

# Calibration Reference Guide

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Factory Calibration settings (CAL-A) are programmed into each flow meter during production and are correct for light fluids such as water, gasoline, or diesel fuel. Factory Calibration is completed with either Stoddard test solvent (on 1" and smaller flow meters) or water (on 1-1/2" and larger flow meters) at 70°F (21°C).

Readings using the standard factory calibration curves may not be accurate in some situations - for example, if the unit measures a "heavy" fluid such as motor oil, especially under extreme temperature conditions. For improved accuracy under such conditions, the GPI flow computer allows for "field" calibration, that is, user entry of custom calibration parameters. A "single point" calibration may yield acceptable accuracy with light liquids; however, heavy liquids may require five or more calibration points to achieve a high level of accuracy. Up to 15 custom calibration points can be entered. NOTE: A Field Calibration below the minimum flow rate can adversely affect accuracy. The use of a uniformly dependable, accurate calibration container is highly recommended for the most accurate results. Due to high flow rate, it is strongly recommended that Field Calibration of 1-1/2" and 2" meters be completed with a combination of volume and weight using fine resolution scales. For the most accurate results, dispense at a flow-rate which best simulates your actual operating conditions. Avoid "dribbling" more fluid or repeatedly starting and stopping the flow - these actions will result in less accurate calibrations.

## Make sure you meet the meter's minimum flow rate requirements.

1/2 inch meters  
1 GPM (3.8 LPM)

3/4 inch meters  
2 GPM (7.5 LPM)

1 inch meters  
5 GPM (18.8 LPM)

1-1/2 inch meters  
10 GPM (37.5 LPM)

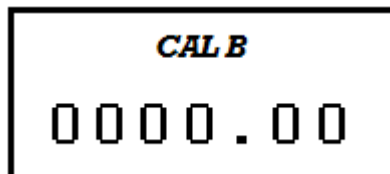
2 inch meters  
20 GPM (75 LPM)

**For best results, the meter should be installed and purged of air prior to Field Calibration.**

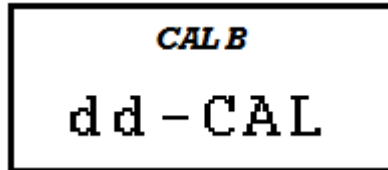
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Step	Action	Notes
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- |   |   |  |
|---|---|--|
| 1 | Hold down CALIBRATE while pressing and releasing DISPLAY until the Field Calibration curves appears ("CAL B" or "CAL C" message will be displayed). Release both buttons. | Remember that Field Calibration Curves are not preset. |
|---|---|--|

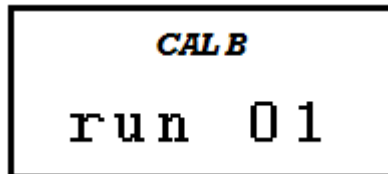


- 2 To calibrate, press and hold the CALIBRATE button. While continuing to hold CALIBRATE, also press and hold the DISPLAY button. Hold both buttons for about 3 seconds until you see a blinking “dd-CAL” message. Once the “dd-CAL” message appears, release both buttons. You are now in field calibration mode.



This step puts the unit in dispense-display field calibration mode (“dd-CAL”).

- 3 Once the buttons have been released from Step 2, the display will show the blinking message “run 01.”



The computer is waiting for you to make a decision to either exit from field calibration mode or to begin a dispense run. If you want to exit the calibration now, go to Step 11.

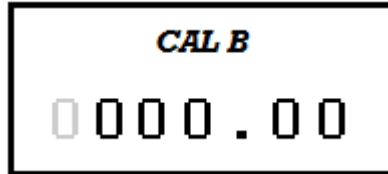
- 4 If you want to continue with the calibration, but have not dispensed any fluid yet, make your final preparations to your pumping system, but don’t start pumping yet.

- 5 Start your pumping system so that fluid flows through the meter. The display will stop blinking and show the “run 01” message.

Dispense into a container that allows you to accurately judge the amount of fluid pumped. When you have pumped the desired amount (for example, 10 gallons), stop the fluid flow quickly.

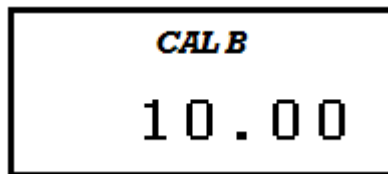
When the computer displays a non-blinking “run 01” message, it is sensing fluid flow. For the most accurate results, dispense at a flow rate which best simulates your actual operating conditions. Avoid “dribbling” more fluid or repeatedly starting and stopping the flow as these actions will result in less accurate calibrations.

- 6 Once the flow has stopped, briefly press and release both buttons. At this point the computer display will change to "0000.00" with the left hand digit blinking.

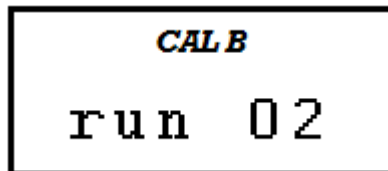


When the display shows "0000.0", the computer has stopped "watching" for fluid flow and is now waiting for you to enter some numbers...

- 7 Enter the volume (amount) of fluid that you dispensed (for example, if your 10-gallon container is full, enter "10.0" for gallons or "37.5" for liters). To enter numbers use the CALIBRATE button to change the value of the digit that is blinking and use the DISPLAY button to shift the "blink" to the next digit.



- 8 Once the correct number has been entered, briefly press and release both buttons. The display will now change to a blinking "run 02" message.



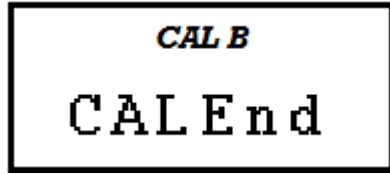
You have installed the new calibration curve point. You are ready to end calibration (Step 10) or enter another new calibration point (Step 9).

- 9 To enter another calibration point, go back and repeat steps 3 through 8.

It is possible to set up a maximum of 15 Cal-Curve Points. The "run ##" message increment will advance one time for each time you repeat the calibration process (run 01, run 02, run 03, etc., up to run 15).

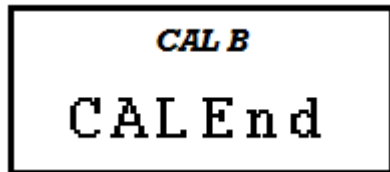
- 10 To end calibration, press and hold both buttons for about 3 seconds until you see the "CAL End" Message

After you release the buttons, the computer will resume normal operations with the new cal point(s) active



- 11 If you HAVE NOT dispensed any fluid, you can exit calibration without changing the calibration curve. If the message "run 01" is showing and you have not dispensed any fluid, hold both buttons down until you see a "CAL End" message (about 3 seconds).

After you release the buttons, the computer will resume normal operation and the old curve (if you have entered one in the past) is still intact.



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