

Mixing Vocals – How To EQ Vocals, Compress Them And Use Effects

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Welcome to my new **mixing vocals** guide. In this guide, I'll show you how to eq vocals, give you my personal vocal compression settings – techniques and in general, you'll see how to mix vocals and get them to sit in the mix properly.

Before I dive into advanced stuff and the plugin chains, allow me to say that you need some basic of knowledge of what compression, EQ and reverb is. If you googled your way here, then I suppose you know the basics.

If not, please click the following links to open new tabs to the following guides:

If you know what reverb, EQ and compression does, then skip the guides above.

If you don't, click the links to read them later, they're going to open in new tabs, so you won't lose what you're reading now.

Mixing Vocals – How To NOT Compress Vocals

In the chapters below, I'm going to show you how to mix vocals step by step, with images and videos.

But first, I'd like to have a little rant about some mis-information spread that confuses most people rather than helping them improve.

Note: *This rant was intended to solve many of your questions. It's not just a rant to fill in the gaps without providing any valuable info, I never type just for the sake of it. If you'd like to skip the rant [please move to the next chapter](#). But I highly recommend you to read this chapter, it will help you a lot and shed some light.*

The most common answer I see people give to home recording newcomers to their question “*How can I get vocals to sit in the mix properly?*” is:

Record correctly, use some EQ and **Do not over-compress!**

While this answer is somewhat correct it's really not going to help. People in forums upload their new mix version with the "no too much compression" advice and 90% of the time the results are worse than before. But why is this happening?

I assume this is because around of 70% of the forum members in the internet, are consisted of hardcore old-schoolers, that grew up with led zeppelin, pink floyd, the doors, bands which I really love and admire. There's nothing wrong with that. Also these bands have lots of dynamics and again I love this fact, there's nothing wrong with dynamics.

The wrong part and my actual rant come to life when these old-schoolers give this kind of advice and never actually use it for themselves. But why am I saying this? They always say "trust your ears each mix is different, there's NO standard formula when mixing". I agree 100%.

But whenever the subject about dynamics comes up they ditch their own beliefs and suddenly the perfect answer for everything is DO NOT OVER-COMPRESS. No, please stop this people.

You cannot say that *each mix and genre must be treated different* and on the contrary you say *do not over-compress for everything!*

And that's pretty much what this rant is all about.

I understand that your old-school love for the old bands with dynamics has created a passion for dynamics, but either you like it or not the new modern genres actually sound better with more compression. I am not personally attacking you... It's just the way it is.

This is how people – including me – enjoy these genres either you like it or not, sorry.

When we listen to EDM or Metal we really don't care about dynamics, all we want is to listen to some in-your-face music! When we feel the need to listen to a genre with dynamics, we'll do.

Please stop acting like you're better if someone enjoys in-your-face music instead of your music choices with more dynamics. I think it's nice to have balance in your life and listen to music with and without dynamics, depending on your mood.

Modern bands, artists – DJs such as Nicky Romero, Evanescence, Linkin Park, Eminem and any other modern genre have less dynamics than we can imagine.

The artists just mentioned have got albums that are compressed a lot and it sounds really cool. So when people are asking advice about this kind of genres please stop saying "do not over-compress".

Or to say it better...

We should not apply old-school mixing techniques mainly created for specific old genres to new-modern mixes and genres. These ideas do not match. They just cannot co-operate.

Stop giving advice of how the producer from your favorite "The Doors" album mixed it, when someone wants to produce modern metal, hip-hop or EDM. Chances are that you're going to make that person's mixing life harder and his song will end up sounding like... you know.

Rant!



Dynamics are nice, I love dynamics but to the right genre. Orchestral – Cinematic music needs dynamics for sure. Rock Ballads need dynamics. Chillout songs need dynamics.

But can you imagine *Machine's Head – The Blackening* (it's a metal album for those who don't know) with the "do not over-compress" mindset? I, for sure, don't want to imagine it.

