All included items must be “off the shelf” COTS pneumatic devices rated by their manufacturers for working pressure of at least 125psi and burst pressure of 250psi, and used in their original, unaltered condition (except as required for assembly with other components)."

COTS is defined as:

A COTS item must be a standard (i.e. not custom order) part commonly available from the VENDOR, available from a non-team source, and available to all teams for purchase.

So does this mean that I cannot go to Bimba and get a standard bore pneumatic with a custom length stroke? I am assuming since I am using the word "custom" (as do some manufacturers) that this would be prohibited. Now if Clippard stocked the length and bore then I could get it from them and this would be acceptable correct?

Am I interpreting this rule properly?

Re: Pneumatic COTS

Posted by GDC at 02/03/2011 08:11:11 pm

1) Correct, custom parts are not COTS parts.
2) If any TEAM would be able to order the same cylinder with the same stroke and it is regularly stocked at a VENDOR, that part is considered COTS and can be used.

Pneumatics

Pneumatics

Pneumatics

Posted by 2011FRC1983 at 02/01/2011 10:25:25 pm

Our team would like to use a pneumatically operated disc brake caliper from tolomatic on our lift design.

This caliper is COTS and contains a pneumatic cylinder.
Is this a legal device to use on our robot?

Thank you

Re: Pneumatics

Posted by GDC at 02/03/2011 08:10:17 pm

No, this is not considered a pneumatic cylinder (it is a MECHANISM that includes a cylinder).

Pneumatics

controlling the exhaust on pneumatics

controlling the exhaust on pneumatics

Posted by 2011FRC2484 at 02/03/2011 03:21:41 pm

Is it legal to use a second solenoid, connected to the exhaust side of the primary solenoid, to control the exhaust from the cyllinder that is controlled by the primary solenoid?

Pneumatic - using valves in series

Posted by FRC2010339 at 02/10/2011 05:38:06 pm

Rule <74> prohibits outputs from multiple valves into the same input on a pneumatic cyclinder. If we use the Festo solenoid provided in the KoP _in series with a single-acting, normally open pneumatic valve (spring loaded to vent) to regulate_exhaust_from the Festo solenoid, are we in compliance with <R74>?

Re: controlling the exhaust on pneumatics

Posted by GDC at 02/11/2011 03:22:14 pm

No, this is prohibited per Rule <R74>.

Pneumatics

Pressure Rating of Additional Pneumatic Tubing

Pressure Rating of Additional Pneumatic Tubing

Posted by 2011FRC1986 at 02/05/2011 10:36:00 am

R66-C. states that additional pneumatic tubing must have the pressure rating printed on the exterior of the tubing. If additional pneumatic tubing meets the dimensional and pressure rating requirements, but lacks the printed pressure rating, can a copy of the manufacturer's official documentation for the tubing showing the pressure rating be used to meet this requirement?

Re: Pressure Rating of Additional Pneumatic Tubing

Posted by GDC at 02/11/2011 03:23:54 pm

Please see [B][I]Team Update 10[/I][/B].

Pneumatics

pneumatic cylinders from single valve.

pneumatic cylinders from single valve.

Posted by 2011FRC0957 at 02/05/2011 09:45:07 pm

Can you run 2 pneumatic cylinders from 1 solenoid valve?

Re: pneumatic cylinders from single valve.

Posted by GDC at 02/10/2011 01:14:04 pm

There are no rules that prohibit this.

Pneumatics

R71 Attaching Relief Valve

R71 Attaching Relief Valve

Posted by 2011FRC2973 at 02/07/2011 09:40:13 am

[QUOTE]R71. The relief valve must be attached directly to the compressor.[/QUOTE]

In past years the GDC and LRI's have interpreted this rule, which was worded the same, to

mean that there could be no fittings between the compressor and the supplied relief valve, so that the valve had to directly screwed into the larger outlet port on the compressor and the supply line was tied into the smaller outlet port.

The compressor supplied in this year's rookie KOP only has one outlet port. Can you please clarify how the relief valve should be attached in the circuit?

Re: R71 Attaching Relief Valve

Posted by GDC at 02/13/2011 10:02:11 pm

Please see Team Update 10.

Pneumatics

Using 12V Solenoids

Using 12V Solenoids

Posted by 2011FRC3518 at 02/07/2011 01:18:47 pm

Our rookie team recently received a number of pneumatic solenoids generously donated by an area veteran team. However, the only power distribution diagram on the KOP website shows the solenoid breakout wired to 24VDC.

We understand that, in past years, FRC had multiple power distribution diagrams showing alternate voltage connections to the solenoid breakout. If an alternate voltage supply is not allowed, we would be forced to purchase a number of spike relays to power/operate the 12V solenoids.

Is it permissible to power the solenoid breakout for 12V operation via a 20A circuit breaker from the power distribution board or must we wire to the 24V output as per the posted power distribution diagram?

Thank you, in advance, for your consideration of this issue.

Re: Using 12V Solenoids

Posted by GDC at 02/15/2011 10:18:38 pm

Thank you for your question, the documentation has been reposted at [url]www.usfirst.org/frc/kitofparts[/url] to include the information for which you're looking.

Pneumatics

Pneumatics Question

Pneumatics Question

Posted by 2011FRC2603 at 02/08/2011 08:35:40 am

Hi,

I'm a team mentor for team 2603 and we have one of our Pneumatics experts proposing an idea and wanted to make sure it was legal. Here are his comments below with a diagram explaining. Any feedback on it's feasibility would be greatly appreciated! (Apologies if I've not posted in the correct area)

Here is what I am proposing.

Control of a pneumatic cylinder:

Use a 4 way 2 Position single solenoid valve for directional control of an air cylinder. At each port on the cylinder use a blocking single solenoid valve would be used to turn air on or off. The default of this valve would be passing so that when the robot is in E-stop no air is trapped. The use of these multiple valves to control a cylinder would be done in series. (Thus the flow of .3 Cv would not be exceeded)

I may have had trouble in attaching the picture to this post so please click on this link to view picture of diagram in case it didn't attach

Repost of Pneumatics Question

Posted by 2011FRC2603 at 02/08/2011 10:37:00 am

Hello,

I've already posted this same question but forgot to check the email notification checkbox as I don't know how else I would be able to know if the GDC responded to my post. Here it is again: (Sorry for any inconvenience)

Here are his comments below with a diagram explaining. Any feedback on it's feasibility would be greatly appreciated!

Here is what I am proposing.

Control of a pneumatic cylinder:

Use a 4 way 2 Position single solenoid valve for directional control of an air cylinder. At each port on the cylinder use a blocking single solenoid valve would be used to turn air on or off. The default of this valve would be passing so that when the robot is in E-stop no air is trapped. The use of these multiple valves to control a cylinder would be done in series. (Thus the flow of .3 Cv would not be exceeded)

Re: Pneumatics Question

Posted by GDC at 02/11/2011 03:43:59 pm

The purpose of this forum is to answer specific questions about the rules in the 2011 FRC Game Manual. We will not review specific designs for efficacy or legality.

Pneumatics

Pneumatics Pressure Gauge and Tubing

Pneumatics Pressure Gauge and Tubing

Posted by 2011FRC3622 at 02/09/2011 02:33:20 pm

From the rules it appears we need to have two pressure gauges to show that we are at 120 PSI and 60 PSI after the regulator. Only one pressure gauge is listed in our kit of parts and we only have one(rookie team). Do we need to buy another pressure gauge or is the rule out of sync with the kit of parts and thus not required? Andymark does not carry the part. If we do need to order one where should we place the order?

I picked up a 100 ft of SMC rated tubing that does have SMC information printed on the tube. From the rules it is not clear what needs to be printed on the tube. The blue tube delivered in the kit of parts has 175 psi so I assume that the intent is to have the PSI rating printed. I have the spec sheet for the SMC tube and it is rated at 115 psi and can provide that as part of inspection.

I only need to use the tube on the 60 psi side after the regulator? I wanted to see if this is legal. Trying not to spend more money on ordering/overnighting tubing that is at 115 psi when 120 psi seems to be the magic number.

Re: Pneumatics Pressure Gauge and Tubing

Posted by GDC at 02/15/2011 10:20:08 pm

1) There are two regulators listed in the [B][I]2011 Kit of Parts Checklist[/I][/B], a main regulator from Norgren and a secondary regulator from Monnier.
2) Many pneumatics VENDORs carry pressure gauges.
3) Rule <R66> requires that all COTS pneumatic devices must be rated by their manufacturers for working pressure of at least 125psi.
4) Regardless of where the tubing is used, it must be in accordance with Rule <R66-D>.

Pneumatics

Compressor / Relief Valve

Compressor / Relief Valve

Posted by 2011FRC2377 at 02/10/2011 09:25:33 pm

Rule 71 states the following:

"R71 - The relief valve must be attached directly to the compressor."

This was fine with the old Gardner Denver compressor because it had two output ports. With the new Viair compressor (one port), it is impossible to mount the relief valve directly. Minimally, several brass adapters and a Tee are required. These fittings are then caltilevered out from the cylinder assembly and will apply undue stress to the fragile compressor outlet.

Will you permit us to run a short pneumatic tube from the compressor to the brass assembly containing the relief valve so it can be securely mounted and not risk compressor damage?

Re: Compressor / Relief Valve

Posted by GDC at 02/13/2011 10:04:50 pm

Per <R71> in Team Update 10, the valve must be mounted to the compressor using suitable brass fittings.

Pneumatics

Pnuematics Question

Pnuematics Question

Posted by 2011FRC1450 at 02/11/2011 06:36:33 am

It appears to be within the rules (as we interpet) to use a 5/3 pneumatics valve, with a closed center position. Could you please confirm this? We unfortunately are not experts in pnuematics!

If this is not within the rules then please explain how to use positions sensors to position pneumatics cylinders, because there is a rule that only one valve can operate a Cylinder.

Thanks! Team 1450

Pnuematic 5/3 Center closed value

Posted by 2011FRC1450 at 02/14/2011 01:07:44 pm

Is a 5/3 center closed position value against the rules?

Pnuematics 5/3 clsoed port valve

Posted by 2011FRC1450 at 02/15/2011 12:54:03 pm

Can a 5/3 closed port valve be utilize as long as when you activate the pressure dump valve it purges all pressurized air from the system? This appears to be within the rules. Without the use of 5/3 closed port valves pneutmaics are extremely limited to only two positions per Cylynder. It defeats the purpose of having magnetic pistons and sensors for positioning.

Re: Pnuematics Question

Posted by GDC at 02/18/2011 08:31:20 am

There is no rule against a specific type of pneumatic solenoid valve, provided it meets the requirements of <R66> and does not violate <R73>.

Pneumatics

Pneumatic Tubing

Pneumatic Tubing

Posted by 2011FRC0128 at 02/11/2011 01:33:57 pm

We are well aware of R66-D. We would like to use coiled pneumatic tubing from Freelin-Wade that is an off the shelf item. However, just like the tubing included in the KOP, this coiled tubing is also not stamped with the pressure rating. The Freelin-Wade tech has offered to mark our invoice with the pressure ratings and state that it is in fact, the same tubing that is in our KOP. Would this be legal?

Thank you!

Re: Pneumatic Tubing

Posted by GDC at 02/13/2011 10:05:33 pm

Please see Team Update #10.

Pneumatics

2 Stage Bimba Cylinders

2 Stage Bimba Cylinders

Posted by 2011FRC0234 at 02/12/2011 09:44:17 pm

We are using a 2 stage cylinder from Bimba. It has three pressure port connections.
Applying pressure to the different ports allows the cylinder to move to different set extensions.

We have one double acting solenoid connected to ports 2 and 3, and a second solenoid connected to port 1. Each motion is accomplished through only one valve, as the two stages can act independently (Extend 1, Extend 2, Retract 1, Retract 2). Each input on the cylinder is connected to only one valve.

Can you confirm that these 2 stage cylinders are legal and do not conflict with R74.

<R74> Each commanded motion of a pneumatic cylinder or rotary actuator must be accomplished via the flow of compressed air through only one approved pneumatic valve. Plumbing the outputs from multiple valves together into the same input on a pneumatic cylinder are prohibited.

3 position cylinders

Posted by 2011FRC2484 at 02/12/2011 10:51:44 pm

Is it legal, per rule <R74>, to use Bimba's 3 position cylinder, shown in the link below, on the robot this year? [url]http://www.bimba.com/pdf/catalogs/FL_OriginalLine.pdf#page=67[/url]

Re: 2 Stage Bimba Cylinders

Posted by GDC at 02/15/2011 10:22:02 pm

As long as <R74> is followed and "each commanded motion of a pneumatic cylinder is accomplished via the flow of compressed air through only one approved pneumatic valve" and these cylinders meet the requirements of <R66>, the cylinders are allowed.

Pneumatics

Pneumatic Hose

Pneumatic Hose

Posted by 2011FRC3637 at 02/14/2011 01:46:31 pm

Is this a legal pneumatic hose? Its in a coil also.

Tube O.D.: 1/4"
Tube I.D.: .125"
Wall Thickness: .062"

Working PSI @ 68F: 667 PSI
Burst PSI @ 68F: 2000 PSI
Working PSI @ 125F: 467 PSI

Rule <R66-D> states "Additional 0.160” inside diameter pneumatic tubing functionally equivalent to that provided in the KOP, with the pressure rating clearly factory-printed on the exterior of the tubing or with supplier documentation showing the pressure rating."

Functionally its the same, so is it legal?

Re: Pneumatic Hose

Posted by GDC at 02/16/2011 09:57:03 pm

No.

Pneumatics

Replacement compressor?

Replacement compressor?

Posted by 2011FRC1729 at 02/15/2011 12:48:58 pm

I've learned that the ViAir Compressor 90C is either backordered or unavailable from suppliers. Can we use either the 92C or 95C?

Thank you,

Brighid Wood
Team 1729

Re: Replacement compressor?

Posted by GDC at 02/15/2011 10:26:04 pm

Please see Rule <R69>.

Pneumatics

pressure transducers/pressure gauges

pressure transducers/pressure gauges

Posted by 2011FRC0340 at 02/16/2011 07:16:47 am

Since <R70-B> allows pressure gauges located in the high pressure circuit located upstream of the regulator, would it allow one physically readable pressure gauge like the 18-013-212 from the Kit of Parts and one electronic pressure gauge of the form of a pressure transducer?

Since pressure transducers/pressure gauges of the appropriate rating to withstand 120 PSI are allowed under <R66-E>, this seems like the most logical plumbing of the pneumatic system. Is this accurate?

Re: pressure transducers/pressure gauges

Posted by GDC at 02/18/2011 08:34:29 am

R70-B allows [B][I]a[/I][/B] gauge, not multiple gauges.

Pneumatics

Replacement compressor

Replacement compressor

Posted by 2011FRC1391 at 02/17/2011 12:14:33 pm

The compressor that came in the rookie kit of parts this year is the Viair 90C. The Viair 92C has the exact same specs as the 90C.

Under R69, the Viair 92C would be an acceptable replacement. Because it meets the "This compressor may be either the compressor from the KOP, or an equivalent compressor that does not exceed any of the KOP compressor performance specifications (specifically: nominal 12v, 1.03 cfm flow rate, 120psi maximum working pressure)." The 92C is equivalent to the

90C.

However, both the Viar 90C (provided in the KOP) and 92C are in violation of R66. Specifically, "All included items must be “off the shelf” COTS pneumatic devices rated by their manufacturers for working pressure of at least 125psi and burst pressure of 250psi". For both compressors, the working pressure is 120psi not 125psi and the listed burst pressure is only 200psi. Are we missing something here?

Are both the 90C and 92C legal?

Re: Replacement compressor

Posted by GDC at 02/24/2011 09:33:47 pm

The compressor used on the ROBOT is subject to Rule <R69>.

Pneumatics

Valve Control

Valve Control

Posted by 2011FRC1322 at 02/18/2011 09:08:23 am

<r74> Each commanded motion of a pneumatic cylinder or rotary actuator must be accomplished via the flow of compressed air through only one approved pneumatic valve. Plumbing the outputs from multiple valves together into the same input on a pneumatic cylinder is prohibited.

I read this as meaning that we can not use multiple valves on a cylinder. But I do not see where I can not use multiple cylinders on a vavle.

On the inspection checklist it says it different.

“ Valve Control – pneumatics solenoid valve must have Cv of 0.32, be controlled by either Spike or NI 9472 and only one valve Per pneumatic actuator. <r66.b, r74>

"one vlave Per Pneumatic actuator"

Which is correct ?

Re: Valve Control

Posted by GDC at 02/22/2011 08:30:40 am

They are both correct. Rule <R74> and the [B][I]2011 Inspection Checklist[/I][/B] require (1) valve per pneumatic cylinder, but do not place requirements on how many pneumatic cylinders may be connected to a single valve.

Pneumatics

Daisy Chain Pneumatic cylinders

Daisy Chain Pneumatic cylinders

Posted by 2011FRC2073 at 02/23/2011 05:23:31 pm

After searching the pneumatics sections of the rules manual, Team updates and searching here, I have found no rule preventing the daisy chaining of two or more cylinders.

We would like to connect one tube between a dual action valve and one end of a cylinder. Then we want to connect the opposite end (exhaust) of the first cylinder to the input of a second cylinder of equal size and stroke. Finally, we will connect the exhaust end of the second cylinder back to the control valve.

This will allow use to double the stroke length available and still maintain a closed loop system.

Is this configuration legal?

Re: Daisy Chain Pneumatic cylinders

Posted by GDC at 02/24/2011 09:43:59 pm

While we will not approve/disapprove of a design on the Q&A forums, please note that the air stored between cylinders (1) and (2) must be able to vent per Rule <R73>.

Bumpers

Bumpers

Robot Bumpers

Robot Bumpers

Posted by 2011FRC2484 at 01/12/2011 05:22:29 pm

Because the robot frame this year is going to be essentially the same as last year, and the bumpers must cover 100% of the robot frame perimeter, it seems fruitless to go out and spend money and other resources to buy new bumper materials to build new bumpers, since we have a perfect set of bumpers sitting in our shop. Can we reuse last year's bumpers and bumper covers, instead of having to remake an exact copy of them?

Re: Robot Bumpers

Posted by GDC at 01/13/2011 11:07:17 pm

That would not be permitted per R22.

