GAGEMAKER

MIC TRAC MT-3000
TF-IND Dial Indicator Fixture
CAL-PAK Fixture Manual

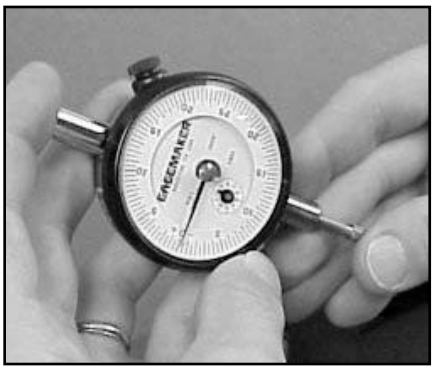
Setup

Materials Needed:

- MIC TRAC™ MT-3000 base unit DRO/Computer
- Indicator fixture (TF-IND Block) and cap screws
- Split bushing for AGD or ISO indicators
- Tall flat face anvil (TF-2F Block) and cap screws
- Indicator
- 5/32" hex wrench
- Cloth
- ZEP I.D. Red cleaner

1. Inspect the indicator visually as follows:

- Check for damage and excessive wear.
- Check for clear bezel, legible dial face.
- Inspect for proper function of the bezel adjustment and lock.
- Inspect for missing or lose screws or worn contact point.
- Check for smoothness of travel by depressing the indicator shaft throughout the entire travel range. Any indicators, with restricted movement, must be repaired prior to calibration.



2. Clean both of the receiver pads and the mounting surfaces of the indicator fixture using the cloth and ZEP I.D. Red cleaner.

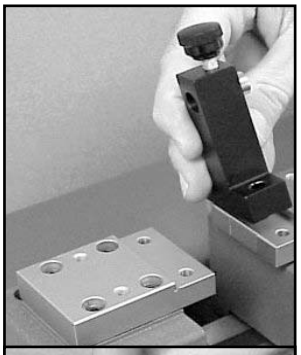
Note: The indicator fixture comes with two split bushings, one for holding ISO indicators and one for AGD indicators.

3. Before mounting the indicator fixture, insert the appropriate bushing into the mounting hole near the top of the indicator fixture.

ISO Split Bushing **AGD Split Bushing**

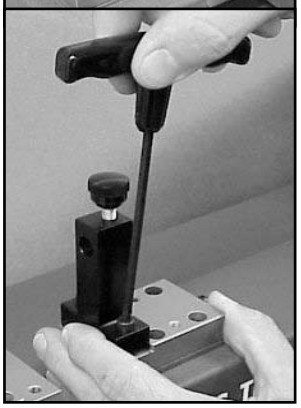
Setup

4. With the split bushing facing to the right, place the indicator fixture against the right receiver pad shoulder.

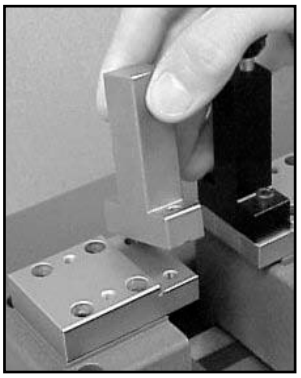


5. Hold the indicator fixture against the receiver pad shoulder and insert the two cap screws into the holes on either side of the fixture.

