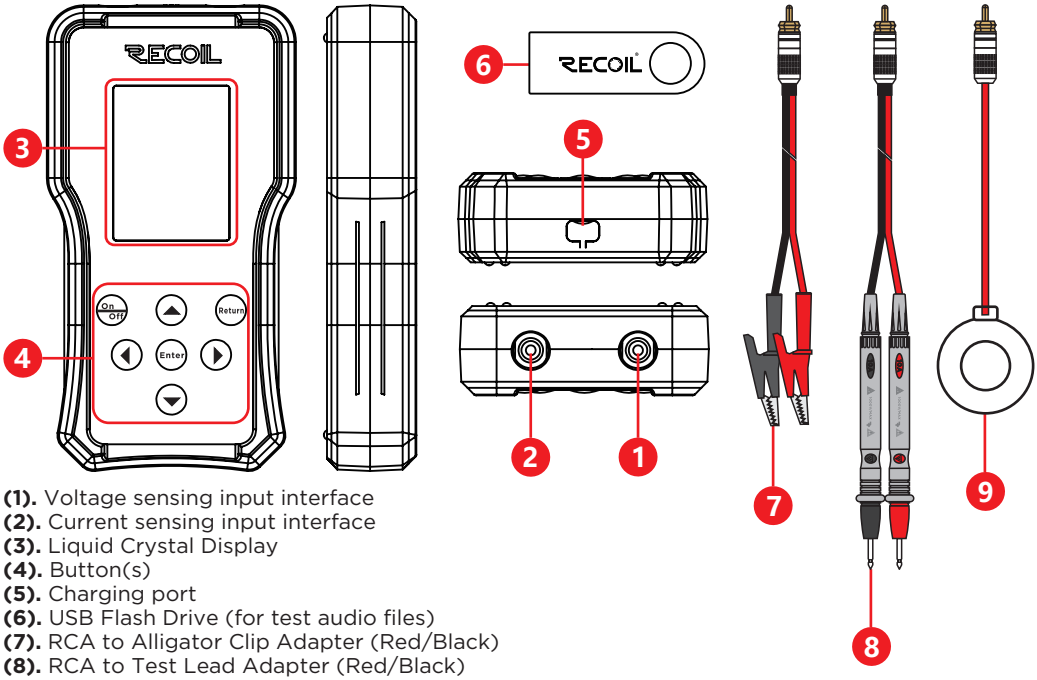
MAT-1

Recoil Multi-function Speaker Tester

User Manual

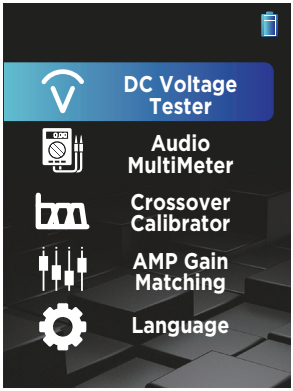
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(1). Voltage sensing input interface
(2). Current sensing input interface
(3). Liquid Crystal Display
(4). Button(s)
(5). Charging port
(6). USB Flash Drive (for test audio files)
(7). RCA to Alligator Clip Adapter (Red/Black)
(8). RCA to Test Lead Adapter (Red/Black)
(9). Current Transformer (CT)

OPERATION INSTRUCTIONS:

1. Power On/Off: Short press the "On/Off" button to power on and enter the main menu. If there is no operation, the device will automatically shut down after 5 minutes. Alternatively, you can long press the "On/Off" button for 2 seconds to power off.
2. In the main menu, use the "▲▼" buttons to move the cursor and select different functions. Press "Enter" to enter the selected function interface, and press "Return" to return to the main menu.
3. The battery indicator is located in the top right corner of the screen. When the battery is low, you can charge it through the Type-C port at the bottom. The device cannot be used while charging.

