MOHO USER MANUAL

KERNOM

M 0 H 0

Welcome to Augmented Analog Fuzz!

The pedal you are holding is the world's first Augmented Analog fuzz pedal. Inside, cutting-edge technology allows you to control, in real time, the behavior of its key internal components.

The MOHO draws inspiration from a range of fuzz classics, spanning both vintage and modern designs. It infuses futuristic tones into the mix, inviting you on a unique sonic adventure that combines the finesse and ferocity of renowned analog circuits in an unprecedented way.

What you do with the MOHO, how you shape the sound of this circuit, is entirely up to you and a product of the hours you'll spend exploring its possibilities.

Happy inspiration!

The Kernom Team

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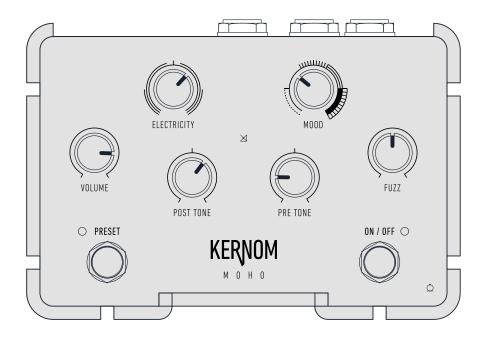
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GENERAL & SPECIFICATIONS - CONTROLS AND CONNECTIONS

FRONT PANEL



ON/OFF FOOTSWITCH

Engages and disengages the effect. Step on the ON/OFF footswitch to turn the pedal on and off. True bypass via relay when off.

PRESET FOOTSWITCH

MOHO allows you to save and recall your favorite preset without the use of external hardware. Press and hold the footswitch to save your favorite settings. Pressing on the footswitch toggles between your favorite preset and the setting defined by the knobs' current position.

LEDs

Indicate functioning state of the pedal, depending on current use.

VOLUME

Defines the overall output level of the pedal.

POST TONE

Acts after the clipping stage to precisely tailor the output sound, from fat and heavy to beautiful chime. 12'o clock is the most neutral position. Turn left to filter high harmonics, right for more presence.

PRE TONE

Acts before the fuzz stage to alter the way the pedal responds to the guitar signal, influenced by the selected MOOD setting. The 12 o'clock position is the most neutral. Turn left to add bass, right to filter bass.

FUZZ

Controls the amount of fuzz in the signal. Varies depending on the selected MOOD setting.

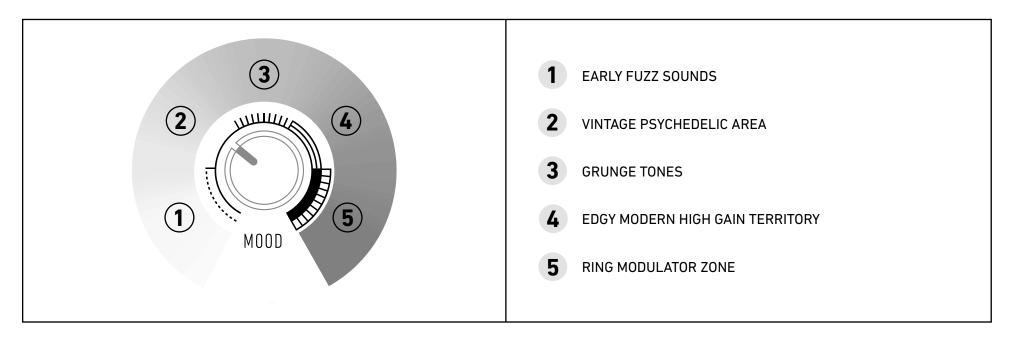
ELECTRICITY

The distinctive ELECTRICITY control acts as an octaver (one octave down on the left, or one octave up on the right, with no octave added in the center position) and serves as the ring modulator frequency control for the last MOOD position.

MOOD

Defines the type of fuzz behavior of the pedal. From the velcro-like under-biased transistor stage to the warm and screaming sounds of psychedelic fuzz, traversing through more modern lead tones, and concluding with full ring modulator circuits.

MOOD FOCUS



The MOOD knob is crucial for controlling the unique patented Analog Morphing Core technology engine within the MOHO and defining the pedal's behavior.

Turning the MOOD knob is like selecting a different behavior for the pedal, much like changing the fuzz for a different style. In general, the first one-third is dedicated to a more vintage sound reminiscent of fuzz face, tone bender, or the iconic FZ1 pedal. The second one-third is geared towards a more modern sound, akin to the Big Muff, while the last one-third explores new territories with a more digital and futuristic sound.