6. While applying pressure toward the receiver pad shoulder, use a 5/32" hex wrench to tighten the screws.

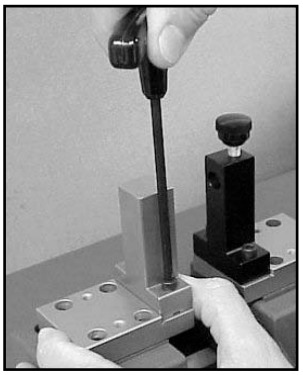


7. Clean the mounting surfaces of the tall flat face anvil and place it against the left receiver pad shoulder.



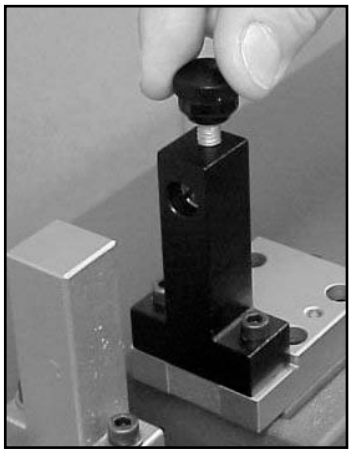
8. While holding the anvil against the receiver pad shoulder, insert the two cap screws into the holes on either side.

9. While applying pressure toward the receiver pad shoulder, use a 5/32" hex wrench to tighten the screws.



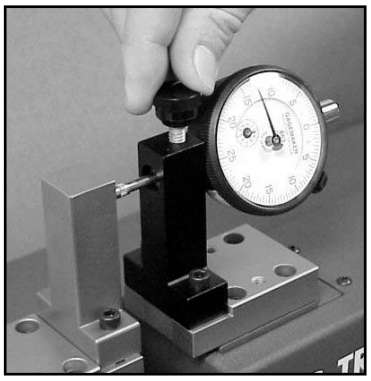
Setup

10. Loosen the knob on top of the indicator fixture to allow the indicator to slip into the mounting hole.



11. Insert the indicator into the mounting hole and gently tighten the knob.

    Note: Turn the face of the indicator dial so it can be clearly read during calibration.

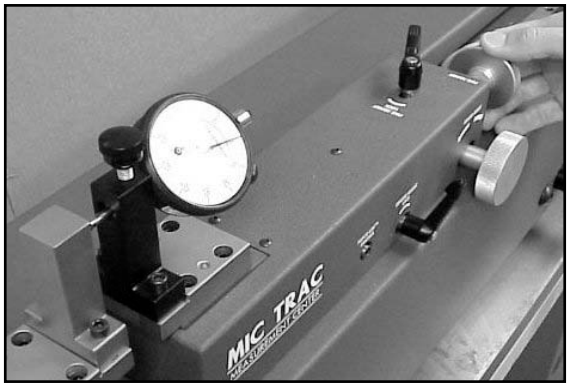


12. Turn the coarse adjust knob counterclockwise until the contact point of the indicator barely touches the tall flat face anvil.

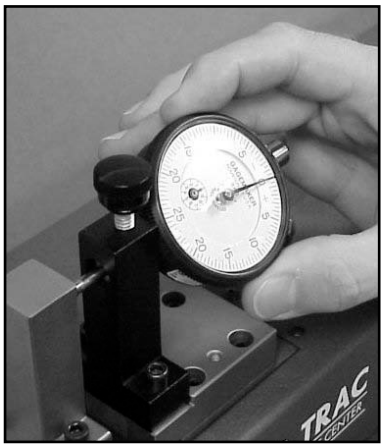
13. Lock the coarse adjust lock.

Setup

14. Turn the fine adjust knob clockwise until the indicator dial travels ¼ of a full revolution.



15. Turn the indicator dial to align the needle with zero.



Calibration

If using a computer with the MT-3000, go to page 6.

Materials Needed:

- MIC TRAC™ MT-3000 base unit and DRO
- Indicator
- Gage Calibration Record
- 5/32" hex wrench
- Lightweight gage oil

1. On the front panel of the DRO, press the internal zero button. The readout displays 0.0000.

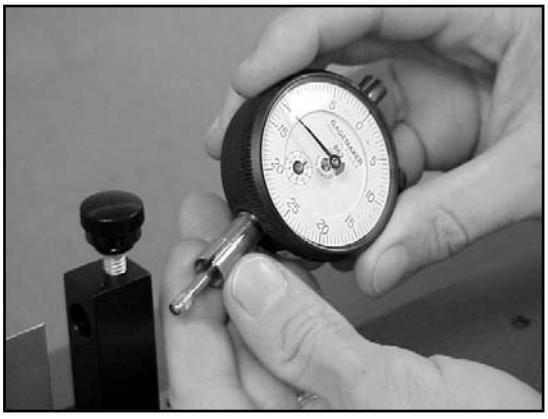
2. Turn the fine adjust knob clockwise to the first calibration value.

