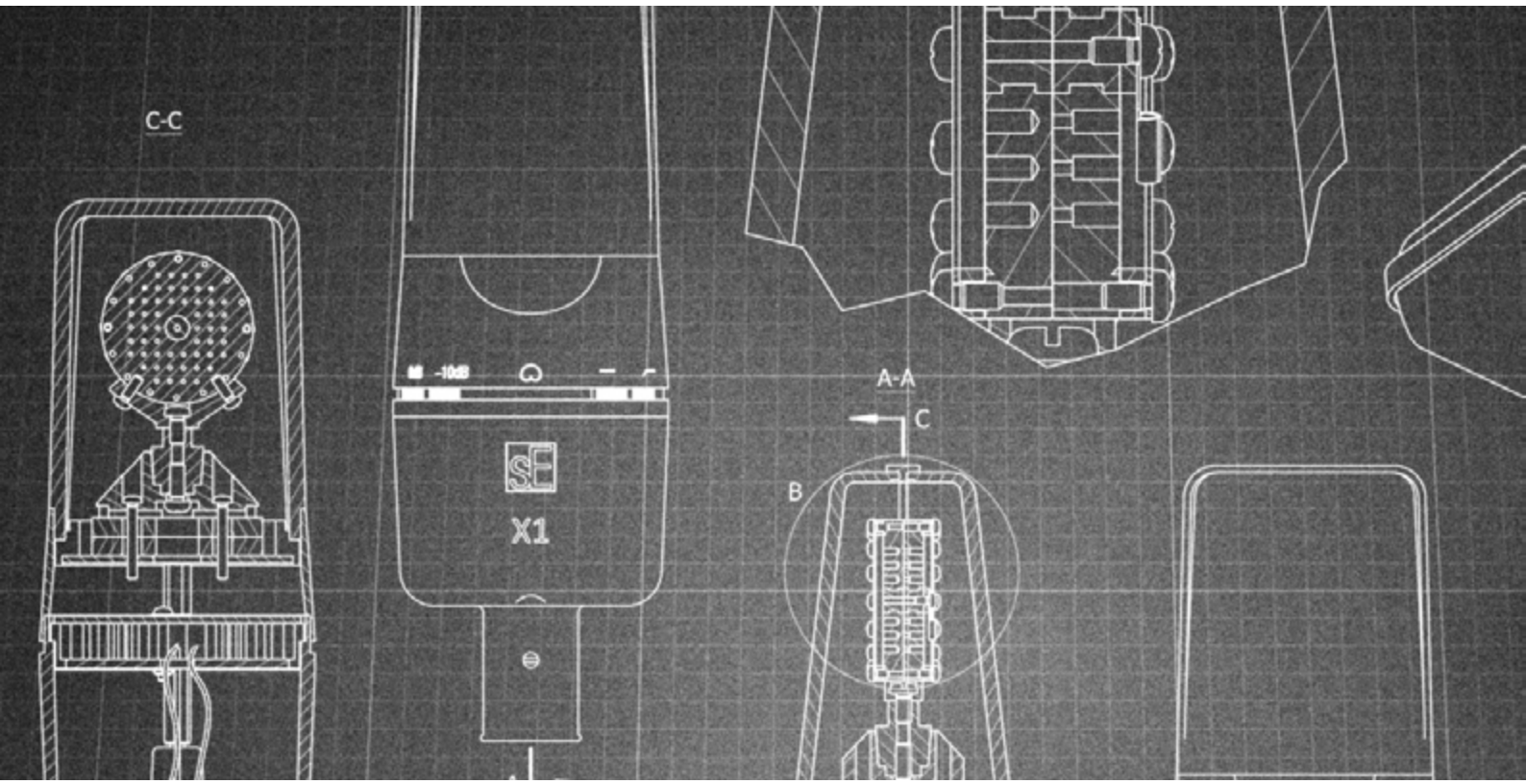
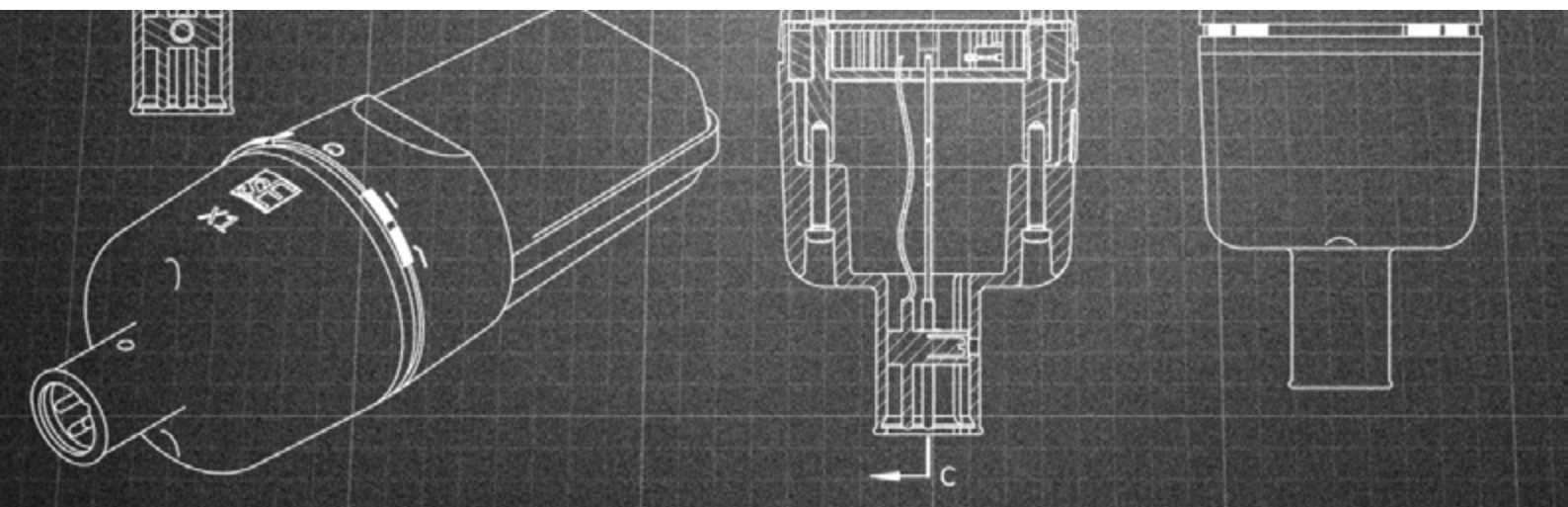
sE Electronics



