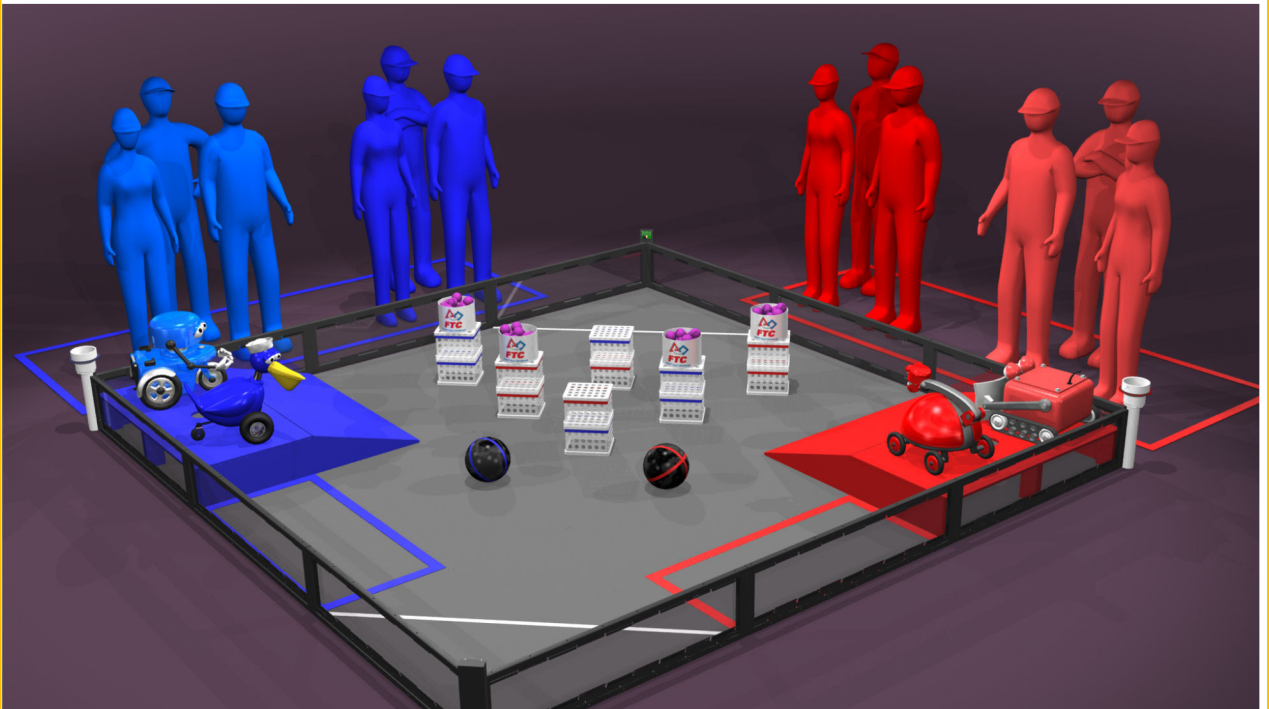


FTC Game Forum Official Answers





Game Definitions - Answers

Printable View

Administrator

09-19-2011, 11:14 AM

Game Definitions - Answers

Answers to questions about Game Definitions will be found here

GDC Twinkletoes

09-22-2011, 09:57 AM

Game Definitions - Answers

Quote:

*Originally Posted by **FTC0965** »*

You define Parked and Completely Parked. You do not define "in". Do you mean "in" like "Parked" or "in" like "Completely Parked"? There are also other references to "in" its Protected Area and/or Home Zone.

<SG7> means "in" like "parked" not "completely parked".

GDC Twinkletoes

10-06-2011, 11:40 AM

Quote:

*Originally Posted by **FTC5135** »*

What is the definition of entanglement?

A: To twist together or entwine. At inspection, if a mechanism on a robot looks like it will cause two robots to entangle, the inspector will ask the team to correct it. During game play, if a referee sees that a robot is causing itself to be deliberately entangled with another robot, the offending team may be disqualified (Rule <G8>)

GDC Medic

10-06-2011, 07:02 PM

Quote:

*Originally Posted by **FTC5356** »*

Rule <SG15> says:

"Robots are not allowed to store, hold, control, contain, etc. more than fifteen (15) Balls at a time. Each Ball above the 15 Ball limit will receive a Penalty (5 points) and the Robot must pass a re-inspection prior to participating in another Match. Balls that are in contact with the Playing Field surface or are fully supported by a Ball Crate are excluded from this constraint. The ball-holding mechanism(s) of the Robot will be inspected before it will be allowed to play (i.e. if the ball holding capability of your robot can hold 16 or more balls, the Robot will not pass inspection)."

How is "control" (and the all-purpose "etc.") to be interpreted in this rule? For example, what if a robot has a Ball launcher and launches balls toward an open upright basket of the same color as the alliance of the robot. Are the balls that have left the launcher and are touching nothing but air still being "controlled" so that they count against the 15-ball limit? If so, when, in this example, are the launched balls no longer "controlled"?

A: Balls that have been launched by a robot and are no longer in contact with the robot would not be considered controlled (i.e. the robot no longer influences their motion or state)

GDC Anchor

10-06-2011, 07:16 PM

Descoring

Quote:

*Originally Posted by **FTC5356** *

Rules version:

<SG2> says:

"Removing (de-scoring) Balls from the Low Goal is allowed. Deliberate de-scoring of Balls from the Ball Crates while in the Protected Area or Off-field Goal will result in Major Penalty (40 points) and a team Disqualification."

Does this mean Balls may be de-scored from Ball Crates in the opponent's Home Zone (at least if you can do it without contacting the crate as prohibited in <SG6>)? Or is the Home Zone meant to be included in the prohibition of <SG2>?

Is the Home Zone part of the Protected Area for Ball-in-Crate scoring, as well as for Stacking? ["Protected Area" in the definitions section says that the Home Zone is part of the Protected Area "for purposes of Stacking," but says nothing about "for purposes of scoring" {or de-scoring} Balls in Crates.]

A: The protected zone includes the Platform, Ramp, and taped off area on the floor. Scoring of balls in the crates is included in the term "Stacking".

GDC Medic

10-20-2011, 01:09 PM

Quote:

*Originally Posted by **FTC5273** *

Each team is given a bowling ball, but bowling balls can have a weight ranging from 6-16 lbs. What is the weight of the bowling ball for this challenge? Is there a variability in the weight of the bowling ball?

A: The bowling ball is a standard 6 lb. ball. Take the time to make sure that you have completely read through the Bowled Over! Game Manual (the bowling ball specification is in Section 2.3 :))

All times are GMT -4. The time now is 04:13 PM.

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Game Play - Answers

Printable View

Administrator

09-19-2011, 11:14 AM

Game Play - Answers

Answers to questions about Game Play are found here

GDC Twinkletoes

09-22-2011, 09:06 AM

Quote:

*Originally Posted by **FTC5096** »*

In the game definitions, it is stated that "The Robot may start in any orientation anywhere on top of the Platform". Is the team free to orient the robot prior to Autonomous mode or do the referees randomly orient the robot?

A: The team is free to orient the robot. The referees will not touch it prior to the match beginning. See Rule <G12> as to which alliance places their robot on the field first.

GDC Twinkletoes

09-22-2011, 10:02 AM

Does Rule <SG5> Apply During the Autonomous Period?

Quote:

*Originally Posted by **FTC0965** »*

Does rule <SG5> and penalty apply during Autonomous mode? When trying to upright the Red crate stacked on a Blue crate or the Red crate under a Blue crate it seems like it would be very hard to avoid this kind of contact.

Yes, rule <SG5> and the penalty apply during the Autonomous period. All game rules apply during the entire match, unless otherwise restricted to certain periods of play (Autonomous, Driver-Controlled, or End Game) in the game manual. Referees may need to take intent into consideration when assessing penalties during the Autonomous period due to the uncertainties involved with four robots executing pre-programmed commands and interacting with each other during the Autonomous period. There are lots of opportunities for unexpected consequences during the Autonomous action.

An example of where intent may come into play would be if a red alliance robot legally touches an opposing alliance's blue crate as described in rule <SG5> and a blue crate stacked on top of the

legally touched blue crate topples over and touches the red robot, no penalty should be assessed. This would apply to both Autonomous and Driver-Controllerd periods of play.

Rule <SG5> allows contact with an opposing alliance's ball crate; provided that the crate is touching the foam tile mat and the robot touches only one outside surface of the crate. Teams should take this rule into account when designing their robot.

GDC Twinkletoes

09-22-2011, 10:06 AM

Quote:

*Originally Posted by **FTC0965** »*

Does rule <SG13> mean you cannot push the Bowling Ball at all during Tele-Op before End Game? Can you push it around but not up the ramp?

No. You can push your own Bowling Ball anywhere on the field, just not into the Home Zone (ramp and/or platform) before the End Game begins.

GDC Twinkletoes

09-22-2011, 10:27 AM

Quote:

*Originally Posted by **FTC5062** »*

If we are a red alliance robot, can a blue robot knock over our stack of red crates that are on the playing field by only touching one side of the bottom crate? This would be a stack of 3 crates NOT in the Protected Zone.

A: Yes, it is legal for the opposing alliance to knock over your stack of crates that are not in the Protected Area or Home Zone. Please refer to rule <SG6>.

GDC Mr Precision

09-25-2011, 03:14 PM

End Game

Quote:

*Originally Posted by **FTC0417** »*

Section 2.4.3 states "Teams may not try to score their Bowling Ball onto their Home Zone until the start of the End Game." Similarly, <SG13> states "Robots pushing their Alliance-colored Bowling Ball onto their Home Zone before the End Game begins is not allowed and the Bowling Ball will not count in the End Game bonus".

We have several questions:

Q1: Is the word "try" in 2.4.3 significant? That is, does intent matter in the adjudication of this rule?

Q2: Does the phrase "onto their Home Zone" above mean the equivalent as that stated in 2.4.3(2), namely (a) parked in the Home Zone, and (b) not touching the foam mats? For example, would a strong push that sent the Bowling Ball rolling freely part way up the Ramp (such that it left the mats) only to roll back down and onto the mats again count as a violation of this rule?

Q3: Is it possible to rehabilitate oneself from a violation of this rule by restoring the bowling ball to a non-violating position, then (legally, as if one had not violated in the first place) achieving the conditions for an End Game bonus? That is, it seems to us to be in what we infer to be the spirit of this rule that it would suffice that the Bowling Ball is either not parked in the Home Zone or is in contact with the foam mats (that is, the ball does not satisfy 2.4.3(2)) either at the instant that the End Game begins or at least at one instant during the End Game itself; is this the case?

A1: The intent of the rule is to prevent actions that cause a Bowling Ball to be in a scoring position (i.e. parked in the Home Zone) prior to the start of the End Game. Incidental contact with the edge of the Home Zone Ramp or side of the Home Zone will not be penalized.

A2: The action described violates rule <SG13> and is therefore, not allowed.

A3: No.

Tip from the Game Design Committee: *Rule violations that result in major (40-point) penalties are a very good indication that the Game Design Committee doesn't want teams or robots to perform the described action under any circumstances. It is strongly recommended that when a rule states not to touch something, not to enter an area, etc. the robot should remain a safe distance from the object, area, etc. For example, don't push the Bowling Ball close to the Home Zone prior to the start of the End Game.*

GDC Mr Precision

09-25-2011, 05:09 PM

Pushing an opposing Alliance's Ball Crate and/or Bowling Ball onto your Home Zone

Quote:

<SG9> states: "Pushing an opposing Alliance's Ball Crate and/or Bowling Ball onto your Home Zone and/or Protected Area is not allowed at any time. ..."

What is the meaning of the word "onto" here?

For example, does "onto" your Home Zone mean Parked therein and not in contact with the foam mats, as in 2.4.3(2)? Does "onto" your Protected Area mean Parked therein? Or do some other definitions apply?

The intent of this rule is that the objects covered by this rule are not permitted to break the vertical plane of the boundary or touch either the Home Zone or the Protected Area.

GDC Mr Precision

09-26-2011, 06:52 PM

Rule <SG5> During the Autonomous Period

Quote:

Originally Posted by **FTC2888** »

We are confused by an answer we saw regarding rule <SG5>. Can the robot intentionally touch more than one side of their opposing Alliance's crate during autonomous? Thank you.

Robots are not allowed to intentionally touch more than one outside surface of an opposing alliance's crate during the Autonomous and Driver-Controlled periods.

GDC Mr Precision

09-26-2011, 10:02 PM

Meaning of "in" for Rule <SG2>

Quote:

Originally Posted by **FTC0417** »

<SG2> states: "... Deliberate de-scoring of Balls from the Ball Crates while in the Protected Area or Off-field Goal will result in [a] Major Penalty..."

We have two questions:

Q1: Does the word "in" here mean "parked", "completely parked", or something else?

*Q2: Is it the Ball Crates which must be "in" the protected area to incur this penalty, or something else? For example, if your robot is "in" your opponents' Projected Area and it descores an opponents' crate which is *not* "in" that area, is a penalty incurred under this rule?*

A1: Parked.

A2: Rule <SG2> refers to location of the Ball Crate. The position of the robot is not relevant. The rules allow de-scoring of Balls from Ball Crates provided that the Ball Crates are not Parked in the Protected Area.

GDC Mr Precision

09-26-2011, 10:15 PM

Robot Starting Location

Quote:

Originally Posted by **FTC0417** »

Section 2.3 states: "... Starting Location – ... The Robot may start in any orientation anywhere on top of the Platform, which is the Starting Location within the Home Zone for each Alliance."

We have the following questions:

Q1: May a Robot placed in its starting position on top of the Platform extend over the edge thereof? Put another way, may the Robot be only Parked on the top of the Platform, or must it be Completely Parked therein?

Q2: May a Robot in its starting position be in contact with the Ramp portion of the Home Zone?

Q3: May a Robot in its starting position be in contact with the perimeter walls of the Playing Field?

A1: Robots may NOT extend over the edge of the Home Zone Platform while in the Starting Location. Robots are required to be Completely Parked on the Home Zone Platform at the start of the match.

A2: Robots may not touch the Ramp portion of the Home Zone while in the Starting Location.

A3: Yes, robots are allowed to touch the inside surface of the perimeter walls of the Playing Field.

GDC Anchor

09-28-2011, 07:47 PM

Robot Scoring

Quote:

*Originally Posted by **FTC4311** »*

Autonomous Scoring - Section 2.4.1 (2) and 2.4.1 (3). The manual says "Parking a Robot in the Front Parking Zone is worth 10 points." It says "a robot", it doesn't say if parking two robots is worth 20 points. This ambiguity also applies to the back parking zone. Can you please clarify?

A: Each robot in a scoring position scores points. Therefore two Red robots parked in the Front Parking Zone are worth a total of 20 points (10 points each) to the Red Alliance.

GDC Anchor

09-28-2011, 07:57 PM

Quote:

*Originally Posted by **FTC4080** »*

During the play it is possible for an alliance's bowling ball to end up in opposing alliance's protected zone. In such a situation is it legal for the alliance to retrieve the ball during:

a) tele-op mode

b) end game

Will there be any penalties if the robot inadvertently touches opposing alliance's creates in the process, or de-scores, again, by accident?

Thanks and Regards

A: Yes, it is legal to retrieve your Alliance's bowling ball from the Opposing Alliance's Home Zone at anytime during the match. Rule SG6 still applies so contact with a stack that results in a change in the score will be penalized.

GDC Anchor

09-28-2011, 08:18 PM

Bowling Over a Stack

Quote:

*Originally Posted by **FTC2856** »*

*Is there any prohibition to pushing your bowling ball into an opponent's home zone in an effort to "bowl" over their stacks? Does this violate the rule: "Pushing a Bowling Ball into the Alliance-colored Home Zone before the End Game begins
Bowling Ball will not be counted for the End Game bonus"?*

A: Rule SG2 clearly states that descoring of Balls from the opponents Home Zone is not permitted. The rule does not restrict how that descoring occurs. Use of a bowling ball, crate, racquetball, balltube, etc. to descore balls in the Home Zone will be penalized.

GDC Anchor

09-28-2011, 08:27 PM

Contact

Quote:

*Originally Posted by **FTC4311** »*

In <SG6>, <SG7>, <SG10>, you use the phrase "making contact". If a robot touches a crate or robot in a protected area or home zone, it is clearly "making contact". However, if a bowling ball or other field element touches, possibly after being propelled or "bowled" by a robot, but while not in contact with it, does it count as "making contact"?

If the robot is holding onto the field element at the time it touches, but only the field element touches, not any part of the robot, does that count as "making contact"?

A: Bowling balls, crates or any other objects that enter the opponents Home Zone and make contact with a robot or crate will be penalized per the appropriate rule. Any object being held by a robot is considered an extension of that robot.

GDC Mr Precision

09-28-2011, 10:17 PM

Rule <SG15>

Quote:

*Originally Posted by **FTC0118** »*

If you are in possession of a crate, is it exempt from the rule <SG15>?; In other words, if you are in possession of a crate, do you stop collecting balls when you have reached 15?

Rule <SG15> states in part: "Balls that are in contact with the Playing Field surface or are **fully supported by a Ball Crate** are excluded from this [15-Ball] constraint." Therefore, Balls scored in a Crate do not count towards the 15-ball limit under any circumstances.

GDC Anchor

10-04-2011, 08:22 PM

Quote:

*Originally Posted by **FTC4080** »*

Q1. If a team wants to move the stack of ball crates and ball tube (two crates + ball tube with balls) into protected zone by:
a) pushing the stack such that it does not loose contact with the floor
b) lifting it as a whole and moving it.

Does the robot incur penalty as per rule <SG 15>. I am assuming that the definitions store and contain does not apply to this situation. But I am not sure about hold and control. Could you please elaborate?

Q2. On a related note if a robot tilts a ball tube into upright crate does it incur penalty in the process?Thanks,

A: 1)A team may push or carry their own crates into their protected zone but not their opponent's crates.

2)No.

GDC Anchor

10-04-2011, 08:38 PM

Auto Routines during Tele-op

Quote:

*Originally Posted by **FTC5135** »*

Are autonomous routines during the driver controlled period allowed?

A: Yes, there are no rules preventing the use of autonomous routines during the teleoperated period or end game.

GDC Anchor

10-06-2011, 07:24 PM

Removing Balls from field

[QUOTE=FTC5356;1881]<SG4> says:

"Robots may not deliberately remove Bowling Balls, Balls, or Ball Crates from the Playing Field. Teams will be warned on a first occurrence. Repeated violations will result in a Penalty (5 points) per Regular Ball removed and a Major Penalty (40 points) per Bowling Ball, Magnet Ball, or Ball Crate removed with the possibility of a team Disqualification."

How is "deliberately" to be interpreted under this rule? What if a robot has a design and strategy that is not specifically intended or designed to, but still sometimes does, remove racquet balls ("Balls" and sometimes "Magnet Balls") from the playing field? Would such "removal" be considered "deliberate"?

For example, what about a robot that places crates open-side-up in its protected zone, then launches racquet balls into the open crates? If the robot is clearly aiming at the crate(s) but balls sometimes bounce out of the arena, is this an example of "deliberately remov[ing]" prohibited by the rule, or is such a robot, with such a game strategy, safe from the severe penalties, such as potential team disqualification, under this rule?

If balls were always landing on, in, or very near the crate(s), would it matter how often a ball bounces out? Thank you.[/QUOTE]

A: The rules are intended to prevent game strategies that involve removal of field elements from the field so as to prevent the opposing alliance from using them. Accidental removal of balls or crates that occur during normal game play will not be penalized. However, if the referee determines that a robot is employing an illegal strategy they will issue a warning followed by penalties.

GDC Anchor

10-06-2011, 07:24 PM

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For example, what about a robot that places crates open-side-up in its protected zone, then launches racquet balls into the open crates? If the robot is clearly aiming at the crate(s) but balls sometimes bounce out of the arena, is this an example of "deliberately remov[ing]" prohibited by the rule, or is such a robot, with such a game strategy, safe from the severe penalties, such as potential team disqualification, under this rule?

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A: The rules are intended to prevent game strategies that involve removal of field elements from the field so as to prevent the opposing alliance from using them. Accidental removal of balls or crates that occur during normal game play will not be penalized. However, if the referee determines that a robot is employing an illegal strategy they will issue a warning followed by penalties.

GDC Anchor

10-06-2011, 07:36 PM

Parked Crate

Quote:

*Originally Posted by **FTC5356** »**Regarding <SG6>, a robot is permitted to contact an opposing crate, in the opposing Protected Area and/or Home Zone, without any penalty under <SG6>, as long as the crate is moving—because a moving crate is not stationary, and is therefore not "Parked".*

A: This is incorrect. A crate that has broken the boundary edge of the Protected Zone will be considered Parked.

GDC Medic

10-13-2011, 08:03 PM

Quote:

*Originally Posted by **FTC5356** »**Rule <SG15> says:**"Robots are not allowed to store, hold, control, contain, etc. more than fifteen (15) Balls at a time. Each Ball above the 15 Ball limit will receive a Penalty (5 points) and the Robot must pass a re-inspection prior to participating in another Match. Balls that are in contact with the Playing Field surface or are fully supported by a Ball Crate are excluded from this constraint. The ball-holding mechanism(s) of the Robot will be inspected before it will be allowed to play (i.e. if the ball holding capability of your robot can hold 16 or more balls, the Robot will not pass inspection)."**Does this mean balls that are effectively contained or encircled on all sides by one or more part(s) of a robot but that are also each resting on (supported in the vertical direction exclusively by) the playing field surface are "excluded from this constraint", as the rule says, because they are "in contact" with the field?**If so, what about balls that are supported exclusively by balls within the exclusion--are balls supported only by balls that are supported by the floor also within the exclusion?
"*

A1: Balls in contact with the mat surface are exempted from the ball count limit by <SG15>

A2: Balls supported by balls in contact with the floor are not exempted and would need to included in the ball count limit of <SG15>

GDC Anchor

10-14-2011, 07:44 PM

Game Play - Answers

Quote:

*Originally Posted by **FTC5273** »*

In section 2.4.1 it says that to gain the points for parking, "a portion of the Robot has to have broken the plane of the outside edge of the tape marking the Parking Zone."

Does the robot have to be completely stopped beyond that line when time ends, or as long as some part of it is crossed, does that mean that, regardless of if it is moving, it still gains the points?

A: Scores are recorded when all objects have come to rest. So, provided that some portion of the robot is breaking the plane of the Parking Zone when it has stopped moving, the robot will earn points for that zone.

GDC Anchor

10-14-2011, 07:57 PM

of Balls in Crate

Quote:

*Originally Posted by **FTC3695** »*

Can you carry more than 15 balls in a crate while your robot is carrying the crate?

A: There is no rule restricting the number of balls that may be carried in a crate providing no other rules are violated.

GDC Twinkletoes

10-17-2011, 06:03 PM

Game Play - Answers

Quote:

*Originally Posted by **FTC5356** »*

Rule <S2> says:

"If any portion of the Robot goes outside of the perimeter wall and makes contact with anything outside of the Playing Field it will be disabled for the remainder of the Match. Robots may extend out-of-bounds during the act of scoring in their Alliance's Off Field Goal. Note: The intent is NOT to penalize Robots for having mechanisms that inadvertently cross the 12' x 12' border walls during normal game play."

Does this mean that a robot may intentionally slightly protrude over the edge of the 12' x 12' border, as long as it does not "make contact with anything outside of the Playing Field," or are all such "intentional" (not "inadvertent") protrusions prohibited?

A: No intentional protrusions of the robot may extend outside of the 12'x12' border except for scoring in the Off-field Goal.

GDC Mr Precision

10-23-2011, 01:15 PM

Ball Crates

Quote:

*Originally Posted by **FTC5185** »*

Q1: Can you have multiple stacks of crates i.e. on the home platform, on the floor, and the robot? If so, is the final stacking bonus the sum of all stack bonuses, specified in section 2.4.2, for each stack?

Q2: Is the robot allowed to push, drag, drop or roll the ball crate on the mat in the attempt to position the crate or to fill the crate with balls or to create a stack?

A1: Yes, each Ball Crate is awarded a score based on its height and location (i.e. is it fully supported by the Home Zone Platform?). The final score includes the sum of all of the Ball Crate Stacking scores.

A2: Yes, teams may interact with their Alliances's Ball Crates in the manner described in the question. Interacting with the Opposing Alliance's Ball Crates have limits described in rules <SG5>, <SG6>, and <SG9>.

GDC Twinkletoes

11-07-2011, 08:49 PM

Question about <SG15> during inspection.

Quote:

*Originally Posted by **2010FTC3848** »*

If our robot is dropping balls into a crate located on a flat surface on the back of the robot, during inspection would this flat area be counted in determining

whether or not the robot violates the 15 ball limit of <SG15>?

A: There have been many questions about the 15 Ball limit, so let's try to put it simply. Robots that have the ability to hold more than 15 racquetballs in their Ball travel paths and storage areas will NOT pass inspection. Balls stored in Ball Crates and Balls that are NOT "held captive" with the robot powered off will NOT count towards the 15 ball limit.

Robot inspectors will observe while teams fill all of the Ball travel paths (intake, conveyor systems, etc.) and storage areas to their maximum capacity with the robot powered off. The robot can be powered on if needed to fill a conveyor system and then powered off while determining the ball capacity. Ball Crates will not be present during this test. Areas that hold Balls "captive" in a travel path or storage area will be counted towards the 15 Ball limit. Areas that always "shed" Balls due to gravity when the robot is in a powered off state will NOT count towards the 15 Ball limit. Examples of areas that shed balls are sloped PVC pipe, ramps, etc. that do not have a mechanism to block ball travel. If a robot has a mechanism for blocking ball travel, the robot will be tested with the mechanism in both the open and closed position. The state (opened or closed) that enables the robot to hold the most balls will be used to determine the ball holding capacity.

Tip from the Game Design Committee: This rule is in to disallow teams from hoarding balls. Rule violations that will disallow a robot to pass inspection is a very good indication that the GDC doesn't want teams to do this.

GDC Anchor

11-29-2011, 08:17 PM

Raising a Crate

Quote:

*Originally Posted by **FTC3787** »*

During Teleop, is it a legal score to raise a single crate, containing a single racquetball up to some height, by gripping the crate on the vertical sides of the crate only (ie. No part of the bottom of the crate is being touched while it is being raised).

A: Yes, there is no rule preventing this strategy provided the crate is being raised by a robot of the same alliance (i.e. red crate being raised by a red robot).

GDC Anchor

11-29-2011, 08:30 PM

Pushing Crates

Quote:

*Originally Posted by **FTC3787** »*

According to rule <SG5>, making contact with an opposing Alliance's Ball Crate or Stack in its Protected Area is illegal. Rule <SG8> prohibits pushing an opposing Alliance's Ball Crate onto your Home Zone or Protected Area.

Q1: If an opposing Alliance pushes our ball crate into their Protected Area and is thus penalized, are we allowed to retrieve our crate from the Protected Area for our own use without penalty?

Q2: In several videos, a robot pushes a stack of two inverted crates and a full

ball tube in their starting position into their protected area. This is addressed in post 23 in Penalties: answers to questions here. Our question is whether, if the stack includes one of our own crates and is therefore illegal, we are allowed to push the stack out, only touching our own crate.

Thanks for your help.

A1: Yes, you may retrieve your own ball crate provided you do not violate any other rules, such as SG6.

A2: Ball tubes are only positioned on single color stacks (red on red or blue on blue), so the scenario you describe cannot occur. However, if a red/blue stack were to be pushed into the Red protected area a Blue robot can retrieve the Blue crate provided the Red crate is not contacted in the process.

GDC Twinkletoes

01-05-2012, 01:09 AM

Tipping

Quote:

*Originally Posted by **FTC4311** »*

If a robot and crate are not in any protected area, but the robot has a scissorlift extended, their design may be subject to tipping over, especially if another robot bumps them on the scissor lift. Deliberate tipping is not allowed per <G8>, " but Bowled Over! is a highly interactive game". If their robot design or execution (deploying the lift too early) causes it to be tippy, is their any metric to help guide when it is ok to hit robot or the lift and when it is not? With some of these designs, it seems like the slightest hit will tip it over which may DQ the team doing the hitting, but it doesn't seem fair that a team that builds a poorly designed lift should get immunity from contact because everyone is afraid to tip it over. Any clarity will be appreciated.

A: This is a call made by the referees at the time of the possible infraction based on what they observe during a match and/or the entire competition. The referees call is final.

GDC Twinkletoes

01-19-2012, 01:13 AM

Defense VS. Destruction

Quote:

*Originally Posted by **FTC0121** »*

As per rule <G8> "Strategies and mechanisms aimed solely at the destruction, damage, tipping over, or entanglement of Robots are not in the spirit of the FIRST Tech Challenge and are not allowed. ..."

