Sanwa CD800a

Sanwa CD800a Digital Multimeter User Manual

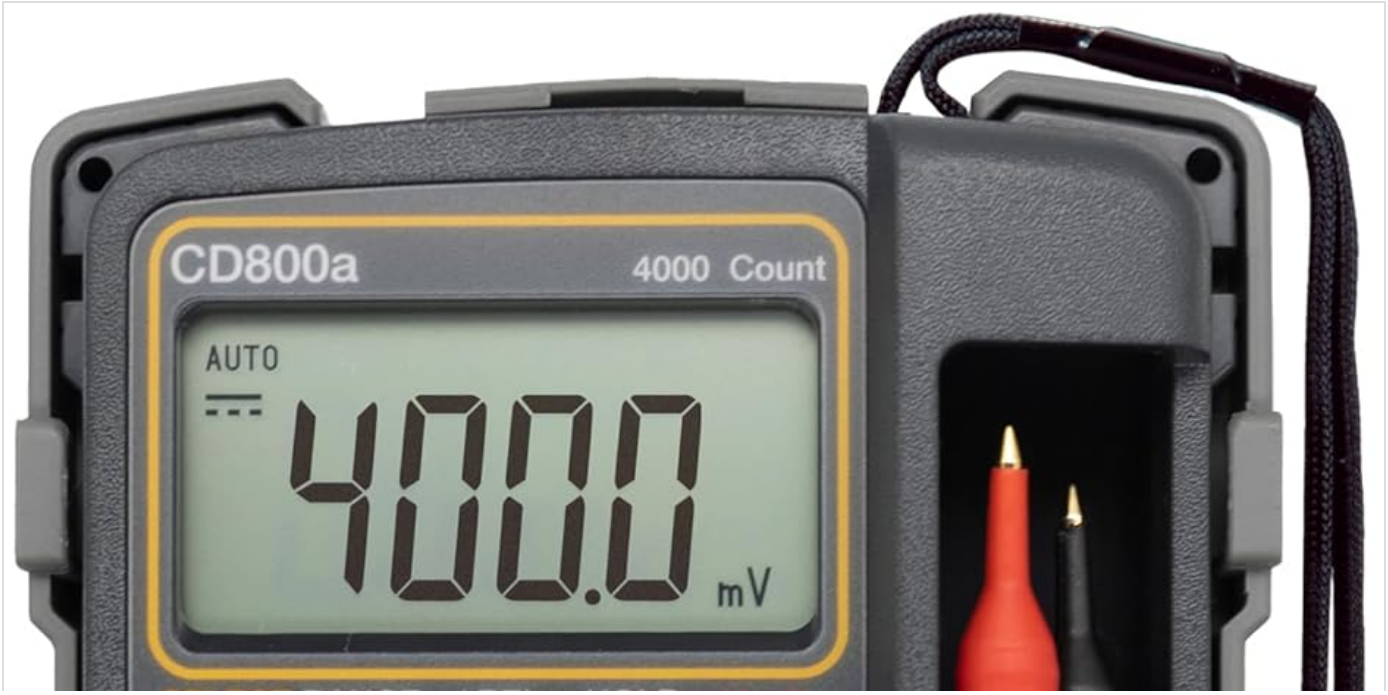
Model: CD800a | Brand: Sanwa

1. Introduction and Overview

The Sanwa CD800a is a versatile digital multimeter designed for a wide range of electrical measurements. It features a 3-3/4 digit, 4000 count display, offering 0.7% best accuracy for precise readings. Its robust design includes a protective body cover that doubles as a tilt stand, and captive test leads to prevent confusion during measurements. The device incorporates essential functions such as data hold, range hold, relative value measurement, and an auto power-off feature to conserve battery life.

Key Features:

- Integrated case suitable for both use and secure storage.
- Captive test leads to ensure correct measurement polarity and prevent loss.
- 3-3/4 Digits, 4000 Count display for detailed readings.
- Conforms to IEC61010 and CAT III 600V Max safety standards.
- Auto Power-off function (30 minutes, cancelable) to extend battery life.



