KORNEFF

the other side of sound

PAWN SHOP COMP 2.0

USER MANUAL

korneffaudio.com

PAWN SHOP COMP 2.0

Compression from smooth to punchy with Audio Nerd tweakability

The Pawn Shop Comp is a compressor emulation that not only gives you the vibe and mojo of those vintage audio processors you know and love, but also allows you to pop open the lid and tinker with the circuit! The audio path is based around a 1940's tube amplifier which instantly places its round sonic fingerprint on your track. The tube amplifier's Preamp section lets you adjust the warmth and grit of your signal by adding harmonic distortion. The solid state FET sidechain delivers the punchy, distinctive compression characteristics of classic early-70's compressors.

The Pawn Shop Comp 2.0 is an update to the original Pawn Shop Comp. The PSC 2.0 retains the distinctive sonics and mojo of the original, while adding oversampling, a new GUI, and even more tweakability. It is a major expansion of the original, and if you liked the PSC you'll love the PSC 2.0.

Minimum System Requirements
Quad Core i5 Processor
4GB of RAM
Mac OS X 10.14 or Later
Windows 7 & Above

Supported Plugin Formats
Intel Mac 64bit: VST3, AU, AAX
Windows 64bit: VST3, AAX

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SPECIFICATIONS

Type:	Compressor Amplifier
Gain:	56 db bridging 600 ohm line
Frequency Response:	±2.4 db, 30-15,000 cycles
Power Output:	+24 dbm (as straight amplifier)
Harmonic Distortion:	At 25 db of compression: Less than 9.4%, 35-15,000 cycles; (0 db threshold setting)
	At 30 db of compression: Less than 6.5%, 25-10,000 cycles;
	(0 db threshold setting)
Noise Level:	74 db below rated output (—111 dbm equivalent input noise)
Input Impedance:	15,000 ohms bridging transformer
Source Impedance:	Any
Load Impedance:	600 ohms
Maximum Compression:	100 db
Attack Time:	Adjustable: .2ms to 200ms
Release Time:	Adjustable: .10ms to 1.2 seconds (67% recovery)
Threshold:	Adjustable: 0 db to -100 db
Compression Ratio:	Adjustable: 2:1 to 50:1, with increments of 1
Power Supply:	117 volts, 60 cycles, 20 watts
Preamp Tubes:	12AX7, ECC83 or 5751
Output Tubes	6V6
Color:	Brown
Weight:	68MB Approx.

OVERVIEW

The Pawn Shop Comp (we aren't going to write 2.0 anymore) has a wide range of controls organized into the Front and "the Other Side."

The compressor controls are principally on the front panel of the PSC. If you click on the Korneff Audio nameplate, the GUI changes and you're presented with even more controls. This additional functionality makes the Pawn Shop Comp closer to an entire channel strip.

