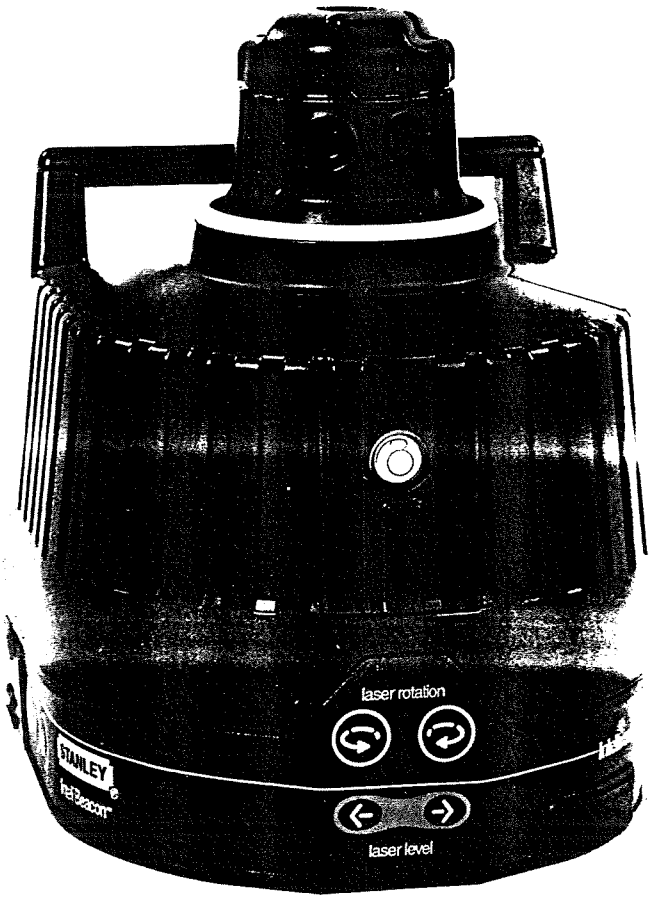
STANLEY®

77-400

IntelliBeacon™
Self Leveling Rotating Laser

INSTRUCTION MANUAL



CONTENTS

1. GENERAL INFORMATION

1.1 Description

The IntelliBeacon™ automatic self leveling rotating laser has been specifically designed for contractors doing both outdoor and indoor work. It can be used for leveling, vertical alignment, squaring and plumbing applications. Its set up and operation is simple in that it is fully automatic self-leveling. The laser outputs include a dot or line with an additional dot 90° degrees to the plane of the rotating beam. The instrument is weatherproof and dust proof.

Caution:
The rotating laser emits a visible Class IIIa laser beam.
Avoid staring at the beam or setting up the laser at eye level.

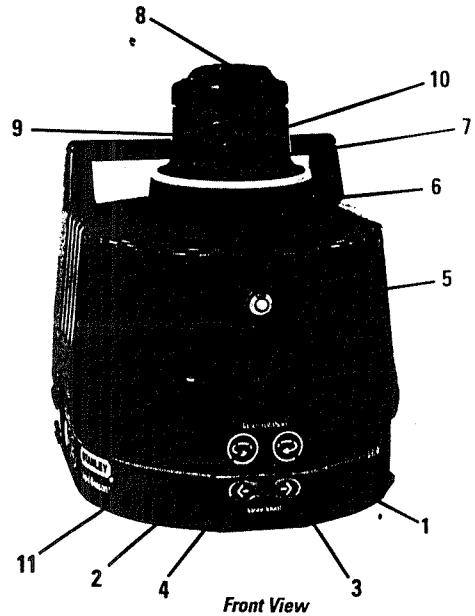
The IntelliBeacon™ laser has these advanced features:

- Automatic self-leveling in both horizontal and vertical modes
- Choice of four types of reference beams: 360° rotating plane, single point, chalk line and square shot
- Reference level / Tilt warning
- Infrared remote control

