The Moog Philosophy

"If you’re into synthesizers, you have a lot in common with us. We’re concerned, and maybe you are too, about some of the hype that’s been going around on synthesizer design. It’s the kind of hype that places too much importance on gimmicks that don’t have any real musical purpose.

Musicians Like You Help Design Moog Synthesizers

Fads, gimmicks and basically un musical electronic features don’t make a synthesizer a musical instrument. Feel, sound and playability do. That’s why Moog has always designed its instruments in close collaboration with working musicians — people like Rick Wakeman, Jon Lord, Chick Corea, Jan Hammer, — some of the most creative and talented performers of our time.

As Moog, literally thousands of hours are spent every year talking (and listening carefully) to our musicians. We visit recording studios. Go on tour with major groups. Sometimes, even participate in live performances. All this teaches us a great deal about what you, the players, need and want in a synthesizer.

From Moog “Musical Engineering”, The Very Best Sound and Performance Formulas and specs are critical, but without the taste and insight of Moog’s “musical engineers”, our synthesizers would just be sound generators and not the versatile musical instruments they are. For example, part of the famous Moog “fat sound” comes from the patented Moog filter. But the total sound of the instrument is the result of dozens of individual design features meticulously proportioned to give just the right sound and feel.

The spirit of “musical engineering” is behind Moog’s many exclusive performance controls, too. Take our Pitch and Modulation Wheels and our Ribbon Controller. They enable the player to easily control pitch bend, vibrato and other nuances so vital to brilliant solo performance. These are the features that make the difference between a “tone note organ” sound and the soaring, fluid Moog lines you hear in the best contemporary electronic music.

The Truth About Sliders Versus Rotary Pots

Take a look at any recording console. You’ll see that the faders are sliders, because the recording engineer has to manipulate many of them simultaneously, especially during a mix. But just about all the other controls on the console are rotaries, because they’re so much easier to set precisely. Moog’s answer? Use both. Rotaries where precision is critical, sliders where speed is the thing (or where space is limited). But to say that there’s only one right way, well again, that’s just hype. Just try to accurately tune all slider instrument!

The point of all this is that if you’re into synthesizers, you really ought to know the difference between electronic gimmickry and solid musical engineering. We’re convinced that Moog offers equipment that gives you the most quality, playability and musical control over sound.

If you visit your Authorized Moog dealer he will be able to give you all the answers you’re looking for...technical specifications, a demonstration and explanation, and a chance to try the Moog Products.

Once you’ve tried a Moog Synthesizer you’ll understand the Moog Philosophy."

Multimoog

Multimoog is the synthesizer for the composer in you and the keyboard for the performer in you. The force-sensitive keyboard extends Moog’s musical engineering to let you phrase, bend pitch, and introduce vibrato, trill, tremolo — even sample and hold — with a single hand.

While your right hand plays two hands worth of music, your left hand can adjust the Moog Pitch Ribbon and Performance Wheel for added expression. Multimoog’s control where it belongs — in your hands.

Variable control and Moog’s open system input/output panel make the Multimoog a powerful synthesizer as well as an expressive keyboard.

Whether you’re a performer, a synthesist — or both — check out the one-hand/two-hand punch of the versatile one-MULTIMOOG.

Features

- Two temperature-regulated ultra stable audio oscillators (heated chip technology)
- Separate modulation oscillator
- Filter can produce sine wave
- Controlled filter talents to prevent accidental oscillation
- Continuously variable voltage controlled wave shapes
- One or two suboctave doubling also blendable
- Octave “click” switching 32’ to 2’
- Wide frequency knob can sweep oscillator pitch continuously over 5 octave range
- Modulation section features quick source-destination orientation
- Dual mode Sample and Hold — synchronous triggering or control output only
- Force sensitive keyboard — touch can take the pace of the modulation wheel
- Patented Moog voltage controlled low pass filter, 24 db per octave
- Reversable filter contours to create an entire new class of sounds
- Separate contour generators for VCF and VCA
- Ribbon "return to center" pitch Bender — zero initial playing
- "Open system" — input/output capacity make it compatible with other Moog synthesizers, accessories, and audio sources such as the guitar

Power Requirements

190 - 260 VAC 50/60 Hz, 5 watts.

Micromoog

The Micromoog is a compact musical instrument. It is designed to be fast and easy to play.

Control over performance

It is constructed to be durable but light. The controls and keyboard are protected by its casing.

Control over handling

It is an example of musical engineering.

The intuitive centre-return ribbon controller and performance wheel introduce musical feeling into electronic music.

Control over sound

There are a minimal number of controls but a great deal of functions. The open system design allows extended input/output capability.

