

2006 FIRST Robotics Competition - Inspection Check List

Team No. _____

Inspector: _____

Signature

time/date

printed name and initials

**signature above indicates that the robot has passed inspection*

GENERAL – (testing at the Inspection Station)				
ITEM	PASS	DESCRIPTION	RULE(S)	COMMENTS
1		Size: Must fit freely in sizing box (28" x 38" x 60"), bumpers removed, robot must be in its largest starting config, no bicycle flag, decorations present	R05 to R07, R101	
2		Weight: Must be 120.0 lbs or less	R09, R101	
3		Bumper Weight: If used, bumpers must be 15.0 lbs or less, no heavy spots	R10, R35	
4		Extended Size and Shooter Mechanisms: The robot must fit within a virtual 60" cube at all times. Shooter mechanisms, if incorporated in robot design, cannot extend beyond robot base.	R08, S02, S03	
5		Bicycle Flag: Must have an appropriate holder with correct installed height	R13	
6		Bill of Material: Attach BOM to this checklist. No exotic items. Less than \$3500 total cost with no individual component over \$400 and no individual COTS electrical component over \$200.	R24, R41, R42, R46-R50	
7		Foreign Teams: If the team is foreign and has successfully petitioned FIRST for a component exemption, attach confirming letter to this checklist	R23	

GENERAL – (testing at the team's pit)				
ITEM	PASS	DESCRIPTION	RULE(S)	COMMENTS
8		Safety and Wedges: No sharp protrusions or edges, no entanglement risks, no wedge-shaped robot bases that may potentially affect other robots	R3, R4, R30	
9		Energy Sources: No illegal energy sources, battery must be secured	R2	
10		Logos: School and sponsor logo and/or name must be clearly visible	R11	
11		Team Number: Must be clearly displayed on all 4 sides	R12	
12		Alliance Color LED: Must be present and clearly visible from front	R14	
13		Interference Mechanisms: Robot cannot include devices or decorations that may interfere with the vision systems of other robots	R31	
14		Decorations: Cannot affect match, cannot broadcast using wireless comm w/o clearance from FIRST Engineering, cannot employ 900MHz cameras	R102-R103	

MECHANICAL SYSTEMS – (testing at the team's pit)				
ITEM	PASS	DESCRIPTION	RULE(S)	COMMENTS
15		Acceptable Mechanical Parts: refer to details in reference material	R21, R46	
16		Specifically Prohibited Mechanical Parts: refer to details in reference material, confirm that the robot does not include any of the listed parts, carefully examine the robot for mechanisms that can harm people, other robots or the playing field (including balls)	R26, R32, R33, R34, R40, R44	
17		Chemical Modifications: No KOP mods except – heat-treating, anodizing or plating metal and rope may have ends singed to prevent unraveling	R38	
18		Motor Modifications: refer to details in reference material, motors can generally be modified in any way except internal re-wiring	R36	
19		Bumpers (if used): refer to details in reference material	R35	
20		If the robot uses a container to hold balls prior to autonomous mode, confirm that balls placed in the hopper can be easily counted by field officials (including balls that are placed with black surfaces "outward")	G13	

