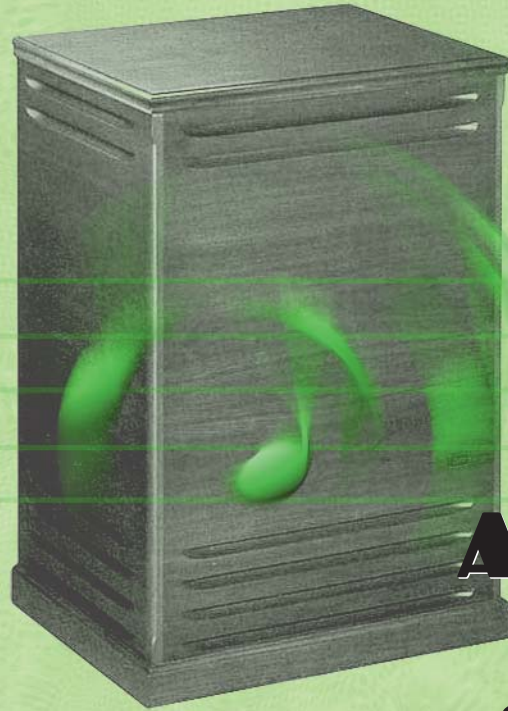




Jiggery-Pokery's

Advanced Rotary Speakers

Patches for Reason Combinator

Thank you for downloading the *Advanced Rotary Speakers* patch set from Jiggery-Pokery! It has been faithfully designed to produce effects similar to the real thing with the Reason environment!

Statutory declaration

1. This Refill complies with all international regulations for radio emissions.

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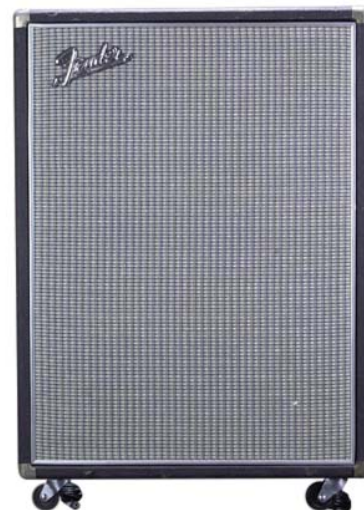
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The rotary speaker



Invented in 1939 by Don Leslie, the rotary speaker is synonymous with the sound of Hammond organs.

Having had his invention rejected outright by Laurens Hammond, Leslie eventually marketed his Vibratone speaker himself. The moniker “Leslie” had stuck however, and by the 1950s his rotary speakers were sold under his own name. The Vibratone name would

be resurrected in the late 1960s by CBS/Fender.

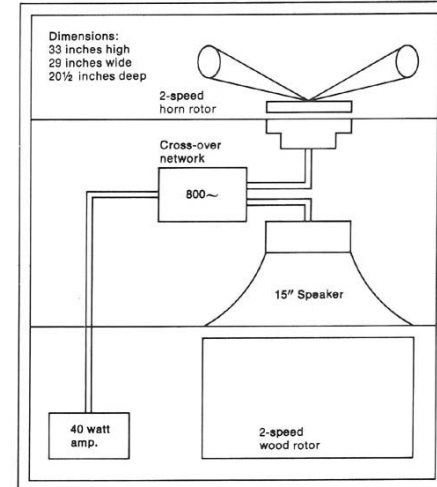
A typical Leslie cabinet—such as the 122, above, and 145, opposite—has two rotors: a bass and treble, with a crossover point a 800Hz. The bass is known as the *rotor*, the treble is called the *horn*. These not only spin in opposite directions, but also at different speeds. Together with microphone placement, these create a number of different harmonic effects.

- The most obvious effect is the tremolo, the rise and fall of the sound level as the rotors face towards and away from the microphones (amplitude modulation)
- As the direction of the soundwaves change in relation to the microphone/listener there is Doppler-effect (frequency modulation/vibrato)
- The enclosed cabinet will have its own particular reverb-tion characteristic, which also creates a chorusing effect

For rotary speakers with two speed settings, *slow*, also known as *chorale* or *chorus*, is typically around 40rpm; *fast*, aka *tremolo*, is around 340rpm.

