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› Klein Tools CL320KIT HVAC Kit User Manual

KLEIN TOOLS CL320KIT

Klein Tools CL320KIT HVAC Kit User Manual

Model: CL320KIT | Brand: KLEIN TOOLS

INTRODUCTION

This manual provides comprehensive instructions for the safe and effective use of the Klein Tools CL320KIT HVAC Kit. This kit is designed for HVAC professionals and includes three essential tools: the CL320 Auto-Ranging, TRMS 400A HVAC Clamp Meter; the IR07 Dual IR and Probe Thermometer; and the NCVT3P Dual Range Non-Contact Voltage Tester with Flashlight. Please read this manual thoroughly before operation to ensure proper usage and to prevent potential hazards.



Figure 1: Overview of the Klein Tools CL320KIT HVAC Kit components.

Safety Information

WARNING: Always adhere to local and national safety codes. Use personal protective equipment (PPE) such as safety glasses and insulated gloves when working with electrical systems. This kit is intended for professional use only. Do not use if any component is damaged.

- Verify the proper function of the tester on a known live circuit before and after use.
- Do not apply more than the rated voltage, current, or temperature as marked on the instrument.
- Exercise extreme caution when working with voltages above 25V AC RMS or 60V DC. Such voltages pose a shock hazard.
- Keep fingers behind the finger guards on the test leads during use.
- Do not use the thermometer for medical or animal use. It is designed for professional HVAC applications.

Components Overview

1. CL320 HVAC Clamp Meter

The CL320 is a versatile digital clamp meter designed for HVAC applications. It measures AC current via the clamp, and AC/DC voltage, resistance, continuity, frequency/duty cycle, DC microamps, diode test, capacitance, and temperature via test leads.



Since 1857

**True RMS
Measurement
Technology**

600V			-40°F –
400A			1832°F
40M			-40° –
200μA			1000°C

Auto Range & Backlit Display



**CAT III
600V**





CE

Figure 2: Key features of the CL320 Clamp Meter.

2. IR07 Dual IR and Probe Thermometer

The IR07 thermometer offers dual temperature measurement capabilities: infrared for surface temperatures with a target laser, and a probe for air temperatures in vents and ducts. It features a backlit LCD display for easy reading.

**KLEIN
TOOLS** 

Since 1857

Pocket Sized **DUAL** Thermometer

IR measures
surface temp
with target
laser



Backlit LCD
Display

Probe for
indoor air quality



-40° –
572°F
-40° –
300°C

Figure 3: Key features of the IR07 Dual IR and Probe Thermometer.

3. NCVT3P Dual Range Non-Contact Voltage Tester with Flashlight

The NCVT3P detects AC voltage from 12 to 1000V AC or 70 to 1000V AC with visual and audible indicators. It includes an integrated flashlight that can be used independently of the voltage detection function, illuminating the work area.



Since 1857



IP67



2 m

70 – 1000V AC

DUAL-RANGE

12 – 1000V AC

**CAT IV
1000V**



**TOUGH
METER**



**Easy-to-read
Dual Mode
LED Indicators**

Flashlight Can be used
independent of voltage detection

Figure 4: Key features of the NCVT3P Non-Contact Voltage Tester.

SETUP

Battery Installation

All three tools in the CL320KIT require batteries for operation. Refer to the specific tool's battery compartment for correct polarity and battery type (typically AAA or 9V, as indicated on the device or in its individual manual).

1. Locate the battery compartment cover on the back of each tool.
2. Use a screwdriver if necessary to open the cover.
3. Insert the specified batteries, ensuring correct polarity (+/-).
4. Replace the battery compartment cover securely.

Test Lead Connection (CL320 Clamp Meter)

For measurements requiring test leads (voltage, resistance, continuity, etc.), connect the leads to the CL320 Clamp Meter:

- Insert the red test lead into the VΩμA input jack.
- Insert the black test lead into the COM input jack.
- Ensure the test leads are fully seated and secure before use.

OPERATING INSTRUCTIONS

CL320 HVAC Clamp Meter Operation

The CL320 offers various measurement functions. Rotate the dial to select the desired function.

- **AC Current Measurement (Clamp):**
 - a. Set the dial to the 400A AC current range.
 - b. Open the clamp jaws and enclose a single conductor. Ensure the jaws are fully closed.
 - c. Read the AC current value on the display.



Figure 5: Measuring AC current with the CL320 Clamp Meter.

- **Voltage Measurement (AC/DC):**
 - a. Connect the test leads as described in the Setup section.

- b. Set the dial to the V~ (AC Voltage) or V- (DC Voltage) range. Use the 'SEL' button to toggle between AC and DC if needed.
- c. Apply the test leads to the circuit points to be measured.
- d. Read the voltage value on the display.