Does this rule come into place if a RED robot lifts one or more crates high into the air (for the stacking point), and a BLUE robot repeatedly hits and backs up

as a method to stop the RED robot from getting the points?

Does it matter whether or not it is clear that crates cannot be separated from the RED robot via getting hit?

Continuing on Rule <G8> "Bowled Over! is a highly interactive contact game. Some tipping, entanglement, etc... may occur..." The referee's best judgment is used to determine whether tipping is deliberate or not. If one robot is designed to be off balance at some point in the match, a push of an opposing robot that topples them over may or may not be called as a penalty (DQ). It's a judgment call by the referee who's ruling is final. Please also note that <SG7> and <SG2> are in play. Robots in the Protected Area and Home Zone are protected by rule <SG7>. Violation of <SG7> is a 40-point penalty. If balls are de-scored from crates while they are in the Protected Area, rule <SG2> is violated. This results in a 40-point penalty and a team DQ

GDC Twinkletoes

01-19-2012, 02:36 AM

Crates in Autonomous

Quote:

*Originally Posted by **FTC5045** »*

can we hold the crate stack during autonomous period

Yes, it is legal to hold the crate stack during autonomous as long as no other rules are violated (i.e. you cannot lift the opposing alliance's crate off the floor).

GDC Mr Precision

02-05-2012, 08:37 PM

Safety of a Scissor Lift

Quote:

*Originally Posted by **FTC4102** »*

Our robot has a scissor lift that shoots up very fast when it is released. Because of the way it is designed, it has to do this in order to work properly. When it shoots up it goes up straight, so it would not go outside of the playing field unless the robot itself was on an angle. We will be placing warnings on the robot about this, protective padding on the top of the lift, and also warning refs during a match when we are about to release the lift. There are no rules against a fast moving lift since it won't damage any field elements and it won't endanger spectators or drivers since it doesn't go outside the playing field. However, refs at our latest scrimmage were still concerned about safety with the lift. Even if it doesn't hurt someone, is there any reason we could be disqualified from a match or a tournament simply because of a fast moving lift? (assuming it doesn't hit anybody)

The Game Design Committee is not able to rule on the safety of the described scenario. Fast robot motion in itself doesn't automatically violate a rule. On-site Referees are best suited to observe robot behavior and determine if rules are violated. Depending on the situation, safety rules <S1> and <S2>, and rule <G8> could come into play.

GDC Twinkletoes

02-22-2012, 10:14 AM

"Upright" in Autonomous

Quote:

Originally Posted by **FTC5356** »

Under Rule 2.4.1 – SCORING IN THE AUTONOMOUS PERIOD:

Paragraph 1 says:

1. Uprighting a Ball Crate is worth 5 points per crate based on the Crate's Alliance color. To be upright, any part of the bottom of the Ball Crate must be in contact with the Playing Field floor, platform, ramp, or with an element that is in contact with the floor mat, platform, or ramp.

Does this mean that a crate whose weight is supported by a robot at the end of autonomous may still receive 5 points for being "upright" if the conditions of paragraph 1 are otherwise met (the bottom of the crate is touching the side of a platform or the side of a crate on the floor, for example)?

A: Yes, this crate is upright as long as the rules of 2.4.1 are satisfied.

GDC Twinkletoes

02-25-2012, 10:05 PM

Game Play - Answers

Quote:

Originally Posted by **FTC3237** »

Right now there are lots of robots that has a lift, and some of them has platforms versus grappling mechanisms to lift the crates.

1. Is it legal to for a blue robot to place a sonatube (tubes that hold the racquetballs) on top of a red robot if there are no crates on their lift?

2. Is it legal for a blue robot to place a blue crate on top of a red robot's lift if there are no red crates on their lift?

3. Is it legal for a blue robot to place a sonatube on top of a red robot's lift that has at least 1 red crate?

4. Is it legal to push sonatubes in front of an opposing alliance's ramp?

5. Is it legal to push / place sonatubes into an opposing alliance's protected zone?

6. Is it legal to place sonatubes on top of an opposing alliance's crate / crate stack if it's not in either of the protected zone?

7. Is it legal to place sonatubes on top of an opposing alliance's crate / crate stack if it is in one of their own alliance's protected zone?

8. What's the call on pushing your own color crate into an opposing alliance's protected zones?

9. what's the call on pushing your opposing color crate into an opposing alliance's protected zones?

There are a lot of questions here that should have been split into several ones

Questions 1, 2, and 3 can be considered as violations of <G8> "**Strategies** and mechanisms aimed solely at the **destruction, damage**, tipping over, or **entanglement** of Robots are not in the spirit of the *FIRST* Tech Challenge and are not allowed" (bold emphasis added). The reason is that the blue robot does not necessarily know what effect the introduction of a different object has on the

red robot and may cause damage to the red robot. <G8> penalties will invoke a disqualification on the offending team.

There is nothing in the rules to prevent strategies outlined in questions 4, 5, 6, 7 or 8.

Question 9 is legal assuming you do not violate any other rules in the process (namely <SG5>).

GDC Twinkletoes

02-25-2012, 10:30 PM

Game Play - Answers

Quote:

*Originally Posted by **FTC3237** »*

1. Is it legal to have a robot's mechanism preventing a robot lifting a crate? An example of this would be a robot (let's call it A) having arms right above a scissor lift robot (robot B) that has a crate / crate stack on top of their platform for the lift so if the lift raises the crates would hit the arm, stopping them from elevating higher. This is assuming the robot B is not in the protected zone and there's no risk of entanglement.

2. is it legal for robot A to use its arms to "whack" the crate off of robot B? Again assuming it's not in the protected zone and there's no risk of entanglement.

If robot A does put an aerial blockade (like in the example) and robot B continues to lift the robot and robot B fell over, and it was obvious that happened because they continued to lift despite the blockade, 3. what's the judgment call on that?

4. What if robot A is the robot that got tipped over because robot B continued to lift their the crates and thus hitting the blockade in the air and caused robot A to tip over?

5. What if both robots got tipped over? What would be the call? And what if that happens in the elimination rounds?

Question 1 would be considered a violation of <G8> "**Strategies and mechanisms** aimed solely at the **destruction, damage**, tipping over, or entanglement of Robots are not in the spirit of the FIRST Tech Challenge and are not allowed" (bold emphasis added) and would lead to a disqualification of the offending robot. You cannot judge whether there is a risk of entanglement.

Question 2 was answered (see #13 in Penalties).

Questions 3, 4, and 5 are moot.

GDC Twinkletoes

02-27-2012, 06:57 PM

Post #34 Clarification

Quote:

*Originally Posted by **FTC4311** »*

Please clarify post 34, Game Play Answers, question #5 and # 8 (and #7),

which you said were not against the rules.

a. If pushing the crates or ball tubes into an opponents protected area causes stacked crates to be moved, or if the item being pushed touches an opposing robot that is carrying or stacking crates in the protected zone, wouldn't a major penalty apply, even though it was not a robot directly touching the opposing robot or stack?

b. However, if putting a ball tube on top of an opposing alliance's stack of crates in the opposing alliance's protected zone, wouldn't that constitute touching a stacked crate in a protected zone and violate <SG6>?

c. If that ball tube caused the stack to be tipped over and descored, wouldn't that cause a DQ under <SG2>?

Thanks in advance for clarifying.

Yes. Penalties would apply as specified in this question. Post #34 should include as part of the answer "assuming no other rules are violated."

GDC Twinkletoes

03-05-2012, 11:37 PM

A follow up to #35- but what if the crate is not in the protected zone

Quote:

*Originally Posted by **FTC3785** *

"Suppose our robot is carrying one of our alliance crates with a ball inside, with the crate in the air above our protected area or above our home zone, and suppose an opposing alliance robot contacts our robot or our carried crate (which is already a minus-40 point violation of <SG7>).

What would the call be if the opposing alliance knocked a crate off of our lifting mechanism while we were driving towards the home zone. In this situations, the crate is held by our robot (with a ball inside) and is attempting to get to the home zone. The opposing alliance is making 1 or more purposeful efforts to knock our crate with the ball, out of our "grip". Is this a dq penalty? i.e. if we were able to lift this crate, we might get more than 100 points so they might work hard to knock the crate out of our grip-taking a 40 penalty but avoiding a high score by our robot.

Thanks

A: If you're not in the protected zone, you're not protected, there will be no penalty - assuming no other rules are violated.

All times are GMT -4. The time now is 04:13 PM.

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Penalties - Answers to Questions

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Administrator

09-19-2011, 10:46 AM

Penalties - Answers to Questions

Answers to your questions about Penalties will be posted to this thread.

GDC Twinkletoes

09-22-2011, 09:47 AM

Quote:

*Originally Posted by **FTC3558** ▶▶*

Can a robot carry a crate that has more than 15 balls inside? Will we be penalized according to <SG15>?

Quote:

*Originally Posted by **FTC5062** ▶▶*

If our robot picks up a crate and there are more than 15 balls in the crate do we violate this rule? ie- we fill a crate with balls then lift it onto the "Home Zone".

A: There is nothing in the rules that prohibit you from picking up your own crate that has more than 15 balls in it as long as they are in the crate and not in the robot. <SG15> states that balls that "are fully supported by a Ball Crate are excluded" from the 15 ball limit.

GDC Mr Precision

09-25-2011, 05:22 PM

Is Intention Considered When Assessing Penalties?

Quote:

*Originally Posted by **FTC0417** »*

Does intention matter in <SG9> or <SG14> (in driver-controlled mode), or are these penalties incurred without regard to whether the infraction was intentional or not?

The word "intent" doesn't appear in either of these rules. A 40-point penalty will be assessed if either of these rules are violated, regardless of the team's "intent."

Tip from The Game Design Committee: *Don't read more into a rule than what is written.*

GDC Mr Precision

09-26-2011, 10:25 PM

Penalties During the Autonomous Period

Quote:

*Originally Posted by **FTC0417** »*

Can penalties be incurred under rules <SG6>, <SG7>, and <SG9> during the Autonomous Period?

Yes, rule <SG6>, <SG7>, <SG9>, and their penalties apply during the Autonomous period. All game rules apply during the entire match, unless otherwise restricted to certain periods of play (Autonomous, Driver-Controlled, or End Game) in the game manual. Referees may need to take intent into consideration when assessing penalties during the Autonomous period due to the uncertainties involved with four robots executing pre-programmed commands and interacting with each other during the Autonomous period. There are lots of opportunities for unexpected consequences during the Autonomous action.

GDC Mr Precision

09-27-2011, 05:25 PM

Hitting other alliance stacks during autonomous

Quote:

*Originally Posted by **FTC3873** »*

SG5 states "Robots may only make contact with an opposing Alliance's Ball Crate(s) at one outside surface at a time and the crate must be in contact with the Playing Field floor. "

Does this mean that if we drive carelessly through the stacks during autonomous, knocking over some of the other alliance's crates onto our robot before they touch the floor, that we will be penalized five points for each occurrence? If not, this rule might use some clarification about the difference in treatment of autonomous and driver-control penalties.

This question was previously answered in the Game Play thread, post #3 located here:
<http://ftcforum.usfirst.org/showthre...e-Play-Answers>

Tip from the Game Design Committee: *Please read the entire Q&A forum before posting a question.*

GDC Anchor

09-28-2011, 07:57 PM

Quote:

*Originally Posted by **FTC4080** »*

During the play it is possible for an alliance's bowling ball to end up in opposing alliance's protected zone. In such a situation is it legal for the alliance to retrieve the ball during:

a) tele-op mode

b) end game

Will there be any penalties if the robot inadvertently touches opposing alliance's creates in the process, or de-scores, again, by accident?

Thanks and Regards

A: Yes, it is legal to retrieve your Alliance's bowling ball from the Opposing Alliance's Home Zone at anytime during the match. Rule SG6 still applies so contact with a stack that results in a change in the score will be penalized.

GDC Anchor

09-28-2011, 08:18 PM

Bowling Over a Stack

Quote:

*Originally Posted by **FTC2856** »*

Is there any prohibition to pushing your bowling ball into an opponent's home zone in an effort to "bowl" over their stacks? Does this violate the rule:

"Pushing a Bowling Ball into the Alliance-colored Home Zone before the End Game begins

Bowling Ball will not be counted for the End Game bonus"?

A: Rule SG2 clearly states that descoring of Balls from the opponents Home Zone is not permitted. The rule does not restrict how that descoring occurs. Use of a bowling ball, crate, racquetball, balltube, etc. to descoring balls in the Home Zone will be penalized.

GDC Mr Precision

09-29-2011, 11:19 PM

<sg6>

Quote:

*Originally Posted by **FTC4080** »*

Including rule SG6 for reference:

"<SG6> Making contact with an opposing alliance's Parked Ball Crate or Stack while in its Protected Area and/or Home Zone is not allowed and will result in a Major Penalty (40 points). Making incidental contact with an opposing Alliance's Ball Crate or Stack where the contact doesn't change the score is allowed."

Please clarify whether following sequence of play events attract major penalty: Blue Alliance's ball crate is parked in its protected area. The Red Alliance's Robot R1 makes an incidental contact which results in the parked ball crate coming off the protected zone. This by itself does not attract any penalty as per <SG6>. There is no change in score. Now, R2, the Red Alliance's second robot, goes after the Blue Alliance's previously parked crate and de-scores balls from it.

If one is interpret rule SG6 on per incident basis there shouldn't be any penalty. If one is to interpret SG6 to both events in total then the Red Alliance should receive 40 point penalty. Second interpretation would impose more burden on referees, however. And could lead to inconsistent interpretations.

If the rule is revised to include a clause that disallows change to parked state of the ball crate then it can be applied to individual events in a consistent manner. I must admit that I am not sure what the GDC actually intended here. Thanks and Regards,

The intent of the GDC is to provide a safe area for Alliances to Park their Ball Crates.

The actions described in the post violate the intent of the rule and a 40-point penalty should be assessed.

Tip from the Game Design Committee: *Robots entering the Opposing Alliance's Protected Area when it contains Ball Crates is a risky action that should be avoided.*

GDC Anchor

10-04-2011, 08:22 PM

Quote:

*Originally Posted by **FTC4080** »*

Q1. If a team wants to move the stack of ball crates and ball tube (two crates + ball tube with balls) into protected zone by:

- a) pushing the stack such that it does not loose contact with the floor*
- b) lifting it as a whole and moving it.*

Does the robot incur penalty as per rule <SG 15>. I am assuming that the definitions store and contain does not apply to this situation. But I am not sure about hold and control. Could you please elaborate?

Q2. On a related note if a robot tilts a ball tube into upright crate does it incur penalty in the process?Thanks,

A: 1)A team may push or carry their own crates into their protected zone but not their opponent's

crates.

2)No.

GDC Anchor

10-04-2011, 08:34 PM

Parking in Opponent's Goal

[QUOTE=FTC5135;1860]Does parking/blocking in opponent goal count for any penalties?[/QUOTE]

A: There is no rule preventing a robot from parking or blocking an opponent's Low goal providing no other rules are violated (i.e. SG6, SG10)

GDC Medic

10-06-2011, 06:34 PM

Quote:

*Originally Posted by **FTC2891** »*

Is a ball holding mechanism something specifically designed to hold racquet balls, or is anything that has the potential to hold racquet balls considered a ball holding mechanism? If the intent of part of the robot is for transferring racquet balls, but it also has the capability to hold racquet balls, is the part counted towards the total amount of racquet balls that can be held?

A: as described, balls that could be captured within the above mechanism would count towards the 15-ball control limit and would be subject to the potential consequences of <SG15>

NOTE: This ruling has been superseded. See post [#3 in Robot Inspection](#) for the updated ruling.

GDC Mr Precision

10-08-2011, 10:39 PM

Quote:

*Originally Posted by **FTC3947** »*

If our robot is capable of holding a crate inside the robot with more than 15 balls in the crate and not in the ball storage mechanism, will we be penalized? The crate is put into the robot void of balls, and then balls are added into the crate. I know a previous question was like this and the answer stated that if you pick up a robot with more than 15 balls in the crate, the robot will not be penalized.

Thanks

Racquetballs scored in crates do not count against the 15-ball limit in rule <SG15>.

GDC Medic

10-10-2011, 05:44 PM

Quote:

*Originally Posted by **FTC5356** »*

Rule <SG5> says:

"Robots may only make contact with an opposing Alliance's Ball Crate(s) at one outside surface at a time and the crate must be in contact with the Playing Field floor. Violations of this rule will result in a Penalty (5 points)."

Does this mean that contacting an opponent Crate carried (by an opponent robot) in a position off the floor is a 5-point penalty? (But not if the opponent robot causes the contact, of course <G10>.) Or will the Crate be considered like an extension of the robot, and since robot-to-robot contact is allowed (if no other rules are violated), there will be no penalty for carried-crate contact?

A: While carried, a Crate is considered a part of the robot for the purposes of <SG5>. An opposing robot will not be penalized for contact with the crate while it is off the ground.

TIP: Pay attention to <G8> in terms of potential damage to a carried crate as well as the potential for entanglement with attempting to grasp or pull on a carried crate. Referees will be watching.

GDC Medic

10-10-2011, 05:51 PM

Quote:

*Originally Posted by **FTC5356** »*

The penalty summary sheet (page 16 of the Game Manual) lists a 40 point penalty for "Making contact with an opposing Alliance's Robot or Ball Crate while in the process of Stacking in Protected Area", referring to rule <SG7>, but <SG7> says nothing about making contact with a Ball Crate.

A: <SG7> will be updated in the next revision of the Game Manual to include protection for the Ball Crate, not just the robot.

GDC Medic

10-10-2011, 06:06 PM

Quote:

*Originally Posted by **FTC5356** »*

Rule <SG7> says:

Making contact with an opposing Alliance's Robot while the opposing Alliance is in the process of Stacking Ball Crates that are located in its Protected Area and/or Home Zone is not allowed and will result in a Major Penalty (40 points).

The definition of "Stacking" (or "process of being Stacked") says:

"A Ball Crate is in the process of being Stacked if it is in contact with a Robot of the corresponding Alliance color, is completely off of the Playing Field and it breaks the projection of the vertical plane of a Ball Crate immediately below it."

Is it a penalty to make contact with a robot that is carrying a Crate in the Protected Area and or Home Zone?

A: The Home Zone and Protected Area are highly protected (as is evident by the 40pt penalties). <SG7> and <SG6> will be getting updated in the next revision of the Game Manual to strengthen those protections.

<SG6> will be updated to remove the "Parked" requirement from the rule.

<SG7> will be updated to include protection for carrying Crates in either the Home Zone or the Protected Area.

Tip: Referees will be carefully watching for interference from opposing alliance Robots in and around the Protected Area and the Home Zone. Drive carefully!

GDC Medic

10-13-2011, 08:17 PM

Quote:

*Originally Posted by **FTC3662** »*

Would a robot be disqualified or suffer a penalty if the crates extend beyond the wall.

For example:

A robot is holding a stack of crates on top of the Home Zone and lifts them up above the wall and moves to where they are outside the wall to allow room for the bowling ball to be placed in the center ring. The robot remains balanced and no crates fall off and hit the floor.

A: <S1> and <S2> are the rules that need to be considered. If the stack makes contact with anything outside the field, it would be disabled for the remainder of the match based on <S2>. Note that <S2> only allows for inadvertent crossing of the field perimeter, not intentional crossings. In all cases, if the referees determine that the robot is behaving in an unsafe manner, they will apply <S1> and could possibly disqualify the robot from the match.

GDC Twinkletoes

10-17-2011, 06:12 PM

Penalties - Answers to Questions

Quote:

*Originally Posted by **FTC4080** »*

Please clarify the following situations:

1) Blue Alliance robot pushes the two inverted, stacked blue crates + ball tube with balls into its protected zone. Game rules allow de-scoring balls from low-goal. So can Red Alliance robots remove balls from the ball tube without getting a penalty?

2) Red Alliance robot hits the ball tube and removes the balls from the low zone without touching the ball crates. Would it get any penalty?

3) During the process of removing balls from the ball tube the inverted crates were disturbed and fall onto the mat but they were not touched. The only change in Blue Alliance's score happens because of legal game play. No penalty should be assessed. Is this the right interpretation?

A1: Yes

A2: No, no penalty

A3: Inadvertent contact which does not affect the score would not cause a penalty. However, You need to be careful on how a team does this. Repeated or frequent methods no longer can be considered inadvertent contact. I.e. If everytime you pull the ball tubes down, the crates fall over, it would be judged as an intentional act – not inadvertent - and subject to penalty.

GDC Medic

10-20-2011, 01:28 PM

Quote:

*Originally Posted by **FTC2891** »*

If there's a ramp/tube on a robot that racquet balls go through but that wouldn't be able to hold the balls in the robot without outside support (e.g. there isn't anything stopping the balls from falling out the bottom of the ramp/tube), would this count towards the 15 ball limit?

A: Balls in a tube, or on a ramp would be considered controlled by the robot and are subject to the limits of <SG15>.

GDC Mr Precision

10-23-2011, 01:28 PM

Quote:

*Originally Posted by **FTC5025** »*

Rule <SG6> states that a major penalty is assessed for touching an opposing crate/stack in it's Protected Area. Would intentional disturbance of the opponents stack in the protected area lead to a disqualification as per <SG2>?

Rule <SG2>, in part, specifies that deliberate de-scoring of Balls from the Ball Crates while in the Protected Area will result in both a 40-point penalty and a team disqualification. If the "intentional disturbance" results in de-scoring Balls from the Ball Crates, the team will be disqualified from the match and receive a 40-point penalty for the alliance.

GDC Anchor

10-27-2011, 07:33 PM

Crate Penalties

Quote:

*Originally Posted by **FTC4311** »*

Last weekend at one of the qualifiers, our team pushed a stack of two opponent's crates into our protected zone, which is a violation of <SG9>. The question is whether we should have been penalized 40 points or 80 points (one per crate), since it was a single instance. The crates were moved by pushing on one side of the lower crate and keeping it in contact with the floor.

A: The scoring was correct, teams will be assessed a penalty for each of the opponent's crate that is moved into the team's protected zone.

GDC Mr Precision

11-27-2011, 09:40 AM

Penalties - Answers to Questions

Quote:

*Originally Posted by **FTC4080** »*

During recent tournament we have observed some teams lifting a single crate straight off the floor for a stacking bonus. Since only one crate is involved my team feels that this process is like robot carrying a crate rather than robot stacking a crate. Therefore the crate does not receive any special protections. How does GDC view this process?

For your easy reference I am including the definition of stacking:

"Stacking / Process of Being Stacked – A Ball Crate is in the process of being Stacked if it is in contact with a Robot of the corresponding Alliance color, is completely off of the Playing Field and it breaks the projection of the vertical plane of a Ball Crate immediately below it."

Thanks and Regards,

Crates that don't satisfy the definition of *Stacking* or the *Process of Being Stacked* do not receive stacking protection, provided that the crates are not in the Protected Area or Home Zone. See rule <SG7> for details. Crates are field elements and they are protected by rule <S1>.

GDC Mr Precision

11-27-2011, 09:56 AM

Penalties - Answers to Questions

Quote:

*Originally Posted by **FTC3785** »*

"<SG5> Robots may contact only one outside surface at a time and may not lift Ball Crate(s) belonging to the opposing Alliance." In our regional tournament, we often nudged the doubled stacked crates of the opposite

*colors while our robot was heading towards the bowling ball in autonomous.
Q1: We were assessed a 5 point penalty but if the nudging only touches the crates on one outside surface - is this really a penalty? or did I miss something.*

Q2: Am I correct to assume that knocking over the Opposing Alliance's crate if you only touch it on one side is penalty free- especially if that opposing alliances crate is on top of your alliance's crate.

A1: Rule <SG5> was updated in Rev 3 of the game manual that was published on 11/21/2011. The original, more restrictive, version of rule <SG5> was in play prior to the publication of Rev 3. The action described in the post violated the original version of rule <SG5>.

A2: Yes.

GDC Anchor

11-28-2011, 04:28 PM

Descoring in Protected Zone

Quote:

*Originally Posted by **FTC2843** »*

In a couple of videos I have seen, a team pushes a stack of two inverted ball crates and the ball tube on top into their protected zone (the crates and tube are in their original starting position). I presume that this scores the approximately 25 balls in the tube at one point each because the balls are within the boundaries of the protected zone (but not in a crate)?

If this happens in a match, what are the options for the opposing alliance to de-score these balls?

- 1. Since the ball crates are still inverted, is it legal to touch the crate on one side to topple the stack (without penalty)?*
- 2. Is it legal to push the stack out of the protected zone?*
- 3. Is it legal to push or lift the ball tube to spill the balls and descore a portion of them?*
- 4. SG2 allows descoreing balls from the protected zone, does this include balls that are on a crate but not in a crate (balls that only score one point) or by being on a crate (but not in) are they now protected?*
- 5. Is there a penalty for touching an inverted crate in the protected area?*

Thanks,

A:

1. No. Per Rule SG6 you may not make contact with a crate that is in the protected zone.
2. No. Per Rule SG6 you may not make contact with a crate that is in the protected zone.
3. Yes, providing the crates are not intentionally tipped over.
4. Yes, balls that are on a crate may be removed providing the robot does not touch the crate.
5. Per SG6 incidental or unintentional contact that doesn't change the score will not be penalized. However, intentional contact is prohibited and is subject to a penalty.

GDC Medic12-01-2011, 10:24 AM

Quote:

*Originally Posted by **FTC4250** »**Is there a penalty if a red alliance robot pushes a crate stack of one red and one blue crate into a blue protected zone?*

A: No. <SG9> only prohibits pushing an opposing alliance crate into your own protected area or home zone; i.e. Red pushing a blue crate into a red protected area or home zone.

GDC Mr Precision12-04-2011, 06:35 PM

Rule <SG15>

Quote:

*Originally Posted by **FTC4080** »**Q1: If a team wants to move the stack of ball crates and ball tube (two crates + ball tube with balls) into protected zone by:*

- a) pushing the stack such that it does not loose contact with the floor*
- b) lifting it as a whole and moving it.*

*Does the robot incur penalty as per rule <SG 15>? I am assuming that the definitions store and contain does not apply to this situation. But I am not sure about hold and control.**Q2: On a related note if a robot tilts a ball tube into upright crate does it incur an <SG15> penalty in the process?**Thanks,*

A1: The actions described don't violate rule <SG15>.

A2: No.

GDC Medic12-08-2011, 11:05 AM

Quote:

*Originally Posted by **FTC4251** »**We have encountered defensive robots that will block our access to game elements and/or places on the field we wish to access. We understand that it is OK to push another robot out of the way, however depending on positioning of the robot, field elements, and field walls, that may not always work, at least not using the front of our robot to push with. Is it permissible to:*

- 1.) Grab onto another robot (temporarily, i.e. for less than 5 seconds like pinning) and pull it out of the way?*

- 2.) *To extend an arm alongside the other robot and slide it sideways out of the way?*
- 3.) *To extend an arm/implement to the far side of the robot and pull it towards you so long as you don't actually grab the robot (it could still move towards you or to the side*
- 4.) *To extend an implement under the other robot, lift it out of the way, and set it down?*
-

A1: intentional grasping/grabbing of another robot would be considered entanglement and is not allowed under <G8>

A2: pushing with an extended arm is equivalent to pushing with any other part of the robot, as long as no other rules are violated.

A3: Without actually seeing the mechanism/strategy described, it is not possible to definitively answer. It sounds very close to entanglement and/or pinning, and risks being penalized under <G8> and/or <G9>.

A4: Intentionally lifting an opposing alliance robot would be considered entanglement and is not allowed under <G8>

GDC Medic

12-08-2011, 11:29 AM

Quote:

*Originally Posted by **FTC4311** »*

Please confirm the interpretation of <SG7>:

1. *If the robot is outside the protected zone, but the crate is in the zone, you are not allowed to make contact.*
 2. *If the robot is in the protected zone, but the crate is outside the zone, you can make contact, as long as no other rules are broken.*
 3. *A crate on the ground is breaking the plane of the protected zone, but is mostly outside it. You are stacking a crate over it (breaking the plane above the first crate), but the second crate is not in the protected zone. Is there a penalty if an opposing robot hits you?*
-

A1: correct (if the robot is carrying/stacking the crate that is in the home zone/protected area).

A2: correct. the crate is not within the home zone or protected area, so <SG7> does not apply

A3: no. the protections granted by <SG7> are triggered by the location of the crate actively being stacked. If the crate being added is not within the home zone or protected area, <SG7> does not apply.

