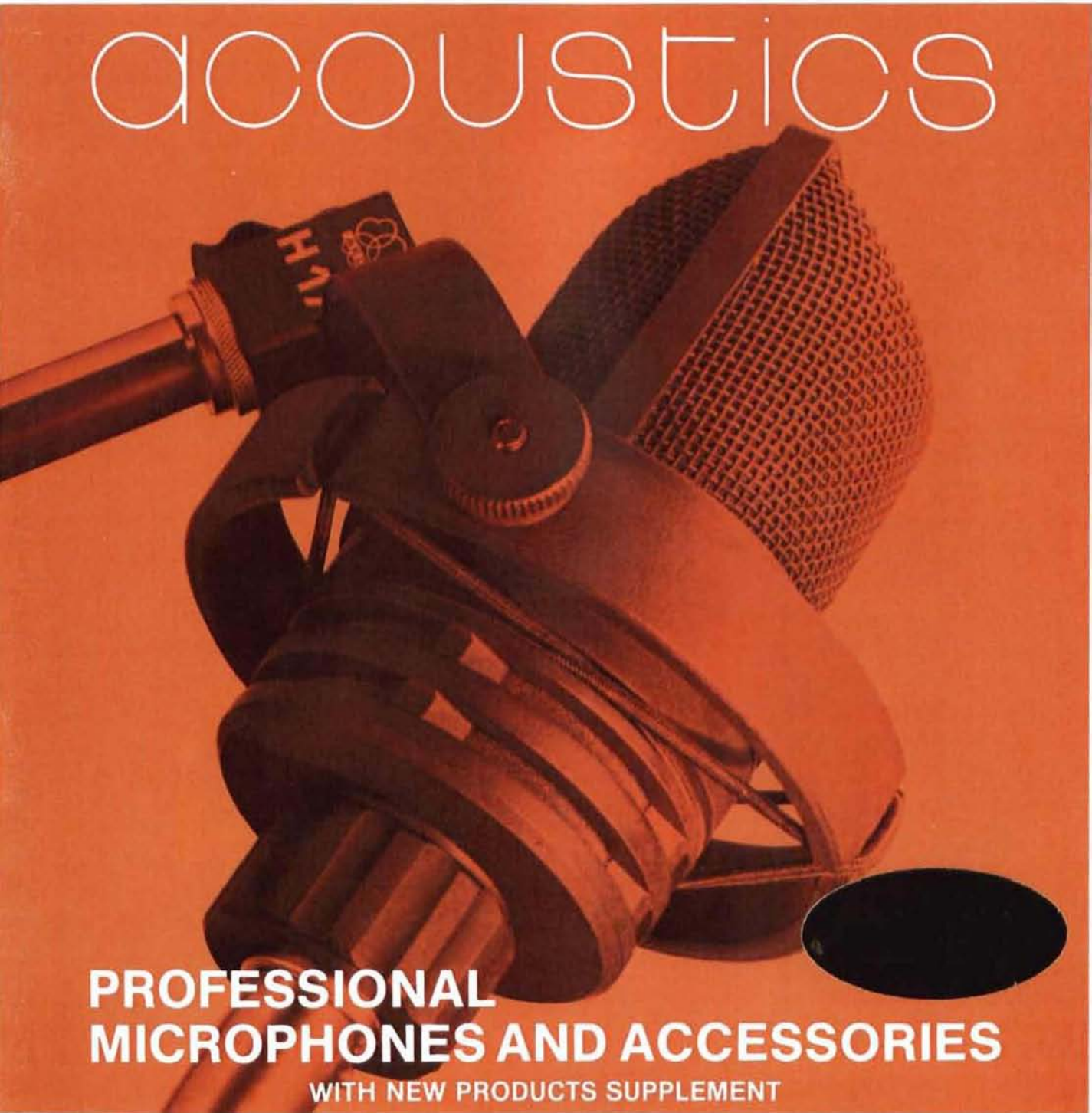
AKG

acoustics



PROFESSIONAL MICROPHONES AND ACCESSORIES

WITH NEW PRODUCTS SUPPLEMENT

AKG...

a name that has amassed an enviable world-wide reputation for performance, dependability and service. A microphone for every need...television studios, motion-picture production centers, theatres, stadiums, concert halls, opera houses, communication links, schools, home tape recorders...and the personal choice of hundreds of performers.

Among professionals—the name AKG is synonymous with the highest standards in quality, performance, and dependability.

Based on intensive scientific research, an extensive knowledge of acoustics and measurement techniques, design competence, precision tooling and meticulous manufacturing standards, AKG has achieved many firsts in microphone development.

In the past three decades, AKG research has resulted in numerous significant acoustical developments, reflected in over 600 worldwide patents held by AKG. Today, AKG operates one of the largest research facilities devoted exclusively to the development of new condenser and dynamic microphones, headphones, phonocartridges and other related acoustic products. It is staffed by over 40 scientists and engineers, who have at their disposal more than 20 walk-in anechoic chambers complete with the latest acoustical, mechanical and electronic measuring equipment.

Research and development is ongoing, and new projects—e.g., ultrasonic transducers, infrared and other wireless techniques, digital and analog delay lines, materials analysis, artificial reverberation, phonocartridges, electret transducers, and more—are under investigation. Manufacturing methods are constantly updated.

Product ruggedness and serviceability are continually improved without compromising quality. AKG is proud to be in the forefront of newer and better sound reproduction.

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Individual specification sheets are also available for all AKG microphones. They provide complete specifications, curves, measurements and architects' and engineers' data.

Selecting a microphone

The professional microphone user needs little guidance as to the most appropriate microphone characteristics needed to do a particular job. However, he may need assistance in selecting an individual microphone type. the function of which most closely parallels his needs

Most professionals including those sound engineers on motion-picture sets and locations, in recording studios, auditoriums, outdoor shells, stadiums, theatres, TV production facilities, location broadcasts and the like, are quite familiar with the variety of environments and unusual circumstances in which they work.

Likewise, these engineers readily understand the meaning of response curves, polar patterns and other technical specifications, and can relate these data to proper microphone selection. Despite this, the knowledgeable engineer will invariably wish to test (on location) specific models—since the environment in which the microphone is to be used might alter or influence "ideal" results. AKG realizes the importance of this location-testing and is amenable to helping professionals by encouraging dealers to assist wherever possible in helping to confirm the proper choice of microphone.

Two things remain. Both are vitally significant to the professional. These are product *quality* and *dependability*. AKG quality assures the user that any number of the same microphone model will possess virtually duplicate consistency in performance characteristics. AKG dependability results from the use of the finest materials and meticulous manufacturing and assembly methods to provide unit ruggedness commensurate with the highest levels of acoustic quality.

Thousands of tapes and records produced every year, are recorded with AKG microphones. From Bach to Rock, AKG has helped to bring some of the finest sounds into your living room. Sheffield Lab has recently released "The King James Version" featuring Harry James and His Big Band, recorded using the renowned C-24 stereo studio condenser microphone. Its realism is astounding. Numerous broadcasts, symphonic concerts, opera performances, musicals, dramatic presentations, outdoor concerts and many other live performances are staged with AKG microphones. To the discerning user, acoustic quality, dependability and serviceability are paramount criteria in the selection of AKG microphones

Impedance and Output Connections

E—EB Suffix Models

All AKG E- and EB- suffix microphones and preamp-capsule combinations in this catalog are low-impedance, balanced-output units fitted with a standard 3-pin XLR-type connector. Nominal output impedance is 200 ohms and is suitably matched by all low-impedance (25-1000 ohms) inputs.

Pin connections are as follows:

Pin 1 = shield
Pin 2 = audio, in-phase ("hot")
Pin 3 = audio, low

In phantom-powerable condenser models, pins 2 and 3, jointly, also carry the positive powering voltage, while pin 1 carries the negative side.

Other Models

Models *without* a suffix—e.g. the C-24 and D-110 microphones—also have an output impedance of 200 ohms, but are supplied with audio-output cables having stripped and tinned leads at their free ends for custom installation. Color coding of their shielded conductors is as follows:

C-24:
red = in phase, fixed capsule
black = low, fixed capsule
white = in phase, rotatable capsule
green = low, rotatable capsule

D-110:
red = in phase
white = low

For all high-impedance applications, use the AKG MCH-20T or MCH-20TS (with on/off switch) transformer cables. These cables are designed to retain all the advantages of a low-impedance balanced-output microphone over the full cable run to the high-impedance input. Hence, no problems are encountered with hum, high-frequency loss, etc.

"MCH"-Series Heavy Duty Microphone Cables

Historically, microphone cables have been a compromise between strength, flexibility, size, weight and cost. This has resulted in the entertainer, broadcaster, sound contractor and recording engineer all facing the same problem: regardless of what microphones they used, the cables did not withstand the wear of constant use. This, in turn, often resulted in dead or intermittent microphones and excessive pickup of RF or hum. AKG has carefully researched cable-design problems and studied information from the field. The results now enable AKG to provide cables that best suit the demands of hard everyday use. AKG specified a structural design for microphone cables similar to the television industry's new lightweight TV camera cables—a cable that would be lightweight, strong, durable, flexible and small, yet capable of withstanding extreme wear conditions. The result is the new "MCH" series of AKG *heavy duty* microphone cables which provide strength, durability, flexibility, small diameter and vastly improved reliability. All "MCH" cable assemblies offered by AKG are described in a separate catalog sheet. Three of these cable assemblies, the MCH-20, MCH-20TS and MCH-50, are available in four optional colors—red, green, blue, and black.