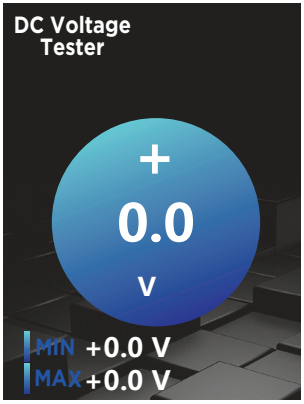


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DC VOLTAGE DETECTION

Measurement Range: ±100V
Usage Tip: Please select the "RCA to Alligator Clip Cable" or "RCA to Test Probe Cable" from the accessories according to your needs. Connect the RCA plug to the white RCA jack on the top right side of the main unit. Connect the alligator clips or test probes to the terminals to be measured. The screen will display the measured voltage value in real time.
Extended Function: During DC voltage measurement, press the "Enter" key as prompted on the screen to activate the Max/Min value recording function. Press the "Enter" key again to clear the current record and restart the statistics.

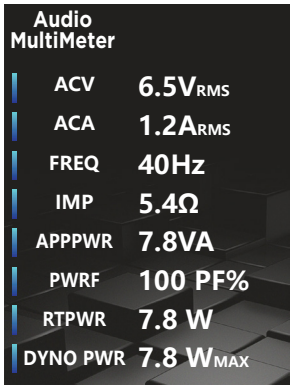




AUDIO MULTIMETER

The Audio Multimeter function can be used to measure the AC voltage, AC current, and signal frequency of the amplifier output. It automatically calculates and displays the current output apparent power, power factor, active (real) power, maximum power, and load impedance.
Measurement Range:
1. AC Voltage: 0 - 150 VRMS
2. AC Current: 0 - 100 ARMS
3. Signal Frequency: 5 Hz - 20 kHz
4. AC Impedance: 0 - 200 Ω
5. Apparent Power: 0 - 15000 VA
6. Power Factor: 50 - 100 %
7. Active (Real) Power: 0 - 15000 W



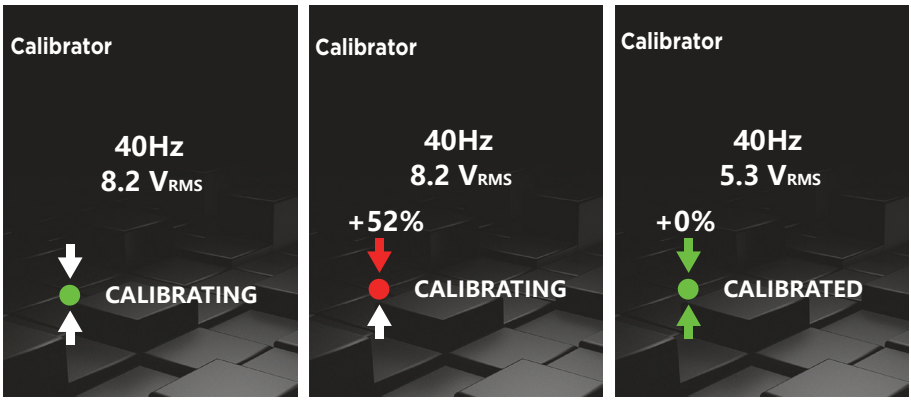


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Usage Tips:
1. AC Voltage and Signal Frequency Measurement: Refer to the DC voltage detection method for connection.
2. AC Current Measurement: First, turn off the amplifier system power. Disconnect any one wire between the speaker and the amplifier. Pass the cable through the current transformer (CT) from the accessories and reconnect it securely. Then, connect the RCA plug from the current transformer to the red RCA jack on the top left side of the main unit. Turn on the power and input an audio signal to display the speaker operating current.
(Caution: Never disconnect the current transformer from the main unit during testing, as this may cause danger or damage the equipment!!!)
3. Signal frequency can be measured accurately only after the input signal reaches a certain amplitude.
4. Power Factor and AC Impedance can only be calculated when both AC voltage and current signals are detected simultaneously. Active Power is derived based on the Power Factor.
5. The Maximum Power record in the statistics can be cleared and restarted by pressing the "Enter" key.

