Polymoog
Keyboard

Owners Manual

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We at Moog welcome you as a new Polymoog Keyboard owner. The purpose of this manual is to describe and explain the musical functions of the unit, but there are some practical things you may want to do first:

If you have not purchased a carrying case, (we recommend you do), do *not* throw away your packing material. It is sturdy enough for ordinary transportation.

Please fill out your warranty card. A few minutes now will help us serve you better if service is required, and may save you some money.

Now on to matters musical . . . . . .

Preparatory Procedures
Set-Up

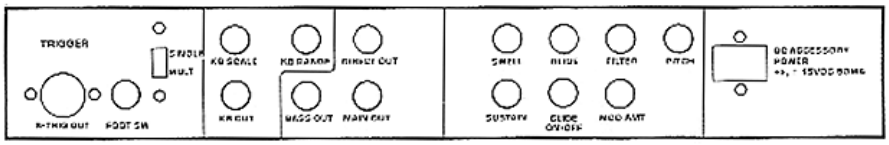
If you plan on using the Polymoog while seated, and have purchased the optional legs, set-up is as follows:

Lay the Polymoog Keyboard upside down on the ground *(Do Not Roll It Over:* damage to the rear panel adjust ment knobs may result.) The one-piece legs screw into the back: the adjustable two-piece legs go in the front. The two large-head screws go in the middle of the bottom of the instrument, and the large ends of the braces (with slots pointed towards the keyboard) are fastened under them. The small ends of the braces fit in the notches in the rear legs formed by partially unscrewing the bottom portion. These braces should also be fastened tightly. When upright, the unit should resemble the picture on Pg.3.

Electrical Connections

Attach the removable line cord and check the voltage selector (115 in U.S.,) before turning on the Polymoog Keyboard.

Turn on the unit and select the *direct* output. *Direct* is and output of all available keyboard signals and should be used normally. *Main* out is the upper keyboard only, and *Bass* is the lower keyboard only. These outputs and their uses will be explained later.

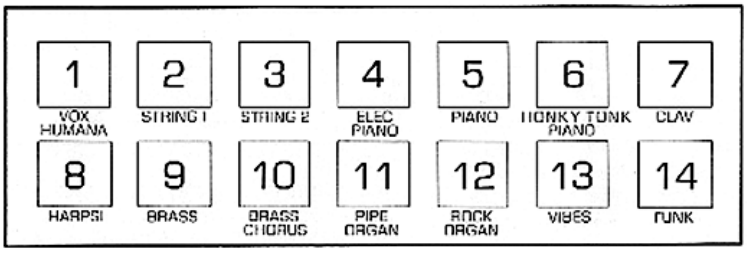


A wide band, high quality sound system such as the Moog Syn Amp is recommended for the Polymoog Keyboard. A high quality public address system has better high frequency response than a guitar amp, and is generally more suitable.

If you have purchased a Polypedal, most plugs and jacks are labelled to match. (The *Ext Syn* on-off circuit is used for *Ext Glide* on-off switching on the Polymoog Keyboard).

Preset Sounds

The Polymoog Keyboard contains a digital logic system that automatically adjusts such variables as modulation amount and rate, keyboard dynamics (touch sensitivity), octave and pitch selection, attack time, and others. These variables in different combinations are the key to the wide range of sounds available on the Polymoog Keyboard. The following is a brief description of each voice and some of its characteristics. (Set the master volume control at 8, and the octave balance controls at 10 (to ensure a strong output signal) and play through the voices.)



Preset Sounds

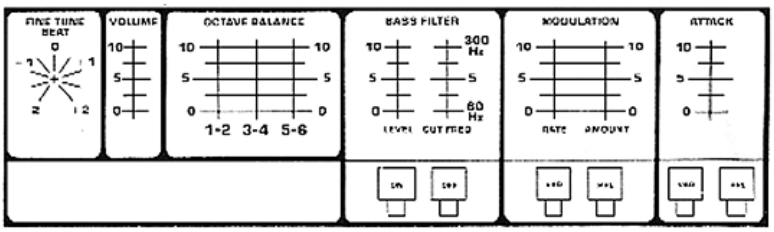
1. **Vox Humana** - A synthesized vocal ensemble sound with a slow attack and wide vibrato, characteristic of the human voice.
2. **String I** - A classical string chorus sound with a short release. Controlled detuning accentuates the chorus effect.
3. **String II** - A more romantic string sound, with a slower attack. String II has a much longer release time when the sustain pedal is used.
4. **Elec Piano** - The mellow sound of a touch sensitive electric piano. This preset has a totally different character with added modulation.
5. **Piano** - A brighter, general-purpose piano sound.
6. **Honky Tonk Piano** - A fixed amount of detuning is built into this preset. Detuning can be overridden using the *beat* knob.
7. **Clav** - The touch sensitive keyboard makes this a funky preset that works well as a rhythm guitar sound.
8. **Harpsi** - This voice, which has the typically delicate sound of a harpsichord, produces a delightful ensemble sound when modulation is added.
9. **Brass** - Presets 9 and 10 employ a master, *final* filter. This is a most effective single-line preset. Pitch-bending and variable attack control help produce very authentic brass sounds.
10. **Brass Chorus** - The Multi-oscillator "Moog sound". This sound is especially effective for background fills.
11. **Pipe Organ** - The rich sound of the pipe organ's principle chorus. Use of the sustain pedal adds a "cathedral" reverb effect.
12. **Rock Organ** - A percussive, dual-oscillator preset with tremelo.
13. **Vibes** - Another touch-sensitive preset. Dramatically different sounds are available by switching modulation in and out.
14. **Funk** - This original voice is highly percussive and easily cuts through full textures.

