

Operator's Manual

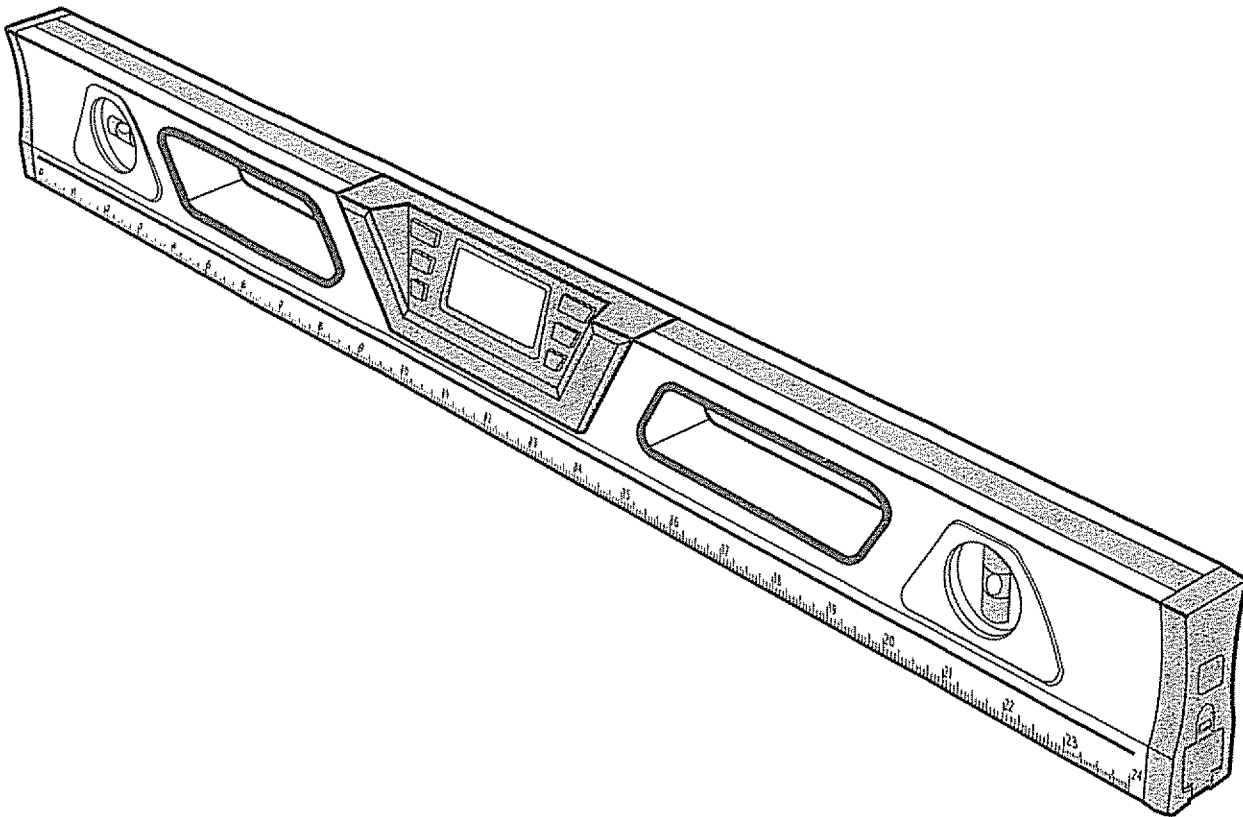


24-in. Digital

Multi-function LEVEL

with Laser Trac™

Model No.
320.48293



⚠ CAUTION Read, understand and follow all Safety Rules and Operating Instructions in this Manual before using this product.

Sears, Roebuck and Co.,
Hoffman Estates, IL 60179 U.S.A.
Visit our Craftsman website: www.craftsman.com

- WARRANTY
- SAFETY
- DESCRIPTION
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ONE YEAR FULL WARRANTY ON CRAFTSMAN TOOL

If this Craftsman tool fails to give complete satisfaction within one year from date of purchase, **RETURN IT TO ANY SEARS STORE OR OTHER CRAFTSMAN OUTLET IN THE UNITED STATES FOR FREE REPLACEMENT.**

If this Craftsman tool is used for commercial or rental purposes, this warranty applies for only 90 days from the date of purchase.


This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Sears, Roebuck and Co., Hoffman Estates, IL 60179

**SAVE THESE INSTRUCTIONS!
READ ALL INSTRUCTIONS!**

SAFETY SYMBOLS

The purpose of safety symbols is to attract your attention to possible dangers. The safety symbols, and the explanations with them, deserve your careful attention and understanding. The symbol warnings **DO NOT** by themselves eliminate any danger. The instructions and warnings they give are no substitutes for proper accident prevention measures.

 **WARNING:** BE SURE to read and understand all safety instructions in this manual, including all safety alert symbols such as “DANGER”, “WARNING” and “CAUTION”, BEFORE using this digital level. Failure to follow all instructions listed below may result in electric shock, fire and/or serious personal injury.

SYMBOL MEANING



SAFETY ALERT SYMBOL: Indicates DANGER, WARNING, OR CAUTION. May be used in conjunction with other symbols or pictographs.



Failure to obey this safety warning **WILL** result in death or serious injury to yourself or to others. Always follow the safety precautions to reduce the risk of fire, electric shock and personal injury.



Failure to obey this safety warning **CAN** result in death or serious injury to yourself or to others. Always follow the safety precautions to reduce the risk of fire, electric shock and personal injury.



