



泰利電器實業股份有限公司  
TAILI ELECTRIC CORPORATION

# CATALOG



## PUNCTURE/INSULATION TESTER

**TL-LH**

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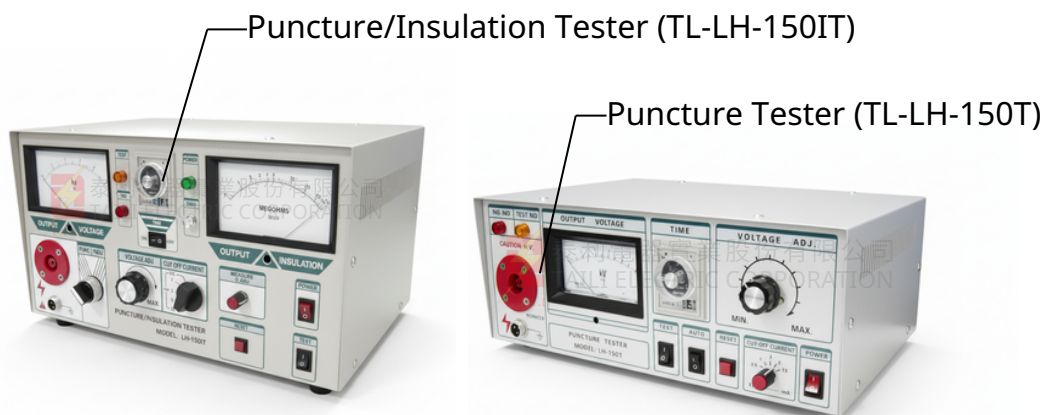
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TL-LH

# Introduction



The TL-LH puncture tester and insulation tester are advanced tools designed to evaluate the puncture resilience and insulation performance of materials like rubber and plastic films or wires and conductors. The puncture tester uses a controlled foreign object to pierce samples, gradually increasing force until penetration, with a precision probe recording the breach pressure to assess strength—results also depend on the object's sharpness. The insulation tester measures insulation resistance (IR) to detect potential damage that could lead to current leakage, ensuring electrical safety, with regular testing recommended due to natural degradation in harsh environments.

TAILI's testers provide reliable flaw detection for safe, efficient equipment operation. Manufactured by TAILI ELECTRIC CORPORATION, a leading provider of top-quality testing solutions, these instruments are optimized for production lines and quality control (QC). (Specs: Puncture tester, adjustable AC 0~5000V; Insulation tester, DC 500V / 250MΩ.) They support industrial safety, insulation, and Hi-Pot testing for R&D, experiments, and production, offering standalone, timed, remote-controlled, determination, and automated modes to meet global safety standards.

# Applications

Household Appliances  
Transformers  
Printed Circuit Boards (PCBs)  
Electric Motors  
Cables Testing  
Switchgear  
Medical Equipment  
Industrial Control Systems  
High-Voltage Cables  
Capacitors

Power Supplies  
Lighting Fixtures  
Consumer Electronics  
Military Electrical Equipment  
Motor Windings  
Distribution Panels  
Data Center Equipment  
Automotive Electronics  
Aerospace Equipment  
Communication Equipment

TL-LH

# Features

## ➔ Clear Control Panel

Features an intuitive and user-friendly control interface for seamless operation and enhanced user experience.

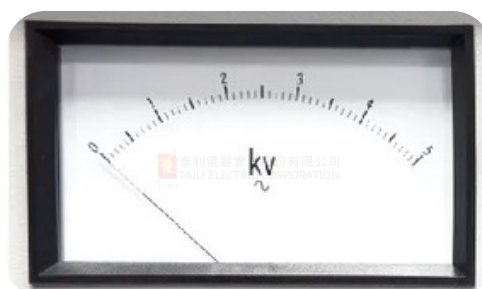
### Intuitive



## ➔ High-Precision & Wide-Angle Meters

Incorporates wide-angle KV and MΩ meters designed for superior accuracy and easy readability in various testing environments.

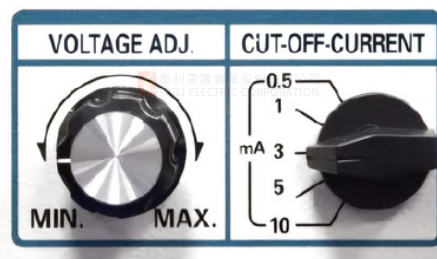
### Accurate



## ➔ Multi-Stage Current Cut-Off

Offers precise, multi-level current cut-off settings for flexible and safe testing tailored to specific requirements.

