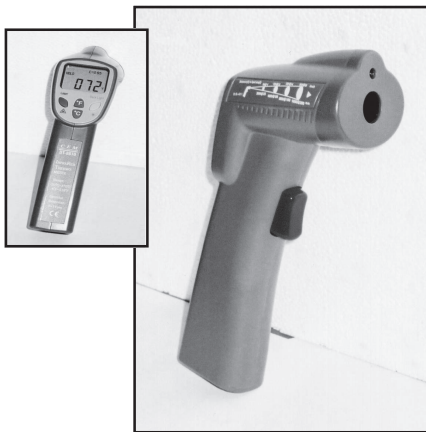


CEN-TECH **NON CONTACT LASER THERMOMETER**

Model 91778

ASSEMBLY INSTRUCTIONS



3491 Mission Oaks Blvd., Camarillo, CA 93011

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Specifications

Measurement Range	20 ⁰ Celsius-270 ⁰ Celsius or 4 ⁰ Fahrenheit-518 ⁰ Fahrenheit
Response Time	Less than 1 Second
Resolution	1 ⁰ Celsius/Fahrenheit
Distance to Spot	8:1
Accuracy	±2%
Battery	9 Volt (included)
Laser Class	Class II Red Wave Length

Save This Manual

You will need the manual for the safety warnings and precautions, assembly instructions, operating and maintenance procedures, parts list and diagram. Keep your invoice with this manual. Write the invoice number on the inside of the front cover. Keep the manual and invoice in a safe and dry place for future reference.

Safety Warnings and Precautions

1. **KEEP PRODUCT USAGE AREA CLEAN.** Cluttered areas invite injuries.
2. **KEEP CHILDREN AWAY FROM PRODUCT.** This is not a toy but a delicate/precision instrument. Do not allow children to handle this product unsupervised.
3. **TO AVOID RISK OF PERSONAL INJURY, EQUIPMENT DAMAGE, FIRE AND SHOCK,** make sure your work area is free of damp, wet or rainy conditions.
4. **USE EYE PROTECTION. NEVER POINT** laser directly at the eye. Do not point laser on or indirectly off of reflective surfaces such as Stainless Steel or Aluminum, etc. Wear ANSI approved safety impact goggles when working with tools and equipment.
5. **CHECK FOR DAMAGED PARTS.** Before using this product, carefully check that it will operate properly and perform its intended function. Check for damaged parts and any other conditions that may affect its operation. Replace or repair damaged or worn parts immediately.
6. **DO NOT DIRECT THE LASER BEAM INTO THE EYES** of any person or animal. This may cause serious injury to the

- eye. Do not look directly into the beam during operation.
7. **USE THE RIGHT TOOL FOR THE JOB.** There are certain applications for which this product was designed. Do not modify this product and do not use this product for a purpose for which it was not intended. Using this product for purposes other than those specified, may result in hazardous radiation exposure.
 8. **STAY ALERT.** Watch what you are doing, use common sense. Do not operate any tool when you are tired or distracted from the job at hand.
 9. **CHECK FOR DAMAGED PARTS.** Before using this product, carefully check that it will operate properly and perform its intended function. Check for damaged parts, loose parts, and any other conditions that may affect the operation of this product. Do not disassemble the instrument or attempt to perform any internal servicing. Repair and servicing of this Laser are to be performed only by a qualified service technician.
 10. **DO NOT USE THIS THERMOMETER IF UNDER THE INFLUENCE OF ALCOHOL OR DRUGS.** Read warning labels on prescriptions to determine if your judgment or reflexes are impaired while taking drugs. If there is any doubt, do not use this product.
 11. **USE ONLY BATTERIES OF THE TYPE RECOMMENDED-SIZE "9 VOLT".** Do not mix old and new batteries. Do not use different types of batteries. Do not use rechargeable and alkaline batteries together.
 12. **MAKE CERTAIN THE LASER BUTTON IS IN THE "OFF" position** when adjusting or when changing the battery.
 13. **REMOVE BATTERY** if the Laser Thermometer is not used for a long period of time.
 14. **DO NOT USE THIS PRODUCT IN THE FOLLOWING FIELDS-EMF** (electromagnetic fields), arc welder, etc.
 15. **ABRUPT TEMPERATURE CHANGE CAN CAUSE HEAT SHOCK.** If this occurs, allow 30 minutes for thermal stabilization before using again to prevent the possibility of inaccurate temperature readings.
 16. **PEOPLE WITH PACEMAKERS SHOULD CONSULT THEIR PHYSICIAN(S) BEFORE USING THIS PRODUCT FOR AUTOMOTIVE PURPOSES.** Electromagnetic fields