ELECTRICAL SYSTEMS – (testing at the team’s pit)				
ITEM	PASS	DESCRIPTION	RULE(S)	COMMENTS
21		Acceptable Electrical Parts: refer to details in reference material	R21, R25, R43, R46, R51	
22		Specifically Prohibited Electrical Parts: refer to details in reference material, confirm that the robot does not include any of the listed components	R27, R33, R40, R44, R45, R60, R88	
23		Insulated 12V battery terminals with SLU-35 or similar crimp-on lugs. Confirm that the battery is securely fastened within the robot.	R54	
24		Battery connected to 120A main breaker via Anderson Quick-Disconnect connector.	R54, R64, R80	
25		Accessibility: 120A main circuit breaker, distribution circuit breakers and Robot Controller are all accessible for inspection (including lights on RC)	R54, R63, R64	
26		Wire Size and Color Rules: refer to details in reference material	R54, R80-R85	
27		Either a 20A, 30A or 40A circuit breaker must be used in series with each Victor 884 Speed Controller. Only 1 motor may be driven by each Victor.	R56, R86, R88, R92	
28		20A circuit breakers must be used to provide power to all Spike Relay Modules, the Air Compressor (if used), Custom Circuits, Additional Electronics and the Robot Controller. Multiple loads may be attached to each Spike Relay Module but only one motor per module is allowed. No other loads may be attached to the Circuit Breakers that provide power to the Robot Controller and Air Compressor.	R56, R88-R91, R93	
29		CIM and Fisher Price motors can only be connected to a Victor 884 Speed Controller (they cannot be connected to Spike Relay Modules)	R80, R87	
30		Motors (other than Hitec servos) must be wired to Spike Relay Modules or Victor 884 Speed Controllers and solenoid pneumatic valves and air compressor (if used) must be wired to Spike Relay Modules. Motors, valves and compressor cannot be wired directly to breakers or other devices for supplying power.	R80, R90	
31		The coast/brake headers on Victor 884 Speed Controllers can only be attached to either selection jumpers or digital outputs from the RC	R70	
32		Sensor Outputs: Refer to details in reference material. Sensor outputs can only be wired to Robot Controller ports or Custom Circuits.	R57, R59	
33		Custom Circuits: Custom Circuits may only connect to the Robot Controller ports, sensors (KOP or COTS) or outputs of circuit breakers, Speed Controllers and Relay Modules. Custom Circuits cannot interfere with other robots, directly affect any output devices (e.g. generate PWM inputs for the Victor 884), be used for wireless communication or connect to the Radio or Tether Ports on the RC.	R58, R59	
34		No 12V power, Victor or Spike Outputs or PWM Outputs can be connected to the analog or digital I/O headers on the RC	R66	
35		No exposed electrical conductors and no electrical contact with robot metal chassis. No chassis parts used to carry electrical currents. Using an ohmmeter, confirm that the resistance between the chassis and each battery terminal is “large” (greater than 100k Ohms).	R55	
36		No modifications to Robot Control System (including OI, RC, Victor, Spike, Modems, Batteries, Chargers, AC adapters or 9-pin cables) except DIP switches on OI, user code for RC, Victors can be calibrated and the fuse on the Spike Relay Module for the air compressor (if used) can be replaced with 20A Snap-Action circuit breaker	R61	
37		7.2V NiCad “backup” battery is connected to the Controller	R51	
38		Decorations may draw power from the 12V battery but must be protected via either 20A or 30A circuit breaker and cannot interfere with other control system components. Decorations may draw power from a separate battery but must not be connected to the rest of the robot’s electronics in any way.	R104	

PNEUMATIC SYSTEMS (if used) – (testing at the team’s pit)				
ITEM	PASS	DESCRIPTION	RULE(S)	COMMENTS
39		Acceptable Pneumatic Parts: refer to details in reference material	R21, R46, R99, R100	
40		Specifically Prohibited Pneumatic Parts: refer to details in reference material, confirm that the robot does not include any of the listed parts	R40,R44	
41		No modifications to the 125PSIG relief valve attached to the compressor.	R96	
42		The manually operated pressure vent valve from the KOP must be present on the compressor output or Clippard tank(s) and be easily accessible.	R95	
43		Must include pressure gauges on the compressor output/Clippard accumulator(s) and all regulator outputs. Must use the Norgren adjustable regulator at compressor output (“post-accumulator(s)”).	R95	
44		Nason Co. pressure switch must be attached to the compressor output or Clippard tank(s) and be wired to the digital I/O port on the RC. The pressure switch CANNOT be used to directly power the compressor.	R97	
45		No disallowed pneumatic component mods. Allowed mods include – cutting tubing, wiring for valves and pressure switch to accommodate interfacing to rest of system, the rear pin of air cylinders can be removed.	R94	
46		No extraneous tubing.	R96	

DRIVER CONSOLE AND POWER-UP – (testing at the team’s pit)				
ITEM	PASS	DESCRIPTION	RULE(S)	COMMENTS
47		OI/Driver Station console must fit on shelf that is 69” wide and 12” deep	R73	
48		Confirm that any device attached to the OI’s Dashboard Port is battery-powered (since there is no AC voltage available at the station)	R74	
49		OI Indicator lights must be visible	R75	
50		OI must be 2006 model from IFI	R76	
51		Anything attached to the OI’s joystick ports must derive power from the port	R78	
52		Connect the OI to the tether port of the RC and power-up the robot. Confirm that the Alliance Color LED blinks at start-up and that the team number is properly displayed on the Operator Interface. Confirm that firmware version number _____ is being used.	R65, R72	
53		Pneumatics Operational Test: If the robot design includes pneumatics, confirm that the pressure in the air storage tanks does not exceed 120PSIG, the “working” pressure does not exceed 60PSIG and confirm that the manually operated vent valve functions as required.	R95, R97, R98	
54		While the robot is running, manually operate the 120A Main Breaker to disable the robot. Confirm that the RC has lost power (lights must go out)	R54, R80	

Team Compliance Statement

We, the Team Mentor and Team Captain, attest by our signing below, that our team’s robot was built after the 2006 Kickoff on January 7, 2006 and in accordance with all of the 2006 FRC rules, including all Fabrication Schedule rules (reference Section 5.3.3). We have conducted our own inspection and determined that our robot satisfies all of the 2006 FRC rules for robot design.

Team Captain: _____

Team Mentor: _____