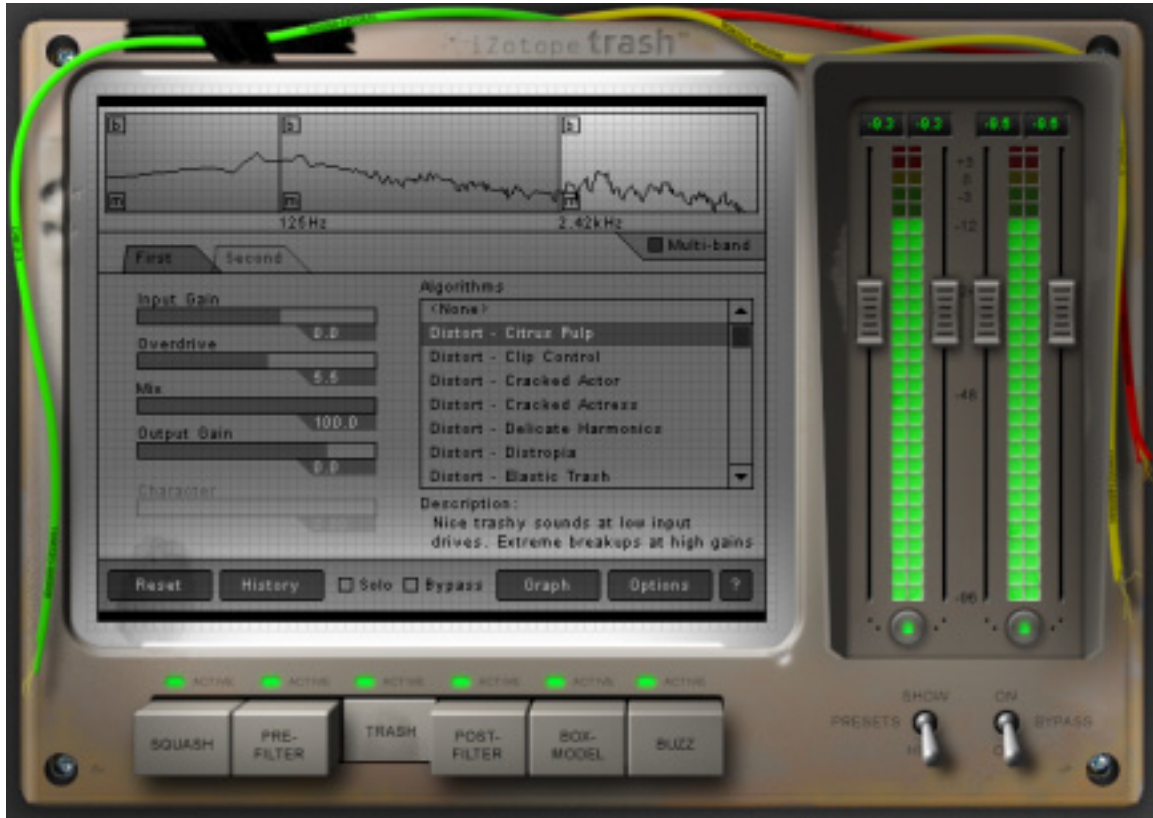


Trash Recipes for Drums



Drums are fun. Loud, noisy and dynamic. Good things to trash. Whether you want to create a lo-fi drum machine sound, ringing hip-hop sound, aggressive industrial sound, or just sounds that make people ask "how'd you make it sound like that?", you can do it with Trash.

There's a lot of control and flexibility with Trash, but once you get the overall principles we know you'll be totally comfortable making your own Trash. So we put together this guide to help you get started, learn the basics and give you some ideas for ways to create your own sounds.

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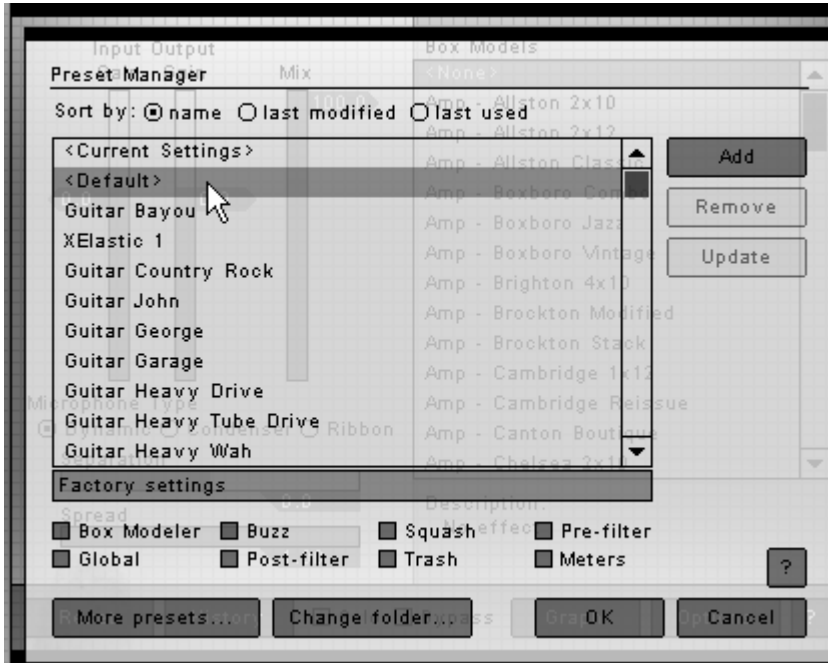
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Project 1: Amp'ed Drums

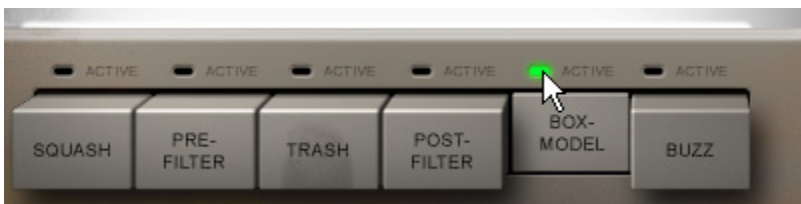
Preset Used: Drums Chelsea 2x10 Cabinet

Purpose: Run some drums through a guitar amp

Open the preset manager by clicking the preset switch. Click the <Default> preset so we know we're listening to the same thing.

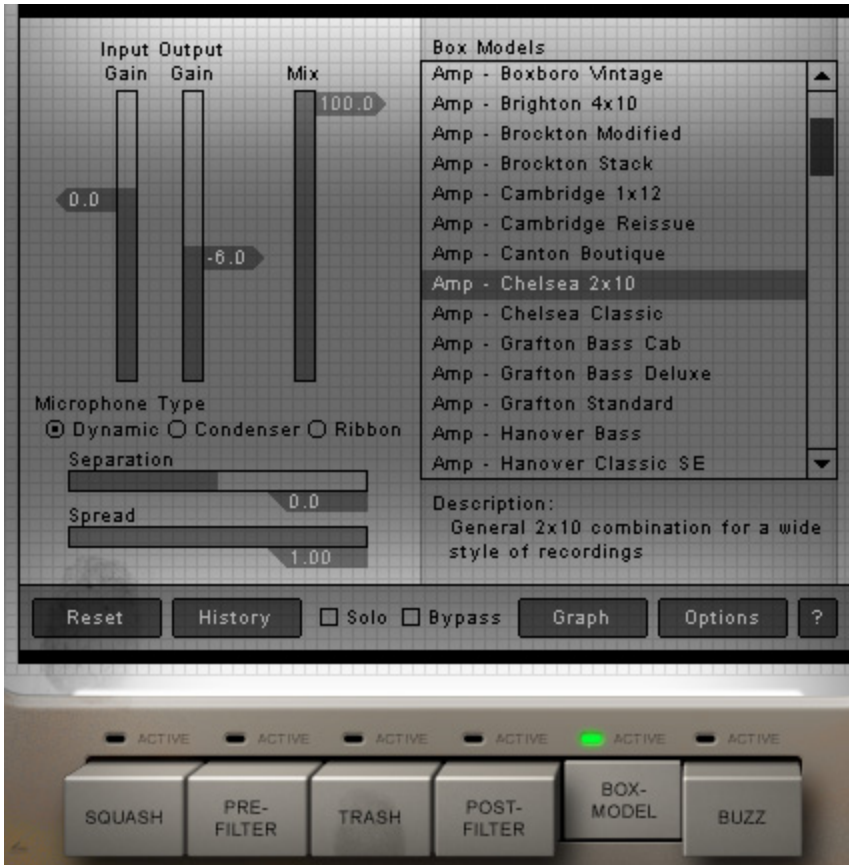


For this one, we'll turn off all the modules except the Box Modeler. You can do this by clicking each of the "active" lights to make them inactive. Or, a little shortcut trick for you - hold down the Alt key on your keyboard and click the Box Modeler to turn off all the other modules.



Go to the Box Modeler module by clicking that button and bring down the output gain to about -6 dB. Select the Chelsea 2x10 cabinet.

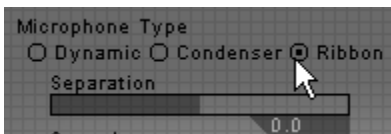
Overall, your Trash should look like the one below.



Hit play, and you're simulating the bass going through a real cabinet and speaker. Toggle the bypass switch and you can get an idea of the differences. The cabinet adds a little resonance and reflection, the speaker adds a little natural compression to smooth it out. And the cabinet and speaker work together to filter and shape the tone.

