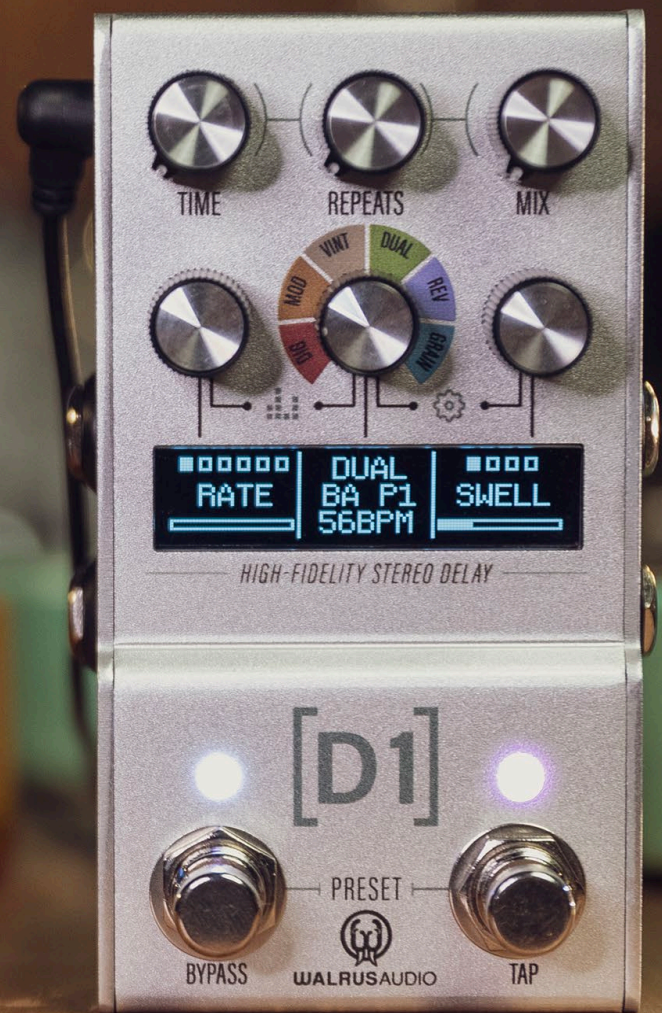


[D1]

MAKO  MKII
HIGH-FIDELITY STEREO DELAY



The D1 MKII is a feature-packed, high-fidelity all-in-one delay pedal with six algorithms for players to choose from: Digital, Mod, Vintage, Dual, Reverse, and Grain. The D1 can create inspirational delay trails ranging from dreamlike and bizarre, to rhythmic and clear, to warm and analog sounding.

9 volt DC, Center Negative · 300mA min*

*The use of an isolated power supply is recommended for powering all Walrus Audio Pedals.
Daisy chain power supplies are not recommended.