GDC Medic

12-22-2011, 10:48 AM

Quote:

*Originally Posted by **FTC0417** »*

In post #24 you answer to the effect that it is ok for the red alliance robot to push a stack of a red and a blue crate into the blue protected zone without incurring a penalty. Does it matter exactly how the pushing is carried out?

*That is, it would seem that if the stack were being pushed by the red bot by applying force to the *blue* crate that at the instant that the blue crate crossed the vertical plane of the zone and thus became parked therein, rule <SG6> would seemingly apply (the contact here clearly is intentional and thus not incidental), resulting in a penalty. Thus, one couldn't actually achieve the result of pushing the stack into the blue zone without penalty. However, if the stack were being pushed by the red bot by applying force to the *red* crate, <SG6> would not apply.*

A corollary would seem to be that it is impossible for red to push a stack of two blue crates into blue's zone without incurring a penalty.

Is this correct? Thanks!

A: No. Under the described scenarios, a penalty would not be given. It is important not to over-interpret the rules.

GDC Mr Precision

12-23-2011, 10:46 PM

Rule <SG10> Making Contact With an Opposing Alliance Home Zone During the End Game

Quote:

*Originally Posted by **FTC1033** »*

Q1: Our team is wondering if our robot was pushed so that it touches the opposing alliance's ramp during the endgame if our alliance would receive a penalty, and or if their alliance would receive a penalty.

Q2: Also, if we were trying to get away from an opposing alliance playing defense on us and we clip their ramp during the last 30 seconds if we would receive a penalty.

A1: This scenario is covered by rule <G10>. The gist of the rule is that the actions of an alliance or their robots shall not cause an opposing alliance or robot to break a rule and thus incur penalties.

A2: The referee will make the determination if the action violates rule <SG10> or if the action is protected by rule <G10>.

GDC Mr Precision

01-08-2012, 04:38 PM

Attaching to the playing field perimeter wall.

Quote:

*Originally Posted by **FTC3237** »*

According to <S2>, the robot will be disabled (not disqualified) for the remainder of the match if it goes outside of the field perimeter. Is it legal then to have a mechanism that repeatedly intentionally latch onto the wall to make sure the robot doesn't tip? Or in other words, is it a viable strategy to purposely violate S2 and get the "penalty" (the robot disabled) every match throughout a tournament and not get disqualified (S2 only says disabled)? The latching mechanism will actually improve the safety of the robot since it will latch onto the wall to prevent it from tipping.

The action described in not permitted. Repeated violation will result in disqualification of the team in the qualifying matches and disqualification of the alliance during elimination matches.

GDC Medic

01-16-2012, 04:59 PM

Quote:

*Originally Posted by **FTC4311** »*

1. If a red robot pushes a red crate so it breaks the plane of the blue protected zone, there is no penalty on blue, however, what happens if a blue robot pushes the crate further into the blue protected zone after red broke the plane (and the crate was not removed from the zone)? Is there any penalty?

2. If a red robot pushes a red crate so it breaks the plane of the blue ramp so that part of the crate is on the mat and part on the ramp, what happens if a blue robot pushes the crate further up the blue ramp after red initially broke the plane (and the crate was not removed from the ramp) without the crate losing contact with the mat? Is there any penalty?

3. In scenario 2, what happens if the blue robot pushes the crate far enough up the ramp that it breaks contact with the field mat, violating <SG5>.

4. If the red robot positioned red robots fully on the ramp (prior to the end game), they could block all access to the ramp because <SG5> would prevent the blue robot from touching them, since they are not touching the field mat, so blue can't push them out of the way. Is this correct or does it fall under rule <G10> - one alliance cannot cause another to violate a rule?

A1: no penalty - crate already in protected zone

A2: no penalty - crate already in contact w/ home zone

A3: no penalty - crate maintains contact w/ ramp (i.e. not lifted)

A4: assume that you mean "red robot positioned red CRATES fully on ramp ..." - no penalty (combination of questions 2 & 3)

GDC Twinkletoes

01-19-2012, 01:05 AM

Post #31 Clarification

Quote:

Originally Posted by **FTC2843** »

This is a request for clarification on post #31 in penalties. The fourth question is implying that if a red robot pushes crates on the blue ramp, they could effectively block the blue ramp and prevent the blue robot from access to the ramp and platform. I just want to verify that a red crate has NO protection on the blue ramp EXCEPT the provision of only being able to touch one side by a blue robot. The blue robot would be free to push the red crate off of the ramp (only contacting one side) without penalty even if there is a ball in the crate and the crate is tipped because a red crate is only protected from descoring on the red home zone and red protected zone.

That is correct. You can spill the red crate where it sits. It is not in the red home zone or protected area and therefore has no protection

GDC Mr Precision

01-26-2012, 04:21 PM

Rule <SG5>, Carrying an Opposing Alliance Crate

Quote:

Originally Posted by **FTC5356** »

What happens if an opponent robot contacts one of our alliance crates on two sides, or holds it off the mat, continuously, for the whole match? Is that just one 5 point penalty?

The action is a single violation of rule <SG5> that incurs one 5-point penalty, provided that no other rule is violated.

GDC Mr Precision

01-26-2012, 04:33 PM

Stacking an Opposing Alliance crate on their own Alliance's Crate

Quote:

Originally Posted by **FTC5356** »

What happens if an opponent places one of our crates on top of a stack of their crates? (With or without a ball in our crate.) Is that only a 5 point penalty (assuming they only had to touch our crate illegally one time in order to stack it)?

The action described is a single violation of rule <SG5> that incurs one, 5-point penalty.

GDC Mr Precision

01-29-2012, 05:39 PM

De-scoring Balls Contained in Crates

Quote:

Originally Posted by **FTC5356** 

Suppose our robot is carrying one of our alliance crates with a ball inside, with the crate in the air above our protected area or above our home zone, and suppose an opposing alliance robot contacts our robot or our carried crate (which is already a minus-40 point violation of <SG7>).

Q1: If the contact directly causes our carried crate to fall, and the fall of the crate causes the ball to bounce out, is this action considered a violation of the prohibition in <SG2> of deliberately de-scoring balls from crates in the protected area (which is minus-40 and a disqualification), instead of (or in addition to) <SG7>, or is only <SG7> violated?

Q2: If the contact does not cause our carried crate to fall, but directly causes the ball to bounce or roll out of our carried crate, is this action considered a violation of the prohibition in <SG2> of deliberately de-scoring balls from crates in the protected area (which is minus-40 and a disqualification) instead of (or in addition to) <SG7>, or is only <SG7> violated?

A1: The action describes is a violation of both <SG2> and <SG7>.

A2: The action describes is a violation of both <SG2> and <SG7>.

GDC Mr Precision

01-30-2012, 12:43 PM

Rule <SG9>

Quote:

Originally Posted by **FTC3483** 

Does the rule apply to Autonomous as well as Driver Controlled?

*<SG9> Pushing an opposing Alliance's Ball Crate and/or Bowling Ball onto your Home Zone and/or Protected Area is not allowed at any time and will result in a Major Penalty (40 points). ****

Thanks.

Yes, "at any time" includes both Autonomous and Driver Controlled portions of the match.

GDC Medic

01-31-2012, 11:59 AM

Quote:

Originally Posted by **FTC4494** 

Will we be penalized if our robot continues to move with no power applied to

the motors after Teleop ends? If not, will the round be scored based on our status at the end of Teleop or that when the robot stops moving?

A: Motion/activity started prior to the end of the match or caused by a simple, random relaxation of the robot will not be penalized. Purposeful motion triggered after the end of the match is a safety violation and may result in disqualification of the robot (<S1>).

GDC Mr Precision

02-05-2012, 08:37 PM

Safety of a Scissor Lift

Quote:

*Originally Posted by **FTC4102** »*

Our robot has a scissor lift that shoots up very fast when it is released. Because of the way it is designed, it has to do this in order to work properly. When it shoots up it goes up straight, so it would not go outside of the playing field unless the robot itself was on an angle. We will be placing warnings on the robot about this, protective padding on the top of the lift, and also warning refs during a match when we are about to release the lift. There are no rules against a fast moving lift since it won't damage any field elements and it won't endanger spectators or drivers since it doesn't go outside the playing field. However, refs at our latest scrimmage were still concerned about safety with the lift. Even if it doesn't hurt someone, is there any reason we could be disqualified from a match or a tournament simply because of a fast moving lift? (assuming it doesn't hit anybody)

The Game Design Committee is not able to rule on the safety of the described scenario. Fast robot motion in itself doesn't automatically violate a rule. On-site Referees are best suited to observe robot behavior and determine if rules are violated. Depending on the situation, safety rules <S1> and <S2>, and rule <G8> could come into play.

GDC Medic

02-16-2012, 11:19 AM

Quote:

*Originally Posted by **FTC3785** »*

Given the potential for some very high scores by a high lifting robot- it seems that one's robot might be tempted to knock a crate/ball out of a high scoring robot- as a defensive move-especially if the robot is not in a "safe" zone. The potential penalty could be 80 points if both <SG2> and <SG7> are invoked but if the high lifting robot could score 2-300 points then taking a -80 point hit might be a viable strategy?

a) In one scenario- the high lifting robot is carrying a crate with or without a ball and is challenged by the opposing alliance- this robot eventually knocks the ball out or knocks the crate out of or off the robot. Is this just a -40 point penalty, -80 or a potential disqualification?

b) Second scenario- the high lifting robot is in the safe zone but the opposing

alliances robot attempts to knock the crate off or out of the high lifting robot- what is the call? Is this just a -40 point penalty or a potential disqualification?

thanks

A: Both of these scenarios would fall under the rulings associated with <G16>. They both fall into the general description of repeated and/or flagrant violation of game rules.

GDC Medic

03-12-2012, 05:41 PM

Quote:

*Originally Posted by **FTC3785** »*

In a follow up to #39. If the robot is carrying a crate in the open field- no ball inside- and is not actively stacking but carrying a crate-looking to add a ball to the crate. What if the opposing alliance team repeated knocks into the arm holding the empty crate. After 3 or 4 knocks, the crate is dislodged from the robots grips and falls. Is this fair play? or does <g16> come into play. With the possibility of very high lifts- dislodging a empty crate can be a useful strategy to stop a major point score. Thanks

A: In general, there is no penalty associated with making contact with a crate carried by an opposing alliance robot outside of the protected areas. However, the referees on the field will have to assess whether the specific sequence of contacts and/or their results violates any of the other rules, including any possible violation of <G16>.

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Penalties - Answers to Questions

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GDC Mr Precision

04-11-2012, 09:53 AM

Lifting an Opposing Alliance's Crate

Quote:

*Originally Posted by **FTC4997** »*

Q1: If we stack 2 of our own crates on top of 1 of our opposing alliance's crates, put balls in each and lift them, would we score points for our opponent as well as our own team

Q2: Also, would we only be penalized one 40-point penalty for putting our crate on our opponent's crate (SG8) and then an SG5 for touching it for a total of 45-penalty points?

Q3: Could we also do this in several matches or would we get disqualified for continuing to get penalties? Or in another words could we use this as a strategy to obtain ranking points in the qualifying rounds at the World Championship?

A1: Yes. Ball's are scored based on their location at the end of the match, not how they got there. For example, Balls in blue crates count for the Blue Alliance and Balls in red crates count for the Red Alliance. The location of the crate isn't relevant when determining the scored balls.

The crate stacking bonus is awarded based on each crate's height and color. Blue crates score for the Blue Alliance and red crates score for the Red Alliance, regardless of which alliance robot is contacting or lifting the crates.

A2: Yes. This question has been addressed in the Driver-Controlled Scoring thread in post #22 on 02-22-2012 and in the Penalties thread in post #33 on 01-26-2012.

A3: The actions described in Q1 would result in a violation of G16 if performed in multiple matches. The consequence would be team disqualification.

GDC Mr Precision

04-16-2012, 11:33 PM

Pinning a Crate

Quote:

*Originally Posted by **FTC4311** »*

In a match last weekend, a situation came up where a crate was pinned,

causing the robot to tip over. With the proliferation of robots using "fishhooks" to capture a crate and then lift it, the hooked crate may be pulled on the ground or carried, dangling in the air by a string.

Scenario 1:

Q1: If a red robot drives and pins the dragged blue crate against the wall, touching only one side of the blue crate, while not touching the blue robot, is it considered pinning or entanglement?

Q2: If the blue robot tries to lift, but ends up tipping over because the basket is pinned against the wall, is it tipping because the blue robot didn't release the basket from the wall?

Scenario 2:

Q3: If a red robot is carrying a red crate that is dangling from a string, but is off the mat, and a blue robot pins that hanging basket against the wall, while not pinning the red robot, is that considered pinning? Even though the rest of the robot can move, the basket can't. However, my understanding is that the hanging basket is considered part of the robot, if it is carried.

A1: The action described is pinning.

A2: The action described is not tipping.

A3: The action described is pinning.

GDC Mr Precision

04-16-2012, 11:39 PM

Touching an Opposing Alliance Crate While Carried

Quote:

*Originally Posted by **FTC4311** »*

If a red basket is carried by a red robot, and by rule is considered part of the red robot, is there a 5-point penalty for a blue robot touching the red crate on more than one side while it is carried (but not in a protected zone) as the blue robot is trying to knock the crate off the other robot?

Yes, this action is a violation of rule <SG5>.

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The Playing Field

Printable View

Administrator

09-19-2011, 10:47 AM

The Playing Field

Answers to your questions about the Playing Field will be posted to this thread.

GDC Mr Precision

09-25-2011, 04:15 PM

Sonotube

Quote:

*Originally Posted by **FTC3785** »*

I went to Home Depot and Lowes today and Sonotube are sold in 2 slight different dimensions- The 8-inch tubes fit inside of each other so that they stack in the store inside each other. I assume that either tube is okay- the inside diameter is off by about 1/2 inch. Is this a safe assumption.

Yes, all of the Sonotubes labeled as 8-inch size are acceptable.

GDC Medic

09-29-2011, 07:03 PM

Quote:

*Originally Posted by **2010FTC4140** »*

2.4.5 <G15> states - "Field and field element tolerances may vary by as much as +/-1.0" (2.54cm). Teams must design their Robots accordingly.

Several instances within the field Complete Build Guide, the term Critical Dimension appears with a red lightning bolt. Does the +/-1.0" tolerance apply to these Critical Dimensions? If not, what is the acceptable tolerance for these Critical Dimensions? Perhaps we need a <G16> for clarification.

Also, does the +/-1.0" tolerance apply to any non-field elements? Things like the 18" robot sizing box.

A1: The tolerances are as indicated in <G15>. The critical dimensions in the building guide are to

make sure that the field is as accurate as possible. During match play, elements (and sometimes the field walls) move. It would be a good idea to design your team's robot to be tolerant of variations in the field.

A2: No. The +/- 1.0" only applies to the field and field elements.

GDC Medic

10-13-2011, 08:37 PM

Quote:

*Originally Posted by **FTC5273** »*

When looking through the manual, it was talking about the magnet balls, but it never specifies their weight. What would the weight of the magnet balls be, and would it vary? If it does vary, how much would it vary by?

A: based in quick measurements, the magnet appears to add approximately 0.12 oz to the weight of the ball.

GDC Anchor

10-27-2011, 07:22 PM

Magnet Ball

Quote:

*Originally Posted by **FTC5273** »*

Is there any possibility of acquiring (or learning how to make) a magnet ball. We know that the regular balls are just normal raquetballs, but what strength, size, etc. magnet would be inside of it? Is there a way to either recreate one or borrow one pre-tournament?

A: The type of magnet used in the magnet ball can be found in the BOM which can be downloaded from the FIRST website http://usfirst.org/sites/default/files/v_10172011.pdf

To make a magnet ball a ~1inch long slit is made in the racquet ball and the magnet is slipped inside. The slit is then glued back together with super glue.

GDC Mr Precision

10-31-2011, 10:31 AM

IR Master/Slave Beacons

Quote:

*Originally Posted by **FTC3633** »*

*Hi Technic does not sell a IR slave beacon. We are building a competition field.
Can we just use 2 stand alone IR beacons (FTCBCN)?
Thank you.*

Yes, two HiTechnic Master IR Beacons can be used in place of the Master and Slave IR Beacon setup.

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Autonomous Scoring

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Administrator

09-19-2011, 10:44 AM

Autonomous Scoring

Answers in this thread will be related to scoring in Autonomous Mode

GDC Anchor

09-28-2011, 07:47 PM

Robot Scoring

Quote:

*Originally Posted by **FTC4311** »*

Autonomous Scoring - Section 2.4.1 (2) and 2.4.1 (3). The manual says "Parking a Robot in the Front Parking Zone is worth 10 points." It says "a robot", it doesn't say if parking two robots is worth 20 points. This ambiguity also applies to the back parking zone. Can you please clarify?

A: Each robot in a scoring position scores points. Therefore two Red robots parked in the Front Parking Zone are worth a total of 20 points (10 points each) to the Red Alliance.

GDC Anchor

11-29-2011, 08:13 PM

Parked in Autonomous

Quote:

Originally Posted by **2010FTC0293** »

*Rule 2.4.1-2 (and -3) says that, to be scored as "parked" in the back (or front) area, some part of the robot "has to have" crossed the outside edge of the tape. While I think the word "parked" clearly connotes that some part of the robot must *still* be over the tape, the phrase "has to have" seems to suggest that a robot that crossed the line at some point during the autonomous period would score as "parked" even if it is no longer across that outside edge when the autonomous period ends.*

Can you clarify that some part of the robot must still be across the outside edge of the tape at the end of autonomous period to be considered "parked" in the area?

A: The Autonomous period will be scored after all objects (robots, bowling balls, crates) have come to rest. It is the final stationary position that will be scored, therefore objects that cross the tape and then exit again will not earn points.

GDC Twinkletoes

11-30-2011, 10:08 PM

Autonomous - Parked

Quote:

Originally Posted by **FTC3888** »

During autonomous, how much of the robot must be in the parking zone for it to score points?

A: According to the definition of Parked: "An object (Robot or game element) is Parked if it is stationary and has broken the plane of the outside edge of the tape marking the Scoring Area". So just any portion of the robot has to have broken the plane of the parking zone.

GDC Medic

02-16-2012, 10:43 AM

Quote:

Originally Posted by **FTC5430** »

We don't see any rule forbidding a team from programming the robot to perform, during the autonomous period, certain tasks that will not be scored at the end of it, but rather will be scored at the end of the teleop period (we are NOT asking about performing in the autonomous period, the bowling ball tasks of the end game). Are we correct ?

A: Yes. Your understanding is correct. There are no additional prohibitions on activities during the

autonomous period. Be aware that actions performed during the autonomous period that do not count as scored during the autonomous period may still be "undone" during the match as long as no other rules are violated.

GDC Mr Precision

02-27-2012, 12:52 PM

Scoring Ball Crates for the Autonomous Period

Quote:

*Originally Posted by **FTC5430** »*

We just want to confirm, that a crate that is uprighted during autonomous, is scored according to its color regardless of which alliance flipped it, this is, if a red robot hits (because of the program or by accident) legally a blue stack, this is, at only one surface of a crate, and the top crate falls upright, those 5 points are for the blue alliance. Is this true?

Yes, this is a correct description of how the crate would be scored at the end of the Autonomous period.

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Driver Controlled Scoring

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FTC2818

09-12-2011, 11:40 AM

Driver Controlled Scoring

Quote:

*Originally Posted by **FTC2818** »*

If one crate is nested inside another crate (easily done), and there is a ball in the inner crate, does this ball activate both crates for a stacking bonus? If not, would two balls activate both crates?

A: A ball can only be scored in one crate at a time. Each ball will count for two points. The crate that is supporting the ball will be the one that counts towards the stacking bonus. If both balls are in the inner and nested crate, it would only be counted for that crate.

FTC2818

09-12-2011, 11:40 AM

Driver Controlled Scoring

Quote:

*Originally Posted by **FTC2818** »*

If one crate is nested inside another crate (easily done), and there is a ball in the inner crate, does this ball activate both crates for a stacking bonus? If not, would two balls activate both crates?

A: A ball can only be scored in one crate at a time. Each ball will count for two points. The crate that is supporting the ball will be the one that counts towards the stacking bonus. If both balls are in the inner and nested crate, it would only be counted for that crate.

Administrator

09-19-2011, 10:44 AM

Driver Controlled Scoring

Answers posted to this thread will have to do with Scoring in the Driver Controlled Period.

GDC Twinkletoes

09-22-2011, 07:27 AM

Quote:

*Originally Posted by **FTC2818** »*

For End Game scoring, how snugly does the bowling ball need to be located in the Home Goal? Is it sufficient for it to break the surface of the hole, (or cylinder of the hole) but not be fully supported by the ring of wood?

The Bowling Ball must be in the detent of the hole and thus must be supported by the ring of wood.

GDC Twinkletoes

09-22-2011, 07:40 AM

Quote:

*Originally Posted by **FTC2859** »*

Please clarify the magnet ball scoring described in section 2.4.2 item 4: "To be scored the Magnet Balls must be supported by the Off-field Goal and be within a space formed by the vertical extension of the inside surface of the Off-field Goal. Balls scored in the Off-field Goal must be supported by the Goal or other Balls within the Goal and nothing else."

- 1) Does the "vertical extension" imply balls can be placed above the upper rim of the off-field goal PVC?*
 - 2) If so, does the provision "nothing else" prohibit the robot from extending the PVC wall higher to retain more balls?*
-

A1) Yes.

A2) Yes. <G7> applies and the robot must not be making contact with the ball.

GDC Anchor

09-28-2011, 07:37 PM

Support Conditions

Quote:

*Originally Posted by **FTC0417** »*

Section 2.4.2(2) states "... To be scored the Ball must be supported by the Ball Crate and be within a space formed by the extension of the inside surface of the Ball Crate. See Section 2.4.8 for pictures of scoring examples. A Ball will not count if it is in direct contact with a Robot of the corresponding alliance."

*The phrase "... must be supported by the Ball Crate..." seems in tension with 2.4.8, as examples are illustrated whose scored balls are supported by the crate and / or other scoring balls and / or other non-scoring balls. Moreover, the wording above regarding a "Robot of the corresponding alliance" seems to imply a Ball will still score even it is "in direct contact with" (is this the same as "supported" by?) a Robot of the *other* alliance; is this the case? If a crate full of balls were jammed up against the side of the Playing Field (or a Bowling*

Ball, or a Ball Tube) such that it was in contact with balls in the crate and so preventing them from falling out, would those balls still score? If not, would other balls that those non-scoring-balls in turn confined still score?

In sum, what is the specification of the support condition that must be fulfilled for a ball that is "within a space formed by the extension of the inside surface of the Ball Crate" to in fact be scored?

A: Rule 2.4.8 clearly states that a ball that touches anything other than the crate it is in, a ball in the crate or an opposing robot will not count. Therefore a ball that is touching the side of the playing field (or bowling ball or tube or ramp or platform side) will not count. While it could be argued that several of the balls in the illustration are being supported by a non-scored ball this is very difficult to determine in actual practice. So to make life easy for the referees the GDC in this instance has decided to give teams the benefit of the doubt and allow the balls to be scored.

GDC Medic

09-29-2011, 06:44 PM

Quote:

*Originally Posted by **2010FTC4140** »*

Rule 1 under 2.4.2 for scoring a ball in the Low Goal uses the term Parked and there is a very clear illustration in 2.4.8 as to what this means.

Rule 2 doesn't used the term Parked, but seems to imply Completely Parked based on the use of "within a space formed by the extension of the inside surface of the Ball Crate." The illustrations in 2.4.8 makes it very clear what counts and what doesn't, but seems to support the term Parked. Is Parked the correct term to associate with Rule 2?

Rule 4 "Magnet Balls scored in the Off-field goal are worth twenty-five (25) points each for the corresponding Alliance. To be scored the Magnet Balls must be supported by the Off-field Goal and be within a space formed by the vertical extension of the inside surface of the Off-field Goal. Balls scored in the Off-field Goal must be supported by the Goal or other Balls within the Goal and nothing else." This rule doesn't use Parked or Completely Parked, but like Rule 2 seems to fit better with Parked. Unfortunately there is not a clear illustration in 2.4.8 to clear this up. Can you please clarify Rule 4 as Parked or Completely Parked? Even better would be an update to the game manual with an illustration.

A: All three cases (2.4.2 #1, #2 and #4) use a Parked definition for scoring, i.e. the ball must be breaking the plane formed by the scoring area. (the outside edge of the tape for the Low Goal, the extension of the inside surface of the the Ball Crate, and the vertical extension of the inside surface of the Off-field Goal).

GDC Anchor

10-04-2011, 08:43 PM

Crates on the Home Zone

Quote:

Originally Posted by **FTC5135** »

Do crates without balls on the Home Zone count for the 10 point bonus?

A: No, per rule 2.4.2-7 only Scored Crates may earn a Stacking Bonus.

GDC Twinkletoes

10-06-2011, 12:18 PM

Driver Controlled Scoring

Quote:

Originally Posted by **FTC4225** »

How would scoring occur if a robot were to lift one ball crate with one ball to extremely unusual heights? Would this robot be deemed unsafe and/or disqualified? Should we bring an extra-long measuring stick?

A: The racquetball would score 2 points and the crate bonus would be equal to 60 points plus an additional 10 points for every 6" increment above 46.5". It cannot be determined at this time if the robot is deemed unsafe without looking at it. The referees would be in charge of the measurements and will have all the materials they need to score the stack accurately.

GDC Twinkletoes

10-06-2011, 01:11 PM

Off-field Goals

Quote:

Originally Posted by **FTC4981** »

SG11 states that "A Magnet Ball may be scored..." I'd just like to clarify that only and exactly one magnet ball can be placed in our own Alliance's off-field goal. If two magnet balls somehow made its way into the off-field goal. Only one would still be counted - at not two.

A: You have made an incorrect interpretation of the rule. You can score more than one magnet ball in the off-field goal. Each magnet ball would count 25 points for the alliance. Please refer to section 2.4.2 - #4 with the word EACH.

GDC Medic

10-06-2011, 01:39 PM

Quote:

Originally Posted by **FTC4225** »

It appears as if scoring balls inside of crates while these crates are in the low goal would score three points per ball. Is this correct?

Thank you

A: No. Balls only score in a single scoring area. In this case, the balls would score as being in the crates (the higher value) and be worth only 2 points per ball.

GDC Medic

10-06-2011, 01:48 PM

Quote:

*Originally Posted by **FTC0135** »*

If a ball is scored in an upright crate located in the low goal, is it worth two or three points?

A: 2 pts. See post [#11](#) in [Driver Controlled Scoring](#)

GDC Twinkletoes

10-17-2011, 05:55 PM

Quote:

*Originally Posted by **FTC2843** »*

If a team has a stack of crates adjacent to the home zone and a crate that is supported by both the stack on the floor and either a stack on the home zone or the home zone itself, how would it be scored?

A: Crates (and stacks of crates) would get the platform bonus if they are fully supported by the platform and only the platform (or robots fully supported by the platform). The crate would be scored as if it is part of the stack from the floor as described in the question.

GDC Anchor

10-27-2011, 07:43 PM

Balls in Ball Tube

Quote:

*Originally Posted by **FTC0796** »*

We have observed that sometime when we tip over the initial stack with the ball holder cylinder on top, the cylinder will end up in the scoring area with a couple of balls inside. Would they count as scored balls?

A: Yes, they will still score per Rule 2.4.2.1

GDC Mr Precision

10-30-2011, 05:26 PM

Magnet Ball Scoring

Quote:

*Originally Posted by **FTC5187** »*

I have a couple of questions about the off-field goal.

Q1. If we unload more than one magnet ball into the off-field goal, will the goal be able to read each ball?

Q2. We have noticed that the off-field goal can only hold three or four balls. Will the off-field goal be emptied during the game to allow room for more magnet balls?

Thanks for your help.

A1: A magnet reed switch senses the presence of a nearby Magnet Ball and closes a circuit that illuminates the LEDs. Additional Magnet Balls scored in the Off-Field Goal have no added effect on the LEDs. The LEDs are a visual effect that do not influence scoring. The number of Magnet Balls scored in the Off-Field Goal will be determined by a referee at the conclusion of the match.

A2: No.

GDC Mr Precision

11-03-2011, 08:43 AM

Driver Controlled Scoring

Quote:

*Originally Posted by **FTC3507** »*

We have a few questions about scoring at the end of the match.

Q1: If a robot on the Home Zone platform lifts a crate so that the crate's top is 14" above the platform, the crate will score 20 points plus the value of any balls in the crate. Correct? If not, how many points will it score?