Bumpers

BUMPER Configuration Clarification

BUMPER Configuration Clarification

Posted by 2011FRC0498 at 01/12/2011 10:12:53 pm

<R07.A> BUMPERS must provide complete protection of the entire FRAME PERIMETER of the ROBOT(i.e BUMPERS must wrap entirely around the ROBOT). As part of the 100% coverage, BUMPERS must protect all exterior corners of the FRAME PERIMETER. For adequate protection, a full segment of BUMPER must be placed on each side of the corner.

Our question is, can we have a "notch"/opening in the front of the robot that would house, say, a claw at the beginning of the match? (as long as other BUMPER/ROBOT rules are met; i.e 6 inches of BUMPER and corner coverage, etc).

Re: BUMPER Configuration Clarification

Posted by GDC at 01/16/2011 11:43:09 am

No, this would be a violation of <R07>.

Bumpers

Convex Bumper/Frame Perimeter

Convex Bumper/Frame Perimeter

Posted by 2011FRC0854 at 01/14/2011 07:57:38 am

I was wondering if you could have an indent in your frame. More information at [url]http://forums.usfirst.org/showthread.php?p=44741[/url] .

All I see in the rules is that we would have to have bumpers all along the indentation and we can't have anything starting in the vertical projection of the indent (as it is part of our frame perimeter).

The only thing that worries me is the hint on finding your frame perimeter by wrapping string.

Robot Bumper Perimeter rule

Posted by 2011FRC1009 at 01/15/2011 12:28:04 am

Can we have a concave robot bumper, or would that violate the 8" support rule since you specify the perimeter as defined as a string tied around the robot?

We want to make a inward curve on one side of our robot to match the curve on the Minibot race posts.

Convex Bumper/Frame Perimeter

Posted by 2011FRC2729 at 01/15/2011 10:29:00 am

Our team would like to form one end of the robot to fit the base of the minibot tower. Are we allowed to have a convex end of the robot? The frame and robot bumpers would be built to conform to this shape, inwards to toward the middle of the robot.

Thanks!

Go teams!

Frame Perimeter

Posted by 2011FRC1322 at 01/16/2011 10:45:56 am

Per K. BUMPERS must attach to the FRAME PERIMETER of the robot with a ridged fastening system to form a tight, robots connection to the main structure/frame

Definitions: FRAME PERIMETER

To determine the FRAME PERIMETER, wrap a piece of string around the HOST BOT at the level of the BUMPER ZONE – the string describes this polygon.

The above description describes the FRAME PARIMETER but doe not describe the under size limitations. We would like to build a “V” shape in our frame perimeter but if we use a string as above we would be laying out the maximum frame perimeter and than there would be a gap in the string where the “V” would be. Our bumpers would be installed attached to the frame inside the “V” as descried in the rules and the segments would not be less than 6 inches. Can we build such a frame and be legal per the rules.

Bumper Perimiter

Posted by 2011FRC0263 at 01/16/2011 12:31:59 pm

Is it legal for a section of the bumper perimeter to be concave of V shaped?

Thanks

Bumpers

Posted by 2011FRC3421 at 01/17/2011 09:31:24 am

Are the bumpers allowed to go inside of the bumper permiter? The rules clearly state about the exterior vertices but does not mention anything about inside corners. We are thinking of building a frame that has a V shaped section on the back of the robot so that when we approach the tower the tower would be in the center of the V. All sides of the frame would still be covered by bumpers, there would be no sections of bumpers that would be unsupported. The entire frame would be covered by bumpers.

I have included a photo of a frame simlar in design to what we are thiniking but instead of 2 V shapes we would only have a single V shape on one side of the robot and the other 3 sides would be flat.

Robot Base Shape

Posted by 2011FRC2990 at 01/17/2011 07:51:02 pm

Is it possible to have a rectangular shaped base to a robot, but one side be concave, so long as the bumpers still wrapped around the entire robot? This would technically make there be 5 sides instead of 4. (illustrated below)
[IMG]http://i306.photobucket.com/albums/nn271/LizardGirl042907/firstqa.jpg[/IMG]

Thank you!

Re: Convex Bumper/Frame Perimeter

Posted by GDC at 01/18/2011 09:23:35 pm

The combination of R07-A and the definition of FRAME PERIMETER prohibit such a geometry.

Bumpers

Bumper Height

Bumper Height

Posted by 2011FRC3457 at 01/14/2011 04:33:57 pm

Is there a required height for the bumpers this year?

Bumper Height

Posted by 2011FRC3213 at 01/15/2011 02:31:27 am

What is the height above floor and tolerance for bumper mounting?

Re: Bumper Height

Posted by GDC at 01/17/2011 10:25:05 am

The BUMPER ZONE is defined in the Glossary, Section 1.6.

Bumper Specs

Posted by 2011FRC3592 at 01/23/2011 07:34:16 am

We have made the backer board for our bumper out of 3/4-inch plywood five inches wide. How high off the floor should it be when attached to the robot's perimeter? For instance, one

inch? That would make the top edge six inches off the floor, etc., but I do not see a description of that among the rest of the stuff about the robot. It makes sense that all robots have mounted their bumpers at the same altitude so as to interact. If there is no spec for that, what is a recommended height? (We are a rookie team.) Thanks.

Bumpers

Bumper Material

Bumper Material

Posted by 2011FRC1351 at 01/14/2011 08:12:52 pm

Hi, My team would like to reuse the fabric from our last year bumpers for this years. We would be constructing entirely new bumpers, simply only reusing the fabric. They are not fabricated covers that would be placed over the bumpers to change team colors, but simply the fabric that would have been placed on the bumpers to cover the pool noodles inside. They do have the team numbers printed on them. As stated by<R 21> Individual COMPONENTS or MECHANISMS retrieved from previous ROBOTS and used on
2011 ROBOTS must have their undepreciated cost included in the 2011 ROBOT cost
accounting and applied to the overall cost limits. But we would like to make sure, that the fabric constitutes an individual component.

Re: Bumper Material

Posted by GDC at 01/17/2011 10:19:34 pm

This is a fabricated item that was specifically constructed for the 2010 competition, which is prohibited by Rule R22.

Bumpers

Minor Protrusions Clarification

Minor Protrusions Clarification

Posted by 2011FRC0177 at 01/18/2011 06:07:26 pm

Ref: R07
F. Each BUMPER segment must be backed by a piece of ¾” thick by 5” tall piece of plywood. Small clearance pockets and/or access holes in the plywood backing are permitted, as long as they do not significantly affect the structural integrity of the BUMPER.
And the definition of frame perimeter
To determine the FRAME PERIMETER, wrap a piece of string around the HOSTBOT at the level of the BUMPER ZONE - the string describes this polygon.
Note: to permit a simplified definition of the FRAME PERIMETER and encourage a tight, robust connection between the BUMPERS and the FRAME PERIMETER, minor protrusions such as bolt heads, fastener ends, rivets, etc are excluded from the determination of the FRAME PERIMETER.

As stated in the manual excerpt above, "minor protrusions" are allowed to be excluded from the fame perimeter. The question is would a bearing protruding slightly out of the frame be considered a minor protrusion per the "Note" in the manual? To clarify, the bearing is protruding less than a standard bolt head would.

Re: Minor Protrusions Clarification

Posted by GDC at 01/24/2011 08:44:54 pm

Please see Team Update 5.

Bumpers

<R07K> Adequate Frame Support for Bumpers

<R07K> Adequate Frame Support for Bumpers

Posted by 2011FRC0610 at 01/19/2011 06:44:27 am

R07K: The BUMPER backing must be supported by the structure/frame of the ROBOT (i.e. the gap between the backing material and the frame must not be greater than 1/4” and no section of BUMPER greater than 8” may be unsupported).

A drivetrain has cantilevered wheels, with bumper supports installed between each wheel to ensure that R07K is met. No section of BUMPER greater than 8" will be unsupported. Our concern lies in whether such bumper supports will:

a) not be considered part of the "structure/frame" of the robot, and thus not comply with R07K
b) not assessed as adequate support for the bumper and thus not comply with R07K

Is a cantilevered drivetrain with bumper supports between the wheels a legal configuration with respect to R07K?

Re: <R07K> Adequate Frame Support for Bumpers

Posted by GDC at 01/23/2011 01:51:54 pm

The purpose of this forum is to clarify rules and answer questions about intent behind rules. We will not provide specific answers regarding how rules are administered or specific design review.

Bumpers

Single piece bumpers

Single piece bumpers

Posted by 2011FRC0057 at 01/19/2011 12:19:42 pm

Is it permissible to build a set of bumpers such that they form a single solid framework that can be lifted on/off the robot? Two proposed construction methods would be:
1. Build a rectangular frame out of 5" tall, 3/4" thick plywood. The ends would be butted and screwed/glued together. Thus, there would be 3/4" of "unsupported" bumper at each corner sticking outside of the frame perimeter.
2. Build a rectangular frame out of 5" tall, 3/4" thick plywood. Leave the corners empty, and attach the pieces at the corners with angle brackets. This removes the 3/4" of unsupported bumper, but adds some angle brackets to the bumpers.

Option 1 may or may not comply with R07-K and L. Compliance with K hinges on whether a <8" unsupported section of bumper must be supported on both sides by the frame perimeter. Compliance with L depends on if the 1" extension is strictly perpendicular to each segment of the frame perimeter, or if it's more a 1" offset outside the frame perimeter polygon.

Re: Single piece bumpers

Posted by GDC at 01/24/2011 07:55:46 am

The purpose of this forum is to clarify rules and answer questions about intent behind rules. We will not provide specific answers regarding how rules are administered.

Generally speaking, there are no rules that prohibit one-piece BUMPER ASSEMBLIES.

Bumpers

4.3.2 Bumper Rules

4.3.2 Bumper Rules

Posted by 2011FRC0100 at 01/22/2011 09:15:06 pm

In reference to:
Section Robot Manual
4.3.2 Bumper Rules
<R07>
The BUMPER backing must be supported by
the structure/frame of the ROBOT (i.e.
the gap between the backing material and the
frame must not be greater than 1/4” and
no section of BUMPER greater than 8”
may be unsupported). See Figure 3-3.

Is it legal to support the bumper using short (~3" wide) L-brackets
connected to the robot's main frame with 7" spaces between brackets?
Within the 7" spaces between brackets, the gap between the back of the bumper
and our main frame is ~3". Is this cantilevered bumper legal?

Re: 4.3.2 Bumper Rules

Posted by GDC at 01/24/2011 07:49:40 am

We do not review and/or approve designs. The purpose of this forum is to answer specific rules questions.

Bumpers

Bumper corners/intersections

Bumper corners/intersections

Posted by 2011FRC2976 at 01/25/2011 11:05:29 am

Last year, at our regional event, our robot’s bumpers were deemed to violate the rules. We were allowed to complete but were told that if we went to the championships we would need to replace our bumpers. Attached is an picture of our bumper corner.

Per Figure 4-2 under <R07>, the lower right corner of the robot appears to clearly show a bumper configuration where the joint formed by the bumpers on the adjacent sides is the same as the intersection of the angle formed by two sides of the robot frame. That is, the bumper ends are cut at an angle. Assuming a rectangular robot, is having the bumper ends cut at 45 degrees legal?

Re: Bumper corners/intersections

Posted by GDC at 01/26/2011 09:24:17 pm

We cannot review and approve a specific design in this forum. Please note that R07-C allows for the beveling of corners.

Bumpers

Bumper Fabric Coverage

Bumper Fabric Coverage

Posted by 2011FRC0801 at 01/26/2011 05:40:30 pm

Since Section 4.3.2G states

The cloth must completely enclose all exposed surfaces of the plywood and pool noodle material.

and 4.3.2H states

The fabric covering the BUMPERS must be a solid red or blue in color.

and <R08> states

B. Alternately, the ROBOT may use changeable BUMPER covers. The BUMPER covers

- must show only show red or blue such that when the BUMPER covers are in use, only fabric of the assigned ALLIANCE color may be visible.

Our questions:

Is fabric required to cover 100% of the wood on the back side of the bumpers that mount against the frame (although Figure 4-1 doesn't show 100% coverage)?

If fabric is required on the back, for teams that use bumper covers and also have frames where the metal doesn't cover 100% of the wood (kit chassis, or chassis with small cutouts), is it allowable to have small amounts of the other color fabric exposed on the back side of the bumper when covers are being used? Or is it allowable to use a neutral colored fabric (perhaps black or grey) on the back side, and red/blue on the front exposed side of the bumpers?

Re: Bumper Fabric Coverage

Posted by GDC at 01/31/2011 03:02:41 pm

Please note that R07-G speaks of the exterior of the BUMPERS, meaning all faces not in contact with the ROBOT frame.

Bumpers

Minimum BUMPER support required

Minimum BUMPER support required

Posted by 2011FRC1515 at 01/26/2011 08:16:51 pm

The gap between any two BUMPER support structures can not be more than 8" per <R7-K>.

Can you please explain what is the intent of the word "Supported" in a a quantifiable manner

such as "the support structures must be the entire high of the BUMPER backing material and x in. wide" or does the lack of specificity mean that as long as the gapping rules per <R7-K> are followed any "supporting" method will be allowed.

As reference i have pasted the 2010 BUMPER "support" rule I am thinking about when asking this question.

(2010)
<R7-M> The entire length of the BUMPER backing must be supported by the structure/frame of the ROBOT (i.e. the backing material must not be in “free space” between or beyond attachment points) (see Figure 8 – 3)

Thank you,
Team 1515

Re: Minimum BUMPER support required

Posted by GDC at 01/31/2011 03:04:17 pm

Rules from prior competitions do not apply in 2011. Please read R7-K carefully and as a whole. The intent is clearly stated within the rule.

Bumpers

Bumper size

Bumper size

Posted by 2011FRC1361 at 01/29/2011 10:05:41 pm

is 2.75" noodle OK if we still use 5" plywood?? (It is much _____er than getting 2.5" shipped).

Re: Bumper size

Posted by GDC at 01/31/2011 03:27:44 pm

No, that is not permitted per Rule <R07-E>.

Bumpers

Bumper brackets

Bumper brackets

Posted by 2011FRC2423 at 02/04/2011 07:37:27 pm

Last year (2010) we added a 1.5" L bracket (4" wide) to each of our bumpers (near the top and bottom of the side of the plywood facing the chassis). A pin fastened the horizontal segment of the L to holes in the to the top or bottom of the chassis. The L, therefore, extended 1.5" past the plywood and into the robot perimeter.

This year's rules do not seem to prohibit this, despite Figure 4-1 and <R07-L> which indicates a "1" limit for hard parts. I interpret this 1" limit on the bumper side, not extensions into the chassis perimeter.

Q1: Are L brackets of this sort allowed in 2011?

Q2: Are fasteners affixed above the plywood (within the 3/4" vertical volume of the plywood) allowed?

Bumper attachment

Posted by 2011FRC2423 at 02/06/2011 04:01:28 pm

Last year we attached L brackets to our bumpers to fasten them to the chassis using a simple pin. (See image)

Are these allowed this year?

Re: Bumper brackets

Posted by GDC at 02/14/2011 10:59:54 pm

We do not review and/or approve designs. The purpose of this forum is to answer specific rules questions.

Bumpers

Bumper

Bumper

Posted by 2011FRC0135 at 02/05/2011 10:54:27 am

I have several bumper questions.

1. Since the top and bottom edge of the bumpers must have angle aluminum covering them, I was wondering if we were allowed to use a 1 inch by 2 inch angle aluminum, the 2 inches being the side that goes along the back?

2. Is there a minimum surface area for the frame's perimeter to which the bumpers must attach?

Re: Bumper

Posted by GDC at 02/11/2011 03:39:58 pm

Note that per Figure 4-1, the aluminum angle is optional and thus there are no exact specifications for it.

There is no minimum surface area required fro mounting the BUMPERS, however please note that BUMPERS must be mounted such that they can withstand rigorous game play per <R07-K>.

Bumpers

Bumper Fabric Coverage

Bumper Fabric Coverage

Posted by 2011FRC0365 at 02/10/2011 08:09:16 am

Section 4.3.2 - Bumper Rules

<R08> Option B is to use Changeable Bumper Covers that may be removable, reversible or fixed.

Question:
If either the removable or reversible options are utilized, must the bumper color (Red or Blue) fully encompass 100% of the cover area including corners? Would it be acceptable if bumper corners or ends are of a neutral color (black or white) encompassing approximately 6 inches of

the rounded corner, from back bumper base to exposed front surface, or similarly, with exposure extending no more than 3” from both or the bumper ends?

Reasoning:
The methods for removability and/or reversibility of the bumper fabric would be enhanced and improve the efficiency and speed of the pit crews if the bumper ends could be of a neutral colored fabric, thereby optimizing turn-time in the pits.

Requirements:
The bumpers would still be 100% covered as required in <R07> G. They would also be covered in 1000 dernier Cordura Plus also as recommended in <R07>. The methods to affix the removable/reversible portion of the fabric will be robust and would not come loose during play.

A minimum of 90% of colored (red or blue) area of the bumper would be centrally exposed to the referees, emcee, announcer and audience. All other requirements in 2011 FRC Game Manual section 4.3.2 for the bumpers shall be met.

Re: Bumper Fabric Coverage

Posted by GDC at 02/15/2011 10:21:07 pm

Per <R07-H>, "The fabric covering the BUMPERS must be a solid red or blue in color."

Bumpers

Bumper Rule Question

Bumper Rule Question

Posted by 2011FRC1756 at 02/12/2011 02:11:02 pm

The bumper rule as stated says the bumper must be within 1-7" from fthe floor. If the bumper (The 3/4" thick X 5" tall backing board with the pool noodles covered with fabric) is within the specified vertical range, can the metal bumper mounting bracket that attaches to the back of the bumper extend higher than 7"?

Re: Bumper Rule Question

Posted by GDC at 02/13/2011 10:06:16 pm

Anything that is part of the BUMPER assembly (i.e. that gets removed from the ROBOT when the BUMPERS are removed) must be within the BUMPER ZONE.

Bumpers

COTS Bumper

COTS Bumper

Posted by 2011FRC2145 at 02/23/2011 03:01:47 pm

If a team purchases a COTS bumper cover from AndyMark and the iron on letters, then irons the letters on to the cover, would this still be considered a COTS part and be able to be used every year, rather than having to be remade from new fabric because it was fabricated for a previous robot?