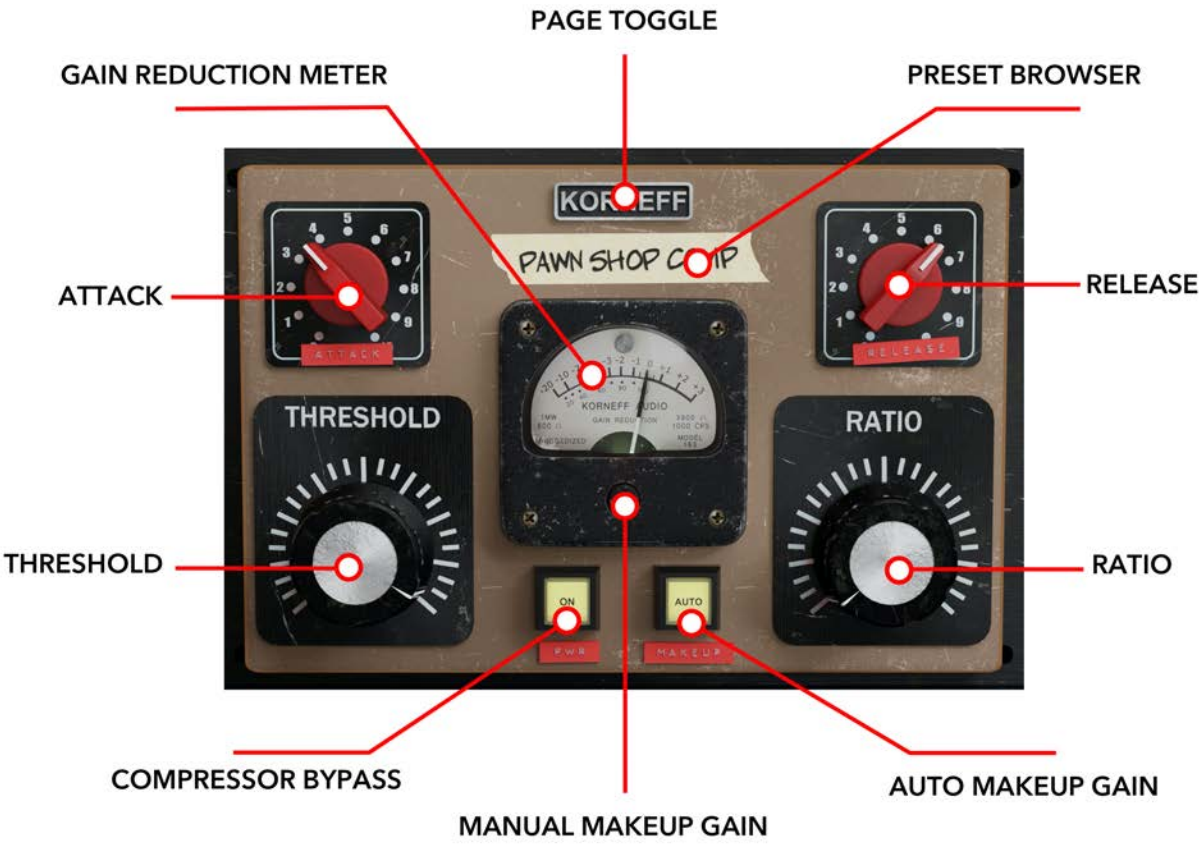
On the other side you can access a tube preamp, with adjustable gain and bias, which lets add warmth and grit by adding harmonic distortion, and a two band EQ section, which lets you add gentle vintage-style peaking equalization curves to the lows and mids. The preamp has three choices of tubes, which allow you to further control saturation characteristics, and three switchable transformer types, which give you surprising control over the overall response of the plugin.

There's also an Operating Level control, which emulates mismatched gear levels, and lets you dial in even more punch and attitude. There are output and input controls to properly gain stage the Pawn Shop Comp in your signal flow, as well as a WET/DRY control for built-in parallel processing.

Finally, you can switch between four sets of different resistors, which affect the high end response, and two different types of FET's that yield different compression curves.

It is a bit overwhelming, but we like to say the PSC is a reverse mullet: the party is up front, and the business is out back. So, if you want to make things easy on yourself, the front panel compressor controls are all you need to quickly and intuitively dial in great sounds. However, if you really want to fine tune the heck out of your signal and get the full functionality of the plugin, go to the "other side" and go berzerk. You can tweak almost everything back there.

FRONT PANEL CONTROLS



ON - press this to engage the compressor circuit. If you switch this off, the compressor is bypassed. Your signal will still go through the tube signal path, so you can still use the Pawn Shop Comp as a preamp and EQ.

AUTO - this engages automatic makeup gain. 90% of the time you switch this on.

MANUAL MAKEUP GAIN - twist the screw at the center of the VU meter to manually adjust makeup gain by +/-18dB.

THRESHOLD - lower this (turn counter clockwise) to set the level at which the compressor begins working. This control also interacts with the makeup gain when that control is set on AUTO, so you can concentrate on sound and not worry about levels.

RATIO - this controls how much compression is added when the signal goes above threshold. Fully counterclockwise is 2:1 (not much compression). Fully clockwise is 50:1 (a lot of compression—effectively a limiter).

