AMERICAN LUBRICATION EQUIPMENT CORPORATION®

11212 A McCormick Road
Hunt Valley, MD 21031

TIM-900B Series

K-Factor Adjustment Procedure

1. Press & release **RESET**. Wait five (5) seconds.

2. Press/hold **AUTO** + **RESET** ..... **0.000 QTS**
3. Release, **AUTO** + **RESET**, blinking **00.0**

4. Press **AUTO (2 sec), release** — blinking UoM ..... **QTS**
5. Press **AUTO (2s), release** — blinking decimal **0.000**
6. Press **AUTO (2s), release** — blinking ..... **no**
7. Press **AUTO (2s), release** — blinking zero ..... **P5 - 0**
8. Press **AUTO (2s), release** — blinking ..... **CAL (large font)**

9. Press **AUTO (2s), release** — blinking ..... **CAL (small font)**

10. Press **AUTO (2s), release** — blinking K-factor ..... **1_000 (Factory setting, 1,000 recommended)**

Increase K-Factor via "**10**" button. I *Larger K-factor number — more oil volume per preset dispense.*
Decrease K-Factor via "**0.1**" button I *Smaller K-factor number — less oil volume per preset dispense*

11. Accept K-Factor. **Press AUTO (2s), release** ..... **END**

VERIFY: Dispense five quarts into laboratory grade, 5000ml, graduated cylinder. Verify preset dispense accuracy. Adjust K-factor as required.

7.7 CALIBRATING

TIM-900 is equipped with a liter-counter high precision oval gears, factory pre-calibrated.

Why calibrate?

If TIM-900 is used:

- **with fluids having a viscosity close to the limits of the allowed range** (such as low viscosity antifreeze fluids or high viscosity oils for gear boxes)
- in extreme flow-rate conditions (close to the min. and max. values of the allowed range) **it may be necessary to carry out an on-site calibration.**

How to calibrate

TIM-900 allows the user to carry out a fast and accurate electronic calibration by modifying the **Calibration factor (K Factor).**

At delivery, all METERS are given the same calibration factor:
K Factor = 1,000
This calibration factor guarantees the best accuracy in the following conditions:

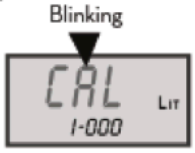
- Fluid: **motor oil type 10W 30.**
- Temperature: **20°C.**
- Flow-rate: **10 liter/min.**

The calibration can be done either as:

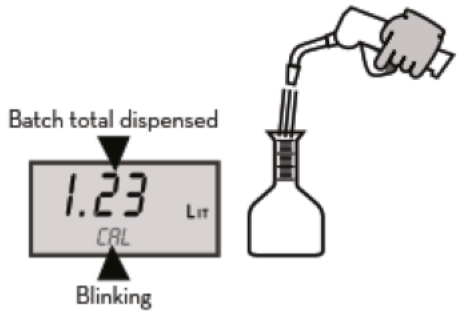
- An on-site calibration, by dispensing into a calibrated container;
- A direct modification of the calibration factor.

When TIM-900 displays:

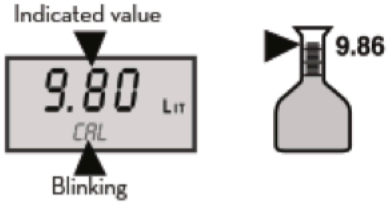
On-site calibration by dispensing into a calibrated container



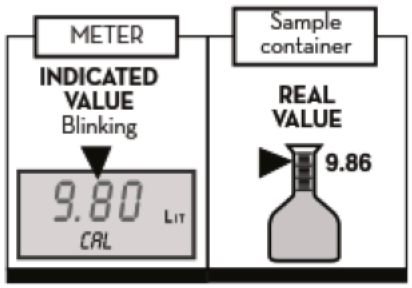
press the AUTO key; it is possible to start the calibration by dispensing the fluid into a calibrated container.
During dispensing TIM-900 displays:



The dispensing operation may be freely interrupted and resumed.
The Calibration dispensing is finished when the fluid level reaches the graduated area in the calibrated container.



