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CASCADE EFFECT℠

Robot Parts and Materials - Answer Thread

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FTC Cause and Effect

08-04-2014, 02:51 PM

Robot Parts and Materials - Answer Thread

You will find answers to the questions you post about Robot Parts and Materials in this thread.

GDC Domino Effect

09-16-2014, 07:54 PM

Robot Parts and Materials - Answer Thread

Quote:

> *Originally Posted by* ***FTC2856***
>
> *Can we can use magnets on a robot?*
>
> *In the rules, I don't see anything saying if magnets are legal or illegal with building the robot, so I'm not sure if magnets are okay or not...*

A: Yes, magnets are legal per Rule <R04>

GDC Domino Effect

09-16-2014, 08:03 PM

Fans

> Quote:
>
> *Originally Posted by **FTC4290***
>
> *According to <RG10.d>, compressed air and pneumatic devices are not allowed. Is it legal to attach fan blades (such as <http://www.amazon.com/Ventmate-65484-White-Replacement-Jensen/dp/B0085IJIPC/ref=sr_1_1?ie=UTF8&qid=1410900771&sr=8-1&keywords=fan+blade>, which is allowed under <RO4.c>) to a Tetrix DC motor in order to generate an air current?*

A: Yes, fan blades and fans made using these blades are legal. However, they must be properly guarded so that there is no possibility of these high speed blades coming into contact with a person (team member, FTA, Ref, etc.) or the field (Rule <RG03.a>. Mechanical Inspectors will be instructed to pay particular attention to fan based devices to insure they can be operated safely.

GDC Domino Effect

09-16-2014, 08:07 PM

Versaframe

> Quote:
>
> *Originally Posted by **FTC6389***
>
> *Hi,*
>
> *With the new relaxed COTS rules, we just wanted to verify that chassis frame components such as the VEX VersaFrame (http://www.vexrobotics.com/vexpro/st...ersaframe.html) are allowed, since all teams have equal access to it?*
>
> *thanks*

A: Yes, Versaframe is a legal building material per Rule R04.b

GDC Domino Effect

09-16-2014, 08:12 PM

Robot Parts and Materials - Answer Thread

> Quote:
>
> *Originally Posted by **FTC5991***
>
> *Are makerslides (https://www.inventables.com/technologies/makerslide) allowable parts as a linear slide system under rule <R04>.c or would at least the aluminum channel be allowed as an extruded raw material under <R04>.a?*

A: Yes, Makerslide is a linear slide and is permitted per Rule <R04.c>

GDC Domino Effect

09-16-2014, 08:23 PM

All-terrain Tires

Quote:

*Originally Posted by **FTC7231***

Are Tetrix All-Terrain tires legal?
Looked the Game Manual but we are still not sure.
I see that from <R02> that All-Terrain tires are not part of the prohibited list so they should be legal.
But someone told our team they can be called high traction so they are not allowed, as per <R04>.d.
But my understanding is that <R04> only applies to COTS other than Tetrix/Matrix. All Tetrix parts have been vetted.

Please advise if we can use Tetrix All Terrain Tires.

A: Rule <R04d> applies to any tire that can damage the field tiles if the robot gets stuck and spins it's wheels in place. The Tetrix All-Terrain tires have not been shown to damage field tiles therefore they are allowed.

GDC Domino Effect

09-17-2014, 05:07 PM

Gearbox Removal

Quote:

*Originally Posted by **FTC7911***

<R09> g. Can an unmodified Tetrix or Matrix motor be used with the gear box removed?

A: No, no modifications are allowed beyond the ones explicitly listed. Teams may replace or repair the gearboxes but cannot alter the performance of the motor/gearbox combination.

GDC Domino Effect

09-17-2014, 05:12 PM

Can & Buckets

Quote:

*Originally Posted by **FTC5664***

Are we allowed to use building materials, such as, preformed plastic buckets/cups or metal cans, such as coffee/aluminum cans, in their whole shape or cut into pieces? We would ensure that any sharp edges were covered, so it wouldn't damage the floor or cut anyone.

A: Yes, preformed cans, buckets etc. are legal per Rule < R04b>. Thank you for considering the safety of any items you use on the robot.

GDC Domino Effect

09-18-2014, 07:55 PM

Non-Tetrix hardware

Quote:

*Originally Posted by **FTC6433***

Question about COTS:

Are other building systems (other than Tetrix or Matrix) allowed under the new COTS rules. Question is regarding the mechanical parts, not the motors or electronics. For example:
http://www.robotmesh.com/classroom-c...nC4aAqCy8P8HAQ

Thanks.

A: Yes, non-Tetrix structural and mechanical parts are allowed providing they do not violate any other rule, particularly <R04>.

GDC Domino Effect

09-18-2014, 07:59 PM

Vacuum Hose

Quote:

*Originally Posted by **FTC0395***

Is flexible vacuum hose, like that below, legal? Thanks.

http://www.amazon.com/Woodstock-D420...997937&sr=1-14

A: Yes, this is a legal component per Rule <R04b>

GDC Domino Effect

09-18-2014, 08:02 PM

Zero Degree of Freedom COTS

Quote:

*Originally Posted by **FTC7953***

<R04>c says "COTS parts and assemblies may only have a maximum of a single degree of freedom." This implies that COTS parts and assemblies with no degrees of freedom are legal. To verify, this means that teams may purchase virtually any commonly available COTS part or assembly with no degrees of freedom and modify and use them as they see fit, correct? We're thinking of things like a rake, a plastic bucket or can, a chair, a boot, an empty plastic bottle, any hand tool with no degrees of freedom, etc.

A: You are correct, items that you have described are allowed under Rule <R04b>.

GDC Domino Effect

09-18-2014, 08:05 PM

Pulleys

Quote:

*Originally Posted by **FTC4454***

Are pulleys still legal?

A: Yes, pulleys (sprockets, gears, etc.) are legal COTS per Rule <R04c>.

GDC Domino Effect

09-18-2014, 08:10 PM

Tetrix Gearbox

Quote:

*Originally Posted by **FTC7911***

<R09> g. Can a Tetrix or Matrix gear box be used with the motor removed (i.e. idle chain tension adjustment.)?

A: There are no restrictions as to where teams may acquire gearboxes. Therefore a Tetrix gearbox without the motor can be legally used on a robot.

GDC Domino Effect

09-18-2014, 08:13 PM

Gearboxes

Quote:

*Originally Posted by **FTC4211***

Hello,

Are the Servocity Servo Power Gearboxes seen here (http://www.servocity.com /html/spg400...o_gearbox.html) allowed?

Thanks,
Team 4211

A: Yes this gearbox is legal per Rule <R04c>

GDC Domino Effect

09-21-2014, 01:49 PM

Rough Top Tread

Quote:

*Originally Posted by **FTC6433***

Are the following tire treads legal?

(Roughtop Tread, 1" wide, nitrile rubber, brown)

http://www.andymark.com/product-p/am-0523.htm

Thanks

A: No, rough top tread has been shown to damage field tiles and is therefore not allowed.

GDC Domino Effect

09-21-2014, 01:53 PM

Retractable Key Ring

Quote:

---

*Originally Posted by **FTC0524***

For example, is this key ring allowed:
http://smile.amazon.com/gp/product/B...A259KVW6HI7JTA

In addition, since the carabiner on the keyring has a single degree of freedom, is that allowed too?

Thank you

A: A retractable key ring is considered a spring and is legal. A carabiner is a single degree of freedom COTS and is legal.

GDC Kessler Effect

09-22-2014, 11:28 AM

Modified servo motors - Not allowed

Quote:

---

*Originally Posted by **FTC0417***

Can we purchaseservos like these ''You can purchase Hitec servos from us that are pre-modifiedin our own manufacturing facility'' http://www.servocity.com/html/hs-755...l#.VB36lPldWLU''We offer the HS-755MG servo in several configurations, 90° stock rotation,180° modified rotation, and continuous rotation (potentiometer is left outsidethe servo case).'' Since the team is not changing the servo could we use the continuous rotation HS-755 or other pre-modified servos?

thank you for your help

A: Per <R09>c.i. and <R09>g., modified servo motors are not allowed. The motors you describe have been modified and would violate this rule.

GDC Domino Effect

09-22-2014, 04:36 PM

Hydraulic Dampers

Quote:

---

*Originally Posted by **FTC4587***

Are COTS linear and rotary dampers allowed. For example, the ones on this page: http://ace-ace.com/wEnglisch/pages/P...up=264&navid=1

Some of the dampers on this page use hydraulic oil or silicone and others such as the damping plates and TUBUS profile damper just use a special solid material.

Thanks.

A: Dampers with hydraulic fluid are not allowed due to possible contamination of the field. Dampers with solid materials are allowed.

GDC Domino Effect

09-22-2014, 04:46 PM

HS-755MG Servo

Quote:

*Originally Posted by **FTC4587***

This is a follow up to Question #17 you have already answered. The original question was specifically about the continuous or other pre-modified servos and the answer was No. However, I want to confirm that the stock version of the HS-755MG Servo is allowed.

Thanks.

A: The HS-755MG servo is a quarter scale servo and is legal per Rule <R09.c.i>

GDC Domino Effect

09-24-2014, 07:56 AM

Wheels larger than 6"

Quote:

*Originally Posted by **FTC5009***

Are wheels and tires larger than 6" allowed this year, assuming they do not damage the field?

A: There are no restrictions on wheel diameter in *Cascade Effect*.

GDC Domino Effect

09-25-2014, 03:35 PM

Grippy Tread

Quote:

*Originally Posted by **FTC6705***

Hello - we used a single pair of AM-2256 wheels last year which appear to be ruled out specifically by <R04.d>. Will other non-tetrix wheels need specific

approval by the forum this year? We are currently planning to use AndyMark am-2611 tread on AndyMark 4" performance wheels. By our evaluation they do not appear to damage the field soft-tiles, but we wanted to check before we centered our design around them.

A: The GDC has not tested all possible tread and tire combinations and therefore cannot answer this specific question. During Mechanical Inspection teams may be asked to demonstrate that their choice of tread will not damage the tile floor during a match when (if) the bot is pushing hard against a wall or another bot and spinning it's wheels. The test will be to place the robot against an immovable surface (wall) and run the wheels at full power for 15 seconds. If there is any physical damage to the floor tile then the wheels will not be allowed. Discoloration or black marks alone are not considered field damage. Remember, the test must be made with the robot at the weight the bot will be at during a match since this will affect the degree of damage.

GDC Domino Effect

09-25-2014, 03:40 PM

ServoCity Wheels

Quote:

Originally Posted by ***FTC7785***

As a followup to post #20 which states that there are no restriction on wheel diameters this season, can you tell us if we would be allowed to use either of these

http://www.servocity.com/html/precis...l#.VCMWBvldUfA
http://www.servocity.com/html/4_90__...l#.VCMWM_ldUfA

Thanks

A: The wheels in question are legal providing they do not violate Rule <R04d>. See Post 21 for explanation of how to test whether a tread/wheel is legal.

GDC Domino Effect

09-25-2014, 03:43 PM

Fishing Snap-Swivel

Quote:

Originally Posted by ***FTC0524***

Is a fishing snap-swivel like this legal:
http://smile.amazon.com/Nsstar-Barre...wivels+fishing

A: Yes, this is a legal COTS.

GDC Domino Effect

09-25-2014, 03:45 PM

Self Closing HInges

Quote:

*Originally Posted by **FTC6253***

Under rule R04 (c) I see that hinges are allow and that springs are allowed. Are self-closing spring hinges allowed such as http://www.mcmaster.com/#1481a12/=tvjql1?

A: Yes, self closing hinges are a legal COTS.

GDC Domino Effect

09-25-2014, 03:49 PM

Non-Tetrix Hubs

Quote:

*Originally Posted by **FTC4625***

This year would it be legal to use non-Tetrix hubs such as this one to mount gears and sprockets to Tetrix motors?
http://www.pololu.com/product/2674 The additional set screw is attractive.

A: Yes, this is a legal COTS.

GDC Domino Effect

09-28-2014, 05:55 PM

3D Printed Parts

Quote:

*Originally Posted by **FTC6062***

<R07> allows 3D printing of team designed parts, but can we also purchase, download and print parts for use on our robot? We live in rural Alaska and instead of paying for and waiting for shipping of the part, we would like to print it ourselves. Is this legal as long as the parts that we print are legal COTS?

A: Yes, providing the parts are legal COTS and no other rules are violated.

GDC Domino Effect

09-28-2014, 06:07 PM

Fan Assemblies

Quote:

*Originally Posted by **FTC8538***

In Q&A answer #3, you state that fan blades and fans made out of those fan blades are legal. Along those lines, our team would like clarification on whether an entire fan, such as

http://www.robotshop.com/en/12v-16cf...lower-fan.html, or
http://www.robotshop.com/en/sfe-air-pump.html

is allowed. In particular, would such a fan violate R04c prohibiting a COTS component with more than 1 degree of freedom? Or, would it violate RG10d prohibiting pneumatic devices? If a robot were to use mechanical switches to control or redirect the air current created by a fan, would the resulting system be considered a pneumatic device?

Thanks,

FTC team 8538 (LickRobotics)

A: Complete fan assemblies violate Rules <R04c> and <R09> and are therefore not legal. Team built devices that blow air and do not result in appreciable increase in air pressure are legal providing no other rules are violated.

GDC Domino Effect

10-03-2014, 09:08 PM

Casters

Quote:

Originally Posted by ***FTC5950***

We were wondering if rubber caster wheel (http://www.lowes.com /ProductDisplay?...llow&cId=PDIO1) was legal. We were not sure if it would fall under wheels (legal) or COTS (illegal due to 2 DOF).

Thanks!
5950 - The Bio-Bots

A: This caster wheel is a COTS and has more than one degree of freedom. Therefore it is illegal.

GDC Domino Effect

10-03-2014, 09:13 PM

Springs

Quote:

Originally Posted by ***FTC3805***

Are springs allowed? In the rules it made it seem like you could: if they were not compressed at the beginning of the match. Thanks in advance!

Best regards, Jesse and the rest of team 3805

A: Springs are a legal COTS. Rule <RG10c> allows springs to be compressed (or stretched) prior to the start of a match.

GDC Domino Effect

10-03-2014, 09:17 PM

Hi Grip Wheels

Quote:

---

*Originally Posted by **FTC5936***

Howdy,

We wanted to know if the 4 inch hi-grip wheels that were legal last year are still legal?

http://www.andymark.com/product-p/am-2256.htm

Under the description at website they say they are not legal.

Thanks!
Robo Squad 5936

A: Rule <R04d> clearly states that AM -2256 wheels are not legal.

GDC Domino Effect

10-03-2014, 09:19 PM

Robot Parts and Materials - Answer Thread

Quote:

*Originally Posted by **FTC6081***

Due to the new COTS parts allowances this year, our team was wondering if brushes would be legal for use.

-i²robotics

A: Yes, brushes (paint, tooth, scrub, etc.) are legal COTS parts.

GDC Domino Effect

10-03-2014, 09:24 PM

Servocity channel and rack

Quote:

*Originally Posted by **FTC7785***

1. Can you tell us if these channels are legal components?

http://servocity.com/html/aluminum_channel.html

2. Also, if so would this gear rack be legal by extension?

http://servocity.com/html/beam_gear_...l#.VCxqoPldUfA

Thanks

A: 1. Rule <R04b> allows for post processed materials including the Servocity aluminum channel.
2. Rule <R04c> allows the use of rack and pinion gears. Therefore the Servocity gear rack is a legal COTS.

GDC Domino Effect

10-03-2014, 09:26 PM

Drawer Slides

Quote:

*Originally Posted by **FTC7965***

Are drawer slides purchased from Lowes legal to use?

Thank you
Team 7965

A: Yes, drawer slides are legal.

GDC Domino Effect

10-06-2014, 02:14 PM

Robot Parts and Materials - Answer Thread

Quote:

*Originally Posted by **FTC8498***

Are pulleys considered a legal part under the COTS one degree of motion rule?

A: Yes, pulleys are legal.

GDC Domino Effect

10-06-2014, 02:23 PM

Tetrix Prime

Quote:

*Originally Posted by **FTC6536***

The most recent FTC TEAM BLAST included an announcement about the all-new Tetrix PRIME parts. Does this imply that all Tetrix PRIME parts are legal for use in Cascade Effect?

A: No, all Tetrix Prime components are not by defaults legal (i.e. <R02l,m> the gripper or battery pack). Tetrix Prime parts must abide by the same rules as all other parts.

GDC Domino Effect

10-06-2014, 04:35 PM

Servocity Servos

Quote:

*Originally Posted by **FTC6389***

Could you confirm that the following 1/4 scale servo is legal?

http://www.servocity.com/html/hs-5765mh_servo.html

HiTec HS-5765MH Servo

thanks

FTC Team #6389 - "The LazyBotts"

A: The 90 and 180 servos are legal, the continuous servo has been modified and is illegal.

GDC Domino Effect

10-09-2014, 07:58 PM

Robot Parts and Materials - Answer Thread

Quote:

---

*Originally Posted by **FTC5913***

We are considering using carbon fiber as part of our robot, which we are getting from one of our sponsors.
Is carbon fiber allowed?

A: Carbon fiber composites are a legal building material providing this material is readily available to all teams. Teams working iwth carbon fiber should be aware of the unique machining issues and take the proper safety precautions. Machining (drilling, cutting, filing, etc.) carbon fiber materials in the pits at an event is not allowed due to the safety issues.

GDC Domino Effect

10-09-2014, 08:06 PM

Servocity Approved List

Quote:

---

*Originally Posted by **FTC3746***

Upon looking around servo city. they have a list that says ftc approved, I was wondering if all items in the list are indeed approved.

http://www.servocity.com/html/ftc_legal_components.html

A: The Game Rules and the Q&A forum are the only official sources for determining the legality of a part. Any other sources should be disregarded.

GDC Domino Effect

10-09-2014, 08:09 PM

Hitec Metal Gear

Quote:

---

*Originally Posted by **FTC3746***

Can you tell me if this part is allowed for FTC Competition?

HiTec 32 Pitch Metal Gear

http://www.servocity.com/html/32p_hi...l#.VDQZexaTGRl

Thank you

A: Yes, this is a legal COTS part per rule <R04c>.

GDC Domino Effect

10-09-2014, 08:12 PM

32 Pitch Gearmotor pinion

Quote:

Originally Posted by ***FTC3746***

Can you tell me if this part is allowed?

Actobotics 32 Pitch (6mm Bore) Gearmotor Pinion Gear

http://www.servocity.com/html/32_pit...l#.VDQZzBaTGRl

Thank you.

A: Yes, this is a legal COTS part per Rule <R04c>.

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GDC Domino Effect

10-09-2014, 08:14 PM

Servo Aluminum Sprockets

Quote:

Originally Posted by ***FTC3746***

Hello,

Can you tell us if this is allowed?

HiTec Servo Aluminum Sprockets (.250)

http://www.servocity.com/html/servo_...l#.VDQaBhaTGRl

Thank you.

A: Yes, this is a legal COTS parts per Rule <R04c>

GDC Domino Effect

10-09-2014, 08:17 PM

Hi Tec Servo Sprockets

Quote:

*Originally Posted by **FTC3746***

Hello,

Can you tell us if this COTS is allowed?

HiTec Servo Sprockets (.250)

http://www.servocity.com/html/hitec_...l#.VDQaNRaTGRl

Thank you.

A: Yes, this is a legal COTS part per Rule <R04c>.

GDC Domino Effect

10-09-2014, 08:21 PM

Omni Wheels

Quote:

*Originally Posted by **FTC2856***

Are we allowed to use 5 inch double aluminum omni wheels on our robot?

A: Yes, providing the wheel does not violate the high traction restriction in Rule <R04d>.

GDC Domino Effect

10-09-2014, 08:25 PM

Dryer Vent Duct Tubing

Quote:

*Originally Posted by **FTC5356***

We were wondering if it was legal to use a dryer vent duct tubing for our appendage to pick up the balls. Thank you!

A: Yes, dryer vent duct tubing is a legal building material per Rule <R04b>.

GDC Kessler Effect

10-13-2014, 10:26 AM

Modified Servos - Not Allowed

Quote:

*Originally Posted by **FTC1983***

After reading the responses given regarding continuous rotation servos, we would just like to clarify something.... Are ALL continuous rotation servos considered to be modified and therefore illegal?
My example was mentioned before (the HSS-755MG servo is available from the retail source in 3 configurations, 90 degree, 180 degree or continuous rotation) I believe the answer was that the first two are not modified and the continuous one is.
I am trying to understand the logic here... are the rules really just saying no continuous rotation servos or are they not?
thank you for your time.

A: Per <R09>c.i. "Any unmodified quarter-scale or smaller servo is allowed." If the servo is modified it is not acceptable. The description for the referenced HSS-755MG servo indicates that 90 degrees is stock with the other versions being modified; the modified versions are not acceptable.

GDC Kessler Effect

10-13-2014, 10:34 AM

HSR-5990TG - Allowed

Quote:

---

*Originally Posted by **FTC0154***

Are we allowed to use this HiTec servo: HSR-5990TG per game rule <R09> C

"A maximum of twelve (12) servos are allowed, provided that they are compatible with and controlled by TETRIX
(HiTechnic) or MATRIX controllers. For TETRIX (HiTechnic) Servo Controllers:
i. Any unmodified quarter-scale or smaller servo is allowed.
ii. The sum of the rated stall current for all servos connected to a single Servo Controller must be no
greater than 5 Amps per controller"

We have already tested this servo and it does work with the HiTechnic servo controller.

Thank You!
Renegade 154

A: Yes, this servo is allowed.

GDC Kessler Effect

10-13-2014, 10:37 AM

Heavy Duty Linear Servo - Not Allowed

Quote:

---

*Originally Posted by **FTC6389***

Hi,

Since this is sold as a type of servo, we think it is legal, but wanted to verify with the GDC before we purchase it.

Heavy Duty Linear Servo (25 lbs)

http://www.servocity.com/html/heavy_...vo__25__l.html

thanks.

- - - -
FTC Team #6389 - The LazyBotts

A: No, this servo violates rule <R09>c.i.

GDC Kessler Effect

10-13-2014, 12:03 PM

Using Natural Plant Products - Not Allowed

Quote:

Originally Posted by ***FTC2856***

Can we use wooden bristles from trees on our robot?

A: No. Natural plant products could leave residue or debris that could violate elements of <RG03> including a., g., and h.

GDC Domino Effect

10-17-2014, 08:09 PM

Spring Piston

Quote:

Originally Posted by ***FTC5754***

Our team wants to use a spring loaded rod. Can we use a reverse single acting piston cylinder, without hooking it to any sort of pneumatics, just for its springiness? (i.e., use it as a COTS 1 degree of freedom part)?

A: As long as the ports remain open and no air is compressed during actuation, a spring return air cylinder may be considred to be a linear slide and is a legal COTS.

GDC Domino Effect

10-17-2014, 08:14 PM

Robot Parts and Materials - Answer Thread

Quote:

*Originally Posted by **FTC4634***

Is sorbothane a legal material?

A: Yes it is a legal material. Sorbothane is a urethane polymer and is readily available from mulitple locations.

GDC Domino Effect

10-17-2014, 08:18 PM

Mixing Matrix and Terix Non-Electrical Parts

Quote:

*Originally Posted by **FTC7664***

According to rule <R09> (referred below), you can use either Tetrix or Matrix motors and motor and servo controllers, but not both. Can we mix Matrix and Tetrix non-electrical components?

A: There are no rules preventing the use of non-electrical COTS and structural parts from multiple sources.

GDC Domino Effect

10-17-2014, 08:23 PM

Gear motors

Quote:

*Originally Posted by **FTC9074***

We are trying to use a smaller motor than the standard tetrix dc motor and found these on servocity.
http://www.servocity.com/html/micro_...torblocks.html
Are these motors legal?
If not, is there a list of legal motors that go beyond the standard tetrix/max dc motors?
If so, where can I find it?

A: Rules <R09b> and <R09c> clearly state what motors and servos are allowed. No other motors are legal.

GDC Domino Effect

10-19-2014, 07:55 PM

Mecanum Wheels

Quote:

*Originally Posted by **FTC4041***

It's said that mecanum wheels are legal <RO4d>
But I was wondering if we could use the 4in. mecanum wheels from vex pro.
They were from are FRC team from last year, and they were not ever going to use them again.
Just wanted to know

A: Yes, mecanum wheels from Vexpro (or any other source) are legal.

GDC Domino Effect

10-20-2014, 03:58 PM

Pillow Block

Quote:

*Originally Posted by **FTC8767***

Would a Pillow Block be considered a single-degree of freedom?
http://www.amazon.com/Hub-City-PB251...s=pillow+block

A: Yes, bearings (of all types) and pillow block assemblies are legal COTS parts.

GDC Domino Effect

10-23-2014, 08:28 PM

Tape Measure

Quote:

*Originally Posted by **FTC5157***

Would a tape measure such as http://www.homedepot.com/p/DEWALT-16...3372/202723374 be considered to have a "single degree of freedom" and therefore be acceptable as a robot component under <R04.c>?

A: Yes, a tape measure is essentially a torsional spring and is allowed.

GDC Domino Effect

10-23-2014, 08:34 PM

Robot Parts and Materials - Answer Thread

Quote:

*Originally Posted by **FTC6191***

Are these allowed? We need them to push down flaps on a conveyor system.
None of the rules specify this...
http://www.zoro.com/i/G6154154/?utm_...FSZo7AodHwgAKQ
Thanks in advance,
JTM
Team 6191

A: Yes, torsion springs are a post-processed material and are allowed per Rule <R04b>.

GDC Domino Effect

10-23-2014, 08:37 PM

Drawer Slides

Quote:

> *Originally Posted by* ***FTC6809***
>
> *Are linear drawer slides, like this one from Lowe's http://www.lowes.com /pd_380977-93052...1&facetInfo=16 , legal for use on a robot as a linear slide?*
>
> *Thanks for the help*

A: Yes, drawer slides are considered linear slides and are legal per Rule <R04c>

GDC Domino Effect

10-25-2014, 08:55 AM

Molded Plastic Parts

Quote:

> *Originally Posted by* ***FTC0516***
>
> *Hello,*
> *Are plastic building sets (created by injection molding) allowed under <R024.b>?*
> *Specifically, we would like to use various K'nex parts from a building set.*
> *(Example set: http://www.knex.com/shop/17785/70-model-building-set/)*
> *Thanks,*
> *Team 0516*

A: Yes, molded plastic parts are legal per Rule <R04b> as long as they do not violate any other rules.

GDC Domino Effect

10-26-2014, 05:37 PM

Robot Parts and Materials - Answer Thread

Quote:

> *Originally Posted by* ***FTC3507***
>
> *3D printed parts are legal and we are wondering if Laser Cutting and other similar process are legal for FTC.*
> *Thanks,*
> *Team 3507*

A: There are no rules restricting what methods teams may use to machine their parts.

GDC Domino Effect

10-27-2014, 04:04 PM

Wire Mesh

Quote:

*Originally Posted by **FTC6238***

Lowe's part number 0049821159603. It is a wire mesh gutter guard. It's this a legal part.

A: Yes, wire mesh is a legal construction material.

GDC Kessler Effect

10-28-2014, 12:59 PM

Computer Fans---Not Allowed

Quote:

*Originally Posted by **FTC3785***

Can one use a "computer fan" like http://www.newegg.com/Product/Produc...82E16835200049 to move balls around? I tend to believe that this is not allowed.

I assume that a "home made fan" with-3d printed fan blades-attached to a nxt motor would be legal

A. Computer fans are motors which are not approved per <R09>. See post on 09-16-2014, 08:03 PM for details on fan blades.

GDC Domino Effect

11-03-2014, 03:28 PM

Robot Parts and Materials - Answer Thread

Quote:

*Originally Posted by **FTC8640***

We need to transport wire up to the top of our lift. Are we allowed to use Cable Carriers?

http://www.mcmaster.com/#drag-chains/=ucr6fy

Thank you
-Trojan Robotics 8640, Valley Christian High School

A: Yes, cables carriers are a legal cable management part and are allowed per Rule <R10e>.

GDC Domino Effect

11-03-2014, 03:32 PM

Aluminum Extrusion Slides

Quote:

*Originally Posted by **FTC7785***

Are the following parts legal COTS?

http://www.mcmaster.com/#aluminum-t-...teners/=ud2yzp

http://www.mcmaster.com/#aluminum-t-...teners/=ud2zx2

http://www.mcmaster.com/#aluminum-t-...teners/=ud302w

Thanks

A: Yes, these are legal linear slide COTS parts.

GDC Domino Effect

11-03-2014, 03:34 PM

Skateboard Wheels

Quote:

*Originally Posted by **FTC7785***

Can we use skateboard/rollerblade wheels NOT as drive wheels but to assist in the operation of a linear slide? Also are linear bushings like these legal?

http://www.amazon.com/SCS20UU-Linear...4609561&sr=1-7

Thanks

A: Yes, skateboard/rollerblade wheels are legal COTS parts.

GDC Domino Effect

11-03-2014, 03:42 PM

Linear Bearings

Quote:

*Originally Posted by **FTC2856***

Are linear bearings and shafts allowed?

A: Yes, linear bearings and shafts are allowed per Rule <R04c>.

GDC Domino Effect

11-03-2014, 03:45 PM

Textured Plastic Sheet

Quote:

*Originally Posted by **FTC7337***

Hello - Can you please confirm this type of textured plastic sheeting is a legal

part? Link below.

http://m.lowes.com/pd/DURALENS-47-34...-Panel/3307652

Thank you!

A: Yes, this is considered a post-processed material and is legal per Rule <R04b>>

GDC Domino Effect

11-03-2014, 03:48 PM

Sizing Box

Quote:

---

*Originally Posted by **FTC9053***

For initial robot inspection, is it okay for the sizing box to bend the zip ties as it fits around our robot? The sizing box would still be able to easily fit around our robot and touch the table.

Thanks,
FTC Team Psionics 9053

A: No, zip ties are considered a part of the robot and anything more than incidental contact with the box is a violation.

GDC Domino Effect

11-06-2014, 03:47 PM

Ball Bearings

Quote:

---

*Originally Posted by **FTC6282***

Hello. In part 1 of the game manual it states, in <RG03> letter h, that ball bearings are not allowed. Does this rule include ball screws http://www.mcmaster.com/#ball-screws/=uhabwf and thrust bearings http://www.mcmaster.com/#standard-ro...arings/=uhadw1? Thank you.

A: Rule <RG03> refers to large quantities of loose objects, such as a container of ball bearings or steel shot that may used as a weight, that could possibly spill out onto the field. Ball bearings that are captured in a bearing housing are legal.

GDC Domino Effect

11-06-2014, 03:51 PM

Manila Folders

Quote:

---

*Originally Posted by **FTC7171***

Are we allowed to use manila folders as part of our robot? For instance, we are

planning on using manila folders to make a crate. Is that allowed?

A: Rule <R04b> allows for the use of raw and post-processed material, including paper, cardboard, etc. Teams are free to use these materials provided no other rules are violated.

GDC Domino Effect

11-06-2014, 03:55 PM

Bungee Cords

Quote:

*Originally Posted by **FTC6536***

Are bungee cords a legal material?

A: Yes, bungee cords are legal per Rule <R04b,c>.

GDC Domino Effect

11-06-2014, 03:58 PM

Rebar, Pipe

Quote:

*Originally Posted by **FTC0516***

Hello,
Is Rebar allowed under <R04> (as a raw metal material)? Example:
http://www.homedepot.com/p/Weyerhaeu...6?N=5yc1vZc7qm
Also, is Galvanized piping Allowed (also under <R04>)? Example:
http://www.homedepot.com/p/Mueller-S...80HC/100207441
Thank you,
Team 516

A: Rebar and pipe are both examples of a post-processed raw material that is readily available to all teams. Therefore these are both legal materials.

GDC Domino Effect

11-06-2014, 04:02 PM

80-20 Aluminum Extrusion

Quote:

*Originally Posted by **FTC7218***

We are considering ordering 8020 Inc, 10 Series t-slot extrusions, bearings etc... but are unsure if this would be considered an approved part for the "Cascade Effect" Challenge. Team 7218.

A: Aluminum extrusion is an example of a post-processed material that is readily available to al teams. Therefore it is a legal material per Rule <R04a,b>. Remember that any of the COTS parts must conform to Rule <R04c>.

GDC Domino Effect

11-09-2014, 06:29 PM

Serpentine Belts

> Quote:
>
> *Originally Posted by **FTC7047***
>
> *I saw that Pulley were acceptable, but can we use an matching serpentine belt and pulley bought from AutoZone? It was much cheaper than the belt and pulley combinations from the robot store.*
>
> *Thank you for all of your work.*

A: Yes, belts of all type are allowed (timing, V, serpentine, etc.).

GDC Domino Effect

11-09-2014, 06:35 PM

Recycled Aluminum Channel

> Quote:
>
> *Originally Posted by **FTC7047***
>
> *We were trying to save money and we were cutting our aluminum channel from an old screen window insert that can be bought at any Home Depot. Is that acceptable?*
>
> *Thank you.*

A: Aluminum channel is allowed per Rule <R04a>. There are no restrictions on where materials may be aquired, therefore this channel is a legal part.

GDC Domino Effect

11-14-2014, 08:22 PM

Screen Door Roller

> Quote:
>
> *Originally Posted by **FTC0516***
>
> *Hello,*
> *Would a "Metal Sliding Screen Door Roller" be allowed under <R04>?*
> *The part that we would like to use is found at http://www.homedepot.com /p/Barton-Kr...0630/100160625*
> *Thanks,*
> *Team 0516*

A: A roller is a single degree of freedom COTS parts and is allowed per Rule <R04c>.

GDC Domino Effect

11-14-2014, 08:28 PM

Conveyor Parts

Quote:

*Originally Posted by **FTC8572***

We have talked with a conveyor belt manufacturer who has agreed to donate parts for our robot, but we are unsure if that would be allowed according to R04c. They are offering to donate a cleated conveyor belt, sprocket/drive spindle, idler pulleys, bearings, as well as aluminum extrusion. All of these materials are available from them through many distributors across the world, but not general industrial suppliers such as Grainger, McMaster-Carr, etc. Their entire conveyor assemblies, however, are available on Grainger and McMaster-Carr. Since we would not be procuring an entire conveyor assembly, but rather individual aftermarket parts, would this be allowed?

A: As long as the parts are readily available to the majority of FTC teams thru distributors and they do not violate any other rule (i.e. <R04c>) then these parts are allowed.

GDC Domino Effect

11-14-2014, 08:33 PM

Types of Materials

Quote:

*Originally Posted by **FTC5532***

My team is working on the bill of materials for the upcoming tournament and can't determine which rule the following items would be under.

Rubber Bands

Duct Tape

Kitchen Cabinet Liner, http://www.amazon.com/Duck-1100731-N...+cabinet+liner

Could you give us an explanation?

Regards,
Wolfbots

A: All of these items are excellent examples of materials that have been post -processed (or formed) into a final shape. Therefore they would be allowed under Rule <R04b>.

GDC Domino Effect

11-14-2014, 08:37 PM

Retractable Reel

Quote:

*Originally Posted by **FTC7232***

Hello,
We are wondering if we can use something like this retractable reel.

http://www.amazon.com/KEY-BAK-Retrac...e+badge+holder
Team 7232

A: This retractable key reel assembly has multiple degrees of freedom (the reel, carabiner, rotating key ring) and is not allowed. However, the retractable reel alone is a legal part.

GDC Domino Effect

11-14-2014, 08:40 PM

Floor Tiles

Quote:

Originally Posted by ***FTC8231***

Hi. We are planning to make wheels from floor mat material similar to what is used for the playing floor.
The wheels will not be used for driving but for moving ball within the robot. Is this material OK to use ??
Thanks

A: The foam tile is a legal building material per Rule R04a>. Teams may used legal materials in any way they see fit provding no other rules are violated.

GDC Snowball Effect

11-16-2014, 06:42 PM

Robot Parts and Materials - Answer Thread

Quote:

Originally Posted by ***FTC7314***

Rule <RG11> limits the velocity of game elements based upon the distance traveled from "the point that the game element ends contact with the Robot". If the game element is contained within the Robot, but not necessarily in contact with Robot, after a velocity is imparted to it, and then it is redirected through contact with part of the Robot, where does the measurement of distance traveled begin? That is, does contact with the Robot end when velocity is initially imparted to the game element or when it is redirected upon exiting the Robot? For instance, if a ball is given an initial velocity but the ball remains inside a tube attached to the robot until it is redirected at the end of the tube to exit the robot, is it the initial velocity or the redirected velocity that is used for this rule?

A: What we are inspecting for is the height and length of the launched item. Substitute the word "force" for "velocity".

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Robot Parts and Materials - Answer Thread

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GDC Domino Effect

11-17-2014, 03:56 PM

Random Building Materials

Quote:

*Originally Posted by **FTC8527***

One of my teams is making a tube and were wondering if a) the could use a vinyl/plastic place mat b) a preformed cardboard tube, or c) a piece of plastic fluorescent light cover? It seems that they would be legal as a raw materials but we want to make sure.

A: All of these materials are considered post-processed and have one degree of freedom or less, therefore they are legal building materials per Rule <R04b,c>.

GDC Domino Effect

11-17-2014, 04:02 PM

Manila Folders

Quote:

*Originally Posted by **FTC7171***

Are we allowed to construct parts of our robot with manila folders?

A: Manila folders fall under Rule <R04a,b> and are legal building materials.

GDC Domino Effect

11-17-2014, 04:02 PM

Manila Folders

Quote:

*Originally Posted by **FTC7171***

Are we allowed to construct parts of our robot with manila folders?

A: Manila folders fall under Rule <R04a,b> and are legal building materials.

GDC Domino Effect

11-17-2014, 04:02 PM

Manila Folders

Quote:

*Originally Posted by **FTC7171***

Are we allowed to construct parts of our robot with manila folders?

A: Manila folders fall under Rule <R04a,b> and are legal building materials.

GDC Domino Effect

11-17-2014, 04:11 PM

Actobotics Parts

Quote:

*Originally Posted by **FTC8530***

Hi,
Can you tell us if these Actobotics parts are legal?

https://www.servocity.com/html/channel_sliders.html

Specifically, we are interested in: https://www.servocity.com /html/chann...l#.VGlu2PnF98E

Also, are these adapters legal?
https://www.servocity.com/html/_770_...l#.VGlvWfnF98E

Thanks!

A: These parts fall under Rule <R04b> as post-processed materials and have one degree of freedom or less, therefore they are legal parts.

GDC Domino Effect

11-17-2014, 04:31 PM

Fabric/Netting

Quote:

*Originally Posted by **FTC7337***

Could you please confirm that plastic or foam netting (link below) is legal?

www.uline.com/Grp_219/netting

Also, is cotton / polyester material (that which you would buy at a fabric store) legal?

Thanks!

A: Fabric and netting are allowed per Rule <R04b>.

GDC Domino Effect

11-17-2014, 04:35 PM

Robot Parts and Materials - Answer Thread

Quote:

---

*Originally Posted by **FTC8646***

Can we use a beaker clamp (see link) that we have modified? We removed the spring and screw and replaced with a rubber band to hold it close and we added a lever attached to a servo to open it.

http://www.humboldtmfg.com/universal...on_clamps.html

A: This clamp has three degrees of freedom and violates Rule <R04c>.

GDC Domino Effect

11-20-2014, 08:35 PM

Beaker Clamp - Part 2

Quote:

---

*Originally Posted by **FTC8646***

Quote Originally Posted by FTC8646 View Post
Can we use a beaker clamp (see link) that we have modified? We removed the spring and screw and replaced with a rubber band to hold it close and we added a lever attached to a servo to open it.

http://www.humboldtmfg.com/universal...on_clamps.html
A: This clamp has three degrees of freedom and violates Rule <R04c

I'm sorry but I forgot to mention that we removed the mounting bar to get rid of that motion and locked the swivel jaw in place...would it then be legal?

