



**Electro-Voice®**  
a MARK IV company

**Commercial  
Microphones**

# US1700/US1718

**CONDENSER CARDIOID  
GOOSENECK MICROPHONE**

## SPECIFICATIONS

### Generating Element:

Condenser, back electret

### Frequency Response (see Figure 1),

5 inches or greater: 70 to 20,000 Hz

3-inch distance: 50 to 20,000 Hz

### Polar Pattern (see Figure 2):

Cardioid

### Sensitivity at 1,000 Hz,

#### Power Level:

-43.0 dB (0 dB=1 mV/pascal)

#### Open Circuit Voltage:

4.5 mV/pascal

### Dynamic Range:

117 dB

### Equivalent Output Noise:

23 dB SPL, A weighted

(0 dB=20 micro-pascals)

### Impedance,

#### Rated:

150 ohms, balanced

#### Actual:

95 ohms at 1,000 Hz, balanced

### Power Requirements,

**Voltage:** 9-52 V dc phantom supply

**Current:** 2.5 mA

### Switch (see Figure 1):

Flat, low-frequency roll-off,  $f_0=130$  Hz,

12 dB/octave

### Mounting:

Male XLR-type 3-pin connector

### Finish:

Nonreflecting black

### Environmental Conditions,

#### Relative Humidity 0-50%:

-29 to 74 °C (-20 to 165 °F)

#### Relative Humidity 0-95%:

-29 to 57 °C (-20 to 135 °F)

### Accessories,

**Furnished:** Windscreen

**Optional:** Flange mount, 1700MF

### Dimensions (see Figure 3),

#### US1700:

**Length:** 406 mm (15.98 in.)

**Maximum Diameter:** 20.0 mm (0.79 in.)

**Head Diameter:** 10.5 mm (0.42 in.)

#### US1718:

**Length:** 571.5 mm (22.5 in.)

**Maximum Diameter:** 20.0 mm (0.79 in.)

**Head Diameter:** 10.5 mm (0.42 in.)

### Net Weight,

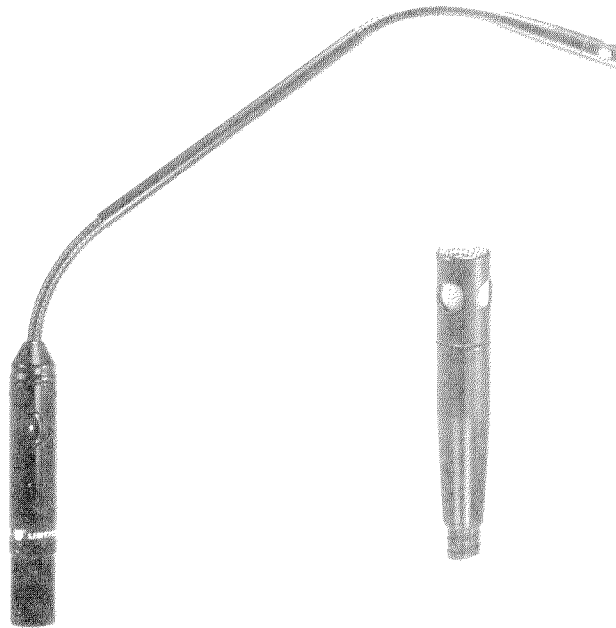
**US1700:** 182 g (6.4 oz)

**US1718:** 244 g (8.6 oz)

### Shipping Weight,

**US1700:** 400 g (14.1 oz)

**US1718:** 528 g (18.6 oz)



## DESCRIPTION

The US1700/US1718 podium microphones are phantom-powered "back electret" miniature condenser gooseneck microphones. The "back electret" feature provides greater sensitivity, wider frequency response and superior immunity from handling noise than a diaphragm electret microphone. The US1700/US1718 are mechanically designed for easy mounting to a lectern, pulpit or podium and acoustically designed for high quality sound reinforcement and broadcast applications. The frequency response is tailored for wide range sound reproduction with very natural sound pickup for either distant or close-up use. The small-diameter gooseneck has two supple joints and a rigid center tube. The rigid tube prevents unsightly twisting of the gooseneck but permits the user to exactly position the microphone. The electronics housing's 3/4-inch-diameter base is terminated with an XLR-type 3-pin connector which allows the microphone to be plugged directly into an existing panel mount XLR receptacle for rapid direct connection. The housing is machined steel for ruggedness and superior EMI/RFI attenuation. A low-frequency roll-off switch has been provided to configure the low-frequency response—reducing proximity effect, background noise and mechanical vibration. The switchable low-frequency response is not load sensitive and provides a constant corner frequency regardless of mixer input impedance. The electronic's output circuit design utilizes a specially produced hum-bucking transformer to further attenuate external magnetic pickup from lighting or electrical power sources and to provide a balanced low-output impedance. The low-output impedance, which is typically less than 95 ohms, permits applications which require very long cable runs without the usual degrading of microphone performance. The US1700/US1718 are designed to be operated from phantom power with a wide voltage range of 9-52 V dc (DIN Standard 45 596).

