

Appendix B – Robot Inspection Checklist

Team Number: _____

Robot Inspection Status (circle): **PASS / FAIL**

✓	Robot Size Inspection	Rule #
	Robot is presented at inspection with all mechanisms (including all components of each mechanism), configurations, and decorations that will be used on the Robot during the competition.	<I7>
	Separately test the Robot in all of its unique starting (pre-match setup) configurations. The Robot fits within the Sizing Box without exerting undue force on the Sizing Box sides and top.	<I7>a <RG02>
	Robot Motion Warning Label is attached if servo motors move during the Robot initialization.	<RG02>b
✓	General Robot Rules	Rule #
	Robot does not contain any components that could damage the Playing Field or other Robots.	<RG01>a&b
	Robot does not contain materials that are hazardous.	<RG01>c
	Robot poses no obvious unnecessary risk of entanglement.	<RG01>d
	Robot does not contain sharp edges or corners.	<RG01>e
	Robot does not contain animal-based, liquid, or gel materials.	<RG01>f&g
	Robot does not contain materials that would cause a delay of game if released.	<RG01>h
	Robot does not contain elements that electrically ground the Robot frame to the Playing Field.	<RG01>i
	Robot does not contain closed gas devices.	<RG01>j
	Robot does not contain hydraulic devices.	<RG01>k
	Alliance Flag Holder is present and adequately holds the Flag during normal Robot operation.	<RG04>
	Team number is visible from at least 2 sides (180 deg. apart). Numerals must be at least 2.5 inches (6.35 cm high), at least in 0.5 inches (1.27 cm) stroke width.	<RG05>
	Energy used by the Robot, (i.e., stored at the start of a Match), shall come only from approved sources.	<RG06>
	Robot is not capable of launching its own components.	<RG07>
✓	Robot Mechanical Parts and Materials Rules	Rule #
	All components on the Robot are from allowable raw materials and Commercial Off The Shelf products.	<RM01> <RM02>
✓	Robot Electrical Parts and Materials Rules	Rule #
	The Main Power Switch is installed properly, labeled, readily accessible, and visible to competition personnel. The TETRIX, REV, and MATRIX switches are the only allowed Main Power Switch.	<RE01>
	All batteries are securely attached to the Robot in a location where they will not make direct contact with other Robots or the Playing Field.	<RE02>
	Exactly one (1) Robot Main Battery Pack of an approved type is on the Robot and it is properly connected to the Main Power Switch and either the Core Power Distribution Module or REV Expansion Hub.	<RE03> <RE05>a(i)
	Where present, fuses must not be replaced with fuses of higher rating than originally installed or according to manufacturer's specifications.	<RE04>
	Allowed electronic devices are powered by power ports on the Core Power Distribution Module or REV Expansion Hub except as noted in <RE05>a, <RE12>, and <RE13>.	<RE05>a
	The Core Power Distribution Module or REV Expansion Hub is powered by the Robot main battery. If a hybrid of Modern Robotics modules is used with the REV Expansion Hub, the REV Expansion Hub must be powered from a power port on the Core Power Distribution Module.	<RE05>a(i)
	Allowed sensors may only receive power from the Core Device Interface Module, Core Legacy Module, or REV Expansion Hub,	<RE05>a(ii)
	Light sources (including LEDs) are not focused or directed in any way and they are powered by allowed methods.	<RE05>a(iii) <RE12>

	Video recording devices, if used, are powered by an internal battery and their wireless communication capability is turned off.	<RE05>a(iv) <RE13>
	The Robot Controller is powered by its internal battery or by the built-in charging feature of the REV Expansion Hub.	<RE05>b
	If present, a second REV Expansion Hub must be powered by the XT30 power port on the primary REV Expansion Hub.	<RE05>c
	Exactly one (1) Core Power Distribution Module is mounted on the Robot if any Modern Robotics Core Control Modules or Legacy MATRIX DC Motor/Servo Controllers are used.	<RE07>a
	No more than two (2) REV Expansion Hubs are mounted on the Robot.	<RE07>f
	No more than two (2) Core Device Interface Modules are mounted on the Robot.	<RE07>b
	No more than two (2) Core Legacy Modules are mounted on the Robot.	<RE07>c
	No more than two (2) Legacy MATRIX DC Motor/Servo Controllers (unified module) are allowed.	<RE07>h
	Motor and Servo Controllers are allowed in only one of the following configurations: i) REV Expansion Hub, Modern Robotics, and Legacy HiTechnic controllers in any combination OR; ii) Legacy MATRIX motor and servo controllers.	<RE08>
	Robot contains no more than eight (8) DC motors of the allowed models and they are compatible with the attached REV Expansion Hub or Motor Controller and the Robot Main Battery.	<RE09>
	Robot contains no more than twelve (12) servos. They must be compatible with the attached REV Expansion Hub, REV Servo Power Module, or servo controller and not exceed the manufacturer specifications for the controller.	<RE10>
	Robot contains only allowed sensors and they are connected only to the REV Expansion Hub, Core Device Interface Module, or Core Legacy Module.	<RE11>
	Power and motor control wires must use consistent color coding with different colors used for the Positive (red, white, brown, or black with a stripe) and Negative/Common (black or blue) wires.	<RE14>g
	Power, motor control, servo and encoder wires are the correct size.	<RE14>j
	Robot does not contain elements that are electrically grounded to the Robot frame.	<RE14>i
	Approved electrical and electronic devices may be modified to make them more usable; they may not be modified internally or in any way that affects their safety.	<RE15>
✓	Wheel/Tread Playing Field Damage Test Performed at the Discretion of the Inspector	Rule #
	Robot did not damage the Playing Field tile. [This is an optional test that is performed only when an Inspector believes that the drivetrain tread may damage a Playing Field tile.]	<I8>