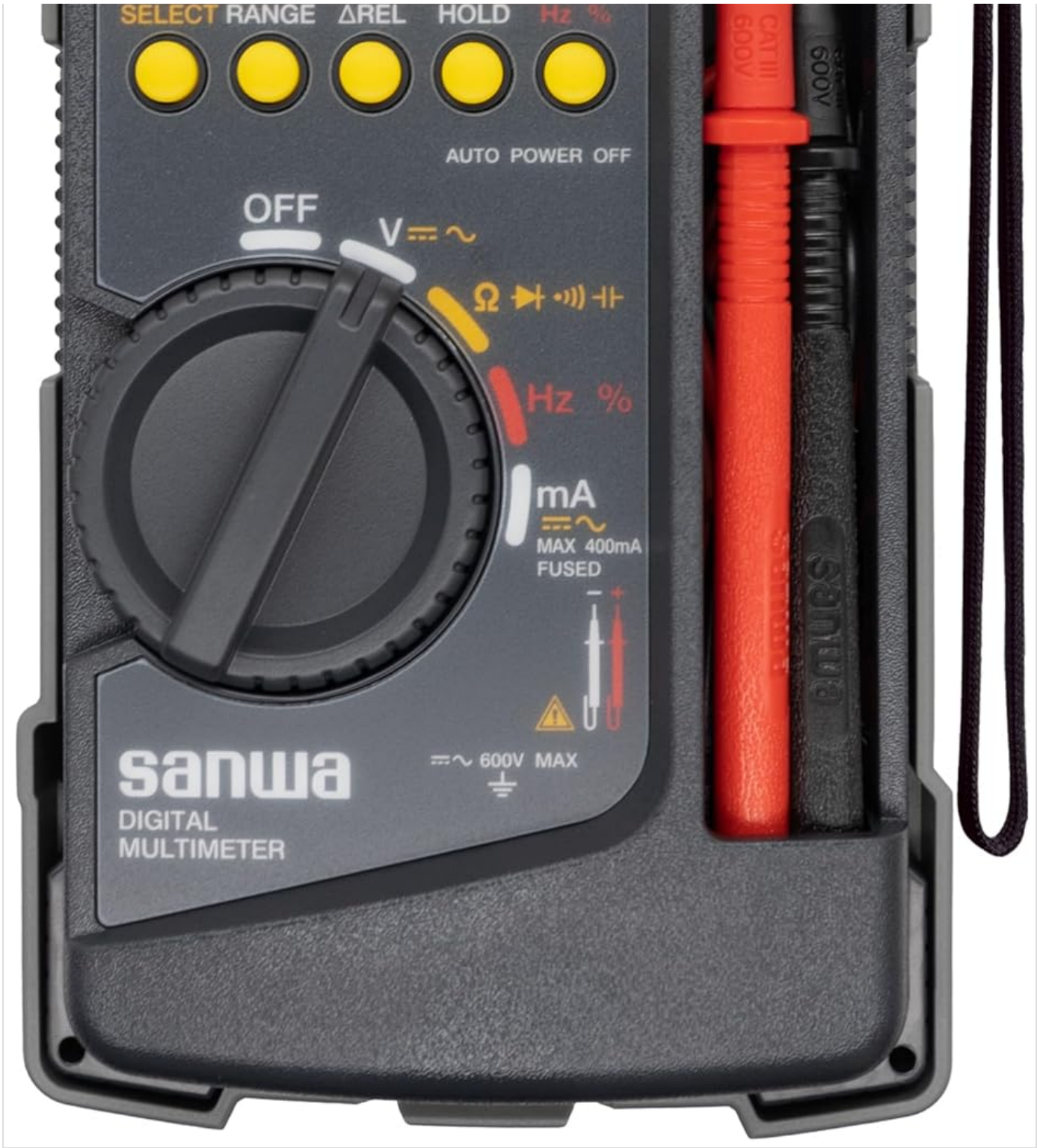


Figure 1.1: The Sanwa CD800a Digital Multimeter with its integrated protective case, showing the display and control dial. The test leads are securely stored within the case.