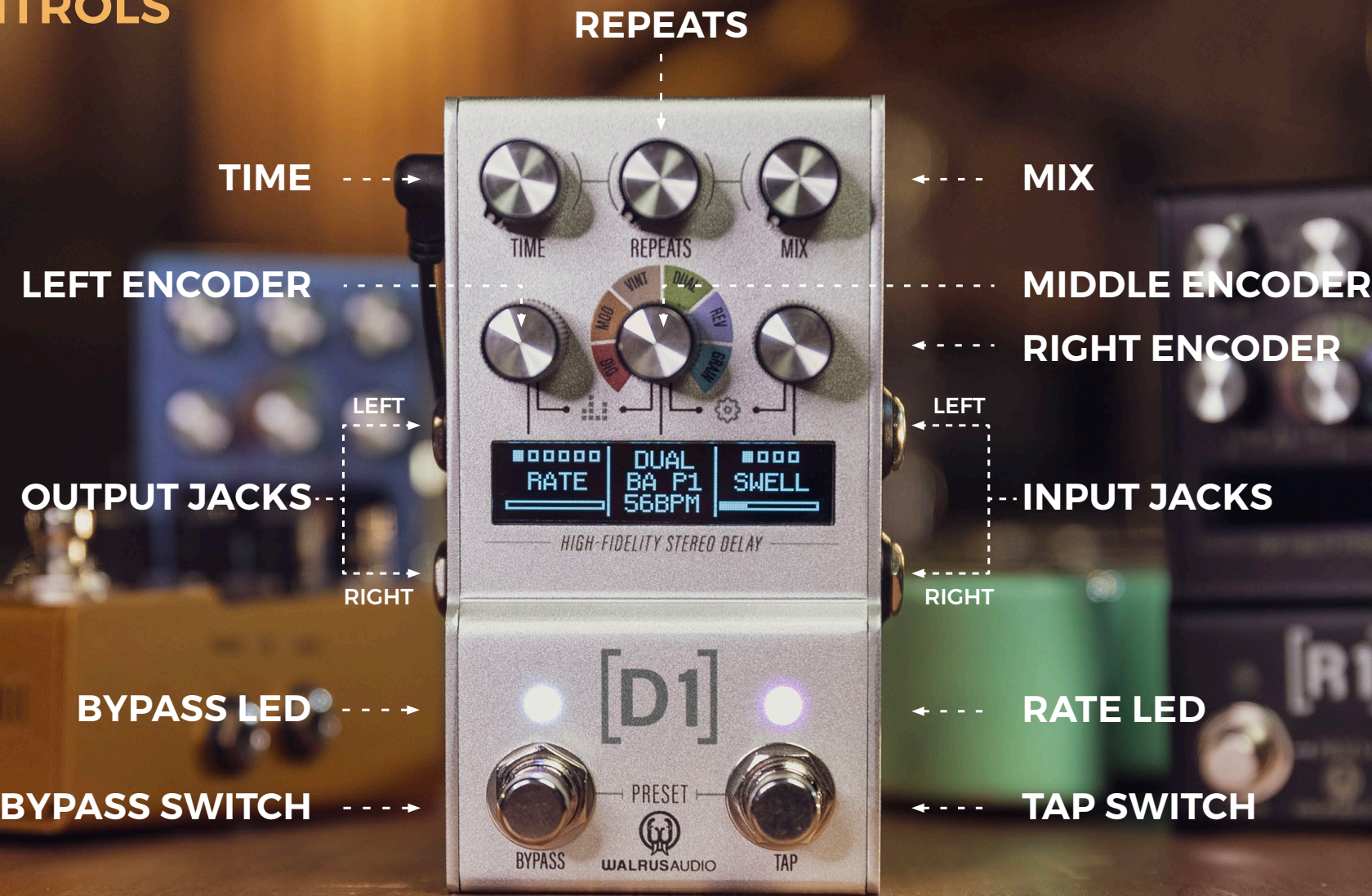
Got questions or need a repair?

Email help@walrusaudio.com to talk with a real live human about your Walrus gear!

This product comes with a limited lifetime warranty.

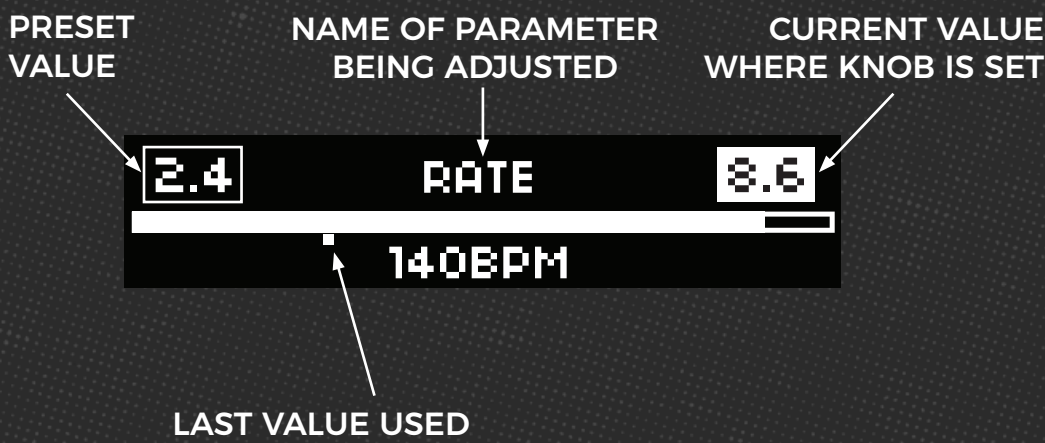
[Click Here](#) for more info.