Given its continuous nature, each point on the knob's range provides access to a different voice for the pedal. The MOHO effectively houses hundreds of analog fuzz tones in one box, featuring a clutter-free, seamless interface. This is why we refer to it as an "Augmented Analog" pedal—an incredibly sounding analog pedal with all the added versatility you'll ever need.

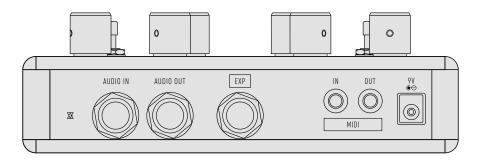
To help users quickly find the desired pedal behavior, indications on the screen printing divide the MOOD into 5 "zones" each containing dozens of different voices that share common characteristics.

While these are general indications to simplify the initial interaction with the pedal, combining the MOOD knob with the other five knobs allows users to discover diverse ways to use the pedal.

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GENERAL & SPECIFICATIONS – CONTROLS AND CONNECTIONS

REAR PANEL



AUDIO IN

Mono audio input. Where you plug your instrument.

AUDIO OUT

Mono audio output. The cable plugged here is to be connected to your next pedal or directly to your amp.

EXP

Expression input. Allows continuous control over all knobs with your expression pedal. Use a stereo cable (not included) to connect.

MIDI IN/OUT

Fully featured MIDI input and output supporting MIDI Control Changes, Program Changes, etc. See page 11 for additional details. The MOHO uses **TRS mini jack type A** connections for its MIDI functionalities. It is compatible with 5 pin DIN connectors with the addition of an external adaptor (not included with the pedal).

POWER

Used to power the pedal.

FEATURES

True Bypass
Expression input
MIDI In/Out
1 Internal favorite preset
127 MIDI presets
Ultra low noise output
5mm thick touring ready casing

SPECIFICATIONS

INPUT IMPEDANCE: 1Meg Ohm (Guitar mode)

OUTPUT IMPEDANCE: 100 Ohm Bypass

BYPASS SWITCHING: True Bypass (electromechanical relay switching)

DIMENSIONS: 11.2 cm deep x 16.4 cm wide x 5.2 cm tall (4.4 inches deep x 6.5

inches wide x 2 inches tall).

WEIGHT: 850 g (1,8 lbs)

POWER ADAPTER REQUIREMENTS

Use an adaptor (not included) with the following rating: 9VDC center negative, 250mA minimum, 300mA or more recommended.



If you want a foolproof process to first learn the pedal, follow these easy steps:

To facilitate the first contact with the pedal, start with this position, which is a classic fuzz sound reminiscent of the psychedelic area.



FIRST. EXPLORE THE PRE TONE

Turn it to the left and feel how it adds body to the sound, creating a more compressed tone. Turn it to the right and explore how the sound starts to become more dynamic, with less low end (also try adjusting the FUZZ setting). It significantly alters the way the pedal reacts to the notes and the way you play.

ADJUST THE POST TONE

To give a smoother tone turn it to the left or a sharper one by turning it to the right.

EXPLORE THE ELECTRICITY

Turn it to the left to add a low octave to the sound. As it is an analog octaver, it is monophonic and has its own personality! It also reacts to the dynamics of your playing. Then try turning it to the right; it will add an octave up to the sound with a tone reminiscent of vintage Octavia or Super Fuzz.

THEN, PUT ALL THE KNOB IN THE STARTING POSITION, AND THEN TRY TO CHANGE THE MOOD SETTING.

In the first MOOD zone, the bias starts completely under-biased at MOOD minimum and gradually increases until the first noticeable step, which occurs at about 9 o'clock. In this range, you can achieve a highly gated sound. Adjusting the FUZZ and PRE TONE controls within this range will significantly impact the responsiveness to your guitar playing

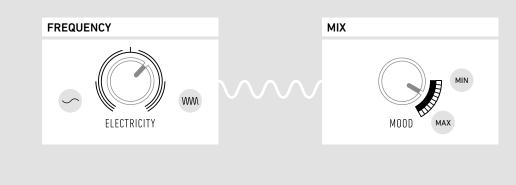
In the second M00D zone (from 9 to 11 o'clock), you get a more standard vintage fuzz tone. Changing the M00D knob alters the overall tone and responsiveness to your guitar playing. It morphs into a more Muff-like sound as you approach 11 o'clock.

The third MOOD zone (from 11 to 1 o'clock) is in the style of the Big Muff. Adjusting the MOOD knob changes both the tone and the character of the Muff sound you'll achieve.

