

Microphones for the AP 13 Acoustic Preamp

- AKG
- Audio Technica
- Beyerdynamic
- Countryman
- Crown
- Donnell
- K&K
- Microvox
- Shure
- Sony
- Telex

Jeff Davies
Chris Duncan
Rane Corporation

RaneNote 131
© 1993, 1999 Rane Corporation

General application notes and disclaimers:

All of the information is gathered here for the curious regarding "What mics can I use with the AP 13?". This miniature mic collection was assembled from the respective manufacturer's published specs. Rane does not guarantee specifications will be accurate when modifications, as required, are made. Rane also assumes no liability for altering another manufacturer's microphone or warranties which may be voided due to modifications described herein. Each manufacturer has the right to change any specification or wiring without notice. Some information was furnished by actual users of these microphones. If you have additional information on any of these or know of any good models we missed, we urge you to contact the factory so we can update our records.

AKG C 411/B-lock

1/8" locking mini plug
Electret pickup 20 Hz-20 kHz
Phantom power: 6v
Includes: reusable adhesive compound for mounting directly to the instrument.

The 1/8" connector can be amputated then the hot lead connects to the tip (or ring) and shield to the sleeve of a TRS jack in the guitar body, or a mini jack to 1/4" adapter can be used outside the instrument. *See AKG MicroMic Series Note.

AKG C 416/B-lock

1/8" locking mini plug
Hypercardioid condenser 20 Hz-20 kHz
Phantom power: 6v
Includes: built on gooseneck, mounting plate, and windscreen.

Uses the same element as the C 419, but with a 9" gooseneck intended for low profile mounting inside guitar, piano, accordion, autoharp, dulcimer, etc. The 1/8" mini can be amputated and the 2 leads connected to the tip (or ring) and sleeve of a 1/4" TRS jack in the guitar body, or a mini jack to 1/4" adapter can be used outside the instrument. *See AKG MicroMic Series Note.

AKG C 417/B-lock

1/8" locking mini plug
Omni condenser 20 Hz-20 kHz
Phantom power: 6v
Includes: clip tie pin and windscreen.

The 1/8" connector can be amputated and the 2 leads connected to the tip (or ring) and sleeve of a TRS jack in the guitar body, or a mini jack to 1/4" adapter can be used outside the instrument. *See AKG MicroMic Series Note.

AKG C 418/B-lock

1/8" locking mini plug
Hypercardioid condenser 50 Hz-20 kHz
Phantom power: 6v
Includes: built on gooseneck, mounting plate, and windscreen.

This microphone is designed for drum and percussion devices. It is similar in design to the 419 but has shorter gooseneck and is suited for higher SPL applications. The 1/8" connector can be amputated and the 2 leads connected to the tip (or ring) and sleeve of a TRS jack in the guitar body, or a mini jack to 1/4" adapter can be used outside the instrument. *See AKG MicroMic Series Note.

AKG C 419/B-lock

1/8" mini plug
Hypercardioid condenser 20 Hz-20 kHz
Phantom power: 6v
Includes: built on 6" gooseneck and clip, windscreen.

An excellent choice for horn players, the rubberized finish clip attaches to the bell. The 1/8" connector can be mated with a mini jack to 1/4" adapter. *See AKG MicroMic Series Note.

Audio Technica ATM 35cW

Lemo connector
Cardioid condenser 35 Hz-20 kHz
Phantom power: 6v
Includes: built in clip, gooseneck and windscreen.

The lemo connector can be amputated, and the red (pin 3) wire going to the tip (or ring), and the yellow (pin 2) and shield (pin 1) tied together at the sleeve of a TRS jack in the guitar.

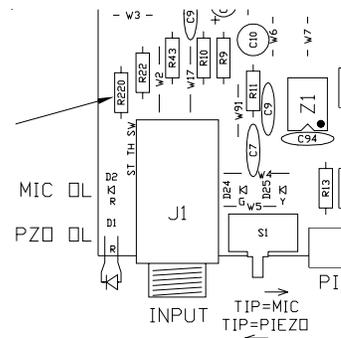
Audio Technica AT831c

Unterminated
Cardioid condenser 40 Hz-20 kHz
Phantom power: 6v
Includes: AT8411 tie clip, guitar adapter, AT8116 windscreen.