Q2: If a robot NOT on the Home Zone platform (e.g. in the protected area) lifts a crate stacked on the Home Zone platform so that the crate's top is 14" above the platform, the crate will score 20 points plus the value of any balls in the crate. Correct? If not, how many points will it score? (The difference between 1) and 2) is the location of the robot.)

Q3: If a robot NOT on the Home Zone platform lifts a crate from the mat and moves it above the Home Zone platform so that the crate's top is 14" above the platform, the crate will score 20 points plus the value of any balls in the crate. Correct? If not, how many points will it score? (In all three scenarios, the crate is in the same physical location at the end of the match. In 3) the crate never touches the Home Zone platform.)

Q4: Finally, does all, most or some of the crate have to be above the platform to earn the platform bonus?

A1: 20-points (10-point platform bonus + 10-point stacking bonus for the crate being 14 inches above the platform) plus the value of any balls in the crate is correct, provided that the crate contains at least one ball.

A2: 20-points (20-point stacking bonus for the top of the crate being 22 inches above the foam mat) plus the value of any balls in the crate is correct, provided that the crate contains at least one ball.

A3: 20-points (20-point stacking bonus for the top of the crate being 22 inches above the foam mat) plus the value of any balls in the crate is correct, provided that the crate contains at least one ball.

A4: The 10-point platform bonus is earned when the crate or a robot lifting/holding the crate is fully supported by the Home Zone Platform. If the robot or crate is partially supported by the Home Zone Ramp or foam mat, the 10-point platform bonus is not awarded and the height of the crate is determined by its height above the form mat.

GDC Medic

11-03-2011, 11:53 AM

Quote:

*Originally Posted by **FTC4514** »*

If our robot were to raise two crates, each containing a racquet ball, to the same height, would both be scored at their respective heights even though they are not stacked on top of each other?g

A: Yes, each of the crates would be scored based on their individual heights. In general, this is true of all crates. i.e., they are all scored on their respective heights, independent of how they are supported/elevated.

GDC Medic

12-22-2011, 10:18 AM

Quote:

*Originally Posted by **FTC0417** »*

Your answer in post #16 in Driver Controlled Scoring states in part "A4: ...If the robot or crate is partially supported by the Home Zone Ramp or foam mat, the 10-point platform bonus is not awarded." What is the definition of "supported" in this context? For example, might any of the following situations be considered as being "partially supported by the ... Ramp"? Might something else?

- a) Some part of the robot simply touches the Ramp, either the top or the side thereof, for whatever reason, however incidentally*
- b) Some part of the robot is gravitationally supported by the ramp: further downward gravitational motion of the part is impeded by the Ramp*
- c) The ramp is providing some form of material structural support for the bulk of the robot: the robot would significantly change orientation (maybe it might topple, or roll back down the ramp) were it not for this structural support.*

Thank you.

A: In all three cases, a portion of the weight of the robot is supported by the ramp. In all three cases, the bonus for stacking on the platform would not be earned.

GDC Medic

12-29-2011, 08:53 PM

Quote:

*Originally Posted by **FTC1033** »*

Q: How much of the robot is needed to be making contact with the ramp/platform to earn a stacking platform bonus of 10pts per crate?

Does the robot just need to make contact with the platform to be considered on the platform?

A: The crate must be completely supported by the platform. Please take a look at [post #13](#) and [post #16](#) in Driver Controlled Scoring

GDC Mr Precision

01-08-2012, 03:54 PM

Measuring Crate Height

Quote:

*Originally Posted by **FTC4311** »*

Q1: In post #16 of Driver Controlled scoring, you said in response #3, that if a robot is on the ramp, the height of the crate is measured from the foam mat and the 10-point platform bonus is awarded.

Q2: What happens if the robot is on the platform, but the crate is hanging from a lift over the mat and not over the platform? It is fully supported by the platform, so it will receive the 10-point bonus, but where will its height be measured from - the top of the platform or the top of the foam mat that it is hanging over?

A1: The answer in the referenced post does NOT state that the 10-point platform bonus is awarded. The 10-point platform bonus is earned when the crate or a robot lifting/holding the crate is fully supported by the Home Zone Platform. If the robot or crate is partially supported by the Home Zone Ramp or foam mat, the 10-point platform bonus is not awarded and the height of the crate is determined by its height above the foam mat.

A2: The height of the crate will be measured from the top of the platform.

GDC Mr Precision

01-16-2012, 03:18 PM

Magnet Ball Scoring

Quote:

*Originally Posted by **FTC4580** »*

RE: Rule 2.4.2.3: Magnet Balls scored in the Off-field Goal are worth twenty-five (25) points each for the corresponding Alliance. To be scored the Magnet Balls must be supported by the Off-field Goal and be within a space formed by the vertical extension of the inside surface of the Off-field Goal. Balls scored in the Off-field Goal must be supported by the Goal or other Balls within the Goal and nothing else.

Does this mean that the entire ball must be inside of the vertical extension of the inside surface (the goal) or that some part of the ball must be within the goal? We've found that there are some ways of filling the goal such that the Magnet Balls are fully supported by the goal, but, because the center of the Magnet Ball is above the lip of the Off-field Goal, some part of the ball extends beyond the vertical extension of the inside surface. The only other scoring rule that seems related is the definition of "parked" which states that a robot would score in the taped-off area as long as some part of the robot breaks the plane of the taped-off area

Scored Magnet Balls may extend beyond the the space formed by the vertical extension of the inside surface of the Off-field Goal.

GDC Twinkletoes

02-22-2012, 10:24 AM

Scoring for opponents

Quote:

*Originally Posted by **FTC4311** *

Is there any prohibition against scoring and stacking a crate for your opponent, assuming that you are not doing it in either side's protected area or home zone and you are not capping a stack (<SG8>). We know that we will probably violate <SG5>, but the recent forum post says that is only one 5-point penalty for the duration that we are continuously holding the crate, as opposed to one every 5 seconds leading to a disable, like pinning <G9>.

A: No, there is no prohibition except as penalties (major, minor, and DQs) as outlined in <SG5> through <SG9>.

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End game scoring

Printable View

Administrator

09-19-2011, 10:45 AM

End Game Scoring

Answers to your questions about Scoring in the End Game will be posted to this thread.

GDC Twinkletoes

09-22-2011, 07:27 AM

Quote:

*Originally Posted by **FTC2818** »*

For End Game scoring, how snugly does the bowling ball need to be located in the Home Goal? Is it sufficient for it to break the surface of the hole, (or cylinder of the hole) but not be fully supported by the ring of wood?

The Bowling Ball must be in the detent of the hole and thus must be supported by the ring of wood.

GDC Twinkletoes

09-22-2011, 10:18 AM

Quote:

*Originally Posted by **FTC5062** »*

The ramp is defined in Sec 2.3 as part of the HomeZone. In Sec 2.4.3 (2), if the robot is holding the bowling ball on the ramp at the end of the game, and the bowling ball is NOT touching the Playing Field, is this worth 20 points?

A: Yes. In this case, "In your Home Zone" is defined as the ramp, platform and vertical extension reaching infinitely upward. It also means Parked (not Completely Parked) so it just has to break the plane of that vertical extension.

GDC Anchor

10-14-2011, 08:03 PM

magnet Balls

Quote:

Originally Posted by **FTC5135** »

Will placing multiple magnet balls in the off-field goal result in cumulative points (25 points per ball) or is it only possible to receive the 25 points from scoring a magnet ball once? Will magnet balls be constantly removed from the off-field goal during the match if at all?

A: Per Rule <SG11> each magnet ball that is in the Off-field goal at the end of the match will score 25 points. Magnet balls will not be removed from the Off-field goal during the match.

GDC Medic

10-20-2011, 01:16 PM

Quote:

Originally Posted by **FTC3787** »

If a robot were able to control an "open end up" crate by applying pressure to the outside vertical surfaces, then lift the crate vertically (keeping the open end up), the bottom of the crate being lifted would not technically be in contact with any part of the robot. Assuming that the crate being lifted contained at least one ball, would this crate score points according to the lift height attained? Or would that crate not score any points, since it was not supported from the bottom of the crate as it was being lifted?

A: The scoring of stacked crates is independent of the method used to lift/stack/support them. Crates with racquetballs scored within them will all be measured for potential Stacking Bonuses.

GDC Mr Precision

11-16-2011, 08:52 AM

End game scoring

Quote:

Originally Posted by **FTC4186** »

Our crate lifting mechanism uses servos to grab the crates. What will happen when the match comes to an end, the FCS shuts things down, and then after a few seconds the servos relax and possibly drop the crate. For the purpose of the following questions, the crate has been released by the robot and it is lying on the playing field surface.

Q1: Will the crate lift be counted?

Q2: Would we be allowed to just stick our hand under to maintain the crate position until the refs got over there, or could we ask them to do that? Just wondering what our options are.

Q3: We're assuming that as long as the crate is lifted at the actual end of match, that should count, because the rules state the end of the match as when tele-op scoring is done. Is that correct? Thanks!

A1: A crate's stacking bonus is determined by its location after all objects have come to a rest per rule <G6>. The crate described in the post is lying on the playing field surface and it is therefore

below the 10.5 inch threshold for earning a stacking bonus.

A2: No, per rule <G4>.

A3: No, see answer A1.

GDC Mr Precision

11-16-2011, 09:01 AM

End game scoring

Quote:

*Originally Posted by **FTC4081** »*

During a recent scrimmage, we were able to balance the bowling ball on the ramp, resting against two racquet balls which kept it completely off the field. In the game manual it states that the bowling ball can be supported by the robot or a ball crate on the ramp. Would being supported by the racquet balls also qualify for scoring during the end game?

Yes, a bowling ball that is supported by the Home Zone and racquetballs will count as scored, provided that the bowling ball is not touching the playing field mat.

GDC Mr Precision

11-21-2011, 11:35 PM

<G6> Objects at rest.

Quote:

*Originally Posted by **FTC3873** »*

How is "at rest" defined during the end game when a crate is lifted after the game ends.

~NW

The intent of the term "at rest" in rule <G6> is that objects on the playing field are in an unchanging, stationary state for an infinite amount of time. The practical application of this rule is that referees will start scoring the playing field when all objects appear to be stationary. Experience has shown that objects are typically "at rest" 15 seconds after the end of the match.

Objects may move after the field appears to be in a stationary state and referees have started recording the score. The score for each object will be determined when the referee records their state on the scoresheet. The score will not be adjusted for objects that move prior to being scored or for objects that move after their score has been recorded on a scoresheet.

GDC Mr Precision

11-23-2011, 10:10 AM

End game scoring

Quote:

*Originally Posted by **FTC3873** »*

Our robot has an arm that holds up a crate during the end of a match and uses two servos to pinch the side of a crate. At the end of a match, when the NXT is given the command to terminate the Tele-Op program, the servos continue to

hold their position with resistance for about 6-8 seconds before cutting off power; at which, the crate being held falls. Does the crate's height still count even if it does fall 6-8 seconds after the end of the match due to an uncontrollable feature of the hardware? Thanks a lot!

The crate's height prior to the "fall" will not count, see post #8 in the End Game Scoring thread.

GDC Mr Precision

12-11-2011, 10:34 PM

Maximum Crate Stacking Bonus

Quote:

*Originally Posted by **FTC0658** »*

Is there a maximum height you can lift the crates and get points. In other words if we lift the crate 80 inches could we get as high as 100 points?

thanks team 0658

There isn't a maximum height limitation. An additional 10-points is awarded for every 6" inch increment above 46.5"

GDC Medic

02-16-2012, 10:49 AM

Quote:

*Originally Posted by **FTC3785** »*

At the end of the game, can a robot be touching the bowling ball when the buzzer rings when placing the bowling ball in the hole. ie. must the robot move away from the bowling ball that is resting in the hole at the end of the game? or can the game end with the robot holding/touching a fully centered or supported bowling ball at the end of the game. Thanks

A: Section 2.4.3 explicitly allows the bowling ball to be in contact with a robot and count as scored. For the bowling ball to score in the home zone goal, it must be completely supported by the home zone goal (i.e. making contact w/ the entire perimeter of the goal)

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The Game - Other Answers

Printable View

Administrator

09-19-2011, 11:16 AM

The Game - Other Answers

Answers to miscellaneous questions about The Game will be found here

GDC Mr Precision

10-24-2011, 11:49 PM

Quote:

*Originally Posted by **FTC4187** »*

Is it allowed to run an NXT program on-field after the match is over and the scores have been tallied, in order to release field elements?

Yes, provided that all of the following are satisfied:

- 1) The NXT doesn't connect (wired or wirelessly) to a computer, smartphone, etc. in order to execute the program.
- 2) The operation isn't a safety hazard to teams, volunteers, spectators, etc.
- 3) The operation doesn't take more time than manual removal of the game elements.

GDC Mr Precision

12-04-2011, 07:33 PM

Orientation of the Ball Crates at the start of the match.

Quote:

*Originally Posted by **FTC2818** »*

At the start of the match, which way are the crates oriented? ie: Are their long, or short, sides facing the front (crowd side) of the field?

Thanks.

The location and orientation of the crates are described in both the *Field Drawings* and *Field Build Guide* documents located here: www.usfirst.org/roboticsprograms/ftc/2011-2012-game-info

GDC Mr Precision

01-30-2012, 03:18 PM

Rule <R5>c1b - Plastic Sheet Size Constraint

Quote:

*Originally Posted by **FTC4251** »*

This is a followup question to post #111 in the Robot Parts and Materials Thread. Our team interprets "The final part used in the robot assembly can't exceed 24 inches on any side" to mean that if the part were laid flat it would fit within a 24" x 24" square. Is that a fair interpretation?

Cougar Robotics Team FTC#4251

This is not an accurate interpretation of rule <R5>c1b. If the part is laid flat, all sides (except the thickness) are required to be no more than 24 inches long. Using the test proposed by the team in this post could yield a piece that exceeds 24 inches on a side and therefore, violates rule <R5>c1b.

GDC Mr Precision

01-30-2012, 03:24 PM

Exchanging Gamepads Between Drivers During A Match

Quote:

*Originally Posted by **FTC0118** »*

Is it legal to physically swap gamepad controllers between drivers, not the coach, during gameplay?

Yes, the student drivers are permitted to exchange gamepad controllers during the Driver Controlled portion of the match.

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Tournament - Answers

Printable View

Administrator

09-19-2011, 10:53 AM

Tournament - Answers

Answers to your questions about Tournaments will be posted here.

GDC Twinkletoes

09-22-2011, 10:23 AM

Quote:

*Originally Posted by **FTC4494** »*

What is the intent and purpose of the last portion of rule <T1>c ? Why would team members be prohibited from trying to determine scoring?

A: The intent of the rule is prevent team members from getting on the field to interfere with the scoring by the referees.

GDC Twinkletoes

10-06-2011, 12:10 PM

Ranking Point Confusion

Quote:

*Originally Posted by **FTC4225** »*

Our team is confused on the definition of ranking points. It appears as if the teams on both the winning and losing alliance receive the same number of ranking points unless one of the alliances suffered a penalty. Is this correct?

Could you please clarify the distribution of Ranking Points based on the following scenario:

Red Alliance has 50 points scored plus a 5 point penalty

Blue Alliance has 45 points plus a 20 point penalty

A1: Yes, you are correct. Both alliances will receive the same number of ranking points equal to the score of the losing alliance if there were no penalties.

A2: In your scenario, the Red Alliance won the match 45-25. Red Alliance teams would get 2 Qualifying Points (QPs) and 45 Ranking Points (RPs). Blue Alliance teams would get 0 QPs and 25 RPs.

GDC Twinkletoes

10-06-2011, 12:32 PM

Qualifier Host Team Definition

Quote:

*Originally Posted by **FTC4225** »*

The "Qualifier Host Team" is listed as the highest priority team for advancement in competition levels (Qualifiers, Championship, and World Championship). How is this defined?

A: For those regions and/or states with a large number of FTC teams, the Affiliate Partner (AP) may decide to have Qualifying Tournaments leading up to the state or regional championships. Many APs look to school FTC teams to host these qualifiers in exchange for a bid to the state or regional championship. There are other requirements that these teams must do as well in order to receive the bid. Contact your local Affiliate Partner for more information about qualifying tournaments.

GDC Mr Precision

11-13-2011, 05:43 PM

Tournament - Answers

Quote:

*Originally Posted by **FTC0712** »*

Can the new Logitech F310 gamepads be used for Tournaments or just the older Logitech Dual Action gamepads? Our team will be providing some equipment for a Qualifying Tournament. Thanks.

Yes, the Logitech F310 gamepad may be used on tournament competition fields. Keep in mind that the F310 software driver isn't built into the Windows operating system. Install the F310 driver on the Field Control System computer prior to tournament day. The software driver is located on the CD that ships with the gamepad or if the computer is connected to the Internet it is automatically downloaded and installed.

The input mode switch located on the underneath side of the F310 should be in the "D" position.

GutterBall_FTCStaff

12-27-2011, 09:48 AM

Tournament - Answers

Quote:

*Originally Posted by **FTC5303** »*

How does my team register for the competitions? We are registered in the program, so how do we register for the competitions?

Registration for events happens at a local level. First, check here <http://www.usfirst.org/whatsgoingon> to see where and when the events near you are scheduled.

Some events will have a link to their registration system in the "Event Info" section (note that the Program Registration section will send you to register your team with *FIRST*, and *not* to an event registration), some will have an email address, but all should give you information on who to

contact to learn more about your local events.

GDC Twinkletoes

01-19-2012, 01:37 AM

Score Sheet Review

Quote:

*Originally Posted by **FTC4494** »*

Are there any provisions for teams to review their score sheets before game elements are moved after both autonomous and tele-op?

A: No, there is no time to review the score.

GDC Twinkletoes

01-19-2012, 01:41 AM

Robot Starting Position

Quote:

*Originally Posted by **FTC4494** »*

Is there any limitations on where the robot can be placed in the home zone depending on ex. red team 1 vs red team 2?

A: No. However there is a limitation as to where the team stands in the driver's station.

GDC Mr Precision

01-26-2012, 04:08 PM

Safety Glasses

Quote:

*Originally Posted by **FTC4743** »*

We looked through the manual before ordering safety glasses, but saw nothing in two separate locations about color. After we ordered what we wanted, we found a third spot that mentioned amber, but no other colors. So we want to know if the smoke and reflective safety glasses we ordered (and already used) are acceptable for the competition.

Thank you.

Rule <T6> describes the rules for allowable safety glasses. The gist is that safety Glasses are required to be ANSI Z87.1 certified and non-shaded. Sunglasses or shaded safety glasses that reduce light levels are intended for outdoor use and are not acceptable for our indoor FTC tournament. Lenses that allow for better/brighter vision such as amber lenses are considered tinted, not shaded, and their use is allowed.

If the safety glasses in question reduce light levels or the packaging indicates they are sunglasses, they violate rule <T6> and are not permitted.

GDC Mr Precision

02-27-2012, 01:05 PM

Logitech Gamepad

Quote:

*Originally Posted by **FTC3947** »*

What kind of controller is standard for tournament matches? We have been to a qualifying match, and they used different controllers than the Logitech Dual Action which we used. We could not use the Logitech gamepad because the configuration and some of the buttons did not work.

Official FTC tournaments should use the Logitech Dual Action or Logitech F310 gamepads.

GDC Mr Precision

02-27-2012, 01:17 PM

Team's Approval of the Score Sheet

Quote:

*Originally Posted by **FTC3947** »*

Do we get to see our match points before we sign the sheet saying we approve of the match and scoring? We recently went to a qualifying match, and we signed the sheet before we saw the points. Does this sheet say we approve of the match and/or scoring?

Thanks

There is no requirement or procedure listed in the Bowled Over! game manual for teams to sign score sheets. Tournament officials may require teams to validate the accuracy of the score sheet and signify this with a signature. Teams retain the right to ask the referee questions after the conclusion of the match as described in rule <T1>b.

GutterBall_FTCStaff

02-28-2012, 02:04 PM

World Championship Advancement

Quote:

*Originally Posted by **FTC5313** »*

How many US teams will be invited to the World championship?

Also, do you accept more people from larger states or does each state receive the same number of invites?

Hello! This season, 128 teams will earn their way to the World Championship Tournament. About 100 of those teams will be from the United States.

We advance 2 teams from most Championship Tournaments. Some states will have more than one Championship Tournament because of their size or the number of teams in the state.

GutterBall_FTCStaff

02-28-2012, 02:28 PM

Quote:

*Originally Posted by **FTC3237** »*

Hello,

In the manual it says a team may not win the Inspire award more than once at the same level of tournament (Qualifying / State). 1) However, does it also ban them from being 2nd / 3rd place award winners at another tournament?

For example, if team A won the Inspire Award at the Z state Championship, thus qualifying them for the World Championship, is it still possible for them to be the 2nd place Inspire Award team at the X state championship? The manual says they are not eligible to win the Inspire Award but it doesn't say anything about being 2nd or 3rd place, which could affect which teams will advance to the World Championship.

2) If a team had already qualified for the World Championship from another state (let's say state Z) and they also qualified for the World Championship (being either Captain of Winning Alliance or Inspire Award winner if not won previously) from their home state (State X), does the world qualification spot from state X go to the next team on the advancement list in the same tournament, or it goes away to the lottery?

Thanks!

Hello!

Thanks for your questions.

1. We'll re-work the language for next season regarding the Inspire Award. A team isn't eligible for consideration for the Inspire Award if they have received it at another event of the same level.
2. We follow the Advancement Criteria outlined in the Game Manual to determine who will advance to World from each event. If the Inspire Award Winner and/or the Captain Team of the Winning Alliance have already been invited to World, the next eligible team based upon the Advancement Criteria will receive an invitation.

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The Robot - Electrical Answers

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Administrator

09-19-2011, 11:04 AM

The Robot - Electrical Answers

Answers to questions about Electrical Components will be found here.

GDC Twinkletoes

09-22-2011, 08:34 AM

Quote:

*Originally Posted by **2010FTC0796** ▶▶*

R5c.26 mentions a "power distribution panel" - Does this mean we can make a plate with terminal blocks to allow individual power distribution to modules instead of having to daisy chain the power from one to another?

Yes, you may. The power distribution panels must be using "quick-connect" blocks (not screw terminals). We highly recommend the use of the Anderson PowerPole Connectors referenced from this team email blast: <http://www.usfirst.org/roboticsprogr...rpole-tutorial>.

GDC Twinkletoes

09-22-2011, 10:09 AM

Quote:

*Originally Posted by **FTC4494** ▶▶*

Is it legal to use an arduino-type microcontroller (or any other microcontroller/IC for that matter) to process signals on the NXT prototype. I understand that I am limited by the power from the prototype board, and that there is no i2c or other serial communication available on the prototype board.

A: There is nothing in the rules that prohibit it provided that all other portions of Rule <R5>d are followed.

GDC Twinkletoes

09-22-2011, 10:12 AM

Quote:

*Originally Posted by **FTC3658** »*

Last year, we have had problems with the supplied "Tamyra" battery connector plug loosing contact during the match and causing the wi-fi connection to be dropped. This year, Rule <R5.c.26> allows use of "Anderson" plugs and we would like to replace the battery connector plug with one of these. However, <R14.b> prohibits changes to battery pack. May we replace the plug since it does not actually modify the battery pack?

A: Yes, we will allow teams to replace the Tamyra (or Molex-type) plug (outside of the fused area) with an Anderson power pole connector or similar model. However, you run the risk of voiding your warranty with Lego Education for the battery pack.

GDC Twinkletoes

09-22-2011, 10:32 AM

Quote:

*Originally Posted by **FTC2888** »*

Can you give us specifics on the Anderson 30 Amp PowerPoles? First, whether you would recommend permanently bonded or unassembled? <R5> c 26. "Power distribution panels may also be used (and is strongly recommended) to make wiring easier." Are the Power distribution panels a specific item or splitters?

Permanently bonded or unassembled is a personal preference and we do not have a recommendation either way. Power distribution panels are up to the team as well, but it appears that the splitters (PS-4 or PS-8) look to be the most interesting.

GDC Mr Precision

10-04-2011, 10:36 PM

Quote:

*Originally Posted by **FTC5135** »*

Are modifications of controllers allowed?

The question didn't state which controller.

Motor and Servo Controllers may NOT be altered from their original state in ANY way per rule <R14>b.

Tournament organizers provide the Logitech Gamepad Controllers used on the competition playing fields and they may NOT be altered. Teams are NOT allowed to replace the tournament supplied Logitech Gamepad Controllers with their own Logitech Gamepads. Teams may alter their own

Logitech Gamepad Controllers, however, this is at the team's own risk and the modification may void the warranty.

GDC Mr Precision

10-31-2011, 10:43 AM

Battery Fuse

Quote:

*Originally Posted by **FTC5036** »*

*The fuse in our rechargeable battery is blown. Do we need to order new ones from a specific place or is this something I can get at our local Radio Shack?
Thanks*

Replacement 20 amp fuses may be purchased from any source. Substituting a different amperage fuse for the 20 amp fuse is not permitted.

GDC Mr Precision

10-31-2011, 07:40 PM

The Robot - Electrical Answers

Quote:

*Originally Posted by **FTC0135** »*

In the game manual, it states that no more than 8 DC motors and 4 motor controllers can be used. Servo Y connectors are already made, so can we fabricate our own DC motor Y connectors as long as we don't break any rules?

Yes. Keep in mind that the motor controller will supply up to 4 amps on each motor channel.

GDC Mr Precision

10-31-2011, 07:54 PM

Servo Modification

Quote:

*Originally Posted by **FTC5037** »*

Our team was gifted a large number of HS-475HB servos. May we modify the servo so it may be used as a continuous rotation servo?

No, per rule <R14>c.

GDC Mr Precision

11-05-2011, 10:04 AM

WAGO Wall-Nuts Connectors

Quote:

*Originally Posted by **FTC4144** »*

Reading the Game Rules and the other electrical post I'm assuming the following connector by WAGO would be allowed to use. The trade name is Wall-Nuts. WAGO #51014600 -- 6 conductor version. website <http://www.wago.us/products/2635.htm> Purchased them from Menards for around \$3 pack of ten. They provide visual verification of connection and also have built test port.

Teams may use WAGO Wall-Nuts connectors.

GDC Mr Precision

11-06-2011, 05:55 PM

The Robot - Electrical Answers

Quote:

*Originally Posted by **FTC0417** »*

Does <R14>c apply to the motor power wires used to connect an NXT brick to a Lego NXT motor (W979842)? That, is may such wires be extended by splicing additional lengths of wire (of sufficient gauge)?

Modification of the NXT to LEGO NXT motor connector cables is NOT permitted.

GDC Mr Precision

11-06-2011, 10:14 PM

Extension of NXT Sensor Cables

Quote:

*Originally Posted by **FTC0417** »*

Are we permitted to extend NXT sensor cables in the same manner as <R14>c permits extension of motor power, power, and encoder wires?

For example, if we wished to have a Lego touch sensor at a distance of six feet from the NXT, could we splice an additional of wire into an otherwise-legal NXT sensor cable in order to do so?

Modification of the NXT sensor cables is NOT permitted.

Rule <R5>b.8. allows LEGO-Approved NXT extension cables. Approved cables are currently only available from LEGO and HiTechnic.

GDC Mr Precision

11-20-2011, 11:06 AM

The Robot - Electrical Answers

Quote:

*Originally Posted by **FTC3493** »*

The 30 amp Powerpole connectors are spec'ed for 14-12 gauge wires, the smaller 15 amp Powerpole connectors are spec'ed for 20-16 gauge wire. Thus

the smaller sized connector is more in line with the extension wire gauges described in rule R14.c

Is it permissible to use the smaller 15 amp Powerpole connectors for connecting individual components (e.g. connecting a 12V DC motor to the motor controller's Motor +/- outputs) while using the the larger 30 amp Powerpole connectors for power distribution (e.g. connecting the battery to the DC motor controller's Battery +/- inputs, as shown in the tutorial)?

Yes, 15 amp and 30 amp Powerpole connectors are both allowed parts.

GDC Medic

12-01-2011, 10:37 AM

Quote:

*Originally Posted by **FTC0505** »*

Last year a team asked this question in the forums. Is this still accurate? Thanks.

We have a DC motor with an encoder that is placed too far away from the motor controller to connect the encoder cable.

Is it legal to put our own connector plugs on the end of the modified cable so we can connect/disconnect at the extension point or do we have to solder the extension wires together?

Thank you!

A: Yes, <R14>.c allows extension via splicing. <R5>.c.26 allows crimp-style connectors.

GDC Mr Precision

12-04-2011, 06:43 PM

NXT Motor Torque Curve

Quote:

*Originally Posted by **FTC5430** »*

I haven't been able to find any information about the torque delivered by any of the LEGO motors. I am interested in the torque at low speeds, less than 5 RPM. Of course that I could measure that torque by hanging some weights at a bar attached to the motor, but I don't think we should spend time finding something that the manufacturer's specs should provide, as they usually do.

