

1. CM49

The Wunder Audio CM49 Tube Microphone comes with the original M7 capsule. The M49 was the first condenser microphone capable of remote pattern control, achieved through electronic means. By varying the rear-diaphragm voltage against the backplate reference, a full range of patterns, from omni to cardioid to figure-8, was accomplished. Because the grille is slanted and presents a continuously varying profile to the capsule, there are fewer standing waves generated.

It should be stressed that vacuum tubes, with their heater filaments, are much more delicate than solid-state components. Consequently, the user should take great care in handling the microphone. A drop from even a moderate height may cause the filament to break and may result in immediate failure of the microphone. It would be advisable for the user to keep a spare tube – specially selected by the Wunder Audio Service Department – always ready for replacement.

It is important to note that the tube may have become slightly unplugged from the tube socket during shipping. If the microphone has no audio output, 99% of the time it is a result of a slightly unplugged tube.

Repairs are to be carried out only by experienced, authorized service personnel. Unauthorized opening of, or modification to the equipment shall void the warranty.

The microphone tube requires a high operational voltage. Contact with the voltages present in the interior of the microphone and PSU may result in injury or death; therefore, the microphone and PSU must be opened only by an authorized, qualified technician.

The microphone must be operated only with the supplied cable. Because hazardous voltages are generated by the PSU that may result in injury or death, always ensure that the microphone cable is undamaged. Damaged cables must no

longer be used.

Operation

The CM49 is equipped with a 8-pin Tuchel connector that plugs into the base of the microphone and screws tight. Always make sure that the PSU is switched off when plugging the microphone connector into the microphone and PSU.

How to change the polar pattern.

Locate the white pattern switch on the PSU. Use this switch to change the directional characteristics: omni-, cardioid-, figure-eight, and eight intermediate positions. The center position with the Wunder Audio logo is the cardioid setting.

As you turn from position to position it will take a few seconds for the polarization voltage to settle and achieve the desired polar pattern.

How to mount the microphone

A special Yoke mount/stand adapter is provided and should always be used to mount the microphone on floor stands or booms.

To mount the microphone, fully unscrew the knurled knob on the side of the metal belt. Place the microphone into the metal belt making sure that the red jewel on the front of the microphone is centered into the center hole on the yoke belt. Make sure that there is no black rubber grommet in the center hole on the belt, if it is present, remove it.

Close the metal belt carefully around the microphone making sure that the leading edge of the metal belt does not scratch the body of the microphone. Screw the knurled knob clockwise to tighten the belt around the microphone.

The CM49 can now be placed with the microphone on stands or booms with standard thread sizes. It may also be swiveled against the stand axis to suit the recording angle.

Powering of the microphone

The required PSU is included with the microphone. It is clearly marked and should be quite obvious by connector type and size how to connect the microphone to the power unit with the supplied CM49 microphone cable. The audio signal may be taken from the transformer-balanced power unit by a conventional audio cable with standard XLR-type connector.

After connection of the microphone, the power supply, and AC line, the main switch may be switched on. Operating condition will be indicated by the power lamp.

The warm-up time of the CM49 is approximately one minute. When your CM49 is new, a 24-hour burn-in period is recommended.

The CM49's tube will "break in" over a period of time enabling the mic to sound subtly better over a period of time.

2. The CM49 Power Supply

This PSU supplies the microphone with the 4.0V filament voltage and 120V plate voltage for the vacuum tube.

Prior to connecting the CM49 to AC power, check the AC voltage of the power line you are going to connect to the CM49.

The CM49 PSU has an internal AC voltage selector switch.

To check the CM49 PSU AC voltage selector switch, first unplug the AC cable (power plug) from the PSU.

Use a flat-blade screwdriver to unscrew the lid to the PSU and remove the lid.

You will see a small chrome toggle switch located inside the unit directly next to the large AC transformer.

To set the switch to 115V, toggle the switch towards the transformer. To set the switch to 230V, toggle the switch away from

the transformer.

Warning: Connecting the CM49 to the wrong AC voltage may destroy the unit and cause fire and/or electric shock.

Replacing Fuses

The fuse protecting the primary circuit is located outside the PSU. Unscrew the black fuse cover to open the fuse compartment. Replace the fuse with a new fuse of the same type (T 500 mA for 115V; 250 mA for 230V) and close the fuse compartment lid.

AC Power Connector

If you are using the microphone in a different country, you may need to connect the unit to a power outlet that does not match the power connector on the supplied power cable. Purchase a matching power cable locally that complies with IEC and local safety standards and has a power connector with a chassis ground pin. While in the same area, use this “local” power cable only.

Shutdown and storage

Before switching off the microphone or disconnecting cables, reduce the volume of the connected equipment. Only then should the PSU be switched off.

Disconnect the cables. When disconnecting a cable, always pull only on the connector housing and not the cable itself.

When the microphone is not in use, it should not be allowed to remain on the stand gathering dust.

A microphone which is unused for a prolonged period should be stored in a cool, dry place and protected from dust.

Cleaning

Under normal conditions, the microphone body may become dirty and covered with fingerprints. One or two drops of Lubriderm unscented hand lotion can be gently rubbed into the nickel finish with a terry cloth and then wiped clean.

Troubleshooting

1) Microphone not operating

Possible causes:

- a. PSU not switched on
- b. Microphone is not connected to PSU

2) Signal is noisy

Possible causes:

- a. Tube filament has become damaged.

3. Specifications of the Microphone

Directional Characteristics: Omni-, cardioid-, figure-eight, and eight intermediate positions remotely controlled from the microphone on the powering unit

Frequency Range: (20 - 20,000 Hz)

Electrical Impedance: 200 ohms

Powering: Via the included powering unit with 115/230 VAC

Maximum Sound Pressure Level: 128 dB

Sensitivity: approx 0.7 mvolts per dyne / cm sq

Non Linear Distortion: less than or equal to 0.6% at 100 dyne / cm sq

Connector: Large-sized swivel, 8 pin

Dimensions: 163 mm (6.42") 80 mm (3.15")

Shipping Weight: Approx. (~12 lbs.)

Included Accessories:

CM49, Plush Oak Box, Historical Yoke Mount, Historical Power supply, Original large Tuchel-connected mic cable. Comes standard with the M7 capsule.