- **Resistance, Continuity, Diode, Capacitance, Frequency/Duty Cycle, DC Microamps, Temperature**

For these functions, connect the test leads and select the appropriate dial position. Use the 'SEL' button to cycle through sub-functions if multiple are present on one dial setting (e.g., Resistance, Continuity, Diode). Refer to the CL320's individual manual for detailed instructions on each specific measurement type.

IR07 Dual IR and Probe Thermometer Operation

- **Infrared (IR) Temperature Measurement:**

- a. Point the IR07 at the surface to be measured.
- b. Press and hold the 'SCAN' button. The laser will activate to indicate the target area.
- c. Release the 'SCAN' button to hold the reading.
- d. Use the °F/°C button to switch between Fahrenheit and Celsius.



Figure 6: Measuring surface temperature with the IR07 Thermometer.

- **Probe Temperature Measurement:**

- a. Extend the integrated probe.
- b. Insert the probe into the air vent or duct where temperature needs to be measured.
- c. The display will automatically show the probe temperature.
- d. Use the °F/°C button to switch between Fahrenheit and Celsius.



Figure 7: Measuring air temperature with the IR07 Thermometer probe.

NCVT3P Non-Contact Voltage Tester Operation

- **Non-Contact Voltage Detection:**
 - a. Press the power button to turn on the tester.
 - b. Select the desired sensitivity range (12-1000V AC or 70-1000V AC) using the sensitivity button.
 - c. Bring the tip of the tester near the conductor or outlet.
 - d. If AC voltage is detected, the LED indicator will flash and an audible beep will sound.



Figure 8: Using the NCVT3P to detect non-contact voltage.

- **Flashlight Function:**

The NCVT3P features an independent flashlight. Press the flashlight button to turn it on or off, providing illumination in dark work areas.

MAINTENANCE

- **Cleaning:** Clean the instruments with a dry, lint-free cloth. Do not use abrasive cleaners or solvents.
- **Battery Replacement:** Replace batteries promptly when the low battery indicator appears on the display. Refer to the Setup section for battery installation instructions.
- **Storage:** Store the kit in its provided carrying pouch in a cool, dry place away from direct sunlight and extreme temperatures. Remove batteries if storing for extended periods to prevent leakage.
- **Inspection:** Regularly inspect all components, especially test leads and probes, for any signs of damage, cracks, or frayed insulation. Do not use damaged equipment.

TROUBLESHOOTING

Problem	Possible Cause	Solution
Instrument does not power on.	Dead or incorrectly installed batteries.	Replace batteries, ensuring correct polarity.
Inaccurate readings on CL320.	Incorrect function selected; loose test leads; external interference.	Verify dial setting; ensure test leads are fully inserted; move away from strong electromagnetic fields.
NCVT3P not detecting voltage.	Low battery; incorrect sensitivity setting; no voltage present.	Replace battery; adjust sensitivity; test on a known live circuit.
IR07 thermometer displaying "OL" or "LO".	Temperature out of range.	Ensure target temperature is within the specified range (-40 to 572°F / -40 to 300°C).

SPECIFICATIONS

CL320 HVAC Clamp Meter

- **AC Current:** 400A (Clamp)
- **AC/DC Voltage:** Up to 600V
- **Resistance:** Up to 40 MΩ
- **Capacitance:** Yes
- **Frequency/Duty Cycle:** Yes
- **DC Microamps:** Up to 200μA
- **Temperature (Thermocouple):** -40 to 1832°F (-40 to 1000°C)
- **Safety Rating:** CAT III 600V
- **True RMS:** Yes

IR07 Dual IR and Probe Thermometer

- **IR Temperature Range:** -40 to 572°F (-40 to 300°C)
- **Probe Temperature Range:** -40 to 572°F (-40 to 300°C)
- **Laser Target:** Yes
- **Display:** Backlit LCD

NCVT3P Non-Contact Voltage Tester

- **Voltage Detection Range:** Dual-range (12-1000V AC or 70-1000V AC)
- **Indicators:** Visual (LED) and Audible
- **Flashlight:** Integrated, independent operation
- **Ingress Protection:** IP67 (Dustproof, Waterproof)
- **Safety Rating:** CAT IV 1000V

WARRANTY AND SUPPORT

Klein Tools products are manufactured to high standards of quality and durability. For specific warranty information, including terms, conditions, and duration, please refer to the warranty card included with your product or visit the

official Klein Tools website. For technical support, replacement parts, or service inquiries, please contact Klein Tools customer service directly.

Official Website: www.kleintools.com

OFFICIAL PRODUCT VIDEOS

No official product videos from the seller were found in the provided data to embed in this manual. Please refer to the manufacturer's official website or product page for any available video resources.

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