ATTACK - how quickly the compressor kicks in once a signal goes above threshold. This allows you to control the peaks and transients of a signal. Set it fully counterclockwise to nip off all but the fastest transients. As you turn it clockwise more of the peaks and transients will get through and the sound will become punchier. The PSC is a beautifully punchy compressor. Attack is adjustable from .2ms to 200ms.

RELEASE - how quickly the compressor stops compressing after a signal drops below threshold. Adjustable from 10ms to 1.2s, RELEASE can have a lot of effect. Setting a short release (counterclockwise) will tend to bring up the quiet parts of a signal—the breaths on a vocal, the ring of a snare drum, room ambience, etc. Setting it long (clockwise) will keep the compressor in longer and tend to smooth things out and make the compression less noticeable.

PAGE TOGGLE - click on the KORNEFF AUDIO name plate to access the "other side" of the Pawn Shop Comp for even more controls.

PRESET BROWSER - click on the piece of tape with the Sharpie Text (where it says PAWN SHOP COMP) to access the preset browser and load and save presets.

IDEAS ON SETTING THE COMPRESSOR

When the Pawn Shop Comp first loads you'll hear a slight increase in gain, which is a design feature and caused by the PREAMP control being slightly up. We did this so you absolutely know that the unit is in your signal chain. The ATTACK and RELEASE are in a good, average position. The RATIO is at 2:1 and the THRESHOLD is all the way up.

These initial settings are a good start. We usually begin working on a track by lowering the THRESHOLD (counterclockwise) until the meter jumps a bit. Click on the AUTO makeup gain. Turn up the RATIO a bit. Decide if you need more punch and then fiddle with the ATTACK. Decide if you want more “pump” and more of the quiet details and fiddle with the RELEASE.

If you want to really hear the compressor working, turn up the RATIO, set the RELEASE short and turn the ATTACK clockwise.

If you want a very smooth sound, with minimal audible compression, lower the RATIO to less than 4:1, set the ATTACK somewhere in the middle and turn the RELEASE clockwise, perhaps even fully clockwise. Then lower the THRESHOLD so that the meter indicates the compressor is working for most of the duration of the signal.

The PSC's wide range of Attack and Release settings—from lighting fast to baby caught in a glue trap—let the plugin catch the absolute quickest transients or mimic the more languid behavior of a classic tube unit with an optical detector circuit.

We advise you to adjust the compressor section of the Pawn Shop Comp using your ears and not your eyes. You'll be playing with it, it will sound great, then you'll notice the meter is pinned and the ratio is set to 30:1, and you'll panic, "I'm crushing the crap out of things! This can't be right! My audio teacher would kill me!"

Relax. If it sounds good, it is good. Don't worry about how things look. You'll find it is very hard to set the controls in such a way that the Pawn Shop Comp sounds bad.