Control over price

Features

- Temperature regulated ultra stable audio oscillator (heated chip technology)
- Separate modulating oscillator
- Filter can produce pure sine wave
- Controlled filter talents to prevent accidental oscillation
- Controlled filter talents to prevent accidental oscillation
- Continuously variable voltage controlled wave shapes
- One or two suboctave doubling — blendable
- Octave “click” switching — 32’, 16’, 8’, 4’, 2’

Power Requirements

190 - 260 VAC 50/60 Hz, 6 watts.

Detachable International power cord
Minimoog

with new Drift Free circuitry

Minimoog introduced synthesizers to the performing musician — it’s the classic lead-line performance synthesizer. What the player needs is a logically built controllable musical instrument, that sounds great. The Minimoog is such a musical instrument. Moog’s musically engineered left hand controllers let you bend pitch intuitively and vary modulations such as vibrato with musical feeling.

Try out the sound — control over sound — find out what makes a classic synthesizer — MINIMOOG

Features

● Ultra stable oscillator
● Logical control panel layout with signal processing from left to right.
● Three tone oscillators, each with separate octave clickers, waveform selectors, volume controls, on/off switches. Oscillators 1 and 3 have separate tuning controls. (Oscillator 1 is tuned with master tune control.)

Power Requirements: 200–260 volts, 50–60 Hz, 10 watts maximum. Specifications subject to change.

Keith Emerson

Taurus Pedal

The Moog Taurus Pedal Synthesizer lets you make music with your feet while your hands are busy playing keyboard, guitar, or drums. The Taurus has three programmed voices and a voice that you can program completely. In performance you can select a Moog voice or your voice instantly. The Taurus is a variable synthesizer that features two audio oscillators to create phasing effects, parallel intervals, and rich percussive sounds. In addition functions like glide, decay, and envelope decay may be switched by foot during performance. Its five octave range makes Taurus more than a bass instrument.

Add another dimension to your control over sound — add a Moog Taurus pedal synthesizer.

Taurus Features

Three pre-programmed synthesizer voices:

Bass, Tuba and Taurus

● One fully programmable voice. You create the sound and preset it yourself.
● Five octave range — 32’ – 8’ – 4’ – 2’ – 1’
● Foot sliders for loudness and tone color variation.
● Ultra stable oscillator design. Less than one cent (0.008%) short term drift, less than two cents (0.18%) long term drift.
● Electrostatic preset selectors. Presets never have to be cancelled.

Polymoog Synthesizer

The Polymoog Synthesizer. The instrument that re-designed the world of synthesizers. No other instrument offers the variety of sound, and control over sound present in the Polymoog control panel. The fully polyphonic, touch responsive keyboard gives the Polymoog instant-play capabilities. Eight pre-programmed voices and a user-programmable voice give it instant-change capabilities. At any time, the pre-programmed voices can be altered with the variable controls, allowing limitless creation of new sounds. The versatility of a Poliphonic synthesizer. The expression of a performing keyboard. Get it all with the Polymoog Synthesizer.

Specifications

Outputs: Output Levels (8 outputs) 10/8mV nominal
Output Impedances (8 outputs) 600 ohms
Output Coupling: Mix output, single ended or balanced (XLR). Direct, VCF, Mode, RES: single ended
Keyboard Voltage: Adjustable from 0.6 to 1.2 volts/octave
Strips: Single or multiple negative trigger; ret jelly 20msec.
Input Filters: 0.64 volts/octave
Pitch: 0.8 volts/octave
Swell (Loudness): 5 volts for 30 db change
Mod Amount: 0.5 volt range
Edit syn, trig mode, sustain, glide, on/off, Sbech closures.
VCF, RES, AUX, Ondim
Power Requirements: 200–260 VAC 0.5A/0.25A

Polymoog Keyboard

The Polymoog Keyboard is musically engineered to give you the tonal variety and breadth of expression of a primary keyboard. Fourteen programmable voices give you a characteristically sounding sounds from one keyboard.

The Polymoog Keyboard is velocity sensitive. It allows the same kind of intuitive touch sensitivity as the piano. An individual voltage controlled filter and voltage controlled amplifier for each key lets you play without triggering problems. Polymoog polyphony is not restricted — either by the number of notes playable simultaneously, or by the size of the 71 note keyboard.

Synthesizer tonal variety goes right down to voltage controlled oscillators.

Primary keyboard masculinity is a keyboard that feels your fingers. Get them both together in the Polymoog Keyboard.

Specifications

Bass Sources

Number of oscillators: 2 (1 pitch range, stave to precision VCO)
Antiphase: +127 (VCA and VCF for each key)
Input Level: 0.5 Vp-p, 71 note keyboard. Pitch ribbon and external frequency control give maximum of 50 degree pitch range.
Pitch Stability: ±0.05% (400 cents)
Pitch Tuning Range: ±10 cents maximum
Fine Tuning Range: ±1 cent
Best Tune Range: ±1 cents

Polarity:

Number: 14 programmed
Voice mini-structured controls: 14 programmed
Oscillator Balance: 5/8
Oscillator Phase: 5/8

VCF: 14 programmed, variable cutoff frequency and separate gain controls.