CONTROLS



ADJUSTING PARAMETERS

When adjusting any knob parameter, you will see a bar appear on the screen. The higher you turn up a parameter, the fuller the bar will appear. The top left number is your stored preset value. The top right number shows the value of where the knob is currently set. The dot below the bar shows you the last value used before turning the knob.



CONTROLS



TIME - The Time knob allows adjustment of the delay time from approximately 50ms at minimum to 2000ms at maximum and overrides any tap or MIDI tempo for manual time control.

REPEATS - The Repeats knob controls the amount of feedback within each delay program. At minimum, only one repeat is allowed. At maximum, there will be a near infinite number of repeats – on the verge of self-oscillation.

MIX - The Mix knob sets the ratio of dry to repeated signal. At minimum, no repeats are heard. Unity gain can be found between 12 and 2 o'clock. At maximum, only repeats will be heard.

LEFT ENCODER - TThe Left encoder offers creative control over various ways to fine-tune each delay program, allowing you to creatively shape things like modulation rate, delay “age,” tone, and more. Cycle through each option by pressing down on the encoder until you reach the desired control, then turn the encoder knob to adjust. Alternatively, press and hold down the encoder and turn to scroll through options, then release to select. Note that not every option listed below will apply to every program.



DEPTH: Adjusts the amount of modulation applied to the repeats.

RATE: Adjust the speed of the modulation applied within the delay.

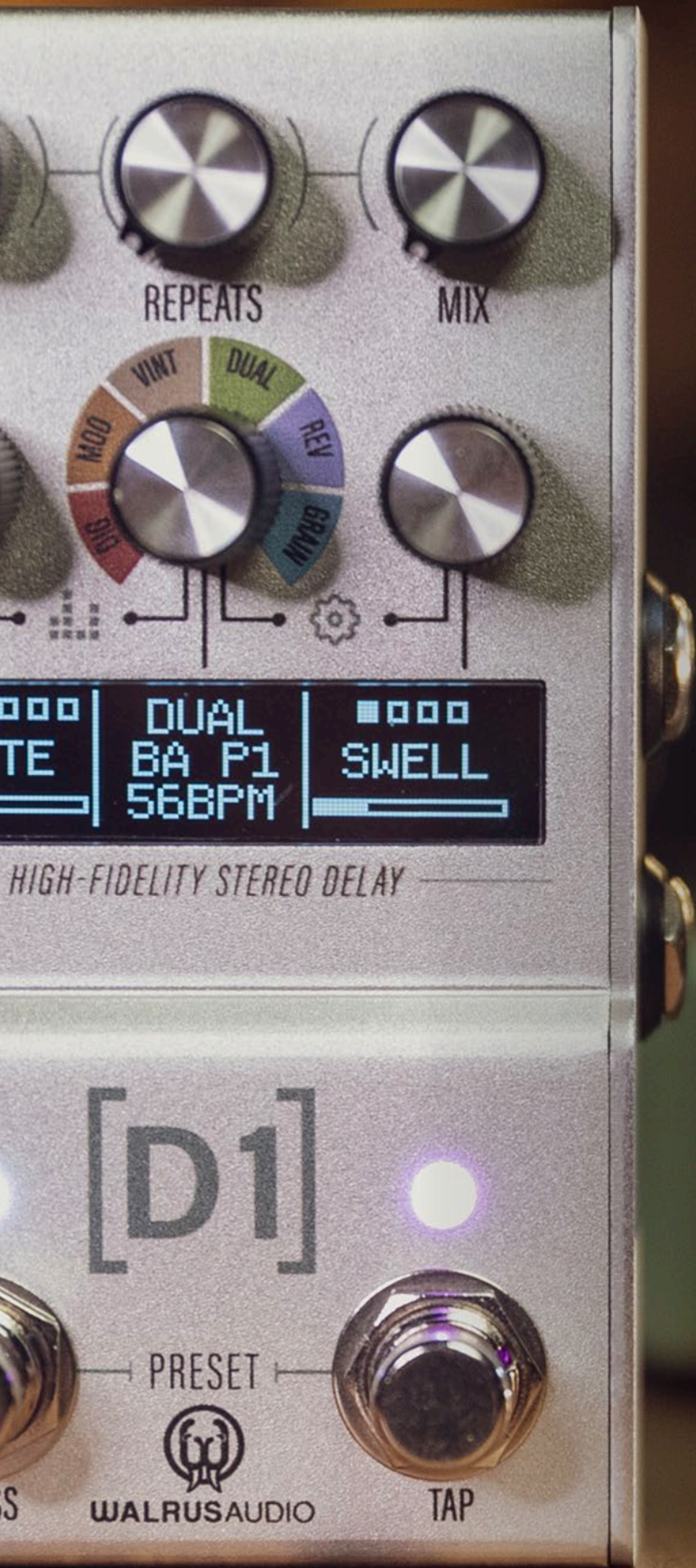
SHAPE: Choose sine, square, triangle, ramp down, ramp up, and random LFO wave shapes to modulate your delay signal.