### Flexible



TL-LH

## Advanced Transformer Protection

Equipped with multiple protective mechanisms in the high-voltage transformer to ensure safety and reliability under demanding conditions.

Secure



## Precision Timer Configuration

Allows precise timing adjustments in minutes and seconds for accurate and customizable test durations.

Adjustable



- **Durable Output Wires:** Features high-voltage-resistant output wires to ensure safe and reliable operation.
- **Functional Testing Capabilities:** Performs functional tests including timing, remote control, and relay output point resetting.
- **Precision Meters:** Includes precise KV (kilovolt) and MΩ (megohm) meters made with vibration-resistant hanging wire for enhanced durability and accuracy.
- **Leak Current Detection:** Capable of determining whether leak current meets qualification standards.
- **High Voltage Transformer:** Equipped with a high-voltage transformer made of epoxy resin for superior voltage resistance.
- **Audio and Visual Alarms:** Initiates audio and visual alerts when voltage resistance or insulation fails to meet qualification standards.
- **Automated Testing:** Supports automatic testing to reduce labor requirements and enhance operational efficiency.
- **Disqualified Output Identification:** Identifies and signals disqualified outputs during testing.
- **Accurate and Rapid Testing:** Utilizes an updated electronic circuit for precise and fast testing without damaging the tested article.
- **Specialized Testing:** Designed specifically for Hi-Pot testing of electronic products, electric components, and parts, ensuring compliance with CNS, UL, JIS, CE, and BE standards.

TL-LH

# Specifications

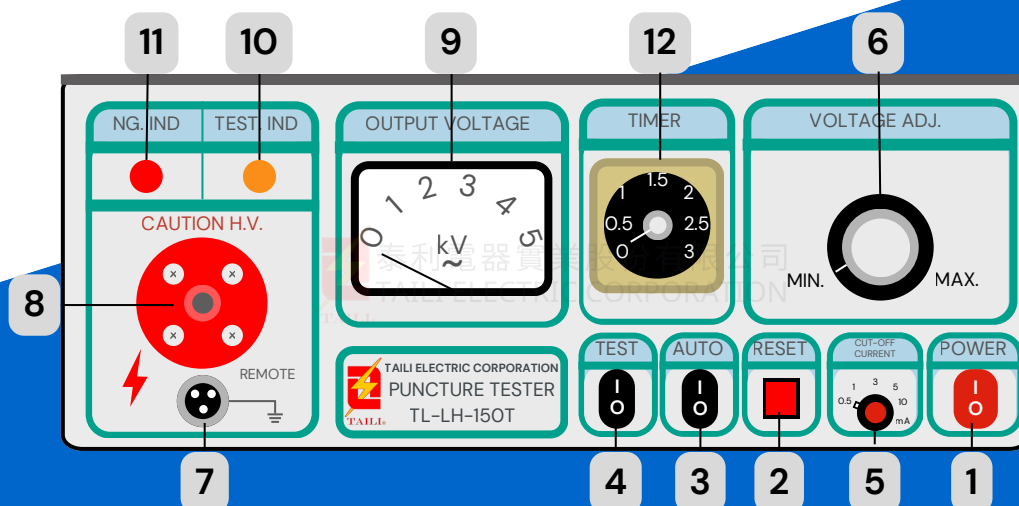
|                         | TL-LH-150T                                                                                           | TL-LH-150IT                                                                                                       |
|-------------------------|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| TYPE                    | <br>Puncture Tester | <br>Puncture/Insulation Tester |
| Capacity                | 500VA                                                                                                |                                                                                                                   |
| Input Voltage           | AC110V(A) or AC220V(B) $\pm 10\%$<br>1 $\phi$ 2W 50Hz or 60Hz                                        |                                                                                                                   |
| Output Voltage Waveform | AC                                                                                                   |                                                                                                                   |
| Test Voltage Range      | 0~5KV adjustable                                                                                     |                                                                                                                   |
| Voltmeter               | With full-scale reading of 5 kV with a precision grade of 1.5.                                       |                                                                                                                   |
| Insulation Meter        | -                                                                                                    | 250m $\Omega$<br>500VDC                                                                                           |
| Cut-Off Current (mA)    | 0.5/1/3/5/10, total: 5 steps                                                                         |                                                                                                                   |
| Test Function           | Manual/Auto                                                                                          |                                                                                                                   |
| Timer                   | 0~3mins                                                                                              |                                                                                                                   |
| Warning Device          | Indicator, buzzer                                                                                    |                                                                                                                   |
| External Control        | Reset, test, NG, OK, NO/NC dry contact (optional)                                                    |                                                                                                                   |
| Environment             | Temperature: 0°C ~ 45°C<br>Humidity: 0% ~ 95% RH (non-condensing)                                    |                                                                                                                   |
| Dimensions (mm)         | W374*D265*H160 mm                                                                                    | W394*D265*H235 mm                                                                                                 |
| Weight (kg)             | 14                                                                                                   | 17                                                                                                                |