General Comments or Reason(s) for Failure (if any):

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

Robot Inspector

Team Student Representative

Appendix C – Field Inspection Checklist

Team Number: _____

Field Inspection Status (circle): **PASS / FAIL**

✓		Drive Team Members Present	Rule #
		Coach	<T8>
		Driver 1 (required); Driver 2 (optional)	<T8>
✓		Driver Station and Robot Controller Hardware Rules	Rule #
		Driver Station consists only of one Android device (Circle): ZTE Speed, Motorola Moto G 2 nd Generation, Motorola Moto G 3 rd Generation, Motorola Moto G4 Play, Google Nexus 5, or Samsung Galaxy S5.	<RE06> <RE16>a
		Robot Controller consists only of one Android device (Circle): ZTE Speed, Motorola Moto G 2 nd Generation, Motorola Moto G 3 rd Generation, Motorola Moto G4 Play, Google Nexus 5, or Samsung Galaxy S5. The Android device's USB interface only connects to the Core Power Distribution Module or the REV Expansion Hub.	<RE06>
		Driver Station Android device USB interface is only connected to either a Mini USB to OTG cable or combination of cables connected to one non-powered USB Hub, or one gamepad.	<RE16>a&b
		No more than one (1) optional Commercial Off The Shelf USB external battery connected to the USB hub is allowed.	<RE06>d <RE16>c
		The Driver Station consists of no more than two of the allowed gamepads (Logitech F310 or Xbox 360 in any combination).	<RE16>a&d
		The touch display screen of the Driver Station must be accessible and visible to field personnel.	<RE16>e
DS	RC	Driver Station (DS) and Robot Controller (RC) Software Rules	Rule #
		Android operating system satisfies the requirements: ZTE Speed – version 4.4 or higher, Motorola Moto G4 Play 6.0.1 or higher, all other allowed Android devices – version 6.0 or higher.	<RS03>
		The Android device is set to airplane mode, and Bluetooth is turned off.	<RS08>
		Robot is not connected to any local networks.	
		Android device is named with the official Team number followed by –DS or –RC as appropriate.	<RS01>
		Android Wi-Fi Direct device name does not include a newline character in the name.	
		All remembered Wi-Fi Direct Groups and Wi-Fi connections have been removed.	
	NA	Driver Station uses the official FTC Driver Station app to control the Robot.	<RS07>
		DS and RC apps are version 3.3 or higher and the DS and RC apps have the same version numbers.	<RS02> <RS07>
NA		The FTC controller app is the default application, the application launches, and no other messages pop up.	<RS06>
NA		The FTC Wi-Fi Direct Channel Changing App is installed on the Robot Controller (for ZTE Speed devices only).	<RS09>
NA		Robot Controller is set to the correct Wi-Fi Direct channel (ZTE Speed, Motorola Moto G 2 nd Generation, Motorola Moto G 3 rd Generation, and Motorola Moto G4 Play only).	<T6>
✓		Robot Operation Verified at the Playing Field	Rule #
		Robot Controller connects with the Driver Station.	
		Robot is motionless prior to the start of the Autonomous and Driver-Controlled periods.	<RS04>
		Robot switches between Autonomous and Driver-Controlled operation correctly.	<RS05>
		Robot starts and stops when commanded by the Driver Station.	
		The Stop Button, when pressed on the Driver Station, functions and stops the Robot.	
		The Team understands how to disable their Robot, if instructed to do so by a Referee.	
✓		Queuing Process Information Provided at the Playing Field	Rule #
		Team understands that software changes are not allowed in the Queue Area.	

	Team understands that the Match schedule is only an estimate. Matches may start prior to or after the scheduled time. It is the Team's responsibility to monitor schedule changes and show up when required.	
	Team knows where to receive alliance flags and where to return them after the Match.	

General Comments or Reason(s) for Failure (if any):

I hereby state that all the above is true, and to the best of my knowledge all software, Driver Station and Robot Controller rules of the FIRST® Tech Challenge have been abided by.

Field Inspector

Team Student Representative