1.2 Overview

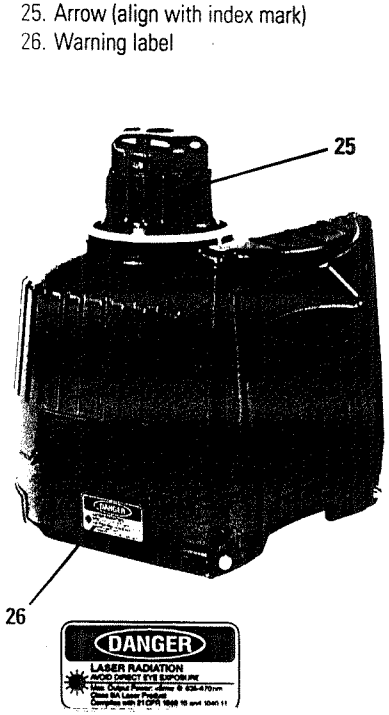
Illustration 1

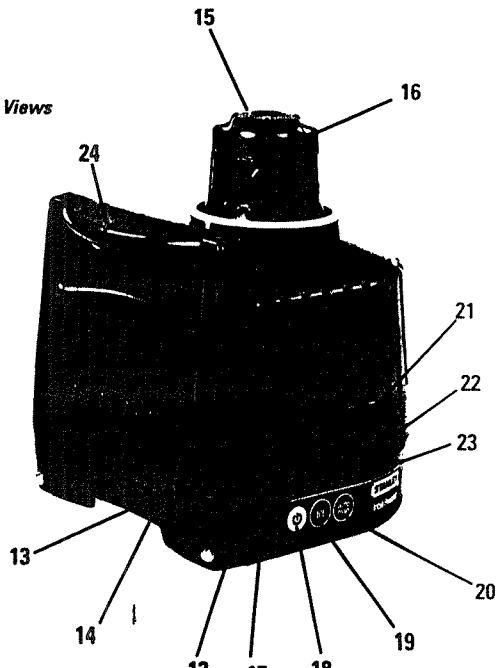
1. Laser rotation control to the right / Speed control
2. Laser rotation control to the left / Speed control
3. Moving the square shot to the right
4. Moving the square shot to the left
5. Vial for vertical setup
6. Index mark
7. Rotating head
8. Plumb or square shot laser beam aperture
9. Horizontal laser beam aperture
10. Laser chalk line aperture
11. Reception window for IR remote control
12. Adjustable feet for vertical setup
13. Battery compartment
14. 5/8 - 11 Tripod mount
15. Aperture label for laser emission
16. Top cover
17. Calibration screws
18. On/Off (⏻)
19. Tilt
20. Manual / Automatic
21. Low battery light
22. Tilt / Reference level light
23. Manual mode light
24. Handle index mark
25. Arrow (align with index mark)
26. Warning label



Front View

Rear Views





"Auto / Man" key

Auto: Automatic leveling. Default mode when laser is switched on.
Man: Manual use.

The laser is always in the automatic self-leveling mode (auto) when turned on. While it is leveling, the head will not rotate and the laser beam will blink. Once the instrument has leveled itself the laser head will start rotating.

Switch to Manual mode to lay out inclined planes, such as cathedral ceilings The beam will *rotate even if the laser is not level.* A red light will blink above the Auto/Manual button to advise the user that the laser is in Manual mode and may not be level.

"Tilt" Key

The Tilt function is also known as the Reference Level alert. This feature shuts off the beam automatically if the laser is jarred or moved, preventing inaccurate readings. This feature operates only in automatic mode, not in manual.

The reference level feature is operational 30 seconds after the laser has self-leveled. Push the "Tilt" key to engage feature. The red light above "Tilt" will blink when operating in this mode.

If the laser is disturbed the head will stop rotating and the red light will be on continuously. Turn the laser off, wait 5 seconds, and turn it on again. Push the "Tilt" key again. Check the height of instrument (check that the beam is at its original reference level).