Failure to obey this safety warning **MAY** result in personal injury to yourself or others or property damage. Always follow the safety precautions to reduce the risk of fire, electric shock and personal injury.

DAMAGE PREVENTION AND INFORMATION MESSAGES

These inform user of **important information and/or instructions** that could lead to equipment or other property damage if not followed. Each message is preceded by the word “**NOTE:**” as in the example below:

NOTE: Equipment and/or property damage may result if these instructions are not followed.

SAFETY INSTRUCTIONS

⚠ WARNING: BE SURE to read and understand all instructions in this manual before using this level. Failure to follow all instructions may result in hazardous radiation exposure, electric shock, fire and/or serious personal injury.

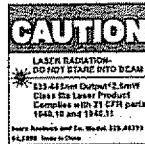
SAFETY PRECAUTIONS FOR LASERS

⚠ WARNING: Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.

⚠ WARNING: The use of optical instruments such as, but not limited to, telescopes or transits to view the laser beam will increase eye hazard.

This level has a built-in laser light. The laser is a Class IIIa and emits output power of a maximum 2.5 mW and 635-665 nm wavelengths. These lasers do not normally present an optical hazard. However, **DO NOT** stare at the beam as this can cause flash blindness.

⚠ CAUTION The following label is on your tool. It indicates where the level emits the laser light. **BE AWARE** of the laser light location when using. **ALWAYS MAKE SURE** that any bystanders in the vicinity of use are made aware of the dangers of looking directly into the laser.



⚠ WARNING: LASER LIGHT. LASER RADIATION. Avoid Direct Eye Exposure. **DO NOT** stare into beam. Only turn laser beam on when the level is on the work surface. Class IIIa laser.

1. **DO NOT** remove or deface any product labels. Removing product labels increases the risk of exposure to laser radiation.
2. **DO NOT** stare directly at the laser beam or project the laser beam directly into the eyes of others. Serious eye injury could result.
3. **DO NOT** place the Laser Trac™ level in a position that may cause anyone to stare into the laser beam intentionally or unintentionally. Serious eye injury could result.
4. **DO NOT** use any magnifying optical tools such as, but not limited to, telescopes or transits to view the laser beam. Serious eye injury could result.

SAFETY INSTRUCTIONS cont.

SAFETY PRECAUTIONS FOR LASERS cont.

5. **DO NOT operate the Laser Trac™ level around children** or allow children to operate the tool. Serious eye injury could result.
6. **ALWAYS turn the Laser Trac™ level off** when not in use. Leaving the tool on increases the risk of someone inadvertently staring into the laser beam.
7. **DO NOT operate the Laser Trac Level in combustible** areas such as in the presence of flammable liquids, gasses or dust.
8. **DO NOT use on surfaces such as sheet steel that have a shiny, reflective surface.** The shiny surface could reflect the beam back at the operator. Be aware that laser light reflected off a mirror or any other reflective surfaces can also be dangerous.
9. **DO NOT attempt to modify** the performance of this laser device in any way. This may result in a dangerous exposure to laser radiation.
10. **ALWAYS use only the accessories** that are recommended by Sears for use with the Laser Trac™ Level with this product. Use of accessories that have been designed for use with other laser tools could result in serious injury.
11. **DO NOT use the Laser Trac Level** for any purpose other than those outlined in this manual. This could result in serious injury.
12. For further information regarding lasers, refer to ANSI-Z136.1 the **STANDARD FOR THE SAFE USE OF LASERS**, available from the Laser Institute of America (407) 380-1553.
13. **ALWAYS USE two “AAA” size batteries.** Use of any other batteries may create a risk of fire.
14. **INSERT the batteries correctly.** Match the polarities, positive (+) to positive and negative (-) to negative, as marked inside battery compartment.
15. **DO NOT** short battery terminals.
16. **DO NOT MIX old and new batteries.** If batteries are weak, replace both of them with two new batteries. These new batteries should match each other in brand and type.
17. **Remove dead batteries immediately** and dispose of them according to your local ordinance.
18. **NEVER dispose of batteries in fire.**
19. **Keep batteries out of reach of children. They are not playthings.**
20. **Remove batteries and store separately if level will not be used for several days.**