The availability of different cable colors permits easy and unambiguous coding of microphones together with their respective inputs and mixer controls.

All cable assemblies (except the MCH-50) are approximately 20' long. Besides black, model numbers with an asterisk (*) are also available in red, green and blue.

MCH-20* Low-impedance cable assembly w/o switch (female XLR-type connector to male XLR-type connector)
MCH-20F Low-impedance cable assembly w/o switch (female XLR-type connector to stripped-and-tinned ends)
MCH-20P Low-impedance cable assembly w/o switch (female XLR-type connector to phone plug)
MCH-20S Low-impedance cable assembly w/switch (female XLR-type connector to male XLR-type connector)
MCH-20T High-impedance cable assembly w/o switch (female XLR-type connector to transformer w/phone plug)
MCH-20TS* High-impedance cable assembly w/switch (female XLR-type connector to transformer w/phone plug)
MCH-50* Low-impedance 50' cable assembly (female XLR-type connector to male XLR-type connector)

Microphone Stands and Accessories

A complete line of "KM" microphone stands and accessories is available from AKG. Ask your dealer for full details and descriptive literature.

C-24
Stereo Studio-Condenser Microphone

Essentially two matched large diaphragm microphones in one housing, the AKG C-24 is an updated "twin C-12"—one of the best known and widely used condenser microphones in professional audio. A time-tested vacuum-tube unit, the C-24 has gained popularity in the U.S. as both a location and studio microphone.

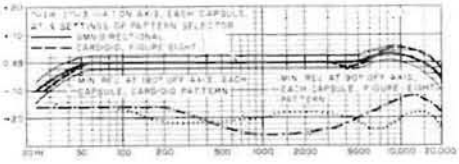
N-24S

C-24

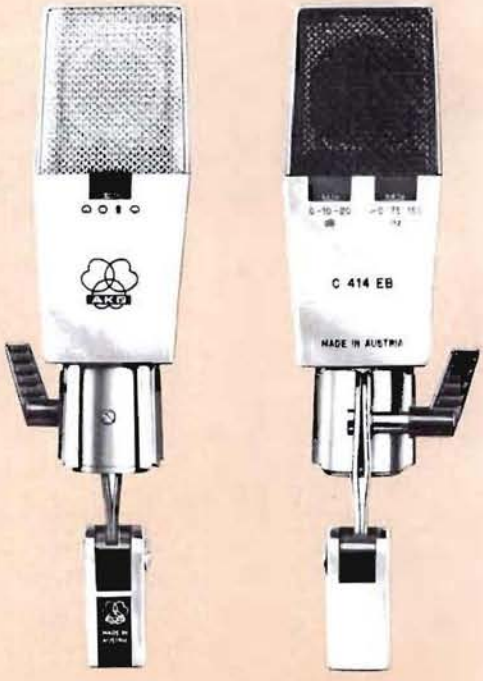
The C-24 has been specially designed for use in M-S and X-Y "intensity" stereophony—two microphone techniques long standard among major European record companies and broadcast networks, and now becoming increasingly popular in the United States. While originally intended for true "concert-hall-sound" reproduction of symphony orchestras, big bands and operatic or choral ensembles, M-S and X-Y techniques are now finding applications in studio rock sessions as well. The C-24's potential as a tool for creative engineering is simply astonishing. From its co-planar (and rotatable) twin-capsule arrangement—inherently free of phase error—to its remote power supply/dual channel pattern selector, the C-24 is an outstanding example of AKG's diligence toward maximum quality and flexibility. Each capsule may be individually aimed during setup, with up to 180 degrees of angular offset between capsules. Moreover, each capsule's directional characteristic may be independently and *remotely* varied at *any* time over a range of *nine* different patterns—from omnidirectional through cardioid and hypercardioid to figure-eight.

Providing the ultimate in convenience and flexibility, the remote pattern selector may be installed directly at the recording or broadcast console in combination with the proper variable-matrix facilities (either M-S or X-Y/M-S/X-Y). This combination offers the recording or broadcast engineer constant, fingertip control over both the apparent *width* of the stereo sound image and the apparent *spaciousness* of that image (ratio of direct-to-reverberant sound pickup). For more details about both forms of intensity stereophony, please ask for the AKG booklet, *M-S Stereo Recording Techniques*. Complete specifications, polar patterns and frequency response curves are available in a separate brochure on the C-24.

The C-24 contains two separate 1" dual-diaphragm capsules, designed for equal phase and amplitude response in all possible combinations of polar patterns. Each capsule is followed by an impedance converter/preamplifier to furnish a low-impedance, balanced output. A 66' multiconductor cable (extensions available) connects the microphone to its power supply/dual-pattern-selector unit. Audio output connections are on the power-supply/pattern-selector unit. Each C-24 is supplied complete with individual proof-of-performance frequency-response curves for each of its capsules—in each of its three basic directional modes: omni, cardioid, figure-eight.



Transducer Type: Two dual-diaphragm condensers, one per channel
Directional Characteristics: Nine independently and remotely adjustable patterns per capsule
Sensitivity: —39 dBm (EIA G : —132 dBm) each capsule
Power Requirements: 120, 220 volts ac ± 10% (internally switchable) 50-60 Hz
Finish: Nickel-plated brass
Overall Dimensions: 10" long x 1"⅛" dia.
Net Weight: 23 oz. (microphone only)



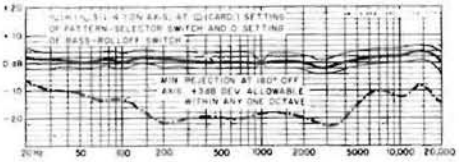
C-414EB

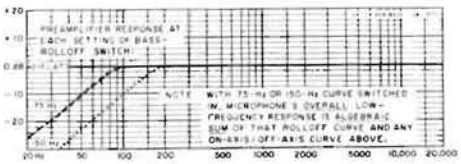
Optional H-17 shock mount/windscreen

C-414EB Polydirectional Studio-Condenser Microphone

The fourth-generation descendent of the AKG C-12, the C-414EB is the culmination of many years of design and application knowledge. The result is an extraordinarily versatile and accurate large diaphragm studio condenser microphone—one of the finest ever made available to the recording engineer. A major feature of this microphone is its flexibility... through proper use of its built-in pattern-selector, pre-attenuator and bass-rolloff switches, the recording engineer can use the C-414EB as if it were an entire system of different microphones.

With the inclusion of a hypercardioid polar pattern, in addition to the more traditional omni, cardioid and figure-eight patterns, AKG engineers have added considerable flexibility not found in most other studio microphones. 0, -10 dB and -20 dB pre-attenuation allows sound pressure levels up to 155 dB to be handled, while 0, 75 Hz and 150 Hz rolloff points provide exceptional (14 dB/octave) control over low-frequency material. An optional H-17 shock mount/windscreen provides further control of vibration and rumble effects as well as additional wind/breath-blast protection. The C-414EB's rugged die-cast housing, temperature/humidity-resistant construction and complete RFI protection make it excellent for outside-broadcast or remote-recording applications. The C-414EB may be phantom powered permitting easy setup or battery operated when needed. Each microphone is supplied complete with individual proof-of-performance frequency-response curves (measured in each of its four directional modes), SA-18/3 stand adapter, and foam-lined vinyl case.





Transducer Type: Dual-diaphragm condenser
Directional Characteristics: Variable, built-in selector (cardioid/omni/figure-eight/hypercardioid)
Sensitivity: – 42 dBm (EIA G_{ss}: – 136 dBm)
Acceptable Phantom-Power Source: 9-52 volts dc (via suitable voltage-dropping network)
Finish: Nickel-plated brass, steel-wire mesh
Overall Dimensions: $5^{9}/_{16}$" long x $1^{3}/_{4}$" wide x $1^{3}/_{8}$" deep
Net Weight: 12 oz.

C-450 System
Modular Condenser Microphones

Like quality cameras with interchangeable lenses, AKG design engineers have similarly developed a complete modular microphone system...with "quick-change" screw-on capsules and accessories of varied characteristics... thereby providing an almost limitless variety of combinations which expand the flexibility and capabilities of the microphone as different applications arise.

Commencing with an option of three different types of preamplifiers, six different types of transducer capsules are available together with a variety of swivels, pre-attenuator pads, extension tubes, windscreens, shock mounts and stand adapters—in a choice of either matte nickel or satin-black chrome finish and 12 or 48 volt phantom powering from associated equipment, in-line ac or battery power supplies. Truly, a complete *all-purpose* microphone system.

Four complete microphone combinations (see below) are available pre-packaged for your convenience. All components are, of course, also available separately: simply add optional modules as your requirements grow.

Complete Microphone Combinations

Note: The specific preamplifier modules, transducer capsules and power supplies used in the following combinations are covered in more detail in their individual descriptions.