# TL-LH

## User manual

Prior to operating the machine, we recommend a thorough review of this user manual.

### ➡ Puncture tester (TL-LH-150T)

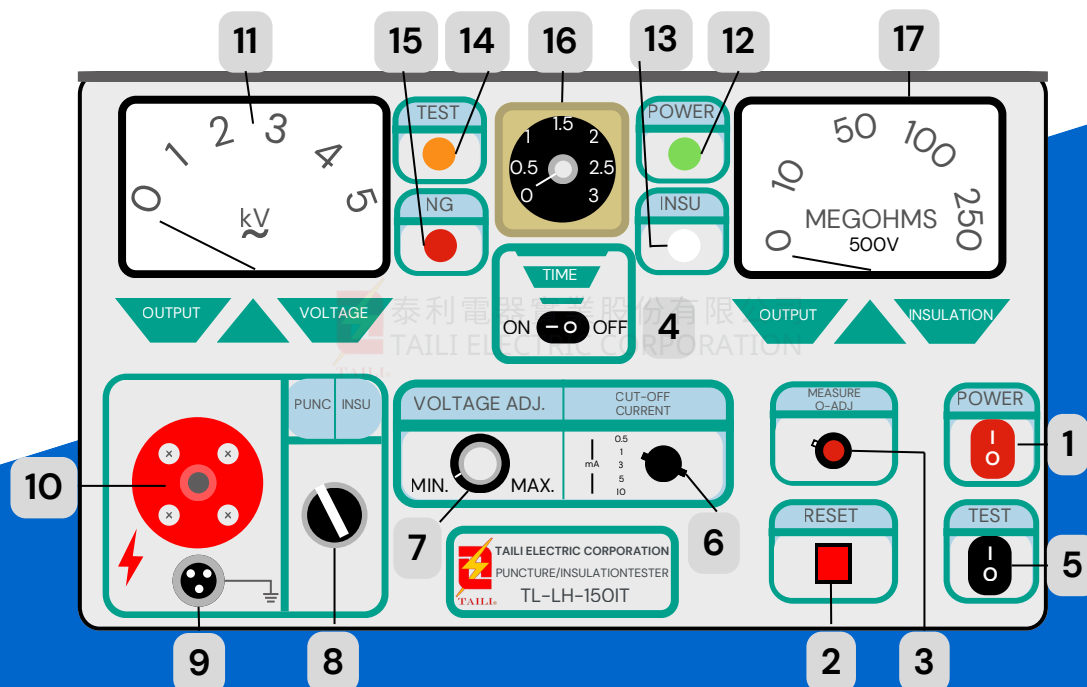


| NO. | Parts                   | Description                                                                                                                                                                                                           |
|-----|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | POWER ON/OFF            | The main power switch for the machine.                                                                                                                                                                                |
| 2   | RESET                   | When a "Fail" alert is triggered during testing, pressing this reset button restores the unit to the testing state. It also functions as a high-voltage output cutoff switch.                                         |
| 3   | TIMER SW.               | When using the timer, set the switch to the "AUTO" position; when the timer is not in use, set the switch to the "OFF" position.                                                                                      |
| 4   | TEST SW.                | In the pre-test state, pressing this switch allows adjustment of the "high-voltage" test voltage value.                                                                                                               |
| 5   | CUT-OFF CURRENT         | This knob sets the cut-off current at 0.5, 1, 3, 5, or 10 mA. If the leakage current of the test object exceeds the set value, a "Fail" warning is issued, and the high-voltage output is automatically disconnected. |
| 6   | VOLTAGE ADJ.            | This knob sets the test voltage value, with the MIN. position corresponding to the minimum output of 0V and the MAX. position corresponding to the maximum output of 5000V.                                           |
| 7   | REMOTE CONNECTOR or GND | This remote connector links to the remote plug on the high-voltage test probe. Pressing the microswitch on the probe allows voltage adjustment via the high-voltage adjustment knob.                                  |
| 8   | H.V. OUTPUT TERMINAL    | The output terminal for dielectric strength/insulation testing.                                                                                                                                                       |
| 9   | PUNCTURE METER          | Indicates the output dielectric voltage value.                                                                                                                                                                        |
| 10  | TEST IND.               | This indicator light illuminates during the dielectric strength testing process.                                                                                                                                      |
| 11  | NG.IND.                 | This indicator light illuminates when a "Fail" determination is triggered during dielectric strength testing.                                                                                                         |
| 12  | TIMER                   | Allows setting of the desired test duration.                                                                                                                                                                          |



# TL-LH

## ➡ Puncture/Insulation tester (TL-LH-150IT)



| NO. | Parts                   | Description                                                                                                                                                                                                           |
|-----|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | POWER ON/OFF            | The main power switch for the machine.                                                                                                                                                                                |
| 2   | RESET                   | When a "Fail" alert is triggered during testing, pressing this reset button restores the unit to the testing state. It also serves as a high-voltage output cutoff switch.                                            |
