

# B BASIL

FLEXIBLE STEREO SPACE DELAY



# Basil Delay

Basil is a compact, yet flexible, digital stereo delay module built on the Bastl Pizza platform. It offers clean delay, as well as lo-fi flavors, and its Space section opens the doors for exploration far beyond simple delay territory. The Basil delay buffer modulates really well, allowing to recreate most classic time-based effects, such as chorus, flanger, vibrato, pitch shifter, reverb, and stereo widener, among others, and navigate between them with just a few performative gestures. Basil is ideal for clean effects, ambient washes, glitchy sound design, or distorted drones. With its V/Oct input, fine delay tuning, and filter in the feedback path, it can also be effectively used as part of a Karplus-Strong synthesis voice. Even the feedback amount is compensated with the shortest delay times to maintain constant decay characteristics when changing pitch.

The delay time features stereo spread and fine-tune components, and can be synchronized to the clock via the Sync jack. The feedback knob has two sides - simple feedback and ping pong mode, where the Left and Right channels cross-feedback.

The Space section brings a variety of flavors to the table! The Blur function provides two ways to diffuse the delay – either directly or in the feedback path, tilting the Basil delay towards the realm of experimental reverb machines. The feedback Filter offers low-pass and high-pass modes that can make the sound brighter or darker. Taps are multi-taps with either odd or even spacing, adding density to your delays and reverbs.

The assignable CTRL knob and CV allow you to modulate any of the many parameters (time, stereo, fine, dry/wet, feedback, speed, freeze, lo-fi, blur, filter, and taps) and tailor the Basil delay to your preferred use.

The Speed section allows for longer delay times by running the buffer at half speed or – in the extended range – at quarter and eighth speeds. This approach creates octave jumps, ensuring the delays remain in tune with your material. It is also great for creating drone layers. Because the sample rate goes very low at lower speeds, Basil brings in a low-pass anti-aliasing filter that removes high frequencies. However, you can also turn the filter off with the LO-FI setting and enjoy some downsampled goodness at lower speeds.

The Freeze function treats the delay buffer as a read-only sample loop that can be layered with the incoming signal. You can sync it and use all the other modifications with it as well.

# Features

- flexible STEREO delay buffer
- stereo inputs (Left normalized to Right) and outputs
- V/OCT DELAY input suitable for Karplus Strong synthesis
- STEREO spread
- FINE tune of delay time (for tonal applications)
- SYNC input for synchronized delays
- HALF SPEED with an extended range of quarter and eighth speeds suitable for octave jumps
- max sample rate 41.66 kHz, 16-bit
  - max delay time in stereo 0.5 s
  - max delay time in mono (via ping-pong) 1 s
  - max delay time at half speed in stereo 1 s (2 s at quarter and 4 s at eighth)
- LO-FI setting for turning off the anti-aliasing filter for lower sample-rates
- DRY/WET mix with a constant power curve
- FEEDBACK knob and CV with normal (right) and ping pong (left) modes
- FREEZE function to act as micro looper or for ambient washes
- SPACE section to add more dimension
  - BLUR for diffusion (inside or outside feedback)
  - FILTER in the feedback path
  - multi-TAPS for adding density
- assignable CTRL knob and CV (time, stereo, fine, dry/wet, feedback, speed, freeze, lo-fi, blur, filter, taps)
- firmware updates via micro USB
- interchangeable HW with the Pizza Oscillator (just a different panel)

# Technical Details

- 8 HP
- PTC fuse and diode protected 10 pin power connector
- 24 mm deep
- current consumption: +12 V: 90 mA; -12 V: 20 mA

# **Basil Manual**

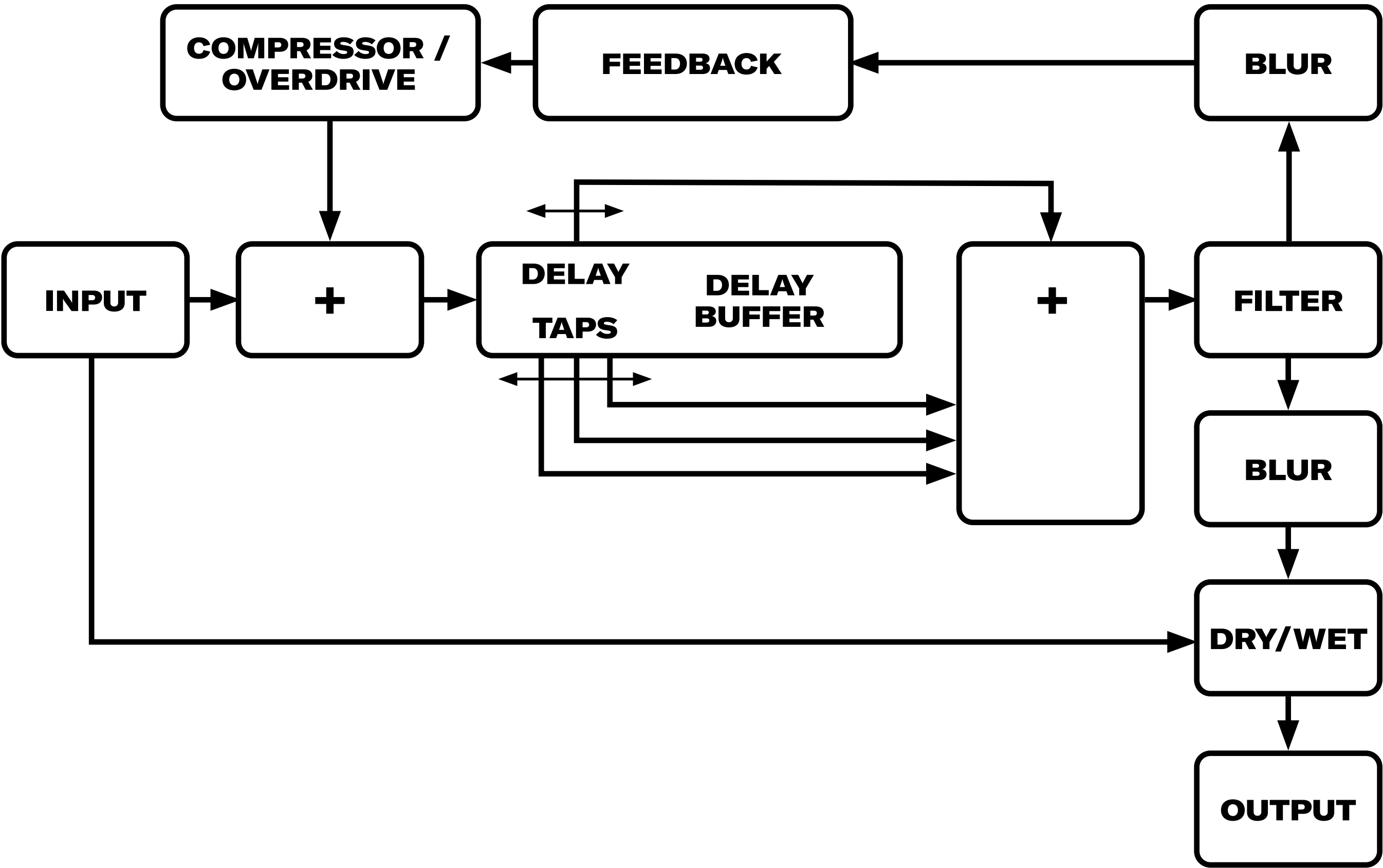
## **Note:**

**If Basil boots and animates a sequence of 2 flashes near the FREEZE button and the lights on the left side of the module pointing down, it requires the V/OCT input to be re-calibrated. This can happen when the power rails in your system are balanced differently than in the previous modular case.**

**To calibrate: Plug a patch cable from R OUT to V/OCT, wait for a few seconds and then disconnect the cable. Basil will boot to normal operation.**