C-451E combination

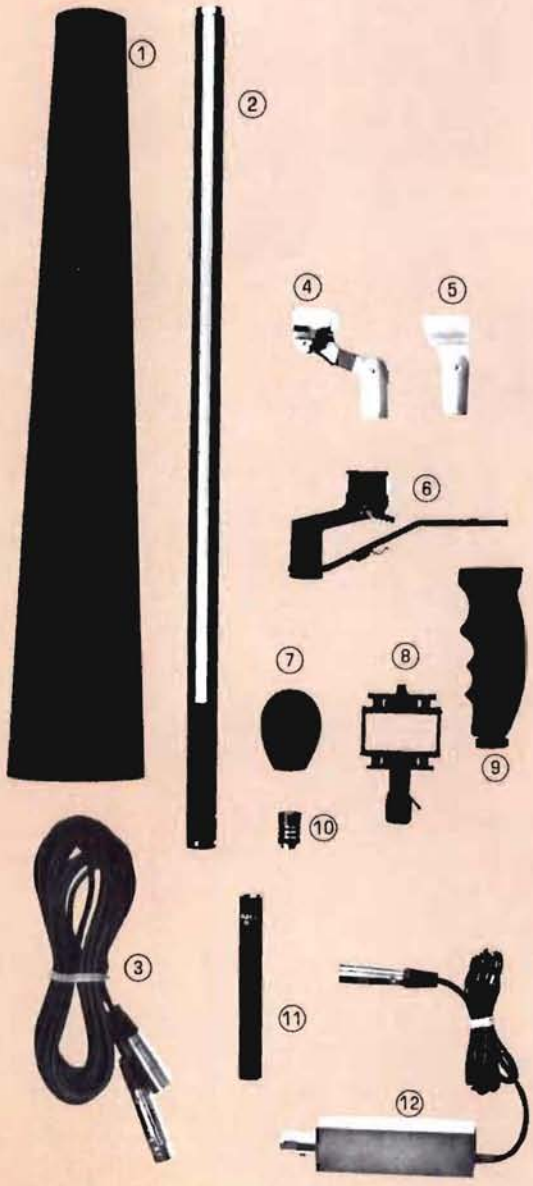
C-451E Basic Cardioid Combination

The essential microphone. Its flat, wide-range response and highly uniform cardioid directional pattern make it the single most useful microphone for the widest possible range of music and speech applications—whether in recording, broadcasting or sound reinforcement. Preamplifier and transducer capsule finished in matte nickel. Complete microphone including C-451E basic 12-volt preamplifier, mating CK-1 cardioid capsule*, SA-15/1 stand adapter, W-3 windscreen and foam-lined vinyl case.

C-452EB Basic Cardioid Combination

Similar to C-451E Combination but for 48V phantom powering systems. Includes C-452EB 48V preamplifier with bass-rolloff switch, CK-1 cardioid capsule*, SA-15/1 stand adapter, W-3 windscreen and foam lined vinyl case.

*Each capsule is supplied with individual proof-of-performance frequency response curve.



1. W-19 foam windscreen
2. CK-9 shotgun capsule
3. MCH-20 microphone cable
4. SA-18/3 stand adaptor**
5. SA-15/1 stand adaptor**
6. SA-70/3 stand adaptor
7. W-3 foam windscreen**
8. H-70 suspension shockmount**
9. H-7 pistol grip
10. CK-1 black cardiod capsule**
11. C-451EB black preamplifier
12. B-46E battery power supply
13. Foam lined carrying case (see pg. 18)

* Not supplied with Basic Shotgun Combination

C-451EB/CK-9 Black Basic Shotgun Combination

A "must" for film and videotape dialog recording, remote newsgathering and theatrical sound reinforcement—acoustically difficult applications in which the microphone's extreme directionality and consequent ability to work at greater distances than a standard cardioid can spell the difference between clean or noise-ridden speech reproduction. Both the preamplifier and transducer capsule are finished in black for minimum reflectivity. Complete microphone including C-451EB-Black 12-volt preamplifier with bass-rolloff facilities, mating CK-9 shotgun capsule*, B-46E battery power supply, SA-70/3 pistol-grip and boom-suspension adapter, H-7 pistol grip, W-19 foam windscreen, MCH-20 heavy-duty 20' cable assembly and fitted, foam-lined carrying case.

C-451EB/CK-1/CK-9 Black Dual-Purpose Cardioid/Shotgun Combination

Virtually a "mini-system" in itself, this microphone combination includes *two* interchangeable transducer capsules—thus offering the fidelity and universality of a high-quality cardioid plus the added directionality and working distance of a shotgun. The preamplifier and both transducer capsules are finished in black for minimum reflectivity. Complete convertible microphone including C-451EB-Black 12 volt preamplifier with bass-rolloff facilities, CK-1-Black cardioid capsule and CK-9 shotgun capsule*, B-46E battery power supply, SA-15/1 stand adapter (for use when cardioid capsule is employed), SA-18/3 stand adapter, W-3 and W-19 foam windscreens, SA-70/3 pistol-grip and boom suspension adapter, H-7 pistol grip, H-70 boom-suspension shock mount (all for use when shotgun capsule is employed), MCH-20 heavy-duty 20' cable assembly and fitted, foam-lined carrying case.

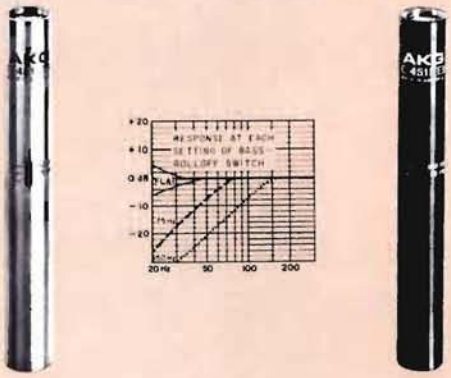
Each capsule is supplied with individual proof-of-performance frequency-response curve.

Preamplifier Modules for the C-450 System

C-451E

C-451E: Basic 12-volt preamplifier. Mates with any transducer capsule in the C-450 system to make up a complete condenser microphone terminating in a 3-pin XLR-type connector. (In addition to its electrical functions, the preamplifier forms the body or shaft of the microphone.) Employs combined FET/bipolar circuitry to provide the required dc polarizing voltage and audio preamplification / impedance conversion for the mating capsule. Features extremely flat, wide-range response and high overload margin. Provides low-impedance balanced output and operates on 12-volt (nominal) phantom powering. Complete with foam-lined vinyl case.

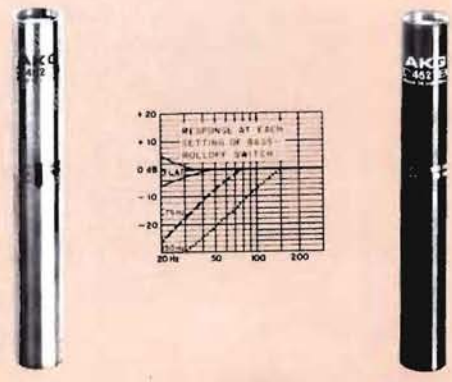
Frequency Range: 5-30,000 Hz
Acceptable Phantom-Power Source: 9-52 volts dc (via suitable voltage-dropping network)
Finish: Nickel-plated brass
Overall Dimensions: 4¾" long x ¾" dia.
Net Weight: 2½ oz.



C-451EB

C-451EB, C-451EB Black: 12-volt preamplifiers with built-in bass-rolloff facilities. Same functions, performance characteristics and phantom-power requirements as C-451E, but with the addition of a 3-position 14-dB/octave bass-rolloff switch and network (flat, 75-Hz hinge point, 150-Hz hinge point) to control low-frequency program content and noise. Each complete with foam-lined vinyl case.

Frequency Range: 5-30,000 Hz
Acceptable Phantom-Power Source: 9-52 volts dc (via suitable voltage-dropping network)
Finish: C-451EB: Nickel-plated brass
C-451EB Black: Black-chrome-plated brass
Overall Dimensions: 5⅜" long x ¾" dia.
Net Weight: 3 oz.



C-452EB

C-452EB, C-452EB Black: 48-volt preamplifiers with built-in bass-rolloff facilities. Same functions, performance characteristics and size as C-451EB and C-451EB Black, but intended for use only with existing 48-volt (nominal) phantom-power installations. Provide a quick, simple way to make all C-450 system microphone combinations compatible with such installations. Each complete with foam-lined vinyl case.

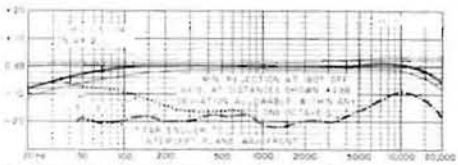
Frequency Range: 5-30,000 Hz
Acceptable Phantom-Power Source: 48 volts dc, ≈3mA
Finish: C-452EB: Nickel-plated brass
C-452EB Black: Black-chrome-plated brass
Overall Dimensions: 5⅜" long x ¾" dia
Net Weight: 3 oz.