Click through the other cabinets - you'll notice very different tones and resonances.

You can also change the microphone that is used to mic the cabinet/speaker.



In most cases, a dynamic microphone (think Shure SM57...) is a good all around choice for mic'ing drums, or drums through amps. A condenser microphone will give you a slightly brighter sound with sharper transients, while a ribbon microphone will give a "flabby" sound with duller transients.



The other point to mention is that the box modeler specifically only models speakers and cabinets. Amplifier stages and tone stages can be modified in the Trash module and Prefilter/Postfilter modules to create a practically infinite number of amplifiers.

Bonus Tip:

Listening to drums solo'ed is a tough way to set a good tone and amp model. What sounds good by itself isn't necessarily what's going to punch through in a mix. Once you start adding bass, guitars, synths, etc. the drums have to start competing for attention and that nice low full bass tone might get muddy and lost. Pick a range of frequencies and let that be what represents the drums. We'll experiment more with this with Prefiltering...

Project 2: Strange Boxes

Preset Used: Drums in the Piano

Purpose: Explore "non-traditional" box models

Traditional box models are all well and good. But the joy of Trash goes beyond sounding traditional. Under the Device and FX labels are box models that can seriously warp your sound.

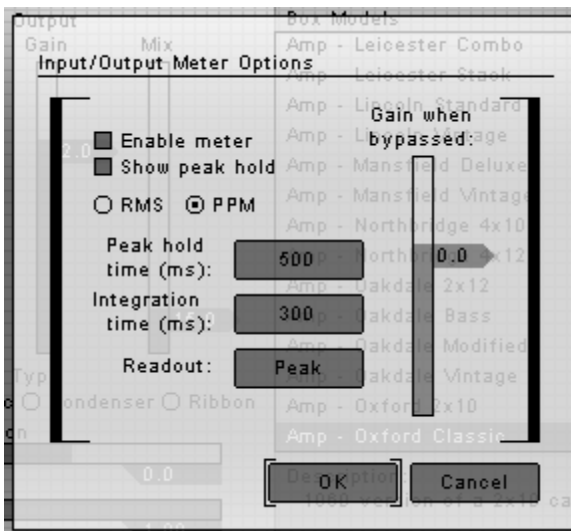
The "Drums in the Piano" preset uses a box model of an upright piano with an additional subwoofer mounted inside it. The cabinet resonances combine with resonances from the strings to create an interesting tone.

Or you can try something like the Area 51 preset. This isn't even a physical model, but one that we just kind of synthesized. So we can't explain what it is, either.

The rest of the Device and FX models are equally strange in their own individual ways. Have fun checking them out.

Bonus Tip:

Right clicking on meters will bring up an options screen for the meters. If you right click on the main input/output level meters on the right side of Trash you get the options screen below



In addition to meter display settings, Trash offers a "Gain when Bypassed" option. This lets you set an offset gain that is only applied when the Trash bypass is switched on. When working with Trash, you'll find that many settings affect the gain. To compare Trash on with Trash off, this option lets you account for any level differences so you're just hearing the effect of a box model, trash algorithm, etc.

Project 3: Mixing the Box Model

Preset: Drums Mixing Area 51

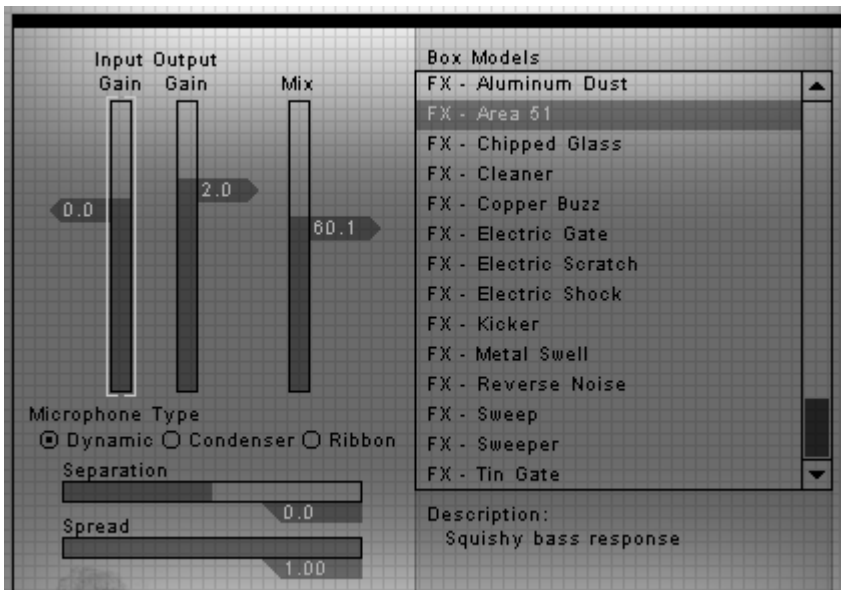
Purpose: Mix box models with direct sound

The Box modeler allows you to mix the direct/unprocessed sound with the box modeled signal. To explore this, check out the "Drums Mixing Area 51" preset.

With the Mix at 100% - that is, all of the signal is through the box model - there is an interesting sound, but it loses the direct "thud" of the unprocessed track.

If we bring the mix control down, this mixes the direct unprocessed signal with the box model. With a Mix of around 60 - that is, 60% box model and 40% direct signal - we've got enough low end and direct sound but still have a touch of that "fffwwttt" sound that we get from Area 51.

Note that as you change the mix control, you may need to bring up the input or output gain (either one will usually sound similar so don't worry too much about which one to use). We ended up with gains and mix as shown below to give a nice sound with a similar level to the original



Project 4: Simple Distortion

Preset Used: Drums Chelsea Trash

Purpose: Play with Trash distortion

With the same settings from Project 1 (select Drums Chelsea 2x10 as the preset), go to the Trash module and activate it.



What we want to do now is add some tube amp distortion.

Taking a minute to look over the controls on the Trash module screen:

Input Gain: the gain going into the distortion module

Overdrive: For most distortion modules, the amount of distortion. Works in combination with the Input Gain to overdrive and distort the audio

Mix: Lets you control the mix of distorted sound (100) and unprocessed original sound (0)

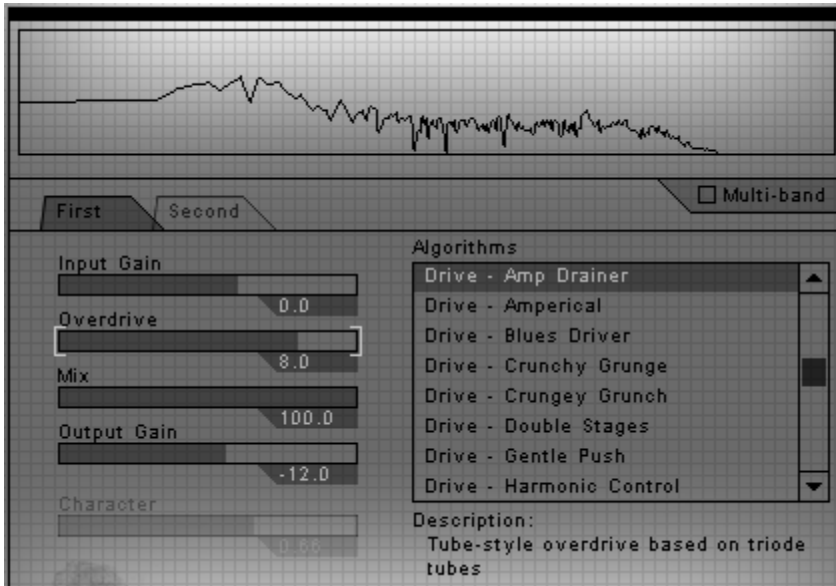
Output Gain: If you've cranked up the input gain and/or overdrive, the output gain lets you turn down the level after it's been distorted.

Character: Some distortion algorithms have additional parameters. For these algorithms, the Character slider becomes enabled to allow you to further customize the trashing.

The most interesting parts of the Trash module are the trash algorithms. You can select from distortion, overdrive, retro fuzz and more.

Important Note: When browsing through distortion algorithms, keep the level turned down. Different algorithms distort the sound in very different ways, which can sometimes cause the level to jump between different algorithms.

So just a first experiment, turn down the output gain to about -12, select the Drive - Amp Drainer algorithm, and turn the Overdrive up to about 8 or so. Your screen should look like the one below.



Definitely trashy. Season to taste.

Bypass the Box Model module - you can either click on the Bypass button on the touchscreen or click the "active" light on the faceplate. Note that affect that box modeling has on a distorted signal. As you add more distortion to your tracks, Box Modeling can be used to smooth out and tame down the extended frequencies created by the extra distortion.

