



StompStation PRO

User Manual



Version 2.0

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Safety Warnings and Regulatory Information

Before using StompStation PRO, read this chapter carefully and keep it for future reference along with the rest of the manual.

General Safety Warnings

- Do not expose the pedal to rain, moisture, dripping, or splashing water; do not place objects containing liquids (glasses, bottles, vases) on top of the pedal.
- Do not install the pedal near sources of heat (radiators, stoves, power amplifiers) or expose it to direct sunlight.
- Ensure adequate ventilation: do not block the cooling openings and do not enclose the pedal in confined spaces without air circulation.
- Do not insert objects or spill liquids into the pedal through the openings in the case.
- Do not open the pedal's enclosure: it contains no user-serviceable parts, opening the case exposes you to the risk of electric shock, and it will void the warranty.
- Disconnect the pedal from power during lightning storms or when it will remain unused for extended periods.

Power Supply

- Use only a power supply with the specifications shown next to the pedal's power input (9V DC, 1000 mA, center-negative polarity — see the Manual chapter, panel legend, item 9). A power supply with a different voltage, current, or polarity may damage the pedal and invalidate the warranty.
- Do not use the pedal if the power cable or power supply appears damaged.
- Do not route the power cable where it can be walked on, pinched, or sharply bent.
- If the pedal will not be used for an extended period, unplug the power supply from the wall outlet.

Hearing Protection

Prolonged listening at high volume, whether through headphones or an amplification system, can cause permanent and irreversible hearing damage. Perceived loudness can be misleading: with continued exposure, the ear adapts to volumes that remain harmful. Set the volume (Master and headphones) to a comfortable level before you start playing, pay attention to volume changes between presets, and avoid raising the volume further in response to this adaptation. If you notice ringing, whistling (tinnitus), or reduced hearing sensitivity, stop listening and lower the volume.

Intended Use

StompStation PRO is an electronic musical instrument designed for processing audio signals from guitar and line/instrument-level sources in musical contexts (practice, recording, live performance). It is not a medical device, is not designed to support vital functions, and must not

be used in applications where a malfunction could cause personal injury. It is not a toy: keep it out of the reach of young children, who could swallow small components (e.g., screws, knobs) or misuse the cables and power supply.

Compliance and Certifications

StompStation PRO is designed to comply with applicable European directives on electromagnetic compatibility (EMC), electrical safety (LVD), and the restriction of hazardous substances (RoHS); the CE marking on the product label attests to this compliance. In markets where required, the pedal is also designed to fall within the limits set for Class B digital devices, intended to provide reasonable protection against harmful interference in a residential installation; however, there is no guarantee that interference will not occur in a particular installation. If the pedal causes harmful interference to radio or television reception (which can be checked by turning the device off and on), try correcting it by reorienting or relocating the receiving antenna, increasing the distance between the pedal and the receiver, or connecting the pedal to an outlet on a circuit different from the one the receiver is on.

Technical specifications and certifications are subject to change without notice as a result of firmware and hardware updates to the product; refer to the identification label on the back of the pedal and to the most up-to-date documentation provided by SONULAB Audio Systems for the specific details of your unit.

Product Disposal (WEEE)

The crossed-out wheeled bin symbol on the product or its packaging indicates that the device must not be disposed of with normal household waste at the end of its useful life, but taken to a separate collection point for waste electrical and electronic equipment (WEEE). Proper disposal helps prevent potential negative consequences for the environment and human health and supports the recycling of materials. For information on available collection points, contact your local authorities.

Service and Maintenance

For cleaning, use a soft, dry cloth; do not use solvents, abrasive cleaners, or sprays directly on the pedal. Have all servicing performed exclusively by qualified personnel in the following cases: the cable or power supply is damaged; an object or liquid has gotten inside the pedal; the pedal has been exposed to rain or moisture; the pedal does not operate normally despite following the operating instructions, or it has been dropped or the case has been damaged.

Trademarks and Intellectual Property

StompStation PRO, VoidX-Control, and SONULAB Audio Systems are trademarks of SONULAB. NAM (Neural Amp Modeler) is mentioned in this manual for descriptive purposes regarding the modeling technology used; any third-party trademarks mentioned in this manual

belong to their respective owners and are used solely for identification purposes, with no implied affiliation.

Limitation of Liability

SONULAB Audio Systems shall not be liable for direct, indirect, incidental, or consequential damages arising from improper use of the product, from electrical connections not compliant with the instructions in this manual, from unauthorized modifications to the pedal, or from servicing performed by unqualified personnel. This chapter is provided for informational purposes regarding the correct and safe use of the product and does not constitute a contractual warranty.

StompStation PRO Manual

Welcome to the StompStation PRO manual. In these pages you'll find everything you need to get to know the pedal, understand how its interface is organized, and make the most of its audio engine.

What Is StompStation PRO

StompStation PRO is a **guitar multi-effects pedal** made by SONULAB, with a color screen and an intuitive graphical interface. It integrates:

- a **native NAM (Neural Amp Modeler) player**, stereo, with two independent slots (a “Drive” block + 1 “Amp” block), for digital amplifier modeling;
- an **Impulse Response (IR) loader**, stereo dual-slot, for cabinet and microphone simulation;
- an **effects chain** configurable up to 16 positions, with fixed blocks and free blocks that can be added, moved, and removed at will;
- **gate, compressor, expression/wah pedal, pitch-shifter harmonizer, 8-band equalizer, modulations (chorus/flanger/phaser + tremolo), flanger and chorus “vintage” modeled analog effects, dual stereo delay, multi-algorithm reverb, pickup simulator;**
- **built-in tuner, tap tempo, 60 presets in 20 banks**, footswitch management;
- **MIDI** (Program Change, Control Change, MIDI Clock), and assignable controllers;
- a **USB Data/Audio** mode and **Wi-Fi/Bluetooth** connectivity for connecting with the **VoidX-Control** companion app, letting you manage presets, backups, and firmware updates directly from your smartphone or tablet.

How to Access the Pedal

You interact with the pedal via:

- a main knob/encoder **BROWSE/VOLUME** (rotate, press, long-press);
- four side knobs **F1–F4** (each with rotate, press, long-press);
- three **footswitches A, B, C** with multicolor LEDs, with two-button combinations for bank changes and long-press for the tuner;
- the **VoidX-Control** app, which connects to the pedal via Bluetooth, Wi-Fi, or USB to give you convenient, immediate remote control.

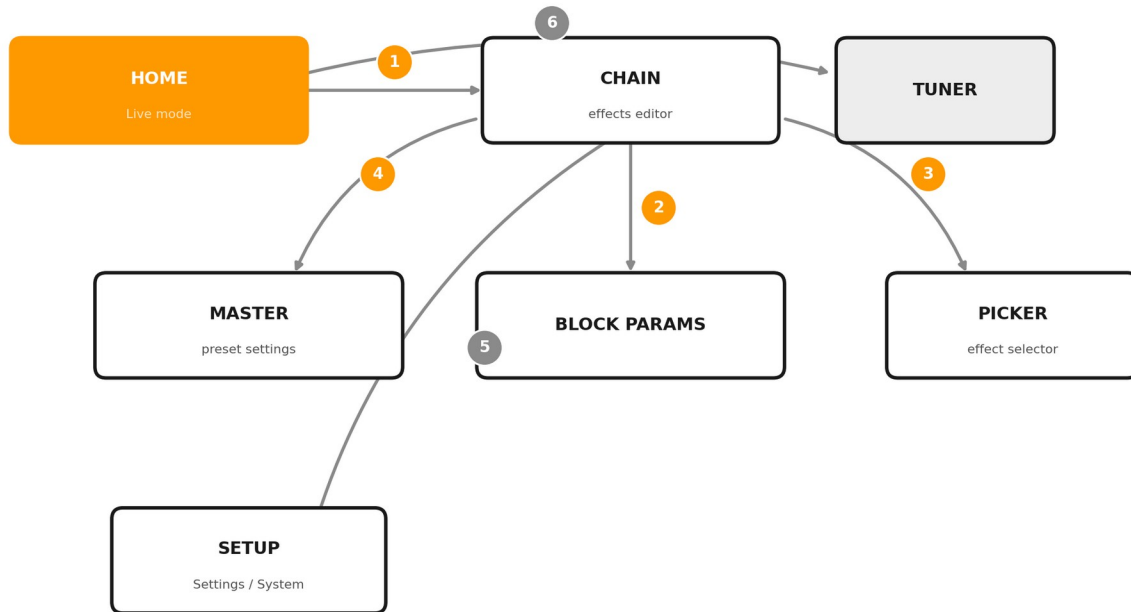


Front panel of StompStation PRO, with connectors and controls numbered

Panel legend (numbers as shown in the photo):

#	Item
1	IN 1 / IN 2 — audio inputs
2	OUT 1 / OUT 2 — audio outputs
3	Footswitch A / B / C
4	LCD Display
5	BROWSE/VOLUME Encoder
6	F1–F4 knobs (SAVE / SAVE AS on long-press)
7	MIDI port (IN/OUT/THRU, 3.5 mm TRS jack, Type A)
8	USB-C port
9	9V DC power input
10	UPD button (update mode)
11	Headphone output
12	CTRL input — external expression pedal connection

Interface Structure



Navigation map between the pedal's screens

#	Step	How
1	Home → Chain	Press BROWSE
2	Chain → Block parameters	Press BROWSE on a selected block
3	Chain → Picker (effect selector)	Press BROWSE on an empty slot
4	Chain → Master	Press BROWSE in list view (no block selected)
5	Chain → Setup	Hold BROWSE in list view
6	Home → Tuner	Hold footswitch C

Key Features

- Dual native NAM player (Drive + Amp), each with a 3-band EQ (Low/Mid/Treble) and

dedicated volume.

- Dual stereo IR loader (independent IR 1 + IR 2, each with blend, lo/hi-cut filters, level, and pan).
- Equalizer **8-band graphic** (100 Hz–12.8 kHz, ± 12 dB) with selectable-slope low-cut/high-cut filters (OFF/6/12/24 dB/octave) and overall level — **two independent instances available** (one in the default chain, one additional).
- Stereo modulation engine “Multi Mod” (Chorus/Flanger/Phaser + Tremolo) — **two independent instances available**.
- Two dedicated “vintage” effects modeled on real analog circuits: **Vintage Flanger** (inspired by the MXR M117) and **Vintage Chorus** (inspired by Boss/CE-2B), not included in the chain by default but can be added at any time.
- Stereo delay with dual independent lines, modulation, analog BBD and tape simulation — **two independent instances available**.
- Reverb with 5 modes (Room, Hall, Galaxy, Plate, Spring) and tone/diffusion/pre-delay/modulation controls.
- Two-voice independent pitch shifter/harmonizer (Transpose or Expression/pedal mode).
- Pickup simulator (Pickup Sim), not included in the chain by default.
- Chromatic tuner with adjustable reference (432–448 Hz) and optional mains-hum notch filters.
- Global tap tempo + per-preset tempo, linkable to the modulation/delay modules.
- 60 presets organized into 20 banks of 3 (footswitches A/B/C), bank changes via footswitch combinations.
- 4 “assignable” controls per preset (for quick access from Home) + up to 3 multi-parameter MIDI/expression controllers.
- MIDI Program Change for presets and fixed MIDI Control Change for a subset of on/off functions (see the full table in the Configuration chapter).

Feature Inventory

This chapter describes every feature of StompStation PRO in detail, from the preset engine to connectivity, to provide a complete reference for everyday use of the pedal.

1. Preset Engine and Effects Chain

Feature	Notes
60 presets, 20 banks of 3 (A/B/C)	
Effects chain (router) up to 16 positions	Lets you arrange blocks in parallel configurations along the chain as well.
Fixed blocks (non-removable, locked position)	Gate (slot 0), Amp/NAM 1 (slot 7), Delay 1 (slot 13), Reverb (slot 14).
Blocks present by default but movable/removable	Pitch (1), Expr (2), Comp (3), Multi Mod pre (4), Drive/NAM 2 (5), IR (8), EQ (9), Multi Mod (10).
Blocks available but NOT present by default	Vintage Flanger, Vintage Chorus, EQ (second instance), Delay Engine (second instance), Pickup Sim.
Adding a block to an empty slot	Category menu (if a category has ≥ 2 blocks, a submenu opens; otherwise the block is shown directly).
Moving a block in the chain	Press + rotate the main encoder; fixed blocks are skipped as a destination.
Removing a block	Not available for fixed blocks.
“Parallel” connection between two adjacent blocks	Shown graphically with a vertical connector between the two blocks involved.
“Clear Chain” / “Load Default Chain”	Actions available in the Master menu to clear the chain or restore the factory configuration.
Unsaved preset (warning triangle)	When you select another preset, you're asked “Discard changes? Back/OK/Save”.
Quick save (overwrite) / save as new	Save as new opens an on-screen keyboard for the preset name.

The chain is a single audio path from input (IN) to output (OUT): the signal passes through all occupied slots in order, left to right. The four fixed slots (Gate, Amp/NAM 1, Delay 1, Reverb) always stay in that position and act as “anchors” for the chain; all other blocks can be moved, removed, or replaced using one of the free slots.

This architecture is what's called a **dynamic chain**: unlike a fixed, unchangeable effects path, the sequence of blocks isn't permanently wired but can be redesigned at any time, preset by preset, with no constraints other than the position of the four anchor slots. The “parallel” connection between two adjacent blocks extends this flexibility even further: instead of placing the two blocks in series, it derives a second processing path that is summed with the main one, useful for blend/parallel-processing techniques (for example, parallel compression, or two different

modulation chains applied to the same signal).

2. Effect Blocks (Audio Chain)

Block	Stereo	Category	In default chain
Gate	mono (stereo trigger)	Gate	Yes, fixed
Pitch (Harmonizer)	stereo, 2 voices	Pitch	Yes
Expr (Expression/Wah)	stereo	Expr	Yes
Comp (Compressor)	stereo	Comp	Yes
Multi Mod (pre)	stereo	Mod	Yes
Drive (NAM)	mono	Drive	Yes
Amp (NAM, stereo)	stereo	Amp	Yes, fixed
IR (dual, stereo)	stereo	IR	Yes
8-band EQ (instance 1)	stereo	EQ	Yes
Multi Mod (post)	stereo	Mod	Yes
Delay 1	stereo	Delay	Yes, fixed
Reverb	stereo	Reverb	Yes, fixed
Vintage Flanger	stereo	Mod	No — addable
Vintage Chorus	stereo	Mod	No — addable
8-band EQ (instance 2)	stereo	EQ	No — addable
Delay 2	stereo	Delay	No — addable
Pickup Sim	stereo	Misc	No — addable

Detailed parameters for each block (exact names, ranges, units, default value) are described in the Configuration chapter.

3. Tuner and Tempo

Feature	Notes
Chromatic tuner, pitch detection via FFT cross-correlation	Range 30–1440 Hz.
Selectable tuning reference	Values: 432, 434, 436, 438, 440, 442, 444, 446, 448 Hz.
Optional mains notch filters (50/60 Hz)	Can be enabled as an option in the System/Setup menu.
Tuner on/off via footswitch	Long-pressing FSW C activates the tuner; pressing any footswitch while the tuner is active turns it off.
Tap tempo (global and per-preset)	Repeated tapping on the active preset's footswitch (at least 4 taps before the BPM is applied).
MIDI Clock synchronization	The pedal syncs to the incoming MIDI Clock, aligning tap tempo and modulations to the session's tempo.

4. Inputs and Pickup Simulation

Feature

Two independent inputs with digital gain (-15/+15 dB)

Automatic detection of connected jack

Pickup simulator (Pickup Sim)

Notes

If only one input is connected, the signal is automatically duplicated in mono to both channels.

Converts the input response (Single Coil / Single Coil Bright / Humbucker) to one of 18 output responses (various Humbucker/Single Coil models), with mix and pan. Block not present in the chain by default.

5. Outputs and Mixer

Feature

Global volume (Master)

Per-preset level

Per-preset LED color

Ground Lift

Stereo/Mono-L headphone output

Encoder direction CW/CCW

USB Data/Audio mode

Expression pedal calibration (Ctrl Toe/Heel)

Factory reset

“Low Power” screen

Notes

0–100%.

-20/+20 dB, ignored by preset comparison (does not trigger “modified”).

Used for the 3 footswitch LEDs when the tuner is off.

Lets you reverse the rotation direction of the main encoder (clockwise/counterclockwise) to suit your preference.

Lets you choose whether the USB port acts as a data interface or an audio interface.

Lets you set the Toe and Heel points of the connected expression pedal.

Clears the NAM, IR, and preset lists.

Shown when power supply is insufficient.

6. MIDI, Controllers, and Expression Pedal

Feature

MIDI Program Change → preset change

Fixed MIDI Control Change

MIDI address (channel 0–15)

Multiple assignable controllers (2 per-preset + 1 global)

Notes

The full CC table is provided in the Configuration chapter.