DESCRIPTION

KNOW YOUR LEVEL Fig. 1

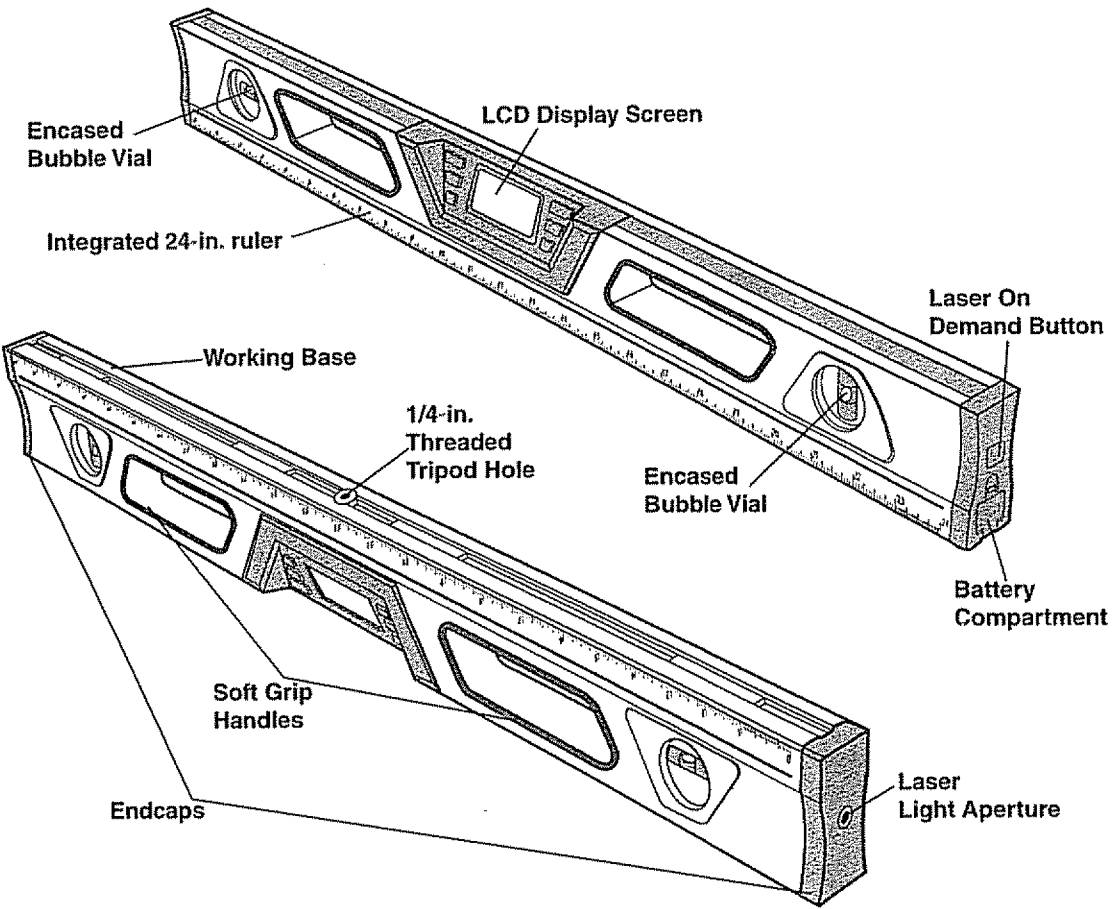
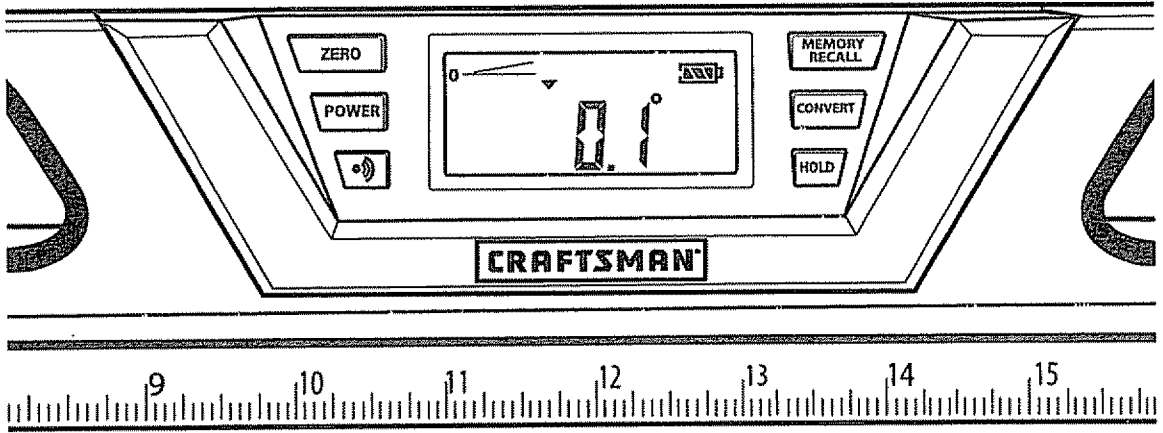


Fig. 1a



DESCRIPTION cont.

KNOW YOUR LEVEL cont.

NOTE: Before attempting to use your level, familiarize yourself with all of the operating features and safety requirements.

This Craftsman 24-inch Digital Level is a highly versatile leveling tool designed for fast, easy operation.

Heavy-duty, lightweight aluminum construction, with the LCD digital module constructed of unbreakable ABS polymer that's sealed against dirt and water, and the toughest acrylic block bubble vials and solid-state laser components all add up to on-the-job durability and long, dependable service.

Use the digital LCD readout for all your angle measurements and layout jobs, such as roof pitches, saw cut angles and drainage slopes.

Use the Laser Trac™ laser beam to extend a visual leveling line over distances much greater than a traditional bubble vial beam level.

Use the level manually, hand held, or mounted on a Craftsman tripod 9-00000 (sold separately).

Use the digital level inside or outside to measure pitch in inches of rise per foot of run.

Measure any angle in degrees with up to 0.2° accuracy.

Measure any slope in percent...measure level and plumb with either the LCD digital display or with the vertical and horizontal bubble vials.

NOTE: Install 2 "AAA" 1.5-volt batteries (sold separately) to power both the LCD module display and the Laser Trac™ laser beam features of this digital level. See Battery Installation on page 0.

1. **Power Button** - Press the button to turn the LCD display screen on. When the LCD screen first comes on, the temperature is displayed in Fahrenheit for about 2 seconds. The current angle of the level is then displayed, and a picture of that angle is shown either above or below the line for true level (see Fig. 2). An arrow on the display indicates which direction to move the level. True level is reached when the two lines are together and the angle shows 0° (see Fig. 3). Turn off the level by pressing the button and holding it in for about 3 seconds. The level will shut itself off when not used for 5 minutes.
2. **LCD Display** - Large, easy-to-read display screen reads right side up even when level is upside down.

