

THE 2000 FIRST ROBOTICS COMPETITION

TEAM UPDATE #6

Date: January 28, 2000

IMPORTANT INFORMATION FROM INNOVATION FIRST

Innovation First has received a number of calls from teams who report errors when trying to program the Robot Controller. In order to avoid problems, please check the "Robot Controller FAQ" and "Guide to Downloading Programs into the Robot Controller" on the Innovation First site. Below is an excerpt from their FAQ that covers the most common types of errors:

Q:	Why does the Parallax Software report an error "... found but not responding ..." when programming the Robot Controller?
A:	1) Be sure you are not using the Microsoft NT operating system on your computer. Parallax software will not work on NT. 2) You have to use Basic Stamp Editor version 1.091 Beta from Parallax. You can download it from our "Links" page of our website. 3) COM Port conflict. See the "Guide to Downloading Programs into the Robot Controller" on the Documentation page.

For more information, please visit the Innovation First web site at www.innovationfirst.com.

RULES QUESTIONS & ANSWERS

Q163. Do we have to use the wheelchair wheels in the kit, or may we go out and purchase bicycle wheels?

A163. You do not have to use the wheelchair wheels. You may not purchase bicycle wheels because they are not on the Additional Hardware List.

Q164. May we have a limit switch contact the goal in order to lower the robot?

A164. No. See Rule M7.

Q165. In the Additional Hardware List we are allowed to use aluminum plate up to ¼". Does this include perforated plate?

A165. Yes.

Q166. May our sponsor ship the crate to Epcot from California?

A166. No. Only Drayage may deliver crates onsite.

Q167. In the Additional Hardware List we are allowed to use ¼" sheet of plywood. We purchased Luan from our local hardware store, but it 3/16" thick. Is it ok to use?

A167. You may use Luan if it is sold as ¼" but actually is 3/16".

Q168. When the "hands" of our robot grab a ball, they sometimes leave a dark scuff mark on the ball. The scuff mark is caused by rubber grippers which are located on the hands of the robot. These marks can be cleaned off using alcohol, and do not modify the texture or functionality of the ball in any way. The robot is not removing any material from the balls, nor is it leaving residue from a lubricant. Also, the balls are not scuffed every time. Is this okay?

A168. We don't want scuff on the balls because it will detract from the appearance of the event. The burden should not be on us to remove scuff marks on the balls, because that will take too long during an event. Therefore, you should redesign your ball handling mechanism so that it does not leave markings on the balls.

Q169. After reading Update #5 Q#153, we have a question relating to red speed control units. Last year they said we needed capacitors and transorbs on the red speed control units. Is this needed this year with the red speed control units?

A169. According to Innovation First, you don't need the capacitors on the Victor 883 (Red) units, but you should still install the included transorb. The Victor 883 (Blue) units don't require external capacitors or transorbs. Also, we have witnessed problems (potential for short circuits) in the past associated with installing capacitors on the drill motors. Therefore, we are disallowing the use of capacitors on the motors this year. If Innovation First decides that capacitors should be used, then we will notify teams in a future Team Update.

Q170. Team Update #3 states any amount of 100K-Ohm linear taper potentiometers may be used. May we also use multi-turn or slide type potentiometers as long as they are 100K-Ohm linear taper?

A170. Yes.

Q171. Do we have to fasten our bumper at the shown centerline height, or may we put it down at the bottom of the indicated envelope? We ask because if we may put it down at the bottom of the indicated envelope, we probably will not make our sides quite as high, which will lower the robot's center of gravity.

A171. According to the 2nd bullet item in Rule M3: "The bumper...must be vertically centered at 6.5" above the bottom of the robot." Thus, you need to keep the bumper vertically centered at 6.5" off the floor.

Q172. The Additional Hardware List does not mention anything related to the SMC pneumatics parts, or at least we couldn't find them. What may and what may we not buy from them?

A172. You are not allowed to purchase additional pneumatic components from SMC for the robot. You may use what they supply and may use pneumatic fittings from Small Parts, Inc. FYI, the list of parts from SMC is included in Team Update #3.

Q173. The Fisher-Price motors are pre-leaded with #14 wire. As per Appendix A, C7 "Ten gauge or larger diameter wire must be used for connections to and from the speed controllers, if they are used with the Fisher-Price motors". M19, states "the motors in the kit may not be modified except as follows:" and noted is that the #14 pre-leaded wire utilized on the Fisher-Price motor is not an exception. Therefore our question is very simple: May we use the #14 pre-leaded wire or must we re-wire with #10?

A173. You may use the wire supplied with the motors. If you need to lengthen the wire, you should use 10 AWG wire.

Q174. Is it legal to use the frame of our robot as a ground for wiring, just like in a car?

A174. It is against the rules to use the robot frame as a ground. See Rule C30 in Team Update #3.

Q175. Does the hard backing for the bumper have to be made out of wood?

A175. No, the hard backing does not need to be made out of wood.

Q176. May we use shock absorbers/gas springs such as the Small Parts Part# Y-GS-0840, 1025, 1262, 2030 or 1100? We intend to hold some energy on them, is that a violation of Robot Rule M1 or is okay since it's still inside the \$425 limit from SPI?

A176. Yes, you may use the gas springs from SPI. They are considered springs, so it is ok to store energy in them per Rule M1.

Q177. Given the ability to connect a computer up to the Dashboard Port on the control system, and given the ability to use this "Dashboard" during the competition....and given that people have the ability to create custom dashboard code.....is it OK if this custom dashboard code is able to do calculations, or otherwise "crunch" the data stream coming back from the robot and give the driver/co-pilot feedback (visual, audible or electro-shock if appropriate) thereby helping them drive or control the robot?

A177. Yes, the dashboard feature was designed to allow teams to develop advanced feedback systems for the drivers. Please note that AC power will not be available at the playing fields, so these devices will have to run on internal batteries. See section 2.3.3 of The Robot section of the manual. Specifications for the data protocol and a free dashboard program are available from Innovation First on their web site at www.innovationfirst.com. Also, Team 74 has created an "open source" dashboard program using Visual Basic. Their program and source code is available at www.hollandfirstrobotics.com/dash_beta/finalrev2/.

Q178. May the Dashboard computer be connected (electrically or optically) to the control panel in any way so as to let the computer control some or all of the user interface?

A178. No. The only input devices that may be connected to the Operator Interface are Joysticks, potentiometers, switches, and the GyroChip sensor.