Each controller can link up to 3 parameters. The controller's source (manual CC, automatic LEARN, or the Ctrl expression pedal) and the parameter linking are two separate steps — full details in the Configuration chapter.

Feature	Notes
CTRL input for external expression pedal	Panel, top-right corner (item 12). Can be used as the source for an assignable controller, or directly for blocks with Expression mode (Pitch, Expr/Wah).
Assignable quick controls in Home (F1–F4)	A system separate from the MIDI controllers: lets you assign, for each preset, up to 4 parameters of a block to the F1–F4 knobs on Home, by long-pressing F1–F4 on the block selected in Chain.

7. Connectivity

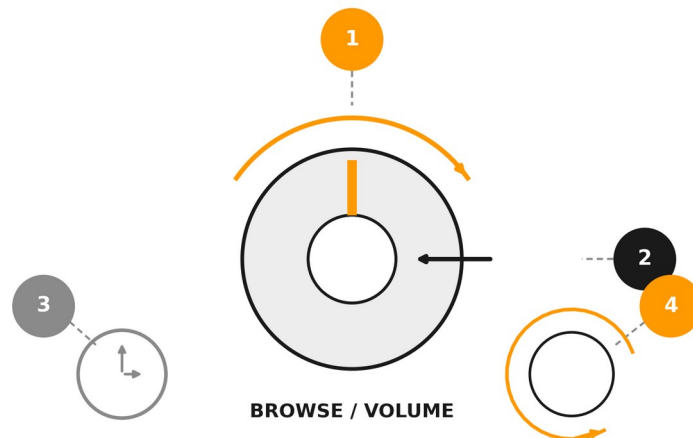
StompStation PRO integrates Wi-Fi and Bluetooth for a direct, cable-free connection with the VoidX-Control app, available for smartphones and tablets. Through the app you can manage and organize presets, back up and restore configurations, and install firmware updates as soon as they're available, keeping the pedal always up to date with the latest features.

Usage Guide

This guide explains how to use StompStation PRO from the pedal's panel.

1. Physical Controls

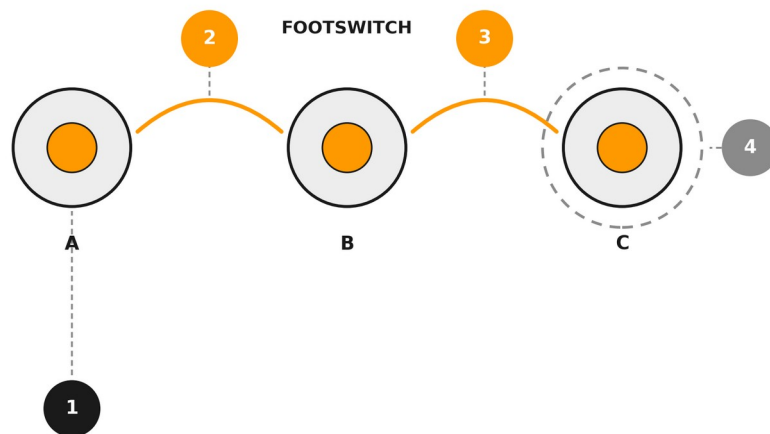
- **BROWSE/VOLUME** (main encoder): rotate for volume/navigation, press to open menus, press and rotate to move blocks in the chain, long-press for context menus.
- **F1, F2, F3, F4**: four side knobs/encoders. They adjust the parameter values shown on screen; long-pressed, they assign a parameter to the Home shortcuts or trigger dedicated actions.
- **Footswitch A, B, C**: recall the three presets of the current bank. Two-button combinations change the bank. Long-pressing C activates the tuner.



Interacting with the BROWSE/VOLUME encoder: 1 rotate, 2 single press, 3 long press, 4 press + rotate

#	Gesture	Effect
1	Rotate	Adjusts volume/value, scrolls

#	Gesture	Effect
2	Press	Opens/confirms the current screen or panel
3	Press and hold	Opens context menus (e.g., Setup)
4	Press and rotate	Moves a block in the effects chain



Footswitch combinations: 1 single press recalls the preset, 2 A+B previous bank, 3 B+C next bank, 4 long press on C activates the tuner

#	Combination	Effect
1	A, B, or C (single)	Recalls the corresponding preset in the current bank
2	A + B together	Switches to the previous bank
3	B + C together	Switches to the next bank
4	C (long press)	Turns the tuner on/off

2. Home Screen (Live Mode)

This is the default screen at power-on.

Shows: the current preset's name/number (format bank+letter, e.g., 01A), current BPM tempo,

the 4 assigned quick controls (or active assigns), the input/output meters, and the volume.



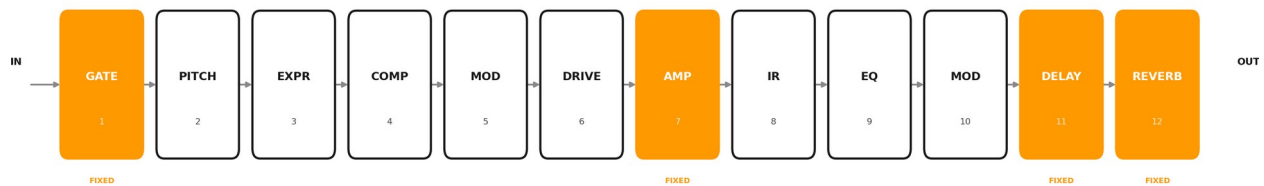
Home screen: 1 current preset name, 2 preset number, 3 volume bar, 4 input VU level, 5 output VU level, 6-7 F1–F4 quick controls

Procedures:

1. **Adjusting the volume:** rotate BROWSE. The value briefly appears as an on-screen bar.
2. **Recalling a preset:** press the corresponding footswitch A, B, or C. If the footswitch already corresponds to the active preset, it acts instead as **manual tap tempo** (tap at least 4 times to set the BPM).
3. **Changing bank:**
 - Next bank: press **footswitches B + C** together.
 - Previous bank: press **footswitches A + B** together.
 - While selecting the bank, the number blinks; release the desired footswitch A/B/C to confirm the preset within the new bank.
4. **Using the F1–F4 quick controls:** if parameters have been assigned for the current preset (see §5), rotating F1–F4 adjusts them directly from Home; if nothing is assigned, F1–F4 control the four “fixed” controls linked to the Amp block (Low/Mid/Treble/Gain of the main NAM).
5. **Temporarily viewing an assignment:** briefly press F1–F4: for ~4 seconds, Home shows the block and parameter assigned to that key instead of the fixed controls.
6. **Opening the effects chain/preset editor:** briefly press BROWSE (single press, not long).
7. **Turning the tuner on/off:** hold footswitch C. Pressing any footswitch while the tuner is active turns it off.

3. Chain Screen (Effects Chain / Preset Editor)

Opened by pressing BROWSE from Home.



Default chain (after “Load Default Chain”): the blocks in orange are in a fixed position; the others can be moved or removed

- At the top, the preset name is shown; an **orange warning triangle** indicates unsaved changes.
- In the center, the chain of effect blocks scrolls horizontally, with a position indicator (number) if the block is assigned to one of the 4 quick controls.
- When **no block is selected** (“list” view), the F1–F4 keys show: Preset (number), List (open preset list), Level (preset level), Volume (global volume).

Procedures:

1. **Scrolling through blocks:** rotate BROWSE to move the selection along the chain.
2. **Opening a block's parameters:** press BROWSE on the selected block → the block's parameter panel opens (see §4).
3. **Adding an effect to an empty slot:** select the empty slot (dashed border) and press BROWSE → the effect selector opens (Picker, see §4.3).
4. **Opening the preset's global settings (Master):** return to “list” view (no block selected, cursor to the left of the start of the chain) and press BROWSE.
5. **Moving a block in the chain:** select the block, **press and hold** BROWSE, then rotate BROWSE to move it left/right; release to confirm. Fixed blocks (Gate, Amp, Delay 1, Reverb) are automatically skipped as a source/destination position.
6. **Quickly enabling/disabling a block:** select the block and long-press BROWSE (without moving it) to turn it on/off (equivalent to the block's “Enable”).
7. **Assigning a block to a Home quick key:** select the block and long-press F1, F2, F3, or F4 respectively to assign it to shortcut 1, 2, 3, or 4. A block can be assigned to only one shortcut at a time; assigning it to a new shortcut removes the previous assignment.
8. **Editing the first 4 “quick” parameters of the selected block without opening its panel:** rotate F1–F4 (the block's 4 “highlighted” parameters, as shown by the bottom bar).
9. **Changing preset while staying in Chain view:** if no block is selected, rotate F1 to scroll forward/backward through presets.
10. **Opening the preset list:** if no block is selected, press F2.
11. **Editing Level/Volume from Chain view:** if no block is selected, rotate F3 (per-preset Level) or F4 (global Volume).
12. **Saving changes:**
 - Overwrite the current preset: long-press F2.
 - Save as a new preset: long-press F3 → an on-screen keyboard opens to type the

- name; if the name matches an existing one, you're asked to confirm the overwrite.
13. **Exiting without saving / changing preset with pending changes:** a popup is shown, “**Discard changes?**” with the options Back / OK (discard) / Save; this behavior applies both when scrolling through presets from Home and from the Chain view.

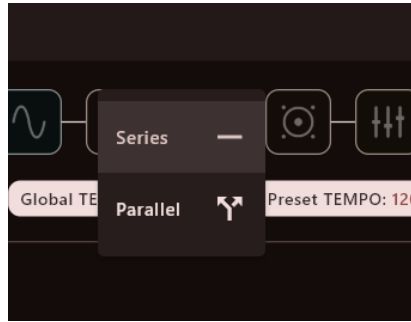
IMPORTANT — No special characters in names. When you name a preset (or any other item that can be named directly from the pedal), **never use special characters** (e.g., symbols, emoji, non-standard punctuation). A special character in a name can cause the pedal to malfunction: preset changes may stop working, or the preset, amp (NAM), or IR list may become inaccessible. If this happens, simply **removing the special character** from the name resolves the issue. If instead the pedal stops connecting to the VoidX-Control app, the solution is to **change the name directly from the pedal** (Setup → System menu, see §6 below), not from the app.

The Dynamic Chain: How It Works

StompStation PRO's effects chain isn't a simple list of blocks in series, but a genuine internal audio router that recalculates the signal path every time a block is added, moved, or removed — hence the term **dynamic chain**. As in any audio processing engine with a topology that can be reconfigured in real time, configuration changes are handled internally using crossfade and interpolation techniques between the old and new state of the audio buffers involved, so as to avoid clicks, pops, or audible discontinuities in the signal at the exact moment a block is moved or removed: this is standard practice in modern DSP engines with dynamically connectable blocks, and it lets you reorganize the chain even while playing, with no perceptible interruption.

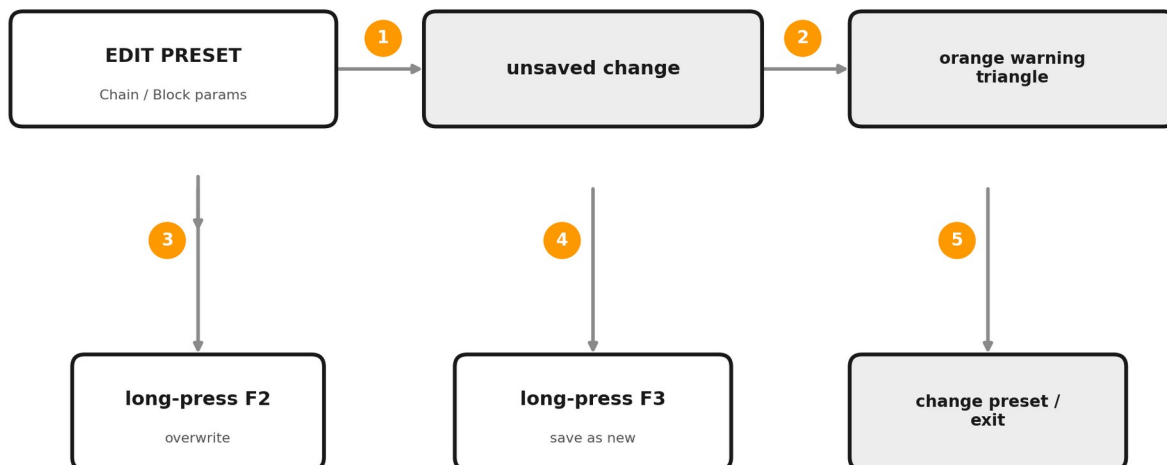
Block order is never sonically neutral. Placing a compressor before or after a distortion stage radically changes its behavior: upstream, the compressor acts on the dynamics of the clean signal (“transparent” compression useful for evening out playing touch); downstream, it acts on a signal already enriched with harmonics from the saturation, producing a perceived effect that's more aggressive and less predictable on transients. Likewise, inserting a modulation before or after a delay produces a different sonic character: upstream of the delay, the direct signal is modulated and so is every one of its repeats equally; downstream, only the tail of the repeats is modulated, leaving the direct sound unchanged — a classic distinction in effects-rack design, freely applicable here thanks to the placement freedom the dynamic chain offers.

The “parallel” connection between two adjacent blocks finally introduces a local split in the signal: the two branches are processed independently and then summed before continuing along the chain. This summing requires attention to phase and overall gain management between the two branches: signals out of phase with each other can produce partial frequency cancellations when recombined, while signals with very unbalanced levels can make one of the two branches barely audible; for this reason, when building a parallel connection, it's good practice to check the result of the sum by ear and adjust the levels of the blocks involved accordingly.



Connection selector between two adjacent blocks: Series (default option) or Parallel

The connection type between two adjacent blocks is chosen from a dedicated menu that opens between the two blocks involved, with only two options: **Series** (series connection, the default setting) and **Parallel** (parallel connection, with signal splitting and summing as described above).



Saving or discarding changes to a preset: 1 edit a parameter, 2 the warning triangle appears, 3 long-press F2 to overwrite the preset, 4 long-press F3 to save as a new preset, 5 changing preset without saving prompts a confirmation

4. Block Parameter Panel

Opened by pressing BROWSE on a block selected in Chain.

1. The block's parameters are listed/shown with on-screen controls; F1–F4 change their values (according to what's shown at the bottom).
2. If the block supports a **parallel connection/link option** with the previous block, this is shown in the top right: select it with BROWSE (down from the first parameter) and confirm with BROWSE.
3. If the block is **not fixed**, a trash icon is available (top right, past any link option): select it and press BROWSE, then confirm “Remove block?” to delete it from the chain (the slot becomes empty again).
4. Press BROWSE repeatedly/go back to exit the panel and return to the Chain view.

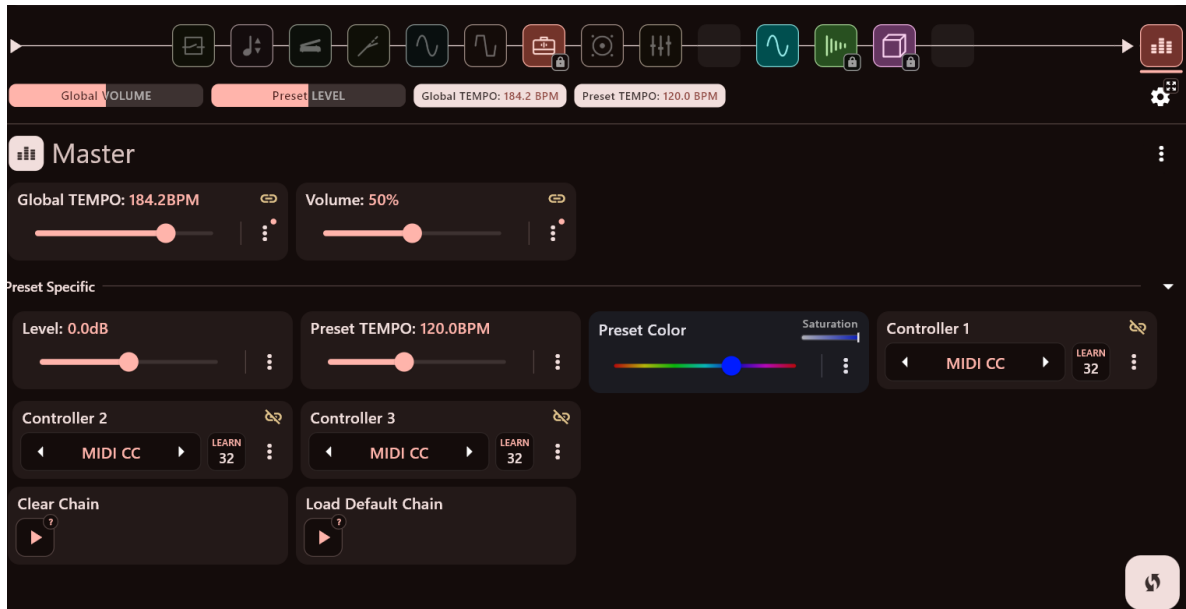
4.1 Effect Selector (Picker)

Opened by selecting an empty slot in Chain and pressing BROWSE.

