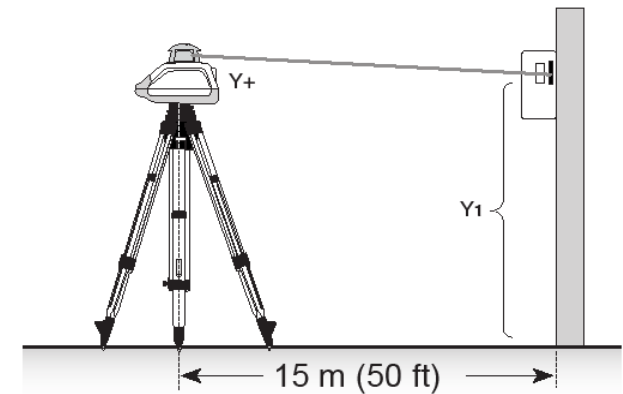# Laser Calibration Check

Checking Calibration of the Y- and X-Axes

1. Set up the tripod 15 m (50 ft) from a wall and make sure the tripod head is leveled.

2. Attach the laser to the tripod with the handle pointing into the opposite direction of the wall.
    Note: Make sure that all three plastic or rubber feet are touching the tripod head.

3. Turn on the laser and allow it to level.
    Note: Let the laser run for 5 minutes to warm up the leveling system.

4. If the green LED starts flashing every 4 seconds, the calibration check can be performed.
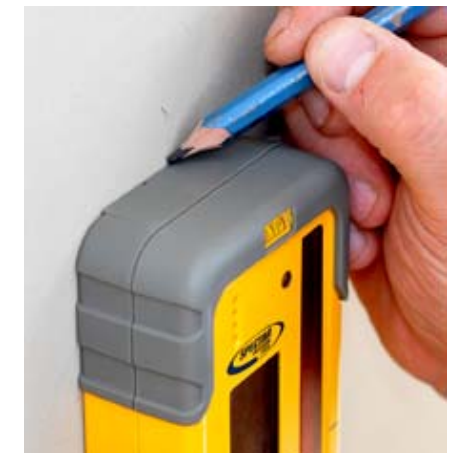
Laser Calibration Check

5. Raise/lower the receiver until you get an on-grade reading for the +Y axis.

6. Using the on-grade marking notch or the flat surface on top (right above the photocell) as a reference, make a mark on the wall.

Note: For increased precision, use the fine-sensitivity setting (1,5 mm//1/16 in.) on the receiver.

In order to avoid wrong markings caused by the deadband of the receiver, always adjust the receiver to the on-grade position coming from the same side (bottom or top)!

Laser Calibration Check

7. **Rotate the laser 180° (-Y axis toward the wall) and allow the laser to re-level.**
   Note: Make sure that all three plastic or rubber feet are still touching the tripod head.

8. **Raise/lower the receiver until you get an on-grade reading for the –Y axis and make a second mark on the wall.**

9. **The distance between the two marks (Y_1 and Y_2) determines the calibration error. If they differ more than 1.5 mm//1/16 in.) (HV301/LL300) at 15 m (50 ft), the laser needs calibrating on the Y-axis.**

10. **After checking the Y-axis, rotate the laser 90°. Repeat the above starting with the + X axis facing the wall.**

11. **When made the mark for the +X axis, rotate the laser again 180° (-X axis toward the wall) and allow the laser to re-level. Make the next mark at the wall and check the difference between the two X axis marks.**
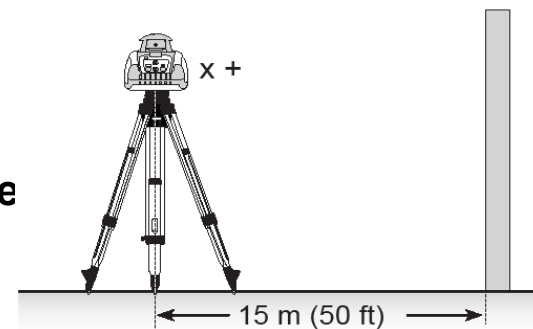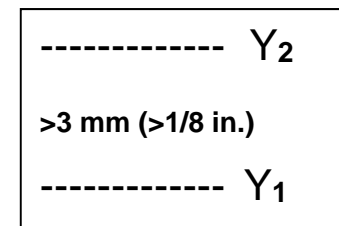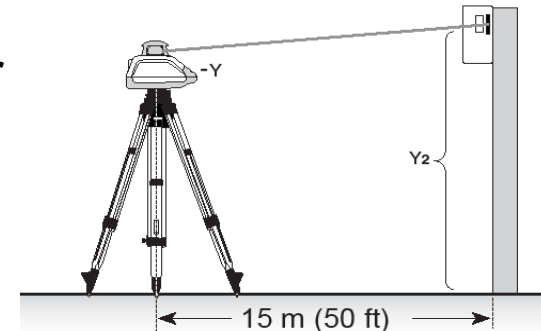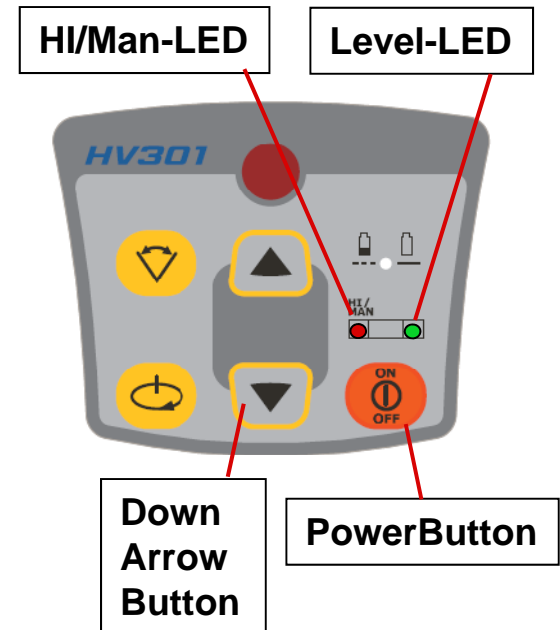
HV301 Calibration Procedure (X & Y)