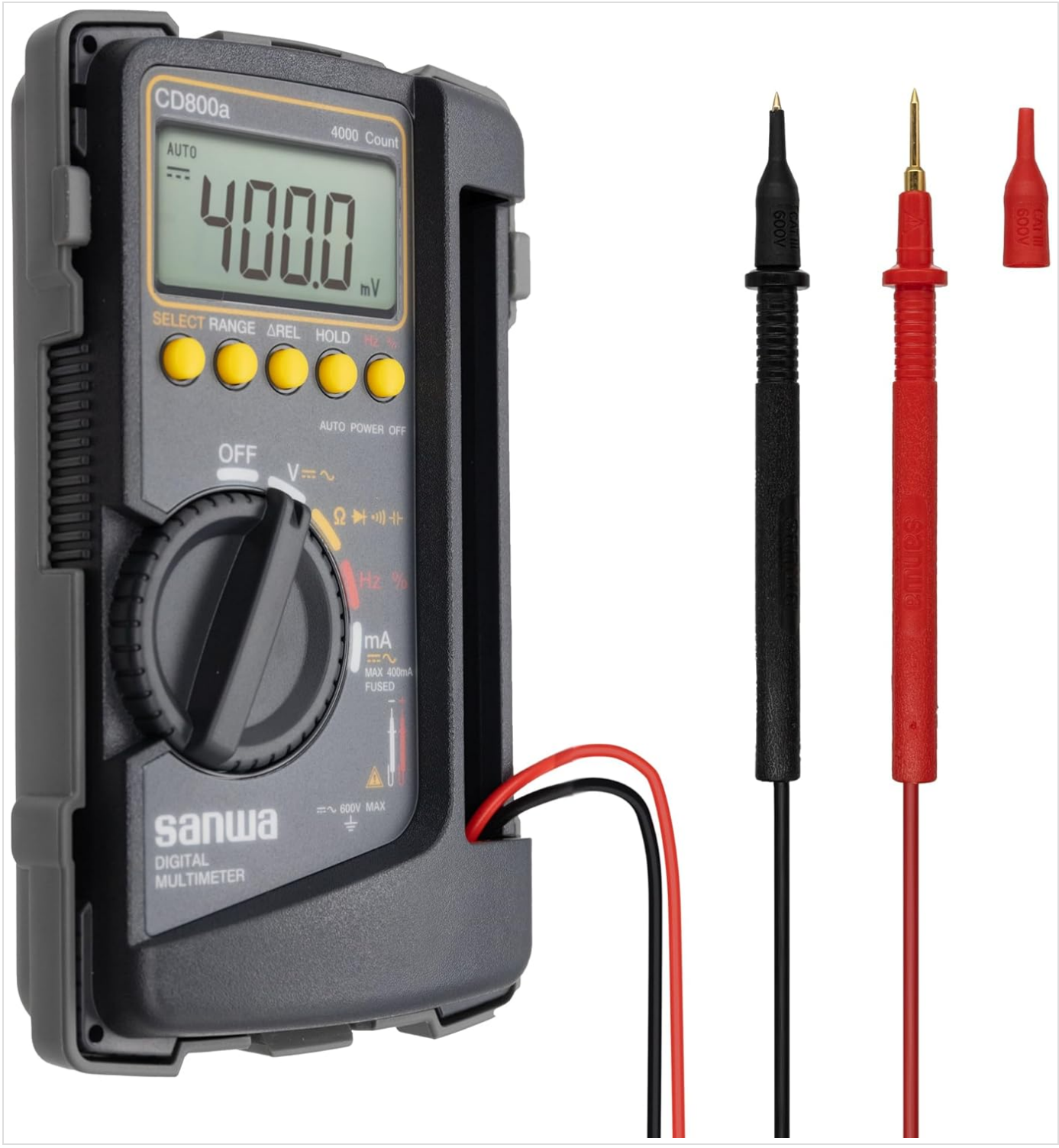


Figure 1.2: The Sanwa CD800a Digital Multimeter with its red and black test leads detached, ready for connection to circuits.

