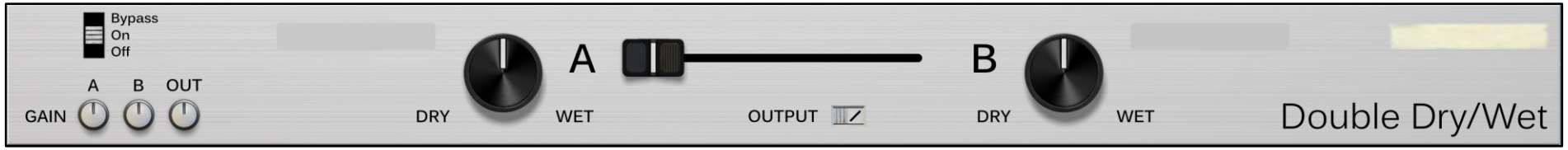
Double Dry/Wet

Linear Parallel Mixer



ANDREW RUSSELL

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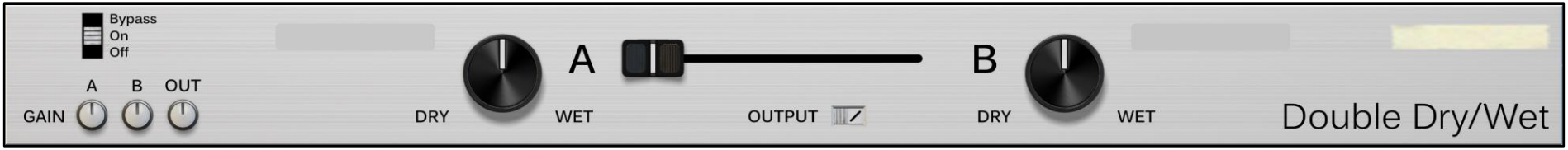
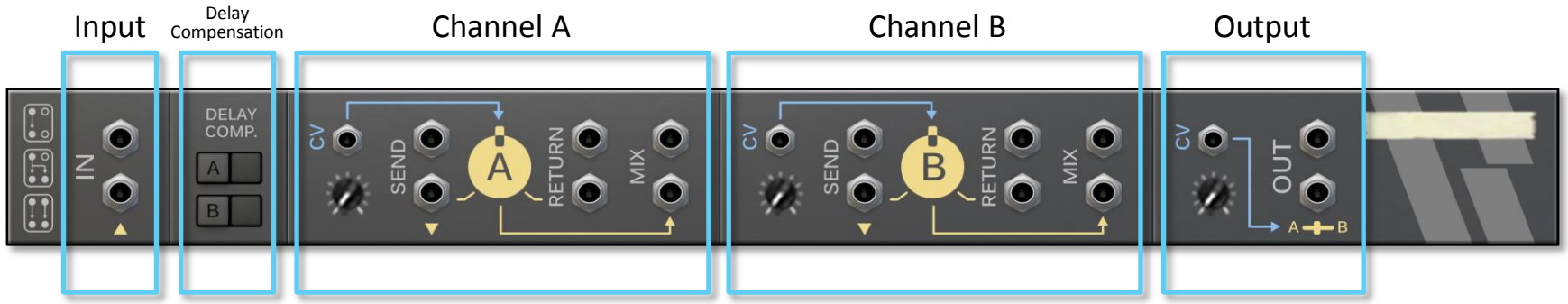
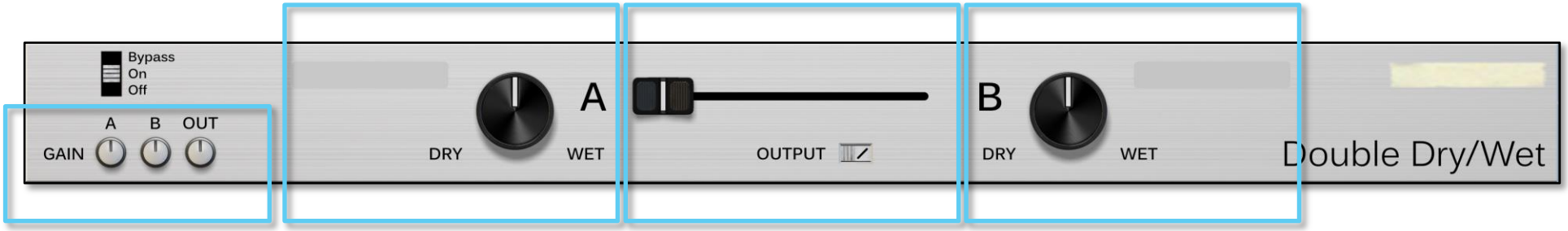


Double Dry/Wet
Version 2.0

Compatible with Reason 7.1.1 and later

Device **Section Overview**





Channel A and **B** signal path

(1) Connect the dry input signal to Input

(2) The dry Input signal is sent out of A Send and B Send

(3) Return ('wet') signals can be plugged into A Return and B Return

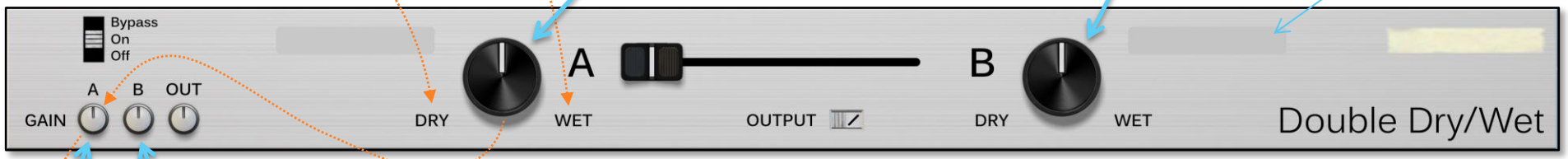
(4) If nothing is plugged into a return socket, then Input is used instead for that channel's 'wet' signal

Only showing Channel A

(5) A Dry-Wet mixes between Input and A Return

(5) B Dry-Wet mixes between Input and B Return

This is a channel strip
You can write something here



(6) The amplitude of the outputs of A Dry-Wet and B Dry-Wet is modulated by A Gain and B Gain respectively

(7) The outputs of A Gain and B Gain are sent to A Mix Out and B Mix Out respectively

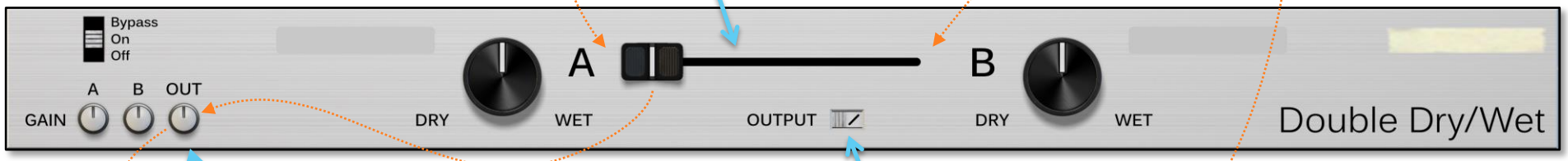
Output signal path

(7) The outputs of A Gain and B Gain are sent to A Mix Out and B Mix Out respectively