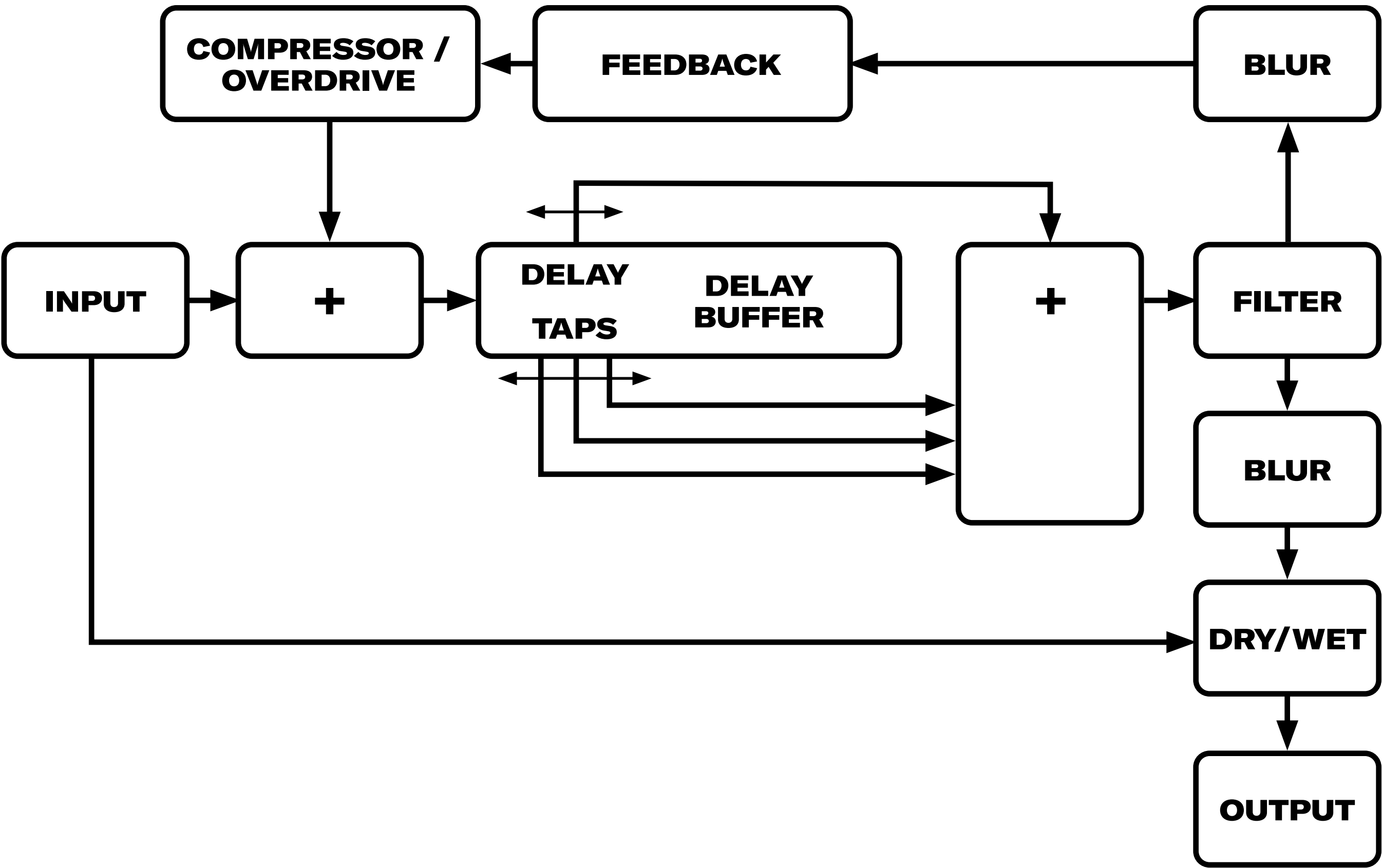
# Architecture

LEFT



RIGHT

Left is normalized  
if Right not connected



B

BASIL

FLEXIBLE

STEREO

SPACE

DELAY

FINE

TIME

3

LONG

3

DELAY

STEREO

5

DRY

WET

SPEED

HALF

FREEZE

4

RANGE

LONG

6

FEEDBACK

13

LO-FI

LONG

7

BLUR

7

SPACE

8

FILTER

9

10

TAPS

LONG: ASSIGN

11

-

+

12

SYNC

11

CTRL

1

L IN

10

R IN

3

DELAY V/OCT

6

FEEDBACK

2

L OUT

2

R OUT

BASTL PIZZA

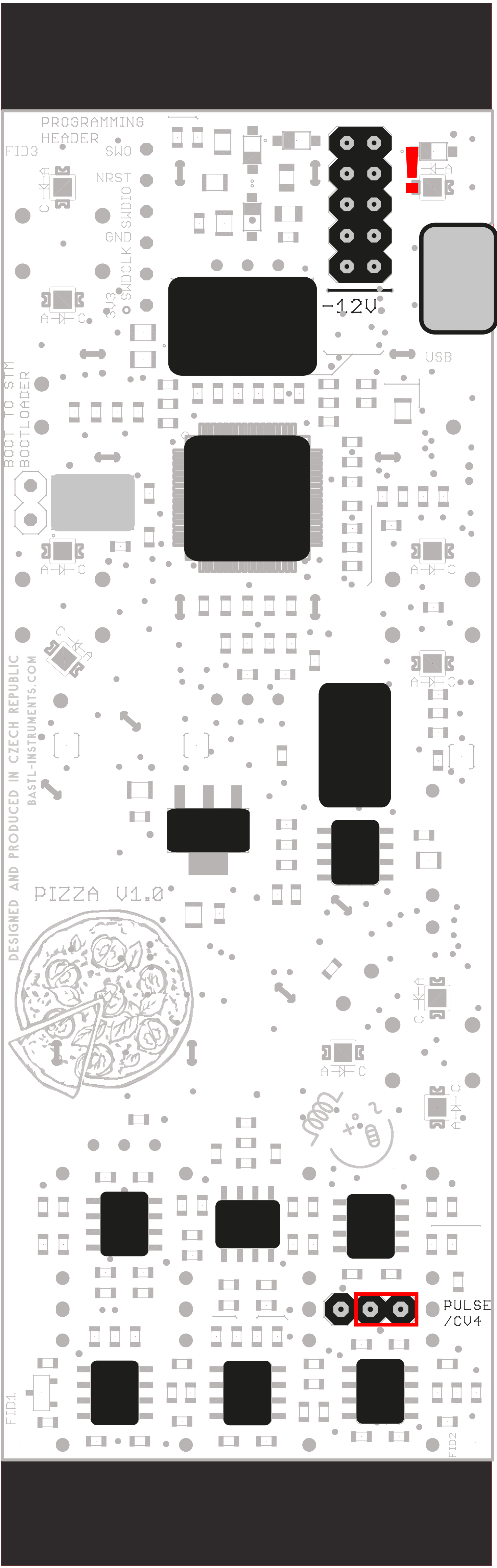
DELAY  
BUTTON

SPEED  
BUTTON

FREEZE  
BUTTON

SPACE  
BUTTON





**A**

**B**

To use the feedback CV input, the jumper must be set in this position

# Power

Before connecting the ribbon cable to this module, disconnect your system from power! Double-check the polarity of the ribbon cable and that it is not misaligned in any direction. The red wire should match the -12V rail both on the module and the bus board.

! please make sure of the following

- you have a standard pinout eurorack bus board
- you have +12V and -12V rails on your bus board
- the power rails are not overloaded by current

Although there are protection circuits on this device, we do not accept any responsibility for damages caused by the wrong power supply connection. After you've connected everything, double-checked it, and closed your system (so no power lines can be touched by hand), turn on your system and test the module.

## A

Micro USB connector for firmware updates.

## B

Keep in the right position (CV input) for the Basil Pizza delay.

Jumper allows switching the functionality from FEEDBACK input to PULSE output (e.g., when using the module as the Pizza Oscillator).



# 1 INPUTS

Inputs are where you plug your audio input that you want to be processed by Basil. If you are processing a mono signal, plug it into the Left channel input (L IN), and it will be copied to the Right channel input (R IN). Plug both inputs for processing stereo signals.

# 2 OUTPUTS

Outputs are where you can listen to the processed audio signal.

# 3 DELAY

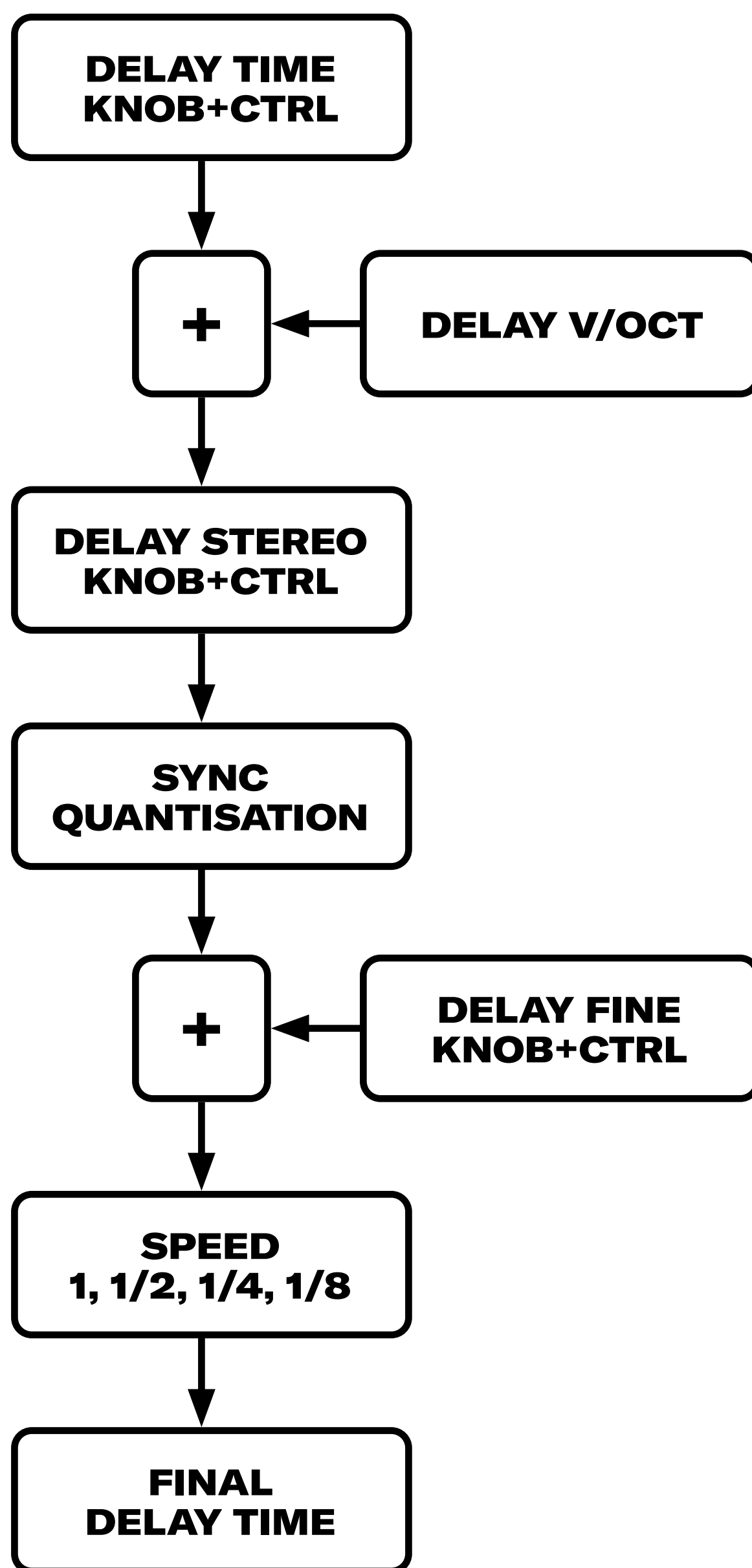
The delay time on Basil is influenced by several factors. The main delay controls, TIME, STEREO, and FINE, are set by the DELAY knob and browsed by the DELAY button. A short press of the DELAY button switches between the delay TIME setting and the STEREO spread function of the DELAY knob. A long press of the DELAY button accesses the FINE delay adjustment via the DELAY knob (a short press of the DELAY button leaves the FINE adjustment).

