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Drawmer 1970 Application Notes

By Barry Rudolph

Setting up the 1970's Microphone Pre-Amplifier

Whether you're recording a guitar or a bass using the Instrument Input or plugging a mic into the microphone input, the basic setup of the 1970's microphone pre-amplifier is the same. Here is a good procedure to get the best sound.

Start with the compressor section bypassed by pushing both Bypass buttons on the right side of the 1970. Also in the Output section, set both Gain controls to 0dB. The Gain controls have a range of -10 to +20dB and act as a fine adjust for the overall level through the 1970—whether you're using the compressor or not. Check to see that the +10dB VU Pad switch between the two VU meters is not lit. But you may have to switch in the +10dB VU Pad later as needed.

I'm setting up for recording a single mic plugged into Channel 1 but I am duplicating all the steps as if you had mics plugged into both Channels 1 and 2.

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Just a note, you may see the compressor's gain reduction LEDs working and that is normal even when the compressor is bypassed. If the gain reduction LEDS distract you, just set the compressor's large Threshold control to fully CCW at +20dB.

The 1970 has several options and choices for recording and they all start with the Source rotary switch. If the microphone you are using requires +48-volt phantom power, turn the Source switch to the full CCW position named "MIC +48V." This is the only way the 1970 will deliver phantom powering to your microphone.

Moving coil dynamic or ribbon microphones normally do not require phantom powering so make sure the Source switch is in either the 2.4k, 600, or 200-ohm position when connecting them. Do not use the MIC +48V position for dynamics or ribbon mics.

The Mic Gain rotary switch dials the amount of mic gain in 6dB steps up 66dB. Having mic gain in steps rather than continuous variable control as most pre-amps makes documenting and recalling setups easier. For recording quiet sounds with a condenser mic, you need to use a switch position somewhere between 24dB to 54dB. If the VU meters' needles "pin" on a vocal peak or drum hit, back down the rotary switch one click (6dB)—if you still see this back it down again by another 6dB. It is good engineering practice to err on the low side, below 0VU on

the meter rather than over 0dB. Remember you have the Output Gain control for adding more level later.

The goal is to set a proper pre-amplifier gain staging here and not distort the 1970. If the pre-amp is distorting then adding a compressor will bring up that distortion to be more hearable! You may want to make a test recording and view the level peaks in your DAW. Zoom in on the waveforms and if you see the tops—the peaks of the waves flatten out anywhere, then you are overloading either your DAW's interface or the 1970's mic pre-amplifier.

What's With The Impedance Choices?

Microphone pre-amplifier design dictates that its input impedance be at least ten times the output impedance of the connected microphone. This is so as to not load down the microphone's output and change its performance, output level and sound. A typical dynamic microphone such as Shure SM57 dynamic has an output impedance of 150-ohms so the input impedance of the microphone pre-amp should be ten times or 1,500-ohms or greater.

The Drawmer 1970 offers three different input impedance choices to give another way to change the sound of your entire dynamic and/or ribbon mic collection. Experiment! This is a seldom seen feature in microphone pre-amps.

However, this feature does not work with phantom powered condenser microphones.

You can connect a 150-ohm SM-57 and listen to the sound difference between 200, 600 and 2.4k ohms. You'll hear the change noticeably at the 200 position and less so at the 600 position. The change is a little hard to describe but there will be a change in level so you may have to switch the Mic gain switch one click higher gain or 6dB but you'll obtain a thicker and heavier sound. For the most pristine sound use the 2.4K position where the mic is not loaded down at all.