

## Y-04: Load and Operate Diagnostics

### SAFETY FIRST

- Follow all Caterpillar facility safety standards when performing this task.

### EQUIPMENT

- Diagnostic tape for the processor

### RESOURCES

- Diagnostics Manual

### Load and Operate Diagnostics

**Note:** These steps are performed on an Allen-Bradley 7300 CNC machine.

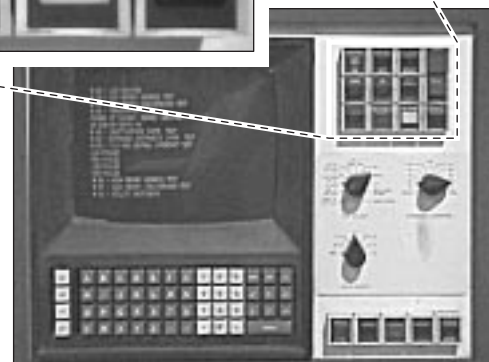
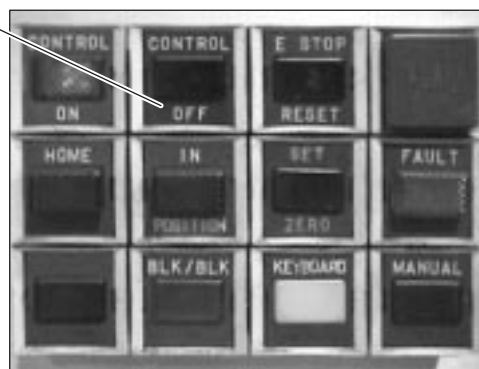
#### 1. Document the tool offsets.

- Ask the Operator to update and record any changes to the tool offsets not already recorded.

#### 2. Clear the memory.

- Turn off the control power.

Control Off



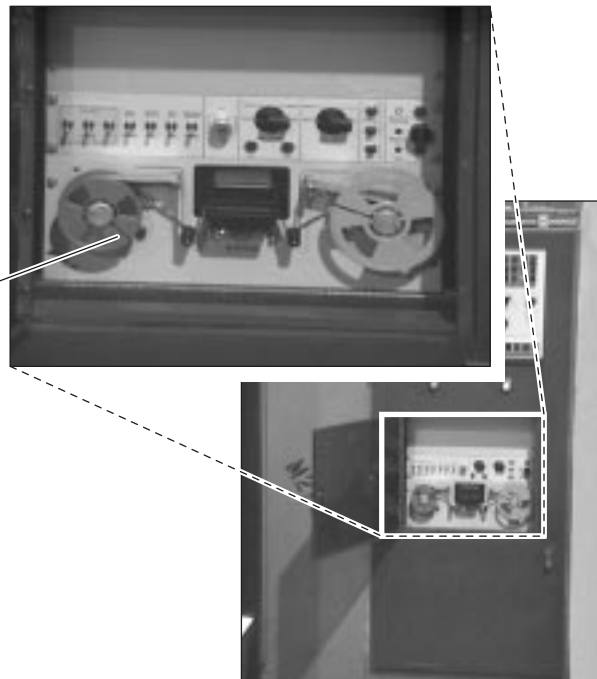
- Turn off the battery backup power.
- Turn the battery backup power back on.
- Turn on the control power.

### 3. Load the Diagnostics program.

**Caution: Handle the tape with care, as it may be the only backup copy of the data.**



Diagnostic Tape



- Manually feed the diagnostics program reel until you are past the “man readable” portion of the tape.

Man Readable  
Portion of the Tape

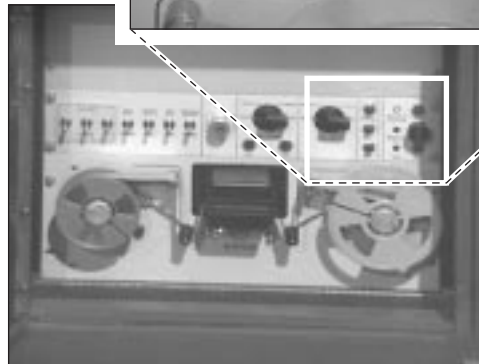


- Press the “Halt” button.