The fourth MOOD zone (from 1 and 3 o'clock) morphs from a Muff-like sound to a sharper, almost digital kind of fuzz ("digital" in a positive sense). You'll notice a slightly gated sound and more aggressive harmonics (also in a positive way).

In the last MOOD zone, a ring modulator is added to the circuit, and the frequency of the modulation is controlled by the ELECTRICITY knob within this MOOD zone.

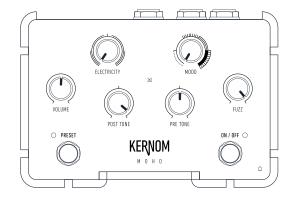
As you turn the MOOD knob to the maximum, the harmonics generated by the ring modulation are increasingly mixed with the signal.



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SETTINGS EXAMPLES

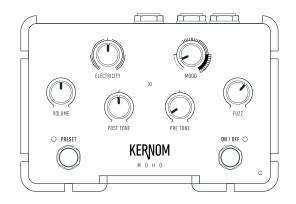
HERE ARE A COUPLE OF SETTINGS THE KERNOM TEAM PARTICULARLY LIKES. ENJOY AND EXPLORE!



Octave "Broken Amp"

Adjust the PRE TONE and the FUZZ to change the gate effects.

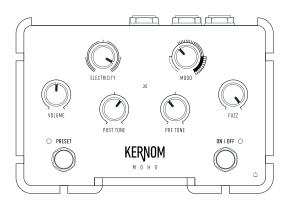
Marty Robbins's "Don't Worry"



Vintage Velcro Fuzz

Adjust the PRE TONE and the FUZZ to change the gate effects.

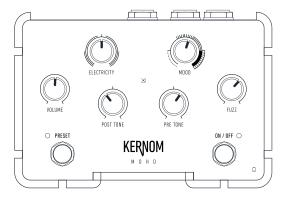
Jack White "Lazaretto"



Classic 60's

Adjust the PRE TONE to add some compression.

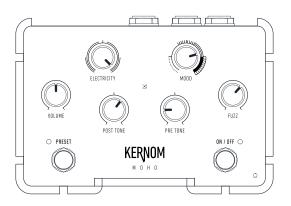
Adjust ELECTRICITY on the right to add more octave up harmonic.



irunge

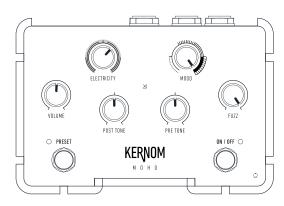
 $\label{post-to-energy} \mbox{Adjust POST TONE to change the global tone.}$

Sonic youth, David Gilmour



Edgy Madness

Adjust FUZZ and ELECTRICITY.



Lord Of The Ring Mod

Change the ring modulator frequency with the ELECTRICITY.







USER FUNCTIONNALITIES - SAVING AND RECALLING A PRESET

The MOHO gives the user the possibility to save their favorite sound to be used at any time.

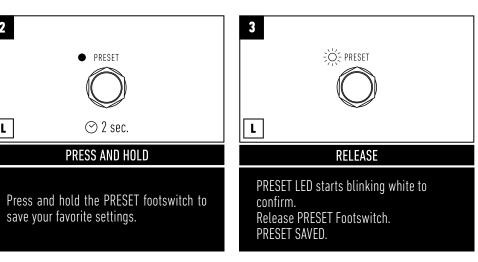
This can be used in many different ways:

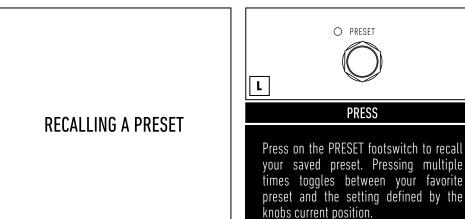
As a dirty octave down riffage machine by saving the same tone with ELECTRICITY turned down all to the left.

To toggle between a velcro like sound for your intro sound and a muffy lead tone.

To switch between two completely different tones, as if using two different pedals.





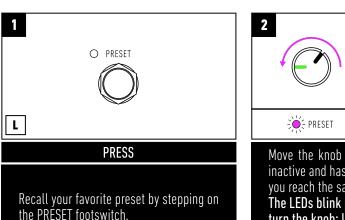


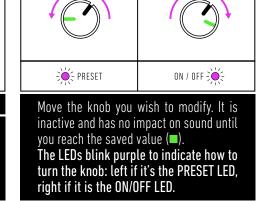
USER FUNCTIONNALITIES - MODIFYING THE FAVORITE PRESET

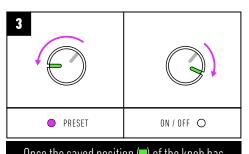
After recalling the Favorite preset, the position of the knobs is decorrelated from the audio.