in close proximity to a heart pacemaker could cause interference to or failure of the pacemaker. Caution is necessary when near the coil, spark plug cables, or distributor of a running engine. The engine should always be off if adjustments are to be made to the distributor.

Note: Always switch to a fresh set of battery when tool performance begins to diminish. This is a delicate instrument. Do not drop or jar the Thermometer.

Unpacking

When unpacking, check to make sure the following parts are included. If any parts are missing or broken, please call Harbor Freight Tools at the number on the cover of this manual

The Non Contact Laser Thermometer

With this Non Contact Thermometer, you can point, shoot, and read the temperature at the location of the laser beam. You can have accurate target aiming and switch from Fahrenheit to Celsius for instant temperature readings. Accuracy is +/- 2%. Response time is less than 1 second. Just point, pull the trigger and read the temperature on the display.

This instrument is widely used in the home or work place for use in the electric power industry, petrochemical industry, metallurgy industry, auto industry, electron industry, tobacco industry, material media industry, etc.

Electronic field: This instrument can measure the heat radiation point of an electric panel, fuse, dynamotor and gearbox, electronic parts.

Heating and Air-Condition field: Checks and monitors supply, leakage of pipe and air stratification. Can check the temperature in an oven to see if it is accurate.

Automotive field: Check cylinder, heat system & cool system, scan radiator, etc.

Food field: When foods are stored, measures surface temperatures in accordance with HACCP standards. Cannot be used to see if cooked meat is done.

For external use only: Not for measuring body temperature for people or animals. Will not take the place of a medical thermometer.

Operating the Infrared Thermometer

1. Squeeze the On/Off Key (E) on the pistol handle of the Laser Thermometer. Align the unit directly facing the target. See Figure 6, page 7.
2. Press the Laser Key (10) while pressing the On/Off Key (E). Point the IR Sensor (B) of the Laser directly at the target and the temperature reading will appear on the LCD Display.
3. You may set the temperature to Fahrenheit (3) or Celsius (2) by pressing the reading switch on the Indicator. See Figure 5, page 7.
4. When measuring temperature with the Laser, take into account the ratio of distance and area to be measured.
5. When you release the On/Off Key (E), the last reading will be held for 7 seconds. The HOLD (5) icon appears on the LCD Display. See Figure 5, page 7.
6. If your battery is low, the screen will indicate "low battery" (6). See Figure 5. At this time you will need to replace the batteries. Dispose of old batteries. Contact local Hazard Waste Disposal authorities for proper guidelines for disposal. See page 7.
7. To find a "hot spot", aim the thermometer outside the area of interest. Then scan across the object with an up and down motion until you locate the "hot spot".
8. To obtain accurate temperature readings, you must be sure the distance from the target is correct. Determine the distance to be measured. The farther the distance from the target, the larger the hot spot size.
9. The smaller the object, the closer you should be to it. If you want to get an accurate reading, you must be sure that the laser reflection is twice as large as the object.
10. Use masking tape or flat black paint to cover surfaces such as shiny or polished metal that has low emissive measurements. Take into consideration the tape and allow more time for the tape to get the same temperature as the material underneath the tape.
11. Read the measured temperature. The Laser powers OFF automatically after about 7 seconds when the On/Off Key (12) is released.