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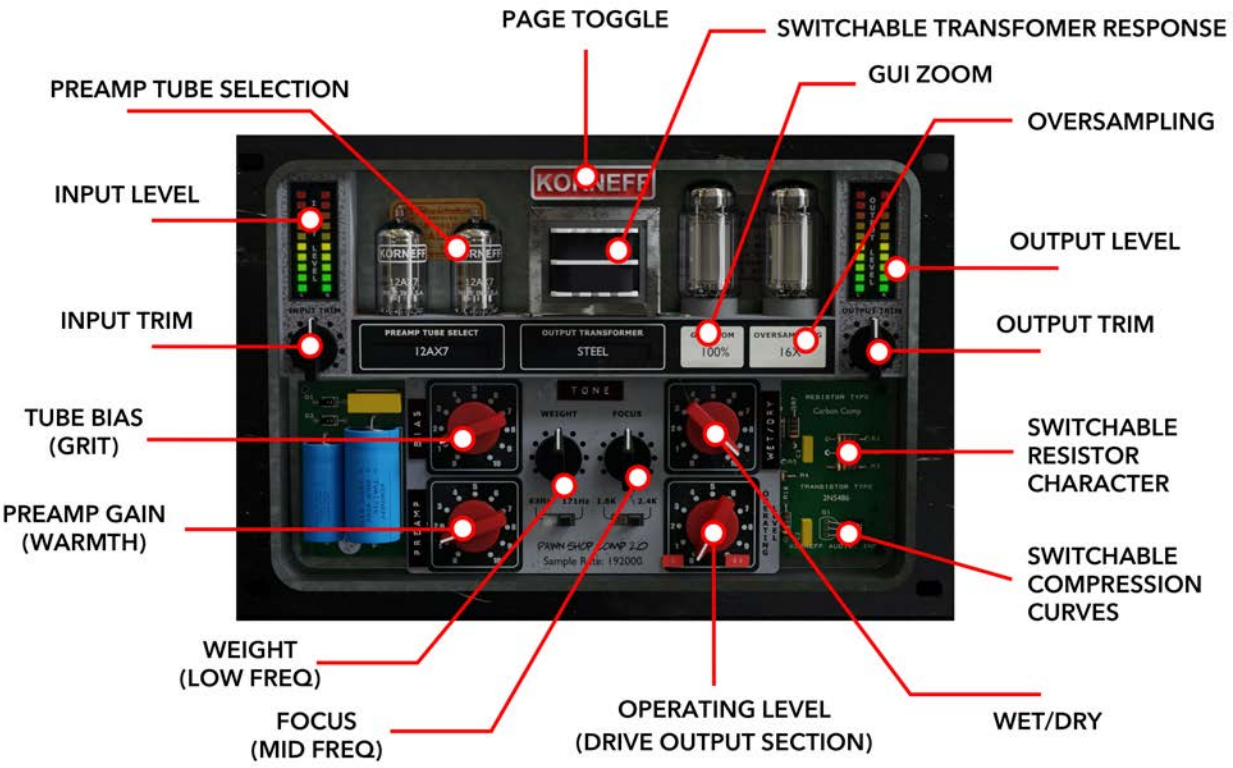
REAR PANEL CONTROLS



PREAMP - turn this clockwise to increase gain and add gentle saturation for more warmth and a slight lift in the high end (caused by added harmonic distortion).

BIAS - turn this clockwise to add grit and very audible distortion and crunch. Basically, this control is emulating setting tube bias incorrectly. In an actual piece of physical equipment this wouldn't be the best idea. On the Pawn Shop Comp, do what you want—you won't break anything except the sound barrier!

PREAMP TUBES - There are three different sets of preamp tubes you can place in the signal path. The default is a pair **12AX7**'s, which have pleasant distortion characteristics and a moderate amount of gain. Switch to the **ECC83** tube set for much higher gain and a lot of distortion (if you turn up that PREAMP control!). The last set, **5751**'s, have much less gain, and a warm, rounded and slightly "out of focus" tonality.

TRANSFORMERS - you can choose from three transformer types, each of which give the Pawn Shop Comp a different overall frequency response and different distortion characteristics when you hit the unit hard. **Nickel** has a flat response, **Iron** is bright and tight sounding, and **Steel** is round, dark and has a low end bump.

WEIGHT - is an adjustable inductor emulation peak style EQ, similar to that found on vintage Neve preamps. The response curve is a wide, gentle bell. There are two center frequencies to choose from, 63Hz and 171Hz. These frequencies were carefully selected to catch kick drum frequencies (63Hz) or affect the "warmth" area of the frequency spectrum (171Hz). Gain is initially at 0dB gain. Turning it clockwise will add up to +8dB of gain, counterclockwise will reduce it by -8dB. WEIGHT was added to the Pawn Shop Comp as a way to compensate for the loss of bottom end when a signal is really squashed by compression. It is NOT a surgical eq. Setting it to 63Hz and cutting will not effect hum.

But if you're really hammering a signal with the Pawn Shop Comp's compressor circuit, adding a few dB of WEIGHT will restore bottom end and balance. Conversely, when compressing things like vocals and acoustic guitars, a little bit of cut at 171Hz can clean up an otherwise lumpy, chesty sounding track.