This web page is a good source for LEGO motor performance information.
www.philohome.com/motors/motorcomp.htm

GDC Twinkletoes

12-05-2011, 10:08 PM

Splicing Motors

Quote:

*Originally Posted by **FTC3888** »*

Can we splice wires so that two motors run off of one wire.

A: Yes, as long as no other rules are violated in the process.

GDC Mr Precision

12-05-2011, 10:50 PM

The Robot - Electrical Answers

Quote:

*Originally Posted by **FTC3599** »*

We were wondering if it would be acceptable to have two power switches on our robot.

One to turn everything on and off,

One after Samantha so that we can turn off the controllers without turning off Samantha.

This way we could maintain a level of safety during minor tweaking without having to reconnect samantha everytime we make a modification.

We looked in the game manual, but could not find anything on the power switch.

*Thanks for your time,
Team 3599*

A second power switch is not allowed. If a volunteer needs to quickly turn of robot power, a second switch is unexpected and could delay powering off the robot.

GDC Mr Precision

12-12-2011, 02:24 PM

Labeling Electrical Components

Quote:

*Originally Posted by **FTC0194** »*

In the rules is states: <R5>c23 electrical tape and/or heat shrink tubing used only for insulation of electrical connections or for holding the motor leads onto the motors.

I would also like to see Electrical tape allowed to indicate which wire is connected to which device. For example, when there are 8 motors with 4 motor controllers and lots of wire on the robot, it is great to teach the students to place a piece of yellow electrical tape on the wire in strategic places, a small piece of yellow wire on the motor and a small yellow dot on the motor controller.

Rule <R5>c33b allows tape of any type or stick-on labels for labeling electrical components (wires, motors, servos, etc.).

GDC Twinkletoes

01-05-2012, 01:02 AM

Fused Wires

Quote:

*Originally Posted by **FTC4855** »*

The team had recently posted a question on the FTC forum regarding fused wires tripping whenever the current exceeds 2.5 amps. Our follow up questions based on our interpretation of R5.b.6 are listed below

- 1. Can we mount fuses on a protoboard and have the motors wired via the protoboard?*
 - 2. For our arm we need NXT extension cables that are longer than 3 ft. The longest lengths offered by HiTechnic is 90 cms long. We were wondering if we could hook the HiTechnic NXT extension cables via NXT sockets (available here <http://www.mindsensors.com/index.php...position=50:50>) mounted on the protoboard?*
-

A1: No. Motors have to be driven by the motor controllers. There's no provision in the rules that allows for that design. Protoboard is only allowed for use of sensors, not power distribution or motor control.

A2: No, the socket is not legal. 90cm is the longest due to the I2C protocol.

GDC Twinkletoes

01-05-2012, 01:05 AM

Parts for Prototype Board

Quote:

*Originally Posted by **FTC5064** »*

We would like to make sure that we don't run into problems with our prototype board and parts used. Specifically:

- 1. Can we buy any off-the-shelf switches, photo-interrupters, IR emitters and receivers, Hall sensors, etc. from Digi-Key to be used with the HiTechnic prototype board? See: <R5> d-4*
 - 2. Can we build our own rotation sensors using photo-interrupters and wheels made from plastic sheets? See <R5> c-1.*
 - 3. Can the plastic housing of a Hall sensor (or any other sensor in a plastic packaging) be glued to a custom cut plastic piece or plastic Lego part before being attached to the robot with screws? See: <R5> c-1,2*
-

A1: Yes

A2: Yes

A3: Yes

GDC Medic

01-06-2012, 01:18 AM

Quote:

*Originally Posted by **FTC3787** »*

Two Questions:

1. Is it legal to wire a DC motor directly to the power distribution panel? Or does it have to be wired through a motor controller?

2. If we are out of motor controller ports due to the limitation on number of motor controllers, is it legal to construct a "switch" controlled by a servo motor that would turn a DC motor on and off?

A1: No

A2: No

GDC Mr Precision

01-08-2012, 04:01 PM

Servo Wiring

Quote:

*Originally Posted by **FTC3273** »*

Q1: Is there a way to wire a servo so it will remain active after the end of a match? We use servos to hold the crate up at the end of a match, but 15 seconds after the end of the match, power is cut from the servos and the robot drops the crate.

Q2: Can we wire it directly to power, or is there another alternative?

A1: No.

A2: No, servos may only be controlled by a HiTechnic Servo Controller.

GDC Mr Precision

01-09-2012, 05:38 PM

Controlling LEDs with Motor Controllers

Quote:

*Originally Posted by **FTC4529** »*

Is it allowed to power LEDs directly from unused 12V motor controller output signals (i.e. "Motor 2 +" and "Motor 2 -")?

No, Motor Controllers are only allowed to control TETRIX DC Drive Motors.

GDC Mr Precision

01-16-2012, 03:06 PM

Y-Cable with Wire Nuts

Quote:

*Originally Posted by **FTC5229** »*

We have used all of the electrical power terminals on our motor and servo controllers, and need to feed power to one more device (non-functional LED lights), so we ran a wire from a port on the block, and twisted it with other wires to distribute power. These wires are capped with a twist-on electrical wire nut, then insulated (wrapped) with electrical tape. There is a nut for the positive, and a nut for the negative.

This is not a "butt" joint, but is still a splice; and the wire nut (or some call a wire cap) is not on the parts list. Are we OK?

Yes, Y-cables are allowed and the construction described in the post is permitted.

GDC Twinkletoes

01-18-2012, 04:30 PM

Multiconductor Wire

Quote:

*Originally Posted by **FTC4225** »*

<R14C> states that teams may splice additional lengths of wire on in order to extend the wires. Does this permit the use of multiconductor wire in order to manufacture our own extension cords for servo motors as long as the wire is 20 or 22 gauge? Would it be permitted to use a wire with 6 conductors in order to control two servos?

A: Yes, this is permitted as long as no other rules are violated in the process.

GDC Twinkletoes

01-19-2012, 01:32 AM

Electrical tape for cable management

Quote:

*Originally Posted by **FTC4494** »*

Are we allowed to use electrical tape for cable management, as in taping a bunch of already insulated wires together? Can heat shrink also be used for this purpose?

Are we permitted to use ring terminals such as McMaster-Carr part number 7113k11 to make splices, without using terminal blocks?

A1: No. Electrical tape restrictions are limited to <R5>c23. Use Zip ties instead.

A2: Yes, heat shrink can be used for this purpose.

A3: Yes, per <R5>c26.

GDC Twinkletoes

01-19-2012, 01:46 AM

The Robot - Electrical Answers

Quote:

*Originally Posted by **FTC5225** »*

Hi,

Are we allowed to use a RCX to RCX extension cable per rule R5 b8 or b9? In 2010 on the forum, teams were allowed to use the cable per R5 b9. Is that still true?

A: Yes, it is allowed.

GDC Twinkletoes

01-19-2012, 02:04 AM

Still looking for a way past the 90cm I2C limit

Quote:

*Originally Posted by **FTC3781** »*

We're still hoping we can find a way around the 90cm cable length limit for NXT cables. We've been considering integrating a Magnetic Sensor at the end of our arm. The NXT Sensor Multiplexer and SMUX Battery Pack are allowed components. Would it be feasible and permissible for us to use the HiTechnic NXT Sensor Multiplexer as a bridge between two NXT cables?

Yes, this is allowed.

GDC Twinkletoes

01-19-2012, 02:18 AM

Protoboard using Servo inputs?

Quote:

*Originally Posted by **FTC0110** »*

As stated in <R5d>, 2. Circuits may connect only to the named connections provided by the NXT Prototype Board (i.e. A4-A0, B5-B0, 3V, 4V, 9V, 5V, GND). Does this mean that a protoboard can not be used to take in a Servo PWM signal and switch it between two servos? We are trying to use a protoboard to switch the power of servos on or off and not do anything with the actual PWM signal.

This is not legal. You would effectively be using the sensor prototype board as a servo controller with the NXT no longer guaranteed to be able to control the servo. This is not acceptable.

GDC Medic

01-26-2012, 11:38 AM

Quote:

*Originally Posted by **FTC5037** »*

<R5.c.25> states "PWM extension cables. These cables may either be purchased from a vendor or fabricated by the team."

Would this include using a spliced coiled telephone cord as a wire extension for a servo? Thanks!

A: Yes. This would be allowed as long as no other rules are broken. Please see [Post #25 in Electrical](#)

GDC Mr Precision

01-29-2012, 05:59 PM

WAGO Compact Connectors

Quote:

*Originally Posted by **FTC4080** »*

In one of the replies to a question regarding the use of WAGO WALL Nut Connectors GDC allowed their use. We are planning to use WAGO COMPACT CONNECTOR 3-CONDUCTOR TERMINAL BLOCKS. The product is described here: <http://www.wagocatalog.com/okv3/inde...3&cid=51&lid=5>

Quote:

From the description it appeared that both seems to have similar purposes.

Could you please clarify whether the use of WAGO compact connectors is allowed?

*Thanks and Regards,
Team 4080*

Yes, this is an allowed part.

GDC Twinkletoes

02-01-2012, 10:44 PM

r14 Part Modification gauge wire

Quote:

*Originally Posted by **FTC3785** »*

The r14 rules on wire says "Battery wires are 16 AWG or larger" or "Motor wires are 22 AWG or larger ". Is it fair to assume that larger means "larger diameter" wire, ie the battery wires would be thicker and maybe 14 gauge or motor wires might be 16 or 18 gauge which would be larger than the 22AWG. We want to replace the "generic" tetrax motor wires with thicker wires or larger wires. Is this correct?

A: You are correct. Thicker is synonymous with larger when it comes to wire gauges.

GDC Medic

02-16-2012, 10:54 AM

Quote:

*Originally Posted by **FTC4076** »*

Are we allowed to drill out the Tetrax encoder mount (not the encoder itself) to attach in a way other than directly to a DC motor?

A: Yes, as long as no other rules are violated.

GDC Mr Precision

02-20-2012, 10:55 AM

Encoder Connector Substitution

Quote:

*Originally Posted by **FTC4187** »*

May we replace the connector on the encoder side of the encoder wire? The replacement connector would be as close to the original as we can find. We could provide a part number if needed.

Yes, this question was addressed on 12/01/2011 in post #14 of the Electrical section of this forum.

GDC Twinkletoes

02-22-2012, 10:30 AM

Solid core wire

Quote:

*Originally Posted by **FTC3633** »*

*Can we use solid core wire of appropriate gauge for the motor controller/
motor controller (battery) connection.*

A: Yes, solid core wire of the appropriate gauge is acceptable.

GDC Mr Precision

02-27-2012, 03:00 PM

The Robot - Electrical Answers

Quote:

*Originally Posted by **FTC3947** »*

*Are we allowed to use non TETRIX wire to connect the power to the motor
controllers because the wire is too short?*

Thanks

Yes, see rule <R14>c for details.

GDC Twinkletoes

02-28-2012, 10:44 AM

The Robot - Electrical Answers

Quote:

*Originally Posted by **FTC4187** »*

*Are there any restrictions on they type of cable(other than the gauge) that is
used in splicing the servo wires? Also, may we completely fabricate an encoder
wire, using no original encoder wire parts?*

A: It is allowed. However, please review the entire Q&A before posting as this question has been asked and answered in multiple ways in the subgroups of the Robot Forum.

GDC Twinkletoes

02-28-2012, 10:49 AM

The Robot - Electrical Answers

Quote:

*Originally Posted by **FTC2887** »*

*What LED lights are allowed to be used with the HiTechnic Prototype Board?
Also, is there a limit on the amount we can use?*

The rules only stipulate "visible LED lights". As to restrictions that the Prototype board may have, please contact HiTechnic.

GDC Medic

03-01-2012, 11:28 AM

Quote:

*Originally Posted by **FTC5598** »*

*We damaged one of our Tetrax motor wire sets and would like to replace it with 22 AWG or larger wire. <R14>c.1. says we may **extend** a motor power wire and <R14>e.3. says we may solder the wire to the motor. Is **replacing** the wire with the appropriate gage also acceptable? If you cut off the plastic connector from the Tetrax motor wire all you are left with is 22 AWG anyway. Seems ok to me, but wanted to check to be sure.*

A: Yes. Make sure to follow the wire gauge requirements and color coding conventions.

GDC Mr Precision

03-11-2012, 07:21 PM

Quick Connectors

Quote:

*Originally Posted by **FTC4916** »*

Hi,

Can we use quick connectors (3M part number 03874NA) like the ones shown here for our robot's power wiring, or do we have to use Anderson Connectors?

Anderson Powerpole Connectors are recommended, but not required. The connectors referenced in the question are allowed per robot rule <R5>c.26.



The Robot - Electrical Answers

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GDC Medic

03-23-2012, 03:55 PM

Quote:

*Originally Posted by **FTC0001** »*

We want to use an accelerometer with our robot, but due to wiring and functional constraints, we cannot use the HiTechnic accelerometer sensor. Is it legal if we design and wire a custom circuit board with a 3rd party accelerometer and necessary support circuitry, (which may include another microcontroller as well), and then connect this board by several feet of wire to the HiTechnic prototype board, which is in turn connected to the NXT?

*Thank you,
Team Unlimited FTC 0001*

A: 3rd party sensors, including ones that possibly might include microcontrollers, connected to the allowed connection points on the prototyping board are allowed.

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All times are GMT -4. The time now is 04:20 PM.

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The Robot - Mechanical Answers

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Administrator

09-19-2011, 11:05 AM

The Robot - Mechanical Answers

Answers to your questions about Mechanical Robot Components will be found here.

GDC Twinkletoes

10-17-2011, 06:17 PM

Lead Screw

Quote:

*Originally Posted by **FTC4356** »*

We were wondering if the use of a Lead Screw with nut allowed as long as it is under the overall rod size constraint of 0.375in? Such as the lead thread that was included in the 2011 kit of parts for the FRC competition (PN: BZ8M16 x 15").

*<http://usfirst.org/uploadedFiles/Rob...%20Rev%20E.pdf>
(bottom of pg. 13)*

A: No, a lead screw is not All-thread. Nor is it a fastener.

UPDATE 10/25/11 - Lead Screws are now allowed. See [Post #33 in Parts and Materials](#)

GDC Twinkletoes

10-24-2011, 09:39 AM

Chain

Quote:

*Originally Posted by **FTC5025** »*

<r5>.31 allows for #25 chain half links. Can we use #25 chain from manufacturers other than tetrix?

A: Yes, as it is a compatible part and as long as no other rules are violated in the process.

GDC Twinkletoes

11-07-2011, 08:53 PM

The Robot - Mechanical Answers

Quote:

Originally Posted by **FTC3831** »

can we use the following item? http://www.homedepot.com/h_d1/N-5yc1...atalogId=10053

A: No, this part is not threaded and is not legal in this year's game.

GDC Twinkletoes

11-07-2011, 08:56 PM

The Robot - Mechanical Answers

Quote:

Originally Posted by **FTC5209** »

Can we use a fishing line as part of the robot. The manual talks about the following:

P. 31: <R5> Robot construction is constrained to the following:

P. 32 c. The following additional components may also be used:

See 14 on P. 33. Rope or cord made from (plastics or natural fibers).

Seems that a fishing line is OK, but wanted to make sure.

A: No, fishing line is not legal per the rules. Monofilament fishing line is made from a single fiber of plastic. Rope or cord is made from several twisted strands of natural materials or plastic.

GDC Mr Precision

11-09-2011, 02:52 PM

15-Ball Holding Limit

Quote:

Originally Posted by **FTC4999** »

Our robot currently has a ball lift in which it is possible for a person to manually stuff 12 racquetballs, and we can store 5 in a separate area.

However, in reality it would be impossible to collect such amounts. To get the twelve balls in our lift the way it is, we would have to drive over a straight row of three balls, four rows deep (12 balls in a perfectly spaced grid). Practically speaking, we can really only hold about 4 or 5 balls in our lift at a time. Also, we have no intent of breaking the 15 ball holding limit, as we only plan on collecting 3 or 4 in a match.

For all practical purposes our robot is not capable of collecting and holding 15 balls, but might the inspection group judge otherwise?

Thanks

Robots that have the capability to hold more than 15 racquetballs will not pass inspection. The

robot described in the post would need to be modified or the mechanism disabled in order to pass inspection.

GDC Anchor

11-13-2011, 04:37 PM

Latching onto Field Wall

Quote:

*Originally Posted by **FTC3237** »*

Hello,

Is it legal to have mechanisms that latch onto the field perimeter / wall?

Thanks!

A: There is no rule preventing robots from latching onto the field perimeter however any mechanism that contacts the outside vertical surface of the perimeter wall will be considered to be in violation of rule <S2> .

All times are GMT -4. The time now is 04:13 PM.

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The Robot - Parts and Materials

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Administrator

09-19-2011, 11:12 AM

The Robot - Parts and Materials

Answers to questions about Parts and Materials will be found here

GDC Twinkletoes

09-22-2011, 09:37 AM

Quote:

*Originally Posted by **FTC5096** [▶▶](#)*

Which HiTechnic IR sensor is appropriate for finding the IR beacons? I could not find one on the parts.ftcrobots.com website, but I found a few on the legoeducation.us web site.

Any IR Sensor is allowed, however we found that the IR Seeker V2 (Lego Ed Product ID: W991379 or HiTechnic Product ID: NSK1042) is very useful with the IR beacons.

GDC Mr Precision

09-25-2011, 02:31 PM

Part Substitution

Quote:

*Originally Posted by **FTC5246** [▶▶](#)*

Our team, like many, is under budget and schedule constraint. We believe we can order some parts from second-source suppliers (e.g. Amazon or McMaster) far more quickly than from Pitsco or Lego Education.

Q1: The general case: May we substitute parts in the Tetrax system with another part from another source that is in the same spirit as the Tetrax part? For example, a motor encoder that matches the performance of the Tetrax part (i.e. 2-bit quadrature 400 bpr), or a servo that is continuous-rotation or 180-degree with similar form factor, performance, and identical electrical interface? In many cases we can source parts from Craigslist or community (R/C hobbyist servos, electronics, etc.) for a lower cost.

Q2: Our team's specific question: May we substitute a machinable-bore (1/4" unfinished) #25 16, 24, or 32T sprocket? Aluminum sprockets are harder to find, and ones with custom bores harder still. May we use a pre-formed sprocket constructed of a of a more-delicate material (Nylon), or may it be of steel?

A1: No. However, teams may purchase identical (manufacturer, model, etc.) parts from any source. For example, teams may purchase the HITEC HS-485HB servo from Pitsco, Amazon.com, hobby shop, etc.

A2: No. The game manual specifies all of the allowed parts. Parts that are not specifically allowed in the game manual are not permitted.

GDC Mr Precision

09-25-2011, 03:31 PM

Allowable Material Clarification

Quote:

*Originally Posted by **FTC1033** »*

My team read the rules clearly and have a question about the amount of allowable material teams can use in addition to the kit of parts. The rules state that for example teams can use aluminum square tubing not to exceed 1" x 1" with no maximum length. Our question is that since there is no limit of tubing as long as it meets the 1" x 1" requirement. We have design plans that if this is true will use a large length of square tubing. Please verify so that I may direct the team in the correct manner and we do not waste our build time on a rule breaking design.

*Thanks,
1033*

There is no limit to the individual piece length or combined total length of 1" x 1" aluminum square tubing used in robot construction; provided that no other rules are violated. For example, the robot in its match starting configuration is required to fit within an 18" x 18" x 18" cube as described in rule <R4>.

GDC Mr Precision

09-26-2011, 12:09 PM

Parts Modifications

Quote:

*Originally Posted by **FTC5185** »*

During today's team meeting, questions were raised about Section 4.2, subsection <R5> part c (page 32-33) of the FTC game manual. <R14> mentioned parts modification allowed but left out majority of the parts allowed in <R5>. Can we modifications (drill, cut, machine, etc) allowable parts in <R5> (items 6-11, 29, etc) to construct functioning parts of the robot, i.e. grabber, harvester, etc?

Yes.

The intent of rule <R14> is to restrict modification of electrical components and prohibit welding, brazing, etc.

GDC Medic

09-26-2011, 08:39 PM

The Robot - Parts and Materials

Quote:

*Originally Posted by **FTC1033** »*

Are teams allowed to use FTC acceptable parts to create a magnet to identify magnet balls?

A: In short, yes, as long as no other rules are violated.

In particular, be sure to read and completely understand <R5>.a.4 and <R5>.d.7 with respect to powered circuits.

GDC Medic

09-30-2011, 12:43 PM

Quote:

*Originally Posted by **FTC4982** »*

Rule <R5c18> allows "All mechanical fasteners (nuts, bolts, screws, etc.) of any length, any thread type, up to 0.375" (0.9525cm) diameter." This is followed by a confusing statement of intention. Are ALL nuts, bolts and screws up to 3/8" diameter allowed? Wood screws, sheet metal screws, countersunk screws, barrel nuts, plate nuts, anything threaded (up to 3/8") goes?

A: The key phrase in <R5>.c.18 is "substantially the same as TETRIX fasteners". The intention is to allow other nut/bolt/machine screw type connectors, not any type of screw. Wood and Sheet Metal screws are NOT allowed. The various types of nuts you mention would be allowed.

GDC Medic

10-03-2011, 05:23 PM

Quote:

*Originally Posted by **FTC4982** »*

Thank you for addressing our question regarding rule <R5c18> earlier!

Could you please further clarify this rule...

Are socket head screws, cap screws, and machine screws of any head type

allowed?

Are countersunk head screws allowed?

Does any thread type mean "any" thread type? Coarse, fine, SAE, metric?

Must all mechanical fasteners be steel or are other materials allowable?

Are any compatible nuts allowed? Acorn nuts, wing nuts, self-locking nuts, castellated nuts?

Can the wire rope of rule <R5c15> be used as safety wire?

Thanks so much!

A1: yes

A2: yes (really the same question as #1 :D)

A3: yes

A4: there is no rule that implies any particular material to screws/nuts/bolts

A5: yes, yes

A6: yes, <R5>.c.15 does not imply how wire rope is used. Just be sure not to violate any other rules.

GDC Twinkletoes

10-06-2011, 12:52 PM

Quote:

*Originally Posted by **FTC4225** »*

Under Material constraints it says: " 24" (60.96cm) maximum dimension on any one side" How would this be measured in the instance of a circle or L-shape?

A: For the circle, measure the diameter. For the L-shape, measure the side of the longest length (in typography terms: either the stem or the stroke)

GDC Medic

10-06-2011, 01:43 PM

Quote:

*Originally Posted by **FTC0367** »*

Rule <5>.c.17 states:

17. Unlimited length Threaded Rod (also known as All Thread) not to exceed 0.375" (0.9525cm)

diameter (e.g. McMaster Carr Part #94435A317).

Numbers 7-11 specifically state "aluminum", 17 does not. Does this mean we can use another metal all thread, as long as it is the same size?

Thanks.

A: Yes, as long as no other rules are violated.

GDC Medic10-06-2011, 01:56 PM

Quote:

*Originally Posted by **FTC4225** »**Our team has several questions regarding the use of fasteners on the robot:**1) All-thread is currently allowed for use (3/8" or less in diameter). Is the use of all-thread as a linear actuator allowed?**2) Would any type of the authorized fasters be allowed for uses other than fastening?**Thank you in advance.*

A1: Yes. There is nothing in the rules that would prohibit the described use of all-thread

A2: Yes. There is nothing in the rules that limits how fasteners are used (except <R5>.c.19 that limits washer usage)

GDC Medic10-06-2011, 06:29 PM

Quote:

*Originally Posted by **FTC4356** »**We were wondering if we were allowed to use a worm-gear in our robot design. We have looked through the rules and have discovered that we can use all-thread but we would like to use a worm-gear because it may better suit our needs.**Thank you for your answers!**FTC Team 4356*

A: If your team can figure out fabricate a worm gear from the allowed materials, yes. Otherwise, there is no worm gear available within the current TETRIX system. Worm gears from other sources are not allowed.

UPDATE 10/25/11 - Lead Screws are now allowed. See [Post #33 in Parts and Materials](#)

GDC Medic10-06-2011, 06:43 PM

Quote:

*Originally Posted by **FTC2891** »*

Is there more than one type of servo available for us to use on the robots? If so, which specific types are allowed?

A: The entire list of allowed servos is listed in <R5>.a.2

GDC Medic

10-06-2011, 06:46 PM

Quote:

*Originally Posted by **FTC2891** »*

May we use more than one magnet sensor on the robot?

A: Yes. Nothing in the rules limits a team to only one magnet sensor.

GDC Mr Precision

10-08-2011, 10:32 PM

The Robot - Parts and Materials

Quote:

*Originally Posted by **FTC3662** »*

We are needing clarification on the rule about the plastic sheets. Are we allowed to use multiple sheets of the same type as long as we start of with the 24" x 24" dimensions. For instance can we use 3 sheets of polycarbonate?

Yes, rule <R5>c.1.c states that "multiple sheets of different plastic materials are allowed with no maximum area constraint." The intent of this rule is to allow teams to use more than one type of plastic sheet on the robot. The intent was not to limit teams to one sheet of each type of plastic. Therefore, 3-sheets of the same type of plastic sheet are permitted; provided no other rules are violated.

GDC Medic

10-13-2011, 08:09 PM

Quote:

*Originally Posted by **FTC0417** »*

<R5>(c)(17) states that threaded rod is permitted, with a maximum diameter of 0.375".

Q1: Are there materials limitations on the threaded rod (steel, aluminum, plastic, etc)?

Q2: Are we permitted to manufacture threaded rod ourselves from cylindrical stock?

Q3: Are we permitted to work 3/8" threaded rod into threaded rod of smaller

diameter?

A1: the rules do not place a limitation on the materials used in the threaded rod

A2: no, cylindrical stock is not allowed in the current rules

A3: yes, as long as no other rules are violated

GDC Medic

10-13-2011, 08:22 PM

Quote:

*Originally Posted by **FTC5170** »*

Our team is constructing a robot for Bowled Over with a design that includes a scissor lift and gear racks. If the legal materials (such as aluminum, and not steel or iron) are used to make these components, are they acceptable to use?

A: The mechanism would be allowed, as long as all of the materials used are from the list of allowed materials in <R5>. Note that <R5>.c does not allow aluminum in general, but rather aluminum in particular forms (i.e. sheet stock not thicker than 1/16", 90-degree angle, u-channel, etc.)

GDC Medic

10-13-2011, 08:30 PM

Quote:

*Originally Posted by **FTC5273** »*

Are neodymium magnets allowed, and if so, what size?

A: No, magnets are not allowed under the current rules (unless you make them from allowed materials)

GDC Anchor

10-14-2011, 07:51 PM

Acme Threaded Rod

Quote:

*Originally Posted by **FTC4356** »*

Q: Are we allowed to use 3/8-8 Acme threaded rod (McMastercarr # 99030A126) and associated acme nuts (McMastercarr # 95072A124)

A: Yes, Acme threaded rod is an acceptable material.

GDC Twinkletoes

10-17-2011, 05:51 PM

Strain Relief for Encoder Wires

Quote:

*Originally Posted by **FTC2843** »*

Last year we were permitted to use a small amount of silicon sealant on the motor encoder wires at the motor encoder end to provide strain relief. Are we again allowed to use this method of protecting these wires?

A: Yes, you may use the silicone sealant/adhesive only for the use of the motor encoder end as described. Silicone adhesive may NOT be used anywhere else on the robot.

GDC Twinkletoes

10-17-2011, 06:00 PM

The Robot - Parts and Materials

Quote:

*Originally Posted by **FTC5135** »*

Can the PVC pipe be used to create an air tank for storing air for use with LEGO pneumatics? Does the tubing used to connect LEGO pneumatics need to be provided by LEGO or can a similar tubing be substituted?

A1: No, the PVC pipe may not be used as an air tank.

A2: No, you must use the LEGO equipment for all pneumatics. No substitutions are allowed.

GDC Twinkletoes

10-17-2011, 06:06 PM

The Robot - Parts and Materials

Quote:

*Originally Posted by **FTC4251** »*

Q: May we, like we did last year, secure a short USB A-Male to A-Female cable to the Samantha unit using the method specified in the Best Practices document and leave the A-Female end accessible for the purposes of both <R8> b. and for connecting the USB A-B cable from the NXT brick?

A: Yes, you may.

GDC Twinkletoes

10-17-2011, 06:15 PM

Non-slip pad

Quote:

*Originally Posted by **FTC4345** »*

Under R5, section c, number 16, it says that "non-slip pad without adhesive backing" may be used. And that the "packaging material must list the product as Non-Slip Pad." Does this include anti-slip fabric or anti-slip pads? Or would using those materials be in violation of the rules?