The user might wish to modify the preset but not remember how the knobs were positioned when the preset was created.

In order to find the saved position on one or multiple knobs, follow these simple steps:



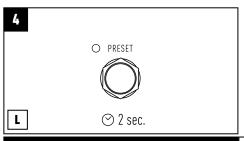




Once the saved position () of the knob has been reached, the LEDs stop blinking and the PRESET LED stays purple, indicating the user is in a modified version of the preset. The knob is now active again and can be dialed in to a new preferred setting.



Repeat steps 2 and 3 on as many knobs as you like. If the user repeats the steps on all 6 knobs, the pedal leaves the preset as all knobs are now active.

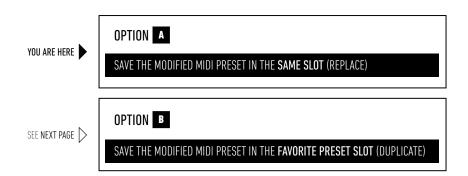


PRESS AND HOLD

Once you are happy with the sound, press and hold the PRESET footswitch to save the new setting.

The knobs that have been made active and modified are updated, if some knobs were not made active again following the procedure described in steps 1 to 3, their previous values remain unchanged.

8 A USER FUNCTIONNALITIES - MODIFYING A MIDI PRESET

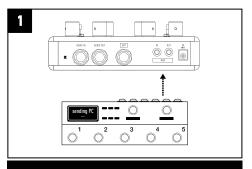


SAVE THE MODIFIED MIDI PRESET IN THE SAME SLOT

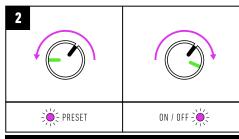
After recalling a MIDI preset, the position of the knobs is decorrelated from the audio.

The user might wish to modify the preset but not remember how the knobs were positioned when the preset was created.

In order to find the saved position on one or multiple knobs, follow these steps:

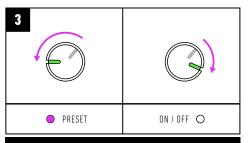


Recall a MIDI preset by sending the desired MIDI PC via your MIDI controller.



Move the knob you wish to modify. It is inactive and has no impact on sound until you reach the saved value (.).

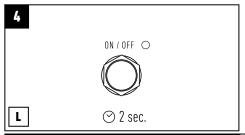
The LEDs blink purple to indicate how to turn the knob: left if it's the PRESET LED, right if it is the ON/OFF LED.



Once the saved position () of the knob has been reached, the LEDs stop blinking and the PRESET LED stays purple, indicating the user is in a modified version of the preset. The knob is now active again and can be dialed in to a new preferred setting.



Repeat steps 2 and 3 on as many knobs as you like. If the user repeats the steps on all 6 knobs, the pedal leaves the preset as all knobs are now active.

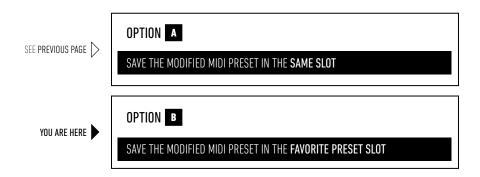




Once you are happy with the sound, press and hold the ON/OFF footswitch to save the new setting into the **same slot**.

The knobs that have been made active and modified are updated, if some knobs were not made active again following the procedure described in steps 1 to 3, their previous values remain unchanged.

8 B USER FUNCTIONNALITIES - MODIFYING A MIDI PRESET



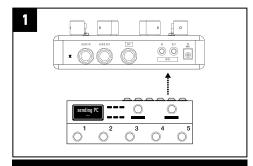
SAVE THE MODIFIED MIDI PRESET IN THE FAVORITE PRESET SLOT

It is also possible to save the modified MIDI preset to an other slot. But for some ease of use considerations, the only possible slot allowed is the Favorite Preset slot (PC 0).

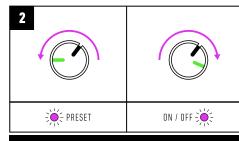
After recalling a MIDI preset, the position of the knobs is decorrelated from the audio.

The user might wish to modify the preset but not remember how the knobs were positioned when the preset was created.