Re: COTS Bumper

Posted by GDC at 02/24/2011 09:40:23 pm

Per the definition, this would be a of FABRICATED ITEM and subject to those rules regarding

reuse.

Section 4 - The Robot

Section 4 - The Robot

FisherPrice Gearbox and Motor

FisherPrice Gearbox and Motor

Posted by 2011FRC0447 at 01/12/2011 08:20:12 pm

The KOP this year only contained one FisherPrice Gearbox and Motor.
In Section 4.3.9 <R45> Are we permitted to use a second FisherPrice Gearbox and Motor?

Fisher Price Motors Allowed

Posted by 2011FRC1351 at 01/13/2011 11:11:32 pm

The manual does not specify how many Fisher Price Motors we are allowed on the robot. Exactly how many Fisher Price Motors are we allowed on the robot?

Fisher Price Motors Allowed

Posted by 2011FRC1351 at 01/14/2011 08:29:35 pm

The rules do not clarify how many Fisher Price Motors are allowed on the robot. My time would like to know the amount of Fisher Price motors allowed on the robot this year.

Re: FisherPrice Gearbox and Motor

Posted by GDC at 01/15/2011 05:31:53 pm

The combination of Rules R45 and R46 permit one and only one FisherPrice motor identical to that which was provided in the Kit of Parts.

Section 4 - The Robot

Direct connection of encoder to jaguar

Direct connection of encoder to jaguar

Posted by 2011FRC0930 at 01/12/2011 09:48:30 pm

Hello,

FRC Team 930 has a question pertaining to the use of encoders in direct link to jaguars. We have read rules; <R55> <R58>, and we were not sure on the limitations of rule <R55> J. To be clear we are using CAN. We were wondering whether or not the use of CAN would allow us to use encoders that are directly connected to the jaguars. Could you please clarify?

Thank you very much,
FRC Team 930

Re: Direct connection of encoder to jaguar

Posted by GDC at 01/22/2011 10:08:19 am

Please see Team Update 4.

Section 4 - The Robot

robot communication on field

robot communication on field

Posted by 2011FRC0451 at 01/13/2011 03:00:42 pm

Which network ports and protocols (UDP and/or TCP) are going to be accessible and usable

for passing data to the driver station/dashboard computer during competitions versus firewalled? Also, will bi-directional communication be allowed, or only driver station/dashboard bound data?

Re: robot communication on field

Posted by GDC at 01/25/2011 09:30:35 pm

Please see Team Update 5.

Section 4 - The Robot

Rotary couplings and R02

Rotary couplings and R02

Posted by 2011FRC0467 at 01/13/2011 03:03:35 pm

Our team would like to use a rotary coupling (slip ring).

Our first question is, are rotary couplings allowed this year?

Secondly, our team has found a rotary electrical coupling that contains mercury as an electrical conductor. The unit is sealed. R02 list many specific "do nots" but mercury does not necessarily fall into any listed category. The item in question is a Mercotac slip ring ([url]http://www.mercotac.com/html/230.html[/url]). Can we use Mercury as an electrical conductor in a seal unit?

Re: Rotary couplings and R02

Posted by GDC at 01/18/2011 09:18:37 pm

Please see Team Update 3.

Section 4 - The Robot

Driver Station setup for Competition

Driver Station setup for Competition

Posted by 2011FRC2062 at 01/13/2011 03:25:25 pm

I do have a question about the Operator Console. At the end of last season we had issues with the classmate PC stability and network connection so we purchased a different classmate from ctlCorp has indicated in last years replacement parts documentation. We purchased the model NBNL2 (Specifically NBNL2 1.66G/160G/1G-KB-6C-10.1" grey-H). My question is how do we ensure that we have it configured like the image on the 2010 or 2011 classmates? We want to ensure we are in compliance to rules (which appear this year to allow any classmate or laptop to be used, if I am reading it correctly) as well as to ensure that we can effectively play the LOGO MOTION game. Is there a image build procedure we can use or is it sufficient enough to load the Driver Station software (which I believe would require LabView to be loaded) and FirstTouch I/O software?

Operator Console

Posted by 2011FRC2062 at 01/14/2011 01:45:00 pm

I have a question about the Operator Console. At the end of last season we had issues with the classmate PC stability and network connection so we purchased a different classmate from ctlCorp as indicated in last years replacement parts documentation. We purchased the model NBNL2 (Specifically NBNL2 1.66G/160G/1G-KB-6C-10.1" grey-H). My question is how do we ensure that we have it configured like the image on the 2010 or 2011 classmates? We want to

ensure we are in compliance to rules (which appear this year to allow any classmate or laptop to be used, if I am reading it correctly) as well as to ensure that we can effectively play the LOGO MOTION game. Is there a image build procedure we can use or is it sufficient enough to load the Driver Station software (which I believe would require LabView to be loaded) and FirstTouch I/O software?

Operator Console

Posted by 2011FRC2062 at 01/17/2011 12:30:22 pm

I have a question about the Operator Console. At the end of last season we had issues with the classmate PC stability and network connection so we purchased a different classmate from ctlCorp as indicated in last years replacement parts documentation. We purchased the model NBNL2 (Specifically NBNL2 1.66G/160G/1G-KB-6C-10.1" grey-H). My question is how do we ensure that we have it configured like the image on the 2010 or 2011 classmates? We want to ensure we are in compliance to rules (which appear this year to allow any classmate or laptop to be used, if I am reading it correctly) as well as to ensure that we can effectively play the LOGO MOTION game. Is there a image build procedure we can use or is it sufficient enough to load the Driver Station software (which I believe would require LabView to be loaded) and FirstTouch I/O software?
Reply With Quote

Driver Station setup for Competition

Posted by 2011FRC0539 at 02/06/2011 04:24:28 pm

I Currently have the Driver Station installed on my computer (it opens as shown in picture)

Is the setup shown in the picture fine? Or does it need set up as a seperate login for the competitions (like the Classmate)? If so, how do I set that up?

Thanks,
Davis Catherman

Re: Driver Station setup for Competition

Posted by GDC at 02/13/2011 09:57:34 pm

Please refer to the [B][I]Installing the 2011 Driver Station on a Non-Classmate PC[/I][/B] document posted on the [URL="www.usfirst.org/frc/kitofparts"]KOP Website[/URL] under Control System.

Section 4 - The Robot

Items allowed within player stations

Items allowed within player stations

Posted by 2011FRC3173 at 01/13/2011 08:01:42 pm

We would like to know exactly what kinds of items are allowed to be brought into the player, feeder, or alliance stations. In particular, we would like to know if some sort of visual signalling system could be set up between the alliance station and the corresponding feeder stations. By using colored flags, for example, the alliance station could communicate which type of logo piece it wanted the feeder to give. <R77> implies that holdable items are allowed as part of the operator console, and the glossary says that "decorations" are allowed as part of the operator console. Can you provide us with more details on whether this idea would work, and what

other sorts of items could be brought to various stations, so that we might devise a similar system.

Signaling the human players

Posted by 2011FRC1983 at 01/20/2011 06:14:14 pm

Is it permissable in the rules to have a device handled by the analyst... (non radio type) for instance three sticks with a Triangle, Circle and Square on them... that could be used to signal the human players on the other end of the field to be ready with a given playing piece.

The rules allow devices that allow the communication of strategy between alliance members...

Is this a legal action and legal devices to use during game play?

thank you

Re: Items allowed within player stations

Posted by GDC at 02/03/2011 08:07:12 pm

Please see Team Update 8.

Section 4 - The Robot

What is the weight of the WITHHOLDING ALLOWANCE?

What is the weight of the WITHHOLDING ALLOWANCE?

Posted by 2011FRC0806 at 01/14/2011 01:40:25 pm

The definitions section of the game manual introduction refers to Chapter 5 of the administrative manual for more info about the withholding allowance. I cannot find in that chapter a clear statement of how much weight we're allowed to withhold and not bag/ship.

Re: What is the weight of the WITHHOLDING ALLOWANCE?

Posted by GDC at 01/19/2011 07:18:02 pm

Please refer to Rule <R33> for the weight limits of the WITHHOLDING ALLOWANCE.

Section 4 - The Robot

Mechanisms Extending Past Frame Perimeter

Mechanisms Extending Past Frame Perimeter

Posted by 2011FRC2630 at 01/14/2011 03:05:18 pm

Hello,

Though it is hinted throughout the manual that robot mechanisms may extend beyond the frame perimeter, for example an arm picking up a logo piece from the floor, it is not specifically allowed (as far as we can tell).

In fact, per our understanding of the rules, it is perhaps even illegal.

here is the reasoning:

1. It seems that the FRAME PERIMETER is not defined in reference to the starting configuration, but in reference to the robot, implying that at any moment wrapping a string around a robot would represent it's current FRAME PERIMETER.

2. Bumper rules dictate that the FRAME PERIMETER must have full bumper coverage in the BUMPER ZONE.
3. Any mechanism, say an arm, going for an object on the ground would enter the BUMPER ZONE.
4. once it's in the BUMPER ZONE, the FRAME PERIMETER now envelops the arm as well (wrap a string around the robot, it also wraps around the arm)
5. the arm + chassis would need to conform to the bumper rules (i.e. HAVE bumpers, maintain bumper gaps, etc...)
6. since the last point is impossible to conform to, especially with the ban on articulated or moving bumpers, picking up tube from the floor seems to be impossible to do legally.

Could you verify this, or make clear where the flaw in the above reasoning is?

Thank you very much.
-Team 2630

Mechanisms Extending Past Frame Perimeter

Posted by 2011FRC0562 at 01/15/2011 01:45:18 pm

While in PLAYING CONFIGURATION, are MECHANISMS allowed to extend past the FRAME PERIMETER and into the planes of the BUMPER ZONE (i.e. touch the ground).

Wishing to get a clarification on this particular issue, not expressly prohibited or endorsed.

Re: Mechanisms Extending Past Frame Perimeter

Posted by GDC at 01/17/2011 10:02:33 am

The FRAME PERIMETER is defined in the context of the fixed, unarticulated elements of the ROBOT (see Rule <R12>). Mechanisms can extend horizontally beyond the FRAME PERIMETER and vertically through the BUMPER ZONE (but not the BUMPERS) as long as they do not violate any other constraints (e.g. the 84 inch cylindrical size limit).

Section 4 - The Robot

Xbox kinect sensor

Xbox kinect sensor

Posted by 2011FRC3504 at 01/14/2011 04:09:52 pm

Rule <R02> part D says that exposed lasers of any type are not permitted. We are considering using the new XBox Kinect sensor: [url]http://en.wikipedia.org/wiki/Kinect[/url]. This sensor works by projecting a structured infra-red light field generated by a source that could be considered to be a laser. Is the Kinect legal for FIRST FRC?

Re: Xbox kinect sensor

Posted by GDC at 01/20/2011 09:20:22 pm

No, this year, this is a violation of Rule <R02-D>.

Section 4 - The Robot

Servo Power Rating Question

Servo Power Rating Question

Posted by 2011FRC0008 at 01/15/2011 12:38:56 pm

Hello,

<R45 - B> states that Motors permitted on 2011 FRC ROBOTS include: an unlimited number of COTS servos with a maximum power of 4W.

To calculate the maximum power, is it intended that we use the formula:

Power = 0.25 * oz-in * (0.00706 N-m/oz-in) * (1/(6 * t)) RPS * (2pi rads/R)

Simplified for easier use with the data provided with servos to

Power = 0.001849 * oz-in / (sec per 60 deg)

(formulas provided by Kevin Sevcik on Chief Delphi)

Is the above formula accurate, or is there another one that we are supposed to use to calculate the maximum power of a servo?

Thanks.

Re: Servo Power Rating Question

Posted by GDC at 01/18/2011 09:33:01 pm

Please see Team Update 3.

Section 4 - The Robot

Light source for camera

Light source for camera

Posted by 2011FRC0128 at 01/15/2011 01:34:27 pm

Are we permitted to have a light source on the robot to illuminate the reflective tape found on the end of the scoring peg so that the camera is able to better detect the scoring peg?

Re: Light source for camera

Posted by GDC at 01/16/2011 12:01:06 pm

There are no rules that prohibit a light source on the ROBOT. Note that the light source must not be a violation of Rule R02.

Section 4 - The Robot

Window Motor Limits

Window Motor Limits

Posted by 2011FRC0562 at 01/15/2011 01:50:38 pm

Are the allowable number of Window Motors covered by <R45 - A> or <R45 - B>?

Re: Window Motor Limits

Posted by GDC at 01/16/2011 12:05:13 pm

Yes. The combination of Rules R45 and R46 define the number of window motors permitted on the ROBOT.

Section 4 - The Robot

non functional robot decorations

non functional robot decorations

Posted by 2011FRC0702 at 01/15/2011 04:37:12 pm

We are thinking of placing a set of red and blue lights under the robot to be lit according to which alliance we are on. We will still have the bumpers of the appropriate alliance color. Would lights like these be allowed in this game?

Re: non functional robot decorations

Posted by GDC at 01/17/2011 10:22:22 pm

These would be considered non-functional decorations, and permitted as long as the implementation satisfies all applicable 2011 FRC rules (e.g. Rule <R44> regarding source of power for the decorations).

Section 4 - The Robot

Gas Springs

Gas Springs

Posted by 2011FRC0263 at 01/16/2011 12:29:20 pm

We have seen gas springs used at the Championship, but have gotten conflicting opinions on their legality.

Please clarify; we would like to use one as a counter balance for LogoMotion.

Are gas springs considered a COTS item and legal?

Or

Are gas springs considered a non approved pneumatic component and illegal?

Thanks

Re: Gas Springs

Posted by GDC at 01/17/2011 10:24:06 pm

Rule R66-G explicitly permits the use of gas-filled shocks (a.k.a. "gas springs") as long as they are safely utilized and do not violate any other 2011 FRC rules.

Section 4 - The Robot

COTS of off season designs.

COTS of off season designs.

Posted by 2011FRC3213 at 01/16/2011 08:11:35 pm

This years rules do not include provisions for teams "cots-ing" designs developed outside of the 2011 build season. Was this intentional or was this omission an oversight? Please see the rules quoted below.

2011 R-22 last paragraph:
"Example: A different team develops a similar solution during the fall, and plans to use the developed software on their competition ROBOT. After completing the software, "

2010 R-25 Last paragraph:

"Example: A different team develops a similar solution during the fall, and plans to use the developed software on their competition ROBOT. After completing the software, they post it in a generally accessible public forum and make the code available to all teams. Because they have made their software generally available, under the terms of Rule <R67> it is considered COTS software and they can use it on their ROBOT. "

Re: COTS of off season designs.

Posted by GDC at 01/24/2011 08:41:00 pm

Please see Team Update 5.

Section 4 - The Robot

Legality of Jaguar CAN-bus operating modes

Legality of Jaguar CAN-bus operating modes

Posted by 2011FRC2607 at 01/16/2011 11:32:36 pm

The explanation of the intent of R62 states in part that "...any additional devices on the Ethernet or CAN-bus must not provide command signals that do not originate from the cRIO-FRC."

This, coupled with a [URL="http://forums.usfirst.org/showthread.php?t=16140"]prior 2011 Q&A answer[/URL] regarding direct connection of encoders to the Jaguar speed controllers, creates ambiguity as to whether the Jaguar closed-loop control modes for speed, position, etc. are legal for competition use. The answer appears to disallow use of the Jaguar closed-loop control modes, however this is not clear since when using CAN-bus in compliance with rules R55, R58, and R59, the Jaguars are under the control of the cRIO-FRC even when operating in a closed-loop control mode such as position control.

To resolve this ambiguity, please state which of the operating modes available for a Jaguar in CAN-bus configuration are legal for competition use:

1. Voltage control mode
2. Speed control mode
3. Position control mode
4. Current control mode

Re: Legality of Jaguar CAN-bus operating modes

Posted by GDC at 01/20/2011 09:22:42 pm

No closed-loop control modes are permitted within the Jaguar per <R62>.

Re: Legality of Jaguar CAN-bus operating modes

Posted by GDC at 01/21/2011 03:40:55 pm

[QUOTE=GDC;45951]No closed-loop control modes are permitted within the Jaguar per <R62>.[/QUOTE]

This answer has been changed - please see Team Update #4.

Section 4 - The Robot

Framer Perimeter Clarification

Framer Perimeter Clarification

Posted by 2011FRC2630 at 01/17/2011 02:52:38 am

Hello,

It is NOT our intent to "lawyer the rules", we simply can not understand something about them, and would like clarification.

It is our understanding that the rules, as they currently appear, must be interpreted as effectively forbidding mechanisms from entering into the BUMPER ZONE outside of the FRAME PERIMETER. This would in turn seem to disallow floor pick up of LOGO PIECES.

The argument for this is the following:

---

1)It seems that the FRAME PERIMETER is defined in reference to the robot at any time, implying that at any moment wrapping a string around a robot would represent it's current FRAME PERIMETER.

2)Bumper rules dictate that the FRAME PERIMETER must have full bumper coverage in the BUMPER ZONE.

3)Any mechanism, say an arm, going for an object on the ground would enter the BUMPER ZONE.

4)once it's in the BUMPER ZONE, the FRAME PERIMETER now envelops the arm as well (wrap a string around the robot: the arm would create a new vertex for the FRAME PERIMETER outside of the former FRAME PERIMETER).

5)The arm + chassis would need to conform to the bumper rules (i.e. HAVE bumpers, maintaing bumper gaps, no articulated bumpers, etc...)

6)since the last point is almost impossible to conform to, picking up LOGO PIECES from the floor is nigh impossible to do legally.

Many (all?) teams are on a working assumption that the above interpretation of the rules is false/mistaken.

Could you confirm our understanding of the rules, or (preferably) clarify our mistake in interpreting them?

Thanks,
Team 2630, The Emek Hefer Thunderbolts, Israel

P.S.
this is the second time this question was posted, the first post mysteriously vanished from the forums.
if there are any problems with this post that necessitate it's removal we kindly request that you inform us of the reason for this via email: [email]leavoa@gmail.com[/email]

Re: Framer Perimeter Clarification

Posted by GDC at 01/17/2011 10:26:02 pm

This question has been addressed in [URL="http://forums.usfirst.org/showthread.php?t=16270"]this thread[/URL].