TIME is the main time of the delay, with the longest delays to the left and the shortest to the right.

STEREO spread is the time difference between the Left and Right channel. Fully CCW, the left and right delay times are identical. Fully CW, the left delay time gets longer while the right delay time gets shorter. In fact, the right delay is twice as short as the left delay time in the fully CW position.

The FINE delay time is useful for certain types of modulation but also to tune the module to a certain note when using it as a tonal Karplus Strong voice element.

If the SYNC jack and clock are detected, the module will use tempo dividers instead of continuous control. The FINE delay is applied after the delay time is quantized to the time constant set by the clock divider, so you can detune your synced delays or get modulated delays that are still synced. Plugging and unplugging the SYNC jack will reset the FINE delay to zero. See the SYNC section for more information.



The DELAY V/OCT input follows the volts-per-octave standard, meaning that twice the voltage means half the delay time. This input can be utilized for playing melodies, particularly with short tonal delay times.

## 4 SPEED

The SPEED section plays a significant role in determining the final delay time. It can be used to halve or double the delay time, transposing the delay tails up and down by an octave.

The SPEED button toggles between two sample rates: full (no light) and HALF. This allows you to quickly switch between half/double delay times and change the octave of the delay tail.

For longer delay times, hold the SPEED button for 2 seconds to access the longer RANGE mode (do the same to leave the mode). In this mode, the SPEED button toggles between quarter and eighth sample rates, resulting in very long lo-fi delays.

When the SPEED is assigned as the CTRL destination, you can continuously select between four sample rates via CV.

The maximum normal sample rate is 41.6 kHz, and the maximum delay time in stereo is 0.5 seconds. If you halve the sample rate, the maximum delay time doubles to one second, whereas if you quarter it, the maximum delay time becomes two seconds, and for an eighth, it is four seconds. Since these are audio rate sample rates, the delayed signal undergoes a low pass anti-aliasing filter, causing it to lose high frequencies, which can be desirable in combination with cutting the low end using the feedback high-pass FILTER (band-passed delay character).

Please note that all other processes, such as the FILTER, BLUR, and DRY/WET mix, still operate at the maximum sample rate.

To deactivate the anti-aliasing filter and get LO-FI downsampled effects, hold down the FREEZE button for more than 2 seconds. Doing so will turn off the anti-aliasing filter for lower sample rates, resulting in a more pronounced lo-fi character that interacts with lower speeds.

## 5 DRY/WET

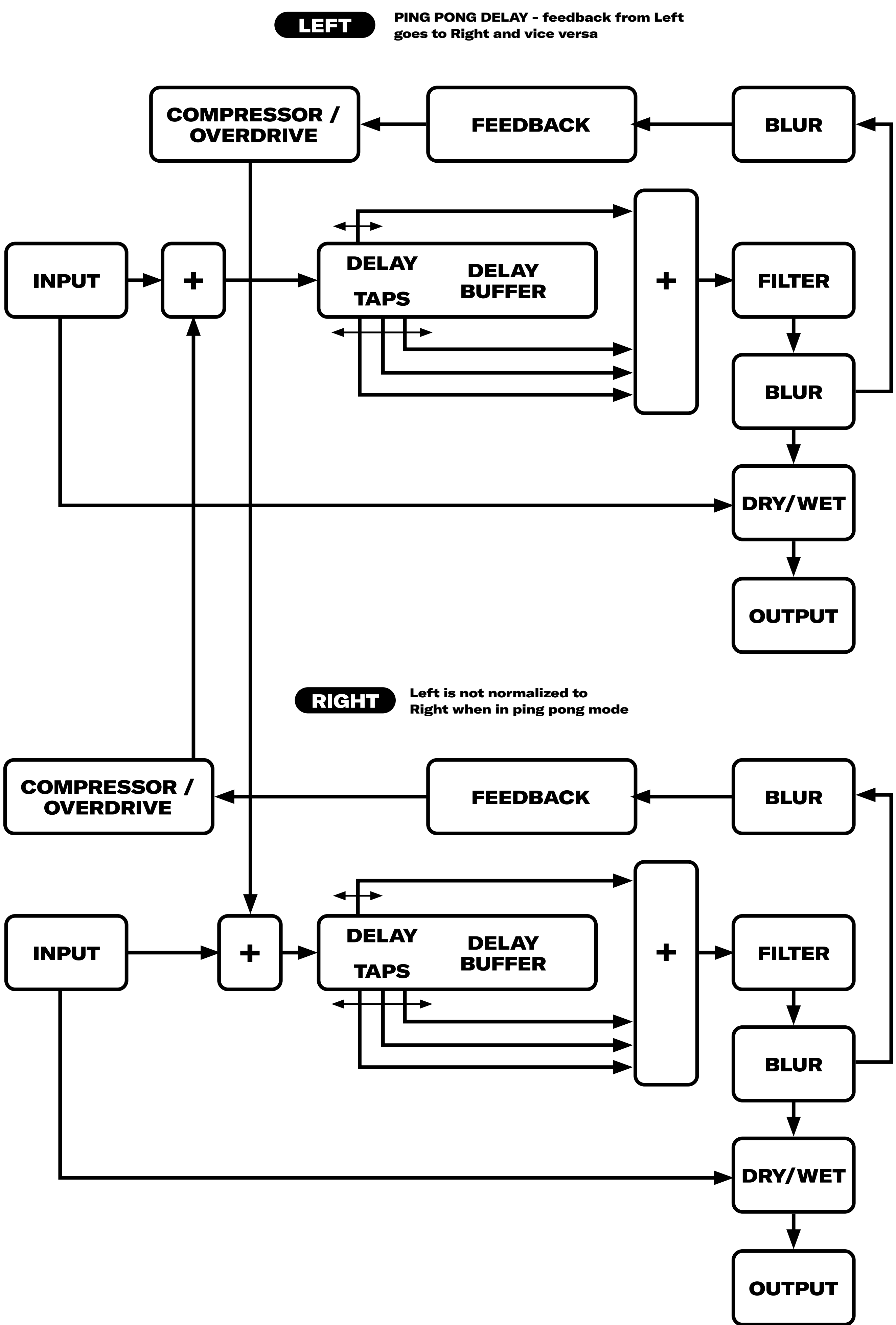
The DRY/WET mix fader allows you to crossfade between the clean INPUT signal (at its leftmost position, labeled DRY) and the fully affected delayed signal (at its rightmost position, labeled WET). The crossfading curve follows a constant power curve.

## 6 FEEDBACK

The FEEDBACK knob feeds a portion of the delayed signal back to mix it with the input, creating repeating fading echoes or endless drones. To keep the feedback under control and prevent it from going too loud, there is a compressor and overdrive in the feedback path. Additionally, there are BLUR and FILTER parameters in the feedback path that can be adjusted in the SPACE section. The TAPs can also be included in the feedback at their higher settings.

When you move the FEEDBACK knob to the right of 12 o'clock, the same amount of feedback is introduced for both the Left and Right channels.