CAUTION:

The IntelliBeacon™ is manufactured to comply with IEC 825 and 21 CFR 1040.10 and 1040.11 Although the power of the beam does not exceed 2mW, the following cautions are recommended:

Do not stare directly at the laser beam.
Do not set up the laser at eye level.

2. HOW TO USE YOUR INTELLIBEACON™ LASER

2.1 Horizontal setup

1. The IntelliBeacon™ laser can be used directly on the ground, with a 77-404 wall mount or with a 5/8 -11 tripod (77-005). The tripod can be a dome or flat head, standard or elevation type. Although the laser automatically levels within a wide range of up to 10%, the surface should be fairly level for setup.
2. Press On/Off to turn the laser on. Once the instrument is level, the head will start rotating.
3. To switch from the automatic mode to the manual mode, press Auto /Man.
4. To select the Tilt mode, press the "Tilt" key. This feature is operational 30 seconds after the laser has leveled itself.
5. To increase the rotation speed (counter clockwise) press key (2), or key (1) to stop it. To rotate the opposite way, (clockwise) keep key (1) pressed. *(Illustration 1)*
6. If you wish to move the laser beam point to the left or the right for aligning on a reference, stop the beam and press one of the laser rotation keys very briefly. Press key (2) to move counter clockwise and key (1) to move clockwise. Do not use the lower laser level arrow to move the horizontal beam.
7. laser off, press On / Off (⏻).

2.2 Vertical setup

No accessories are needed for this position. The laser can be set directly on the floor or ground. It can also be used with the 77-404 mount on the ground or a tripod.

1. Place the instrument in vertical position. Use the adjustable feet to rough level the laser using the top bubble vial. The laser is electronically self-leveling in the vertical position, so rough adjustment is sufficient.
2. Turn the instrument on. Once the instrument is level, the head will start rotating.
3. To switch from the automatic mode to the manual mode, press Auto / Man.
4. To select the Tilt mode, press the "Tilt" key. This feature is operational 30 seconds after the laser has leveled itself.
5. Adjust the rotation speed and direction by keys 2 and 1. *(Illustration 1)*
6. You can now work on the vertical plane projected by the laser.
7. If you want to align the vertical plane with a specific reference, stop the rotation, change the beam from point to chalk line, use the arrow keys to move the chalk line right or left. You can also use the optional remote control for this.
8. To turn the laser off, press On / Off (⏻).

2.3 Squaring

For squaring (i.e.: positioning the rotating vertical plane perpendicular to a reference line):

1. Place the instrument on the ground in the vertical position. Use the adjustable feet to rough level the laser using the top bubble vial. The laser is electronically self-leveling in the vertical position, so rough adjustment is sufficient.
2. Turn the instrument on. Once the instrument is level, the head will start rotating. Stop the rotating head.
3. Align the arrow (25) located behind the beam aperture with the index (24) located on the carrying handle. *(Illustration 1)*
4. Move the laser so that the beam is over the reference point, keeping the arrow and index aligned.
5. You now need to align the beam projecting from the top of the head to your second reference point. (This beam is 90°, or square, to the other vertical plane beam). Use the arrow keys to move the beam right or left until on the reference point.
6. Start rotating the head, using the laser rotation keys. You can also use the chalk line. Check from time to time that the laser has not been moved and that your setting is still accurate.

2.4 Rotation speed

Your laser is equipped with a visible laser diode. Adjust the rotation speed according to the ambient light conditions. The laser beam is more visible in slow motion. ***It is possible to stop the rotation*** and point the beam manually to view the beam over long distances.