Bonus Tip:

When setting controls, a few shortcuts for you:

- 1) To enter numeric values directly, click the number label of the slider, enter the value you want and press the Enter key
 - 2) Select the control with the mouse (or Tab key to it) and use the arrow keys to adjust it. Use Shift+arrow keys to adjust in larger increments. Use PgUP and PgDOWN to adjust in even larger increments. And use Shift+PgUp or Shift+PgDown to move in even even larger increments.
 - 3) Our favorite one: just hold your wheel mouse over a slider and roll the wheel to adjust the slider.
 - 4) Double click a slider to set it back to zero.
-

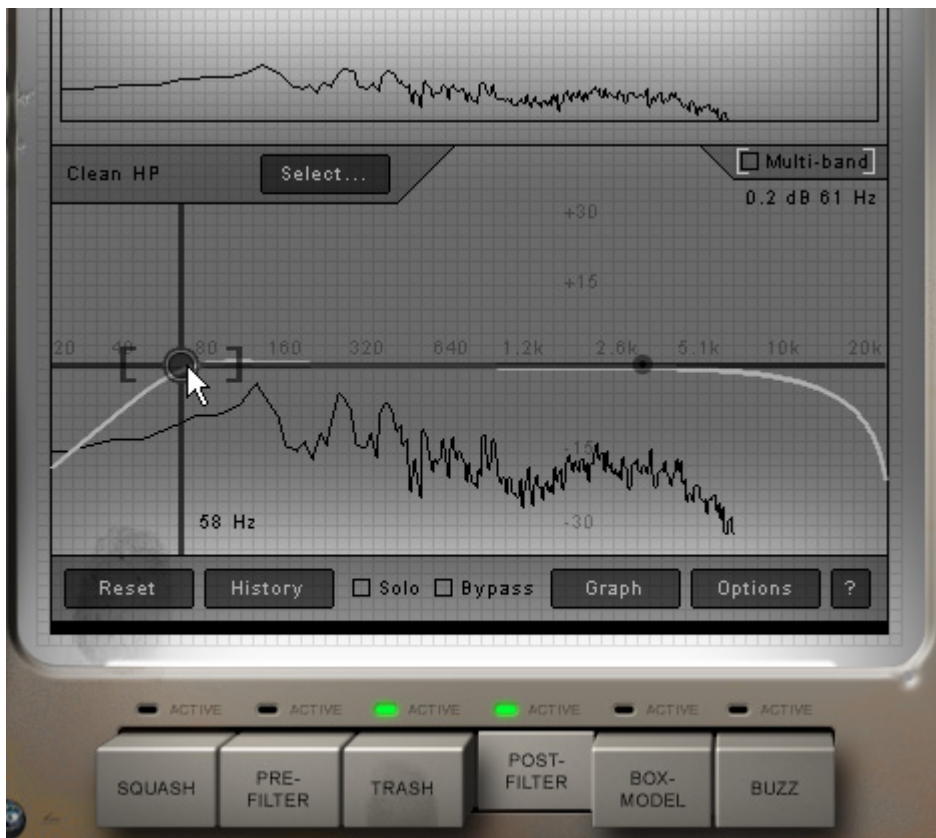
Project 5: Postfiltering Trash

Preset Used: Elastic Trash

Purpose: Use postfiltering to tame distortion

The Box Model is only one way of taming or smoothing the extended frequencies created by distortion. The Postfilter module can also provide low pass and high pass filtering, without any cabinet and speaker modeling. Which can be exactly what you want for some situations.

The "Elastic Trash" preset uses a distortion algorithm with a unique "elastic sounding" quality. Load this preset, and compare the sound with the Postfilter module on or off. You can adjust the Postfilter module by simply dragging the low and high pass handles to create wider or more narrow tones.



Bonus Preset:

Drums Elastic Trash with Delay

We liked this sound and went on to create this additional preset which uses a lo-fi digital delay to add some ambience

Project 6: Two Stages of Distortion

Preset Used: Drums Two Stage Trash

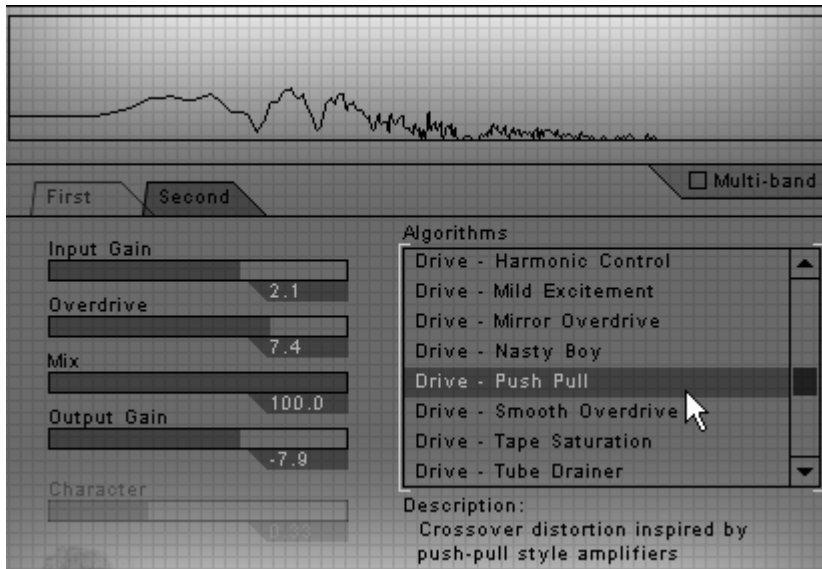
Purpose: Use two stages of distortion in one preset

In Project 4, we simulated the saturation of a tube amp with the Trash module. We can go even further, and simulate a distortion pedal (such as a fuzz box) running into a tube amplifier for "two stages" of Trash.

We can do this in Trash. In the Trash module, there are tabs labeled "First" and "Second". These are two individual stages of distortion - one runs into the next.



If you open preset "Drums Two Stage Trash", we've already got the First distortion set up for a fuzz pedal. Click on the "Second" tab, select the Push Pull algorithm and set it up as shown below.



The dual stage distortion provides a more complex sound, with the overdrive smoothing out and fattening up the fuzz effect.

Project 7: Recap

Preset Used: Drums Metal Warehouse

Purpose: Combine some ideas

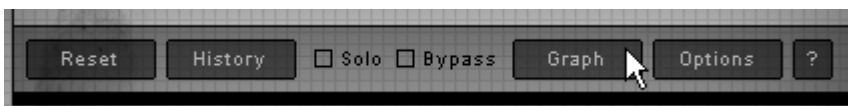
The preset "Drums Metal Warehouse" is a different sound with the same ideas we've covered. (disregard the Prefilter module for now)

A single band fuzz trash algorithm is used, with the output of that algorithm going into the postfilter module to filter some distortion. After the postfilter module, the signal goes into the Box Modeler, where a "Rusty Bin" model with a Dry/Wet mix of about 50/50 is used.

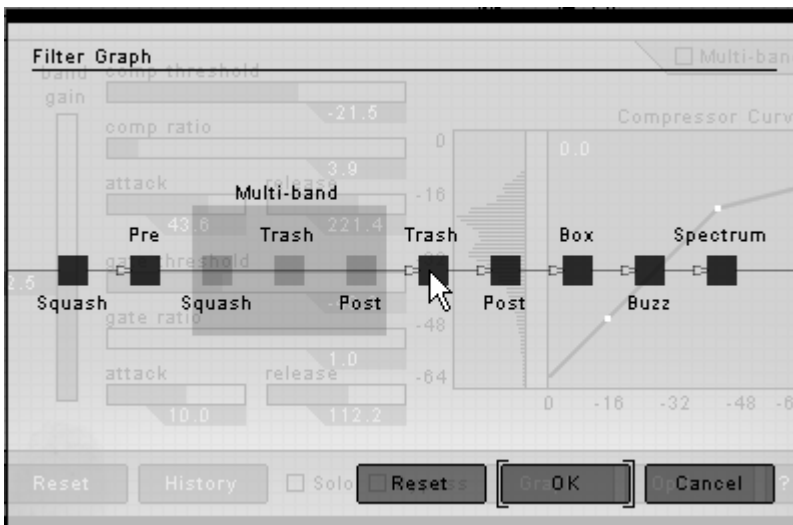
Bonus Tip:

The order of the modules in Trash has an effect on the sound. By default, the order is as shown on the faceplate buttons - Input goes through the Squash module into the Prefilter module, then into the Trash module, etc.

You can change this order by clicking the Graph button on the touchscreen



This brings up a signal flow diagram that lets you reorder the modules



See the Trash help file for more information on ordering modules.

Project 8: Drum Machine

Preset Used: Drums Drum Machine

Purpose: Another simple combination of Trash and postfiltering

This preset gives a type of "lo-fi drum machine" sound, like at the beginning of Sublime's "What I've Got".

We used two stages of Trash for this one - a Bit Wrench which truncates down to get an 8-bit drum sound followed by a Sample Rate aliasing effect for more dirty digital delight.

Postfiltered the highs and lows and sent it all through a cabinet model for a cheap speaker sound.

Bonus Preset:

Drums Lo-Fi Drum Machine Direct In

Another digital lo-fi drum effect. We've bypassed the box modeler for a more direct sound, and added a cheesy lo-fi digital delay.