| 3   | ZERO ADJ.               | The zero-adjustment knob for the MEGOHMS meter.                                                                                                                                                                       |
| 4   | TIMER SW.               | When using the timer, set the switch to the "ON" position; when not using the timer, set the switch to the "OFF" position.                                                                                            |
| 5   | TEST SW.                | In the pre-test state, pressing this switch allows adjustment of the "high-voltage" test voltage value.                                                                                                               |
| 6   | CUT-OFF CURRENT         | This knob sets the cut-off current at 0.5, 1, 3, 5, or 10 mA. If the leakage current of the test object exceeds the set value, a "Fail" warning is issued, and the high-voltage output is automatically disconnected. |
| 7   | VOLTAGE ADJ.            | This knob sets the test voltage value, with the MIN. position corresponding to the minimum output of 0V and the MAX. position corresponding to the maximum output of 5000V.                                           |
| 8   | PUNC/INSU SW.           | Select "PUNC." for dielectric strength testing and "INSU." for insulation testing.                                                                                                                                    |
| 9   | REMOTE CONNECTOR or GND | This remote connector links to the remote plug on the high-voltage test probe. Pressing the microswitch on the probe allows voltage adjustment via the high-voltage adjustment knob.                                  |
| 10  | H.V. OUTPUT TERMINAL    | The output terminal for dielectric strength/insulation testing.                                                                                                                                                       |
| 11  | PUNCTURE METER          | Indicates the output dielectric voltage value.                                                                                                                                                                        |
| 12  | INSU.IND.               | This indicator light illuminates when the switch is set to insulation testing mode.                                                                                                                                   |
| 13  | POWER IND.              | This indicator light illuminates when the machine is connected to the power supply.                                                                                                                                   |
| 14  | TEST IND.               | This indicator light illuminates during the dielectric strength testing process.                                                                                                                                      |
| 15  | NG.IND.                 | This indicator light illuminates when a "Fail" determination is triggered during dielectric strength testing.                                                                                                         |
| 16  | TIMER                   | Allows setting of the desired test duration.                                                                                                                                                                          |
| 17  | INSULATION METER        | Indicates the insulation resistance value.                                                                                                                                                                            |





## ➔ Precautions

- Please carefully read the contents of this manual before use.
- This equipment is for use by authorized personnel only; unauthorized individuals must not operate it.
- Ensure the input power matches the specified input voltage of the device.
- Do not disassemble or modify internal circuits or components.
- Before powering on, confirm that the high-voltage output dial is set to the minimum position (fully counterclockwise).
- During high-voltage output, operators must not touch the high-voltage test terminal or the object being tested.
- In case of any abnormalities, immediately turn off the power switch and contact our company promptly.
- For unfamiliar operations or adjustments, please contact our company immediately.



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