CROSSOVER CALIBRATOR

Before using the Crossover Calibration function, please set the amplifier's tone controls (e.g., bass, treble, etc.), the main unit's EQ, and the crossover to flat mode. Restore the original settings after calibration is complete. The main unit screen will display the voltage and frequency of the current input signal. Arrows and a circular icon, along with concise text prompts, will intuitively indicate the current status.
Press "Return" to go back to the main interface. Enter the "Crossover Calibrator" again to restart the calibration process.



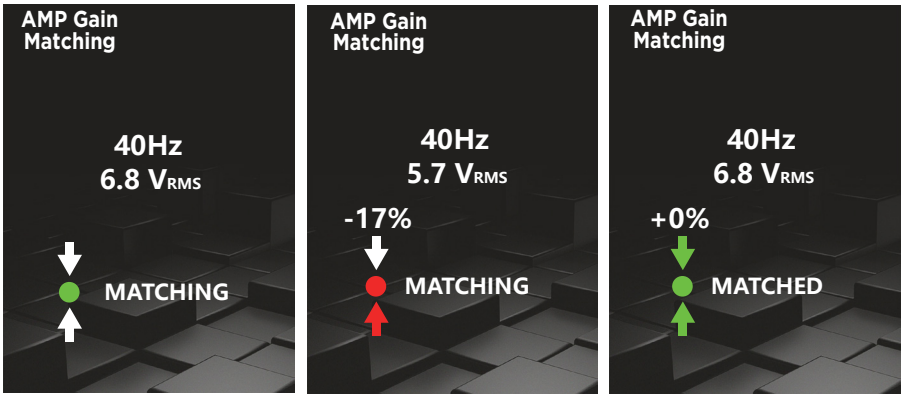
Usage Tips:
1. Setting Low-Pass Crossover:
a. Connect the crossover output to the white RCA jack on the top right side of the main unit using an RCA cable or accessory cable harness.
b. Play the target frequency track (loop playback is recommended) and turn the source volume down to the minimum.
c. Set the crossover switch to "Full Range" (All-Pass) mode, or adjust the crossover frequency to the highest setting.
d. Gradually increase the source volume until the circular icon on the screen turns green. Press the "Enter" key to save the data (the icon will turn red).
e. Adjust the crossover switch to the "Low-Pass" mode. Slowly adjust the crossover frequency knob until the circular icon turns green again. The low-pass crossover point is now set.

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2. Setting High-Pass Crossover:
a. The connection method is the same as for the low-pass crossover setting.
b. Play the target frequency track (loop playback is recommended) and turn the source volume down to the minimum.
c. Set the crossover switch to "Full Range" (All-Pass) or adjust the crossover frequency to the lowest setting.
d. Gradually increase the volume until the circular icon displays green. Press the "Enter" key to read the data (the icon will turn red).
e. Adjust the crossover switch to the "High-Pass" mode. Slowly adjust the crossover frequency until the icon turns green again. The high-pass crossover point is now set.

AMPLIFIER GAIN MATCHING

Press "Return" to go back to the main interface. Re-enter the "Amplifier Gain Matching" function to restart the matching process.



1. Connect the main amplifier's output to the white RCA jack on the top right side of the main unit using an RCA cable or accessory cable harness.
2. Play the matching frequency track (40Hz is recommended for bass, 1kHz for full range; loop playback is recommended). Turn the source volume down to the minimum.
3. Gradually increase the source volume until the circular green icon lights up. Press the "Enter" key to read the data.
4. Disconnect the main amplifier from the main unit. Connect the amplifier to be matched.
5. Adjust the gain of the amplifier to be matched according to the on-screen prompts until the circular green icon lights up again. This indicates that the gain matching with the main amplifier is complete.

LANGUAGE SETTINGS

This function allows you to set the display language.
a. Select " Language" from the main menu and press "Enter" to enter the " Language" interface.
b. Use the "◂▸" cursor to switch between "English" and "简体中文" (Simplified Chinese). "Return" to return to the main menu.

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