Section 4 - The Robot

R22 and previous year's design

R22 and previous year's design

Posted by 2011FRC2973 at 01/17/2011 08:05:51 am

The examples for R22 pretty clearly explain that parts fabricated prior to kickoff cannot be used and the limits on modifications made prior to kickoff to existing designs, but it doesn't explain what to do about designs from previous year's competitions that are used unmodified.
For example, if you designed an omni wheel for 2010 within the rules for that year and want to use the same design for 2011, the design is the design - you can't un-design it and then design it new for this year.

The same concern applies if I were to ask for and receive a design from another team who designed a component for a previous year.

Can you please explain what (if anything) we need to do to use an existing design from another year to fabricate hardware for this year?

Re: R22 and previous year's design

Posted by GDC at 01/20/2011 09:25:35 pm

Parts may not be reused. Designs may be re-manufactured provided they're public domain e.g. the definition of COTS, Example 3.

Section 4 - The Robot

Linear Actuators

Linear Actuators

Posted by 2011FRC3637 at 01/17/2011 08:51:09 am

Are linear actuators allowed on the robot? Please see link for example of actuator: [url]http://www.firgelliauto.com/default.php?cPath=109[/url].

Re: Linear Actuators

Posted by GDC at 01/19/2011 07:24:32 pm

No.

Linear actuator

Posted by 2011FRC1785 at 01/28/2011 04:32:22 pm

Are linear actuators "legal" parts for FRC? The L16 actuators are complete, self contained

linear motion devices with position feedback for sophisticated position control capabilities, or end of stroke limit switches for simple two position automation. Driving them couldn't be easier, simply apply a DC voltage to extend the actuator, and reverse the polarity to retract it. Several gear ratio's are available to give you varied speed/force configurations.

actuators

Posted by 2011FRC3737 at 02/01/2011 10:14:21 am

"Are we allowed to purchase and use 12v electrical linear actuators on our robot?"

Section 4 - The Robot

Chargeable cost of FIRST Choice Items

Chargeable cost of FIRST Choice Items

Posted by 2011FRC2973 at 01/17/2011 10:35:00 am

Are materials available through FIRST Choice considered part of the Kit of Parts (per Bill's Blog on 11/15/2010, "FIRST Choice is an online extension of the traditional KoP") and thus are not chargeable against the $3500 limit?

If not, are there sufficient quantities of the FTC kit in FIRST Choice such that it is considered an available VENDOR source where we can use the $0.00 cost as our cost for those components?

Re: Chargeable cost of FIRST Choice Items

Posted by GDC at 01/18/2011 09:40:04 pm

Please see Team Update 3.

Section 4 - The Robot

Battery Connection

Battery Connection

Posted by 2011FRC2723 at 01/17/2011 11:32:02 am

Is it legal to have two anderson clip leads on one battery so that the battery can still be plugged into the robot and be charging at the same time? If so I would put the braker on both of the leads so I can turn one off while using the other.

Re: Battery Connection

Posted by GDC at 01/19/2011 07:36:12 pm

No. This would be a violation of Rule <R37>.

Section 4 - The Robot

Frame perimeter clarification

Frame perimeter clarification

Posted by 2011FRC2028 at 01/17/2011 02:34:50 pm

Last year my team had to spend valuable time on the practice day modifying our bumper mounting with relation to FRAME PERIMETER

This year I see that there is a special mention about this in the rules, to wit -

In SECTION 1: INTRODUCTION

FRAME PERIMETER
Note: to permit a simplified definition of the FRAME PERIMETER and encourage a tight, robust connection between the BUMPERS and the FRAME PERIMETER, minor protrusions such as bolt heads, fastener ends, rivets, etc are excluded from the determination of the FRAME PERIMETER.

So I want to verify that this means that we can have small protrusions such as the heads of bolds, etc., outside the frame perimeter and will not have to go through the same extremely frustrating experience as last year. I know the phrase quoted above appears in a "blue box", but it is still for team guidance, correct? And the judges at the events will apply this "blue box"?

Re: Frame perimeter clarification

Posted by GDC at 01/24/2011 08:41:39 pm

Please see Team Update 5.

Section 4 - The Robot

FTC parts on Robot

FTC parts on Robot

Posted by 2011FRC0447 at 01/17/2011 07:19:56 pm

Can we use FTC Minibot motors and gearboxes on the main robot?

Re: FTC parts on Robot

Posted by GDC at 01/24/2011 08:42:04 pm

Please see Team Update 5.

Section 4 - The Robot

Gearboxes

Gearboxes

Posted by 2011FRC1601 at 01/18/2011 12:56:00 pm

Are there any limitations on gears, gearboxes or gear trains/gear arrangements?

Re: Gearboxes

Posted by GDC at 01/20/2011 09:34:54 pm

Yes.

Section 4 - The Robot

Line Sensor Wiring

Line Sensor Wiring

Posted by 2011FRC0093 at 01/18/2011 02:17:10 pm

The 2011 KOP includes three Allen-Bradley PHOTOTSWITCH 42EF-D1MNAK-A2 proximity/line sensors. These have a specified 10.8 V to 30 V DC power supply. The cable jacket print says the cable attached to (and integral
to) the sensor is a bundle of four 22 AWG wires. (Also, they're UL AWM style 2464 with registration number E24546).

These sensors cannot be powered by the digital sidecar because 12V is not available. That leads us to the power distribution board (PD Board). Rule R39F requires us to protect this branch circuit with a 20A breaker. R39 does not allow any smaller breaker to be used for any

type of load.

Rule R40 states that the minimum wire size for a 20A PD Board branch circuit shall be 18 AWG. Therefore, we cannot connect an Allen-Bradley sensor to the PD Board and use a 20A breaker. This is a good safety rule. However, the rules appear to prohibit us from using a smaller, properly sized breaker.

Should I interpret the rules to allow me to use thinner wire after a second breaker or fuse? I would add another smaller fuse before the sensors and after the 20A breaker in the PD Board. Aside from this I see no legal way to connect the Allen-Bradley sensors in the KOP to the FRC control system. I am aware of the blue box on R39 but unclear if it allows me to violate R40 by connecting the sensor with integral 22 AWG wire. This seems technically valid but it's unclear if this is FRC legal.

Thank You for clarification.

NEW Apple Corps FIRST Robotics Competition Team #0093

Re: Line Sensor Wiring

Posted by GDC at 01/25/2011 09:35:15 pm

Per R40, all active PD Board branch circuits shall be wired with appropriately sized wire - but the branch circuit may include intermediate elements such as COTS connectors and splices.

Please also reference Team Update 5.

Section 4 - The Robot

Power Distribution

Power Distribution

Posted by 2011FRC0236 at 01/18/2011 04:05:02 pm

The Rockwell light sensors require 10.4 to 30 volts to operate properly. We often see our battery voltage dropping below 10 v towards the end of a 2 minute period. We observe that the sensors function erratically when this happens. Are we allowed to use the regulated voltage supplies from the PDB....either the 24 v or the 12 v?

Re: Power Distribution

Posted by GDC at 01/24/2011 08:40:34 pm

Please see Team Update 5.

Section 4 - The Robot

Using previously-assembled COTS "kit" components

Using previously-assembled COTS "kit" components

Posted by 2011FRC3238 at 01/18/2011 06:30:00 pm

Certain items are sold off-the-shelf as "kits" - items sold as a unit that are meant to be assembled into a final form. (For example, AndyMark sells mecanum wheels in kit form that are meant to be assembled into mecanum wheels.) If a team has assembled these items before the build season for practice/test purposes, can they be used on the 2011 robot, or must they be broken down into the form in which they were shipped to the team before being

used on the 2011 robot?

Re: Using previously-assembled COTS "kit" components

Posted by GDC at 01/31/2011 02:53:53 pm

A COTS item that requires assembly is considered a COTS item, not a FABRICATED item.

Section 4 - The Robot

R14

R14

Posted by 2011FRC2377 at 01/18/2011 10:15:15 pm

The definition of FRAME PERIMETER excludes "minor protrusions such as bolt heads, fastener ends, rivets, etc" from the determination of FRAME PERIMETER.

R14 then proceeds to prohibit any part of the robot from extending beyond the vertical projection of the FRAME PERIMETER.

This is contradictory...

Last season, there was a specific exception for bolt heads, etc. within the bumper zone. Is it really the intention that nothing (bolt heads, rivets, etc.) may protrude beyond the FRAME PERIMETER anywhere on the robot? Couldn't these sort of protrusions be allowed as long as they fit within the 28" x 38" x 60" box?

Re: R14

Posted by GDC at 01/24/2011 08:42:36 pm

Please see Team Update 5.

Section 4 - The Robot

Teleplay mode "edge detector"

Teleplay mode "edge detector"

Posted by 2011FRC0175 at 01/19/2011 12:43:48 pm

Regarding robot rule R07 that sites “STARTING” position, once in tele play mode can features of the robot be deployed that contact the end walls or tower base before the bumper touches such as a retractable probe to gage distance from the human player wall.

Re: Teleplay mode "edge detector"

Posted by GDC at 01/23/2011 01:54:32 pm

Per <G43>, ROBOTS and MINIBOTS may push or react against any elements of the ARENA, provided there is no damage or disruption of the ARENA elements.

Section 4 - The Robot

Python

Python

Posted by 2011FRC2115 at 01/19/2011 07:02:40 pm

Will RobotPy, a mentor-created way to use Python with the robot, be legal to use in the competition?

It has a FirstForge page. [url]http://firstforge.wpi.edu/sf/projects/robotpy[/url]

Re: Python

Posted by GDC at 02/03/2011 08:29:18 pm

There is no legislation on what language a team uses to program their ROBOT. However, please note that there has been no official development for Python and it will not be supported at all. This means that if you use it, you use it at your own risk and will not be able to get assistance through FIRST channels. It also means that if you have trouble on the FIELD related to your programming, there will be no troubleshooting and the MATCH will begin without your ROBOT.

Section 4 - The Robot

Banebots Motor question.

Banebots Motor question.

Posted by 2011FRC2502 at 01/19/2011 08:55:46 pm

The rules manual says that any combination of the Banebots motors included in the kit of parts is legal. However they list these motors by their model name RSxxx rather than the specific part numbers such as: M5-RS550-12.

Our team wanted to use a rotary encoded Banebots motor for a certain task on our robot. We were wondering if we could use the M5-RS550-12-B motor which is identical to the M5-RS550-12 except for the output shaft which continues out the back of the motor 3/8"

M5-RS550-12 - [url]http://banebots.com/pc/MOTOR-BRUSH/M5-RS550-12[/url]
M5-RS550-12-B - [url]http://banebots.com/pc/MOTOR-BRUSH/M5-RS550-12-B[/url]

The specs for both of the motors are identical, the only difference being the extended shaft out of the back of the motor.

"This motor shaft is extended from the back of the motor 3/8in to allow mounting an encoder to the motor."

While this motor was not specifically included in the kit of parts it is has identical performance specifications when compared with the RS550 in the KOP

Re: Banebots Motor question.

Posted by GDC at 01/25/2011 09:39:46 pm

Please see Team Update 5.

Section 4 - The Robot

Pneumatic solenoid valve

Pneumatic solenoid valve

Posted by 2011FRC1189 at 01/20/2011 09:52:06 am

<R74> clearly states one and only one solenoid output into one cylinder input.

We have two cylinders in parallel and we desire that they fire at the same time / rate. There are two clearly legal solutions.
1. Two solenoids into two cylinders, each circuit being kept separate, fired by same control output.

2. One solenoid output into two cylinder inputs.

Both of these have their issues.

Would it be permissable to fire two solenoids with same control output, hose each to its own cylinder and also BRIDGE the two cylinder inputs, insuring that they are both getting the same pressure?

Re: Pneumatic solenoid valve

Posted by GDC at 01/23/2011 02:47:59 pm

Under the conditions defined in Rule R74, option "1" and option "2" would be permitted. Bridging between solenoid valve outputs into cylinders would be prohibited.

Section 4 - The Robot

Required Classmate software

Required Classmate software

Posted by 2011FRC0281 at 01/20/2011 02:53:42 pm

Our team has been having problems re-imaging our Classmate with the "2011 Image for 2010 Classmate" USB (it blue screens during procedure). If we re-install the 2010 image and then install the "2011 FRC Utilities", the "2011 FRC Utilities Update" and the "2011 Drivers Station Update" is that sufficient for 2011 competition? Rule <R75> seems to imply that the only REQUIRED software on the Classmate is the Drivers Station software revision 01.05.11.00.

Re: Required Classmate software

Posted by GDC at 02/14/2011 11:21:33 pm

Please contact [email]frcparts@usfirst.org[/email] if you believe you have a bad USB key.

Meanwhile, any PC (including a Classmate) running Windows 7 or XP can be configured to interface with the robot and the FMS. Please refer to [B][I]Installing the 2011 Driver Station on a Non-Classmate PC[/I][/B] document posted on the [URL="www.usfirst.org/frc/kitofparts"]KOP Website[/URL] under Control System for details.

Section 4 - The Robot

PWM Wiring

PWM Wiring

Posted by 2011FRC3132 at 01/21/2011 05:51:29 am

We would like to design a removable electronics board containing motor controllers and the mounted FRC power distribution board. To facilitate this we would like to use a large pin-count connector through which we will connect our PWM cables coming off the board on one side and PWM cables going to our motors, sensors, etc. on the other side.

Is this use of a the large pin-count connector legal?

Re: PWM Wiring

Posted by GDC at 01/23/2011 02:43:36 pm

There are no rules that would prohibit this.

Section 4 - The Robot

Fisher-Price Gearboxes

Fisher-Price Gearboxes

Posted by 2011FRC0135 at 01/22/2011 09:41:41 am

We noticed that we only recieved one Fisher-Price gearbox this year. Does this mean we are only allowed to use one Fisher-Price gearbox on the robot? We know we can only use one Fisher-Price MOTOR, but are unsure about the gearboxes. Thanks.

Team 135

Re: Fisher-Price Gearboxes

Posted by GDC at 01/24/2011 07:52:08 am

There is no overt restriction on the number of gearboxes permitted on the ROBOT.

Section 4 - The Robot

Two withholding exceptions or three?

Two withholding exceptions or three?

Posted by 2011FRC0956 at 01/22/2011 03:06:21 pm

This issue seems to be either that the number of items was not updated when editing or one of the three items should not be there. R33 States there are two withholding exceptions, but three are listed. Are the 3 listed exceptions correct?

Re: Two withholding exceptions or three?

Posted by GDC at 01/25/2011 09:40:56 pm

Thank you. Please see Team Update 5.

Section 4 - The Robot

Mechanism Covering the Bumpers?

Mechanism Covering the Bumpers?

Posted by 2011FRC3197 at 01/22/2011 05:46:00 pm

Hi,

Our team is thinking of doing using a forklift/plow like scoop to pick up the tubes and then place them on a movable hook. The scoop would initially start inside the frame of the robot, but would then flip out over the bumpers and onto the floor to scoop up the tubes. The scoop is made out of sheet metal with rolled edges, and extends the full length and height of the bumpers on one side of the robot. Is this legal, or are we not allowed to entirely cover the bumpers?

Thanks,
Team 3197

Re: Mechanism Covering the Bumpers?

Posted by GDC at 01/24/2011 07:47:28 am

We do not review and/or approve designs. The purpose of this forum is to answer specific rules questions.

Section 4 - The Robot

Control system components and withholding allowance

Control system components and withholding allowance

Posted by 2011FRC3795 at 01/22/2011 06:27:46 pm

Can we withhold the control system components that are mounted to a unified panel as part of our withholding allowance?

Re: Control system components and withholding allowance

Posted by GDC at 02/10/2011 01:11:55 pm

A control panel that is part of the ROBOT/ HOSTBOT and is made by the TEAM would be considered a FABRICATED item and is permitted as part of the WITHHOLDING ALLOWANCE.

Section 4 - The Robot

Bill of Materials Template

Bill of Materials Template

Posted by 2011FRC0237 at 01/23/2011 12:28:14 pm

When will bill of materials template be available for download?

BOM Template

Posted by 2011FRC1138 at 01/29/2011 05:46:11 pm

Where can we find the Bill of Materials Template? What are the restrictions of the BOM?

Thanks.

Re: Bill of Materials Template

Posted by GDC at 02/01/2011 10:06:54 pm

Please see Team Update 7.

Section 4 - The Robot

<R47> Denso Motor connection

<R47> Denso Motor connection

Posted by 2011FRC0885 at 01/23/2011 07:03:09 pm

Are we allowed to cut/remove a bit of the plastic connector housing in order to solder two wires to the Denso Window motor's posts? In previous years it was allowed. If we aren't allowed to do it, do you have any suggests that are acceptable and as robust and reliable. TNX for your efforts.

Re: <R47> Denso Motor connection

Posted by GDC at 01/31/2011 02:55:21 pm

Please see Team Update 6.

Section 4 - The Robot

Team 533

Team 533

Posted by 2011FRC0533 at 01/24/2011 11:24:36 am

Can we use Windows 7 with a new netbook or notebook for the drivers station?

Re: Team 533

Posted by GDC at 01/26/2011 09:22:19 pm

There are no rules governing the operating system used to run the Driver Station software. Note that the software has only been tested on Windows 7 and XP, and thus those are the recommended Operating Systems.

Section 4 - The Robot

Allowed Banebot motors as per R45-D

Allowed Banebot motors as per R45-D

Posted by 2011FRC1009 at 01/24/2011 11:44:58 am

Are we allowed any banebot motors with the same major model number as those specified in R45-D?

R45 - D. up to four, in any combination, of the BaneBots motors provided in the KOP (RS-775, RS-550, RS-540, RS-395),

Specifically, are we allowed to use banebot M5-RS550-12-B or are we limited to the M5-RS550-12.

Similarly, can we use the M7-RS775-12 instead of the M7-RS775-18 motors?

ref: [url]http://banebots.com/c/MOTOR-BRUSH[/url]

Re: Allowed Banebot motors as per R45-D

Posted by GDC at 01/25/2011 09:42:03 pm

Please see Team Update 5.

