

sanwa

HV-50 HV-10 HV-10T HV PROBE

取扱説明書 INSTRUCTION MANUAL

発売元

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[1] SAFETY PRECAUTIONS

Read this instruction manual thoroughly before using the high voltage probe HV-50, -10, or 10T. This manual covers instructions for proper and safe use of your probe. Keep the manual together with the product so that you can readily refer to it.

Be sure to observe the instructions given under the headings of **⚠ WARNING** and **⚠ CAUTION** to prevent personal injury, such as burns and electrical shock.

[1-1] Description of Symbols

Symbols Found in This Instruction Manual

⚠ : This indicates very important items for safe use.

- **WARNING** is instructions for the prevention of personal injury, such as burns and electrical shock.
- **CAUTION** is instructions for handling, disobedience to which may result in damage to the probe.

⚡ : This indicates parts to which high voltage may be applied. Do not touch these parts; it is dangerous.

[1-2] Warning for Safe Use

⚠ WARNING

The following instructions must be observed to prevent personal injury, such as burns and electrical shock. Be sure to follow the instructions when using the probe.

1. The probe is designed for the measurement of very small direct current circuits. Never use the probe to measure high voltage in power lines, such as transmission and distribution lines; it is very dangerous.
2. Use caution in measuring a circuit of a current capacity of 2 mA d.c. or above, which is dangerous for human bodies.
3. Do not input signals exceeding the maximum rated input value.

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⚠ WARNING

4. Do not hold the area between the collars and the measuring pin on the probe during measurement.
5. Be sure to check the function and range of a tester to be connected before measurement.
6. When making a measurement, first connect the clip for connecting the earth line. After reading a measured value, first disconnect the measuring pin of the probe.
7. Do not change the function or range of the connected tester, nor re-connect the plugs to other terminals during measurement.
8. Do not use the probe when it is wet. Do not handle the probe with wet hands.
9. Be sure to read the instruction manual for a tester to be connected. Thoroughly understand the contents of the manual for the tester as well as this manual before measurement.
10. Be sure to inspect the probe at least once a year.

[1-3] Maximum Rated Input Value

Model	Maximum rated input value
HV-10, 10T, 50	30 kV d.c.

[2] APPLICATIONS AND FEATURES

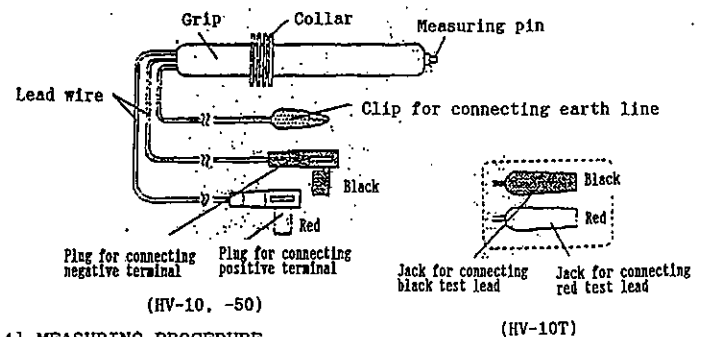
2-1 Applications

The probe is a high d.c. voltage probe for the measurement of very small current. It is suitable for measuring voltage of high impedance circuits, such as CRT anode voltage of TV sets and high voltage for focusing.

2-1 Features

Connected with a digital multimeter or an analog multimeter, the probe is capable of measuring high d.c. voltage.

[3] DESIGNATION OF EACH PART



[4] MEASURING PROCEDURE

4-1 Inspection before Measurement

⚠ WARNING

1. Refer to the section of inspection before measurement in the instruction manual for a tester to be used, and check to see that there is no abnormality in the tester body.
2. Do not use a tester with a damaged or broken body or lead.

4-2 Preparation for Measurement

- In case of use with a digital multimeter
 - Turn ON power to the tester using the function switch or power switch.
- Note: If you use a tester that is turned ON/OFF by means of the function switch, set it to the V or DCV range.