(10) The output of Output Gain is output from Output

(8) Output Mix mixes between A Mix Out and B Mix Out

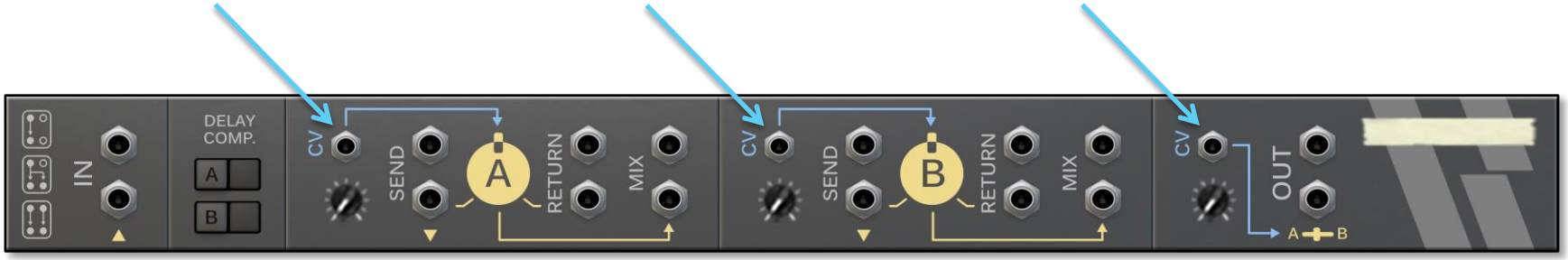
Off: All outputs are silenced
Bypass: All outputs receive the dry Input signal



(8.1) Output Fader Mode selects whether the Output Mix is Linear or Constant Power (page 7)

(9) The amplitude of Output Mix is modulated by Output Gain

Control Voltage modulation



Control Voltage (CV) inputs are available to modulate the values of A Dry-Wet, B Dry-Wet and Output Mix. The modulation works as follows:

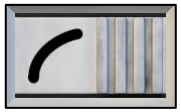
- Each parameter on the front panel is taken as a value from 0 to 1
- The matching CV signal is taken as a bipolar value from -1 to 1
- The CV value is added to the parameter value
- The final parameter value is clamped to the range 0 to 1

Note that CV Trim knobs in Reason range from 0 to 127. These are used to scale the incoming CV value by 0% to 100% respectively.

Select the correct mixing mode to maintain a perceptually consistent sound level when fading between two signals

When two signals are correlated, use a Linear mix

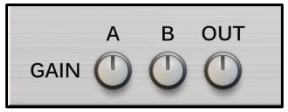
- A Linear mix is a good choice when mixing between the dry version of a signal, and the same signal passed through an effect
- Or between two parallel effects, as in Double Dry/Wet
- The Dry/Wet knobs in Double Dry/Wet *always* perform a Linear mix



When two signals are un-correlated, use a Constant Power mix

- A Constant Power mix is a good choice when performing a cross-fade between two different tracks (see page 13)

A word on **Gain Controls**



The gain controls in Double Dry/Wet are amplitude-based and range from 0% to 200%, with 100% at the centre position.

This is unlike the more familiar decibel (dB) gain controls found elsewhere in audio software.

Measuring gain using amplitude makes sense in conjunction with linear mixing. For example: setting a channel's dry/wet knob to 50% and setting the channel's gain to 200% will pass through both signals at 100% volume (i.e.: the signals will be added together, see page 15).

Note that, while each gain control only goes up to 200% (6 dB), you can achieve up to 400% (12 dB) and even 800% (18 dB) gain by combining gain controls in series (see pages 18 and 19 respectively).

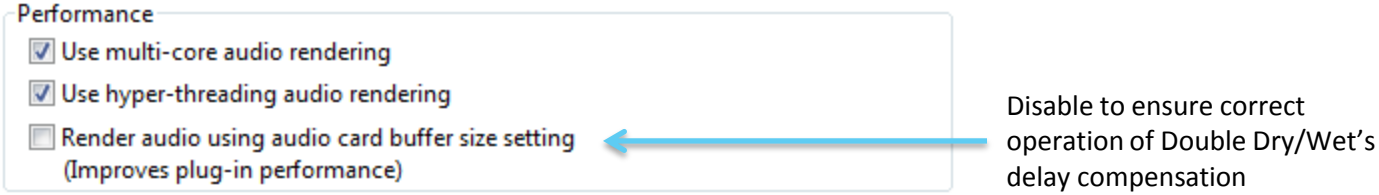
18 dB	800%
12 dB	400%
6 dB	200%
3 dB	141%
1 dB	112%
0 dB	100%
-1 dB	89%
-3 dB	71%
-6 dB	50%
-12 dB	25%
-20 dB	10%
-∞ dB	0%

Using **Delay Compensation**

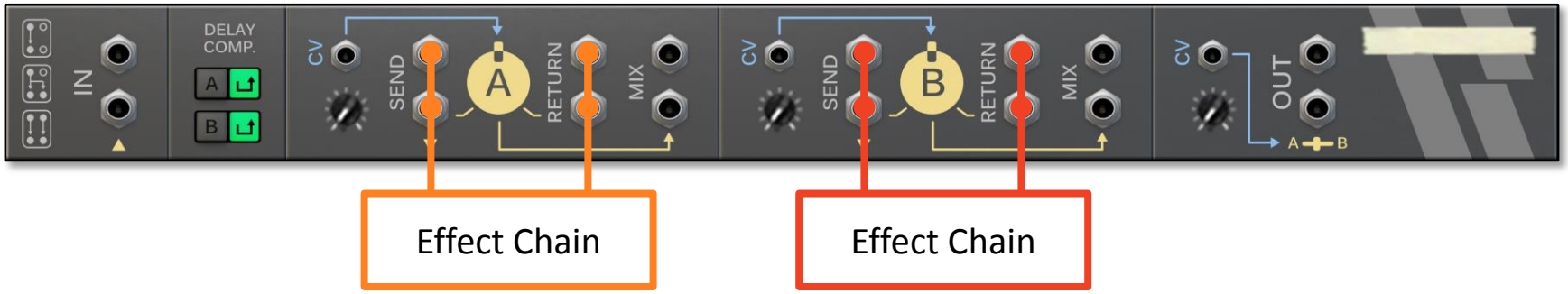
Double Dry/Wet provides limited support for delay compensation. When a signal path forms a loop from a device back into itself, it introduces 64 samples of latency.

By activating the per-channel delay compensation, signals are buffered within Double Dry/Wet to account for this latency.