A: A clamp that has been modified to have only one degree of freedom (essentially a hinge) would be a legal COTS part.

GDC Domino Effect

11-20-2014, 08:44 PM

RC Car Parts

Quote:

---

*Originally Posted by **FTC5466***

a) Based on rule <R04c>, would it be allowed if we took the plastic shell off of an RC car and used it on the robot?

b) Would we also be able to use other parts from the RC car in our design, like the wheels or the chassis?

An example of one that could be used for this is below.
http://www.rcplanet.com/HPI_Racing_W.../hpi106173.htm

A: a) The plastic shell is a post-processed plastic part and has zero degrees of freedom and is legal per Rule <R04 b,c>
b) It is impossible for the GDC to determine whether every part from a RC car is legal. These parts must follow the same rules as parts obtained from other sources.

GDC Domino Effect

11-20-2014, 08:58 PM

AM-2648 Wheels

Quote:

Originally Posted by ***FTC7231***

FTC has disallowed am-2256 wheels from AndyMark this year.
On their site AndyMark are stating that am-2256 are not legal and then are recommending using the am-2648 stealth wheels for FTC.
Is this official, are am-2648 wheels legal?

A: The Game Rules and the Q&A Forum are the only official sources for what is legal or illegal. Statements by parts suppliers should be taken as recommendations only. Please refer to previous posts about how to evaluate whether a wheel will cause damage to the playing field.

GDC Domino Effect

11-24-2014, 03:27 PM

Vex Traction Wheels

Quote:

Originally Posted by ***FTC4943***

Are vex traction wheels with wedgetop tread legal?

Please see the link below.

http://www.vexrobotics.com/vexpro/wh...on-wheels.html

A: The wheel in question is legal providing it does not violate Rule <R04d>.

The GDC has not tested all possible tread and tire combinations and therefore cannot answer this specific question. During Mechanical Inspection teams may be asked to demonstrate that their choice of tread will not damage the tile floor during a match when (if) the bot is pushing hard against a wall or another bot and spinning it's wheels. The test will be to place the robot against an immovable surface (wall) and run the wheels at full power for 15 seconds. If there is any physical damage to the floor tile then the wheels will not be allowed. Discoloration or black marks alone are not considered field damage. Remember, the test must be made with the robot at the weight the bot will be at during a match since this will affect the degree of damage.

GDC Domino Effect

11-24-2014, 03:31 PM

Vex Meccanum Wheels

Quote:

Originally Posted by ***FTC8811***

We would like to use VEX 4" Meccanum Wheels and Noah Todd's VEX Meccanum Wheel Adapters for FTC. As rookies, we would like to confirm our interpretation of the build rules.

1. We believe the 4" VEX Meccanum Wheels are legal COTS since they are readily available to all teams per <04>.b and are exempt from the COTS one-degree of freedom restriction per <04>.c
http://www.vexrobotics.com/276-1447.html

2. We believe the VEX Meccanum Wheel Adapters (designed by Noah Todd and offered on Shapeways under Azul Robotics) are legal COTS since --- although they are not designed by our team and hence do not qualify under <07> --- they are 3D printed parts readily available to all teams per <04>.b
http://www.shapeways.com/model/27781...l?materialId=6

Please confirm and many thanks for your time and dedication to First Robotics!

Teams 8811 & 9256
Sunset High School
Dallas, TX

A1: Yes these wheels are legal providing they do not violate Rule <R04d>.
A2: Yes, these are legal parts.

GDC Domino Effect

11-24-2014, 03:33 PM

Constant Force Retractor

Quote:

Originally Posted by ***FTC6022***

While designing our robot for this season, our team came across this part from McMaster-Carr: http://www.mcmaster.com/#61115a6/=uolntp

We believe that it is acceptable under the game rules because it is both from a standard distributor and it is a COTS assembly with only a single degree of freedom. However, we thought it would be a good idea to hear other feedback before making this investment.

Thank you,
FTC Team 6022

A: A constant force retractor is essentially a spring and is an allowed COTS part.

GDC Domino Effect

11-24-2014, 03:39 PM

Monopod

> Quote:
>
> *Originally Posted by **FTC5220***
>
> *Monopod like this (with single degree of movement) trimmed or shorten to fit into our robot can be used?*
>
> *http://www.amazon.com/Dolica-WT-1003.../ref=pd_cp_p_0*
>
> *Thanks.*

A: While the individual sections of the monopod are essentially a linear slide with a single degree of freedom, the three clamping mechansms each have their own degree of freedom. Therefore this is not a legal COTS part.

GDC Domino Effect

11-24-2014, 03:43 PM

Robot Parts and Materials - Answer Thread

> Quote:
>
> *Originally Posted by **FTC8538***
>
> *In post #15 on Sept. 21, you ruled that roughtop tread has been shown to cause damage to floor tiles and are disallowed. Does the GDC have any evidence for or against AndyMark wedgetop tread am-0522? We understand that in the absence of specific evidence or testing by the GDC, then the procedure in post #21 on Sept. 25 will apply.*

A: Please see the post on 9-25-2014 regarding testing the acceptability of tread.

GDC Domino Effect

11-24-2014, 04:02 PM

Zip ties and the Sizing Box

> Quote:
>
> *Originally Posted by **FTC3785***
>
> *in post 67-you note it is not okay " for the sizing box to bend the zip ties as it fits around our robot". The game manual "Part 1 page 28 7.4<13> says not exerting force on the top and sides of box" Would it be acceptable to slide a piece of composition paper between the top/side of the sizing box and a zip tie to determineif it-the zip tie- is exerting a force. My interpretation is that nothing should touch the left side, top side, or right side of the sizing box. It is okay for the robot to touch the back of the sizing box and the floor of the sizing box.*

A: There is no rule preventing a robot from touching all 6 sides of the sizing box providing it does not exert any force on those sides. Practically speaking however, a robot can be pressed against three sides (i.e. bottom, left, front) and the other three sides will have a slight clearance (paper

width).

GDC Domino Effect

11-24-2014, 04:19 PM

Spring Balance

Quote:

> *Originally Posted by **FTC8909***
>
> *Can you tell me if window spring balances are considered a single degree of freedom and are allowed under R04c?*
> *Something like: http://www.homedepot.com/p/Prime-Lin...2020/202625172*
>
> *Thanks in advance,*
> *Team 8909*

A: The photo does not have a lot of detail but it looks like the spring slides along the track and that there is a block and tackle inside with additional degrees of freedom. if this is the case then the part violates Rule <R04c>.

GDC Domino Effect

11-24-2014, 04:34 PM

Vex 3 wire motor

Quote:

> *Originally Posted by **FTC0395***
>
> *We would like to know if the old vex 3 wire motor modules are legal servos. They are constructed and operate just like continuous rotation servos, using PWM input from the servo controller, but are labeled "motor modules." They are great for teams who may have participated in vex competitions previously. Thank you.*
>
> *http://www.vexrobotics.com/wiki/3-Wire_Motor*

A: The Vex 3 wire motor is considered a motor and is not legal.

GDC Domino Effect

11-26-2014, 07:53 PM

Cascade Field Parts

> Quote:
>
> *Originally Posted by **FTC5276***
>
> ***Just wondering whether parts found in the Cascade field kit from AndyMark can be considered as COTS parts usable in a robot build. Specifically, could an item like the 275mm Goal Tube, if ordered separately, be used as part of a robot?***

A: There are no rules restricting where parts may be obtained provided they are available to all teams, Rule <R04a>. The ball tube is a legal part per Rule R04a,b>.

GDC Domino Effect

11-26-2014, 07:57 PM

Flexible Shaft

> Quote:
>
> *Originally Posted by **FTC6074***
>
> *Is a flexible shaft permitted (for example: http://www.homedepot.com/p/Ryobi-11-...FB11/202078690 or http://www.mcmaster.com/#3787k12/=urkti1)?*
>
> *Thanks!*

A: Yes, this is a legal part.

GDC Domino Effect

11-26-2014, 08:00 PM

Modified Monopod

> Quote:
>
> *Originally Posted by **FTC5220***
>
> *Follow on to post #93 monopod question, if we remove the three clamping mechanisms, does it make the monopod legal COTS part?*
> *ie. no other part to move except up and down movement on the individual sections.*
>
> *Thank you.*

A: Without the three clamping mechanisms the monopod is essentially a telescoping linear slide and is a legal COTS part.

GDC Domino Effect

12-14-2014, 08:09 PM

Aluminum Reel

Quote:

*Originally Posted by **FTC9173***

My students designed an aluminum reel to gather the string that causes the elevation of our cascade element made with 80/20 stock. We have manufactured this and are currently using it in our design of our robot. Is our student's custom design legal? It has no sharp edges.

A: Student designed and fabricated parts are legal (and highly encouraged) providing they are made from legal materials and do not violate any other rules.

GDC Domino Effect

12-14-2014, 08:13 PM

Robot Parts and Materials - Answer Thread

Quote:

*Originally Posted by **FTC5333***

Planning to use a pulley to life the slide rails. Is the use of a pulley ok?

A: Please see the answer to the post from 9-18-2014

GDC Domino Effect

12-14-2014, 08:16 PM

AndyMark Aluminum Wheels

Quote:

*Originally Posted by **FTC2887***

We are thinking of using Andy Mark 4" performance wheels (http://www.andymark.com/product-p/am-2031.htm). The wheels are made out of aluminum, and we have some tread we could use with them. However, using this tread, the aluminum rims will touch or almost touch the foam tile mats on the ground. If there is a low resistance electrical path between the frame of our robot and the wheels, will these wheels violate rule RG03-i? We are not designing our robot specifically to ground the robot frame to the floor, but that may be an unplanned consequence.

A: These wheels are legal parts.

GDC Domino Effect

12-14-2014, 08:18 PM

Hose Clamps

Quote:

*Originally Posted by **FTC5356***

Are hose clamps considered fasteners as per rule <R05>?
thank you,

Team 5356

A: Yes, hose clamps are a legal part.

GDC Domino Effect

12-14-2014, 08:28 PM

All Thread

Quote:

---

*Originally Posted by **FTC4221***

We want to make sure these McMaster threaded rods would be approved:
http://www.mcmaster.com/#catalog/120/3174/=uu70tm

And also this linear guide:
Part Number: S99GNRM170490
www.spd-si.com/eStore/Catalog#
Thanks!

A1: Threaded Rods are legal per Rule <R04b>.

A2: This part number cannot be found onthe SDP website.

GDC Domino Effect

12-14-2014, 08:32 PM

Cabinet Liner

Quote:

---

*Originally Posted by **FTC4221***

We just want to make sure this material is allowed...

http://www.organizeit.com/images/gripit.jpg

It's foam cabinet liner mat kinda thing, about 1/8 inches wide... and keeps things from slipping on surfaces.

Thanks!

A: Yes, this material is considered a post-processed material and is legal per Rule <R04b>

GDC Domino Effect

12-14-2014, 08:35 PM

Robot Parts and Materials - Answer Thread

Quote:

---

*Originally Posted by **FTC8380***

Would a telescoping pole be allowed as a COTS part?

Similar to the pole shown at the link but without the ball scoop and handle. We would like to just use the pole.
http://www.amazon.com/telescopic-sta...technical-data

A: Yes, the telescoping pole is legal.

GDC Domino Effect

12-14-2014, 08:37 PM

Surgical Tubing

Quote:

*Originally Posted by **FTC4644***

In past years Latex / Surgical Tubing were specifically allowed by rules (ex. <R02d.6> - Ring it Up>. This year it is not specifically addressed, but we assume it is still legal. Is surgical / latex tubing allowed this year under <R04>? Thanks!

A: Yes, surgical tubing is allowed per Rule <R04a>.

GDC Domino Effect

12-14-2014, 08:44 PM

Washers

Quote:

*Originally Posted by **FTC7171***

Are washers allowed from Lowes:

Here is lowes item : http://www.lowes.com/pd_2576-37672-2...3D1&facetInfo=

A: Washers are a post processed material and are legal per Rule <R04b>.

GDC Domino Effect

12-14-2014, 08:48 PM

Nylon Spacers

Quote:

*Originally Posted by **FTC7171***

Are Nylon Spacers allowed ? Here is lowes item:

*http://www.lowes.com/pd_137094-37672-880449_*

A: Yes, nylon spacers are considered post processed parts and are legal per Rule <R04b>.

GDC Domino Effect

12-22-2014, 03:45 PM

Robot Parts and Materials - Answer Thread

Quote:

*Originally Posted by **FTC3409***

Our team would like to use this retractable name badge holder on our robot: http://www.staples.com/Staples-Retra...product_614046. We'd like clarification on if this could be a legal part.

a. Our understanding is that to be considered legal, the vinyl strap and the triangular metal ring attaching it to the plastic end piece would have to be removed (leaving only the plastic end piece at the end of the string). Would that be correct?
b. The retractable reel has an integrated metal "belt clip". We're thinking that this does not have to be removed, because while it can bend, it's intended use (and the use we would put it to - as an attachment point only) does not constitute an additional degree of freedom. Would that be correct?

We're basing these assumptions on the answer in http://ftcforum.usfirst.org/showthre...ll=1#post11389 (dated 11-14-2014), which stated for a similar part (in that case a retractable key reel) that "the retractable reel alone is a legal part."

Thanks
Team 3409

A: a: Yes, your understanding is correct
b: Yes, the clip does not have to be removed.

GDC Domino Effect

12-22-2014, 03:47 PM

Robot Parts and Materials - Answer Thread

Quote:

*Originally Posted by **FTC7475***

Are we able to use plastic building straws in the building of our robot?

A: Yes, plastic straws are an extruded material and are legal per Rule <R04a>.

GDC Domino Effect

12-22-2014, 03:58 PM

Pulley with Rotating Socket

Quote:

*Originally Posted by **FTC6691***

We are using pulleys that can be hung and have a socket in them that allows them to rotate horizonatally. We are preventing the horizontal motion. Please see

the attached image and let us know if this is a legal part.

A: This pulley is a COTS with more than one degree of freedom and is not allowed per rule <R04c>, even if the socket is constrained to prevent movement. There are similar versions of these pulleys with fixed attachment points, these pulleys are legal.

GDC Domino Effect

12-26-2014, 07:50 PM

Lego Tank Tread

Quote:

---

*Originally Posted by **FTC7129***

We were wondering if it would be legal to wrap our 4in tetrix wheels with the lego rubber tank tread. Rule R01 allows the lego tread, but would it be allowed based on rule R04d? The tread shouldn't damage the field, but we want to make sure the robot passes inspection.

A: Lego Tank Tread is a legal building material however it's use on the wheel is constrained by Rule <Ro4d>. The GDC cannot evaluate all combinations of wheels sizes, tread types, and robot weights so the legality in this instance cannot be determined. As stated in previous posts, if the Mechanical Inspector or referee believes the tread may cause field damage the team may be required to demonstrate that the robot will not cause damage to the tiles.

GDC Domino Effect

01-04-2015, 06:23 PM

Paracord

Quote:

---

*Originally Posted by **FTC4408***

Can you please confirm that nylon paracord such as http://www.lowes.com /pd_340003-76951...3690258&rpp=32 is considered a COTS item and is allowed by <R04>?

Thank you!

A: Yes, rope (and wire cable, string, etc.) is a legal COTS.

GDC Kessler Effect

01-14-2015, 11:51 AM

LEGO parts---Allowed

Quote:

---

*Originally Posted by **FTC9620***

Can we use elements from prior FIRST LEGO LEAGUE mission sets? Here is the link to the picture and part number our team would like to use:http://bricker.info /parts/64782/

Thank you!

Yes, this part is allowed. Per <R01>, all LEGO parts are allowed except for Duplo, EV3, and pneumatics.

GDC Domino Effect

01-19-2015, 03:51 PM

3D Printed Parts

Quote:

---

*Originally Posted by **FTC7785***

Rule R07 states that team designed 3D printed parts are allowed. We need to confirm that the rule applies to 3D printed parts created by other teams that are acquired from sites like Thingiverse. We have found some 3D parts for things like mounting batteries, lego motors, etc on Thingiverse. Our thought is that since they are available to everyone they would be legal 3D parts. We would also add those parts to the BOM to cite where we got them.

A: Yes, 3D printed parts from any source are legal provided no other rules are violated.

GDC Domino Effect

01-19-2015, 03:55 PM

Surgical Tubing

Quote:

---

*Originally Posted by **FTC5333***

Can we have very flexible surgical tubing sticking above the 18 inch mark but easily pushed down (by the box)when the box is covering the robot, thus within the 18 inch rule?

A: No, The robot must be within the 18" x 18" x 18" box without exerting force on the box. The surgical tubing as described clearly violates this requirement.

GDC Domino Effect

01-19-2015, 04:01 PM

Cable Routing Chain

Quote:

Originally Posted by ***FTC5996***

Are drag chains for routing and protecting cables, such as the one found here http://www.amazon.com/Long-Plastic-T.../dp/B007Q84IFM allowed? Because it is composed of many individual links, I do not think it should be restricted due to it having more than one pivot point.

A: Yes, This is a legal component.

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Robot Parts and Materials - Answer Thread

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GDC Domino Effect

01-26-2015, 03:54 PM

Self Closing Hinge

Quote:

> *Originally Posted by* ***FTC6954***
>
> *Rule R04.c indicates that single degree of freedom COTS components like hinges are allowed in robot construction. Are self-closing hinges (containing springs in the hinge joint) like http://www.mcmaster.com/#15205a83/=vjfkys from McMaster-Carr allowed?*

A: Yes, a self closing hinge is a legal COTS part.

GDC Domino Effect

01-26-2015, 04:02 PM

Opaque Ball Tube

Quote:

> *Originally Posted by* ***FTC6954***
>
> *Is there any rule against a part of a robot's ball collection components being opaque? The question came up when discussing the possibility of using a small piece of aluminum duct work (something like http://www.homedepot.com /p/Master-Fl...90E4/100033952) for our ball collection mechanism. If balls are in the metal tube, it would be really difficult for referrees to make sure we're only controlling 5 balls. We're not looking for a way to hide balls, just want to know if we need to be careful about components that could obscure balls this way.*

A: While we prefer a collection mechanism that allows the referees to check the number of balls being carried, there is no rule requiring that the tube be clear.

GDC Domino Effect

01-26-2015, 04:06 PM

Downspout

Quote:

> *Originally Posted by* ***FTC8889***
>
> *Our rookie team would like to be certain we are not violating the one degree of freedom rule in <R04>c. by using a corrugated downspout adapter from Lowes:*
> *http://www.lowes.com/pd_561166-124-0...ain&facetInfo=*
> *Thank you for the clarification.*

A: Yes, this is a legal COTS part.

GDC Domino Effect

02-02-2015, 03:55 PM

Metal Duct

Quote:

> *Originally Posted by* ***FTC9231***
>
> *Under this year's COTS rules would the following metal duct part from Lowe's be legal?*
>
> *http://www.lowes.com/pd_36401-85334-...uct&facetInfo=*

A: Yes, this is a legal COTS part.

GDC Domino Effect

02-02-2015, 03:57 PM

Coke Bottle

Quote:

> *Originally Posted by* ***FTC7171***
>
> *Is Coke 2 liter bottle legal ? I have attached a picture as well. We plan to cut in half and use the lower portion.*

A: Yes, a plastic soda bottle is a molded plastic part and is a legal COTS part.

GDC Domino Effect

02-02-2015, 04:18 PM

AM-2256 Wheels

Quote:

> *Originally Posted by* ***FTC6085***
>
> *Can the AndyMark am-2256 wheels that are NOT allowable parts for use as wheels be used for another purpose, such as ball collection as long as they do not come in contact with the tiles?*

A: Rule <R04.d> specifically does not allow the use of AM-2256 wheels. The rule does not make a distinction for how the wheels are used. Therefore they may not be used for a ball collection

device.

GDC Domino Effect

02-02-2015, 04:23 PM

Tape Measure

Quote:

*Originally Posted by **FTC8539***

We are considering using a retractable tape measure to extend a telescoping tube. Our question is whether or not the retractable measuring tape is an allowable part. According to <R04>.c COTS parts and assemblies may only have a maximum of a single degree of freedom. Does a retractable tape measure abide by this rule?

A: Please see post # 55 from 10-23-2014.

GDC Domino Effect

02-09-2015, 04:00 PM

Poly Tubing

Quote:

*Originally Posted by **FTC8758***

We wanted to use poly tubing (clear plastic tubing) to cover and protect our wires. We were also going to use copper tubing also known as refrigerator coil. We are going off of RO4, and all COTS can be found at HomeDepot. Just ensuring that these are legal.

A: You are correct, both of these items are legal.

GDC Kessler Effect

02-20-2015, 08:27 PM

Duct Tape---Allowed, with reservations

Quote:

*Originally Posted by **FTC4486***

During hardware inspection an inspector was concerned about the use of gray duct tape and that it may interfere with another robot and the IR beacon, as the tape may be reflective. This is duct tape as illustrated here
http://www.thetapedepot.com/7-mil-ge...ct-tape-67212/
Would this be permitted?

Are other more reflective tapes prohibited such found here?
http://www.thetapedepot.com/foil-tap...h-liner-45020/

A: Duct tape is allowed and can be a useful material, but it needs to be carefully installed and maintained. Duct tape with the adhesive side exposed may not pass inspection or may result in a penalty, disabling, or disqualification depending on the circumstances; see <RG03>, <S1>, <G8>,

and <G9>. The problem with duct tape is that the adhesive on it (and other similar tapes) can adhere to or leave a residue on the field, game elements, and other robots that it comes into contact with. Tape that is used for its reflective properties may or may not be allowed, depending on the use case.

GDC Kessler Effect

02-20-2015, 08:29 PM

Servo Blocks---Allowed

Quote:

> *Originally Posted by **FTC5893***
>
> *Are ServoCity Quarter-Scale Servo Blocks allowed? https://www.servocity.com/html/quart...l#.VOJecS79xqs*
> *What about ServoCity Servo to Shaft Couplers? https://www.servocity.com/html/servo...l#.VOJfIC79xqs*
>
> *Thanks for your time.*
> *-Team 5893 Direct Current*

A: Yes, ServoCity Quarter-Scale Servo Blocks and Servo-to-Shaft Couplers are allowed.

GDC Domino Effect

02-23-2015, 03:20 PM

Tape on Wheels

Quote:

> *Originally Posted by **FTC8154***
>
> *Is it legal to attach double sided tape to wheels to increase their traction? There are rules; RG03> The following types of mechanisms and components are not allowed:*
> *a. Those that could potentially damage playing field components.*
> *b. Those that could potentially damage or flip other competing Robots.*
> *High traction wheels, eg. AM- 2256, that may damage the playing field are not allowed*
>
> *However, the rules are not specific enough to determine if this is a legal strategy.*

A: No, using double sided tape on the wheels can potentially damage the playing field tiles and is not allowed.

GDC Domino Effect

03-01-2015, 08:19 PM

Leadscrew

Quote:

> *Originally Posted by **FTC8391***
>
> *Would a leadscrew table, such as http://www.igus.com/wpck/3578/DryLin_SHTC_der_Flexible, be considered a legal part?*

A: Yes, this is a legal part per Rule<R04.c>

GDC Domino Effect

03-16-2015, 03:23 PM

Robot Parts and Materials - Answer Thread

Quote:

Originally Posted by ***FTC8471***

Hello, our team wants to make sure the following hinge pictured is able to be used this year before we head to Super-Regionals with a new bucket door. Thank you

A: Yes, a hinge is a legal COTS part.

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Robot Electronics and Power - Answer Thread

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FTC Cause and Effect

08-04-2014, 02:53 PM

Robot Electronics and Power - Answer Thread

You'll find the answers to the questions you asked about Robot Electronics and Power in this thread.

GDC Domino Effect

09-18-2014, 07:51 PM

LiPo Batteries - Not allowed

Quote:

Originally Posted by ***FTC5020***

I would like to confirm that the only batteries to power the robot (motors, etc) allowed are tetrix and matrix per rule R08.f These batteries have terrible performance and charging characteristics compared to the current industry standard, lithium polymer. We would specifically like to use a 3-cell lipo battery which has a voltage of 11.1 volts. This is less than the tetrix batteries we currently have. We could match the capacity of 3000mah to be comparable to the tetrix batteries. Again it is my understanding that we cannot use lipo batteries but I want to clarify that we cannot use what I described.

a: Per Rule <R08e> lipo batteries are not allowed.

GDC Kessler Effect

09-22-2014, 11:06 AM

Multiple DC Motors per controller port - Allowed, with limitations

Quote:

Originally Posted by ***FTC4454***

Can you have 2 motors in a single port on the DC motor controller? Wired specifically using a wire nut so one wire into the dc motor controller port and then that wire is associated with 2 motor positive or negative using a wire nut?

A: Two DC motors should work fine on a single Tetrix motor-controller port; of course, you won't

be able to control the motors independently in this configuration. Make sure that you have good connections to both motors and that the motor load is within controller power limits. Note the restrictions in <R09>d.

GDC Kessler Effect

09-22-2014, 11:46 AM

SuperPro Prototype Board - Wiring information and power limits

Quote:

> *Originally Posted by* ***FTCAU31***
>
> *Rule <R11>d.i. provides for the use of an external 9V source for the SuperPro Prototype board.*
>
> *Information provided to us from HiTechnic support states that the 9v pin on the SuperPro edge connection *only* connects to the NXT while the 5V and 3V sources are derived from both NXT and external battery sources (presumably via a diode OR'ing arrangement).*
>
> *http://ftcforum.usfirst.org/attachme...tachmentid=209*
>
> *HiTechnic support informed us that it is necessary to use the second 2-pin connector next to the external battery connector to access the external battery as a 9V source.*
>
> *This rule, as written, may imply that 9V connections are only permitted via the edge connection which defeats the purpose of allowing the external 9V battery.*
>
> *Can you please confirm that 9V connections via the secondary 2-pin connector will be permitted?*

A: The short answer is No.

You may connect a single external 9V battery to the two-pin 9V headers on top of the prototype board (in the photo: top and bottom right, on the top side of the prototype board, labeled 9V and GND); you may also connect an additional SuperPro prototype board to each connector. The two two-pin headers are wired together on the board and may also used used to daisy-chain multiple prototype boards so that they share a single 9V battery. You may only have a single 9V battery for any prototype board or daisy chain of prototype boards; you may not use any other batteries or battery packs such as the Hitechnic 9V battery box to power the prototype board or chain of prototype boards.

You must connect your circuit to the power and signal pin header on the bottom of a single SuperPro prototype board (in the photo: bottom, on the bottom side of the prototype board); if you use multiple prototype boards you must have each circuit connected to a single prototype board. You may not connect your circuit to either of the two-pin 9V headers on top of the prototype board. Connecting an external 9V battery to one two-pin header and your circuit to the other two-pin header would violate <R11>d.i. by connecting your circuit directly to the battery.

The power limits for the SuperPro prototype board are as follows; note that the 3.3V (labeled 3V on the board) and 5V power limits are increased when using an external 9V battery but the 9V power limit remains the same whether there is an external 9V battery or not.

When connected to NXT for power:

9V = 8mA
5V = 8mA
3.3V = 15mA

When connected to optional 9V battery:

9V = 8mA
5V = 50mA
3.3V = 20mA

These power limits constrain what you can connect to the SuperPro prototype board. You must ensure that any connected circuit or device does not exceed these power limits and does not violate any other rule.

GDC Kessler Effect

09-22-2014, 03:59 PM

External 9V Battery for Samantha in Tetrix system - Not allowed

Quote:

*Originally Posted by **FTC4587***

The FTC Samantha Module User's Guide page 9 shows the Samantha module being powered by a 9V battery. It shows this with the Matrix controllers. Are we allowed to use a 9V battery with the Samantha Module when we use Tetrix Controllers?

Thanks.

A: No. The external 9V battery is an exception that is allowed only for Matrix system robots.

GDC Kessler Effect

09-22-2014, 08:01 PM

Microcontrollers - Allowed

Quote:

*Originally Posted by **FTC8704***

this may be a rookie question, but: Is it legal to interface a Raspberry Pi (or similar dev board) and a camera with the HiTechnic SuperPro Prototype or the NXT Prototype Boards? It seems to be allowed by <R08> d., but it never hurts to check.

A: Per <R11>d.ii., microcontrollers are specifically allowed. Other constraints in <R08>, <R10>, and <R11> must be followed.

GDC Kessler Effect

09-29-2014, 10:51 AM

Muscle Wire - Allowed, but ...

Quote:

*Originally Posted by **FTC4587***

Can we use muscle wire controlled with the prototype board in our robot? For example: http://robotics.hobbizine.com/flexinol.html

Thanks.

Muscle wire is allowed as long as its use does not violate any other rule.

Note, however, that you may not find the available power from the prototype board sufficient for practical use. See post #4 dated 09-22-2014, 10:46 AM for more details.

GDC Kessler Effect

09-29-2014, 10:55 AM

Electromagnetic Solenoids---Not allowed

Quote:

---

*Originally Posted by **FTC2856***

Can we use solenoids on our robot? (Both commercial off the shelf and custom made from commercial off the shelf parts such as wires and magnets.)

Electromagnetic solenoids are not allowed; see post dated 10-08-2014, 04:04 PM for more details.

GDC Kessler Effect

09-29-2014, 10:57 AM

IR Sensors and Devices - Not allowed

Quote:

---

*Originally Posted by **FTC6055***

We have a question about the legality of Pololu digital proximity sensors (found at http://www.pololu.com/product/1132/). These emit IR pulses from an IRED with a range of 5 cm. We plan to connect them to a Hitechnic prototype board. Will this be allowed?

Thanks,
Team 6055

Not allowed per <R11>e.

GDC Kessler Effect

09-29-2014, 11:09 AM

9V Battery Types

Quote:

---

*Originally Posted by **FTC6055***

Rule 11.d.i states "i. All power used in the circuits connected to the Prototype Board must be derived from the power
connections provided within the board including the board's optional additional 9V battery, if one is
supported by the Prototype Board. " Is the "board's optional 9v battery" referring

to a specific part sold by HiTechnic or are we allowed to use any 9v battery with a compatible connection to the board's 9v pins?

Thanks,
Team 6055

Per <R11>d.i., a single standard 9V battery ("transistor battery") is allowed to be connected to an approved prototype board as long as its use does not violate any other rule.

Note that power from the prototype board limits the available current independent of which 9V battery is used. See post #4 dated 09-22-2014, 10:46 AM for more details.

See http://en.wikipedia.org/wiki/Nine-volt_battery for example batteries.

GDC Kessler Effect

10-06-2014, 10:14 AM

Prototype Board Power

Quote:

Originally Posted by ***FTC3409***

Regarding R11.e.i - the text of the rule explicitly defines the power for decorative LED's (TETRIX/MATRIX or external battery), but does not specify the power source allowed for any associated electronics. Can the power for the associated electronics also come from the main battery pack?

More specifically, our team would like to use a microcontroller (Arduino) to control external LED's for purely decorative purposes (and not controlled by the NXT). We are planning to build a circuit to properly regulate the voltage from the main battery pack to run the Arduino and external LED's. We want to make sure this would be an allowed configuration.

A: Per <R11>.d.i. "All power used in the circuits connected to the Prototype Board must be derived from the power connections provided within the board" including the optional 9V battery. See paragrarph 2 of <R11>.d.i. for the specific connections allowed and forum post #4 dated 09-22-2014, 10:46 AM for additional details on power sources.

GDC Kessler Effect

10-06-2014, 10:29 AM

Increasing Power Avaialble from Prototype Board - No

Quote:

Originally Posted by ***FTC6133***

1: In order to incorporate 2D vision control can we use a microcontroller/camera such as Pixy assuming that it will be communicating with the Hitechnic Protoboard?

A: You may use a microcontroller and camera as long as no other rules are violated. These include not exceeding any current limits.

Quote:

> *2: Are we allowed to daisy chain protoboards and combine power outputs from the 5V pins in order to get current high enough to use Pixy at its' necessary standard of 140 mA? So far we haven't been able to find any camera that can run at under the specified 50mA limit.*

A2: No. Per <R11>d.ii. "Circuitry may not increase the electrical power (either voltage or current) provided by the Prototype Board". Per <R11>d.i. "All power used in the circuits connected to the Prototype Board must be derived from the power connections provided within the board" so when using multiple Prototype Boards, power from each Prototype Board must power independent electrical circuits; multiple prototype boards may not be connected together in parallel to increase the power available to your circuit. See forum post #4 dated 09-22-2014, 10:46 AM for additional details on power sources.

GDC Kessler Effect

10-06-2014, 03:05 PM

MoPi External Regulator - No

Quote:

> *Originally Posted by* ***FTC6133***
>
> *Can we use one of these switching regulators to regulate power received from the Hitechnic Prototype Board? https://pi.gate.ac.uk/pages/mopi.html*

A: No. Per <R11>d.i. "All power used in the circuits connected to the Prototype Board must be derived from the power connections provided within the board". The only available voltage on the Prototype Board that would work with the MoPi is the 9V supply which is limited to 8mA and would not be able to supply the MoPi with power. See forum post #4 dated 09-22-2014, 10:46 AM for additional details on power sources.

GDC Kessler Effect

10-06-2014, 03:10 PM

Can Batteries be Directly Connected to Circuits - No

Quote:

> *Originally Posted by* ***FTC2856***
>
> *On the HiTechnic SuperPro proto board, when a 9V battery is connected to one set of 9V male header pins to power the board, Is it legal to use the extra 9V male header pins to power a sensor directly so that you can get a true 9V and a better current draw than from the 9V output pin on the board?*

A: No. See forum post #4 dated 09-22-2014, 10:46 AM for details on power sources.

GDC Domino Effect

10-06-2014, 04:39 PM

Robot Electronics and Power - Answer Thread

Quote:

> *Originally Posted by* ***FTC6027***
>
> *http://www.amazon.com/Wago-222-413-L.../dp/B003K124UA*

Are these legal on the robot?

A: Yes, these are legal electrical connectors.

GDC Kessler Effect

10-08-2014, 04:04 PM

Electromagnetic Solenoids - Not Allowed

Quote:

Originally Posted by ***FTC9044***

My team is investigating popping a ball up without any structure, then deflecting the ball higher up.

Q1: Are we allowed to use electromagnetic solenoids? (I saw from a previous season that hydraulic solenoids were not allowed)
Q2: If we can use a solenoid, how is the 5ft max height interpreted? If there is a surface below the 5ft maximum that traps the ball's momentum, do we still have to turn the power down on the solenoid so that if the backstop disappeared, the ball would not exceed 5ft?

A: No, electromagnetic solenoids are not allowed. The prototype board and its power is not shut down automatically (unlike the motor controllers) and there is a safety risk if the devices were to activate unexpectedly.

GDC Kessler Effect

10-08-2014, 04:12 PM

Use of Alternate Power Sources - Not Allowed

Quote:

*Originally Posted by **FTC3409***

Post #11 of the Robot Electronics and Power thread clarifies the use of electronics for decorative LED's driven by the prototype board. We'd also like to clarify the case where the NXT does NOT control the decorative LED's. We would like to be able to individually control LED's on our robot to allow for color and pattern control of the lights on our robot. In our case, we would only drive the LED's from code loaded on an Arduino, and any settings would be performed via manual (human) input to the Arduino directly (via pushbuttons or switches wired in to the Arduino's board).

In a case such as this, if the LED's are not controlled by the NXT in any way, is it permissible to power an Arduino (or other microcontroller) from the main battery, assuming that we have properly regulated the voltage to the Arduino and associated LED lighting?

The relavent sections for this question appear to be <R08>.d, <R11>.e, and <R12>. By the definition of decorative in <R12>, it appears to us that this configuration would be within the spirit of the rules, however we are unclear as to the exact definition of "connected electronic circuits" in <R11>.e.

A: No, per <R11>.d.i. you may not connect your custom circuits (including all attached devices) to power sources other than the allowed power sources on the prototype board. The exception in <R11>e.i. is for self-contained LED displays that may be powered by a single battery up to 9V.

GDC Kessler Effect

10-08-2014, 04:23 PM

Video Cameras as Sensors

Quote:

*Originally Posted by **FTC0395***

This question stems from an answer to a previous question.
Original Question and Answer:

Increasing Power Avaialble from Prototype Board - No
Quote Originally Posted by FTC6133 View Post
1: In order to incorporate 2D vision control can we use a microcontroller/camera such as Pixy assuming that it will be communicating with the Hitechnic Protoboard?
A: You may use a microcontroller and camera as long as no other rules are violated. These include not exceeding any current limits.

My Follow Up:

Are we allowed to use digital cameras so long as they are attached to the prototype board or to another device attached to the prototype board and all of the camera's power is derived from the prototype board? If yes, what is is the distinction between video recording devices and cameras?

I am asking to ensure that the use of a digital camera as a sensor would not conflict with R11.f, "Video recording devices (GoPro or similar) are allowed

providing they are used only for non-functional post match entertainment and the wireless capability is turned off," and to see if any distinction is made between video recording device and camera. Considering the wording of R11.f in the hardware inspection list, "Video recording devices, if used, do not have the wireless communication capability turned on," and the response to FTC6133, I am thinking that digital cameras are allowed as sensors if connected to the prototype board.

Despite part of the answer stating, "You may use a microcontroller and camera as long as no other rules are violated," which may be intended to include cameras cannot be used as sensors, we were confused because cameras were not outright dismissed.

A: Stand-alone cameras are allowed per <R11>f. Anything connected to the prototype board becomes part of your circuit and thus is subject to <R11>d.

GDC Kessler Effect

10-08-2014, 04:40 PM

Alternate Main Power Switch - Not Allowed

Quote:

---

*Originally Posted by **FTC2844***

Does the Main power switch need to be the Tetrix bought switch? Or can we use a heavier duty switch if we wanted to?

A. No, replacing the main power switch with a different switch is not allowed. This switch is a critical safety element for the robot and is standardized.

GDC Kessler Effect

10-13-2014, 10:31 AM

EV3 Sensors on NXT - Not Compatible

Quote:

---

*Originally Posted by **FTC4221***

Can we use the gyro sensors used for the EV 3s on our FTC bot? (Which we can borrow from our FLL team). Or do we need to buy another type, i.e. HiTechnic? Just trying to be budget-minded.
Thanks!
Team 4221
FPD Robotics

A: Per LEGO, "It is not possible to connect the new EV3 sensors to the NXT brick."

GDC Kessler Effect

10-13-2014, 10:39 AM

Violating Current Limits - Not Allowed

Quote:

---

*Originally Posted by **FTC4855***

Following the thread on posts #4, #10, #11 and #16 with regard to the power and current that can be drawn from the HiTechnic SuperPro board:

However, we note that HiTechnic on its SuperPro board page states the following:

This seems to contradict the information in post #4 as HiTechnic does not specify current limitations when connected to the external battery connection on the 9V line. In our experimentation with the HiTechnic board we observed that when the external battery is connected per the regulations in post #4 we were able to draw significantly more than 8 mA from the 9V line.

In light of the above we were wondering if it was legal to draw more than 8 mA from the 9V line (as was specified as part of post #4) as long no other game rules are violated.

A. You are not allowed to violate the current limits as specified for the SuperPro prototype board.

GDC Domino Effect

10-23-2014, 08:56 PM

NXT Cable Modification

Quote:

*Originally Posted by **FTC2901***

Are we allowed to use connectors on NXT wires if they are being used to allow for easy removal of an enclosed box of motor controllers?

A: No, Rule R10> specifically prohibits modifying NXT cables.

GDC Kessler Effect

10-27-2014, 04:58 PM

Powerpole Mounting Wing---Allowed

> Quote:
>
> *Originally Posted by **FTC7104***
>
> *Per rule R10 C is this connector allowed to be used to connect Anderson power poles to robot frames or other components?*
>
> *Powerpole Mounting Wing*
>
> *http://www.powerwerx.com/anderson-po...ting-wing.html*

A: This part is allowed and should help cable management.