In order to find the saved position on one or multiple knobs, follow these steps:

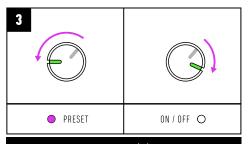


Recall a MIDI preset by sending the desired MIDI PC via your MIDI controller.



Move the knob you wish to modify. It is inactive and has no impact on sound until you reach the saved value (■).

The LEDs blink purple to indicate how to turn the knob: left if it's the PRESET LED, right if it is the ON/OFF LED.



Once the saved position () of the knob has been reached, the LEDs stop blinking and the PRESET LED stays purple, indicating the user is in a modified version of the preset. The knob is now active again and can be dialed in to a new preferred setting.



Repeat steps 2 and 3 on as many knobs as you like. If the user repeats the steps on all 6 knobs, the pedal leaves the preset as all knobs are now active.



PRESS AND HOLD

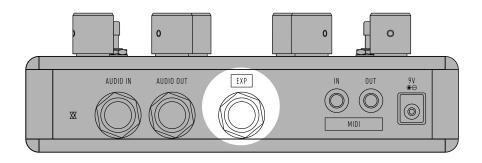
Once you are happy with the sound, press and hold the PRESET footswitch to save the new setting into the favorite preset slot. The knobs that have been made active and modified are updated, if some knobs were not made active again following the procedure described in steps 1 to 3, their previous values remain unchanged.

Using an expression pedal allows the user to morph (by interpolating values) between two different settings, as if the user had 6 hands turning the knobs at the same time from one position to another.

It allows to explore new sonic landscapes and leverage the possibilities offered by the MOHO's internal Analog Morphing Core engine.

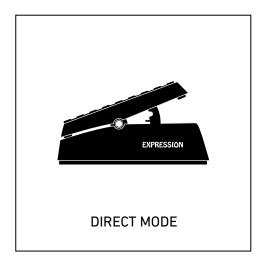
When using the pedal without its MIDI functionality, the expression pedal allows to morph between the setting indicated by the current position of the knobs and the internal favorite preset.

When using the pedal with its MIDI functionality, the expression pedal allows to morph between the setting indicated by the current position of the knobs and the saved MIDI preset currently in use, OR to specify different settings for the heel and toe positions (see page 17).



To use the expression pedal:

- 1 Plug the expression pedal using a stereo jack cable in the dedicated expression input.
- Morph between the sound indicated by the knobs (heel position) and the internal favorite preset (toe position).





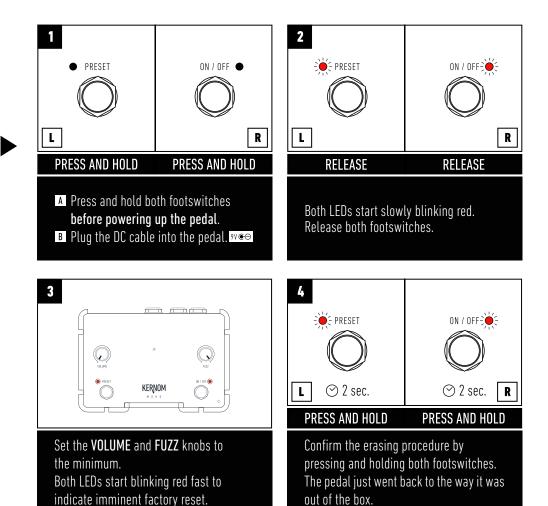


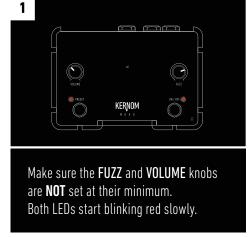
IMPORTANT!

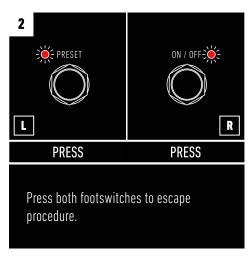
When using the internal preset (via MIDI recall or by pressing the Preset footswitch), the expression pedal is inactive.

At any point, the user may decide to reset the MOHO to its factory settings. This will erase all presets, and toggle all functioning modes (MIDI out/thru, MIDI channels, Input level etc.) back to their default settings.

In order to reset to factory settings, follow steps 1 to 4:





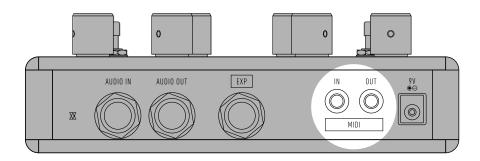


If the user has entered the reset mode by mistake and wants to exit the procedure without resetting the pedal to its factory settings, either unplug the pedal or simply follow steps 1 to 2.