Preprogrammed Sounds and Variable Controls

The qualities of the preset sounds of the Polymoog Keyboard may be changed with the variable controls.

Each particular group of controls is engaged by pushing the white "VAR" button in that group. Returning to "PRE" disengages these controls and returns control to the preset sound. For musical reasons under some conditions, the variable controls may remain inactive on a given preset. This is explained on Pgs, 9-10.

The variable controls on the Polympog Keyboard are:



1. **Fine tune** - This control tunes the entire Polymoog Keyboard to another instrument, such as a piano or organ.
2. **Beat** - On presets using two oscillators (specified later), this controls the difference in pitch between the two oscillators. Try Honk Tonk and play with the Beat control.
3. **Volume** - A master output level control. (For optimum signal-to-noise ratios, relatively high volume settings (above 8) are recommended).
4. **Octave Balance** - Individual level controls for the low, middle, and high 2-octave sections of the keyboard. (Again, for optimum signal-to-noise ratio, one of these sliders should be set at maximum. The others can then be reduced relatively.)

5. **Bass filter** - This takes the signal from the lower keyboard left of the DOT and sends it through a low-pass filter, which cuts off high frequencies. This way, the lower keyboard will have a darker sound, suitable for bass lines. The lower keyboard and upper keyboard have separate outputs, so the two signals can be set up in a stereo configuration. Try Pipe Organ, push VAR for bass filter reaction, and play pedal parts.
6. **Modulation** - This introduces repetitive changes (vibration or waveform changes) to the oscillators. On the string voices, vibrato rates are critical and have been locked in place at the factory. In these cases, only the "amount" control is active.
7. **Attack** - On the non-percussive voices, such as Pipe Organ, this control increases the attack time; i.e. the amount of time between striking the key and reaching maximum volume.

The pitch ribbon is always functional. It allows you to change the pitch of any tone or chord played. Depress the ribbon to the right of centre and pitch is raised. Position left of centre lowers pitch.

Active Conditions When Controls Are Inactive

The authenticity and realism of any Polymoog Keyboard voice is due to the fact that it can reproduce most of the unique characteristics of each instrument. If those characteristics are removed or changed, the sound is less authentic.

For this reason, some qualities of individual voices are programmed to be not changable. For example, a slow attack on a percussive voice such as clav would destroy the integrity of the sound; so, on the clav preset, the attack control is not active.

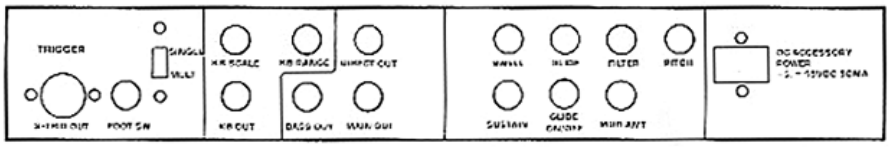
The available variable controls on each preset are explained and graphed below:

1. **Vox Humana** - A non-percussive preset. All variables are active.
2. **String I** - All variable controls are active except the modulation *rate* control, which is fixed to avoid phase cancellation.
3. **String II** - All variable controls are active except the modulation rate control, which, again has been programmed to avoid phase cancellation
4. **Elec Piano** - A percussive voice. All controls are active except *Attack* and *Beat*.
5. **Piano** - Same as Elec Piano.
6. **Honky Tonk** - All controls are active except Attack.
7. **Clav** - All controls are active except *Beat* and *Attack*.
8. **Harpsi** - All controls are active except *Beat* and *Attack*.
9. **Brass** - All controls are active except *Beat*.
10. **Brass Chorus** - Same as *Brass*.
11. **Pipe Organ** - All controls are active except *Beat*.
12. **Rock Organ** - All controls are active except *Attack* and *Beat*.
13. **Vibes** - All controls are active except *Beat* and *Attack*.
14. **Funk** - All controls are active except *Beat* and *Attack*.