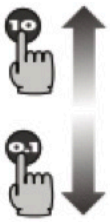
To obtain a correct METER calibration, it is necessary to use an accurate sample container having a **capacity not less than 5 liters.**
Completely purge all air from the unit (see par. 5.7) before performing the calibration.
Perform the calibration dispensing at a steady flow-rate, by pulling the trigger fully down and keeping it in open position until the container is full.
During the final dispensing phase, do not reduce the flow-rate to reach the graduated area in the calibrated container.
The correct technique to be adopted at the final stages of the filling operations into the calibrated container is "small topping-ups"; this is achieved by rapidly pulling the
METER trigger fully down and then releasing it very quickly.
Press AUTO to confirm the end of the calibration dispensing.



After dispensing, wait for a few minutes to allow any possible air bubble to be bled from the sample container. Read the Real value only at the end of this phase as the level may decrease in the container.
Do not wait for more than 15 minutes as TIM-900 will exit the menu and it will be no longer possible to complete the

After dispensing, wait for a few minutes to allow any possible air bubble to be bled from the sample container. Read the Real value only at the end of this phase as the level may decrease in the container.

Do not wait for more than 15 minutes as TIM-900 will exit the menu and it will be no longer possible to complete the calibration procedure.



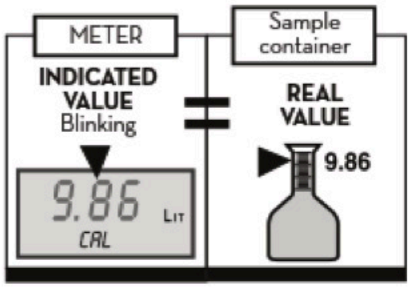
TIM-900 is ready to accept the modification of the **indicated value** to be matched with the **real value**.

Press the "10" key to increase the indicated value.

Press the "0.1" key to decrease the indicated value.

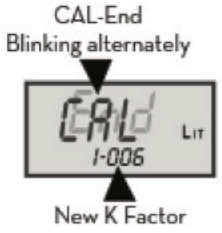
Each time a key is pressed, the last digit on the right is modified by one unit.

By keeping the keys pressed, the value changes, slowly at first and then rapidly.





Press AUTO to confirm the end of the indicated value correction; TIM-900 now calculates the new Calibration factor (K Factor) and displays:



After a few seconds TIM-900 **automatically exits the customization mode** and starts using the new Calibration Factor.



One dispensing operation is enough to carry out the on-site calibration of the liter-counter.

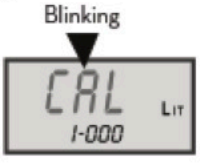
If you wish to **verify** the result of this calibration, **perform a normal dispensing in the same sample calibrated container**, without re-entering the calibration function in Customization menu.

Direct modification of the calibration factor

The direct correction of the Calibration Factor is useful when:

- the K Factor in use must be corrected by a known percentage;
- a K Factor already known must be added.

When TIM-900 displays:



Direct modification of the calibration factor

The direct correction of the Calibration Factor is useful when:

- the K Factor in use must be corrected by a known percentage;
- a K Factor already known must be added.

When TIM-900 displays:

Blinking





press the AUTO key, release it and press the AUTO key again.
TIM-900 displays:



Blinking

TIM-900 is ready to accept the direct modification of the K Factor.
Press the "10" key to increase the indicated value.
Press the "0.1 " key to decrease the indicated value.



Each time a key is pressed, the last digit on the right is modified by one unit.
By keeping the keys pressed, the value changes, slowly at first and then rapidly.



Press the AUTO key to confirm that the correction of the indicated value is over.
TIM-900 stores the new Calibration Factor (K Factor) and displays:

CAL-End
Blinking alternately



New K Factor

After a few seconds TIM-900 **automatically exits the customization mode** and starts using the new Calibration Factor.

Example of a graduated cylinder that works well (correct/proper container) for meter calibration.