MICROPHONE MANUAL



Thank you for purchasing an sE Electronics microphone, which was was hand-built in one of the most advanced microphone manufacturing facilities in China. Designed by a team of extremely experienced engineers and verified by extensive listening tests, each model (with a few application-specific exceptions) utilizes gold-sputtered, ultra-light mylar diaphragms in an advanced capsule design. Your microphone was constructed using the finest quality electronic components and extensively tested to provide you with years of trouble-free operation.

Specifications

Specifications for all of our microphones can be found on our website: http://www.seelectronics.com

Pickup Patterns

There are two basic microphone directional patterns, omnidirectional, which picks up sound equally from all directions, and figure-of-eight, which picks up from both the front and rear of the microphone but not from the sides. Combining these two basic patterns creates a cardioid or directional response, which simply means the microphone is most sensitive in one particular direction. By varying the way in which the omnidirectional and figure-of-eight patterns are combined, varying widths of cardioid pattern can be created.

Cardioid



Cardioid pattern microphones are popular for general-purpose recording as they can be directed at the wanted sound source while offering a measure of rejection to sounds approaching the microphone from the rear, and to a lesser extent, the sides.
Where several musicians are playing together, this reduces the amount of crosstalk between the microphones. Cardioid pattern microphones also pick up less of the 'room sound', which results in a clearer, less 'coloured' recording. Note that cardioid microphones belong to the category of 'pressure gradient' microphone as their output signal depends on the differences in air pressure between the front and rear of the capsule.
All pressure gradient microphones exhibit some degree of proximity effect, which simply means that there is a significant rise in their bass response if they are used very close to the sound source. This can be countered by using the low-cut switch on the microphone or microphone preamplifier.
Variations on the cardioid theme range from wide cardioid to hypercardioid.



Hypercardioid has a narrower pickup pattern than the normal cardioid response but is more sensitive to sounds coming directly from the rear.

Omnidirectional



Omnidirectional mics are pressure-operated devices, which means they respond directly to changes in air pressure. They are equally sensitive in all directions and do not exhibit the proximity bass boost effect inherent in pressure-gradient microphones. Omnidirectional microphones sound very “natural” and are used where there is a need to capture the sound of a room’s acoustics or where there are several musicians or singers performing together. Spaced omni microphones are often used for the stereo recording of choirs and ensembles.

Figure-of-Eight



Also a pressure gradient (directional) microphone, the figure-of-eight pattern is produced by a diaphragm open to the air on both sides and gets its name because its polar pattern looks like two identically sized circles in contact with each other. Sound arriving from the side reaches both sides of the diaphragm at the same time, which results in the air pressure on both sides of the diaphragm being equal, so there’s no movement of the diaphragm and consequently no electrical output. Conversely, on-axis sounds produce the maximum pressure differential and hence the maximum output. Figure-of-eight microphones are used in specialist stereo recording applications and also where it is useful to have a high degree of rejection from 90 degree off-axis sound.

Care and Maintenance

Though capacitor microphones are now far more rugged than in the era of the so-called ‘classic’ models, care must still be taken with all capacitor models to avoid damp conditions, humidity or excessive dust and cigarette smoke. Microphones brought into a warm studio from a cold vehicle, for example, may suffer condensation on the diaphragm and circuitry, which will compromise the performance of the microphone until it has completely dried out. It is also important not to subject the microphone to excessive shocks, such as dropping it onto a hard surface.

Microphones may cleaned using a damp cloth but solvents or thinners should not be used. It is also important not to use contact cleaners or other aerosols close to the capsule as this may impair operation.