FOCUS - this adjusts a gentle (wide Q) peak-style inductor EQ centered at 1.2 kHz and 2.4kHz. It's initially at 0dB gain. Turning it clockwise will add up to +8dB of gain, counterclockwise will reduce it by -8dB. 1.2 kHz is an ignored area and people are very hesitant to boost in here, because too much can sound harsh and/or honky. However, with a wide, gentle curve, a slight boost in here adds presence and "width." Adding a dB or two of FOCUS across, say, a drum bus, will make the kit sound wider. It's psychoacoustics for sure—there is no spacial processing going on in the Pawn Shop Comp—but try it and see if it doesn't "open things up" in your mix.

While 1.2kHz and 2.4kHz might seem to be very close together on the spectrum, there is a tremendous difference between the two. The 2.4kHz setting has a lot more effect on the signals highs - it seems to get up into the "air band" area while still remaining quite smooth. The 1.2kHz setting feels much lower and solidly in the middle of the audio spectrum.

OPERATING LEVEL - turn this up to add gain, presence and "in your face." Turn it WAY up to get HUGE amounts of distortion.

In the old days, mismatched operating level would tend to blow gear up. Literally. Like smoke from behind the rack and a bad smell and a repair bill from the studio. With the Pawn Shop Comp, the worst you can get is some digital clipping. Very often turning this up 3dB (clockwise just a tiny bit) can make a big difference.

INPUT and **OUTPUT** - these are trims and what you think it does: adjusts the input feeding in and output levels feeding out. If you're adding a lot of gain via the PREAMP, BIAS and the OPERATING LEVEL controls you will be adjusting the OUTPUT down. A lot. If the signal feeding into the Pawn Shop Comp is low—like the track was recorded too low—you'll be able to compensate for that using the INPUT control.

WET/DRY - use this to blend unprocessed signal (dry: what is feeding into the Pawn Shop Comp) with processed signal (wet: the signal after you run it through all of the elements of the Pawn Shop Comp). This is a very useful control.

Sometimes, after you work on a track or a bus or a channel in solo (which everyone says you shouldn't do but everyone does), you'll un-solo the track and hear it in context to the rest of the mix, and realize you maybe went too far. Back down the effect by turning the WET/DRY counterclockwise until it fits in better.

RESISTORS - There are four resistor choices, which affect mainly the high end of the plugin. **Metal Film 1%** is the brightest and most transparent, while **Carbon Composition** is the darkest. Metal Film settings will give the Pawn Shop Comp a bright, modern sound, while Carbon settings round off the high end a bit and add a bit of noise for a more vintage vibe. This is a very subtle effect and it will get lost in a big, thick mix. However, if you're working with less sound sources—a voice and an acoustic guitar, as an example, switching it over to Carbon resistors is a nice touch.

FET - this allows you to adjust the compression curves by selecting between two different sets of FET emulations. 2N5486 FETs give a lot of predictable punch and give the Pawn Shop Comp a response similar to vintage '70's Neve solid state compressors, API compressors, 1176's and more esoteric things like the ADR Compex. 2N3820 models an FET set that had some design issues which cause some unpredictable behavior. Sometimes you'll click over to the 2N3820 setting and hear no difference, but sometimes it will sound better, and other times it will loose punch and sound smoother... it really depends on what you send through it.

IDEAS ON TWEAKING THE OTHER SIDE

There is so much tweakabilty on the back side of the Pawn Shop Comp it is hard to know where to begin in terms of giving guidance. BIAS is great for adding buzz and distortion to basses and really hard-assed vocals. Turning up PREAMP can get a little more oomph and sparkle out of a softer vocal, acoustic instruments, and snare drums.

If you're not wacking the preamp gain up, the choice of tubes won't matter that much, but at high preamp gain settings, the tube choices make a HUGE different. ECC81's are the preamp tube of choice for Marshall and other high gain guitar amps for a reason. Switching

them in for the PSC adds a ton of distortion. The 5751 is always very gentle, and even at normal gain settings will tend to round out the signal a bit. Good for softer things like quieter vocals.

As stated earlier, 3dB up on OPERATING LEVEL pushes the whole track forwards and more "in your face." The operating level is sort of a secret weapon on the PSC.