GDC Kessler Effect

10-27-2014, 05:03 PM

Repair to Encoder Cover

> Quote:
>
> *Originally Posted by **FTC9132***
>
> *We've found that the thin plastic Encoder Cover on the AndyMark NeveRest 40 motor is fairly fragile. We've broke one and another has stress creases at the two mounting screw locations. The Motor and Encoder are fully functional.*
>
> *R09 g: appears to prohibit the modification we've made to the motor. (Breaking the Encoder Cover).*
>
> *<R09> Robot motors and servos are constrained to the following:*
> *g. Motors, sensors, controllers, and any other electrical components may not be altered from their original state in ANY way unless specifically allowed by the Robot rules. The following motor modifications are allowed:*
> *i. Teams may solder wires to the motor leads*
> *ii. Motor shafts may be modified (i.e. cut short, drilled thru, etc.)*
> *Gearboxes may be replaced and repaired with replacement parts that are equivalent (identical in performance) to the original.*
>
> *We're looking for ways to preserver our $25 investments.*
>
> *a) Are we allowed to replace the Encoder Cover with an AndyMark provided replacement?*
> *b) Can we tape together the cover together and to the motor to restore the functionality?*
> *c) Can we 3D print our own designed replacement cover?*
>
> *--Polar Vortex*

A: Repairing or replacing the encoder cover is allowed as it does not modify the functionality of the encoder or motor.

GDC Kessler Effect

10-27-2014, 05:12 PM

Ribbon Cable---Not allowed

> Quote:
>
> *Originally Posted by **FTC6191***
>
> *Are we allowed to use this to attach LED's to the SuperPro board?*
>
> *(10 pin DIL Ribbon Cable)*
>
> *http://shop.evilmadscientist.com/pro.../partsmenu/271*
> *JTM*
> *Team 6191*

A: The wires in the ribbon cable appears to be 28 AWG and thus violates <R10>d. so are not allowed.

GDC Kessler Effect

10-27-2014, 05:32 PM

Remove Futaba/Andy Mark Servo connector keying tab---Allowed

> Quote:
>
> *Originally Posted by **FTC3231***
>
> *Is the Futaba Andy Mark Servo allowable? It is a commercial off the shelf servo distributed by Andy Mark. However the form factor for the connector requires that the connector keying (tab) be removed to plug into the servo controller. Is removing the keying legal? Thank you*

A: Yes, it is allowed to modify the connector to remove the keying tab.

GDC Kessler Effect

10-27-2014, 05:37 PM

HS-805BB Mega Giant Scale Servo---Not allowed

> Quote:
>
> *Originally Posted by **FTC5233***
>
> *Team 5233 (Vector) is wondering if hitec mega quarter scale servos (HS-805BB Mega Power) are legal in game play. We are looking to order these servos with a 180 degree rotation. We were unsure whether these are modified.*
>
> *http://www.servocity.com/html/hs-805...l#.VD1DBk10wdU*
>
> *Thank you,*
> *Vector*

A: The HS-805BB Mega Giant Scale Servo is not allowed because it violates <R09>c.i.

GDC Kessler Effect

11-01-2014, 05:43 PM

Modify Tetrix motor---Not allowed

> Quote:
>
> *Originally Posted by **FTC7229***
>
> *Can we remove the Tetrix motor gearbox and attach a nylon pulley to the motor shaft for use with a belt. Our gearbox broke when we used gear train to increase rpm, and using a belt pulley is much more efficient.*

A. No, this modification violates <R09>g. However, per this rule "Gearboxes may be replaced and repaired with replacement parts that are equivalent (identical in performance) to the original." A belt pulley does not meet this requirement.

FTC Cause and Effect

11-03-2014, 09:57 AM

Samantha Battery Box for Matrix -- Location

> Quote:
>
> *Originally Posted by **FTC7664***
>
> *Here is a quote from RG10a:*
> *"Electrical energy derived from the onboard TETRIX or MATRIX battery pack, HiTechnic 9-volt Battery Box for the*
> *sensor multiplexer, MATRIX Battery Box for powering the Samantha unit (MATRIX Robots only)..."*
>
> *We have seen the question about this mythical Matrix battery box for the Samantha unit many times, but never seen an official answer. In the Samantha Alternate Wiring file from the FTC website, Samantha can be powered from a separate 9v transistor battery. However, this is very inefficient and expensive, as these batteries often only last a few minutes with this setup, and causes the FCS to constantly think that the robot's battery is low.*
> *We have searched Matrix, and never found anything battery related other than the main power batteries.*
>
> *Where can the Matrix Battery Box be obtained?*
> *If it is not commercially available, can an equivalent be used?*

Hello Team,

This product is available on the hitechnic.com website. Check under Products/Accessories. Use the HiTechnic 9v-6xAA Battery Box plus the FTC Samantha Power cable.

GDC Kessler Effect

11-03-2014, 05:34 PM

IR Emitters---Not allowed

> Quote:

*Originally Posted by **FTC8045***

Are these distance sensors legal? We can't find rules about IR signals, but thought there were restrictions...

https://www.sparkfun.com/products/242

A: The datasheet indicates that this sensor emits an IR signal which violates <R11>e. which states that "infrared (IR) LED's are NOT allowed."

GDC Kessler Effect

11-03-2014, 05:43 PM

IR Sensors and Emitters

Quote:

*Originally Posted by **FTC6133***

As long as no other game rules are violated (e.g. any external sensor must be connected through the HiTechnic Prototype Board and must not exceed the given current limits), are the use of the following optical mouse sensors permitted?

1. *ADNS-5020 LED sensor (datasheet)*
2. *ADNS-9800 Laser sensor (datasheet)*

In reference to Rule <R11>e.i, are we allowed to completely disconnect the LED from the circuit containing sensor #1 and power it instead from our decorative lighting circuit? It would always stay on and not be controlled by the robot.

Thank you,
Team 6133

A: In general, sensors are allowed as long as they don't violate any other rule. <R11>e. states that "infrared (IR) LED's are NOT allowed." The laser violates this rule and is thus not allowed.

GDC Kessler Effect

11-03-2014, 05:55 PM

Extending TETRIX encoder wires---Allowed.

Quote:

*Originally Posted by **FTC0796***

I would like confirmation that encoder wires in "<R10>d. Non-NXT power, motor control, servo, and encoder wires and their connectors may be extended" are the encoder wires between the 12V tetrix motor encoder and the motor controller as we need to extend the wires to one to our Motors.

A: Extending TETRIX encoder wires is allowed.

FTC Cause and Effect

11-04-2014, 04:45 PM

Coupler for NXT Cable - Not Allowed

> Quote:
>
> *Originally Posted by **FTC6191***
>
> *Can we use cable couplers like this*
>
> *(Cat5 Ethernet Coupler)*
>
> *(http://www.amazon.com/gp/aw/d/B003IY...&robot_redir=1)*
>
> *or can we make our own with a 3d printer to connect NXT cables together to extend cable length? I don't think it counts as modification, its just a cots part.*
> *Thanks,*
> *JTM*
> *Team 6191*

Extending the NXT cable with a coupler is considered a modification to the cable, and is not allowed.

GDC Kessler Effect

11-05-2014, 10:02 PM

Servo Guidelines

> Quote:
>
> *Originally Posted by **FTC1000***
>
> *We are having trouble interpreting the rules as to whether a particular servo is allowed on our robot. Please explain how we can ensure that we do not use a servo that will not pass Hardware Inspection.*

A: There are three aspects of servos that must be met in order that both the servo and its use are allowed: size quarter-scale or less, unmodified, and within controller stall-current limits. In any event, if you use a servo that is not a TETRIX servo then you should identify it on your Bill of Materials (BOM) and bring a copy of the manufacturer's specifications with you to Hardware Inspection.

Per <R09>, the following rules apply:

c. A maximum of twelve (12) servos are allowed, provided that they are compatible with and controlled by TETRIX (HiTechnic) or MATRIX controllers. For TETRIX (HiTechnic) Servo Controllers:
i. Any unmodified quarter-scale or smaller servo is allowed.
ii. The sum of the rated stall current for all servos connected to a single Servo Controller must be no greater than 5 Amps per controller.

g. Motors, sensors, controllers, and any other electrical components may not be altered from their original state in ANY way unless specifically allowed by the Robot rules.

Two key points:

* The only valid specifications are those provided by the manufacturers, not by a third party supplier or vendor. Thus, the first thing to do is to get the manufacturer's specifications.
* The servo controller was designed with the Hitec HS-485HB servo in mind and this is the recommended servo for use with the controller; other servos are allowed but there may be

physical/power challenges and complications.

Here are the guidelines for determining compliance with size, unmodified, and stall current restrictions:

* Size: The TETRIX® MAX Quarter-Scale HS-755HB servo is allowed; the dimensions of this motor are 58.93mm x 28.96mm x 49.78mm (2.32in x 1.14in x 1.96in). Other servos are likely to work with the servo controller and any servo that meets this size will be allowed; any servo identified by the manufacturer as a quarter-scale servo will also be allowed. Servos that exceed this size may be allowed but their use should be verified before competition. Note that some suppliers and vendors change the description of a servo to indicate that it is quarter scale when the manufacturer makes no such claim; if there is a classification difference between manufacturer and vendor, the manufacturer's classification will be used.

* Unmodified: If the servo as sold is different from the servo as manufactured, it is modified and thus not allowed. Note that many servos are modified by the supplier or vendor to be continuous rotation or to have an extended operating range. If the manufacturer does not indicate that the servo is continuous rotation then it will be considered to be a modified servo and thus not allowed. In addition, the use of a servo pulse extender is not allowed as it is considered a removable servo modification.

* Stall current: The best reference is the manufacturer's specifications; however, as many of the servo specifications don't include this information, here is a rule of thumb that you can use to estimate stall current for servos that you are considering:

estimated stall current (mA) = 400mA + 10mA/in oz * stall torque (in oz)

The manufacturer of the servo controller recommends that you limit the current from each pin to 1.5A and from all servos on the controller to 4A to ensure that the total current doesn't exceed the controller shutdown threshold of 5A when stalls occur. If the total stall current on a servo controller exceeds 5A you must redistribute your servos on your servo controllers, possibly adding additional controllers if necessary, so that you meet this requirement on all servo controllers.

The total stall current allowed on a servo controller is based on avoiding a stalls producing an overcurrent situation that shuts down the servo controller. If the servo controller shuts down, it will stay shutdown until it resets on its own; this length of this shutdown could extend well beyond the current match. A shutdown servo controller is neither a field failure or a justification for delaying a match.

GDC Snowball Effect

11-10-2014, 05:58 PM

NXT Conversion Cables---Allowed but not recommended

Quote:

> *Originally Posted by* ***FTC8045***
>
> *Are we allowed to connect two LEGO-Approved NXT Conversion Cables back to back to run an NXT motor? (It works, but is longer than 90cm.)*

A: Yes. This is legal, but not recommended and any unexpected robot behavior resulting from this use will not result in a match replay per <G14>. This method will not work with many of the sensors. Nor will it work with the motors or any of the connections involving the motor and servo controllers.

GDC Kessler Effect

11-11-2014, 12:57 PM

FTC Wiring Guide (including USB surge protectors)

Quote:

*Originally Posted by **FTC7503***

We where wondering where you can find a surge protector for our robot, will we have build one or can we buy one? we would like to have one to prevent lock ups and such

A: Wiring guidelines, including USB cable recommendations, are provided in the FTC Wiring Guide at

http://www.usfirst.org/sites/default...ring_Guide.pdf

Note that you may not build your own USB surge protector as that does not meet the requirements of <R08>d.

GDC Kessler Effect

11-11-2014, 01:01 PM

Using LEDs to communicate robot status to team (Superseded)

Quote:

*Originally Posted by **FTC9356***

Assuming that an LED were attached to a legal prototyping board and power supply, could an LED or two flash to indicate status even though teleop had not yet started?

Last year there was a question in the forum about a servo acting as a heartbeat.

http://ftcforum.usfirst.org/showthre...-Answer-Thread

<R08 part "s">

Robot electronics are constrained to the following:
...
s. Visible light LEDs with their connected electronic circuits are allowed. Power for the LEDs may be provided by the main robot battery pack (TETRIX or MATRIX) or by no more than one (1) battery of any type not to exceed 9 volts. LEDs used as visual cues must be controlled via connections to a HiTechnic SuperPro Prototype Board or
the NXT Prototype Board.

<RS08>
Immediately prior to the start of the Autonomous Period and during the pause between then end of the Autonomous and the start of the Driver Controlled periods, robots shall be motionless, with the exception of initialization of positioning for servos. Violations subject the robot to random re-positioning by the head referee. Repeated violations may lead to disqualification of the robot.

Thanks for the help,

ktow,

Coach for
Rookie Team 9356
Waukee, IA

A: This answer is superseded; see question dated 12-02-2014, 12:17 PM with subject "LEDs as visual cues---Allowed"

GDC Kessler Effect

11-11-2014, 01:05 PM

Installed LED voltmeter---not allowed

Quote:

Originally Posted by ***FTC4290***

Is it legal to attach a 12v voltmeter

(DROK Surface Mini 0.28" 12 DC Volt Meter 0~100V Green Digital Display Voltmeter Gauge LED Voltage Detector)

(such as <http://www.amazon.com/DROK-Surface-Digital-Voltmeter-Detector/dp/B00C58QIOM/ref=sr_1_3?ie=UTF8&qid=1415137689&sr=8-3&keywords=mini+red+led+volt+meter>) to the robot to monitor the Tetrix battery voltage by <R11.e>?

A: Adding an LED voltmeter would violate <R08>d. and thus is not allowed. You may use a voltmeter to test your battery voltage between rounds, but it may not be part of the robot.

GDC Kessler Effect

11-11-2014, 01:08 PM

COTS Servo Mounts---Allowed

Quote:

Originally Posted by ***FTC8231***

Hi. May we use HiTech Servo mounts from ServoCity as in this URL ??? Thanks
http://www.servocity.com/html/standa...l#.VGAeRskdVl0

A: COTS servo mounts are allowed per <R04>c.

GDC Kessler Effect

11-13-2014, 01:31 PM

Emitters on robots (Superseded)

Quote:

Originally Posted by ***FTC6081***

Forum post [In general, sensors are allowed as long as they don't violate any other rule. Emitters other than decorative lighting are not allowed per <R11>e. and <R12>. In addition, <R11>e. clearly states that "infrared (IR) LED's are

NOT allowed." The laser clearly violates both of these rules and is thus not allowed.]

<R11>e. Visible light LEDs with their connected electronic circuits are allowed; infrared (IR) LED's are NOT allowed.

<R12> Robots may contain decorations provided that that they are non-functional; do not affect how the Robot interacts with the playing field, field elements, or other Robots; do not require external power except as specified in rule <R11.e> do not affect the outcome of the match; are not hazardous to themselves or other teams; and are in the spirit of Gracious Professionalism. A simple test of decorative vs. functional; if the items in question were turned off and/or removed from the Robot, there would be no change in the capabilities of the Robot, the team, or the alliance, nor any change in the outcome of the match.

Just for clarification purposes, in the forums it was stated that "Emitters other than decorative lighting are not allowed per <R11>e. and <R12>." however, there is no mention of this in either rules. Is there something that we are missing? Any help would be greatly appreciated.

-i²robotics

A: This answer is superseded; see question dated 12-02-2014, 12:17 PM with subject "LEDs as visual cues---Allowed"

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Robot Electronics and Power - Answer Thread

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GDC Kessler Effect

11-13-2014, 01:41 PM

Servo Extension Wire

Quote:

*Originally Posted by **FTC8471***

Our team needs to extend the wires from our servo to our servo controller. Is it legal to use a spiral phone cord and solder on the servo connectors to get the extension?

A: This cord would be allowed if it meets the requirements of <R10>.d.iv. "PWM wires are 20 AWG or 22 AWG"; you must list this item on your Bill of Materials and be able to demonstrate from labeling or manufacturer's documentation that this requirement is met. You should ensure that it does not pose an entanglement hazard.

GDC Kessler Effect

11-13-2014, 02:02 PM

Unmodified Continuous Rotation Quarter-Scale Servo---Allowed

Quote:

*Originally Posted by **FTC9497***

Wanted to clarify that this servo which is continuous and unmodified from the factory is legal.

http://hitecrcd.com/products/servos/...-servo/product

A: Per the rules and Forum post "Servo Guidelines" dated 11-05-2014, 10:02 PM, if a servo is quarter-scale or smaller and is unmodified (Forum post, <R10>.c.i.) and its application does not exceed the stall-current limit of the servo controller (<R10>.c.ii.) then it is allowed. From the manufacturer's specifications, the Hitec RCD HSR-1425CR meets the size and unmodified requirements; you should ensure that your application does not exceed the stall-current limit of the servo controller (using the estimated stall current calculation described in the Forum post). Make sure that the servo is included in your Bill of Materials and that you have the manufacturer's specifications and current-limit calculations available for Hardware Inspection.

GDC Kessler Effect

11-18-2014, 10:50 AM

Prototype Board USB Port for power---Not allowed

> Quote:
>
> *Originally Posted by **FTC0395***
>
> *According to <R11 d i>, paragraph 2, "Circuits may connect only to the designated connections provided by the NXT Prototype Board". The rule continues to list various ports on the superpro board. We think that the intent of this rule is to bar access to raw power from the 9v battery.*
>
> *We were wondering if the USB port on the HiTechnic SuperPro Prototype Board constitutes as a "designated connection", and whether circuits could attach to those connections, as no unregulated (i.e., raw 9v) power can be tapped from those pins. Is this the case?*

A: You may not use the USB port for power; also, as you noted, you may not use a direct connection to a battery or other power source. The only allowed connections are those listed in <R11>d.i. The power limits on the prototype board are due to limitations in total power available from the NXT as well as from voltage regulation on the prototype board; using the USB port does not avoid these power limitations. Note that although these power limits are insufficient to connect a Raspberry Pi microcontroller module, there is sufficient power available to connect other low-power microcontroller modules and devices.

GDC Kessler Effect

11-18-2014, 10:55 AM

Power Distribution Module---Allowed

> Quote:
>
> *Originally Posted by **FTC8918***
>
> *We are looking at using a RIGrunner 4008 Horizontal power distribution module from West Mountain Radio on our FTC robot. This unit has built in fuses and anderson powerpole connectors included to feed eight devices. I just want to verify that this device is a valid device for use on our robot. I have included a scan of athe device description and specs.*

A: This power distribution module is allowed as long as the fuse ratings do not exceed the main battery fuse rating to ensure that, in event of a failing load, the fuse closest to the failure blows first.

GDC Kessler Effect

11-19-2014, 11:04 AM

Switches in Robot Wiring---Not allowed

> Quote:
>
> *Originally Posted by **FTC5333***
>
> *We would like to use a double pole, double throw switch to protect our motors. Is this kind of switch allowed?*

A: No, switches are not allowed. Motors must be wired directly to the motor controller except as allowed by the rules. Switches are not allowed either as motor modifications per <R09>g. or in Robot wiring per <R10>.

GDC Kessler Effect

12-01-2014, 03:34 PM

Modifying prototype board hardware or firmware---Not allowed

Quote:

*Originally Posted by **FTC7187***

Hi,

<R11.d.ii> indicates that microcontrollers may be used as long as they are connected to the NXT through an approved prototype board (e.g. HiTechnic Superpro board), correct? However, this rule also states that no changes to "this" interface, either hardware or software, are allowed. This is where we would like clarification.

Does this rule apply specifically to the communication between the NXT and the SuperPro board (SPB) (i.e. we CAN use on-board programming as long as it does not relate to the interface between the NXT and the SPB) or does it prohibit programming on the SPB in general? Also, we are allowed to program an attached microcontroller (e.g. Arduino or Raspberry Pi), right?

I know this is more than one question, but they're really all related to the single question of programming microcontrollers so I hope this post is ok.

Thanks!

Colin Mitchell
Team Axis

A: Per <R11>d.i., you are allowed to attach your own circuit (including a microcontroller that you program) to the prototype board as long as it uses the listed signals and power sources through the supplied connections and does not exceed the power limits of the prototype board. Per <R11>d.ii. you may not alter the as-supplied hardware or reprogram the as-supplied firmware associated with the prototype board.

GDC Kessler Effect

12-01-2014, 03:49 PM

What is a quarter-scale servo?

Quote:

*Originally Posted by **FTC6433***

The following site says that a giant scale servo and a quarter-scale servo are the same:
http://www.rchelicopterfun.com/rc-servos.html

While this website lists them separately?
https://www.servocity.com/html/hitec_servos.html

What is the FTC definition of a quarter-scale servo? Is there a size limitation?

A: Servo naming and descriptions vary significantly between manufacturers and vendors. See post dated 11-05-2014, 11:02 PM for FTC Servo Guidelines including servo size limits and servo controller power limits. Servos meeting these requirements are allowed. Servos exceeding the size limit by a small amount will be considered on a case-by-case basis; servo configurations (on a single servo controller) exceeding the power limit will not be allowed.

GDC Kessler Effect

12-01-2014, 03:55 PM

Tetrix/Hitec HS-785HB Servo---Allowed

Quote:

---

*Originally Posted by **FTC5466***

The HS-785HB Winch Servo that we have purchased from the pitsco store says it does 3.5 rotations, but it acts like a continuous servo in one direction and has no physical stops. It only stops going the other way when the servo position reaches 0. Last year's game manual <R08h> said it was allowed. Is this still true? We have not modified it in any way.

Where we bought it
http://www.pitsco.com/motors/TETRIX_...otor_with_Horn

What looks like the manufacturer's website
http://hitecrcd.com/products/servos/...-servo/product

Thanks for taking the time to answer questions regarding this.

A: Yes, the Tetrix/Hitec HS-785HB is allowed.

GDC Kessler Effect

12-01-2014, 05:13 PM

Wire management---Allowed

Quote:

---

*Originally Posted by **FTC6448***

Is this item (or something similar) legal for wire management? We are looking for an effective way to control the wires as our robot elevator extends up and comes back down.

http://www.cableorganizer.com/igus/e...U-E08-20-028-0

A: Yes, per <R10>e. "Wire and cable management products of any type are permitted."

GDC Kessler Effect

12-01-2014, 05:17 PM

Matrix System Pigtail

Quote:

*Originally Posted by **FTC0417***

*Our team was wondering what the meaning of pigtails was in rule <R08>b - Exactly one (1) Samantha Wi-Fi Communication Module with USB A-B cable (and optional **pigtail**) to go from the Samantha module to the NXT (24"/60.96 cm or shorter is recommended) must be used. USB cables with integral ferrite chokes (e.g. Tripp Lite U023-003) are allowed. Separate ferrite choke cores that snap onto cables (e.g. RadioShack # 273-105) are also allowed. No other wireless communication is permitted during match play.*

What is form and function of this pigtail?

Thank you,
team 417

A: The Samantha Pigtail is only applicable to Matrix System configurations and is used to connect the battery to the Samantha module.

GDC Kessler Effect

12-01-2014, 05:24 PM

Alternative battery boxes and additional power switches---Not allowed

Quote:

*Originally Posted by **FTC4137***

According to the rules, teams can use HiTechnic's sensor multiplexer, powered by a 9-volt battery.

Can we:
- replace the battery holder box provided with the multiplexer by another battery box (using same type of battery, just replace the holder)
or
- insert a power switch between the battery and the multiplexer?

Rationale: the existing battery box, with the built-in switch, makes it rather inconvenient to turn off the battery after the game (unless you mount the battery box on the outside of the robot, which is not feasible in our design). As a result, team members frequently forget to turn off the battery, so it gets discharged and needs to be replaced.

Of course, the multiplexer itself will not be modified in any way.

Per <R11>c. you may only use the HiTechnic 9-volt Battery Box with the NXT Sensor Multiplexer; it may only be used for this purpose. <R10>d. does not allow adding a switch to power wires.

GDC Kessler Effect

12-02-2014, 11:17 AM

LEDs as visual cues---Allowed

Quote:

*Originally Posted by **FTC0025***

Last year's rules, <R08>.s stated, "LEDs used as visual cues must be controlled via connections to a HiTechnic SuperPro Prototype Board or the NXT Prototype Board." Which we interpreted to mean that we could use LED's in a functional manner during a match to give visual feedback to the drivers/coach regarding various elements of the game as long as they were controlled by a circuit connected to the prototype board and did not violate any other rules.

We used this during teleop for a reversible drivetrain so the driver could easily determine which end of the robot was the front, and we started a timer task and switched the color during endgame so that our driver would not need to watch the clock. During autonomous they were used as diagnostic feedback to let our programmer know where the IR receiver thought the beacon was at any given time.

Before, after, and in between teleop and autonomous, the LED's were put into a purely decorative state.

This year's rulebook does not appear to have the text quoted above from last year's rulebook.

It states instead in <R08>.e.iii "LEDs may not communicate in any way with other Robots on the playing field, any part of the field management system, or any game element." This text does not appear to rule out LED's communicating
with team members.

<R12> states, "Robots may contain decorations provided that that they are non-functional" However one may argue that LED's designed and installed for functional purposes that do not violate any portion of <R08> are not decorations and therefore are not in violation of <R12>.

And yet, the answer to this post

http://ftcforum.usfirst.org/showthre...ll=1#post11332

appears to definitively rule out was allowed by <R08>.s last year and seems to assert that <R12> is violated even if the LED's are not decorations and that <R08>.e.iii is violated even if the LED's do not communicate, or interfere, with any of the three elements listed.

Can you please clarify the official position?

Thank you.

A: Thanks for the description and reference. The intent of Rule <R11e> is to allow LEDs used as visual cues provided they are controlled and powered only by connections to a HiTechnic SuperPro Prototype Board or an NXT Prototype Board.

GDC Kessler Effect

12-04-2014, 11:13 AM

Decorative LED Power Sources

Quote:

*Originally Posted by **FTC8498***

Rule RG10a states; Electrical energy derived from the onboard TETRIX or MATRIX battery pack, HiTechnic 9-volt Battery Box for the sensor multiplexer, MATRIX Battery Box for powering the Samantha unit (MATRIX Robots only), the battery for the visible LEDs, a 9-volt battery connected to an approved prototype board, and the NXT battery.

Rule R08d states: Additional electronics are allowed provided they are an integral part of an allowed part, or attached to the HiTechnic SuperPro Prototype or the NXT Prototype Boards, or are purely decorative in function. Approved prototype boards may optionally include a 9-volt battery per <R11d>

If we are setting up to use LEDs that are purely decorative in function do we have to run them through the approved prototype board or can they be run through a more inexpensive option as they are purely decorative in function?

A: Per <R11>e.i., LED power sources are the main Robot battery pack (TETRIX or MATRIX), no more than one (1) battery of any type not to exceed 9 volts, and the prototype boards.

GDC Kessler Effect

12-09-2014, 11:34 AM

Sensor Multiplexor Battery Pack---Allowed with NXT Sensor Multiplexor

Quote:

*Originally Posted by **FTC9044***

Our multiplexer (which can be found here: http://tinyurl.com/nb8qjjs) requires a 9-volt power source. Are we allowed to use the 6-AA power block that comes with it or do we need to draw our power from the robot's main 12-volt battery?

A: Yes, per <R11>c. the Hitechnic NXT Sensor Multiplexor may be powered by its included 9V Battery Box.

GDC Kessler Effect

12-09-2014, 11:39 AM

Using non-Tetrix/Matrix Batteries---Not allowed

Quote:

*Originally Posted by **FTC4221***

Is there any problem with using this battery for competition?
http://www.batteryjunction.com/12v10nibapaf.html

A: Yes, there is a problem. Only approved NXT and Tetrix/Matrix batteries may be used per <R08>e. and <R08>f.

GDC Kessler Effect

12-09-2014, 11:49 AM

Prototype Power Limits for LEDs

Quote:

*Originally Posted by **FTC4290***

Our team would like to use LED lights in a similar manner to Team 0025's description in post #52, i.e., as sensor feedback and an end game warning to drivers during teleop and purely as decoration before and after teleop. According to <R11.e.i>, such LEDs must be controlled and powered only by connections to a HiTechnic SuperPro Prototype Board or the NXT Prototype Board.

However, post #4 states and post #11 confirms that all used power in this case must come from the prototype board, which, with a 9v battery, has a limit of 8mA at 9V, 50 mA at 5V, and 20 mA at 3.3V. But when a single LED draws 20 mA, there's no way we can power, say, an RGB light strip (http://www.adafruit.com/product/306 : Digital RGB LED Weatherproof Strip - LPD8806 32 LED - (1m) : 120 mA per 2.5"), not to mention a microcontroller to drive it.

Is there any legal way that we can make the NXT control an LED light strip?

Thank you.

A: As you noted, any circuit connected to the prototype board (including microcontrollers and any attached LEDs) must not exceed the board's power limits that you included (from the post dated 09-22-2014, 12:46 PM). In order to control an LED light strip you would have to find one that can be operated within these limits, including all associated control circuits.

GDC Kessler Effect

12-09-2014, 11:56 AM

Hitec HS-645MG Servo---Allowed

Quote:

*Originally Posted by **FTC7090***

Our team uses the Matrix system, and we are finding that the servos are not able to hold up to much torque without destroying the internal gears. Would this servo be an acceptable replacement for the Matrix SC-0352? http://www3.towerhobbies.com/cgi-bin...UZ89&P=ML#tech

It has metal internal gears and as such they won't break.

Thank you!

A: Per the post dated 11-05-2014, 11:02 PM, the servo must meet three requirements: size, unmodified, and total controller stall current. The Hitec HS-645MG servo, if unmodified form the manufacturer, meets the size and unmodified constraints; you must still ensure that you do not exceed the total controller stall current limit of 5A (4A total and 1.5A per servo recommended).

GDC Kessler Effect

12-12-2014, 02:21 PM

Using voltage converter for Sensor Multiplexor---Not allowed

Quote:

*Originally Posted by **FTC4290***

According to <R11.b>, teams may use the NXT sensor multiplexer (MUX), which comes with an external 9-volt battery box (also allowed).

Our team would like to use a MUX, but are concerned about adding another battery to the robot because we'll need to make sure that it is charged before every match. Post #51 said that we cannot use a different, longer-lasting battery box. However, is it legal to connect the MUX to the existing Tetrix 12v DC battery via a 12v-to-9v DC adapter (such as http://www.amazon.com/KEEDOX%C2%AE-C...p/B00A71E52G)?

As in post #51, of course, the MUX itself will not be modified.

Thank you.

A: No, you may only use the HiTechnic 9-volt Battery Box with the NXT Sensor Multiplexer as specified in <R11>c. A voltage converter would be considered additional robot electronics that is not specifically allowed by <R08>.

GDC Kessler Effect

12-12-2014, 02:28 PM

Old LEGO Motors

Quote:

---

*Originally Posted by **FTC9386***

Rule <R01> states that all LEGO parts are approved except for DUPLO, MINDSTORMS EV3, and pnuematics.

Rule <R09> d. states that "LEGO approved/certified motors may be used with the following constraints (per NXT motor port):" and then goes on to limit certain motors' use by a certain number of ports.

R09, in conjunction with rule R01 seems to indicate that many LEGO motors are available for use but certain motors as listed in R09 must be constrained to a certain number of motors per port. Rule R09 does not seem to say that only the LEGO motors listed therein are approved for use. If that were the case we would have expected R01 to indicate that LEGO motors were limited and R09 to indicate something like 'only the following LEGO motors are approved for use.'

From our reading, and from the apparent intent of the combination of these two rules, it would seem that older LEGO motors are allowed. Our team specifically would like to use an ancient 9v LEGO motor (part 74569?) that is already geared for high rpm/low torque. Please confirm?

Thanks for your help! - Team #9386

A: LEGO approved/certified motors with part numbers specifically identified in <R09>d. are allowed; other LEGO motors are not allowed.

GDC Kessler Effect

12-12-2014, 05:33 PM

Extending encoder cables

Quote:

*Originally Posted by **FTC5178***

We request clarification regarding permissible extension of 12V motor shaft encoder cables. The 2014 Q&A #32 here ---> http://ftcforum.usfirst.org/showthre...r-Thread/page4 indicates that this cables are allowed to be extended. However, rule R10-d-iv requires PWM wires to be 20 or 22 Gauge. However, the original encoder wire seems much thinner that 20 or 22 Gauge. In consideration of a similar, but previous-year Q&A #35 thread ---> http://ftcforum.usfirst.org/showthre...ectrical/page4 , is it allowable to extend the encoder cable using any wire that ranges in thickness from 26 Gauge to 20 Gauge that allows the encoder to correctly function?

Thanks.

A: Yes, you may extend encoder cables using cable with the same gauge or larger as the original cable.

GDC Kessler Effect

12-12-2014, 05:36 PM

Retractable wire mechanism (and wire)

Quote:

*Originally Posted by **FTC9074***

Can we use the following part to manage some cable issues?

http://www.amazon.com/BELKIN-A3L791V...tractable+cat5

A: You may use this retractable cable as long as it complies with <R10>.

GDC Kessler Effect

12-13-2014, 11:41 PM

LED light strips requiring USB power source---Not allowed

Quote:

*Originally Posted by **FTC4290***

Our team has not been able to find an LED strip that meets the power restrictions reiterated in post #55 so that it may be connected to the HiTechnic Prototype Board and controlled by the NXT. Therefore, we will forgo NXT control and use only purely decorative LEDs, such as BlinkyTape (http://blinkinlabs.com/blinkytape/), that can be powered by a separate battery per <R11.e>. Can you confirm this is legal?

It also appears that the BlinkyTape light strip has a pushbutton embedded into its circuitry that will change its light pattern. Is it allowed to actuate this pushbutton with a servo?

Thank you.

A1: The short answer is that the BlinkyTape LED strip is not allowed due to its power requirements. The BlinkyTape looks like a really-cool LED light strip but as described in the link it requires an external power source providing power via a USB cable. There seem to be two ways that compatible power can be provided: using an external DC-to-DC USB power adapter connected to the main power supply or using a regulated external battery pack with a USB power connection. Using an external power adapter violates <R08>d. as it is not "an integral part of an allowed part"; using an external regulated battery pack (containing multiple batteries and a built-in voltage regulator with a USB interface to provide a USB power connection) violates <R11>e.i. which limits batteries to "no more than one (1) battery of any type not to exceed 9 volts". The FTC Game Design Committee re-evaluates all of the robot rules annually, and although this rule won't change in the current season, we will certainly discuss our rules around LEDs and power to LEDs for next year's game.

A2: For an allowed LED light strip configuration, using a servo to control the LED light strip would violate <R11>e.i. which requires that "LEDs controlled by the Robot must be controlled and powered only by connections to a HiTechnic SuperPro Prototype Board or the NXT Prototype Board" and servos are required by <R09>c. to be "controlled by TETRIX (HiTechnic) or MATRIX controllers".

GDC Kessler Effect

12-28-2014, 01:26 PM

Parallax Continuous Rotation Servo----Allowed

Quote:

Originally Posted by ***FTC8496***

Please confirm the legality of using Parallax 900-00008 continuous rotation servos. These servos are built to Parallax specifications by Futaba on an OEM basis. http://www.parallax.com/product/900-00008. I seen one spot on the forum where this was noted as a duplicate question, but I have never seen a definitive answer given. It would be terrible to get to a competition with 5 - 6 of these servos forming critical robot functions and then not to be able to compete because a local official makes an unanticipated ruling.

Thanks,
Dennis Smalley
Mentor
FTC Team 8496

A: This servo is manufactured for Parallax (by Futaba) as a Continuous Rotation servo and is thus allowed.

GDC Kessler Effect

12-28-2014, 01:33 PM

IR Emitters---Not allowed

Quote:

Originally Posted by ***FTC7187***

We would like to utilize an optical sensor in a stop-limit mechanism for our lift and are considering a reflective object sensor. The datasheet can be viewed at:

https://www.sparkfun.com/datasheets/BOT/QRD1114.pdf

Can you please tell us whether or not this sensor is a allowed?

Thanks in advance.

Colin Mitchell
Team Axis Captain

A: This device emits IR light at a wavelength of 940nm which violates <R11>e. and is thus not allowed.

GDC Kessler Effect

01-07-2015, 10:45 AM

Unmodified quarter-scale servos---Allowed

Quote:

---

*Originally Posted by **FTC6389***

Hi,

Please verify that HiTec 1/4 scale HS-755MG in its default factory config (90deg rotation), and the HS-785HB 3.5 turn "Winch Servo", also default factory config, are allowable servos.

thanks

FTC Team #6380 - "The Lazybotts"

A: These servos are allowed as long as they are unmodified; based on the manufacturer's specifications, they meet the requirements of the robot design rules and the guidelines presented in the previous forum post 11-05-2014, 11:02 PM, Servo Guidelines. Make sure that they are listed on your bill of materials and that you have a copy of the manufacturer's specifications (not the vendor's catalog page); you must also ensure that you meet the current limitations as clarified in the forum post as well.

GDC Kessler Effect

01-07-2015, 10:51 AM

Unmodified standard-scale servos---Allowed

Quote:

---

*Originally Posted by **FTC7176***

Would this type of servo be acceptable?

https://www.servocity.com/html/hs-64...ra_torque.html

Thank you for your time.

A: This servo is allowed as long as it is unmodified; based on the manufacturer's specifications, it meets the requirements of the robot design rules and the guidelines presented in the previous

forum post 11-05-2014, 11:02 PM, Servo Guidelines. Make sure that it is listed on your bill of materials and that you have a copy of the manufacturer's specifications (not the vendor's catalog page); you must also ensure that you meet the current limitations as clarified in the forum post as well.

GDC Kessler Effect

01-07-2015, 11:07 AM

Quick-connect connectors for power connections---Allowed

Quote:

Originally Posted by ***FTC7176***

Would these connectors be acceptable for the batteries?

http://www.getfpv.com/xt60-power-con...FQNk7Aod62IAwA

Thank you for your time.

A: Although these connectors appear that they would meet the requirements of <R10>c., there are no manufacturer's specifications available to determine if they are comparable in capacity to the Anderson PowerPole connectors that are commonly used for this purpose. If you decide to use the XT60 connectors then you should be sure to review the manufacturer's specifications and ensure that their power (current and voltage) limits are adequate; you will also need to list the connectors on your bill of materials and bring in a copy of the manufacturer's specifications for Hardware Inspection.

GDC Kessler Effect

01-08-2015, 05:30 PM

Datasheet for BOM

Quote:

Originally Posted by ***FTC7176***

Is this sufficient for specs on XT60 connectors.

http://www.produktinfo.conrad.com/da...60_STECKER.pdf

A: Yes, this datasheet is sufficient and has some of the key information for use in FTC (in particular, documenting the materials and current limit for the connector); it would be great to have a bit more electrical information (such as voltage and power limits, not just current limits) but given the FTC platform these connectors should work great with appropriate wiring (and fusing)---see the FTC Robot Wiring Guide section "Installing Anderson Powerpoles" for details. Thanks for researching and providing the link to the datasheet for reference; manufacturer information on these connectors is not readily available and I'm glad you were able to find something suitable.

GDC Kessler Effect

01-12-2015, 05:42 PM

ArcRobots Servo---Not allowed

Quote:

Originally Posted by ***FTC0516***

Hello,
We have a question concerning an Analog Feedback Servo. (Example: http://arcbotics.com/products/metal-...alog-feedback/)
We believe that this servo is legal under <R09>.c.i as is was specifically designed and manufactured.
Is it acceptable to run the servo via a Tetrix Servo controller and read from the feedback wire using a HiTechnic SuperPro Prototype Board?
Thanks,
Team 516

A: There is insufficient information available to approve this Servo; thus, this servo is not allowed.

GDC Kessler Effect

01-12-2015, 05:44 PM

NXT Conversion Cables to use NXT motors---Allowed, with reduced capability

Quote:

*Originally Posted by **FTC6341***

Does R09(e) and/or R10(b) implicitly exclude the use of NXT conversion cable W770323 with NXT motor W979842?

