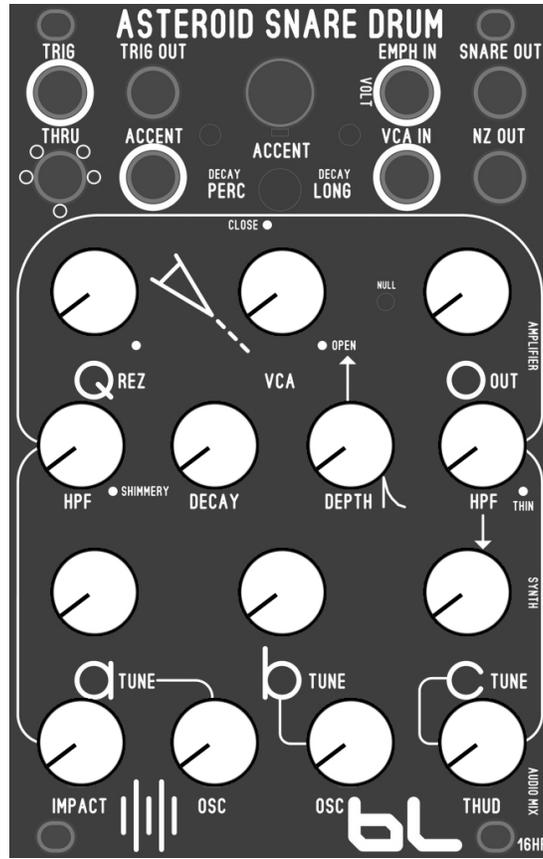


BLM ASTEROID SNARE DRUM



Jacks

*Trigger Input Jack: (TRIG) patch a 0-5v pulse, or gate signal into this input jack. You can use other waveforms. There is an internal trigger conditioner to allow use of other wave shapes. If you can not get it to trigger, just use a square wave.

*THRU: this is connected to the TRIG input and passive. Use this to 'daisy' chain the trigger signal to other modules.

*TRIG OUT: this is a pulse wave taken from the internal circuit. Use this to trigger other modules. This trigger output can vary in amplitude with the use of the accent and how hard the trigger input is. It is not just a static pulse.

*ACCENT input: patch preferably a square wave, triangle wave, or sine wave. This is used with the accent knob. This allows some dynamic response to the snare drum. It will vary the overall volume a bit. It is not a very drastic fx. It is normal not to go from very soft sound to really loud. It is not that kind of drastic accent.

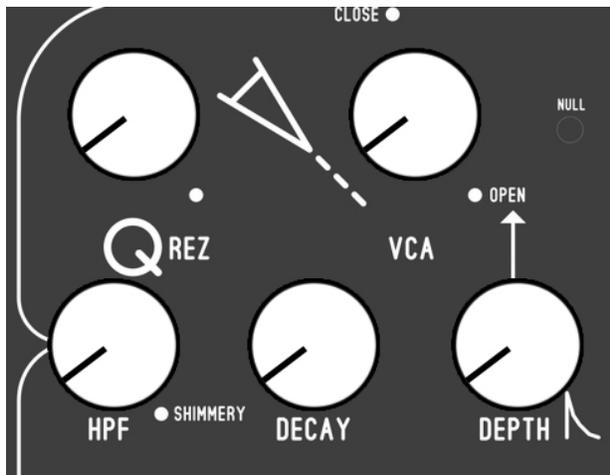
*EMPH In: is a cv input for the internal VCA.

*VCA IN: this is to use external sounds, and bypass the Noise.

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*NZ OUT: Noise output.

NOISE CIRCUIT AND PERCUSSION VCA.



This section is a VCA + Decay + Filter circuit.

