

L-04: Access and Modify Data Table

SAFETY FIRST

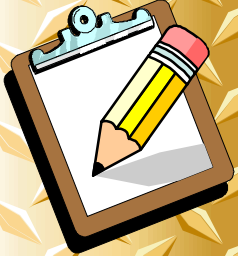
- Follow all Caterpillar facility safety standards when performing this task.

EQUIPMENT

- dial indicator with magnetic base
- calculator
- Electrician's hand tools
- pencil

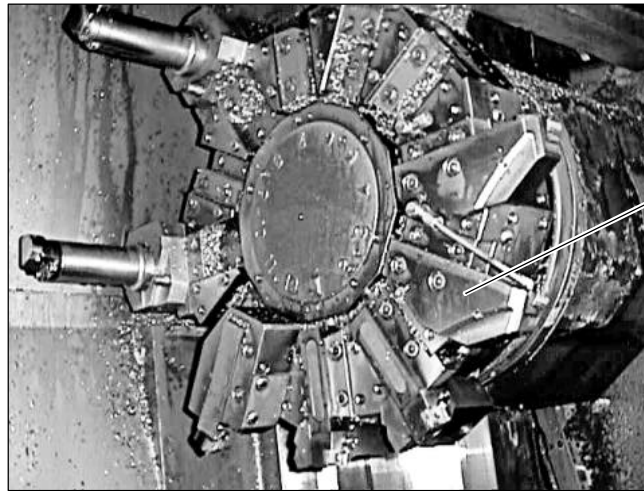
RESOURCES

- Fanuc Series 16-T Maintenance Manual
- Fanuc Series 16-T Operator's Manual
- specification sheet for machine



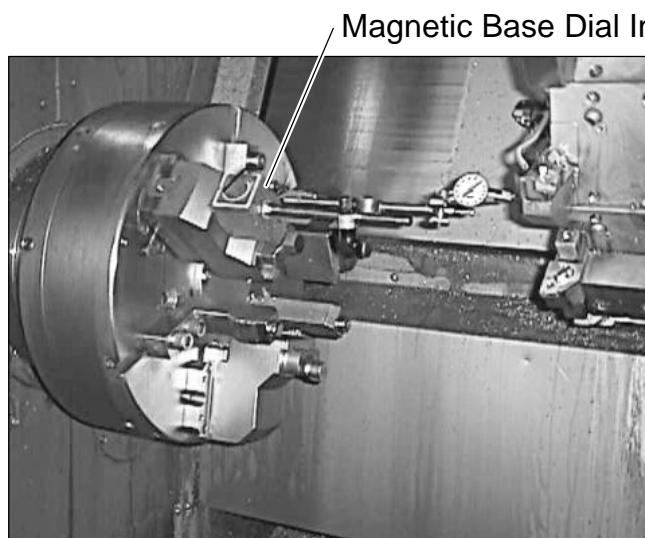
Access and Modify Data Table

1. Determine the amount of error.
 - Open the Operator door.
 - Using an Allen wrench, remove the tooling block. See the figure below.



Tooling Block #3

- Set up the dial indicator on the spindle. See the figure below.



Magnetic Base Dial Indicator

- Position the X-axis on the centerline of the spindle. The centerline position is listed in the "Specifications" section of the machine manual (Reference Points and Relevant Dimensions Drawing).



- Move the Z-axis in towards the spindle until the dial probe is approximately 1/8" into the hole with the tip of the dial probe touching the top or bottom of the hole.
- Manually rotate the chuck on the spindle to sweep the dial probe around the inside diameter of the hole. Observe the dial face as the dial probe sweeps the hole.

Note: Note the error value on the dial indicator face. If the dial reading is greater than .0005" (from the top center and bottom center readings only!), the X-axis centerline data must be modified.

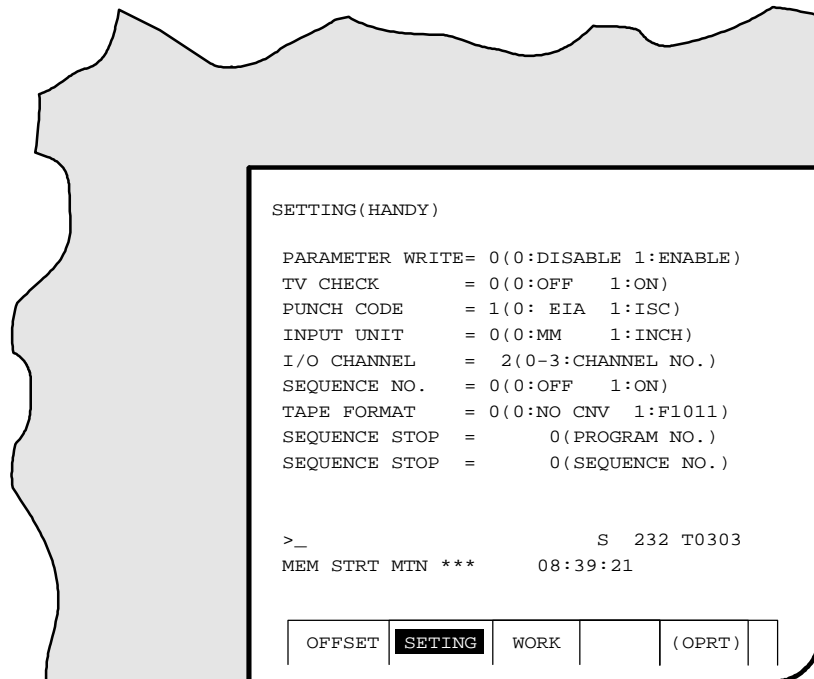
- Using a calculator, convert error reading to metric.
- Use the table below to calculate the new value.