1. “Choose effect” is shown with the list of available **categories** (Gate, Pitch, Expr, Comp, Mod, Drive, Amp, IR, EQ, Delay, Reverb, Misc). If a category contains only one effect, it's shown directly without going through the category submenu.
2. Rotate BROWSE to scroll through entries, press BROWSE to confirm (enters the category or directly assigns the block to the slot).
3. Within a category with multiple effects, rotate and press BROWSE to choose the specific block to insert.
4. Press F1 to go back (from the block list to the category list, or to close the Picker from the category list).
5. If the slot has a connection option (link, e.g., parallel/series with the previous block), it's shown and selectable just as in the parameter panel.

5. Preset Global Settings (Master)

Accessible from the Chain view when no block is selected, by pressing BROWSE.



Master panel: Global TEMPO and Volume, “Preset Specific” (Level, Preset TEMPO, Preset Color with Saturation control, Controller 1-2-3 with MIDI CC source and LEARN button), and the Clear Chain / Load Default Chain actions

Contains, among others: Global Volume, the “Preset Specific” section (per-preset Level, Preset TEMPO, Preset Color), global Tempo/tap tempo, the **Clear Chain** and **Load Default Chain** actions, and assignable controllers 1 and 2 for the current preset.

- **Clear Chain:** empties all slots in the chain (requires confirmation).
- **Load Default Chain:** restores the factory arrangement of blocks (Gate, Pitch, Expr, Comp, Multi Mod, Drive, Amp, IR, EQ, Multi Mod, Delay, Reverb — see the Feature Inventory chapter).

6. System Menu (Setup)

To open the Setup menu, hold the BROWSE knob from the Chain view when no block is selected. The Setup menu gives access to two submenus: **Setting** (Tuner, Input, Misc, Ctrl), described in detail in the Configuration chapter, and **System**.

The **System** menu gathers the device's identifying information and connectivity settings: the pedal's name and optional alias, author, firmware version, license, device ID and key, password, VU meter behavior, interface color, and Wi-Fi settings.

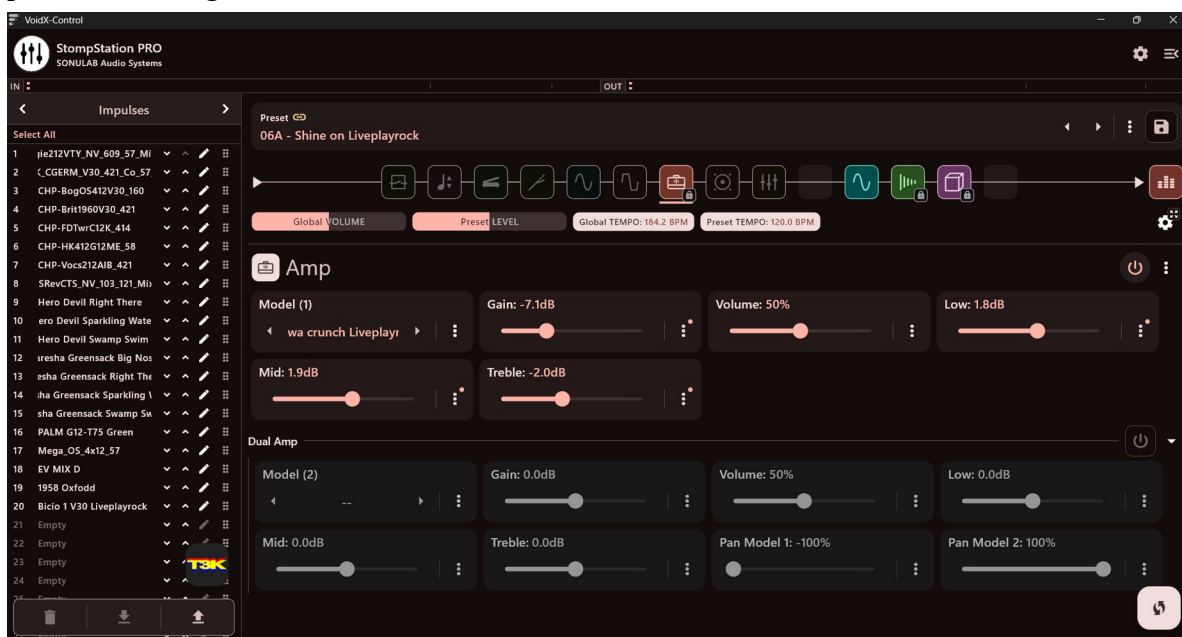
If the pedal stops connecting to the VoidX-Control app, change the pedal's name directly from here (System), on the pedal itself, rather than from the app: in particular, check that the name does not contain special characters, and remove them if present.

7. Firmware Update

Firmware updates are performed using the pedal's **Update Mode**, together with the VoidX-Control companion app or a direct connection from a computer. Once in Update Mode, the display shows “Update Mode / press BROWSE for settings”; from here you can access the system settings by pressing the BROWSE encoder. To complete the update, follow the instructions in the VoidX-Control app.

8. VoidX-Control App

StompStation PRO connects via Wi-Fi, Bluetooth, or USB to the **VoidX-Control** app, available for computer, smartphone, or tablet, designed to extend control of the pedal beyond the front panel with a larger, more convenient interface to work with.

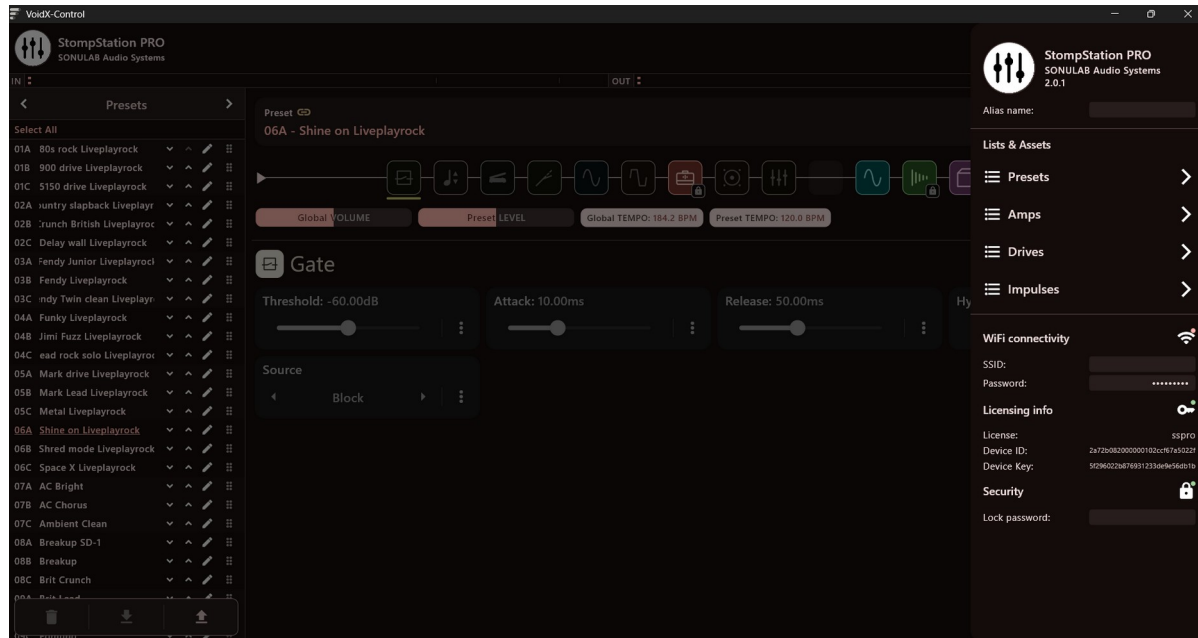


VoidX-Control companion app interface: effects chain, Impulse Response library on the left, and the Amp block's parameter panel

The app mirrors the pedal's same chain organization: the top bar shows the indicator of the preset in use, the row of blocks (with the padlock icon on fixed blocks, identical to the pedal's), and the Global/Preset volume and tempo indicators. On the left side is a browsable library, switchable between **Presets**, **Amps**, **Drives**, and **Impulses**: each entry can be renamed, reordered by dragging (dotted handle on the right), and has a dedicated edit icon; at the bottom of the list, three buttons let you delete an entry, export it to a file, or import a new one. The center panel shows the parameters of the selected block, using the same graphical language (sliders, numeric values, and three-dot menus for options) used on the pedal's screen.

Connecting and pairing: the first connection is made by selecting the pedal from the list of available devices in the app (via Bluetooth, or on a shared Wi-Fi network), or by connecting the

pedal to the computer via USB — the connection mode is chosen from the menu that opens from the USB icon next to Settings. The pedal is identified in the app by the name set in the System menu: if the pedal doesn't appear in the list or the connection drops, check that the name doesn't contain special characters and, if necessary, change it directly from the pedal's panel rather than from the app.



App Settings panel: device identifying information, Wi-Fi connectivity, license, and security

Device settings: the gear icon in the top right opens the Settings panel, which gathers the pedal's name/alias, the installed firmware version, the Wi-Fi network parameters (SSID and password), license information (license, device ID and key), and an optional security lock password.

Preset and library management: the app mirrors the pedal's bank-and-preset organization, letting you browse the whole library, rename presets, reorder them within a bank, and remotely recall any of them on the pedal; the same browsing, reordering, and export/import operations are also available for the Amp, Drive, and Impulse Response libraries loaded on the pedal. This view is especially handy when working with a large number of presets — for example, to program a show's setlist, or to reorganize banks before a performance without having to step through them one by one on the pedal's footswitches.

Backup and restore: the export and import functions available at the bottom of each library (Presets, Amps, Drives, Impulses) let you save individual entries or entire lists to a file on your computer, and reload them later or on another pedal of the same model. It's good practice to export your libraries before every firmware update and before any potentially destructive operation, such as a factory reset (see the Troubleshooting chapter).

System Settings

This chapter gathers all of the pedal's system parameters (Setting) and global preset settings (Master).

Tuner

Parameter	Type	Values/Range	Default
Enable	ON/OFF	—	OFF
Freq (detected)	read-only	0–2000	—
Level (detected)	read-only	-60–0 dB	—
Ref	list	432,434,436,438,440,442,444,446,448 Hz	440

Detection range: 30–1440 Hz. The pedal includes mains notch filters (50/60 Hz) to eliminate power-line hum while tuning.

- **Ref** — the reference frequency for A used as the basis for tuning: 440 Hz is the standard, but you can adjust it to match other instruments or a different tuning fork.
- **Freq / Level (detected)** — the note and signal level the tuner is reading in real time; these are read-only values, useful for checking what the pedal “hears”.

Practical example: want to tune silently on a noisy stage? Hold footswitch **C**: the tuner activates and the audio signal is automatically muted while it stays active; press any footswitch to exit and return to normal sound.

Input

Parameter	Range	Default	Unit
In 1 digital gain	-15 / +15	0	dB
In 2 digital gain	-15 / +15	0	dB
In 1 connected / In 2 connected	read-only (YES/NO), auto-detected	—	—

- **In 1 / In 2 digital gain** — adjusts the digital gain of the input signal on each channel, before it enters the effects chain: useful for compensating for instruments with very weak or very strong output.
- **In 1 / In 2 connected** — indicates whether a jack is actually plugged into that input (automatic detection), useful for troubleshooting when no signal is coming through.

Practical example: signal still arriving weak even after pushing the Drive/Amp block's Gain? First raise **In 1/In 2 digital gain** by a few dB: acting at the input of the chain avoids introducing extra noise by pushing a gain stage further downstream too hard.

Pickup Sim — separate block, addable to the chain, Misc category

Pickup Sim digitally converts the character of your guitar's pickup into that of another model, without needing to change instruments.

Parameter	Values	Default
Enable	ON/OFF	OFF
Input	Single Coil, Single Coil Bright, Humbucker	Single Coil
Output	Humbucker Bright, Humbucker Classic, Humbucker Modern, Humbucker Rails, Humbucker Ricky, Humbucker Vintage, Humbucker Wide, Humbucker Wide Jazz, Humbucker Jazz Box, Single Coil Active, Single Coil Bridge+Mid, Single Coil Hot, Single Coil Modern, Single Coil Neck+Mid, Single Coil P90, Single Coil P90J, Single Coil Tele, Single Coil Vintage	Humbucker Bright
Dry-Wet	0–100 %	100 %
Pan	-100/+100 %	0 %

- **Input** — the type of pickup actually fitted on the guitar you're playing: it serves the pedal as the starting point for the conversion.
- **Output** — the pickup model you want to simulate on output, chosen from the available list.
- **Dry-Wet** — balances the original signal (dry) with the one converted by the simulation (wet); at 100% you hear only the simulated pickup.
- **Pan** — positions the processed signal in the stereo field.

Practical example: playing a single-coil guitar but need the punch of a humbucker for one song, without switching instruments? Set Input to Single Coil (or Single Coil Bright if your pickup is already bright) and Output to one of the available Humbuckers; start with Dry-Wet at 100% and reduce it if you want to keep some of the original character.

Misc

Parameter	Values	Default
MIDI Address	0–15	0
Ground Lift	ON/OFF	OFF
Headphones	STEREO, MONO/L	STEREO
Encoder mode	CW, CCW	CW
USB Mode	Data, Audio	Data
Factory reset	action (confirmation)	—

- **MIDI Address** — the MIDI channel on which the pedal listens for incoming messages (see the Controls, MIDI, and Expression Pedal section below).
- **Ground Lift** — disconnects the ground link between input and output: enable it if you notice a hum caused by a ground loop in your setup.
- **Headphones** — headphone output mode: full stereo, or mono on the left channel only.
- **Encoder mode** — rotation direction of the BROWSE knob (clockwise/counterclockwise) for volume and navigation; useful if you prefer the opposite direction from the factory default.
- **USB Mode** — determines whether the USB-C port works as a data interface (for the app and firmware updates) or as an audio interface to a computer.
- **Factory reset** — returns the pedal to its factory state (see the Troubleshooting chapter for the full procedure and what gets erased).

Practical example: hearing a hum when you connect the pedal to the same electrical circuit as your amplifier or audio interface? Try enabling **Ground Lift**: it often eliminates hum caused by a ground loop between the two devices.

Ctrl (Expression Pedal Calibration)

Parameter	Range	Default
Ctrl Toe Calib	0–100 %	100 %
Ctrl Heel Calib	0–100 %	0 %
Ctrl Status	0–100% (read-only)	0 %

- **Ctrl Toe Calib / Ctrl Heel Calib** — calibrate, respectively, the maximum point (pedal pressed forward, “toe”) and minimum point (pedal raised, “heel”) of a connected external expression pedal, so that its full physical travel maps to the full range of the controlled parameter.
- **Ctrl Status** — the currently detected position of the connected expression pedal (read-only), useful for checking that calibration is correct by physically moving the pedal.

Practical example: the connected expression pedal never covers the full range of the parameter (e.g., the wah never fully closes at heel)? Move the pedal to full toe travel and adjust **Ctrl Toe Calib** until **Ctrl Status** reads 100%, then repeat at full heel travel, adjusting **Ctrl Heel Calib** until it reads 0%.

Master (Preset Global Settings)

Parameter	Range	Default	Unit
Volume (global)	0–100	50	%
Level (per-preset)	-20/+20	0	dB
Preset TEMPO	30–240	120	BPM
Preset Color	hex color	00AA00	—
Global TEMPO	30–240	120	BPM
Clear Chain	action (confirmation)	—	—
Load Default Chain	action (confirmation)	—	—

- **Volume (global)** — the pedal's overall output level, applied uniformly to all presets.
- **Level (per-preset)** — a volume offset specific to the current preset, useful for balancing presets with different perceived volumes against each other without touching the global volume.
- **Preset TEMPO** — the tempo (BPM) specifically associated with the current preset, used by tempo-synced effects when not linked to the global tempo.
- **Preset Color** — the color of the footswitch LED associated with the current preset, so you can recognize it at a glance.
- **Global TEMPO** — the pedal's overall tempo (BPM), which can also be updated using tap tempo or incoming MIDI Clock.
- **Clear Chain** — empties all slots in the current preset's effects chain (requires confirmation).
- **Load Default Chain** — restores the factory arrangement of blocks in the chain (requires confirmation).

Practical example: two presets from the same song sound like they're at perceptibly different volumes? Don't touch **Volume (global)**, which would affect all presets: instead adjust **Level (per-preset)** on the quieter preset, to balance it against the others without altering the pedal's overall volume.