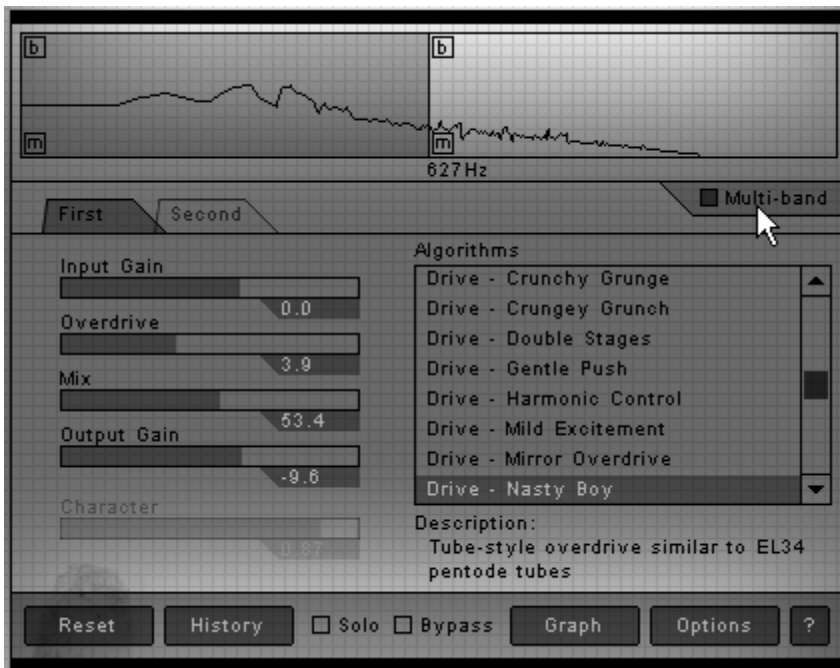
Project 9: Multiband Trash

Preset Used: Three Band Tube Drive

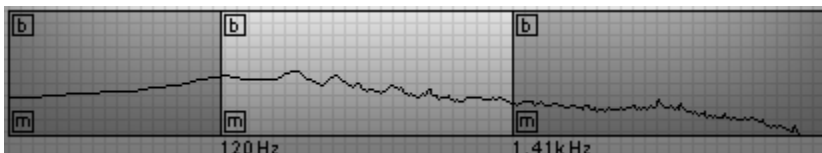
Purpose: Explore multiband distortion

In Project 4 we ran some drums through a tube distortion algorithm for a very trashy sound. As you work trashy drums into a mix, though, you might find that all that trash is creating distortion, frequencies and general noise that you don't really want. Can you get strong trashy sounds without all that additional "muddiness" and "harshness"?

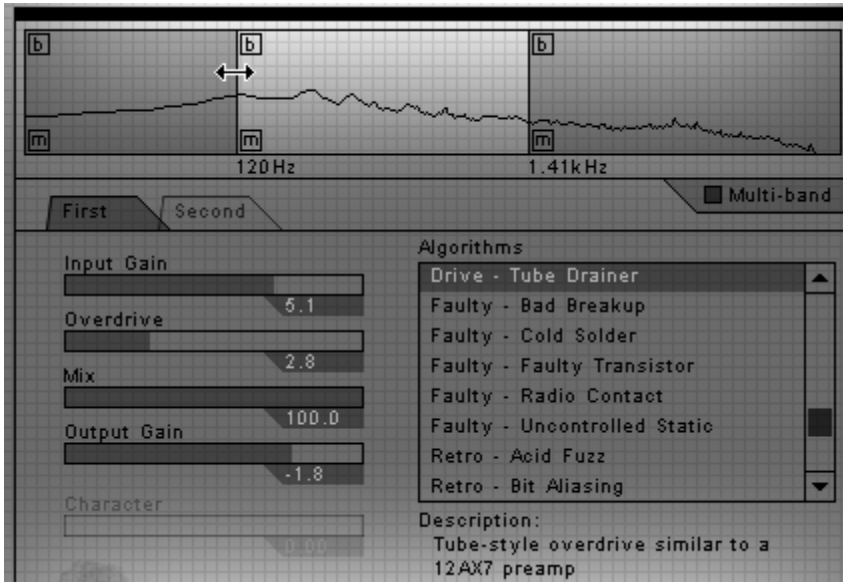
The solution is multiband distortion. This allows you to selectively distort ranges of frequencies. You can, for example, add some midrange overdrive while still retaining a full (clean) low end and a controlled high end. To enter the world of multiband Trash, click the multiband button in the Trash module as shown below



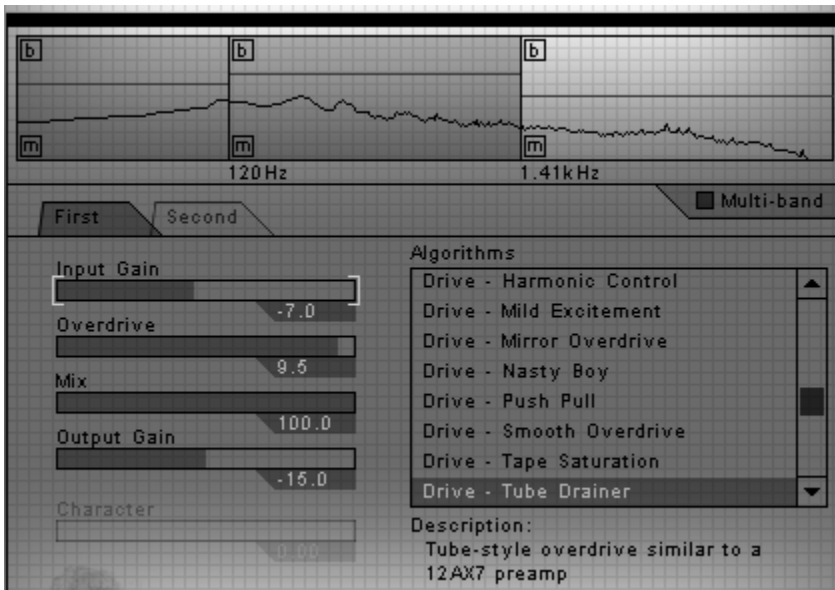
The mini-spectrum at the top of the screen splits into three bands



Drag the handles of the bands as shown below so that you have one cutoff at 120 Hz, and one at 1.41 kHz.



You can now set Trash parameters independently for either band. Click on the upper band to select it and set the parameters for the upper band as shown below



Follow the same process for the other two bands, or simply open the "Three Band Tube Drive" preset for a complete three band distortion preset.

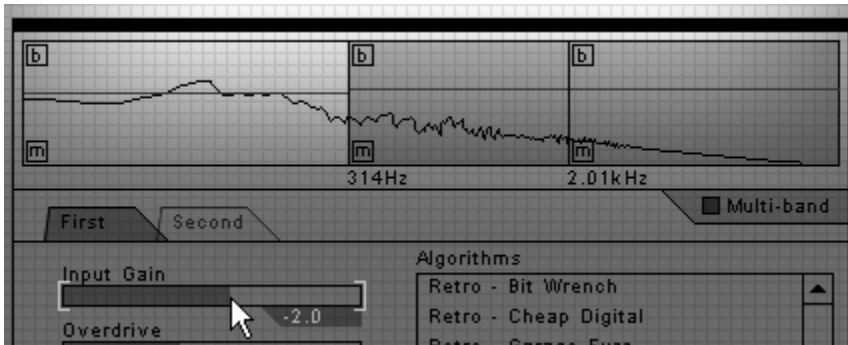
What we've done in this preset is added a lot of distortion to the high band, and a lot of level to the middle band. This gives a powerful snare body sound in the middle band, with a crashing sound from the distortion in the upper band.

Experiment with the overdrive parameter for the upper band, as well as the cutoff frequency for the bands. Even with this simple combination you can get a fun variety of tones.

Bonus Tip:

As you work with multiband effects, you'll see horizontal lines appear on the upper mini-spectrum when you select a control. These are handles to the setting that you've selected, but for other bands. So without switching bands, you can drag these handles up and down to adjust the same parameter for other bands

As an example, for the screen below, we've selected the lower band and we're adjusting the input gain. We could adjust the input gain for the middle and upper bands with the horizontal handles on the spectrum.



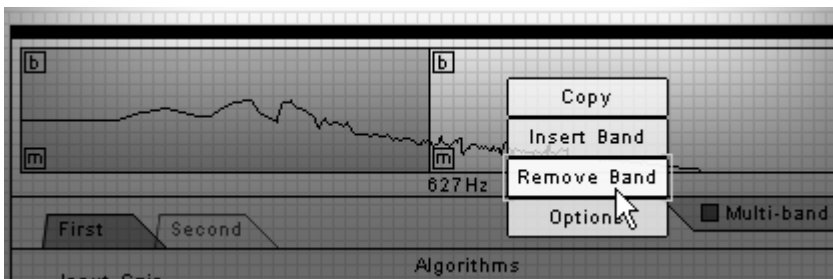
Project 10: Multiband Low End Trash

Preset Used: Drums Fuzzy Kick

Purpose: Hear what happens if we only trash the low end

We don't always need to use three bands of distortion. We can use single band, two band, three band or four band. In this project we're just going to be trashing the low end or body of the kick drum, so we really only need two bands.

Right click on one of the bands in the mini spectrum and select remove band from the menu. Now we've got two bands to play with.

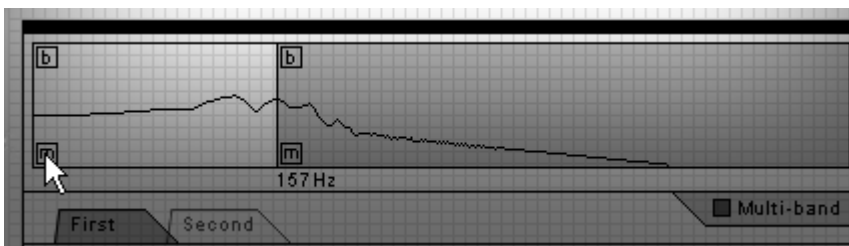


The other options in the menu allow you insert or add bands back (up to four), copy settings from one band to another, and set options for the mini-spectrum display.

