THE 1999 FIRST ROBOTICS COMPETITION

TEAM UPDATE #3

Date: January 31, 1999

IMPORTANT NOTE ABOUT CALLING SUPPLIERS

Many teams find it useful to obtain extra kit parts, such as motors, sensors, etc. in order to have spares on hand or to have units on which experiments can be performed without damaging the original kit parts. In order to obtain these parts, the logical first step is to contact the supplier of the parts and order them. Where possible, FIRST has provided contact information for suppliers in Appendix A of the Administrative Details section of the manual.

Please be aware that not all parts suppliers are able to handle a large volume of small orders from the teams. This is especially true of many of the suppliers of automotive parts in the kits. If contact information for a supplier is not listed in the Supplier Directory in the Manual, it is usually because the supplier is unable to accept orders from teams. **If you would like to obtain spares of a kit part, and contact information for the part supplier is not listed in the manual, please do not contact the supplier on your own. Instead, contact FIRST.** This is very important because many of these suppliers graciously donate the parts in the kits for the benefit of the teams, and we do not wish to jeopardize the potential for future donations.

As FIRST learns of alternate sources for parts not available directly from our suppliers to the teams, we will post such information in the Team Updates. Please be aware that certain parts may be unavailable or highly expensive.

GLOBE MOTOR INFORMATION

Globe Motors (the company) is unable to sell Globe Motors (the kit parts) directly to teams. These motors are available from GM parts distributors and possibly your local junkyard. The Globe Motors provided in the kit are used on pre-1997 GM K-Trucks (Tahoe and Yukon), and on current model Chevrolet Blazer and GMC Jimmy vehicles as the “Transfer Case Encoder Motor”, which is part of the 4-wheel drive shift system. The GM part # for the motor is 15636696. Please note that this part number is for a motor that is identical to the kit motor except that it has different connectors on the ends of the wire. Since these connectors should be removed, they should be considered equivalent.

KIT OF PARTS INFORMATION

As some teams have noticed, there are a few discrepancies between the Kit of Parts list printed in the rules manual, and the Kit Checklist distributed at the Kickoff Workshop. In order to eliminate confusion, an updated Kit Checklist has been posted on the FIRST web site along with the other documentation for the 1999 competition. The updated list should be considered correct and supersedes both the Kit of Parts list in the manual and

the original Kit Checklist. Please use this list when accounting for parts used on your robot.

CHAIRMANS AWARD INFORMATION

Many teams have submitted questions about acceptable formats for their Chairman's Award submission. Please refer to page 2 of the Awards section, 3rd paragraph from the top. **Please note that CD-ROMs and diskettes are not acceptable formats.**

AUTODESK INFORMATION

Many teams have submitted questions about the Autodesk Excellence In Engineering Creativity And Communications Award. Please refer to section 5 in the Awards section for information. If you still have questions, please see page 15 of Awards for contact information. This award is administered by Autodesk, not FIRST. Please contact Autodesk for all questions about this award.

Also, many teams have submitted questions about how to install, troubleshoot, and/or use Autodesk 3D Studio MAX and/or Autodesk Mechanical Desktop. These are Autodesk products for which FIRST is unable to provide technical support. Please contact Autodesk for technical support for these products.

INNOVATION FIRST CLARIFICATION

Innovation FIRST, maker of the Victor 883 speed controller, is a wholly independent company from FIRST. . If you require repair or replacement of your Victor 883 speed controllers, please contact Innovation FIRST at info@innovationfirst.com. If you leave your phone number, they will be able to call you back in the evening. If you need to send your unit in for service, please use the address listed in the "Company Info" page on the Innovation FIRST web site at www.innovationfirst.com. **Do not send Victor 883 speed controllers to FIRST for repair or replacement.**

RULES QUESTIONS & ANSWERS

Q30. May a device be constructed to lift or tilt another robot in order to assist in moving it on to or off of the puck?

A30. Lifting a robot is acceptable if the intention is not to tip the robot. Intentionally tipping a robot is forbidden. See Rule V5.

Q31. Will there be a flag extending from each of the pipes on the puck to a height of 8' above the ground? It appeared in the kick-off, but is not referenced in the documentation.

A31. Yes, the flags were omitted from the documentation. They are on the puck as visual indicators, and are not designed for interaction with the robots.

Q32. Will there be any penalty if a team's robot breaks the flag, even accidentally? What is the penalty?

A32. Accidental damage to the playing field will not be penalized. However, modifications to your robot may be necessary if it looks likely that further damage will be caused. If for some reason lots of robots are having problems

with the flags, then we may opt to alter the puck (such as by removing the flags). If damage is deliberately done to the flags, then the alliance causing the damage will be disqualified. See Rule V8.

