

Cupwise Mixing Filters Pack 3



General Information

This is the biggest entry in this series yet. An old Hycor 4200 passive filter unit was sampled extensively, providing many unique programs that offer many different ways of shaping your audio frequency spectrum. The programs made from it here should be thought of less as typical HP/LP filters, and more as unique sound sculpting tools. They may be more useful thought of as sound design tools rather than mixing tools, but can be used in either case. A 'Smaltec' 9880A active filter was also sampled and it provides another set of the more standard HP/LP filters, with their own sound, of course. All programs were sampled with full dynamics right in the filter programs, so you don't need to add a preamp style program afterwards to get the full model.

Both units are very hard to find any information on. I saw some threads at Gearslutz that suggested that the Hycor model, or one very similar to it, may have been used at Motown. I also found that a lot of the old passive filter units made by various companies back then may have used very similar or even identical designs. The 'Smaltec' unit isn't quite as interesting, but combined with the Hycor programs in this library you get a nice variety of filters for mixing use. Both units work by switching between the HP/LP cutoff positions (not continuously variable cutoff, in other words).

The Hycor is the real star of the show here because the unit itself has multiple inputs and outputs which I quickly discovered produce different results depending on how you interfaced with the unit through them.

The various programs I've made from it include:

- A combo HP/LP program, where the filters provide something more like high and low cutting shelves, rather than actual HP/LP filters, and include a wide, high, resonant peak at the cutoff point(s) which goes up to around 10dB. One interesting thing about this combo program is that the actual position of the cutoff of one filter affects that of the other (just like with the hardware). For example, if you have HP at 0 and LP at 2600Hz, that's actually where the LP cutoff will be, but if you then adjust HP to 1400Hz, the LP cutoff moves up to 3000Hz (value on the control will still say 2600 though). This program can be very cool for creative sound sculpting. Setting both filters close together can give some really unique band-pass effects, similar to my tube radio libraries (but different, much cleaner). Setting HP higher than LP can produce really interesting results too, but the output will be very quiet (try boosting it to hear these results). 8 selectable positions for each filter. Also don't forget that you can dial back the effect by using the 'amount' control.
- A set of separate HP/LP filter programs which produce similar filter shapes to the combo programs, but with deeper cuts in the 'shelves'.

- Another set of HP/LP filters, which were 'enhanced' by me, using a very transparent technique I came up with (applying an amplitude envelope to the recorded tone sweeps) to remove the resonant peak found in the previously mentioned set, and also to provide more of a cut, so they function as actual HP/LP filters instead of like shelves. These also have very sharp filter slopes. Nothing I did to make these affected the tone at all, just the filter shapes. They can be very good if you need some steep filtering with that unique transparent passive filter sound.
- Yet another set of separate HP/LP filter programs. This set is a bonus, and provides some alternate filter shapes (mostly with no resonant peak) and cutoff positions for these types of filters. The freq response shapes aren't perfect or like you might expect from a typical HP or LP filter, but they can still be useful.
- Peak filters! There is a program with 10 frequency positions, each giving a wide peak. A band gain control allows you to start from a flat or slightly rippled response and increase the peak up to around 15dB.
- Notches! 21 selectable frequency positions, most providing deep, sharp notches and many also with strange quirks such as boosted or attenuated frequencies above the notch, and some with additional mini-notches at other frequencies.
- Troughs. 14 selectable positions for what are basically wide notches/dips. With these, the peaks, and the notches, the frequency response can be a little unusual in some settings, so these aren't perfect peaks/notches for precise EQ work. But again, they can be great for sound design.
- Two 'tilt' bandpass programs. These offer several settings which transition from a bandpass filter tilted towards the bass frequencies, to one tilted towards treble. Both tilt programs have differently shaped band-pass profiles (again, some settings look/sound very similar to some of my tube radio programs' responses).
- You also get a pass-through program made without any filtering, just the signal going through the unit for a little tone. This is very subtle.

Last there's the Smaltec stuff. You get an HP and a LP, each with several different selectable cutoff points. The filtering is very typical in these programs as opposed to the Hycor ones. They usually have a $\sim 16\text{db/oct}$ slope, but not always.



Here are the sampled high pass frequency positions, in Hz:

Main Hycor HP- 140, 350, 700, 1400, 2700, 4000, 5600, 7000

Smaltec- 50, 60, 70, 90, 120, 140, 180, 220, 350

Here are the sampled low pass frequency positions, in kHz:

Main Hycor LP- 60, 150, 300, 620, 1250, 1900, 2600, 3200,

Smaltec- 1.3, 1.6, 2.1, 2.6, 3.1, 4, 5, 6, 7.2, 9

The enhanced Hycor filters are have very similar cutoff points to the main ones, and the bonus HP/LP Hycor filters, along with the peaks, notches, and troughs, have center freq points across the audible spectrum. I don't feel that it's important to really list them all here, but just know that they each offer several positions.

Installation

Copy the .n2p files to your Nebula 'Programs' folder, and the .n2v files to the 'Vectors' folder.

Organization

The filter programs will all be found in the 'FLT' category in Nebula, and from there, the 44.1khz set will be found in 'CM4', and the 96khz set in the 'CM9' sub-category. The pass through programs are placed in the 'PRE' then 'CW4' and 'CW9' sub-categories. Any time I release a set that includes 'pass-through' type programs, I always put them in that location, so there will be a growing collection of preamp style programs all found in that same spot if you buy more of my libraries that include those.



Controls

HP, LP- These adjust the HP and LP cutoff points, only found in the Hycor combo program.

Freq- Adjust the cutoff points/center frequencies for all the other filter programs in the library.

Amt- This is kind of like a wet/dry control, except the 'dry' portion is actually still going through the hardware (taken from the 'pass through' samples). At the default setting of 100%, you get the typical filter effect. At 0% you get a flat response. In between is where something cool happens- with HP and LP filter programs, you usually get something like a cutting shelf. Lowering the control from its default position you are introducing back in some of the audio that was being filtered out. You can use this to ease back on a filtering effect that was a little too extreme, OR you can think of the programs as cutting shelves and use them as such. With the Hycor peaks it can lower the peak boost amount. Notches can have their cutting depth reduced.

Trim- Since these are all dynamic effects, trim allows you to quickly adjust the input level going into the effect, and hear the (usually very subtly) different results you can get. Don't expect to get anything like overdrive distortion.

Dist- Only found in the pass-through programs. It's basically a mixer control that allows you to directly adjust the output loudness of the distortion.

Notes

- Try the Hycor Combo, throughs, and Tilt 1 and 2 programs just as an experiment every now and then. I don't really think you can always predict when you might like what they do. Remember you can always back off of the effect with the Amt control. I really like the combo program with percussions and the tilts can be interesting with audio with lots of lows, mids, and highs. These are great for thinking of using in terms of sound design, as an effect.

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