If you open the "Drums Fuzzy Kick" preset you'll see that we've used two bands of Trash, but only applied a little bit of fuzz to the low end. If you solo that band, or simply toggle the bypass on the Trash module, you can hear that we've added a little some ringing and distortion to the low end for a trashy kick drum.

Bonus Tip:

Click on the M button a band to mute the sound going through that band...or Alt-click the M button to solo that band...



Project 11: What's the Frequency?

Preset Used: None

Purpose: Overview of which drum sounds are in which frequency ranges.

As you work with multiband trash and filters, it's helpful to have a general understanding of which sounds are in which frequency ranges: i.e. if you want to trash a snare, you've at least got to have an idea of where the snare is...

The table below gives a general idea, but will vary depending on specific drum tunings, types of cymbals, etc.

Frequency	What's there?
<100 Hz	The real "boom" of the drums. The meat of the kick drum, low end of toms, even some snare drum body resonances. Boost if you want to add some real oomph. If you want that real "ringing" hip hop kick sound, boost a tight notch around 60 Hz.
100-250 Hz	Mostly body resonance of the snare drum and some harmonics of the kick drum. This range can be cut to reduce muddiness, especially before distortion.
500-1000 Hz	The whack of the snare drum. Boost or distort this range if you want a low driving snare sound
1000-2500 Hz	The bang of the snare drum. Too much distortion in this range can sound irritating, but maybe that's what you want...
2500-3500 Hz	Usually the attack of the kick drum is in this range. You can accent it to bring out the rhythm of the kick drum, especially the low end of the kick drum (100 Hz or so) is competing with bass and other low end instruments
5000-7000 Hz	Here's where you start to hear the actual sticks and wires of the snare drum.
9000 and up	Cymbals and ambience (with the sticks of the cymbals hitting around the 5000-7000 Hz range)

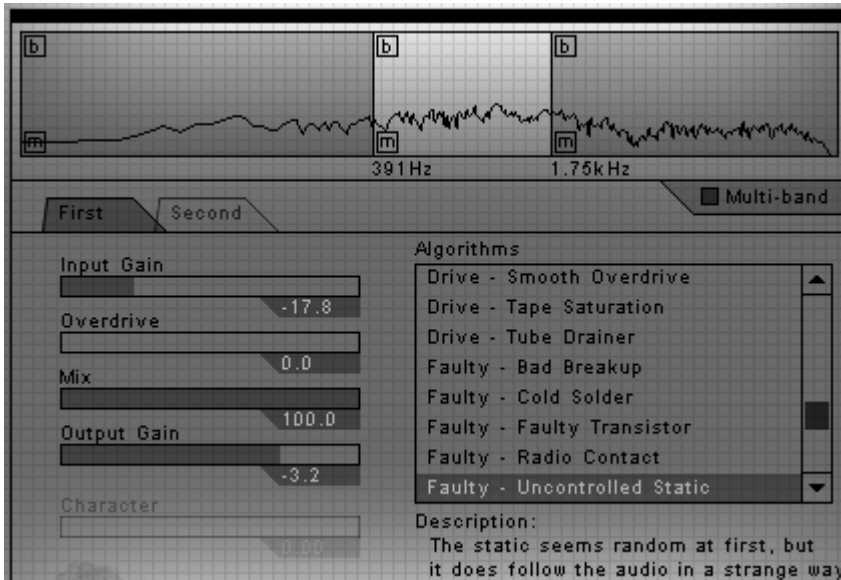
With that guide, you can choose what to boost and/or distort. Of course, the point is to pick a few things to boost or a few things to cut. You won't get a boomy, whacky, banga, trashy, ambient sound by boosting all ranges - that will just sound like you turned up the gain. The key is to accent and highlight a few ranges.

Project 12: Where's the Snare?

Preset Used: Drums Static Snare

Purpose: Trash the "whack" of the snare drum

Knowing what we know about drum frequencies, this preset uses a band between 391 Hz and 1.75 kHz (1750 Hz) to focus in on the "whack" of the snare drum.



Once we've got that range, we've used the "Uncontrolled Static" algorithm to transform the snare into a strange sounding digital clap...or whip...or something...OK, we just thought it sounded cool....

Bonus Multiband Trash Presets

Drums Power Kit:

Trashes the snare midrange while leaving the lows and highs unaffected.

Drums Pushing Tin:

Trashes the high end cymbal frequencies while leaving the lower ranges unaffected.

Drums Sweet and Sour:

Fuzzy kick, very little mids, scratchy highs

Drums Trashy Highs and Lows

Fuzz on kick with additional harmonic excitation on highs

Drums Twist the Highs

Clean lows, saturation on mids, slight twist on highs

Project 13: Limit the Peaks

Preset Used: Drums Simple Dynamics

Purpose: Use the Squash module to smooth out a drum part with compression

Moving on to the Squash module, we're going to create a few different compression presets for drums. For an overall view on compressors, check out our mastering guide here <http://www.izotope.com/products/audio/ozone/ozoneguide.html>. We'll assume you understand what compressor controls do in general, therefore, and just move on to compression for drum applications.

There's a tight relationship between compression/dynamics and distortion. Distortion in most cases is an effect that works on level. A louder signal will generally be more distorted. If the level of your track varies, your distortion will vary. This might be what you want. On the other hand, getting a consistent level through compression and therefore consistent distortion is usually a desirable thing.

The "Bass Simple Dynamics" preset rounds off the top of the drums. The attack and release are relatively fast, as drum hits have pretty short durations. With an attack of 11 ms, most of the initial hit of the drums will still pass through uncompressed, however.

Release times, for a natural compression, should be roughly the length of the decay drum hit. For snare drums, try a release of around 15 ms (and an attack of 10 ms or so). For something like a kick drum, a longer release in the range of 60 ms with an attack of 10 ms would be a good starting point.

Bonus Tip:

The faster the attack of the compressor, the more the transients or initial hits of the drum will be compressed. Slow attacks let the initial hits go through uncompressed.

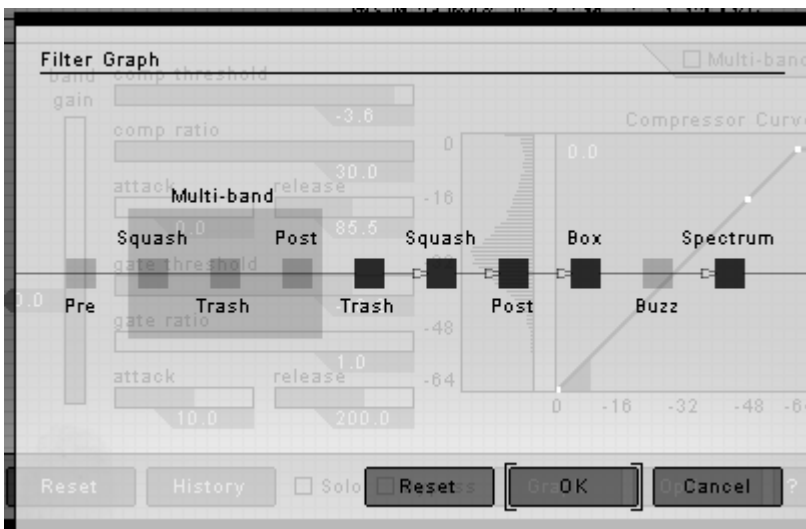
Project 14: Squash as a Limiter

Preset Used: Drums Simple Limiter

Purpose: Use compression to limit a signal

So in the last project we had the compressor before everything else to compress the signal going into the distortion and other modules. An alternative approach is to use the compressor after all the distortion to limit any stray peaks caused by the distortion.

The Drums Simple Limiter preset uses the technique by placing the Squash module after the Trash module (click the "Graph" button to reorder the modules)



If the Squash module wasn't used, the distortion and level would be a little all over the place. You can bypass the Squash module to hear what we mean. What we've done is used two distortion chained together - Little Popper followed by Mirror Overdrive. As the name "Little Popper" might imply, that trash algorithm excites and pops the signal in level. Little Popper before the Mirror Overdrive creates exaggerated distortion as Little Popper is "expanding" the level that is feeding Mirror Overdrive. Follow it all with some limiting to control the peaks and call it a wrap....

Project 15: Gating the Noise

Presets Used: Drums Noise Gate

Purpose: Check out noise gating

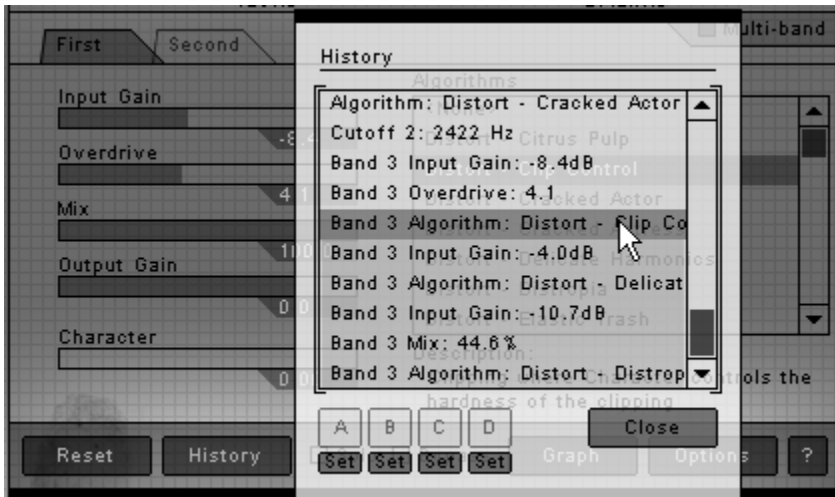
When you're boosting gain, adding distortion and trashing sounds in general, any noise in the recording can be boosted and create problems. Fortunately, the Squash module also provides a noise gate that you can use to "hush" the low level signals before they go through Trash.