Transducer Capsules for the C-450 Modular System

Transducer Type: Condenser
Directional Characteristic:
Cardioid
Sensitivity:
−39.5 dBm (EIA G_m: −132 dBm)
Finish:
CK-1: Nickel-plated brass
CK-1 Black: Black-chrome-plated brass
Overall Dimensions:
1⅛" long x ¾" dia.
Net Weight: 1 oz.

CK-1

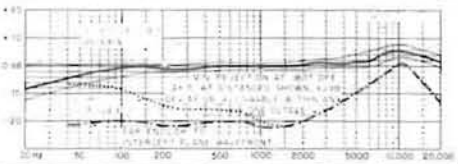
CK-1, CK-1 Black: Basic cardioid condenser capsules. For all applications in recording, broadcasting and sound-reinforcement requiring flat, wide-range on-axis response and linear off-axis response. Each capsule also features high front-to-rear discrimination over a wide range of frequencies. Both mate with any C-450 system preamplifier, and are supplied complete with an individual proof-of-performance frequency-response curve and foam-lined vinyl case.



Transducer Type: Condenser
Directional Characteristic:
Cardioid
Sensitivity:
−39.5 dBm (EIA G_m: −132 dBm)
Finish: Nickel-plated brass
Overall Dimensions:
1⅛" long x ¾" dia.
Net Weight: 1 oz.

CK-1S

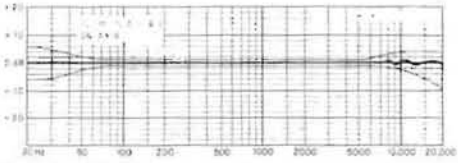
CK-1S: Cardioid condenser capsule with rising response. Similar to CK-1 and CK-1 Black capsules, but with on-axis rising response between 2 kHz and 10 kHz. Extremely useful for imparting added "presence" and "brilliance" at normal working distances, or for preserving clarity at greater working distances. Mates with any C-450 system preamplifier. Complete with individual proof-of-performance frequency-response curve and foam-lined vinyl case.



Transducer Type: Condenser
Directional Characteristic:
Omnidirectional
Sensitivity:
−41 dBm (EIA G_m: −133.5 dBm)
Finish:
CK-2: Nickel-plated brass
CK-2 Black: Black-chrome-plated brass
Overall Dimensions:
1⅛" long x ¾" dia.
Net Weight: 1 oz.

CK-2

CK-2, CK-2 Black: Omnidirectional condenser capsules. Recommended for recording and broadcast applications that require extra emphasis on the acoustic ambience of a hall or auditorium, highly faithful reproduction of deep-bass fundamentals and high-treble overtones in music, non-discriminating coverage of several instrumentalists and vocalists grouped around a single microphone or close-up mic'ing free of proximity effect. Each capsule features extraordinarily flat and extended on-axis response coupled with uniform non-directional pickup. Both mate with any C-450 system preamplifier and are supplied complete with an individual proof-of-performance frequency-response curve and foam-lined vinyl case.



Transducer Type: Condenser
Directional Characteristic:
Cardioid
Sensitivity:
−39.5 dBm (EIA G_m: −132 dBm)
Finish: Black steel-wire mesh
Overall Dimensions:
3⅛" long x 1 15/16" dia.
Net Weight: 4 oz.

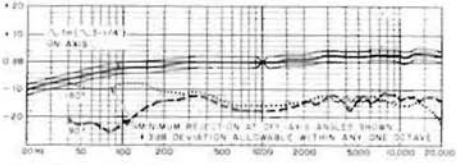
CK-5

CK-5: Shock-mounted cardioid condenser capsule with fixed wiremesh windscreen. Ideal for pop and rock vocalists, stand-up comics, emcees and remote-newsgathering reporters. Its highly effective internal shock suspension and windscreen/pop filter make this capsule perfect for handheld and outdoor use. Response and directional characteristics similar to those of the CK-1 capsule. Mates with any C-450 System preamplifier. Complete with individual proof-of-performance frequency-response curve and foam-lined vinyl case.

CK-8

Transducer Type: Condenser
Directional Characteristic:
Short-shotgun hypercardioid
Sensitivity:
—35.5 dBm (EIA G_m: —128 dBm)
Finish: Black-lacquered brass
Overall Dimensions:
$8\frac{5}{16}$" long x $\frac{3}{4}$" dia.
Net Weight: $1\frac{1}{2}$ oz.

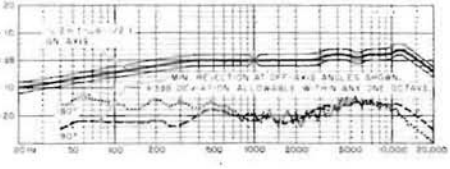
CK-8: Short-shotgun condenser capsule. Designed primarily for effective *medium*-distance dialogue pickup in film and television work (where it can be kept out of camera range on a boom or fishpole), this capsule can also be used at *closer* distances (hand-held or stand-mounted) in unusually noisy or feedback-prone locations. Its tight hypercardioid directional pattern and unusually high sensitivity permit the capsule to be used at 1.5-2 times the working distance of a standard cardioid for roughly the same source-to-noise ratios and output levels. Mates with any C-450 system preamplifier. Complete with individual proof-of-performance frequency-response curve, W-18 windscreen and foam-lined vinyl case.



CK-9

Transducer Type: Condenser
Directional Characteristic:
Shotgun Hypercardioid
Sensitivity: —35.5 dBm (EIA G_m: —128 dBm)
Finish: Black-lacquered brass
w/nickel-plated grille
Overall Dimensions:
24" long x $1\frac{5}{16}$" dia.
Net Weight: 12 oz.

CK-9: Shotgun condenser capsule. "Big brother" to the CK-8 and, with its longer acoustic-interference tube and more directional polar pattern, designed for even greater working distance in difficult applications—dialog pickup in film and television, remote newsgathering and theatrical sound reinforcement. The CK-9 can be used at 3-4 times the working distance of a standard cardioid for similar source-to-noise ratios and output levels. Mates with any C-450 system preamplifier. Complete with individual proof-of-performance frequency-response curve and zippered vinyl case with protective foam packing.



ZW-8/SM-8

ZW-9/SM-9

Zeppelin-Windscreen/Shock-Suspension Combinations for C-450 System Shotgun Microphones

ZW-8/SM-8: Combination for CK-8 short-shotgun capsule with any C-450 System preamplifier.

ZW-9/SM-9: Combination for CK-9 shotgun capsule with any C-450 System preamplifier.

Featuring a three-layer diffusion screen coupled with a rubber-damped double-cantilever suspension, these new windscreen/shock-mount combinations offer almost *total* elimination of wind noise and vibration. Each lightweight combination includes an adjustable pistol-grip handle with $\frac{3}{8}$" *and* $\frac{5}{16}$" threaded inserts, permitting it to be used either hand-held or boom-mounted. Where environmental conditions permit, either shock-mount may be used without its windscreen.

Special-Purpose Modules—for the C-450 System

A-50/10, A-50/10 Black, A-50/20, A-50/20 Black: 10-dB and 20-dB capacitive pre-attenuator pads. These pads prevent capsules from overdriving preamplifiers at extremely high sound-pressure levels *without affecting frequency response*. Pads insert directly between any preamplifier and any capsule (except CK-9 shotgun), and may be used singly, in multiples and in various combinations with A-51 swivel joints and/or VR-1 or VR-2 extension tubes. 10-dB pads have their value color-engraved in red and 20-dB pads have their value color-engraved in green for ease of identification. Each pad complete with screw-top plastic protective case

Approximate Insertion Loss:

A-50/10: one = 10.7 dB, two = 15 dB, three = 18.2 dB, four = 20.7 dB

A-50/20: one = 19.3 dB, two = 24.9 dB, three = 28.2 dB, four = 31.7 dB

Mixed: one A-50/10 + one A-50/20 = 22 dB

Finish:

A-50/10, A-50/20: Nickel-plated brass

A-50/10 Black, A-50/20 Black: Black-chrome-plated brass

Overall Dimensions: $1\frac{1}{16}$" long x $1\frac{1}{16}$" dia.

Net Weight: ½ oz.

A-51, A-51 Black: 180-degree swivel joints. For angling axis of any capsule (except CK-9 shotgun) with respect to axis of any preamplifier over a range of 180 degrees. (Especially useful for X-Y stereophony with two preamplifier-capsule combinations on a common stereo bar.) Swivels insert directly between preamplifier and capsule, and may be used either alone or in various combinations with A-50 pre-attenuators and/or VR-1 or VR-2 extension tubes.

Insertion Loss: None

Finish:

A-51: Nickel-plated brass

A-51 Black: Black-chrome-plated brass

Overall Dimensions: $1\frac{5}{8}$" long x $1\frac{1}{16}$" dia.

Net Weight: $1\frac{3}{4}$ oz.

VR-1, VR-2: Short and long angled extension tubes. Used for creating longer, more slender and less obtrusive microphones. Both tubes insert directly between any preamplifier and any capsule (except CK-9 shotgun), and may be used either alone or in various combinations with A-50 attenuators and/or A-51 swivel joints. The VR-1 is ideal for lectern applications or for extending a capsule outward a short distance from a standard floor stand. The longer VR-2 features a swivel mount and counterweight, and may be used floor standing (on the optional ST-305 anti-shock base) or suspended from above the performer. Both tubes angled at approximately 45 degrees.