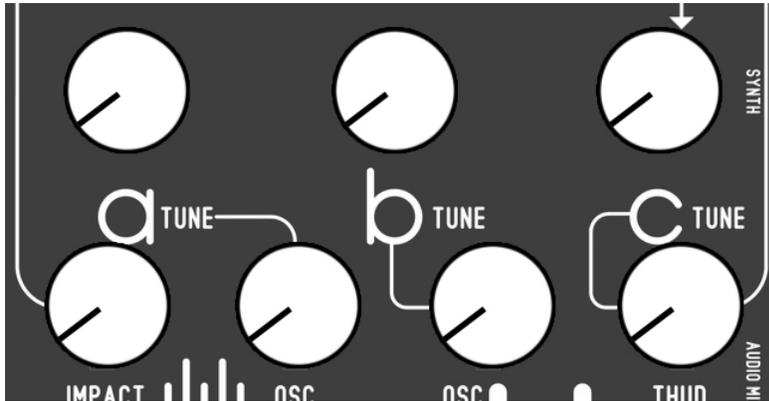
In order to make sure you are hearing the effect:

1. Have DEPTH turned clockwise to have the Decay open the VCA.
2. Have the DECAY not fully counter clockwise, otherwise you will hear a very short click.
3. You can use the VCA knob and turn it to open to monitor that sound is actually present (noise or your external sound source)
4. Have the Snare Output knob turned clockwise.

The HPF (High Pass Filter) and Q are used together to shape the Tone.

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MIXER SECTION



The bottom row of knobs is just a mixer.

Impact is for the Noise VCA Percussion Circuit.

OSC1 and OSC2 are the internal oscillators.

THUD is a thicker, TOM like oscillator.

The knob above the mixer are used to tune the (3) oscillators.

THUD



The THUD oscillator sometimes it can be too much mid range. The HPF (High Pass Filter) above the THUD tuner is used to cut off some of the low frequencies.

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The toggle switch changes the length of the decay response.

How to setup your trigger to full explore snare sounds.

1. Patch your trigger signal to an attenuator.
2. Patch from the attenuator into the Asteroid Snare Drum TRIG input.
3. Turn up the attenuator until you see the right LED flash. This indicates the Decay was struck. The left led will not flash. This is okay. You will hear that the snare drum sounds poppy and weak, like the Korg Volca. As you turn up the attenuator, the snare will sound fuller and louder.
4. This method will allow you to explore more variation, and not always just a big snare.
5. The Left LED will only flash when a strong (about 5V) signal is present.

FROM WEBSITE:

MODEL: ASTEROID SNARE DRUM

WIDTH 16HP

CURRENT: +43mA -38mA

What does this do?

This is a sound generator module with 3 oscillators + noise generator. This module is a complete mini synthesizer that can easily produce snare drum sounds. A 'trigger' signal is patched in order to hit the snare drum. The bottom row contains an internal mixer where you mix in 2 shell generator oscillators, one thud oscillator, and a noise generator.

The Noise generator can be used for your other modules. You can also patch into the discrete transistor vca, breaking the switch jack to replace the noise generator with an external audio signal (synth level).

The Filter on the 'Impact' signal path was carefully designed just for snare drum tone control. It sounds very nice. It will not self oscillate, but the Q control can go very high in frequency.

There is an accent control circuit in order to vary the loudness of the impact.

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History of the design:

The Asteroid Snare drum started out on bread board as a TR 606 snare drum. That design only contains one oscillator, a transistor based noise generator, and a 'clipper' brute vca. It is a nice efficient old design, but it is too simple and boring. I decided to add (2) of the original oscillators, and replaced the noise generator with a digital based noise generator to make sure all production units were alike. The snare drum still was missing fullness, so I designed an addition oscillator called 'thud'. The poor vca from the original design was removing all the additional harmonics, so that was replaced by a discrete vca, and I added tonal controls to the IMPACT signal, and the THUD signal path.

All of this amounts to about 200+ smt parts. Far exceeding the original design. I don't think there is another analog snare drum out there with the Asteroid Oomph.

VCA CALIBRATION

1. Patch a hanging cable input VCA IN to cut the internal noise.
2. Patch a VCO input EMPH input.
3. Use Snare output to monitor the VCA. Have the VCA knob turned to OPEN.
4. Use the NULL trimmer to get rid of CV offset bleed through as best you could. Turn the trimmer until you don't see (oscilloscope use) or hear the VCO waveform you patched.
5. Remember to have the IMPACT Knob turned clockwise, and have all the other OSC +THUD turned counterclockwise. You don't need to trigger the snare either.