

Robot Workshop, Saturday, January 10, 2000, 10 AM to 2 PM

A G E N D A

MANUAL ROBOT

10:00 to 12:00\PM

Each participant will have a robot kit, a ruler, and a manual at their place, and will take parts out of the kit as directed during the workshop. Please replace all parts back in the box after the session is over.

1. Description of the robot and key elements. Brief comments on the Written Reports and the Oral Presentation
2. How much to share with the students and what we want them to discover for themselves. Planning, documentation and teamwork. Spare parts. Tools needed. All mistakes can be fixed!
3. The wood block, and the challenges of the 3/32 hole, and the 3/16" angled holes for the wiring.
4. The mounting of the motors and correcting for errors in the 5/16" cutouts. Use of epoxy. Cutting the threaded rods, the purpose of the plastic tubing, and how best to insert it.
5. How the mechanism gets jammed, and what to do about it.
6. The Control Units and the importance of the hole sizes. Painting them. Assembling the parts.
7. Bending the legs of the brass fasteners to form the bridges. The common bus. The wiring.
8. The soldering.
9. Planning and building the body.
10. Walking and Troubleshooting, the center of gravity, keeping one leg down, the 4 triangles.
11. The Written Report
12. The Shipping Container, the Flag, and the Team number.
13. What to expect on the day, rules & score sheets, the Pit, preparing for the Oral Presentation.
14. Discussion of your experiences, notification of Results and the Web page.

LUNCH: Noon to 12:15 PM

A G E N D A for AUTOMATION
12:15 to 2:00 PM

1. The purpose of Automation
2. Differences between the manuals – degree of detail and depth
3. Interpreting the figures
4. The Breadboard, 2803, and relays as a way to boost current capability. Function of the LEDs.
5. Identifying the means of steering the robot. Wiring the Breadboard
6. Interfacing with the Control Units. Mods to Control Units.
7. Preparing the long and the short cables
8. Writing the program, and estimating the Pauses.
9. Checking the program with the Robot on bricks.
10. Differences to expect when robot is on table.
11. Driving the robot with Automation.
12. Fine-tuning the program
13. Suggestions and wrap-up.