Diving into forum threads and spreading the "do not compress much" rumor on EVERY SINGLE GENRE out there, even on genre that you DON'T LIKE is what really grinds my gears.

And in case you dislike modern productions (unfortunately I see lots of hate on forums) then please think before you give advice for something that you don't really know or like.

Isn't it logical and natural to actually give false advice for something that you hate...? It's simple logic really.

This was *not* intended to insult an old-schooler.

This was intended to actually follow **your** rule that "each genre should be treated differently" which I agree wholeheartedly with it, and unfortunately, your old-school love for dynamics usually makes you forget to actually follow this rule that you *had firstly created*.

If you took this personally, please don't. If you do, maybe your gut is telling you to re-consider some things? If you got offended for something that is based on logic and wasn't intended for you, then I guess I might have a chance that I speak some sense here? If yes, let's try and stop the genre hate once and for all.

There's no reason for someone to be offended if he feels like he is not doing any of the above.

If you are really one of the group of people that don't any of the stuff mentioned above then you would have the "do people really do this kind of stuff" face. If you got angry or offended... I've got some bad news for you.

Compressing Vocals Properly

Since we should follow the "each genre is different" rule, there are certain questions you must ask to yourself in order to compress vocals properly.

Some of these questions are:

- Do the vocals sound already compressed?
- What's the genre I am mixing? Does it require dynamics or not?
- Does the backing track – simply put the instruments – play at a steady volume?
- Or on the contrary, the instruments have lots of dynamics?

Get Vocals To Sit In The Mix

If you ask those questions then you'll start noticing something really important: **The vocal compression should be similar to the backing tracks**. That's how we should decide how compression we should add or not. But why am I telling this?

As I've talked in my [compression tutorial](#), one of the primary aspects of compression is to bring the sound **upfront** with a steadier volume and less volume changes. So, depending on the genre we should apply similar compression.

In a hip-hop, EDM or metal song where the instruments have minimum dynamic range (meaning that the volume changes are almost zero) you can't expect to follow the "do not compress a lot" rule

here. The reason is that most of the vocal phrases would disappear and hide behind the instruments.

As a result, we need to apply similar compression so all the vocal phrases can be heard. We can do this by either compressing a lot or automating the volume signal. I prefer using compressors most of the time.

You may now ask: “*But is it not dangerous to use lots of compression? Compressors act like crazy and it be heard in an unpleasant way*”. You’re right but there’s a way around this.

Should you decide to use compression, instead of automation, then read the chapter exactly below and you’ll see a way of how you can compress a lot, without making it audible.

The Difference Between Compressing Too Much and Compressing Wrong

Let me distinguish these 2 terms, so I can help you compress better.

These 2 make newcomers to home-recording confused and they are afraid to use lots of compression, cause of all this nonsense spread that reducing the dynamic range of a song is necessarily bad, which is not.

Let’s get this straight:

Compressing Too Much: This is simply compressing as much as you like, depending on your taste. It’s wrong for some people, it’s great for some others. It’s not necessarily wrong or right as long as it sounds good to the right audience. Modern productions compress a lot. Old-schoolers prefer more dynamics. It’s a matter of taste, neither can be considered wrong or right, cause it’s purely based on taste and opinions.

Compressing Wrong: This happens no matter if you reduce the dynamic range a lot or not. This is not about opinions or taste. This can happen when you use the compressor in a wrong way that when a listener that has no clue about audio engineering can think “something is happening here and it’s definitely sounding *not* cool”. It’s usually the sound of the compressors “choking” by abusing them in a wrong way.

The Solution: But how can we “abuse” the compressors and compress a lot – as long as the genre is asking for it and it sounds good – without making the compressors “choke”?

It’s really simple. It’s called: *Compressors In Series*.

Let’s use an example to help you understand what *compressors in series* can do for your mixes:

Hypothetically, you’ve got an EDM song to mix. The producer used samples and kontakt libraries to produce the song, so it’s pretty normal for the sound to be already a bit of compressed. Then, he decided to use female vocals in his song.

