

① VCO (VOLTAGE CONTROLLED OSCILLATOR)

- a FREQUENCY:** Adjusts the oscillator's frequency as much as one octave up or down from its center position.
- b VCO WAVE:** Selects between pulse & saw waveshapes.
- c PULSE WIDTH:** Adjusts the width of the VCO pulse wave.
- d VCO MOD SOURCE:** Determines whether the envelope, LFO, or external modulation source is being sent to the VCO MOD AMOUNT control.
- e VCO MOD AMOUNT:** Specifies the amount of modulation applied to the selected VCO mod destination.
- f VCO MOD DESTINATION:** Selects whether modulation is applied to the pitch of the oscillator, or to the width of the pulse wave.

② GLIDE

- a GLIDE:** Determines the amount of time it takes to transition from one pitch to the next between notes.

③ LFO (LOW FREQUENCY OSCILLATOR)

- a LFO RATE:** Used to determine the LFO's modulation frequency from 0.1Hz to 350Hz (600Hz max).
- b LFO WAVE:** Selects between triangle and square modulation waveshapes.

④ MIX (VOLTAGE CONTROLLED)

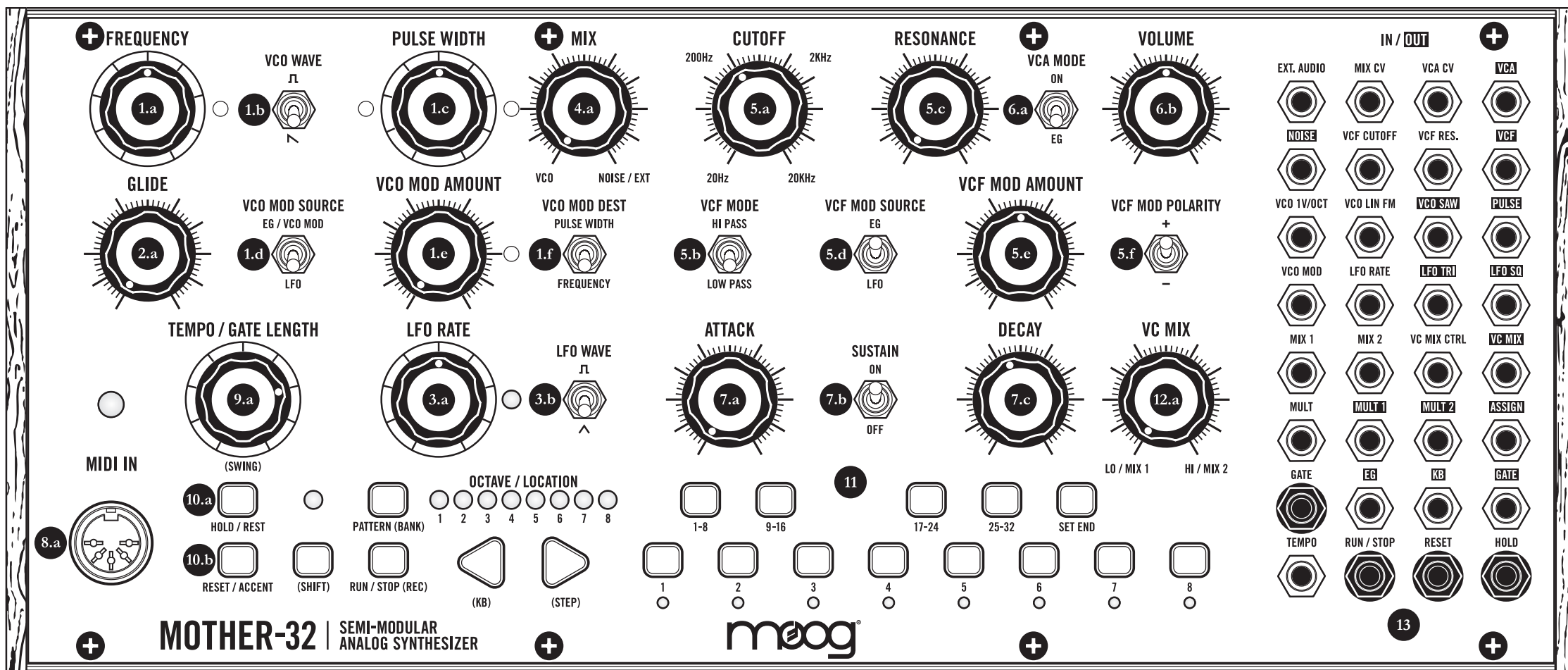
- a MIX:** Use to blend the level of the VCO with the onboard white noise generator or external audio input signal.