Again, we refer you to our mastering guide

<http://www.izotope.com/products/audio/ozone/ozoneguide.html> for an overall explanation of gates and compressors. For drum applications specifically, you want to set the attack and release relatively fast. The threshold and ratio depend on how aggressively you want to gate the noise.

Bonus Tip

As you make adjustments, Trash remembers what you've done and keeps it in a History list. Click the History button and you can go back any number of steps to a previous sound.



If you just want to undo your last change, press the Ctrl+Z key to undo your last step

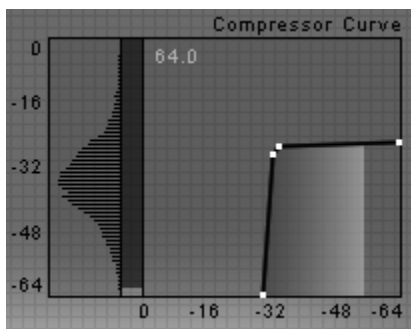
Project 16: Crashing the Gates

Presets Used: Static Mess A and B

Purpose: See how we can use gating as a sound shaping effect

Gating is useful for removing noise, but can also be used at extreme settings to create great effects.

You can see from the compression curve on this preset that this is not a subtle compressor. The gate has a high threshold and the compressor has a high ratio. This thing is either full on or full off - extremely compressed or completely gated.



We put some static distortion after it and loved it. So we tried another distortion algorithm and came up with Static Mess B. We liked that one too....

There's a lot you can do with the combination of extreme compression, gating and multiband distortion. And keep in mind that even a small adjustment such as a different attack time can create an entirely different sound.

Project 17: Multiband Gating

Preset Used: Drums Multiband Gating

Purpose: Experiment with multiband dynamics for drums

Like the Trash module, the Squash module can be also used as a multiband module.

Following the last few projects, this opens up a number of possibilities. You could just compress the low end and let the mids ring through without compression. You could just gate the high frequencies to remove noise and static. Or any other combination.

As one multiband example, we'll use multiband Squash and Trash to create a gated drum effect, but where different gate levels and timings are used for different frequency bands. Load up the Drums Multiband Gating preset and give it a listen.

Bass and mid ranges are gating pretty quickly and aggressively, while the highs are compressed/sustained and allowed to ring through for a longer duration.

Play around with the band cutoffs as well as the thresholds, attack and release times for lots of different possibilities....

Bonus Gating Preset

Kind of Closer

Started as a NIN "Closer" preset but strayed a bit. Tight gating on the snare and cymbals, with extended compression and delay on the kick drum.

Project 18: Filters

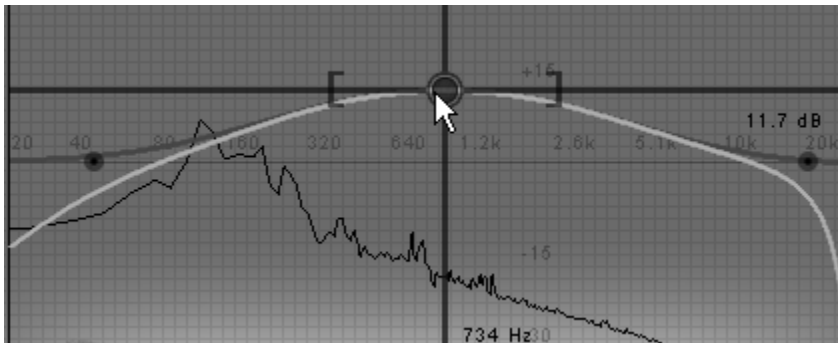
Preset Used: Watcha Want

Purpose: Use prefiltering to shape the tone of a distorted drum kit

Now that the Box Model, Trash and Squash modules are under our control, go to the Prefilter module and activate it. The Prefilter module is basically an EQ that shapes the sound before it goes into the distortion module.



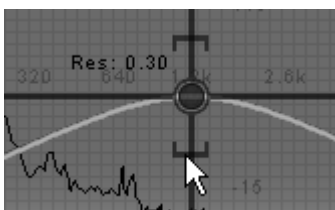
The Prefilter module has three circles or bands. You can grab a circle and move it up or down to change the gain, or left/right to change the frequency.



Some filters have horizontal handles on them that change the width of the filter, as shown below

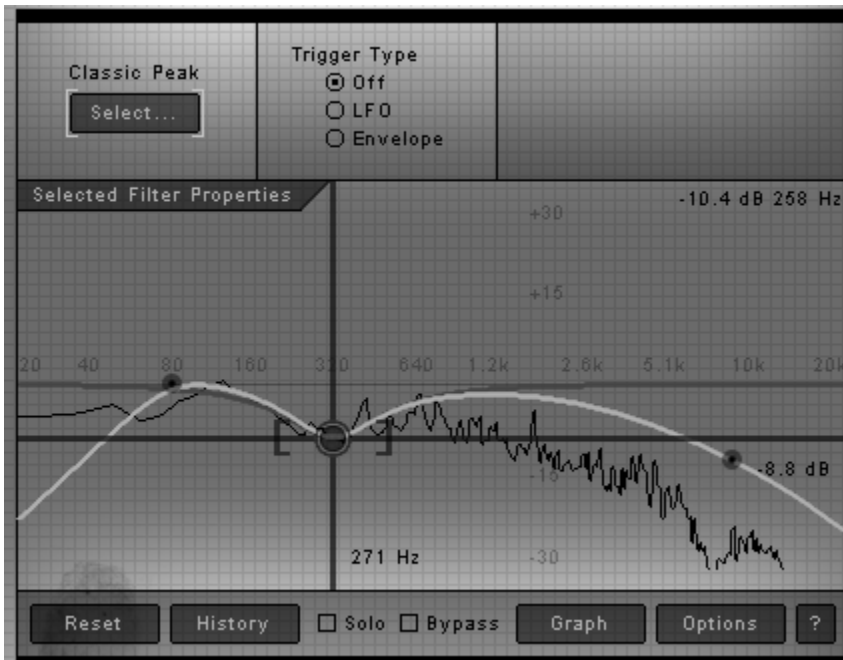


Other filter types have vertical handles that change the feedback or resonance of the filter as shown below:



A couple tips on setting the filters:

- 1) Once selected, you can move a filter with the arrow keys on the keyboard.
- 2) If you hold down the shift key, the filter will be constrained to only move vertically or horizontally - whichever direction you initially move with the mouse.
- 3) Once selected, you can set the width of a filter (if it supports variable width) with the wheel of a wheel mouse.



So for this drum project, we've taken the middle band, dropped it down a few dB and made it tighter around 200-300 Hz. We've also boosted the region around 80-100 Hz with the lower band.

Try playing the sample with the Prefilter active and inactive to hear the result...without prefiltering we've got more of a muddy sound in that 200-300 Hz range.

Bonus Tip

You can automate Trash parameters from applications that support DirectX automation such as Cakewalk Sonar, Sonic Foundry Vegas and Sonic Foundry Acid.

Project 19: Different Filter Flavors

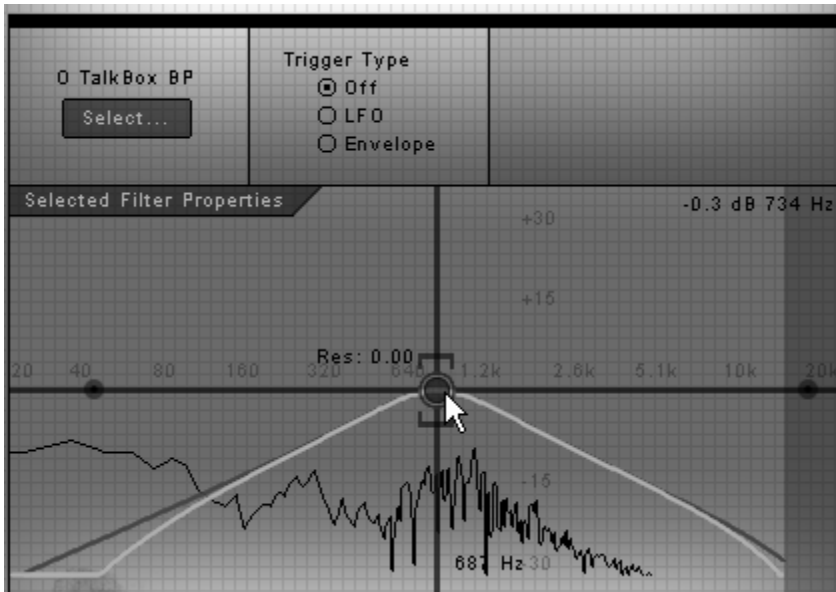
Presets Used: Drums O My

Purpose: Selecting different filter types

In addition to setting filters, you can select filters to be different types - different sounds, capabilities, etc. Load the Drums O My preset.