Insertion Loss: None

Finish: Black-lacquered brass

Overall Dimensions:

VR-1: $11\frac{5}{8}$" long x ¼" tube dia. x $1\frac{1}{16}$" fitting dia.

VR-2: $51\frac{1}{4}$" long x ¼" tube dia.

Net Weight:

VR-1: 2 oz.

VR-2: $4\frac{3}{4}$ lbs.

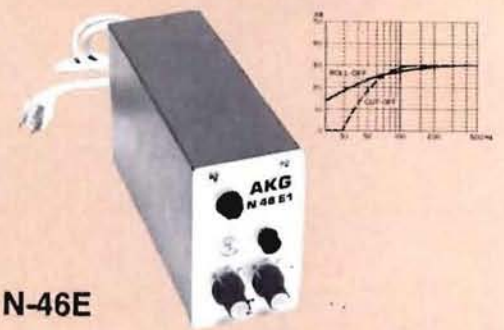
Additional general accessories for all C-450 System components—e.g. standard windscreens, stand adapters, shock mounts, goosenecks and table stands—are listed in the Accessories section of this catalog, and in supplement.

Phantom-Power Supplies and Adapter Module for C-414EB, C-450 System and C-500 System*

B-46E

B-46E: In-line battery power supply with built-in on/off switch. Phantom powers any *one* 12-volt microphone or preamp-capsule combination. Uses standard 9-volt transistor-radio battery (Eveready 216 or equivalent) for operating time of approximately 40 hours, or long-life battery for up to 220 hours of service. Includes XLR-type input and output connectors.

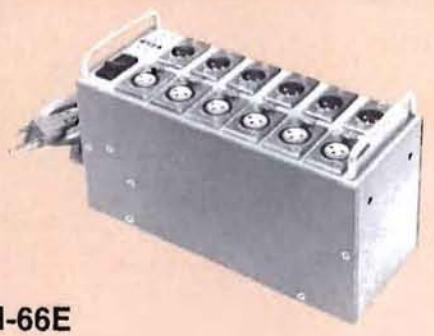
1:1 audio output transformer isolates dc phantom power from output circuit for use with unbalanced equipment.



N-46E

N-46E: In-line ac power supply with two independent bass-roll-off/cutoff switches and active-filter circuits. Phantom powers any *two* 12-volt microphones or preamp-capsule combinations. Accepts ac power ranging from 100 to 250 volts without need for internal rewiring or adjustments. Includes XLR-type input and output connectors for each microphone circuit.

1:1 audio output transformers isolate dc phantom power from output circuit for use with unbalanced equipment.



N-66E

N-66E: In-line ac power supply for phantom powering any *six* 12-volt *or* 48-volt microphones or preamp-capsule combinations. Includes rack-mounting brackets, and XLR-type input and output connectors for each microphone circuit.

Must be used with inputs which are balanced and floating to prevent shorting-out of dc phantom power.

A-52

A-52: Adapter module for deriving phantom power directly from the microphone inputs of associated units such as consoles, mixers or recorders. Each A-52 module modifies one balanced, low-impedance input circuit for phantom powering. With input voltages from 13 to 50 volts dc, an A-52 will operate a 12-volt phantom-powered microphone *only*; with input voltages from 50 to 60 volts dc, an A-52 will operate a 12-volt *or* 48-volt phantom-powered microphone *interchangeably*.

Must be used with inputs which are balanced and floating to prevent shorting-out of dc phantom power.

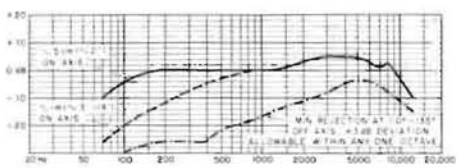
Refer to general microphone catalog for C-500 System information.

Dynamic Microphones

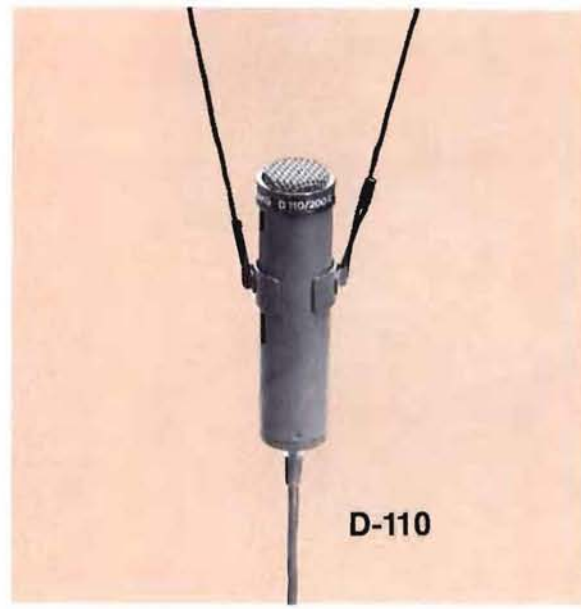
D-58E Noise-Cancelling Dynamic Microphone

The D-58E is expressly designed for close-talking use in noisy or feedback-prone environments—areas beyond the capabilities of other, more conventional, microphones. Its special combination of characteristics makes the D-58E ideal for a variety of broadcast, communication and sound-reinforcement applications. Unexcelled as a talkback microphone in studio control rooms, the D-58E also provides optimal performance in the clatter of newsrooms, radio-communication centers and industrial plants as well as in the noise and reverberation of stadiums and transportation centers.

Offering maximum noise reduction and intelligibility with minimum distortion or loss of "naturalness" in speech quality, the D-58E owes its outstanding performance to a combination of three factors: its carefully tailored frequency response, its tight hypercardioid polar pattern and its use of special differential design techniques at low frequencies. A compact and lightweight unit, the D-58E provides the utmost in convenience when mated with either of two optional flexible goosenecks—the MSH-58E (8" long) or the MSH-58E2 (20" long). Microphone is supplied complete with foam-lined vinyl protective case



Transducer Type: Dynamic
Directional Characteristic: Hypercardioid
Sensitivity: – 62 dBm (EIA G_m: – 154.5 dBm)
Finish: Nickel-plated brass, steel-wire mesh
Overall Dimensions: $1\frac{5}{8}$" long x $\frac{13}{16}$" dia.
Net Weight: 1 ½ oz.

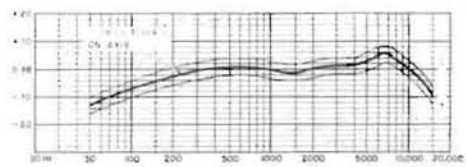


D-110 Lavalier Dynamic Microphone

Unobtrusiveness—both aural and visual—is the distinction of this compact microphone. A long-time favorite for on-camera use in film and television, the D-110 has also found widespread use in theatrical and educational sound reinforcement.

Not merely an ordinary microphone "adapted" for lavalier use, the D-110 has been designed from numerous applications criteria to provide optimum results when worn against the user's chest. Whether worn exposed *or* concealed, the D-110 offers flawless natural speech reproduction, immunity to clothing and cable contact or rubbing noises and its finish effectively aids in blending visually with its surroundings. Its many distinctive features are the direct result of the microphone's specially contoured frequency response and internal shock suspension, coupled with its moderate size and non-reflective neutral finish.

The D-110 also offers an unusually high output level (as much as 6 dB higher than competitive microphones), assuring sufficient signal to drive any mixer. Supplied complete with 29½' non-detachable lightweight cable, lavalier clip with adjustable clothing clasp, adjustable lavalier neck cord and foam-lined vinyl case.

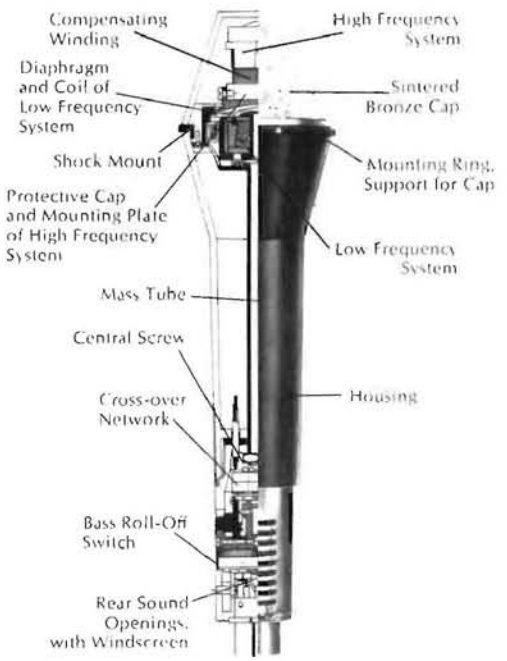


Transducer Type: Dynamic
Directional Characteristic: Omnidirectional
Sensitivity: – 59 dBm (EIA G_m: – 152 dBm)
Finish: Broadcast-gray-painted brass
Overall Dimensions: $3\frac{3}{16}$" long x $\frac{13}{16}$" dia.
Net Weight: 6½ oz. (including cable and clip)

The patented AKG Two-Way system

In the AKG Two-Way microphone system, the total response range has been divided between a high-frequency and a low-frequency transducer, each of which is optimally adjusted to its specific range (similar to a two-way loudspeaker system). The two systems are connected by means of a crossover network with the crossover frequency at 500 Hz.