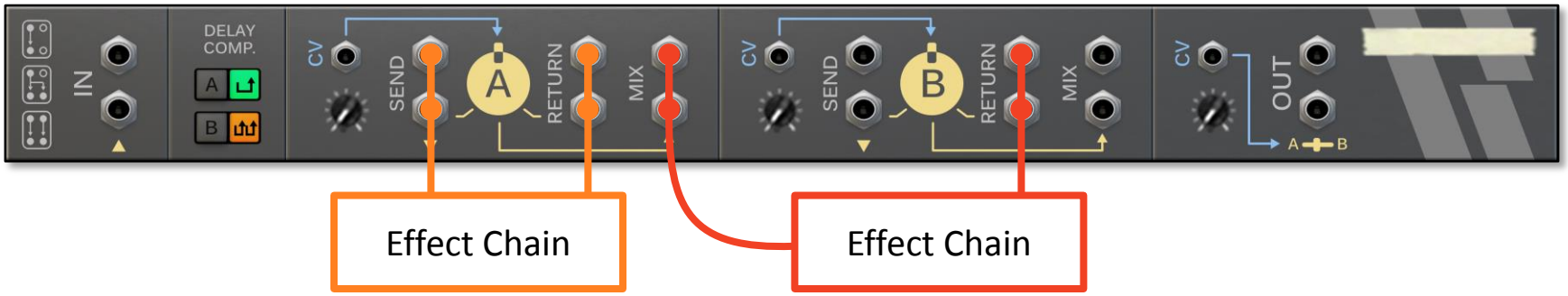
IMPORTANT: If "Render audio using audio card buffer size setting" (introduced in Reason 11, under the Audio tab in Preferences) is enabled, then the loop delay may be longer than 64 samples and Double Dry/Wet's delay compensation will not operate correctly!



When an audio signal is sent from a Send socket to a Return socket on the same device, set that channel's delay compensation to "x1 (64 samples)"

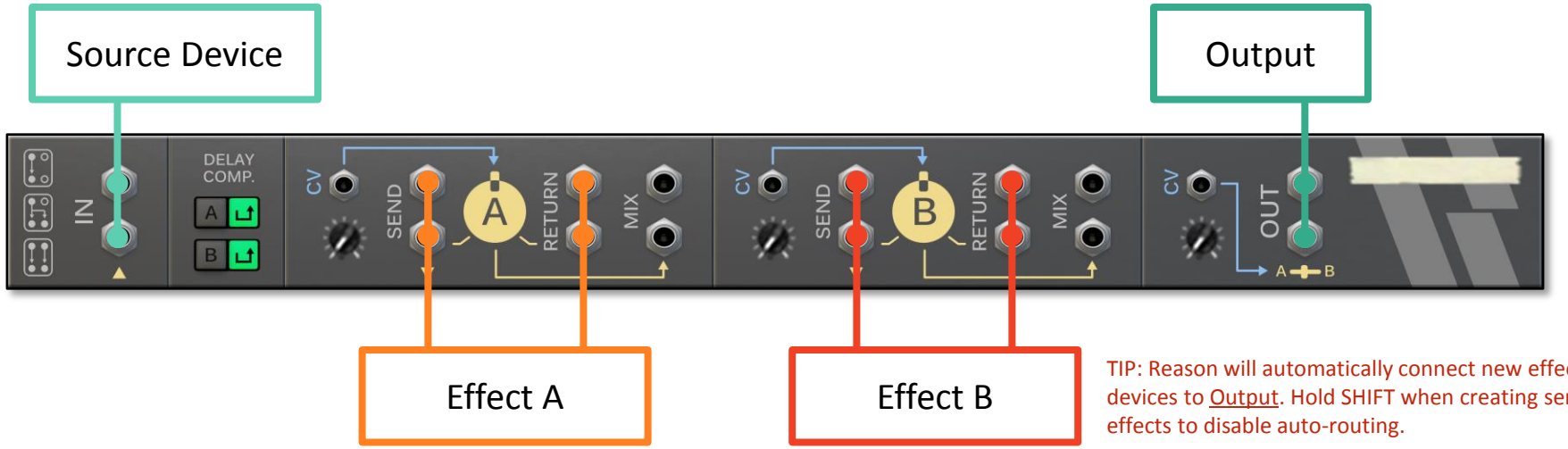


When an audio signal is sent from a Mix socket that is already subject to "x1" delay compensation, to a Return socket on the same device, set the receiving channel's delay compensation to "x2 (128 samples)"

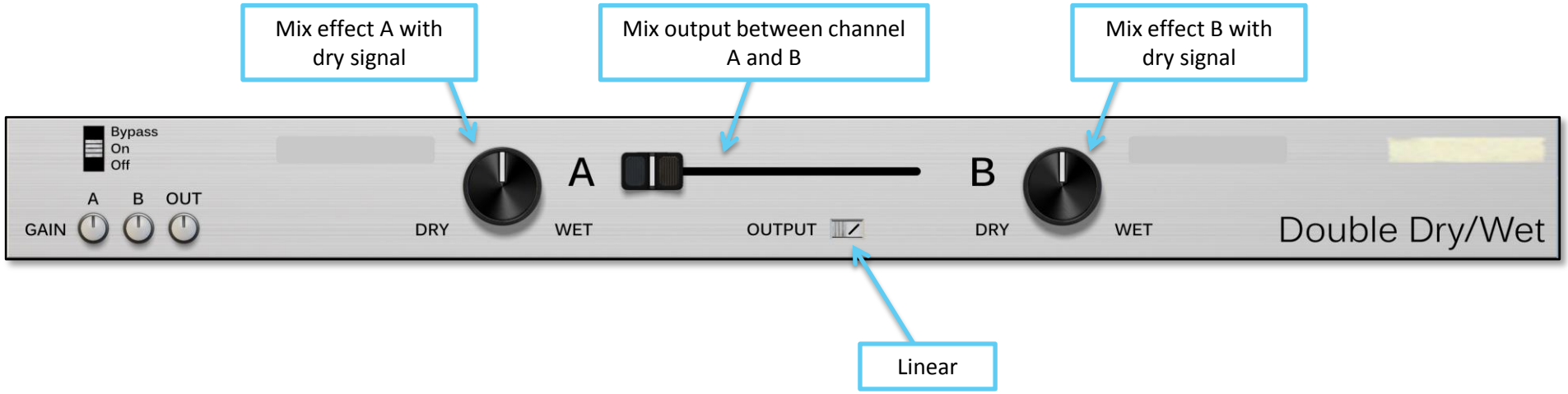


Alternatively: use multiple devices to avoid creating audio loops (see page 20)