A: This configuration is allowed; however, these motors will have reduced capability as sensor functionality will not be available.

GDC Kessler Effect

01-12-2015, 05:47 PM

Mindsensors cables---Not allowed

Quote:

*Originally Posted by **FTC8521***

Are the flexible NXT wires provided by Mindsensors (link attached) legal?

http://www.mindsensors.com/index.php...age&PAGE_id=66

A: These cables are not LEGO approved; per <R10>a. they are not allowed.

GDC Kessler Effect

01-12-2015, 05:48 PM

Ferrite Chokes---Allowed

Quote:

*Originally Posted by **FTC7953***

May ferrite chokes/ cores be used on the flat cables from the NXT brick to the motor controllers, sensors, and/or motors?

A: Per <R08>b., ferrite chokes are allowed.

GDC Kessler Effect

01-12-2015, 05:56 PM

Using Custom Power Label---Not allowed

Quote:

*Originally Posted by **FTC6938***

General Robot Rule RG05, mentions printing off the supplied Main Robot Power label and affixing it to our robot. We are using a dual layer engraving plastic (Dark Grey surface, Wineberry subsurface). Is it permissible to engrave the label into the robot side instead of utilizing the label. If allowed, would the power icon still need to be green, or can we leave it as the Wineberry subsurface)

Engraving Plastic: http://www.johnsonplastics.biz/detail/M37/1/1/SG210A

Thank you

A: Per <RG05> teams must use the provided power label. Having a common label for all robots ensures that all field staff and participants know how to identify the power switch on any FTC robot.

GDC Kessler Effect

01-15-2015, 09:37 AM

EL Wire and Panels---Not allowed

Quote:

*Originally Posted by **FTC8645***

Hello,

Are visible light electroluminescent components such as EL wire or ribbon allowed to be used as decoration? It appears that as long as they comply with the battery requirements they should be allowed as a non-functional decoration. In a previous year, this question was answered and stated this was an allowable component. See post #65 from the "Ring it Up" Question and Answer Forum (http://ftcforum.usfirst.org/showthre...ull=1#post5864).

Since we were questioned during an inspection at our last qualifier, we would like a formal answer that addresses the use of decorative EL Wire/Ribbon/Panel for the Cascade Effect Game.

Thank you,

Team 8645

A: Unfortunately, EL Wire and Panels are not allowed; they are definitely great for lighting things up, but they are a poor match for installation on FTC robots. Because they require a high-voltage AC signal (using a separate DC-to-AC inverter/controller between the power source and the EL Wire and Panels) they present a shock hazard if improperly assembled or damaged during gameplay.

GDC Domino Effect

01-19-2015, 04:07 PM

Radio Shack Motors

Quote:

---

*Originally Posted by **FTC8758***

Are we allowed to use 2 9-18VDC Motor from RadioShack, or do all motors need to come from Tetrix or Matrix?

A: No, the only motors that are allowed are those listed in Rule <R09>

GDC Kessler Effect

01-22-2015, 09:21 AM

Enclosed-wire terminal strip---Allowed

Quote:

---

*Originally Posted by **FTC9715***

Rookie question - I see that power connectors are allowed - are terminal strips?
http://www.radioshack.com/12-positio...%2Bstrip&sz=12
Thank you!

A: As long as the wires are trimmed so that there is no exposed conductor outside the terminal strip and the screws are sufficiently recessed that incidental contact is not likely, this part is allowed. You may want to use Ferrules/End Sleeves (see the FTC Robot Wiring Guide, page 14) and should ensure that wires are properly secured and routed.

The wiring guide is available at:

http://www.usfirst.org/sites/default...ring_Guide.pdf

GDC Kessler Effect

01-22-2015, 09:51 AM

Microcontrollers as custom circuits

Quote:

---

*Originally Posted by **FTC5703***

Hello,
We would like clarification on if teams are allowed to have LED lights on their robots for purely decorative purposes that are controlled by an Arduino that does

not connect to the NXT. Post number 17 in the Robot Electronics and Power-Answer Thread confused us because, the way its worded it appears that you cannot power the Arduino from the main battery. If this is the case, is it preferred that the Arduino is powered by a seperate battery and the LED lights are powered by the main battery?

Team 5703 Doppler Effect

A: Microcontrollers (whether discrete components or stand-alone boards or modules) are considered custom circuits and thus must attach to and be powered by the SuperPro Prototype Board. As such, you must comply with the prototype board power limits as described in the post dated 09-22-2014, 11:46 AM.

GDC Kessler Effect

01-22-2015, 10:00 AM

Coiled cable---Allowed, subject to gauge restrictions

Quote:

Originally Posted by ***FTC6954***

Are we allowed to replace servo and motor cables with self-coiling cables like Low-Current Neoprene Rubber Retracting Cable from McMaster-Carr? See http://www.mcmaster.com/#69115k13/=vjf3li. Section R10.d in part 1 of the Game Manual indicates that this would be allowed as long as we use the proper gauge wire.

A: This cable is not allowed. Coiled cables are allowed, but this cable is 23 AWG which would violate gauge requirments in <R10>d.

GDC Kessler Effect

02-02-2015, 06:23 PM

Servo Repair---Allowed with manufacturer's replacement parts

Quote:

Originally Posted by ***FTC9497***

I wanted to double check on how we should handle repairing servos that have stripped gears or splines. For the hitec servos it is common to strip a gear or a spline based on mechanical failure. The object you were trying to move would move. Hitec sales replacement gears for exactly this reason.

If we are modifying/repairing a Hitec servo with parts designed for that servo is that ok?

A: Servos may not be modified but they may be repaired using replacement parts from the original manufacturer to restore them to their original specifications.

GDC Kessler Effect

02-02-2015, 06:28 PM

LEGO Mindstorm Cable Length Limit

Quote:

> *Originally Posted by* ***FTC7373***
>
> *We would like to use Lego Motors on top of our linear slides for our ball intake system. Is the .9 meter cable length limit due to signal degradation or is a not allowable according to the rules. We would like to use an NXT female adapter to interface with a CAT 5e cable then interface back to NXT. We are looking at Rule R10a in specific. Thanks.*

A: Per <R10>a., the maximum cable length is 0.9 meters. Accordingly, cables longer than 0.9 meters are not allowed.

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Robot Electronics and Power - Answer Thread

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GDC Kessler Effect

02-02-2015, 06:44 PM

Prototype Board for Custom Circuits---Required

> Quote:
>
> *Originally Posted by **FTC0358***
>
> *Just wanted to make sure. All I want to do is build a custom i2c sensor to interface a couple of limit switches and integrate gyro data at a higher sample rate. I have a teensy 3.1 microcontroller, which is way cheaper, smaller and more suitable for the job. What harm could it do?*

A: The rules are quite clear on this point: Per <R08>d., "Additional electronics are allowed provided they are an integral part of an allowed part, or attached to the HiTechnic SuperPro Prototype or the NXT Prototype Boards, or are purely decorative in function." Thus, for your circuit, a prototype board is required per the rules. Also note that per <R11>.d.i., "All power used in the circuits connected to the Prototype Board must be derived from the power connections provided within the board including the board's optional additional 9V battery, if one is supported by the Prototype board." You should ensure that you understand the Prototype Board power limits detailed in Forum post #4 dated 09-22-2014, 11:46 AM. Any implementation that does not meet the requirements specified in the Game Rules and the Forum posts is not allowed.

GDC Kessler Effect

02-16-2015, 07:46 PM

Tetrix MAX W39177 Continuous Rotation Servo---Allowed

> Quote:
>
> *Originally Posted by **FTC0040***
>
> *The W39177 continuous rotation servo is available at the pitsco site, is this servo legal?*
>
> *Thanks*

A: Yes, the Tetrix MAX W39177 continuous rotation servo is allowed. Note from Pitsco: This servo does not have position feedback.

GDC Kessler Effect

02-16-2015, 07:49 PM

Using LEDs as Uncontrolled Light Sources---Allowed

Quote:

*Originally Posted by **FTC4537***

Lots of questions have been asked about LEDs. R11e is pretty clear that LEDs are allowed if they don't talk to other robots, or game elements, etc. and that any LED that has to be controlled needs to go through the Prototype board. However, we've noticed that if we place our decorative lights right, we can use them to judge how full our ball box is..... I don't see anything that prohibits "passive" benefits from decorative lights. I'm just curious if it's allowed to take advantage of "always on" lights (that are not controlled in any way) to help you in game play.

A: Using an otherwise-legal LED as a light source for a legal sensor is allowed. That's a great use of an LED as there may not be sufficient (or stable enough) light for a sensor embedded inside your robot to operate reliably.

GDC Ripple Effect

03-16-2015, 05:08 PM

Wire Gauge and Inspection

Quote:

*Originally Posted by **FTC1000***

At the South Super Regional the Hardware Inspectors were gauging the wire sizes of the individual wires in the spiral phone cords. They found that all of the phone cords (more than six) had individual wire sizes smaller than 24 gauge. Due to time and time a resource constraints of the travel teams they required any wire that could see "significant" amperage to change the wires from phone cord to gauge wire that meet rule R10d (20 or 22 gauge). At the other Supers, and at the Worlds will the same standard be followed? or will we need to change all of the phone cords to other wires?

A: Teams that are taking advantage of <R10>.d to extend or replace wiring within their robot should be prepared to verify the gauge of wire used, either by displaying the original packaging/specification for the wire or by physical measurement of the gauge of the wire, particularly for multi-conductor wiring. Teams should expect that wire that is smaller gauge than is allowed under <R10>.d will not pass inspection and will need to be replaced.

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Game Rules and Game Play - Answer Thread

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FTC Cause and Effect

08-04-2014, 02:54 PM

Game Rules and Game Play - Answer Thread

You'll find the answers to the questions you posted about Game Rules and Game Play in this thread.

GDC Domino Effect

09-17-2014, 05:23 PM

Kickstand

Quote:

*Originally Posted by **FTC2856***

1. Do the kickstands get removed after autonomous?
2. What happens if the kickstand gets knocked over but the balls don't fall out?

A 1. No, the kickstands remain on the field where they fell. Kickstands can be pushed but per Rule <G8> they may not be grasped or grabbed.

A 2. If the kickstand is knocked over during Autonomous and the balls are not released, the Referees will release them in the part of the match after Autonomous mode and before Driver Controlled starts. If the kickstand is knocked over in Driver Controlled period and the balls do not come out then teams may try to knock them free by driving their bots into the Center Structure (but not hard enough to cause field damage). This is not cause for a match replay since both alliances are affected equally..

GDC Domino Effect

09-17-2014, 05:32 PM

Moving the Center Structure

Quote:

*Originally Posted by **FTC4106***

The center structure seems to not have a lot of mass relative to the robots. We can picture scenarios where rogue autonomous robots cause it to move or maybe

even tip over. Will there be a penalty for significantly moving the center goal structure, whether on purpose or not? Will it be reset to the original position after autonomous?

A: The Center Structure is bolted to a plate located beneath the tile floor. It is very difficult to rotate and cannot tip over. A robot would have to be very strong and try very hard to move this structure. Robots that intentionally try to move this structure will be in violation of Rule <G8>.

GDC Domino Effect

09-18-2014, 08:17 PM

Balls Scored in Goal - Control

Quote:

*Originally Posted by **FTC7078***

We are wondering about the situation that more than likely will come up during end game. The manual states "Balls Controlled by a Robot are considered to be part of the Robot. Driving through more than the maximum number of Balls is acceptable as long as they are not collected, guided, herded, etc". However, in the end game teams can score points by moving the goal. If a team moves a goal with more than 5 balls which have already been scored in the goal are they in control of those scored balls or just the goal? Will they receive a penalty for moving the goal with balls in it?

A: Balls scored in a Rolling Goal are not considered as being controlled by the robot and do not count toward the 5 ball limit.

GDC Domino Effect

09-18-2014, 08:23 PM

Latching onto Goals

Quote:

*Originally Posted by **FTC4314***

1. Can you latch on to the base of the rolling goal while picking up balls and scoring them in the attached rolling goal?

A: The rules allow teams to grasp, grab, or latch onto the base of the Rolling Goals. There is no rule prohibiting scoring of balls while the robot is latched onto the goal, providing no other rules are violated.

GDC Domino Effect

09-19-2014, 06:57 PM

Kickstand Removal

Quote:

> *Originally Posted by **FTC7785***
>
> *1. During the autonomous period if the blue alliance removes the red kickstand (either accidentally or intentionally) do they get points for releasing both kickstands or just their own? Is there a penalty assessed if the opposite alliance's kickstand is knocked over before they have an opportunity to "kick it".*
>
> *2. Regarding the kickstands: Can you confirm that any knocked over kickstands are removed from the floor between autonomous and teleop? Also, can you confirm that kickstands are removed manually after autonomous if no bot knocks them out.*

A: 1. If a Blue Kickstand is removed during the Autonomous period the bonus goes to the Blue alliance regardless of which color alliance robot knocked it down. There is no penalty for knocking down the opposing alliance's kickstand.

2. Kickstands are not removed from the field. They remain as obstacles that robots must navigate around or over. If Kickstands are not removed during the Autonomous period they remain in place and can be removed during the Driver Controlled period by the robots.

GDC Domino Effect

09-19-2014, 07:04 PM

Bumping the Center Structure

Quote:

> *Originally Posted by **FTC7785***
>
> *Balls that are "stuck" in the center structure are not manually released into the field correct? Based on that, can a bot bump the center structure in an effort to dislodge the balls that are stuck (without actually touching the balls) or would that be considered a violation of either rule GS2 or G8?*

A: Yes, robots may bump the Center Structure to dislodge stuck balls providing this action does not result in damage to the Center Structure.

GDC Domino Effect

09-21-2014, 01:42 PM

Shooting Balls

Quote:

*Originally Posted by **FTC6055***

We have a question about RG11, which states "Game elements launched by Robots should not have a velocity greater than that required to reach a maximum of five (5) feet (1.5 meters) above the playing field surface". If balls are travelling within a robot faster than the limit but exit the robot at a slower velocity, will that robot be in violation of RG11? That is to say, if balls are being propelled through the robot, are not able to escape, and never exceed 5 feet in height while inside the robot, is it considered "launching"?

A: The rule is intended to prevent balls from injuring people outside the field. If a robot has a mechansim that launches balls, the Inspector will require that the team demonstrate the ball trajectory by launching a ball and measuring the highest point the ball reaches. If that point is above 6 feet, then the bot will not pass inspection until the mechanism is modified to comply with the rules.

GDC Domino Effect

09-21-2014, 02:00 PM

Rolling Goal - Off the Floor

Quote:

*Originally Posted by **FTC3900***

If a robot were to slide a piece of plexi-glass completely under a rolling goal to the point where not part of the rolling goal is touching the foam floor, would that be counted as an "off the ground" score of the rolling goal?
Last year a robot was though to be off the ground if a piece of paper could be slid underneath it. But as there is nothing to hang the goal from, the only criteria is to get it off the ground. If there is a piece of material completely underneath it, it would be off the ground, but only by as much as a few millimeters.

A: The definition for *Off The Floor* states that the Rolling Goal must not be in contact with the tile floor. It does not stipulate how to achieve this or how high the goal is off the floor. A Rolling Goal sitting fully on a plastic sheet would satisfy the requirements of being off the floor. Remember that Rule <G7> requires that robots cannot intentionally detach pieces so the plastic sheet would have to be firmly attached to the robot. Attachment via a thin cord or string is an entanglement risk and is not legal.

GDC Domino Effect

09-21-2014, 02:04 PM

Ball Control

Quote:

*Originally Posted by **FTC4133***

We would like know how the competitions will enforce the rule on the number of

balls a robot can control at one time. We need two clarifications:

1. If the robot is controlling a rolling goal with more than 5 balls in the rolling goal, are those balls in the rolling goal considered under the robot's control?

2. How will the judges or inspectors enforce the rule that the robot cannot control more than 5 balls? 2 years ago, during the bowled over game, the inspectors would actually attempt to put more than 5 balls in the robot. This year with two different sized balls, we are wondering how they will determine this.

A: 1. Balls scored in a rolling Goal are not considered as being controlled and do not count toward the 5 ball limit.
2. There will be no capacity test this year. Refs will observe the robots to determine if a robot is violating the 5 ball limit.

GDC Domino Effect

09-21-2014, 02:06 PM

Towing a Goal

Quote:

---

*Originally Posted by **FTC5754***

We wanted to double check that towing the rolling goal, similar to what the robot in 1 weekend team has done, is not in violation of GS1. Rules G8 and GS8 seem to allow the robot to grab the rolling goal, and GS10 allows pushing, but we wanted to clarify that pulling/towing does not constitute controlling more than 5 balls (or violating another rule).

A: Towing a goal is legal provided no other rules are violated.

GDC Domino Effect

09-21-2014, 02:11 PM

Goals on ramp Prior to End Game

Quote:

---

*Originally Posted by **FTC3900***

Would a goal be scored as "off the ground" and on the ramp if it was placed there before endgame?
It doesn't seem to be explicitly clear in the manual about WHEN the goals can be moved to the ramp, it only describes endgame as the time when goals are moved to the ramp.
For example: the small goal has already been filled up for our alliance, and to "get it out of the way" early, one robot moves that goal onto the ramp in the middle of the tele-operated period. Would the goal receive the points for being on the ramp and off the ground at the conclusion of the match?

A: There is no rule preventing teams from moving their own Rolling Goals onto the Ramp/Platform or Parking Zone prior to the start of End Game.

GDC Domino Effect

09-21-2014, 02:14 PM

Balls on Rolling Goal Base

Quote:

*Originally Posted by **FTC5873***

Does a Ball which rests on the Rolling Goal base outside the Tube and follows the movement of the Rolling Goal when pushed by the Robot count towards the limit in <GS1>?

A: Balls on the Rolling Goal base do not count toward the 5 ball limit.

GDC Domino Effect

09-21-2014, 02:17 PM

Picking up Rolling Goals

Quote:

*Originally Posted by **FTC4211***

Can the rolling goals be lifted off the mats by their base and fully supported by a robot?

A: Yes. robots may lift the Rolling Goals providing no other rules are violated.

GDC Domino Effect

09-21-2014, 02:22 PM

Autonomous Ball Removal

Quote:

*Originally Posted by **FTC2856***

Hi, this is Madeleine from 2856, again. I have a question regarding the autonomous balls. My question is:

Do the autonomous balls scored in tubes/center goal get removed at the end of the autonomous period?

A: No, they remain in the Goals.

GDC Snowball Effect

09-21-2014, 03:37 PM

Goals Righted Before Scoring

> Quote:
>
> *Originally Posted by **FTC3900***
>
> *Will goals be put put straight up or moved after the match end when scoring by the referees occurs?*
> *If a robot scored in a tube by tipping it onto the ramp on a steep angle (not past 90 degrees) and filling it up, will that goal be righted to straight up when it is scored?*
> *When testing filling up the large tube at kickoff, it “filled” (on an angle) to a full 90 cm with a little more than half the balls necessary to fill it while in the righted position.*
> *The balls do not sit directly above each other in the goal when it is upright (3 or 4 small balls can sit on the same plane, not adding height more than one). But when the goal is on a very small angle (just above flat), the balls all sit next to each other, using close to their full diameter to add to the height of the filled tube.*

A: Yes, the Rolling Goals will be righted by the referees and then scored. If the Rolling Goals are on the Ramp, they will placed with all wheels on the Ramp and scored. If the Rolling Goals are on a robot, they will be scored in place.

GDC Snowball Effect

09-21-2014, 03:50 PM

Controlling rolling ball tubes vs. "grab"

> Quote:
>
> *Originally Posted by **FTC6389***
>
> *Hello,*
>
> *The rules say robots may not "grab" on to the tube portion of the rolling ball tubes. May teams use a design in which a pair of "C" shaped manipulators that have an combined inner diameter larger than the diameter of the tube are used to keep the tube from tipping over while being moved? The idea would be that when this controlling device is in place around the clear portion of the tube, it would never "grab" or "grasp" the tube, the tube would be free to move back and forth roughly 1/4".*

A: While we are not able to specifically address your robot design, any mechanism that has the appearance of grasping (e.g. something that surrounds) the Ball Tube will be considered something that grabs the tube and will be penalized by the referee.

GDC Snowball Effect

09-21-2014, 03:54 PM

Orientation of Rolling Goals

Quote:

*Originally Posted by **FTC4211***

Are the starting orientations of the rolling goals consistent? Will the graduation marks always face a certain direction? If so, can you please clarify the orientation?

A: There is no set orientation of the Rolling Goals. Their starting location is set as being centered in each of the three tiles in the corner.

GDC Snowball Effect

09-21-2014, 03:59 PM

Rolling Goal Tipping

Quote:

*Originally Posted by **FTC4211***

If a robot is in the process of scoring in a rolling goal, and the actions of a robot on the opposing alliance causes the rolling goal to tip, which robot, if any, is assessed the penalty?

A: This would be a judgment call by the referees.

GDC Domino Effect

09-21-2014, 04:19 PM

Autonomous Goal

Quote:

*Originally Posted by **FTC7785***

If you put both balls in the center goal during autonomous do you get 60 pts per ball or just 60 pts?

A: You will get 60 points for a Center Goal with a ball, not 60 points per ball in a Center Goal.

GDC Snowball Effect

09-21-2014, 04:23 PM

RE: Rule GS8

Quote:

*Originally Posted by **FTC7785***

Can a robot contain an device that is intended to prevent the scoring tube from flipping without "grabbing" the tube (i.e a bumper of sorts)? Also, if a robot has an opening in the robot frame that allows the scoring tube to fit into it, would

that be considered "grabbing" the tube (i.e a "U" shaped bot that pushes the scoring tube within the opening of the "U")?

A: As described above, there is no rule preventing that kind of robot design. However, any ruling as to whether the Ball Tube is grabbed is purely up to the referee.

GDC Domino Effect

09-21-2014, 04:26 PM

Center Goal Scoring

Quote:

---

*Originally Posted by **FTC7911***

(1.4.4) Does end game center score measurement start from the floor (90mm) or from the bottom of the center goal tube (0mm)?

A: The Center Goal scoring starts from the bottom of the Center Goal, not from the floor. The center Goal is 30 cm tall so the maximum score for filling the Center goal is 30 cm X 6 pts/cm = 180 pts.

GDC Snowball Effect

09-21-2014, 04:37 PM

Rolling Goal Tube Incidental Contact

Quote:

---

*Originally Posted by **FTC7911***

<GS8> says "Robots may grab onto their own Alliance's Rolling Goal in any location except for the Ball Tube. Incidental contact with the Ball Tube during Scoring or pushing is allowed. Robots that grab their Rolling Goals by the Ball Tube will incur a Minor Penalty immediately and will incur additional Minor Penalties per five (5) second interval that this situation continues"

If a robot pushes against the rolling goal tube intentionally without grasping it, is that considered "incidental contact" for the purpose of this rule?

A: <GS8> says pushing a Rolling Goal is allowed. It also allows incidental contact with the Ball Tube. Pushing a Rolling Goal by the Ball Tube will NOT be considered incidental contact with the Ball Tube.

UPDATE: The initial answer to this question indicated that pushing the Ball Tube would be allowed. This is no longer true. Intentional contact with the Ball Tube will NOT be considered incidental contact. The traditional definition of incidental will be applied, i.e., "accompanying but not a major part". Applicable synonyms include; minor, nonessential, inconsequential, insignificant, etc.

GDC Snowball Effect

09-21-2014, 05:01 PM

Center Goal Autonomous Score

Quote:

*Originally Posted by **FTC7911***

(1.4.2) Does the 60 point center goal autonomous score apply once per alliance, once per robot, or once per ball scored during autonomous?

A: The Center Goal Autonomous Score (60 points) counts once per alliance.

GDC Snowball Effect

09-21-2014, 05:11 PM

Grabbing tube versus grabbing base

Quote:

*Originally Posted by **FTC3795***

Instead of pushing the base of the tube is it legal to grab the colored base holding the tube? The rule book states that you are not allowed to grab the tube itself but makes no mention of the base. We are currently working on a design that would grab the base and make no contact with the tube. Any guidance would be appreciated!

A: Yes, it is legal to grab the base as long as no other rules are violated.

GDC Snowball Effect

09-21-2014, 05:40 PM

<GS2> applicable to autonomous balls?

Quote:

*Originally Posted by **FTC6705***

Is it the intent of the GDC that <GS2> applies to autonomous balls? That is, if you don't score one or both auto balls in the autonomous period, do they have to touch the floor before they can be scored in the driver-controlled period?

A: No, the autonomous balls don't have to touch the floor if they were not scored during the Autonomous period. They do count towards the five ball limit.

GDC Snowball Effect

09-21-2014, 05:47 PM

Pulling a goal

Quote:

*Originally Posted by **FTC2867***

Can a robot pull a goal behind it if the goal has more than 5 balls in it?

A: Yes it can. Balls scored in the Ball Tube or balls resting on the Rolling Goal base are not considered to be in control of the robot.

GDC Snowball Effect

09-21-2014, 06:05 PM

End game ramp scoring

Quote:

*Originally Posted by **FTC3633***

Is there a multiplier to the goals in end game on the ramp, according to the height of the goal?

A: No, there is not a "multiplier" on the Rolling Goals that are on the ramp. You will receive 30 points per goal that is Off the Field plus the score of the goal based on the ball height and ball tube.

GDC Snowball Effect

09-21-2014, 06:14 PM

Descoring on your own goal

Quote:

*Originally Posted by **FTC3537***

I have a question about the descoring of rolling goals. I know that in the rule book it states that, "Robots may not de-score Balls from any of the opponent Alliance's Goals" (GS5). My question then is, Is it legal to descore your OWN goal during the telly-op and endgame periods?

Also if you were to descore your own tubes, would they be counted as descored at the moment it occurred, or would it be counted as descored at the end of the match?

It is legal to descore balls from your own goals, however be careful not to violate <GS14> - Goal tipping ANY goal. All scoring is determined at the end of the match.

GDC Snowball Effect

09-21-2014, 06:24 PM

Grabbing a ball tube

Quote:

*Originally Posted by **FTC7953***

<GS8> says “Robots may grab onto their own Alliance's Rolling Goal in any

> *location except for the Ball Tube." What constitutes a "grab"? In particular, if a robot puts a funnel-like tube into or around the top of a ball tube to direct balls into the top, is that a grab?*

A "grab" can be considered to be a way to squeeze the Ball Tube that encircles a majority of the tube. It can also be thought of employing a mechanism in or around the Ball Tube that causes the Rolling Goal to follow the robot. As described above, inserting a funnel-like structure into the top of the Ball Tube and then driving around with it can be considered to be a violation of <GS8>.

GDC Snowball Effect

09-21-2014, 06:29 PM

Center Structure rotations: game video or field setup guide correct?

Quote:

> *Originally Posted by **FTC7953***
>
> *The game video show the rotations of the center structure differently than page 19 of the Field Setup Guide describes, and the Game Manuals do not describe the rotation positions in detail. Is the Field Setup Guide correct and thus are the rotations shown in the game video incorrect?*

A: The order of precedence for deciding rules is 1) Q&A Forum; 2) Game Manuals; 3) Game Video. In this case, Field Setup Guide has the definitive answer to this question.

GDC Ripple Effect

09-21-2014, 06:39 PM

<GS8> and Incidental Ball Tube Contact

Quote:

> *Originally Posted by **FTC7911***
>
> *<GS8> Says "Robots may grab onto their own Alliance's Rolling Goal in any location except for the Ball Tube. Incidental contact with the Ball Tube during Scoring or pushing is allowed. Robots that grab their Rolling Goals by the Ball Tube will incur a Minor Penalty immediately and will incur additional Minor Penalties per five (5) second interval that this situation continues."*
>
> *Is it permitted for a robot to grab the base of its own rolling goal and make incidental contact with the tube in a way that limits but does not otherwise constrain the relative motion between the robot and the rolling goal?*

A: In general, the referees will make judgment calls based on the nature of the contact. Ball tube contact that is deemed to be a significant part of controlling a rolling goal may be deemed not to be incidental and may result in assessment of <GS8> penalties.

GDC Ripple Effect

09-21-2014, 06:45 PM

Balls Stuck in Center Field Structure

Quote:

*Originally Posted by **FTC3826***

My team and I were at kickoff here in Anchorage and we noticed a concern. When the bots hit the kickstands at the same time the balls would get stuck at the bottom of the center goal. Will that be something that is addressed? Will they be released by a referee or something? The balls were stuck for the entire match and we weren't sure if that will be the case in match play. If that's the case, thats A LOT of balls that are taken out of play. I don't know how we should handle this. Please advise.

A: At the end of the Autonomous Period, the referees will dislodge and allow to fall to the playing field floor, all balls that have become stuck in the Center Field Structure. Balls that become stuck after the start of the Driver Controlled Period are the responsibility of the robots on the field to dislodge (i.e. a few bumps on the Center Field Structure will likely cause the balls to fall). Balls that do not come free before the end of the Match will NOT be grounds for a match-replay as all robots on the field will have potential access to the same number of balls.

GDC Ripple Effect

09-21-2014, 06:54 PM

Center Field Structure Position

Quote:

*Originally Posted by **FTC3658***

In the 1.4.1 Pre-Match section, rotation of the center to one of three positions is described. However, the direction of the center team goals (red or blue) are not defined. If the goal is rotated to position 1, with the long axis perpendicular to the RED alliance Parking Zone, looking from the parking zone will the RED goal be on the right or left. Alternatively, if the goal is rotated to have the goals pointing toward the Parking Zone (position 3), will the RED goal be pointing toward or away from the RED Parking Zone.

A: If you look closely at the drawings on page 19 of the Field Assembly and Setup Guide, you can see the positioning for the Center Goals. In position #1, the Red Center Goal is at the bottom of the drawing (the Audience), in position #2, the Red Center Goal is pointed to the corner where the 3 Blue Alliance Rolling Goals start, and in position #3, the Red Center Goal is pointed towards the Red Parking Zone.

Another way to describe it is that the Center Goal is always 90 degrees clockwise of the position for the corresponding Kickstand.

GDC Ripple Effect

09-21-2014, 07:08 PM

<G10> and Pinning/Trapping During Automonous

Quote:

> *Originally Posted by **FTC6705***
>
> *Historically, teams have occasionally employed defensive autonomous programs that interfered with the forward progress of an opposing alliance robot. <G10> appears to address these types of programs to some extent, but we think it requires some clarification on the specifics of enforcement, particularly around the Trapping concept.*
>
> *The language of <G10> now reads: "In general, Pinning or Trapping will not be called during Autonomous mode. However, Autonomous strategies that appear to be intended to Pin or Trap an opposing Alliance's Robot may result in a Minor Penalty, or if chronic, Disqualification."*
>
> *Is the intent of <G10> to discourage teams from these purely defensive autonomous programs, despite the note that trapping will not be called in Autonomous? For example, if a team pointed their robot out of their Parking Zone and it went forward and "intercepted" an opposing robot coming down the Ramp, and thus stopped them from reaching the rolling goals during autonomous, would that result in a Minor Penalty?*

A: The intention of the additional language was to eliminate the potential for abuse of a forgiveness in the application of pinning/trapping during the Autonomous period.

If, in the opinion of the referees, a team is strategically taking advantage of the Autonomous Period exceptions to pinning/trapping the referees will assess a Minor Penalty per <G10>.

GDC Ripple Effect

09-21-2014, 07:22 PM

Ball Height Measurement Clarifications

Quote:

> *Originally Posted by **FTC4106***
>
> *We are wondering about seemingly conflicting statements in the rules regarding scoring for the rolling goals. In the scoring summary table it says "Balls scored in 30cm (from floor) rolling goal." Later there is a table indicating max scores, it says "Rolling Goal Height from floor" and "Points per cm of Ball Height" with ball height in italics.*
> *1) Is the score purely calculated from the base of the tube to the top ball or are other factors involved?*
> *2) If the goal is tipped, is it then measured from the floor to the top ball?*
> *3) If the goal is raised (i.e. On the ramp or otherwise) is the measurement taken 'from the floor' to the top ball?*
> *3a)Would this mean there is an uncapped points per tube?*
> *4) In the "Rolling Goal Height from Floor" column does this mean if the rolling goal is raised up to that height, the balls in the tube are worth more points?*
> *4a) This would seem to be contradicted by the table indicating a max score and 1pt per cm. In fact, if all measurements are taken 'from the floor' to a raised goal, it appears there is no limit to the score from a given tube. The table makes it seem like the tubes change values if you raise them. Is that true?*
> *4b) If the table is meant to say 'Short Height goal,' 'Medium Height Goal,' and 'Tall Height Goal.' Then the points per goal don't change as you raise it, but would the points given for the top ball still be increased if the goal itself is raised?*

4c) If the maximum points per goal is true, can this maximum only be achieved by filling the tube with balls or can part of it be achieved by putting balls in combined with lifting the gaol?

A1: Ball Height is measured from the base of the Ball Tubes.
A2: Tipped goals will be righted to a perpendicular orientation.
A3: No. See A1 ... there is a defined max score per goal (last column in table in Section 1.4.3 of Game Manual Part 2)
A4a: No. All measurements are from Ball Tube Base
A4b: No. Ball Height Score is not dependent in any way on the height of the base of a goal from the floor
A4c: Max score for Rolling Goals is achieved solely by filling the Tubes with Balls.

The measurement of Ball Height is performed using the index that is mounted on the Tube of each Goal.

GDC Ripple Effect

09-21-2014, 07:28 PM

Ball Control Clarification

Quote:

---

*Originally Posted by **FTC6433***

Under 1.3 Game Definitions, under Control / Controlling, the last line says "Driving through more than the maximum number of Balls is acceptable as long as they are not collected, guided, herded, etc."

Let's say we have 5 balls in our robot and want to score into a rolling goal which is 10 feet away but there are many balls around the goal and our robot. The only way to get to the goal would be to push along a few balls in order to score. Is this considered a penalty?

Thanks.

A: The referees will make a judgement call based on the observed situation. If, in the opinion of the referees, the team is actively guiding balls on the floor, in addition to the 5 carried balls, they will assess penalties based on <GS1>

GDC Ripple Effect

09-21-2014, 07:34 PM

Blocking Center Goal/Ramp based on Center Field Structure Position

Quote:

---

*Originally Posted by **FTC7953***

When the center structure is in rotation position #1, one alliance's center goal is right in front of the other alliance's ramp entrance. The rules state that neither alliance may block access to the other alliance's center goal or ramp entrance during the end game. However, a robot trying to score in the center goal in this

position will likely also be blocking access to the other alliance's ramp, and similarly a robot trying to move its rolling goals onto its alliance's ramp will likely also be interfering with access to the other alliance's center goal. How will <GS16> and <GS18> be enforced in this situation?

A: In general, blocking access to either the Center Goal or the Ramps will be a judgement call made by the referees based on their observations of the match as it is being played. In position #1, there is approximately 4 1/2 feet between the Center Field Structure and the playing field wall. Certainly should be enough space for both alliances to be able to play carefully.

GDC Ripple Effect

09-21-2014, 07:45 PM

Autonomous Robot Signaling Strategy

Quote:

*Originally Posted by **FTC3697***

Hello, We had a question concerning the strategy. Would it be legal to have a sensor on our robot that in autonomous we would show it a card and it would run a certain autonomous program depending on which card we show it. Would this be considered legal since it is still being operated be pre-programmed instructions.

A: No. By signaling to the robot a desired action with a colored card, you are controlling the robot and it is no longer autonomous. It is not making its own decisions, you are deciding for it and communicating the decision with a colored card.

GDC Ripple Effect

09-21-2014, 07:48 PM

Scoring Clarification

Quote:

*Originally Posted by **FTC5223***

Our team is currently confused about two rules involving ball scoring.

1. If a ball is scored in the high goal during the autonomous period, is it counted for 60 points at the end of the autonomous as well as for 6 points times however centimeters tall it is at the end of the tele-op?

2. Is the height of the balls in the high goal measured from the floor? Eg. Is a single ball scored in the center goal worth over 540 points, or is it worth 6 points times however many centimeters it is above the bottom of the center goal?

A1: The Balls will remain in the Goals and be counted as part of the End-of-Match scoring

A2: Ball Height is measured from the base of the corresponding goal using the measuring tape attached to the Goal.

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Game Rules and Game Play - Answer Thread

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GDC Ripple Effect

09-22-2014, 02:08 PM

Rolling Goal Tipping

> Quote:
>
> *Originally Posted by **FTC7953***
>
> *<GS14> says "Robots may not tip over ANY Rolling Goal (deliberately or accidentally)" and the game manual defines tipping over as more than 90 degrees so the balls would roll out of the tube. Can a robot deliberately tip a rolling goal less than 90 degrees to assist in scoring? For example, could a robot tip a rolling goal down to allow its alliance partner to more easily insert balls into the lowered end of the ball tube? Or tip a rolling goal onto its alliance's ramp and then load balls into the tube from the ramp if the tip is less than 90 degrees?*

A: There is nothing in the rules that prohibits the above strategy, as long as no other rules are violated.

GDC Ripple Effect

09-22-2014, 02:14 PM

Moving Kickstand

> Quote:
>
> *Originally Posted by **FTC4625***
>
> *In discussion today our team wondered if the Kickstand can be moved after it is released, or does it have to be left where it falls. Our assumption is that the Kickstand is not classified as a scoring element in the game definitions, therefore under rule 1.5.2.G8 the robot cannot manipulate the Kickstand by grabbing, grasping, grappling or attaching to it. Is it allowable though for the robot to intentionally push the Kickstand aside once it has been released, or conversely if the robot does push the Kickstand during play, would that action be penalized under rule 1.5.2.G8?*

A: You are correct that the Kickstand may not be grabbed/grasped/grappled. There is nothing in the rules that prohibits a robot from pushing the Kickstand as long as no other rules are violated.

GDC Ripple Effect

09-22-2014, 02:18 PM

Balls Scored In Autonomous Period

Quote:

> *Originally Posted by **FTC0207***
>
> *Section 1.4.2: Autonomous Period - 60 points if any Autonomous Balls are Scored In the Center Goal.*
> *Section 1.4.4: End Game - 6 points for each cm of Ball Height for Balls Scored In the Center Goal*
>
> *A robot scores a single Autonomous Ball in its Alliance's Center Goal during the Autonomous Period. By my interpretation of the rules, this Ball scores twice: once at the end of Autonomous Mode (60 points) and once in End Game (90+ points), for a total of over 150 points for a single ball in the Center Goal. Is this interpretation correct?*

A: Balls scored during the Autonomous Period will be left in their respective Goals and be Scored at the end of the Match according to the Goal they are in. Be careful about the computation of the value of the Balls in the Center Goals. Measurement starts from the base of the Center Goal, not from the floor.

GDC Ripple Effect

09-22-2014, 02:24 PM

Kickstand used to push Balls

Quote:

> *Originally Posted by **FTC2856***
>
> *If the kickstands remain on the field, does it count as possession if the robot pushes a kickstand and the kickstand pushes balls?*

A: The referees for the match will make a judgement call based on their observations. If, in the opinion of the referees, a robot is using a Kickstand to control more than 5 Balls, penalties will be assessed based on Rule <GS1>

GDC Snowball Effect

09-22-2014, 03:34 PM

Initial positions of rolling goals

Quote:

> *Originally Posted by **FTC7953***
>
> *The initial position of the rolling goals is described as in the center of the*

> *corresponding tiles. Since the field perimeter is slightly smaller than 12 feet, the starting tiles for the rolling goals are not entirely in the field area. Is the initial position in the center of the original, full tiles (and thus closer to the perimeter than the tile seam) or is the initial position in the center of the portion of the tile that is in the field (and thus half way between the perimeter and the seam, even though that is less than 1 foot from the seam)? Also, is there any particular initial rotation of the rolling goals (e.g., "pentagon point pointing towards the ramp"), or will they be in random starting rotations?*

A: The initial position of the Rolling Goals is in the center of the tile. Official game fields will have the edges removed so that the tiles fit within the field borders. There is not any particular initial rotation of the goal other than the height being in their specific tiles.