⑤ VCF (VOLTAGE CONTROLLED FILTER)

- a CUTOFF:** Determines the point where the filter begins to attenuate high or low frequency information.
- b VCF MODE:** Selects between resonant low pass and non-resonant high pass filter modes.
- c RESONANCE:** Shifts the energy in a filtered sound to a peak at the cutoff frequency. Settings above 3 o'clock will cause the filter to self oscillate.
- d VCF MOD SOURCE:** Used to determine whether the envelope or LFO is being sent to the VCF MOD AMOUNT control.
- e VCF MOD AMOUNT:** Specifies the amount of modulation applied to the filter cutoff.
- f VCF MOD POLARITY:** Determines whether VCF modulation has a positive or negative effect on the filter cutoff position.

⑥ VCA (VOLTAGE CONTROLLED AMPLIFIER)

- a VCA MODE:** Determines whether the VCA is being modulated by the envelope or is simply on.
 - b VOLUME:** Sets the master volume for the output.
- ## ⑦ EG (ENVELOPE GENERATOR)
- a ATTACK:** Specifies the time it takes for the envelope to ascend from zero to its maximum level.
 - b SUSTAIN ON/OFF:** When set to ON, the envelope will hold at its maximum position for the duration of a note. When set to OFF, the attack stage, when complete, immediately transitions to the decay stage.
 - c DECAY:** Specifies the time it takes for the envelope to descend from its current level to its zero position.



⑧ MIDI

- a MIDI IN:** Allows for external control, MIDI clock sync and MIDI to CV conversion. The MIDI LED blinks when MIDI messages are received.

⑨ TEMPO / GATE LENGTH

- a TEMPO / GATE LENGTH:** During playback, determines the tempo of a pattern. When programming a pattern, determines how long each note is held in reference to the duration of its step. Tempo LED blinks to indicate tempo.

⑩ HOLD & RESET

- a HOLD:** During playback, press to repeat the current step.
- b RESET:** Press to return to pattern step 1 at any time.

⑪ SEQUENCER

The onboard 32-step sequencer has 64 pattern locations and two modes: keyboard (KB) and step edit (STEP). To get started quickly use (KB) mode:

1. Press (SHIFT) & (REC).
2. Enter up to 32 notes with the keypad.
3. Press RUN/STOP to exit recording.
4. Press RUN/STOP again to begin playback. The step LEDs 1-8 will indicate the current step being played.

⑪ INITIALIZE CURRENT PATTERN

1. Press the (SHIFT) & PATTERN & RESET buttons together.
- NOTE:** This does not erase saved pattern data.

⑪ SAVE PATTERN

1. Press & hold the (SHIFT) & (REC) buttons for one second (An Octave/Location LED will blink rapidly indicating the current pattern location).
 2. Use the LEFT / RIGHT arrows to select a new location.
 3. Press the (SHIFT) & (REC) buttons again to save.
- NOTE:** To exit without saving, simply press RUN / STOP.

⑪ SELECT A SAVED PATTERN

1. Press and hold the PATTERN button.
2. While holding PATTERN, press any step button 1-8.

⑫ VC MIX (DC COUPLED)

- a VC MIX:** Voltage controlled mixer that allows two signals to be blended together, modulated and then patched to a new location. Requires patch cables for use.

⑬ 32 POINT MODULAR PATCHBAY

PATCHBAY: 18 input / 14 output patchbay for extended synthesis capabilities and modular connectivity. Patch any output to any input and listen to the effect.

⑬ MOTHER-32 OWNER'S MANUAL

- ! MANUAL:** To learn more about the patchbay, sequencer modes, functions and capabilities, please refer to the included owner's manual.