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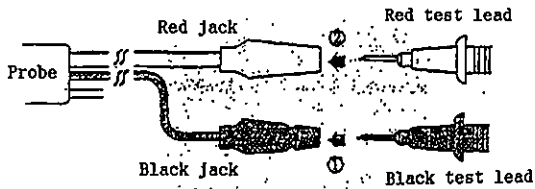
-3-

- In case of use with an analog multimeter
 - Turn the zero position adjuster to align the pointer with the zero position (at the left end of the scale).

○ If your probe is HV-10T

The model HV-10T is designed to connect with a tester by means of jacks. Connect your HV-10T with a tester in accordance with the procedure below:

- (1) Firmly fit the black jack of the probe onto the test pin of the black test lead of the tester to connect them.
- (2) Firmly fit the red jack of the probe onto the test pin of the red test lead of the tester.



4-3 Measurement



WARNING

X. Measuring terminals and ranges vary from tester to tester. Be sure to check measuring terminals and ranges referring to the instruction manual for the tester to be connected.

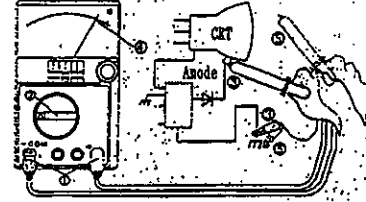
● In case of use with an analog multimeter

- (1) Connect the probe's plug (red) for connecting the positive terminal to the + (positive) terminal of the tester, and the plug (black) for connecting negative terminal to the -COM terminal.

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- (2) Turn the range select knob to the range marked by **HVPROBE** in the DCV range. **⚠ Check required**
- (3) First, connect the clip (black) of the probe to the earth line (-) in the circuit to be measured, and then apply the measuring pin on the probe body to your measuring point.
- (4) Read the tester indication. (Note)
- (5) After reading the tester indication, first disconnect the measuring pin from the measured circuit, and then remove the clip.

Note: To obtain a measured value, the indicated value and unit must be converted. Refer to the instruction manual for the tester for details.



● In case of use with a digital multimeter

- (1) Connect the probe's plug (red) for connecting positive terminal to one of the tester terminals, such as "+", "V" and "1000V", that is specified in the tester's instruction manual. Connect the plug (black) for connecting the negative terminal to the common negative terminal.

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- (2) Set the measuring function to DCV. Set the measuring range as specified in the instruction manual for the tester to be connected.
- (3) First connect the clip (black) of the probe to the earth line (-) in the circuit to be measured, and then apply the measuring pin on the probe body to your measuring point.
- (4) Multiply the value indicated on the tester by 0.1, and thus read the measured value in terms of kV.
- (5) After reading the measured value, first disconnect the measuring pin from the measured circuit, and then remove the clip

- Check to see that there is no abnormality in a tester to be connected, referring to the section of inspection before measurement in the instruction manual for the tester.

5-2 Storage



CAUTION

Do not store your probe in a humid.

(6) REPAIR

We repair defective product at cost. When mailing it to us for repair, do not use the same cardboard box in which it was delivered to you because it may receive damage in transit. Please send it in a box at least five times as large as the original box with enough cushioning material stuffed around it.

(7) FOR INFORMATION OR INQUIRY

If you need information regarding purchase of repair parts and optional accessories or if you have any other sales related questions, please contact the dealer, selling agent, or maker.

[5] INSPECTION AND STORAGE

5-1 Inspection

Check the following points:

- (1) Appearance
 - Is the appearance not damaged by shock due to drop?
- (2) Lead wire, plug
 - Is the connection not loose when a plug is inserted into an input terminal?
 - Is any lead wire not deteriorated?
 - Is the core wire not exposed at any point in the lead wires?

If any one of the above items is faulty, do not use it. Have it repaired or replace it with new one.

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[.] TECHNICAL DATA

Measuring range:	30 kV d.c. (HV-10, -10T, -50)
Internal Resistance:	480MΩ (HV-10, -10T) 1000MΩ (HV-50)
Accuracy:	±20% (combined with tester)
Dimensions and weight:	φ18 × 273 mm, measuring pin φ3.5 mm (HV-10, -10T, -50) Approx. 155 g (HV-10, -10T) Approx. 160 g (HV-50)

Specifications and appearance described here are subject to change without notice due to improvement.