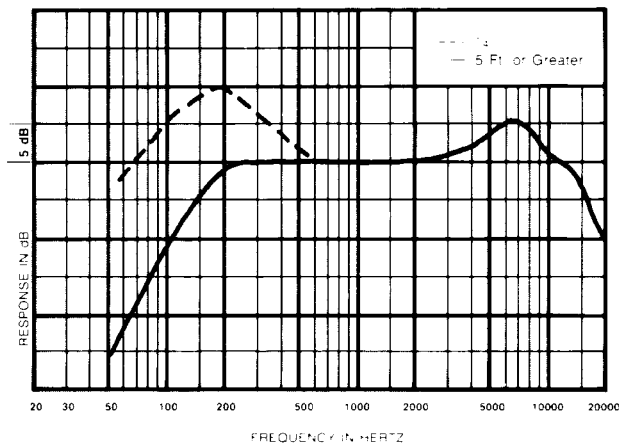


FIGURE 1 — Frequency Response

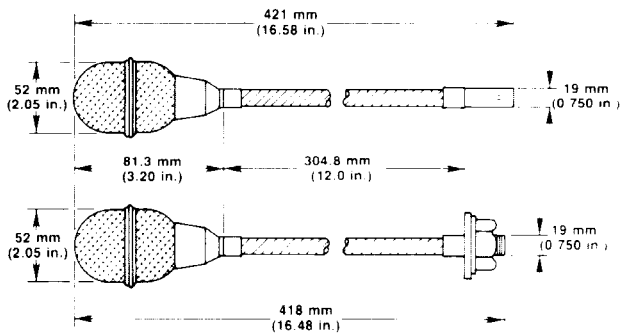


FIGURE 2 — Dimensions

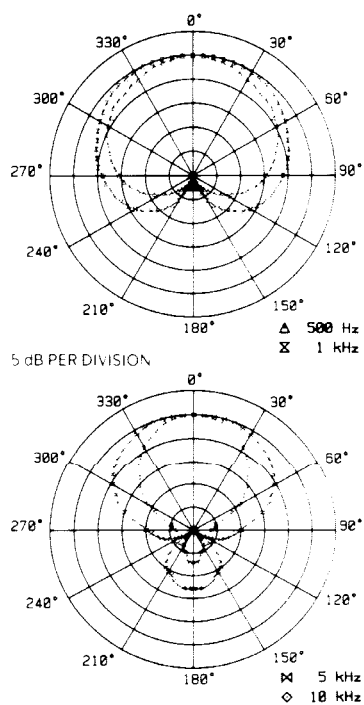


FIGURE 3 — Polar Curves

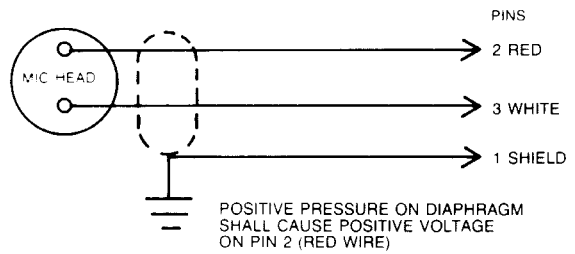


FIGURE 4 — US690 Wiring Diagram

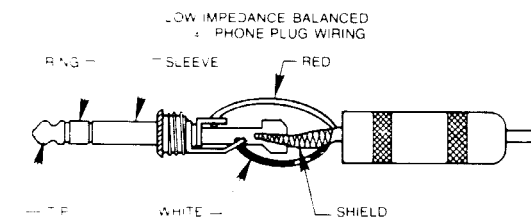
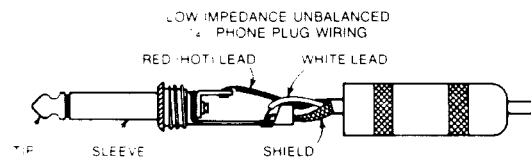
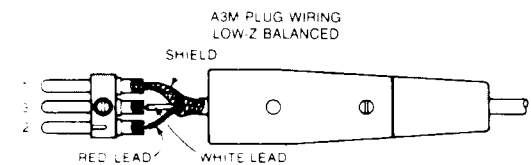