Gate — Noise Gate

The Noise Gate is the first block in the chain (fixed slot 0) and acts as a dynamic gate on the input signal: it lets it pass unaltered when it exceeds a level threshold, and attenuates it to silence when it drops below that threshold. Its main job is to eliminate hum, pickup hiss, and background noise from the simulated amplification during silent moments between musical phrases, without affecting the tone of the wanted signal.

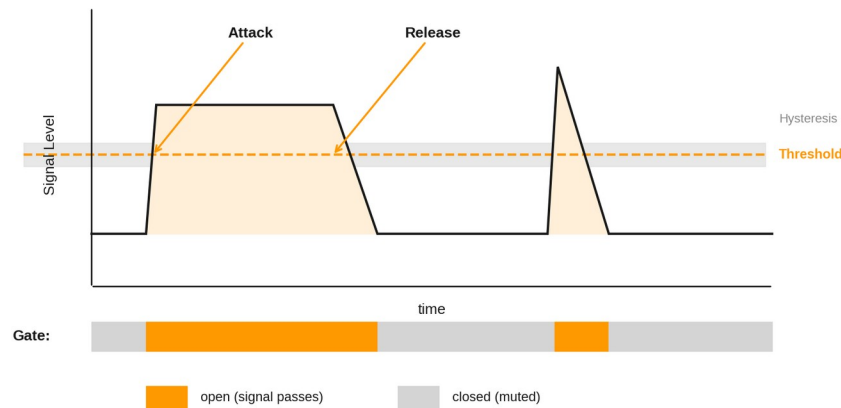
How It Works

Internally, the gate consists of an envelope follower that estimates the instantaneous level of the input signal in real time, and a comparator that checks this level against the threshold set in **Threshold**. When the level exceeds the threshold, the gate generates an opening gain that follows the time curve set in **Attack**; when the level drops back below the threshold, the gain closes again following the time set in **Release**. Because an electric guitar signal is never perfectly stable — it naturally oscillates around the threshold point as a note decays — the gate would otherwise open and close repeatedly in rapid succession (an artifact known as “chattering”). The **Hysteresis** parameter solves this by defining two distinct, separate thresholds: the opening threshold remains Threshold, while the effective closing threshold is lowered by a margin equal to the Hysteresis value, so the signal must drop noticeably below the opening point before the gate actually closes again.

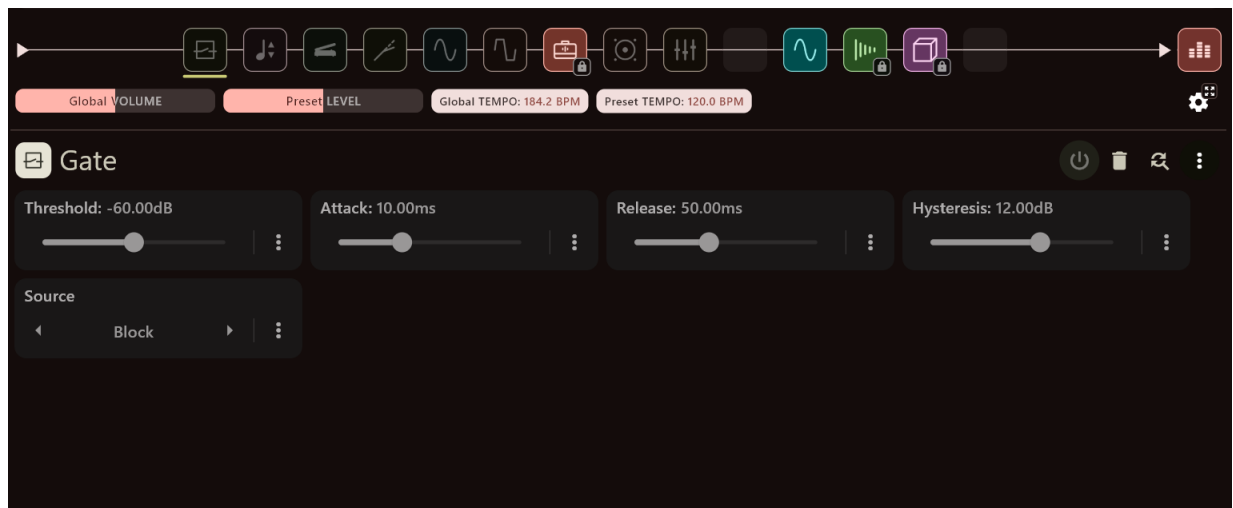
Being positioned at the start of the chain, the Gate acts on the signal while it's still “clean,” before any coloration from Drive/Amp, modulations, or reverb: this is intentional, because processing background noise before it gets amplified and possibly saturated by later stages (in particular the NAM block) is far more effective than trying to remove it downstream, once noise and wanted signal are already mixed into the same dynamic envelope.

Parameters

Parameter	Range	Default	Unit
Enable	ON/OFF	OFF	—
Threshold	-100/-20	-60	dB
Attack	1–200	10	ms
Release	20–500	50	ms
Hysteresis	0–20	12	dB



Gate behavior over time: Threshold level, Attack opening time, Release closing time, Hysteresis margin between opening and closing



The Gate panel screen on the pedal, with the Threshold, Attack, Release, Hysteresis, and Source parameters

Parameter Guide

- **Threshold** — the level threshold below which the gate closes and silences the signal; the higher it is (closer to 0), the more readily the gate engages, but too high a value risks cutting off the natural tails of quietly played notes.
- **Attack** — the time the gate takes to open (let the signal through) once the level exceeds the threshold; values that are too high can “eat” the attack of notes, especially with

percussive techniques like slapping or hard palm muting.

- **Release** — the time the gate takes to close again after the signal drops below the threshold; too short a value can abruptly cut off the tail of notes and harmonics, while too long a value lets more background noise through before it fully closes.
- **Hysteresis** — the margin between the opening and closing thresholds: it prevents the gate from “chattering” (rapidly opening and closing) on signals that hover near the threshold, typically during the natural decay of a sustained chord.

Practical Applications

Practical example: the gate cutting off the attack of plucked notes, or “chattering” on a sustained chord that's fading out? In the first case, reduce **Attack** to a few milliseconds so you don't lose the transient; in the second, raise **Threshold** slightly and increase **Hysteresis** to keep the gate from repeatedly reopening and closing near the threshold.

Practical example: using a high Gain level on the Drive/Amp (NAM) block and hearing a constant hum during silences, even with the Gate on? Check that the Gate really is the first block in the chain (fixed position, slot 0): if the noise is coming from the pickup or cables upstream of the pedal, raise **Threshold** a few dB at a time until the hum disappears during silences, then check that the attack of the lighter notes you normally play isn't being penalized — if it is, reduce Threshold slightly and compensate with a faster Attack.

Pitch — Harmonizer

The Pitch block generates one or two additional voices transposed relative to the original signal, for harmonies, detuned doublings, or pitch effects controlled by an expression pedal. It offers two independent voices (Voice 1 always active, Voice 2 can be disabled), each with its own transposition, mix, and stereo positioning parameters.

How It Works

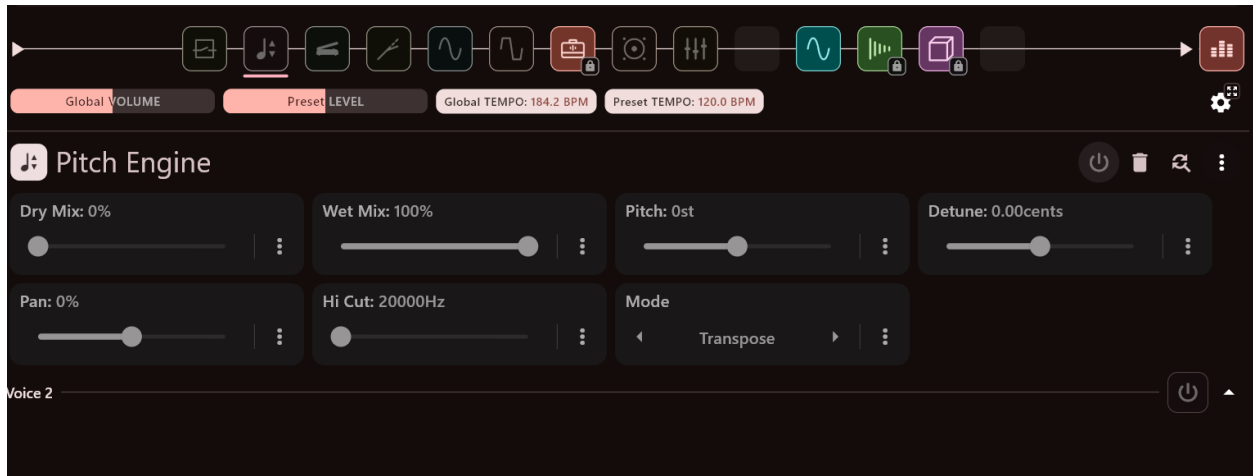
Shifting the pitch of an audio signal in real time, without altering its duration, requires internally resampling small portions of the signal (grains) and recombining them at a rate different from the original playback rate, or working in the frequency domain by decomposing the signal into spectral components and reconstructing it at a different pitch. Both approaches inevitably introduce a trade-off between latency, artifact quality, and transient behavior: small variations (a few cents, as in the **Detune** parameter) remain nearly imperceptible as an artifact and produce a natural doubling/chorus effect, while large transpositions (an octave or more) make the synthetic nature of the process more evident, especially on complex chords or very fast passages.

The Pitch block's two voices share the same input signal but are processed completely independently: this lets you, for example, leave Voice 1 almost unchanged (or slightly detuned for a doubling effect) while Voice 2 is transposed by a precise harmonic interval, building two-voice harmonies without having to manually double-track the guitar during recording.

Expression mode replaces the fixed transposition with a real-time variable interval, driven by the position of the expression pedal connected to the CTRL input: the range it can traverse is bounded by **Min Pitch** and **Max Pitch**, allowing effects ranging from the classic digital “dive bomb” to foot-controlled harmonic slides.

Parameters

Parameter	Range	Default	Unit
Dry Mix (shared)	0–100	0	%
Wet Mix	0–100	100	%
Pitch (Transpose mode)	-24/+24	0	semitones
Detune	-100/+100	0	cents
Pan	-100/+100	0	%
Hi Cut	2000–20000	20000	Hz
Mode	Transpose, Expression	Transpose	—
Min Pitch / Max Pitch (Expression mode)	-24/+24	0	semitones
Position (Expression mode)	0–100	0	%



The Pitch Engine panel screen on the pedal: block header with ON/OFF switch, trash icon, link, and options menu, the Dry Mix, Wet Mix, Pitch, Detune, Pan, Hi Cut, and Mode parameters, and a “Voice 2” subsection with its own independent ON/OFF switch

Parameter Guide

- **Dry Mix / Wet Mix** — balance the original unprocessed signal and the transposed signal, respectively; they're shared between the two voices, so they control the block's overall mix rather than the balance between Voice 1 and Voice 2.
- **Pitch (Transpose)** — the voice's fixed transposition interval, in semitones (e.g., +12 = an octave up, +7 = a fifth up); musically “consonant” intervals (thirds, fourths, fifths) sound more natural to the ear than dissonant intervals on harmonically dense material.
- **Detune** — a slight mistuning, in cents (hundredths of a semitone), for a natural doubling/chorus effect rather than a true harmony: typical values for a believable doubling stay under 15-20 cents.
- **Pan** — positions the processed voice in the stereo field, useful for physically separating the harmonized voice from the original.
- **Hi Cut** — a high-cut filter applied only to the voice signal, to soften its tone and mask any pitch-shifting algorithm artifacts at higher frequencies.
- **Mode** — Transpose applies a fixed, manually set interval; Expression lets you vary the pitch in real time by moving a connected expression pedal.
- **Min Pitch / Max Pitch (Expression)** — the extremes (minimum and maximum) of the transposition range reachable by moving the expression pedal from one end of its travel to the other.
- **Position (Expression)** — the current position of the connected expression pedal (read-only, useful for verification).

Practical Applications

Practical example: want a stable harmony a third or a fifth above the note played? On Voice 2, keep Mode set to Transpose and set Pitch to +4 semitones (major third) or +7

(fifth), then bring Wet Mix to around 40-50% so it blends well with the original signal (Dry Mix).

Practical example: after a foot-controlled “dive bomb” effect, typical of modern solos? Set Mode to Expression on Voice 1, with Min Pitch at -24 semitones and Max Pitch at 0; connect the external expression pedal as the Ctrl source (see the “Controls, MIDI, and Expression Pedal” chapter) and put the heel at full travel for the normal starting point, the toe at full travel for the maximum two-octave drop.

Expr — Expression/Wah

The Expr block groups two functions controllable with an expression pedal (or a fixed value): a **Volume** control and a **Wah** effect. Although they share the same block and the same physical CTRL input, the two functions can be enabled and configured independently, and can also be used separately (volume only, wah only, or both together on different presets).

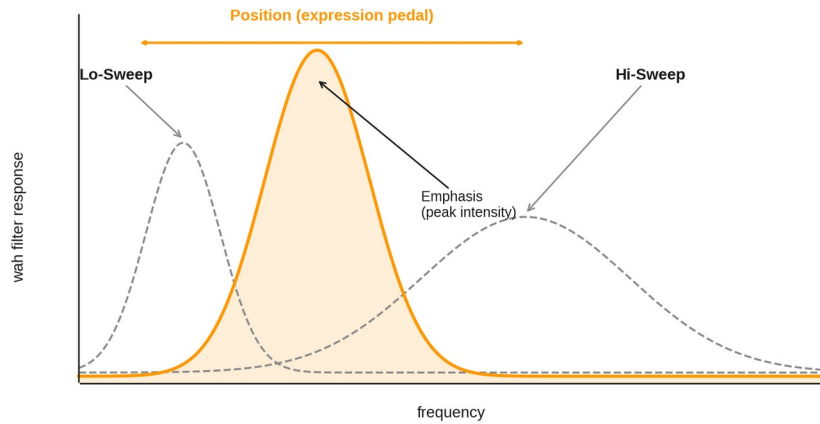
How It Works

A traditional wah pedal is, circuit-wise, a resonant band-pass filter whose center frequency is swept back and forth by physically moving the pedal: the more resonant the filter (peaked around its center), the more pronounced the characteristic “nasal” tone. StompStation PRO's Wah block digitally models this behavior: **Lo-Sweep** and **Hi-Sweep** define the frequency extremes between which the filter moves, **Position** represents the instantaneous point in the sweep (normally driven in real time by the connected expression pedal, but can also be set as a static value), and **Emphasis** controls the filter's resonance/Q at its current point. The two **Cry** and **Vintage** modes correspond to two different response profiles of the modeled filter: Cry reproduces a more vocal, “screaming” tone, typical of modern wide-dynamic-range wah circuits, while Vintage reproduces a softer, old-school character, with less pronounced resonance decay at the edges of the sweep.

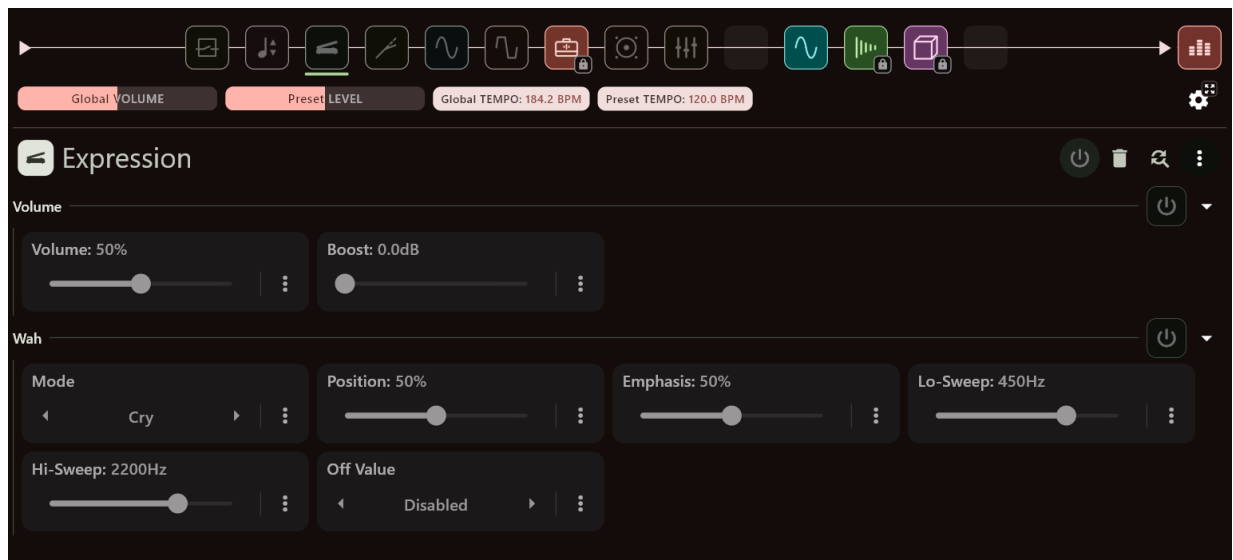
The **Volume** function, while sharing the same physical expression pedal input, is conceptually independent of the Wah filter: it acts as a simple linear attenuator/gain controlled by the pedal's position, with the addition of the **Boost** parameter, which introduces extra gain available only at the toe end of travel, designed for a quick volume increase during a solo without having to touch other preset controls. The **Off Value** parameter avoids a perceptible tonal jump when the Wah is turned off: instead of instantly returning to an arbitrary filter position, the sweep settles at the set percentage value, chosen to be as transparent as possible relative to the unfiltered signal.