2. Setup

2.1 Battery Installation

The CD800a requires two AA batteries for operation, which are included with the device. To install or replace batteries, locate the battery compartment on the rear of the multimeter. Open the compartment cover, insert the batteries according to the polarity indicators (+/-), and then securely close the cover. The device also features a chip holder behind the body cover for convenient storage of small components or accessories.

2.2 Initial Inspection

Before first use, inspect the multimeter and its test leads for any signs of damage. Ensure the test leads are securely connected to

the appropriate input jacks on the multimeter. The captive design of the leads helps prevent incorrect connections.

3. Operating Instructions

3.1 Measuring Voltage (AC/DC)

To measure voltage, turn the rotary switch to the 'V~' (AC Voltage) or 'V=' (DC Voltage) position. Connect the test leads to the circuit or component you wish to measure. The multimeter will display the voltage reading. Ensure the appropriate range is selected or use the auto-ranging feature.

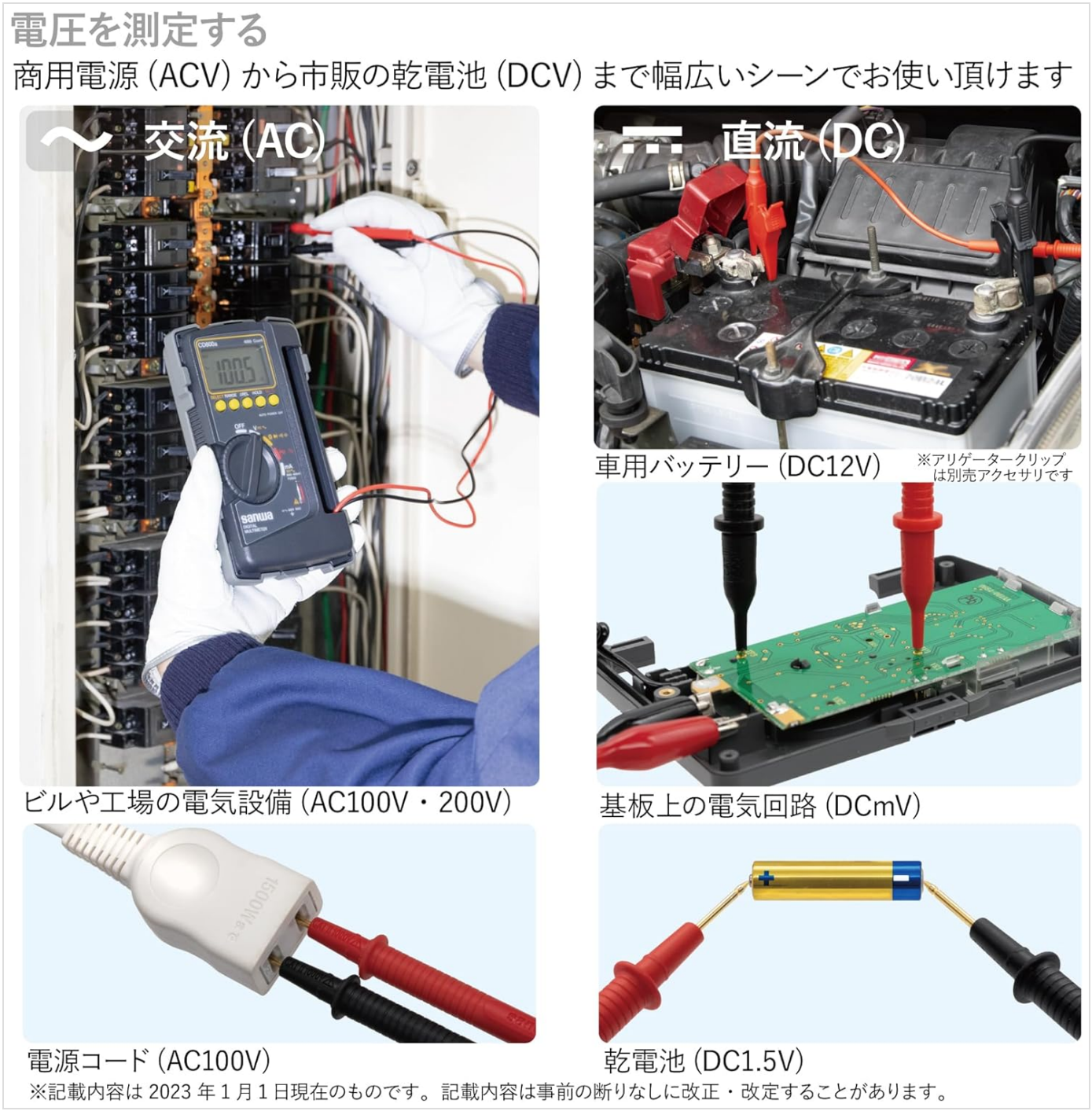


Figure 3.1: Demonstrations of voltage measurement. Top left shows AC voltage measurement on commercial power (AC100V-200V). Top right shows DC voltage measurement on a car battery (DC12V). Bottom left shows measuring an AC100V power cord. Bottom right shows measuring a DC1.5V battery and a board circuit (DcmV).

3.2 Continuity Check

The continuity function allows you to check for an unbroken electrical path. Turn the rotary switch to the continuity symbol

(speaker icon). If a continuous path is detected (low resistance), the multimeter will emit an audible buzzer sound. This is useful for checking wires, switches, and fuses.