Fig. 2

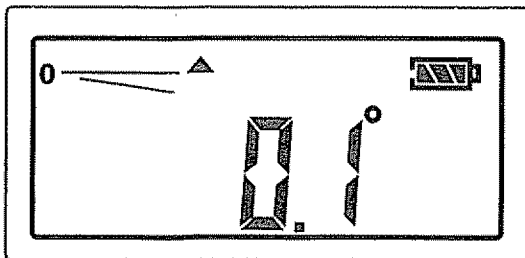
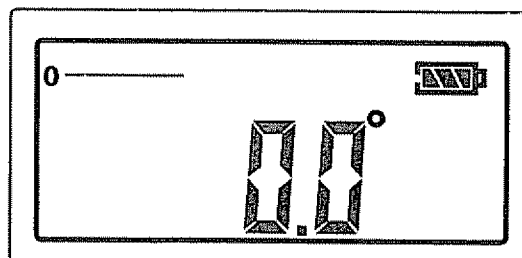


Fig. 3



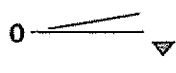
DESCRIPTION cont.

KNOW YOUR LEVEL cont.

3. **Sound On/Off Button** - Used to activate the beeper. When button is pushed, beeper sounds at level (0°), 45° , and plumb (90°). To turn sound off, simply push button again.
4. **Current Reading Hold Button** - Push to hold the information on the current reading. The level will hold nine different consecutive angle readings in its memory.
5. **Memory Recall Button** - Push button to recall the last 9 measurements that are stored in the memory. They will read in order of the latest measurement entered as "first".
6. **Zero Button** - Absolute / relative angle conversion button for comparison of two work surface angles. When the level is turned on, it is in absolute angle mode. Take a measurement of the first work surface. The LCD screen indicates the angle between the surface and true level. Press the zero button for the relative angle mode and the level will set the current angle to zero. Move the digital level to the second work surface, and the level will give the relative angle between the first and second surfaces. To return to absolute angle again, turn power button off and back on.
7. **Conversion Button** - By pushing this button you can convert angles to different units. Push to change the display units from degrees ($^{\circ}$) to pitch (in / ft), to percent slope (%). Pitch readings are in 1/8-inch/feet increments. Plus and minus signs indicate that the pitch is slightly more (+) or less (-) than true level.
8. **Laser Trac™ System** - Shoots a bright 635-665 nanometer laser beam with a useful visibility of up to 300-ft. indoors or outdoors.
9. **Laser On Demand Button** - Located on the right endcap of the level, powers the laser on/off.
10. **Laser Light Aperture** - The laser beam is emitted from this opening, which is on the left endcap of the level.
11. **Integrated 24" Ruler**- Located on the lower front surface of the level, 24 inches in increments of 1/16-inch, with first inch marked in 1/32-inch increments.
12. **Encased Bubble Vials**- The level or plumb of a surface can also be accurately measured by positioning the bubble inside the vial in between the marks on the vial's surface. The highly sensitive vial ensure the digital level has an accuracy of 0.029° .
13. **Working Base** - The bottom of the level is the working base. The working base should always be placed firmly on the working surface.
14. **Magnetic Bottom** -Four magnets in the working base allow for secure contact to metal, handy when working with steel studs or metal ductwork.
15. **1/4 -inch Tripod Threaded Hole** - Allows level to be mounted to Craftsman® tripod 9-00000, sold separately.
16. **Battery Compartment** - Holds two "AAA" batteries to power Laser Trac™ system and LCD display.
17. **Endcaps** - Ends cushioned to help protect level from damage.
18. **Large, Soft-grip Handles** - For ease in carrying, holding level in place.

DESCRIPTION cont.

LCD SCREEN ICONS

0  **Up/Down Indicator** - The zero line (0°) indicates the level position. The arrow indicates the current angle's position, either up or down away from the level (0°).



Battery Power Icon - Indicates the amount of battery power in the unit. Replace batteries when the black power bar disappears.



Sound / Beeper Icon - This icon appears on the screen when the beeper function is activated.



Memory Icon - This icon shows when the memory function is being used. Level can recall the last nine saved measurements.

TECHNICAL SPECIFICATIONS	
Recommended Use	Indoors or Outdoors
Laser Class	Class IIIa, Max. output power ≤ 2.5 mW
Power Supply	Two "AAA" 1.5-volt batteries
Angle Measuring Range	0° to 360°
Optimum Operating Temperature	0° to 40°C (32 to 104°F)
Accuracy of vials	$\pm 0.029^\circ$ (level or plumb)
Accuracy of digital display	$\pm 0.1^\circ$
Estimated Battery Life	10 hours with alkaline batteries

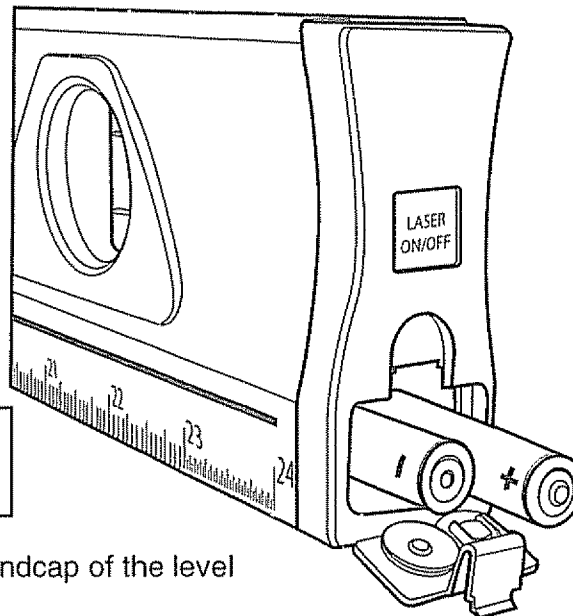
OPERATION

BATTERY INSTALLATION (Fig. 4)

This multi-function digital laser level uses two "AAA" batteries (sold separately), to power both the LCD module display and the Laser Trac™ features.