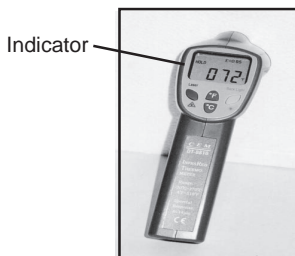


Figure 1

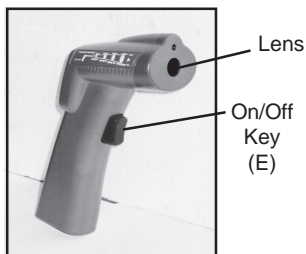


Figure 2

Replacing the Battery in the Laser Thermometer

1. Slide the Battery cover door on the handle to expose the Battery compartment. See Figure 3.
2. Insert the replacement DC 9V Battery into the Battery compartment (F). **DISPOSE OF OLD BATTERIES PROPERLY.** Never put batteries into a fire. Contact local Hazard Waste Disposal authorities for proper guidelines. Replace cover. See Figure 4.

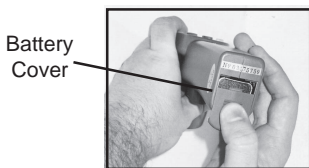


Figure 3

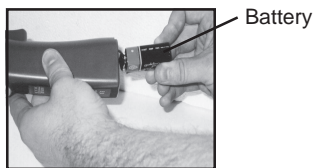


Figure 4

Maintenance

1. Clean the Lens (10) (See Figure 2) with a can of compressed air. Gently brush remaining dust with a camel's hair brush. Carefully wipe the surface with a moist cotton swab moistened with water or water based glass cleaner.
2. For better and safer performance, keep all parts of this product clean and dry at all times

FEATURE CALL OUTS

1. Digital Readout
2. Temperature °C (Celsius)
3. Temperature °F (Fahrenheit)
4. Measuring Indication
5. Data Hold
6. LOW Battery Indicator
7. Laser Point
8. Fixed Emissivity (0.95)
9. Backlit
10. Laser Key
11. Backlight Select Key

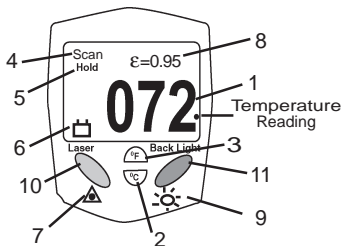


Figure 5

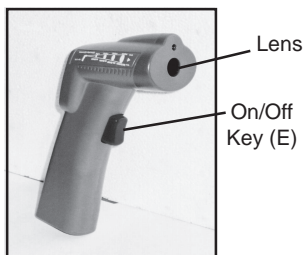


Figure 2

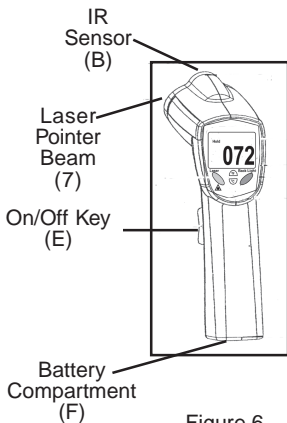


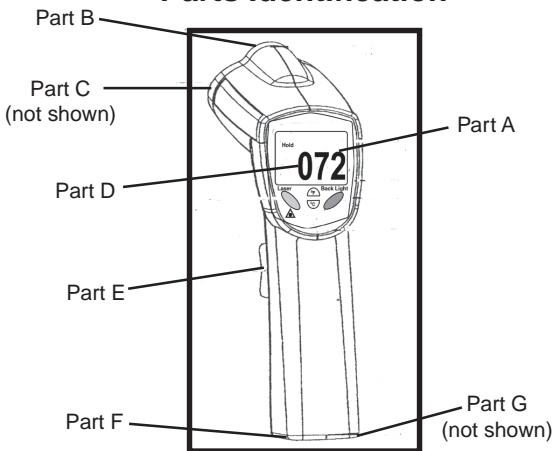
Figure 6

Warning: The warnings, cautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

Parts List

Part #	Description	Qty.
A	Indicator (for details, see page 7)	1
B	IR Sensor	1
C	Laser Pointer Beam	1
D	LCD Display	1
E	On/Off Key	1
F	Battery Compartment	1
G	9 Volt Battery	1

Parts Identification



PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER NOR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

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