This arrangement is depicted in the following cross-sectional drawing:



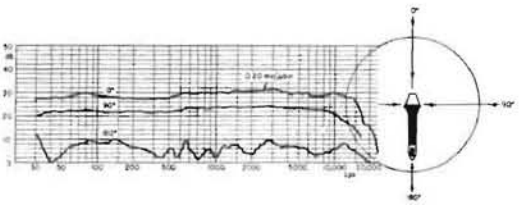
The high-frequency system is mounted on the protective cap of the low-frequency system. The low-frequency system is connected to a mass tube having apertures at the rear of the microphone. For maximum reduction of wind sensitivity at the rear sound openings, the aperture of the mass tube does not connect directly to the open air but leads instead to a chamber coupled to the sound field via slotted openings covered with damping material. The high-frequency system is shock mounted to reduce handling sensitivity, and is provided with a compensating winding to eliminate the effects of stray magnetic fields. The crossover network is housed in the lower portion of the microphone.

This unique arrangement achieves a number of previously unobtainable performance characteristics for cardioid dynamic microphones:

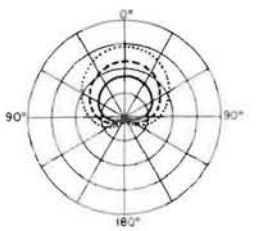
Flat frequency response over the entire audible range. The low- as well as the high-frequency system is optimally adjusted to its specific frequency range and the 500 Hz crossover point is unnoticeable.

Linear off-axis response. Sound reaching the microphone 90° off-axis is reproduced naturally. There are no audible frequency-discriminating characteristics common to standard cardioid dynamic microphones.

Uniform front-to-back discrimination. The two-way



system maintains a front-to-back discrimination of at least 20 dB over its entire frequency range, even in the critical low frequency and upper mid-range area. The polar pattern shows the directional characteristics of the microphone at 125 Hz, 1,000 Hz and 8,000 Hz. *For better graphic clarity, a different sound level was used for each pattern.*



Proximity effect. A complete absence of proximity effect—the rise in low-frequency response when a directional microphone is used in close-up applications—is a distinguishing characteristic of the two-way system compared to other directional microphones.

These features offer several advantages in practical applications: The flat frequency response allows the most natural and faithful pickup of sound. In public-address installations, it also permits control of feedback at virtually any frequency.

The linear 90° off-axis response is of particular importance in recording applications whenever a number of microphones are used, since sound reaching the microphone ±90° off-axis (such as leakage from other instruments, etc.) is reproduced faithfully without frequency discrimination characteristics. The same also applies to public-address installations where a speaker may move to the left or right (off-axis) of the microphone.

Uniform front-to-back discrimination is of prime importance in public-address installations since it virtually eliminates feedback and offers almost complete freedom in microphone and speaker placement. For instance, it has been found that a gain increase of approximately 6 dB could be achieved in a majority of sound systems by use of AKG two-way microphones. The exceptional front-to-back discrimination of this exclusive design also offers better-than-average separation in recording applications.

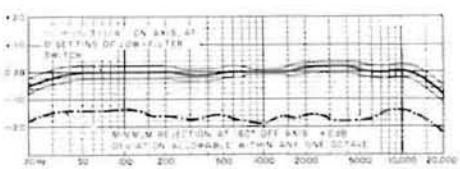
D-202E

D-202E Two-Way Cardioid Dynamic Microphone

The very first two-way cardioid dynamic microphone—now an established classic in recording and broadcast studios, film sound stages, sound-reinforcement installations and remote assignments throughout the world. As distinctive in performance as it is in appearance, the versatile D-202E exhibits the special characteristics unique to AKG's patented two-way microphones—exceptionally smooth, wide-range frequency response, unusually uniform directionality over most of its frequency range and virtually no proximity effect.

Ranking a very close second only to the extraordinary D-224E in these respects, the D-202E is unhesitatingly recommended for any microphone application in which the paramount considerations are highly faithful music and speech reproduction (both on *and* off axis) and effective, *uniform* rejection of background noise and feedback at virtually any frequency. As an added measure, the D-202E three-position bass-rolloff switch (0, 7 dB or 20 dB attenuation at 50 Hz) provides control over low-frequency program content and noise.

The microphone's distinctively shaped—and highly effective—windscreen / pop filter is made of sintered bronze (an AKG exclusive), and also serves to protect the two-way transducer system against metal particles, dust and spittle. Supplied complete with an individual proof-of-performance frequency-response / rejection curve, SA-16 stand adapter and foam-lined vinyl case.



Transducer Type: Dynamic, two-way system
Directional Characteristic: Cardioid
Sensitivity: —55 dBm (EIA G.): —147.5 dBm)
Finish: High-impact black ABS-polymer; nickel-plated brass; sintered bronze
Overall Dimensions: $8^{9}/_{16}$" long x $2^{1}/_{16}$" dia.
Net Weight: 12 oz.

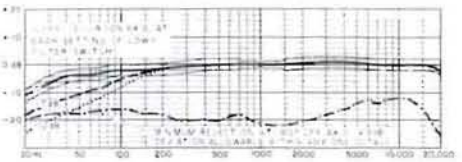
D-224E

D-224E
Two-Way Cardioid Dynamic Microphone

The ranking member of AKG's unique family of two-way cardioid dynamics—and one of the world's truly great microphones. Whether in the recording studio or in high quality sound-reinforcement installations, the D-224E is unsurpassed in its accurate reproduction of instrumental, orchestral and choral music, and is unrivalled in its combined ability to reproduce desired off-axis information naturally while rejecting unwanted noise or feedback uniformly at virtually any frequency

The sound of the D-224E is nearly indistinguishable from that of many condenser microphones, and its on-axis response—extraordinarily flat to 20 kHz and beyond—resembles that of a condenser microphone. Yet the D-224E is free of the added costs and maintenance requirements entailed by a condenser unit's power supplies and associated electronics. Equally impressive is the D-224E's exceptionally uniform cardioid polar pattern. Constant and symmetrical at virtually all frequencies, it accounts for the microphone's superb off-axis reproduction and feedback rejection. Like AKG's other two-way microphones, the D-224E exhibits virtually no proximity effect, enabling instruments both near and far to be reproduced without false bass coloration.

The D-224E also includes a three-position bass-rolloff switch (0, 7 dB or 12 dB attenuation at 50 Hz) to provide a means for controlling low-frequency program content and noise. Supplied complete with an individual proof-of-performance frequency-response/rejection curve, SA-18/3 stand adapter, W-2 front windscreen, W-2A rear windscreen and foam-lined vinyl case



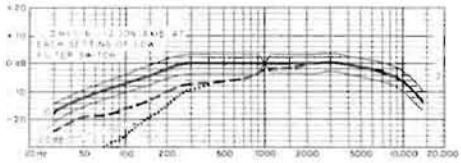
Transducer Type: Dynamic, two-way system
Directional Characteristic: Cardioid
Sensitivity: —56.5 dBm (EIA G . —149.5 dBm)
Finish: Nickel-plated brass
Overall Dimensions: $7\frac{1}{16}$" long x $\frac{15}{16}$" dia
Net Weight: 10 oz.

D-900E
Shotgun Dynamic Microphone

A proven "workhorse" in film and videotape dialogue recording as well as in theatrical sound reinforcement. The D-900E combines extreme directionality plus unusually high sensitivity with versatility at moderate cost—factors that have made it the best value among today's shotgun microphones.

The D-900E achieves its outstanding performance by coupling a highly efficient pressure-gradient transducer to an acoustic-interference tube over 19 inches long. Thus, in a relatively non-reverberant environment (outdoors, or on a good sound stage or the like), the D-900E may be used at up to *three or four times* the working distance of a standard cardioid—yet still maintain similar source-to-noise ratios and enough output to drive any mixer or recorder. A built-in three-position bass-rolloff switch (0, 7 dB or 20 dB attenuation at 50 Hz) provides additional control over low-frequency wind noise, building rumble and boom vibration.

As versatile as it is directional, the lightweight D-900E may be used virtually anywhere and in any way—suspended from a fishpole or boom, mounted on a stand, clamped to theater travellers or rigging, or with the optional H-7 pistol grip, may be hand-held for pointing in any direction. Complete with SA-16/1 stand adapter and zippered vinyl carrying case with protective foam packing.



Transducer Type: Dynamic
Directional Characteristic: Shotgun-hypercardioid
Sensitivity: −49.5 dBm (EIA G_m: −142 dBm)
Finish: Black-varnished brass w/nickel-plated accents
Overall Dimensions: $26\frac{5}{16}$" long x $1\frac{5}{16}$" dia.
Net Weight: 18 oz.

D-900E
Shotgun System

The D-900E is also available as part of a complete packaged system capable of handling practically any shotgun assignment. System includes D-900E microphone, W-19 windscreen, SA-16/1 stand adapter, SA-70/9 pistol-grip and boom-suspension adapter, H-7 pistol grip, H-70 boom-suspension shock mount, MCH-20 cable assembly and fitted, foam-lined carrying case.

