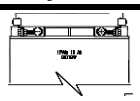
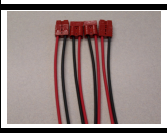
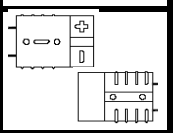
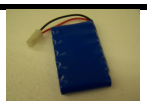
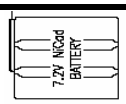
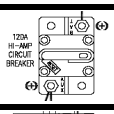
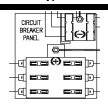
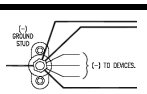
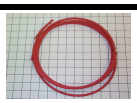
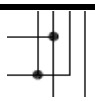
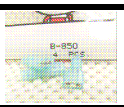
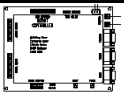
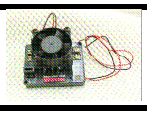
2006 FIRST Robotics - Basic Electronics

The Robot - Quick Reference Sheet 1

Item	Use	Notes	Photo	Symbol
12V Battery	Supplies most of the power to the robot. Dangerous - 200Amps possible during short circuit. Connected only to the Anderson Connector.	Only one allowed per robot. Keep it charged. Locate it for easy access.		
Anderson Connector	Only item connected to 12V battery. Keep as close to 12V battery as possible.	6 AWG Wire. Don't use to carry 12V battery. Locate it for easy access.		
7.2V Battery	Supplies robot controller with power to run micro. Only other battery allowed to power robot.	Only one allowed per robot. Keep it charged. Locate it for easy access.		
Main Breaker	Protects all of the robot electronics from the 12V battery.	Only one allowed per robot. Protect it from other robots. Locate it for easy access.		
Breaker Panels	Protects each electrical device used on robot. Ratings 20Amp, 30Amp and 40Amp. Self resetting.	Protect it from other robots. Locate it for easy access.		
Ground Stud	Used for distribution of battery ground when multiple breaker panels are used.	Do not ground to any part of robot.		
Wires	Transports power from batteries to electrical devices. Color Coded. Higher correct required - thicker wire needed.	Keep as short as possible. Follow color coding. Use correct gauge.		
Terminal Crimps	Used to connect wires to electrical devices. Color coded per wire size. Easy connect - disconnect.	Use fully insulated terminals. Check crimps often. Use right size per wire gauge.		
Robot Controller	The computer/brains of the robot. Stores and executes the software program. Gives feedback on robot status.	Locate it for easy viewing. Protect it from other robots. Locate it for easy access.		
Radio	Transmits data back and forth between the Robot and Driver Board.	Do not bury in inside robot. Protect it from other robots.		
Team Color Leds	Distinguishes alliances by flashing alliances color. Flashes status codes of robot.	Locate it for easy viewing. Protect it from other robots.		
Software	Controls robot during autonomous and driver mode. Default and user software available.		1100111	C Basic
Victor Speed Controller	Used to control a high current such as a motor by the RC. Off & On - Forward & Reverse - Variable speed. Used for 30amp and 40amp devices.	Locate it for easy viewing. LED indicates status. Keep airflow to fan unrestricted.		
Spike Relay	Used to control a high current such as a motor by the RC. Forward & Reverse only. Used for 20amp max devices.	Locate if for easy viewing. LED indicates status.		
Motors	Does most of the work on the robot. Used for drive trains, arms, lifters, shifters, etc.	Do not overdrive. Watch for overheating.		GLOBE MOTOR
Pneumatics	Used to do some of the work on the robot. Used for arms, lifters, shifters, etc. Can be faster than motors.	120 psi used for storage. 60 psi max used for work.		COMPRESSOR
Sensors	Allows feedback to Robot Controller of robot's status. Can be kit supplied or custom made. Very helpful in autonomous mode.			SENSORS

Worksheet may be downloaded from www.teamfordfirst.com

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