PCC®-170
PCC®-170W

PHASE COHERENT
CARDIOID® MICROPHONE

The Crown PCC-170 is a surface-mounted supercardioid microphone of professional quality. This handsomely styled unit is appropriate for use on the most elegant boardroom table or lectern. Other applications include churches, courtrooms and council chambers.

Because of its highly directional pickup pattern, the PCC-170 minimizes background noise and feedback. The microphone reproduces the voice with a clean, clear and natural sound.

Since the microphone capsule is placed on a boundary or surface, direct and reflected sounds arrive at the diaphragm in-phase. This coherent addition of direct and reflected waves increases sensitivity 6 dB and prevents phase cancellations. The mic capsule is small enough to ensure phase coherency up to the highest frequencies in the audible spectrum, resulting in a wide, smooth frequency response free of phase interference. Clarity and reach are also enhanced.

Self-contained electronics eliminate the need for an in-line preamp. Powered by 12-48V phantom power, the PCC-170 has a low-impedance balanced output which permits long cable runs without hum pickup or high-frequency loss. Although the standard connector option is a Switchcraft TB3M, the microphone can be special-ordered with a $^{1}/_{4}$" stereo phone plug on the bottom of the base plate as the PCC-170/SPP.

The PCC-170W is finished in off-white to blend with church altars and other surroundings where the lighter color is appropriate.

RFI suppression is included. Self-noise is low and sensitivity is very high. A bass-tilt switch allows the user to tailor the low-end response for particular applications.

How to Set the Bass Tilt Switch

On the bottom of the microphone is a BASS-TILT switch with three positions: FLAT, CUT, and BOOST. It adjusts the low-frequency response as shown in Fig. 1.

• The FLAT position provides a flat low-frequency response, which is normal usage. The PCC-170 is shipped from the factory in flat position.

• The CUT position rolls off the bass, useful in noisy or boomy surroundings.

• The BOOST position boosts the bass for a more natural sound when the mic is used on a small surface such as a lectern.

How to Adjust the High-Frequency Response

The microphone is factory-set for flat response at high frequencies. You can raise or lower the high-frequency response for special applications. Please follow this procedure:

1. On the bottom of the microphone, find the hole labeled HF ADJ. This trim pot adjusts the high-frequency response as shown in Fig. 1.

Specifications

Type: Phase Coherent Cardioid®.

Element: Electret condenser.

Frequency response (typical): 50 Hz to 20,000 Hz at 30 degrees incidence to surface (see Fig. 1).

Polar pattern: Half-supercardioid (supercardioid in the hemisphere above the primary boundary). See Figs. 2 and 3.

Impedance: 150 ohms, balanced (recommended load impedance 1000 ohms or greater).

Open circuit sensitivity (typical): 22 mV/Pa* (-33 dB re 1 volt/Pa).

Power sensitivity: -30.5 dB re 1 mW/Pa*. EIA rating -125 dBm.

Equivalent noise level (self-noise): 22 dB SPL typical (0 dB = .0002 dyne/cm^2), A-weighted.

S/N ratio: 72 dB at 94 dB SPL.

Maximum SPL: 120 dB SPL produces 3% THD.

Polarity: Positive pressure on the diaphragm produces positive voltage on pin 2 with respect to pin 3.

Operating voltage: Phantom power, 12 to 48 volts DC on pins 2 and 3 with respect to pin 1.

Current drain: 4 mA nominal.

Connector: Switchcraft TB3M in model PCC-170. Bottom-mounted $^{1}/_{4}$" stereo phone plug in model PCC-170/SPP. See Fig. 7.

Cable: 15-foot, black, two-conductor shielded cable with Switchcraft TA3F and A3M connectors. No cable supplied with SPP option.

Materials: High-impact molded plastic and steel mesh grille.

Finish: PCC-170: black. PCC-170W: off-white.

Net weight: 6 oz. (170 g).

Dimensions: See Figs. 4 and 7.

