2004 FIRST Robotics Competition - Inspection Check List

Team No. _____

Pass	Amount	Description	Fail	ROBOT	
	$ (USD)	**Additional materials total cost is $ 3,500 or less with $ 400 per component max (5.3.2-R69 to R78)**		**Ver. 8**	**3/8/04**
	$ (USD)	**Additional electronics total cost is $ 300 or less with $ 100 per component max (5.3.2-R69 to R78)**		**PASS**	
	Size	**Must fit freely in ready-to-run condition, w/o bumpers (30″x 36″x 60″) (5.2.2-R02 to R05 & G11)**		**DATE**	**/ /**
	Weight	**All possible configurations combined with battery, bumpers, & decorations must be 130.0 lbs or less (5.2.3-R06)**		**TIME**	**:**

GENERAL					
ITEM	PASS	DESCRIPTION	RULES	FAIL	COMMENTS
1		Team Name and/or logo and Team No on 4 sides: □ 4" numerals; □ 3/4 " stroke; □ 4 sides (90 deg apart).	5.2.4-R07		
2		Bumpers must be removable, and meet 2" to 8" location and 4" maximum horizontal extension limits	5.2.5-R17		
3		Decorations must be non-functional	5.2.10		
4		No disallowed components	5.2.5-R09,R16 5.3-R61 5.3.1.4-R63 to R65 5.3.2-R66 to R70		
5		No loose wires, mechanisms, etc. that could cause entanglement with other robots	5.2.5-R11		
6		No traction devices that may damage the field or game structures	5.2.5-R13		
7		No sharp items that could harm people, playing field, or game elements	G25		
8		No obvious unsafe stored energy devices	5.2.1-R01		
9		No tape used as a fastener. No Duct Tape.	5.2.5-R14		
10		No hazardous materials per MSDS sheets	5.3.2-R67		
11		No excess lubricants that could contaminate playing surfaces or robots	5.2.5-R15		
12		Document/demonstrate Pull-up Bar grabber tip velocity not greater than 10'/sec.	G08		
13		Demonstrate acceptable robot removal process from Pull-Up Bar			
14		Only allowed motor modifications	5.3.1.4-R62		

PNEUMATICS					
ITEM	PASS	DESCRIPTION	RULES	FAIL	COMMENTS
15		(Pneumatic parts are from 2004 Pneumatic Kit, 2004 Pneumatic Components Order Form, or previous years' kits	5.2.9-R54		
16		No modified pneumatic components or custom pneumatic components **except** for generating vacuum	5.2.9-R53		
17		Pressure switch cannot be wired in series with the pump. It must be wired through the RC Digital Input port.	5.2.9-R54		
18		All air from compressor accumulator tanks (120 psi max) goes through Norgren Regulator (60 psi max) before any valves, etc.	5.2.9-R54		
19		System pressure relief / dump valve is easily accessible.	5.2.9-R54		
20		No more than the 2 Kit-supplied Clippard air accumulators for air storage.	5.2.9		
21		Compressor power-up test. Gauges must verify system 120 psi max for tanks & 60 psi max for system. Regulators installed after Norgren Primary to maintain lower pressure.	5.2.9-R54		

ELECTRICAL & CONTROLS					
ITEM	PASS	DESCRIPTION	RULES	FAIL	COMMENTS
22		Only one Exide ES18-12 or EX18-12 robot battery and 7.2v back-up battery connected to Robot Controller	5.2.6-R18		
23		Insulated 12v battery terminals	5.2.7-R29		
24		Battery connected to 120A main breaker via Anderson Quick-Disconnect connector.	5.2.6-R20		
25		Main circuit breaker is accessible. CIM & Drill motor power goes through Power Distribution Block to Maxi Brkr. Panel Note: Ground Stud is optional.	5.2.7-R21, R28 Pwr. Distributio. Diagram		
26		#6 wire from battery (+ and -) to Anderson Disconnect and to main circuit breaker, junction blocks and circuit breaker panels	5.2.6-R21 5.2.7.1-R44		
27		Proper wire color for power distribution (red/white for positive; black for negative).	5.2.7.1-R43		
28		Only electric motors and number thereof supplied in Kit are on the robot.	5.2.5-R09		
29		Only 1 Drill, CIM, F-P, van door, and Globe motors on one Innovation First speed controller, and not on Spike relays	5.2.7-R33		
30		Only one motor per Victor 884 controllers (except two window motors are OK) **Victor cannot be an 883.**	5.2.5-R09 5.2.7-R34,R35		
31		Only 1 seat or window motor or air compressor per Spike.	5.2.7-R31 5.2.7-R36		
32		1 Spike may power multiple pneumatic valves, fans, LED's, etc	5.6.3		
33		Motors, compressor, and sol. valves wired to relay modules or speed controllers, and not directly to breakers.	5.6.1		
34		Sensor outputs wired to controller analog inputs, digital I/O, TTL serial, Program port, or custom circuit board only. No series connections with motors, etc., **except** current sensor bus connected in series with load being monitored.	5.2.7-R38		
35		30A or 40 A circuit breaker in series with each speed controller: **40A on CIM and Drill, 30A on F-P, van door, and Globe** circuits.	5.2.7-R32		
36		20A circuit breaker on each remaining branch circuit, including window and seat motor loads	5.2.7-R31 5.2.7-R36		
37		#10 wire minimum from breaker panel to speed controllers for CIM, Drill, van door, Globe, and F-P motors.	5.2.7.1-R45		
38		#16 wire minimum to Robot Controller power, solenoid valves, window motors, relay modules, compressor, large muffin fan.	5.2.7.1-R47 5.2.7.1-R49		
39		#24 wire minimum from switches, PWM cables, sensors, potentiometers, small muffin fans, custom circuits, and LED's.	5.2.7.1-R48		
40		No exposed electrical conductors. No wires in electrical contact with robot metal chassis (no chassis parts used as ground)	5.2.6-R22 5.2.7.1-R41		
41		Proper use of electrical connectors and electrical tape.	5.2.5-R14		
42		No IR jamming devices.	5.2.5-R12		
43		Custom circuits may connect to the RC's digital I/O,TTL Serial, or Program ports	5.2.8-R50 to R52 5.2.6-R23		
44		Robot Controller LED's are visible.	5.2.7-R27		
45		No modifications to Robot Control system and its components.	5.2.8-R24		
46		RC RESET button on Robot Controller is accessible			
47		7.2V NiCad "backup" battery is connected to the Controller	5.2.7-R39		
48		Team Color LEDs (4) must turn on and blink when control system is enabled (**power up RC to check).**	5.2.4-R08		
49		Light from Team Color LEDs is visible around 360 degrees horizon to indicate robot operation.	5.2.4-R08		
50		Verify team no. and 2004 O/I	5.2.7-R30 5.5-R84		