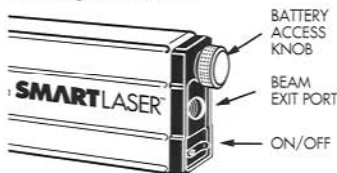


## LASER

The laser beam provides a perfectly straight reference line that extends out 300' or more. The center of the beam is 1" above the bottom (working) surface of the **SMARTLASER™** unit. Remember to account for this dimension when doing layouts and taking measurements.



The laser projects a round dot that may change size and shape slightly with distance from the unit and when the temperature gets hot or cold. The reference point to use for layout work is the center of the light pattern. This center point maintains its alignment accuracy even if the beam shape changes.

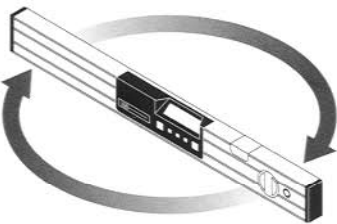
## SIMPLE ACCURACY CHECKS AND CALIBRATION PROCEDURES

### ELECTRONICS CALIBRATION

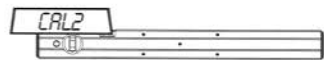
**PROCEDURE FOR LEVEL:** To calibrate, place **SMARTLASER™** on a flat surface. Wait 10 seconds. Push and hold the CALIBRATE button for 2 seconds. (CAL1) will appear briefly on the display.



Rotate the **SMARTLASER™** end-for-end. Place in the same location. Wait 10 seconds.

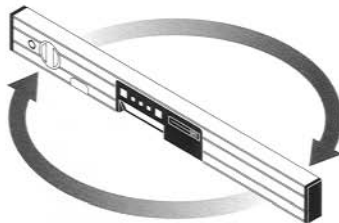


Push the CALIBRATE button again. (CAL2) will appear briefly on the display.



The **SMARTLASER™** has now been calibrated for level.

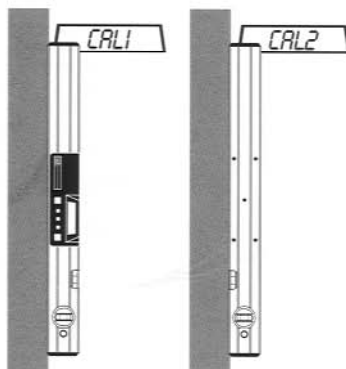
**OVERHEAD MEASURING FOR LEVEL:** If you need to read the display upside down, you must calibrate the top surface of the level. Repeat the steps described above except the **SMARTLASER™** should be upside down.



**PROCEDURE FOR PLUMB:** Place the **SMARTLASER™** against a flat vertical surface with the plumb vial at the bottom and the level vial away from the surface. Wait 10 seconds. Push the CALIBRATE button. (CAL1) will appear briefly on the display.

Rotate the **SMARTLASER™** edge-for-edge about its long axis (i.e., plumb vial is still at the bottom, but the level vial is now against the flat vertical surface). The display should face away from you. Wait 10 seconds. Push the CALIBRATE button again. (CAL2) will appear briefly on the display.

Repeat the steps above except with the plumb vial at the top. The **SMARTLASER™** is calibrated for plumb. *Note: If the CALIBRATE button is pushed when the SMARTLASER™ is not near level or plumb, the display will show - - - and the SMARTLASER™ will ignore the calibration attempt.*



*Note: We recommend checking calibration daily, after a rough fall or if there has been a significant temperature change,  $\pm 20^\circ\text{F}$ , since the previous calibration. To check, simply follow the above procedures without depressing the CALIBRATE button. If the two readings in the end-for-end or edge-for-edge positions are different by more than  $0.1^\circ$ , then the **SMARTLASER™** should be recalibrated.*

### VIAL ALIGNMENTS

To check the alignment of the vials in the **SMARTLASER™**, use the simple "end-for-end" procedure.

Place the unit on a flat surface. Note the position of the bubble in the level vial. Rotate the level  $180^\circ$  and place it on the same edge and on the same spot. Note the new position of the bubble in the level vial. The two readings should be the same. For example, if the bubble is touching the line on the side of the vial to your right, it should be touching the line on the side to your right when the level is flipped end-for-end.

A similar test can be done on the plumb vial using a flat vertical surface.

If the vials are out of alignment, the unit needs to be returned to the factory for alignment or replacement.

### LASER ALIGNMENT

To check that the **SMARTLASER™** beam is aligned with the level vial, you will need to compare the position of the laser spot at two different distances. The following instructions reference the use of the Leveling Base accessory (#25551). If a Leveling Base is not available, any moveable level surface may be substituted. Set up in an area where you can space two targets 50 to 70 feet apart. Survey rods or opposite walls work well as the targets.

Set up your **SMARTLASER™** on the Leveling Base halfway between the two targets. Level the unit on the Leveling Base.

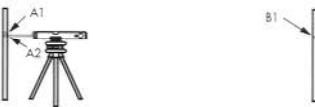
1. Point the **SMARTLASER™** at the first target. Mark the position of the center of the laser dot ("A1").



2. Rotate the laser  $180^\circ$  on the Leveling Base. Point the **SMARTLASER™** at the second target. Make sure the bubble in the level vial is still centered. Mark the position of the center of the laser dot ("B1").



3. Set up the **SMARTLASER™** next to one of the targets. Relevel the Leveling Base. Point the **SMARTLASER™** at the first target again. Mark the new position of the center of the laser dot ("A2").



4. Rotate the **SMARTLASER™**  $180^\circ$  on the Leveling Base. Point the laser at the second target. Make sure the bubble in the level vial

is still centered. Mark the new position of the center of the laser dot ("B2").



The distance ("A") from A1 to A2 should be the same as the distance ("B") from B1 to B2. If A and B are not the same (typically within 1/2 inch when the targets are 70 feet apart), call the factory for realignment service information.



### WARNINGS

1. Never look into the laser beam. Avoid eye exposure as laser radiation is emitted from the aperture. Caution must be taken when handling the instrument to avoid eye exposure to the beam.
2. In case of extended eye exposure, contact physician immediately.
3. Keep this instrument out of the reach of children.

### MAINTENANCE, SERVICE AND REPAIR

The following tips will ensure that your **SMARTLASER™** is kept in top condition.

- The **SMARTLASER™** is weather and water resistant. Should the **SMARTLASER™** be splashed with mortar or other construction site residue, simply wipe clean with a damp cloth. Do not immerse the **SMARTLASER™** in water.
- Aluminum surfaces can be cleaned with a non-abrasive cleansing powder.
- ABS polymer surfaces should be cleaned with a mild liquid soap and water.
- We advise you to store the **SMARTLASER™** away from extreme temperatures below  $20^\circ\text{F}$  ( $-6^\circ\text{C}$ ) or higher than  $140^\circ\text{F}$  ( $60^\circ\text{C}$ ).
- Your **SMARTLASER™** is a precision instrument and requires reasonable care and handling. If the level has been dropped or severely jarred, the line of sight may be affected.
- Tampering with the factory-adjusted components may impair accuracy or damage the instrument and invalidate the warranty.
- Our laser products are constructed to withstand rugged field use. However, like any precision instrument, they should be treated with reasonable care to extend their useful life and accuracy.