NOTE: Always turn off the level before installing or replacing the batteries.

Fig. 4



1. Open the battery cover, located in the right endcap of the level below the laser on/off button (see Fig. 4).
2. Insert two new "AAA" alkaline batteries with the polarity (+/-) as indicated on the inside of the battery compartment.
3. Close the cover securely in place.

OPERATION cont.

POWER BUTTON AND LCD DISPLAY

Press the Power button to turn the LCD display screen on. When the screen first comes on, the temperature is displayed in Fahrenheit for about 2 seconds, to indicate if level is being used in optimum operating temperature range. The current angle of the level is then displayed, and a picture of that angle is shown either above or below the line for true level (see Fig. 2). An arrow on the display indicates if the level has to be moved up or down. True level is reached when the two lines are together and the angle shows 0° (see Fig. 3). Turn off by pressing and holding the button in for about 2 seconds. If not used for 5 minutes the level automatically turns off. The LCD display is large and easy to read. When the level is turned upside down, the LCD screen senses and changes to read correctly in the inverted position.

TO USE THE LEVEL FOR HORIZONTAL AND PLUMB MEASUREMENTS

Horizontal and Plumb measurements can use both the bubble vial and the LCD readout features.

HORIZONTAL

Use the level on horizontal surfaces to true them up. The level's bubble vials will show when you have the surface level. The bubbles will be exactly in between the marks on the vial.

Once the Power button is turned on, lay the level on the surface you want to level. The LCD display will show the surface you are measuring as a line either above or below the true level line, and the degree to which the surface is off, with an arrow showing whether the surface should be raised or lowered in order to be leveled.

The LCD display also gives the degree to which the surface is off. To level, move the surface with the level on it until the two lines on the readout match and the readout says 0° for the angle (Fig. 3). If the beeper is activated, the beeper will sound when the level is at level.

PLUMB (Fig. 5)

To find the plumb of a work surface, lay the digital level against the vertical surface, with the plumb bubble vial at the top. The surface will be at true plumb when the bubble is positioned exactly between the marks on the vial.

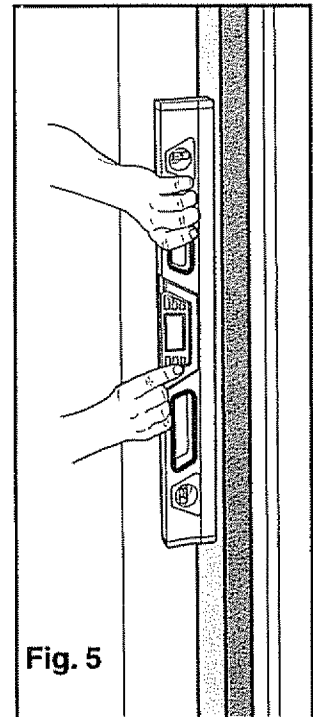
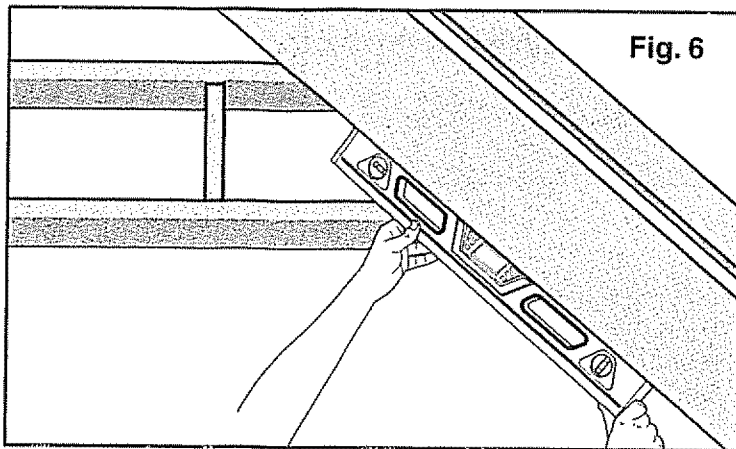


Fig. 5

OPERATION cont.

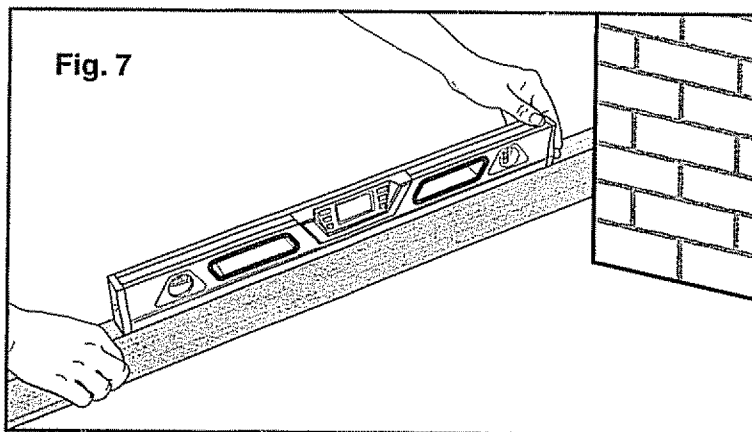
PLUMB cont. (Fig. 5)

The LCD display shows the surface with the level on it as a line, and true plumb as another line either to the left or right of the line for plumb, and the degree to which the surface is off, with an arrow showing whether to move the surface to the left or right. If the beeper button is on, the level will beep when true plumb or 90° is reached.