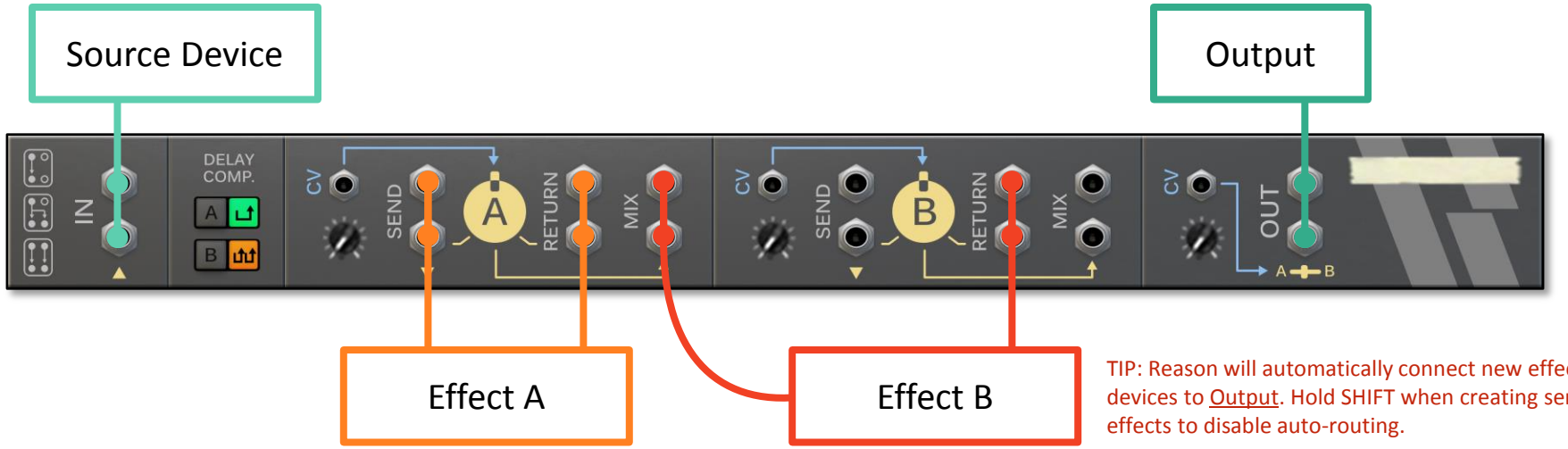
Recipe: **Parallel Dry/Wet**



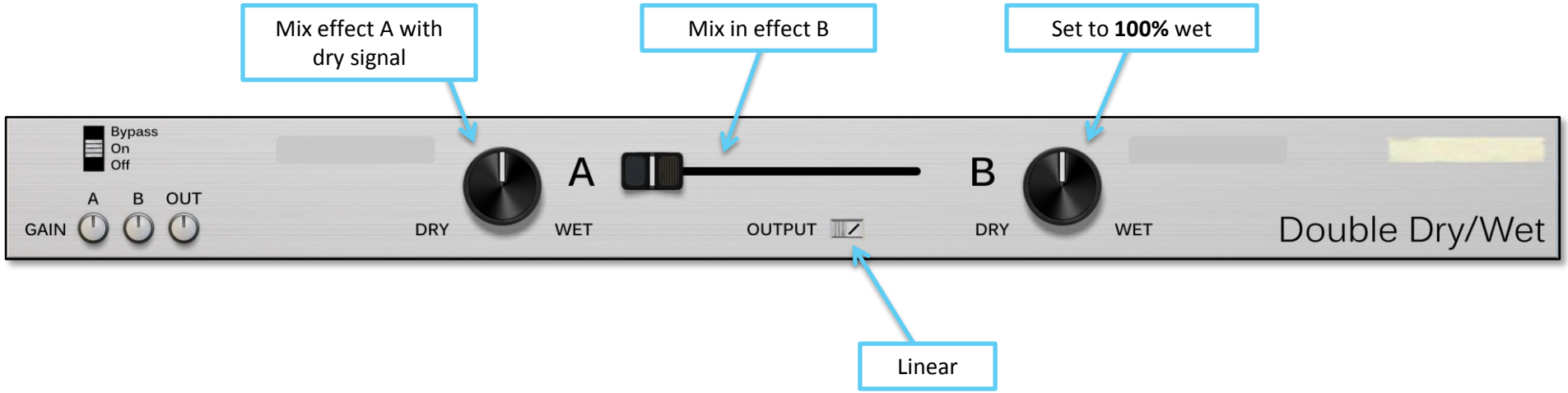
TIP: Reason will automatically connect new effect devices to Output. Hold SHIFT when creating send effects to disable auto-routing.