AGE: Adjust the desired amount of grit through the delay. The idea for the “age” effect is to simulate the signal passing through bucket brigade ICs or other analog circuits and in turn, losing fidelity. This is a desired sound that has charmed guitar players for decades.

tone: Adjust the tonal characteristic of the delay. The EQ type varies on some programs.

SPREAD: The D1 offers two different ways to add atmospheric space and width to your repeats. With spread below 5.0, a Haas effect is introduced creating an offset between the right and left channel to create a stereo widening effect.

With spread above 5.0, a panning effect is introduced moving your delay signal between the right and left channels to create an extra sense of depth and movement. With Spread at 5.0, the widening effects are turned off.



RIGHT ENCODER - Use the Right encoder to fine-tune the delay features like BPM, Ducking and more. Cycle through each option by pressing down on the encoder until you reach the desired control, then turn the encoder knob to adjust. Alternatively, press and hold down the encoder and turn to scroll through options then release to select. Note that not every option listed below will apply to every program.

■ ■ ■ ■	MOD	■ ■ ■ ■
DEPTH	BA P2	BPM
=====	104BPM	115

BPM: Use to dial in a specific amount of beats per minute.

DUCK: Introduces a sidechain compression on the delay signal, reducing repeats volume while dry signal is present. The control ranges from subtle compression to help clarity in a mix to hard sidechaining, creating creative swelling effects.

DIV: Use to change tap divisions. Select quarter, quarter note triplet, eighth, dotted eighth, or sixteenth delay multiplier when tapping a tempo or when the tempo is set via MIDI clock.

NOTE - When using the Dual program you can set different tap divisions for the left and right channels separately.

FEEDBACK MODE - When using Dual mode, you can choose between Parallel, Ping-Pong, and Series delay lines.

Parallel - Left and Right feedback paths are independent of each other. Left repeats feedback into the left input. Right repeats feedback into the right input.

Ping-Pong - The Left repeats feedback into the right input and the right repeats feedback to the left input; the repeats bounce from one side to the other.

Series - The Left repeats feedback into the Left channel and is sent to the input of the Right delay line as well. The right repeats, with the addition of the left repeats feedback into the right input. Use this mode to create interesting syncopated delay rhythms.

INPUTS AND OUTPUTS

The D1 offers multiple input and output configurations and features true bypass circuitry.

- Mono In / Mono Out
- Mono In / Stereo Out
- Stereo In / Stereo Out

USB-C - Used to load IR files and update firmware via computer via walrusaudio.io.