Note: If you pass the calibration value, turn the dial back and approach the value again, from the same direction. This practice will increase the accuracy of the calibration.

3. Record any deviations on the Gage Calibration Record or in-house calibration report. Continue with remaining measurements.

4. Remove the indicator and continue with the same calibration process for the next indicator.

   Note: When removing the indicator, be sure to replace the split bushing in the mounting hole of the fixture, if it is removed.



5. After calibrating all indicators, be sure to insert the split bushing into the mounting hole of the indicator fixture, if necessary. Remove the indicator fixture and the tall flat face anvil from the MT-3000. Oil the fixture and anvil and return them to the storage case.

Calibration

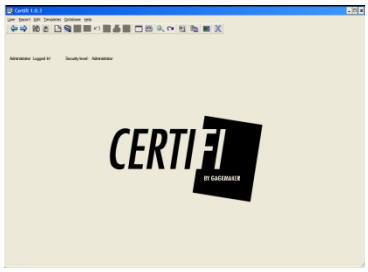
If using a computer with the MT-3000, begin here.

Materials Needed:

- MIC TRAC™ MT-3000 base unit
- Computer
- CERTIFI™ software
- MT-4-USB Digital Data Acquisition Card
- Indicator
- 5/32" hex wrench
- Lightweight gage oil
- Brother P-Touch Label Printer (optional)

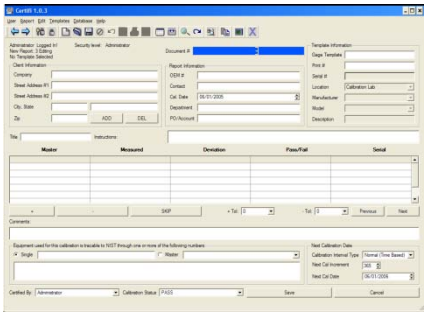
1. Start CERTIFI™ by double clicking the CERTIFI™ icon.

CERTIFI Icon

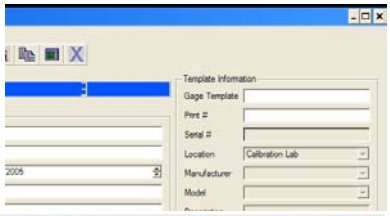


2. Click on the New Calibration Report Icon.

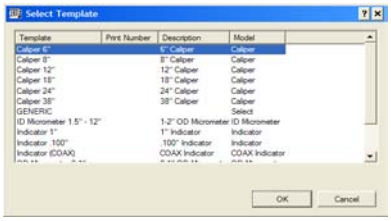
New Cal. Report Icon



3. With the cursor in the Gage Template field, press the Enter key.



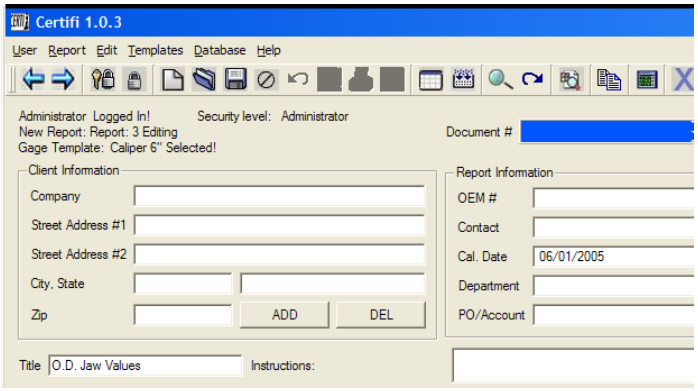
4. Highlight the Indicator 1” line and click on the OK button.