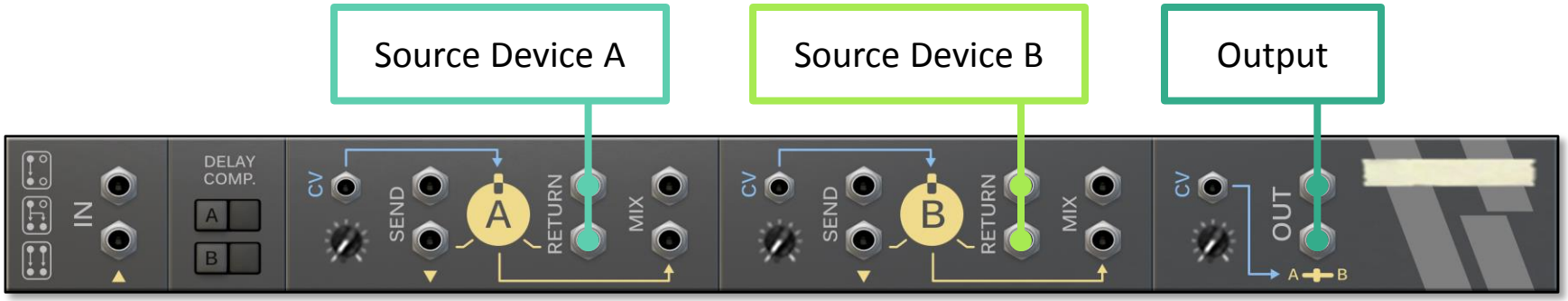
Recipe: **Serial Dry/Wet**

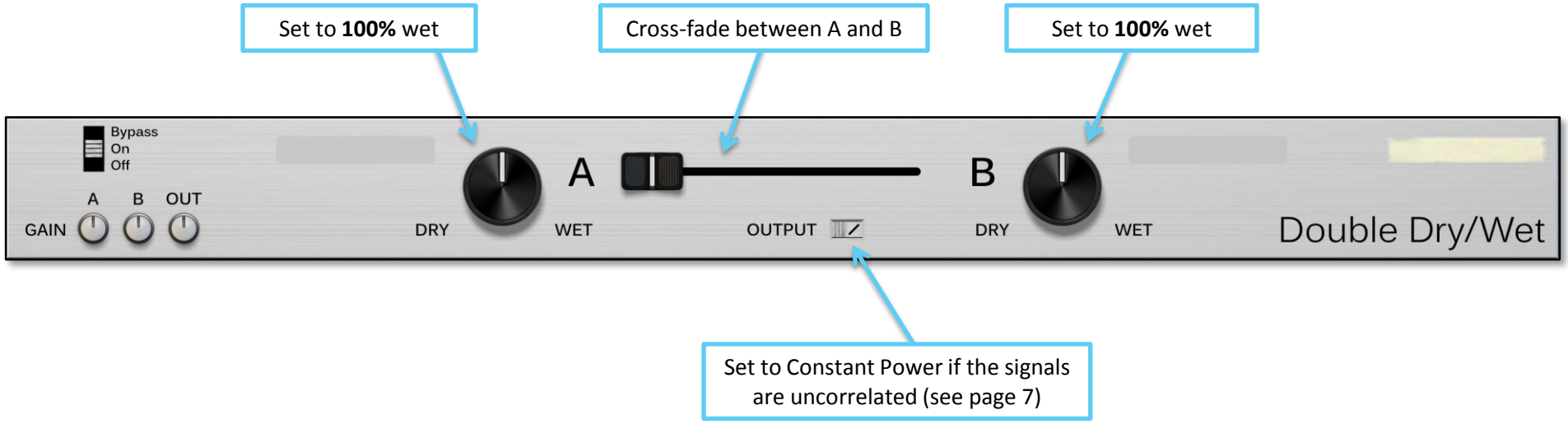


TIP: Reason will automatically connect new effect devices to Output. Hold SHIFT when creating send effects to disable auto-routing.