PRESETS

The pedal includes 128 total presets slots. Good luck using them all! Access them by pressing the Left and Center encoders simultaneously. The first 9 presets are accessible from the pedal in Banks A, B, and C and can be cycled through three at a time by pressing both stomp switches simultaneously. All 128 are accessible via by manually selecting in the preset menu or via MIDI Program Change messages, which are outlined in the MIDI section.

o **To recall a preset bank:**

1. Enter the global sound menu by pressing the Left and Center encoders simultaneously.
2. With “Preset” highlighted in the first column, turn the Center encoder to select the preset bank. Press down on the Center encoder to select the bank.
3. Scroll through the presets in that bank by turning the Right encoder. Press down on the Right encoder to select your preset number.
4. Press the Left and Center encoders simultaneously to exit the menu.

o **To save a preset:**

1. Scroll to the preset color (red, green, blue) in the bank you want to save a new sound by pressing Bypass and Tap/Skip simultaneously.
2. Using the knobs and switches, dial in the desired modulation sound. The Rate LED will turn purple indicating the preset has been modified.
3. To save, hold down the Bypass and Tap switches until the preset LED blinks. The preset is now saved and the LED will return to the preset color.



PRESET COPY/PASTE

Any preset can be copied and placed into another preset slot. While in the preset menu, press and hold down the Right encoder for three seconds to enter the copy/paste menu. You will have the following options:

- **COPY:**
 1. Scroll to the preset you want to copy then press and hold down the Right encoder to open the copy/paste menu.
 2. Select copy.
 3. The menu will now return to the preset menu.
- **PASTE:**
 1. Scroll to the preset you want to paste then press and hold down the Right encoder to open the copy/paste menu.
 2. Scroll to the Paste option. You will now see the number of the slot that you have copied and will be replacing in the new slot.
 3. Select Paste to confirm. The menu will now return to the preset menu.
- **OVERWRITE:**
 1. Overwrite saves the current parameter values into the preset (this is the same thing as pressing and holding both stomp switches to save a preset).
- **SWAP:**
 1. Scroll to the preset you want to swap then press and hold down the Right encoder to open the copy/paste menu.
 2. Scroll to the Swap option and press down on the Right encoder to select Swap. This will return you to the preset menu.
 3. Scroll to the preset slot you wish to swap with and press and hold down the Right encoder to enter the preset/swap menu.
 4. Scroll to the Swap option. You will now see the number of the slot that you will be swapping presets with.
 5. Press down on the Right encoder to confirm. The menu will now return to the preset menu.
- **BACK:** Returns to the preset menu without making changes.

MIDI

The D1 can be controlled via standard MIDI messages. Simply connect your MIDI controller to the D1 MIDI “IN”. Downstream MIDI devices can be connected to the MIDI “OUT” which serves as a MIDI passthrough. The D1 is not able to control other devices via MIDI. The D1 ships with the MIDI channel set to 1 by default.



- o **MIDI In** – Connect upstream MIDI devices or your MIDI controller to the D1 MIDI “IN”.
- o **MIDI Out** – The MIDI “OUT” functions as a simple MIDI thru allowing all incoming MIDI messages to pass through.
- o **MIDI Clock** - The D1 accepts MIDI clock and sets its delay time anytime it sees a change in MIDI clock tempo. MIDI clock, when sent, will override the tempo set with the Time knob or Tap switch. You can, however, tap a new tempo after the tempo has been set with MIDI clock. It’s a good practice to limit your MIDI clock to only send a few clock pulses at a time since the D1 will quickly lock in the tempo.
- o **MIDI PC** – Presets on the D1 are able to be recalled via MIDI program change messages. Simply send a program change message corresponding to the desired preset to be recalled on the D1 MIDI channel. See the table on the next page for a list of D1 presets and how they map to program change messages.