Calibration

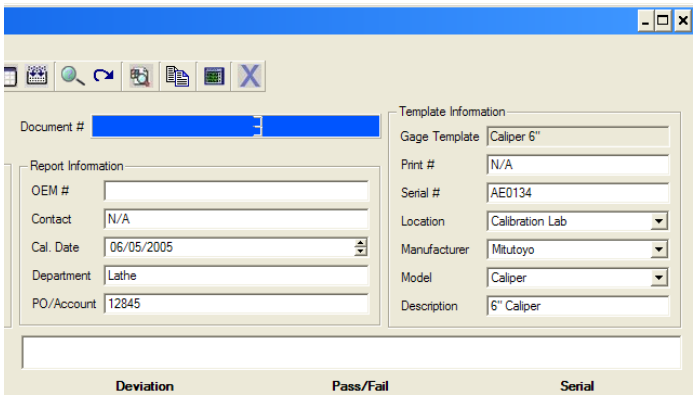
5. Complete the following Client information:

   - Company name and address.
   - OEM #
   - Contact name.
   - PO/Account - purchase order or account number.
   - Calibration Date - automatically displays, but can be changed by typing over the displayed date.
   - Print #
   - Serial #



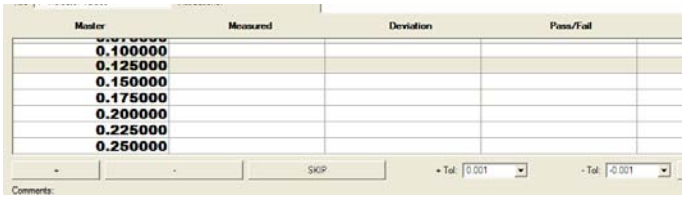
6. Enter the following information about the gage you are calibrating:

   - Serial Number
   - Location
   - Gage Manufacturer
   - Model
   - Description



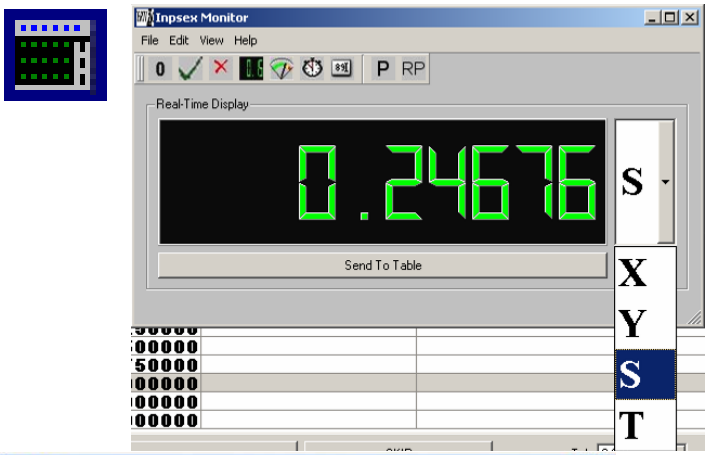
7. You may change the tolerances for the caliper if you wish.

8. You can enter additional master values by right clicking your mouse over an existing master value. Select **Insert** to insert a new line. Then type in the new master value in that line.