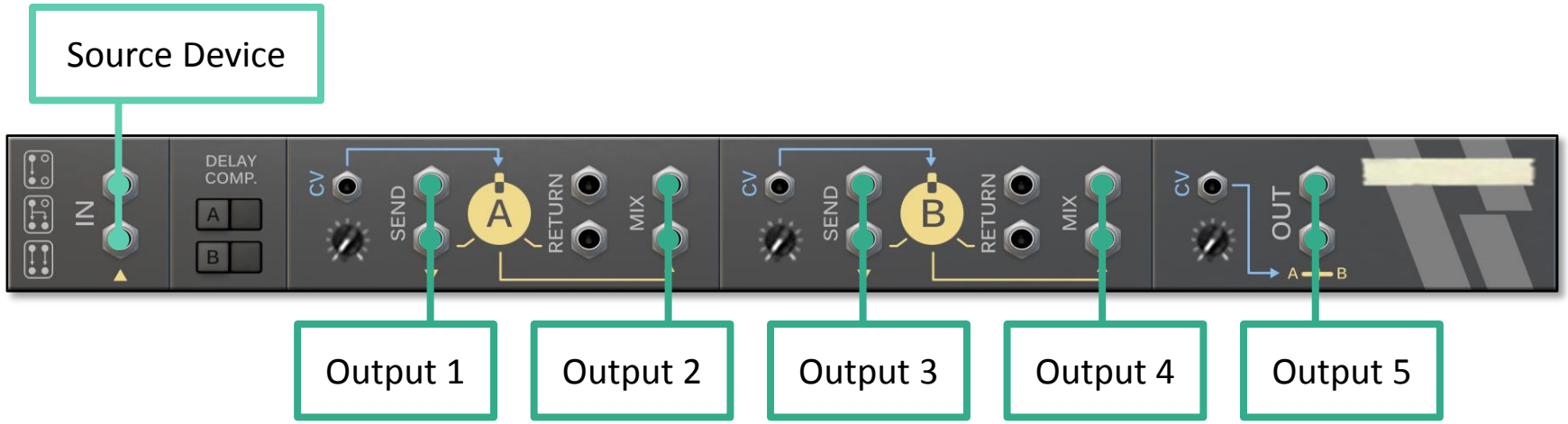


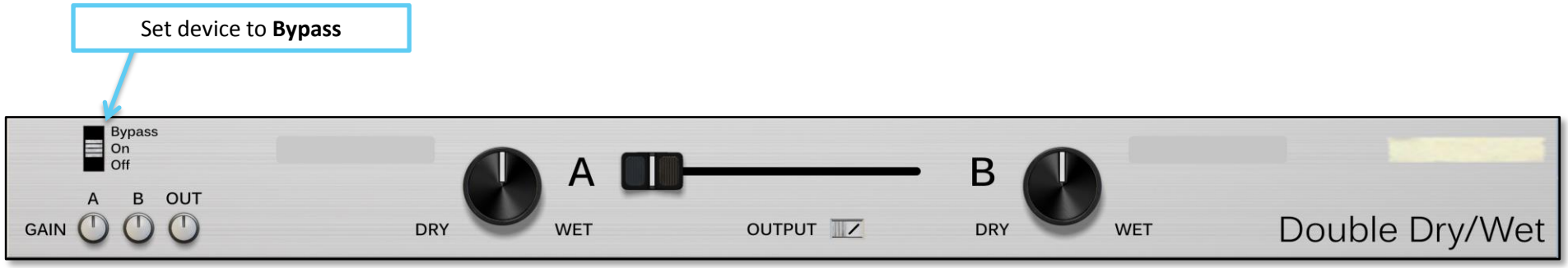
Recipe: **Cross-fader**



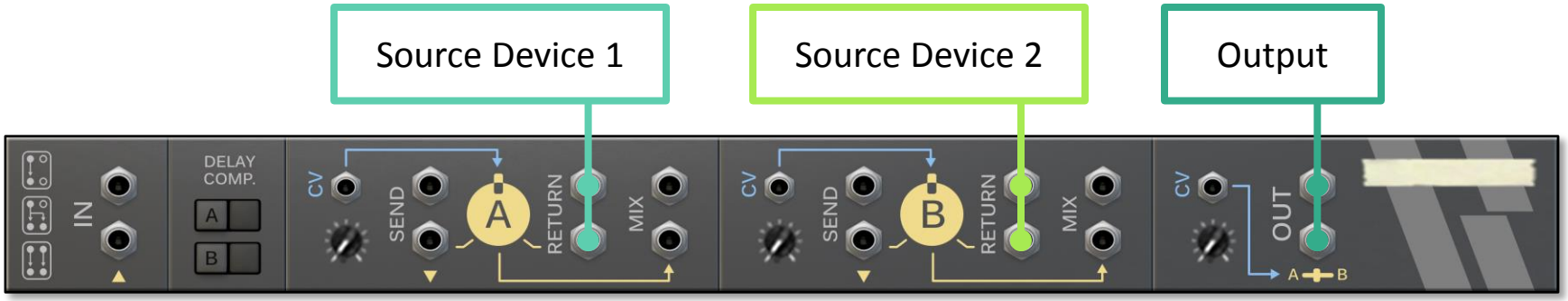


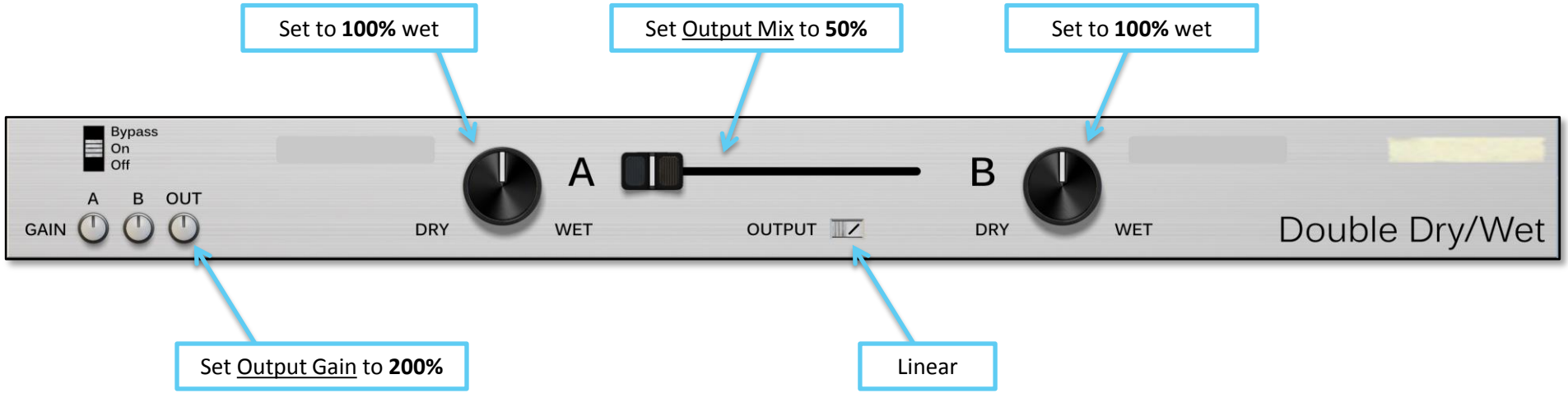
Recipe: **5x Audio Splitter**



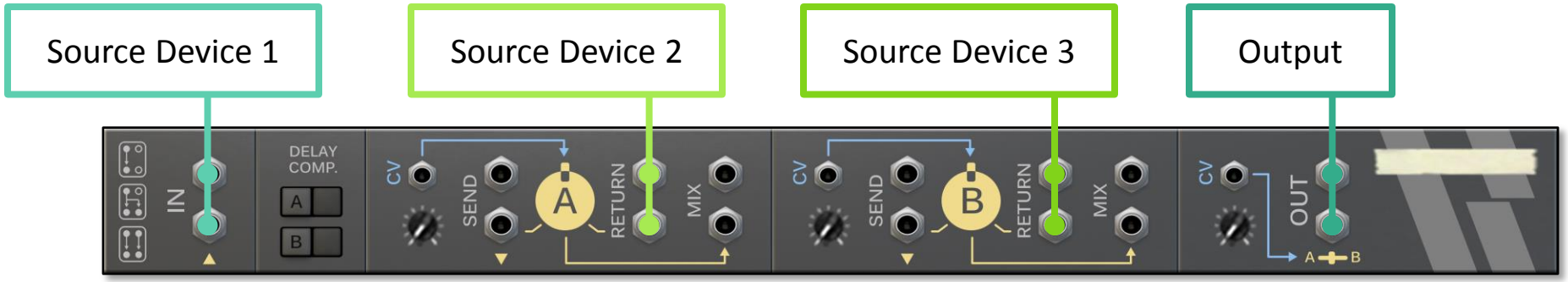


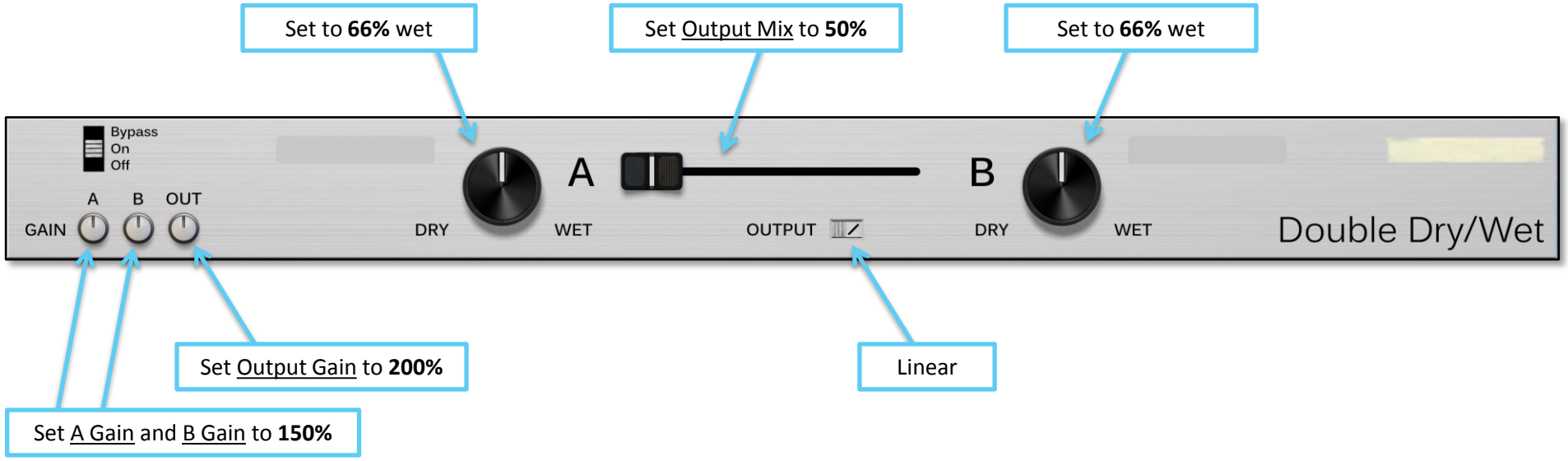
Recipe: **2x Audio Merger**



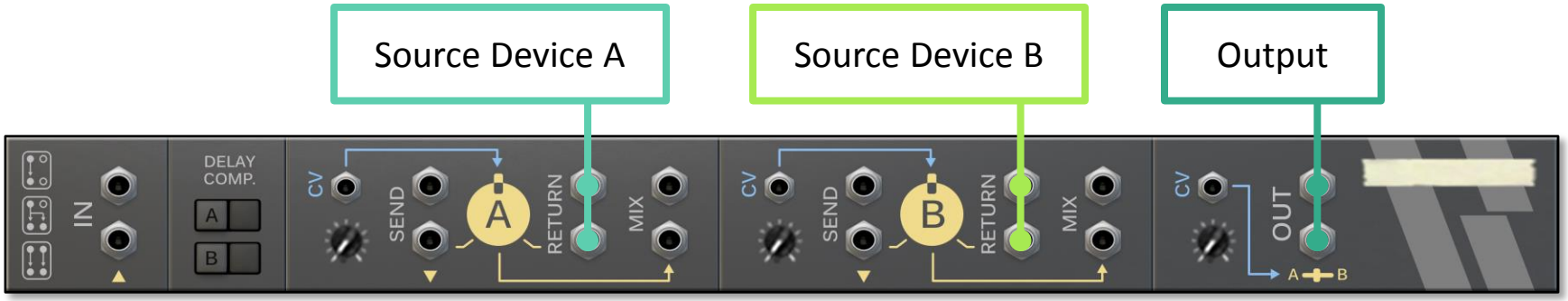