Section 4 - The Robot

COTS Laptop

COTS Laptop

Posted by 2011FRC0011 at 01/25/2011 11:08:39 am

START
>
> It's apparently permissible to use a COTS laptop worth less than $400
> on the robot during competition:
>
> <R34> Batteries integral to and part of a COTS computing device are
> also permitted (i.e. laptop batteries), provided they’re only used to
> power the COTS computing device.
>
> <R45> F. drive motors or fans that are part of a speed controller or
> COTS computing device.
>
> <R50> B. Ethernet-connected COTS devices or custom circuits may
> connect to either cRIO-FRC Ethernet port; however, these devices may
> not transmit or receive UDP packets using ports 1100-1200 except for
> ports 1130 and 1140.

>
> Problem:
>
> Is the COTS laptop on the robot, being connected to the ethernet
> bridge within the stated restrictions, allowed to interact with the
> cRIO controller via any of it's various interfaces?
>
> Summary of detail:
>
> I can easily help our team fabricate an interface board that could
> connect the USB ports of a say a netbook or ITX computer to a digital
> I/O port, CAN bus, or even analog bumper of the cRIO on the robot. The
> issue is not if the laptop can be on the robot but whether or not it
> can directly interact with the cRIO.
>
> Expansion of that question:
>
> Can the COTS laptop on the robot interact over the ethernet via
> sockets to the control software on the Drivers Station computer?
> Whether or not the COTS laptop on the robot can interact with the cRIO
> on the robot, can it funnel information to the software on the Drivers
> Station computer than can then be used used there to provide
> additional functionality to the robot back through the ethernet
> bridge?
>
> Summary of detail of expanded question:
>
> If funneling of data from the COTS laptop on the robot is allowed to
> the Drivers Station computer over the ethernet bridge, is there any
> limitation on what software is permitted on either side of the link?
> In short, is there anything stopping code written in (for example) GCC
> from being run on the COTS laptop on the robot and being connected via
> sockets to the LabView on the Drivers Station computer?
>
> Expansion of both questions:
>
> What, if any, limitations are there for attaching sensors or output
> devices directly to the COTS laptop?
>
> Summary of detail of final question:
>
> What stops someone from hooking up a USB camera to the COTS laptop on
> the robot and using it for vision processing?
> What stops someone from building a more advanced motor controller
> using the COTS laptop?
> (The line directly above is qualifed as R59/R62 explicitly limits the

> CAN/Jaguar relationship (regardless of the source of the
> communications) to the cRIO, but that doesn't mean that the COTS
> laptop couldn't change the Jaguar speed controllers through
> communications with the cRIO or the Driver's Station, and that might
> include over the CAN bus as long as it doesn't interfere with the
> Jaguars directly.)
>
> (To further qualify, I realize that the cRIO must ultimately control
> all output devices without interference and must be operational within
> the specifications. When I mention outputs above, I'm considering that
> USB ports on laptops are bidirectional and video displays are output
> devices generally.)
>
> In follow up to these questions once we have these answers:
>
> 1. Can we get an an official statement for what a 'COTS laptop' is or
> is not. People over on Chief Delphi's forums have suggested that this
> rule permits the use of a modded PlayStation 3. Still others have
> suggested that a small ITX computer (like a car computer) fits under
> this rule (though those generally do not have a video display
> integrated into them). Years ago Apple sold a 'portable' computer that
> had an integrated 5-1/4" floppy diskette drive, keyboard, mouse port
> and SCSI port. However it had no CRT. As I presume the $400 limit is
> supposed to 'level the playing field' to some extent we need
> clarification on this. I presume a 'netbook' is considered a valid
> 'COTS laptop' even though they have a smaller than normal form factor?
>
> 2. There's a $400 limit on the laptop. Does that limit include any USB
> to I/O devices, or are they subject to their own $400 limit. Also, if
> we can use something that doesn't have a video display integrated,
> does the inclusion of a display effect the $400 limit for the 'COTS
> laptop' or is it subject to it's own limit? Can that be gotten around
> by using a video display in the pits only or just using SSH, VLC or
> remote desktop in the pits (or limited to the ports allowed for
> communication during the game)? What about 'off the shelf' upgrades
> such as PCMCIA cards are they grouped with the 'COTS laptop' or the
> USB to I/O devices?
>
> 3. How is the value of the 'COTS laptop' determined? What stops
> someone from buying a MacBook Pro on eBay for $350 and then claiming
> that sale makes it's value $350. What stops them from selling
> privately a $5,000 laptop to a F.I.R.S.T. team for $350. Clearly that
> device does not retail, or even go on retail sale at those sort of
> prices. Additionally what stops someone from buying a low end Dell
> laptop and upgrading it with a faster CPU, an SSD and more RAM? Do
> those upgrades into a possible model that is no longer 'off the shelf'

> get limited under the $400 limit?
>
> 4. I presume from your example of streaming from your own COTS laptop
> that you mean that the COTS laptop can have it's own USB camera(s) or
> use the Ethernet CMOS camera. Is it legal to not plug the Ethernet
> CMOS camera into the cRIO on the proper port, and instead plug it into
> the D-Link bridge directly so that the COTS laptop can get to the
> video or the Drivers Station? The cRIO seems to insert a delay into
> the video when we tinkered with it.
>
> 5. How if at all does the value of the software effect the $400 limit?
>
> Thanks in advance.
> Team 11
>
> END

Re: COTS Laptop

Posted by GDC at 01/31/2011 02:58:19 pm

Questions have been numbered for sanity and reference purposes.

[QUOTE]1. Is the COTS laptop on the robot, being connected to the Ethernet bridge within the stated restrictions, allowed to interact with the cRIO controller via any of it's various interfaces?[/QUOTE]

Yes, per rule <R62>
“All outputs from sensors, custom circuits and additional electronics shall connect to only the following:
C. input ports on the Digital Sidecar, or
D. input ports on the Analog Breakout, or
E. the RS-232 DB-9 RS-232 port on the cRIO-FRC, or
F. the Ethernet network connected to either Port 1 or Port 2 of the cRIO-FRC, or
G. the CAN-bus if and only if all Jaguar speed controllers on the CAN-bus are wired in full compliance with Rule <R58> and Rule <R59>”

[QUOTE]2. Can the COTS laptop on the robot interact over the ethernet via sockets to the control software on the Drivers Station computer?[/QUOTE]

There is nothing but prohibits interaction with the Driver Station software.

[QUOTE]3. Whether or not the COTS laptop on the robot can interact with the cRIO on the robot, can it funnel information to the software on the Drivers Station computer than can then be used used there to provide additional functionality to the robot back through the ethernet bridge?[/QUOTE]

Yes, provided that device communicates with the Driver Station computer through the DAP-1522 robot radio using one of the allowed Ethernet sockets outlined in Team Update 5

[QUOTE]4. If funneling of data from the COTS laptop on the robot is allowed to the Drivers Station computer over the Ethernet bridge, is there any limitation on what software is permitted on either side of the link?[/QUOTE]
Software running on the COTS computing device would need to follow the material usage rules outlined in section 4.3.4 and 4.3.5 of the manual

[QUOTE]5. In short, is there anything stopping code written in (for example) GCC from being run on the COTS laptop on the robot and being connected via sockets to the LabView on the Drivers Station computer?[/QUOTE]
See answer to #2

[QUOTE]6. What, if any, limitations are there for attaching sensors or output devices directly to the COTS laptop?[/QUOTE]
R62 limits what connections can be made to and from sensors, custom circuits and additional electronics.

[QUOTE]7. What stops someone from hooking up a USB camera to the COTS laptop on the robot and using it for vision processing?[/QUOTE]
No rule prohibits this.

[QUOTE]8. What stops someone from building a more advanced motor controller using the COTS laptop?[/QUOTE]
Rule R62

[QUOTE]9. Can we get an official statement for what a 'COTS laptop' is or is not.[/QUOTE]
No

[QUOTE]10. I presume a 'netbook' is considered a valid 'COTS laptop' even though they have a smaller than normal form factor?[/QUOTE]
‘COTS laptop’ is not defined in the LOGOMOTION manual.

[QUOTE]11. I presume from your example of streaming from your own COTS laptop that you mean that the COTS laptop can have it's own USB camera(s) or use the Ethernet CMOS camera. Is it legal to not plug the Ethernet CMOS camera into the cRIO on the proper port, and instead plug it into the D-Link bridge directly so that the COTS laptop can get to the video or the Drivers Station? The cRIO seems to insert a delay into the video when we tinkered with it.[/QUOTE]

Yes

[B]Regarding the cost accounting questions:[/B]

Per section 4.3.5 of the LOGOMOTION manual as well as the definition of COTS, COMPONENT, and MECHANISM:

If a computing device and external accessory were sold individually as COMPONENTS, then each COMPINENT must cost $400 or less. If the two units were sold together, they would fit the description of a COTS MECHANISM, the total cost of which must be $400 or less. The same logic would be applied to software for the computing device.

Determining the cost of additional parts is explained in section 4.3.5 of the LOGOMOTION manual

Section 4 - The Robot

Dashboard Data

Dashboard Data

Posted by 2011FRC1058 at 01/26/2011 07:23:00 pm

Hi,

Team Update 5 specifies two UDP ports open on the field for use by teams to send data back and forth between the ROBOT and the dashboard; however, rule <R75> states that the only tool permited to collate driver/operator input to the ROBOT is the Driver Station software.

Are we permitted to use UDP Port 1130 to send control data from the dashboard to the robot and is this data restricted to computations performed by the dashboard program or may the dashboard collect user input and send that as well?

Legality of Dashboard-robot communication

Posted by 2011FRC1058 at 02/01/2011 06:43:10 pm

We apologize if you've read this question before; it has been over a week and our school network sometimes drops our internet traffic on forums, so we are unsure if the question went through.

Team Update #5 specifies UDP port 1130 for "Dashboard-to-Robot Control Data," yet rule <R75> states that the only tool allowed to communicate driver/operator input to the robot is the Driver Station software. As we interpret it, this allows us to send data to and from the dashboard so long as data coming from the dashboard isn't affected by driver/operator input. Is this interpretation correct and is this the intent of these rules?

Re: Dashboard Data

Posted by GDC at 02/13/2011 09:59:23 pm

Please see Team Update 7.

Section 4 - The Robot

Servo Questions

Servo Questions

Posted by 2011FRC3637 at 01/27/2011 12:20:39 am

1. Are retract servos allowed?

2. Can we use a transistor gate to jump or unjump the jumper pins on the digital sidecar for servo power?

3. Is it legal to use a voltage regulator on the output from the digital side car to convert the 6V output to 4.8V power a 4.8V servo?

Thanks

Re: Servo Questions

Posted by GDC at 02/03/2011 08:31:59 pm

1) There are no restrictions on the HOSTBOT for type of servo, once R45-B is met.
2) This would be a custom circuit.
3) This would be a custom circuit.

Section 4 - The Robot

Cooling fans

Cooling fans

Posted by 2011FRC2630 at 01/27/2011 02:25:05 am

Hello GDC,

Team 2630 would like to know: Are we allowed to add cooling fans to the robot in order to cool heat sensitive components?

We are specifically concerned about the BaneBots motors, with their high power output and (relatively) small surface area, they seem to be likely to overheat and burn out.

The fans would not affect robot performance, other than to cool the motors in order to prevent burnout.

Thanks,
-Team 2630

Re: Cooling fans

Posted by GDC at 01/31/2011 03:34:03 pm

COTS fans, other than those provided in the Kit of Parts or expressly permitted per R45-F are not permitted.

Section 4 - The Robot

Wire Gauges

Wire Gauges

Posted by 2011FRC0057 at 01/27/2011 06:47:41 pm

A recent Q&A answer about wiring up the line sensors seemed to imply that it was illegal to connect the 22AWG wire of the sensors to a circuit protected by a 20A breaker on the power distribution board. In fact, <R40> states "The branch circuit may include intermediate elements such as COTS connectors, splices, COTS flexible/rolling/sliding contacts, and COTS slip rings, as long as the entire electrical pathway is via appropriately gauged conductors."

So the question is, where does the electrical pathway start/stop? Do wires that are permanently attached to a device need to comply with <R40>? If so, the CIM motors would be limited to 30A circuits, as they have 14AWG wire connected to them.

Re: Wire Gauges

Posted by GDC at 02/08/2011 10:11:16 pm

1) The pathway is the complete conductive pathway.

2) Wires that are originally attached to legal devices, are part of the device, and by default legal as supplied. Such wires are exempt from the wiring requirements listed in Rule <R40>.

Section 4 - The Robot

Robot Starting Position vs Inspection Robot Position

Robot Starting Position vs Inspection Robot Position

Posted by 2011FRC0125 at 01/27/2011 08:06:22 pm

Currently our robot has a legal starting position so long as we are in possession of a tube which per the rules, we have to start with. However at inspection, we imagine it will be difficult to use the robot sizing box while our robot is holding a tube. We can "fix" our mechanism so that we are in a legal position and we are wondering whether or not this will be allowed during inspection.

Thank you,
NUTRONS

Note: We have done a little digging and think that we can probably fit our robot with a tube into the sizing box. However we still wanted to ask in order to be on the safe side.

Re: Robot Starting Position vs Inspection Robot Position

Posted by GDC at 01/31/2011 02:50:23 pm

Per <R83>, a ROBOT must be in its STARTING CONFIGURATION and self-supporting while in the Sizing Device during inspection. Thus, the use of a GAME PIECE to support the ROBOT is not allowed during inspection.

Section 4 - The Robot

Bill of Materials

Bill of Materials

Posted by 2011FRC3862 at 01/27/2011 08:57:20 pm

I can't find the FIRST-approved template available for download mentioned in R18. Where is it?

BOM Template

Posted by 2011FRC0801 at 01/30/2011 12:20:01 am

Per <R18> The BOM must use the FIRST-approved template available for download at [url]www.usfirst.org/frc/competitionmanual[/url].

Question: Will your webmaster be posting the template soon?

Re: Bill of Materials

Posted by GDC at 01/31/2011 03:06:50 pm

The template is not posted yet, but will be announced in a Team Update when published.

Section 4 - The Robot

Regarding reusing items from previous robots

Regarding reusing items from previous robots

Posted by 2011FRC3396 at 01/28/2011 10:10:33 am

Is it permitted to reuse the transmitter and motor from previous robots if they have not been customized (ex. Shape Shifter by AndyMark)? Would this be considered a COTS item indicated in R29?

Re: Regarding reusing items from previous robots

Posted by GDC at 01/31/2011 03:08:30 pm

Please see Rule <R29>.

Section 4 - The Robot

I/O Cards in cRIO

I/O Cards in cRIO

Posted by 2011FRC1038 at 01/28/2011 12:15:23 pm

Is there a requirement that all of the supplied I/O cards are placed in the cRIO? That is, if we have no use for a specific I/O card may we also not install it in the cRIO?

Re: I/O Cards in cRIO

Posted by GDC at 01/31/2011 03:09:40 pm

Other than Rule <R61>, there are no requirements to include cRIO modules.

Section 4 - The Robot

Clarification of Netbook usage instead of the 2go PC

Clarification of Netbook usage instead of the 2go PC

Posted by 2011FRC3059 at 01/28/2011 03:37:44 pm

We would like to know if it is required to use the 2go PC during official competition.

Re: Clarification of Netbook usage instead of the 2go PC

Posted by GDC at 02/03/2011 08:33:44 pm

No, the 2GoPC is not required.

Section 4 - The Robot

Clarification of Netbook usage instead of the 2go PC

Clarification of Netbook usage instead of the 2go PC

Posted by 2011FRC3059 at 01/28/2011 03:41:04 pm

We would like to know if it is required to use the 2go PC during official competition.

Re: Clarification of Netbook usage instead of the 2go PC

Posted by GDC at 01/31/2011 03:11:08 pm

No, there is no requirement to use the Kit netbook.

Section 4 - The Robot

84 inch robot peremeter.

84 inch robot peremeter.

Posted by 2011FRC2035 at 01/28/2011 07:12:09 pm

Can we build an arm that exceeds the 84 inch perimeter, but program it so it never crosses the 84 inch line? Example: a 100 inch arm that at different angles will never pass the 84 inch limit.

Re: 84 inch robot peremeter.

Posted by GDC at 01/31/2011 03:15:01 pm

There are no rules that prohibit this, however you should expect added scrutiny from the inspectors and referees.

Section 4 - The Robot

Gearboxes

Gearboxes

Posted by 2011FRC2035 at 01/28/2011 07:34:03 pm

Hello,

Banebox informed us that the gearboxes we need have been back ordered for the next three weeks, are there any alternatives we can use, as three weeks form now the robot needs to be shipped. Because the only motors allowed are banebot this places all teams in a no win situation.

Re: Gearboxes

Posted by GDC at 01/31/2011 03:16:37 pm

Please see Rule <R45> for information about permitted motors. We invite you to consider using the WITHHOLDING ALLOWANCE for parts that aren't available by ship date.

Section 4 - The Robot

External battery during FRC match

External battery during FRC match

Posted by FRC368 at 01/29/2011 02:40:16 am

Hello,
On this year's competition, we are planning to use a steering wheel as the robot controller. We are just wondering if we are allowed to use an external battery to power the steering wheel for the driver station during the match.

Re: External battery during FRC match

Posted by GDC at 01/31/2011 03:24:27 pm

There is no rule that prohibits this.

Section 4 - The Robot

Alignment of Hostbot with Tower

Alignment of Hostbot with Tower

Posted by 2011FRC0135 at 01/29/2011 01:24:37 pm

Rule G43 says:

With the exception of the TOWER during the END GAME and while DEPLOYING a Minibot, ROBOTS may not grab, grasp, grapple, or attach to any arena structure.

We are looking for clarification on the words "Grasp" and "Grapple". Would contact that does not surround the TOWER's pole or physically attach, but merely touches the pole be considered "grasping" or "grappling"?

Re: Alignment of Hostbot with Tower

Posted by GDC at 01/31/2011 03:26:46 pm

The intended definitions of grasp and grapple are as follows:

grasp: to seize upon; hold firmly.
grapple: to seize in a grip, take hold of

Section 4 - The Robot

R42 loads

R42 loads

Posted by 2011FRC2199 at 01/29/2011 02:04:08 pm

Would lights counted as an "electrical load" under R42? R42 only defines a load as motors, actuators or compressors.

We were planning to use 12 volt lights to signal our feeder. Would it be acceptable to connect two different lights to a single relay module in such a manner that one of them may be turned on at one time?