PITCH (Fig. 6)

The digital laser level can be used to measure the pitch of a roof. It measures the pitch in inches of rise per foot of run. Push the conversion button to change angle to pitch. The pitch will be read as inches per foot in 1/8-in. increments, with a + or a - sign to indicate if the pitch is above or below the desired measurement.



ANGLE (Fig. 7)

The digital laser level measures any angle in degrees with up to 0.1° accuracy. This can be used to find the necessary angle for many surfaces, and when the conversion button is pushed to display angle, will tell you the angle and which way it is off of true level. If the beeper button is turned on, the level will beep at 0° angle.

OPERATION cont.

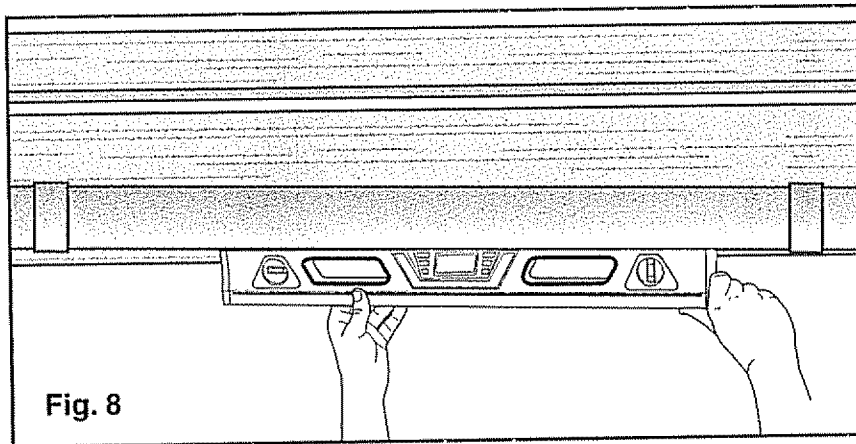


Fig. 8

SLOPE (Fig. 8)

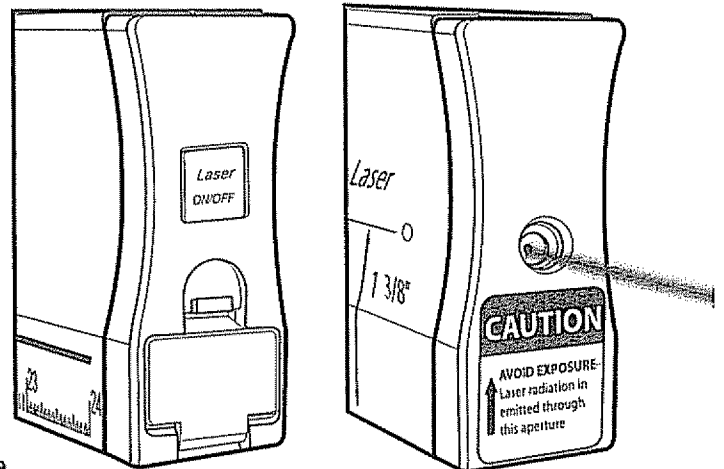
The digital laser level measures the slope of a surface in percent. This is useful when laying pipe for proper drainage. When the conversion button is in the slope mode, it will display the surface being measured in percent, with exact level at 0.0%. If the beeper button is turned on, the level will beep at 0.0%.

LASER TRAC™ ALIGNMENT (Fig. 9)

This digital level contains a laser diode located inside the left endcap of the level. It provides a bright 635-665 nanometer beam with a useful visibility that extends up to 300-ft. indoors or outdoors.

1. To activate the Laser Trac™, press in the Laser On Demand Button located on the right endcap of the level (Fig. 9).
2. The center of the laser beam is 1 3/8-inch above the bottom (working) surface of the level. Remember to account for this when doing layouts and taking measurements.
3. Level the work surface, and the laser will project the level up to 300-feet away to enable you to level large areas.
4. The laser projects a round dot on the targeted surface. The dot size and shape may change slightly with distance, temperature or target surface material. The point to use is the center of the dot pattern.