ADVANCED FUNCTIONALITIES - MIDI FUNCTIONALITIES

MIDI INTRODUCTION

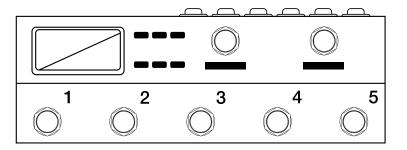


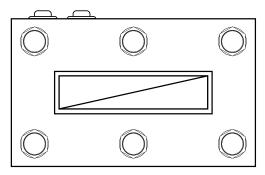
MIDI allows to further take advantage of all the possibilities given by the MOHO's internal technology: control the pedal with a computer, a tablet, an external controller or switcher, the possibilities are endless.

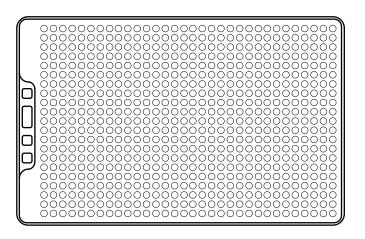
MIDI gives the user access to up to 128 presets* that can be recalled with Program Changes (PC) messages at any point using an external MIDI switcher. This is more than enough to cover any kind of fuzz needs.

The use of Control Change (CC) messages, also allows the user to control all the MOHO's internal settings with a connected MIDI controller and to come up with unique ways to interact with the pedal.

*NB: preset number 1 is the favorite preset, which can therefore be saved either by following the procedure detailed on page 7 or the one detailed on page 13.







Out of the box, the MOHO is set to function on MIDI channel 1

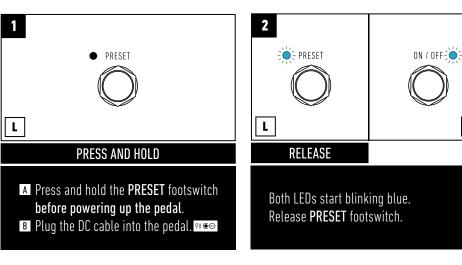
In order to make sure the MOHO will function perfectly with other devices when using MIDI, the user can at any time modify this setting to receive MIDI messages on another channel.

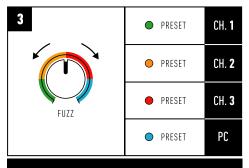
In order to modify the MIDI channel of the MOHO, follow steps 1 to 5.

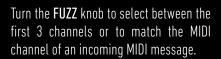


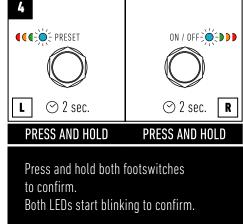


MIDI channel and MIDI THRU/OUT (see page 18) can be defined at the same time by entering the same procedure described in steps 1 to 5 by pressing and holding the PRESET footswitch.

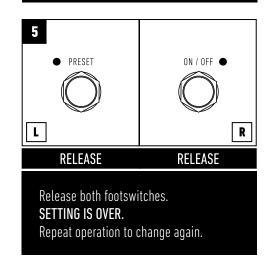






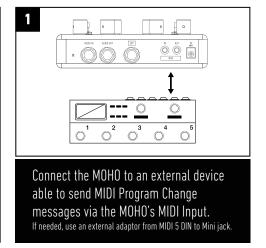


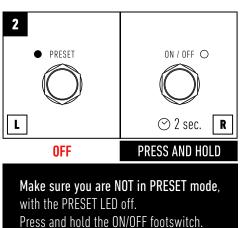
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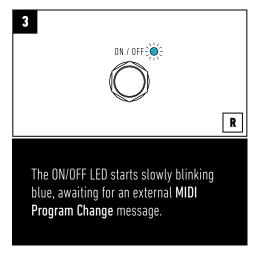