Parameters

Parameter	Range	Default	Unit
Enable	ON/OFF	OFF	—
Volume: Enable	ON/OFF	OFF	—
Volume	0–100	50	%
Boost	0–12	0	dB
Wah: Enable	ON/OFF	OFF	—
Mode	Cry, Vintage	Cry	—
Position	0–100	50	%
Emphasis (Intensity)	0–100	50	%
Lo-Sweep	200–800	450	Hz
Hi-Sweep	1000–4000	2200	Hz
Off Value	Disabled, 95%, 90%	Disabled	—



Wah frequency sweep: Lo-Sweep and Hi-Sweep are the extremes, Position is the current point (driven by the expression pedal), Emphasis is the peak intensity



The Expr panel screen on the pedal, with the Volume (Volume, Boost) and Wah (Mode, Position, Emphasis, Lo-Sweep, Hi-Sweep, Off Value) sections that can be enabled individually

Parameter Guide

- **Volume: Enable** — enables volume control via the connected expression pedal (a

- “volume pedal” function), independent of the Wah.
- **Volume** — the base volume level controlled by the pedal, measured at the midpoint of its physical travel.
 - **Boost** — extra gain, applied at the toe end of the pedal's travel, for an extra boost during a solo without touching other controls.
 - **Wah: Enable** — enables the Wah effect, independently of the Volume function.
 - **Mode** — the type of wah filter response: Cry for a classic, vocal tone with greater dynamic range, Vintage for a softer, more old-school character, with less pronounced transitions at the edges of the sweep.
 - **Position** — the static wah position when it's not being driven dynamically by the pedal (e.g., for a “fixed” effect in a preset, or as a starting point before connecting an external pedal).
 - **Emphasis (Intensity)** — the filter's intensity/resonance at the sweep's current point: high values give a more pronounced, “nasal” wah, low values a more restrained effect closer to a simple tone filter.
 - **Lo-Sweep / Hi-Sweep** — the extremes (minimum and maximum) of the frequency swept by the wah as the pedal moves from one end of its travel to the other; narrowing the range focuses the effect on a more targeted portion of the spectrum.
 - **Off Value** — the position the wah filter settles at when the effect is turned off, to avoid an abrupt tonal jump when disabling it mid-sweep.

Practical Applications

Practical example: want a volume pedal “at your toe” instead of a wah? Leave **Wah: Enable** set to OFF and enable only **Volume: Enable**, then connect the external expression pedal as the Ctrl source and link it to the Volume parameter (see the “Controls, MIDI, and Expression Pedal” chapter for the full two-step procedure).

Practical example: wah sounding too “shrill” in the upper part of the sweep when you push the pedal to the toe? Reduce **Hi-Sweep** by a few hundred Hz to lower the top end of the sweep, and consider switching to Vintage Mode if you're after a softer transition instead of adjusting Emphasis further.

Comp — Compressor

The compressor automatically reduces the volume difference between the loudest and quietest passages of your sound, for a more even, controlled result. It offers two operating modes with deeply different approaches: **Dyn**, for fast, transparent dynamic control with a few essential controls, and **Studio**, with classic threshold-compressor controls for a more surgical, predictable action.

How It Works

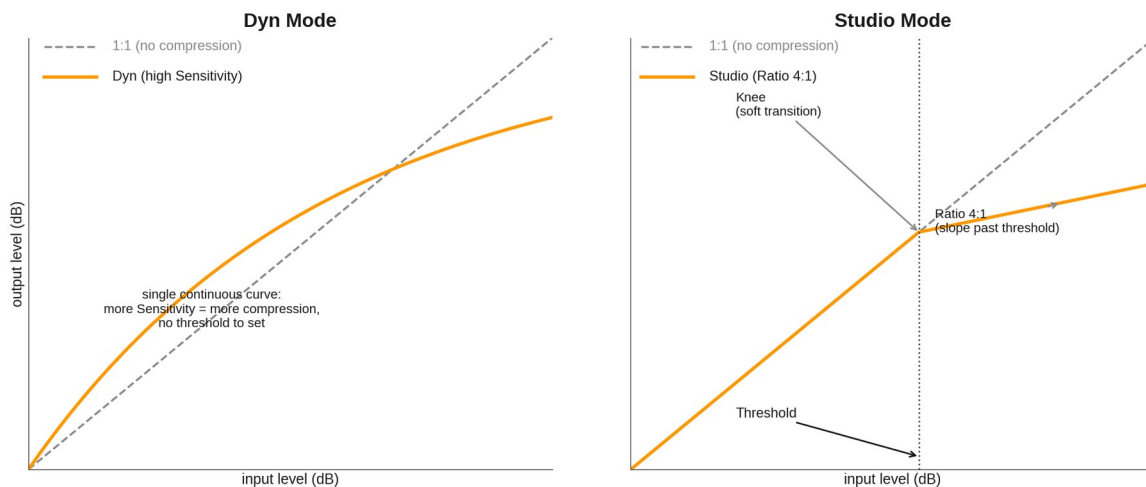
A compressor continuously monitors the level of the input signal and reduces the gain when it exceeds a certain point, producing a signal with a reduced dynamic range (the difference between the loudest and quietest passages). How that point is defined distinguishes the block's two modes: in **Studio**, the relationship between input and output level is explicit and configurable via **Threshold** (the level above which the compressor kicks in), **Ratio** (how much of what's over the threshold gets reduced — for example, a 4:1 ratio means 4 dB of excess becomes 1 dB at the output), and **Knee** (the smoothness of the transition around the threshold: a narrow knee produces a sharper, more “clicky” onset, a wide knee an imperceptible transition). In **Dyn**, this relationship isn't piecewise-linear but follows a continuous curve governed solely by the **Sensitivity** parameter: there's no hard threshold to cross, and the amount of compression increases gradually with the signal level — a behavior conceptually close to vintage optical compressors, where the sensing element responds in an intrinsically nonlinear way rather than through a threshold comparison.

Regardless of mode, every compressor introduces a delay in its reaction (**Attack**) and its recovery (**Release**) relative to level changes: a very fast Attack catches even the fastest transients (at the risk of “smoothing over” the initial pluck of notes), while a very fast Release can produce an audible “pumping” artifact when the gain oscillates in sync with the rhythm of the signal. Because compressing the signal inevitably reduces its average volume, the **Makeup** parameter applies a compensating gain downstream of the entire detection-and-reduction chain, to bring the perceived volume back to the desired level without reintroducing the peaks the compressor had just attenuated.

Parameters

Parameter	Range	Default	Unit	Visible in
Enable	ON/OFF	OFF	—	always
Mode	Dyn, Studio	Dyn	—	always
Sensitivity	0–1	0.5	—	Dyn mode only
Tone	0–100	50	%	Dyn mode only
Threshold	-60/-10	-40	dB	Studio mode only
Ratio	1–12	2	—	Studio mode only
Knee	1–20	1	dB	Studio mode only
Attack	5–100	10	ms	always

Parameter	Range	Default	Unit	Visible in
Release	100–2000	400	ms	always
Makeup	0–20	9	dB	always



Input/output curves for the two modes: Dyn compresses continuously with no settable threshold; Studio applies Threshold, Ratio, and Knee explicitly

Parameter Guide

- **Sensitivity (Dyn)** — the responsiveness of compression in Dyn mode: higher values compress more decisively across the whole dynamic range, without needing to set a manual threshold.
- **Tone (Dyn)** — the tonal color of the compressed signal in Dyn mode, to compensate for any loss of brightness that compression can introduce in the upper harmonics.
- **Threshold (Studio)** — the level above which the compressor starts to engage; the lower it is, the more of the signal gets compressed.
- **Ratio (Studio)** — how much the signal above the threshold is reduced (e.g., 4:1 means 4 dB of excess becomes 1 dB): higher values compress more aggressively, approaching limiter-like behavior beyond a 10:1 ratio.
- **Knee (Studio)** — the smoothness of the transition around the threshold: low values give a more abrupt, well-defined onset, perceived as the compressor “grabbing” the signal; high values a more gradual, natural entry, less identifiable by ear.
- **Attack** — the compressor's reaction time when the signal exceeds the threshold: faster values control sudden peaks better but risk attenuating the note's attack transient.
- **Release** — the compressor's recovery time after the signal drops below the threshold: too short a time can produce an audible “pumping” effect in sync with the rhythm being played.
- **Makeup** — a compensating gain applied after compression, to bring the overall volume back to the desired level once the dynamics have been reduced.

Practical Applications

Practical example: want an “always on” compressor that evens out your sound without making it “pump”? Use Dyn mode with a medium-low Sensitivity (0.3–0.4). For a more pronounced effect on fingerstyle or slap playing, switch to Studio with a Ratio of 4:1–6:1 and a short Attack, then compensate for the lost volume with Makeup.

Practical example: hearing obvious “pumping” (a rhythmic breathing of the volume) when you play a rhythm chord progression? It's almost always a Release that's too short relative to the song's tempo: gradually lengthen **Release** until the gain recovery stops being perceptible as a beat of its own, then, if needed, raise **Threshold** slightly (in Studio) or lower **Sensitivity** (in Dyn) to reduce the overall amount of compression applied.

Multi Mod — Stereo Modulation Engine

A stereo modulation engine offering three selectable alternative effects (Chorus, Flanger, Phaser) plus an independent, stackable Tremolo. **Two independent instances** of the block are available within the chain (one before and one after the Drive/Amp block in the default chain), usable simultaneously with different settings.

How It Works

Chorus, Flanger, and Phaser share a basic principle — creating a slightly modified copy of the signal that, summed with the original, produces interference and tonal variations perceived as movement — but they achieve it through different mechanisms. **Chorus** and **Flanger** are both based on a delay line whose duration is cyclically modulated by a low-frequency oscillator (LFO): in Chorus the modulated delay is relatively long (on the order of tens of milliseconds), producing a doubling/spatialization effect perceived as “multiple voices” playing together slightly out of tune; in Flanger the modulated delay is much shorter (sub-millisecond), enough to create comb filtering whose cancellation frequencies shift over time following the LFO, producing the characteristic metallic sweep. **Phaser**, on the other hand, doesn't use a delay line but a cascade of all-pass filters whose notch frequencies are swept in sync by the LFO: the perceived result is similar to a flanger but softer, because the number of notches and their frequency distribution are typically sparser and less evenly spaced than flanging's combs.

The **Resonance/Emphasis** parameter in these effects introduces a feedback path that re-injects part of the processed signal back into the effect's own input, accentuating the peaks and cancellations produced by the filtering and making the effect more pronounced and recognizable. The **Tremolo** built into the block is conceptually distinct from the other three effects: it doesn't alter the signal's phase or delay, but directly modulates its amplitude (volume) over time, following the waveform set in **Tremolo Waveform** — from a smooth sine oscillation to a square wave that produces a more pronounced “choppy” effect. The **Lock Options (tempo)** parameter, shared by modulation and tremolo, lets you sync the effect's speed to the song's tempo instead of leaving it free-running, so the sweep rhythmically follows the music instead of proceeding at an independent rate that could perceptually clash with it.

Parameters

Parameter	Range	Default	Unit
Enable	ON/OFF	OFF	—
Mode	Chorus, Flanger, Phaser	Chorus	—
Rate	0.05–8	1	Hz
Time Subdivision (if linked to tempo)	4/4, 2/4, 1/4, Dotted 8th, 1/8, 1/16, Triplet	1/4	—
Lock Options (tempo)	Unlocked, Global, [additional tempo	Unlocked	—

Parameter	Range	Default	Unit
	sources]		
Depth	0–100	50	%
Dry-Wet	0–100	50	%
Level	0–100	100	%
Emphasis	0–100	50	%
Shape	Triang, Sin, Square	Triang	—
Hi-Cut	900–20000	18000	Hz
Lo-Cut	20–1200	20	Hz
Stereo Phase	0–180	0	°
Tremolo: Enable	ON/OFF	OFF	—
Tremolo Rate	0.7–15	4	Hz
Tremolo Time	same as Rate + 1/32	1/4	—
Subdivision			
Tremolo Depth	0–100	25	%
Tremolo Waveform	0–100 (sine ↔ square)	0	%
Tremolo Stereo Phase	0–180	0	°

Parameter Guide

- **Mode** — the type of modulation applied: Chorus for a doubling/spatialization effect, Flanger for a more pronounced metallic sweep based on comb filtering, Phaser for a softer, rotating filtering effect based on all-pass filters.
- **Rate** — the speed of the modulation, i.e., the frequency of the oscillator driving the sweep.
- **Time Subdivision** — the rhythmic subdivision used to calculate the speed when the modulation is locked to tempo (e.g., 1/8 = one cycle per eighth note).
- **Lock Options (tempo)** — the tempo source to lock the speed to: free-running (Unlocked, controlled only by Rate), or synced to the global tempo/other available sources.
- **Depth** — the intensity/depth of the modulation: how far the sound moves from the center point on each cycle.
- **Dry-Wet** — balances the original signal and the modulated signal.
- **Emphasis** — accentuates the modulation via internal feedback, for a more pronounced, recognizable effect, especially useful on Flanger and Phaser.
- **Shape** — the waveform used for modulation: triangle for a linear sweep, sine for a softer one, square for a choppy effect.
- **Hi-Cut / Lo-Cut** — filters that limit the frequency band affected by the modulation, useful for keeping the effect from excessively coloring deep bass or the highest frequencies.
- **Stereo Phase** — offsets the modulation's phase between the two stereo channels, to widen the stereo image.
- **Tremolo: Enable** — enables an independent tremolo (a rhythmic volume variation, not pitch/phase) layered on top of the main modulation.
- **Tremolo Rate / Time Subdivision / Depth / Waveform / Stereo Phase** — equivalent to the entries above, applied specifically to the tremolo; Waveform controls its waveform on

a continuous scale from sine to square.

Practical Applications

Practical example: want a subtle, “always there” chorus that doesn't tire the ear? Chorus mode, low Rate (0.3–0.6 Hz), Depth 20–30%, Dry-Wet 25–35%. For a rhythmic tremolo that follows the song instead of going “by ear,” enable Tremolo: Enable and set Tremolo Time Subdivision (e.g., 1/8) instead of adjusting Tremolo Rate freely.

Practical example: want to use both instances of the block at the same time without them “overlapping” in a confusing way? Use the first instance (before Drive/Amp) for a light Phaser that colors the signal before the simulated amp's saturation, and the second instance (after Drive/Amp) for a wider Chorus at the end of the chain: separating the two modulations by position in the chain, as well as by type, avoids the “muddled” effect of two similar modulations summed at the same point in the signal.

Vintage Flanger

A modeled analog flanger, inspired by real vintage circuits (in particular the famous MXR M117), for a fuller, more “lived-in” modulation effect than the digital Flanger in the Multi Mod block. It's not included in the chain by default and must be added manually via the Picker.

How It Works

Historic analog flangers didn't use digital memory to delay the signal, but solid-state devices called BBDs (Bucket-Brigade Devices): chains of capacitors that pass the signal sample along “bucket-brigade style” from one stage to the next, at a variable clock rate. This mechanism has two characteristic sonic consequences that this block's modeling reproduces: on one hand, a frequency response that isn't perfectly linear and is slightly colored even with the effect off; on the other, feedback (**Resonance**) behavior that's less “clean” and more harmonically rich than a purely digitally computed flanger, perceived as warmer and less sterile to ears used to the original analog sound. The **Manual** parameter defines the static center point around which **Depth** makes the sweep oscillate, while **Rate** controls its speed: it's the same combination of modulated delay and feedback as the digital Flanger in Multi Mod, but here the signal path is deliberately modeled to reproduce the original circuit's non-linearities instead of aiming for maximum digital transparency.