Fig. 9

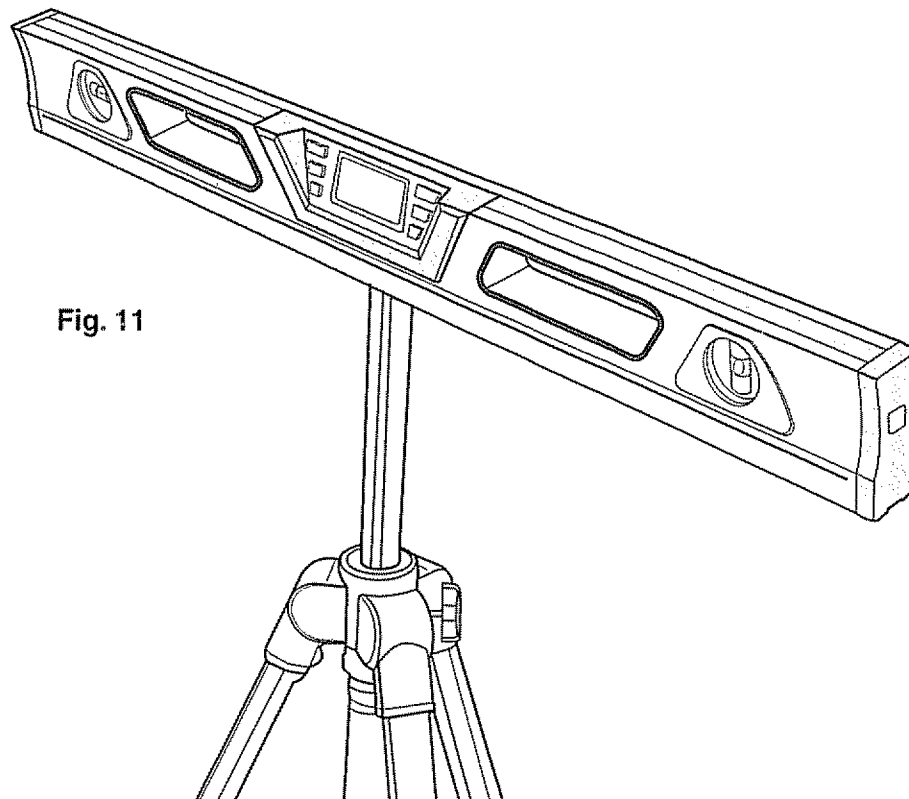
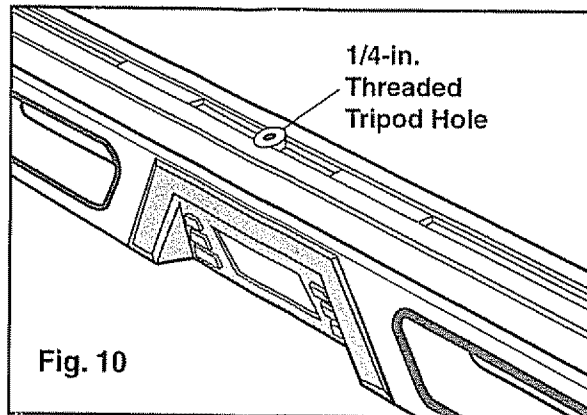


OPERATION cont.

ALIGNMENT - TO USE LEVEL WITH TRIPOD (Figs. 10, 11 and 12)

This level can be used with a tripod 9-48278 (sold separately) to project a beam for level up to 300-ft. away. This feature is perfect for home improvement projects such as aligning pictures, chair rails and other wall fixtures, plumbing runs, and many other uses.

1. Adjust the tripod to true level, using the bubble vial on the base of the tripod.
2. Adjust the height of the laser line you want to project.
3. Screw the level to the tripod using the 1/4-in. threaded hole located in the center of the working surface of the level (see Fig. 10).
4. Make any final adjustments to tripod and level to find the true level point. This will be at 0° on the LCD display screen and, if activated, the beeper will beep.

