

## BEGINNER'S GUIDE TO HOME RECORDING ON A BUDGET

### Part 3: Microphones



A microphone converts sound into an electrical signal so you can record your music. A DYNAMIC mic does that with a coil of wire vibrating near a magnet. A RIBBON mic does that with a strip of metal foil vibrating near a magnet. A CONDENSER mic does that with a metal-coated diaphragm vibrating next to an electrically charged metal plate.

Phantom power is power coming from a mixer, through a mic cable, to make a condenser mic work. Dynamic mics and most ribbon mics don't have internal electronics, but condenser mics do, so condenser mics need phantom power (or an internal battery). So on your audio interface, when you are using a condenser mic, be sure to push the little button labeled "Phantom", "P48", or "48V". Some mic preamps and direct boxes also work off phantom power.

If your mixer lacks phantom power, purchase a phantom power supply. Plug the mic into that supply, and connect the supply output to your mixer input.

Dynamic mics are popular for electric guitar amps and drums. Condenser mics are popular for vocals, cymbals and acoustic instruments. Ribbon mics are popular for electric guitar amps and horns. But you can use almost any mic on any instrument if it sounds good to you.

#### **POLAR PATTERN (directional pickup pattern)**

Microphones also differ in the way they pick up sounds coming from different directions. An OMNIDIRECTIONAL mic picks up sounds from all directions. A UNIDIRECTIONAL mic picks up sounds mostly in front of the mic. A BIDIRECTIONAL mic picks up sounds from in front of and behind the mic, and rejects sounds to the sides.

Three types of unidirectional mic are CARDIOID, SUPERCARDIOID, and HYPERCARDIOID. They are progressively more directional or focused. Cardioid is the most popular.

Some expensive condenser mics have switchable polar patterns: omni, cardioid, or bidirectional.

### **CONDENSER MIC SIZES**

Condenser mics are grouped by the size of their diaphragms. A large-diaphragm condenser (LDC) has a diaphragm about 1" or larger. It tends to reproduce bass well. It's a popular choice for vocals. A small-diaphragm condenser (SDC) has a diaphragm less than about 1". It tends to reproduce extreme highs well and is popular on cymbals and acoustic instruments.

LDC mics are side-addressed; you aim the side of the mic at the sound source. SDC mics are end-addressed; you aim the end of the mic at the sound source.

### **MORE**

A USB mic is a microphone with a built-in audio interface. It connects directly to your computer's USB port, and is useful if you want to record only one microphone at a time without having to buy an audio interface

Do a Google search for best microphones under \$100, best dynamic mics, best LDC condenser microphones, best small diaphragm condenser mics, best USB mics, etc. There are some excellent mics under \$100.

### **MICROPHONE ACCESSORIES**

- \* A mic cable is typically 15 to 20 feet long and has XLR connectors on both ends.
- \* A mic stand and boom securely position the mic where you want it to go.
- \* A pop filter prevents explosive breath sounds (thumps) from a vocalist singing the letters p, b, or t.
- \* A stage box is a metal box with several female XLR connectors. A long, multiconductor cable called a snake runs to your interface, and divides into male XLR connectors. Using a snake is neater and faster than running several individual mic cables.

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