Parameters

Parameter	Range	Default	Unit
Enable	ON/OFF	OFF	—
Manual	0–100	50	%
Depth	0–100	50	%
Rate	0.0625–10	0.5	Hz
Resonance	0–100	50	%

Parameter Guide

- **Manual** — the static center point around which the flanger's sweep oscillates; moving it changes the portion of the spectrum where the comb filtering's cancellations are concentrated.
- **Depth** — the width of the flanger's sweep around the center point: wider values span a broader range of frequencies on each cycle.
- **Rate** — the speed of the sweep; very low values (below 0.5 Hz) produce a slow, cinematic movement, high values a faster, more agitated vibrato/flutter.
- **Resonance** — the amount of internal feedback: higher values give a more metallic, pronounced effect typical of a flanger, approaching an almost self-oscillating sound at extreme values.

Practical Applications

Practical example: after the classic “jet plane” effect of '70s analog flangers? Raise **Resonance** above 70%, set **Rate** slow (below 1 Hz), and **Depth** wide: the higher the feedback, the more metallic and pronounced the sweep.

Practical example: want to use it as static coloration (with no moving sweep) to enrich a clean tone, rather than as a dynamic effect? Reduce **Rate** to its minimum (0.0625 Hz, practically motionless for the length of a song) and adjust **Manual** manually until you find a filtering point that adds body without any perceptible movement: it's a practical way to exploit the modeled circuit's tonal coloration without the classic moving “whoosh” effect.

Vintage Chorus

A modeled analog chorus, inspired by famous BBD-based circuits such as the Boss CE-2, for a doubling/spatialization effect with vintage character, as an alternative to the digital Chorus in the Multi Mod block. It's not included in the chain by default and must be added manually via the Picker.

How It Works

Like the Vintage Flanger, this block models the behavior of an analog single-BBD-delay-line chorus, a circuit that is deliberately simpler and more “monophonic” in its modulation path than the Multi Mod's multi-voice digital engine. This circuit simplicity is exactly what gives it its recognizable character: a single delay line modulated by an LFO produces a more organic, less “perfect” movement than a multi-tap digital chorus, with slight non-linearities in the frequency response that harmonically enrich the doubled signal instead of simply summing it. The **Effect Level** parameter balances the processed signal with the direct one through a summing path designed to stay faithful to the wet/dry architecture of the original analog pedals, where the “wet” signal was added at a dedicated level rather than through a percentage crossfade.

Parameters

Parameter	Range	Default	Unit
Enable	ON/OFF	OFF	—
Rate	0.4–4.4	1	Hz
Depth	0–100	50	%
Effect Level	0–100	100	%

Parameter Guide

- **Rate** — the speed of the applied modulation: values around 1 Hz reproduce the classic “wavy” movement of vintage analog chorus, higher values give a more agitated, vibrato-like effect.
- **Depth** — the amplitude of the applied modulation: low values give subtle spatialization, high values a more pronounced, evident doubling.
- **Effect Level** — the level of the processed signal in the mix with the original signal; unlike the Multi Mod's percentage Dry-Wet, here the wet signal is added to the direct signal, staying faithful to the behavior of the original analog pedals this block is modeled on.

Practical Applications

Practical example: want the classic “80s” doubling on a clean arpeggio? Rate around 0.8–1.2 Hz, Depth 40–60%, Effect Level 60–80% so it sits well with the direct signal without covering it.

Practical example: trying to figure out the practical difference between this block and the Multi Mod's Chorus before deciding which to add to a preset? Try both on the same passage with similar settings (Rate ~1 Hz, Depth ~50%): the Vintage Chorus tends to sound “softer” and less defined in stereo spatialization, while the Multi Mod's Chorus (especially with a high Stereo Phase) offers a wider, more precise stereo image: choose the Vintage Chorus when you want vintage character and “imperfection,” the Multi Mod when you want stereo width and finer control.

Drive / Amp — NAM Player

The Drive and Amp blocks perform digital amplifier modeling using NAM (Neural Amp Modeler) technology: they load a model captured from a real amplifier and faithfully reproduce its sonic behavior. The “Drive” block (mono, movable slot) and the “Amp” block (stereo, fixed position in the chain, with an additional Stereo section for a second NAM model in parallel) share the same modeling technology but occupy different roles in the default chain.

How It Works

NAM technology captures a real amplifier's sonic behavior by training a mathematical model (a neural network) to reproduce its non-linear response, based on reference recordings of the amplifier itself subjected to a wide range of input signals. Unlike a simulation based on circuits explicitly modeled component by component, a NAM model directly learns the resulting behavior — including the saturation, dynamic compression, and harmonic coloration typical of that specific amplifier — without needing to know its circuit diagram. This means the model loaded into **Model** faithfully reproduces the characteristics of the captured unit, including any of its quirks and imperfections, but only within the range of signal levels it was trained on: this is why the **Gain** parameter, which adjusts the gain going into the model before it's processed, has a much more direct and “authentic” sonic impact on the character of the saturation than simply adjusting the output volume.

The **Low / Mid / Treble** controls, on the other hand, operate downstream of the modeling itself, as a classic three-band tone stage applied to the signal already processed by the NAM model: they let you fine-tune the tone (for example, compensating for a model perceived as too dark or too bright) without having to load a different model or give up the captured character of the specific amplifier. The **Stereo section**, available only on the Amp block, lets you load a second NAM model in parallel with the first — even the same model with different settings — for a stereo result ranging from a simple amplitude doubling to combining two genuinely different amplifiers, positioned in the stereo field via **Pan Model 1 / Pan Model 2**.

Parameters

Parameter	Range	Default	Unit
Enable	ON/OFF	OFF	—
Model	list of loaded NAM models (up to 60 slots)	—	—
Gain	-20/+20	0	dB
Volume	0–100	50	%
Low	-15/+15	0	dB
Mid	-15/+15	0	dB
Treble	-15/+15	0	dB
Amp block only —	ON/OFF	OFF	—
Stereo section: Enable			

Parameter	Range	Default	Unit
Model (2)	NAM list (same list)	—	—
Gain/Volume/Low/ Mid/Treble (2)	same as above	same as above	—
Pan Model 1 / Pan Model 2	-100/+100	-100 / +100	%

Parameter Guide

- **Model** — the NAM model loaded into this slot, chosen from those stored in memory (up to 60 slots available in total across Drive and Amp).
- **Gain** — the gain going into the model, to adjust how hard you “push” the simulated amplifier toward saturation; it's the most decisive parameter for the character of the distortion, more so than Volume.
- **Volume** — the block's output level after modeling, to balance perceived intensity against the rest of the chain without altering the NAM model's operating point.
- **Low / Mid / Treble** — three-band tone controls applied after modeling, to fine-tune the tone without having to load a different model.
- **Stereo Section: Enable (Amp only)** — enables a second NAM model in parallel with the first, for a stereo sound with two different amplifiers (or the same one, with different settings).
- **Pan Model 1 / Pan Model 2** — position the two models in the stereo field, to clearly separate them (by default they're at the two opposite extremes).

Practical Applications

Practical example: simulated sound feeling “squashed” or over-compressed at high volume? Reduce **Gain** (the gain into the NAM model) instead of raising **Volume**: that way you avoid pushing the model past the point it was captured at. For a wider stereo sound, enable the **Stereo section** of the Amp with a second NAM model and put Pan Model 1/2 at the two opposite extremes.

Practical example: want to combine two genuinely different amplifiers (e.g., a full clean and a more aggressive crunch) while keeping a single chain? Enable the **Stereo section** of the Amp block, load a different model into **Model (2)**, and adjust that second instance's Gain/Volume/EQ independently of the first: the result is a dual stereo signal with two “virtual amplifiers” active at the same time, balanceable in real time with their respective pan controls.

IR — Stereo Impulse Response Loader

The IR block loads and applies impulse responses for cabinet and microphone simulation, in a stereo, independent dual-slot configuration.

How It Works

An impulse response is a “snapshot” of a system's complete acoustic behavior — in this case a real cabinet captured by a microphone in a given position — obtained by recording its response to a theoretically instantaneous, full-spectrum impulse. Applying this capture to the input signal via convolution (the mathematical operation that combines the two signals) is, in practice, equivalent to passing your signal through that specific combination of cabinet, microphone, and placement, faithfully reproducing both its frequency coloration and its behavior over time (how the speaker cone and surrounding environment respond in the instant after the sound's attack). Unlike an EQ, which only acts on the amplitudes of different frequencies, an IR also captures phase and transient information specific to that physical combination, which makes it sonically more realistic than a simple equalization aimed at “imitating” its response curve.

The dual stereo slot lets you load two different IRs and blend them in real time: each IR has its own **Lo Cut / Hi Cut** filters to adjust the captured frequency band, its own **Blend** to dial in how much of the capture is added to the direct signal, and its own **Level** and **Pan** to balance its contribution in the overall stereo mix. This lets you combine, for example, two different mic placements on the same cabinet (one more centered and bright, one more off-axis and dark) or two physically different cabinets, achieving in real time a blend that would otherwise only be possible by physically mic'ing a cabinet with two microphones at once.

Parameters

Parameter	Range	Default	Unit
Enable (IR 1)	ON/OFF	OFF	—
IR (1)	list of loaded IRs (up to 50)	—	—
Lo Cut	20–1000	20	Hz
Hi Cut	2000–20000	20000	Hz
Blend	0–100	100	%
Stereo IR: Enable (IR 2)	ON/OFF	OFF	—
IR (2)	IR list (same list)	—	—
Lo Cut / Hi Cut (2)	same as above	same as above	—
Blend (2)	0–100	100	%
Level IR 1 / Level IR 2	-20/+20	0	dB
Pan IR 1 / Pan IR 2	-100/+100	-100 / +100	%

The mix between the two IRs is controlled with **Blend** (per IR), together with dedicated **Level IR 1/2** and **Pan IR 1/2**, for a precise stereo balance between the two loaded impulse responses.

Parameter Guide

- **IR** — the impulse response loaded into this slot: a “sample” of the sonic behavior of a real cabinet and microphone, applied to your signal.
- **Lo Cut / Hi Cut** — filters that limit the IR's frequency band, useful for trimming the low end or softening the top end without changing IRs.
- **Blend** — balances the direct signal (unfiltered by the IR) with the filtered one: at 100% you hear only the IR's effect.
- **Stereo IR: Enable (IR 2)** — enables a second IR in parallel with the first, for a stereo result or to blend two different cabinets/microphones.
- **Level IR 1/2 and Pan IR 1/2** — balance, respectively, the volume and stereo position of the two IRs when both are active, letting you give more presence to one of the two captures or clearly separate them in the stereo field.

Practical Applications

Practical example: want a tight, defined cab sound for recording but a fuller one live, without switching presets? Load two different IRs (stereo IR 1 and IR 2), adjust each one's Blend, and balance them with Level IR 1/2: you can switch either one off on the fly with its respective Enable, without removing the block from the chain.

Practical example: sound with the loaded IR coming out too “telephone-like” or lacking low-end body? Before switching IRs, try lowering **Lo Cut** to let more of the low frequency captured by the impulse response itself through; if instead the problem is an excess of harsh high frequencies, lower **Hi Cut** rather than reaching for an EQ downstream, to stay as faithful as possible to the capture's natural character.

EQ — 8-Band Graphic Equalizer

The EQ block is an 8-band graphic equalizer with independent low-cut and high-cut filters, for precisely fine-tuning the final tone of your sound. **Two independent instances** are available in the chain (one by default, one additional to be inserted manually), usable at different points in the chain for different tonal adjustments.

How It Works

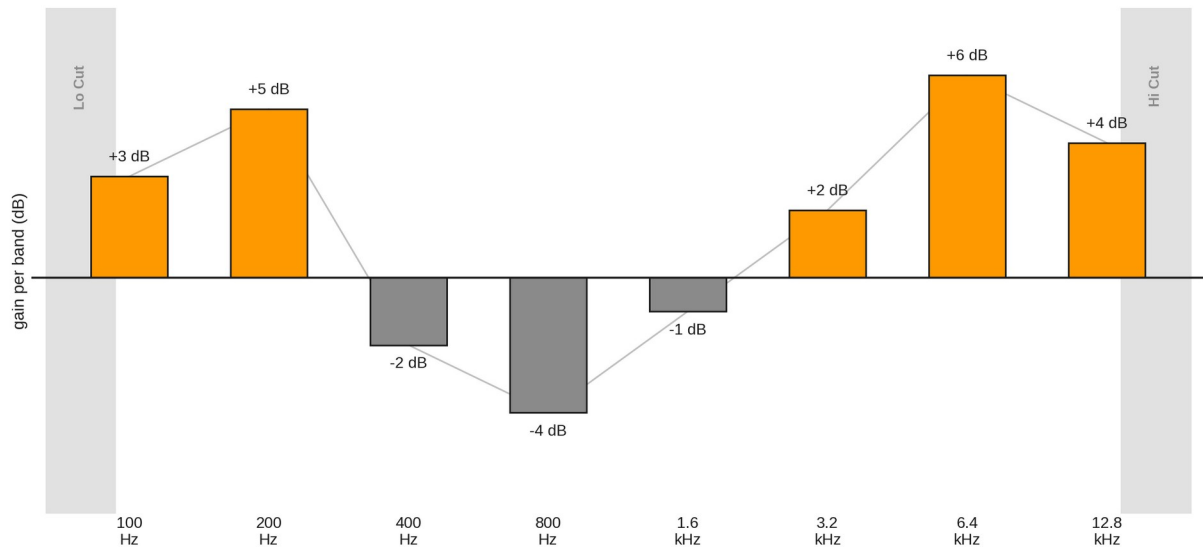
A fixed-band graphic equalizer — unlike a parametric EQ, where center frequency and bandwidth are freely adjustable — works through a bank of “peaking” filters, each centered on a predefined, fixed frequency, here spaced one octave apart from 100 Hz to 12.8 kHz. This regular spacing between bands is designed to evenly cover the entire audible spectrum relevant to an electric guitar, from the low fundamental of the bass strings to the brightness and presence of the upper harmonics. Raising or lowering a band's slider increases or decreases the gain around that center frequency, while adjacent bands overlap partially: this is what makes a graphic equalizer intuitive to use “by sight” (hence the name), while remaining less surgical than a variable-band parametric one.

The **Lo Cut** and **Hi Cut** filters, with adjustable slope via **Lo Slope** and **Hi Slope**, work differently from the 8 bands: they don't boost or cut a portion of the spectrum, but progressively cut everything beyond the set frequency, with a steepness (measured in dB per octave) that determines how abruptly the cut takes effect. A shallow slope (6 dB/octave) lets frequencies beyond the cutoff point through gradually, useful for a gentle touch; a steep slope (24 dB/octave) removes everything beyond the threshold much more sharply and decisively, useful for aggressively cleaning up subsonic rumble or excessive sibilance. Because heavily adjusting some bands can noticeably alter the signal's overall volume, the **Level (general)** parameter applies a compensating gain after the entire equalization, to bring the perceived volume back to its starting point.

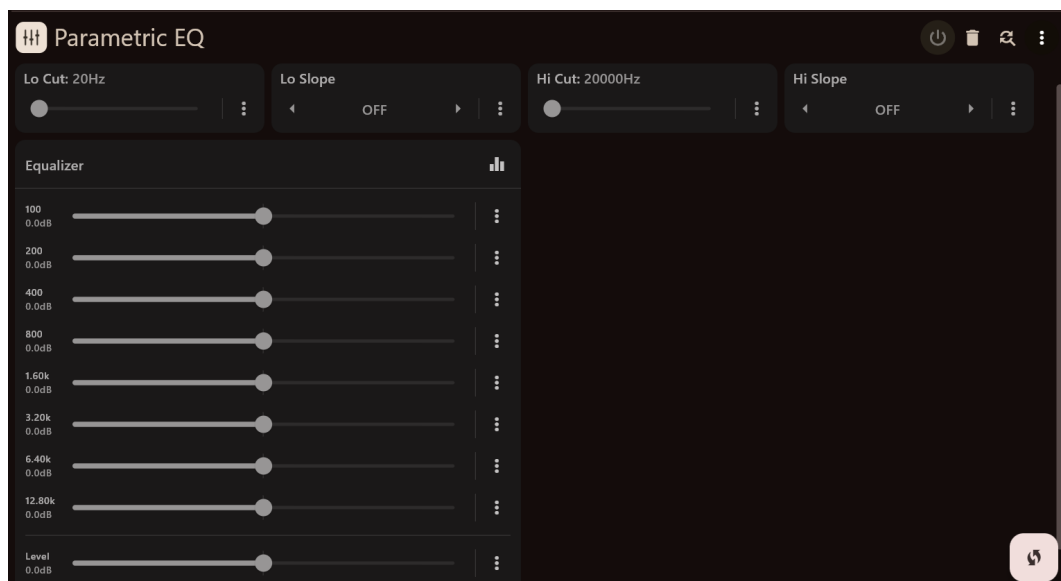
Parameters

Parameter	Range	Default	Unit
Enable	ON/OFF	OFF	—
100 Hz Band	-12/+12	0	dB
200 Hz Band	-12/+12	0	dB
400 Hz Band	-12/+12	0	dB
800 Hz Band	-12/+12	0	dB
1.6 kHz Band	-12/+12	0	dB
3.2 kHz Band	-12/+12	0	dB
6.4 kHz Band	-12/+12	0	dB
12.8 kHz Band	-12/+12	0	dB
Level (general)	-12/+12	0	dB
Lo Cut	20–1000	20	Hz

Parameter	Range	Default	Unit
Lo Slope	OFF, 6dB/oct, 12dB/oct, 24dB/oct	OFF	—
Hi Cut	2000–20000	20000	Hz
Hi Slope	OFF, 6dB/oct, 12dB/oct, 24dB/oct	OFF	—



Example frequency response of the 8 bands: orange bars = boost, gray bars = cut; the side zones indicate the action of Lo Cut and Hi Cut



The EQ panel screen on the pedal, with the Lo Cut/Lo Slope and Hi Cut/Hi Slope filters, the 8 bands of the graphic equalizer (100 Hz–12.8 kHz), and the Level control

Parameter Guide

- **Band [frequency]** — raises or lowers the volume of just the frequency band centered on the indicated value (e.g., the “100 Hz” band acts on deep bass, the “12.8 kHz” band on high frequencies/brightness), with a bell curve that partially extends into adjacent bands as well.
- **Level (general)** — an overall gain applied after all the bands, to compensate for volume after significant equalization.
- **Lo Cut / Hi Cut** — the frequency at which the low-cut/high-cut filters start to take effect.
- **Lo Slope / Hi Slope** — the slope (steepness) of the cut filter: higher values (e.g., 24dB/oct) cut more sharply and decisively than low values (6dB/oct), which are more gradual.