MIDI

PRESETMIDI PROGRAM CHANGE (PC)

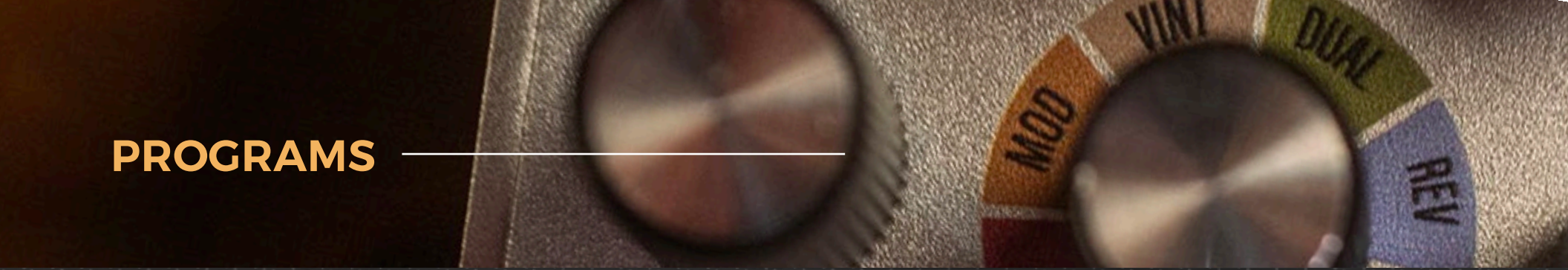
Bank A (Red)	0
Bank A (Green)	1
Bank A (Blue)	2
Bank B (Red)	3
Bank B (Green)	4
Bank B (Blue)	5
Bank C (Red)	6
Bank C (Green)	7
Bank C (Blue)	8
Accessible via MIDI	0-127



- o **MIDI CC** – Most parameters on the R1 can be controlled via MIDI CC messages. The list below shows all applicable MIDI CC numbers and their associated parameters and control values.

PARAMETER / MIDI CC # / VALUES / MIDI Range				PARAMETER / MIDI CC # / VALUES / MIDI Range			
Div (Left in Dual)	28	0 - 5	0 - 5	Mix	20	0.0 - 1.0	0 - 127
Div (Right in Dual)	31	0 - 5	0 - 5	Duck	25	0.0 - 1.0	0 - 127
Feedback Mode	32	0 - 2	0 - 2	Mod Depth	21	0.0 - 1.0	0 - 127
Mod Shape	33	0 - 5	0 - 5	Tone	22	0.0 - 1.0	0 - 127
Grain Pitch	34	0 - 4	0 - 4	Age	23	0.0 - 1.0	0 - 127
Reverse Mode	35	0 1	0 1	Midi Clock Ignore	89	0 1	0 127
Ramp	36	0 - 127	0 - 127	Spread	98	0.0 - 1.0	0 - 127
Mod Rate	37	0.0 - 1.0	0 - 127	Program	24	0 - 5	0 - 5
Grain Size	38	0.0 - 1.0	0 - 127	Tap	30	0 1	0 127
Grain Mix	39	0.0 - 1.0	0 - 127	Bypass	29	0 1	0 127
Time	14	50 - 2000	0 - 127				
Bpm	N/A	N/A	N/A				
Repeats	15	0.0 - 1.0	0 - 127				





PROGRAMS

Each program features shared parameters under the Left and Right encoders:

PARAMETERS (LEFT ENCODER)		(RIGHT ENCODER)
1. DEPTH (MOD DEPTH)	4. AGE	1. BPM
2. RATE (MOD RATE)	5. TONE	2. DUCK
3. SHAPE	6. SPREAD	3. DIV (TAP DIVISION)

DIGITAL

The Digital delay program offers a clean and crystal-clear delay that is perfect for rhythmic guitar parts where ultra-defined echoes are desired.

MOD

The Mod delay program has unique modulation LFOs applied to the repeats that are random and run at multiple rates to create unpredictable pitch modulation. This results in very unique sounding repeats perfect for warping minds and scattering trains of thought.

VINTAGE

The Vintage program allows for analog tape delay-inspired tones to be achieved with complex filtering applied to the repeats. Use the tone knob at low settings for darker filtering and at higher settings to roll off low end.