However, moving the knob to the left introduces ping/pong delay routing, causing the Left and Right channels to cross paths with every feedback run. This method can also extend the maximum available feedback time for mono delays, since the signal runs through both delay buffers before reaching the output. Check out the patch examples for more information. The maximum feedback will also amplify the signal in the feedback path slightly, causing it to hit the overdrive/compressor, but it remains under control and won't explode with loudness.



# 7 SPACE

The SPACE section enhances the digital delay effect with three distinct flavors: BLUR, FILTER, and TAPS. Each flavor has two poles (left and right) and is neutral when the SPACE fader is centered. To cycle between flavors, press the SPACE button and use the SPACE fader to adjust the flavor intensity. When the fader is centered, no effect will be applied. Moving the fader to the right or left will produce different effects. Moreover, you can control the currently selected flavor via the SPACE CV input.

**Note:** You can control two flavors at the same time by assigning the other one to the CTRL knob.

## Hyper-SPACE mode

To have all the SPACE parameters active simultaneously, their states can be remembered so that you can layer them and create powerful ambient spaces without sacrificing the CTRL knob. When you press the SPACE button, the SPACE fader will be frozen to avoid overwriting the previous value of the newly selected flavor. Move the fader to start modifying that flavor.

To activate/deactivate the Hyper-SPACE mode, hold both the SPEED and FREEZE buttons at startup. While holding these buttons at startup, the Hyper-SPACE mode on is indicated by all three SPACE lights being ON (and OFF, if it is deactivated).

# 8 BLUR

BLUR gives you two flavors of signal diffusion to turn your delays into reverb-type effects. BLUR also adds some stereo spread to your signal and breaks the main resonant frequency of the delay line.

Moving the SPACE fader to the left, the diffusion takes place before the feedback path (also the first delays get diffused) and adds slight low-pass filtering.

To the right, the diffusion occurs in the feedback path with more lush and resonant character.

# 9 FILTER

FILTER in the feedback path provides control over the tone darkness/brightness of your delays, reverbs, and drones.

Moving the SPACE fader to the left applies a low-pass filter, removing high frequencies and producing a darker character.

Conversely, moving the SPACE fader to the right applies a high-pass filter, resulting in bright, lush delays and reverbs.

# 10 TAPS

TAPS are an excellent way to increase the density of the delay effect by mixing in signals from delay times shorter than the primary delay time (multi-tap delay). These TAPS act as additional read heads in the delay buffer, which are placed at shorter sub-divisions of the primary delay time.

When you move the SPACE fader to the left, you add odd and even division TAPS. When you move it to the right, you add only even division TAPS.

Additionally, moving the SPACE fader to the extremes mixes the TAPS signals into the feedback path, which is controlled by the feedback knob. If droning with the full feedback, this affects the overtones, while with gentler feedback, it adds more density to your delay/reverb tails.

# 11 CTRL

## **CTRL knob and CTRL CV** (-6V to +6V)

The CTRL is an assignable control. The CTRL knob can serve as a static control or, when you plug voltage into the CTRL CV input, as an attenuverter.

To enter ASSIGNMENT mode, hold the SPACE button for a few seconds. The currently assigned CTRL destination will start blinking. Set the destination you want by pressing the button nearest to it. Long-press the SPACE button again to return to normal operating mode.



The possible CTRL destinations are (indicated by lights):

- Delay time (TIME light)
- Delay stereo spread (STEREO light)
- Delay fine adjustment (FINE light)
- Speed (HALF+RANGE lights)
- Dry/Wet (HALF+FREEZE lights)
- Feedback (RANGE+LO-FI lights)
- Freeze (FREEZE light)
- Lo-Fi (LO-FI light)
- Blur (BLUR light)
- Filter (FILTER light)
- Taps (TAPS light)
- Blur and Filter and Taps (BLUR+FILTER+TAPS lights)

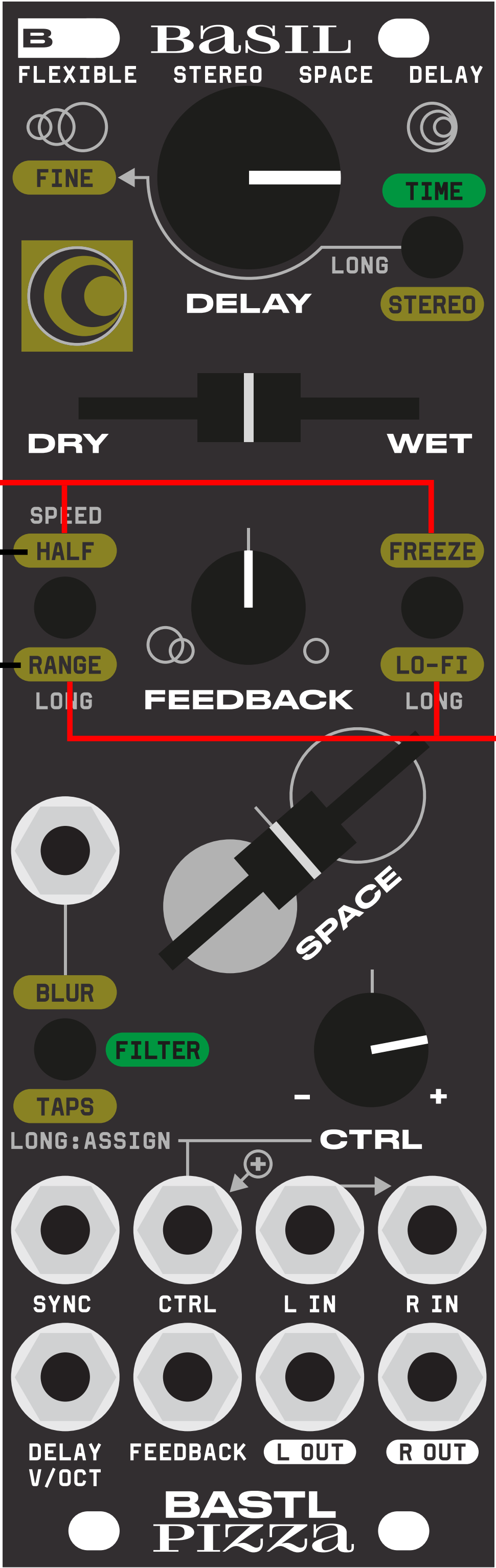
SMALL DELAY CHANGE  
FOR CHORUS or COMB  
filter

DRY / WET

SPEED

ALL  
at once

- BLUR
- FILTER
- TAPS



DELAY TIME

STEREO SPREAD

FREEZE GATE

LO-FI

FEEDBACK

# 12 SYNC

## **SYNC input** (-6V to +6V)

The SYNC input is used to synchronize delay times with the analog clock and is active only when a cable is detected at the input. Once detected, the DELAY TIME set by the DELAY knob aligns to a clock division.

The available time divisions are:

32, 24, 16, 12, 8, 6, 4, 3, 2, 1,  $\frac{3}{4}$ ,  $\frac{1}{2}$ ,  $\frac{1}{3}$ ,  $\frac{1}{4}$ ,  $\frac{1}{6}$ ,  $\frac{1}{8}$ .

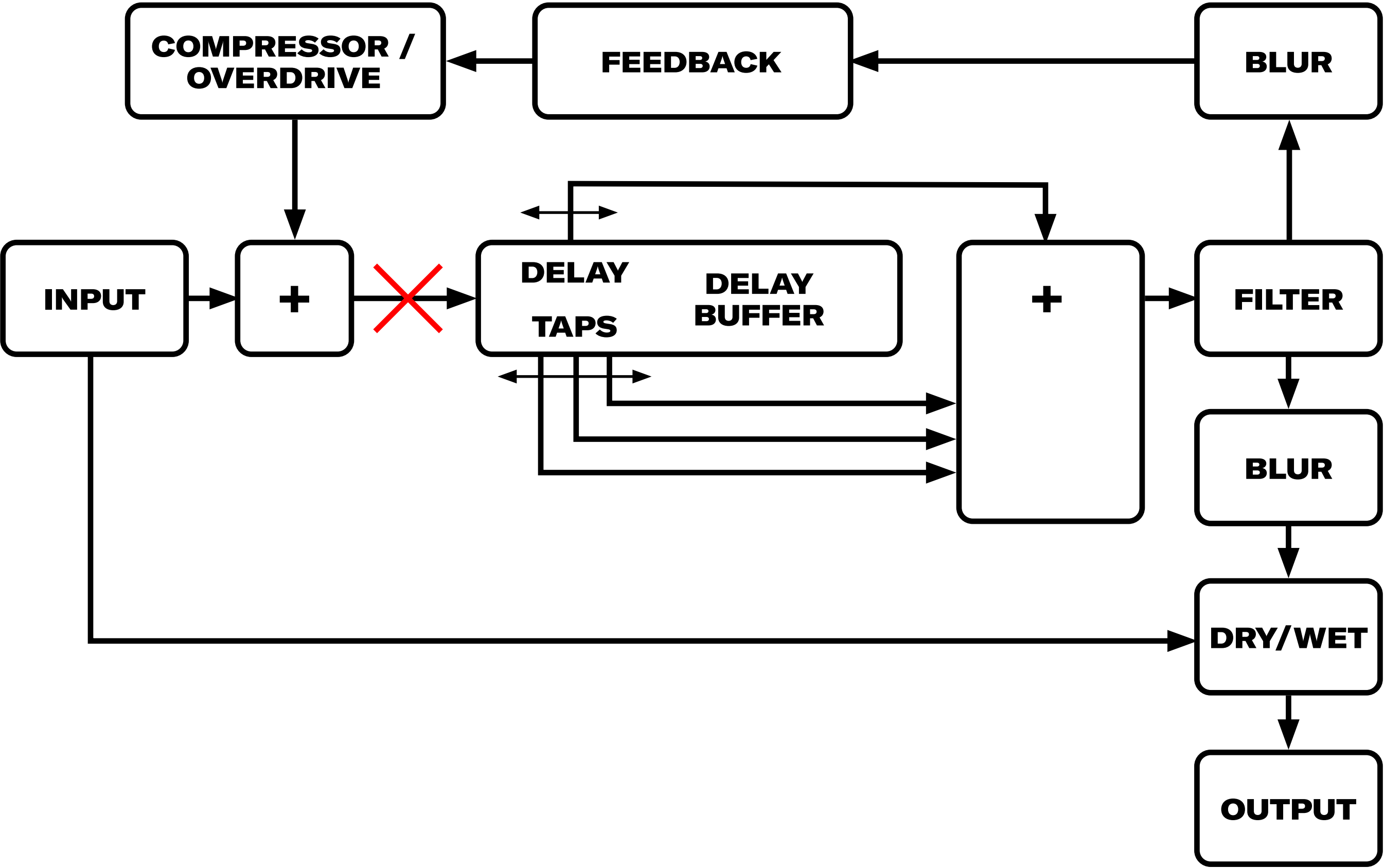
The delay time will vary based on your clock speed and the SPEED setting of Basil. However, there is an upper limit to the delay length. So, if the slow divisions don't sound right, you may need to increase your clock resolution.