FIGURE 5 — US690F Wiring Diagrams

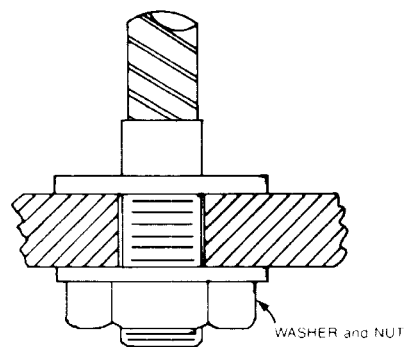
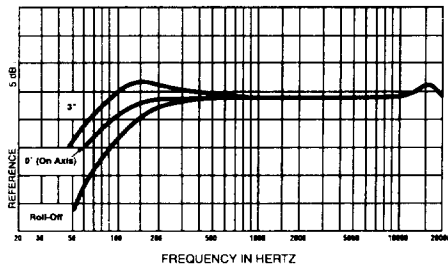
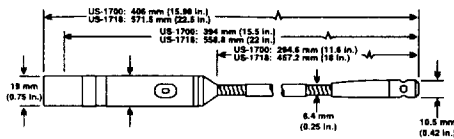


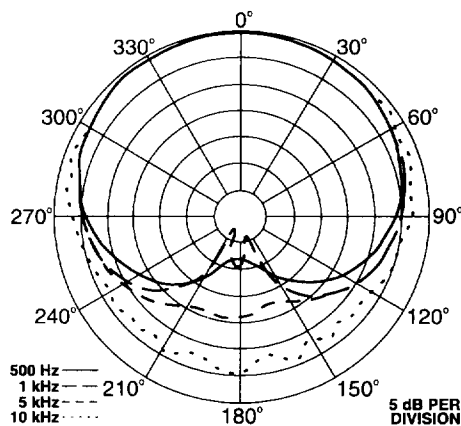
FIGURE 6 — Panel Mounting Detail



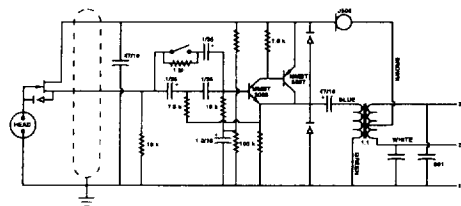
**FIGURE 1**  
Frequency Response



**FIGURE 2**  
Polar Response at 1,000 Hz



**FIGURE 3**  
Dimensions



**FIGURE 4**  
Wiring Diagram

## ARCHITECTS' AND ENGINEERS' SPECIFICATIONS

The microphone shall be a Single-D cardioid back-electret condenser type with a frequency response of 70 to 20,000 Hz.

The microphone shall have a 150-ohm balanced output, with an output level of -43 dB (0 dB=1 mW/pascal). The microphone shall have a back-electret condenser generating element whose output shall not be appreciably affected by temperature extremes from -17.8 °C (0 °F) to 54.4 °C (130 °F) and/or by humidity extremes. A switchable high-pass filter ( $f_0=130$  Hz) shall be provided.

Dimensions shall be 20 mm (0.79 in.) diameter and 406 mm (15.98 in.) long for the US1700; and 20 mm (0.79 in.) diameter and 571.5 mm (22.5 in.) long for the US1718. The microphone shall include a 294.6 mm (11.6 in.) gooseneck for the US1700; and 457.2 mm (18.0 in.) gooseneck for the US1718. Both microphones will be provided with professional A3M-style terminating connectors and external windscreens. The microphones shall be of metal construction.

The US1700/US1718 are specified.

## WARRANTY (LIMITED) —

Electro-Voice Commercial Microphones are guaranteed for two years from date of original purchase against malfunction due to defects in workmanship and materials. If such malfunction occurs, unit will be repaired or replaced (at our option) without charge for materials or labor if delivered prepaid to Electro-Voice. Unit will be returned prepaid. Warranty does not extend to finish, appearance items, cables, cable connectors, switches, or malfunction due to abuse or operation under other than specified conditions, nor does it extend to incidental or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you. Repair by other than Electro-Voice will void this guarantee. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

For warranty repair, service information or a listing of the repair facilities nearest you, contact the service repair department at: 405/324-5311 or 800/444-9516.

For technical assistance, call: 800/234-6831.

Specifications subject to change without notice.



**Microphone Placement**

The US690 and US690F are cardioid dynamic microphones for use on lecterns, for multi-microphone conference installations, or as talk-back microphones for mixing consoles. If the application is in live sound reinforcement, special attention should be given to microphone placement.

**The 3-to-1 Ratio**

The 3-to-1 ratio is an excellent guide for installations using multiple microphones such as senate chambers or panel discussions. This will help prevent multiple microphone interference (acoustic phase cancellation).