Select the middle filter at 680 Hz, and click the button in the upper left corner of the touchscreen that says "Select...". This brings up a list of filter types that you can use, all of which have slightly different sounds.

We used the "O TalkBox BP" on this one. It's a bandpass filter that highlights vocal formants, giving the drums an "Ooohh" sort of tone. We followed it by a rectifier distortion and some delay for a very, well, unique drum effect.



As you explore other filters, you'll see that the spectrum is dimmed on the right side for some of the filter types. This indicates that this filter is modeled after a type that doesn't support filtering at those higher frequencies.

Bonus Filter Presets

Drums Bad Connection A and B

Bandpass filtering for a lo-fi midrange effect

Drums Cheap Toy

Extreme bandpass filtering, compression and box modeling for a cheap toy effect.



Drums Fat and Sassy

A ringing resonant filter at the cliché "60 Hz" frequency with additional compression, gating and multiband trash. Prince-like?

Drums Ring the Bass

Same type of "60 Hz" resonant filter as in "Drums Fat and Sassy", but with different multiband trash

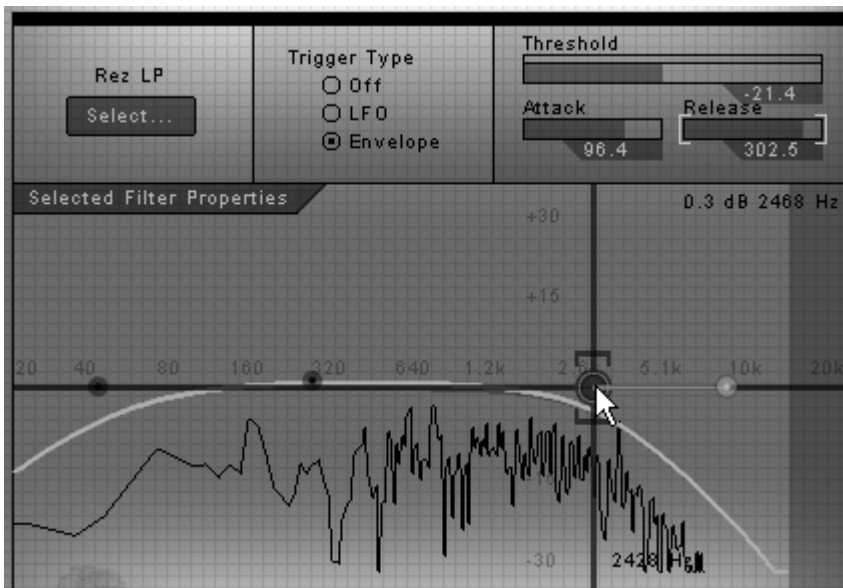
Project 20: Low Pass Bass Wah

Preset Used: Drums Wah Trash

Purpose: Trigger a filter with an envelope

Just in case all the different filter types weren't enough...you can also trigger them to sweep around. They can be triggered by an envelope or level of the signal, like an "auto-wah", or triggered by a slowly moving oscillator or LFO. And since you have three filters, you can even have three different types moving in three different directions.

But for now, let's start simple. Open the "Drums Wah Trash" preset for a starting point. Select the low pass filter, and you'll see options in the upper left corner for envelope or LFO triggering.



Select the envelope trigger type and additional envelope trigger controls appear.



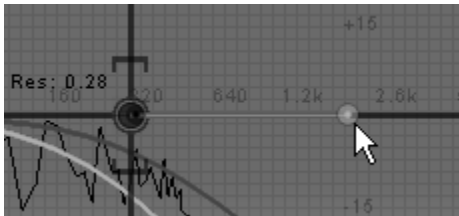
The threshold is the level at which the filter is triggered. Any level above the threshold will cause the filter to begin sweeping. Note that when playing your audio, a small level meter appears above the Threshold control to help you set an appropriate trigger point - typically triggering just below the peaks for an "auto-wah" sound.

The attack sets the time that it takes for the filter to move to its "target position" after the threshold is triggered, and the release sets the amount of time it takes to return to the original position after the level drops back down below the threshold.

For an autowah type of effect, try a threshold of -25 or so (adjust depending on your input level), an attack of 100 and a release of 200.

The part of setting sweeping filters is the part that's the most fun - setting the target or destination for the filter when triggered.

To do this, you'll note that when you select a filter and set it to be envelope triggered an additional white circle appears. Select that circle and you can set and adjust the target filter point.



Your target can be set to a higher frequency, higher level, higher resonance -- you can sweep or morph any filter parameter.

For this one, we set the target around 7 kHz to accent the cymbals when the wah is triggered. We also increased the resonance of the target a little with the vertical handles, so that the envelope triggers a higher frequency and a slightly higher resonance.

Bonus Wah Presets

Drums are so dynamic by nature that triggering envelope filters with them is a lot of fun. Check out "Vinyl Scratch A" and "Vinyl Scratch B" presets for another type of low pass filtered wah effect.

Project 21: Peak Filter Wah

Preset: Drums Fast Sweeps

Purpose: Trigger a peak filter with an envelope

Instead of a low pass filter, you can also try triggering a peak filter with a wah. This will let your high end remain even when the wah is off or not being triggered, but still add a little sweep when it is triggered.

Check out the "Drums Fast Sweeps" preset for an example of this. Three peaking filters sweep up to give a sort of triggered "hollow" effect....

Bonus Envelope Filter Presets:

Drums Cracked Actor

Fast sweeping Low pass envelope for gating sound

Drums Crying

Subtle use of a triggered peak filter around the mids to give some movement to the sound

Dentist Chair

Triggered bandpass filter with resonance widening as it's triggered for a "wahhhh" sound

Ring the Snare:

Triggering a resonant peak filter around the snare drum region

Project 22: Reverse Wah

Preset: Drums Reverse Sucker Wah

Purpose: Cut off the sound when it peaks

Most autowah pedals operate on the idea that louder signals will trigger or "open up" more of the. When you play harder, it "wahs" by sweeping a filter up in frequency.

An alternative idea is the reverse of this. On louder sounds, cut the sound by triggering a filter that sweeps down in frequency. The result is a sort of "sucking in" sound where following a peak the track is sucked down in volume, then returns to normal.

The "Drums Reverse Sucker Wah" preset is an example of this. A prefilter band is setup as a lowpass, and on loud sounds this filter sweeps to a lower frequency, cutting off the sound.

This might seem counterproductive - cutting off the sound when it gets loud. The trick to making this work is adjusting the threshold, attack and release times of the envelope filter. With an attack time of >50 msec, the initial attack of the sound will get through, followed by the reverse wah. So in a way, you're not cutting off the initial volume of the sound, but instead modifying the decay of the drum.

Bonus Reverse Envelope Filter Presets:

Drums Reverse Sucker B

Added some delay to fill out the sound

Drums Isn't That Special

Several filters here - one that triggers up on envelopes and one that triggers down. Because they have different attack and release times they both contribute to the overall effect, as opposed to just canceling each other out.

Drums Trash Cans

We thought this had an exaggerated "trash can" sound - perhaps because we're cutting off the decay of the high end on transients. We're not quite sure. We just liked the sound of this one.

Drums Timid

Subtle reverse sweep with filtering to give it a slightly timid tone

Project 22: LFO Filters

Preset: Drums LFO Cliche

Purpose: Trigger a peak filter with an LFO

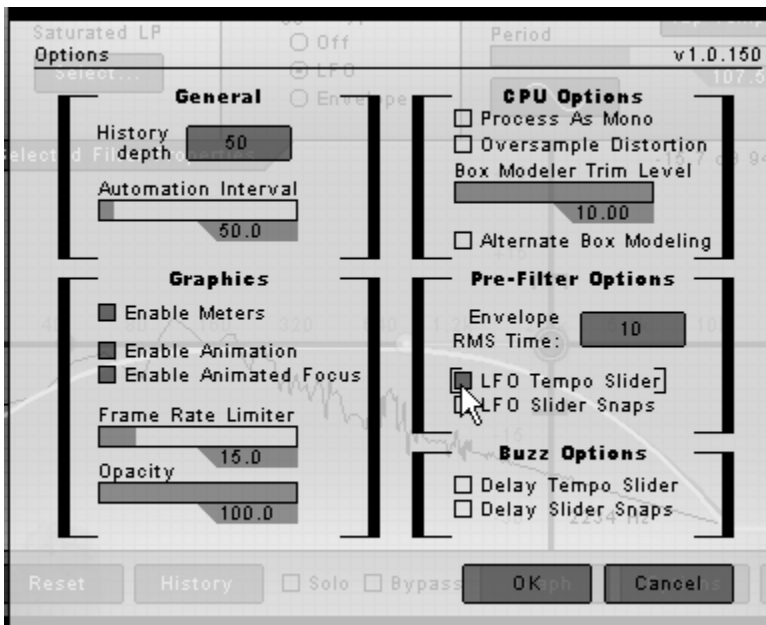
Instead of triggering off the envelope of level of the signal, you can alternatively have a sine wave or other signal automatically sweep the filters.

Check out the "Drums LFO cliche" preset for an example of this. A sine wave LFO is sweeping a resonant filter to give a periodic sweeping sound.