GDC Snowball Effect

09-24-2014, 01:07 PM

End Game and Before

Quote:

> *Originally Posted by **FTC6433***
>
> *1) Regarding end game points, are we allowed to place rolling goals in the Parking zone prior to end game?*
> *2) Regarding end game points, are we allowed to place rolling goals on the ramp prior to end game?*
> *3) Regarding end game points, are we allowed to place balls in the center goal prior to end game?*
>
> *Thanks.*

A1) Yes
A2) Yes
A3) No

GDC Snowball Effect

09-24-2014, 02:15 PM

Questions

Quote:

> *Originally Posted by **FTC0417***
>
> *1. If the center goal is accidentally bumped from below and falls down will the referees replace it?*
> *2. What is the purpose of the large holes in the bottom of the "front panel" of the center goal?*

A1. No
A2. They are for assisting field setup with the center pivot bolt and nut. They have no game purpose.

GDC Snowball Effect

09-24-2014, 02:20 PM

Scoring in the endgame

> Quote:
>
> *Originally Posted by **FTC2856***
>
> *Do the autonomous balls scored in the center goal/tubes count for your score during endgame?*

A: Yes, they do.

GDC Snowball Effect

09-24-2014, 02:25 PM

Atonomous balls score

> Quote:
>
> *Originally Posted by **FTC5954***
>
> *1. Is an autonomous ball considered scored if it is on the rolling goal at the end of autonomous but not in the tube?*
> *2. If your robot is on the center goal base at the end of the game and not touching the floor mat is that considered not in contact with the floor and scored.*

A1: No
A2: Yes, it is "Off the Field".

GDC Snowball Effect

09-24-2014, 02:59 PM

Tipped over Rolling goal

> Quote:
>
> *Originally Posted by **FTC4930***
>
> *If an alliance knocks over their own rolling goal, is it considered to be de-scored? Would that alliance be penalized or would they "lose" those points?*

A: There is no rule against descoring balls from your own goals, however <GS14> states that you cannot tip over any goal (yours or your opponents). So the action you describe would receive a major penalty.

GDC Ripple Effect

09-25-2014, 12:55 PM

<GS8> and Incidental Contact

> Quote:

*Originally Posted by **FTC6369***

May a robot have a device that intentionally presses against the ball tube of the rolling goal?

By this I mean that a part of the robot presses against the goal tube, but does not press on opposite sides in an act of grabbing. Picture, for example, a tuning fork with tines spaced a half inch larger than the tube diameter. One side of the tube remains open. Such a device could not lift the tube, but might be used as a locating device for ball placement, or a stabilizing device near the base. This would seem to be short of grabbing (<GS8>) but more than incidental contact. Would it be legal?

Many thanks!

A: In general, the referees will make a judgement call based on what they see at the time. Contact with the tube that is deemed to be not incidental (i.e. plays a part in the control of the Rolling Goal) may result in application of penalties based on <GS8>.

GDC Ripple Effect

09-25-2014, 12:59 PM

<GS8> and Encircling a Rolling Goal Tube

Quote:

---

*Originally Posted by **FTC0121***

Rule GS8 includes "Robots may grab onto their own Alliance's Rolling Goal in any location except for the Ball Tube. Incidental contact with the Ball Tube during Scoring or pushing is allowed." Is it legal to encircle the tube of the rolling goal (with a hoola-hoop for example) and drive away from the rolling goal such the the far end of the hoola-hoop pushed the goal towards the robot (effectively pulling the goal)? Is it leagal to encircle the tube of the rolling goal as a guard against tipping? Control of the goal would be from grasping the base, the hoop would only contact the tube if the tube were to start to tip over (ideally stopping it before it does tip over).

A: The strategy as described would not fall under the definition of incidental contact and would lead to application of penalties based on <GS8> in the case that contact with the tube is made.

GDC Ripple Effect

09-25-2014, 01:03 PM

<GS8> and the definition of Incidental

Quote:

---

*Originally Posted by **FTC6433***

Rule GS8 says "Robots may grab onto their own Alliance's Rolling Goal in any location except for the Ball Tube. Incidental contact with the Ball Tube during Scoring or pushing is allowed".

What is the definition of "incidental" for this game? If we incorporate a support system that prevents the Goal from falling towards our robot (no grabbing involved) and the goal touches this system more than once during the game is this incidental?

Thanks

A: In general, the referees are going to make judgement calls based on their observations of the match. Contact that is determined to be intentional or purposeful will likely not to be viewed as incidental and could lead to penalties based on <GS8>

GDC Snowball Effect

09-29-2014, 12:32 PM

Scoring Tube Scale Location

Quote:

---

*Originally Posted by **FTC0524***

I applied the scale to the scoring goal tubes as explained in the instructions, but then when I inserted them over the protrusion on the rolling base, the first 2.5 cm is taken up by the protrusion.

Is the scale supposed to be applied above the protrusion, or do balls scored in a goal get an extra 2.5 cm added on?

A: The scale is supposed to go down to the top of the rolling goal base. The protrusion does give the teams an extra 2.5 cm.

GDC Ripple Effect

09-29-2014, 01:14 PM

<GS8> and Grasping

Quote:

---

*Originally Posted by **FTC0121***

Is it the intention of <GS8> to mean that a robot mechanism can not surround the ball tube, or is it meant that a mechism can't apply force/contact to the ball tube from multiple directions simutaneously?

Or to ask the question another way, what is the defnition of grab with regards to <GS8>?

A: A traditional definition of grasp will apply i.e., "to take and hold (something) with your fingers, hands, etc.". <GS8> allows for incidental contact with the Ball Tube. Encircling the Ball Tube with any sort of mechanism and then making contact to pull, push, control, support, balance, etc. the Ball Tube would not be considered incidental contact and would trigger the application of penalties

based on <GS8>.

GDC Ripple Effect

09-29-2014, 01:21 PM

Autonomous Pinning/Trapping

Quote:

*Originally Posted by **FTC8391***

Hi,

We have a few questions regarding pinning/trapping during the autonomous period.

Rule <G10> states, "Autonomous strategies that appear to be intended to Pin or Trap an opposing Alliance's Robot may result in a Minor Penalty, or if chronic, Disqualification".

Q1) Is parking in front of the opposing alliance's center goal during autonomous considered trapping?
Q2) If the answer to Q1 is yes -- Rule <G10> states, "A Robot cannot Pin or Trap another Robot for more than five seconds". If, during autonomous, a robot were to park in front of the opposing alliance's center goal but were to block an opposing robot for under five seconds, would its actions result in a penalty?
Q3) Trapping is defined as "Preventing an opposing Alliance Robot from accessing or escaping from a constrained Area of the Playing Field for an extended period of time". If, during autonomous, a robot were to block one path to the opposing alliance's center goal, while leaving another path open, would this robot be considered trapping?

Thanks,

W-Prime Robotics, FTC Team 8391

A1: Parking in front of Center Goal does not meet the requirements to be considered Trapping. It could be considered to be blocking access and if done during the End Game could result in penalties per <GS18>
A2: n/a
A3: The referees will make a judgement call based on what they observe during the Autonomous period and apply penalties as they deem appropriate.

GDC Ripple Effect

09-29-2014, 01:28 PM

Autonomous Pinning/Trapping

Quote:

*Originally Posted by **FTC6705***

Thank you for the response to our question on the expanded rule on pinning/trapping in autonomous.

We think that this will come up in the earliest qualifiers, where simple "just go

forward" autonomous programs could be used that might effectively prevent scoring in autonomous - so we wanted to ask about a couple very specific scenarios for clarification.

1. Robot starts in Parking Zone, goes in a straight line and stops opposing alliance robot from coming down ramp. Minor Penalty?
2. Same as #1, except opposing alliance robot makes it down ramp, but is prevented from reaching center goal by the other robot - meeting it near the bottom of the ramp. Minor Penalty?
3. Is the rule note on "disqualification, if chronic" meant to apply to a later match where a robot repeats an action that they received a minor penalty for previously?

Thanks!

A1: If the referees determine that the opposing alliance robot is pinned/trapped by your robot and that the pinning/trapping was a strategy, a Minor Penalty could be assessed based on rule <G10>

A2: Same as A1

A3: There is no requirement that a prior Minor Penalty to have been assessed for the referee crew to determine that autonomous pinning/trapping actions by a robot are strategic. In general, attempts will be made to warn team, both verbally and via Minor Penalties, prior to disqualification.

GDC Ripple Effect

09-29-2014, 01:32 PM

Using Colored Cards to Select Autonomous Actions

Quote:

Originally Posted by ***FTC5940***

One question asked if a color could be shown to a robot for autonomous instructions. The answer made it clear that any instructions given to the robot during play make it no longer autonomous. What if, instead of using menus/buttons to select autonomous behavior, the program read a color or other information BEFORE the orientation of the center is set and the game begins? This would leave the robot as autonomous for the entire period of required autonomous play.

A: There is nothing in the rules that prohibits using colored cards as a method to select Autonomous actions. Be aware that the use should be done in a manner that does not cause delay to match start, does not interfere with other robots setting up on the field, and does not cause the robot to fail to abide by the field control protocols.

GDC Ripple Effect

09-29-2014, 01:35 PM

Pushing/Pulling Rolling Goals by the Ball Tube

Quote:

---

*Originally Posted by **FTC6389***

In a previous post, the GDC ruled that robots are allowed to push rolling goals by touching the clear plastic part of the tube. Does this mean that robots may also "pull" tubes along behind or along side of the robot so long as the clear plastic tube is not "grabed" or "grasped" ?

thanks

- FTC Team 6389 - "The LazyBotts"

A: The previous post mentioned has been updated. Intentional contact with the Ball Tube of a Rolling Goal will not be considered incidental and will result in the assessment of penalties based on <GS8>.

GDC Ripple Effect

09-29-2014, 01:36 PM

Game Rules and Game Play - Answer Thread

Quote:

*Originally Posted by **FTC5501***

When assembling the rolling goals, I noticed that the measuring tape goes to the bottom of the tube and the tube is supposed to be flush with the base of the rolling goal. This puts each rolling goal with a starting point of just over the 2cm mark. Does each team at the end of a match get 2cm credit for each tube or is it only scored once a ball is in the goal?

A: For a Rolling Goal to score, there must be at least 1 Ball in the Ball Tube.

GDC Ripple Effect

09-29-2014, 01:39 PM

Balls not in Ball Tube do not score

Quote:

*Originally Posted by **FTC0118***

If a ball were to land on the pentagonal base outside of the tube on one of the 30, 60, or 90cm tubes and no other balls were to enter the tube, would that ball on the base outside the tube be worth points for its height in centimeters?

A: When determining Ball Height for scoring a Rolling Goal, only Balls that are within the Ball Tube will be considered. Balls outside the Ball Tube are ignored, even if they are supported by the Rolling Goal Base.

GDC Ripple Effect

09-29-2014, 01:45 PM

Knocking Down Center Goal

> Quote:
>
> *Originally Posted by **FTC0417***
>
> *If the opposingalliances intentionally knocks off the center goal will they getpenalized for it, if so how much? Canpoints be scored into it while on the ground?*
>
> *thanks for the help*

A: Knocking a Center Goal off of the Center Field Structure will be considered Tipping the Center Goal. Rules <GS5>, <GS14> and <GS15> will all also apply to a Tipped Center Goal as the particular situation merits (i.e. Major Penalty for Tipping <GS14>, possible 2nd Major Penalty + Full Center Goal for Descoring Opposing Alliance Center Goal <GS5>, and the Tipped Goal may not be scored into <GS15>)

GDC Snowball Effect

10-02-2014, 09:37 AM

Balls extending above the tube

> Quote:
>
> *Originally Posted by **FTC0524***
>
> *It is easy to imagine a full goal (either rolling or center) completely filled up with part of a ball sticking out the top.*
>
> *Will the score for a goal include that part of a ball that is sticking out? Or is there a maximum score for each goal?*

A: There is a maximum score for each goal and it is documented in Section 1.4.3 of Part 2 of the Game Manual.

GDC Snowball Effect

10-02-2014, 10:36 PM

Balls on the scoring base

> Quote:
>
> *Originally Posted by **FTC9044***
>
> *You are not allowed to remove balls from an opponent's scoring tube. Are balls on the base counted for this rule?*

A: Since the balls have not been scored, you can remove the balls from the base provided no other rules are violated - namely <GS5>, <GS2>, <GS9>. and <GS13>.

GDC Snowball Effect

10-02-2014, 10:45 PM

Parking Zone vs Off the Floor

> Quote:
>
> *Originally Posted by **FTC8538***
>
> *For scoring at the end of the game, where 10 points is given for an item in the Parking Zone and 30 points is given for an item Off the Floor, is it theoretically possible for the same item to be both in the Parking Zone and Off the Floor, or are those mutually exclusive criteria? In particular, if an item is completely elevated in the air space above the Parking Zone, does that item score both 10 points and 30 points?*

A: You will not get 30 points for being Off the Floor plus 10 points for being in the Parking Zone. Only one bonus (30 points) will apply plus points for the ball height achieved.

GDC Snowball Effect

10-03-2014, 10:55 AM

IR Beacon Height

> Quote:
>
> *Originally Posted by **FTC5026***
>
> *I am the team programmer, and I need to know how high the IR Beacon is off the ground. The only problem is, I haven't found a specification of the height anywhere. If you can answer that would be awesome!*

A: The bolt that holds the IR Beacon door tag is 24.375" off the soft tiles. Depending on the type of IR Beacon in use, the height of the IR source may be different. The mounting board specifications for the IR Beacon has not changed from the previous year.

GDC Snowball Effect

10-09-2014, 09:41 AM

Further <GS8> clarification

> Quote:
>
> *Originally Posted by **FTC0121***
>
> *I'm sorry to belabor this point, but I just want to be clear on this ruling as another coach interpreted the previous rulings differently than I do.*
>
> *My understanding of the intent of <GS8> is that only incidental contact with the Ball Tube is allowed, regardless of what actions you are doing, and that intentional contact (not just grabbing) will result in a Minor Penalty. Is this understanding correct?*

A: That is correct. Only incidental contact with the Ball Tube is allowed. All other contact with the

Ball Tube will result in Penalty.

GDC Snowball Effect

10-09-2014, 09:51 AM

Balls in tubes

Quote:

*Originally Posted by **FTC5035***

If there is an air gap between balls in the tube how will the balls be scored? If you have some in the tube and then you put more in and they don't slide down would the score be where the last balls reach on the scoring tape? The balls would not be near the balls below.

A: There should not be an air gap in the final state of the Ball Tube. If there is, that might mean possible field damage or intentionally removing parts of robots (both of which are penalized). The referee will remove any air gap and then take the measurement.

GDC Snowball Effect

10-09-2014, 10:00 AM

Robot Completely Off the Floor and In Parking Zone at end of Match

Quote:

*Originally Posted by **FTC5873***

Question 64 posted by FTC8538 at 10-02-2014, 10:45 PM asked about "an item in the Parking Zone" being Completely Off the Floor and In the Parking Zone. The response was consistent with the Note in section 1.4.4 of Game Manual Part 2 with respect to the Rolling Goal. However, the question was worded in a way that applied to Robots and to Rolling Goals. Would a Robot that is Completely Off the Floor and Inside the Parking Zone receive 30 points or 40 points?

A: Only one bonus (30 points) will apply regardless of whether it was a robot or a Rolling Goal. Plus you will receive points for ball height in the Tubes. You will not receive 30 points + 10 points at all.

GDC Snowball Effect

10-09-2014, 10:14 AM

Rule Clarification

Quote:

*Originally Posted by **FTC6191***

Hi,
If our team uses a funnel to go over the tube, does that count as grasping the floor goal? Doesn't seem to be outlined in <G8>.
JTM Team 6191

A: Asked and answered in post "Grabbing a ball tube" dated 9/21/14. You can't do this. It does count as grasping. Please read all Q&A prior to posting a question.

GDC Snowball Effect

10-09-2014, 10:47 AM

Goal tube

Quote:

*Originally Posted by **FTC5559***

Our team plans to lift the rolling goal by only grasping onto the base.

Would it be incidental contact if we used side rails that momentarily touch the tube only to center the rolling goal on our lift system?

A: No, it would be ruled intentional contact and penalized.

GDC Ripple Effect

10-09-2014, 03:19 PM

Control of Multiple Balls

Quote:

*Originally Posted by **FTC6369***

<GS1> States that a robot may not control more than 5 balls at any time.

We are considering a strategy that includes device can get balls rolling across the playing field. Our robot would not be in contact with more than 5 balls at any one time. More than 5 balls that were set in motion by our robot may still be rolling at any one time, at a distance of some feet from our robot. Are balls that were set in motion by our robot, but no longer in contact with it, considered "controlled", and thus in violation of <GS1>?

Many thanks.

A: In general, the referees will need assess each particular situation based on what they observe. As an example, a robot with a "leaf-blower" type of mechanism could be blowing balls into a group for pickup. If more than 5 balls are being affected by the air flow, the referees would assign penalties based on <GS1>.

GDC Snowball Effect

10-13-2014, 08:45 AM

Starting Position on the Ramp

Quote:

*Originally Posted by **FTC2901***

When starting on the Ramp does the robot have to start on the horizontal part of the ramp or can it start on the incline assuming that it is inside the lines enclosing the ramp and it is also in contact with the side wall?

A: The robot's starting position has to be on the Platform (the "horizontal part" as you call it).

GDC Snowball Effect

10-13-2014, 08:50 AM

Moving Opposing Alliance Rolling Goals During Autonomous

Quote:

*Originally Posted by **FTC0524***

Is it legal for a robot to move the opposing alliances rolling goals away from their initial starting positions during the autonomous period?

A: There is nothing in the rules to prevent that strategy except <GS11> and <GS12>.

GDC Ripple Effect

10-13-2014, 01:38 PM

Supporting Rolling Goal Ball Tube w/ Robot

Quote:

*Originally Posted by **FTC5501***

Are we allowed to tilt the tube onto our robot, so we aren't grabbing it but it is leaning on our robot and we drive around like that? Are we not allowed to touch the tube at all? If we tilt the tube onto our robot and drive away from the tube then we aren't officially pushing the tube with our robot. The tube would also not be tilted far enough that it is considered tipped over.

A: Tilting a Rolling Goal so that the Ball Tube is supported by a robot will not be considered incidental contact and will result in penalties per <GS8>

GDC Ripple Effect

10-13-2014, 01:57 PM

Pushing Opposing Alliance Grasped Rolling Goal

Quote:

*Originally Posted by **FTC0524***

Robots will be grabbing their rolling goals and moving them.
<GS9> says that "Grabbing opposing Alliance's Rolling Goal" is a penalty.
My question: "Is it legal to PUSH on a grabbed opposing alliance rolling goal in an attempt to dislodge it from the opposing robot?"

A: There is nothing in the rules that would prohibit this strategy. Be aware that any contact with the Ball Tube would not be considered incidental and would result in penalties. Additionally, any descoring of balls or tipping of goals would result in penalties based on <GS5> and <GS14>. Additionally, if the referees determine that the contact with the opposing alliance rolling goal is likely to cause damage, rules <G8> and <G9> would apply as well.

GDC Ripple Effect

10-14-2014, 12:52 PM

Maximum Points for Center Goal

Quote:

*Originally Posted by **FTC0365***

Our team was wondering about the maximum points you can score in the center goal during End Game. We are given point values for what full rolling goals are worth, but nothing said about the center goal in Game Manual Section 1.4.3. The rules state that the center goal is worth 6pts per cm, and is at 120cm tall. Is the maximum value equal to 30cm at 6pts per cm, 120cm at 6pts per cm, or something under 30cm (i.e. 27cm)? Our current center goal from AndyMark only shows markings a little over 27 cm, so we are a little confused.

Thanks,
MOE 365 FTC

A: The measuring tape on the side of the Center Goal is the method that is used to determine Center Goal scores. The referees will determine the level of the top of the Balls within the Center Goal tube and match that to a marking on the tape. Based on this, the maximum score for the Center Goal is 6 pts/cm * 27 cm or 162 pts.

GDC Ripple Effect

10-14-2014, 12:59 PM

Electronic Devices in Driver Station

Quote:

*Originally Posted by **FTC6806***

Does it violate any rules to have one of our teams' drivers use an electronic counting device to keep track of the number of balls entering our robot during a match?

A: Yes, and electronic counting device violates <G2>. <G2> indicates that any device that a casual observer may mistake for a communication device violates <G2> and would be subject to an escalating sequence of consequences, include a warning, Minor Penalty, and possible Disqualification.

GDC Snowball Effect

10-16-2014, 09:30 AM

Game Rules and Game Play - Answer Thread

Quote:

*Originally Posted by **FTC7911***

<G8>, <GS8>, seems to relate to any contact that occurs in the process of moving or controlling a rolling goal. This topic has been beat to death and sorry for adding two more ?s.

(1) If a robot is pushing a rolling goal by the base toward the ramp and the tilt that results from the transition from floor to ramp causes momentary contact with tube, would that be considered unintentional and incidental contact.

(2) "Would a penalty occur as result of light tube "CONTACT with a whisker" switch probe, if its only purpose is to sense the presents of the tube and NOT intended to cause or restrict goal movement of any kind, which even though intentional, is totally inconsequential to the process of moving, manipulating or controlling the position of the rolling goal."

A1: Probably not, but it's a judgment call by the referee. If the robot continues to push the goal while controlling it via the Ball Tube, it would probably be penalized.
A2: Yes. Contacting the ball tube to control a robot function is not incidental contact and is not allowed.

GDC Domino Effect

10-20-2014, 05:12 PM

Balls Falling on Robot

Quote:

*Originally Posted by **FTC7664***

In autonomous or tele-op, when the kickstand is knocked over, it seems probable that many (possibly dozens) of balls could fall on top of the robot, some of them

possibly getting stuck.
1. Would these balls be removed at the end of the autonomous period?
2. If not, would these count against the five ball limit, as outlined in <GS1>?
3. What if more than five balls fell and lodged on the robot? Would the robot sit there incurring a minor penalty every 5 seconds for every excess ball for the rest of the match as outlined in <GS1>?
4. Do we need to build a roof on our robot?

A1: No, the balls will remain where they fall.
A2: Yes, these balls will count against 5 ball limit.
A3: Yes, penalties will be incurred.
A4: The design of the robot is left up to the teams.

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Game Rules and Game Play - Answer Thread

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GDC Snowball Effect

10-21-2014, 10:48 PM

Autonomous Period

Quote:

*Originally Posted by **FTC9173***

If we are able to knock down our own pole during the autonomous period & our challenger(s) do not, can we knock theirs down during the regular timed period in order to release more balls? Do we get more points if so?

A: Yes, you can knock down their pole to release more balls during the autonomous period. However you are also giving them 30 points for having their poll released. No points will be earned if the poles (either side) are knocked down during driver controlled period.

GDC Snowball Effect

10-23-2014, 02:08 PM

Control of Balls

Quote:

*Originally Posted by **FTC5073***

<GS1> States that a robot may not control more than 5 balls at any time. With so many balls on the field we want to understand how we can navigate through them without controlling them. For each of the following cases, is the robot in violation of rule GS1. In all cases, if one were to pick up the robot the balls would stay on the field. The robot drives through a bunch of balls (more than 5) with each of the designs below. From the rules none of designs have the balls "following the movement of the robot." But designs, B, C, D could be considered to be "guided, herded" the balls.

A - Robot has a flat front such that balls cannot go under the robot.
B - Robot has a flat front but with a 4 inch wide opening in the middle such that balls can roll straight through under the robot if they enter the hole.
C - Same robot as B but with a 8 inch wide funnel to guide balls to the 4 inch opening
D - Same robot as B but instead going straight through they get deflect out the sides.

While the GDC cannot answer based on specific designs in this forum (there is no robot design that is inherently legal or illegal). Calling a penalty or not is about what the team does with the robot, not how it is built. Some designs are more or less risky, but it boils down to what is done on the field.

GDC Snowball Effect

10-23-2014, 02:14 PM

Autonomous - Collisions and Tubes getting knocked

Quote:

*Originally Posted by **FTC0409***

It is frequent for teams to create simple defensive autonomous since scoring in autonomous is much harder. This game appears to be very easy to block access to the tubes. If a robot blocks access and another robot collides with that robot resulting in tube(s) falling over. Which team gets penalized? The team that blocked access to the tubes or the team the collided with the blocking robot? Or in another case, if a defensive robot collides with a robot attempting to get to the tubes causing it to be knocked off the programmed path and now colliding and knocking over a tube. Is the robot that cause the autonomous to go off path gets the penalty or the unfortunate robot knocked off its path and knocking over the tube gets penalized?

A: <G11> will protect the offensive robot (i.e. no penalty). If the referees believe that the defensive robot is employing this as a strategy, <G19> could be issued to the defensive robot.

GDC Snowball Effect

10-23-2014, 02:17 PM

Blocking access to rolling goals

Quote:

*Originally Posted by **FTC5169***

How will Rule <GS17> be enforced, given that robots are allowed to push and shove or sit and block? Will it be something like a pick in basketball where they can block once, as long as they stay there, and neither they, nor their alliance partner, move to block the opposing robot again on its way to the rolling goal?

A: As long as there is a way for a robot to get to (gain access) their rolling goals via one or more paths that might not be straight-forward, the Rolling Goal is not blocked.

GDC Snowball Effect

10-23-2014, 02:25 PM

Autonomous Rolling Goals and Scoring

Quote:

*Originally Posted by **FTC5501***

We have a few questions in regards to autonomous:

1. If a robot knocks over a rolling goal in autonomous will it be up righted before the beginning of tele-op?
2. Is there a penalty for knocking over a rolling goal in Autonomous? If there is, is it handled the same as tele-op with a major penalty and then if it has a ball in it will it be another major with full points being awarded for that rolling goal as if it had all the balls in it or just if it had an autonomous ball in it?
3. Is it a penalty if you knock over your own rolling goal during autonomous?
4. If all of the above result in a penalty, is it handled the same way if the robot is determined to have gone "rogue" by the NXT locking up and the robot not performing what it was supposed to. Along those same lines, if the robot gets knocked off course by another in autonomous and that causes it to knock over a rolling goal then is it still a penalty?
5. In regards to scoring, if we are interpreting the manual and forum posts correctly, it is of no benefit in autonomous to score more than 1 ball in any goal. You only get credit for a max of 1 ball per goal (3 rolling and 1 center goal) making up the 4 balls your alliance can start with.

In the future, please split your questions into multiple posts.
A1: Yes, the referee will right the Rolling Goals
A2: Yes, there is a penalty for knocking over a Rolling Goal in the Autonomous Period. Yes, it is handled the same way.
A3: Yes, there is a penalty if you knock over ANY Rolling Goal at any time.
A4a: This would be a judgment call by the Referees, however it is generally difficult to knock over the Rolling Goals assuming you handle or interact with them in a legal way.
A4b: <G11> should protect the offensive robot (i.e. no penalty).
A5: In autonomous, balls do not score - goals do. For a goal to score, it needs 1 or more balls. The goal will only score once.

GDC Snowball Effect

10-23-2014, 02:39 PM

Parking Zone Information

Quote:

*Originally Posted by **FTC6433***

It is understood that during autonomous, one robot must start in the parking zone and rolling goals can be placed in the parking zones for points. Also during end game, robots and rolling goals can be in the parking zones for points.

In summary, these questions regard the limitation of the parking zone's boundaries.

1. What is considered the limit of the parking zone boundary, the outer edge of the tape or the inside edge of the tape?
2. When robots start in the parking zones do they have to be completely in the zone?
3. When rolling goals are scored in the parking zones during autonomous, do they have to be completely in the zone to get points?
4. When robots and rolling goals are in parking zones during end game, do they have to be completely in the zone to get points?

A1: Please read the game manual carefully. See definition for *In* and *Area*. Per definition of Area, the outer edge of the tape defines the boundary.
A2: Per Game Manual, section 1.4.1 - item 1 - "Robots start the Match Completely On their Alliance's Platform or Completely In their Alliance's Parking Zone at the discretion of the Alliance."
A3: Per Game Manual, section 1.4.2 in the scoring section (2nd bullet) - Rolling Goals In the Parking Zone (not Completely In)
A4: Per Game Manual, section 1.4.4 - items must be In to get points (not Completely In).
Also, in the future, please limit your questions to one per post.

GDC Domino Effect

10-23-2014, 08:52 PM

Contact with Bottom edge of Ball Tube

Quote:

*Originally Posted by **FTC6055***

Our team was wondering about the very bottom of the ball tube- specifically, the bottom inch or so that comes into contact with the cylindrical mount on the pentagonal base. Would a robot that, while picking up a goal by the pentagonal base, touched that part of the tube be in violation of rule <GS8>?

Thanks,
Team 6055

A: The bottom inch of the Ball Tube is still considered part of the Ball Tube and is subject to all the rules and restrictions as the rest of the tube. Per Rule GS8> incidental contact is allowed but robots that intentionally contact or grab the tube in this area will be penalized.

GDC Domino Effect

11-03-2014, 03:38 PM

Holes in Center Structure

Quote:

*Originally Posted by **FTC8176***

Is there a reason for the holes in the plexi glass near the bottom of the center goal?

A: Yes, they are there to allow access to the center bolt. They have no function in game play.

GDC Ripple Effect

11-05-2014, 01:50 PM

Center Goal Ball Tube

Quote:

*Originally Posted by **FTC8538***

<GS8> prohibits deliberate contact with a Ball Tube and assesses a Minor Penalty for grabbing the Ball Tube of a Rolling Goal. <GS8> does not mention the Center Goal explicitly.

The definitions are unclear whether a Center Goal has a Ball Tube. A Ball Tube is the scoring part of a Goal, of which there are two types: Rolling Goal and Center Goal. The definition of a Rolling Goal mentions a Ball Tube, but the definition of a Center Goal does not explicitly mention a Ball Tube. However, Section 1.4.4 says that scoring is the Center Goal is based on Ball Height, and Ball Height is an attribute of a Ball Tube.

Could you please clarify: Is the score part of the Center Goal considered a Ball Tube? More relevant: Is grabbing or deliberate contact with the Center Goal allowed?

A: The tube that is part of the Center Goal is a Ball Tube. The Center Goal has the same rules applied to is as the Rolling Goals; i.e.:

<GS5> Descoring
<GS8> & <GS9> Non-incidental contact with the Ball Tube
<GS14> Tipping

Penalties associated with the above rules will all apply to inappropriate interaction with the Center Goal Ball Tube

FTC Butterfly Effect

11-10-2014, 11:53 AM

IR Beacon

Quote:

*Originally Posted by **FTC8538***

We would like to know what we can rely upon for calibrating to the IR beacon on the Center Goal. We are concerned about tournament-specific lighting conditions

and the possible weakening of the 9-volt battery during a tournament.

1. During pre-Match setup, will the IR beacons be turned on?

2. We understand that during pre-Match setup, Teams will place their Robots on the Playing Field, and then Referees will rotate the Center Goal into 1 of 3 random positions. At the start of pre-Match setup, will the Center Goal be guaranteed to be in any particular position?

3. Are Teams allowed, during pre-Match setup and before the randomization process, to take measurements of the IR beacon intensity and to adjust their Robots accordingly?

---

1. Yes.
2. The Center Goal position will not be guaranteed, it will be in one of 3 random positions.
3. Teams are not allowed to take measurements prior to the start of the match.

FTC Butterfly Effect

11-10-2014, 11:55 AM

Questions about IR Beacons

Quote:

---

*Originally Posted by **FTC5356***

Hello,
We just had a few questions about the IR Beacons

1) Are there one or two beacons? (One on each side)
2) Will they we sending the same signal or different?
3) What range do the IR beacons reach?

---

1. There will be 2 IR beacons total, one on either side of the center structure.
2. Each IR beacon is set to 1200Khz.
3. IR beacons are set to 180 degrees (newer style beacon) and will project beyond the limits of the field.

GDC Snowball Effect

11-10-2014, 03:00 PM

Target Alignment Devise-Ball tube

Quote:

---

*Originally Posted by **FTC3785***

Can a team uses a blunt "stick" to create the correct distance to the ball tube and then drops a ball into the tube. Essentially this is a tube aiming devise. As it would intentionally "contact" the ball tube-but not control the ball tube- can i assume that this approach would incur a penalty. Thanks

---

A: This approach will incur a penalty.

GDC Snowball Effect

11-10-2014, 03:06 PM

Autonomous Penalties

Quote:

*Originally Posted by **FTC5501***

In a previous post it was stated that knocked over goals in autonomous are penalized the same way they are in Tele-Op. It was also stated that they will be up righted before the start of tele-op. What about the following scenario:

If a tube is knocked over in autonomous and receives a penalty, is up righted at the end of autonomous, and then during tele-op it is knocked over again then does it occur another penalty?

A: Yes, it does incur another penalty.

GDC Snowball Effect

11-10-2014, 03:09 PM

Autonomous Defense

Quote:

*Originally Posted by **FTC9529***

Can you move your opponents rolling goals? example you move from home start position to your opponents rolling goals and move them against the wall.

A: As long as no other rules are violated, you may move your opponent's rolling goals.

GDC Snowball Effect

11-10-2014, 03:11 PM

knocking over goals

Quote:

*Originally Posted by **FTC9529***

If you knock over your own goal, will the penalty be incurred by your own team?

A: Yes, you will incur a penalty for knocking over any rolling goal.

GDC Snowball Effect

11-10-2014, 03:15 PM

Ball tubes and clumsy driving

Quote:

> *Originally Posted by **FTC7673***
>
> *There have been lots of questions about the ball tubes, so we hope we're not repeating.*
> *About rule <GS8> and Question and answer 53, if you are trying to dump balls into the top of the rolling goal and accidentally touch the rim or side of the tube but are NOT trying to hold, guide, or control the tube, that would not be a penalty, right?*
>
> *In other words, if you make a clumsy driving error but are not trying to control, guide, or hold the tube, would your team be penalized?*

A: This would be a call for the referee to make. Repeated clumsy driving may be considered intentional.

GDC Snowball Effect

11-10-2014, 03:18 PM

Can you touch the tubes on the rolling goals in autonomous

> Quote:
>
> *Originally Posted by **FTC4412***
>
> *I already know that you cannot grasp the goals, but is it ok to touch them while trying to drag them in autonomous. My understanding is that you cant in driver controlled.*

A: Generally, you cannot touch the Ball Tubes on the Rolling Goals at ANY time without incurring a penalty. You can touch the Rolling Goals on the base, but not the tube.

UPDATE: Note that contact that is deemed by the referees to be both incidental and inconsequential will not result in a penalty.

GDC Snowball Effect

11-10-2014, 03:24 PM

Center Goal Screw Access Holes

> Quote:
>
> *Originally Posted by **FTC4412***
>
> *1) Is the a penalty for placing balls, either purposefully or accidentally, into the holes in the bottom section of the center goal that allow access to the screw that the center goal pivots around?*
> *2) If a ball were placed into the bottom section of the center structure during the autonomous period, would it be removed before the driver control period began?*

A1) If done purposely, it will incur a penalty per <G17>
A2) It is illegal to do it. It will not be replaced. Continuous or repeated offenses may lead to disqualification per <G19>

GDC Snowball Effect

11-10-2014, 03:29 PM

Controlling Balls

Quote:

*Originally Posted by **FTC0154***

Hi,
I had a question about the controlling more than 5 balls rule. Would a robot be considered controlling more than 5 balls if the robot had a sheet metal plate on the ground and there were more than 5 balls passing over the plate at one time. The plate cannot actually trap or control more than 5 balls, but at any given instance could potentially have more than 5 balls rolling on and off of it. The goal of this plate/system would be to just separate one ball size from the other, grabbing just 5 of one size ball. Would this be controlling or just separating because the system cannot actually hold more than 5?
Thanks,
Renegade

A: Sorting is considered to be controlling. If you are sorting more than five, you are controlling more than five.

GDC Snowball Effect

11-10-2014, 03:32 PM

Picking Up Downed Goals

Quote:

*Originally Posted by **FTC6282***

Our team was wondering, if a goal were to be knocked down, is it legal for us to pick it up. If we do so by placing a plate or a pair of forks, similar to a forklift, underneath the ball tube, would we gain a penalty? Also, if our opposing alliance knocked down the goal, would we retain the full goal's worth of points after we pick it up?

A: It is legal to pick up or right a rolling goal assuming no other rules are violating in attempting the pick up.

GDC Snowball Effect

11-10-2014, 03:35 PM

Autonomous Defense

Quote:

*Originally Posted by **FTC8169***

Can you block your opponent from getting to their rolloing goals or center goal in autonomus period?

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

GDC Snowball Effect

11-10-2014, 03:58 PM

Ramp blocking

Quote:

*Originally Posted by **FTC6191***

If the rolling goals of the other team ends up in front of our ramp, whether it was intentional or not, and endgame starts, does this count as forcing a penalty as our team would have to get a 50 point penalty for moving the other team's rolling goal out of the way to access the ramp?

A: The intent of the GDC is to allow access to the ramp. Slight movement of the opponent's rolling goal is deemed to be inconsequential and inadvertent. If a team intentionally blocks the ramp or descores balls, the appropriate penalty will apply.

GDC Snowball Effect

11-10-2014, 05:18 PM

GS17 - Blocking Access

Quote:

*Originally Posted by **FTC5169***

Can you clarify forum answer number 84 in Game Play? The ruling is that you CAN block a robot's access to the rolling goal, you just have to make sure there is some theoretical path to "gain access" to the goal. So a defensive robot can move in autonomous to block one avenue of access to the three rolling goals by blocking the entire path between the ramp and the center goal such that robots coming off the ramp cannot pass, but that robot will not be "blocking" because a path to "gain access" exists by going the long way around the center goal. If the defensive robot then moves to interfere with the long path around the center goal, that is still not "blocking" because the offensive robot can reverse direction and theoretically "gain access" by going the other way around the center goal. A robot with the inside position can thus keep an opposing robot away from its rolling goals for the entire match as long as some open path exists at all times. Is that correct?

A: You cannot defend all paths to the Rolling Goals. Actively blocking all paths would be considered a Blocking Access penalty.

GDC Snowball Effect

11-10-2014, 05:22 PM

Scoring more than 5 balls

Quote:

*Originally Posted by **FTC5501***

Last year in Block Party if you carried and scored more blocks than you were allowed to then the basket that those blocks were scored into was no longer scored. Is this the case with the balls into the tube. If we carry 6 balls and don't notice until they are placed into the tube then does that whole tube become scoreless, are the 6 balls removed in the end and then it's scored? How is this handled?

A: A penalty will be assessed per ball scored when controlling more than 5. Balls are not removed, nor will the whole tube become scoreless. <G19> may also apply.

GDC Snowball Effect

11-10-2014, 05:25 PM

Robot off the Mat

Quote:

*Originally Posted by **FTC9497***

If the robot was sitting perfectly balanced on top of 5 balls then I would assume that the robot would be ruled as not touching the mat without any penalties.

A: Yes, it would be Off the Field

GDC Snowball Effect

11-10-2014, 05:34 PM

Center Goal Clarification

Quote:

*Originally Posted by **FTC7104***

This question is continuing from post #89. In that said post, you, the GDC wrote that the tube portion of the center goal is a ball tube and that the tube still follows same rules as the rolling goal tubes.

However, does incidental contact with the portion above the center goal tube count as a penalty? Thank you.

A: Any part of the center goal (including the backboard) is considered to be part of the goal. All rules and rulings apply.

GDC Snowball Effect

11-10-2014, 05:49 PM

Goals and Robots on Center Plate at End Game

Quote:

*Originally Posted by **FTC7231***

Does a robot or goal on the yellow center plate for be considered "off the field"

for scoring purposes. I..e will a rolling goal or robot on the yellow plate and not touching the mat at the end of the match qualify for the 30 points.
Thank you.

A: Yes, they would be considered Off the Field.