The red wire goes to the tip (or ring), and the yellow or white and shield ties together at the sleeve of a TRS jack in the guitar body.

Beyerdynamic MCE 5.9

***AKG Micro Mic Series Note:** These mics are incompatible with the AP 13 as it is shipped. A minor modification must be performed to be able to use these microphones. Remove the top and bottom covers and replace R220 (near the INPUT jack) with a 15k ohm resistor. Once modified with the 15k resistor, the input won't be compatible with other mics.



Unterminated

Omni condenser 20 Hz-20 kHz

Phantom power: 6v

Includes: tie clip, windscreen.

Recommended: MAG 5 or MAG 5.1 guitar clip.

Mounts for a violin, viola, cello, flute, trumpet, sax, trombone are available. Connect the green wire to the tip (or ring), and the outer shield to the sleeve. Do not connect the inner shield to anything. One of the best sounding mics we have actually tested.

Beyerdynamic MCE 52.16

Lemo connector

Omni pressure mic 35 Hz-20 kHz

Phantom power: 6v

Includes: built on clip.

Connect the green wire to the tip (or ring), and the outer shield to the sleeve. Do not connect the inner shield to anything.

Beyerdynamic MCE 53.16

Lemo connector

Omni pressure mic 35 Hz-20 kHz

Phantom power: 6v

Includes: built on 85mm gooseneck and clip.

Connect the green wire to the tip (or ring), and the outer shield to the sleeve. Do not connect the inner shield to anything.

Countryman Isomax B3*

XLR

Omnidirectional condenser 20 Hz-20 kHz

(*Use Red Band version, which has lower sensitivity than standard model.)

Countryman Isomax EMW

XLR

Omnidirectional condenser 20 Hz-20 kHz

Countryman Isomax II C

XLR

Cardioid condenser 50 Hz-20 kHz

Countryman Isomax II H

XLR

Hypercardioid condenser 50 Hz-20 kHz

Countryman Isomax II O

XLR

Omni condenser 50 Hz-20 kHz

Countryman Isomax II B

XLR

Bidirectional condenser 50 Hz-20 kHz

Phantom power all models: 6v

Includes: clip and windscreen. Sax or flute clip also available.

Each microphone comes with electronics in the XLR connector. The connectors have an internal EQ circuit that increases gain. The EQ section in the AP 13 would replace

the EQ circuit in the connector, but mic frequency response is unknown. To install one of these mics without the XLR, amputate it and connect the red wire to the tip (or ring), and tie the green and shield together at the sleeve. When using the XLR, not connecting the green wire defeats the EQ circuit.

Crown GLM 100/E

Unterminated

Omni condenser 20 Hz-20 kHz

Phantom power: 6v

Includes: GLM-UM universal mount, windscreens, tie bar mount and belt clip.

The red goes to the tip (or ring) and the white and shield get tied together at the sleeve.

Crown GLM 200

XLR preamp

Hypercardioid condenser 60 Hz-20 kHz

Phantom power without inline preamp: 6v

Includes: GLM-UM universal mount, windscreens, tie bar mount and belt clip.

The GLM 200 comes with a preamplifier module. When using their preamplifier, switch phantom OFF, and use a power supply battery. Connect pin 2 to the tip (or ring) and pins 1 and 3 go to the sleeve. Their preamplifier can be removed and lead connections are same as the GLM 100, with phantom set to 6v.

Donnell Mini-Flex 135

1/4" TRS jack

Cardioid condenser 80 Hz-16 kHz

Phantom power (battery): off

This is an efficient one piece device that installs through the endblock and exits the body via a 1/4" TRS jack in place of the strap button. A pickup may be wired to the ring of the TRS. An 'AA' battery supplies the current for the condenser, so switch phantom OFF.

K & K Silver Bullet

XLR Plug

Softcardioid condenser 20 Hz-20 kHz

Phantom power: 6v

The white wire goes to the tip (or ring) and shield connects to the sleeve. Amputate the XLR and connect white wire according to your needs.

Microvox M400

Gold Phono Plug

Omni condenser 30 Hz-20 kHz

Phantom power: 6v

The center wire goes to the tip (or ring) and shield connects to the sleeve.

Sennheiser MKE 2 -5

Unterminated

Omni condenser 40 Hz-20 kHz

Phantom power: 6v

The red wire goes to the tip (or ring) and the blue and shield tie together at the sleeve.