Mic cables and connectors should be checked regularly for damage. If the cable connecting a tube microphone to its power supply is damaged, contact your local service agency for a replacement and under no circumstances attempt to use a cable of a different type as this could damage the microphone circuitry and/or power supply, and also risk electric shock.

Never run a tube microphone power supply with the ground disconnected as this presents the risk of electric shock. Do not open the microphone case or the power supply case when the power supply is connected to the mains supply as there are potentially lethal voltages inside.

If a capacitor microphone produces intermittent noise or spluttering sounds, it is probably suffering from condensation and should be dried out in a warm place before further use. Do not attempt to service a microphone yourself as this will void the warranty and may cause serious damage. These considerations apply to all capacitor microphones.

Many models come with a precision-built flexible shock mount to minimize the effect of floor-borne vibrations reaching the microphone through the stand. When recording vocals at close range, you should use an external mesh pop screen to prevent low frequency thumps caused by air expelled from the mouth on certain syllables. Your pop screen should be placed midway between the singer's mouth and the microphone for close-miked vocals but should not be necessary when using the microphone to record voices more than 1 metre from the microphone or when recording musical instruments. To avoid room reflections, microphones should be set up away from hard walls and surfaces - or if this is unavoidable, a Reflexion Filter™ can come in handy.

Pad Switch

Where a pad switch is fitted, this should only be used when the microphone is being used to record exceptionally loud sound sources that risk overloading the microphone preamplifier to which the microphone is connected, even when set to its minimum gain setting.

Low Cut

Where fitted, the Low Cut switch activates a high-pass filter that reduces the amount of low frequencies in the output signal from the microphone. Low Cut may be used to reduce the amount of bass boost caused by the proximity effect when working very close to the microphone or to to exclude low frequency signals, such as traffic and floor vibrations where the signal being recorded has little or no deep bass content.

Operating your microphone

All capacitor microphones, other than tube models, require a phantom power supply (48V nominal), normally provided by the mixing console or mic preamp to which the microphone is connected. Phantom power can only be used with balanced microphones and balanced cables and will not cause damage to dynamic microphones plugged into the same mixing console providing they are balanced and connected using balanced cables.

Switch on the phantom power supply after connecting the microphone as repeated plugging and unplugging of a microphone with the phantom power switched on may eventually degrade the components in your microphone preamplifier or mixing console.

Before switching on any tube microphone for the first time, ensure that the mains voltage selector is set correctly for the local mains supply. Tube microphones should also be switched on 30 minutes prior to use to achieve optimum performance.

Accessories

For information on available accessories (pop shields, mic stands, etc), please visit our website.

www.seelectronics.com

PLEASE READ THESE NOTES CAREFULLY BEFORE USING YOUR MICROPHONE

WARNING

Always follow the basic precautions listed below to avoid the possibility of serious injury or even death from electrical shock, short circuiting, damages, fire or other hazards. These precautions include the following:

• The power supply (if included with this microphone) contains no user-serviceable parts. Do not attempt to disassemble or modify the internal components of the power supply in any way.

• Do not expose the microphone to rain, use it near water or in damp or wet conditions.

• If the power cord or plug becomes frayed or damaged, or if there is a sudden loss of sound during the use of the microphone or any unusual smells or smoke should appear to be caused by it, turn the power switch off immediately, disconnect the mains plug from the wall and have your microphone inspected by a qualified technician.

• Only use the voltage as specified as correct for the microphone supply.

• Always attached the three-pin attachment plug for the power supply to a properly grounded power source.

• Check the mains plug periodically and remove any dirt or dust that may have accumulated on it.

• Do not place the power cord near heat sources such as heaters or radiators and do not excessively bend or otherwise damage the power cord, place heavy objects on it or place it in a position where anyone could walk or trip over, or roll anything over.

• When removing the power cable from either the power supply or the wall outlet, please do not jerk or pull on the power cord. Always remove the cord by holding the plug itself.

• Always connect the power supply to a direct outlet and not an extension cord. Doing so may result in an inadequate power supply for the unit to operate at specified levels.

• Always remove the plug from the outlet when the power supply is not in use for extended periods of time (longer than two weeks). Also remove the plug from the outlet during any electrical storm.

• Do not expose the microphone or power supply to any excessive dust or vibrations or extreme cold or heat. This includes but is not limited to: a car on a hot day, direct sunlight for long periods of time or near a heater or a radiator.

• Our power supplies are made for international use, so they all come with a voltage switch. This switch can be located on the back of the unit next to the on/off switch. You will have a selection between 115V or 230V. Please make absolutely sure that you have the correct voltage selected for your outlet as a mistake in selection could cause serious damage to the power supply and/or the microphone that is connected.

• sE Electronics cannot be held responsible for any damage caused by improper use or modifications of the microphone or power supply.

• sE Electronics cannot provide schematics, wiring diagrams or any other technical documents to anyone outside of our distribution partners and authorized sE repair centers.

For support or service, please contact your local sE distributor or email support@seelectronics.com