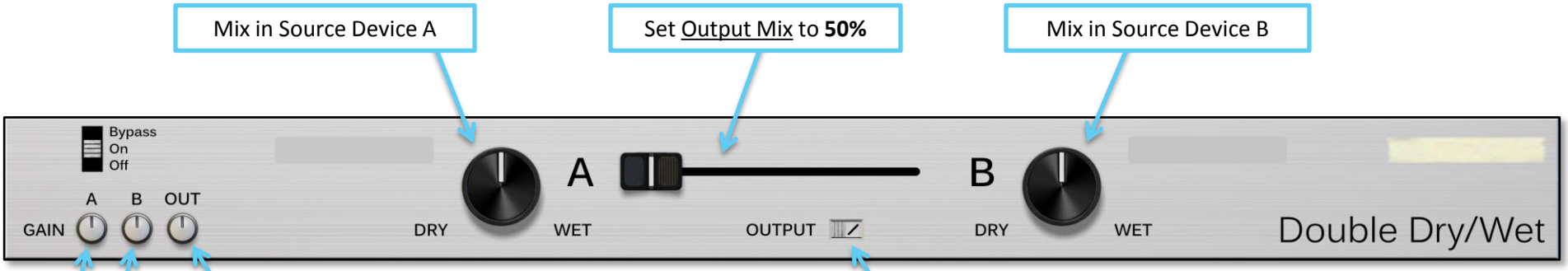
Recipe: **3x Audio Merger**





Recipe: **2 Channel Mixer**



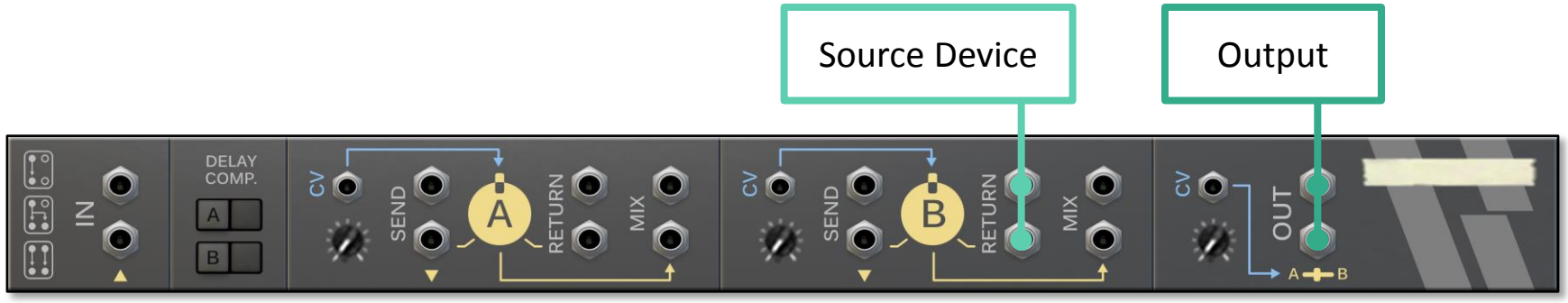


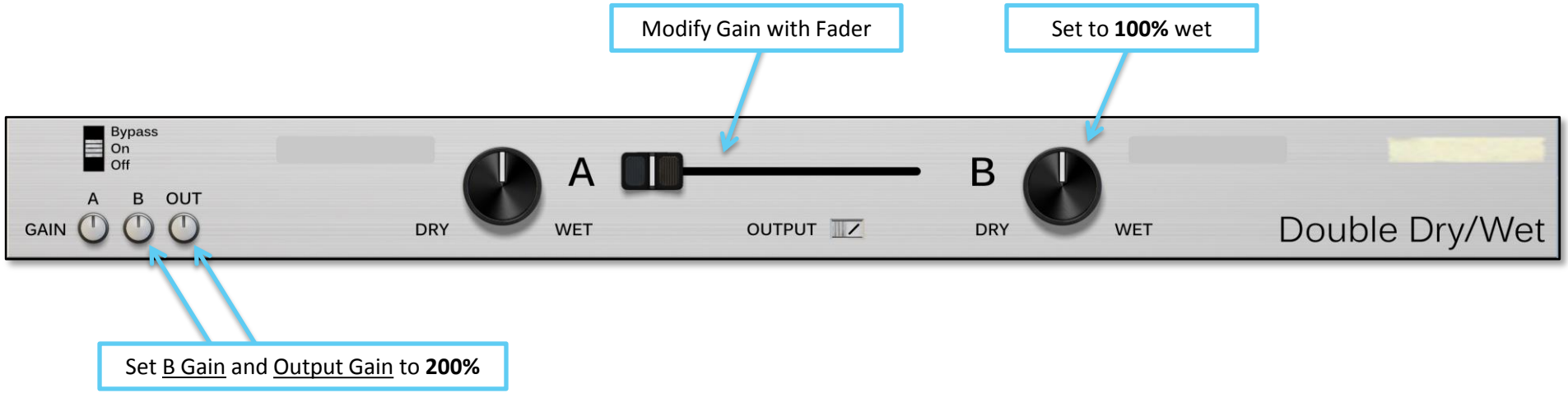
Set Output Gain to **200%**

Linear

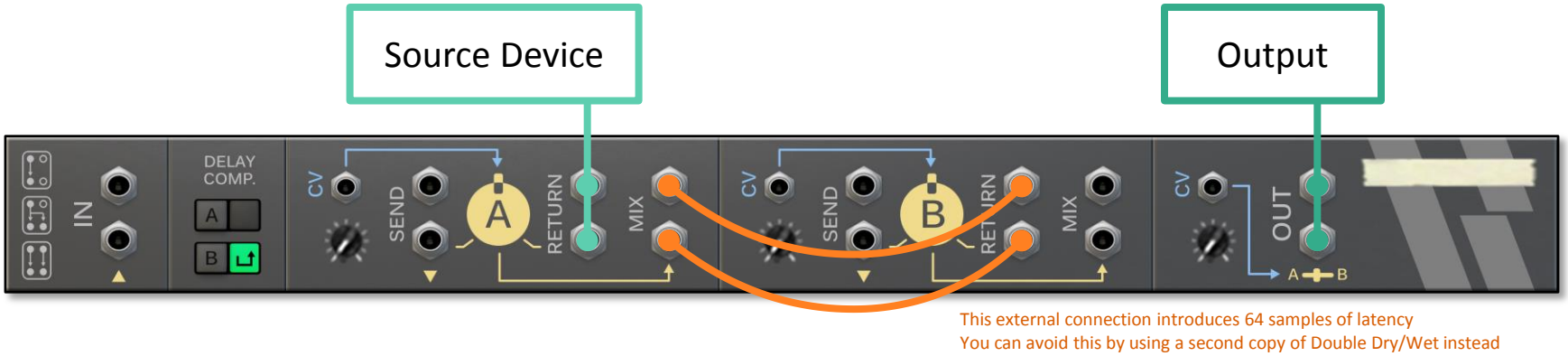
Tip: Increase the dynamic range by increasing the channel gain (or just mix directly using the gain knobs)