IF:	THEN:
Dial reading is negative	X-axis is off in the positive direction. Add the dial reading to the X-axis reading.
Dial reading is positive	X-axis is off in the negative direction. Subtract the dial reading from the X-axis reading.

2. Display the screen that allows data modification.

- Press the OFFSET SETTING key on the key pad.
- Press the SETTING softkey; the SETTING(HANDY) screen displays.
- Press Page \uparrow or \downarrow until to highlight SETTING(HANDY).

- Using the arrow keys, move the cursor to PARAMETER WRITE= 0(0:DISABLE 1:ENABLE). See the figure below.



- Position the Machine Mode switch to MDI. See the figure below.



- Enter 1 to enable Parameter Write.

- Using the keypad, press the INPUT key. See the figure below.



3. Locate the axis data.

- Press the SYSTEM key, then press the PARAM softkey. See the figure below.



- The PARAMETER screen displays.

- Locate the grid shift parameter number for the X-axis.

Note: When data is entered to shift a grid, the reference position of the axis changes. The grid shift number is located in the “Parameters” section of the machine manual. The grid shift number for the X-axis is 1850. See the figure below.



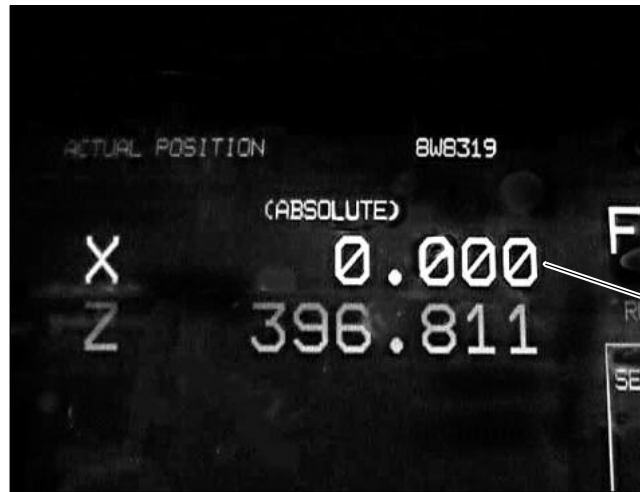
1850

Grid shift for each axis

- Using the keypad, type 1850. Press the NO. SRH softkey. The program highlights the first data entry for the 1850 grid shift.
 - Type in the new value for the X axis centerline and press INPUT. The new reference point will display.
4. Power down, then power up the machine.
- Press the E-Stop to power down the machine.
 - Release the E-Stop to restore power to the machine.
 - Press the POWER ON button.
5. Disable PARAMETER WRITE-ENABLE.
- Using the keypad, press OFFSET SETTING.
 - Press the SETTING softkey.
 - Press Page \uparrow or \downarrow until SETTING(HANDY) is highlighted.
 - Press the SETTING softkey; the SETTING(HANDY) screen displays.
 - Move the cursor to PARAMETER WRITE-ENABLE.
 - Enter 0 to disable Parameter Write.
 - Press the INPUT key.
6. Move the Z-axis back away from the spindle.
- Position the Machine Mode switch to RAPID.

7. Reference the axis.
 - Using the joystick, move the X-axis to the home position.

Note: The absolute value on the screen will be X = 0.000. See the figure below.



X Absolute Value

8. Verify home position.
 - Position the Machine Mode switch to MDI.
 - Locate the spindle centerline and EOB (End of Block) information.

Note: Refer to the specifications section of the machine manual.

- Using the keypad, enter the value for the spindle centerline positions and press INPUT.
 - Press CYCLE START. The X-axis will move to the centerline position.
 - Jog the machine until the dial indicator is in the hole on the tool turret.
 - Manually rotate the chuck on the spindle to sweep the dial probe around the inside diameter of the hole. Observe for dial movement. No movement indicates that the reference point is accurate. If dial movement is observed, repeat step 2 and then recheck the home position centerline.
9. Clean up the work area.
 10. Document the work history.