You'll find that you end up using the PSC on a lot of channels in your mix. A nice trick is to leave the Operating Level alone on all of them, and then goose any track you want to stand out a bit - a lead vocal or instrument, a kick, by 3dB and it sort of... jumps out. This is not like Spinal Tap's "This one goes to 11." There is a change in saturation and harmonics when you push on Operating level that seems to shove things out of the speakers a bit more.

If you want to cause all sorts of noise and distortion, turn down the OUTPUT a lot and crank up BIAS and PREAMP and OPERATING LEVEL... you'll get total mayhem.

A CAVEAT

Because the Pawn Shop Comp is a digital emulation, you can tweak it in ways that you would never do with a physical piece of audio equipment. In the real world things blow up and burn out. HOWEVER, all digital equipment is capable of tremendous amounts of gain, the Pawn Shop Comp included. Digital clipping is a real possibility, and a digitally clipped signal going through speakers at a high volume is NOT GOOD AT ALL. You don’t want to burn out the voice coils of your speakers, so by all means experiment but be sure to watch the levels feeding out of your gear and into your monitor amplification: you don’t want to digitally clip signals.

IDEAS FOR APPLICATIONS

The Pawn Shop Comp wasn’t designed to do any one specific type of task. It’s not a vocal compressor or a bus compressor. It works well everywhere. In fact, for many users, it is the first processing plugin reached for when working on a track. Because it is so versatile, and because it is so hard to get a bad or unusable sound out of it, it is difficult to give specific setting for a particular application. So, here are some ideas and guidance to get you started.

On Bass
The Pawn Shop Comp combines the warmth and smoothness of a tube compressor and the punch of a FET limiter, so it is a natural fit for bass. Start with the ATTACK to about 1 o’clock and the RELEASE to about 10 o’clock, and RATIO at 8:1. Turn down THRESHOLD to

get the meter jumping. Too short a RELEASE can result in some strange things in the bottom end as the compressor starts “riding” the peaks and valleys of the waveform rather than responding to the bass sound in its entirety (all compressors with a fast release do this). Use the ATTACK to get control of the transient, set it slower to make the bass punchier.

On the Other Side, use BIAS to get a fuzz bass effect, FOCUS can make things more articulate, and WEIGHT set at 63Hz can strengthen the bottom end if you crank it way up. You might also think about doing a small cut with WEIGHT at 63Hz if the bass is getting in the way of the kick, or if the whole bottom end is a bit too big.

On Electric Guitars

Pawn Shop Comp ’s designer, Dan Korneff, is renown for guitar sounds, so it is a given that the Pawn Shop Comp sounds great on electric guitars. Use slower settings on the ATTACK control to bring out picking and percussiveness. Setting the RELEASE long can make hand noise and hum less obtrusive, but too long a release tends to dull down the entire guitar sound.

On The Other Side, the WEIGHT control is almost specifically designed to add back in missing bottom end on compressed guitars, while FOCUS will bring out note articulation. Use the 63Hz setting for really low guitar parts (maybe throw a high pass filter on the channel first to get rid of any guitar subharmonics). The 171Hz setting will bring out electric guitar warmth. BIAS and PREAMP can be used together to add a nice simulation of old tube amp crunch and breakup. Switch to the ECC83 and the IRON transformer for a more high gain amp sound.

On Acoustic Guitars

The same ideas apply to acoustic guitars as electric: control the percussive character of the acoustic guitar using the ATTACK knob, use the RELEASE to control resonance and sustain, as well as sparkle.

The WEIGHT control on the back can be used to cut out some lower end boom (171Hz), and a boost in FOCUS at 1.2kHz will increase articulation and presence. For more sheen, set FOCUS at 2.4kHz.

On Vocals

The Pawn Shop Comp can be used to barely touch a vocal or smash it to hell and back. ATTACK controls the bite and intelligibility of the vocal, RELEASE controls breathiness and can be used to increase intimacy (at faster settings). Long RELEASE settings will dramatically smooth vocals out. Start with RATIO at 4:1 and see where it goes from there.

One of the few times we think you should be looking at the meter is setting release times. Ideally, you want the Release set so that as the vocal trails off or gets quiet, the meter needle is moving back to 0dB. When the vocal dies out the meter should be back to 0.

