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### **Beyond synthesizers**

The Polymoog is a fully polyphonic keyboard. That simple fact alone takes it into the realm of electronic pianos, organs, vibes, string effects and more, as well as the infinite realms of the synthesizer. In the age of the multi-keyboardist, the Polymoog stands alone as *the* multikeyboard.

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### **The first fully polyphonic synthesizer**

Until now, synthesizers have been monophonic. Like the clarinet, only one note could be played at a time. That monophonic sound was and is revolutionary. Now the Polymoog's polyphonic sound is an even greater

revolution. You can play any number of notes simultaneously on the Polymoog. In other words, it's the first synthesizer you can play like a standard keyboard—not like a clarinet playing one note at a time.

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### **Over \$100,000.00 for a penny sized chip**

The polyphonic feat is accomplished by an electronic "chip" that was three years in the making. (The Polymoog itself was 8 years and over one-half million dollars in the making.) Without this chip, a polyphonic synthesizer would cost several times as much and the space requirements would be highly impractical.



Actual size

Technically, this chip (there are 71 in all—one for each key) puts two voltage controlled amplifiers, one voltage controlled filter and one contour generator under each key. That means each key has its own volume response, attack and brightness. And that means each key has its own musical identity—like each piano key with its own hammer and string. The harder it's hit, the louder and brighter the sound.



### Another first—Piano expression

Aside from being the first truly polyphonic synthesizer, the Polymoog is the first fully electronic keyboard with a true piano touch. This is because each key has its own chip, like each piano key with its own hammer and string. And each key is velocity sensitive. Remember, a pianist adds "expression" in the way each key is pressed down to blend with the other keys. Of course, the Polymoog also offers

the alternative advantages of electric organ and synthesizer keyboards through its loudness contour controls.



### Your choice: Acoustic intonation or electronic intonation

Here's still another first. If you strike two keys on an acoustic piano and listen closely, you'll hear a slight movement in the sound, wavering back and forth. It's an acoustical phenomenon that gives the piano its rich, moving sound. This movement occurs because of an acoustical imperfection that electronic instruments don't enjoy—the fact that it's impossible to tune a piano perfectly. No two strings produce exact, consistently

harmonious frequencies, so the sounds of those two strings move back and forth, toward and away from each other.

On the other hand, electronic oscillators (as opposed to strings) can be tuned perfectly, so the sounds are in perfect unison—dry and static.

Each sound has its advantages. The Polymoog gives you both. You can get the electronic sound of the organ and synthesizer. Or, you can "detune" the sound sources and create the acoustical phenomenon of moving frequencies.

Honky tonk pianos in barrooms and halls have always tended to be slightly more out of tune than concert pianos due to the use and abuse. The result: More moving frequencies. Scott Joplin's compositions actually took advantage of





this, so if you play Joplin on the Polymoog, detune it just to the point where the imperfection sounds perfect. You might also note that string sections, brass sections and several instruments operate under the same imperfect principle as the piano's strings.

Incidentally, the Fine Tune Beat control has a blinking light. The more it blinks, the more detuned. The less it blinks, the more perfectly tuned. It allows instant visual adjustments.

### Fast numbers

Rick Wakeman plays four Minimoogs on one stage just so he can get instant sound changes. Since you can't take the time to reprogram one instrument in the middle of a passage, you have to *preprogram* several instruments—*unless* you play the Polymoog.

You can program the Polymoog like other synthesizers, starting from scratch and building up to your ultimate sound. *And* you can enjoy the multikeyboardist's advantage of instantaneous sound

changes. Eight preset modes let you change from organ to strings to piano to vibes and more at the touch of the buttons. Four master gain sliders turn up four variations of each preset voice, making a total of 32 instant sounds. Combining the sliders gives still more fast sound changes.

The variable mode button lets you create your own synthesizer voice. Push the "dot" button and you can combine your own synthesizer voice with any preset voice.

You can tune in several different organ sounds, several violin sections, and innumerable totally new sounds—*instantly*.

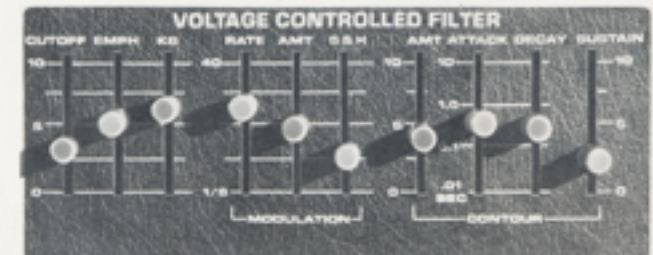




### The patented MOOG filter

The Polymoog has a full feature voltage controlled filter section. It gives you complete manual and automatic control over the level of harmonics, so influential in coloring the tone. And it's the patented Moog filter for the patented fat Moog sound. There are several ways to put those high frequencies in automatic motion for a host of sounds you'd

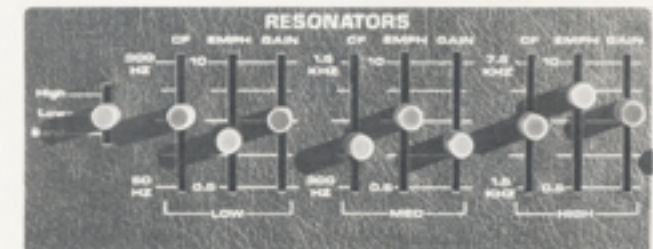
normally need several sound effects boxes for.