The delay FINE adjustment is applied after the delay time is synchronized, allowing for slightly modulated synchronized delays. Plugging and unplugging the SYNC jack resets the FINE delay setting.

# 13 FREEZE

The FREEZE button lets you create endless loops that correspond to the set delay time. The input gets disconnected, and the current state of the delay buffer will act as a read-only sample loop. When FREEZE is activated, you can still use BLUR, FILTER, TAPS, and SPEED to change the sound of the frozen audio.

When using SYNC, you can get precise micro-loops to layer with your incoming audio. Making these loops play at half speed and altering them using the SPACE section can go a long way. Use the quarter or eighth SPEED setting for longer loops.



**LO-Fi:** Holding the FREEZE button for longer than 2 seconds turns off the anti-aliasing filter for the lower speeds and that will give more LO-Fi character interaction with the lower sample rates. See the SPEED section for more info.

# Patch Tips

## TIME-BASED EFFECTS

Many sound effects are based on the principle of manipulating the delay buffer in specific ways, which is why they're known as time-based effects. The beauty of the Basil delay is that you can transition between various effect categories with just a few gestures.

Here's a cookbook on how to achieve the most common time-based effects. Use this as a starting point and bring in more SPACE (start with FILTER for spectral control) and modulation once you've achieved the desired effect.

# COMB FILTER

- TIME setting in the upper third
- DRY/WET center to right
- FEEDBACK between 2 and 4 o'clock
- full SPEED
- no SPACE, no FREEZE, no SYNC

Tweak delay TIME in the upper third and add FEEDBACK for more resonant comb filtering.



# FLANGER

- TIME setting in the upper third
- DRY/WET in the middle
- FEEDBACK between 2 and 4 o'clock
- full SPEED
- no SPACE, no FREEZE, no SYNC

Assign CTRL to modulate the FINE delay time and feed it with slow sine/triangle LFO.

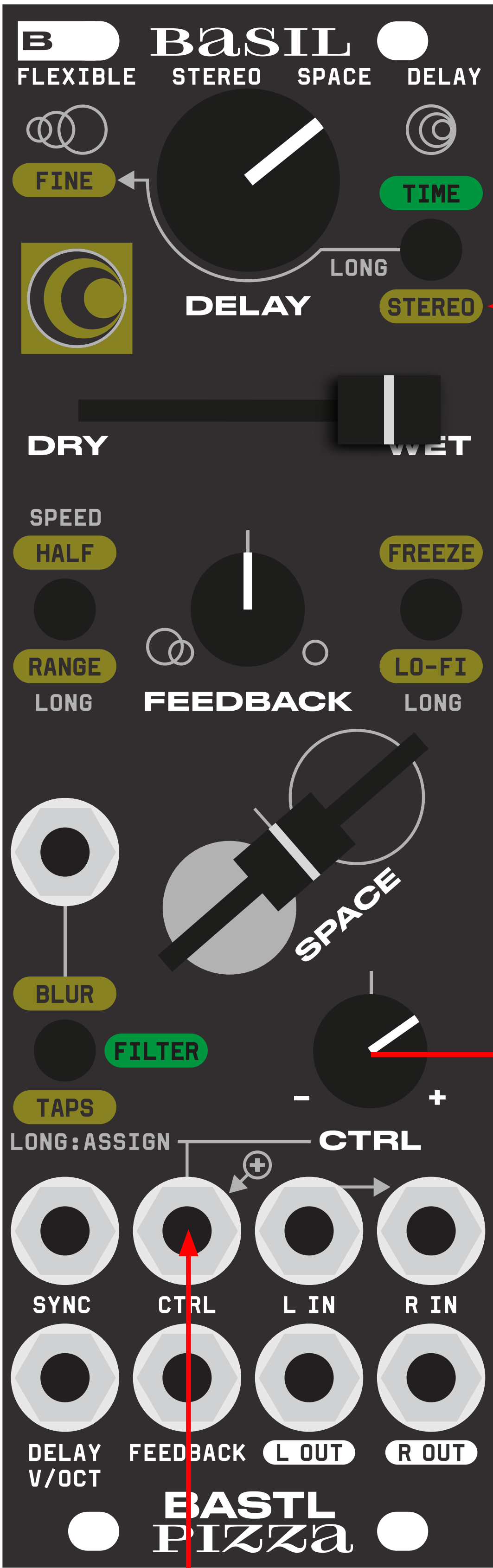




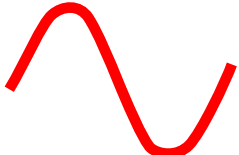
# STEREO CHORUS / STEREO VIBRATO

- TIME setting in the upper third
- DRY/WET on max (vibrato) or middle (chorus)
- little to no FEEDBACK
- full SPEED
- no SPACE, no FREEZE, no SYNC

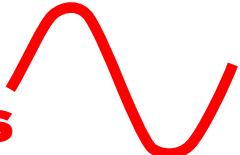
Assign CTRL to modulate the STEREO time spread and feed it with a slow sine/triangle LFO. If DRY/WET is fully to the right, you will get a vibrato effect. Mixing in the DRY signal will create a chorus effect. Add FEEDBACK to get a stereo flanger effect.



LFO  
1s-0.1s



LFO  
3s-0.5s



# PITCH SHIFTER

- TIME setting in the upper third
- DRY/WET on max
- no FEEDBACK
- full SPEED
- no SPACE, no FREEZE, no SYNC