Leslie
Speaker | 145

Block diagram of function.



Leslie

Overview of the patch set

Sample-based Hammonds recorded through a Leslie are problematic because a) they do not usually include a sample of every note, so each note you play has a different rotary speed due to the sampler speed-up or slow-down (try playing a chord!), b) the mic placement is fixed and c) since the Leslie effect is recorded on the sample, the rotary effect is fixed per note rather than affecting the whole output, meaning there is no continuity of the rotary effect between notes! In other words, pre-sampled Leslie'd Hammonds are spectacularly useless.

In these patches the original sound is first split into sub- and plus-800Hz. A pair of Malströms control the panning speed and UN-1 detune as a substitute for a Doppler effect. Another pair of Malströms CV'd up to a mixer control the level of tremolo. There is reverb for the cabinet interior, as well as the exterior space. And finally, there is a two-mic set up: the mics can be placed in near mono to wide stereo, near/far and balance of the *rotor* and *horn*, all via a tubed amp sim.

There are six patches in the set:

- **Leslie 122:** A simulation of the Leslie 122
- **Leslie 122A:** A 122 but with a non-rotating *rotor*
- **Leslie 145:** A smaller cabinet, with wobbly old rotors
- **Fender Vibratone:** A single rotor model
- **Cordovox CL-10:** A non-amped single rotor with chorus
- **DRS-1 Digital Rotary Speaker:** visually modelled on the Reason effects boxes, this patch features more pronounced tremolo and digital rotary effects

The Combinator front panel is typically as follows:

- **Rotor Speed:** Simply "Slow" (chorale) or "Fast" (tremolo)
- **Drive:** Amount of amp drive
- **Stereo Spread:** "Min" is just shy of mono, and "Max" is as wide as possible
- **Brake:** rotation is stopped dead
- **Amp:** Amp drive off/on
- **Body:** Cabinet body off/on
- **Mic Balance:** *Button 4* toggles "Near" (off) or "Far" (on) mic placement, while *Rotary 4* balances the position between the *rotor* and the *horn* or, for the single rotor patches, panning

The best way to use a patch is as an insert effect: hook your sound module directly to the "Combi Inputs" at the rear the rotary effect Combinator.

To use as a send effect, an alternative method to hooking the rotary up to the aux send and return might be to divide the audio of your sound generator in two with a Spider Audio Splitter, with one output to the rotary effect, and one to your master Remix unit. This way you have more flexibility to control not only the levels and wet/dry amount, but also panning of the dry and wet sounds, and amounts of other send effects.

While these CMBs do not pretend to be a tonally accurate set of Leslie sounds, they are an attempt to create a more effective and versatile model for your Reason studio.



The patches

Leslie 122/122A

The most prized of the original Leslie's, the 41" tall 122 has a rich, warm sound and sounds great with *non-Leslie'd* Hammond samples. Also try it on pads and strings, guitars, pianos (like Pink Floyd's *Echoes*) and vocals. The 122A patch has a non-rotating *rotor*, which was a common modification made by Leslie owners.



Leslie 145

With its smaller 33" cabinet, this patch models a Leslie that is in need of restoration, with rotors wobbling. Bass response of the 14* series is less pronounced than with the 12* series.

Fender Vibratone

The Fender Vibratone—also known as a Fender Leslie 16—sounds great on all types of guitars. This model only has one rotor so *Rotary 4* controls mic pan. While the real Fender Vibratone had no built-in amplification, the Scream 4 units remain in this setup with overdrive selected.



Cordovox CL-10

With no built-in amplification, *Rotary 2* instead adds chorus, whilst *Button 3* will swap the exterior reverb between Room and Hall. A bonus effect is *Button 2*, which will change the flowing sine rotation shape into a jagged square rotation. This single rotor model is particularly good with tube-amped combo organs (Farfisa, Vox etc.).