2.5 Using the chalk line

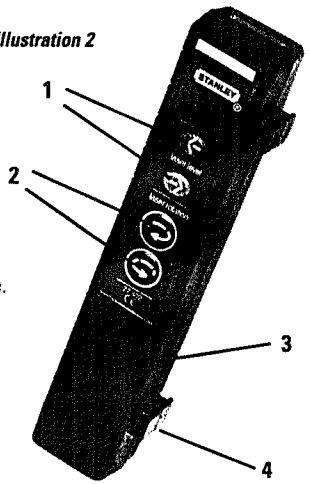
1. To switch the beam from a point of light to a solid chalk line, hold the head and turn the top cover to the right.
2. The laser will project a sharp solid line, which is ideal for alignments, partitions and ceilings.
3. Move the line by rotating the beam manually or by using the remote control. Although the chalk line is most visible when the beam is stationary, it can be used in rotation mode as well.
4. To use a laser detector, you must return to "laser point" mode.
   The IntelliEye™ Laser detector will not work with the chalk line feature.

2.6 Remote control 77-402

The remote control can be used up to 100 ft. (30 meters) away from the laser. It allows you to control the laser speed rotation and direction of the rotating head. It can be hand-held or attached to the laser detector. The reception window on the laser unit must be in sight for the IR remote control to function properly.

When the laser is in the vertical mode, the remote can also be used to move the square shot to the right or left to a desired point. Use the top arrow keys to move the square shot (the beam projecting from the top of the head).

Illustration 2



1. Use these to align the vertical plane. (Move the square shot to the right or left.)
2. Rotation speed adjustment
3. Battery location
4. For attaching the remote control to the detector

The 1.5V alkaline battery will provide 50 hours of continuous use. To open the battery compartment, push the tab at the top of the compartment up, in the direction of the arrow.

2.7 Batteries

Two 'D' type batteries located in the bottom of the unit power the laser.
Alkaline are recommended for best operation.
The light above the On/Off key will blink when the batteries are low .

1. To replace batteries, use a coin to unscrew the battery compartment at the bottom of the instrument.
2. Remove the battery compartment.
3. Insert the batteries, matching the polarity (+ or -) as indicated on the bottom of the compartment. Always replace both batteries at the same time.
4. Put the battery compartment back in place and tighten the screw.

3. CHECKING THE INTELLIBEACON™ CALIBRATION

Here are a few simple instructions to check the laser for calibration. Remember that the laser is a precision instrument and that it is important to keep it calibrated and in proper condition.

The accuracy of your work is completely your responsibility and you should check your instrument regularly, especially prior to important jobs.

We recommend that qualified technicians perform calibration.

3.1 Horizontal Checking

1. Set up the laser about 100 feet (30 meters) from a wall or door and turn laser on.
2. After its level, stop the rotation so that the beam is a point
3. Mark the location of the beam on the wall. You can use a detector if it's hard to see the beam.
4. Rotate the laser unit 180°. Mark the location of the beam on the wall near the first mark (after 90 seconds).
5. If the instrument is properly calibrated at 100 feet the marks should be no more than 3/8" apart. (At 30 meters, no more than 9 mm apart.) This is ±0.015 % leveling accuracy.
6. Turn the laser 90° and repeat the same steps with the second axis. Again, compare the two marks. If more than 3/8" apart, the laser should be calibrated.

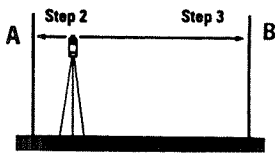
If you notice an error, contact customer service for repair information or use the 2 calibration screws (17) [left and center screws for adjustment of x, y, axis]

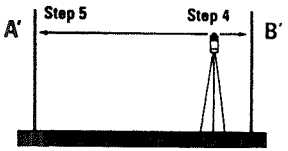
3.2 Vertical Checking

Vertical plane can be checked with plumb line (z axis screw on the right).

3.3 Cone Error Checking

The laser should be properly calibrated (within the tolerances as described above) before checking for cone error. If possible, use an elevation tripod for this test.