Multiple microphone interference causes voids to appear in the frequency response of a system (see Figure C) when the outputs of two or more microphones are combined. This can be minimized if the microphones are 3 times farther apart as either is from the user (see Figure D).

"Good" and "bad" multiple microphone placements are shown in Figures E and F. The "bad" placement can seriously degrade the performance of an otherwise excellent sound system.

**X-Y Method**

Some lectern applications may require the use of 2 microphones. To minimize multiple

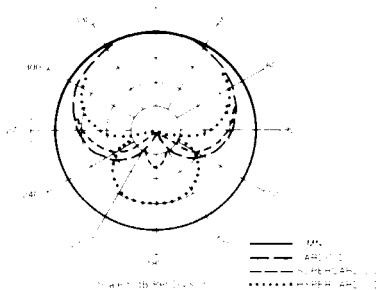
microphone interference, the X-Y method used by recording engineers may be used. Position one microphone on top of the other and at 45 degrees from the center line (see Figure G). Note that the angle between the microphones totals 90 degrees. This may be decreased without problems, but this angle should not be increased to total more than 100 degrees, or degradation of performance will result.

**Feedback**

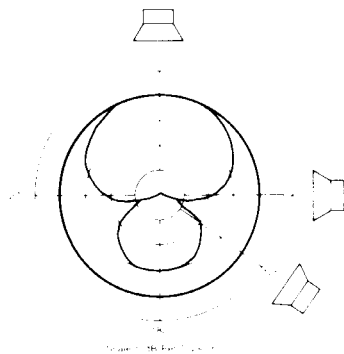
Feedback is a problem which seems to plague all sound systems, however, following a few basic rules can help. Using a cardioid microphone like the US690 is one possibility as the US690 polar pattern will help reduce the likelihood of feedback. A guaranteed method to prevent feedback is to reduce the system output level, however, this may not be acceptable. Positioning the loudspeakers so they do not radiate directly into the microphone also can help. Unfortunately, feedback is not always caused by direct radiation of the loudspeaker into the microphone, but by the sound reflected off walls or other flat hard surfaces, possibly

even the lectern itself. If the person talking moves as close to the microphone as practical, the signal level from the microphone will be greater and thus will permit the system gain to be reduced. With multiple microphone applications, every open directional microphone will reduce the gain-before-feedback by 3 dB, so whenever possible turn off microphones not in use. If feedback still occurs, equalization of the system or reducing the reflections from walls or other flat hard surfaces by using absorptive materials may be required.

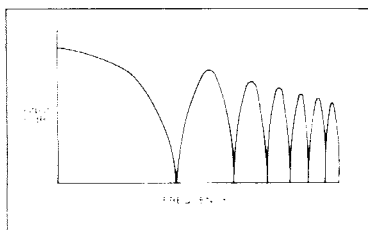
University Sound catalogs and engineering data sheets are available at no charge from your University Sound dealer or directly from University Sound, Inc., 13278 Ralston Ave., Sylmar, CA 91342.



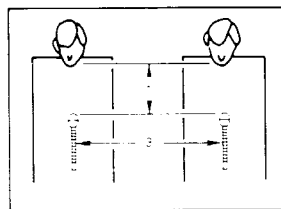
**FIGURE A — Common Polar Pattern**



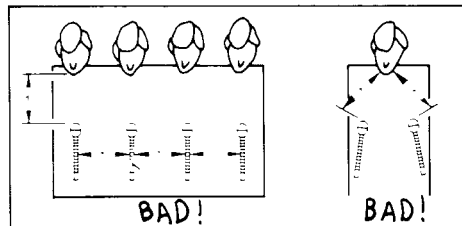
**FIGURE B — Omnidirectional vs. Supercardioid Pattern**



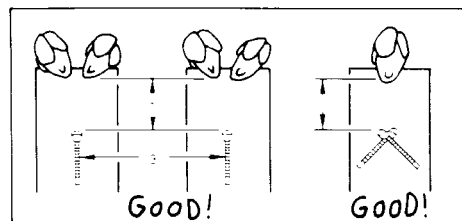
**FIGURE C — Microphone Interference**



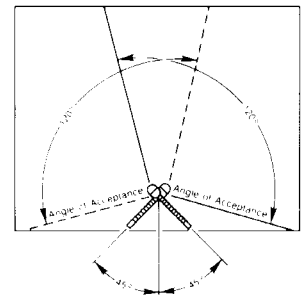
**FIGURE D — Minimized Interference**



**FIGURE E — Microphone Placement**



**FIGURE F — Microphone Placement**



**FIGURE G — X-Y Method**