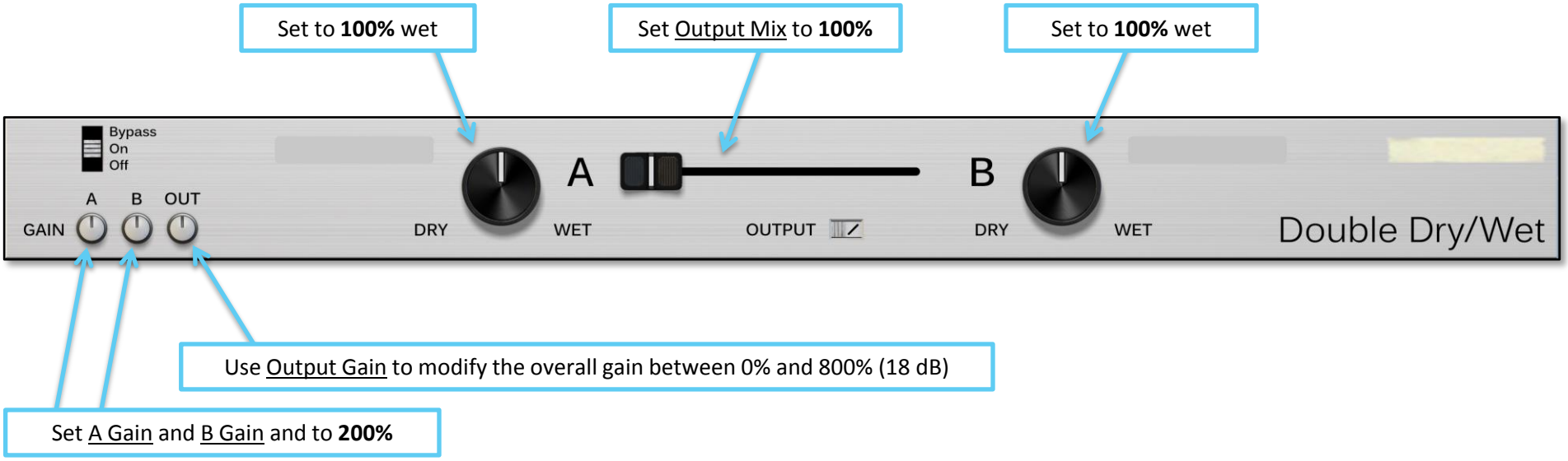
Recipe: **-∞ to 12 dB Gain Control**



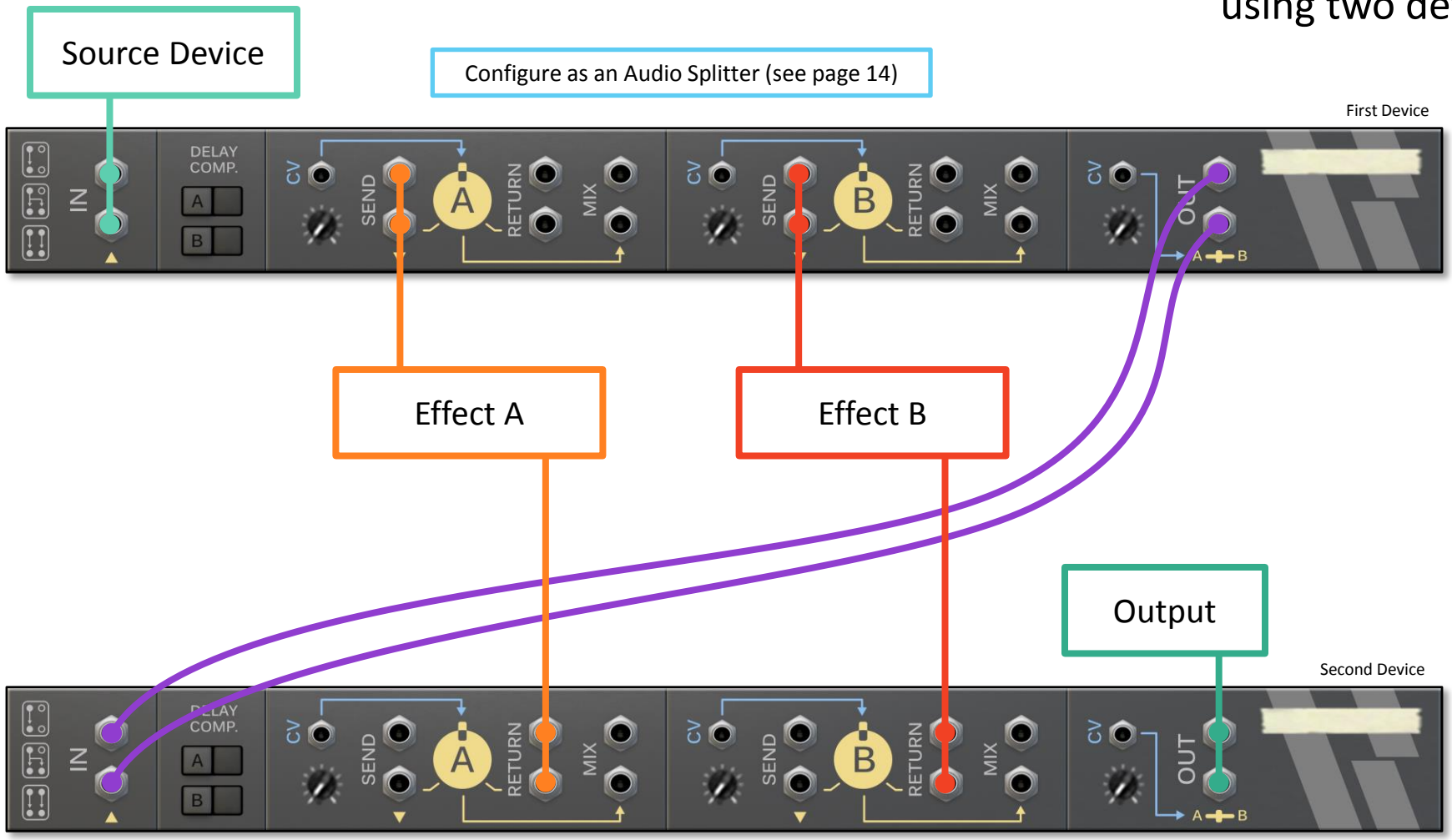


Recipe: **-∞ to 18 dB Gain Control**





Recipe: **Delay-Free Parallel Dry/Wet** using two devices



Note that Reason does not perform delay compensation within the rack (at time of writing, using Reason 11). Parallel signal chains with different delays will result in an offset signal.

About **Andrew Russell**

Andrew Russell is a former computer game developer from Australia, bringing his experience developing high-performance game engines and designing fun, intuitive and delightful user experiences to the world of music software.

Also from **Andrew Russell**