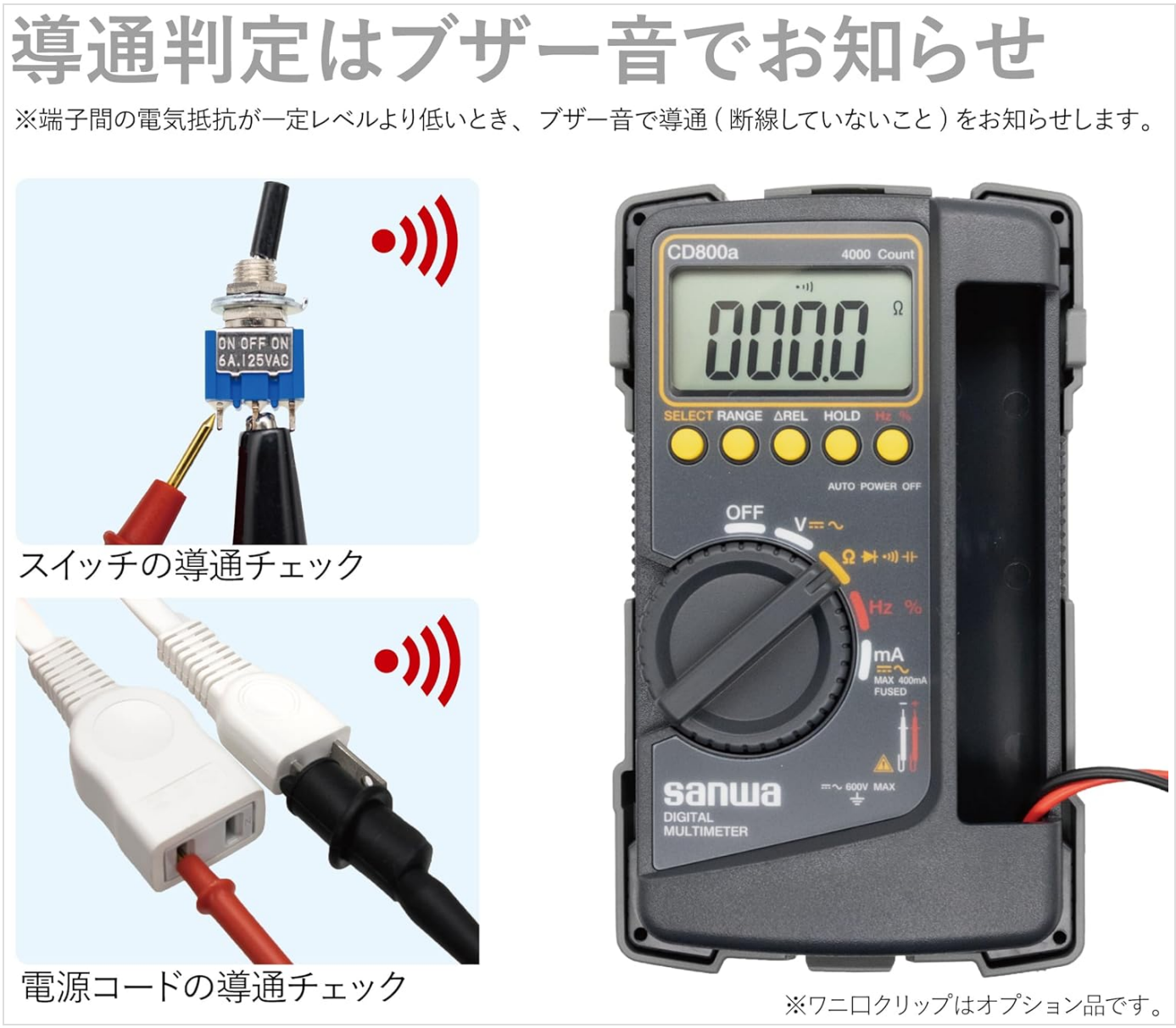


Figure 3.2: Illustrations of continuity checks. Top left shows checking the continuity of a switch. Bottom left shows checking the continuity of a power cord. The main image on the right shows the multimeter display during a continuity test, indicating a low resistance reading.

3.3 Testing Electronic Components

The CD800a can be used to test various electronic components. Select the appropriate function on the rotary switch for resistance (Ω), capacitance (†), or diode check (†). Connect the test leads to the component as required.

- **Resistance Measurement:** Measure the resistance of resistors and other components.
- **Capacitance Measurement:** Measure the capacitance of capacitors. Note: Not suitable for measurement of condensers with large leak current.
- **Diode Polarity Check:** Determine the forward voltage drop and polarity of diodes.
- **Fuse Continuity Check:** Verify if a fuse is intact or blown.