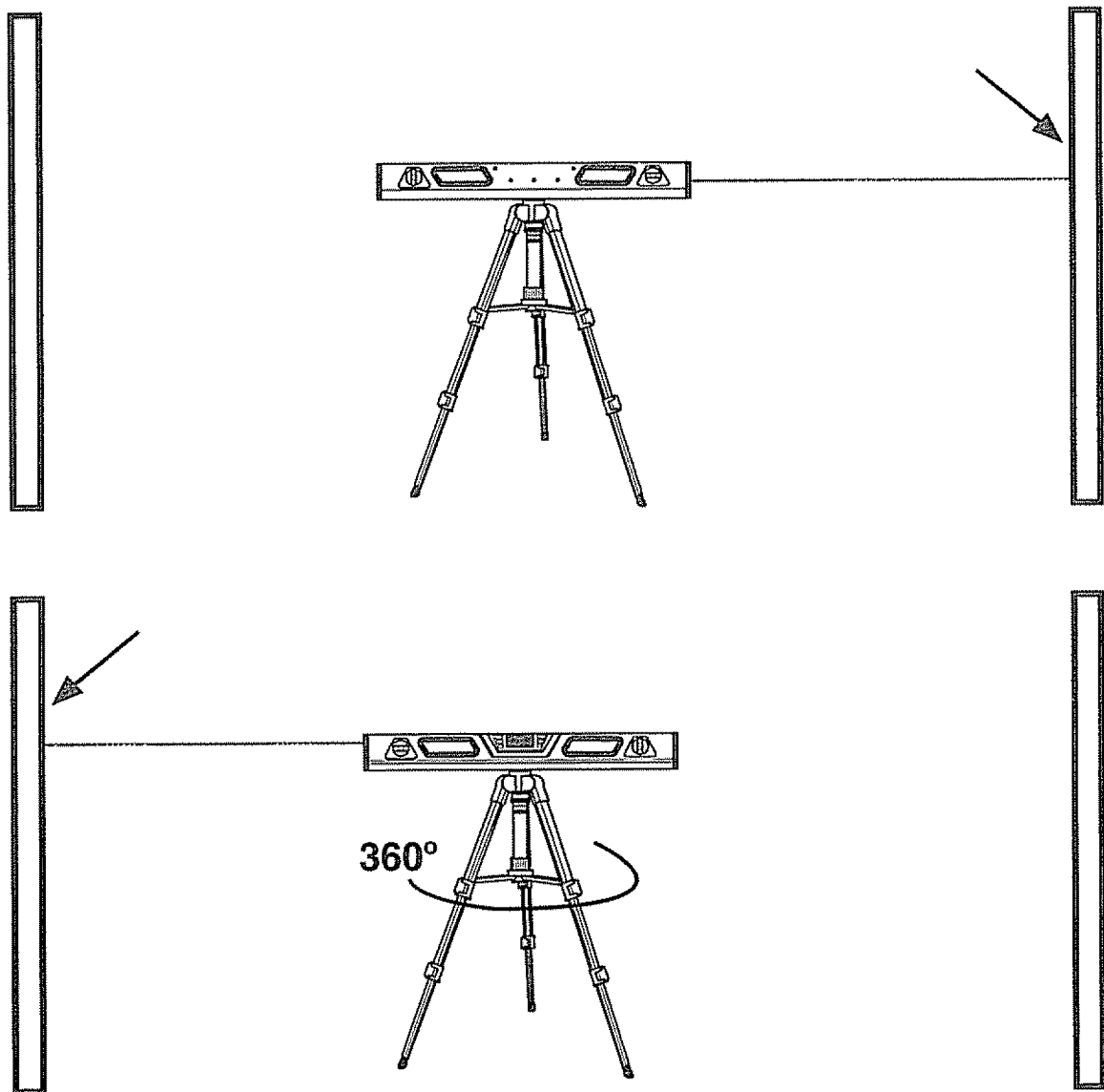


OPERATION cont.

ALIGNMENT - TO USE LEVEL WITH TRIPOD cont. (Figs. 10, 11 and 12)

5. The laser projects a dot on the targeted surface (see Fig. 12) and the size and shape may vary according to temperature, distance and target surface material. **ALWAYS** use the center point of the dot for your measurement. Rotate the level on the tripod to align chair rail, pictures, etc. 360° around the space.

Fig. 12



OPERATION cont.

CURRENT READING HOLD BUTTON AND MEMORY RECALL

To hold the information of the current reading, press the Hold button. The level can hold nine different readings in its memory. To read out the measurements, press the Memory Recall button. The last nine measurements can be read out, beginning with the most recently saved. To make a new measurement, press the hold button to return to measuring mode.

USING CONVERSION BUTTON TO CHANGE DISPLAY UNITS

The conversion button changes the measurement units from degrees ($^{\circ}$) to pitch (in/ft) to slope percent (%). Pitch readings are in 1/8-in. per foot increments. Plus and minus signs indicate when the pitch is slightly more (+) or less (-) than true level shown on the display. The conversion button can be used even when the display is in the HOLD mode. This feature is a convenient way to convert angles from one unit to another. For example, a 5-in/ft. roof pitch measurement can be converted to 22.6° for setting up cuts on a chop saw.

ABSOLUTE ANGLE AND RELATIVE ANGLE MEASUREMENTS

ABSOLUTE ANGLE MEASUREMENT

1. Lay the digital laser level on a working surface with the base flat against the surface.
2. When level power is turned on, the display indicates the absolute angle between "level" and working surface. The zero line indicates the level position, and the arrow indicates the direction of the working surface either above or below level.
3. To activate the beeper, push the beeper button. The beeper will sound when the level is at 0° (level), 45° , and 90° (plumb). To deactivate beeper, push button a second time.
4. To save the measured angle in memory, press the hold button. This level can remember the last nine measurements. To display the data in memory, press the memory recall button to recall recorded angles. The level will read out the data starting with the most recent measurements and going backwards to the earliest in its memory.
5. To take a new measurement, press the hold button to return to measurement mode.

RELATIVE ANGLE MEASUREMENT

1. Lay the digital laser level on the First working surface.
2. Turn on the level. The LCD screen indicates the absolute angle between true level and the working surface.
3. Press the Calibration button to enter relative angle measurement mode. The current angle will be considered to be 0.0° and the display will read 0.0° .
4. Place the digital level on the Second working surface and the relative angle between the First working surface and the Second working surface will be displayed. The zero line indicates the First working surface position, and the arrow indicates the direction of the Second working surface either above or below the First working surface level.
5. At this point you can change the display units for the measured angle from degrees ($^{\circ}$) to pitch (inch/foot) or slope (%) by pressing the conversion button.

MAINTENANCE

This digital laser level has been designed to be a low-maintenance tool. However, in order to maintain its performance, follow these steps.

1. **HANDLE** the tool with care. Treat it as a precision optical device, such as a camera or binoculars.
2. **AVOID** exposing the tool to shock, continuous vibration or extreme hot or cold temperatures.
3. **STORE** the tool indoors and in a safe place.
4. The Level is designed to be weather resistant and construction site tough. If the level is splashed with mortar or other construction site residue, simply wipe clean with a damp cloth. **DO NOT** immerse the level in water.
5. Aluminum surfaces can be cleaned with a non-abrasive powder.
6. Check the batteries regularly to avoid corrosion. **REMOVE** the batteries from the tool if it is not going to be used for an extended period.
7. **DO NOT** try to take the level apart.

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Laser point projection is weak.	Batteries are low in power.	Replace with new batteries.
Laser point is not projected.	Laser On Demand Switch is not On Batteries are installed incorrectly. Battery power is low. Laser diode is damaged	Check to make sure the switch is in the "On" position. Reinstall batteries with correct polarity. Replace with new batteries. Take tool to Sears Service Center
The LCD screen will not turn on.	Batteries are installed incorrectly. Battery voltage is low. The LCD screen is damaged.	Reinstall batteries with correct polarity. Replace with new batteries. Take tool to Sears Service Center

ACCESSORIES

Tripod

There is a Craftsman Tripod 9-48278 that can be use with your 24-inch level. It has a 1/4-in. threaded screw that fits the 1/4-in. threaded screw hole on the level. Visit your local Sears store or other Craftsman outlets or shop sears.com/craftsman.

NOTES

NOTES

Get it fixed, at your home or ours!

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