He’s hired a girl and started to record her wonderful vocals.

The instruments have already reduced dynamic range. The girl is not a sample obviously, so her dynamic range is way more broad. So we must match the vocal dynamics with that of the instruments... But he didn’t use *some slight compression during tracking*, so he can help you mix later.

He simply didn’t care, cause he might have thought that “you can fix it in the mix”. So, you need to apply a bit more of compression to the girl’s voice to reduce the dynamic range and match her vocals to the instrumentals. After some fine tuning your ears are telling you to compress at around -12db of Gain Reduction, which is **a lot**.

You fire-up your compressor and put the GR (Gain Reduction) at -12db. It sounds like @ ss. What to

do? Simple.

You put the Gain Reduction back to -6db and you open a new instance of the same compressor (or different) and add 6 db more of Gain Reduction. The result? Same compression without the “choking artifacts” of the compressor. It’s all about balance between these compressors.

The vocal phrases can be heard throughout the whole song and the listener is happy without thinking “what’s happening here”. Mission complete!

Important:

The 6db of Gain Reduction was just an example. You don’t have to use the exact same amount of GR on both compressors. For example, you can easily use -3db on the 1st compressor and -7db on the 2nd. There are no rules here as long as it sounds good.

But how do we decide how much of GR we should use on each compressor? The answer is simple:

It depends on what we want to achieve:

If we want to just shave the peaks with the 1st compressor without compressing the whole signal, we just tweak the threshold and listen. Was the sudden peak reduced and tamed, **without the compressor compressing the whole signal but just the peaks?**

Good, move onto the next compressor.

What’s the purpose of our 2nd compressor now that our peaks have been taken care of? **Gentle leveling?** Great! Since you want some gentle leveling, you can easily dig into the sound and you can allow the compressor to go deep compressing nonstop.

By nonstop I mean that the compressor is getting triggered **all the time**. The 1st compressor’s purpose is to just “work” during the sudden peaks. The 2nd one must work continuously to deliver a constant volume throughout the singing.

Plus, it can do that easier with the help of the 1st compressor, cause it shaves the peaks.

So we’re using compressors and plugins depending on what we want to achieve and we’re not adding processors and effects just for the sake of it. That’s how we should mix in general, not only during vocals.

My Vocal Plugin Chain

Now that we made some things clear about vocal compression and compression in general, it’s time to continue this *mixing vocals* guide by showing you my usual vocal plugin chain.

Note: *As always, when I share my chains I advise you to bypass the plugins to actually hear if you’re improving the sound or not. Sometimes, out of the 5-6 plugins I recommend, 3 or 4 might be enough for your mix. This entirely depends on how the vocals are sounding without any FX on it. I will share everything I use though, so you can experiment with everything and let your ears decide what to keep or not.*

The Vocal “Warmer”

When we’re working fully In-The-Box with zero analog gear it’s wise to [add a bit of analog “coloring” to the signal](#), by adding the necessary plugins.

A couple of plugins I really love for this issue, are the [NLS plugin from Waves Audio](#) and the Virtual Console Collection plugin by Steven Slate (VCC).

Here are a couple of screenshots of both:

Chances are that you've recorded through an analog compressor and pre-amp combo that may have given you a warmer sound. If this is true, the sound you're going to get through this plugin might be "too much" for your liking.

It's a nice idea to try it out and let your ears decide if it must stay in the mix or leave. I've recorded through an analog amp and at the same time added [VCC](#) and the result was pretty awesome! So you never know if it's worth it or not until you hear it. Experiment!

Vocal EQ Tips

Next, I usually add an EQ to fix the problems or "bad" frequencies and enhance the "good" frequencies.

If you've got access to the *source* sound, being a microphone or a sample does not matter as long as you can tweak it, please go there to fix any problems, cause no EQ will make your track sound commercial if it was recorded/sampled like s**t.



