

# CYMBL909



## User Manual

## Introduction.

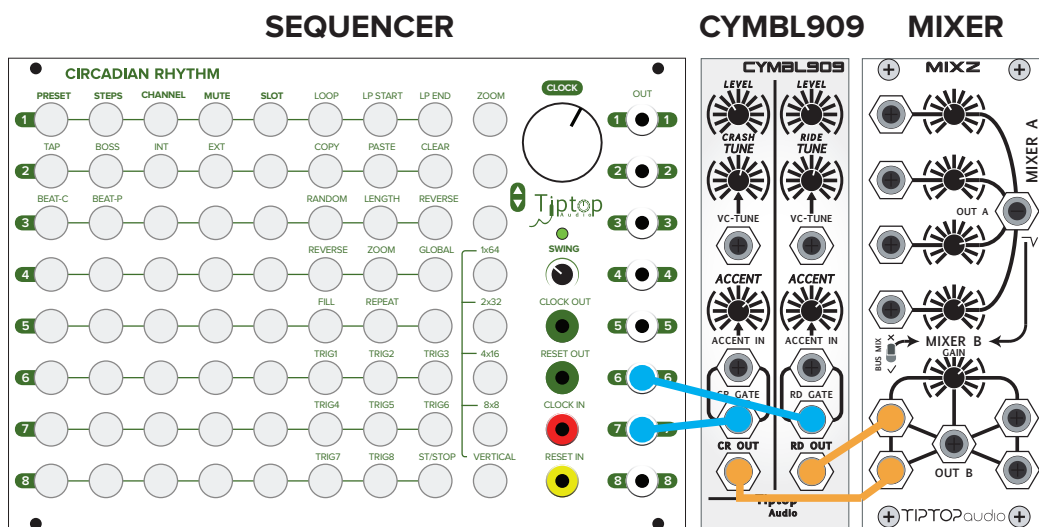
The CYMBL909 is a dual voice module featuring the original TR-909 crash and ride sound generators adapted for modular synthesizer use. The front panel contains all of the controls found on the original TR-909 drum machine, allowing you full control over the sound's volume levels to mix with other drums, and accent levels. In addition to those original controls we have also added manual and voltage control of each generator frequency, further enhancing this circuit.

## About the Making of the CYMBL909.

The Cymbal is a one-to-one clone of the original circuit found in Roland's TR-909 drum machine. During the design phase, we created additional features only when implementation would not compromise the original signature sound. Cloning a circuit that was designed and produced in the 80's was not an easy task. A variety of obstacles including availability of the original parts, the modern SMT manufacturing process, the differences in +/-12V Eurorack power versus the +/-15V of the original 909, and far many more were addressed in the creation of this module. To learn more about the process of remaking the sound generators in this series please refer to the BD808 user guide.

## Let's get started.

On the left side of the module are the Crash controls, on the right are the Ride. To start using the CYMBL909, take two gate outputs from your sequencer and plug them into the GATE IN for each sound, plug the CR OUT and RD OUT to your mixer or sound system, set ACCENT to max, set the LEVEL half way and TUNE half way. Readjust the TUNE till you hear the original sound of each.



## Dynamics and Gain.

### Accent and Levels:

Dynamic Accent and Level control of any drum sound in the mix is a big part of making a beat sound right. Dynamic Accent provides emphasis on a particular note through loudness. In analog circuits like the CYMBL909, the accent pulse physically "hits" the internal envelope circuit harder and provides not only a louder sound but also slightly more attack (much like if you hit a real drum harder or softer with a drum stick.)

While the original 909 has one global accent knob for setting accents levels for all of its sounds, the CYMBL909 (and all other drum modules in this series) offers an independent accent level control. This feature expands the work flow beyond what is possible with the original machine.

### Accent Explained:

The accent input can be driven by either a gate/trigger or CV signal.

When the accent input is not in use, the incoming gate input is routed (normalized) to both the accent input and the gate input. This serves two purposes:

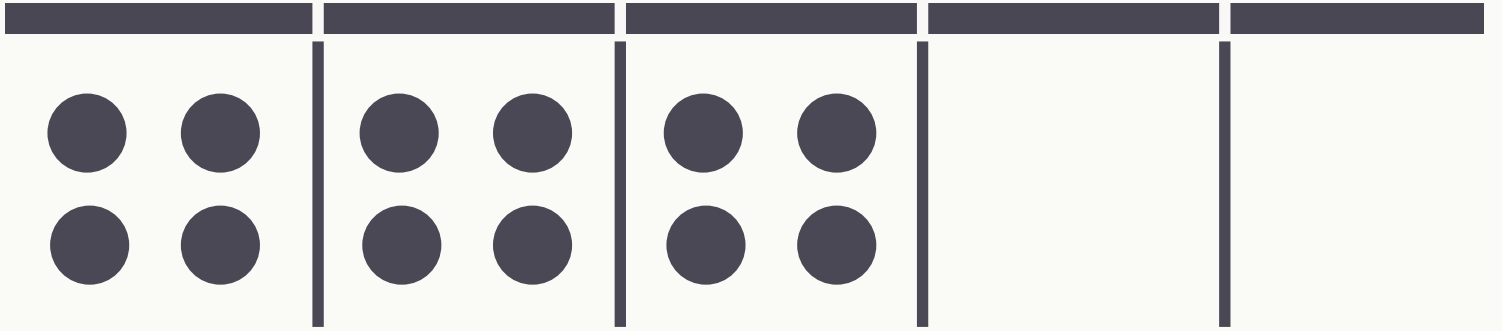
1. To allow you to reach the hottest drum sound possible even when there is no accent input signal connected.
2. It makes the ACCENT knob act as a fine control of the output gain level. This is very useful in situations where the level knob range is too coarse for setting precise levels in a mix with other drum sounds.

Connecting a gate or CV signal into the accent input will break the internal routing mentioned above and will allow for independent control over accent regardless of the incoming gate signal. In this case as long as there is no accent signal present, the drum sound will be set to the minimum accent level set internally, and once the accent input gets hit by a gate or CV signal, the drum sound will get louder in proportion to the accent level set by the accent knob. In short: the higher the knob setting, the larger the difference will be in gain levels between the accented notes and the un-accented notes. Using CV allows for even greater variations.

## VC-TUNE Explained.

The sample playback rate of each generator in the CYMBL909 module was replaced with an analog Voltage Controlled Oscillator which allows full control over the tuning of the sound, both manually (TUNE knob) and with Voltage Control (VC-TUNE jack). This integration of analog control over the sample sound generation lets us animate the sounds using CV as well as deforming the original sample. Analog CV sequencers like the Z8000, LFOs like the Z3000 or Envelope generators like the Z4000 can all be used to modulate the TUNE. Make sure to apply CV changes at about the same time the sound is triggered. For example, triggering the Z4000 from the same gate signal as the Crash will synchronize their actions.

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