Section 9

Robot Inspection Guidelines

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Section 9 – Robot Inspection

9.1 – Overview

This section describes Robot Inspection for the *FIRST* Tech Challenge 2008-2009 competition, *FIRST* Face Off. It also lists the inspection definitions and inspection rules.

9.2 – Description

The *FTC robot* will be required to pass a hardware and a software inspection before being cleared to compete. This inspection will ensure that all *FTC robot* rules and regulations are met. Initial inspections will take place during team registration/practice time. A copy of the official FTC "Robot Inspection Sheet" in located in this section. The "Robot Inspection Sheet" should be used as a guide to pre-inspect the robot.

9.3 – Definitions

FIRST Tech Challenge (FTC) robot – An operator controlled and/or autonomous programmed vehicle designed and built by a *FIRST* Tech Challenge team to perform specific tasks while competing in the FTC *FIRST* Face Off. The FTC robot can be constructed using only official FTC Competition kit components as defined in Section 4.2 <R5>a., and additional components approved for the FTC *FIRST* Face Off competition as defined in Section 4.2 <R5>b. No other parts will be allowed on the vehicle. Prior to participating in the competition, each *FTC robot* will be required to pass an inspection.

FTC Robot Sizing Box – A box used during *FTC robot* inspection that has interior dimensions 18 inches (45.72cm) wide by 18 inches (45.72cm) long by 18 inches (45.72cm) high. The *FTC robot* must fit within the box without exerting ANY force on the box walls or ceiling. (i.e. the robot cannot be held inside the constraints by the box itself) to pass inspection.

9.4 – Inspection Rules

<I01> FTC teams must submit their *FTC robot* for inspection prior to participating in practice rounds. At the discretion of the FTC Lead Inspector, the *FTC robot* may be allowed to participate in practice rounds before passing inspection.

<I02> The team's *FTC robot* must pass inspection before being allowed to compete in Qualification Rounds. Noncompliance with any *FTC robot* design, construction rule, or programming requirements may result in disqualification of the robot at a FTC event.

<I03> The FTC Official Team Number must be displayed on the *FTC robot* prior to inspection as defined in Section 4.2 <R10> .

<I04> *FTC robot* construction is constrained by the number of Official FTC Competition Kit components a team may use as defined in Section 4.2<R5> a. There is not a specified *FTC robot* weight constraint.

<I05> The maximum size of the *FTC robot* for starting a Qualifying or Elimination Match is 18 inches (45.72cm) wide by 18 inches (45.72cm) long by 18 inches (45.72cm) high. The *FTC robot* must fit within a *FTC Robot Sizing Box* that has the following inside surface dimensions: A flat, level base 18 inches (45.72cm) x 18 inches (45.72cm), and a height of 18 inches (45.72cm). The *FTC robot* must be self-supporting while in the *FTC Robot Sizing Box*.

<I06> The starting configuration of the *FTC robot* at the beginning of a match must be the same as a *FTC robot* configuration inspected for compliance, and within the maximum allowed size.

<I07> *FTC robot* designs having more than one possible starting configuration, the largest possible configuration must be used during size inspection.

<I08> When an FTC team makes a modification to improve performance or reliability of their *FTC robot*, the team may request a re-inspection of their robot by an FTC Inspector.

<I09> FTC Inspectors evaluate *FTC robot*s to insure each *FTC robot* has been designed to operate and function safely. The *FTC robot* must be designed for safe operation and handling. Specific safety rules and limitations apply to the design and construction of an *FTC robot* as defined in Section 2.4.3 <S01>.

<I10> An *FTC robot* is deemed successfully inspected when all items listed on the official FTC "Robot Inspection Sheet" have been recorded as passed by an FTC Inspector.

Competition Inspection Checklist

Team Number: _____

Time of Inspection: _____ *Pass/Fail:* _____

Inspection Type: ____ *Initial* ____ *Mandated* ____*Random*

	Size Inspection	
	Robot fits within the Sizing Box (18" x 18" x 18") without exerting force on box sides or top	R4
	Overall Inspection	
	Team Number is visible from 2 sides, is written in 3" tall, 3/4" stroke on a contrasting background	R10
	Robot does NOT contain any components which will be intentionally detached on the playing field	R3
	Robot does NOT contain any components that could damage the playing field or other robots	R3
	Robot does NOT contain any sharp edges or corners	R3
	Robot poses NO obvious unnecessary risk of entanglement	R3
	NXT battery can be easily removed without disassembly	R11
	USB port is easily accessible for rapid registration	R11
	Robot Flag Holder is present and adequately holds the flag during normal robot operation	R12
	ALL Decorating Components on the Robot NOT meeting FTC Inspection Criteria are NON FUNCTIONAL	R5
	Parts Inspection - Official Tetrix Components	
	ALL Robot components are (or IDENTICAL to) OFFICIAL Tetrix Products or Vex Hardware	R5
	FTC Robot does not utilize any of the Packaging materials, or materials other than those listed	R5
	Robot has only (1) NXT controller	R5
	Robot uses maximum of three (3) NXT Motors	R5
	Robot uses maximum of four (4) 12V DC drive motors	R5
	Robot uses a maximum of six (6) servos (Hi Tec, HS-475HB)	R5
	Robot uses one (1) official NXT rechargeable battery pack or six (6) AA batteries (not both)	R5
	Robot uses one (1) official FTC 12 V DC NiMH battery	R5
	Additional Parts Inspection	
	Robot contains no more than 12"x24"x1/10" thick polycarbonate	R5
	Robot contains no more than 12"x24"x1/16" thick aluminum	R5
	Robot contains no more than 12"x15" of Non-Slip Pad	R5
	Robot contains only the Lego parts included in the FTC Competition Kit	R5
	Robot contains Vex structural metal. NO Vex electrical components or linear slide pack	R5
	Construction Inspection	
	NO electrical components have been modified from their original state	R9
	NO method of attachment NOT provided by the Tetrix or Vex Design System	R9
	If thread locker is used, it is used for securing screws & fasteners ONLY	R9
	Software Functionality Check	
	Robot has passed Software Inspection	

Reason for Failure (if any):

I hereby state that all of the above is true, and to the best of my knowledge all rules and regulations of the 2008-2009 FIRST Tech Challenge have been abided by.

_____ _____

Inspector *Team Student Representative*