

What is a JM47?

Just before World War 2, a small company in Germany developed a technology for the manufacture of very high quality microphones using the principle that a charged capacitor changes the voltage across its plates when one of the plates is moved with respect to the other. The German company developed a shape of capacitor and the gold membrane that forms the 'moving' plate.

This development reached a high level of sophistication. So much so, that to this day the finest studio microphones follow the design of the original Neumann Company. Fortunately for some other manufacturers in the world, the technology of the original company in East Germany became a part of the technology sharing policy of the Communist world, and it was taken up by some specialist manufacturers in the Far East.

Today, fine microphones are still manufactured by the original company, and by the sharing of technology, we now have a number of products from China that are actually legitimate high quality microphones in their own right. For many years, Joemeek has been making occasional "one off" capacitor microphones with varying degrees of success.

Attempts to manufacture the microphone economically while retaining the superior performance were not completely successful until Joemeek investigated some of the Far East products. The JM47 is the result of co-operation with a Far East manufacturer and a sustained program of testing in the new Joemeek studio, comparing the production microphone with the best hand built originals, and with some competing products. The JM47 contains all the classic design elements and the sound of the finest microphones in the world.

Origins and Manufacture

The Joemeek JM47 is manufactured under the supervision of PMI Audio Group. All mics are tested for quality control. The JM47 meets all requirements for electronic equipment in all countries of export.



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JM47



Ultimate professional quality

Large diameter true capacitor gold capsule

Ultra low-noise FET Preamplifier

Transformer output

48 volt phantom powered

Elastic shock mount (sold separately)

JM47 Description

The JM47 is a very high quality true capacitor microphone with FET impedance converter and transformer output. (NOTE, this is NOT an electret microphone).

The capacitor element is manufactured to the classic 'centre electrode' design which provides smooth extended frequency response without low frequency boominess. Quality is further enhanced by using dynamic feedback actually at the capacitor element. This original technique eliminates distortions which can occur when using this type of microphone for high volume levels.

The capacitor membrane is microfine 'mylar' with gold sputtering, voltage polarised by phantom power.

The microphone body is made of brass with double screening of the transformer. Connection is via screened balanced audio cable with 3 pin XLR connectors.

Care of Your JM47

Although the 'mylar' membrane on the capacitor is more robust than the gold foil used by the German originals of the 1930s, it is still extremely fine and liable to damage if mishandled. There are two safety factors that MUST be remembered when handling these microphones:

- 1) Keep the microphone dry.
- 2) Avoid wind or air blasts directly onto the capsule.

All electronic equipment should be kept dry, but it is even more important to avoid any damp conditions when using high quality capacitor microphones.

Damp can cause partial short circuits in the polarising voltage, this will cause crackling noises and low output.

The most important instruction for capacitor microphones is NEVER blow at the capsule. Damage caused by blast of air on the capsule are often permanent and require the complete replacement of the capacitor element (capsule).

Never use the microphone in the open air without substantial wind protection.

Warranty

The JM47 is warranted from defects for a period of 1 year, parts and labor. Register for your warranty at www.joemeek.com.

Operation

The JM47 is capable of handling very high sound volume levels so it can be used safely close to musical instrument amplifiers. If the amplifier sound is very loud, this may overload the microphone amplifier. A 10dB pad switch on the microphone eliminates this problem. It is also a very low noise microphone and suitable for voice recording to the highest quality.

For voice recording, avoid singing directly into the capsule unless an efficient pop shield is used. Occasionally when close microphone techniques are used in the studio, an excess of low frequencies occur. The microphone is fitted with a high pass filter to minimise this effect.

Problems

Should the microphone accidentally become damp and fail to operate properly (start crackling, or go very quiet) then place it in a warm and very dry environment for 24 hours. The ideal environment is an airing cupboard.

The JM47 is extremely resistant to physical damage, but if the microphone fails to work after being dropped, it should be returned in adequate packing to the supplier. A double test and inspection system means that manufacturing faults are almost unknown but should any fault occur, it will be repaired (or replaced) free of charge excepting where the fault has been caused by physical damage.

Connecting Up

Using a high quality balanced and screened audio cable, connect the microphone head to the microphone amplifier input and switch on the 48V phantom power. NOTE, the microphone will not operate unless 48V phantom power is provided.

The microphone should be powered up for at least one minute before it will operate correctly as the polarising voltage on the capsule needs to stabilise.

Some background noise is possible during the first few seconds after switch on.

Keep the gain controls on the microphone amplifier or mixer well down as the output from the microphone is high (as most capacitor microphones).

Using the JM47

The JM47 is supplied with an elastic shock mount system. Although the microphone is not particularly susceptible to sounds transmitted through the case, it is advisable to use this shock mount wherever possible.

To further improve the performance of the mount, it is possible (but certainly not essential) to remove the wire clips (normally used to open the microphone holder), this allows the microphone more movement in the elastic mount.

The response of the microphone is CARDIOID, this means that it is very much more sensitive to sounds from the front than from the rear. The front of the microphone is indicated by the JM47 logo. To get the best quality, be sure that the sound source is in line with the front of the microphone.

To get the classic early capacitor microphone voice sound, the singer should sing very slightly across the front of the microphone at a distance of 150 to 200mm from the microphone. The microphone amplifier should be of the highest quality such as a Joemeek microphone amplifier.

Specification

Cardioid only capacitor microphone with FET impedance converter and transformer output. Power required, 48V phantom approx. 1mA.

Frequency response substantially flat 20Hz to 20KHz.

Sensitivity approx. -36dBV

Output impedance 200 ohms transformer balanced.

Recommended load impedance 2Kohm.

Signal to noise ratio 74dB.

Dynamic range 126dB