

COOPER FX : MOMENT MACHINE

The Moment Machine at its core, is one of the most advanced pitch shifters available in hardware form. Featuring two independent polyphonic pitch shifting engines, a powerful sixteen step sequencer, and over two hundred user adjustable parameters, there is plenty of room to get lost in the pedal, however it's easy to use due to a simple and intuitive graphical user interface. This manual will try and break down everything as best as is possible, however, as is usually the case, exploring the pedal on your own will likely yield the best results. Let's start with the knobs on the face of the pedal.

The white knobs are encoders that are used to adjust all the parameters within the pedal. The parameter that will be adjusted by each knob changes depending on the screen page you are on. The text on the screen will indicate the parameter being controlled by the encoder directly below it (more on this later).

Each encoder has a push button associated with it, and the text on the enclosure indicates the function of each button. From left to right:

- **SAVE** – Hold for 1 sec to save current settings into selected preset slot
- **LOAD** – Hold for 1 sec to load selected preset
- **RAND** – multiple functions depending on how long it is held down
 - Hold for 0.5 sec to randomize based on user selection
 - Hold for 2 sec to randomize pitch 1
 - Hold for 4 sec to randomize pitch 1 and 2
- **INIT**– Hold for 0.5 sec to bring all step parameters to defaults

The silver knob on the right side of the pedal will be used to easily flip between menus and pages. There are three different menu types:

- Global Settings
- Step Settings
- Configuration and Assignments

Menu type is selected by pushing the button, page selection is done by rotating the encoder.

Global Menu

The three pages in the global menu is where the primary sequencer controls will be found. Upon powering up, the Moment Machine will default to this page. The large silver knob can be rotated to select between the three pages within the global menu.

- Page 1
 - **BPM** – Sets the base tempo of the sequencer, depicted on the screen in beats per minute
 - Ranges from 2 bpm – 999 bpm
 - **MULT** – Multiplies the BPM by the value selected on screen
 - Ranges from x1/4 – x32
 - **DIR** – Sets the direction of the sequencer
 - → Forward – sequencer will advance from 1-Max step
 - ← Reverse – sequencer will advance from Max step to 1

- \leftrightarrow Alternate – sequencer will alternate between forward and reverse
 - RND Random – sequencer will advance in a random pattern
 - $\leftarrow ? \rightarrow$ Stumble - sequencer will randomly decide whether to go forward or backward
- **STP** – Selects the number of steps in the sequence
 - Ranges from 1-16
- Page 2
 - **MIX** – sets the overall mix of the pitch shifter
 - **FBK** – sets the overall feedback of the pitch shifter.
 - **PORT** – adjusts the portamento or glide between pitches. There are two types of portamento, smooth and stepped.
 - When the display shows “SM”, you are in smooth portamento where the pitch slides smoothly.
 - When the display shows “ST”, stepped portamento is selected. In this type of portamento, the pitches slide between the notes within the selected quantization.
 - **SCL** – select the scale to which the pitches are quantized to:
 - **MAJ** - Major
 - **MIN** - Minor
 - **P-M** – Pentatonic Major
 - **P-m** – Pentatonic Minor
 - **T-M** – Major Triad
 - **T-m** – Minor Triad
 - **T7M** – Major Triad with Seventh
 - **T7m** – Minor Triad with Seventh
 - **MEL** – Melodic Minor
 - **HAR** – Harmonic Minor
 - **BHx** – Blues Hexatonic
 - **BHp** – Blues Heptatonic
 - **CHR** – Chromatic, all semitones
 - **DET** – Detuned from +/- 2 semitones
 - **5&8** – Fifths and octaves only
- Page 3

This page you a visual of where you are in the sequence. The filled segments on the screen indicate the number of steps in the sequence, and the hollow segment on the screen indicates the current step. The knobs still control the parameter they are located beneath with one exception.

- First encoder (on the left) changes the tempo
- Second knob changes the multiplier (this is hidden so may take some getting used to)
- Third knob changes the direction
- Fourth knob changes the number of steps

Step Menu

The step menu is where you will have access to the individual step parameters. This is how you really shape and customize the sequence to your liking. Along with the global parameters set on the global menu, each step has individual parameters such as multiplier, portamento, mix, and feedback. Editing the steps can be as simple or complex as you want to make it.

- Page 1

- **STEP** – This is the step selector and will show which step’s parameters you will be editing.
- **P-1** – Sets the pitch of the first polyphonic voice from +/-12 semitones
- **P-2** – Sets the pitch of the second polyphonic voice from +/- 12 semitones. If you only want one voice then turn this knob to the max position until you see “OFF”
- **MLT** – sets the individual multiplier. This value is multiplied by the global multiplier value – so for example:
 - Global Mult set to x2
 - Step Mult set to x1/4
- Overall Mult = $2 * (1/4) = x1/2$

- Page 2

- **MIX** – sets the dry wet mix for the selected step. If the step mix is set to zero, the global mix setting will be used
- **FBK** – sets the selected step’s feedback level. If the step feedback is set to zero, the global feedback setting will be used.
- **PORT** – sets the amount of portamento for the selected step. If it is set to zero, the global portamento value will be used. Additionally, the type of portamento will be the type selected by the global portamento parameter