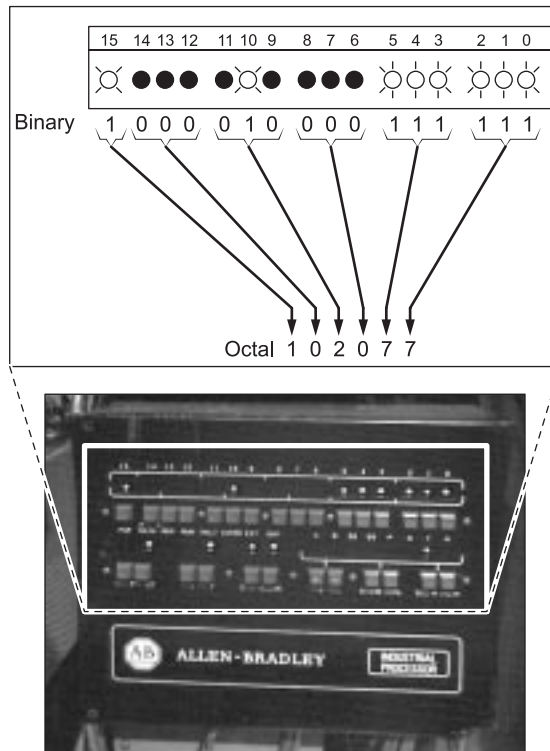
Basic Binary  
Loader Button

Halt Button



- Press the “BBL” (basic binary loader) button and observe the tape begin to feed through the reader.

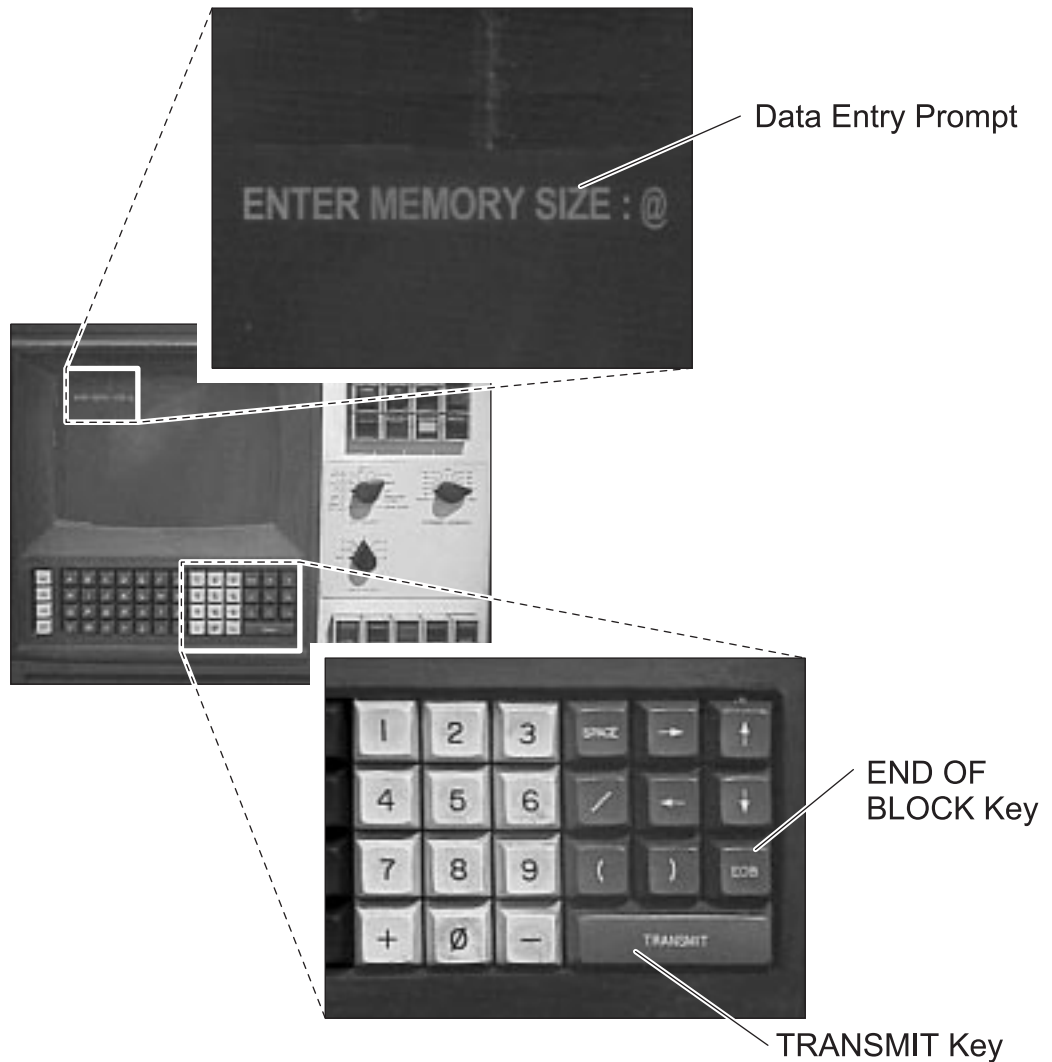
- After the tape finishes feeding, verify that the display on the processor panel reads 102077.