Main: Programmable output level 0dBm (0.7 volt output impedance less than 3000 ohms)
Super: Programmable output level 0dBm (0.7 volt output impedance less than 3000 ohms)

Control Outputs

Keyboard Controller: Fine adjustable from 0.5 to 1.2 volts input
Swell: 5 Vp-p to 50VDC single / multiple determined by trig mode switch or foot switch
Filter: 0.5 volts/octave input impedance — 1 mfd filter with 0.5 volt/octave input
Trigger: Switch to ground gives single trigger mode with trig switch in multiple position
Pitch: 0.5 volts/octave
Sustain: Section to ground gives sustain

Accessory Power Outputs: 12V/50mA at 100 ma available for supply of microphone, etc.

Polymoog Foundation

Moog SYNTHESIZERS
Signal Processors

Vocoder

The Moog Vocoder is an instrument which continuously analyzes the timbral characteristics of a sound program and impresses these timbral characteristics upon a second signal (carrier). The most familiar use of this type of instrument is to impose vocal characteristics onto instrumental sounds. As a musical instrument, a large variety of musical effects is possible by applying different types of signals to the two audio inputs called the program input and the carrier input.

The 16-channel Moog Vocoder has a variety of features especially developed and engineered for musical performance. These features make the instrument a powerful sound modifier for both live performance and for studio work.

Features
- Sixteen channels plus a special high frequency channel which oscillates either in the "speech" mode or in a "pitch" mode
- Switchable "speech" or "pitch" mode for each channel
- Attack and decay controls for each channel
- Lowest frequency output settable from 50 to 15000 Hz
- Output level settable from 0.5 to 10000 Hz
- Dynamic control
- Dynamic spectrum analysis

Specifications
- Program Input
  - Sound Level: 90 dB SPL
  - Input Impedance: 100 ohms
- Carrier Input
  - Sound Level: 90 dB SPL
  - Input Impedance: 100 ohms
- Output
  - Sound Level: 100 dB SPL
- Dynamic Control
  - Range: 0 to 100%

Parametric and Graphic Equalizers

Bringing the studio closer to home. Now, with Moog’s own Band Graphic Equalizer and Three Band Parametric Equalizer you have the answer. Engineered for the studio technician and built for the stage musician. In fact, Moog’s Signal Processors are ready veterans in recording studios — among producers, engineers and musicians alike. That says a lot for units that were built to handle the road.

Moog Signal Processors were designed to meet the wide range demands of keyboard instruments — to handle a very wide dynamic range and extended frequency response. The controls on Moog’s Signal Processors have a smooth, quiet action for precision adjustments. The Graphic Equalizer’s sliders are protected from dust entering their mechanisms, so they stay smooth and quiet. The slider center points are detented for fast easy reference you can feel.

You can bypass the Graphic or Parametric by flipping the Status Switch for last sound changes. And the Drive control lets you adjust the level of the equalizer’s internal signal to match the input signal. Let’s you maintain a high signal-to-noise ratio with low output instruments and guards against overload from high output instruments. You can also use Moog’s Signal Processors as line drivers for long cords stretching across the stage. Moog’s Signal Processors are designed for the studio and the road, right down to the two way chassis. In one position the carrying handles also protect the front panel, extending beyond the controls. In the other positions there are two flanges, complete with screwholes, for mounting in a standard 19” rack space.

Accessories

1125 Sample & Hold

(Usable with MicroMoog, Minimoog, PolyMoog, Modular systems)

You’ve heard Moog’s Sample & Hold creating a lot of extra special effects on a lot of today’s hit recordings. It delivers a steady, rhythmic pattern of noise climbing up the scale, over again, or down the scale, or just jumping all around the scale at random. The glide control gives your music “animation” like vibrato. The Sample & Hold is like a drummer playing notes, so it’s great accompaniment for drum solos. It’ll put new life in the band’s “Rhythm Breaks.” And it’s a showstopper too with its extra special sound effects.

1150 Ribbon Controller

(Usable with MicroMoog, Minimoog, Modular systems)

One of Moog’s most popular accessories, the Ribbon Controller is a whole new group of instruments in itself. You can use it as a Hawaiian guitar, theremin, “musical saw,” and a lot of instruments you never heard of. The Ribbon Controller is a limitless boardroom you play by just touching the ribbon. As you slide your finger to the right, the pitch lowers. You can adjust the Ribbon Controller so that it spans ten or more octaves, or as its range and length correspond to that of a keyboard. Another useful feature lets you “filter” the high frequencies. You can also use the Ribbon Controller as a loudness control, or even as a percussion instrument, tapping the ribbon to trigger a sound.