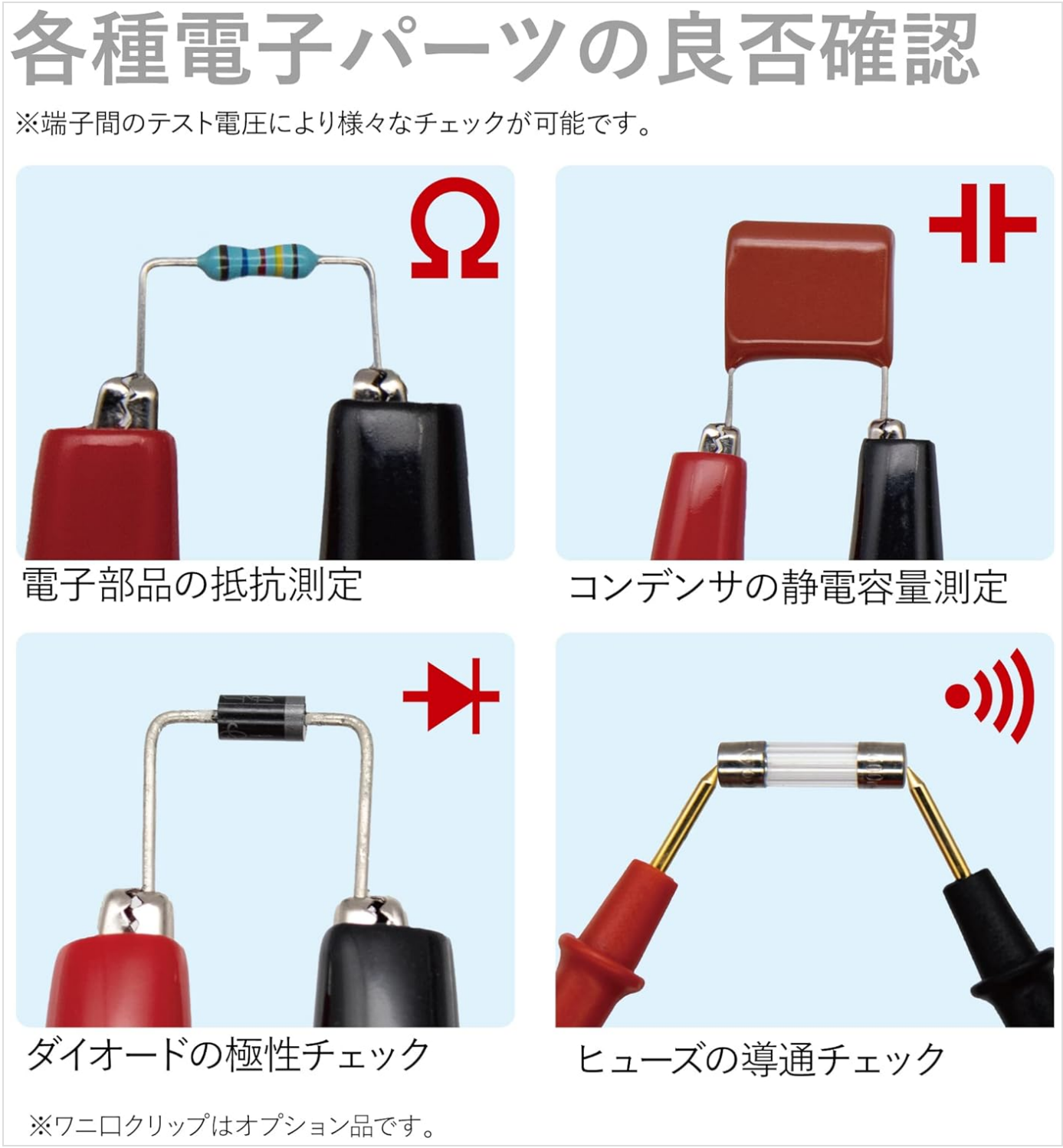


Figure 3.3: Examples of electronic component testing. Top left: Resistance measurement of an electronic component. Top right: Capacitance measurement of a capacitor. Bottom left: Diode polarity check. Bottom right: Fuse continuity check.

3.4 Special Functions

- **Data Hold:** Press the 'HOLD' button to freeze the current reading on the display. Press again to release.
- **Range Hold:** Press the 'RANGE' button to manually select a measurement range instead of auto-ranging. Press again to return to auto-ranging.
- **Relative Value (REL):** Press the 'REL' button to set the current reading as a reference point, and subsequent measurements will be displayed as a deviation from this reference.
- **Auto Power Off:** The multimeter automatically powers off after approximately 30 minutes of inactivity to save battery. This feature can be canceled if continuous operation is required.

4. Maintenance

4.1 Cleaning

To clean the multimeter, use a soft, dry cloth. For stubborn dirt, a slightly damp cloth with mild detergent may be used, but ensure no liquid enters the device. Do not use abrasive cleaners or solvents.

4.2 Battery Replacement

When the low battery indicator appears on the display, replace the batteries promptly to ensure accurate measurements. Refer to Section 2.1 for battery installation instructions.

4.3 Test Lead Care

Regularly inspect the test leads for any signs of wear, cuts, or damage to the insulation. Damaged leads can pose a safety risk and affect measurement accuracy. Replace them if necessary with genuine Sanwa replacement parts.