Optional accessories: Crown PH-1A phantom power supply (single channel, battery or AC adapter powered), Crown PH-4B phantom power supply (4 channels, AC powered).

*1 pascal = 10 dynes/cm^2 = 10 microbars = 94 dB SPL.

Fig. 1

Frequency Response

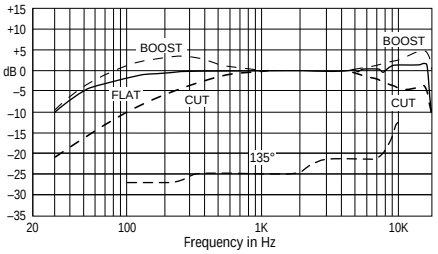

Fig. 2

Vertical-Plane Polar Response

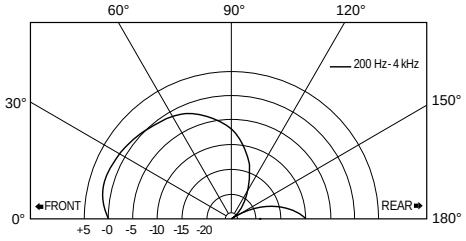

Fig. 3

Horizontal-Plane Polar Response

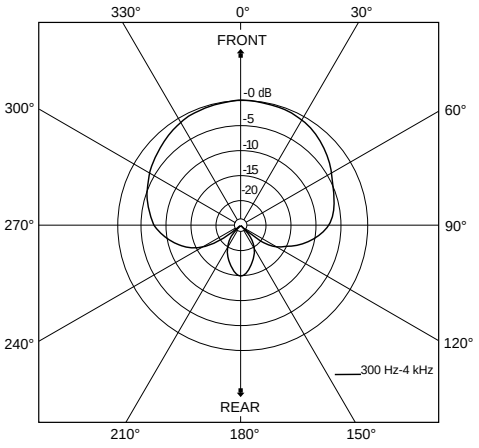

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Fig. 4

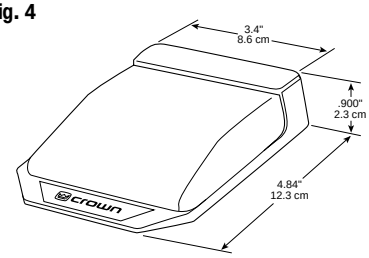
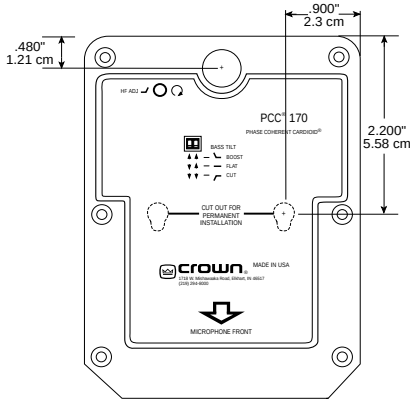


Fig. 5

Dimensions are to outside of plastic housing.



2. Using the supplied small screwdriver, turn the pot clockwise for high-frequency boost (a brighter sound); turn the pot counter-clockwise for high-frequency rolloff (a duller sound).

Installation

Typical placement for each microphone is at arm's length from the user. Either place one microphone in front of each person or one between every two people. The front of the microphone is indicated by an arrow on the bottom of the base plate.

If the microphone is used on a lectern, place it on an open surface, not in a cavity. Otherwise the frequency response and polar pattern will be degraded.

Connect the far end of each mic cable to the input of a phantom-power supply such as a Crown PH-4B. For each channel of the phantom-power supply, connect the output to a mixer mic input.

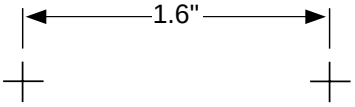
Or if your mixer has phantom power built in, connect each mic cable directly to a mixer mic input.