1121 Glide/Fade Decay Footswitch

(Usable with MicroMoog, Minimoog, PolyMoog, Modular systems)

A lot of professional musicians know how dramatic it is to switch sounds instantly in the middle of a tune. But, if both your hands are busy playing, even flipping one little function switch is impossible. That’s why the 1121 Footswitch is so valuable. It lets you turn either the glide or decay on the MINIMOOG for both with 2 boost switches on or off at the tap of your foot. On MICROMODIC it lets you turn modulation on or off.

1130 Percussion Controller

(Usable with MicroMoog, Minimoog, Modular systems)

Everybody talks about having a “new beat.” But, Moog’s Percussion Controller is no idle talk. It’s a “touch sensitive” drum that can control the pitch of the synthesizer, the filter, or both simultaneously. When you hit it harder the pitch rises and/or the filter opens. You can control the “sensitivity” of the drum (how hard you have to hit it to get a response) and the “scale” (how much it responds when you hit it). Now the drummer can play chords, wah wah, repeating patterns and so much more, he can even be called a “drummer” anymore.

1120 Foot Pedal Controller

(Usable with MicroMoog, Minimoog, PolyMoog, Modular systems)

Like the 1121 Footswitch, the 1120 Foot Pedal Controller gives the musician a third hand — or rather a foot. It’s a variable control that lets you control the pitch bend, cutoff frequency (for wah wah or tone color) or loudness for “expression” with your foot. The Foot Pedal Controller can even operate two or more synthesizer functions simultaneously.

Flight Cases

To protect your Moog Synthesizer we now offer a range of flight cases for all models. These rugged cases are a must for the travelling musician.
Synamp

Ask a recording engineer — violins require one mike, while guitars require another. Ask a sound reinforcement technician — one speaker suits the bass while another suits the horns. Even amps have to vary as instruments vary. That's why even the thought of creating the SynAmp was such a vast concept — because the synthesizer is such a vast instrument with so many sounds. The SynAmp was created to sound superb with every sound the synthesizer makes. And it was developed with expert help of the people who advanced the synthesizer ever since its beginnings — Moog. Synthetizes have proven to be truly outstanding instruments. And now, thanks to the SynAmp, they'll sound more outstanding than ever.

SynAmp Head
Features:
- 400 watts continuous average power output. User selectable as 2 x 200 watts Biamp or 2-200 watt full range power amplifiers.
- Four input channels (capable of taking up to eight inputs with LED overload indication).
- Three band parametric equalizer for each input channel.
- 10 Band Graphic Equalizer.
- Effects Chanel for detachable reverb section, switchable to external effects source.
- Internal headphone monitor amplifier and house sound kill button for changing, checking or adjusting input levels of synthesizer patches without turning system down. Warning light indicates house sound off.
- 60dB range peak reading meter.
- Internal four pole active crossover and equalizer for Biamp use.
- Two compressors — one for each amplifier with indicator lamps.
- Clipping indicator for each power amp.
- Comprehensive back panel for various patching operations.
- Amp and Speaker test facility.

SynAmp Cabinet
Features:
- "Two 15" low frequency premium grade drivers in computer assisted vented enclosure design.
- Compression driven and horn mid-range.
- Compression driven wide dispersion tweeters.
- Mid and High frequency driven protection circuitry with automatic reset.
- Speaker cover panels for protection during transit.

Studio Systems

The big modular systems from Moog are what started the synthesizer revolution. There are the three basic systems in the modular range. Systems 15, 38, and 56.

As the word modular implies the systems are made up with modules which can be changed or simply added to the basic system you buy.

The biggest system, the 56, in two cabinets comprises:
- 6 x oscillators in two banks
- 2 x oscillator drivers
- 1 x low frequency oscillator
- 1 x fixed filter bank
- 1 x voltage controlled low pass filter
- 1 x voltage controlled high pass filter
- 5 x envelope generators
- 1 x dual trigger delay
- 1 x sequencer
- 1 x attenuator panel
- 1 x multiple panel
- 1 x random noise generator
- 5 octave keyboard

A total of 36 individual modules each with a specific function in sound generation, processing or control are contained in the System 56.

Only the finest, 100% professional quality components are used in construction of the Synthesizer to provide reliable performance and durability. Careful consideration has been given to the placement of individual modules within the system, to provide convenient and logical inter-connections. The most used control connections can be internally selected by switches to reduce external patch-cord use.

Most important, these features are the culmination of more than a decade of collaboration between Moog Music and leading musicians throughout the world — to create a system providing musical control of the vast potential of electronic sound.

Moog Studio Systems are only available to special order.