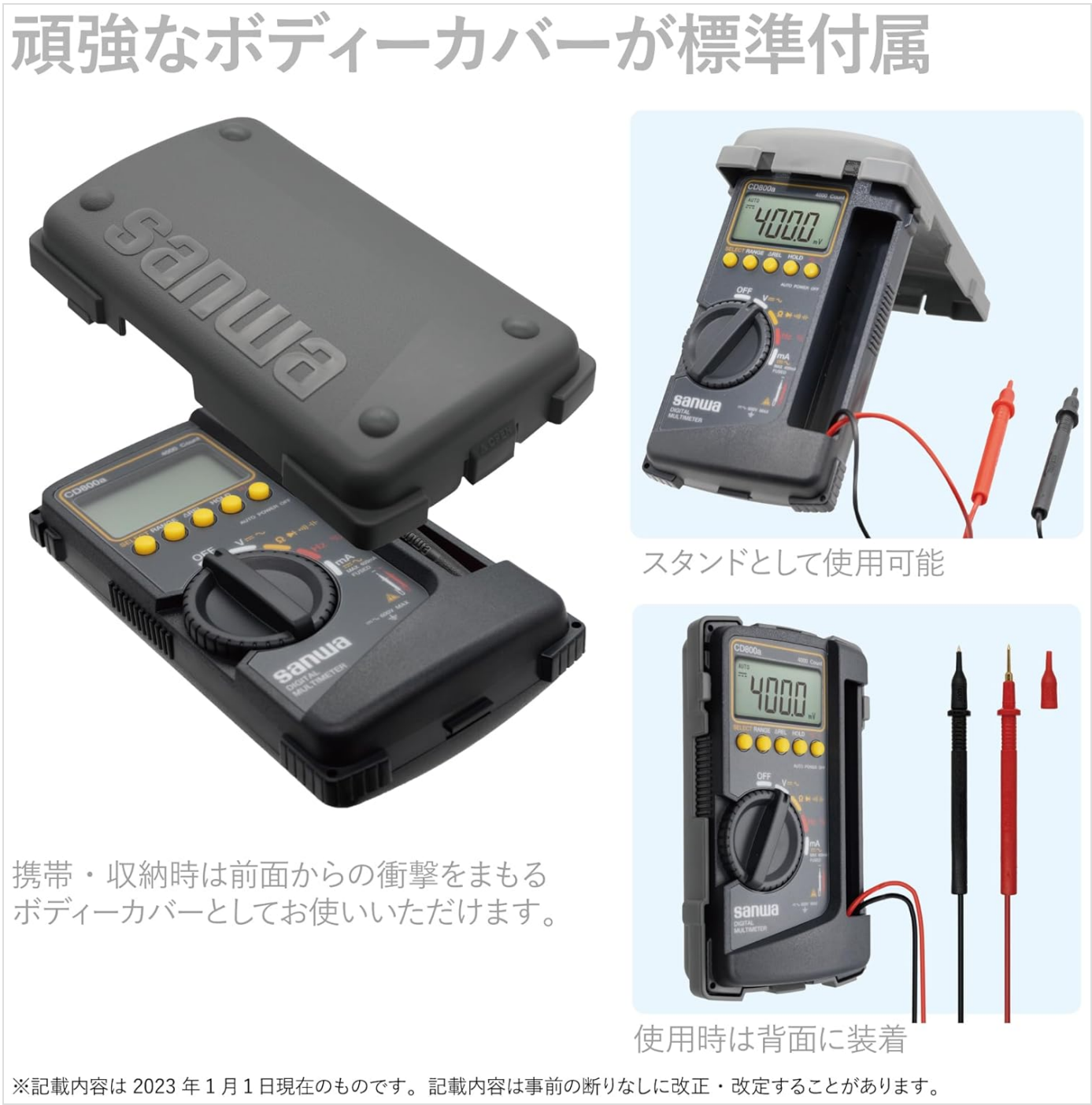


Figure 4.1: The robust body cover of the CD800a can be used as a tilt stand for convenient viewing during operation (top right) or as a protective cover for transport and storage (left and bottom right), shielding the front from impacts.

5. Troubleshooting

If you encounter issues with your Sanwa CD800a, consider the following common troubleshooting steps:

- **No Display/Power:** Check battery installation and ensure batteries are not depleted. Replace if necessary.
- **Inaccurate Readings:** Ensure test leads are properly connected. Verify the correct measurement function and range are selected. Check for external interference.
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