Re: R42 loads

Posted by GDC at 02/06/2011 07:24:47 pm

Please see Team Update 8.

Section 4 - The Robot

Bypass Switch That Will Lower A Lift After The Game has ended.

Bypass Switch That Will Lower A Lift After The Game has ended.

Posted by 2011FRC2443 at 01/29/2011 11:04:19 pm

At the end of the game, if our lift is at full extension, can we have a bypass switch that will lower the lift after the game has ended so we can get the robot off the field?

We are aware that controls are cut off from the robot at the end of the match. We want to know if there can be a button (Either on the robot, or joy pad) that we can press that will lower a lift we have on our robot for easy retrieval as well as a safety hazard.

Re: Bypass Switch That Will Lower A Lift After The Game has ended.

Posted by GDC at 01/31/2011 03:31:39 pm

Rule <R17> requires that ROBOTS may be removed from the field without activation of the ROBOT power system.

Section 4 - The Robot

Playing configurations

Playing configurations

Posted by 2011FRC0562 at 01/31/2011 05:53:46 pm

In playing configuration, is the 84" diameter right cylindrical volume measured from contact of that cylinder by the edge of the frame perimeter or the edge of the bumper?

Re: Playing configurations

Posted by GDC at 02/11/2011 03:20:11 pm

The PLAYING CONFIGURATION size constraint does not include BUMPERS.

Section 4 - The Robot

One Jaguar to two CIM Motors

One Jaguar to two CIM Motors

Posted by 2011FRC0178 at 02/01/2011 09:49:08 am

Is it permitted to use one Jaguar to control two different CIM Motors?

Re: One Jaguar to two CIM Motors

Posted by GDC at 02/03/2011 08:40:46 pm

No, this would be a violation of rule <R42>.

Section 4 - The Robot

Network adapter

Network adapter

Posted by 2011FRC3788 at 02/02/2011 12:35:36 pm

We plan to use a Toshiba PC rather than the Classmate. The rules refer to "active wireless network cards" as not being allowed. I looked on the Internet for a definition and couldn't find anything definitive. Can you tell me what is meant by that rule?

Re: Network adapter

Posted by GDC at 02/16/2011 09:56:04 pm

Bluetooth, 802.11, WIFI, Broadband and all other wireless networking adapters must be disabled.

Section 4 - The Robot

Driver Station current version?

Driver Station current version?

Posted by 2011FRC0885 at 02/02/2011 03:27:21 pm

<R75> What is the current Driver Station Version number? Is it 01.05.11.00?

I think it would be very helpful to post in an obvious place the current version/revision number for the Driver Station, LabView, Competition manual, and any or other important document that effects passing inspection and playing in the tournament. Just a single pdf document in a well publicized location would make me happy. The constant worry every time there is a discussion of an update, change or revision has me scurrying all over the place to see if it applies to us.

TNX for your efforts!

Re: Driver Station current version?

Posted by GDC at 02/10/2011 01:12:40 pm

The inspection checklist will contain the required versions of the various software/firmware.

Yes, per Rule <R75> the required version of the Driver Station software is 01.05.11.00.

Section 4 - The Robot

Motors

Motors

Posted by FRC3242 at 02/03/2011 05:15:30 pm

Can we use a linear actuator if it is retrofited with a KoP motor?

Re: Motors

Posted by GDC at 02/13/2011 10:00:27 pm

The term "linear actuator" is not specific, therefore we cannot answer your question.

Section 4 - The Robot

Clarification on Driver's Station and Team Update 7

Clarification on Driver's Station and Team Update 7

Posted by 2011FRC1002 at 02/03/2011 05:27:36 pm

In the last update, you said you could only control the robot through the driver's station software. Does that forbid receiving video feedback from a camera that is not processing images through Firefox?

The update was:
"<R75> The Driver Station software provided on the FRC website ([url]www.usfirst.org/frc/kitofparts[/url]) is the only tool permitted to specify and communicate the operating mode (i.e. Auto/Teleop) and operating state (enable/disable)..."

Thanks!

Re: Clarification on Driver's Station and Team Update 7

Posted by GDC at 02/10/2011 01:13:11 pm

No.

Section 4 - The Robot

Gearbox alternatives?

Gearbox alternatives?

Posted by 2011FRC0122 at 02/03/2011 07:31:51 pm

Since Banebot have a back order on gearboxes, can we use any COTS gearbox such as a gearbox from a drill with the motors we recieved from Banebot and Fisher Price?

Re: Gearbox alternatives?

Posted by GDC at 02/11/2011 03:38:24 pm

There are no explicit rules governing gearboxes. Provided they meet the rules in the manual, there is no restriction on how teams adjust motor outputs.

Section 4 - The Robot

Piston as a Show Absorber (Further Exploring)

Piston as a Show Absorber (Further Exploring)

Posted by 2011FRC2443 at 02/04/2011 12:39:13 am

Can we use a pneumatic piston that is not hooked up to any tubing or pressuring device?

With all do respect:
<R66> states: H. For the purposes of the FRC, closed-loop COTS pneumatic (gas) shocks are not considered pneumatic devices, and are not subject to the pneumatic rules (although they must still satisfy all other appropriate rules).

Our previous question was deemed as "not permitted." We would like to explore as to why, so we may better our designs.

Thank you!

Re: Piston as a Show Absorber (Further Exploring)

Posted by GDC at 02/08/2011 10:13:51 pm

The proposal is prohibited because a cylinder is a cylinder, not a COTS closed-loop gas shock, which is permitted in Rule <R66-H>.

Section 4 - The Robot

Resistor on output of spike to window motor

Resistor on output of spike to window motor

Posted by 2011FRC1802 at 02/04/2011 11:12:37 am

Is it legal to put a resistor inline on the output of a spike relay module? We would like to slow down the power window motor for a certain application but do not need a variable speed so using a jaguar or victor is overkill.

Re: Resistor on output of spike to window motor

Posted by GDC at 02/08/2011 10:14:32 pm

No, this is prohibited per Rule <R43>.

Section 4 - The Robot

Window Motors, R45/46

Window Motors, R45/46

Posted by 2011FRC3013 at 02/04/2011 08:30:19 pm

Our team does not understand how rule R45 and R46 combine in terms of maximum number of window motors. The previous questions cover BaneBot and CIM motors (Rule referenced below) but we would like more clarification on R45A. Specifically, the meaning of "listed": Does that mean you can use unlimited numbers of that specific type or ONLY the specific motors those that were given in the KoP (ie, we were given 1, only allowed to use 1; we were given 3, allowed to use 3)?

Thank you!

Team 3013

<R45> Motors specifically permitted on 2011 FRC ROBOTS include:
A. all motors, actuators, and servos listed in the 2011 KOP Checklist,
C. one or two additional 2½" CIM motors (part #FR801-001, M4-R0062-12, AM802-001A, or PMR25R-45F-1003) in addition to those provided in the KOP. This means that up to four, and no more, 2½" CIM motors can be used on the ROBOT,
<R45-D> up to four, in any combination, of the BaneBots motors provided in the KOP (acceptable part numbers are M7-RS775-12, M7-RS775-18, M5-RS550-12, M5-RS550-12-B, M5-RS540-12, and M3-RS395-12),

<R46> Items specifically PROHIBITED from use on the ROBOT include: A. Electric motors and/or servos different from, or in addition to, those listed in the 2011 KOP Checklist, with the exception of those specifically permitted by Rule <R45>.

Re: Window Motors, R45/46

Posted by GDC at 02/08/2011 10:15:15 pm

For motors other than CIMS and Banebots motors, ROBOTS may only have motors identical to those listed on the [B][I]2011 KOP Checklist[/I][/B] and in quantities no greater that the quantities listed on the [B][I]2011 KOP Checklist[/I][/B].

Section 4 - The Robot

R45 - Fisher-Price

R45 - Fisher-Price

Posted by 2011FRC1466 at 02/05/2011 12:47:43 pm

We understand that we can only use one Fisher-Price motor. My question is, can we use more than one Fisher-Price gear box if the motor connected to the extra gear box(es) is a legal motor?

Re: R45 - Fisher-Price

Posted by GDC at 02/08/2011 10:15:59 pm

There are no explicit limits on the number of Fisher-Price gearboxes permitted on the ROBOT.

Section 4 - The Robot

Flashlights on the robot

Flashlights on the robot

Posted by 2011FRC1747 at 02/05/2011 01:28:02 pm

Our team would like to know if flashlights would be allowed on the robot (as long as they did not interfere with other systems per the rules)? If so, would the flashlight be allowed to be powered through its own batteries or would it need to draw power from the PD?

Re: Flashlights on the robot

Posted by GDC at 02/10/2011 01:14:35 pm

There are no rules that explicitly prohibit flashlights, however they must derive power from the one battery permitted by Rule <R34>.

Section 4 - The Robot

Clarification on Rule 46

Clarification on Rule 46

Posted by 2011FRC1168 at 02/05/2011 03:46:56 pm

I imagine there is already a thread about this but I have been having trouble finding one that exactly answers my question. Are electric solenoid actuators prohibited in all incarnations? In other words, if we have something like [url]http://www.amazon.com/Electric-Door-Strike-Mortise-Type/dp/B000RKVVGU[/url] containing an electric solenoid, would that possibly be legal?

Re: Clarification on Rule 46

Posted by GDC at 02/10/2011 01:15:04 pm

No, these are prohibited per Rule <R46>.

Section 4 - The Robot

Usb to ethernet

Usb to ethernet

Posted by 2011FRC2864 at 02/05/2011 04:38:49 pm

Are we allowed to use one of these connections? Our port broke last year during a match at the Dallas regional, making the Ethernet port no longer clip to the cable. If this is not allowed, is there anything we can do to fix it?

Usb to ethernet

Posted by 2011FRC2864 at 02/07/2011 12:32:52 am

sorry im not sure if our question was posted, my apologies if it was.

Are we allowed to use a usb to Ethernet cable? our port broke last year during a match, and the Ethernet cable no longer clips. if we are not, is there anything we can do?

Re: Usb to ethernet

Posted by GDC at 02/10/2011 01:15:33 pm

There are no rules that prohibit USB to Ethernet adapters as part of the OPERATOR CONSOLE.

Section 4 - The Robot

Multiple relays [2] on a single 20A circut

Multiple relays [2] on a single 20A circut

Posted by 2011FRC1622 at 02/05/2011 07:25:38 pm

Hi, our team is wondering if we can power multiple LED arrays independantly of each other. each draws 76 mA of power, and we have 4. the delema comes when we look at the rules. LEDs are considered decorations, so it seems they are constrained to a single 20A circut. We technically can controll two LEDs per spike, but can we have 2 spikes on one 20A circut?

Re: Multiple relays [2] on a single 20A circut

Posted by GDC at 02/13/2011 10:01:24 pm

Please see Rule <R42> as updated per [B][I]Team Update 8[/I][/B] and Rule <R39-B>.

Section 4 - The Robot

Power converter

Power converter

Posted by 2011FRC3138 at 02/06/2011 10:01:07 pm

Is the CPR 360 power converter, used to power the D-link, the only one pemitted on the robot.

The manufacture, Current Logic, is closed until Februeary 12 and their web site indicated that it takes 2-4 weeks for delivery and that is if they have the product in stock.

Ours is not working and we have been trying to find a replacement.

Re: Power converter

Posted by GDC at 02/24/2011 09:18:28 pm

Please see Team Update 13.

Section 4 - The Robot

Fixing Damaged Parts

Fixing Damaged Parts

Posted by 2011FRC3504 at 02/07/2011 03:22:29 pm

If a broken part was received and instead of sending it back, the team repairs the part, is it legal to use?

Re: Fixing Damaged Parts

Posted by GDC at 02/14/2011 10:55:42 pm

Please see Team Update 11.

Section 4 - The Robot

$3500 Limit

$3500 Limit

Posted by 2011FRC3504 at 02/07/2011 04:02:48 pm

The manual says that kit of parts parts do not contribute to the $3500 limit for the robot.
If a faulty part was received in the kit, and a new one was ordered, does that then count towards the $3500 because it was not specifically from the KOP?

Re: $3500 Limit

Posted by GDC at 02/11/2011 03:41:54 pm

No. Please see Rule <R20-D>.

Section 4 - The Robot

Limit switch on Jag

Limit switch on Jag

Posted by 2011FRC0123 at 02/08/2011 02:45:37 pm

Can we use the limit switch feature on the Jaguar

Re: Limit switch on Jag

Posted by GDC at 02/11/2011 03:46:35 pm

Please see Rule <R55-J>. Teams may remove the limit switch jumpers on the Jaguar and substitute a custom limit switch circuit if CAN functionality is being used.

Section 4 - The Robot

Use of Electromagnet

Use of Electromagnet

Posted by 2011FRC2791 at 02/09/2011 04:04:23 pm

We are looking at designing a spring loaded drawbridge platform for mini-bot deployment. Is it legal to use an electromagnet to release the drawbridge? The electromagnet would not have any moving parts.

Re: Use of Electromagnet

Posted by GDC at 02/14/2011 09:39:14 am

There is no explicit rule prohibiting electromagnets. However, any such device would qualify as a custom circuit/additional electronics. As such, the device must satisfy all applicable custom circuit/additional electronics rules. In addition, an electromagnet must not be used to construct

a solenoid actuator, as that would be a violation of Rule <R46>.

Section 4 - The Robot

Second Camera

Second Camera

Posted by 2010FRC1768 at 02/10/2011 09:11:38 am

Can two KOP cameras be used on the robot? Since there is just one 5V supply how would the 2nd camera be powered?

Re: Second Camera

Posted by GDC at 02/14/2011 11:27:03 pm

1) There are no rules that would prohibit this.

2) The purpose of this forum is to answer questions about rules, and will not offer solutions to technical challenges.

Section 4 - The Robot

Alternate ways of powering Line Following sensors

Alternate ways of powering Line Following sensors

Posted by 2011FRC1850 at 02/10/2011 05:11:44 pm

Per Team Update 5, the line following sensors are to be powered via the Solenoid Breakout board. If we are not using a NI9472 module, and therefore do not have anything connected to the 24 V port on the power distribution board, can we connect the line following sensors directly to that port? In other words, there are two available 24 V connections, one of which is used for the cRIO. Can we connect directly to the other, or must we install a NI9472 and a solenoid breakout board and power the line sensors through them?

Re: Alternate ways of powering Line Following sensors

Posted by GDC at 02/13/2011 10:03:05 pm

Your desired approach would be disallowed per R38-A.

Section 4 - The Robot

Discontinued items On the BOM

Discontinued items On the BOM

Posted by 2011FRC0753 at 02/10/2011 06:38:49 pm

R29 expressly allows discontinued COTS items as long as they meet all other requirements for material utilization. What I am unclear about is how we are supposed to put discontinued items on the BOM. Are we supposed to give the price that the item was originally sold at, the price of a currently available equivalent part, or some other way?

Thanks in advance,
Team 753

Re: Discontinued items On the BOM

Posted by GDC at 02/13/2011 10:03:56 pm

Please use the current fair market value of the item.

Section 4 - The Robot

Withholding allowance

Withholding allowance

Posted by 2011FRC3145 at 02/11/2011 04:00:34 pm

I want to make sure I'm clear on withhold as there's some confusion coming from Section 1, Rev D, page 13 -
"The OPERATOR CONSOLE is automatically included in the WITHHOLDING ALLOWANCE"

In <R33> it states the operator console is excluded from the withholding allowance as is the mini-bot. So if I read this correctly, I can ignore the weight (for withholding purposes) of the operator console and the mini-bot, is this correct? And where do the bumpers fit in to the equation? Should we zip tie them to the bot inside the bag or carry them separately?

Thanks for the help!

FIRST FRC Team 3145

Re: Withholding allowance

Posted by GDC at 02/22/2011 08:27:45 am

Correct, the weight of the OPERATOR CONSOLE and the MINIBOT do not count towards the weight of the WITHHOLDING ALLOWANCE.

BUMPERS do count towards the weight of the WITHHOLDING ALLOWANCE. How the TEAM bring them to the event is up to the TEAM.

Section 4 - The Robot

Pneumatic Solenoid control

Pneumatic Solenoid control

Posted by 2011FRC2484 at 02/11/2011 10:12:43 pm

We posted a question about controlling the pneumatics via the exhaust port of the solenoid. I don't think that I worded it correctly, so that it was succinct and clear. Let me try to be clearer in my wording. We would like to connect our pneumatics so that solenoid A controls the cyllinder, with the input of solenoid A connected to the compressed air supply, and the outputs, ports 1 and 2 of solenoid A connected to the cyllinder. This would be the only solenoid with it's output ports connected to and controlling the cyllinder, thus satisfying rule <R74>. We would then have another solenoid, solenoid B, connected, via it's input port, to the exhasut ports, E1 and E2, of solenoid A. Then by opening or closing solenoid B, we would control the air moving out of the solenoid A. I don't understand how this can be a violation of <R74>, because the compressed air is flowing to the cyllinder through only one pneumatic solenoid. The input ports of the cyllinder only have the outputs of one solenoid plumbed into them. In fact, the output ports of solenoid B aren't even plumbed to anything at all.

Re: Pneumatic Solenoid control

Posted by GDC at 02/14/2011 11:32:04 pm

Per <R74>, "each commanded motion of a pneumatic cylinder or rotary actuator must be accomplished via the flow of compressed air through only one approved pneumatic valve." The proposed commanded action would be accomplished via the flow of compressed air through more than one valve.

Please refer to [B][I]Team Update 13[/I][/B] for more information.

Section 4 - The Robot

Motor Replacement - Robot

Motor Replacement - Robot

Posted by 2011FRC0316 at 02/12/2011 09:46:55 am

Can the window motor be replaced with a banebots motor in the window motor's gearbox?

Re: Motor Replacement - Robot

Posted by GDC at 02/18/2011 08:32:36 am

This would be a violation of R47.

Window motor reducer

Posted by 2011FRC2648 at 02/20/2011 02:25:44 pm

Is it legal to remove the window motor from the window motor reducer and mount a Banebots RS 550 motor to the window motor reducer and use this new combination it in competition.

Section 4 - The Robot

Reuse of previous RSL?

Reuse of previous RSL?