Practical Applications

Practical example: after the classic metal scoop? Lower the 400 Hz and 800 Hz bands by a few dB and raise 3.2 kHz slightly. If instead the sound comes out “muddy” in a crowded mix, enable Lo Cut around 80–100 Hz with Lo Slope at 12dB/oct or 24dB/oct to clean up unnecessary low end.

Practical example: want to use both instances of the EQ block at different points in the chain? Use the first instance (default position, before the final Multi Mod) for a “structural” tonal correction of the signal — broad, permanent cuts/boosts — and the second instance (added manually, typically at the end of the chain) for finer, preset-specific adjustments, like a small presence boost before the output: separating the two roles keeps you from having to recalibrate the entire equalization from scratch every time you change your mind about one tonal detail.

Delay — Stereo Delay Engine

A stereo delay line with configurable repeats, analog and tape delay device simulations, and the ability to run as two independent lines for more complex rhythmic patterns. **Two independent instances** are available in the chain (one fixed in position 13, one additional to be inserted manually).

How It Works

A digital delay, in its simplest form, stores the signal in a buffer and plays it back after a time interval equal to **Time**, summing it with the direct signal; the **Feedback** parameter re-injects a portion of the delayed signal back into the buffer, generating successive repeats that progressively fade with each cycle. The **Analog BBD** and **Tape** parameters introduce, within this same feedback path, a simulation of the characteristic imperfections of historic delay devices: a BBD delay (the same solid-state technology used by the vintage flangers and choruses modeled elsewhere in the pedal) introduces a progressive loss of bandwidth and slight distortion on each repeat, while a tape delay adds speed instability (wow and flutter) and magnetic saturation, so the repeats “degrade” organically instead of staying identical to themselves cycle after cycle as a pure digital delay would.

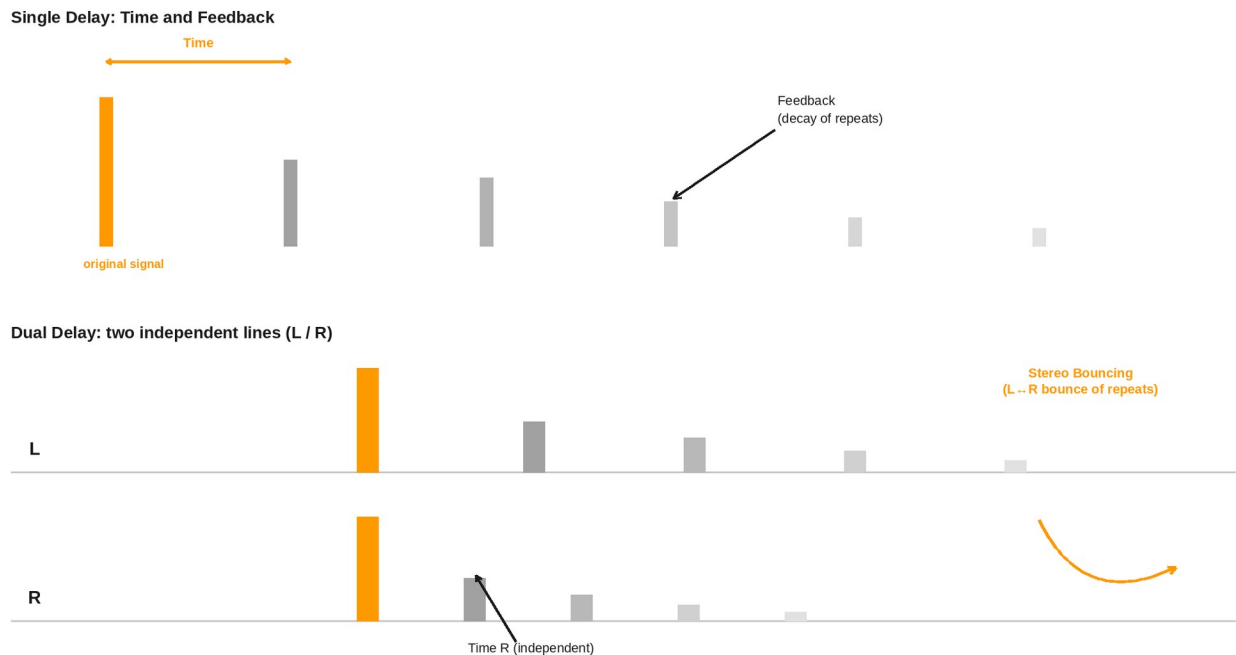
The **Dual Delay** turns the block from a single mono-stereo line into two independent delay lines, each with its own time (**Time** for the left line, **Time R** for the right), and, depending on **Feedback (mode)**, also with independent or shared feedback. This allows rhythmic patterns otherwise impossible with a single line, such as a dotted delay on one channel and a straight delay on the other. The **Stereo Bouncing** parameter adds a further dimension by making the repeats “bounce” between the two stereo channels: at positive values, successive repeats progressively alternate from one side to the other up to the classic full ping-pong effect at 100%, while at negative values it instead introduces cross-feedback between the channels, a behavior distinct from simple bouncing that adds stereo density rather than discrete movement.

Parameters

Parameter	Range	Default	Unit
Enable	ON/OFF	OFF	—
Time	1–2000	300	ms
Time Subdivision	1/4, Dotted 8th, 1/8, 1/16, Triplet	1/4	—
Feedback	0–100	30	%
Dry-Wet	0–100	20	%
Level	0–100	100	%
Tone and Character:	0–100	0	%
Analog BBD			
Tape	0–100	0	%
Hi-Cut	900–20000	18000	Hz

Parameter	Range	Default	Unit
Lo-Cut	20–1200	20	Hz
Stereo Spread	0–100	0	%
Stereo Bouncing	-100/+100	0	%
Modulation: Enable	ON/OFF	OFF	—
Rate	0.05–8	1	Hz
Depth	0–100	50	%
Shape	Triang, Sin, Square	Triang	—
Stereo Phase	0–180	0	°
Dual Delay: Enable	ON/OFF	OFF	—
Time R	1–2000	300	ms
Feedback (mode)	Independent, Locked	Independent	—
Feedback R	0–100	30	%
Mix Balance	-100/+100	0	%
Left Line Pan	-100/+100	-100	%
Right Line Pan	-100/+100	100	%

The **Stereo Bouncing** parameter controls the stereo movement of the repeats: 0% is centered, positive values introduce a rotation up to full ping-pong at 100%, negative values introduce cross-feedback up to 100% at -100%.



Time and Feedback on a single delay line (top); Dual Delay with two independent L/R lines and Stereo Bouncing between the repeats (bottom)

Parameter Guide

- **Time** — the time interval between the original signal and the first audible repeat.
- **Time Subdivision** — the rhythmic subdivision used to calculate the time when the delay is locked to the song's tempo.
- **Feedback** — the amount of signal re-injected into the delay: the higher it is, the more repeats you hear before they fade out.
- **Dry-Wet** — balances the original signal and the repeats.
- **Tone and Character: Analog BBD** — amount of simulation of an analog BBD (Bucket-Brigade Device) chip delay, for a warmer sound that progressively degrades with each repeat, as in vintage analog delays.
- **Tape** — amount of tape delay simulation, with its natural imperfections (slight speed variations, saturation), for a more organic character.
- **Hi-Cut / Lo-Cut** — filters applied to the repeats, to make them progressively darker and more “vintage” with each repeat.
- **Stereo Spread** — the stereo width of the repeats.
- **Modulation: Enable** — activates a modulation applied to the repeats, for an effect similar to a chorus on the delay's tails.
- **Dual Delay: Enable** — activates a second independent delay line (right channel), to create more complex rhythmic patterns (e.g., different times between left and right).
- **Time R** — the time of the second line, when Dual Delay is active.
- **Feedback (mode)** — whether the two lines share the same feedback (Locked) or manage it independently (Independent).
- **Mix Balance** — balances the volume between the two Dual Delay lines.
- **Left Line Pan / Right Line Pan** — position the two lines in the stereo field.

Practical Applications

Practical example: want a rhythmic delay locked to the song instead of a fixed time? Use **Time Subdivision** (e.g., Dotted 8th for an “The Edge”-style feel) instead of adjusting Time manually. For a stereo ping-pong effect, enable **Dual Delay: Enable** and bring **Stereo Bouncing** toward +100%.

Practical example: want a delay that “wears out” naturally instead of repeating identically and sterilely? Raise **Analog BBD** and/or **Tape** to around 30-50%: each repeat will progressively lose bandwidth and gain slight saturation, a behavior much closer to a real analog delay than pure digital feedback with only Hi-Cut/Lo-Cut manually adjusted.

Reverb

Reverb simulates the acoustic space in which the sound is played back, from the ambience of a room to a vintage amplifier spring tank. It offers 5 modes (ROOM, HALL, GALAXY, PLATE, SPRING) selectable from the same block, each with a distinct tail character.

How It Works

An algorithmic reverb doesn't record and play back a real capture of a space (as an IR would), but synthesizes in real time the growing density of reflections that characterizes an acoustic environment, through a network of interconnected delay lines with cross-feedback. Each simulated reflection re-enters the network and generates others, producing the continuous, progressively denser and more diffuse tail that we perceive as “reverb” rather than as an echo of distinct repeats. The **Diffusion** parameter controls exactly how quickly the reflections multiply and blend together: high values give a smooth tail right from the start, low values let more distinct and separate reflections show through, especially at the tail's onset.

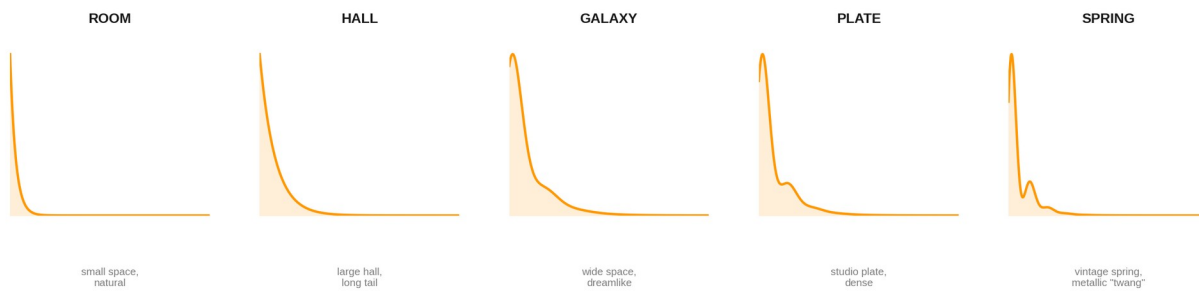
The five available modes configure the network's topology and internal timings differently to mimic physically very different spaces: **Room** and **Hall** model real environments of increasing size, with a shorter, more defined tail for the former and a longer, more expansive one for the latter; **Plate** reproduces the behavior of a suspended vibrating metal plate (a studio reverb device historically widespread before the digital era), recognizable by a very high density of reflections right from the start of the tail; **Galaxy** is a deliberately unrealistic mode, designed for wide, dreamlike tails closer to an ambient effect than a believable physical space; **Spring** instead models the behavior of a mechanical bounce spring (typical of vintage tube amplifiers), a physically much simpler system — a few dispersive propagation lines instead of a dense network — that produces the characteristic metallic, discontinuous “twang” distinctive of this type of reverb, managed by the dedicated **Tension**, **Tone** and **Spring Pickup** parameters, which have no equivalent in the other four modes.

Parameters

Parameter	Range	Default	Unit
Enable	ON/OFF	OFF	—
Mode	ROOM, HALL, GALAXY, PLATE, SPRING	ROOM	—
Decay	0–1	0.2	—
Dry-Wet	0–1	0.5	—
Level	0–100	100	%
Pre Delay	0–100	5	ms
Diffusion	0–1	0.5	—
Modulation	0–100	25	%
Tone and Character:	0–1	0.5	—

Parameter	Range	Default	Unit
Tension (SPRING mode only)			
Tone (SPRING mode only)	0–1	0.5	—
Spring Pickup (SPRING mode only)	PRE, POST, POST+PRE	POST	—
Hi Damp (non-SPRING)	900–20000	10000	Hz
Lo Damp (non-SPRING)	20–1200	20	Hz
Damping Mode (non-SPRING)	SOFT, MEDIUM, HARD	MEDIUM	—
Hi Cut (non-SPRING)	600–20000	12000	Hz
Lo Cut (non-SPRING)	20–1200	20	Hz
Stereo Spread	0–100	50	%

Reverb Tail Character by Mode (Decay for illustration)



Reverb tail character in the 5 modes: Room (small space), Hall (large hall), Galaxy (dreamlike space), Plate (studio plate), Spring (vintage spring)

Parameter Guide

- **Mode** — the reverb algorithm: Room for a small, natural environment, Hall for a large hall, Galaxy for a wide, dreamlike space, Plate for the classic studio plate reverb, Spring for the spring typical of vintage amplifiers.
- **Decay** — the length of the reverb tail: high values give long, expansive tails, low values give short, contained tails.
- **Dry-Wet** — balances the direct signal and the reverberated one.
- **Pre Delay** — a short delay before the reverb starts, useful for clearly separating the direct sound from the tail and keeping definition.
- **Diffusion** — the density of the reflections that make up the reverb: high values give a smoother, more continuous tail, low values give more recognizable, “grainier” reflections.
- **Modulation** — the amount of modulation applied to the reverb tail, for a more “alive” and less static effect, avoiding metallic or unnatural tails.

- **Tone and Character: Tension (SPRING)** — the simulated tension of the springs, which changes their sonic character (more or less metallic “twang” typical of the spring effect).
- **Tone (SPRING)** — the specific tonal color of the spring mode.
- **Spring Pickup (SPRING)** — the position of the simulated “pickup” along the spring (before, after, or at both points), which changes the timbre captured by the spring reverb.
- **Hi Damp / Lo Damp (non-SPRING)** — the attenuation of high/low frequencies within the reverb tail over time, for darker or duller tails as they fade.
- **Damping Mode (non-SPRING)** — the overall intensity of the frequency damping applied by the Hi/Lo Damp pair.
- **Hi Cut / Lo Cut (non-SPRING)** — filters applied to the reverberated signal at the block's input/output, to limit its overall bandwidth.
- **Stereo Spread** — the stereo width of the reverb.

Practical Applications

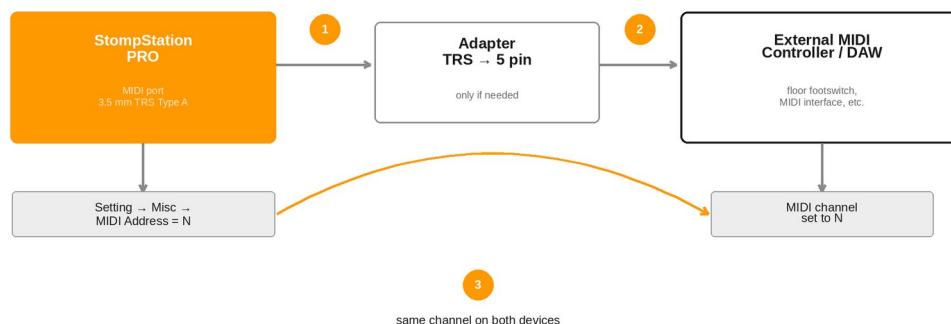
Practical example: looking for a discreet reverb that won't “muddy” the sound live? Mode ROOM with low Decay (0.1–0.2) and Dry-Wet 15–25%. For the classic surf/vintage sound, switch to Mode SPRING and raise Tension for a more pronounced “twang.”