For best result, place the unit on a level platform or a leveled tripod to begin calibration.

The unit must be leveled on both X- and Y-axes before proceeding to calibration mode. Turn the unit on and allow it to level, then turn it off after both axes are leveled.

HI/Man-LED   Level-LED

1. To get the unit into **X-axis calibration** mode make sure the unit has been turned off.

2. Press and hold the **Down Arrow** Button and then press and release the Power Button (On/Off).

3. Release the Down Arrow Button.

    Note: The unit is now in the calibration mode for the X-axis.

    Note: The red HI/Man - LED starts flashing 2 times a second to confirm the calibration mode has been entered.

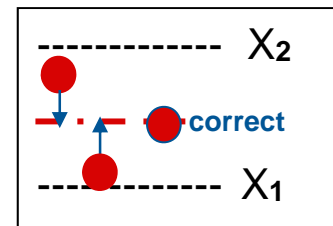Down Arrow Button   PowerButton

HV301 Calibration Procedure (X & Y)

- After starting the X-axis calibration mode, the compensator will drive from the current position to one end of the X-axis- limit then back to the other and stop at the center position. (Both HI/Man + Level-LED will flash until the rotor stops at the center position).

Up and Down Arrow Button

4. To correct a calibration error, mark a new line at the midpoint of the distance between the first and second reading of the X-axis, and calibrate the unit to that point pressing **repeatedly** the Up and Down buttons on the remote control.

   Note: If calibration is not required, turn the unit off and the previous calibration value will be maintained.

HV301 Calibration Procedure (X & Y)

- After approximately 15 seconds, the unit beeps to indicate its ready to store the new calibration constant.

5. Save the new calibration value into the EEprom location using the manual button on the remote control.

- Exit calibration mode by pressing any button on the laser's keypad and the unit will exit without saving a new value.

6. Turn the unit off and then on again to check if calibration has been held.

Manual Button
Save Calibration

HV301 Calibration Procedure (X & Y)

The unit must be leveled on both X- and Y-axes before proceeding to calibration mode. Turn the unit on and allow it to level, the turn it off after both axes are leveled.

1. To get the unit into **Y-axis calibration** mode make sure the unit has been turned off.

2. Press and hold the **Scan Button** and then press and release the Power Button (On/Off).

3. Release the Scan Button.

   Note: The unit is now in the calibration mode for the Y-axis.

   Note: The red HI/Man - LED starts flashing 2 times a second to confirm the calibration mode has been entered.

HI/Man-LED

Level-LED
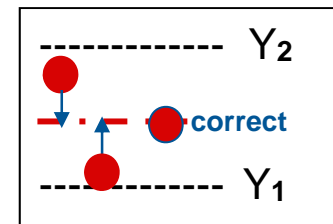
HV301

Scan Button

PowerButton
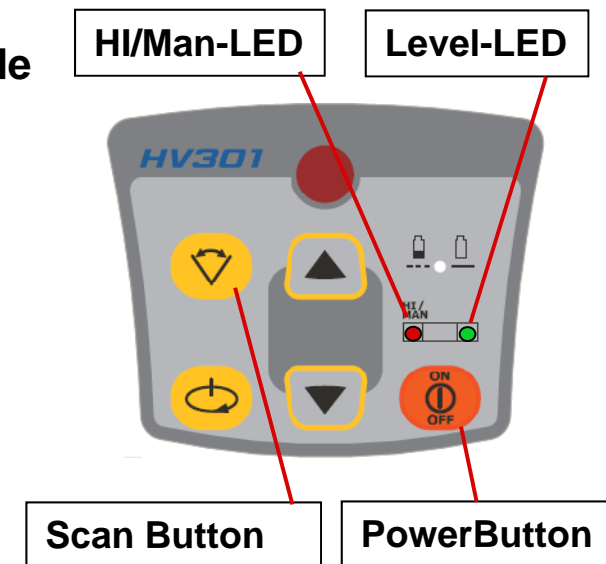
HV301 Calibration Procedure (X & Y)

- After starting the Y-axis calibration mode, the compensator will drive from the current position to one end of the Y-axis- limit then back to the other and stop at the center position. (Both HI/Man + Level-LED will flash until the rotor stops at the center position).