Posted by 2011FRC0885 at 02/13/2011 10:46:50 am

Having not found a rule outlawing the use of a previous year’s signal light on the robot in addition to RSL required, we would like to use it to signal our drive team visually. The question is: Can we mount on the robot and activate a previous year’s RSL that is the same color and configuration as this year’s RSL?

Thanks for your efforts!

Re: Reuse of previous RSL?

Posted by GDC at 02/18/2011 08:24:32 am

Rule <R54> permits only one RSL, part number 855PB-B12ME522.

Section 4 - The Robot

Limit switches in electrical series

Limit switches in electrical series

Posted by 2011FRC0230 at 02/13/2011 01:19:53 pm

Is it legal to place a limit switch in series between the motor controller and the motor in order to electrically stop the motor when the switch is activated? Note that we are not using CAN, we are using PWM connections.

<R43> Custom circuits shall NOT directly alter the power pathways between the battery, PD Board, speed controllers, relays, motors, or other elements of the robot control system (including the power pathways to other sensors or circuits). Custom high impedance voltage monitoring or low impedance current monitoring circuitry connected to the ROBOT’S electrical system is acceptable, because the effect on the ROBOT outputs should be inconsequential.

The above makes it seem as though that you can't put it in the series, but the other rules are very vague about the connection between the outputs of the speed controller and inputs of the

motor.

Re: Limit switches in electrical series

Posted by GDC at 02/15/2011 10:22:46 pm

This would be a violation of <R43>.

Section 4 - The Robot

Gas springs

Gas springs

Posted by 2011FRC3145 at 02/14/2011 01:01:55 am

Hello,

Are gas springs allowed on the robot? I'm thinking of the gas cartridges that would be used to hold open a hood or trunk lid on a car.

Thanks for the help.

Brian
Team 3145

Re: Gas springs

Posted by GDC at 02/21/2011 09:32:13 pm

Per Rule <R66-F>, closed-loop COTS pneumatic (gas) shocks are not considered pneumatic devices, and are not subject to the pneumatic rules (although they must still satisfy all other appropriate rules).

Section 4 - The Robot

withholding and allowed items

withholding and allowed items

Posted by 2011FRC2462 at 02/14/2011 05:50:17 am

Our withholding question is , are we allowed to withhold the cRio and our robotic arm for testing

Secondly, are we allowed to bring things such as walkie-talkies to competition, to help communicate with our alliance members

Re: withholding and allowed items

Posted by GDC at 02/15/2011 10:23:38 pm

1) Please see <R33>.
2) Please see <T25> and <T26> for items allowed to be brought to the ARENA.

Section 4 - The Robot

Ultrasonic Sensor use

Ultrasonic Sensor use

Posted by FRC3453 at 02/14/2011 12:50:39 pm

There was an ultrasonic sensor provided in the KOP from previous FRC competitions. The rules don't seem to prohibit the use of an ultrasonic sensor as long as it is attached correctly. We purchased this

Devantech SRF04 Ultrasonic Range Finder
Product code :RB-Dev-01 from Robot Shop.

Would this be allowed on the robot?

Re: Ultrasonic Sensor use

Posted by GDC at 02/15/2011 10:24:23 pm

Sensors are legal as long as they satisfy all of the requirements of [B][I]Section 4 - The Robot[/I][/B].

Section 4 - The Robot

Pnuematic Pressure Dump valve

Pnuematic Pressure Dump valve

Posted by 2011FRC1450 at 02/14/2011 02:40:28 pm

Can a multi chamber valve be used for the dump valve?

Re: Pnuematic Pressure Dump valve

Posted by GDC at 02/21/2011 09:33:06 pm

We do not understand what you mean by the "dump valve".

Section 4 - The Robot

Section 4, Rules R24/R25/R33: Clarification of withholding allowance

Section 4, Rules R24/R25/R33: Clarification of withholding allowance

Posted by 2011FRC1619 at 02/14/2011 02:46:55 pm

Please consider the following four details as background information:

1. The definition of 'Withholding Allowance' limits items to being fabricated, with exception to the operator console.

2. Rule R24 indicates that teams may continue development of any items retained under the withholding allowance after the robot has shipped, and then bring those items to the competition. The associated "blue box" further explains that the intent of the rule is to allow teams to hold back items like the robot control system for further development after the robot has shipped. For all practical purposes, the robot control system would "very likely" include non-fabricated items like the cRIO, electrical wire, etcetera.

3. Rule R25 indicates that during the competition, teams may bring a limited amount of fabricated items as part of the withholding allowance back to the team’s home facility for continued development.

4. Rule R33 limits what can be brought to the competition for the robot to 30 pounds of fabricated items. An exception to that limit is the weight of the Minibot. For all practical purposes, the Minibot would "very likely" include non-fabricated items like motors, electrical wire, etcetera.

As a result, please consider the following four questions:

1. Regarding Rule R24, how can a team legally hold back the robot control system for further development after the robot ships when it "very likely" contains non-fabricated items, which are not part of the withholding allowance? If the robot control system is in fact allowed to be held back after the robot has shipped, then it seems R24 and/or the definition of 'Withholding Allowance' should be revised to include COTS and KOP items.

2. Regarding Rule R25, does it mean that if a KOP and/or COTS item needs to be repaired, it can not be taken to the team's home facility for repair?

3. Regarding Rule R25 and the definition of 'Withholding Allowance', can the items within the withholding allowance change, provided that the withholding allowance still fits within its definition, R33, etcetera? For example, Item A weighs 30 pounds and is held back as the withholding allowance when the robot ships. At the competition, Item B fails. Can Item B be taken back to the team's home facility as part of the withholding allowance, even though it was not part of the original withholding allowance at the time the robot shipped, or can the team only take items back to the team's home facility that were originally "defined" as the withholding allowance items when the robot shipped?

4. Regarding Rule R33, can a team hold back the Minibot for further development after the robot ships? R33 only indicates that the Minibot is not part of the weight limit... it does not indicate that the Minibot is excluded from all of R33, meaning that a team could hold back a Minibot, even though it "very likely" contains non-fabricated items. If the entire Minibot is in fact allowed to be held back after the robot has shipped and not be subject to the weight limit in R33, then it seems the Minibot should be listed within the 'Withholding Allowance' definition as done with the operator console (that is, the Minibot would automatically be part of the withholding allowance as with the operator console).

Thank you in advance for your response.

Re: Section 4, Rules R24/R25/R33: Clarification of withholding allowance

Posted by GDC at 02/15/2011 10:25:19 pm

1) Per <R33>, TEAMS may bring up to 30 pounds of WITHHOLDING ALLOWANCE items to the competition. COTS parts are not part of the WITHHOLDING ALLOWANCE and may be brought in any number to the competition. However, per the definition of FABRICATED ITEM, once any COMPONENT has been modified (including assembly to other COTS items) it is no longer a COTS item and is now a FABRICATED ITEM.

2) <R25> allows teams to remove parts as part of the WITHHOLDING ALLOWANCE at the conclusion of event for continued development.

3) The items in the WITHHOLDING ALLOWANCE that a TEAM brings to an event do not have to be the same as the items in the WITHHOLDING ALLOWANCE that a TEAM takes from an event, provided <R33> is satisfied for both cases.

4) Per <R24> and <R33>, TEAMS may continue development on the MINIBOT and bring it to an event without its weight counting towards that of the WITHHOLDING ALLOWANCE.

Section 4 - The Robot

Withholding allowance clarification

Withholding allowance clarification

Posted by 2011FRC2819 at 02/14/2011 09:25:28 pm

This year, FIRST is allowing all FRC teams to retain up to 30 pounds of equipment.
I was thinking about using some of our withholding allowance and the time between ship and our regional to give some of the team a chance to develop a claw that they had been pushing for.
For reference this is the thread I created on chief delphi: [url]http://www.chiefdelphi.com/forums/showthread.php?t=91769[/url]
Would it be legal for my team to bring a new mechanism to the regional to replace the mechanism shipped with the robot (while keeping everything under thirty pounds)? Or must we fabricate it at the regional?

Re: Withholding allowance clarification

Posted by GDC at 02/16/2011 09:57:41 pm

Please see rules <R24>, <R25>, and <R33> for information on the WITHHOLDING ALLOWANCE.

Section 4 - The Robot

Withholding allowance and spare parts

Withholding allowance and spare parts

Posted by 2011FRC3145 at 02/15/2011 01:29:42 pm

Are spare parts considered part of the 30 pound withholding allowance? For instance, if we bring a spare omni wheel (COTS part), is that weight deducted from the 30 pound allowance?

Thanks for help!

FIRST team 3145

Re: Withholding allowance and spare parts

Posted by GDC at 02/22/2011 08:28:28 am

Per the definition of WITHHOLDING ALLOWANCE, only FABRICATED ITEMS count towards the weight restriction, with the exception of those items listed in Rule <R33>.

Section 4 - The Robot

how to configure your cRIO

how to configure your cRIO

Posted by 2011FRC3700 at 02/15/2011 02:18:38 pm

we cant get it started

Re: how to configure your cRIO

Posted by GDC at 02/15/2011 10:26:57 pm

The purpose of this forum is to answer specific rules questions. If you have technical questions regarding the cRIO, please ask them in the FRC Electrical Forums here ([url]http://forums.usfirst.org/forumdisplay.php?f=1337[/url]).

Section 4 - The Robot

2011 Pre-Inspection Checklist

2011 Pre-Inspection Checklist

Posted by 2011FRC2358 at 02/15/2011 02:27:43 pm

When will the pre-inspection checklist be available for teams to download?

Re: 2011 Pre-Inspection Checklist

Posted by GDC at 02/18/2011 08:33:44 am

The 2011 Inspection Checklist has been posted under Section 4 - The Robot at [url]http://usfirst.org/roboticsprograms/frc/content.aspx?id=452[/url].

Section 4 - The Robot

Keyang window motor 2008

Keyang window motor 2008

Posted by 2011FRC1086 at 02/16/2011 01:41:08 pm

Per rule R30 can we use the transmission off of the 2008 Keyang window motor.
Thanks
Blue Cheese 1086

2008 Keyang Window motor transmission

Posted by 2011FRC1086 at 02/16/2011 02:47:47 pm

Per rule R29 and R30 we can use the Keyang Window Motor transmission from the 2009 back, but we would like clarification from FIRST.
Sorry if this post has already gone through but when submitting the school laptop locked up.
Thanks
Blue Cheese 1086

Keyang window motor 2008

Posted by 2011FRC1086 at 02/18/2011 08:34:33 am

Per rule R29 and R30 we should be able to use the Keyang window motor 2008 transmission but would like to get clarification. see links below to see image of what we have done:
[url]http://www.chiefdelphi.com/media/photos/36378?[/url]
[url]http://www.chiefdelphi.com/media/photos/36377[/url]

Re: Keyang window motor 2008

Posted by GDC at 02/18/2011 08:35:40 am

Yes.

Section 4 - The Robot

Use 5V PS from PDB to power router

Use 5V PS from PDB to power router

Posted by 2011FRC1310 at 02/16/2011 03:47:45 pm

We are not using the camera. The 5v power supply for the camera built into the power distribution board seems capable enough to power the 5V D-link router saving us the weight and wiring hassle of the converter. Is this acceptable ?

Re: Use 5V PS from PDB to power router

Posted by GDC at 02/21/2011 09:33:58 pm

No.

Section 4 - The Robot

Light Sensor Hookup.

Light Sensor Hookup.

Posted by 2011FRC1310 at 02/16/2011 03:55:34 pm

If we chose to use 12v to power the sensors, could the +wire from all three light sensors be combined into a single wire going to a single 20 breaker (since each sensor only draws a few millamps) or would they each be required to be connected to separate 20a breakers ?

Team update 5 allows connecting the Light Sensors to 24v via a 9472 pneumatic C-Rio from the 24v on the power distribution panel (for improved sensor reliability over 12v). We do not have a need to be able to shut on and off the light sensors (via the 9472) and we would have to spend $140+ to acquire a 9472 as our only one is full up. If 24v is allowed, would it be acceptable to directly wire the light sensors from the 24v on the PDP. It would appear to be logical and safe.

Re: Light Sensor Hookup.

Posted by GDC at 02/22/2011 08:29:21 am

There are no rules prohibiting photosensors from being powered by a 20A circuit from the Power Distribution board. Please note, such wiring must be in compliance with all wiring rules, i.e. <R40>.

Rule <R38A> expressly prohibits powering the sensors directly from the 24V supply on the PD.

Section 4 - The Robot

3.3V Regulator

3.3V Regulator

Posted by 2011FRC3238 at 02/16/2011 05:22:42 pm

Is it legal to use a 3.3V voltage regulator off the digital sidecar to power a 3.3V accelerometer?

Re: 3.3V Regulator

Posted by GDC at 02/22/2011 08:36:43 am

There are no rules that would prohibit this.

Section 4 - The Robot

Rookie / Veteran KOP parity

Rookie / Veteran KOP parity

Posted by 2011FRC2973 at 02/17/2011 01:14:54 pm

The instructions in the 2011 Inspection BOM Template include
[QUOTE]Any item that was included in the Rookie KOP but not the Veteran KOP should be considered a KOP item and indicated on that tab, including the compressor. If a part was in a previous years' KOP, it's current cost must be accounted for on the non-KOP items tab. [/QUOTE]
1) The compressor in the Rookie KOP is not the same compressor previously provided to veteran teams. If a veteran team uses a compressor provided by FIRST in a previous year, do

we get to claim $0 for the cost, or do we have to purchase the same compressor provided to rookies in order to claim $0 for the cost?

2) Similarly, rookie teams were provided 4 black jaguars in the KOP and veterans were only provided 2. If a veteran team uses a brown jaguar provided by FIRST in a previous year, do we get to claim $0 for the cost, or do we have to purchase a black jaguar in order to claim $0 for the cost?

Re: Rookie / Veteran KOP parity

Posted by GDC at 02/24/2011 09:13:27 pm

1) The items are not in the 2011 KOP, thus they must be accounted for using the fair market value.

2) These items were included in [I]FIRST[/I] Choice and are thus considered KOP items. The quantity is limited to the number available to teams (i.e. 1 grey Jaguar, 1 pneumatic muscle, etc). Additional quantities must be accounted for per Section 4.3.5.

Section 4 - The Robot

Window motors

Window motors

Posted by 2011FRC0619 at 02/17/2011 06:29:07 pm

Are we permitted to modify the window motor's gearbox? It was supplied in the kit of parts

Re: Window motors

Posted by GDC at 02/22/2011 08:30:01 am

The only modification allowed to motors are listed in Rule <R47>.

Section 4 - The Robot

Bill of Materials / Kit of Parts

Bill of Materials / Kit of Parts

Posted by 2011FRC1388 at 02/17/2011 07:20:41 pm

Section 4.3.4, Budget Constraints, indicates that Kit of Parts items are not included in the total cost calculation for the robot. Can you clarify the quantity of KoP items that are allowed to be excluded?

For example, would a veteran team be allowed to exclude a quantity of items specific to the veteran KoP, or would it be the same quantity as a rookie team's KoP? (Example, 1 Spike relay or 2?) Or is the quantity not limited (for the cost calculation)?

Re: Bill of Materials / Kit of Parts

Posted by GDC at 02/24/2011 09:35:20 pm

KOP items that may be assigned $0 on the BOM (specifically elaborating on Rule <R20-A>) include the following:
[LIST][*]any item on the [B][I]2011 KOP Checklist[/I][/B] in the total quantity noted in the checklist (regardless of whether it only went to only Rookie teams or not) and
[*]items included in [I]FIRST [/I]Choice. The quantity is limited to the number available to teams (i.e. 1 grey Jaguar, 1 pneumatic muscle, etc). Additional quantities must be accounted for per Section 4.3.5.

[/LIST]

Section 4 - The Robot

Minibot Carrier

Minibot Carrier

Posted by 2011FRC2377 at 02/18/2011 09:39:28 am

Would it be acceptable for a small wheeled cart to be left behind on the tower base after minibot deployment? This cart would be considered a part of the hostbot and could be attached to the hostbot with a small tether if necessary.

Re: Minibot Carrier

Posted by GDC at 02/22/2011 08:31:14 am

Any part of the ROBOT that is not part of the MINIBOT is considered part of the HOSTBOT and must conform to all HOSTBOT rules. Parts of the HOSTBOT may be used in the DEPLOYMENT of the MINIBOT, but must remain attached to the HOSTBOT.

Section 4 - The Robot

<R38> Omit Voltage Converter for Radio

<R38> Omit Voltage Converter for Radio

Posted by 2011FRC2826 at 02/18/2011 10:41:09 am

Background:
Rule <R38> part B states "The radio power feed must be connected via the 5V converter (model # TBJ12DK025Z) to the marked 12 Vdc supply terminals located at the end of the PD Board (i.e. the terminals located between the indicator LEDs, and not the main WAGO connectors along the sides of the PD Board)."

Problem:
The required power supply can only be obtained through a source coming from China, thus taking an exorbitantly long time to ship. We have had ours on order for 4 weeks and the company still will not communicate to us when these could arrive. Additionally, this unit weighs 0.35 lbs which is a significant hit for no gain in our case.

Solution: (at least for some teams)
We will not be using a camera this year, so our Power Distribution Board 5VDC supply output will be unused. Can the rules be modified to allow us to connect the radio power supply directly into the PD board and completely omit the converter?

Supporting Claims:
The PD documentation found at:

[url]http://www.usfirst.org/uploadedFiles/Community/FRC/Game_and_Season__Info/2010_Assets/PD%20package.zip[/url]

states on page3 of 6 that the 5 VDC supply is rated for 3 Amp output.

The D-Link DAP-1522 documentation found here:

[url]ftp://ftp10.dlink.com/pdfs/products/DAP-1522/DAP-1522_ds.pdf[/url]

and printed on the unit itself states that the required amperage is 2.0 Amps

Therefore the PD supply should easily support the radio when a camera is not connected

Thanks again for all the time the GDC puts into making this program a success!

Re: <R38> Omit Voltage Converter for Radio

Posted by GDC at 02/22/2011 09:36:46 am

No. Please see [B][I]Team Update 13[/I][/B].

Section 4 - The Robot

Use of second device at DS

Use of second device at DS

Posted by 2011FRC2028 at 02/18/2011 06:47:52 pm

Are we allowed to have a second pc, iPod, tablet, etc at the DRIVERS STATION to view images from the robot camera?