A: Yes, "anti" is an acceptable synonym for "non".

GDC Medic

10-20-2011, 01:04 PM

Quote:

*Originally Posted by **FTC3787** »*

Is there an acceptable supplier/part# available for purchasing the aluminum U channel and flat bars other than Tetrax?

A: There is no alternative supplier for the TETRAX metal materials. <R5>.c.7 through <R5>.c.11 allow for a variety of alternative aluminum materials to be used. Most can be found at local hardware stores.

GDC Medic

10-20-2011, 01:37 PM

Quote:

*Originally Posted by **FTC4494** »*

Is Acme Threaded Rod an acceptable all thread? Are there any limitations as to what constitutes a nut?

A: Make sure to fully read the Q&A before posting. This is answered in [Post #19 in Parts & Materials](#).

GDC Medic

10-20-2011, 01:46 PM

Quote:

Originally Posted by [FTC3947](#) »

In this game manual, it states that in <R5> Robot construction is constrained to the following, however it does not talk about whether or not we can have springs, and is so, what is the limit ? Also in the Mindstorms kit, there is a Lego Interactive Servo Motor Part Number 42970008 (we think it is a interactive servo motor), and it says we can have one NXT Interactive Servo Motor with a part number of W979842, however this part number is not mentioned. Can you please clarify whether this motor is allowed and the limit.

Thanks alot

A: The two numbers refer to the same part. 42970008 is the LEGO Mindstorms internal part number. W979842 is the part number if you wished to order additional motors from LEGO Education. Per <R5>.b.3.a, you are allowed to connect up to 1 of the NXT Interactive Servo Motors to each NXT motor port for a maximum of 3 NXT Interactive Servo Motors (there are only 3 motor ports on the NXT controller).

GDC Mr Precision

10-23-2011, 12:54 PM

Nyloc Nuts

Quote:

Originally Posted by [FTC3633](#) »

Can nyloc nuts be used on the all-thread?

Yes, nyloc nuts are permitted by rule <R5>c18.

GDC Mr Precision

10-23-2011, 01:04 PM

Shorter Bushings and Nyloc Nuts

Quote:

Originally Posted by [FTC3633](#) »

Q1: Can we use shorter bronze bushings from MacMaster-Carr?

Quote:

Originally Posted by [FTC3633](#) »

Q2: Also can nyloc nuts be used this year? Thanks.

A1: Yes, provided that the material type, and inner and outer diameters are equivalent to the TETRIX bushings.

A2: Yes, see rule <R5>c18.

GDC Mr Precision

10-23-2011, 01:36 PM

Pulleys

Quote:

*Originally Posted by **FTC5025** »*

*Rule <R5>.c.14 allows for the use of rope and <R5>.c.15 allows for the use of wire rope
are there any pulleys that we can use and do you have a suggested manufacturer?*

Commercial Off the Shelf (COTS) pulleys are not allowed by the rules. Teams may fabricate pulleys by using the allowed materials listed in rule <R5>.

GDC Mr Precision

10-23-2011, 04:40 PM

Axle Length

Quote:

*Originally Posted by **FTC0313** »*

My team needs an axle rod approximately 14" long. However, the longest available axle I can find from TETRIX is 10" long. Is it acceptable to go to another manufacturer to get a 14" Axle?

No, axles other than the ones provided in the TETRIX robotics system are not allowed. Teams may fabricate axles from the allowed materials listed in rule <R5>.

GDC Mr Precision

10-24-2011, 11:39 PM

Allowed LEGO MINDSTORM TECHNIC parts

Quote:

*Originally Posted by **FTC5420** »*

This is our first year participating in the FTC program, and my team has read the instruction manual closely but we still have a question that needs to be addressed. Which TECHNIC pieces from the LEGO MINDSTORM kit can we use for the robot? We are especially concerned about the peg and beam pieces in the MINDSTORM kit. Thank you for taking your time to answer this question.

All of the LEGO TECHNIC parts contained in the LEGO MINDSTORM 9797 kit that is part of the 2011 FTC Full Competition kit are allowed parts that may be used in the construction of an FTC robot.

GDC Mr Precision

10-25-2011, 12:09 AM

Quote:

*Originally Posted by **FTC4494** »*

Are there any restrictions as to what constitutes a nut?

Restrictions for mechanical fasteners, including nuts, are described in rule <R5>c18. *All types of nuts, of any length, any thread type, and any thread size up to 0.375" diameter are permitted.*

GDC Medic

10-25-2011, 02:43 PM

Quote:

*Originally Posted by **FTC0092** »*

We are confused about the two answers that seem to be conflicting. In The Robot Parts & Materials post #19 ACME threaded rod IS allowed. In The Robot Mechanical Answers post #2 a Lead Screw IS NOT allowed. We believe ACME threaded rod is a type of Lead Screw. If you go to McMaster and search for Lead Screw you get to ACME Threaded Rod.

Can you reconcile these two answers?

A: In light of the confusion and ambiguity that surrounds threaded rod vs. lead screw, the Game Design Committee has decided to allow any type of threaded rod/lead screw that conforms to the initial limitations (i.e. 3/8" diameter or smaller). This allowance also includes compatible nuts for the threaded rod/lead screw.

GDC Medic

10-25-2011, 03:27 PM

Quote:

*Originally Posted by **FTC3525** »*

With regards to The Robot-Mechanical post #2, can Threaded Rod be used as a Lead Screw? R17. "Unlimited length Threaded Rod (also known as All Thread) not to exceed 0.375" (0.9525cm) diameter (e.g. McMaster Carr Part #94435A317)." does not specify that threaded rod be used as a fastener.

A: Please see [Post #33 in Parts and Materials](#) for an update with respect to threaded rod and lead screws

GDC Mr Precision

10-29-2011, 12:40 AM

LEGO Pneumatics

Quote:

*Originally Posted by **FTC4187** »*

Our current robot design uses a relatively long length of pneumatic tubing, and we have a few questions regarding our options on creating that long of a run.

Q1: The GDC has stated in another forum post that only lego created tubing is allowed, however we are allowed latex or surgical tubing, would we be allowed to use that?

Quote:

*Originally Posted by **FTC4187** »*

Q2: If we would not be allowed to use latex or surgical tubing, would we be allowed to use small aluminum tubing as an coupler for lego created tubing?

A1: No, substitutions for the LEGO Pneumatic tubing are not permitted.

A2: No.

GDC Mr Precision

10-30-2011, 05:09 PM

The Robot - Parts and Materials

Quote:

*Originally Posted by **FTC4187** »*

Post number 35 in "Parts and Materials" states that joining pneumatic tubing with aluminum tubing is not allowed. Is it allowed to join pneumatic tubing using other LEGO parts?

For safety and inspection considerations, ALL parts and materials used in the pressurized system must be LEGO parts sold specifically for the LEGO Pneumatics system.

GDC Mr Precision

10-31-2011, 03:36 PM

The Robot - Parts and Materials

Quote:

Originally Posted by **FTC5029** »

Can we use aluminum rectangle tube? The game manuel said we can use a 1" x 1" aluminum square tube. Can we use aluminum rectangle tube that is less than 1" x 1", e.g. 1" x 0.5" tube?

Yes, aluminum rectangle tube with a cross section dimension of 1" x 1" or smaller is allowed.

GDC Medic

10-31-2011, 04:51 PM

Quote:

Originally Posted by **FTC4149** »

<R5> c. 6. Restricts thickness on aluminium sheet metal to '...not greater than 0.0625" thick.', meaning that sheet metal less than 1/16" is allowed.

<R5> c. 7-11. Says "Aluminium [Shape], up to 1" x 1" wide, 0.0625" thickness."

Does the wording "up to" apply to both the width and the thickness of the part, and thus restrict thickness in the same way as <R5> c. 6?

A: yes, the aluminum shapes referenced in <R5>.c.7-11 are allowed to be up to 0.0625" in thickness. Thinner wall thickness are allowed.

GDC Anchor

10-31-2011, 05:03 PM

Fabricating Channel

Quote:

Originally Posted by **FTC5025** »

Robot parts

1. My impression from the forum and the rules indicate that if we can make it ourselves from allowable materials then it's allowed for use. Is this correct?

2. local suppliers cannot get 1" aluminum U-channel. can I get a flat sheet of aluminum and bend it into a U-channel, staying below the 1"x1".

3. If so, is it restricted to the 24" max dimension, only allowing 8 sticks at 24" long, or does it come under U channel letting me have unlimited length?

4. If I'm limited to the 24" length, can I bend it into larger than 1"x1" U-Channel?

5. Does this also work with the other aluminum shapes, specifically angle and flat bar?

6. <r5>c.6 states Galvanized flat sheet. Does this mean galvanized steel? How does this apply to the previous questions?

A: You may make any size or shape channel from the allowable aluminum or galvanized steel sheet. Rule R5 C.6 restricts the length of the material used in this application. Also, note that the combined quantity of aluminum and steel cannot exceed 576 in2.

GDC Mr Precision

10-31-2011, 07:45 PM

The Robot - Parts and Materials

Quote:

*Originally Posted by **FTC4999** »*

Hello,

The rules say that only non-slip material without an adhesive backing that is also labeled as non slip pad is allowed. We have a "non-slip material without an adhesive backing" that is labeled as: rug grip, rug stay, and nonslip rug cushion. Would this be allowed?

*Thank you,
Team 4999 (ImagineIt)*

Yes, provided that the non-slip material doesn't also have a backing material (i.e. foam, felt, fabric, etc.).

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The Robot - Parts and Materials

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GDC Mr Precision

11-03-2011, 08:50 AM

Substitute Servo

Quote:

*Originally Posted by **FTC5420** ▶▶*

Can we use the Hobbico Command brand servo in place of the Deluxe Hi-Tec servo we get in the TETRIX kit?

Thank you for your time.

No, the Hobbico Command brand servo is NOT allowed since it isn't listed as an allowed part in rule <R5>.

GDC Mr Precision

11-06-2011, 10:21 PM

The Robot - Parts and Materials

Quote:

*Originally Posted by **FTC0417** ▶▶*

Are generic-brand mechanical switches permitted on the far side of the NXT prototype board (appropriately connected thereto per <R5>d2)? Can these be distributed throughout the robot?

Yes, generic-brand mechanical switches are allowed, provided that they are used with the HiTechnic NXT Prototype Board.

GDC Twinkletoes

11-07-2011, 08:33 PM

The Robot - Parts and Materials

Quote:

*Originally Posted by **FTC4140** ▶▶*

The HiTechnic NXT Prototype Board that was available when Rev 1 of the

Game Manual came out has been discontinued or are listed as Obsolete. New replacement products are now available on the HiTechnic product page. I was wondering if these new products are available under Game Manual Section 4.2, <R5>, d.

Specifically:

NXT SuperPro Prototype Board (SPR2010)

HiTechnic SuperPro Experimenter's Kit A-SP (SPA2017)

A: These parts are legal and are allowed as long as you do not write custom code for the onboard processor. The new prototype board will work the same as as the original straight out of the box.

GDC Twinkletoes

11-07-2011, 08:37 PM

The Robot - Parts and Materials

Quote:

*Originally Posted by **FTC4187** *

Is there any limit on the sensors that you can attach to the prototyping board, and what parts of the robot they can interface with? (other than the rules set forth in <R5>d)

A: No, there is no limit other than what the board itself can handle.

GDC Medic

11-10-2011, 11:16 AM

Quote:

*Originally Posted by **FTC3237** *

1. Is anodizing of aluminum allowed and legal for decoration purposes? (Anodizing square tube, channel, angle, etc.)

2. Is UHMW polyethylene considered a non-reinforced polymer based plastic (Is it legal for competition use)?

3. Is clear PVC allowed?

4. Is it legal to stack sheet plastic thicker than 1/2 in. if they are not laminated together?

Thanks!

A1: Yes, as long as the material being anodized falls within the allowed materials.

A2: Yes.

A3: Yes.

A4: Yes.

GDC Medic

11-10-2011, 11:24 AM

Quote:

*Originally Posted by **FTC5303** »*

My team was wondering what the strength of the FTC magnet balls are. For example do they need another piece of metal to attract to the robot or can they just attract just by the FTC part alone? Thanks!

A: The specifications for the magnet in the magnet balls can be found at <http://www.kjmagnetics.com/proddetail.asp?prod=DC1-N52>

GDC Anchor

11-13-2011, 04:25 PM

Adhesive for Surgical Tubing

Quote:

*Originally Posted by **FTC4149** »*

<R5> c. 2. Allows the use of glue and cement for the joining of plastic pieces.

Are we allowed to use a latex adhesive for the allowable latex surgical tubing?

A: No, rule R5 states that glue/cement may be used only for joining of plastic pieces.

GDC Mr Precision

11-13-2011, 06:03 PM

What constitutes "pre-formed"?

Quote:

*Originally Posted by **FTC5135** »*

*For purchasing flat metal or plastic sheet, what constitutes "pre-formed"?
Would using a waterjet cutting service (ex. www.bigbluesaw.com) fall under purchasing it "pre-formed"?*

Waterjet cutting a team designed part out of an allowed material is permitted. The raw material used prior to the waterjetting, milling, etc. must comply with the allowed material rules (material type, thickness, length, etc.).

GDC Medic

11-14-2011, 06:27 PM

Quote:

Originally Posted by **FTC5222** 

Having read the rules and all of the posts under parts & materials, I'm still confused. Post #19 says threaded rod and nuts are OK if under 3/8" in diameter. Post #33 says the design committee decided to allow any type of threaded rod 3/8" diam. or smaller and "compatible nuts for the threaded rod." We want to use 5/16" diameter all thread (smaller than the limit) and it needs a 5/16" nut to turn against. The compatible nut is 1/2" from outside face to face. I searched the hardware store and all kinds of available nuts are the same or larger dimensions because a smaller nut would be too weak. Would standard 5/16" steel nuts be allowed on 5/16" all thread even though the nut's outside dimensions exceed 3/8"?

A: Yes. Nuts are sized by the thread diameter, not the external dimensions of the nut. The 3/8" limit applies to the thread size.

GDC Mr Precision

11-16-2011, 08:34 AM

Are we allowed to use pulleys?

Quote:

Originally Posted by **FTC3006** 

Are we allowed to use pulleys?

Commercial off the shelf (COTS) pulleys are not permitted. Teams may build pulleys by using the allowed materials listed in rule <R5>.

GDC Twinkletoes

11-16-2011, 11:49 PM

Heavy Nuts

Quote:

Originally Posted by **FTC3633** 

Can nuts that have the same internal diameter (.375") but have a larger outside diameter (heavy nuts) be used on the all thread?

Yes. Nuts are sized by the thread diameter, not the external dimensions of the nut. The 3/8" limit applies to the thread size.

GDC Mr Precision

11-20-2011, 10:48 PM

The Robot - Parts and Materials

Quote:

Originally Posted by **FTC3785** 

At a recent regional tournament, I saw that a team was competing with "bare stranded wire". My reading of r5 c15 suggests that one can only use plastic stranded wire not bare. Did I miss something?

Bare stranded wire is not listed in rule <R5> and is therefore not permitted.

GDC Mr Precision

11-21-2011, 02:04 PM

The Robot - Parts and Materials

Quote:

*Originally Posted by **2010FTC3740** »*

Q1: Can we melt the end of the 1/8th"or < synthetic rope so it doesn't fray?

Q2: Are rope and twine definably different? If not, can we use twine?

A1: Yes

A2: Twine is an allowed material provided that it is made from non-metalic materials such as nylon, polypropylene, hemp, cotton, sisal, etc. and it doesn't exceed 0.125 inches (0.3175 cm) in diameter.

GDC Mr Precision

11-23-2011, 10:50 AM

<R5> Robot Allowable Parts

Quote:

*Originally Posted by **2010FTC4291** »*

We have looked and cannot find the allowable parts list for the robot. We have read the posts and answers but need to know if there is a master list of items we can use. Thank you.

The Bowled Over! game manual contains a list of allowed parts in rule <R5> located in section 4.

GDC Mr Precision

11-27-2011, 09:23 AM

Rectangular Tubing and Cardboard Tubing

Quote:

*Originally Posted by **FTC3746** »*

Q1: Is aluminum rectangular tubing allowed? Square, round, angle, and flat are mentioned but not rectangular? IE (1/2 x 11/16)

Q2: Is cardboard tubing allowed? There is no mention of it in the manual.

A1: The answer to this question was addressed in the Parts and Materials post #37 located here: ftcforum.usfirst.org/forumdisplay.php?71-Parts-and-Materials

A2: Cardboard tubing is not listed in the game manual, therefore, it is not an allowed material.

GDC Mr Precision

11-27-2011, 02:45 PM

Chain and Sprockets

Quote:

*Originally Posted by **2010FTC4291** »*

The chain and sprocket you can buy at LEGO Education is currently out of stock. Can we buy regular bike chain and can we cut sprockets out of aluminum TETRIX pieces?

Teams may use #25 chain from any source per rule <R5>c.31. Teams may build their own sprockets, provided that they use an allowed material listed in rule <R5>.

GDC Twinkletoes

11-28-2011, 04:45 PM

Joining aluminum sheets

Quote:

*Originally Posted by **FTC5430** »*

Are we allowed to join together 8 aluminum sheets, 1/16" thick each, to get a 1/2" block?

A: Yes, as long as all the rules are followed for joining the sheets.

GDC Anchor

11-29-2011, 07:56 PM

cylindrical Rod

Quote:

*Originally Posted by **FTC5430** »*

According to answers 2 and 3 to post #16 (by FTC0417, on Oct/13), the only method I can think that we could get a cylindrical smooth rod, this is, not threaded, with a diameter larger than the 4.7 mm of the Tetrax axle, would be by starting with a threaded rod, 0375" diam. or smaller, and cut it in the lathe to remove all the threads. Am I correct ?

A: The method you describe of making a cylindrical rod is legal.

GDC Anchor

11-29-2011, 08:03 PM

Slotted spring pins

Quote:

Originally Posted by **FTC5430** »

Can we use slotted spring pins, for example in 3/32" diam., equivalent to McMaster P/N 98296A833?

A: Slotted spring pins are not "substantially the same" as TETRIX fasteners and may not be used per Rule R5.C.18

GDC Twinkletoes

11-30-2011, 09:24 PM

Are we allowed to use Rod Coupling nuts?

Quote:

Originally Posted by **FTC3787** »

Our team has a design that requires 2 threaded rods joined by a "Rod Coupling Nut" such as the home depot one here... http://www.homedepot.com/h_d1/N-5yc1...atalogId=10053. Is this "Rod Coupling Nut" allowed?

A: Yes. This appears to be a compatible fastener according to <R5>c18 of a nut of any length.

GDC Medic

12-01-2011, 10:15 AM

Quote:

Originally Posted by **FTC4494** »

The minor diameter of 3/8 - 24 is 0.3239". Rather than turning the threads off threaded rod, would it be acceptable to simply purchase metal round stock with a diameter of less than .3239" to save ourselves time and money?

*Thanks,
4494*

A: No. Round, solid metal stock of any type is not allowed under this year's robot construction rules.

GDC Medic

12-01-2011, 10:46 AM

Quote:

*Originally Posted by **FTC5430** »*

Page 33 of the Game manual, rule <R5>c.1.d, I understand that it allows us to get a 1/2" block by joining 4 plastic sheets, each 1/8" thick, which is the maximum according to <R5>c.1.a. Am I correct ?

A: Yes, however, <R5>.c.1.d does not limit the number of layers involved to make the block. It limits the final thickness of the block. If a team wished to laminate 8 layers of 1/16" thick sheets it would be allowed as long as the final thickness of the block was no more than 1/2".

GDC Mr Precision

12-04-2011, 07:18 PM

Slotted Spring Pins

Quote:

*Originally Posted by **FTC5430** »*

Can we use slotted spring pins, for example in 3/32" diam., equivalent to McMaster P/N 98296A833?

Slotted spring pins other than the pins provided with the Anderson PowerPole connectors <R5>c26 are not permitted. These pins may only be used to join the PowerPole connectors.

GDC Mr Precision

12-04-2011, 07:24 PM

Hinges and Staples

Quote:

*Originally Posted by **FTC2891** »*

We are near the end of developing our robot, but before we finish we must first know if either of these parts are allowed: hinges, and staples.

The allowed parts list is provided in rule <R5>. Hinges and staples are not listed in rule <R5> and are therefore not allowed.

GDC Twinkletoes

12-05-2011, 10:00 PM

thermoplastic elastomer

Quote:

*Originally Posted by **FTC0417** »*

Does thermoplastic elastomer (TPE) qualify as a legal material under <R5>(c)(1): "any non-reinforced polymer-based plastic sheet material ... may be used"?

A: Sorry, no. TPE can be considered to be more of a rubber material than plastic.

GDC Twinkletoes

12-05-2011, 10:05 PM

Threaded Rod Nuts with "Mounting Flange"

Quote:

*Originally Posted by **FTC3787** »*

Do threaded rod nuts from McMaster-Carr that come with a "Mounting Flange" qualify as "compatible nuts" for the threaded rod? Specifically, we are looking at the picture of the "Assembled Nut And Mounting Flange" on this page of the McMaster-Carr website... <http://www.mcmaster.com/#catalog/117/1094/=f6c25t>

A: No, we wouldn't consider the mounting flange to be an equivalent product.

GDC Twinkletoes

12-05-2011, 10:16 PM

Cable from fishing line?

Quote:

*Originally Posted by **FTC5430** »*

Regarding post #52 of the "Parts and Materials" forum (from FTC3785 on Nov/20), is the following cable allowed: Omniflex Braid, 0.014 in dia. manufactured by Zebco. From the brochure (I am sorry, but the only information I could find in their website is about fishing rods) supplied with the 110-yard spool (I bought it at Walmart) it is made "...using multiple bundles of fiber, unlike mono-filament which is one solid strand of plastic... bundles are made of UHMW Polyethylene...with a special coating to give abrasion resistance and color". The braided surface is clearly visible, the color is dark green.

A: Yes, in this instance, it is legal to use that type of fishing line (with the braids) as long as no other rules are violated.

GDC Mr Precision

12-05-2011, 10:37 PM

Flexible Aluminum Tubing

Quote:

*Originally Posted by **FTC3888** »*

In the list of non- TETRIX/LEGO parts that may be used on the robot, the manual mentions round aluminum tubing. Does the flexible aluminum tubing used in air ducts count as this?

Flexible aluminum tubing is not an allowed part.

GDC Medic

12-08-2011, 10:19 AM

Quote:

*Originally Posted by **FTC5029** »*

*For thread #57 under Parts-and-Materials,
[http://ftcforum.usfirst.org/showthre...aterials/page6](http://ftcforum.usfirst.org/showthread.php?p=6)*

*Can we join the aluminum sheets with super glue, similar to joining plastic sheets?
Thanks*

A: No. <R5>.c.2 only allows plastic glue/cement, and only for the joining of plastic pieces.

GDC Medic

12-08-2011, 10:26 AM

Quote:

*Originally Posted by **FTC2858** »*

One of our motors smoked during the competition last Saturday. We removed it, and are in the process of replacing but I was wondering if we could take off the encoder on the motor. I understand that the hubdisk is a complicated component, and it is gripping the axle very tightly. If we can remove it, how?

A: Yes, transferring the encoder to the replacement motor is allowed. The "how" to removing the encoder disk is outside the scope of game questions. Try contacting either LEGO Education or US Digital for advice. Alternatively, post a question to the "teams helping teams" portion of the FTC Forums.

GDC Medic

12-08-2011, 10:33 AM

Quote:

Originally Posted by **FTC5116** »

Are we allowed to use graphite to help metal slide easier? I know we can use super lube but it is grease based and would actually gum up our design idea.

A: No. Graphite is not allowed.

GDC Medic

12-08-2011, 10:43 AM

Quote:

Originally Posted by **FTC2859** »

Our gripper arm using four standard HiTec HS-485HB servos. However, it would simplify the design if two of the servos could be reversed to permit a single servo port to control two servos in exactly opposite positions such as left and right servos. The manufacturer, HiTec, provides instructions on their website on how to reconfigure the servo by switching four wires inside the servo, see the URL below:

<http://www.hitecrcd.com/support/faqs...log-servo.html>

or this YouTube video: http://www.youtube.com/watch?v=EK_FdRTenI0

Would this be permitted even though rule <R14> has a blanket provision of no electrical alterations?

Alternatively, can we use a third party servo reversing device that is inline with the servo cable such as the following?

http://dionysusdesign.com/product_in...roducts_id/194

Lastly, if a third party device is not permitted, can we implement a reversing device ourselves that is placed inline between the cable from the servo controller and the two servos? The reverser would simply adjust the PWM signal to one of the servos.

Thanks

A1: <R14> expressly prohibits the modification of servos.

A2: The servo reverser listed is not an allowed part.

A3: implementing a servo reversing device also is not allowed under the current robot construction rules

GDC Medic

12-08-2011, 10:51 AM

Quote:

Originally Posted by **FTC0417** »

<R5>(c)(6) states, in part: "Aluminum or Galvanized flat sheet (not patterned), not to exceed 576 sq. inches..." (plus additional limitations). Is one allowed to have up to 576 square inches of aluminum AND 576 square

inches of galvanized, or does the 576 square inch limitation apply to the combined amounts of aluminum and galvanized?

A: <R5>.c.6 explicitly uses the word "combined". The 576 sq. in. limit is applied to the total area of all aluminum and galvanized sheet used in the robot, combined. I.e., add up the area of the aluminum sheeting and the area of the galvanized sheeting and the total must not exceed 576 sq. in.

GDC Mr Precision

12-11-2011, 09:47 PM

Acceptable Use of Rivets and Bolts

Quote:

*Originally Posted by **FTC3787** »*

Our team has implemented a scissors lift using the tetrax flat bars and a combination of rivots and TETRIX bolts at the "hinge" points. While attending a scrimmage last week, one of the other team coaches mentioned that in the past, FTC has disallowed the use of rivots and TETRIX bolts in this fashion, and said that the only allowable item to use in this manner would be the TETRIX axles. I could not find anything in the game manuals for the last 3 years mentioning anything about this limitation. Can you verify that we are allowed to use rivets and/or bolts as "pivot points".

thanks

The game manual doesn't restrict how rivets and bolts are used on an FTC robot.

GDC Mr Precision

12-11-2011, 10:14 PM

Omni Wheel Repair

Quote:

*Originally Posted by **FTC4220** »*

Our 4" TETRIX Omni wheels are failing, the roller pin pulls through the seam between two half of the wheel shell regardless how tight we screw the halves together. Is it legal for us to repair/reinforce it with glue that we are using for our Delrin/Nylon parts?

Rule <R5>c2 limits the use of plastic glues and cements to joining plastic pieces. All other uses of plastic glues and cements are not allowed. If the action described in the question is glueing together plastic pieces, it is allowed.

GDC Mr Precision

12-11-2011, 10:46 PM

Quote:

Originally Posted by **FTC3991** »

"Rope or cord made from non-metallic materials... of any length, not to exceed 0.125"... " Does this include typical sewing thread? Thanks.

It depends on what is meant by "typical sewing thread." Sewing thread is allowed, provided that it satisfies the material type and size constraints of rule <R5>c14.

GDC Mr Precision

12-12-2011, 11:52 AM

Duct Tape

Quote:

Originally Posted by **FTC4318** »

We have some thin metal on our robot that has some edges that are sharp. Is it possible to use duct tape on the edges to cover them. It will be very clear that the tape is not being used to attach parts together.

Permitted uses of tape are listed in rule <R5>c33. The use of tape described in the question is not listed in this rule and is therefore not allowed.

GDC Anchor

12-12-2011, 04:29 PM

Quote:

Originally Posted by **FTC5029** »

Can we use shoulder screw to hold to Al plates together?

A: Yes, shoulder screws are legal providing no other rules are violated.

GDC Anchor

12-12-2011, 04:52 PM

Patterned Material

Quote:

*Originally Posted by **FTC4468** »**We are wondering what the intent of the word patterned is in the rule describing aluminum and galvanized sheeting for use on the robot not to exceed 576 sq in. We were thinking of cutting holes or slots into the aluminum and deducting that amount from the total area used and wanted to make sure this was acceptable.*

A: The intent of the rule is to NOT allow the use of patterned material such as diamond plate. The area of any holes or slots cut into a sheet may not be deducted from the overall size of the sheet.