GDC Ripple Effect

11-11-2014, 11:56 AM

Pushing Rolling Goals Into Opposing Alliance Parking Zone

Quote:

*Originally Posted by **FTC4606***

In our scrimmages and qualifying tournaments, we have seeing many instances of rolling goals getting in opposing parking zones. The proximity of these goals to the opposing parking zones make it almost common for this to occur in both Autonomous and Teleop periods. In some cases, the goals ended up there because of many robots jostling in the area and the goals simply migrated there in the scrum. <GS12> indicates that robot may not push any alliance rolling goal into the opposing parking zone, and they will be assessed a major penalty. Will the penalty be assessed as soon as a rolling goal enters the opposing parking zone? Or will teams be allowed to pull the goal out of the zone to avoid the penalty, assuming the robot does so before the end game to avoid <GS16>? What if a robot pushes a rolling goal into the opposing parking zone during autonomous - is that also a violation of <GS12>?

A: Pushing any rolling goal into an opposing alliance Parking or Keep Out Zone will result in an immediate <GS12> penalty. <GS12> applies during the Autonomous period as well. Remember that repeated and/or continuous violation may result in disqualification from the match.

GDC Snowball Effect

11-16-2014, 06:36 PM

"Off The Ramp" in Autonomous

Quote:

*Originally Posted by **FTC7655***

In section 1.4.2 (Autonomous), It says the that a team will b awarded:
"20 points for a Robot that started the match Completely On the Platform and got On to ANY portion of the playing field floor."
We'd like some clarification here. According to this rule, if a robot comes off the ramps and touches the floor and then returns to the top of the ramp, do they get the 20 points?
In other words, are the points awarded to the robots that END on the playing field or that touched the floor at ANY point during autonomous?
-Q

A: The points are awarded based on the way the field is at the end of each period. So, if a robot

comes off the Ramp/Platform, touches the mat, and goes back up the Ramp/Platform would not receive any points.

GDC Snowball Effect

11-17-2014, 10:14 AM

Use of electronic devices in the competition box

Quote:

> *Originally Posted by **FTC5466***
>
> *We had a question regarding the use of electronic devices in the box. Rule <G2> states that no electronic communications can be used after the team has been called to the match. Does this cover recording video on a phone or does this apply to all electronic devices? We would like to know what is acceptable in the box and what is not.*

A: The last sentence of <G2> is clear on this matter: "Items that may be mistaken by a casual observer as being in violation should not be brought to the Playing Field violate this rule." Phone cameras can be considered to be communications devices before they are considered to be cameras. They should not be used near the field.

GDC Snowball Effect

11-24-2014, 12:27 PM

Opposing rolling goal-Center target-defense

Quote:

> *Originally Posted by **FTC3785***
>
> *If a team encounters the opposing rolling goal underneath the high center target-"the 30 cm tube on center structure (near station 1)"- Can the opposing team move the opposing rolling goal out of the way without a penalty? 2. Can one park a robot directly underneath/in front of the same high tube (near station 1)-Which has the net effect of reducing access to this goal?*

A1: Yes, you may push it out of the way <GS10> up to, but not including the End Game <GS13>. You may not grab or grasp it in order to move it <GS9>. When pushing it out of the way, pay attention to Rule <GS12>
A2: No, per Rule <GS18>

GDC Snowball Effect

11-24-2014, 12:30 PM

Dead robot scoring points

Quote:

> *Originally Posted by **FTC5326***
>
> *At the end of the match, each Robot Completely Off the Playing Field Floor scores 30 points and each Robot In its Alliance's Parking Zone scores 10 points.*

A non-functional robot will score 30 points or 10 points depending on where it starts, if it doesn't move for the match. An alliance with two non-functional robots will score 40 points.

A: You are correct. A non-functional robot will score 10 or 30 points depending on where it starts. A robot with two non-functional robots will score 40 points.

GDC Snowball Effect

11-24-2014, 12:33 PM

Can an Alliance push an opposing Rolling Goal into its own Parking Zone?

Quote:

---

*Originally Posted by **FTC5326***

<GS12> Robots may not push any Alliance's Rolling Goal In to the opposing Alliance's Parking Zone or Keep Out Zone.

Does "opposing Alliance" refer to the Alliance opposite the robot, or the Alliance opposite the rolling goal?

That is, can a Blue Robot push a Red Rolling Goal into the Blue Parking Zone? Or does <GS12> prevent pushing a Rolling Goal into the other color Parking Zone?

A: Blue robot cannot push any color Rolling Goals into the Red Zones (<GS12>). Nor can Blue robot push Red Rolling Goal into Blue Zones (<GS17> Blocking Access)

GDC Snowball Effect

11-24-2014, 12:43 PM

Can you put rolling goals on the ramp & in the parking zone before the end game?

Quote:

---

*Originally Posted by **FTC0524***

Since rolling goals can be put in the parking zone during autonomous, I assume you can do it anytime.
What about driving up onto the ramp to put a goal up there before the end game?

A: Your assumption is correct. You may move your goals into any of your Zones before the End Game.

GDC Snowball Effect

11-24-2014, 12:47 PM

Scoring endgame

Quote:

> *Originally Posted by* ***FTC6661***
>
> *If a robot is initially placed on the ramp. Does not move during the entire game and remains on the ramp at the end of the game will it be scored at 30 points for being off the floor?*

A: Yes, it will receive the 30 points for being off the floor.

GDC Ripple Effect

11-26-2014, 02:26 PM

Intentional Pin/Trap During Autonomous Period

Quote:

> *Originally Posted by* ***FTC6433***
>
> *In post #56 the following was asked and the answer was as below:*
>
> *Q: Robot starts in Parking Zone, goes in a straight line and stops opposing alliance robot from coming down ramp. Minor Penalty?*
>
> *A1: If the referees determine that the opposing alliance robot is pinned/trapped by your robot and*
> *that the pinning/trapping was a strategy, a Minor Penalty could be assessed based on rule <G10>*
>
> *Even if a minor penalty was incurred (10 points) it would be worth executing this strategy as this would prevent 30 points for coming down the ramp and also potentially prevent the team coming down the ramp from scoring in the rolling goals and doing anything else in autonomous. We will see this defensive strategy likely in every match. Shouldn't this be considered a major penalty, because the opposing alliance is blocking access to rolling goals?*
> *If not, we will see one robot on each alliance executing this blocking move in almost every match and consequently the ramp and rolling goal scoring in autonomous will not be part of the game.*

A: Driving from the Ramp to the Playing Field Floor is worth 20 pts., not 30 pts.

Teams considering this type of a strategy may want to make sure to pay attention to all of the potential consequences:

Disqualification from a match includes an immediate disabling of a robot. The robot would sit idle for the remainder of the match, unable to earn points for their alliance.

Disqualified robots do not earn qualification or ranking points for the match.

<G19> adds consequences for intentionally violating game rules, i.e., a major penalty for flagrant and/or repeated violations of rules.

GDC Snowball Effect

11-30-2014, 11:18 PM

Game Rules and Game Play - Answer Thread

Quote:

*Originally Posted by **FTC0121***

If a team scores through the act of occurring penalties does that score still count? Specific examples include: If a team can only score into a tube through the use of an alignment device that touches the tube, do the balls scored count? If a robot pushes a rolling goal up the ramp by pushing the tube, does that goal get points for being off the ground?

A: Scoring through penalties still count to the height of the balls as the referee will not remove any balls before scoring. However, repeated scoring while committing penalties may be considered egregious behavior and suffer the consequences of rule <G19> which may result in a major penalty and possible disqualification.

GDC Snowball Effect

11-30-2014, 11:25 PM

Game Rules and Game Play - Answer Thread

Quote:

*Originally Posted by **FTC9205***

Can the balls that are provided to each team during pre-match be scored during the driver controlled period? If they are able to be scored during the driver controlled period, do they need to touch the floor first before scoring?

A1: Yes, the balls given to each team as pre-loads for the robot can be scored the driver controlled period.
A2: No, those two balls do not need to touch the floor first before scoring.

GDC Snowball Effect

11-30-2014, 11:33 PM

Game Rules and Game Play - Answer Thread

Quote:

*Originally Posted by **FTC2818***

Part 2, page 4: Teams can also earn bonus points for every Robot and Rolling Goal that is not in contact with the floor when the Match ends and by moving their Rolling Goals and/or Robots into the Alliance Parking Zone. (This statement leads us to think of the ramp (inside a taped rectangle) and the Parking Zone (empty rectangle taped on the floor) to be 2 different areas.)

Part 2, page 6: Parking Zone - The Area of the Playing Field taped off in front of each Alliance Station. The Parking Zone can be used to place Rolling Goals or Robots for points. (This statement leads us to think that both taped off rectangles (ramp and empty) are considered the Parking Zone - both are in front of the Alliance Station and both are score-able areas.)

Is the taped area around the ramp also considered a Parking Zone? Is a rolling goal on the ramp at the end of autonomous, scored 20 points for being in a

Parking Zone?

A: There is only ONE Parking Zone per alliance on the field. It is the taped rectangle measuring approximate 4' x 2' in front of each Driver's Station (and centered on the field). The taped area around the Ramp/Platform is NOT a Parking Zone - it is the Keep Out Zone.

GDC Snowball Effect

12-04-2014, 04:24 PM

Clarification of Post #94

Quote:

---

*Originally Posted by **FTC7785***

Post #94 states that you can move your opponents rolling goals at any time as long as no other rules are violated. Can you confirm that once a rolling goal has been placed in an alliance's parking zone (ie, red's 60cm goal in the red parking zone) regardless of when it was done (autonomous, tele-op, or end game) it would be a rules violation for the opponents to move those goals (either accidentally or intentionally).

A: Rule <GS11> confirms that you cannot move an opponent's Rolling Goal FROM the opposing alliance's Parking Zone.

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Game Rules and Game Play - Answer Thread

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GDC Snowball Effect

12-04-2014, 04:31 PM

Tipped Over Tube

> Quote:
>
> *Originally Posted by **FTC4412***
>
> *Are you allowed to put balls in your tube if it is knocked over?*

A: <GS15> is very clear on this matter: "Robots may not score Balls into a Rolling Goal that is Tipped Over."

GDC Snowball Effect

12-04-2014, 05:41 PM

Game Rules and Game Play - Answer Thread

> Quote:
>
> *Originally Posted by **FTC7593***
>
> *It is clear that there is a penalty for pulling the opposing alliances goals during the end game, as well as for blocking all access to the ramps, center goals, or rolling goals. Would driving around with the opposing alliances goals (with the aim of making it hard for them to score) fall under that category?*

A: <GS10> says robots may push the opposing alliance's Rolling Goals. It will be the referee's call whether pulling the opposing alliance's goals are considered to be blocking access.

GDC Snowball Effect

12-04-2014, 05:44 PM

Game Rules and Game Play - Answer Thread

> Quote:
>
> *Originally Posted by **FTC4290***
>
> *Consider the case where "Robot A" holds 5 balls, and, while it is in front of the*

center goal, "Robot B" intentionally knocks over a kickstand to release more balls into Robot A such that Robot A holds more than 5 balls. Should penalties be assessed under <GS1>, or does <G11> negate them? Furthermore, if Robot A cannot get rid of the extra balls but can release its original 5 balls so that the total number of balls it controls is under the limit, does not releasing doing so make it incur penalties under <GS1>?

A: In general, robots are responsible for all balls that become accidentally lodged within the robot. If the referee determines that balls were intentionally placed within a robot by the opposing alliance, <G11> should supercede <GS1> until it is no longer in effect based on the referee's judgment.

GDC Snowball Effect

12-04-2014, 05:49 PM

Game Rules and Game Play - Answer Thread

Quote:

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*Originally Posted by **FTC0516***

Hello,
We have a question relating to incidental contact with a rolling or center goal during Autonomous Mode.
If, for example, there is an error in an autonomous program that would result in the robot moving further than expected, and this in turn results in contact with a tube, is the robot protected?

A: Based on the referee's judgment, this would possibly be considered a penalty, if the determination by the referee was that the contact was either intentional or consequential. In general, teams are responsible for the actions taken by their robots during the autonomous period unless there is interaction with a robot from the opposing alliance (i.e. <G11> protections)

GDC Snowball Effect

12-04-2014, 05:58 PM

Game Rules and Game Play - Answer Thread

Quote:

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*Originally Posted by **FTC6559***

If a robot is pushing a rolling goal up the ramp by the base, and the goal tilts relative to the robot during the transition from the floor to the ramp so that the ball tube is momentarily in contact with upper edge of the robot would this be deemed a penalty? The goal is only controlled by the base and the tube does not contact the robot except occasionally during this transition. The robot design is not intended to stabilize or intentionally contact the ball tube. Rule <GS8> states that "Incidental contact with the Ball Tube during Scoring or pushing is allowed."

A: If the referees determine that the contact was incidental and inconsequential, they should not assess a penalty.

GDC Snowball Effect

12-04-2014, 06:03 PM

Game Rules and Game Play - Answer Thread

Quote:

*Originally Posted by **FTC8668***

At a qualifier, we were told by a ref that the robot and tubes needed to remain on the ramp for at least 30 secs after the end of the match as scoring didn't happen immediately. In other words, he said the team would NOT score points if the robot was on the ramp when the buzzer sounded at the end of the match, but then the robot rolled off the ramp AFTER the buzzer had sounded. Is this correct? Does the robot and/or tubes need to remain on the ramp for some period of time after the buzzer to be scored?

A: Rule <G6> states that scoring will only happen when all elements come to rest. If the robot is rolling down the ramp at the sound of the buzzer, the referee will wait until it stops before determining a score. There is no specific time limit (i.e. 30 seconds) in the rule. However, it is the judgment of the referee to determine when all objects come to rest.

GDC Snowball Effect

12-04-2014, 06:11 PM

Game Rules and Game Play - Answer Thread

Quote:

*Originally Posted by **FTC3568***

During one of the events, a robot came down fully from the ramp and then drove back up the ramp and was fully positioned on the ramp by the end of the autonomous period.
Q1) Should the alliance be given 20 points for driving onto the playing field even though they were on the Ramp/Platform at the end of the autonomous period?
Q2) What happens in the scenario where the robot comes to the end of the ramp and before the referee could notice whether it touched the floor it drives back up?

A1 - No, per Rule <G6> - scoring only takes place at the end of the Autonomous Period or Match
A2) The referee makes all rulings based on what he/she sees.

GDC Ripple Effect

12-07-2014, 05:56 PM

Quote:

*Originally Posted by **FTC6137***

We'd like clarification regarding Q&A #103:

"GS17 - Blocking Access
Quote Originally Posted by FTC5169
Can you clarify forum answer number 84 in Game Play? The ruling is that you

CAN block a robot's access to the rolling goal, you just have to make sure there is some theoretical path to "gain access" to the goal. So a defensive robot can move in autonomous to block one avenue of access to the three rolling goals by [A] blocking the entire path between the ramp and the center goal such that robots coming off the ramp cannot pass, but that robot will not be "blocking" because a path to "gain access" exists by going the long way around the center goal. If the defensive robot then moves to [B] interfere with the long path around the center goal, that is still not "blocking" because the offensive robot can reverse direction and theoretically "gain access" by going the other way around the center goal. A robot with the inside position can thus keep an opposing robot away from its rolling goals for the entire match as long as some open path exists at all times. Is that correct?

A: You cannot defend all paths to the Rolling Goals. Actively blocking all paths would be considered a Blocking Access penalty."

To us, the Forum Answer suggests that the proposed actions in the question (defending route [A] and then route [B]) would warrant a Blocking Access major penalty - is this correct? If yes, I am concerned that refereeing of <GS17>, <GS18>, <GS19> and perhaps even <G10 Trapping> will be quite variable as this kind of strategy has been used by many defensive robots in past seasons.

A: If the referees determine that your alliance is actively defending all paths an object or area that has protection from access blocking, it is likely that your team will be assessed with a penalty based on the rules you mention.

GDC Ripple Effect

12-07-2014, 06:10 PM

Plowing Through Balls

Quote:

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*Originally Posted by **FTC3785***

if you are trying to drive over balls while attempting to climb the ramp, it's possible that you may "plow" more than five balls as you push up the ramp. is this an example of a robot controlling the balls? Therefore, a multi-ball penalty- or no penalty as the robot is not that interested in moving those balls-which happened to be in the way of the robot climbing the ramp. Of course, the same example could be driving over balls- without a sorting mechanism on the bottom of the robot-- strictly driving over them- but in the process you may be moving them--this seems like this should not be a penalty or should it be a penalty.

A: In general, the difference between plowing through balls and herding balls is a judgement call made by the referee crew observing the match. If it is clear to the referees that no attempt is being made to control the balls (i.e. herd/guide them) they will likely not call a penalty for violation of <GS1>

GDC Ripple Effect

12-07-2014, 06:30 PM

Blocking Robot vs. Blocking Access

Quote:

Originally Posted by ***FTC6433***

In post #101 the following was asked and the answer was as below:

Q: Can you block your opponent from getting to their rolling goals or center goal in autonomous period?

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

This answer may be in conflict with game rules on page 16 of game manual part 2 where rule <GS17> says that "Blocking access to opposing Alliance's Rolling Goal at any time" is a major penalty. If the referees assume that there is another path to go to the opponent's robot in autonomous (which there likely is), they would have to assume that we have the ability to adapt to any possible situation without driver control. With practicality in mind, this is likely not possible in autonomous.

Also <G10> indicates that "Autonomous strategies that appear to be intended to Pin or Trap an opposing Alliance's Robot may result in a Minor Penalty, or if chronic, Disqualification". Therefore, it appears that the GDC intends that defensive autonomous is to be discouraged.

In the early tournaments we have seen robots come down the ramp straight in autonomous and score in the 60 cm goal, taking the goal to the parking zone. If the opposing alliance moved their robot in between the ramp and the opposing rolling goals and blocked access to the rolling goals, all of these autonomous programs would be nullified.

Considering the above facts, we anticipate constant blocking autonomous routines, especially in the higher levels of competition. In summary, is the intent of the GDC to discourage autonomous programs that come downfrom the ramp, assuming that they can be blocked? This could possibly lead to one robot on each alliance executing this blocking move in almost every match and rolling goal scoring in autonomous will not be part of the scoring in this game.

If not,what would be the final call if a robot were "blocked access to the rolling goals" in autonomous?

We apologize for any repetition in the forum, we would just like further clarification.

A: The original question you reference talks about blocking a robot, not blocking access to a goal. It is an important distinction to understand. The question as stated does not provide enough information to allow for assessment of the entire set of possible penalties, hence the phrase "as long as no other rules are violated"

Robots that are employing the strategy you propose in your last few paragraphs would need to be careful of potentially being guilty of violating <G10> during the autonomous period. If the referees determine that the blocking action constitutes intentional pinning and/or trapping they will issue a penalty. Chronic violation could lead to disqualification. Intentional violation of the rules could lead to assessment of <G19> consequences for egregious behavior including the possibility of a major penalty.

GDC Ripple Effect

12-07-2014, 06:44 PM

Incidental Tube Contact on Ramp

Quote:

*Originally Posted by **FTC3785***

A robot is pushing a rolling goal up the ramp- clearly gripping the rolling goal at the base- and is not touching the tube. The front of the robot is flat, as the robot pushes the rolling goal up the ramp, the tube rocks backwards bounces off or briefly leans against the flat front of the robot. The robot pushes more, the tube no longer rests on the front of the robot. Would this be a minor penalty-for touching the tube? thanks

A: If the referees determine that the contact was both incidental and inconsequential, they should not assess a penalty.

GDC Ripple Effect

12-07-2014, 06:50 PM

Incidental Tube Contact

Quote:

*Originally Posted by **FTC3785***

A robot is built with a funnel. The funnel generally doesn't touch the tube top, but occasionally when the full mechanism is working-the funnel bounces off the upper lip of the rolling goal. Would this be a minor penalty? it seems inadvertent but maybe the funnel should be designed so that it never contacts top of the tube.

A: If the referees determine that the contact with the top of the ball tube was both incidental and inconsequential (both must be true) they should not assess a penalty. Your last sentence is the safest solution. Why leave the determination to the referees? Design so that contact doesn't happen.

GDC Ripple Effect

12-07-2014, 07:03 PM

Dead Robots and Penalties

Quote:

*Originally Posted by **FTC8918***

In the event that an opposition alliance has a robot that drives into the corner that has your goals and pins them into the corner and then dies, it can block access to your goals. If this happens, would it be a penalty on the opposition alliance in that their robot is blocking access to your goals? There is nothing that can be done by them to correct the situation, but it is affecting the play on the field. Our drivers tried to push the robot back away from the goals and was being

called for pinning the opposition robot. I am just trying to be clear on the rules should this occur again so that we can advise our drivers on how to deal with the condition.

A: In general, dead robots are not assessed with penalties. Additionally, attempts to push dead robots should also not generate pinning penalties. The pushing robot is not preventing the movement of the dead robot.

GDC Ripple Effect

12-07-2014, 07:21 PM

Blocking Access & Parking Zone Clarification

Quote:

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*Originally Posted by **FTC5326***

We have a followup question to answer #112, 11-24-2014, 12:33 PM PST:

Thanks for the clarification on <GS12>. We're halfway to enlightenment! ;-)

We're still confused on the second part of the answer:

In that event, couldn't the Red team just drive into the Blue Parking Zone and retrieve their Rolling Goals? What blocks their access in that situation? Is there a rule that prevents a team from driving in the opponent's Parking Zone?

Thanks!

A: Due to the challenges associated with removing own alliance rolling goals from opposing alliance Parking Zones, pushing opposing alliance rolling goals into own alliance parking zones is considered blocking access, particularly with the likely ingress of additional rolling goals and robots during the match. (i.e. <GS19> prohibits blocking access to the parking zone during the endgame and <GS11> prohibit removing opposing alliance rolling goals from the opposing alliance parking zone). Hopefully all teams will be similarly enlightened ;-)

GDC Ripple Effect

12-07-2014, 07:27 PM

Intentionally Blocking Access to Center Goal

Quote:

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*Originally Posted by **FTC4290***

Ruling #111 says you cannot park under the center goal per <GS18>, which penalizes the action with a major penalty. In a recent scrimmage, a robot deliberately parked under the center goal to block it because they would rather take a 50 point penalty than the 162 points that would be scored by the opposing alliance. Is this a legitimate defensive strategy?

A: Teams that utilize strategies based on intentional violation of the rules should be sure to fully understand <G19>. Repeated and/or flagrant violation of the rules will result in Major Penalties and

possible disqualification. Multiple <G19> penalties in a tournament could lead to disqualification of the team from the entire tournament!

GDC Ripple Effect

12-07-2014, 07:32 PM

Ball Tube Contact Clarification

Quote:

*Originally Posted by **FTC4448***

At our first competition on November 22, the judges awarded a major penalty one match, and a minor in another, for touching the ball tube. They claimed that the forums had updated, saying that we could no longer touch the ball tube. After the competition, I searched the forums but only found posts repeating what was in the rules, that the robot could not grab the tube, but could unintentionally touch the ball tube. Am I missing just missing the post?

A: If the referees determine that the contact with the ball tube was both incidental and inconsequential, they should not assess a penalty.

GDC Ripple Effect

12-07-2014, 07:39 PM

Goal Tube Contact Examples

Quote:

*Originally Posted by **FTC3568***

Post #79 does broach on this subject but what our team has noticed is that the rule <GS8> is being applied inconsistently. Our robot clamps on to the base of the rolling goal and moves it around the field without getting into contact with the tube. However, while either pushing the goal up the ramp or pulling it up the ramp, there is a short period of time when the rolling goal comes in contact with the robot due to the angle of the ramp. However, once both the robot and the rolling goal are on the ramp, then there is no contact again.

Scenario 1: If the rolling goal is being pushed or pulled by the base of the ramp during the transition period from floor to ramp should the resulting contact with the tube due to ramp angle be considered as incidental contact with tube?

The scenarios where we believe Referee's judgment call will be are;
Scenario 2: If the robot continues to touch the tube after both the robot and the rolling goal are on the same plane on the ramp, then it should be adjudged a penalty.
Scenario 3: If the rolling goal base comes lose from the robot's clamping mechanism and the tube is in contact with the robot, then it should be assessed as a penalty.

A1: The determination of incidental and inconsequential tube contact will be made by the referees based on their observations. Contact that is of significant duration will likely be determined to be

consequential and would likely result in a penalty

A2: long duration of contact = likely penalty (i.e. not incidental)

A3: control of the rolling goal by the ball tube = likely penalty (i.e. not inconsequential).

In all cases, if the robots next action after the beginning of contact is to back away to eliminate the contact, the determination is much more likely to be that the contact was incidental and inconsequential (short duration and no benefit from the contact)

GDC Ripple Effect

12-07-2014, 07:47 PM

Clarification on <GS8>

Quote:

*Originally Posted by **FTC8546***

Hello,
Our team was curious on how strictly rule GS8 is being scored. We have seen gameplay instances of robot mechanisms touching or grazing to top of the ball tubes while scoring, most commonly on center goal. As seen at the first competition this has not been called a penalty by referees although happening repeatedly, but the specific rule was changed to penalize anyone who does touch or graze the ball tube. Is it safe to assume that touching or grazing the top of the ball tube while scoring will not be penalized?
Thank you!

A: Referees will issue penalties for violations of <GS8> and <GS9> based on their observations during the match. Contact that is deemed to be both inconsequential and incidental will be permitted. Contact that is deemed to be intentional or consequential will be penalized based on <GS8> and <GS9>

GDC Ripple Effect

12-07-2014, 07:54 PM

Autonomous Balls Missed & Unreleased Kickstand

Quote:

*Originally Posted by **FTC3568***

Do the autonomous balls that fell on the floor or base of the rolling goal during the autonomous period need to be put back in the dispenser? Some referees were doing so not sure what the rule is? What happens if the kickstand was released during autonomous?

A1: Balls that are released by robots during the autonomous period should remain where they are at the end of the period. They should not be "reset"

A2: If the kickstand is not released during the autonomous period, nothing should be done (i.e. it should be left in place). It is up to the robots to release the balls from the center structure.

GDC Ripple Effect

12-07-2014, 08:06 PM

Center Goal Scoring Clarifications

Quote:

*Originally Posted by **FTC4299***

What happens if balls are scored in the center goal during tele-op or autonomous? Are there any penalties associated with this?

If a robot scores balls in autonomous in addition to the pre-loaded autonomous ball, how will they be scored? Will they, in addition to the pre-loaded autonomous ball, be rescored after endgame?

A1: Autonomous scoring with Autonomous Balls into the Center Goal is explicitly allowed. It is one of the defined autonomous scoring activities. Scoring of balls into the Center Goal scoring during the Driver-Control prior to End Game violate <GS7> and cause the Center Goal Score to be zero for the alliance.

A2: <GS6> dictates that, if balls other than the Autonomous Balls are scored during the Autonomous Period, ALL ball scoring activites from the Autonomous Period will be zero.

A3: All balls scored legally or illegally during any period of the match are left in the goals and are counted as part of the ball height for the goal for the scoring at the end of the match.

GDC Ripple Effect

12-07-2014, 08:14 PM

Max Score for Center Goal Clarification

Quote:

*Originally Posted by **FTC5018***

What is the maximum score for a full (30cm and beyond) center goal tube?

In a 9/21 post it was stated as 180 points but in a 10/14 post it was stated as 162 points but neither answer refers to the other as to which one is correct.

The measuring index on the side of the Center Goal only measures to 27cm. The max score for the Center Goal is 6 pts/cm * 27 cm for a total of 162 pts

GDC Ripple Effect

12-09-2014, 06:36 PM

Trap/Trapping and Access to the Ramp

Quote:

*Originally Posted by **FTC0409***

While the rules are pretty clear about the ramp area during end game, it is not as clear during the teleop play prior to end game. The rule book says Trap /

Trapping – Preventing an opposing Alliance Robot from accessing or escaping from a constrained Area of the Playing Field for an extended period of time. The word trap implies you have no way out (not no way in) and is generally interpreted that way. But in todays match, we could not push a goal up the ramp prior to the end game due to a team "blocking" the ramp. While our team could move anywhere else around field (ie. not trapped), we could not access the ramp. We believe this is a minor penalty since it did not occur during end game. The referee says it was fair game for the entry to ramp to be blocked since our robot is not trapped. But there is not a second access to the ramp. The only access was blocked. Could you please clarify the "accessing" part of the Trap/Trapping rule?

A: A defensive robot that prevents an opposing alliance robot from being able to access its ramp (drive up, push rolling goals up) is violating <G10>. The referee should begin a count once there is interaction between the two robots that clearly demonstrates that the defender is preventing access. If the count reaches 5 seconds, the referee should assess a penalty for trapping. Merely parking in front of a ramp is not sufficient to trigger the count for trapping; there MUST be interaction between opposing alliance robots.

GDC Snowball Effect

12-15-2014, 09:48 AM

End Game rolling goals

Quote:

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*Originally Posted by **FTC3296***

To score rolling goals during end game does there have to be a ball in the rolling goal. Can we push an empty goal onto the ramp and get the 30 points for rolling goal off the floor?

A: The Rolling Goals do not have to have any balls in them to count as being off the floor if they are on the ramp or platform. Nor do they have to have any balls in them to count for 10 points in the Parking Zone.

GDC Snowball Effect

12-15-2014, 10:01 AM

IR beacon strengths

Quote:

---

*Originally Posted by **FTC5356***

Are the IR Beacons set to different strengths for the 3 different orientations of the center tower?

A: No, they are set to the same strength. No other modifications are done to the beacons based on rotation.

GDC Snowball Effect

12-15-2014, 10:34 AM

Wheelchair in Alliance Station

> Quote:
>
> *Originally Posted by **FTC8492***
>
> *One of our drivers is getting knee surgery and will be in a wheelchair during her next competition. <G3> states that drivers must remain in the Alliance Station. Will any accommodation be made for the fact that the wheelchair is more than half the 3.5 foot width of the Alliance Station and it will be difficult for her to ensure that everything (especially her feet that will stick way out in front) stay within the station?*

A: Generally, we don't want body parts to cross the front edge of the driver's station onto the field (hence the 1' gap between them). If the student can be in the wheelchair without crossing that boundary, she should be able to drive the robot. Please work with your tournament host, field manager, head referee, and field technical adviser to make sure they are aware of situation.

GDC Snowball Effect

12-15-2014, 10:37 AM

How Tubes are Scored

> Quote:
>
> *Originally Posted by **FTC5223***
>
> *In the game manual, at the end of section 1.4.4, there is a note that states " the Rolling Goal can only achieve one Scoring milestone (for example, Off the Floor and In the Parking Zone). It will be Scored for the highest value achieved."*
>
> *Are the balls in a tube considered a scoring milestone? (ie. Would a 30cm tube that is filled with balls and also lifted off the ground score 30 points or 57 points?)*

A: It would score 57 points. The milestones alluded to in the Game Manual are the End Game Milestones, not the general ball scoring.

GDC Snowball Effect

12-15-2014, 11:08 AM

Ball Control

Quote:

*Originally Posted by **FTC5069***

During autonomous, if a Robot A stops at the center goal, and then a robot from the opposing alliance releases the kickstand causing the cascade of balls to be released and multiple balls fall onto and/or into Robot A, can the team ask the referee to take these balls out of Robot A before teleop begins? Will the referee take the balls out? Thank you.

A: No, the referee will not remove the balls.

GDC Ripple Effect

12-16-2014, 05:39 PM

Clarification on Incidental & Inconsequential Contact

Quote:

*Originally Posted by **FTC5237***

We have a question if the phrase "incidental and inconsequential contact" is referring to controlling the rolling goal. It is our understanding that the rolling goals can only be controlled by the base and not the ball tube, with "incidental and inconsequential" contact with the ball tube being the only exception. Devices such as a "V" channel that guide the tube are in violation because they control the movement of the rolling goal. We would like to know if intentional contact with the ball tube is allowed if it does not affect the movement of the rolling goal whatsoever. In our case, a small piece of material that rests along the tube as it is raised into position. This piece cannot control the movement of the rolling goal at all. This video provides a clear example of what we're talking about.

--- video URL deleted ---

It is also important to note that the piece in question is held up at the lowest position, not touching the ball tube while we drive around or latch onto a rolling goal.

A: Intentional contact with the Ball Tube is not incidental and would result in a penalty. Any contact that ends up benefiting a robot attempting to score is not inconsequential and would result in a penalty.

Final determination of the nature of contact (i.e. is it incidental & inconsequential) will be made by the referee crew that is observing the match.
As a general rule, we will not view or use as a basis for ruling video or pictures of particular game/robot situations.

GDC Ripple Effect

12-16-2014, 06:26 PM

Quote:

*Originally Posted by **FTC9497***

This weekend at a tournament a team was in position to score 5 balls in the center goal and were in the process of raising the balls and were fully extended. A robot from the other alliance in the process of trying to get around the robot who was attempting to score in the center goal hit the corner of the robot which caused them to no longer be lined up with the center goal and they were not able to score. Basically this revealed that it will be trivial to play defense at the end of the game and prevent a robot from scoring max points in the center goal by simply giving them a nudge. We could not find any clear rules to prevent it as no blocking of the goal was occuring. Even if there was a rule a major or minor penalty would be worth it to keep from max points being scored. This brings up a couple points that would be good to have clarified.

1. If a robot is in a scoring position on a goal and a robot playing defense pushed the robot and results in tipping of the goal how is that treated? Does the offense get a penalty for tipping the goal or does the action of playing defense which results in the opposing alliance goal being tipped result in the offense getting the equivalent of a full goal? The defense robot never touches the goal that was tipped but by hitting the offense robot the goal is knocked over.

2. Extend that same thought process to the center goal where if a team is in the position to score and not touching the center goal but because another team plays defense the arm of the robot attempting to score knocks the center goal off(easy to do) does that result in a penalty for the offense or full credit to the offense because the defense caused the goal to be tipped?

3. One other goal tipping question. If a team knocks over a goal but is able to stand it back up without touching the tube before the end of the match is a penalty still issued?

A1 & A2: In both of these cases, the referees will need to make a judgement call based on what they observe. There is no absolute answer.

There are a couple of factors that will play into how the referees will determine responsibility and assess penalties (if any)
- Was the objective of the defending robot to knock off the Center Goal (via the scoring robot)?
- Was the root case of the Center Goal tipping due to contact from the defending robot?

It is important to keep in mind a couple of rules:
- <G11> protects a robot from being forced into penalties
- <GS14> only awards a full goal if there was descoring of balls involved, not just tipping (<GS5>)

A3: There is nothing in the rules that prevents scoring into a Rolling Goal that has been re-righted. Teams righting tipped Rolling Goals should be careful about contact with the Ball Tube. There is no added value to scoring into a Rolling Goal that has been declared full as a by-product of <GS14> as the Rolling Goal can only be full once!

GDC Ripple Effect

12-16-2014, 06:33 PM

A Clarification to Post #97

Quote:

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*Originally Posted by **FTC7592***

According to post #97 11/10/2014 the incidental tube contact rule was changed to be a no tube contact rule. This was exactly as it was enforced at our 11/8/2014 tournament. We were told by the referees that any contact with the tube would be penalized as breaking GS8. I thought the original intent of the rule was very clear. Do not design a robot that intends in any way to touch the tube. The new interpretation of the rule came as a big surprise to us at our first tournament because we were very familiar with the forums and rules at this point and did not consider this as how the rule would be implemented. At our first tournament our robot had no capability to manipulate the goals, and we were reduced to driving around and trying to get in our opponents way. Yet somehow we were still penalized for times when our driving around robot clipped or hit the goals. This seems against the original intention of the rule.

We have another competition this weekend. We are even more concerned with this rule because we are going to be a fully functioning robot that will try and manipulate and score in the rolling goals. Our design does not benefit in any way from contact with the goal tube, and does not attempt in any way to make contact with the goal tube. Any 18" robot that attempts to extend up to 60, 90, or 120 cm will have a natural instability at these heights which may lead to accidental and non-beneficial contact with the tube. In addition to the natural instability of robots extending this high, they will be experiencing starting, stopping, going up and down the ramp, as well as getting pushed by other robots. This will only increase the likelihood of incidental tube contact.

We believe our robot design is in the spirit of the original intention of the rule, which would be the robot is not designed to touch or manipulate the rolling goal tube intentionally. Since many scoring mechanisms were designed in such a way that there could be the possibility of incidental contact we would like to forum to more fairly interpret the clarification of this rule and reduce the ambiguity surrounding it's enforcement.

A: Post #97 "Can you touch the tubes on the rolling goals in autonomous" from 11-10-2014 has been updated to include language that makes it clear that contact that is both incidental and inconsequential should not result in a penalty.

GDC Ripple Effect

12-16-2014, 06:39 PM

Blocking Access to Center Goal

Quote:

Originally Posted by ***FTC9387***

In the rules is states: "<GS18>During the End Game, an Alliance may not Block Access to the opposing Alliance's Center Goal. If this occurs, the offending Alliance will incur a Major Penalty." If a robot is in position to score in the center goal during the end game period, and then an opposing alliance team member pushes that robot to the side to prevent it from scoring but then that opposing team robot is in the space that the scoring robot needed to be in, would that be considered blocking access to the center goal?

A: Merely being in position below the center goal would not be sufficient to be considered blocking access. If the defensive robot then continued to push the offensive robot, keeping it away from being able to access the Center Goal, <GS18> penalties would apply.

GDC Ripple Effect

12-16-2014, 06:51 PM

Aggressive Defense at Center Goal

> Quote:
>
> *Originally Posted by **FTC4537***
>
> *At a recent event, a blue robot parked under the red center goal during the endgame and blocked access to the tube for the first 15 seconds of the endgame. After repeated warnings, the blue robot finally moved back. When the red robot moved into position, the blue robot repeatedly rammed it (and received a warning). After about 10 hits, the red robot's arm finally broke off and it was disabled. No penalties were assessed because the blue team had asked the head ref beforehand if ramming was allowed during the endgame and was told it was an acceptable type of play. As a ref myself, I'm curious if blocking and ramming (with the obvious intent to disable) during the endgame is something we should be more lenient on this year. (If the reaction of the crowd is any indication, I think the concept of gracious professionalism took a hit with the performance.)*

A: In general, it is not possible for us to comment on what was or wasn't called at a particular event. FIRST Tech Challenge is an interactive robot game. Some robot to robot contact should be expected, and should be designed for.

If, in the determination of the referees, the blue robot was blocking access to the red center goal for 15 seconds, the referees should have assessed penalties based on <GS19> and potentially <G19>. Remember that merely being present under the red center goal is not sufficient to be declared as blocking access. The determination of blocking access would come when the red robot attempts to access the center goal.

Teams playing aggressive defense should make sure that they understand a couple of rules; <G9> Strategies aimed at damage/destruction/tipping/entanglement, <G10> pinning/trapping, <G19> flagrant and/or repeated violation of game rules

GDC Ripple Effect

12-16-2014, 06:53 PM

Scoring into Opposing Alliance Goals

Quote:

*Originally Posted by **FTC5873***

If, say, the blue alliance makes no attempt to score a ball in the blue Center Goal during End Game, can a red robot score in the blue Center Goal without penalty, or would this be a penalty under <GS18>?

A: There is nothing in the rules that prohibits scoring into Opposing Alliance Goals (Rolling or Center), as long as no other rules are violated.

GDC Ripple Effect

12-17-2014, 12:21 PM

Defensive Contact During End Game Center Goal Scoring

Quote:

*Originally Posted by **FTC5873***

During the End Game, if a robot is trying to Score on its own alliance's Center Goal, can a robot on the opposing alliance deliberately contact the robot in an attempt to prevent the scoring, or would this be a penalty under <GS18>? I'm thinking in particular of cases where, after contact, the robot which is trying to Score is still placed in front of its Center Goal but has been jostled and is at an angle that prevents it from scoring. Note there may be penalties under <G9> which would be evaluated separately.

A: The contact described would not be sufficient to be considered blocking access to the Center Goal. You are correct that <G9> and possibly <G10> may apply if in the opinion of the referees that there is either a strategy to damage the scoring robot or that pinning is taking place.

