

3 点を接触させる

- ・ 内部導体と内部導体
- ・ 内部導体と外部導体
- ・ 外部導体と外部導体

内部導体と外部導体は 1 か所で接触するように接続してください。

9770, 9771

PIN TYPE LEAD

Instruction Manual

EN

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HIOKI

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Introduction

Thank you for purchasing the HIOKI Model 9770, 9771 Pin Type Lead. To obtain maximum performance from the product, please read this manual first, and keep it handy for future reference.

Overview

The conductive-tip contact pin of the model 9770 has a four-terminal structure that is developed for inspection of small devices, such as a terminal of a button cell battery. Use of the coaxial pin with an outside diameter of 1.8 mm makes it easy to contact an object to be measured, ensuring correct resistance measurement. The conductive-tip contact pin of the model 9771 has a four-terminal structure that is developed for inspection of through holes, pads and surface mounted devices on a PCB. Parallel pins 0.2 mm apart are used and the tip is a four-sided pyramid. These make it easy to contact very small objects under measurement, and help measure a through hole efficiently.

Inspection and Maintenance

Initial Inspection

When you receive the product, inspect it carefully to ensure that no damage occurred during shipping. If damage is evident, or if it fails to operate according to the specifications, contact your authorized Hioki distributor or reseller.

Maintenance and Service

- To clean the product, wipe it gently with a soft cloth moistened with water or mild detergent. Never use solvents such as benzene, alcohol, acetone, ether, ketones, thinners or gasoline, as they can deform and discolor the case.
- If the product seems to be malfunctioning, contact your authorized Hioki distributor or reseller.
- Pack the product so that it will not sustain damage during shipping, and include a description of existing damage. We cannot accept responsibility for damage incurred during shipping.

Safety

This manual contains information and warnings essential for safe operation of the product and for maintaining it in safe operating condition. Before using it, be sure to carefully read the following safety precautions.

⚠ DANGER

Mishandling this product during use could result in injury or death, as well as damage to the product. Be certain that you understand the instructions and precautions in the manual before use. We disclaim any responsibility for accidents or injuries not resulting directly from product defects.

Safety Symbol



In this manual, the ⚠ symbol indicates particularly important information that the user should read before using the product.

The following symbols in this manual indicate the relative importance of cautions and warnings.

⚠ DANGER

Indicates that incorrect operation presents an extreme hazard that could result in serious injury or death to the user.

⚠ CAUTION

Indicates that incorrect operation presents a possibility of injury to the user or damage to the product.

NOTE

Indicates advisory items related to performance or correct operation of the product.

Usage Notes

Follow these precautions to ensure safe operation and to obtain the full benefits of the various functions.

⚠ DANGER

- To avoid electrical shock, be careful to avoid shorting live lines with the Pin type leads.
- Do not use the product to measure circuits that exceed its ratings or specifications. Damage to the product or overheating can cause bodily injury. Use of the instrument and personal injury or death.
- To avoid shock and short circuits, turn off all power before connecting leads.

⚠ CAUTION

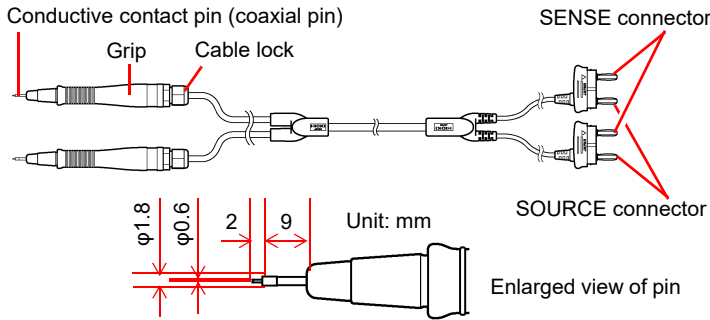
- To avoid damage to the product, protect it from physical shock when transporting and handling. Be especially careful to avoid physical shock from dropping.
- To avoid breaking the leads, do not bend or pull them.
- Do not curl the cable near the cable lock. It may damage the core wire or the covering.
- Do not bend it continuously.
- The ends of the leads are sharp. Be careful to avoid injury. Fit the protective pin cap when the product is not in use.

NOTE

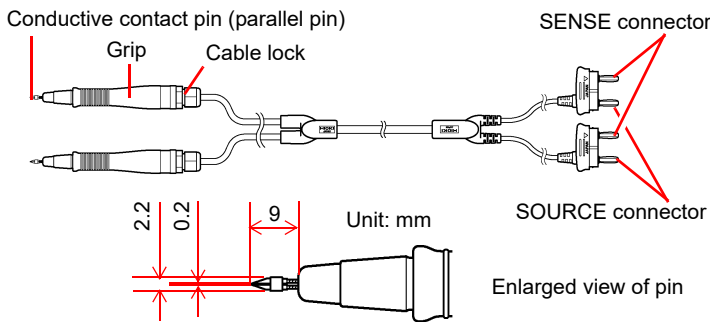
A cap are placed on pin for protection during transport. Remove the cap before use.

Part Names

Model 9770 Pin Type Lead



Model 9771 Pin Type Lead



Procedure

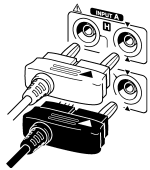
Preliminary Checks

Before using the product the first time, verify that it operates normally to ensure that no damage occurred during storage or shipping. If you find any damage, contact your authorized Hioki distributor or reseller.