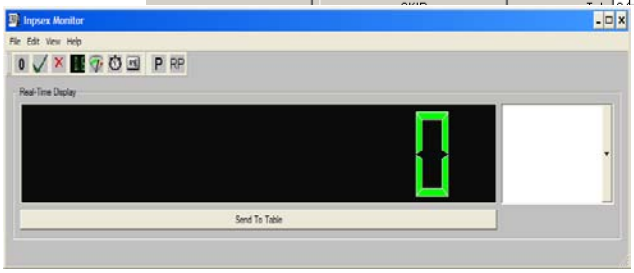
Calibration

9. Click on the CERTIFI Monitor icon to open the CERTIFI Monitor Window.



10. Choose the “Y” axis from the pull down box.

11. Bring the MIC TRAC jaws together and click the Zero button twice.



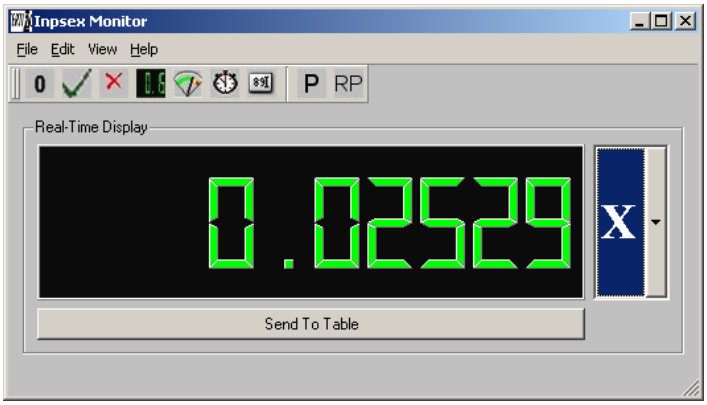
12. Enter the gage measurements in the Measured column as follows:

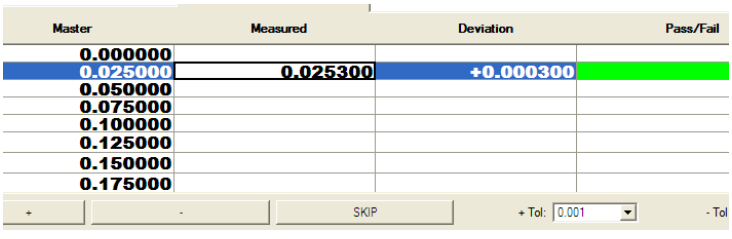
    - Turn the Y axis adjust knob to open the caliper jaws until the indicator reads the first calibration value.

Note: If you pass the calibration value, turn the dial back and approach the value again, from the same direction. This practice will increase the accuracy of the calibration.

    - Click the Send To Table bar.

    CERTIFI™ records the value and displays a green box in the In/Out column if the value is within tolerance. A red box displays if the value is not within tolerance. The Deviation column shows the deviation of the measured value from the master value.





Master	Measured	Deviation	Pass/Fail
0.000000			
0.025000	0.025300	+0.000300	
0.050000			
0.075000			
0.100000			
0.125000			
0.150000			
0.175000			

Calibration

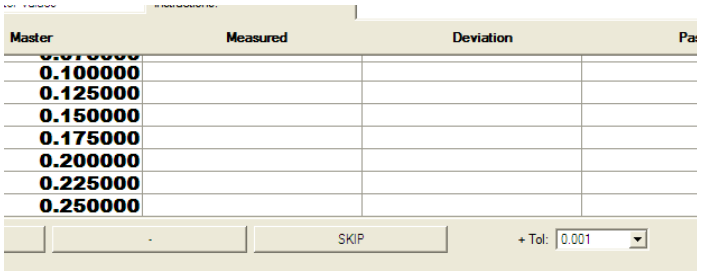
13. Enter the gage measurements for the first 2½ revolutions in the Measured column as follows:

    - Turn the fine adjust spindle clockwise to the first calibration value.

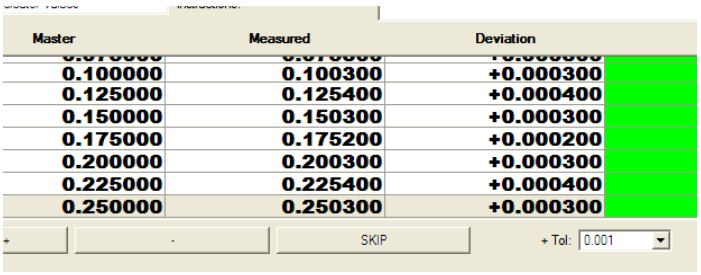
Note: If you pass the calibration value, turn the dial back and approach the value again, from the same direction. This practice will increase the accuracy of the calibration.