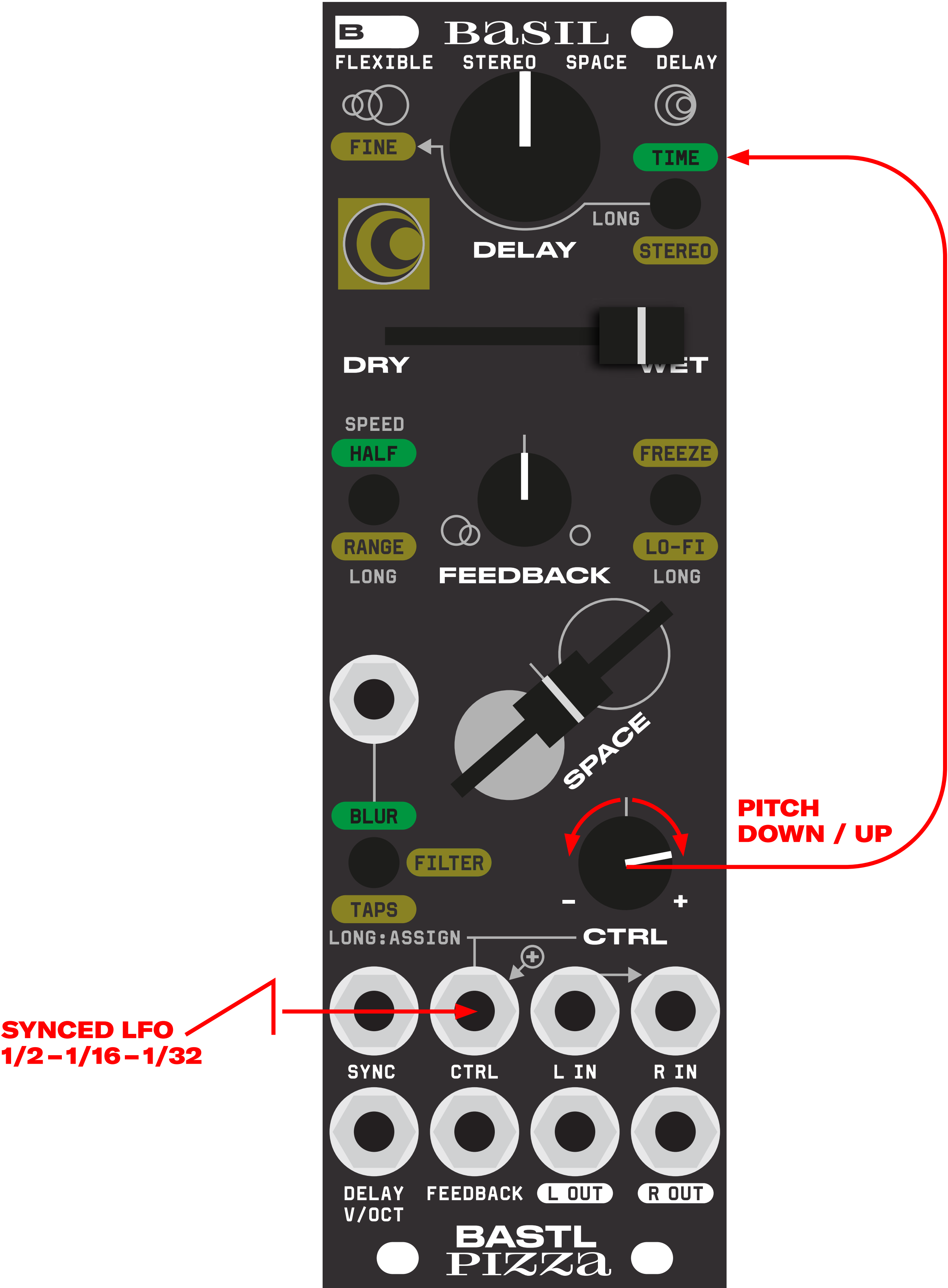
Use a ramp LFO to modulate the FINE delay time via the CTRL input. Turning the CTRL knob to the right will result in a pitch-up effect, while turning it to the left will result in a pitch-down effect and eventually lead to reverse effects.



# TEMPO-SYNCHED REPHRASER / REPITCHER / REVERSER

- TIME setting in the middle
- DRY/WET on max
- no FEEDBACK
- half SPEED for more range
- no SPACE, no FREEZE, no SYNC

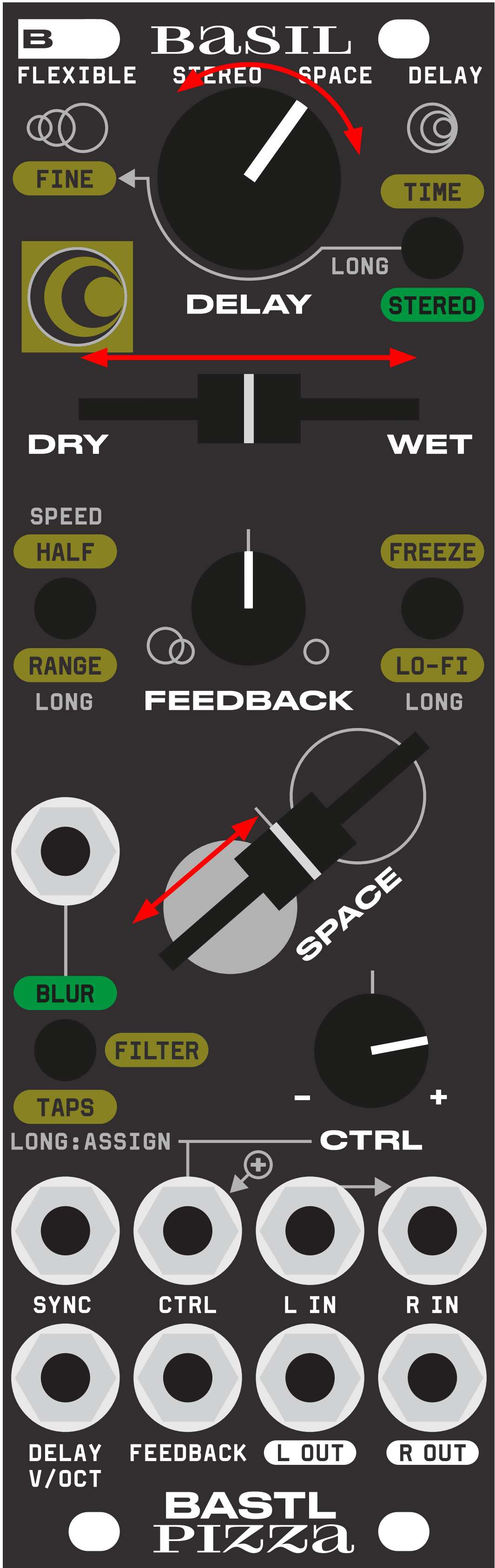
This is a very similar effect to Pitch Shifter but using tempo-synced LFO to modulate the delay TIME via the CTRL. Turning the CTRL knob to the right produces a pitch-up effect. Turning it to the left results in a pitch-down, and eventually in reverse effects with pitch going up again.



# STEREO WIDENER

- TIME setting in the upper third
- STEREO spread in the upper half
- DRY/WET for width
- no FEEDBACK
- full SPEED
- no SPACE, no FREEZE, no SYNC

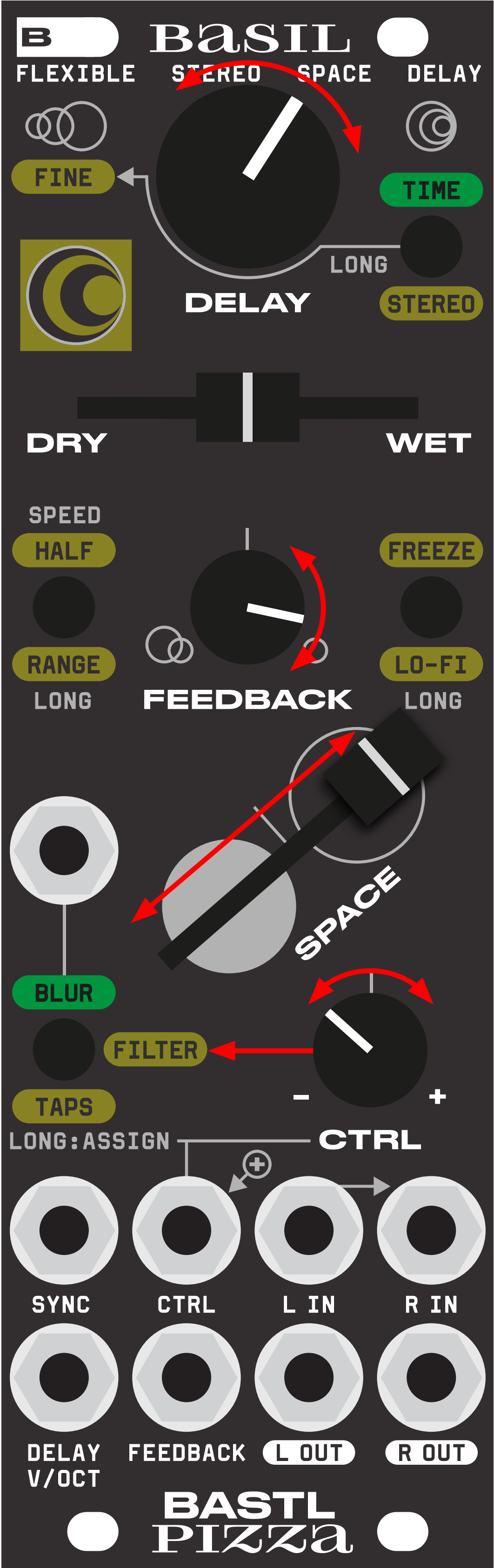
Set the delay TIME in the upper third then switch to STEREO and use the DELAY knob for STEREO spread. DRY/WET adds the wide layers. Set SPACE to BLUR and move the fader to the left for more abstract width.



REVERB

- TIME setting at around 1 o'clock
- STEREO spread according to liking
- FEEDBACK in the upper third
- full SPEED
- SPACE set to BLUR
- CTRL set to FILTER (or TAPS)
- no FREEZE, no SYNC

This is just a starting point, so feel free to experiment with different settings. To get even more control over the reverb, consider using the Hyper-SPACE mode. If using the Hyper-SPACE, use slight modulation on the FINE delay time for modulated reverb. Use CTRL on DRY/WET for gated reverb.





# WOW & FLUTTER DELAY

- TIME setting according to desired delay time
- FEEDBACK around 3 o'clock
- full SPEED
- CTRL assigned to FINE delay time
- no SPACE, no FREEZE, no SYNC

Modulate CTRL (assigned to FINE delay time) with smooth random CV to get old tape delay wow & flutter effects.