Accessories

WINDSCREENS

W-2
(fits D-224E), foam
W-20
(fits D-58E), foam

W-3
(fits CK-1, CK-1 Black, CK-1S, CK-2, CK-2 Black), foam

W-7
(fits D-202E) foam

W-9A
(fits rear of D-202E, D-900E), foam

W-17A
(fits CK-1, CK-1 Black CK-1S, CK-2, CK-2 Black), nickel wire mesh
W-17B
(same as W-17A, but black finish)

W-18
(fits CK-8), foam

W-19
(fits CK-9, D-900E), foam

W-22
(fits D-224E)
nickel wire mesh

W-23
(fits CK-5), foam with fastening strap

STAND/PISTOL-GRIP/BOOM-SUSPENSION ADAPTERS, ⅝" -27 Thread

SA-15/1
stand adapter
(fits all C-450 System preamplifiers), metal base

SA-16/1
stand adapter
(fits D-202E, D-900E)
metal base

SA-18/1 stand adapter (fits all C-450 System preamplifiers), all-metal clamp type
SA-18/1- Black stand adapter (same as SA-18/1 but with black finish)
SA-18/3 stand adapter (fits C-414EB, CK-9, D-224E), all-metal clamp type
SA-18/9 stand adapter (fits D-202E, D900E), all-metal clamp type

SA-26 stand adapter (fits all C-450 system preamplifiers, D-202E, D-224E), clothespin type

SA-70/3 pistol-grip and boom-suspension adapter (fits CK-9, D-224E), all metal with bracket for use with H-7 pistol grip or H-70 boom-suspension shock mount (below)
SA-70/9 pistol-grip and boom-suspension adapter (fits D-202E, D-900E), all metal with bracket for use with H-7 pistol grip or H-70 boom-suspension shock mount (below)

PISTOL GRIP, STEREO BAR, SHOCK SUSPENSIONS, ⅝" -27 Thread

H-7 shotgun pistol grip (use with SA-70/3 to fit CK-9 or with SA-70/9 to fit D-900E), rubber

H-9 clamp mount for H-10 stereo bar (use to surface-mount or hang H-10), all metal

H-10 stereo bar for stand-mounting two microphones (use with H-9 to surface-mount or hang), all metal

H-15 spider-suspension shock mount (fits all C-450 System preamplifiers)

H-17 combination shock mount/windscreen (fits C-414EB)

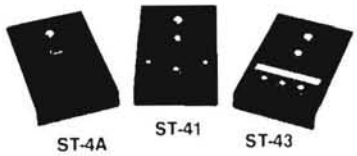
H-60 shock mount (fits all C-450 System preamplifiers

H-70 boom-suspension shock mount (use with SA-70/3 to fit CK-9 or D-224E with SA-70/9 to fit D-202E or D-900E)

FLEXIBLE GOOSENECKS

MSH-58E 8" gooseneck with XLR-type connector (mates with all C-450 System preamplifiers, D-58E)
MSH-58E2 20" gooseneck with XLR-type connector (mates with D-58E only)

TABLE STANDS



ST-4A ST-41 ST-43

ST-305

ST-4A table stand
ST-41 table stand with one DPDT momentary-contact pushbutton, one 24V signal lamp
ST-43 table stand with three DPDT momentary-contact pushbuttons, one 24V signal lamp
ST-305 anti-shock table stand

AKG...

Acoustics is pleased to publish this black-and-white addendum "AKG New Products Supplement" and include it as a part of the reprinted AKG Professional Microphones and Accessories brochure.

The new products described are of such significance in terms of technical achievement and sophisticated engineering that their importance to the audio community could not be withheld pending a more elaborate art treatment and printing. We assume you are as eager for the information as we are in getting it to you.

AKG has developed a broad range of products to meet your varying creative requirements and, as new audio frontiers evolve, our engineers will lead the technological pioneering.

We set our goals rather high and turn every stone to live up to, and improve upon, self-imposed challenges. We constantly strive to advance beyond state-of-the-art developments. Loaded with practical, innovative features, AKG's "New Professional" microphones are intended to further build upon the remarkable results achievable with the AKG "Professionals."

C-424 FET

C-424 Quadraphonic Condenser Microphone

AKG laboratories have, among its range of studio condenser microphones, developed a unique *quadraphonic* microphone, utilizing the CK-12 one-inch diameter dual-diaphragm capsule...the singularly outstanding transducer element also found in the much renown C-12, C-24 and C-414EB microphones.

Smaller than the famous C-24, the C-424 is phantom powerable (9-52 volts), and provides four outputs grouped in two pairs. Two CK-12's are used, each providing two cardioid-characteristic outputs—one from the front of the respective CK-12 and one from the back of the same capsule.

One dual-diaphragm CK-12 is fixed to the main housing, while the other CK-12 swivels through an angle of 0-180°. This results in diagonally opposed outputs (LF & RB, RF & LB) fixed in 180° opposition, while the included angle between the two pairs (LF/RB & RF/LB) is adjustable.

The FET preamplifiers include a ganged 0/—10 dB/—20 dB pre-attenuator switch that pads the output of the capsules at the inputs to the preamplifiers. The microphone is supplied complete with MK-42/20 20m (≈66 ft) cable, W-42 windscreen, H-15/9 suspension mount/stand adapter, and foam-lined carrying case. Matte nickel finish.

Transducer Type: Two one-inch diameter dual-diaphragm condenser
Directional Characteristics: 4 x cardioid
Frequency Range: 20-20,000 Hz
Nominal Impedance: ⩽ 200 ohms
Recommended Load Impedance: ⩾ 500 ohms
Sensitivity at 1 kHz:
Open Circuit: 0.6 mV/μb; —64.4 dBV
Maximum Power Level: —43.5 dBm
EIA G_{m}: —136 dBm
Equivalent Noise Level: ≈20 dB SPL (CCITT-C)
Supply Voltage: 9-52 V (with appropriate resistive network), per channel
Supply Current: ⩽ 5 mA (with appropriate resistive network) per channel
Overall Dimensions: 265 mm (≈10½ in.) x 41 mm (≈1½ in.) dia.
Weight: ≈510 g (≈18 oz.)

C-422
Stereophonic
Condenser Microphone

Essentially, this microphone is an FET version of the C-24. It is phantom-powered (9-52 V) and is applicable both to concert hall and studio uses. Two one-inch diameter dual-diaphragm CK-12 capsules, (one adjustable to 0° or 45° in reference to the main housing, and the other adjustable through an angle of 0°-180° in reference to the first), form the core of the unit. A remote-control unit allows for independent adjustment of each capsule's polar response over a range of nine patterns—from omnidirectional through cardioid and hypercardioid to figure-eight—resulting in a uniquely flexible instrument for M-S or X-Y recording techniques.

LED's, illuminated by a switch on the remote control, "aim" in the same direction as the in-phase axis of each corresponding capsule, aiding in sight-alignment of the individual capsules in the concert hall or studio...and are particularly useful when distant mic'ing techniques are employed. The LED circuit is powered by a standard 9V battery in the remote control unit. If a rechargeable (nickel-cadmium) battery is used, it will be constantly trickle-charged by the phantom-powering feed.

The FET preamplifiers include a ganged 0/—10 dB/—20 dB pre-attenuator switch that pads the capsules' outputs at the inputs to the preamplifiers. The microphone is supplied complete with MK-42/20 20m (≈66 ft.) cable, S-42E remote control unit, H-15/9 suspension mount/stand adapter, W-42 windscreen, and foam-lined carrying case. Finish is satin-black chrome.

Transducer Type: Two one-inch diameter dual-diaphragm condenser
Directional Characteristics: Variable—nine patterns from omni through figure-eight
Frequency Range: 20-20,000 Hz
Nominal Impedance: ⩽ 200 ohms
Recommended Load Impedance: ⩾ 500 ohms
Sensitivity at 1 kHz:
Open circuit: 0.5 mV/μb; —66 dBV
Maximum power level: —45 dBm
EIA G_n: —138 dBm
Equivalent Noise Level: ≈ 22 dB SPL (CCITT-C)
Supply Voltage: 9-52 V (with appropriate resistive network), per channel
Supply Current: ⩽5 mA (with appropriate resistive network), per channel
Overall Dimensions: 235 mm (≈9¼ in.) 41 mm (≈1½ in.) dia.
Weight: ≈440 g (≈15½ oz.)

C-422 FET

C-34 FET

C-34 Stereophonic Condenser Microphone

In response to applications and user demands, AKG has developed a remotely-controlled polydirectional stereophonic microphone based on the C-450 System. This new microphone provides an additional creative alternative for the professional engineer by combining the "sound" of the popular CK-1 capsule and the facility of variable pattern selection.

The microphone contains two pairs of "twin" capsules, one pair is fixed to the main housing and the other is rotatable through an angle of 0-180°. A remote-control pattern selector allows for independent adjustment of each capsule's polar response over a range of nine patterns—from omnidirectional through cardioid and hypercardioid to figure-eight. The microphone is phantom powered (9-52 V) and is supplied complete with MK-42/20 20m (≈66 ft.) cable, S-42E remote control, H-15/6 suspension mount/stand adapter, W-34 windscreen, and foam-lined carrying case. Finish is satin-black chrome.