EQ has the potential to improve your sound a lot, but it can't turn s**t into gold. But it can do the exact opposite if used improperly in an abused way. So please, if you can go back to the source and fix it there, *you'll save lots of time during mixing and the result will be a lot better.*

There are different kind of Equalizers, some with more knobs, some with less knobs, but in the end, [all equalizers do the same and have the same purpose.](#)

When you're EQing vocals make sure you try to do it while the whole mix is playing, so your ears can tell you when they cut through or get buried in the mix.

I usually solo them to reduce any annoying frequencies – resonances that won't deliver any useful to the mix and then I continue with the whole mix.

Here's a vocal frequency guide to assist you in your vocal mixing journey:

- Fullness @120Hz
- Boominess @240Hz
- Presence & Sibilance @5Khz
- Air @10Khz+

- “Cut Through” Frequencies but also fatigue at around 3Khz.

Don't rely blindly on these. **Listen**. Chances are that you may need to leave the vocals as they are without any post-process.

If you've got vocal WAV files from commercial songs – some artists publish them – then it's wise to solo them and have a feeling of how far from commercial your vocals may sound, by using them as reference.

Vocal Compression Settings and Tips

Now that we've got some nice EQ going (or not depending on the source) it's time to use some compression to make our vocals and vocal phrases cut through.

I've explained how I use compression in general and especially in vocals on my [rant section above](#) – you can click it in case you scrolled your way down here. If you didn't read it, please do. It will answer lots of questions and clear some misconceptions.

Assuming that you've read the rant section I'm going to show you the plugins now. Let's begin.





One of favorite EQs – Fabfilter Pro-Q



This is the CLA 76. This is mainly the compressor I am using to cut the peaks in an aggressive way so it can help the CLA-2A work easier below.



This is the CLA-2A. This compressor plays the role of making the audio sound more even across the performance.

He's not so fast – and his job is not to be fast – that he can easily be heard as being “choked” if some sudden peaks come through him.

That's the reason we're using an aggressive compressor that cuts the peaks right before so we can help these 2 co-operate.

I Don't Have These Compressors – What To Do?

If you don't own any of these plugins don't worry. There are 2 things you can do about it:

1. Just use a random compressor with a *fast attack* – *fast release* first in the chain to take care of the peaks and a compressor with *medium attack* – *medium/auto release* to play the role of the compressor that evens out the volume during the performance.
2. [Check out the compressors guide](#). There are some *free* alternatives in there that can help you get the job done. I've also included download links.

Vocal De-essing Tips

Since we've compressed it's pretty logical for the annoying SS sounds to come to the surface. They are really annoying, hurt our ears and they must be reduced to avoid ear fatigue.

Every single [DAW](#) out there, in 2015, has a built-in vocal de-esser, unless the programmers gave up during their work and decided to ruin their reputation for trolling reasons.

Since the De-Esser is nothing more than a compressor that compresses/reduces the frequencies responsible for these annoying sounds, look for it at the *Compression*, *Restoration* or maybe even at the *Dynamics* folder of your DAW.

In case you want to know my de-esser of choice, please check out the video below. I show you my exact train of thoughts of mixing vocals from scratch, in a particular mixing session.

Mixing Vocals Video Tutorial

Please watch from **30:30** – this is where the vocal part starts.

This is also where I talk about effects.

As you can see I've added a couple of plugins not mentioned in this guide. Reason is that I rarely use them, I added them cause of this specific situation as I explain in the video.

I hope you've enjoyed this mixing vocals guide and hopefully I helped you clear up some things, so you can mix better sounding vocals.

And please don't forget: Each mix is different.

Let your ears make the final choice of what plugins to keep or ditch completely. If you've got any questions, you can visit our [home recording community](#).

Please share some love for: [Mixing Vocals – How To EQ Vocals, Compress Them and Mix.](#)