# Even more patch Tips

## EXTERNAL FEEDBACK DELAY

- set TIME as desired
- FEEDBACK on the left side (ping pong)
- full SPEED
- no SPACE, no FREEZE, no SYNC

You can affect the feedback signal externally by splitting your L OUT signal going to an effects module such as a downsampler, filter, or pitch shifter, and then going back to R IN. Use the FEEDBACK knob to the left in the ping-pong mode. Listen in mono or stereo.



# DOUBLE-LENGTH MONO DELAY

- TIME setting on longest
- FEEDBACK on the left side (ping pong)
- full SPEED
- no SPACE, no FREEZE, no SYNC

When using the Basil delay module as a mono delay, you can utilize the ping pong delay mode to effectively double the available delay buffer by using both the left and right delay buffers. To achieve double delay, use only the Left input and Left output. Once you move the FEEDBACK knob to the right of the 12 o'clock position, you will get a half-time delay. Additionally, you can use the HALF speed or extended RANGE features to achieve longer delay times, but this comes with a loss of audio quality.



# OCTAVE LO-FI LOOPER

- TIME on lower settings
- FREEZE activated
- long RANGE SPEED
- no SPACE
- SYNC to a clock
- CTRL assigned to FILTER

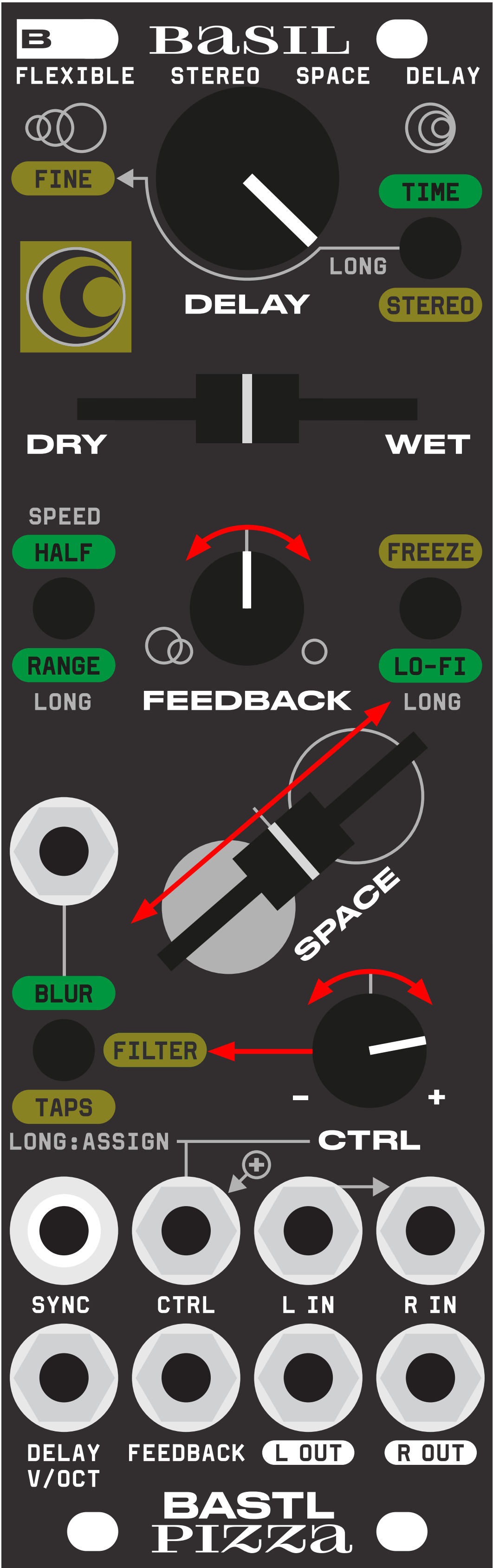
You can make lo-fi loops up to 2 bars long when using the long RANGE and activating the FREEZE function. Also, you can transpose the loops up or down an octave by pressing the SPEED button. To further modify the loops, you can engage the SPACE sections BLUR or FILTER.



# MINECRAFT REVERB

- TIME setting on full CW
- FREEZE activated
- long RANGE SPEED + HALF SPEED
- SPACE set to BLUR
- no FREEZE
- LO-FI activated
- CTRL assigned to FILTER

To create crunchy and lush lo-fi reverb tails, set the SPEED to its lowest setting (long RANGE and HALF speed) and the delay TIME to its shortest (fully CW) while activating the LO-FI setting. Just this will create a nicely downsampled sound. Then, add BLUR, FEEDBACK, and CTRL assigned to FILTER to gain the most control over the Minecraft reverberation.



# STEREO KARPLUS-STRONG VOICE

- TIME setting in the upper third
- FEEDBACK on the right - sets Decay
- full SPEED
- SPACE set to FILTER
- no FREEZE, no SYNC

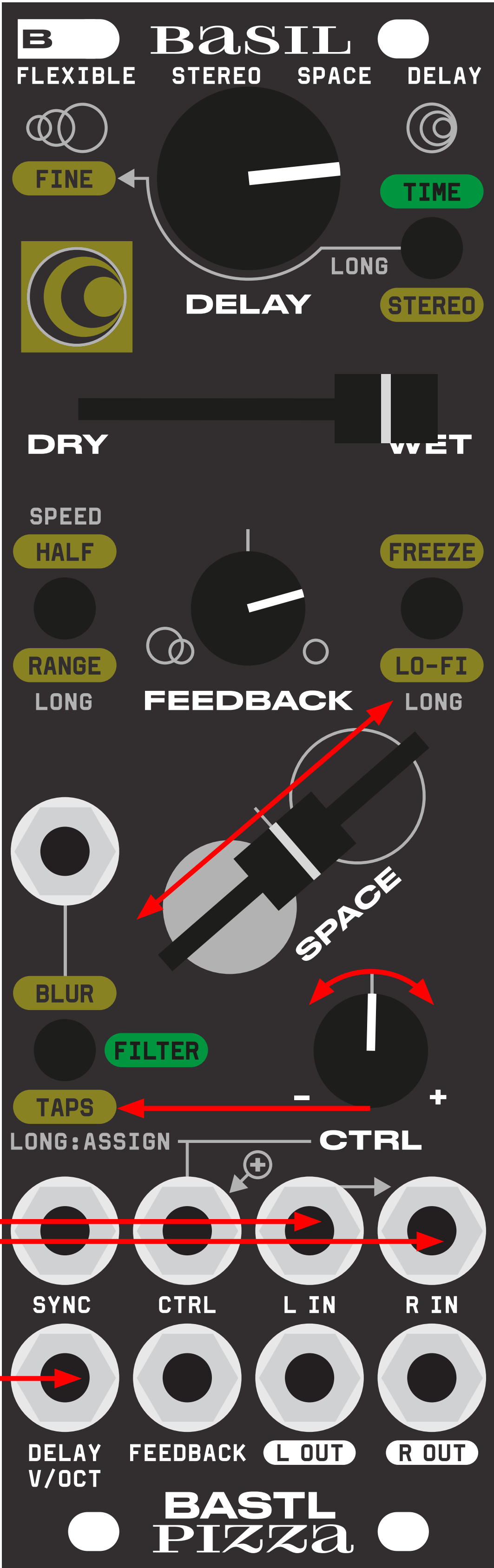
To create a unique physical modeling synth sound, you can utilize the Karplus-Strong synthesis method. Start by creating a noise burst (use noise into a VCA controlled by an envelope with attack and decay controls), and optionally run it through a resonant filter (for optimal results, use a stereo filter, such as Ikarie). Set FEEDBACK to higher resonant settings and TIME to the upper third. Use the FINE control to tune to your root note and run a pitch sequence to the DELAY V/OCT input. You can use the FEEDBACK knob to control the decay of your sound and the FILTER for its decay timbral characteristics. Additionally, you can use the CTRL knob assigned to TAPS to gain more control over the resonant harmonics.