GDC Ripple Effect

12-17-2014, 12:28 PM

Incidental Tube Contact & GS8

Quote:

*Originally Posted by **FTC8579***

With all of the recent forum posts concerning GS8 and GS9, it seems a lot of new interpretations of the rules are coming into play based upon how various people are reading the responses and there seems to be a lot of confusion regarding what exactly will or will not count as a penalty.

Our primary interest is with GS8, so I'll frame my questions based upon that one.

With the wording "robots may grab onto their own Alliance's Rolling Goal in any

location except for the Ball Tube", it' is our understanding that it's perfectly legal to us a hook to catch onto the lip of the rolling goal base - I don't think there's any question there. The statement of "robots that grab their Rolling Goals by the Ball Tube will incur a <penalties details...>" is very clear about a penalty for actually grabbing the tube - no question against that and our robot never wraps anything even partially around the tube.

Our question is in the various interpretations of the phrase "incidental contact with the Ball Tube during Scoring or pushing is allowed" and the recent forum addition of the term "intentional" (which makes no appearance in the original rules). Here is what type of contact our robot makes with the ball tube. Can you clarify which is legal and which is not?

1) While dragging the rolling goal around the field, the tube is generally 1/4" from the back of the robot. When making turns, however, the tube will come in contact with the back frame of the robot. When the robot straightens and continues forward, or turns the opposite direction, the robot will then pull back away from the tube.
2) While dragging the rolling goal around the field, if the robot is run in reverse, the back of the robot touches the ball tube. Running the robot forward again will remove contact from the ball tube and leave a 1/4" gap between the robot and ball tube if the hook is attached to the rolling goal base, otherwise, it'll simply drive away from the rolling goal.
3) While operating a lift to deliver the balls into the top of the rolling goal, the lift will brush against the ball tube (not for control or alignment purposes) as it is rising.
4) When the lift mechanism is above the goal and releases the balls, sometimes the lift may hang over the ball tube by 1/4" or less. When the lift mechanism comes back down, it may touch the top of the ball tube, but the mechanism will tilt forward and get pushed out of the way by the ball tube - not actually snagging on it.

Per the original rules of "incidental contact with the Ball Tube during Scoring or pushing is allowed", it would seem to me that all of these would be permissible, yet it seems that the addition of the "intentional" phrase challenges this understanding.

Help?

Thanks,
Brian

A: It is not possible for us to rule on all possible scenarios of contact between a robot and a Ball Tube.

In general, the referees are looking to verify that observed contact was incidental and inconsequential. Both must be true for the referees to not issue a penalty. Contact that is of long duration, always happens or is intentional should be deemed not incidental. Contact that is beneficial or aids the robot in control or scoring should be deemed not inconsequential.

GDC Ripple Effect

12-17-2014, 12:48 PM

Resting Mechanism on Rim of Ball Tube

Quote:

*Originally Posted by **FTC5069***

During the autonomous period and/or during teleop, is the robot allowed to touch/rest on the rim of any given tube when scoring balls? Over the course of many matches, we have observed robots that lines up to the respective tube and then touches the rim of the center goal or rolling goal tube with a mechanism that is used to empty their cache of balls. Is this considered a penalty or is this considered to be incidental even though these mechanisms constantly touch the rim of the tube? Thank you.

A: Contact with Ball Tubes that is deemed by the referees to be either intentional (not incidental) or beneficial (not inconsequential) should result in penalties being assessed based on the appropriate rules. Resting a mechanism on the rim of a Ball Tube is one example of contact that would likely be deemed as a violation of <GS8>

GDC Snowball Effect

12-22-2014, 10:21 AM

Defense against opposing ramp

Quote:

*Originally Posted by **FTC8593***

Assume that Driver Control Period has begun and the alliance's robot has already drove off the ramp and has clear access to its rolling goals.

According to the section 1.4.3, the only points that can only be scored during this phase is by "collecting balls and placing them in the rolling goals". However we know from games that many alliance will use this time to have one robot push their rolling goals onto the ramp for 30 points apiece. Technically this scoring opportunity only is mentioned in the End Game rules (1.4.4) but is perfectly legal during the driver controlled period (as verified from forum posts).

Given this technicality, may an opposing alliance team simply park in front of the ramp for that 90 seconds before the End Game? It is not actually blocking access to scoring and doesn't break GS17 or GS18 which only apply to the End Game.

A: Robots that prevent an opposing alliance robot from accessing the ramp are potentially in violation of <G10> based on the definition of trapping ... "preventing an opposing alliance robot from accessing or escaping from a constrained area of the playing field for an extended period of time". Robots should expect to received penalties based on <G10> if they prevent access for extended periods of time (1st penalty after 5 seconds. additional penalties each additional 5 seconds)

GDC Snowball Effect

12-22-2014, 10:29 AM

Game Rules and Game Play - Answer Thread

Quote:

*Originally Posted by **FTC8221***

What is the official ruling for penalties when a robot delibritly touches/grabs a goal tube, or accidentally touches/comes in contact with the goal tube?

A: Please see rules <GS8> and <GS9>.

GDC Snowball Effect

12-22-2014, 10:41 AM

Game Rules and Game Play - Answer Thread

Quote:

*Originally Posted by **FTC8593***

Our team has a ball chute on a lift that they raise over the rolling goals and drop into the rolling goals.

They realized in their first tournament that from a poor angle 10-15 feet away, it is difficult to visually judge whether the scoop is actually aligned over the tubes which often resulting in a miss.

So the kids came up with attaching 4" hanging string to the bottom of the ball chutes lip (they call it the goatee). It is simply a visual cue to see if they are aligned over the tubes but occasionally depending on how high they raise the lift this piece of string will touch the tubes.

Is this possible touching legal?

A: If the referees determine that the contact was purposeful (i.e. not incidental) or beneficial (i.e. not inconsequential) they will assess penalties based on <GS8>. It is likely that the string deflecting upon contact with the ball tube will be seen as beneficial (i.e. aided alignment)

GDC Ripple Effect

12-22-2014, 01:21 PM

Quote:

*Originally Posted by **FTC9387***

During a recent match, a robot moved in front of the opposing alliances ramp in order to align themselves with the center goal. While they were backing up, the beginning of end game sounded. That robot immediately pulled forward out of the way of the ramp. No robot to robot contact was made. The robot was never in one of the restricted parking zones. Would the robot be guilty of violating either <G10> or <GS16>? Thanks.

A: As long as the robot stayed clear of the Keep Out Zone and, in the opinion of the referees observing the match, did not prevent an Opposing Alliance robot from accessing the Ramp/Platform, it has not violated either <G10> or <GS16>. The trapping aspect of <G10> and the Blocking Access aspect of <GS16> both require interaction between opposing alliance robots.

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Game Rules and Game Play - Answer Thread

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GDC Ripple Effect

12-22-2014, 01:48 PM

Dead Robots

Quote:

*Originally Posted by **FTC3785***

At a recent event, a red robot falls over and ends up blocking the blue ramp. The red robot "tip over" was "without malice" but as the ramp is now inaccessible- to the blue team. Is this a blocking access penalty or is this an example of the "dead robot" exception.

A: As was stated earlier, dead robots are in general not assessed with penalties. If in the opinion of the referees, the robot was intentionally tipped over, it is likely that <G19> consequences would apply, in addition to violations based on <GS19>.

GDC Ripple Effect

12-22-2014, 02:09 PM

Balls Trapped within a Robot

Quote:

*Originally Posted by **FTC5069***

As a follow-up to posting #146, if during Autonomous a robot is positioned near the center goal and 10 or more balls fall onto/into the robot caused by the cascade of balls being released by another robot, is the team considered to be controlling those 10 balls? Would they be assessed a penalty for those balls that fell into their robot during the autonomous that they can't get out? Would the penalty be assessed every 5 seconds? Thank you.

A: Unless balls are placed in to a robot intentionally by an opposing alliance robot, the robot is responsible for all balls that become trapped within the robot. In this situation, the robot would likely be assessed multiple <GS1> penalties depending upon the duration of the violation.

GDC Snowball Effect

01-01-2015, 07:44 PM

Autonomous Goals in Parking Zone

Quote:

*Originally Posted by **FTC6022***

If an autonomous goal is partially placed in a parking zone, (such as breaking past the tape line and partially entering the zone, for example,) does it still count as parked?

A: Yes. When it breaks the tape line, it is considered "In" the Parking Zone - which is the requirement for scoring at the end of the Autonomous period.

GDC Snowball Effect

01-05-2015, 10:20 AM

Mirror to reflect IR Beacon

Quote:

*Originally Posted by **FTC4150***

Is it legal for a team to have a concave mirror mounted on their Robot, and sit on the top of the ramp in Autonomous and aim this mirror in an effort to reflect the IR Beacons Signals from their IR Beacon to the other side of the field, as a defensive strategy , to intentionally confuse the other Alliances Robots in any attempt to use their own IR Beacon Signals?

A: No, this is not a legal strategy and is not in the spirit of the FIRST Tech Challenge. The mirror would violate <R12> (interferes with other robots). Rule <G19> could also be called against the team that does this (which could be an infraction that leads to a disqualification).

GDC Ripple Effect

01-07-2015, 11:20 AM

Intentional rotation of center goal

Quote:

*Originally Posted by **FTC5062***

Hello, our question is about the end game. On 9-17-2014, post #3, was about moving the center; our question is about rotating it.

At a league play event, a red robot was able to slightly rotate the field center enough that the blue robot missed the high goal. The red robot pushed on it's own end of the center (from the side) so it was not blocking access of the blue robot from it's goal <GS18>. Does this violate any rule that would cause a penalty to be assessed?

The referees held a discussion at the end of the match and only warned the red team that it was possibly a violation of <G19>. I know you can't comment about the referees' decision, however, is this a "legal" way to stop a team scoring?

Thank you.

A: Intentional rotation of the center structure would be considered field damage and should be penalized based on <G9>, with repeated violations potentially trigger <G19> consequences.

GDC Ripple Effect

01-07-2015, 11:25 AM

Ramp Access and Trapping

Quote:

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*Originally Posted by **FTC8045***

Hi, Posts 157 and 160 address this, but it seems like "ramp access" is being interpreted in different ways.

We believe the definition of accessible is not dependent on any particular robot. We believe that just as the Platform has two sides that are accessible, the Ramp also has two sides which are accessible.

If a robot solely parked in front of the short edge of the opposition's ramp (without entering the keep out zone) for the entire driver controlled portion of the match, the entire long edge of the ramp is still accessible. Certainly if an opposition robot is still on the ramp, they can drive off the long edge and are not denied access to the entire field. Likewise, while parked in front of the short edge, the entire long edge is still accessible, and as such they should not be assessed a penalty. We've seen writing and video that makes us believe many refs are defining the short edge of the ramp as the only way to access the ramp. If that interpretation is valid then the logic would follow in the above case that a penalty is warranted for blocking access.

While most of the official answers are prefaced with "If the Ref believes", we believe it would serve refs and teams well if you could clarify this point and let us have a consistent interpretation.

Is the ramp to be considered accessible from short side only, or both the short and long sides?

A: If a defending robot parks in front of the ramp and prevents an opposing alliance robot from being able to drive up the ramp, the defending robot is in violation of <G10>. Penalties should be applied based on the sequences in <G10>

GDC Ripple Effect

01-07-2015, 11:27 AM

Center Goal Backstop Part of Tube

Quote:

---

*Originally Posted by **FTC1001***

It is clear in post #106 that the backstop is part of the "goal". It is not clear if it is part of the "tube". The distinction is important for assessing penalties.

A: Yes. The backstop that is part of the Center Goal is considered an extension of the tube and all rules that apply to the tube apply to the backstop as well.

GDC Ripple Effect

01-07-2015, 11:40 AM

Scoring While in Possession of More than 5 Balls

Quote:

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*Originally Posted by **FTC4997***

If a robot is holding 6 or more balls and wants to score them can they score the 6 or more and only have 5 count or do they need to drop all the extras first before they score the 5 remaining? If they did score all of them what penalties would be called? What if they are holding a rolling goal. Do they have to disconnect from the rolling goal before they can shore the 5 after dropping the extra. Can you be more specific for how you can get back into compliance after holding more than 5 balls.

Team 4997

A: Immediately upon collecting the 6th ball, the robot should receive a minor penalty (and an additional minor penalty for each 5 seconds that it holds the 6 balls). A Double minor penalty would also be earned for scoring a ball while in control of more than 5 balls. Once the initial ball is scored, the robot is no longer in control of more than 5 balls.

The only way to no longer be violating <GS1> is to release a ball. If that release involves scoring, it includes additional penalties per <GS1>, There is no requirement related to the rolling goals (i.e. it does not have to be released)

GDC Ripple Effect

01-07-2015, 11:48 AM

Robot Out of Bounds

Quote:

---

*Originally Posted by **FTC9497***

Our robot has a forklift that allows it to pick up a goal and drive around. During end game the team drove up the ramp and pulled forward on the level part of the ramp. This resulted in the fork portion of the robot and the goal to be "outside" the field boundary but in complete control of the robot. Would this result in a penalty? Would the goal and robot still score as being off the playing field floor?

A1: If the robot makes contact with anything outside the field, it would be in violation of <S2> and would be disabled for the remainder of the match. If at anytime, the referees determine that the robots reaching outside of the field is unsafe, the robot is in violation of <S1> and would be disabled for the remainder of the match. Remember that repeated violations of either <S1> or <S2> can lead to disqualification.

A2: Both the robot and the goal should count as scored for being off the playing field surface.

GDC Ripple Effect

01-07-2015, 11:53 AM

Center Goal Defense

Quote:

*Originally Posted by **FTC3785***

From post #151 "Merely being in position below the center goal would not be sufficient to be considered blocking access. If the defensive robot then continued to push the offensive robot, keeping it away from being able to access the Center Goal, <GS18> penalties would apply." and #152 "The determination of blocking access would come when the red robot attempts to access the center goal."

Question;Blue robot parks under/infront of red center goal and does not move. in this configuration, the red robot has a hard time reaching the the high red goal. Is this passive defence permitted? or is this blocking?

a variation --the red robot pushes the blue robot who does not push back but the blue robot ultimately delays the red robot access to high center goal- would either of these be a blocking access penalty?
THANKS

A: If either scenario happens during the end game, the Blue robot should receive penalties based on <GS18> for blocking access to the red center goal

---

GDC Ripple Effect

01-07-2015, 12:15 PM

Autonomous Scoring Questions

Quote:

*Originally Posted by **FTC7155***

In our autonomous (video below), we drive off of the ramp, on to the playing field floor, deposit our preloads into the middle sized goal, and bring the goal back on to the ramp (in order).

We've calculated this to be worth 70 points (20 for driving off of the ramp, 30 for scoring an autonomous ball in a rolling goal, and 20 for moving a rolling goal into a parking zone).

Several teams have commented on this video, suggesting that the ramp is not a parking zone, and therefore we should not receive the 20 points for moving a rolling goal.
Additionally, the teams suggest that driving off of the ramp does not count as we

end up back on the ramp at the end of autonomous.

We were wondering if these two claims are accurate.

-- video removed ---

What may appear confusing in the video, is that we hook on to the middle sized goal at about 0:18.

A1: The parking zone is the roughly 2' by 4' taped area of the floor along the center of the wall immediately in front of the driver station. For a rolling goal to score at the end of the autonomous period, the goal must be in the parking zone. The ramp and its surrounding keep out zone do not score.

A2: For a robot to score for being partially off the ramp at the end of the autonomous period it must be in contact with the playing field floor. Robots that drive off and then back onto the ramp do not earn the autonomous bonus.

GDC Ripple Effect

01-07-2015, 12:19 PM

Gentle Defense

Quote:

Originally Posted by ***FTC6287***

from post #152: "FIRST Tech Challenge is an interactive robot game. Some robot to robot contact should be expected, and should be designed for" . We were wondering then if during end game it seems to us to be permissible to "gently" push against the side or corner of a robot that is trying to score in the high goal. The defending robot is not blocking access-it is staying away from the area in front of the goal/center structure but it is pushing-not ramming-the robot that is attempting to score thus making the scoring process more challenging. Thanks

---

A: There is nothing in the rules that would prohibit gentle defense, as long as no other rules are violated (i.e. blocking access, trapping/pinning, etc)

GDC Ripple Effect

01-07-2015, 12:22 PM

Robot Both Off Field and In Parking Zone?

Quote:

Originally Posted by ***FTC5913***

While you are in the ramp can you extend an arm or something similar into the parking zone and score points for both? Because during one of our competitions our robot fell off of the ramp and a little bit of it was in the parking zone and it counted. So i was wondering if this is a way we can score in both or not.

A: A robot may only score as either off the field or in the parking zone, not both. When a robot (or a rolling goal) is eligible for more than 1 scoring option, the higher valued option will be chosen (i.e. in this case, the off the field option is worth 30 pts.)

GDC Ripple Effect

01-07-2015, 12:27 PM

Center Goal Contact

Quote:

*Originally Posted by **FTC6981***

At a recent event, our team was penalized for a part of our ball-dumping mechanism touching the center goal tube (actually the "backboard") during Autonomous and Tele-Op. We did graciously ask for verification and we were able to show a ref that in fact, touching the tube during autonomous was actually allowed. However, we are still in a quandary about whether or not its OK to simply "touch" the tube when we are in the process of dumping balls during tele-op. We have seen the definition about "grasping" where you encircle a majority of the tube with a mechanism. However, our team is now concerned that we not even allowed to come in any contact with the center tube or any other tube for that matter, while we are dumping balls. Our mechanism uses a brush to brush in the balls while we are driving around the floor. Then, we lift this mechanism in the air, and we turn the bristles to a position where they are horizontal, which then releases the balls into the tube. However, when we drive up the the center goal tube, these "bristles" touch the backboard of the center tube. We do not believe this is a penalty, however, we are asking for a clarification if one is available. It would certainly prevent a lot of re-design on our team's part. Thanks for all of you assistance!!!

Team 6981
Hortonville Robotics

A: If the referees deem the contact to be both incidental and inconsequential, they should not assess penalties. If they determine that the contact is either intentional or beneficial, appropriate penalties should be issued. In this situation, if the referees believe that the contact with the "bristles" is part of the alignment strategy, it would be appropriate for them to have given your team penalties based on the contact.

GDC Snowball Effect

01-12-2015, 03:46 PM

Ball Scoring

Quote:

*Originally Posted by **FTC7197***

We had a question regarding ball scoring that we think may have been addressed but we cannot locate the thread that references it. At a recent event, a team tilted the scoring tube so that the opening of the tube rested directly inline with the opening on the ball dispenser of the center element. We are wondering if that is a legal method of scoring. The tube never tips beyond the 90 degree limit but the balls never hit the floor and the rule book states that all balls must be scored from the floor.

Can a team tip a scoring tube to that ball falling out of the ball dispenser fall directly into it when the kickstand is removed (all of this is done during teleop).

A: No, a team may not do this. This is a direct violation of <GS2> and will be penalized as such (Double Minor per ball scored in this manner).

GDC Snowball Effect

01-14-2015, 02:29 PM

Autonomous starting on the ramp

Quote:

*Originally Posted by **FTC4144***

Looking through the game manual it states if the robot starts in the parking zone it must be touching the field perimeter. There is no mention the robot starting on the ramp has to touch the perimeter. So would it be legal to start anywhere on the ramp?

A: See answer #73 posted on 10/13/14. The robot on the platform does not have to be touching the perimeter (the parking zone one does).

GDC Ripple Effect

01-26-2015, 12:42 PM

Autonomous Balls

Quote:

*Originally Posted by **FTC4486***

Do teams need to use both preload balls (one large and one small) or can they preload just one.

This question has been listed as a duplicate but it does not seem to be in the forums.

A: Section 1.4.1 of the Part 2 of the Game Manual is very clear about the Autonomous Balls. **"Each Team is given two (2) optional Autonomous Balls (one large and one small) that, if used ..."** There is no requirement to use either Autonomous Ball. (i.e. teams may use none, either or both)

GDC Ripple Effect

01-26-2015, 12:50 PM

Aggressive Robot Contact

Quote:

*Originally Posted by **FTC8645***

How much aggressive defense is to be expected as teams move into higher levels of competition?

At yesterday's Qualifier, while we were lined up to score in the center goal during end game, one of the opposing alliance's robots began ramming us repeatedly to try to get us out of position. Because our robot is somewhat heavy, they had to keep backing up farther each time to get more momentum to ram us. The referee called a major penalty for them backing up far enough to cross into our parking zone, but did not call a penalty for the repeated ramming (because it was not "blocking"). Despite the ramming, we were able to successfully score, and the crowd cheered on our behalf.

Due to the repeated ramming, our lift was damaged (later repaired), but we will continue to be somewhat vulnerable when the lift is fully raised if repeated ramming is permitted in end game. In order to plan appropriately, what should be expected as falling within FTC's acceptable parameters for defense?

A: FIRST Tech Challenge is a highly interactive robotic sport, robot-to-robot contact should be expected and should be designed for. In general, <G9> could potentially apply, if the referees believed that the contact was part of a strategy aimed at destruction, damage or tipping of an opposing alliance robot. The application of <G9> is based on the observations of the referees observing the match.

GDC Ripple Effect

01-26-2015, 12:54 PM

Intentional rotation of center goal

Quote:

---

*Originally Posted by **FTC4115***

I was at a Wisconsin qualifier, and during the endgame of the final match, my team was going to score in the center goal. However, an opposing team rammed the center structure and rotated it, causing us to miss. We lost the match as a result due to not scoring in the center. No penalty was applied to either team. However, at a recent Ohio Qualifier my team attended, my team tried to move the center structure in similar fashion during tele-op so we could score more easily in endgame, and we were given a warning because the center goal moved from its original position. They said we could contact the center structure in order to dislodge stuck balls only, and if it moved from its original position, it would be a robot disable or disqualification. Is moving the center structure allowed or not?

A: Intentionally rotating the center goal would be considered field damage and fall under <G9>, and would lead to assessment of a Major Penalty and the possibility of being disabled and/or disqualified from the match, with repeated offenses potentially leading to tournament disqualification.

GDC Ripple Effect

01-26-2015, 12:59 PM

Deflecting Balls

Quote:

*Originally Posted by **FTC3415***

If a robot is actively deflecting balls that end up under the robot away from it, or reversing a zip tie collector mechanism to deflect balls while driving through the field, would this be considered a form of possession under <GS1>? The intent would be to repel additional balls (in no specific direction) and to prevent balls from becoming stuck under the robot, with no intention of collecting said balls.

A: The referees observing the match will make a judgement call based on their observations. They will assess the nature of the "control or lack of control" of the repelled balls and assess penalties as is appropriate. i.e. if they determine that the mechanism is being used to sweep balls into a corner to aid later pickup, the action would be considered a form of possession.

GDC Ripple Effect

01-26-2015, 01:06 PM

Blocking Access to the Center Goal

Quote:

*Originally Posted by **FTC9497***

If the blue robot is near the red center goal where it doesn't allow the red robot perfect access to the center goal is that considered blocking access? For example the red robot can not drive straight in but could easily access the center goal from an angle. Is this considered blocking access if the blue robot is not moving but simply near the red goal that makes it challenging for the red robot to align? I remember reading somewhere in the posts that you could not block all access to the center goal as the definition of blocking access versus blocking one path. It would seem if the intent is to prevent interference then a region would have been setup that the opposing robot could not enter during end game.

Similar thought process on the following related to definition of blocking access.

If a robot was able to extend an arm from the side of the center goal that extended a small tube across the top of the center goal of the opposing team in a way that if balls were dropped they would hit the tube and not score is that considered blocking access to center goal? The opposing robot is not blocking access to the center goal but is playing defense by deflecting balls before they are scored.

A: In all cases, the referees are going to make a judgement call based on their observations. If, they determine that the above scenarios fit the definition of blocking access, they will assess appropriate penalties. Merely being in a specific area is not enough to trigger "blocking access". Interaction between robots with one robot attempting to access is required.

GDC Ripple Effect

01-26-2015, 01:17 PM

DeScoring Autonomous Balls

Quote:

*Originally Posted by **FTC4530***

If we drop a ball into a tube in autonomous, take it out, and put it in another tube, do we receive points for both tubes?

A: No. Autonomous Period scoring is done at the end of the period, based on the state of the field at that time. i.e. the ball would only be in one goal at the end of the autonomous period.

It is worth noting that any means to remove a ball that is scored in the autonomous period is likely going to violate one or more other rules, i.e. <GS8> or <GS14>

GDC Ripple Effect

01-26-2015, 01:20 PM

Balls Trapped Under Robot

Quote:

*Originally Posted by **FTC3007***

Hi,

I am part of FTC team 3007 and have a question regarding the transport of the balls.

If we trap any balls under our robot and move the robot while they're trapped (Not putting the balls in our normal ball-holding system), do the balls trapped count towards the total amount of balls that our robot may have in its possession at one time?

I have reviewed the posting guidelines and feel that this strategy would not post a significant risk to life, property, or the integrity of the game.

What do you think? Would this be an acceptable strategy?

Thank you for your time.

Team 3007

A: If the referees determine that the balls trapped under the robot are being controlled by the robot then they will assess penalties per ball based on <GS1>

GDC Ripple Effect

01-26-2015, 01:30 PM

Center Goal Scoring with Robot In Contact with Ball

Quote:

*Originally Posted by **FTC4290***

Our team recently came across a strange situation. At the end of autonomous, our robot, which drops the autonomous balls from a vertical tube into the center goal, had somehow wedged our large autonomous ball in between the misaligned openings of the center goal and its ball dispenser. So the ball, while completely within the vertical boundary of the goal, had its bottom half inch within the very top of the goal and the rest held in place over it by the robot.

According to glossary in the game manual, a ball is "scored" in autonomous if it is "in the center goal," where "in" means "crossed the vertical extension of a defined Area's boundary." This ball was certainly (in fact, completely) inside the vertical extension of the goal, and was also partially inside the vertical boundary of the top of the goal. But the center goal was never called an "Area."

Would the 60 points for an autonomous ball in the center goal still be awarded?

A: No. <GS3> applies at the end of each scoring period. Balls in contact with a robot of the same color as the scoring area have zero scoring value.

GDC Ripple Effect

01-26-2015, 01:48 PM

Kickstand Contact

Quote:

---

*Originally Posted by **FTC8935***

During teleop is it okay if your robot lines up with a straight flat arm and twists in order to knock down the kickstand?

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

GDC Ripple Effect

01-26-2015, 01:51 PM

Pinning vs. Ramming

> Quote:
>
> *Originally Posted by **FTC8935***
>
> *What is the difference between pinning and ramming? Are both ramming and pinning major (50 pts) penalties?*

A: Pinning has a formal definition within the rules. There is no formal definition for ramming, nor any rule that references ramming. The closes would be <G9> that would deal with intentional damage, tipping etc.

GDC Ripple Effect

01-26-2015, 01:59 PM

Pushing Opposing Alliance Rolling Goals into Own Parking Zone

Quote:

*Originally Posted by **FTC5414***

We had a question about a situation that happened in one of our matches at our qualifier this weekend. Heres what happened:

We (red alliance) started in the parking zone. The center goal was in the 2nd position, facing towards the corner of the field. At the start of autonomous we drove foward, out of the parking zone and began tracking the IR beacon. We turned left towards the red alliance center goal. As we made the second turn to line up our robot with the center goal ball tube we collided head on with a robot from the blue alliance. The collision caused us to miss our center goal score and it through off the rest of our autonomous routine which was meant to take down the kickstand. Ultimately this resulted in us driving into the blue alliance's rolling goals and pushing two of them into the red parking zone.

We have two questions regarding this situation. First, should we be penalized for the blue goals going into the red parking zone? While we were the robot that pushed the goals into the zone, we had no intention of doing that and it only occured because of the collision with the blue alliance robot. Secondly, if during teleop the blue alliance attempts to remove the blue goals from the red parking zone, would they be penalized once they contact the blue goals while they are in the red parking zone?

Thank you,
Team 5414

A: Consistent with earlier FTC Forum postings, moving opposing Alliance Rolling Goals into your own Parking Zone will be considered blocking access to the Rolling Goals and penalized according to <GS17>. There is no rule that prohibits the opposing alliance from removing their rolling goals from your parking zone. <GS12> only covers pushing rolling goals INTO the opposing alliance's parking zone, not out of ...

GDC Ripple Effect

01-26-2015, 02:59 PM

Blocking Access to Rolling Goals Placed on Ramp/Platform

Quote:

*Originally Posted by **FTC7172***

The answer to Post #157 says that "Robots should expect to receive penalties based on <G10> if they prevent access [to the ramp] for extended periods of time."

Q1: If there are goals on the ramp/platform, would preventing access to the ramp also be a violation of <GS17>?

Q2: Would the penalty be immediately applied as soon as the opposing team

attempted to access the ramp and was blocked? (Unlike pinning/trapping in <G10>, the rules concerning "Blocking Access" don't mention any "extended period of time" component; they simply say "moving robot(s) [...] to obstruct all paths to the item".)

Thanks,

FTC7172

A1: Potentially, if the referees believe that access to the rolling goals is being blocked. They will make a judgement call based on what they observe and what they see as the interactions between the two opposing alliance robots.

A2: If the determination of the referees is that <GS17> is being violated, penalties would be assessed immediately. Extended blocking could lead to multiple penalties under <GS17>

GDC Ripple Effect

01-26-2015, 03:03 PM

Blocking Access to Rolling Goals - All vs. Only One

Quote:

---

*Originally Posted by **FTC2818***

Rule GS17 state that you cannot block access to the rolling goals at any time.

Q: Does this mean access to all the goals or any one individual rolling goal cannot be blocked?

To clarify my question, if we notice a team in previous matches can only scores balls in the medium rolling goal, can we push that goal into the corner and block access to that goal as long as the team has access to the other rolling goals?

If the answer to the above question is "NO", (that you cannot block access to any one rolling goal), then in AUTONOMOUS, if a defensive robot pushes a rolling goal into the wall, and stays there with the goal lodged between the robot and the wall (consequently not allowing a full sized offensive robot to get access to the goal from any side), would this be considered "blocking access", and be a major penalty?

Thanks.

Phil

A: Blocking access to **ANY** individual rolling goal is sufficient to trigger the penalties associated with <GS17>.

GDC Ripple Effect

01-26-2015, 03:08 PM

Pinning During Autonomous Period

Quote:

> *Originally Posted by **FTC8629***
>
> *Does the 5 second rule apply in the autonomous mode? For instance, can a robot drive up to the bottom of the opposing team's ramp, stop for < 5 seconds and move 3 feet away without incurring a penalty, just as is required in teleop mode?*

A: Pinning/Trapping is the only rule that does not trigger its penalties during the autonomous period. Teams should be aware that <G10> carries and exception that allows the referees to apply the penalties if they believe that there is an effort to take advantage of the autonomous period exemptions to pinning/trapping.

GDC Ripple Effect

01-26-2015, 03:15 PM

Blocking Access to Rolling Goals

Quote:

*Originally Posted by **FTC8045***

Thanks for clearing up the ramp access.

At a recent event, a red team decided to play defense by driving back and forth in front of small and large blue goals (the medium blue goal had been moved). There was still access to the blue goals, but by driving through the red parking zone. (At the event teams were penalized for entering the opposition's parking zone - though we can't seem to locate that penalty in the game manual at the moment?!)

Q1- Is driving into the opposition's parking zone a penalty? (sorry if we're missing something obvious)

Q2- Just as blocking ramp access is a penalty, would a strategy that sequesters goal(s) in the corner where they started be considered blocking access to the goal(s), and a major penalty? (These goals are only accessible in this scenario by driving through the oppositions parking zone which we believe is a penalty. We could do this but believe that G11 would not apply here.)

Q3- Can you clarify how pushing an opposition goal is not considered blocking access? GS10 vs GS17 ?

A1: Yes, if it occurs during the End Game and the referees determine that the action was sufficient to be considered "Blocking Access"

A2: If in the opinion of the referees the strategy described is deemed to be "Blocking Access" to the Rolling Goals, <GS17> would apply

A3: Merely pushing a Rolling Goal would not be sufficient to be considered "Blocking Access". In general, Blocking Access to something requires interaction between robots, not just with Game Elements or scoring locations.

GDC Ripple Effect

01-26-2015, 03:19 PM

Balls Directly from Center Structure into Rolling Goal

Quote:

*Originally Posted by **FTC5936***

Howdy from Del Rio,

We have a question about <GS2> Balls must have been collected off of the Playing Field Floor to be eligible to be Scored. Balls that deliberately fall into Possession of a Robot without having been on the Playing Field Floor must be relinquished and then recollected before they can be Scored. Teams that violate

this rule will be assessed a Double Minor Penalty.
What if the balls do not fall into possession of the robot but a scoring tube?
Would this rule still apply?

Thanks in advance!

FTC Team 5936 - Robo Squad

A: If the referees determine that the Rolling Goal was deliberately placed to accumulate the balls, <GS2> would apply and a double minor penalty per ball scored illegally would apply. The penalties will be assessed to the team that places the Rolling Goal, regardless of which Alliance actually triggers the release of the balls.

GDC Ripple Effect

02-02-2015, 10:19 AM

<GS12> and Move vs. Push

Quote:

---

*Originally Posted by **FTC8045***

GS12 "Robots may not push any Alliance's Rolling Goal In to the opposing Alliance's Parking Zone or Keep Out Zone."

1 - We note that GS11 uses the Term 'move', other GS rules use the word push. Our goals are near the opposition's parking zone, are we allowed to "Pull" them through the opposition's parking zone without incurring a Penalty? Or do Push / Pull have the same definition for the purposes of GS12?

2 - A robot is latched onto its own goal. Does the goal have to enter the opposition's parking zone to receive a penalty, or will a penalty also apply if just the robot enters the opposition's parking zone and the goal remains outside of the parking zone?

A1: It was never the intention of <GS12> to limit penalties to moving a rolling goals only by pushing. All forms of movement will trigger <GS12> consequences. i.e, push, pull, drag, shove, tip, etc.

A2: <GS12> is about the locations of the Rolling Goals, not the robots. The Goal must enter the Parking Zone to earn penalties based on <GS12>. Penalties based on <GS19> may apply during the End Game, if the referees determine that the robot entering the Parking Zone blocked access.

GDC Ripple Effect

02-02-2015, 10:29 AM

Update to forum posting #187 (dated 01-26-15)

Quote:

---

*Originally Posted by **FTC5421***

Hello - We would like some clarification about the legality of pushing an opposing

alliances rolling goal into your alliance's parking zone (e.g. blue robot pushing red goal into blue zone).

According to Post #113, this is a <GS17> penalty

A: Blue robot cannot push any color Rolling Goals into the Red Zones (<GS12>). Nor can Blue
robot push Red Rolling Goal into Blue Zones (<GS17> Blocking Access)

Further confirmed by #134

A: Due to the challenges associated with removing own alliance rolling goals from opposing alliance
Parking Zones, pushing opposing alliance rolling goals into own alliance parking zones is considered
blocking access, particularly with the likely ingress of additional rolling goals and robots during the
match. (i.e. <GS19> prohibits blocking access to the parking zone during the endgame and
<GS11> prohibit removing opposing alliance rolling goals from the opposing alliance parking zone).
Hopefully all teams will be similarly enlightened ;-)

...But then comes #187

A: There is no rule that prohibits pushing an opposing alliance rolling goal into your own parking zone. If the referees determine that you are blocking access to the rolling goals, they may assess penalties based on <GS17>. Additionally, there is no rule that prohibits the opposing alliance from removing their rolling goals from your parking zone. <GS12> only covers pushing rolling goals INTO the opposing alliance's parking zone, not out of ...

Please advise.
Thank you,
FTC 5421

A: Thank you for your thorough readings of the FTC Forums. Post #187 has been edited to be consistent with #113 and #134. Moving Opposing Alliance Rolling Goals into your Alliance's Parking Zone (or Keep Out Zone) will be considered blocking access and will be penalized based on <GS17>

GDC Ripple Effect

02-02-2015, 10:44 AM

Blocking Scoring Areas and Rotating Center Structure

Quote:

---

*Originally Posted by **FTC4410***

1.) Is deliberate autonomous blocking of scoring areas legal?

2.) Is it legal to rotate the center goal in teleop?

Thanks.

A1: There are several rules that control blocking access to scoring areas and elements, including <GS16>, <GS17>, <GS18>, <GS19>

A2: Intentional movement of the Center Structure will be considered a violation of <G9> and will be penalized appropriately.

GDC Ripple Effect

02-04-2015, 12:10 PM

Definition of the Parking Zone

Quote:

*Originally Posted by **FTC8526***

RE: "parking zone" for depositing the rolling goals into for autonomous mode -- is this just the rectangular area a bit to the left of the ramp area, or is the ramp area included? ALSO -- does the goal need to be entirely within that marked off area, or just part of it in? Thanks!

A1: The Parking Zones are the 2' x 4' taped area immediately in front of each Alliance Station. The Ramp and its surrounding Keep Out Zone are NOT part of the Parking Zone

A2: The End Game scoring for the Rolling Goals uses the word "In", not the phrase "Completely In". The Rolling Goals need to be inside the vertical extension of the Parking Zone to count as scored within the Parking Zone.

FTC1001

02-07-2015, 06:20 PM

Game Rules and Game Play - Answer Thread

Please withdraw my question about pushing rolling goals during autonomous. I unfortunately searched for the word "push" to make sure it was not a duplicate. I hope starting the duplicate section earlier in the year might make the forum more manageable in the future. It is pretty crazy right now.

GDC Ripple Effect

02-11-2015, 01:13 PM

Autonomous Defense

Quote:

*Originally Posted by **FTC4251***

During autonomous, is it a penalty to park in a defensive position near or against the field wall near the 60 cm rolling goal such that the offensive robot would have to turn and go around the defensive robot after it left the ramp in order to score in the 60 cm goal? Provided that:

- *the defensive robot had parked far enough from the bottom of the ramp that the offensive robot was not trapped on the ramp.*
- *the defensive robot did not pin the offensive robot against the wall,*

ramp, it's defensive partner, or any other field element(s) preventing the offensive robot's movement away from the field wall and tangentially away from the defensive robot and ramp.

- *the defensive robot and it's alliance partner had left the path clear between itself and the center goal such that the offensive robot, if programmed to do so, could execute a series of turns and go around the defensive robot passing between the defensive robot and the center goal to access the 60 cm rolling goal.*

A: With the set of conditions described, there are no rules that would prohibit the defensive strategy described. Make sure to be careful with using the strategy. Small errors could lead to assessment of <G10> for trapping or <GS17> for blocking access to rolling goals.

GDC Ripple Effect

02-11-2015, 01:17 PM

Adapting Autonomous Strategy to Opposing Alliance

Quote:

---

*Originally Posted by **FTC4290***

It is legal to move the robot in autonomous to a defensive position, i.e., between the opponent's ramp and goals, via Q&A Response #101.

But is it legal to observe an opponent's autonomous strategy in their previous matches, then change your robot's autonomous strategy in order to interfere with it?

A: There is nothing in the rules that would prohibit adapting your strategy to your opponent's based on scouting, as long as no other rules are violated.

GDC Ripple Effect

02-11-2015, 01:25 PM

Pushing Opposing Alliance Rolling Goals During Autonomous Period

Quote:

---

*Originally Posted by **FTC1001***

Is it legal to push the opponent's rolling goals during autonomous? The robot does not contact the goal tube. The robot does not push the goal into, through or out of a parking zone. The robot does not maintain contact so does not block access.

A: There is nothing in the rules that prohibits pushing an Opposing Alliance Rolling Goal during the Autonomous Period as long as none of the other rules are violated.

Be careful to make sure that the pushing does not violate any of <GS9> (grasping), <GS11> (moving from parking zone), <GS12> (push into opposing parking or keep out zones), <GS14> (tipping), or <GS17> (blocking access).