- Page 3

Page three deals with the alternate step mode of the sequencer. When the sequence runs its course a number of times set by the ALT control, the sequencer alternates between the pitch values set on the first page of the step menu and the pitch values on this page

- **AST** - selects the alternate step you want to edit
- **A-1** - Like the P-1 control, this sets the pitch of the first voice when in alternate mode
- **A-2** - Sets the pitch of the second voice when in alternate mode
- **ALT** - Selects the number of time the sequence will run through before switching between normal and alternate pitches (this parameter is not a step parameter, and will apply to all steps regardless of which step the AST control indicates you are editing)

- Page 4

Page 4 deals with randomization of the step parameters. P-1, P-2, MLT, MIX, FBK, and PORT can all be randomized various ways.

- “OFF” - no randomization
- “ A ” - the parameter will be randomized each time the sequence runs its course.
 - the “ % ” control is tied to this mode. It selects the probability that the parameter will be randomized. At its lowest setting, the parameter will never be randomized, at its highest setting, the parameter will be randomized on each run through.
- “ B ” - the parameter will be randomized when the “RAND” button is held for 0.5 seconds
- “ C ” - the parameter will be randomized when the middle footswitch is pressed
- “ D ” - the parameter will be randomized when the envelope is triggered

Configuration and Assignments

This menu three pages and will select all the boring stuff: presets, clock source, footswitch and envelope assignments.

- Page 1 - Configuration
 - **PRST** – This is how you select the preset slot you want to either save to or load from. You have fifty slots on board, hopefully that will be enough for you.
 - **CLOCK** – Selects the clock source:
 - **INT** – internal clock, tap tempo
 - **MIDI** – midi clock input
 - **ENV** – Each time the sequencer detects a change in the incoming audio's signal level, it will advance the sequencer. Works best with palm muting and distinct envelope changes. Experimental for sure.
 - **EXT** - Plug in an external clock source with a sync out jack, such as the volca series. Works well with x1.0 multipliers but can be finicky with other multipliers. Again, experimental
 - **SEN** - Sets the sensitivity for the envelope. Mostly controls the decay time when the envelope is momentary
- Page 2 – Footswitch Assignments
 - **FT1 (or FT2, EN1, EN2)** – Indicates the state of the footswitch – a filled shape indicates the footswitch is not activated, a hollow shape indicates the footswitch is active
 - **L/M** – selects whether the footswitch function is latching (“LAT”) or momentary (“MOM”)
 - When in momentary mode, the First knob adjusts the “polarity” of the switch.
 - “<” means when you push the footswitch or trigger the envelope, you change from your normal setting to the value shown on the footswitch page.
 - EX: in the pause play mode - hold the footswitch to pause, release to resume play
 - “>” is the opposite -
 - Hold the footswitch to resume play, releasing the footswitch will keep it paused
 - **DEST** – selects the function the footswitch is assigned to:
 - **//** – Pauses sequence. When paused, you can manually advance the sequence using the tap footswitch
 - **RST** – Resets the sequence back to the first step
 - **MULT** – multiplier
 - **FBK** – feedback
 - **PORT** – portamento
 - **MIX** - mix
 - **P-1** – pitch one **
 - **P-2** – pitch two **
 - **1&2** – both pitches **
 - **SCLE** – scale swap **
 - Footswitch will cause scale to alternate between major and minor variations
 - **VAL** – the value the footswitch assignment will jump to when active. Most of these are self-explanatory, however when “SCLE” is selected as the destination the values are as follows:
 - **M/m** – switches between major and minor scales

- **PMm** – switches between pentatonic major and minor scales
- **TMm** – switches between major and minor triads
- **7Mm** – switches between major and minor seventh triads

- Page 3 – Envelope Assignments

When using the envelope assignments, think of your dynamics as a switch. Play hard, switch on. Play hard again, switch off. So instead of pressing a switch, your playing dynamics will be what causes the “switch’s” state to change.

The envelope assignments are the same as the footswitch assignments so see that section for any info.

It should be noted that the envelope and footswitch should not be assigned to the same functions. It will confuse the system and may cause unwanted results.

Again, the envelope needs distinct dynamics to work, it may be best to exaggerate hard and soft picking.

** indicates the destination is only available on footswitch 1 and envelope 1

Other Information

- Relay true bypass switching
 - Works simultaneously as latching and momentary
 - Quick press for latching functionality
 - Hold for 0.25 sec for momentary functionality
 - Whenever in bypass, the sequence will go back to its first step, so every time you activate the pedal, the sequence will start at step one.
- Power
 - 9v center tip negative (Standard power supply)
 - 200 mA
- Midi – accepts midi clock in for syncing the Moment Machine to external devices
 - For best results:
 - select a multiplier of x1.0
 - Use a device that can send midi start/stop messages
 - If your device does not transmit start/stop messages, press and release the tap footswitch until the devices are synced
 - Some functionality is not available when midi clock is selected, such as pause/ play and foot and envelope multipliers