4. To correct a calibration error, mark a new line at the midpoint of the distance between the first and second reading of the X-axis, and calibrate the unit to that point pressing **repeatedly** the Up and Down buttons on the remote control.

   Note: If calibration is not required, turn the unit off and the previous calibration value will be maintained.

Up and Down Arrow Button

Y_2

correct

Y_1

HV301 Calibration Procedure (X & Y)

- After approximately 15 seconds, the unit beeps to indicate its ready to store the new calibration constant.

5. Save the new calibration value into the EEprom location using the manual button on the remote control.

- Exit calibration mode by pressing any button on the keypad and the unit will exit without saving a new value.

6. Turn the unit off and then on again to check if calibration has been held.

**Manual Button
Save Calibration**

Laser Calibration Check (Z)

Checking Calibration of the vertical (Z) Axis on self-leveled HV - lasers

To check vertical calibration, you need a plumb bob with at least 10m (30 ft) of string.

1. Suspend the plumb bob from the ceiling of a room whose ceiling height is at least 10m (30 ft).

2. Set up the laser in vertical so that the laser beam strikes the top of the string.
    Stop the beam's rotation.

3. Using the left/right arrow button, guide the beam from the top of the string to the bottom of it.

4. Look for any deviation in the beam from the top of the string to the bottom of it.
    If the deviation is more than 1,5 mm (1/16 in.), the vertical axis needs calibrating.

10 m (30 ft)
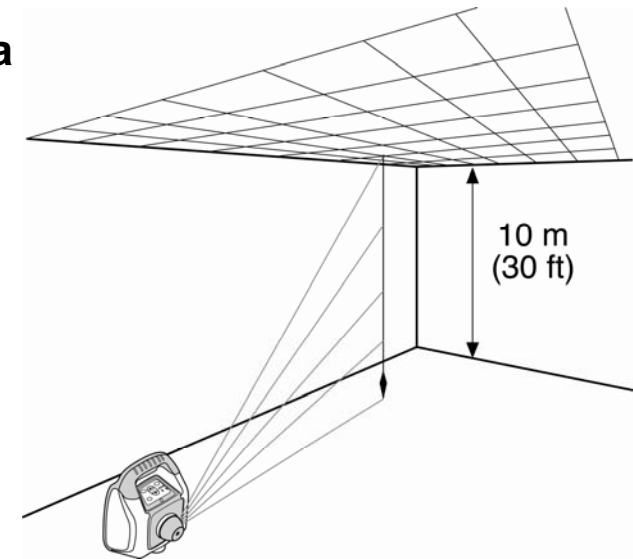
HV301 Calibration Procedure (Z)

Calibration of the unit is accomplished using the remote control.

Note: The unit must be setup vertical and leveled on the Z-axis before proceeding to calibration mode. Turn the unit on and allow it to level, then turn it off after the axis is leveled.

1. To get the unit into **Z-axis calibration** make sure the unit has been turned off.

2. Press and hold the **Rotation Button** and then press and release the Power Button (On/Off).

3. Release the Rotation Button.

    Note: The unit is now in the calibration mode for the Z-axis.

    Note: The red HI/Man - LED starts flashing to confirm the calibration mode has been entered.

HI/Man-LED

Level-LED

Rotation Button

PowerButton
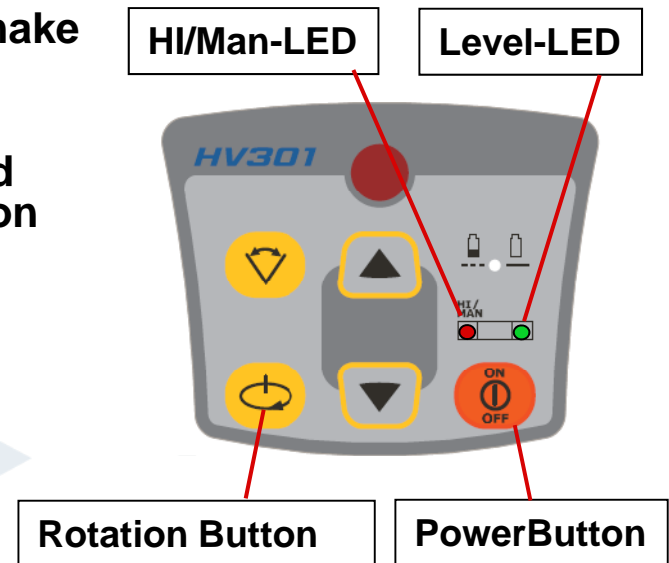
HV301 Calibration Procedure (Z)

- After starting the Z-axis calibration mode, the compensator will drive from the current position to one end of the Z-axis-limit then back to the other and stop at the center position. (Both HI/Man + Level-LED will flash until the rotor stops at the center position).