DUAL

The Dual program employs two delays in parallel, each with different time divisions. When connected in mono, the two delays are added together. When connected in stereo, one set of repeats is sent to the left output and one set is sent to the right. The division switch has unique functionality in Dual mode. We'll break it down for you below:

- ADDITIONAL RIGHT ENCODER PARAMETERS:
- DIVL (LEFT TAP DIVISION)
- DIVR (RIGHT TAP DIVISION)
- FEEDBACK MODE

REVERSE

The Reverse program reads the delay memory backwards creating a unique delay repeat character known as reverse delay.

- ADDITIONAL RIGHT ENCODER PARAMETER:
- REVERSE MODES

GRAIN

The Grain program adds a cloud of randomized grains sampled from a digital delay line. Grains can be modulated in pitch and duration, and blended with standard delay signal for an adjustable level of the effect.

- ADDITIONAL RIGHT ENCODER PARAMETERS:
- SIZE (GRAIN SIZE)
- PITCH
- GMIX (GRAIN MIX)



MOMENTARY FEEDBACK RAMP

Press and hold the Tap switch to ramp up the repeats of the delay. Release to set the feedback back to the knob location.

Note: Some combinations of programs and settings will send the pedal into self-oscillation.

GLOBAL PREFERENCES

Access the global settings menu by simultaneously pressing down on the Middle and Right encoders. Each encoder then cycles through the column of options directly below it on the screen.

Note that the solid white bar behind the text indicates which row of text you have selected.

Press down on the Right encoder to confirm your selection in the 3rd column. Press down on the Middle and Right encoders again to return to the home screen.

Bypass Modes

The D1 offers three bypass modes. Relay Bypass, Hybrid Bypass, and Buffer Bypass.

In **Relay Bypass mode**, the D1 uses relays to bypass the pedal.

In **Hybrid Bypass mode**, the D1 uses relays to bypass the pedal after the reverb decay dies out. Use this mode to keep trails on after bypassing.

In **Buffered Bypass mode**, the D1 locks the relays on and uses the DSP to bypass the pedal. The R1 ships in Hybrid mode by default. Use this mode to keep trails on after bypassing.

Display

Adjust the screen brightness level.

MIDI

Chnl - Select MIDI channel.

Tempo

The D1 offers Global and Preset Tempo modes. In **Global mode**, once a tempo is set, the tempo will not change when changing presets. In Preset Tempo mode, the tempo is set based on the delay time stored when the preset was saved. The D1 ships in Global Tempo mode by default.

About

Shows the current firmware version.

FACTORY RESET

Use the following procedure to restore the pedal to its factory settings.

1. Hold both stomp switches while applying power. The screen will read “Factory reset, hold both stomps 10 seconds.”
2. After 10 seconds the screen will read “Factory reset, now resetting, release both stomps.”
3. Release both stomp switches. After releasing the stomp switches the screen will read “Factory reset, now resetting, keep power on.”
4. Next, the display will read “Updating preset storage.” This will take about 45 seconds. Once the pedal is done, the screen will return to the home screen and the Bypass LED will return to white and the Sus/Latch LED will return back to red.

Note: Performing a factory reset will cause any custom stored presets to be erased back to the factory default.



WALRUSAUDIO.IO

[Walrusaudio.io](https://walrusaudio.io) is a simple interface to update your pedal's firmware.

*Note - Connecting a USB C cable to your D1 allows you to access firmware updates using your computer with a Chrome-based web browser.



TECHNICAL INFO

- Input Impedance:** 1.1M Ohms
- Output Impedance:** 220 Ohms
- Frequency Response:** 20Hz To 20kHz
- Inputs:** 2, 1/4" unbalanced TS
- Outputs:** 2, 1/4" unbalanced TS
- USB Type C:** For firmware updates via walrusaudio.io
- Power Requirement:** Isolated 9VDC, center-negative, 300mA minimum
- Size Including Knobs/Jacks:**
 - Height: 2.48" / 63.15mm
 - Width: 2.9" / 74.33mm
 - Depth: 4.89" / 124.37mm
- Weight:** .8 lbs