On The Other Side, get rid of lower end chestiness by doing a tiny cut with WEIGH at 171kHz, and top off and widen the vocal a bit with FOCUS set to 2.4kHz. You can lean pretty hard on the FOCUS without making the vocal sound harsh and chiffy. Use that OPERATING LEVEL control to add gain and presence to the vocal. Crank it way up (don't forget to drop the OUTPUT level a little!) to get distortion and mojo happening. A touch of gain added with the PREAMP control will give vocals a nice, glassy sheen.

Experiment with the TRANSFORMERS on vocals. In some cases there will be almost no effect, but in other cases the effect can be huge. Happy songs = Iron? Sad songs = Steel?

On Drums

Again, the Pawn Shop Comp was developed by an engineer known for great rock drum sounds, and he made the plugin for his specific work so... It's great on drums. Use it on everything from kicks to snares to toms. Turning up OPERATING LEVEL by 3dB or more makes drums jump out of the speakers like cannons. Dialing in a higher BIAS setting can add vintage overload crunch to a kick. The WIEGHT control, set to 63Hz, is specifically useful for drums and kicks in particular.

The Pawn Shop Comp works on overheads, but we suggest for this application that you set a little too much compression—really get those cymbals to last, and then go to The Other Side and dial in some unprocessed signal using the WET/DRY to recover lost high end. IRON transformers work well on cymbals and switch in METAL FILM resistors for maximum high end.

Across the Drum Bus

On a drum buss, the Pawn Shop Comp is flat out amazing, and you can get sounds from subtle to the classic "All Four Buttons Down" sound of the 1176. Use the RELEASE to adjust how much room sound there is (fast release = more room) and ATTACK to let the initial hits get through (slower attack = more punch... up to a point. Too slow an attack results in loss of punch and very little compression applied to the tracks). In fact, often when working on a mix we'll put the Pawn Shop Comp on the drum bus first thing and start playing with settings before working on any of the drum tracks individually.

WEIGHT and FOCUS are especially handy on the drum bus. Cutting at 171Hz can clean up a sloppy, mushy room, and a bit of a push at 2.4kHz is nice for cymbals and high hats.

Across the Mix Bus
The Pawn Shop Comp wasn't specifically designed for use across the mix bus, but, predictably, it works great there as well.

For a more vintage sound to your overall compression, switch in the 5751 tubes and the STEEL transformer. The CARBON COMP resistor setting will pull down the highs a bit and the overall sound will be smoky and loose. If it is too dull, either switch resistors to something in the METAL FILM family or use the WET/DRY control to ease off the effect and add back some of the unprocessed signal to restore the high end a bit.

For a modern bus compressor sound, use the NICKEL transformers and METAL FILM resistors.

The Pawn Shop Comp across a mix adds a lot of punch, especially if you set the ATTACK a bit slow and the RELEASE on the short side.

Remember that ATTACK effects the wavefront—the start of signals, the transients. Too fast an attack and you'll dull down your whole mix because the high end is usually in the transients. Perhaps start with Attack fully to the left and ease it to the right until the mix sort of peps up and pops.

Remember that RELEASE effects how much the dynamics of the song vary from section to section, and how much quiet detail can be heard. Release effects the wave ends. That might not be a real term, but think of it as the portion of the signal as it dies out. Start with the RELEASE at 12 o'clock and experiment moving it to the left and to the right. There's a spot where the mix will sound even and yet is exciting. That is where you want to set that release.

People talk about bus compressors adding "Glue" and getting everything to work together harmoniously. The Pawn Shop Comp is more like epoxy on a mix if you overdo it... ever get epoxy everywhere? It makes a mess. However, feel free to overdo it, and then back it down using WET/DRY.

CONCLUSIONS

Ok, there it is—the Pawn Shop Comp in a huge nutshell. Please visit our Facebook group (https://www.facebook.com/KorneffAudio/) and leave a message there if you have any questions, or email us directly at info@korneffaudio.com.

Thanks again for supporting Korneff Audio. We hope you love your Pawn Shop Comp.

Make great records! Make great music.