Transducer Type: Two "twin" condenser
Directional Characteristics: Variable (9 patterns from omni through figure-eight)
Frequency Range: 20-20,000 Hz
Nominal Impedance: ⩽ 200 ohms
Recommended Load Impedance: ⩾ 500 ohms
Sensitivity at 1 kHz:
Open circuit: 0.6 mV/μb; —64.4 dBV
Maximum power level: —43.5 dBm
EIA G_m: —136 dBm
Equivalent Noise Level: ≈ 25 dB SPL (CCITT-C)
Supply Voltage: 9-52 V (with appropriate resistive network), per channel
Supply Current: ⩽ 5 mA (with appropriate resistive network), per channel
Overall Dimensions: 200 mm (≈7¾ in.) x 33 mm (≈1½ in.) dia.
Weight: ≈275 g (≈9¾ oz.)

C-33 FET

C-33 Stereophonic Condenser Microphone

The C-33 is a fixed pattern (cardioid) version of the C-34, in which two CK-1 type capsules are employed as an economical approach to X-Y stereophonic recording techniques. As is found in the C-34, one capsule is fixed to the main housing while the other is rotatable through an angle of 0-180°. The microphone is phantom powered (9-52 V) and is supplied complete with MK-33/20 20m (≈66 ft.) cable, H-15/6 suspension mount/stand adapter, W-34 windscreen and foam-lined carrying case. Finish is satin-black chrome.

Transducer Type: Two condenser (≈⅝ in. dia.)
Directional Characteristics: 2 x cardioid
Frequency Range: 20-20,000 Hz
Nominal Impedance: ⩽ 200 ohms
Recommended Load Impedance: ⩾ 500 ohms
Sensitivity at 1 kHz:
Open circuit: 0.6mV/μb; —64.4 dBV
Maximum power level: —43.5 dBm
EIA G_m: —136 dBm
Equivalent Noise Level: ≈ 25 dB SPL (CCITT-C)
Supply Voltage: 9-52 V (with appropriate resistive network), per channel
Supply Current: ⩽ 5 mA (with appropriate resistive network), per channel
Overall Dimensions: 200 mm (≈7¾ in.) x 33 mm (≈1¼ in.) dia.
Weight: ≈ 275 g (≈9¾ oz.)

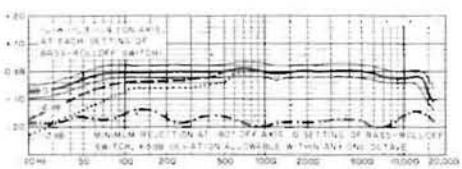
D-222E

D-222E Two-Way Cardioid Dynamic Microphone

This is an improved, smaller version of the classic D-202E which was the original two-way cardioid dynamic microphone. The D-222E encompasses further refinements of the exclusive,patented AKG two-way design principle. Characteristically, the two-way design exhibits exceptionally smooth, wide-range frequency response, nearly ideal directionality and virtually no promiximity effect. Equipped with switchable bass rolloff (0, 6 or 12 dB attenuation at 50 Hz) and internal shock suspension, the D-222E is suitable for use in most any acoustic environment.

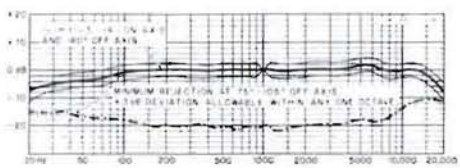
This newest model is highly recommended for applications in which its properties contribute to faithful music and speech reproduction—natural, uniform and uncolored tonal quality—regardless of the position and distance of performers and instruments within a semicircle around the microphone; yet provide effective, uniform rejection of background noise and feedback.

Internally, the dual transducers and cross-over network are elastically suspended within a slide-in field-replaceable module—providing isolation against handling noise, mechanical shocks and spurious vibrations. The microphone's distinctively shaped windscreen/pop filter is a highly functional protective cap made of sintered bronze. Supplied complete with proof-of-performance frequency-response and 180° rejection curves, SA-12/1 Black stand adapter and foam-lined vinyl case.

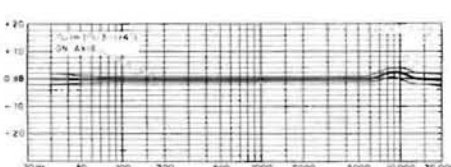


Transducer Type: Dynamic, two-way system.
Directional Characteristics: Cardioid
Sensitivity: —55.5 dBm (EIA G.: —148 dBm)
Finish: High-impact black ABS-polymer; nickel-plated die-cast zinc; sintered bronze.
Overall Dimensions: 8 1/16" long x 1 3/4" dia.
Net Weight: 9 oz.

C-450
Modular Condenser Microphone additions



CK-4



CK-22

CK-4 Figure-eight capsule

This bidirectional capsule is invaluable for use in "M-S" or "Blumlein" intensity-stereo microphone arrays, as well as for non-discriminating coverage of performers who must face each other across a single microphone and for superior side rejection of noise, feedback or leakage. The CK-4 features virtually identical front *and* rear frequency response and sensitivity, plus exceptionally high front-to-side discrimination over a wide range of frequencies. Its two closely matched transducer elements are oriented back-to-back, connected to an R-C combining network and are elastically suspended within the capsule. An integral wire-mesh windscreen with polyurethane-foam lining minimizes the effects of breath "pop" and wind noise. The capsule is finished in satin-black chrome with a white dot to indicate its "front" (in-phase axis of maximum sensitivity). Complete with individual proof-of-performance frequency-response curve and foam-lined vinyl case.

Transducer Type: Dual-diaphragm condenser
Directional Characteristics: Figure-eight
Sensitivity: —45 dBm (EIA G_{m}: —138 dBm)
Finish: Black chrome-plated brass
Overall Dimensions: 3⅛" long x 1⁹⁄₁₆" dia.
Net Weight: 4 oz.

CK-22 Omni-directional capsule with integral pop filter

This capsule features extraordinarily flat and extended on-axis response coupled with uniform non-directional pickup. Slightly longer than the original CK-2, the CK-22 contains an integral pop/blast filter to adapt it to hand-held vocal applications such as television, music, variety and game shows; interviews / news gathering. It is recommended for applications requiring extra emphasis on the acoustic ambience of a hall or auditorium, highly faithful reproduction of deep-bass fundamentals and high-treble overtones in music, non-discriminating coverage of several instrumentalists and vocalists grouped around a single microphone or close-up mic'ing free of proximity effect.

Transducer Type: Condenser
Directional Characteristics: Omnidirectional
Sensitivity: —41 dBm (EIA G_{m}: —133.5 dBm)
Finish:
CK-22 Nickel-plated brass
Ck-22 Black: Black-chrome-plated brass
Overall Dimensions: 1⅝" long x ¾" dia.
Net Weight: 4 oz.

See other components for the C-450 Modular Microphone System Pages 7 through 12.

C-414EB

N-62E

B-1E

SA-30

C-414EB/Remote Comb: The C-414EB polydirectional studio condenser microphone has been adapted for use with the S-42E1 Remote Pattern Selector providing independent adjustment of the capsule's polar response over a range of *nine* patterns—from omnidirectional through cardioid and hyper cardioid to figure-eight. The S-42E1 will control *one* or *two* C-414EB/Remote microphones, and is phantom powered (9-52 volts). The unit complete comprises one C-414EB/Remote microphone, MK-23/20 20m(≈66 ft.) cable, S-42E1 remote control, SA-18/3 clamp stand adapter, W-26 windscreen and foam-lined carrying case.

N-62E Phantom-power supply: provides inline power to any *one* or *two* 12-volt or 48-volt microphones or preamp-capsule combinations. Includes XLR-type input and output connectors for each microphone circuit. Complete with 6 ft. line cord. Must be used with inputs which are balanced and floating to prevent shorting-out of dc phantom power.

B-1E In-Line battery power supply: with built-in on/off battery test switch. Phantom powers any *one* 12-volt microphone or preamp-capsule combination. Uses standard 9-volt transistor-radio battery (Eveready 216 or equivalent) for operating time of approximately 40 hours, or long-life battery for up to 220 hours of service. Includes XLR-type input and output connectors, belt clip. Must be used with inputs which are balanced and floating to prevent shorting-out of dc phantom power.

VR-11 & VR-12 Extension tubes: These are additions to the VR-1 & VR-2 *angled* extension tubes listed on page 12. These have been designed for applications requiring *straight* tubes. VR-11: 11⅝" long x ¼" tube dia. x 1⅛" fitting dia. VR-12: 51¼" long x ¼" tube dia. Net Weight: VR-11: 2 oz. VR-12: 4¾ lbs.

SA-30 Flexible stand adapter: made of high-impact resilient plastic. Allows microphones to be "snapped" into snug-fitting tubular cradle. For C-33, C-34, C-450 System preamplifiers, and D-224E microphones. ⅝"-27 thread. Black finish.

Individual specification sheets are available on all AKG microphones. They provide complete specifications, curves, measurements and architects' and engineers' data.

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