    - Click the Send to Table bar.

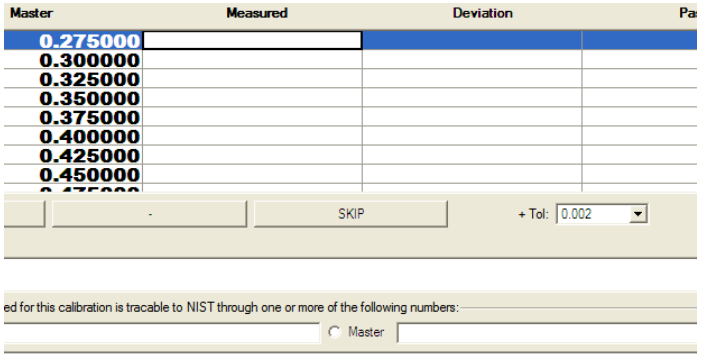
    CERTIFI™ records the value and displays a green box in the In/Out column if the value is within tolerance. A red box displays if the value is not within tolerance. The Deviation column shows the deviation of the measured value from the master value.



14. Using each master value, continue measuring the indicator until all values for the first 2½ revolutions are recorded in CERTIFI™.



15. Click the Next button. The dataset for the remaining values to be recorded is displayed.



Calibration

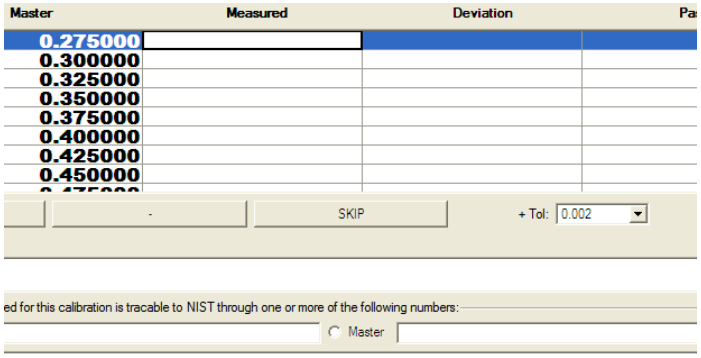
16. Enter the gage measurements in the Measured column as follows:

    - Turn the fine adjust spindle clockwise to the first calibration value.

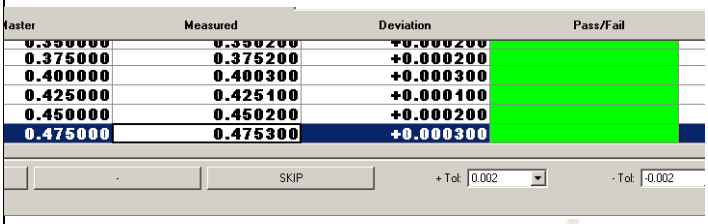
Note: If you pass the calibration value, turn the dial back and approach the value again, from the same direction. This practice will increase the accuracy of the calibration.

    - Click the Send to Table button.

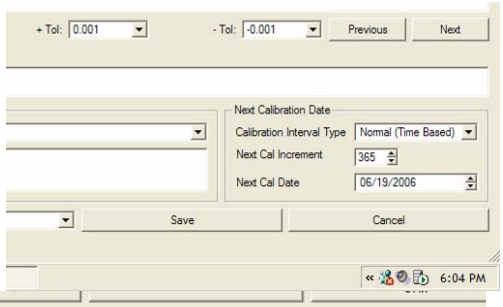
    CERTIFI™ records the value and displays a green box in the In/Out column if the value is within tolerance. A red box displays if the value is not within tolerance. The Deviation column shows the deviation of the measured value from the master value.