Re: Use of second device at DS

Posted by GDC at 02/22/2011 08:31:47 am

There are no rules that limit the number of computing devices that are part of the OPERATOR CONSOLE.

Section 4 - The Robot

5 volt DC-DC converter failed, none to be bought

5 volt DC-DC converter failed, none to be bought

Posted by 2011FRC1712 at 02/18/2011 08:44:37 pm

R38 requires that this converter be used (model # TBJ12DK025Z) or 360 CPR.
Ours only puts out 4.1 volts and will not run the radio.
The vendor, Current-Logic doesn't have any here in the US to ____.
We are not the only ones with this problem.
Will there be a legal substitute announced soon, or what to do ?

Charlie Affel, 1712

Re: 5 volt DC-DC converter failed, none to be bought

Posted by GDC at 02/21/2011 09:24:13 pm

There are no plans to change the rule. There will be a limited quantity of spares at the events.

Section 4 - The Robot

Chai ns Touching Ground

Chai ns Touching Ground

Posted by 2011FRC3504 at 02/18/2011 09:36:27 pm

Currently, our chains from our wheels to motor are touching the ground. Is this illegal? (For safety/ruining the field purposes)

Re: Chai ns Touching Ground

Posted by GDC at 02/21/2011 09:34:46 pm

ROBOTS may not damage the ARENA per Rule <G45>, and must be safe per Rule <R02>. Judgments will be made by personnel on site about your robot's safety and potential to cause field damage.

Section 4 - The Robot

Camera through router on robot?

Camera through router on robot?

Posted by 2011FRC0498 at 02/19/2011 12:43:35 am

We read this tutorial:
[url]http://decibel.ni.com/content/docs/DOC-15144[/url]

Would this, camera to KOP wireless router on robot to bypass cRIO, be a legal way to view images during the match?

Re: Camera through router on robot?

Posted by GDC at 02/21/2011 09:35:54 pm

There are no rules prohibiting this.

Section 4 - The Robot

5 CIM motors: Requesting Rule Update

5 CIM motors: Requesting Rule Update

Posted by 2011FRC3863 at 02/19/2011 01:59:05 am

Hello,
Last year the rule was that 5 CIM motors were allowed. With that idea in mind, we designed and built our robot with 5 CIM motors. After going through the pre-inspection checklist, we noticed that only 4 CIMs are allowed this year. After reading the discussion on chiefdelphi, it seems like a lot of people are desperate to be able to use 5 CIMs. And BaneBots is offering a CIM-U-LATOR that apparently can be used to make one of the BaneBots into a CIM replacement.

If the BaneBot CIM replacement can be used, why not just allow one more CIM like last year?

If the rule cannot be changed, is it possible to get a waiver to use 5 CIMs?

Re: 5 CIM motors: Requesting Rule Update

Posted by GDC at 02/21/2011 09:36:54 pm

Rules from prior years' FRC do not impact LogoMotion rules. Per Rule <R45-C>, only four (4) CIM motors are allowed on the ROBOT. There are no waivers for any rules.

Section 4 - The Robot

Scrap materials

Scrap materials

Posted by 2011FRC3667 at 02/19/2011 04:06:19 pm

Question regarding the cost basis for recycled/scrap materials:

We are using aluminum that we purchased by the pound from a local scrap metal recycling facility to make COMPONENTs. The public is able to purchase the same materials for the same price we paid. Some of it came in the form of a large 4'x6' sheet that we have been cutting from as needed. Some of it is in the form of 1/4"x2" wide straps that have holes drilled every 2". Some of it is 2"x2" stock that we have been cutting to length & machining.

Question: For the purposes of the BOM, can we account for the cost of the materials based on what we paid for them, or do we have to use the retail prices of equivalent brand-new materials?

Re: Scrap materials

Posted by GDC at 02/22/2011 08:32:23 am

Per Section 4.3.5-C, fair market value is that price at which the supplier would normally offer the item to other customers. If your TEAM paid the fair market value for the material, that is the price that should be used.

Section 4 - The Robot

Replace Axis 5V camera with 12V camera

Replace Axis 5V camera with 12V camera

Posted by 2011FRC2057 at 02/20/2011 01:38:25 pm

We propose that we be able to replace the Axis 5V camera since it is undependable. Some days it works and some days it doesn't. Yes, we have connected it correctly..... Cause/reason unknown. This problem is fairly well-known throughout the FRC community.

We propose that we be allowed to use a different camera. All of the cameras that we are interested in require a 12 volt connection. We believe a 12 volt camera will be more dependable.

We propose that we be allowed to attach the new camera to the 12 volt connector on the Power Board; and that we be allowed to attach the 5 volt "Robot Radio" Wireless Bridge directly to the 5 volt connector on the Power Board.

This would elliminate the need for the 12/5 volt converter and possibly avoid any heat problems.

Team 2057, Las Vegas

Re: Replace Axis 5V camera with 12V camera

Posted by GDC at 02/21/2011 09:38:17 pm

There are no rules that restrict teams to only using the camera supplied in the 2011 KOP.

Per Rule <R38-B>: The radio power feed must be connected via the 5V converter (model # TBJ12DK025Z) to the marked 12 Vdc supply terminals located at the end of the PD Board.

Section 4 - The Robot

Robot handles

Robot handles

Posted by 2011FRC3238 at 02/20/2011 05:28:35 pm

Is it legal to have clip-on handles for a robot that are used to carry it onto the field, detached following placement of the robot on the field and kept with the operator console, and then reattached to the robot at the end of the match to more easily remove it from the field? Attaching and removing the handles would be a speedy process.

Re: Robot handles

Posted by GDC at 02/24/2011 09:20:27 pm

Please see Team Update 13.

Section 4 - The Robot

Gearboxes

Gearboxes

Posted by 2011FRC0316 at 02/21/2011 08:01:05 am

2011FRC0316
Can the window motor be replaced with a banebots motor in the window motor's gearbox?

GDC
Game Design Committee
This would be a violation of R47.

Point of Clarification-Our question pertained to the utilization of a different gearbox with a banebots motor. Neither the gearbox nor the motor have been modified. Per Rule R47 which you cite and is posted below the integral mechanical and electrical system of the motor have not been modified in any way:
<R47> Motors and servos used on the ROBOT shall not be modified in any way, except as follows:
A. The mounting brackets and/or output shaft/interface of the motors may be modified to facilitate the physical connection of the motor to the ROBOT and actuated part.
B. The electrical input leads on the motors may be trimmed to length as necessary.
C. The locking pins on the window motors may be removed.

The intent of this rule is to maintain the maximum power level for each ROBOT, yet still allow teams to modify mounting tabs and the like, not to gain a weight reduction by potentially compromising the structural integrity of any motor. The integral mechanical and electrical system of the motor is not to be modified.

Again we have not modified any motor.

Additionally we have found the below listed thread which specifically addresses this same issue and you will note that the GDC response says “There are no explicit rules governing gearboxes. Provided they meet the rules in the manual, there is no restriction on how teams adjust motor outputs.”:

2011FRC0122
Since Banebot have a back order on gearboxes, can we use any COTS gearbox such as a gearbox from a drill with the motors we recieved from Banebot and Fisher Price?

GDC
Game Design Committee
There are no explicit rules governing gearboxes. Provided they meet the rules in the manual, there is no restriction on how teams adjust motor outputs.

Accordingly we would like a confirmation that we are indeed able to use the window's gearbox with the banebots motor, understanding that neither have been modified.

Thank you

Re: Gearboxes

Posted by GDC at 02/22/2011 08:33:18 am

In the [B][I]2011 Kit of Parts Checklist[/I][/B], the window motors are listed by part number containing the motor and the gearbox. As such, this motor/gearbox is to be thought of as a single motor unit, and cannot be modified except as listed in Rule <R47>. The answer you quote involves other motors in the kit which are listed as individual motors and may be used with any gearbox.

Section 4 - The Robot

EXternal Power Source for Retracting Arm?

EXternal Power Source for Retracting Arm?

Posted by 2011FRC3694 at 02/21/2011 05:03:51 pm

Can anyone tell me if its legal to bring an external power source onto the feild after the match to retract the arm so we can move it safely and at the safety of others? Thanks.
~3694

External Power Source for Retracting Arm?

Posted by 2011FRC3694 at 02/21/2011 05:06:30 pm

Can anyone tell me if it is legal to bring an external power source onto the feild after the match to retract the arm on our robot for ease of moving it and for the safety of everyone involved? Thanks.

~3694

Re: EXternal Power Source for Retracting Arm?

Posted by GDC at 02/22/2011 09:37:40 am

No, per Rule <R17> ROBOTS must be designed to permit removal of GAME PIECES from the ROBOT, and removal of the ROBOT from other FIELD elements and/or other ROBOTS without requiring activation of the ROBOT power system.

Section 4 - The Robot

Window Motor Hand.

Window Motor Hand.

Posted by 2011FRC0957 at 02/21/2011 08:47:18 pm

Can you use 2 window motors of the same hand if the part numbers are within the rules?

Re: Window Motor Hand.

Posted by GDC at 02/22/2011 08:33:52 am

Please see Rule <R45-A>.

Section 4 - The Robot

External connector on the D-Link DAP-1522

External connector on the D-Link DAP-1522

Posted by 2011FRC1251 at 02/21/2011 09:14:22 pm

Would be legal to add an external connector to the D-Link DAP-1522 to attach an external antenna for purposes of obscure mounting in an area of the robot where signal may not propagate well?

Re: External connector on the D-Link DAP-1522

Posted by GDC at 02/24/2011 10:14:41 am

No, as this is not a permitted modification per Rule <R55>.

Section 4 - The Robot

<R17> External individual power for actuators

<R17> External individual power for actuators

Posted by 2011FRC0562 at 02/22/2011 07:09:48 pm

The GDC Previously stated the following: Per Rule <R17> ROBOTS must be designed to permit removal of GAME PIECES from the ROBOT, and removal of the ROBOT from other FIELD elements and/or other ROBOTS without requiring activation of the ROBOT power system.

We have a specifically designed an external power box that will allow us to drive motors without the need to reinstate whole system power. Are we allowed to use this after a match per <R17>?

Also, are we allowed to use the specifically designed power box during the setup for a match to allow for UBERTUBE placement?

Re: <R17> External individual power for actuators

Posted by GDC at 02/24/2011 09:39:41 pm

1) No
2) No

Section 4 - The Robot

Rule_G14. Gamepads that not physically supported on Operator Console

Rule_G14. Gamepads that not physically supported on Operator Console

Posted by 2011FRC0846 at 02/23/2011 12:48:39 pm

Under Rule_G14, must gamepads (such as an Xbox controller, or Logitech F310)
that are *freely* held (i.e. "supported", rather than "clasped" like a joystick) in the hand,
and that are not physically supported by the Operator Console,
be unconnected from the Operator Console during autonomous?

Re: Rule_G14. Gamepads that not physically supported on Operator Console

Posted by GDC at 02/24/2011 09:15:52 pm

Devices that are held or worn during the AUTONOMOUS PERIOD must be unplugged.

Section 5 - The Tournament

Section 5 - The Tournament

FTC Alliance for FRC competition?

FTC Alliance for FRC competition?

Posted by 2011FRC1257 at 01/13/2011 08:32:00 pm

Do FRC teams need a FTC team in order to compete? During the kickoff presentation Dean indicated getting an alliance with a FTC team. Was this just because FRC is using FTC parts for the mini bot? Clarification would be appreciated.

Re: FTC Alliance for FRC competition?

Posted by GDC at 01/16/2011 12:09:56 pm

No. Incorporating or partnering with a FTC team is not required to compete in the FRC competition. Given the design considerations for the MINIBOT, it may be desirable, as a FTC team may have relevant experience in the implementation of small robot with similar constraints. However, it is not a requirement.

Section 5 - The Tournament

Red Cards

Red Cards

Posted by 2011FRC0100 at 01/15/2011 02:19:16 pm

regarding section 5.5.4 of the Tournament manual:

Is there a limit to the number of red cards a team can receive before being disqualified from the competition?

Re: Red Cards

Posted by GDC at 01/16/2011 12:08:19 pm

No, there is no limit on the number of RED CARDS a TEAM may receive. We are nervous that you ask the question.

Section 5 - The Tournament

<T25> and <T26>

<T25> and <T26>

Posted by 2011FRC1503 at 02/08/2011 02:56:03 pm

<T25> states:

[quote]The only equipment that may be brought on to the ARENA is the OPERATOR CONSOLE,

non-powered ANALYST-to-FEEDER signaling devices, 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 TEAM, are prohibited.[/quote]

while <T26> states:

[quote]Devices used solely for the purpose of planning or tracking strategy of game play are allowed inside the ALLIANCE STATION, if they meet ALL of the following conditions:

* Do not connect or attach to the OPERATOR CONSOLE
* Do not connect or attach to the FIELD or ARENA
* Do not connect or attach to another ALLIANCE member

* Do not communicate with anything or anyone outside of the ARENA.
* Do no include any form of enabled wireless electronic communication (e.g. radios, walkie-talkies, cell phones, Bluetooth communications, WiFi, etc.)
* Do not in any way affect the outcome of a MATCH, other than by allowing TEAM members to plan or track strategy for the purposes of communication of that strategy to other ALLIANCE members.[/quote]

A. There seems to be a conflict - do devices permitted under <T26> constitute an exception to <T25>?

B. Would an electronic device that is capable of wireless communication be permitted under <T26>, if all such functionality is disabled and all other conditions of <T26> are met?

Re: <T25> and <T26>

Posted by GDC at 02/14/2011 11:02:26 pm

A. Yes. T26 is explicitly allows certain devices, independent of T25.
B. Yes, if the wireless electronic communication is not enabled, as is clearly stated in the rule.

Section 5 - The Tournament

Robot off tether

Robot off tether

Posted by 2011FRC2973 at 02/11/2011 12:21:08 pm

From last year's Q&A
[QUOTE]Testing Robot off Tether
Posted by FRC2973 at 03/25/2010 01:24:50 pm
[I]<T02> Radio control mode of ROBOT operation is not permitted in areas anywhere outside the ARENA or practice field. ROBOTS must only be operated by tether when not within the ARENA or practice field.[/I]
This prohibition from running wireless with the team's radio except in the ARENA (although not stated in the manual, we were required to use an FRC provided radio on the practice field) precludes troubleshooting any problems with the telemetry system, since the tether takes that part of the system out of the loop. This has potentially contributed to the significant delays in starting matches since these problems must be corrected on the field during the reset period. Would the GDC consider amending this rule to allow untethered operation in some managed way at each competition, such as at specific times and/or locations where it would not interfere with the matches taking place in the ARENA?

Re: Testing Robot off Tether
Posted by GDC at 03/29/2010 12:43:40 pm
The use of [I]FIRST [/I]hardware at the Practice Field is to insure that teams are not required to reconfigure their own hardware after using the Practice Field to play on the Competition Field, which would likely lead to different and possibly additional issues. It is also controlled wireless that will not interfere with the field's access point. Use of team hardware to run wirelessly off the competition field may cause interference with the field and adds risk to the event.
[COLOR="Red"]This concept will be one of the things considered for 2011.[/COLOR][/QUOTE]

I don't see any new rules this year; will we be allowed to run on our own radio on the practice

field? Will there be specific times when we can?

Re: Robot off tether

Posted by GDC at 02/15/2011 10:43:39 pm

Please see Team Update 11.

Section 5 - The Tournament

T25 Clarification and Update #8, ANALYST

T25 Clarification and Update #8, ANALYST

Posted by 2011FRC0141 at 02/13/2011 02:49:09 pm

Originally, a question was asked to clarify what could be used to signal the feeder on the opposite side of the field. The GDC original response seemed to indicate that the analyst could use any tool, electronic or non-electronic, as long as it did not communicate with the robot or outside the field of play.

That answer seems to have been retracted and replaced in weeks subsequent by Update #8, which seems to conflict with the original direction. Please clarify the function and tools available to the analyst.

What can an ANALYST use, exclusive of what he/she will use to signal to the feeder, to analyze the game in process? It seems obvious that an analyst's sole purpose is, indeed, to provide competitive advantage in the game. We understand that the tool used by the analyst cannot communicate to the robot, cannot communicate to others external to the field of play, and cannot electronically flag the feeder. What tools may the analyst use to analyze the game that will not violate T25? For example, may the analyst use the following: an abacus, a notebook, a pencil, a PDA, tally marks written on one's hand, an Excel file on a device not connected to the internet...? Or, is it your intent that the analyst may use only her/his active neurons and nothing else? Please clarify your intent.

Re: T25 Clarification and Update #8, ANALYST

Posted by GDC at 02/15/2011 10:40:43 pm

Any device used by the ANALYST for the sole purpose of planning or tracking strategy of game play must comply with <T26>. Any device used to communicate with the FEEDER must also comply with <T25>.

Section 5 - The Tournament

Coaches and signaling devices

Coaches and signaling devices

Posted by 2011FRC1939 at 02/15/2011 12:31:20 pm

According to update 8

<T25> The only equipment that may be brought on to the ARENA is the OPERATOR CONSOLE, non-powered ANALYST-to-FEEDER signaling devices, 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 TEAM, are prohibited.

May the coaches also use the non-powered ANALYST-to-FEEDER signaling devices or is that

only for the analyst to use?

Re: Coaches and signaling devices

Posted by GDC at 02/15/2011 10:41:32 pm

No, only the ANALYST may use the allowed signaling devices.

Section 5 - The Tournament

Laptop in Alliance Selection Process

Laptop in Alliance Selection Process

Posted by 2011FRC3173 at 02/15/2011 05:42:49 pm

In the alliance selection process (described in section 5.4.1), may a TEAM Representative bring a laptop, with data about the other teams, up with him? For our team, the purpose of this would be to have an analytical application on the laptop suggest team choices in real time, as teams are chosen. There would be no need for internet access, or communication with other team members. Also, we have been discouraged in the past from communicating with other team members during the alliance selection process--are we correct in thinking that this is not allowed?

Re: Laptop in Alliance Selection Process

Posted by GDC at 02/16/2011 10:03:57 pm

There are no rules that prohibit laptops or team collaboration during the alliance selection process. These methods are permitted, however the team is expected to make quick and expeditious decisions in the interest of keeping the process moving.