

## GM 16 Instructions

### DESCRIPTION

Amplifying the acoustic sound of an instrument over a sound system has been difficult. Microphones feed back, and pickups don't deliver a natural frequency response. By mixing the two, the advantages of each come through. The pickup supplies the *gain* and low end, and the mic supplies the *clarity* and high end to deliver the best combination of clear sound and gain before feedback.

The Rane GM 16 is designed to be mounted inside acoustic instruments such as a guitar. It is a uni-directional condenser which can be positioned for the best sound within the instrument. It requires a special 6 volt 2-wire phantom power supply to operate, supplied on Rane's AP 13 Acoustic Preamp (for which the GM 16 is intended to be used). A second pair of leads are provided to connect to an existing pickup. Output is derived from a 1/4" TRS jack at the base of the gooseneck that wires the pickup to the tip and the microphone to the ring. This jack replaces the existing jack or endpin on the instrument body. If a 1/4" TRS cable is used, both pickup and mic signals are kept separate on a single stereo cable. If using a mono 1/4" cable, only the pickup is active.

### INSTALLATION

1. Remove the strings. Enlarge the hole for the GM 16 with a 1/2" tapered reamer if needed.
2. If the instrument has a pickup, disconnect the wires from the existing jack and solder those leads to the loose set of wires protruding from the middle of the GM 16. Separate and cover the connections with electrical tape.

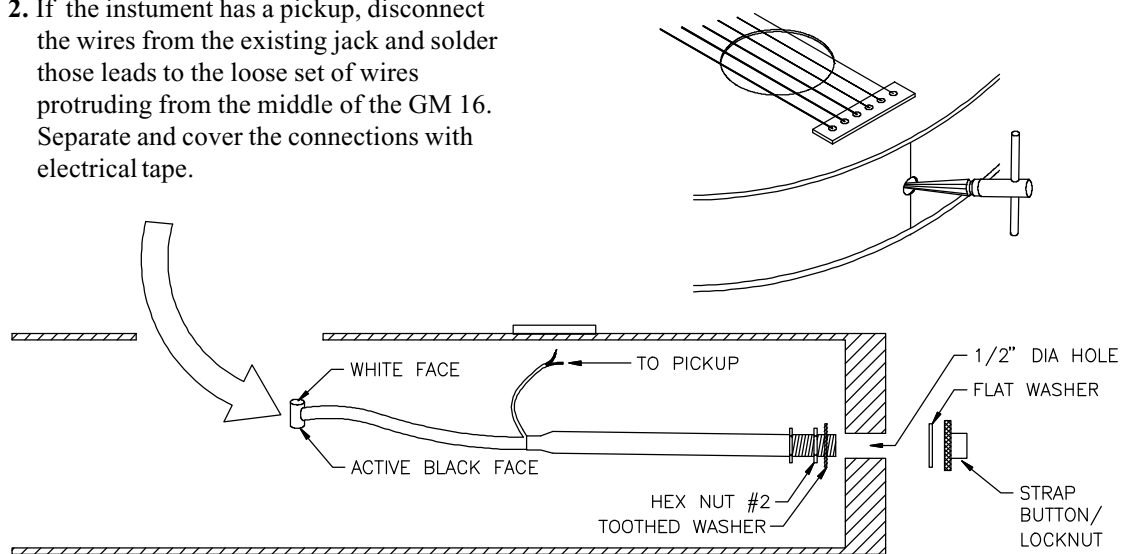
3. Insert the microphone assembly through the soundhole and tighten the strap button/locknut from *outside* the instrument.
4. Replace the strings and tune the guitar. Set the phantom power on the AP 13 to 6 volts. Connect a quality 1/4" TRS to TRS cable from the instrument to the preamp. Set the front panel switch to TIP=PZO/RING=MIC. Consult the AP 13 owners manual for further instructions.

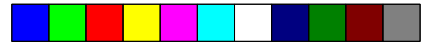
### MICROPHONE PLACEMENT

Position the microphone approximately 1/4" beneath the soundboard near the treble side of the soundhole, with the active black face of the microphone towards the interior of the instrument (approximately towards the chest of the player). Rotating the active face of the mic towards the back of the guitar often tends to reduce excessive bass response.

Every instrument is different, and may require a different mic position. You are encouraged to experiment with positioning the mic until the best combination of tone and volume is produced. Like any microphone, the GM 16 can feedback if not properly used.

Most pickups that sound 'midrangey' are better with the 630 Hz slider pulled down in the AP 13's Piezo equalizer section. The mic will be less boomy with it's Low Cut filter raised. Experiment with combinations of mic position and equalization for best results.





## Specifications

Type	Electret condenser
Frequency Response	50 - 18,000 Hz
Pattern	Unidirectional
Impedance	Low
Sensitivity	-64 dB (0 dB=1V/microbar)
Max. SPL	120 dB
Current drain	2 microamps

# **RANE** **GM 16**

## **GOOSENECK MIC**

**Low Impedance  
Guitar Microphone  
for the Rane AP 13  
Acoustic Preamp**

Amplify the  
Acoustic  
Sound of your  
Guitar



Printed in the U.S.A. on Recycled Paper 04680 DEC97

U.S. Patent No. 5,010,803  
Made In the U.S.A.