### Mixing, equalizing, filtering and making resonators

The Polymoog's resonator section is a multipurpose section that lets you control the tone color in several ways. You can duplicate the timbres of several instruments' resonators (the banjo's drum head, the horn's bell, the violin's body, etc.) and zero in on specific instruments' peculiarities. For example, a bassoon tends to emphasize the frequencies around 450 Hz. So can the Polymoog. You can create "nasal" sounds, "hollow" sounds, "rich" sounds, "fundamental" sounds and so on.

Use the resonator for mixing sound levels. Use it like an equalizer for smoothing out the overall response. You can even use it as three different filters — high-pass, low-pass or band-pass.





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### **Split the keyboard—Double the sound**

One way to get two sounds from the same keyboard is to split the keyboard. For example, you can play a rhythm with a percussive, funky, fundamental tone using your left hand, while you play lead with a rich, moving wah wah full of sustain with your right. There are several functions

you can split among the left and right sides of the keyboard: Decay; the two waveforms; the waveshape modulation; the pulsewidth (the variable shape of the rectangular wave); and the various filtering paths (the variable filter, the preset filter and the resonator section).

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### **Bend notes and chords**

The pitch controller is located at the center of the keyboard so either hand can play it. Slide your finger up, the pitch slides up. Down, the pitch slides down. And the sound snaps back to center the instant you release your finger. It's a

simple work of genius that lets the keyboardist do the blues guitar bend, the trombone slide, the violin vibrato and other techniques artists like Chick Corea are famous for. And now, you can bend whole chords. Another first.



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### **One keyboard—Two synthesizers**

Moog synthesizers are famous for their "open system" engineering. The Polymoog offers an ingenious open design. Suppose you want to play synthesizer chords with one hand, and modulating monophonic synthesizer leads with the other—you can, all on the same keyboard. If you connect a Micromoog or Minimoog to the

Polymoog, the sound of the highest note you play on the Polymoog will actually emanate from the Mini or Micromoog—as if your right hand was playing the second synthesizer's keyboard. So, you get two separate sounds simultaneously from the same keyboard.

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### Let your foot lend a hand

(Footpedal optional)

Now that you can use two hands on the polyphonic synthesizer, you can use your feet to do what the left hand did on the monophonic synthesizer. One pedal controls the volume. The other controls either the pitch for pitch bending techniques, or the filter for the most sophisticated wah wah pedal you've ever played.

The footpedal also has a trigger mode switch. This switch dictates how the effects of the filter contour are triggered. Suppose the filter contour is making a slow motion "wow" sound, for example. In the single trigger mode, if you play a chord with that wow sound, the wow sound won't retrigger again until all the

keys are released. So, if you press another key while you're still playing that chord, you'll hear the note without a wow effect. In the multiple trigger mode, the extra key *will* retrigger the wow sound plus the entire chord.



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### Quieter than high quality hifi's

Studio engineers really enjoy the Polymoog's 90 db signal-to-noise ratio. That figure is better than high quality

hifi's. It gives the engineer plenty of room to get the best dynamic response possible.



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### **Performance: Good advice and high recommendations**

The panel layout and voicing of the Polymoog took two years to create. It also took the advice of every good artist we could talk to—Chick Corea, Pat Moraz, Herbie Hancock, Keith Emerson, Roger Powell, even a room full of Nashville cats.

All of the functions of the Polymoog can be turned on and off instantly. Each

control section has a variable and a preset button. Once you're familiar with the control panel, you can create a lot of your own preset programming techniques for instant custom made sound changes. Status lights across the panel show you what's on and off instantly. And color keys help you find your way quickly and easily.

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### **Plus everything else you'd expect**

Keyboard response controls. Sustain. Modulation controls. Octave switching. Octave balancing. Sample and hold. Sawtooth and variable rectangular

waveshaping. And a lot more. Like we said, to say it's polyphonic is an understatement. The Polymoog.



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### Polymoog Specifications

#### Outputs:

Output Levels (5 outputs)	0dBm nominal
Output Impedances (5 outputs)	600 $\Omega$
Output Coupling	Mix output; single ended or balanced (XLR) Direct, VCF MODE, RES; single ended
Keyboard Voltage	Adjustable from 0.9 to 1.2 volts/octave
Strig	Single or multiple negative trigger; retrigger 20 msec.

#### Inputs:

Filter	0.64 volts/octave
Pitch	0.9 volts/octave
Swell (Loudness)	5 volts for 30 dB change
Mod Amount	0-5 volt range
Ext syn, trig mode, sustain, glide, on/off	Switch closure
VCF, RES, AUX	0dBm
<b>Power Requirements:</b>	100-130/200-260 VAC; 0.5A/0.25A
<b>Dimensions:</b>	6"H x 45½"W x 22¼"D
<b>Shipping Weight:</b>	82 lbs.

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### Polymoog Accessories

#### Polypedal



#### Footpedal





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