Shure SM11

XLR connector
 Omni dynamic 50 Hz-15 kHz
 Phantom power: none
 Includes: tie tack and tie bar mount
 Recommended: RK279 instrument mounting kit
 Amputate the XLR connector. Connect the red wire to the tip (or ring). Black and shield tie at the sleeve.

Shure SM98A

Includes XLR preamp
 Cardioid condenser 40 Hz-20 kHz
 Phantom power: 6v*
 Includes: windscreen, swivel adapter, supercardioid polar modifier, preamplifier.
 recommended: A98KCS Keen Clamp.

This model comes with a barrel preamplifier. In order to guarantee frequency response, the preamplifier works with an adapter that takes pin 2 to the tip (or ring), and pins 1 and 3 go to the shield. *Phantom power should be off when used in this configuration, and two 9v batteries must be used in the preamplifier. It is possible to disconnect the preamplifier and just use the capsule, but response is unknown. Connect the red wire (pin two of the QG connector) to the tip (or ring), and the black or blue and shield (pins 1 and 3) tie together at the sleeve. Set phantom to 6v.

Sony ECM-44BBT

XLR
 Sony capsule part number #A4510056A
 Underterminated
 Omni condenser 40 Hz-15 kHz

Sony ECM-55BBT

XLR
 Sony capsule part number #A4510051A
 Underterminated
 Omni condenser 30 Hz-18 kHz

Sony ECM-77BBT

XLR
 Sony capsule part number #A4510050A
 Underterminated
 Omni condenser 40 Hz-20 kHz
 Phantom power all units: 6v*
 Includes: windscreen and two mic clips for the ECM units.

The regular ECM versions of these mics come with an attached preamplifier capsule. *When using this capsule, a battery must be used and phantom switched OFF. Use an adapter from pin 2 of the XLR to the tip (or ring) of a TRS, and tie pins 1 and 3 to the sleeve. A mic capsule can be ordered separately from Sony without the preamplifier with the part number. Connect the red to the tip (or ring) and the white and shield get tied to the sleeve.

Telex ELM-22PT

Underterminated
 omni condenser 20 Hz-20 kHz
 Telex ELM-33PT
 Underterminated
 cardioid condenser 100 Hz-10 kHz
 Phantom power all models: 6v
 Connect the red wire to the tip (or ring) and the black and white wires together at the shield.

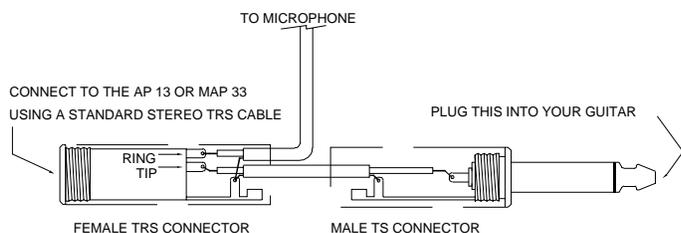
WIRING

Most condenser microphones come with a balanced output, i.e., three wires. The input of the AP 13 is unbalanced stereo, i.e. two wires, per input. Most of the time, the red wire is the hot or + wire, and should be wired to the tip or ring of the plug. The other two wires, regardless of color (blue, black, white) and the shield will get tied together at the sleeve or common of the plug. This is a very general rule. When in doubt, always check with the microphone manufacturer before making modifications or connections.

DEMOS

To most effectively demonstrate the power of Rane's AP13 acoustic preamp, use a combination of a piezo pickup and miniature microphone—pickup for gain, mic for clarity. You may wish to try out several mics before actually committing a purchase.

Detailed below is a wiring diagram, of a custom made cable, to take the guitar's piezo pickup output, add the microphone, and end up with a single 1/4" TRS connector ready to plug into the AP 13. We suggest retailers make one of these and keep it handy for doing demonstrations. The necessary adapters may be available off the shelf (PROCO, Hosa, etc.) to build this. A 'wye' cable with a TRS female to two 1/4" TS males will work like the diagram below. One TS goes to the guitar and the other goes to the mic. A 1/4" TS female to (XLR, 1/8" , or 1/4") female adapter will get you from the mic to the wye cable.



Demo Mic Adaptor Wye Cable