NOISE BURST



(STEREO DETUNED) RESONANT FILTER

PITCH SEQUENCE

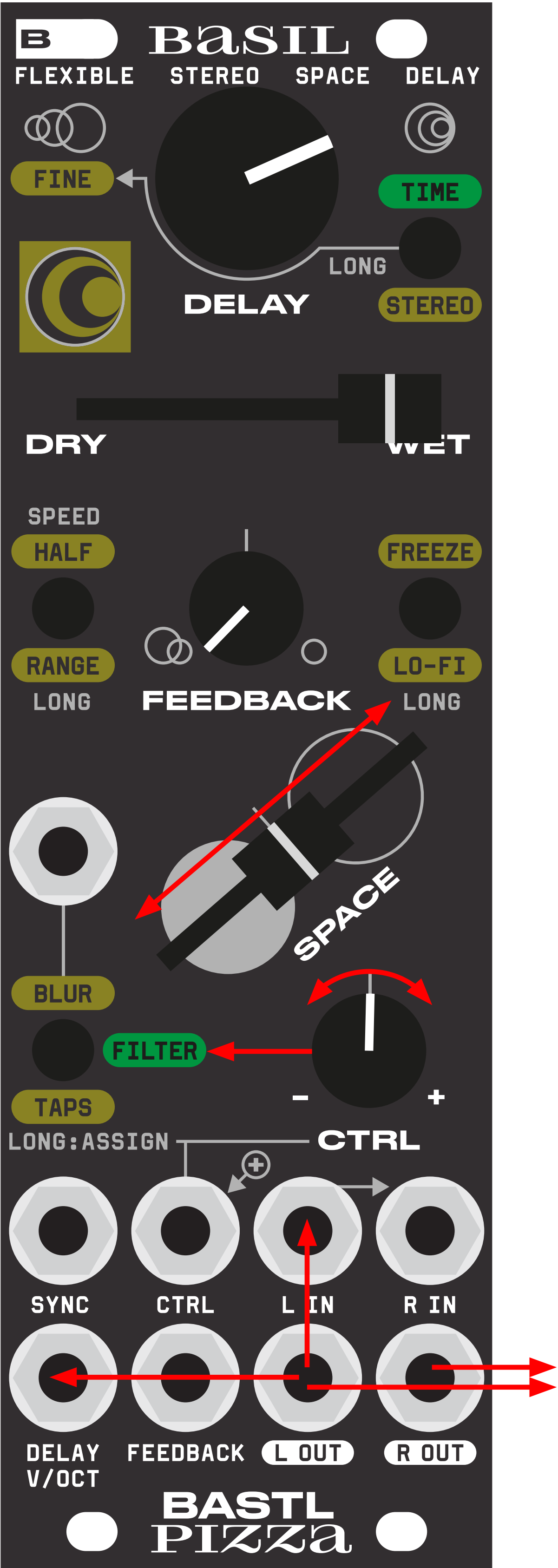




# SOUND DESIGN FEEDBACK

- TIME setting all around
- STEREO on fully right
- FEEDBACK on max CCW or CW
- full SPEED
- SPACE set to FILTER
- CTRL assigned to TAPS
- no FREEZE, no SYNC

Create a feedback loop inside the module by connecting L OUT to L IN and to the DELAY V/OCT input. Listen to the loop - ideally in stereo, using R OUT as well. Set the FEEDBACK knob fully left or right. Use the CTRL knob to control the TAPs, and use your index finger to tweak the delay time while using your thumb to move the SPACE slider set to FILTER. Experiment with different gestures to create the most crazy sounds you've ever heard and unleash the chaotic behavior of this feedback system. Feedback even more signals to unchain the beast.





# V/OCT CALIBRATION MODE

Enter the V/OCT CALIBRATION MODE by holding the SPACE and DELAY buttons. All LEDs will turn on to indicate the mode.

Press the SPACE button to quantize the V/OCT input (stepped animation on SPACE leds) or leave it unquantized (smooth fading of SPACE leds).

Exit the V/OCT CALIBRATION MODE by pressing SPACE and DELAY buttons together.

Press the PITCH button to initiate **automatic** V/OCT calibration.

- 1** Connect the R OUT output to the V/OCT input and wait until all LEDs turn ON.
- 2** Unplug the cable, and the module will return to the V/OCT CALIBRATION MODE.

The LEDs will animate pointing down towards the V/OCT jack. This method uses internally calibrated R OUT output and calibrates the V/OCT input by sending precise voltages.

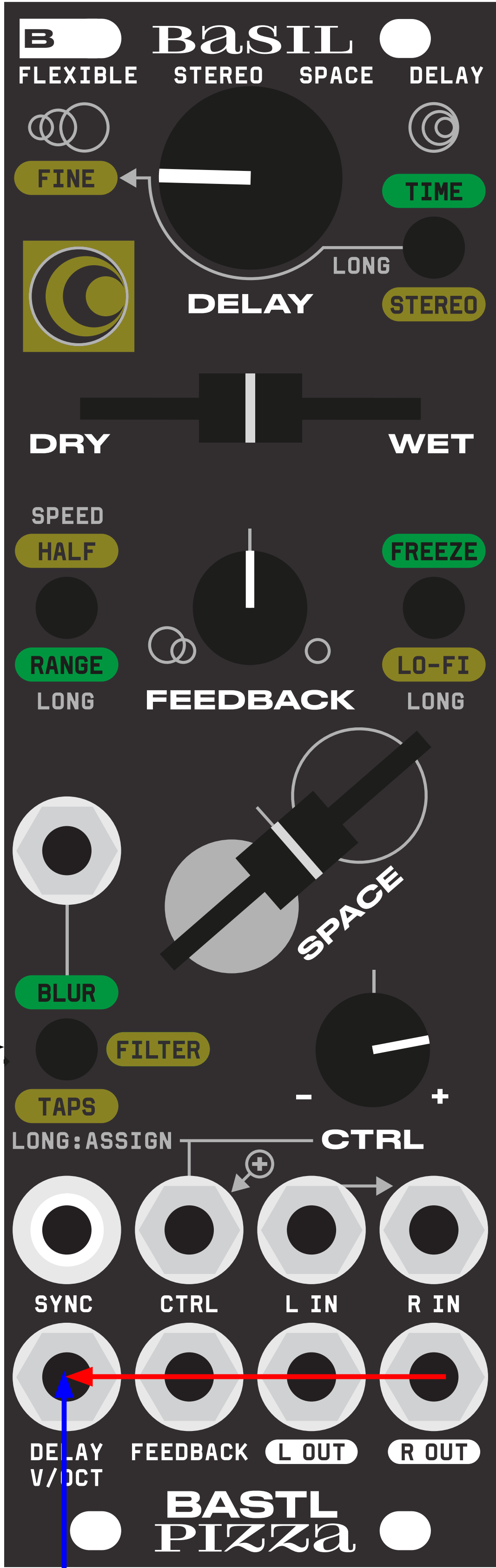
Press FREEZE button to initiate **external** V/OCT calibration.

- 1** Plug a cable from your V/OCT source to the V/OCT input of the Basil module.
- 2** 0 is blinking = apply 0 V (C note in lowest octave) on your V/OCT source.
- 3** Press the FREEZE/LO-FI button to learn what 0 V means.
- 4** 2 starts blinking = apply 2 V on your V/OCT source (play a note that's two octaves higher = 2 V).
- 5** Press FREEZE/LO-FI button to learn what 2 V means and the Basil module will return to V/OCT CALIBRATION MODE.

# V/OCT CALIBRATION MODE

## START

HOLD DELAY & SPACE  
TO ENTER THE V/OCT  
CALIBRATION MODE  
(ALL LIGHTS COME ON)  
HOLD BOTH TO LEAVE



## AUTOMATIC CALIBRATION

PRESS THE DELAY BUTTON TO  
START AUTOMATIC CALIBRATION

- 1 - CONNECT A CABLE FROM  
R OUT TO DELAY V/OCT
- 2 - WAIT FOR ALL LIGHTS TO GO  
ON AND THEN DISCONNECT  
THE CABLE

## EXTERNAL CALIBRATION

PRESS THE FREEZE BUTTON TO  
START EXTERNAL CALIBRATION

- 1 - Plug a cable from your V/OCT  
source to the V/OCT input of  
Basil.
- 2 - LO-FI is blinking = apply 0V  
(C note in lowest octave) on  
your V/OCT source.
- 3 - Press the FREEZE button to  
learn what 0V means.
- 4 - FREEZE starts blinking = apply  
2V on your V/OCT source (play  
a note that's two octaves  
higher = 2V).
- 5 - Press FREEZE button to learn  
what 2V means and Basil will  
return to V/OCT CALIBRATION  
MODE.

V/OCT SOURCE  
0V & 2V

# FIRMWARE UPDATE

- 1** Disconnect Basil Pizza from your rack and plug a micro USB cable to the Basil Pizza module
- 2** Hold the DELAY button and plug the USB into your computer
- 3** Pizza shows up as an external disk on your computer
- 4** Copy the pizza\_basil\_\*.version\*.uf2 file to this drive and wait for the Basil Pizza module to update and boot to normal operation
- 5** Disconnect the USB and install the Basil Pizza module in your rack

Basil shows the firmware version by a static light of the LEDs at startup. The first release firmware has the RANGE light ON.

## **Boot settings**

Hold DELAY at powerup to go to firmware update mode.

Hold SPEED and FREEZE buttons to activate/deactivate the Hyper-SPACE mode.

Hold SPACE at powerup to reset user settings (FINE delay settings, CTRL destinations).

Hold SPACE and FREEZE at powerup to do a factory reset: resets user settings and calibration.

Hold SPACE and SPEED at powerup to enter the factory test mode.

# Credits

**Development Team** Florian Helling & Martin Klecl

**Supervised by** Václav Peloušek

**Bootloader** Lennart Schierling (Binary Labs)

**Main Tester** Juha Kivekäs

**Beta Testers** David Žáček, Milan Říha, John Dinger, Václav Mach, Peter Edwards, Oliver Torr, Patrik Veltruský, Niels Aras, Leoš Hort, Leo Hivert, Martin Klecl

**Management** John Dinger

**Graphic design** Anymade Studio

The idea turned into reality thanks to everyone at Bastl Instruments and thanks to the immense support of our fans.

# BASTL

more info  
and video tutorials

[www.bastl-instruments.com](http://www.bastl-instruments.com)