Practical example: does the reverb tail sound too “metallic” or unnatural at long Decay times (Mode HALL or GALAXY)? Raise **Diffusion** to better blend the reflections together instead of leaving them distinguishable, and slightly increase **Modulation** to break up the tail's staticness: the combination of the two reduces the “glassy” effect typical of very long digital reverb tails.

Controls, MIDI and Expression Pedal

MIDI Channel

All the pedal's MIDI functions (Program Change, fixed Control Change, assignable controllers) respond to a **single global MIDI channel**, set in Setting → Misc → **MIDI Address** (values 0–15, default 0). There is no “Omni” mode: set the same channel on the pedal and on the external MIDI device (floor controller, DAW, another pedal) so the messages are recognized.



MIDI connection between StompStation PRO and an external controller/DAW: 1 3.5 mm TRS Type A cable (with an optional adapter to 5-pin), 2 connection to the external device, 3 same MIDI channel set on both

Fixed MIDI Control Change

CC #	Function Controlled	Behavior
1	Drive — Enable	ON/OFF
2	Modulation (pre) — Enable	ON/OFF
3	Amp (NAM 1) — Enable	ON/OFF
4	IR — Enable	ON/OFF
5	Reverb — Enable	ON/OFF
6	Modulation (post) — Enable	ON/OFF
7	Modulation — Tremolo: Enable	ON/OFF
8	Compressor — Enable	ON/OFF
9	Gate — Enable	ON/OFF
10	Delay 1 — Enable	ON/OFF
11	Tuner — Enable	ON/OFF
12	Expr — Enable	ON/OFF
13	Expr — Boost: Enable	ON/OFF

CC #	Function Controlled	Behavior
14	Expr — Wah: Enable	ON/OFF
15	EQ — Enable	ON/OFF
16	Pitch — Enable	ON/OFF
20	Global Volume (Master)	continuous value 0–127
21	Preset UP	trigger (advances to the next preset)
22	Preset DOWN	trigger (goes back to the previous preset)

For CCs that control an ON/OFF, a value of 0–63 disables the function and a value of 64–127 enables it. Blocks not listed in the table (for example Vintage Flanger, Vintage Chorus, or the second instance of a block that already appears, such as EQ or Delay) don't have a dedicated fixed CC: connect them via MIDI using the assignable controllers described below.

MIDI Program Change

Each preset can be reached with a Program Change message whose number corresponds directly to its position in the preset list (index 0–59, since the pedal manages 60 presets in 20 banks of 3): PC 0 recalls preset 01A, PC 1 preset 01B, PC 2 preset 01C, PC 3 preset 02A, and so on up to PC 59 = preset 20C.

PC #	Preset Recalled	PC #	Preset Recalled
0	01A	3	02A
1	01B	4	02B
2	01C	...	... (bank = $PC \div 3 + 1$, letter = A/B/C from the remainder of $PC \div 3$)

The last available preset (bank 20, slot C) corresponds to **PC 59**.

Bank	Footswitch A	Footswitch B	Footswitch C
01	preset 01A PC 0	preset 01B PC 1	preset 01C PC 2
02	preset 02A PC 3	preset 02B PC 4	preset 02C PC 5
03	preset 03A PC 6	preset 03B PC 7	preset 03C PC 8
⋮	⋮	⋮	⋮
20	preset 20A PC 57	preset 20B PC 58	preset 20C PC 59

formula: $PC = (bank - 1) \times 3 + (A=0 / B=1 / C=2)$ — last preset (20C) = PC 59

Bank/letter/Program Change grid: each preset can be reached with $PC = (bank - 1) \times 3 + (A=0 / B=1 / C=2)$

Assignable Controllers (Controller 1/2/3)

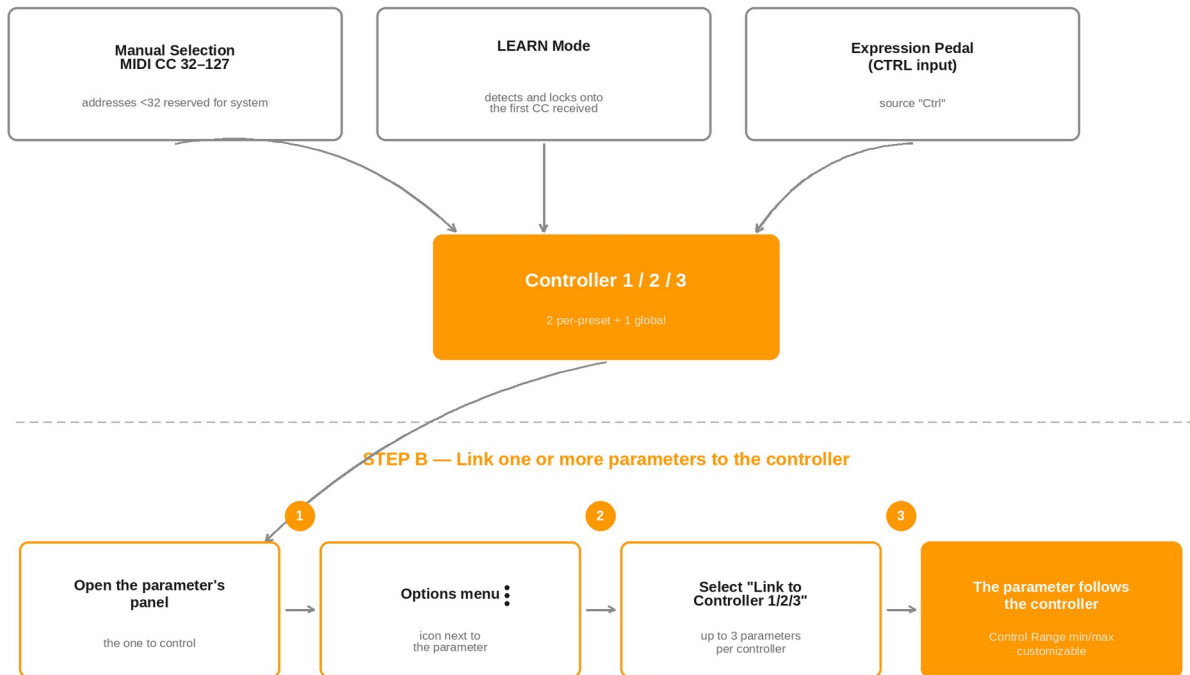
The pedal provides 3 assignable controllers — **Controller 1** and **Controller 2** (per-preset) and **Controller 3** (global) — designed to drive in real time the parameters that lack a dedicated fixed MIDI CC (see the “Fixed MIDI Control Change” table above). Assignment happens in **two distinct, separate steps**, not to be confused with each other:

Step A — Define the controller's source (Master → Controllers menu, at the end of the effects chain): each of the three controllers is assigned a source, chosen from:

- **Manual selection** of a MIDI CC address between 32 and 127 (addresses below 32 are reserved for the system — they coincide with the range of fixed CCs in the previous table — and are not available for manual mapping);
- **LEARN mode**: the pedal automatically detects and locks onto the first MIDI CC message received from the connected external device;
- **Expression pedal (Ctrl)**: the external expression pedal connected to the panel's CTRL input (see the “Expression Pedal (CTRL Input)” section below).

Step B — Link one or more parameters to the controller: open the panel of the parameter you want to control, open its options menu (the three-dot icon ⋮ next to the parameter's name) and select **Link to Controller 1/2/3**. Each controller can be linked to up to 3 parameters at the same time. This is the way to use to drive via MIDI (or via expression pedal) the blocks listed above that lack a dedicated fixed CC.

STEP A — Define the controller's source (Master → Controllers menu)



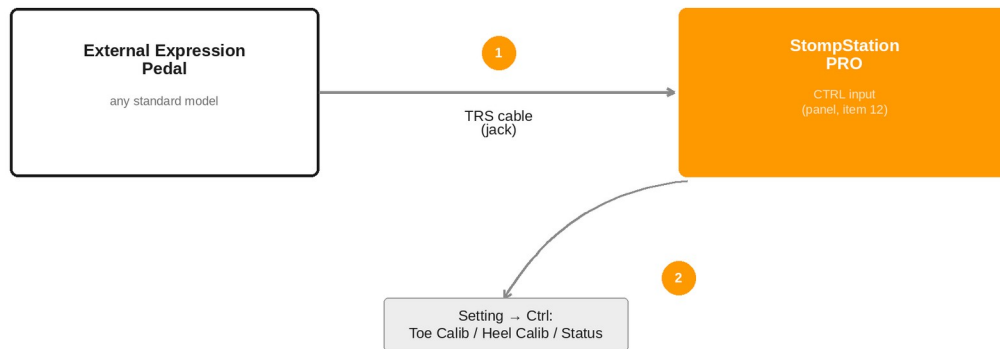
Assigning a controller in two steps: Step A defines the source (manual CC, LEARN, or Ctrl expression pedal) on Controller 1/2/3; Step B links one or more parameters to that controller from their options menu

- **Control Range** — for each linked parameter you can set a minimum/maximum range, expressed as a percentage: it defines the range within which the parameter will vary when the controller is moved, instead of always sweeping the parameter's entire range.
- **Removing a link** — go back into the parameter's panel, open the options menu  and select **Remove link**.

Practical example: want to drive the Wah with an external expression pedal connected to the pedal? Step A: in the Master → Controllers menu, assign Controller 3 to the Expression pedal (Ctrl) source. Step B: open the Expr block's panel, on the Position parameter open the  menu and select **Link to Controller 3**. From this point on, your foot drives the wah sweep in real time.

Expression Pedal (CTRL Input)

StompStation PRO has a dedicated **CTRL** input, located in the top-right corner of the panel, for connecting a standard external expression pedal via TRS (jack) cable. This is an external accessory independent of the pedal, not an expression pedal built into the chassis.



External expression pedal connection diagram: 1 TRS cable between the pedal and StompStation PRO's CTRL input, 2 travel calibration in Setting → Ctrl

Once connected, the external expression pedal can be used in two ways, even simultaneously on different presets:

- as the **Ctrl source** for one of the 3 assignable controllers (see “Assignable Controllers” above, Step A), to drive in real time up to 3 any parameters linked to that controller;
- directly as the **Position** control of blocks that natively have an Expression mode (Pitch in Expression mode, Expr/Wah — see the respective “Effect Blocks” sections earlier in this chapter).

Before use, it's advisable to calibrate the connected pedal's travel in **Setting → Ctrl**: the parameters **Ctrl Toe Calib** and **Ctrl Heel Calib** map the pedal's two physical travel extremes to the controlled parameter's entire range, while **Ctrl Status** shows the detected position in real time, useful for checking that the calibration is correct by physically moving the pedal.

MIDI Clock

The global tempo and the per-preset tempo sync to the MIDI Clock received at the input: when Clock is active, the pedal aligns its tempo estimate to the incoming signal, so as to keep tap tempo, delay, and modulations consistent with the tempo of the connected session or master device.

Troubleshooting

On-Screen Messages and Indicators

Indicator	Meaning
Orange triangle next to the preset name	There are unsaved changes in the current preset
“Discard changes? Back / OK / Save” popup	Appears when changing presets with unsaved changes
“Overwrite changes?” popup	Appears when saving (overwriting) the current preset
“Remove block?” popup	Confirmation required before removing a block from the chain
“Low Power” screen	The detected power supply is insufficient
“Update Mode / press BROWSE for settings” screen	The pedal is in firmware update mode

“Low Power” Screen

If the black screen with the message *“Please ensure your power supply provides enough current”* appears, the connected power supply isn't providing enough current. Check that the power supply meets the specifications listed on the pedal's rating label before continuing to use it.

Factory Reset

Procedure:

1. Open the Chain view (press BROWSE from Home) with no block selected.
2. Long-press BROWSE to open the Setup menu.
3. Go to **Setting** → **Misc** → **Factory reset**.
4. Confirm the action when prompted.

Effect: the list of loaded NAM models, the list of loaded IRs, and the list of saved presets are all cleared. General system settings (MIDI address, Ground Lift, etc.) are, on the other hand, not touched and remain unchanged.

WARNING: This operation cannot be undone from the pedal itself: before proceeding, back up your presets and models via the companion app.

Common Problems

No Sound

- Check that the signal is going into Input 1 or Input 2 and that “connected” detection is active (Setting → Input menu): with no jack plugged in, no signal arrives.
- Check that no block in the effects chain is abnormally zeroing out the signal (e.g., Gate

with too high a threshold, NAM/Amp block “Enable” off with “Load Default Chain” not run).

- Check that the global volume (Master → Volume) and the per-preset level (Level) aren't at zero.

The Pedal Seems “Silent” After a Preset Change

- Check the warning triangle: if there were unsaved changes and they were discarded, the preset has reverted to its saved state — verify that the blocks you expect are still enabled.

The Tuner Doesn't Activate

- The tuner only activates with a **long press** of footswitch C; a short press instead recalls preset C of the current bank.
- While the tuner is active, any footswitch press (even a short one) deactivates it.

Tap Tempo Doesn't Respond

- Tap tempo activates **only** by pressing the footswitch corresponding to the **already active** preset; pressing a footswitch for a different preset simply recalls that preset.
- The BPM is only updated after **more than 3 taps**; the first taps serve to “synchronize” the measurement.
- A tap timeout of inactivity resets the sequence.

An Effect Block Doesn't Appear in the Chain After Power-On

- Some blocks (Vintage Flanger, Vintage Chorus, EQ 2, Delay 2, Pickup Sim) **are not part of the default chain**: they need to be added manually by selecting an empty slot and using the Picker (see the Usage chapter, §4.1), or restored along with everything else via “Load Default Chain” (which, however, still leaves them absent, since they're also absent from the default chain).

Bank Change Doesn't Match Expectations

- “Next bank” = footswitches B+C together; “Previous bank” = footswitches A+B together. If the observed behavior is different, check the encoder direction in **Setting** → **Misc** → **Encoder mode (CW/CCW)**: this setting controls the direction of rotation of the BROWSE knob.

Preset Change Locked, or Preset/Amp/IR List Inaccessible

- **Most likely cause: a special character in a name.** If preset changing stops working, or the preset list, amp (NAM) list, or IR list becomes inaccessible, check whether a name (of a preset or of another item recently named on the pedal) contains a special character (symbols, emoji, non-standard punctuation) — see the IMPORTANT box in the Usage Guide chapter, §3.
- **Solution:** remove the special character from the name. This is enough to restore correct operation.

- **If the pedal no longer connects to the VoidX-Control app:** don't try to fix the name from the app. Instead, act **directly from the pedal**, in the **Setup** → **System** menu (see the Usage Guide chapter, §6), removing any special character from the pedal's name.

Pairing with Third-Party MIDI Floor Controllers (e.g., M-VAVE Chocolate and similar)

Many guitarists pair StompStation PRO with a compact, affordable MIDI floor controller — such as the various models in the M-VAVE Chocolate family — to have additional footswitches dedicated to preset changes or block activation. With this type of accessory, the most common difficulties are with connection and settings alignment, not with the pedal itself:

- **Check the TRS cable/adaptor type:** StompStation PRO's MIDI port is a **3.5 mm TRS Type A** jack (see the Manual chapter, panel legend). Many compact controllers also have a TRS output that requires a Type A adapter to the classic 5-pin connector, or a direct TRS-TRS cable if your controller supports it: a mismatched standard (Type A vs Type B) is the most frequent cause of a cable connection that looks fine but transmits nothing.
- **Leave room for the connectors:** the panel's ports are close together — prefer cables/adapters with a slim body, so you can comfortably plug in the other jacks (audio, power) too without mechanical interference.
- **Align the MIDI channel on both devices:** set the same channel in **Setting** → **Misc** → **MIDI Address** on the pedal and in the external controller's configuration (see the Configuration → Controls, MIDI and Expression Pedal chapter); a channel mismatch is, at first glance, indistinguishable from a non-working cable.
- **If the TRS cable proves unreliable, try Bluetooth:** several compact controllers also offer a wireless MIDI mode; when available, it can be more stable than the cable connection with certain device pairings.
- **Test the fixed CCs first:** before working on custom assignments, verify the connection with an already-known fixed CC (e.g., CC 12/13 for Preset Up/Down, or CC 3 for Amp Enable — see the Configuration → Controls, MIDI and Expression Pedal chapter). If these respond, the channel and wiring are correct and the problem is isolated to the controller's configuration or the LEARN assignment.
- **For more complex mappings:** if your controller only sends Control Change but you want to recall presets with Program Change (or vice versa), a small external MIDI converter/router placed between the two devices can translate between message types.

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