1. Set up the laser about 2 ft. away from one wall (A) or pole, and 100 ft. from another wall (B) or pole, Turn the laser on.
2. After its level, stop the rotation so that the beam is a point. Mark the location of the middle of the beam on the near wall (A).
3. Turn the laser beam 180° and mark the location of the middle of the beam on the far wall (B).
4. Now set up the laser unit about 2 ft. away from the far wall. After the laser has leveled itself, stop the rotation so that the beam is a point. Carefully line up the beam on the previous mark on wall B'.
5. Turn the laser beam 180°and mark the location of the middle of the beam on wall A', near the first mark.
6. Compare the two marks on wall. If the difference between a A A' and B B' exceeds 3/8" (9 mm) apart, the unit is out of calibration.

4. MAINTENANCE

Caution - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

1. The automatic laser is a precision instrument which must be handled with great care. Avoid shock and vibration. Always store and transport the laser and accessories in their carrying case.
2. Do not store the instrument in its case if the instrument or case are wet to avoid moisture condensation inside the instrument.
3. Do not stare directly at the laser beam. Continuous exposure could damage your eyesight.
4. Although weather resistant, the laser and its accessories should be kept dry and clean.
5. Do not store your laser at temperatures below -4°F or above 176°F (-20° C or above 80°C) to prevent possible damage to electronic components.
6. To maintain the precision of your laser, check the calibration regularly.
7. Keep the lenses of the apertures clean. Use a soft cloth and glass cleaner.

5. SPECIFICATIONS

Recommended operating distance	1,000 ft. (300 meters) diameter with receiver
Leveling accuracy	± .015%; ± 3/16" at 100 ft. (±15 mm at 100m)
Leveling range	± 10%
Laser emission	Laser diode Class IIIa, 635 nm < 2 mw
Batteries	2 alkaline D batteries, Approx. 160 hours life
Operating temperature	14° to 122°F (-10° to 50° C)
Dimensions	6 3/4" x 6" x 6 " (17 x 15 x 15 cm)
Weight	3 lb. / 1.3 kg

Specifications are subject to change without notice.

6. ACCESSORIES

6.1 IntelliEye™ (77-401) Laser Detector

The IntelliEye™ Laser Detector increases the versatility of the IntelliBeacon™ by enabling the operator to extend the usable range of the unit. With the detector the unit can be readily used out side and has a range of up to 1000' (300m) in diameter. It features dual LCD displays and comes with its own mounting bracket.

6.2 Mounts

6.2.1 Universal Mount 77-404

The universal mount can be used for horizontal alignment, as a wall mount and for vertical setups on a tripod. It has a spring-activated mechanism that allows you to quickly change the height of the laser. A fine adjustment screw on the bottom allows precise positioning.

6.2.2 Tripod 77-005

The laser can be mounted on a 5/8 - 11 tripod that has a dome or flat head. It can be either a standard or elevation tripod. An elevation tripod will allow you to quickly set up on the same reference point.

7. WARRANTY

Stanley Tools warrants the IntelliBeacon™ against defects in material and workmanship for 1 year from the date of purchase. Deficient products will be repaired or replaced at Stanley's discretion if sent to:

The Stanley Works
Repair Department
480 Mytle St.
New Britain, CT 06053

Stanley's liability under this warranty is limited to repair or replacement of the unit. Any attempt to repair the product by other than factory authorized personnel will void this warranty. Calibration, batteries and maintenance are the responsibility of the user. Where permitted by law, Stanley is not responsible for incidental or consequential damages. Agents of Stanley cannot change this warranty. Stanley is not responsible for damage resulting from wear, abuse or alteration of this product. The user is expected to follow ALL operating instructions.

This warranty may provide you with additional rights that vary by state, province or nation.

United States government regulations require accurate records of sales of products that contain laser diodes. The enclosed warranty registration card must be returned to Stanley to record the sale of this unit. Warranty claims cannot be honored unless the registration card has been returned to Stanley.