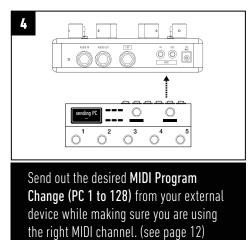


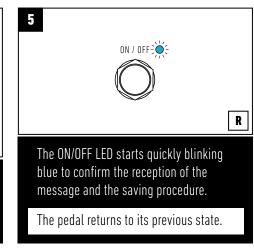


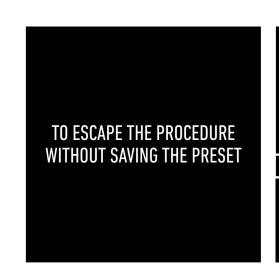


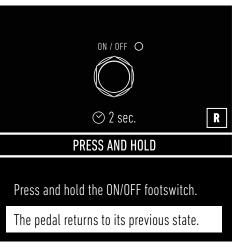








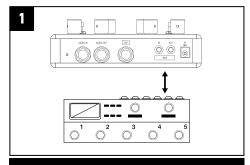




ADVANCED FUNCTIONALITIES – **SAVING A MIDI PRESET** 2/2 **RECALLING A MIDI PRESET**

TO SAVE THE VALUES OF AN EXISTING MIDI PRESET IN ANOTHER MIDI PRESET

AND TO LEARN HOW TO RECALL A MIDI PRESET



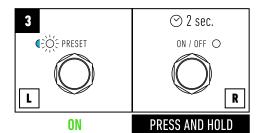
Connect the MOHO to an external device able to send MIDI Program Change messages via the MOHO's MIDI Input.

If needed, use an external adaptor from MIDI 5 DIN to Mini jack.

2

Recall the MIDI preset your desire to duplicate.

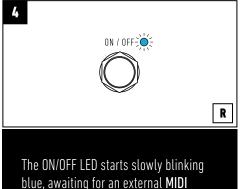
To recall and hear a specific MIDI preset, the user simply sends out a Program Change message to the MOHO from their external device, automatically turning the pedal on and recalling the desired preset (PC 1 to 128).



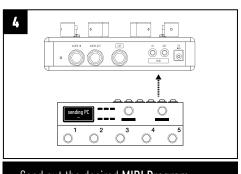
Make sure the preset recall functioned by checking the color of the Preset LED: at this stage, it should be either white* or blue.

Press and hold the ON/OFF footswitch.

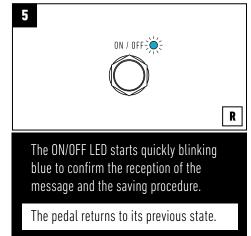
*the favourite preset is in fact preset number 1

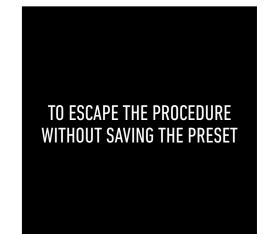


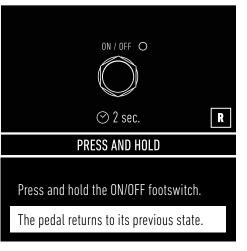
Program Change message.



Send out the desired MIDI Program Change from your external device while making sure you are using the right MIDI channel. (see page 12)



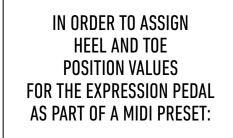




ADVANCED FUNCTIONALITIES - MODIFY EXPRESSION HEEL AND TOE POSITIONS USING MIDI 1/2

When using MIDI presets and an expression pedal, the user can morph between two sounds by assigning them to two positions: the heel position and toe position, controlled by the pedal as part of the preset.

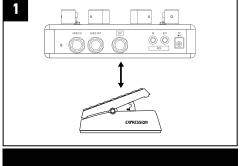
By default, before completing the procedure for the first time, the expression pedal morphs between the current value of the knobs and the saved MIDI preset.



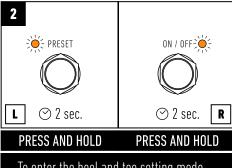






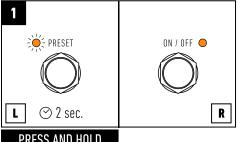


Plug the expression pedal using a stereo jack cable in the dedicated expression input.



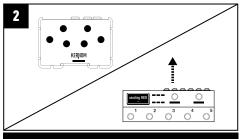
To enter the heel and toe setting mode, Press and hold both footswitches at the same time. Both LEDs light up in orange.

FROM THERE. TO SET THE HEEL POSITION SETTING

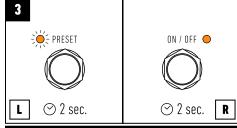


PRESS AND HOLD

Press and hold the preset footswitch. The preset LED starts to slowly blink while the ON/OFF LED remains lighted up in orange.



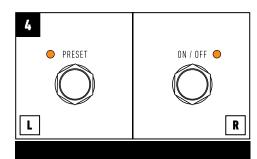
Either dial in your prefered heel position setting by turning the knobs, or send a PC message from an external controller to copy a specific preset and set it as the heel position of the preset you are creating.