GDC Mr Precision

12-12-2011, 05:32 PM

The Robot - Parts and Materials

Quote:

*Originally Posted by **FTC4220** »**Is Tyvek, which is basically pressed polyethylene legal? (www2.dupont.com/Tyvek/en_US/tech_info/test_results.html) We are looking at Floppy disk sleeve thickness in 24"x24" sheet.*

Tyvek satisfies the requirements of rule <R5>c1 and therefore it is an allowed material.



The Robot - Parts and Materials

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GDC Medic

12-15-2011, 10:22 AM

Quote:

*Originally Posted by **FTC3550** ▶▶*

Rule <R5> a-8 states that "Lubricants shall not be allowed to contaminate the playing field or other Robots."

*Would this allow other lubricants, such as silicon grease, as long as it does **NOT** contaminate the field or other robots?*

Also, Rule <R5> c-4 states that "Commercial PVC couplings 3" or smaller are allowed."

Are we allowed to modify these couplings, such as cutting, bending, etc?

If so, are we allowed to use them to fabricate something like a pulley out of the material of the fitting?

i.e. cutting off the flat part of a PVC cap to be used as a solid piece of 1/4" PVC plastic sheet, and thereby side-stepping rule <R5> c-1-a

(note that the fitting would initially satisfy the 3" diameter constraint of rule <R5> c-4, but could potentially break rule <R5>c-1-a upon modification)

http://www.lowes.com/pd_317774-1815-...3D2&facetInfo=

A1: <R5>a.8 permits only the Permatex Super Lube. No other lubricants are allowed.

A2: The modification described would be permitted under the current rules, as long as no other rules are modified. Be prepared to explain the process to the to the inspectors, potentially including bringing an unmodified version of the fitting. The fitting would still need to adhere to <R5>.c.4

GDC Medic

12-15-2011, 10:35 AM

Quote:

*Originally Posted by **FTC4154** »*

Hello, we were wondering about the usage of a certain part. Are we allowed to use threaded rods? If so, are there any size requirements (i.g. diameter, height) other than the 18x18x18 box? Thanks a ton!

A: Please take the time to completely read the Robot portion of the game manual. <R5>.c.17 specifically address the use of threaded rod.

GDC Medic

12-15-2011, 10:46 AM

Quote:

*Originally Posted by **FTC4225** »*

Under rule <R5>, the use of nuts are permitted. Would a flange nut qualify as a nut and thus be allowed for use on the robot?

Thank you in advance.

A: No. This was answered in a [prior post in Parts and Materials](#).

Please take the time to read the Forum posts completely to help eliminate duplicated questions.

GDC Anchor

12-19-2011, 04:31 PM

Acme Round Nut

Quote:

*Originally Posted by **FTC4311** »*

To work with the ACME precision threaded rod (McMastercarr # 99030A126) that was allowed in post number 19 in Parts and Materials, can we use a compatible Machinable Bronze Precision Acme Round Nut 3/8"-8 (McMaster-Carr Part# 1343K131)? This is a simple round nut without a flange.

A: Yes, this part is legal.

GDC Twinkletoes

12-19-2011, 05:42 PM

Nylon Invisible Hanging Wire

Quote:

Originally Posted by **FTC3785** »

*At a recent tournament, a team came in with the following item. It looks like monofilament but they had the original box and it is the Nylon Hanging Wire. I've included the url. OOK 15 ft. 50 lb. Nylon Invisible Hanging Wire Model # 50104 Internet # 100060433 Store SO SKU # 304759
<http://www.homedepot.com/buy/tools-h...re-137407.html>*

A: We've investigated this material and it does sound like monofilament. Therefore, it is not legal.

GDC Twinkletoes

12-19-2011, 05:55 PM

Threaded Rod Questions

Quote:

Originally Posted by **FTC3785** »

Rule R5 C 17 Unlimited length Threaded Rod (also known as All-Thread) not to exceed 0.375" (0.9525cm) diameter (e.g. McMaster Carr Part #94435A317).

- 1) Does the threaded rod have to be aluminum? can it be steel?*
 - 2) Can one use <http://www.mcmaster.com/#standard-threaded-rods/=ffhvqa> Which have threaded ends and are aluminum tubes? For example item 6516K52 " Thread sizes through 5/16" are zinc-plated steel; 3/8" and larger are high-strength aluminum"*
 - 3) Can one use the male end version? 6516k22*
- Thanks*
-

A1: Yes, it can be made of steel

A2: No, the threaded rod has to be all thread. Not threaded ends of tubes

A3: No, given answer A2.

GDC Twinkletoes

12-19-2011, 05:58 PM

Melting non-slip pad

Quote:

Originally Posted by **FTC5614** »

Our team is using a non-slip pad specified in the game manual to make a system of conveyor belts, but almost all of the methods we could use to join the ends of the materials are against the rules. The method we would most like to use is to place the ends between two pieces of metal and heat it, causing the material to bond together. I was wondering if this counts as melting, and if so, does that rule apply to this material in the way we plan to use it?

A: Yes, it does count as melting and therefore would not be allowed per rule <R14>d.

GDC Medic12-22-2011, 10:14 AM

Quote:

*Originally Posted by **FTC5229** »*

The flat Tetrax aluminum bar (with the holes) is .125 thick but the rules only allow .0625 non -Tetrax aluminum bar stock. Can using .125 bar stock be an exception to the rules?

A: No. The allowed thickness for Aluminum stock is the limit.

GDC Medic12-22-2011, 10:28 AM

Quote:

*Originally Posted by **FTC3539** »*

We got hit by static shock and lost our protoboard. When we went to order a replacement, we found that HiTechnic has obsoleted the protoboard that we used to use (NXT Solderless Prototype Board (obsolete)). They have replaced it with the NXT SuperPro Prototype Board. However, the new protoboard has an on-board processor that can be reprogrammed, which is in violation of rule <R5>d.6. The documentation is not clear as to whether it is required to program the protoboard or whether it emulates the old protoboard as a default. Since the old protoboard is not available, what is your recommendation?

<http://www.hitechnic.com/cgi-bin/com...on&key=SPR2010>

A: This was answered in post #43 of Parts and Materials

GDC Medic12-22-2011, 10:30 AM

Quote:

*Originally Posted by **FTC4408** »*

Are we allowed to use eye bolts? If so, are there any restrictions on size?

A: No. eyebolts are not part of the allowed materials.

GDC Medic12-22-2011, 10:32 AM

Quote:

*Originally Posted by **FTC4408** »*

*Can we use displacement connectors such as:
http://www.homedepot.com/h_d1/N-5yc1...atalogId=10053
or
<http://www.micromark.com/suitcase-co...f-25,8998.html>*

A: Yes. These are a type of crimp-on connector.

GDC Medic

12-22-2011, 10:36 AM

Quote:

*Originally Posted by **FTC3539** »*

I just want to confirm that the round nut (McMasters Carr part no: 1343K114) is legal, since it is a compatible nut and fastener to the precision threaded rod that was approved earlier.

<http://www.mcmaster.com/#acme-precis...d-nuts/=fglij9>

A: Answered in [post #84](#) of Parts and Materials

GDC Mr Precision

12-24-2011, 02:20 PM

TETRIX Motor Modification

Quote:

*Originally Posted by **FTC1033** »*

Our team is wondering if it is possible to cut the axle of the TETRIX motor to a shorter length. No additional modifications would be made; just simply cutting down the axle of the motor.

Modification of the TETRIX motors in any way is not permitted per rule <R14>b. Therefore, cutting the axle of the TETRIX motor to a shorter length is not allowed.

GDC Twinkletoes

12-28-2011, 05:03 PM

Confusion regarding patterned material

Quote:

*Originally Posted by **FTC0417** »*

In Robot Parts and Materials post #79, to our surprise you answered that "The

intent of the rule is to allow the use of patterned material such as diamond plate." Yet the rule says "Aluminum or Galvanized flat sheet (not patterned)...". So: some kinds of 'patterns' are allowed, while others are not? If so, what characteristics distinguish between the two classes of patterns?

A: Thank you for calling our attention to our typo error. Post #79 has been updated.

GDC Mr Precision

01-02-2012, 10:54 PM

Superglue

Quote:

*Originally Posted by **FTC4373** »*

Is superglue allowed for use in joining plastic pieces (nothing metal) on the robot? We have used Loctite® Quikcite Superglue Gel for a few pieces.

Rule <R5>c2 allows glue/cement that is formulated for joining plastic parts. The glue is permitted if the list of compatible materials on the packaging includes "plastic." The GDC recommends saving the packaging to show robot inspectors if the glue is questioned at a tournament.

GDC Mr Precision

01-08-2012, 04:18 PM

Plastic Coated Wire Rope

Quote:

*Originally Posted by **FTC5131** »*

We would like to use a 1/16th or .0625 braided wire, plastic coated line. There are 6 stands that make up the wire. Each stand is less than .03125, but together they make up the 1/16 line. Can we use this since each bare wire diameter is less than .03125?

The described part violates the size constraint in rule <R5>c15 and is therefore not permitted. The bare wire diameter referenced in the rule is the size of the braided wire.

GDC Mr Precision

01-09-2012, 12:04 AM

Aluminum Foil

Quote:

*Originally Posted by **FTC5430** »*

I think that standard kitchen aluminum foil, being its thickness much less than 1/16", can be considered as an "aluminum flat sheet", under rule <R5>c.6, and therefore would be allowed. Am I right?

Yes, aluminum foil without an added coating that complies with the thickness, area, and maximum

dimension constraints specified in rule <R5>c6 is an allowed material. An example of an aluminum foil that isn't allowed is "Reynolds Wrap Non-Stick Foil" because it has an added non-stick coating.

GDC Mr Precision

01-11-2012, 09:30 PM

Are Magnets an allowed part?

Quote:

*Originally Posted by **FTC5487** »*

Are robots able to have magnets attached to them?

Magnets are not listed as an allowed part in rule <R5>, therefore, magnets are not allowed for robot construction.

GDC Medic

01-16-2012, 04:37 PM

Quote:

*Originally Posted by **FTC4529** »*

I know there hasn't been much time to answer our latest question re. LED power. It dawned on me that there might be a more direct way of asking the question:

Would it be acceptable to use a half bridge (eg. TI SN754410) to isolate the prototyping board cueing circuitry from the 12V LED power? This would seem to satisfy the general intent to allow cued 12V LED power <R5.c.32> while isolating it from prototyping board power <R5.d.1>.

Thanks,

A: The above part would be legal for switching the LEDs on/off with a couple of conditions: the part must be controlled and powered solely by the prototype board, the power for the LED may only come from a power source as listed in <R5>.c.32

GDC Twinkletoes

01-18-2012, 04:33 PM

Painting on materials

Quote:

*Originally Posted by **FTC3550** »*

Would painting some of the allowable materials for a functional purpose be allowed?

i.e. painting a silver coating on a piece of plastic to be used as a mirror, or painting dots on the robot to help judge distances.

A: This would not be legal. Paint is not allowed to serve a functional purpose.

GDC Twinkletoes

01-19-2012, 01:08 AM

Plastic Mesh Fence

Quote:

*Originally Posted by **FTC0121** »*

Are sheets of plastic mesh (that are less than 1/8" thick) considered part of the allowable plastics? (i.e. the stuff used as animal barriers for gardens, or what was used as the back board for the off field goals in Hotshot!)

No, it is not allowable. Per <R5>c5 "All plastics may not be purchased in a pre-formed manner". Mesh is pre-formed.

GDC Twinkletoes

01-19-2012, 01:18 AM

Mounting Disconnected Tetrax Motors

Quote:

*Originally Posted by **FTC0965** »*

We use extra disconnected Tetrax motors (within the 8 motor constraint) as a counter balance. We mount these motors by mounting a motor hub to the robot and then using the set screw in the motor hub to hold the motor by its shaft. At a recent competition, an inspector indicated this may not be an allowable method of mounting a motor. Is it?

While it is not a functional use of a motor mounting in this manner, there is nothing in the rules that prevents this design strategy.

GDC Twinkletoes

01-19-2012, 01:28 AM

Potting motor tabs in epoxy

Quote:

*Originally Posted by **FTC4494** »*

Are we permitted to pot the tabs on motors (along with wires soldered to them) in epoxy to prevent them breaking off? They are very fragile and we have lost three motors in two days.

Yes, we will allow it similar to the answer to post #20 in this forum.

GDC Twinkletoes

01-19-2012, 01:54 AM

Tetrix Axle Spacers

Quote:

*Originally Posted by **FTC2888** »*

We were wondering if we can use nylon spacers just like the 3/8" and 1/8" spacers we buy on the LEGO Education website. They would be exactly the same material and the same outside diameter, same inside diameter but would be 1" long instead of 3/8" long or 1/8" long. This would save us from stacking 2-3/8" and 2-1/8" spacers.

No, you may not use other sized spacers.

GDC Twinkletoes

01-19-2012, 01:59 AM

Using tape

Quote:

*Originally Posted by **FTC5614** »*

Are we allowed to use gaffer's tape to cover sharp edges on pieces of metal? Another team we know was told by an inspector that it was okay, but I can't find anything in the rules about being able to do that, so I was wondering if the inspector was mistaken.

No. Answered in Post #77.

GDC Twinkletoes

01-19-2012, 02:14 AM

all thread as ballast?

Quote:

*Originally Posted by **FTC4081** »*

At a recent qualifier we passed inspection using .375" all thread as ballast. <R5>c17 does not restrict how one uses the all thread like washers are in <R5>c19 however, one of the more experienced teams told us all thread could not be used this way. Is all thread restricted to be used solely as a fastener? If so, where is it stated in the rules? Thanks.

There is nothing in the rules that prevents this design strategy.

GDC Twinkletoes

01-19-2012, 02:25 AM

Nylong Spacer Part Question

Quote:

Originally Posted by **FTC4193** »

*Would a generic nylon spacer similar to the ones already provided with the TETRIX system be allowed? If other brand spacers are allowed would they fall under the constraints of the washer sizing rule?
If they are not permitted, from reading the other posts I believe I could laminate plastic sheeting together up to 1/2" thick and then shape it as necessary.*

A: Generic nylon spacers of different sizes other than provided in the TETRIX system are not legal. You would have to laminate the plastic sheeting together.

GDC Twinkletoes

01-19-2012, 02:30 AM

The Robot - Parts and Materials

Quote:

Originally Posted by **FTC0033** »

*Does the max. length of PVC referenced in <R5>c3 not to exceed 36" apply to cutting the PVC in half?
ie. Can I have a 36" piece of PVC and cut it in half (lengthwise) equaling 72" of half pieces
and still have complied with the rule?*

There is nothing in the rules that prevents this design strategy.

GDC Twinkletoes

01-19-2012, 02:41 AM

Gluing LEGO Mindstorms elements

Quote:

Originally Posted by **FTC5602** »

*<R5> c. 2. Allows the use of glue and cement for the joining of plastic pieces.
Does "plastic pieces" include the plastic LEGO Mindstorm elements? More specifically, may we glue bushings to axles?*

The description for glue is in relation to gluing raw plastics. Glue is allowed only for joining the raw plastics allowed, not the parts in the LEGO kits.

GDC Mr Precision

01-22-2012, 01:20 PM

Lead Screw Thread

Quote:

Originally Posted by **FTC3787** »

I know that FTC has ruled that threaded rod / lead screws are allowed. Our question is whether or not there is any restriction on the threading used on the lead screw. Specifically, we are using a lead screw that is "double threaded", with 1/2 of the screw threaded "Left Hand", and the other 1/2 threaded "Right Hand", using compatible "Left Hand" and "Right Hand" brass nuts.

Thanks

The "double threaded" lead screw described in the question is allowed.

GDC Mr Precision

01-29-2012, 05:31 PM

Larger Bronze Bushings

Quote:

*Originally Posted by **FTC4667** »*

Are we allowed to use bronze bushings larger than what is in the Tetrix list? For example, we can use up to 3/8 inch rod. Can we use bronze bushing up to 3/8" inside diameter?

Bronze bushings other than the ones provided in the TETRIX system are not permitted.

GDC Mr Precision

01-29-2012, 05:51 PM

Size Constraints for Plastic Sheet

Quote:

*Originally Posted by **FTC2753** »*

Rule R<5> states

Any non-reinforced polymer-based plastic sheet material (e.g. polycarbonate, PVC, acrylic,

ABS, Teflon, PETG, etc.) may be used with the following constraints:

- a. Thickness per sheet not greater than 0.125" (0.3175cm).*
- b. 24" (60.96cm) maximum dimension on any one side*
- c. Multiple sheets of different plastic materials are allowed with no maximum area constraint.*

d. Plastic sheets may be laminated together to form a block up to a maximum thickness of 0.5" (1.27cm).

Q1: Is there a maximum area constraint on an individual material, such as lexan on the robot?

Q2: <R5>c.b. of the rule states a maximum dimension of 24", does that mean that a 24" x 24" is the largest starting piece of material and no other material can be used? or can say 4 pieces of 7" wide sheet of lexan can be used, even though if you started with that sheet and cut the 4 pieces out of it the starting piece would have been greater than 24".

thank you

A1: No, per rule <R5>c1b.

A2: There is no constraint on the pre-cut [starting] dimension (except for thickness) of the plastic sheet material. The final part used in robot assembly can't exceed 24 inches on any side. The starting piece of material is not constrained to 24" x 24".

GDC Mr Precision

01-29-2012, 05:59 PM

WAGO Compact Connectors

Quote:

*Originally Posted by **FTC4080** »*

In one of the replies to a question regarding the use of WAGO WALL Nut Connectors GDC allowed their use. We are planning to use WAGO COMPACT CONNECTOR 3-CONDUCTOR TERMINAL BLOCKS. The product is described here: <http://www.wagocatalog.com/okv3/inde...3&cid=51&lid=5>

Quote:

From the description it appeared that both seems to have similar purposes.

Could you please clarify whether the use of WAGO compact connectors is allowed?

*Thanks and Regards,
Team 4080*

Yes, this is an allowed part.

GDC Mr Precision

01-29-2012, 06:15 PM

Post #108 Clarification - Rule <R5>c3 PVC Pipe Constraints

Quote:

*Originally Posted by **FTC1369** »*

I am confused by the answer given to thread #108 in the Robot->Parts & Material section. The PVC rule states that PVC is "not to exceed 36" in total length". However, the answer given to the post appears that you can use more than 36 inches of total length of PVC because the robot described in the question is using 72" of PVC cut into smaller pieces. However, the rule in the manual states you cannot use more than 36 inches of total length of PVC of any size. Can you please clarify rule R5.c.3

Rule <R5>c3 constrains the total combined length of PVC pipe on the robot to 36 inches. Teams may cut a 36 inch long piece of PVC pipe into smaller pieces and use them on the robot. The team in post #108 described cutting a 36 inch long piece of PVC pipe lengthwise. This resulted in two 36 inch long "c" shaped cross section pieces. Both of these "c" cross section pieces are allowed on the robot since the total combined length the PVC material in its original cylinder cross section shape doesn't exceed the 36 inch length constraint.

GDC Mr Precision

01-29-2012, 06:25 PM

Laminated Plastic Sheet - Rule <R5>c1d

Quote:

*Originally Posted by **FTC1369** »*

I have a clarification question about laminating plastic together. Rule R5.c.1.d states that plastic sheets can be laminated together to form a block up to a maximum of 0.5". Can you please clarify the definition of laminated. I understand that that gluing pieces of plastic together is considered to be laminating plastic. However, if I using bolts to hold layers of plastic together, is this considered to be laminating the plastic sheets together? For example, if I have multiple layers of plastic stacked on a piece of u-channel and the only thing holding the layers of plastic sheet together is bolt and nut that is attached to the u-channel is this considered to be a peice of laminated plastic and therefore must be less than 0.5 inches thick?

For the purpose of rule <R5>c1d, lamination is glueing together plastic sheet. Plastic sheets held together with with mechanical fasteners (nuts, bolts, screws, etc.) are not constrained to the 0.5 inch thickness in rule <R5>c1d.

GDC Mr Precision

01-30-2012, 03:18 PM

Rule <R5>c1b - Plastic Sheet Size Constraint

Quote:

*Originally Posted by **FTC4251** »*

This is a followup question to post #112 in the Robot Parts and Materials Thread. Our team interprets "The final part used in the robot assembly can't exceed 24 inches on any side" to mean that if the part were laid flat it would fit within a 24" x 24" square. Is that a fair interpretation?

Cougar Robotics Team FTC#4251

This is not an accurate interpretation of rule <R5>c1b. If the part is laid flat, all sides (except the thickness) are required to be no more than 24 inches long. Using the test proposed by the team in this post could yield a piece that exceeds 24 inches on a side and therefore, violates rule <R5>c1b.

GDC Twinkletoes

02-01-2012, 09:58 PM

Rule R5 c-17-18

Quote:

*Originally Posted by **FTC3920** »*

We understand the rules we just want a yes or no answer so we are a 100%. Can the team use 1/4 inch hex bolts of any length with nylon nuts. Like MC Master item # 93306A546 and MC Master item # 90640A129. Can the team use 1/4 Threaded Rod of any length with nylon nuts. Like MC master item # 94435A325 and MC Master item # 90640A129.

Yes to the Nylon Nuts. Yes to the 1/4" Threaded Rod. Yes to the 1/4" hex bolts. See also question #7 in The Robot/Parts and Materials thread for further clarification.

GDC Twinkletoes

02-01-2012, 10:35 PM

Springs?

Quote:

*Originally Posted by **FTC5430** »*

Is the use of extension springs allowed (for example, McMaster P/N 9654K718) ? We would not use them to store and release energy, as they are normally used, but not for decoration either, they would serve a function.

Springs are not listed as an additional component per Rule <R5>c and are therefore not allowed.

GDC Twinkletoes

02-01-2012, 10:41 PM

Prototype Board Attachment

Quote:

*Originally Posted by **FTC1002** »*

We are using the prototype board and the bread board that hitechnic sells with it. The bread board has adhesive on the back. Are we allowed to use this adhesive to attach the bread board to the robot?

A: Yes, you may use the adhesive on the back of the bread board provided that the adhesive was originally on the bread board. However, you may not use to adhesive in a secondary way as stated like the Velcro rule in <R5>c28 (i.e. it may *not* be used to join robot parts together).

GDC Twinkletoes

02-01-2012, 10:55 PM

R5c15 question on wire coated rope

Quote:

*Originally Posted by **FTC3785** »*

The rule states "Plastic-coated wire rope with a bare wire diameter of 0.03125" (0.08cm) or smaller." We are using low strength nylon coated stainless steel wire rope from McMaster Carr 34235T22. It has a diameter 0.027-0.034. I assume that this is okay.

Yes, that specific part from McMaster Carr is acceptable.

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The Robot - Parts and Materials

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GDC Mr Precision

02-02-2012, 05:00 PM

Rule <R5>c1b - Size Constraint for Plastic Sheet

1 Attachment(s)

Quote:

*Originally Posted by **FTC1000** »»*

Can you tell me if the cut example for plastic sheet in the attached file would pass inspection? Attachment 26

The example part would not pass inspection. Parts constructed from plastic sheet must be able to fit within a 24 inch square, and may not exceed a 24 inch maximum dimension on any side.

GDC Mr Precision

02-05-2012, 10:46 AM

Shorter Version of the TETRIX Bushing

Quote:

*Originally Posted by **FTC4667** »»*

Seeing how we could shorten the bronze bushings provided, can we just purchase shorter versions with those diameters??

Yes, provided that the material type, and inner and outer diameters are equivalent to the TETRIX bushings

GDC Mr Precision

02-05-2012, 11:00 AM

Allowed Materials

Quote:

*Originally Posted by **FTC4667** »»*

Q1: Are there any restrictions on fastener materials? We are allowed up to 3/8" diameter, but can we use stainless steel, brass, aluminum, plastic, etc. fasteners?

Q2: Can the 3/8" threaded rod be of any material?

Q3: Is it just washers that can't be used as ballast?

A1: There are no restrictions on fastener materials. See Rule <R5>C18 for the mechanical fastener constraints.

A2: Yes, per post #16 in the Parts and Material thread.

A3: Yes, provided that no other rules are violated. For example, only one TETRIX battery is allowed on the robot.

GDC Mr Precision

02-05-2012, 11:10 AM

Equivalent Bronze Bushing

Quote:

*Originally Posted by **FTC2901** *

Q1: Are we allowed to purchase a nearly equivalent bronze bushing from an alternate source?

The Standard Bronze Bushing from TETRIX is 3/16" Inside Diameter, 5/16" OD 1/2" length with a 1/16" thick 3/8" OD flange

Can we instead use the equivalent McMaster-Carr Part 6338K311 which is listed as:

SAE 841 Bronze Flanged-Sleeve Bearing for 3/16" Shaft Diameter, 5/16" OD, 1/2" Length.

If you compare it to the official tetrax part, the only difference is that the Flange just a tiny bit larger at 7/16". There doesn't appear to be any advantage of the larger flange and it is slight enough that if someone didn't point it out, it would not be noticed.

Q2: Assuming that the answer to the question is yes, McMaster-Carr has another identically sized part at half the price. (\$.44 instead of \$.75 each).

Part Number 2938T28 which is listed as:

SAE 863 Bronze Flanged-Sleeve Bearing for 3/16" Shaft Dia, 5/16" OD X 1/2" L X 7/16" Flange OD

The difference here is that the part has a silver cast to it as per their description:

SAE 863—Also called Super Oilite®, this material is similar to SAE 841, but contains more iron for greater strength. Note: Color is silver because of the iron.

Thank you very much

A1: Yes, the referenced part is equivalent to the TETRIX part and it is allowed.

A2: Yes, the referenced part is equivalent to the TETRIX part and it is allowed.

GDC Anchor

02-06-2012, 04:33 PM

Wiring Sleeve

[QUOTE=FTC5454;3167]Q: Are we allowed to use these types of sleeves for our wiring?

- a) <http://cableorganizer.com/braided-sleeving/>
- b) <http://cableorganizer.com/nylon-wire...BFTNY075-550FT>
- c) <http://cableorganizer.com/spiral-wra...SWPE0375-100FT>[/QUOTE]

A: No, this type of material is not allowed by the rules.

GDC Medic

02-09-2012, 11:51 AM

Quote:

*Originally Posted by **FTC5341** »*

Can non-slip pad be glued to itself to create a belt?

A: No. Glue is only allowed for PVC and plastics as described in <R5>.c.2.

GDC Medic

02-16-2012, 11:01 AM

Quote:

*Originally Posted by **FTC3717** »*

Can we manufacture square square tubing with radiused corners on the inside?

A: Yes, as long as the raw material used to fabricate the mentioned tubing are from the list of approved materials in <R5>.c and the methods used don't violate any other rules (i.e. <R14>.d).

GDC Anchor

02-16-2012, 03:56 PM

Spacers vs. Washers

Quote:

*Originally Posted by **FTC4667** »*

re:

Nylon Spacer Part Question

Originally Posted by FTC4193

Would a generic nylon spacer similar to the ones already provided with the TETRIX system be allowed? If other brand spacers are allowed would they fall under the constraints of the washer sizing rule?

If they are not permitted, from reading the other posts I believe I could laminate plastic sheeting together up to 1/2" thick and then shape it as necessary.

A: Generic nylon spacers of different sizes other than provided in the TETRIX system are not legal. You would have to laminate the plastic sheeting together.

*Can you clarify the difference between nylon spacers and plastic washers?
Can we glue two together?*

A: Washers are fasteners that are used to spread the load and prevent damage to the part being fastened together. They are typically very thin in relation to their length and are sold as "washers". As the name implies, spacers are used to space two or more items apart and are typically quite thick.

Yes, you may glue washers or spacers together providing the glue used is in the list of allowable cements.

GDC Mr Precision

02-20-2012, 11:03 AM

Plastic Drop Cloth

Quote:

*Originally Posted by **FTC2888** »*

Is plastic sheeting such as plastic drop cloth with a 2 mil thickness an allowed material?

Thank you.

Yes, per rule <R5>c.1. Pay particular attention to the length restriction in <R5>c.1.b and posts to the Parts and Materials section of the Q&A forum that address the length restriction.

GDC Twinkletoes

02-20-2012, 03:34 PM

Hex Bolts

Quote:

*Originally Posted by **FTC5721** »*

Looking at rule <R5> c. 18: Are hex bolts allowed? They are under 0.375" but the heads do not look like Tetrax. After reading several other post, I would say yes. The last part of the rule is confusing, and we just don't want to mess up anything as simple as bolts.

A: Yes, Hex bolts are allowed. See also Post #117 in Parts and Materials.

GDC Twinkletoes

02-22-2012, 10:17 AM

Velcro as padding

Quote:

*Originally Posted by **FTC5356** »*

Are we allowed to use Velcro other than as a fastener (as long as we do not use it as tape)? For example, could we line a battery box with the fuzzy half of

Velcro, using the adhesive backing to attach it?