⚠ DANGER

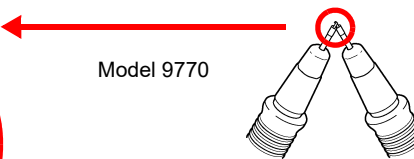
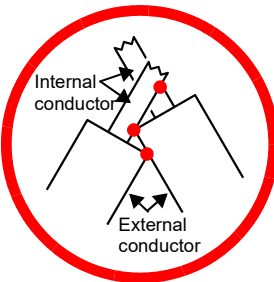
Before using the product, make sure that the insulation on the test leads is undamaged and that no bare conductors are improperly exposed. Using the product in such conditions could cause an electric shock, so contact your authorized Hioki distributor or reseller.

1. Make sure that power of the device to connect the pin type lead to is off.
2. Connect the pin type lead to the input terminal of the device.



Plug the ▲ mark on the red lead into the red ▲ marked jack on the instrument, and plug the ▲ mark on the black lead into the black ▲ marked jack on the instrument.

3. Perform zero adjustment. Short-circuit the pins of the pin type lead in the specified method and perform zero adjustment. See the instruction manual for details of connectable devices.



Bring the pins into contact at 3 points.

- Internal conductor and internal conductor
- Internal conductor and external conductor
- External conductor and external conductor

The internal conductor shall contact the external conductor at one point.

4. Connect the model 9770/9771 to a sample.

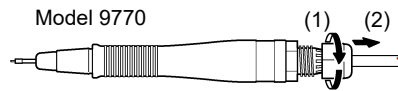
NOTE

- Zero adjustment cannot be performed with the model 9771. Use the model 9287-10 clip type lead for zero adjustment.
- Fit the cap after use.

Replacing the Tip Pin

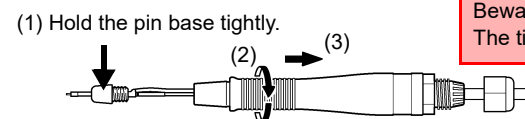
The conductive-tip contact pin is replaceable. Replace the pin with a new one if it is broken or worn. One-piece conductive-tip contact pins with a plastic pin base are available separately.

1. Turn off power of the device before connecting the pin type lead.
2. Unscrew the cable lock to unlock the cable.
(The cable is locked by screwing the cable lock.)



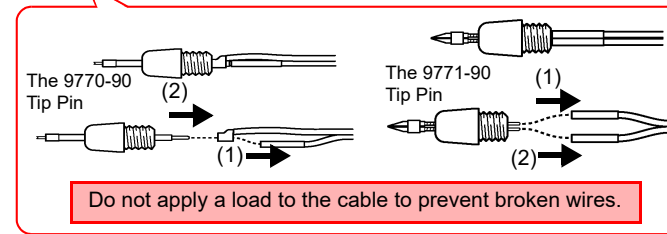
To prevent broken wires, do not pull the cable, and do not twist the cable.

3. Hold the pin base so that the cable won't rotate, and then rotate the grip to loosen it.



Beware of injury. The tip has a sharp point.

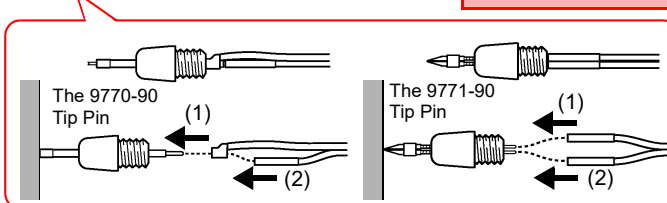
4. Pull off the connector and remove the pin.



5. Fasten a new pin. Press the tip of the pin against a desk so that the pin won't spring out, and push the connector onto the pin.



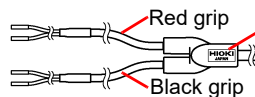
The red shrink tube should not come out.



6. Assemble the pin type lead in the reverse order of disassembling. Do not pull or twist the cable.
7. To avoid broken wires and contact failures, after tightening the cable lock, gently tug and twist the cable to check it is firmly held.
8. Check the performance. Measure an object with a known resistance. Make sure that the measured resistance is correct before using the pin type lead.

NOTE

If the grips are detached, reassemble by referring to the picture below.



Place the cable so that the HIOKI logo is shown in the upright position.

Specifications

Maximum rated terminal-to-ground voltage	60 V DC, 30 V AC rms, 42.4 V AC peak
Rated current	Model 9770: AC/DC 3 A continuous Model 9771: AC/DC 2 A continuous
Operating temperature and humidity range	0°C to 40°C (32°F to 104°F), 80% RH or less (no condensation)
Storage temperature and humidity range	-10°C to 50°C (14°F to 122°F), 80% RH or less (non-condensing)
Operating environment	Altitude up to 2000 m (6562 feet), Indoors
Length and Mass	Approx. 860 mm (33.86")/ Approx. 110 g (3.9 oz.)
Accessory	Instruction manual
Options*	9770-90 Tip Pin, 9771-90 Tip Pin

*: The options listed above are available for the product. Contact your authorized Hioki distributor or reseller when ordering. The options are subject to change. Visit our website for updated information.