In conclusion, the *Attack* control is active only on non-percussive presets such as strings and pipe organ. The *Beat* control is active only on presets where a wide detuning is acceptable or desirable, such as Honky Tonk piano. Otherwise, in cases where modulation rates are critical (such as strings), they are fixed.

	FINE TUNE	BEAT	VOLUME	OCT BAL	BASS FILTER	MODULAT	ATTACK
VOX HUMANA		YES				AMOUNT ONLY	YES
STRING I		YES				AMOUNT ONLY	YES
STRING II		YES				YES	YES
ELEC PIANO		NO				YES	NO
PIANO		NO				YES	NO
HONKY TONK PIANO		YES				YES	NO
CLAV		NO				YES	NO
HARPSI		NO				YES	NO
BRASS		NO				YES	YES
BRASS CHORUS		NO				YES	YES
PIPE ORGAN		NO				YES	YES
ROCK ORGAN		NO				YES	NO
VIBES		NO				YES	NO
FUNK		NO				YES	NO

Pedal And Rear Panel Controls



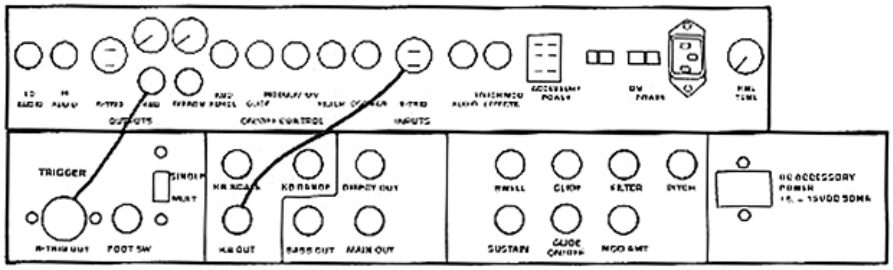
The control inputs on the rear of the Polymoog Keyboard are designed to be used with the Polypedal or the Moog 1120 Foot Pedal and 1121 Foot Switch.

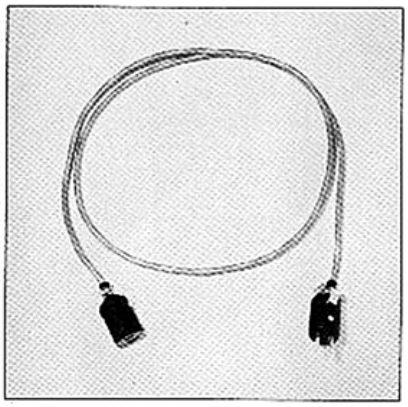
The Polypedal performs the following functions:

1. **Pitch** - Pitch can be raised by pressing the "pitch" footswitch and moving the left-hand pedal marked "pitch-filter." The amount of pitch bend is adjusted by the *pitch amount* knob on the rear of the Polypedal.
2. **Filter** - The filter pedal is active on the two brass presets only. The filter pedal is activated by depressing the *filter* footswitch. The midpoint of the pedal travel is equivalent to having the circuit disengaged; from this point, moving the pedal forward increases the brightness, while backing off decreases the brightness. This can be used for "WAH-WAH" effects.

3. **Trig mode** - The brass presets on this instrument employ a final master filter. The filter is controlled by a contour generator. A contour is a signal that can open and close the filter, and is generated under two types of triggering conditions. Single triggering, where a contour is generated when the first note is depressed, but will not reoccur unless all keys are released and another note or notes played; and in multiple triggering, where a contour is generated whenever a note or notes is played, under any conditions. A switch on the rear of this instrument chooses between these two modes when the Polypedal is not being used. If the Polypedal is being used, leave this switch in the "Multiple" position. The "Trig Mode" pedal is a momentary contact switch that chooses between single and multiple triggering. The mode of triggering when the pedal is in the "UP" position can be either single or multiple and is selected by a switch on the rear of the Polypedal.
4. **Sustain** - This pedal introduces a final release (the sound continues after keys are released). On some presets, such as strings, the release is long, while on *funk*, it is relatively short.

External Synthesizer Connections





If you on a Micromoog, Minimoog, or Multimoog, it is a simple operation to interface it with the Polymoog Keyboard.