A: Yes, that is acceptable.

GDC Mr Precision

02-27-2012, 12:57 PM

Quote:

*Originally Posted by **FTC3550** »*

*Would we be allowed to Wax some of the aluminum pieces on our robot?
Per rule R5a. 8, wax (under normal temperatures) would never contaminate
the field. It would also serve the same purpose as the Super lube described in
the ruling.*

Wax is not listed as an allowed material in rule <R5> and is therefore not permitted.

GDC Twinkletoes

02-27-2012, 06:46 PM

Quote:

*Originally Posted by **FTC0785** »*

*My team is unsure whether or not one of our parts is legal. We have a scissor
lift design use two aluminum nuts, one on each side of the robot. It is a crucial
part of our lift, but upon closer inspection, we are unsure whether or not the
part is legal. The nut has a 3/8" diameter thread, is made from aluminum, and
is used as a mechanical fastener.*

The part in question is legal. See also post #8 in Parts and Materials.

GDC Mr Precision

03-13-2012, 07:56 PM

Is a Spring an Allowed Part?

Quote:

*Originally Posted by **FTC5411** »*

Are teams allowed to use springs to assist in lifting crated on the robot?

Springs are not listed as an additional component per Rule <R5>c and are therefore not allowed.

GDC Mr Precision

03-18-2012, 12:20 PM

Modification of Rubber Tubing

Quote:

*Originally Posted by **FTC5784** »*

We have designed a ball elevator using store bought #107 rubber bands which works perfectly. Unfortunately the #107 rubber bands are larger than the #32 bands that are specified in the rules and so are illegal.

Q1: Under the rules we can use rubber tubing with 1/4" ID and 3/32 wall thickness - but are we allowed to slice the tube along one edge to make a flat band out of it or do we need to keep it in its original cylindrical form?

Q2: If we can slice it the second part of the query is, are we allowed to sew the ends together using sewing thread (under rule <C>.14) and are we then able to use aluminium sheet cut into strips and hammered around the join to support the stitching?

Q3: If we can't sew the cut bands are we able to use string to weave the ends of a non-slip mat together as the non-slip mat we have access to is manufactured not as a flat sheet but rather as an open checkerboard style pattern.

Of course if you could declare a rules exemption and allow the #107 rubber bands that would be brilliant as well.

I look forward to your reply.

A1: The specified material appears to violate the Outside Diameter (OD) limit of rule <R5>c22 and therefore is not permitted. There are no material specific limitations on how teams may modify or use surgical or latex tubing. The pre-modified [as purchased condition] parts and materials are required to comply with the material restrictions stated in rule <R5>.

A2: There are no material specific limitations on how teams may modify or use sewing thread, aluminum sheet, and surgical or latex tubing. The pre-modified [as purchased condition] parts and materials are required to comply with the material restrictions stated in rule <R5>.

A3: There are no material specific limitations on how teams may modify or use string and non-slip pad. The pre-modified [as purchased condition] parts and materials are required to comply with the material restrictions stated in rule <R5>.

GDC Mr Precision

03-19-2012, 06:00 PM

Video Camera on a Robot

Quote:

*Originally Posted by **FTC4311** »*

In a tournament last week, one of the teams mounted a video camera as a "decorative item". It seems that violates the rule of no external batteries (or possibly IR sources) (assuming it was powered), which is why our team had taken our keychain camera off our robot, but it is a neat idea and gives great shots (we have used it in practice). Can we do this in future tournaments?

You are correct, an onboard camera would violate the stored energy rule specified in <R17>. The GDC is also concerned about possible interference from the camera's built-in WiFi, Bluetooth, and IR rangefinder. Therefore, cameras are not permitted on the robot.

GDC Mr Precision

03-25-2012, 02:10 PM

Teflon Tape

Quote:

*Originally Posted by **FTC3550** »*

Are teams allowed to use Teflon tape on their robots? As long as the 24" dimension constraint was not exceeded, Teflon tape would satisfy all of the constraints specified in Rule <R5> C-1.

Teflon is an allowed material in rule <R5>c.1. Teflon tape is permitted if it isn't adhesive backed and the material satisfies the size constraints specified in rule <R5>c.1.

GDC Mr Precision

03-25-2012, 02:27 PM

Shoulder Screw

Quote:

*Originally Posted by **FTC3785** »*

According to R5.c.18. "All mechanical fasteners (nuts, bolts, screws, etc.) of any length, any thread type, up to 0.375" (0.9525cm) diameter may be used." Just checking, so McMaster Carr item # 91259A544 Alloy Steel Shoulder Screw, 1/4" Shoulder Diameter, 1-1/4" L Shoulder, 10-24 Thread is allowed?

Please read the Q&A forum prior to posting questions. This question was addressed in the Robot Parts and Materials section of the forum on 12-12-2011 in post #78. Shoulder Screws are allowed provided that they satisfy the constraints listed in rule <R5>c.18 and no other rules are violated.

GDC Mr Precision

03-25-2012, 02:44 PM

A Question About VELCRO

Quote:

*Originally Posted by **FTC3785** »*

The manual states "The (VELCRO) fastener may not be used as tape (i.e. the adhesive side may not be used to join together Robot parts)." Can I assume that the hook and loop sides can be used to hold two arms to each other. For example, we might want to squeeze two arms together at some point and use the VELCRO to keep the arms together. This seems to be a permitted use of VELCRO. Correct?

Yes, the VELCRO hook and loop sides joined together to secure robot parts is permitted by the rules.

GDC Mr Precision

03-25-2012, 03:04 PM

Fastener Thread Type

Quote:

*Originally Posted by **FTC3550** »*

Rule <R5> C 18 first states that teams may use fasteners of any length, thread type, and must be under 0.375" in diameter. It then goes on to state that "compatible fasteners are characterized by using the same thread characteristics as TETRIX fasteners."

Q1: May the fasteners have any thread type and the rule was stating TETRIX compatible fasteners, or must teams use fasteners of similar thread type to TETRIX fasteners?

Q2: Also, I would assume that said fasteners could be modified, but could you please clarify on the limitations to modifying these fasteners?

A1: This question was addressed in the Robot Parts and Materials thread on 09-30-2011 in post #7.

A2: There are no rules specifically addressing modification of fasteners.

GDC Anchor

04-02-2012, 04:51 PM

Lead Screw flange Nuts

1 Attachment(s)

Quote:

Originally Posted by **FTC2859** 

Q: Posting #66 appears to rule that the independent mounting flange for lead screws are not allowed. But are plastic flange nuts that have an integrated mounting flange permitted, see the URL: http://www.roton.com/Mating_Componen...family=7061016 or the attached PNG.

A: Yes, a lead screw with an integral mounting flange is a legal component.

GDC Anchor

04-02-2012, 04:51 PM

Lead Screw flange Nuts

Quote:

Originally Posted by **FTC2859** 

Q: Posting #66 appears to rule that the independent mounting flange for lead screws are not allowed. But are plastic flange nuts that have an integrated mounting flange permitted, see the URL: http://www.roton.com/Mating_Componen...family=7061016 or the attached PNG.

A: Yes, a lead screw with an integral mounting flange is a legal component.

GDC Mr Precision

04-14-2012, 10:24 AM

Nylon Lock Nuts

Quote:

Originally Posted by **FTC4081** 

We ordered the following thinking they were nylon-insert lock nuts, but they are lock nuts completely made out of nylon (McMaster # 94909A159 - Nylon Hex Locknut, self-threading, 6-32 thread size, 5/16" W, 13/64" H) Would this part be allowed or should we order new? Thanks.

This is an allowed part based on the following posts to the Parts and Materials Q&A:

Post # 8 on 10-03-2011

Post # 123 on 02-05-2012

GDC Mr Precision

04-20-2012, 09:37 AM

The Robot - Parts and Materials

Quote:

*Originally Posted by **FTC4076** »*

Q: Are there any restrictions on allowable materials for washers? Can nylon washers be used?

A: There are no restrictions on washer materials. See the Parts & Materials post #128 on 02/16/2012 for guidance concerning the difference between washers and spacers.

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The Robot - Other Answers

Printable View

Administrator

09-19-2011, 11:13 AM

The Robot - Other Answers

Answers to questions that don't fall under Electrical, Mechanical or Parts and Materials will be found here

GDC Twinkletoes

09-22-2011, 10:20 AM

Quote:

*Originally Posted by **FTC5192** »*

how much can the robot weigh.....

A: There is not a rule on the weight of a robot.

GDC Mr Precision

09-28-2011, 10:23 PM

Flag and Measurement Requirements

Quote:

*Originally Posted by **FTC4982** »*

Rule <R4> specifies the 18" x 18" x 18" initial envelope for the robot. Rule <9> specifies the robot identification flag requirements. Is the envelope measurement taken before the mounting of the flag?

The Alliance Flag is not included in the rule <R4> size requirement. The flag may extend outside the 18" x 18" x 18" envelope.

GDC Twinkletoes

11-16-2011, 11:56 PM

The claw

Quote:

*Originally Posted by **FTC5303** »*

My team and I were wondering what is the best way to make a claw? <design idea deleted>

The Game Design Committee does not answer questions regarding robot design or strategy. This Q&A forum is specifically for questions concerning the rules and play of the game. We suggest you direct your question to the FTC Community Forum.

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Engineering Notebook - Answers

Printable View

Administrator

09-19-2011, 11:16 AM

Engineering Notebook - Answers

Answers to questions about Engineering Notebooks are found here.

GDC Mr Precision

09-25-2011, 02:47 PM

Engineering Notebook - Answers

Quote:

*Originally Posted by **FTC5112** »*

My team has been collecting thier designs, notes, refelctions, and other technical details in a team blog. Can this be printed and given as the team's (electronic) technical notebook?

Thanks,

Yes, provided that the guidelines for Engineering Notebooks in Section 5 of the game manual are followed.

GDC Twinkletoes

11-05-2011, 11:15 PM

Drawings in Electronic Notebook

Quote:

*Originally Posted by **FTC3633** »*

How would you like drawings placed in an electronic notebook? Scanned or rough copy just placed in at the appropriate date?

Thanks

A: Either way is fine as long as it documents your thinking at that time.

GDC Twinkletoes

11-30-2011, 09:43 PM

Engineering Notebook - Answers

Quote:

*Originally Posted by **FTC3991** »*

In reference to 5.3, line 1, does a three-ring binder count as a 'loose-leaf' notebook? We started our year using a small spiral notebook, and have since added several other ones, along with countless drawings and things. Are we forbidden to organize our stuff into a binder? We are not recording our meetings on individual pages of lined paper, rather, we've kept them in spiral notebooks. We want to put the several notebooks into a binder.

A: Based on how you are using the spiral notebooks, you are allowed to organize them into a binder. Please do not use individual pages of lined paper.

GDC Mr Precision

12-05-2011, 10:59 PM

Switching Notebook Formats in the Middle of the Season

Quote:

*Originally Posted by **FTC4982** »*

Hello, I am mentoring a rookie team and we have just been to our first qualifier. We have been utilizing a spiral-bound engineering notebook up to this point, but the students have decided they would rather go with an electronic/online format for a number of reasons. We will be attending at least one more qualifier. Would there be any problem with switching to an electronic format now that the season is well underway? Is this something that we are allowed to do? We would, of course, still submit the original spiral notebook, but everything we do from this point and throughout the rest of this season would be in a separate, second notebook that we print out from our computer. I am hoping it would show that the team has learned from their experiences and is making a change in a better direction for themselves.

Switching from a hand-written to an electronic format engineering notebook is allowed. If the spiral notebook has pre-punched holes, insert it into the three ring binder used for the printed copy of the electronic notebook. If the spiral notebook does not have pre-punched holes perform the following steps:

1. Verify that the pages are numbered.
2. Remove the pages from the spiral notebook.
3. Punch holes so that the pages can be inserted into a 3-ring binder.
4. Combine the hand-written pages with the printed electronics pages and place them all in a single 3-ring binder.

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Judging and Awards Criteria - Answers

Printable View

Administrator

09-19-2011, 11:17 AM

Judging and Awards Criteria - Answers

Answers to questions about Judging and Awards Criteria are found here.

GDC Mr Precision

12-23-2011, 01:38 PM

Judging and Awards Criteria - Answers

Quote:

*Originally Posted by **FTC0505** »*

In the game manual it states: "Once a team has won an Inspire Award at a Championship, they are no longer eligible to win the Inspire Award at additional championship tournaments they may attend. Similarly, once a team wins an Inspire Award at a Qualifying tournament, they are no longer eligible to win the Inspire Award at subsequent Qualification tournaments."

Does this mean that at each "level" of championship or competition that a team may only win the Inspire Award one time, but can then still qualify to win at the next level?

For example: A team may win at Qualifier, State, and World but not more than once at each level.

Yes, a team can win the Inspire Award one time at each competition level (i.e. a single team can win the Inspire Award at one qualifying tournament, one Regional Championship and the World Championship).

GDC Mr Precision

01-09-2012, 02:40 PM

Supplementing the Engineering Notebook

Quote:

*Originally Posted by **FTC0040** »*

Hello. My team would like to use a tablet and its built-in webcam to record short video clips associated with pictures of key elements of the robot as we work on them. I would like to know if the judges will allow us to submit the

*tablet with an app. prominently displayed on the opening screen that they would click to look at our notebook. The screen would be broken into two halves - the picture or a series of pictures and in the lower portion a short video clip where the students will explain the pictures that you are seeing. This format would not lend itself to being printed out and submitted, so we would **need to submit the actual tablet**, is this acceptable? If we do it correctly, I think it would make looking at our engineering notebook both easier and more personal.*

Thanks.

Teams are required to submit a paper copy of their engineering notebook to the judging team in order to be considered for most of the judged awards. The format of the engineering notebook is described in section 5.3 of the Bowled Over! game manual. Electronic devices are not listed in section 5.3, and therefore are not allowed to be part of the engineering notebook that is turned in for judging.

Teams may use tablets and other electronic devices for their formal judging interview and during informal follow-up interviews. Teams should keep the electronic devices in their possession and not hand them over to judges for later review. We don't want Judges to be responsible for the security of a team's valuable equipment.

GDC Mr Precision

01-30-2012, 12:38 PM

Awards Eligibility

Quote:

*Originally Posted by **FTC3483** »*

I am wondering about this rule -

6.2 - FIRST TECH CHALLENGE AWARD ELIGIBILITY

To ensure fairness to all teams and to provide equal opportunity for all teams to win an award at a FIRST Tech Challenge Championship tournament, teams are only eligible to win an award at the first three Championship tournaments that they attend. Those teams who compete in more than three Championship tournaments do so for the purpose of being involved in the fun and excitement of the tournament and not with the intention of winning multiple awards.

Q1: Does this mean if you have NOT won any awards at your first two Championship tournaments, you could potentially compete in two more and be eligible for Awards?

Q2: What if you don't win any awards in your first three Championship tournaments - could you compete in another and be eligible for Awards?

Thanks.

A1: No.

A2: No.

Teams are eligible to win an award at the first three Championship tournaments attended in a

season. Starting with the fourth Championship tournament attended during the season, the team is not eligible to win any awards.

Teams may win the Inspire Award at only one Championship tournament in a season.

GutterBall_FTCStaff

01-31-2012, 04:20 PM

Fourth Championship and Advancement

Quote:

*Originally Posted by **FTC4311** »*

If a team competes at a fourth championship for fun and training, they are not eligible to win an award, but what happens if they are the captain of the winning alliance? Would the first pick of the winning alliance be considered the captain of the winning alliance, thus getting an invite to St. Louis, or would the invites go to the Inspire winner and second-place Inspire winners?

The next eligible team according to the advancement criteria would receive the invitation. In the scenario you describe, the Inspire Award Winner and the first runner up to the Inspire Award Winner would receive the invitation.

All times are GMT -4. The time now is 04:13 PM.

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Robot Inspection - Answers

Printable View

Administrator

09-19-2011, 11:18 AM

Robot Inspection - Answers

Answers to questions about Robot Inspections are found here.

GDC Twinkletoes

09-22-2011, 09:00 AM

Quote:

*Originally Posted by **FTC0031** »*

Rule SG-15 says that the ball-holding capacity of a robot cannot exceed 15 balls, but two things aren't clear to me.

First, the rule suggests that the robot isn't inspected for ball holding capacity unless and until it has committed an offense of holding more than 15 balls. In other words, a robot that is theoretically capable of holding more than 15 balls is "okay" as long as it follows the rules and doesn't in fact control too many. Only after a penalty for having too many balls would the robot be required to make a modification to eliminate the possibility of future offenses. Is that the intent? Or will robots be inspected for ball holding capacity at the outset of the competition?

Second, in deciding whether the 15 ball capacity limit is met, do we count just the ball storage mechanism or must we also account for the fact that a ball pick-up mechanism, in a sense, also carries/controls balls at least in a transitory manner. Many robots will have both a ball-holding mechanism (e.g., a storage bin of some kind) and a ball pick-up mechanism of some kind. The purpose of the pick-up mechanism isn't to hold balls, but in at least some designs the pick-up mechanism may have several balls in it at a time as the balls are being lifted. Must that capacity also be considered, or just the capacity of the ball storage mechanism itself?

First - Not true. Robots WILL be inspected for ball holding capacity during inspection. Please refer to Rule <I2>

Second - the entire robot is considered when testing the 15 ball capacity limit. This includes pick-up mechanisms, arms, hoppers, and more.

GDC Twinkletoes

11-09-2011, 10:11 PM

How is racquetball capacity calculated for <SG15>?

Quote:

*Originally Posted by **FTC5341** »*

<Question regarding racquetball capacity that included robot design that we will not comment on>

From the GDC: There have been many questions about the 15 Ball limit including asking if a certain design is legal or not, so let's try to put it simply. Robots that have the ability to hold more than 15 racquetballs in their Ball travel paths and storage areas will NOT pass inspection. Balls stored in Ball Crates and Balls that are NOT "held captive" with the robot powered off will NOT count towards the 15 ball limit.

Robot inspectors will observe while teams fill all of the Ball travel paths (intake, conveyor systems, etc.) and storage areas to their maximum capacity with the robot powered off. The robot can be powered on if needed to fill a conveyor system and then powered off while determining the ball capacity. Ball Crates will not be present during this test. Areas that hold Balls "captive" in a travel path or storage area will be counted towards the 15 Ball limit. Areas that always "shed" Balls due to gravity when the robot is in a powered off state will NOT count towards the 15 Ball limit. Examples of areas that shed balls are sloped PVC pipe, ramps, etc. that do not have a mechanism to block ball travel. If a robot has a mechanism for blocking ball travel, the robot will be tested with the mechanism in both the open and closed position. The state (opened or closed) that enables the robot to hold the most balls will be used to determine the ball holding capacity.

Tip from the Game Design Committee: This rule is in to disallow teams from hoarding balls. Rule violations that will disallow a robot to pass inspection is a very good indication that the GDC doesn't want teams to do this.

GDC Mr Precision

11-23-2011, 10:03 AM

<SG15> Static or Dynamic Capacity?

Quote:

*Originally Posted by **FTC1001** »*

Can the ball holding capacity of <SG15> be limited by software or physical interlocks, or is static capacity the only acceptable criteria?

To help illustrate the question, this is a specific example: "If a ball holding mechanism has sufficient space to hold 20 balls, but the robot counts the number of balls in the mechanism and prevents more than 15 from entering, does that satisfy the ball holding capacity limit of SG15?"

I encourage the answer to be "yes". It would be OK with me to say that if interlocks are used to limit the ball holding capacity and if it is not obvious during game play that these interlocks are effective, the referee or inspector can request that the interlocks be changed to reduce the number of contained balls such that it is clearly below 15.

The robot described in this post would not pass inspection because it has the capacity to store more than 15-balls. The robot inspection procedure is described in post #3 of the robot inspection thread.

GDC Mr Precision

11-23-2011, 09:10 PM

Robot Inspection - Answers

Quote:

*Originally Posted by **FTC4150** »*

Last year, teams were required to provide a "cut sheet" as part of the bill of materials showing the amount of sheet aluminum and sheet plastic used on the robot. This year, a cut sheet is not mentioned in the game manual, and the bill of materials only seems to require some basic dimensions for the sheet types used (thickness, maximum side length, and area for aluminum only).

Q1: During this year's inspection process, are teams required to present a cut sheet or individual part drawings for custom sheet parts (polycarbonate, aluminum, etc)?

Q2: Apart from listing the total area of sheet aluminum used on the BOM, are the bill of materials requirements different for aluminum than they are for the other sheet materials? Thanks.

A1: Cut sheets are not required for the Bowled Over! season. The engineering notebook should contain dimensioned sketches/drawings and calculations for all materials with total area or length constraints to verify that they comply with rule <R5>c. Teams should bring copies of these engineering notebook entries to hardware inspection.

A2: No.

GDC Twinkletoes

11-30-2011, 09:49 PM

Bill of Materials

Quote:

*Originally Posted by **FTC5157** »*

In the sample posted it seems to indicate the BOM needs to only include non-Tetrix/Lego parts, is that correct is do we need to include a comprehensive list including every single piece?

A: Rule <R6> states: All parts listed in <R5>c that have a maximum constraint and that are used on the robot must be tracked through a Bill of Materials (BOM). The parts in <R5>c are non-TETRIX/non-LEGO parts. So you don't have to track all of the TETRIX parts. Nor do you have to track every compatible screw, nut, washer, etc. Only the parts that have a size constraint (e.g. plastic, aluminum sheet, etc.).

GDC Mr Precision

12-11-2011, 10:02 PM

Robot Inspection - Answers

Quote:

*Originally Posted by **FTC5501** »*

We have a robot that has a harvester on the back of it. We have zip ties attached to the harvester to help pull the balls into it. Our robot is just under 18" long without the zip ties hanging off the back. However, if you put an 18" x 18" x 18" box over the robot the zip ties are pressed between the robot and the box so it fits. Our question is if this is acceptable since it still fits inside the box?

The sizing box is a tool used by robot inspectors to verify that a robot, while in its starting configuration, doesn't exceed the 18" x 18" x 18" size constraint. If the robot exerts force on the sides or top of the box, the box is helping the robot to stay within the size constraint and the robot therefore violates rule <R4> and it will not pass inspection. The robot described in this question violates rule <R4> and would not pass inspection.

GDC Medic

12-15-2011, 11:13 AM

Quote:

Originally Posted by **FTC4650** 

I have a question about the following clarifications. The first post would state that any place that balls are not "held captive" by the robot (pvc pipes/channels with stopping device) and naturally shed the racquetballs would not count toward the 15 ball limit. The second post on the other hand seems to say the opposite, that those ramps would count toward the 15 ball limit. Which of these interpretations should the teams plan on?

GDC Twinkletoes

Question about <SG15> during inspection.

Originally Posted by **2010FTC3848**

If our robot is dropping balls into a crate located on a flat surface on the back of the robot, during inspection would this flat area be counted in determining whether or not the robot violates the 15 ball limit of <SG15>?

A: There have been many questions about the 15 Ball limit, so let's try to put it simply. Robots that have the ability to hold more than 15 racquetballs in their Ball travel paths and storage areas will NOT pass inspection. Balls stored in Ball Crates and Balls that are NOT "held captive" with the robot powered off will NOT count towards the 15 ball limit.

GDC Medic

Originally Posted by **FTC2891**

If there's a ramp/tube on a robot that racquet balls go through but that wouldn't be able to hold the balls in the robot without outside support (e.g. there isn't anything stopping the balls from falling out the bottom of the ramp/tube), would this count towards the 15 ball limit?

A: Balls in a tube, or on a ramp would be considered controlled by the robot and are subject to the limits of <SG15>.

A: The later posting will take precedence. Of the two answers given, the one you listed as "1st (GDC Twinkletoes)" was posted on 11/10/11, the one listed as "2nd (GDC Medic)" was posted 10/06/11.

GDC Twinkletoes

12-19-2011, 05:50 PM

Using Programming to limit number of raquetballs contained in robot

Quote:

*Originally Posted by **FTC3599** »*

Our team was working on our ball collection system and were wondering if we could use sensors and programming to limit the number of racquetballs we had collected. For example, if our robot had the physical capacity for more than 15 balls, but we programmatically (using sensors) made sure that the robot would never collect more than 15 balls. (Basically can we programmatically reduce our ball capacity)

A: No, this would be a violation of Rule <SG15> specifically the last statement in parentheses "if the ball holding capability of your robot can hold 16 or more balls, the Robot will not pass inspection"

GDC Medic

12-22-2011, 10:43 AM

Quote:

*Originally Posted by **FTC5045** »*

Our Robot has a an Archimedes screw which has 5 levels to pick up the racquet balls. The entry point where ball can enter is a 3 inch square and hence only one ball can get it in at a time. The height of the screw is 15 inches and the space between each step of the screw is 3 inches. Because of the restriction at the entry point, at any point of time, each rotation of the screw can only pick up one racquet ball. With five levels, the maximum capacity of the archimedes screw is 5 racquet balls at a time. At the last qualifier round, we were asked a lot of questions as the inspectors assumed that it was possible to carry many racquet ball in each level hence exceeding the 15 ball limit. We need your response that based on the information provided by us , our archimedes screw is within the rule limitations.

Are wood screws less than 3/8inch diameter allowed?

A1: The inspectors (and the referees) will determine if a robot is capable of holding more than the allowed 15 balls, based on their observations at the event.

A2: Wood screws are not allowed.

GDC Mr Precision

12-23-2011, 02:01 PM

Rule <SG15> - 15-Ball Limit

Quote:

*Originally Posted by **FTC5045** »*

If the entry point of the Archimedes screw restricts entry of one ball at a time, is it possible for an archimedes screw to carry more than one ball per level of screw?. We are confident the screw can only one ball at a time. Can you tell us

a scenario where it is possible for the screw to carry multiple balls per level of screw taking into consideration, entry is restricted to one ball at a time

The Game Design Committee (GDC) is not able to rule on specific robot designs described in posts to the Q&A forum. The GDC recommends that teams review the pertinent rules in the game manual and posts to the Q&A forum. Pay particular attention to the inspection process for determining the ball capacity (rule <SG15>) at tournaments as described in post #3 in the robot inspection thread: <http://ftcforum.usfirst.org/showthread.php?p=1> Posts #4 and #9 in this thread also address questions about <SG15>.

GDC Mr Precision

01-09-2012, 02:56 PM

Robot Inspection - Answers

Quote:

*Originally Posted by **FTC5015** »*

We purchased and have used extra robot parts for our robot. They were all from PITSCO. Some of the materials are components not originally found in the FTC Kit of Parts and Resource Set.

Q1: Will we still need to list those parts on the BOM? What needs to be listed on the BOM?

Q2: Do we need to attach original receipts?

Thanks

A1: The Bill of Material should only contain parts listed in rule <R5>c that have a maximum constraint and that are used on the robot. See rule <R6> for complete details of what is expected for the Bill of Materials.

A2: Receipts are not listed in rule <R6> and therefore are not required to be included in the Bill of Materials. Rule <R7> addresses the need for teams to have receipts or other documentation available for robot inspectors to review upon request.

GDC Mr Precision

02-05-2012, 08:37 PM

Safety of a Scissor Lift

Quote:

*Originally Posted by **FTC4102** »*

Our robot has a scissor lift that shoots up very fast when it is released. Because of the way it is designed, it has to do this in order to work properly. When it shoots up it goes up straight, so it would not go outside of the playing field unless the robot itself was on an angle. We will be placing warnings on the robot about this, protective padding on the top of the lift, and also warning refs during a match when we are about to release the lift. There are no rules against a fast moving lift since it won't damage any field elements and it won't endanger spectators or drivers since it doesn't go outside the playing field. However, refs at our latest scrimmage were still concerned about safety with the lift. Even if it doesn't hurt someone, is there any reason we could be disqualified from a match or a tournament simply because of a fast moving

lift? (assuming it doesn't hit anybody)

The Game Design Committee is not able to rule on the safety of the described scenario. Fast robot motion in itself doesn't automatically violate a rule. On-site Referees are best suited to observe robot behavior and determine if rules are violated. Depending on the situation, safety rules <S1> and <S2>, and rule <G8> could come into play.

GDC Twinkletoes

03-05-2012, 11:33 PM

Zip Ties

Quote:

*Originally Posted by **FTC4408** »*

We use zip ties to form a "skirt" around the bottom of our robot. The zip ties touch the ground and bend out slightly. In this state, the zip ties do not extend beyond 18" in either dimension. Is this acceptable even though they will make contact with the bottom of the sizing box?

A: Yes, it is acceptable as long as the zip ties in question are on the drive train side of the robot. This does not give teams carte blanche to extend to the sides or top of the robot beyond the 18".

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