  Note: If calibration is not required, turn the unit off and the previous calibration value will be maintained.


HI/Man-LED   Level-LED
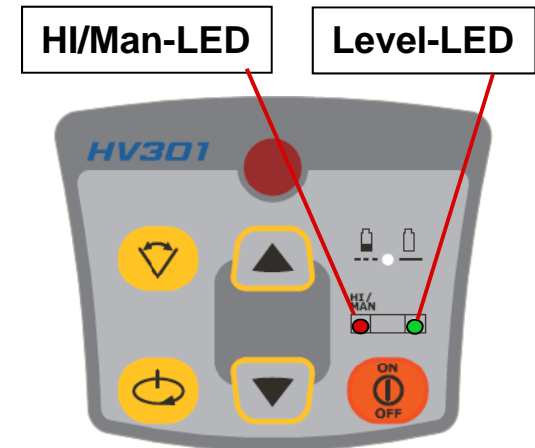
HV301 Calibration Procedure (Z)

4. **To correct a calibration error, mark a new line at the midpoint of the deviation between the top and bottom of the string reading of the Z-axis, and calibrate the unit to that point pressing repeatedly the Up and Down buttons on the remote control.**

•   **After approximately 15 seconds, the unit beeps to indicate its ready to store the new calibration constant.**
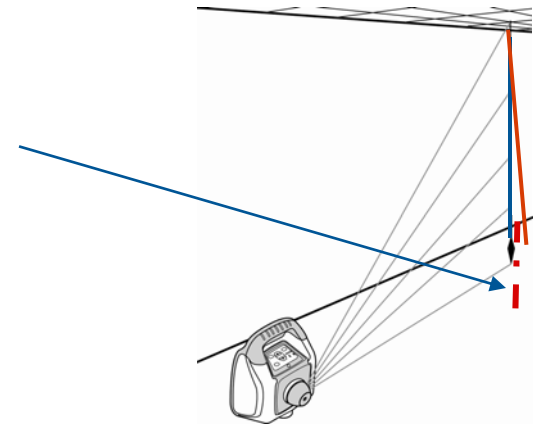

Up and Down Arrow Button

HV301 Calibration Procedure (Z)

5. Save the new calibration value into the EEprom location using the manual button on the remote control.

• Exit calibration mode by pressing any button on the keypad and the unit will exit without saving a new value.

6. Turn the unit off and then on again to check if calibration has been held.

Note: Calibration may be performed with the stopped or rotating beam (dynamically). When calibrating dynamically, use the rotation button at the remote control to change the rotation speed to 600 rpm.

Rotation Button

Manual Button Save Calibration
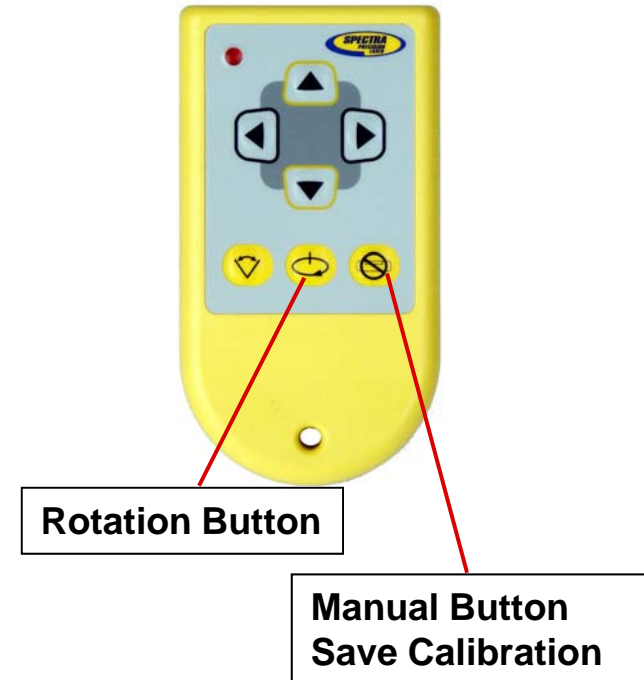
Note: The calibration procedure can be done in the field by a trained customer but our preference is that calibration should be permormed at the service center!