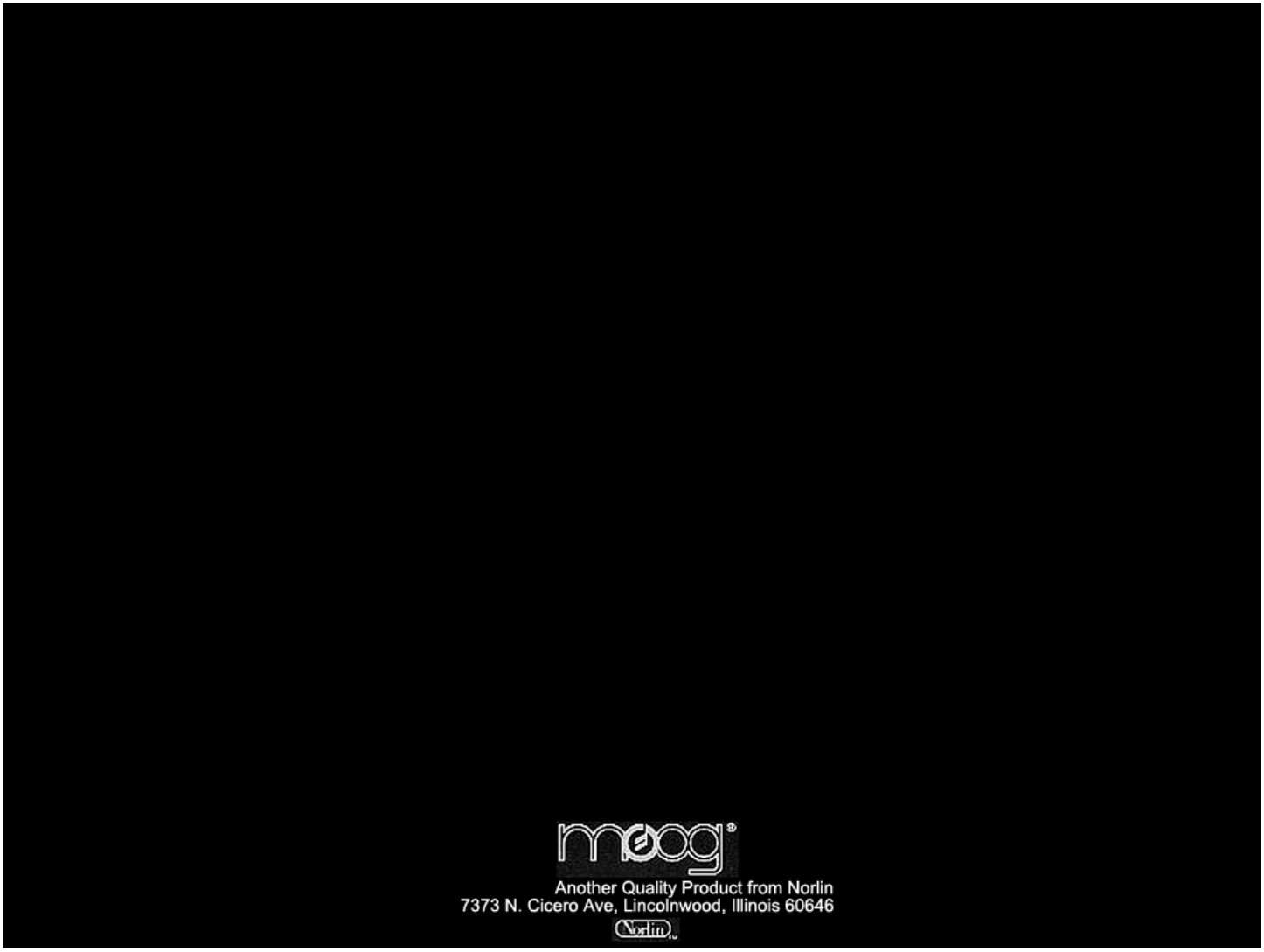
Interfacing involves setting up instruments so signals pass from one unit to the other and are accepted. In this situation, signals are sent from the master (the Polymoog Keyboard), to the slave (A Minimoog or Micromoog), and the slave will sound the highest key played on the master.

Connect the *S-Trig* output on the master to the *S-Trig* input on the slave, using a Cinch-Jones connector (Moog part #850717). Connect the *KB out* jack on the master to the *OSC Input* on the Minimoog. On the Micromoog, plug into the *Keyboard output* jack (see Micromoog manual for proper procedure). Tune the interfaced units by using the following procedures:

Set the slave to 8' and play the lowest *F* on the keyboard of the master. Adjust the *KB Range* on the master while repeatedly striking the *F* until both units are in unison. Play the highest note (D) on the master repeatedly, while adjusting the *KB Scale* on the back of the master, until both units are in unison.

No further adjustments are required. Due to individual tolerances between units, if a new slave unit is used, the tuning process may have to be repeated.


MASTER VOICE SELECTOR
1 2 3 4 5 6 7
8 9 10 11 12 13 14
Polymoog
keyboard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