Try setting the LFO to the tempo of your song, or experimenting with different LFO shapes....

Bonus Tip:

In the main Trash options screen, you can set whether the prefilter LFO period is displayed in milliseconds or tempo.



Project 23: LFO Phase Effect

Presets: Drums Phase Thing

Purpose: Try sweeping narrow filters for phase effects

The great thing about analog filters is that they have magnitude and phase characteristics. Linear phase filters are good for surgically removing sharp frequencies, but for tracks and mastering it's the phase response of analog filters that provide a musical and organic sounding quality.

We can use this quality to create some interesting sweep effects. Check out the Drums Phase Thing preset. We have three narrow notches of filters which are all sweeping to their own LFOs. It's not the filtering that catches the ear as much as the phase effects of the filters sweeping and interacting with each other. You hear a sort of watery sound - not quite a phaser but something like it.

Bonus LFO Presets

Drum Phase Thing B

We liked Drum Phase Thing A and continued on to the Drum Phase Thing B preset. We seriously compressed the high end/cymbals and added a little trash to them as well. The kick was sounding a little boomy, though, so we used one of our sweeping notch filters as notch at 200 Hz.

Ring My Bell:

Random high resonant LFO delivers strange howling sounds

Project 24: More LFO effects

Presets: Birds in a Box, Crack the Whip, Electric Shock and Claps

Purpose: See what else we can do with LFOs....

A few other presets that use LFOs are:

Drums Birds in a Box

Uses very high resonance (ringing) filters with a random noise LFO to create a sort of random singing effect.

Drums Crack the Whip

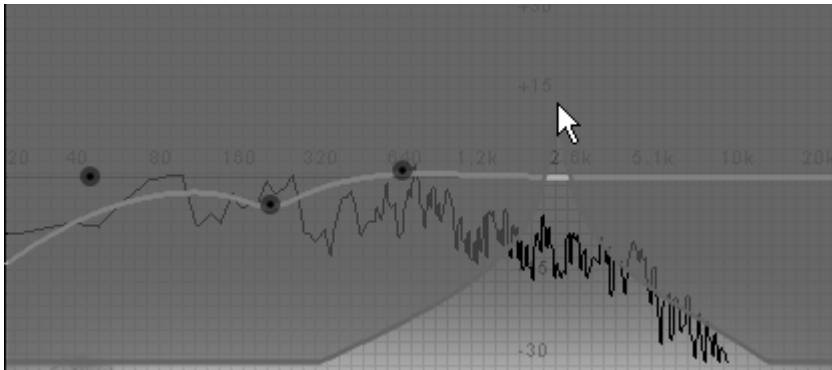
A random LFO in the upper midrange combined with an envelope LFO on the kick drum region

Drums Electric Shock and Claps

A random LFO in the upper midrange provides a little "movement" to the snare drum region.

Bonus Tip

When in the Prefilter or Postfilter modules, hold down the Alt key and you'll get a "solo" filter. This lets you highlight and locate frequencies before actually changing the setup of your filters.



Project 25: Buzz

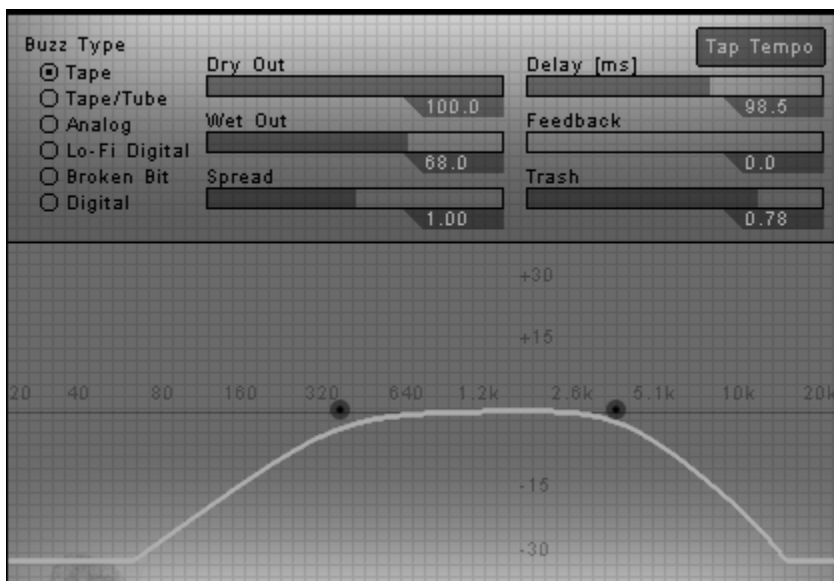
Preset: Rockabilly Slapback

Purpose: Get familiar with the Buzz delay module

Activate and switch to the delay (buzz) module as shown below



The upper portion of the module sets the delay parameters, while the lower portion provides an EQ for specifically shaping the response of the delayed portion of the signal. This filter section in the Buzz module only affects the delayed signal - not the dry signal.



Delay Type:

You can select the type of delay with the controls in the upper left corner:

Tape: A straight tape delay effect with saturation and wow/flutter

Tape/Tube: A tape delay effect with additional tube saturation properties

Analog: A lo-fi analog delay effect with smearing and analog degradation

Lo-Fi Digital: A lo-fi digital delay effect, similar to the first digital delay stomp boxes



Broken Bit: A digital delay effect with infinite feedback on the lowest bit, similar to a faulty "stuck bit" delay

Digital: For completeness, a pure, clean digital delay

Controls:

Dry Out: Sets the output gain of the dry/undelayed signal

Wet Out: Sets the output gain of the wet/delayed signal

Spread: For stereo tracks. Sets the stereo spread of the signal, from mono (0) to extra wide (2)

Delay: Sets the delay time in milliseconds by default. In the Trash options screen, you can have the time displayed in tempo (beats per minute) instead. You can also set the delay time by tapping the "Tap Tempo" button.

Feedback: Sets the gain of the delay feedback. Higher values will result in longer audible feedback times, i.e. more repeats.

Trash: Sets the amount of degradation for the delay. For example, higher Trash values for tape delays results in more saturation. Higher Trash values for lo-fi digital delays results in more bit truncation and aliasing.

What we've done in the "Rockabilly Slapback" preset is to filter the delayed signal to just the midrange to provide a slapback echo sound. We've got a short echo (~100 ms) with a high wet level and no feedback. The filtering provides a strong echo without muddying up the low end.

Project 26: More Delay Fun

Presets: Drums Miami Garbage, Drums Slapstick, Drums Down the Hall A and B

Purpose: See what else we can do with delay

Being able to filter and trash the delay signal independent of the dry signal, combined with the ability to place the delay anywhere in the signal chain, opens up a lot of interesting possibilities. Just a few ideas based on the presets below:

Drums Miami Garbage

Tight delay around the kick drum to create a trashy ringing sound.

Drums Slapstick

Another slappy echo, filtered to the high frequency range.

Drums Down the Hall A

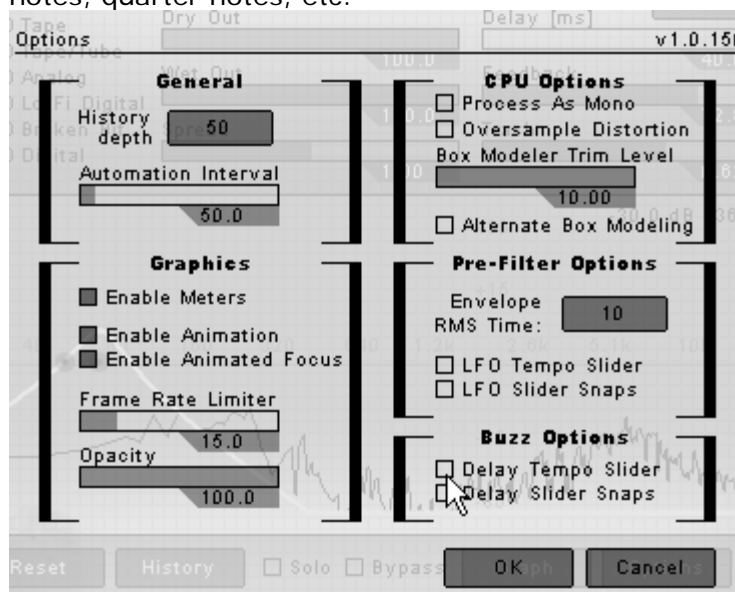
Moderate delay with a lot of feedback, filtered to the upper midrange regions. The delay module is placed last in the signal chain in this preset.

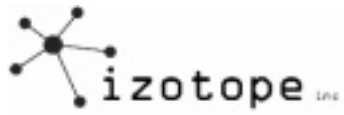
Drums Down the Hall B

Fast delay with a lot of feedback, filtered to the upper midrange regions. The delay module is placed first in the signal chain in this preset.

Bonus Tip

In the main options screen (click the Options button) you can set whether the delay slider displays the delay in time (milliseconds) or tempo (beats per minute). Once you have a tempo set, setting the "Delay Slider Snaps" forces the delay slider to snap to fraction values of the tempo - e.g. 120, 60, 30 - to force delays to half notes, quarter notes, etc.





Closing and Contact

We hope that this guide has been helpful and that you enjoy using Trash.

If you have any questions, suggestions or simply want to share some Trash ideas, please drop us a line at izotope@izotope.com

Thanks,
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