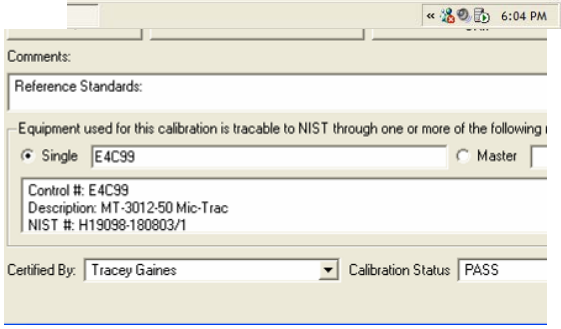
17. Using each master value, continue measuring the indicator until all values for revolutions after 2 1/2 are recorded in CALSPEX.



18. Change the Next Calibration Date, if necessary, by typing over the displayed date.



19. Enter NIST information as necessary. With the cursor in the single box press the Enter key to bring up a list of current NIST information. For new NIST information select Edit from the menu and press the Preferences box. Select the NIST tab to enter new information.

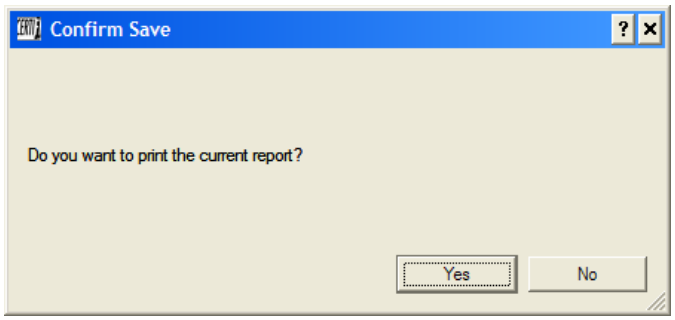


Calibration

20. Click the Save button.

Note: CERTIFI™ automatically assigns a filename to each calibration. **DO NOT** change the filename to avoid problems with the CERTIFI database.

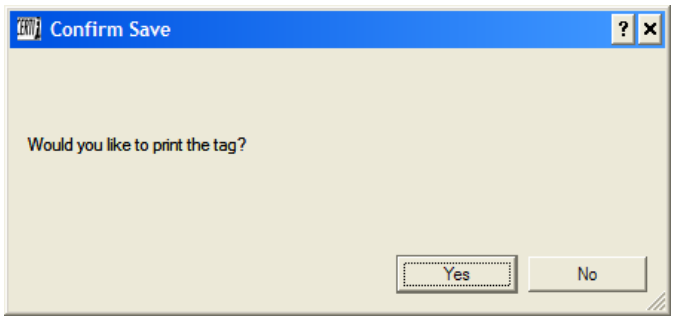
21. When the confirm window displays, click the Yes button if you want to print the calibration report.



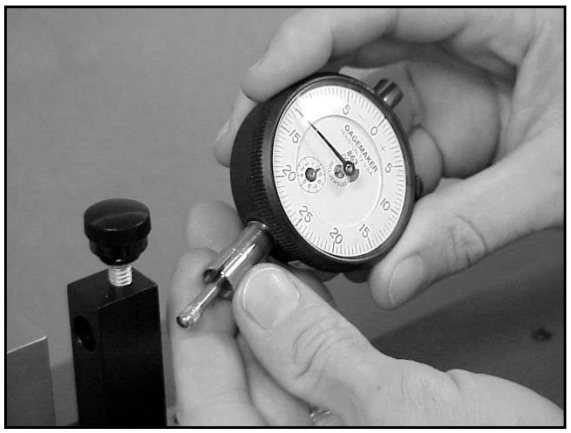
Note: If you have a Brother P-Touch Label Printer for printing calibration stickers, the Confirm window for printing a calibration tag displays.

22. Click the Yes button to print the calibration tag. Affix the Calibration Tag to the caliper.

23. Continue with the same calibration process for the next caliper.



24. Insert the split bushing back into the mounting hole of the indicator fixture, if necessary. Remove the indicator fixture and the tall flat face anvil from the MT-3000. Oil the fixture and anvil and return them to the storage case.



NOTES:

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