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Game Rules and Game Play - Answer Thread

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GDC Ripple Effect

02-11-2015, 01:30 PM

GS5 & GS14 Clarification

Quote:

*Originally Posted by **FTC7785***

GS14 states that tipping over ANY rolling goal whether intentionally or accidentally is a major penalty. GS5 references a "full tube score" for de-scoring balls but if an EMPTY opposing alliance rolling goal was tipped over, would it only result in a major penalty or would it result in a major plus a full tube. (For example, a blue alliance robot tips over the red 90cm goal. At the time, the 90cm goal is empty. Would red be awarded the 50 pts for a major penalty only, or would they get the 50 plus the 261 for a full 90).

A: For a penalty to be assessed based on <GS5> there must be balls descored from a Rolling or Center Goal. If an empty Goal is tipped, a single Major Penalty would be assessed based on <GS14> if the tipping action causes balls to descore, an additional Major Penalty and full Goal would be awarded based on <GS5>. If there are no balls in the Goal, there can be no <GS5> penalty assessed.

GDC Ripple Effect

02-11-2015, 01:33 PM

Covering Mouth of Goal

Quote:

*Originally Posted by **FTC8995***

First time post here so please go easy on me.
I know there are penalties for blocking access to the rolling goals. What about this scenario - The Red team is ready to deposit / score balls into the rolling goal and a blue team bot places something between the rolling goal and red alliance bot preventing the balls from scoring, making sure not to touch either the rolling goal or the red team's bot. Would this be classified as blocking access to the rolling goal?

Thanks

Team 8995

A: Yes. Covering the mouth of the a Center or Rolling Goal would be considered Blocking Access to the Goal and would result in penalties based on <GS17>

GDC Ripple Effect

02-11-2015, 01:39 PM

Scoring into Opposing Alliance Goals

Quote:

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*Originally Posted by **FTC5466***

Referring to <GS4> and <GS7> in game manual part 2, would it be legal for a team to take on a strategy to score in the opposing alliance's center goal during endgame, or would the offending team incur penalties of <GS18>, even if the opposing alliance cannot score in the center goal? Can we legally score in their center goal if the opposing alliance can score in the center goal and we are not preventing them from scoring in it at the moment?

Thanks for clarifying this,
Combustible Lemons

A: As long as the action does not constitute either grab/grasp/grapple (<GS9> violation) or blocking access (<GS18> violation) the strategy would be legal.

GDC Ripple Effect

02-11-2015, 01:43 PM

Surrogate Drive Team Members

Quote:

---

*Originally Posted by **FTC1000***

If a team has advanced to a Championship Tournament but for some reason they are not able to compete, I understand that they are permitted to ask a surrogate drive team to drive their robot. Is there a rule that says the surrogate drive team must use the robot of the team that earned the spot, or may the surrogate drive team use their own robot?

Thank you!

A: The surrogate drive team MUST use the robot of the team that earned the spot. Additionally, the surrogate drive team is, for the duration of the tournament, effectively no longer members of their original team (i.e. they may only participate in the tournament as members of a single team).

GDC Ripple Effect

02-11-2015, 01:49 PM

E-Stop Guidelines

Quote:

*Originally Posted by **FTC1000***

If a team asks the Referee or FTA to E-Stop their robot in the autonomous period, is that team permitted to run their robot during the driver controlled period?

If a Referee or FTA makes a decision to E-Stop a robot (because it is damaging the field, or damaging another robot) in the autonomous period, is that team permitted to run their robot during the driver controlled period?

Thank you!

A: if a robot is stopped via E-stop (or power switch) to stop a robot that is "locked up" during the autonomous period,
the robot may be restarted for the Driver Controlled period, by the FTA. If the E-stop is used for any other reason
(strategic or due to referee assessing either a disable or a disqualification) the robot may not participate in the
remainder of the match and will not be re-enabled. E-stop is for safety, not for strategy.

GDC Ripple Effect

02-11-2015, 02:13 PM

G11 Protections During Autonomous Period

Quote:

*Originally Posted by **FTC5414***

I submitted a follow up question a little over a week a go after the answer to post 187 was edited in light of post 194. I just wanted to make sure that the post had made it through.

Incase it didnt, here it is again:

Since post 187 has now been edited to say that pushing opponent's rolling goals into you alliance's parking zone is considered a penalty we would ask that the GDC committee clarify our original question in post 187.

If the blue alliance pushes one or more red rolling goals into the blue parking zone during the autonomous period as a result of contact between the blue alliance robot and a red alliance robot, should the blue alliance be assessed a penalty? In this scenario it would be abundantly clear thay the blue alliance had no intention to move the red goals, they were only forced off course by the red alliance robot while trying to score in their own center goal.

Also, if this scenario does result in a penalty and the blue robot pushes two of the red rolling goals into the blue parking zone, should they be assessed two separate penalties for blocking or just one?

Thanks,
Team 5414

A1: The referees observing the match will make a judgement call based on their observations. If, in their opinion, the contact by the opposing alliance robot was the primary cause for the Rolling Goals being pushed into the Parking Zone, they may excuse the infraction based on <G11>. If they determine that the contact was not the primary cause, the robot would be assessed with penalties.

A2: multiple Rolling Goals would result in multiple penalties

---

GDC Snowball Effect

02-11-2015, 11:00 PM

Driving Through the Opposing Alliances Parking Zone during Autonomous

Quote:

---

*Originally Posted by **FTC7104***

Hello GDC,
During Autonomous, is it legal for a red robot to drive through the blue parking zone? If not, what penalties will be accessed?

A: There is nothing in the rules to prevent that strategy as long as the robot drives through the parking zone. However, the robot needs to be careful about <GS11> and removing any ball tubes that are already in the goal during the Autonomous Period and the other rules concerning blocking access (both time and location).

GDC Ripple Effect

02-19-2015, 11:30 AM

Tipping Rolling Goal onto Own Robot for Extended Durations

Quote:

---

*Originally Posted by **FTC1000***

Hello Game Experts,

Can you clarify how penalties are applied in the following scenario?

A robot attaches to the base of a rolling goal and tips the goal so the tube rests on the robot. The robot then drives around and collects balls to score.

Is this a one time, 10 point penalty or something different?

Thank you!

A: This type of contact with the Rolling Goal tube would be considered a violation of <GS8> and would result in an immediate penalty. <GS8> also adds additional penalties every 5 seconds for continued contact.

Teams should also be aware that intentionally violating rules (i.e. intentionally taking penalties) falls under the definition of egregious behavior and could lead to consequences based on <G19>, including Major Penalties and potential disqualifications.

GDC Ripple Effect

02-19-2015, 11:36 AM

Intentionally Tipping Goals

Quote:

*Originally Posted by **FTC7953***

Post #201 on 2/11/15 stated that if an empty opposing alliance rolling goal is tipped over, it will only result in a 50 point penalty. I fear that this may cause teams to immediately and purposely tip over the opposing alliance goals to incur only a 50 point penalty but prevent the opposing alliance from possibly scoring 114+30 points for a full 60cm goal on the ramp/platform, or 261+30 points for a full 90cm goal on the ramp/platform. Is it the GDC's intention to allow this strategy?

If the refs see an alliance tip over the opposing alliance's rolling goal and believe this action to be intentional, can you clarify if other penalties would be imposed? For example, would one or more G19 penalties be imposed? Would a robot be disqualified if this strategy was clearly used or used repeatedly?

I urge you to consider stating clearly what penalties would be imposed and to consider making those penalties sufficiently high so that the intentional tipping of opponent's goals becomes a losing strategy. Otherwise, the matches may turn into "tip-a-thons" with low excitement and low gracious professionalism. It would be relatively easy to start an autonomous program from the parking zone and immediately tip over the opposing alliance's 60 and 90 cm goals before their robots could even reach the goals.

Thanks for your consideration.

A: Intentionally tipping Rolling Goals in an attempt to prevent the opposing alliance from scoring would be considered egregious behavior under <G19> and would result in additional Major Penalties (i.e. <GS14> tipping and <G19> egregious behavior) per occurrence as well as potential disqualification from the match.

GDC Ripple Effect

02-19-2015, 11:45 AM

Placing Own Rolling Goals into/onto Opposing Alliance Keep Out Zone/Platform

Quote:

*Originally Posted by **FTC8155***

We, team 8155, have developed a slightly controversial strategy relating to the game Cascade Effect. Our strategy, pertains to grabbing our rolling goals by the base, lifting them with a mechanism, and placing them onto the opposing alliance's ramp. This still counts as off the ground, and is more challenging for opposing alliance to place their game elements on their ramp. If the goal is knocked over, the opposing alliance gets a penalty, and our team receives the

points equal to a full goal's worth. Many teams have questioned or expressed concern during a match as to how this is illegal. Although, nowhere in the rulebook does it say you aren't allowed to put rolling goals onto the opposing alliance's ramp. This is all done during teleop, not at all in endgame where it is prohibited. This does not break any gracious professionalism because we are not prohibiting the other team from performing as well or worse, but rather providing a more compelling challenge to work around. Instead of trying to find the solution to the strategy we are creating, most are simply arguing as to why it should be banned. Our question is, is there any reason as to why we should not be able to use this strategy?

A: This strategy violates rule <GS12>. Robots may not push/move ANY rolling goal into the opposing alliances Parking Zone or Keep Out Zone, at any time! Continuous or repeated violation of <GS12> would lead to disqualification. Flagrant violation of rules may also lead to consequences based on <G19>.

GDC Ripple Effect

02-19-2015, 12:00 PM

Rolling Goal Off Ground in Parking Zone ... Which Scores?

Quote:

---

*Originally Posted by **FTC8155***

We, team 8155, have developed a mechanism that we use to let us grab and hold a rolling goal by the base and lift it off the ground while our robot is still on the ground. During one of our matches, we didn't have enough time in end game to get back on our ramp, so we lifted the goal and drove into the parking zone of our alliance. We were able to have our rolling goal off the ground and in the parking zone at the same time, although we were only credited for having it as off the ground. Our questions is, does the parking zone count vertically as well, allowing a rolling goal to be simultaneously off the ground and in the parking zone, allowing for more points? We ask this due to the fact that it might come up in a later game that could be a tie breaker, and we want to clarify it before hand.

A: Objects only score in a single area. If a Rolling Goal is potentially eligible for more than 1 scored placement at the end of the match, it will be given the higher valued one. In this situation, the Rolling Goal would be scored as "Off the Playing Field Surface".

GDC Snowball Effect

03-09-2015, 09:37 AM

Initialization during Teleop

Quote:

---

*Originally Posted by **FTC3493***

At the beginning of many autonomous programs, there is the initialization function, which runs a few lines of code, usually setting servo values or sensor readings. We have previously seen that other teams have this code in their tele-op program as well, so that when autonomous ended, a set of servos would open up to prepare for tele-op. Our question is, does FIRST restrict or monitor

what we put in this function? If we are allowed to put in a few servo initializations, why not put a few lines of code to set up the DC motors, and while I'm at it, might as well move over to the rolling goal . . . This would mean that after autonomous period ended, while the referees were waiting for the field to come to rest, a robot could execute maneuvers indefinitely. I can imagine a robot that, after autonomous ends, spends 10-15 minutes and lots of sensors picking up balls and filing all the ball tubes with all the time in the world, finishing its "tele-op" before tele-op even began. This doesn't seem to be in the spirit of the challenge, is there some rule against this?

A: This would be a violation of rule <RS08> (Game Manual-Part I) and may lead to disqualification.

GDC Snowball Effect

03-09-2015, 09:47 AM

Safety Glasses

Quote:

*Originally Posted by **FTC8526***

Are shooting glasses (worn for shooting sports) considered safety glasses for the competition, or do they have to be something specific? The ones we have are wrap-around style~~

Thanks!

If they comply with the ANSI Z87.1 certification and provide adequate protection of the eye (and area around the eye), they are acceptable. Read section 4.5 in Part I of the Game Manual for details.

GDC Snowball Effect

03-09-2015, 06:09 PM

Can fuse be replaced between autonomous and teleop

Quote:

*Originally Posted by **FTC9010***

If unintended contact between robots during the autonomous period caused the 20A battery fuse to blow, could it be replaced prior to teleop?

Could it be replaced by the Referee or Field Technical Advisor as discussed in <G15> as long as it does not cause extraordinary delay?

A: No it cannot. There isn't enough time to replace the fuse and the rules currently do not allow it. Only resetting the power of the robot is allowed in between the Autonomous and TeleOp periods.

GDC Snowball Effect

03-09-2015, 06:36 PM

Contact with Center Goal Structure

> Quote:
>
> *Originally Posted by **FTC4029***
>
> *Is it permissible to deliberately contact the center goal structure (not the tube) such as with a touch sensor or stabilizing arm?*

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

GDC Snowball Effect

03-09-2015, 06:42 PM

Center Goal Strategies

> Quote:
>
> *Originally Posted by **FTC8391***
>
> *Would the following strategies be legal? If not, what penalties would be incurred?*
>
> *Strategy 1: During endgame, a blue alliance robot pushes a red alliance robot trying to score in the center goal. The blue robot's pushing physically moves the red robot so that it doesn't have access to the position in which it needs to be in order to score.*
>
> *Strategy 2: A red alliance robot has a design with which the balls take a second to fall out of the robot's tray after the robot's flap is (visibly) lowered. The blue alliance recognizes this; every time the red robot lowers its flap to score in the center goal during endgame, the blue robot simply pushes the red robot (physically moving the red robot) so that the red robot cannot score.*

A: Both strategies are legal as long as no other rules are violated in the process. Pay attention to the Pinning and Blocking Access rules.

GDC Ripple Effect

03-09-2015, 07:29 PM

Requesting Power Cycle Between Autonomous and Driver Controlled Periods

> Quote:
>
> *Originally Posted by **FTC0359***
>
> *Background: Last tournament 359 had problems with I2C communications between the NXT and the motor and servo controllers. During the autonomous period our robot did not move, we knew something was up and requested a power cycle (reset) so that we would be able to participate in the tele-operated period, but our request was denied and we were told that nothing in the rules stated that we could request a power cycle.*

As per G15:

This may be due to different interpretations of the rule. Nothing within this rule explicitly states that a team can request their power to be reset, it simply says that power 'may' be reset.
Q: If a team requests that their robot's power be reset, is the Field Technical Advisor (henceforth referred to as 'FTA') required to perform the reset as long as it will not extraordinarily delay the match and as long as no other rules are violated or can the FTA deny their request if he/she deems it unnecessary?

A: Teams are welcome to request a power cycle, but FTA's are not required to honor the request. If the FTA's determine that a cycling of power is needed (based on their assessment of robot status), they will toggle power as they determine is appropriate. Toggling of power without a need based on robot state will likely NOT be performed.

GDC Ripple Effect

03-09-2015, 07:50 PM

Goal Tipped Due to Interaction Between Robots

Quote:

Originally Posted by ***FTC7655***

According to rule <GS5>, when a robot "de-scores" an opposing alliances rolling goal, the affected alliance receives points equal to the max score for that tube, and (if the tube was tipped over) a Major Penalty would be assesed on the offending alliance.

So if a robot is pulling a tube with them, and the opposing alliance pushes them in such a way that they are caused to tip over the tube they are pulling and scoring in, will the affected alliance receive the full tube height's points, or will no penalties be assessed?

The affected alliance would be protected from the major penalty by <G11>, but the rules are not clear whether or not the offending alliance would be assessed any penalties.

-Q

A: The referee crew on the field will make a judgement call based on what they observe. If they determine that one robot is responsible for the rolling goal tipping, they will penalize appropriately. It is possible that the determination is that both robots were equally responsible and assess no penalties.

GDC Ripple Effect

03-09-2015, 07:55 PM

Warping Opposing Alliance Robot

Quote:

---

*Originally Posted by **FTC6369***

Hello

We have observed video of a robot that uses a large, flexible sheet of cardboard to guide balls toward its ball placing device. We would like to know if it would be legal to use one of the features of our robot to press against mechanism to render it inaccurate? A few details:
- The disruption would not damage or entangle the opposing robot. It would not destroy the robot or damage any field elements.
- We would use an appendage on our robot that is designed for another purpose, but could be pressed into service for this strategy.
- The proposed strategy would not in any way block the rolling goals of our opposing alliance.

Providing we have accurately described the situation, does this proposed strategy violate S9 or any other rule?

Many thanks for your answer.

A: Intentional deformation of an opposing alliance robot would be considered a violation of <G9> as it is an intentional damage to the structure of the robot. Damage does not need to be lasting/permanent to be a violation of <G9>.

GDC Ripple Effect

03-09-2015, 08:22 PM

Repeated Pinning

Quote:

---

*Originally Posted by **FTC4546***

If a powerful robot repeatedly pushes an opposing robot from the side, and in so doing ensnares, or entangles the opposing robot is there a time limit before G9 penalties are imposed?

In section 1.3 of Game Manual the definition of Pin /Pinning is "Preventing the movement in all directions of an opposing robot while in contact with...or another Robot." So if a robot push into an opposing robot overpowering it, when does the five second count for a pin (or trap) of a Robot (per G10) starts and ends?

If a robot pins another robot for four second, can it then back away a couple of inches and start another four second pin, then repeats over, and over?
Would the last be considered entanglement since the strategy could be considered to capture, or prevent escape of the opposing robot?

A: Once a pinning count has begun, the count will not end until the robot has moved away to a distance of 3 feet. Robots that start moving away before the 5 second count has been completed and reach a minimum separation of at least 3 feet should not be penalized.

The strategy described above (repeated 4 second pins with only minor backups between) would be considered as a single pinning activity. And would result in one or more pinning penalties

depending on the overall duration.

GDC Ripple Effect

03-09-2015, 09:57 PM

Moving Opposing Alliance Rolling Goal out from Under Own Center Goal

Quote:

*Originally Posted by **FTC6299***

Can you clarify the reasoning between Q&A # 102 & #111 A1)? Is it the intent to allow access (via the use of GS13's " inadvertent an inconsequential" clause) to the Ramp, but not the Center Goal at End Game?

#102
Ramp blocking

Quote Originally Posted by FTC6191 View Post
If the rolling goals of the other team ends up in front of our ramp, whether it was intentional or not, and endgame starts, does this count as forcing a penalty as our team would have to get a 50 point penalty for moving the other team's rolling goal out of the way to access the ramp?

A: The intent of the GDC is to allow access to the ramp. Slight movement of the opponent's rolling goal is deemed to be inconsequential and inadvertent. If a team intentionally blocks the ramp or descores balls, the appropriate penalty will apply.

#111
Opposing rolling goal-Center target-defense

Quote Originally Posted by FTC3785 View Post
If a team encounters the opposing rolling goal underneath the high center target-"the 30 cm tube on center structure (near station 1)"- Can the opposing team move the opposing rolling goal out of the way without a penalty? 2. Can one park a robot directly underneath/in front of the same high tube (near station 1)-Which has the net effect of reducing access to this goal?

*A1: Yes, you may push it out of the way <GS10> up to, **but not including the End Game <GS13>**. You may not grab or grasp it in order to move it <GS9>. When pushing it out of the way, pay attention to Rule <GS12>*
A2: No, per Rule <GS18>

A: Teams that move an opposing alliance rolling goal out from under their center goal will not be in violation of <GS13> as long as, in the referee's opnion, the contact is no more than is needed to clear the center goal and does not violation any other rules (grasping, etc.)

GDC Ripple Effect

03-09-2015, 10:04 PM

Rolling Goal Tipped During Autonomous

Quote:

*Originally Posted by **FTC0365***

I have 3 questions about a particular scenario that recently occurred.

Scenario was that Blue team scored ball in Blue tube during autonomous and then tipped over blue tall tube and ball rolled out of the tube.
The call on the field was 50 point penalty <GS14>. Tthere was no de-scoring penalty <GS5>. I think that this was call since ball is not scored until end of autonomous.
The tube was reset between autonomous and Teleop. That is consistent with the way referee said it would be handled in driver meeting, but I can not find any rule in the manual that documents resetting field elements. In a previous tournament, our team had knocked off the center goal in autonomous and center doals was not reset.
I can not find any mention of these scenarios in the game manual or forums about resetting field elements. The closest I find is
<G15> I am posting this note to document and ensure it is consistent in future tournaments. I tend to think that referee got the calls correct in the scenario above, but in the end, it is not my call :)

The 3 questions are:
1. Should Blue Alliance be assessed a de-scoring penalty <GS5> once Blue goal is tipped over in autonomous in addition to the assess <GS14>?
2. Should blue rolling goal be reset after tipping over in autonomous?
3. If answer to prior question is yes, Is the reset rule, over the same for center goal that are dislodged as rolling goals that are tipped over? In other words, should center goal be reset if knocked off field center?

Many thanks

A1: <GS5> only applies to de-scoring from the opposing alliance rolling goal. The penalty for tipping your own rolling goal (and descoring balls) would be a single major penalty (<GS14>)

A2: Yes, all goals are "righted" at the end of the autonomous period.

A3: Yes, the center goal should be re-hung if it is knocked off during the autonomous period.

Show 40 post(s) from this thread on one page

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All times are GMT -4. The time now is 03:17 PM.

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The Field, The Tournament, Judging and Advancement - Answer Thread

Printable View

FTC Cause and Effect

08-04-2014, 02:55 PM

The Field, The Tournament, Judging and Advancement - Answer Thread

You'll find the answers to the questions you posted about The Field, The Tournament, Judging and Advancement in this thread.

GDC Domino Effect

09-17-2014, 05:24 PM

White Lines

Quote:

*Originally Posted by **FTC1001***

The video shows white lines radiating from the center goal. These do not appear in the manual or the field setup guide. Will there be white lines on the field? If so, how long are they measured from the center of the field.

A: The video was made early in the game design process and is incorrect. There are no white lines on the official field.

FTC Cause and Effect

10-07-2014, 12:23 PM

Compass Award Nominations

Quote:

*Originally Posted by **FTC1000***

My team would like to nominate our team mentors, together in one submission for the Compass Award. Is this allowed?

Hello Team!

While a team may only submit one nomination, the nomination can be for a single mentor, a pair of mentors or a group of mentors. A precedent has already been set for this - in the first season that the Compass Award was presented at the World Championship, it was awarded to John and Marion Brooks - a pair of mentors who truly deserved the recognition.

Good luck with your submission!

FTC6981

10-13-2014, 11:05 AM

The Field, The Tournament, Judging and Advancement - Answer Thread

We have been looking in all of the Field Assembly instructions, drawings, etc. and we can't find ANYWHERE the details on mounting the IR beacons for this year's challenge. They look like the same mounts as last season, but we can't find official confirmation. Could somebody please post dimensions, or instructions for the IR Beacon mounts? We actually destroyed ours from last season. We are using the NEW IR beacons as well.

Thanks!
Hortonville Robotics

GDC Ripple Effect

10-14-2014, 12:45 PM

Kickstand Setup Changes?

Quote:

*Originally Posted by **FTC7445***

We have noticed that the kickstand can become locked into the cutout in the base and will not Release by driving into it. In fact, in several cases the robot has spun around facing the center goal assembly and drove up the kickstand and flipped over. On page 13 of the "Field Assembly and Setup Guide", it states (including typo) in step 4 that, "Kickstands are positioned to hold up ball tray with the bottom of the pipe sitting (type, missing language) the base cutouts." When the kickstand is centered in the base cutout it is difficult and sometimes impossible to dislodge even in Teleop mode. It seems to me that the intent of this game element especially during Autonomous mode is to be able to navigate to the kickstand and bump it out of the base and not to have to lift the kickstand out of the base once there. Could the setup instructions allow for the kickstand to be positioned on the outer edge of the base cutout or include a plate under the base to keep the kickstand from sinking into the foam floor. This, or a similar modification/clarification, would allow for a consistent "Release" of the kickstand across venues, during Autonomous mode and quicker release during Teleop.

A: There will be no modification of the setup for the Kickstand. The lower end of the Kickstand should be placed within the circular cutout in the Center Field Structure baseplate.

FTC Butterfly Effect

10-14-2014, 01:37 PM

ball caster

Quote:

*Originally Posted by **FTC5559***

I've notice our the bearing ball casters on the rolling goal are starting to get rusty, making it difficult to roll the goals around.

Will new bearing ball casters be used for each event?

Please see the following recommendation from AndyMark for ball casters that become rusty, as ball caters will not be replaced from event to event:

1. Remove the plastic cap holding in the steel ball by using a flat head screwdriver. Place the screwdriver in the seam between the cap and the plastic base.
2. Pry the cap away from the base until it comes loose and is removed from the base.
3. Remove the steel ball from the socket.
4. Put a small bit of light oil, such as mineral oil, on a rag.
5. Wipe the oily rag over the steel ball, applying pressure to the rusty area.
6. Rust or marks from rust may not be totally removed, but the ball should be smooth when finished.
7. Use a second rag, one that is dry, to wipe the oil from the ball
8. Place ball back into the socket
9. Reattach plastic cap

GDC Domino Effect

10-23-2014, 08:46 PM

Center Pivot Plate

Quote:

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*Originally Posted by **FTC3258***

In a reply to an early post on game play there was the following statement:
"The Center Structure is bolted to a plate located beneath the tile floor."
There was another reference to the otherwise unused holes in the bottom of the center structure as being access holes for mounting the center structure.

We have tried to do our due diligence and research this mounting plate but have been unable to find any other reference to it on the AndyMark instructions or other documentation. Maybe we can't read.
Can you give some more specific information about this center mounting plate. How is it incorporated into the floor system? What is it made of? How tightly is the center structure bolted down to the plate so to keep it from rotating. Overall dimensions of the plate and what it is made out of?

Thank you for pointing us in the direction of this information.

A: References to the center pivot plate and isntructions for assembly can be found on pages 5 and 13 of the **Field Assembly and Setup Guide**.

FTC Cause and Effect

10-24-2014, 03:44 PM

Recording the Judging Session

Quote:

---

*Originally Posted by **FTC5875***

Are teams allowed to video their judging session?

Thanks for the great question!

A student member of the team may record the Judging session only if:

The team intent is to use the recording for its value as a learning opportunity
The recording process is unobtrusive and is not disruptive
The event organizer allows this at their event

FTC Butterfly Effect

10-24-2014, 04:54 PM

Center Goal

Quote:

*Originally Posted by **FTC0037***

We are assembling our field, and at one point in the directions it calls for the use of a standard stapler to staple one piece of plastic to another. We are discovering that the plastic involved is too thick and heavy for a stapler to penetrate -- even a heavy-duty stapler. Is drilling a hole and using a rivet an acceptable alternative?

Drilling a hole and using a rivet is an acceptable alternative, however a washer must be used to secure the rivet in place.

GDC Domino Effect

10-27-2014, 04:53 PM

Center Goal Rotation

Quote:

*Originally Posted by **FTC7503***

How far in each direction do they turn the center goal? Is it a whole 180? or just 90?

A: The total rotational movement between locations 1 and 3 is 90 degrees.

FTC Cause and Effect

10-27-2014, 05:14 PM

Engineering Notebook - Notebook Style

Quote:

*Originally Posted by **FTC7673***

Hi,
We want to double check this because it's a change, and we don't want to have our notebook wrong.
1. 4.0 Engineering Notebook - Section 4.3 Under Handwritten: it says, "or you may use the binder supplied by Rockwell Collins delivered to you in your Registration and Welcome Kit".
So that means we can use the Rockwell Collins 3-ring binder and use loose leaf graph paper pages and the notebook will be a format equally acceptable to judges as bound handwritten notebooks or electronic printout notebooks(as long

as we follow the Engineering Notebook entries rules (page numbers, no blank spaces, entries initialed and dated, etc.). Are we reading this correctly?
Thank you so much for your help.
Kyle Dragon FTC7673

Hi Kyle,

Yes, a three ring binder with loose leaf paper is an acceptable format for the Engineering Notebook, provided all the other guidelines are followed.

Thanks for the great question!

FTC Cause and Effect

11-04-2014, 12:54 PM

League Judging

Quote:

---

*Originally Posted by **FTC1000***

Hi,

Can you explain how Judging works at League events, please?

Thank you!

League Meet judging happens in two ways:

At the Event: Pairs of Team Interviewers will visit each team at their pit area. The Judges will ask you about your team, your robot, your community service, etc. They will send what they learn to the League Championship Judge Advisor, who will add it to the body of information that the League Championship Judges have gathered about your team.

Before the League Championship: Teams are required to submit a 2 to 3 minute Video Judging Presentation. Your local event organizer will provide you with deadlines for your video and information about where to submit your video. A group of Video Judges will review your submission, and forward their feedback to the Judge Advisor for the League Championship, who will add it to the body of information that the League Championship Judges have gathered about your team. It's important to note that the content of this video is more important than the quality of the video, but, the Judges should be able to see and hear you well enough to learn something about your team.

FTC Butterfly Effect

11-04-2014, 07:12 PM

IR Beacon Mode

Quote:

---

*Originally Posted by **FTC8045***

The Field setup guide has vague language implying that it might be ok to run the New beacons in 360 mode instead of 180. Which mode are the new style

beacons to be set at for official events?

I thought it was mentioned, but can't seem to find it now, is the holder for the new beacon the same as for last year?

The IR Beacon should be set to 180 mode and not 360 mode. Please see the most updated version of the Field Setup Guide at www.usfirst.org/ftc

FTC Butterfly Effect

11-04-2014, 07:23 PM

Quote:

Originally Posted by ***FTC6981***

We have been looking in all of the Field Assembly instructions, drawings, etc. and we can't find ANYWHERE the details on mounting the IR beacons for this year's challenge. They look like the same mounts as last season, but we can't find official confirmation. Could somebody please post dimensions, or instructions for the IR Beacon mounts? We actually destroyed ours from last season. We are using the NEW IR beacons as well.

Thanks!
Hortonville Robotics

An updated version of the Field Assembly and Setup Guide has been uploaded to www.usfirst.org/ftc. The updates to the guide include build instructions for the IR beacon mounts for both types of IR beacon.

FTC Butterfly Effect

11-10-2014, 12:02 PM

Quote:

Originally Posted by ***FTC7655***

Video on the FTC Game page shows white tape on the gray soft tiles. Page 18 of the Field Assembly and Setup Guide Rev 1.4 does not indicate white tape should be applied to the gray soft tiles. Is the white tape part of the official FTC playing field and if Yes what are the tape dimensions/locations?

Please confirm that for the Center Field Structure as shown on Page 19 of the Field and Setup Guide Rev 1.4 above the number 1 within a circle the blue and red shown are the Red and Blue Diverter Pipes and not tape applied to base of the Floor Plate of the Center Field Structure.

Relative to the IR Beacon
-IR beacon (FTCBCN-Oldstyle) as shown on Video (3:58) on the FTC Game page does not match orientation or mount as shown on Page 15 of the Field and Setup Guide Rev 1.4. What is the correct orientation and mount for FTCBCN IR beacon relative to the Center Field Structure? Where can I find the instructions/dimensions for the mount the FTCBCN attaches to?
- Where can I find the instructions/dimensions for the HBK2100 IR Beacon mount?

- Instruction/Picture on Page 13 of the Field and Setup Guide Rev 1.4 states to use a 10-32 X 1.000 to hang IR beacon on. To hold the bolt perpendicular to the side I have the bolt through the side panel with a 10-32 nut on each side of the side panel. Is this the correct way to attach the bolt the IR beacon hangs on to the side panel? In this arrangement when I put the HBK2100 on the bolt (HBK2100 wood mount from last years FTC Challenge) the IR beacon sits on the bolt head due to thickness of the mount not as shown on inset picture on Page 20 of the Field and Setup Guide Rev 1.4 and thus is easily knocked off if a robot hits the Center Field Structure. Should the HBK2100 mount sit on the bolt head? Is a longer bolt needed? Is the wood mount for the HBK2100 beacon different from last years FTC Challenge?

Thank you

Center Structure Locations: Teams must follow the Field Assembly and Setup Guide for Cascade Effect official setup guidelines. The video was filmed prior to the official release of this guide.
IR Beacons: Please see the updated Field Assembly and Setup Guide for updated instructions on IR beacons and beacon mounts.
The bolt should be assembled as shown in the assembly guide, the beacon hangs on the threaded portion of the bolt, not on the head

GDC Ripple Effect

11-11-2014, 12:17 PM

Proper Center Goal Rotation Positions

Quote:

---

*Originally Posted by **FTC7953***

Page 19 of the Field Setup Guide shows center structure rotation #2 with the long edge of the center structure base being parallel with the side of the field perimeter, implying that it is not a 45 degree rotation from rotations #1 and #3. However, in the newly released Version 1.5 of the Setup Guide, the final page describes the #2 sticker as being a 45 degree rotation, introducing some confusion and uncertainty about the #2 rotation.

Can you clarify? Does the #2 rotation position of the center structure have the long edge of the structure base parallel to the field perimeter as shown on page 19 of the Field Setup Guide (and thus not 45 degrees from positions #1 and #3), or has the #2 position changed to be 45 degrees from positions #1 and #3?

A: The template that is now part of the Field Assembly and Setup Guide is the correct reference. The #1, #2 AND #3 rotation positions are at 45 degree intervals from each other. The text description on page 19 does not currently match the pictures on page 19 and both will be updated in the next release of the Field Assembly and Setup Guide.

FTC Butterfly Effect

12-22-2014, 01:27 PM

Quote:

---

*Originally Posted by **FTC8538***

We believe that the latest revision of the Field Setup Manual introduces a discrepancy. Page 19 implies that the correct setup for position 2 is when the long edges of the center field base are parallel to the tile borders and to the long dimension of the ramps. This puts the IR beacon pointing at the 30 cm rolling goal, or about a 60-degree counter-clockwise rotation from position 1.

The new schematic for "LR15 - Number 2 Sticker Placement" shows a rotation angle that is 45 degrees from position 1. With that rotation, the long edge of the center field base will not be parallel to the tile borders or to the long dimension of the ramps, and the IR beacon will point at the 90 cm rolling goal instead.

Could you please clarify which rotation is correct?

Please see the most current version of the Field Assembly and Setup Guide, as this question has been addressed in version 1.6 of the manual.

GDC Ripple Effect

01-07-2015, 12:02 PM

Rolling Goal Starting Positions

Quote:

---

*Originally Posted by **FTC4200***

Hello,

We have a question regarding the exact position of the rolling goals before the start of autonomous. We cannot find any published information regarding specific dimensions of the location of the goals. We are looking for how far off the wall each goal is in order to accurately program autonomous. Can anybody help?

Thank you,
X-Squaed Factor
Team 4200

A: The rolling goals start in the approximate center of the tiles as indicated in the Field Assembly and Setup Guide

---

FTC Cause and Effect

01-12-2015, 05:08 PM

Multiple Competitions Simultaneously

Quote:

---

*Originally Posted by **FTC4969***

Is there any rule that restricts a single FTC team to simultaneously participate in two separate competitions (say, a qualifying event in one state and a championship event in another) at the exact same time if their team has enough members? We have two robots that we could theoretically use at two separate events at the same time. I see nothing barring this, and it would give some of

our team member valuable experience.

Rule <RG01> prohibits this. The rule states that only one robot will be allowed to compete per registered *FIRST* Tech Challenge team.

FTC Cause and Effect

01-19-2015, 05:37 PM

Quote:

Originally Posted by ***FTC8390***

Hi,

Are the Bill Of Materials requirements for this season the same as they were last season? I ask because I noticed that the paragraph describing the Bill Of Materials in last season's Game Manual in rule <RG02> has been removed in this season's manual, and there is no BOM template provided on the FTC game page like there was last season.

Thanks in advance for your answer.

A Bill of Materials is required if you are using components outside of the Tetrix or Matrix kit of parts.

GDC Ripple Effect

01-26-2015, 01:34 PM

Picking Up Game Controllers

Quote:

Originally Posted by ***FTC5414***

We are looking for clarification on when the controllers should be picked up for the driver controlled portion of the match.

We have encountered different rules at various competitions that we have attended. At some events the refs will not allow the drivers to pick up their controllers until the buzzer sounds for the begining of the driver controlled period. At other events, including super regionals and the world championship last year, the ref would give all the drivers a chance to pick up their controllers and then he would signal for the driver controlled period to begin.

Which way is correct?

Thanks,
team 5414

A: Different events have different rhythms to their matches. You should always follow the direction of the field/tournament officials at your event. If you are concerned about the timing at a particular

event, ask the question during the captains meeting prior to the start of competition.

FTC Cause and Effect

02-11-2015, 09:44 PM

Electronic Engineering Notebook

Quote:

> *Originally Posted by **FTC4290***
>
> *Electronic notebooks are allowed per Game Manual Pt. 1 Section 5.3: "Electronic/Online: Teams may choose to use electronic or online programs to create their Engineering Notebook. For the purposes of judging, teams must print out their Engineering Notebooks and place them in a binder, no larger than 1.5". All pages must be numbered and in order. Only one copy is required per team."*
>
> *Would printing out the "cards" from an industry electronic documentation and project management tool meet the requirements for a notebook?*
>
> *Thank you.*

Thanks for your question!

Printed copies of electronic Engineering Notebooks are permitted, including those that are created with a project management or collaboration tool. Your team should be sure to include all of the the required components that are outlined in the Game Manual.

FTC Cause and Effect

02-18-2015, 12:24 PM

Advancement Critera and Awards

Quote:

> *Originally Posted by **FTC5873***
>
> *In the Game Manual Part I, section 8.2 "FTC Award Eligibility" says in part,*
> *...*
> *To ensure fairness to all teams and to provide equal opportunity for all teams to win an award at an FTC 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 Qualifying Tournament, League Championships, and 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 awards or advancing to the next tournament level.*
> *...*
> *Is it correct to say that teams that have participated in three Qualifying Tournaments are ineligible to receive any judged award at subsequent Qualifying Tournaments?*
>
> *Is it correct to say that a team which is participating in its fourth Qualifying Tournament will not earn advancement to that Region's Championship from this fourth Qualifying Tournament, regardless of their team's on-field performance or recognition by the judges?*

Does either answer change if the Qualifying Tournaments are in different Regions?

Thanks for the great questions!

The limits apply at every level and are based on the event the team would advance to. A team could conceivably compete at 3 Qualifying Tournaments in New Jersey and still be eligible for advancement or award consideration at a Qualifying Tournament in Pennsylvania. Further, a team could win the Inspire Award at Qualifying Tournament or League Championship in New Jersey, and still be eligible for consideration of that award at a League Championship or Qualifying Tournament in Pennsylvania.

At a State or Regional Championship level, the same guidelines apply. A team could be eligible for awards and/or advancement at 3 State or Regional Championships within an area covered by the East Super-Regional, and would remain eligible for awards and/or advancement at a State or Regional Championship within an area covered by the North, South or West Super-Regional. A team who has already secured a spot at a Super Regional must declare which Super Regional they plan to attend - a team may not advance to multiple Super Regional events.

GDC Snowball Effect

03-09-2015, 05:54 PM

Visible LED lights on team spirit items (hats, clothes, necklaces)

Quote:

---

*Originally Posted by **FTC8629***

Our team would like to make sure we are allowed to have LED lights (visible, NOT IR) on our spirit wear that our team would wear during the tournament, judging and drivers/coach would have them on at the field also. Examples would be on hats, necklaces, clothes, etc... They have no connection to the robot or game in anyway...purely for decoration and fun. :) They could also be turned off if deemed a distraction by the referees.

Thanks!

A: These decorations are allowed. However, like you said, if the Referee or other lead field personnel deems them to be a distraction, you will be directed to turn them off.

GDC Snowball Effect

03-23-2015, 03:17 PM

Driver/Coach Role-Swapping

Quote:

---

*Originally Posted by **FTC2827***

Hi,

we were wondering: if, during a match, a driver and a coach put their controllers on the ground and swapped badges/lanyards, couuld they swap roles?

Jack

A: No. Once a drive team has reported to the field, they must remain in their roles. Per <T2>, roles can be swapped in between matches, but not during a match.

All times are GMT -4. The time now is 03:17 PM.

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