Q33. The floppy supplied at the kickoff meeting contains a zipper, but the zipper is not part of the floppy bill of materials or construction instructions. Will the floppies at the competition contain a zipper?
A33. Yes. The zipper is there for the convenience of the manufacturer during stuffing and should not significantly impact the performance of the floppies vs. the spec published for the teams. Also, per contact information published in Team Update #1, you can order floppy kits (unstuffed) pre-made by the same manufacturer that FIRST is using.

Q34. May the air springs be pre-compressed before the match begins?
A34. Yes. Air springs from SPI are considered springs. See Rule M1.

Q35. How much bending moment can the pipes on the puck tolerate? Can they, for instance, tolerate 150 foot pounds of bending torque without damage to their mounts?
A35. FIRST does not specify the maximum force. Please build your puck to the specifications in the field documentation and test your robot on that.

Q36. May Velcro be used in any manner for better traction on the floor or puck? For instance, is it allowable to use a 4x4" plate covered with hook Velcro as the sole for a pod?
A36. No. Use of Velcro to adhere to the playing field carpet is disallowed. See Rule M10.

Q37. Is it allowable to lift your alliance partner's robot to the puck?
A37. Yes.

Q38. Is it allowable to lift your opponent's robot, and set it down somewhere else?
A38. Yes, as long as the robot is not tipped over or damaged in the process.

Q39. Is it allowable to pull your alliance partner's robot to help it onto the puck?
A39. Yes.

Q40. Is it allowable to pull your opponent's robot, provided you do not tip it over, damage it, destroy it, or otherwise entangle it?
A40. Yes.

Q41. Regarding Rule P23, if part of a robot holding floppies reaches over the interaction zone of the player station, do the floppies held by the robot count as being at the player station?
A41. No. Floppies held by the robot in the interaction zone would not be considered at the player station unless the robot drops the floppies.

Q42. If our robot do climbs over the top of an opponents machine to get on the puck, are we responsible (i.e.: penalized) for any damage that might occur to the bottom machine?
A42. This will be treated as with all other robot interaction. See Rules M4, V6, V7. Therefore, it will be up to the referees on the field to make the call.

Q43. May we pin the puck in a corner?
A43. Yes.

Q44. In the Additional Hardware List is says up to 6 Victor 883 speed controllers. That does mean an additional 6, for a total of 8, correct?
A44. You may get 6 additional to what is in the kit, for a total of 8.

Q45. When wiring the switches and potentiometers in our project box, we understand that +5 Vdc wires should be red, and Ground wires should be black. What color should we use for switch and potentiometer inputs?
A45. The color of the input wires does not matter.

PUCK FLAG INFORMATION

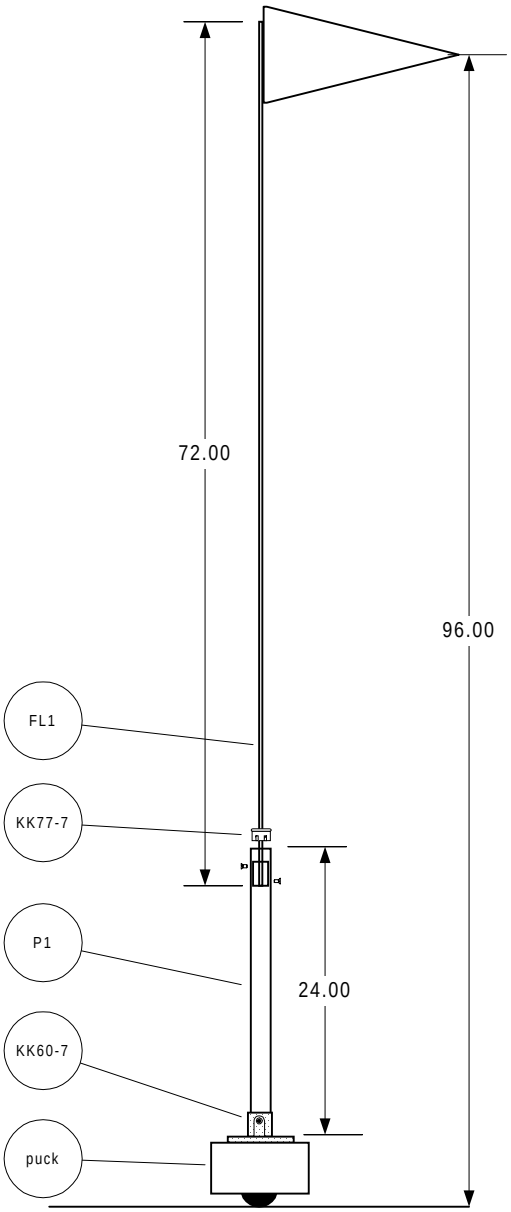
The following details cover the design and construction of the flags attached to the puck as demonstrated at the Kickoff Workshop:

Materials needed:

#FL1 standard 6' fiberglass bicycle flag (available at any bicycle shop)
#KK77-7 (from field components list)
two part epoxy
tape
drill and ¼" bit
countersunk screws
24" long schedule 40 steel pipe (to replace #P1)

To attach the flag to the puck use the following instructions:

1. drill a ¼" hole in the center of the pipe plug (#KK77-7)
2. remove any bracket that came with the bicycle flag
3. slide plug onto the fiberglass pole
4. cover one end of a two inch long piece of 1 ¼" OD PVC pipe with tape
5. insert the fiberglass pole into the 1 ¼" OD pipe
6. while holding the pole in the center, fill the pipe with two part epoxy
7. allow the epoxy to set with the pole in the center
8. insert the pipe 3" into the 24" Puck pipe
9. secure with countersunk screws
10. for the center of the flag to be 8' from the floor you will need to raise the flag by 3" *



*The flag will only be used as a reference and does not need to be exactly 8' for your practice Puck.

PRESSURE SWITCH INFORMATION

In order to connect the pressure switch to the Receiver, connect the positive lead (+) to +12 Vdc from the battery, the negative lead (-) to Ground on the Receiver's Sensor Port, and the output lead (0) to one of the Receiver's Switch Inputs. Wire color and function information is printed on the side of each switch. See the spec sheet included with the switch for details on calibrating the switch.

CORRECTIONS AND UPDATES TO THE MANUAL

The Additional Hardware List includes the item "blue conduit". This is a mistake and should be crossed off the list.

The following rule is added to Appendix A of The Robot:

M18. Robots must display their alliance color (red or blue) on a least two opposite sides (180 degrees apart) of the robot. The solid-color displays should be at least 5" by 12" and should be clearly visible from a distance of not less than 50 feet. FIRST recommends developing some sort of removable panel that may be easily changed to the opposite color between matches. It is acceptable to incorporate the team number (as per Rule M7) on the color display panel as long as the numerals are not red or blue.

Section 14.1 of the Events section of the manual contains a typo. Both dates referred to in the first paragraph should be "February 24".

Section 14.2 of the Events section of the manual contains a typo. Both dates referred to in the first paragraph should be "February 22".

SEAT POSITIONING UNIT INFORMATION

The Seat Positioning Unit Bag Should have contained the following:

Hex Head Bolt for Seat Positioning Unit	2
Hex Nuts for Seat Positioning Unit	4
Horizontal Actuator for Seat Positioning Unit (LH)	1
Lower Channel for Seat Positioning Unit	1

Note: There was no Horizontal Actuator for Seat Positioning Unit (RH) in the 1999 Kit.

VELCRO CLARIFICATION

According to Q8 appearing in Team Update #1, Velcro is considered a fastener if used to fasten a floppy to the robot. This means that, per Rule K1, Velcro used as a fastener can be used in unlimited quantity on the robot without affecting the $425 limit on parts from Small Parts, Inc. (SPI).

Teams using Velcro on their robot should be careful to observe the "used as a fastener" portion of Rule K1. A fastener, as interpreted by FIRST, is used to fasten objects together. That is, Velcro used on the robot must fasten one object (e.g. a floppy) to another object (e.g. part of the robot structure). The fastener itself is not considered part of the robot structure. Therefore, Velcro must be attached to some backing (e.g. a board, a beam, a belt, etc.) in order to satisfy the fastener criteria. Teams wishing to use Velcro without a backing material may do so, but this material must be purchased from SPI and counted as part of the $425 limit.

FLOPPY INFORMATION

Kustom Seating Upholstery, Inc. has only 57 Red Sewn Floppies left. They will be sold on a first come, first served basis. There is no blue or pre-cut material left.

MESSAGE FROM KUSTOM SEATING UPHOLSTERY, INC.

Kustom Seating Upholstery, Inc. would like to take this opportunity to thank all the teams whom we had the pleasure of providing our services.

We wish all participants the BEST OF LUCK during this challenging and exciting event.

As far as we are concerned you're all "FIRST WINNERS !"

Thank You

VELCRO INFORMATION

Velcro, Inc. has offered to sell Velcro at a discounted price to the teams. If interested, please contact:

US Slide
800 835-7371
617 426-3546
Ask for Brady in Sales
Mention FIRST