The PCC includes two keyhole slots in its base to accept mounting screws. To screw the PCC to a table top, follow this procedure:

1. Punch out the keyholes marked on the label underneath the base plate (use a razor blade, small screwdriver, etc.).

2. Using the template (Fig. 6), mark the location of two holes in the table where you want to mount the mic. These holes are 1.6" apart, center-to-center. They are 2.2" from the rear of the mic. See Fig. 5.

Fig. 6

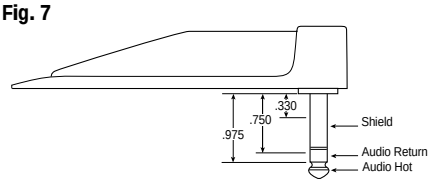


3. Screw two #8 woodscrews (.270" dia. head) into the table at the locations you marked.

4. Loosen the screws enough to receive the mic and to hold it with a friction fit.

If your model is the SPP type install $^{1}/_{4}$" phone jacks in your table. Fig. 7 shows the optimum jack wiper locations.

Fig. 7



Jack contacts should be close to these dimensions.

Architects' and Engineers' Specifications

The microphone shall be the Crown Model PCC-170 (black) or PCC-170W (off-white) or equivalent. The microphone shall be a half-supercardioid electret condenser type, utilizing a subminiature transducer of rugged construction.

The microphone shall employ the principle of phase coherency achieved by mounting a small-diameter element very near a boundary, thus eliminating comb filtering in the audible spectrum. The microphone will exhibit excellent off-axis response and gain-before-feedback.

A 15-foot (4.6m), two-conductor shielded cable with TA3F and A3M connectors shall be supplied with the microphone. As an option, the microphone may be obtained with a bottom-mounted $^{1}/_{4}$" stereo phone plug (model PCC-170SPP, no cable provided).

Nominal sensitivity shall be 22 mV/Pa. Maximum SPL shall be 120 dB SPL for 3% THD. Equivalent noise shall be 22 dBA nominal. Frequency response shall be 50 Hz to 20,000 Hz with a uniform off-axis response, over 20 dB down at the rear nulls.

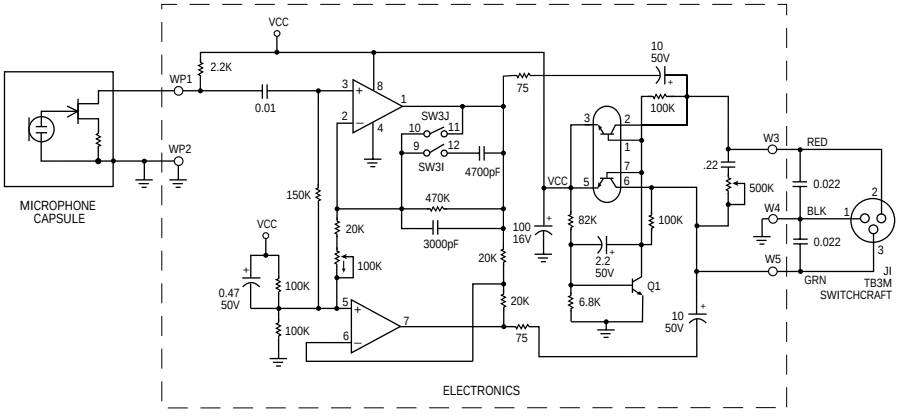
The Crown Model PCC-170 is specified.

Warranty

Crown professional microphones are guaranteed unconditionally against malfunction from any cause for a period of three years from date of original purchase. Please refer to the enclosed full warranty sheet for more detail.

Service

If the microphone does not function properly, check that it is aimed correctly and is configured and connected as described in this data sheet. Double check the DIP-switch settings. If there is hum or no signal, first repair or replace the cable. If the microphone capsule is defective, order a replacement PCC-170 mic capsule from Crown (part no. M43197-9) or return the microphone in its original packaging to **Crown's Service Department, Plant 2 SW, 1718 W. Mishawaka Road, Elkhart, IN 46517**. For further assistance or technical support call 800- 342-6939.



PCC-170 Schematic

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