PRESS AND HOLD

PRESS AND HOLD

Press and hold both footswitches to save the heel position. The preset LED starts to blink quickly to confirm while the ON/OFF LED remains lighted up in orange.



The preset LED stops blinking and both LEDs are lighted up orange. Heel position has been set.

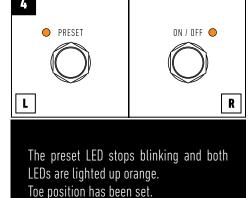


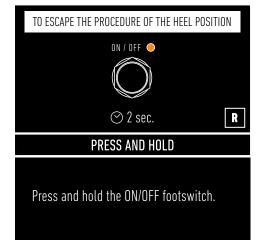
PRESS AND HOLD

Press and hold the ON/OFF footswitch.

ADVANCED FUNCTIONALITIES - MODIFY EXPRESSION HEEL AND TOE

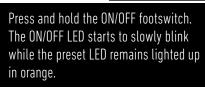
POSITIONS USING MIDI 2/2

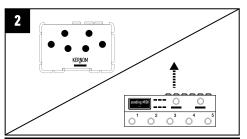




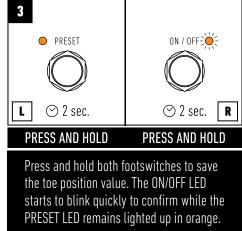
TO SET THE TOE POSITION SETTING



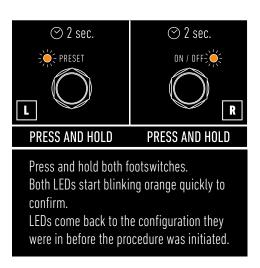




Either dial in your prefered toe position setting by turning the knobs, or send a PC message from an external controller to copy a specific preset and set it as the toe position of the preset you are creating.



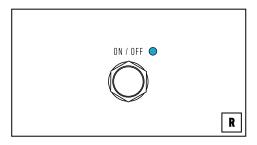
TO EXIT THE HEEL AND TOE POSITION SETTING MODE AND GO BACK TO THE PREVIOUSLY ACTIVE STATE OF THE PEDAL



The MOHO is also able to receive MIDI Control Changes (CC) to allow the user to either control it from an external device, using the following codes:

1	CC 20	ELECTRICITY	min=0 max=127
2	CC 21	MOOD	min=0 max=127
3	CC 22	VOLUME	min=0 max=127
4	CC 23	POST_TONE	min=0 max=127
5	CC 24	PRE_TONE	min=0 max=127
6	CC 25	FUZZ	min=0 max=127

1	CC 26	ЕХР	min=0 max=127
2	CC 27	FS preset	min=0 max=127
3	CC 28	FS on/off	min=0 max=127



When a MIDI Control Change (CC) is sent to the MOHO, the ON/OFF LED turns blue (CC20 to CC25) to indicate the pedal is currently using its MIDI functionalities.

The MOHO is also able to send out MIDI Control Changes (CC) through its MIDI output, to control an external device.

When doing so, the value of the Control Change (CC) message being sent out is always that of the current position of each potentiometer.

Out of the box, the MOHO is set to function on MIDI THRU

Meaning the pedal will send out through the MIDI output the exact same MIDI messages it received through the MIDI in input.

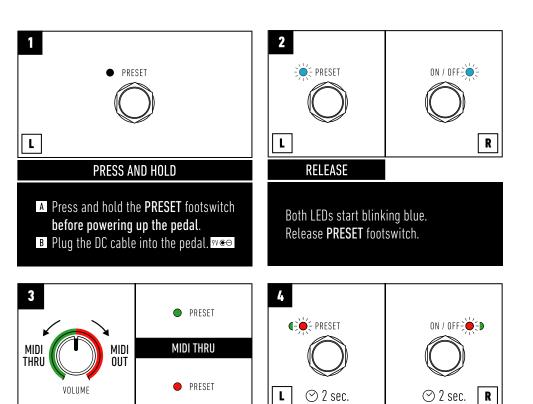
The user can choose between this default mode, or to change the setting to MIDI OUT, where output MIDI messages correspond to the current positioning of the knobs and expression input.

In order to toggle between MIDI THRU and MIDI OUT, follow steps 1 to 5:





MIDI THRU/OUT and MIDI channel (see page 12) can be defined at the same time by entering the same procedure described in steps 1 to 5 by pressing and holding the PRESET footswitch.



Turn the VOLUME knob to select between MIDI THRU or MIDI OUT.

MIDI OUT



PRESS AND HOLD

PRESS AND HOLD