DRS-1

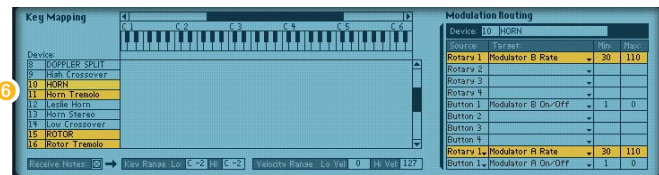
As a purely digital box, this patch has no cabinet reverb or chorus modules. Amp model is set to tape. *Rotary 2* now changes the rotary type (i.e., the Mod B curves), the tremolo effect is exaggerated and the top rotary speed is faster.



Tips

Here are a few tips to guide you through the Combinator rack. The figure opposite is the Leslie 122 patch.

- Use Param 1 and 2 of the **Leslie EQ** to cut any harsh frequencies, particularly around the 2–5kHz range ①
- In the Malström rotors (named **HORN** and **ROTOR**) Mod A controls the Doppler effect, and Mod B the rotary speed. *Rotary 1* on the Combinator front panel controls both Mod A and B rates ②
- *Rotary 1* on the Combinator front panel also controls the Malströms Mod B of **Horn Tremolo** and **Rotor Tremolo** ③
- Swap the L+R cables over from the **Leslie Rotor** or **Leslie Horn** Micromix Master Out to alter panning direction ④
- On the same Micromixers, channel 1 is the un-Doppled, channel 2 the Doppled. Use the channel 2 level to increase/decrease amount of detuned Doppler effect ④
- To increase the amount of the tremolo effect, raise the Level CV Ins dial at the rear of the **Tremolo** Remix unit for channels 1 and 2, particularly useful if you want the fast rotary speed with a minimal stereo effect ⑤
- As well as the tremolo level, this Remix unit is best place to change the *rotor/horn* mix level volumes ⑤
- The **Tremolo** Remix also has the chorus and cabinet reverb effects placed as send effects ⑤
- In the TS8450 device list, adjust the Min and Max for *Rotary 1* “Modulation Routings” to alter the speed ranges of the rotors. Remember there are three *Rotary 1* mod routings for each rotor—**HORN/ROTOR** Mod A and Mod B, and also the **Horn Tremolo/Rotor Tremolo** Mod B—though of course you could have all six unequal! ⑥



- As you can see above, there are plenty of other ways to modify the sound, so play around with all the knobs and routings to create more bizarre and/or interesting tones
- And for a *really* huge sound, use two Leslies!

Webliography

The following websites were used in compiling this patch set.

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- en.wikipedia.org/wiki/Leslie_speaker
en.wikipedia.org/wiki/Donald_Leslie
- www.mitatechs.com/leslierumors.htm

Photo credits

- captain-foldback.com
[Leslie 145 brochure block diagram]
- www.8thstreet.com [Leslie 122]
- www.bostonguitar.com [Cordovox CL-10]
- www.loncohen.com [Fender Vibratone]

From the maker of...

Refills

- 8-BIT Magic: The ZX Spectrum Refill
- B3 Tonewheels [*non-Leslie'd Hammond samples!*]
- Classic Drum Machine Collection v1.1*
- Eminent 310 Strings*
- EMS VCS3/Reason: SubTractor Edition
- EMS VCS3/Reason: NNXT Edition
- Farfisa Compact Deluxe
- Harpe Laser*
- Moog Taurus Bass Synthesizer*
- Vox Continental 300

Skins

- 001 Digital Heaven: Stoned Ages
- 010 Digital Heaven: Coke Ages
- 111 Digital Heaven: Ecstatic Ages
- 45RPM vinyl record
- Acoustic Piano collection
- Analogue Heaven volume 1: Analogue Monsters
- Analogue Heaven volume 2: Electromaniacal
- Analogue Heaven volume 3: Oscillitilating Beasties
- Cubana
- Electric Guitar & Bass v2
- Orkester
- Roland SoundCanvas SC-8850

* Samples courtesy of HollowSun.com