- Press the “Run” button if the display reads 102077 and observe as the tape feeds through the reader.
- When the tape stops, the CRT should read Enter Memory Size: @.

#### 4. Follow the diagnostics procedure to identify the fault.

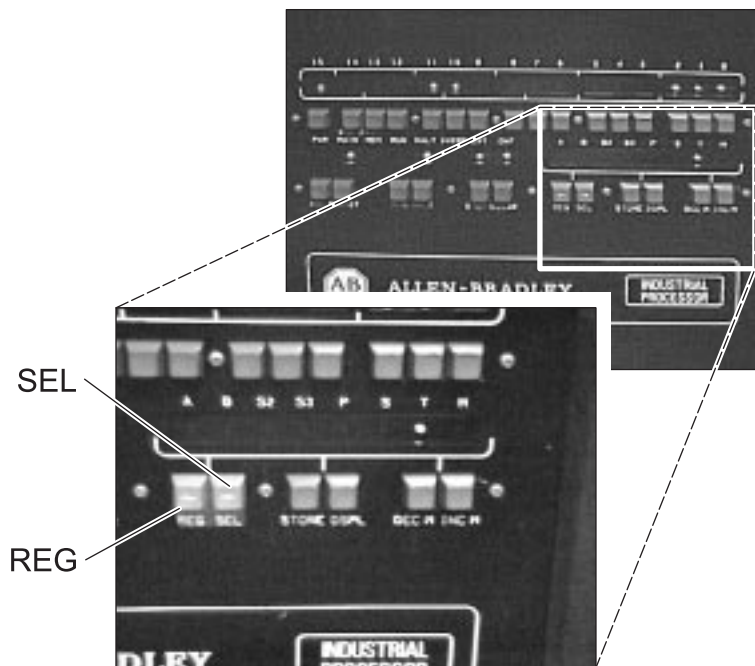
- Type the memory size when the Enter Memory Size: @ prompt displays, then press the <Transmit> key.



- Type "A1, 1" at the @ prompt and press the <EOB> key.
- Type the test number "R1" (options include R0, R1, or R2) and press the <EOB> key.
- Press the <Transmit> key to start the test.

**NOTE: This test may take 5 to 10 minutes.**

5. **Locate the test message in the Diagnostics Manual.**
  - Follow the recommended procedure for the error message.
6. **Check the T and M registers for any halt codes, if necessary.**
  - Use REG and SEL buttons to view the contents of both the M and T registers.



- Match the displayed code with the code in the Halt code reference table in the Diagnostics Manual.
7. **Perform a corrective action to repair the system.**
  8. **Restore the Exec program and any Lead Compensation (Lead Comp) programs originally installed in the AB 7300.**
  9. **Ask the Operator to reload the tool offsets and the part program.**
  10. **Ask the Operator to cycle the machine.**