EQ Vocals: The Five Primary Areas of Modification

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Let start off with the basic vocal eq settings and the details behind them. Then, let's dig deeper.

1. **General**: Roll off below 60Hz using a High Pass Filter. This range is unlikely to contain anything useful, so you may as well reduce the noise the track contributes to the mix.
2. **Treat Harsh Vocals:** To soften vocals apply cut in a narrow bandwidth somewhere in the 2.5KHz to 4KHz range.
3. **Get Brightness, Not Harshness**: Apply a gentle boost using a wide-band Bandpass Filter above 6KHz. Use the Sweep control to sweep the frequencies to get it right.
4. **Get Smoothness**: Apply some cut in a narrow band in the 1KHz to 2KHz range.
5. **Bring Out The Bass**: Apply some boost in a reasonably narrow band somewhere in the 200Hz to 600Hz range.

This is all well and good, however, using vocal EQ isn't as simple a a+b = great vocal EQ. Therefore, let's dig into the details behind vocal EQ.

The Reasons For Using Vocal EQ

When a voice is recorded through a microphone, we need to add a bit of EQ to the voice to bring out its natural qualities. For example, when you hear me talk in a room, you hear some natural reverberation in the room. In EQ'ing, you can add that natural reverb back in because the microphone might not pick it up in your particular recording environment.

Additionally, vocal EQ'ing is performed to enhance the vocals so they sound best in our environment as well as within the band and within the song. And this

is where most of your work is focused.

The Details Behind the List

Let's start with the first point listed above:

1. "General: Roll off below 60Hz using a High Pass Filter."

Each channel on a mixer usually has an HPF (high pass filter) button. By pressing this button, we are dropping all audio frequencies below a certain level. As an example, I've got a Yamaha mixer with a "*/80*" button – which means HPF and drop all freq's below 80 Hz. Freq's this low are typically your low bass notes and kick drum. If any low frequencies seep into the vocal microphone, they can muddy up the sound. So, it's good to use a HPF on any channel that's not dealing with low-end frequencies. With experience, you might find some vocals sound better without the HPF but if you are new to sound, HPF is a good place to start.

2. "Treat Harsh Vocals: To soften vocals apply cut in a narrow bandwidth somewhere in the 2.5KHz to 4KHz range."

This is where a lot of what is being done is dependent on the type of mixer you have. For example, if you run an analog mixer, you most likely have a semi-parametric EQ. This means you EQ via knobs on each channel with control for gain (amplitude) and the center frequency, however, you can't control the width of the affected frequencies – the bandwidth. Thus, your EQ adjustments affect a wide range of frequencies at once – like moving a mountain peak back and forth – it means you have to move a lot of the mountain with it.

Some EQ's allow the user to work on EQ like a surgeon, making freq cuts/boost in very specific ranges. Harsh vocals can be reduced by sweeping over the mid/high-mid frequencies until you hear the harshest vocal sound. Then you cut (reduce) those frequencies via the EQ. This would be the case with a parametric EQ where you can control the center frequency, the gain/amplitude cut or boosted, and the bandwidth, sometimes known as the Q.

3. "Get Brightness, not harshness"

As for "***brightness***," much of your high frequencies control how bright and airy a vocal can sound. For example, crank the high EQ all the way up during a practice on a vocal mike. It will be very airy and then you can reduce it to where it sounds good. So much of what sounds good comes with having a good ear and knowing your music.

4. "Get Smoothness"

"***Smoothness***" – much of the natural freq's of a voice are in the mid-range freq's. By cutting or boosting in the mid-range, we can optimize the sound so it sounds best. We can also boost or cut to separate it out in the mix from other vocals and or instruments that might be vying for the same frequencies. Think of it like this, a bass is low end. A flute and even a drum kit's high hat are on the high end. You want to fill up the sonic space (freq's) with as much as you can over the whole range. When you get a bunch of stuff in the same place, that gets you a muddy sound.

Same with bass, boost a little or cut…or not. Here's the thing…the best thing you can do is get a solo track of a vocal on CD (or do this during practice). Move the EQ dials, one at a time, to an extreme. Once you hear what is bad, it's easier to then move the dial until you hear what sounds good. We just need to know the bad to help identify the good.

Additionally, if you have singers with slightly wavering voices or young singers – teenagers, you can add a little vocal reverb effect that will even out their vocal fluctuations.

Maybe it's something deep within our minds that says "*if there is a problem with the sound then we need to boost the problem area*." However, when it comes to EQ and even cross-channel balancing, this is not always the case. Cutting frequencies is often the cure. For example, if two instruments are sharing common frequencies and you want one to stand out, don't boost the frequency for that instrument. Cut the frequency of the other. Lowering other channel volumes can bring the boost to the single channel that you need. Louder isn't always better.

One last VERY HELPFUL TIP! If you are having troubles with cleaning up a male vocal, take a 3-6 dB cut in the 325 to 350 Hz range. this is where a lot of the muddiness in a vocal can be found.

Lastly, **vocal eq is where the science of audio manipulation is surpassed by the art of audio manipulation.** The above tips I mentioned might get you exactly what you want to hear. But more than likely, they will only point you in the right direction that will eventually lead you to the sound you want. Listening to several genres of music, you can hear the different types of vocal EQ for that style of music. Then you add in individual taste in EQ. You might think that a singer's vocal EQ is perfect but they think it needs more breathiness or more brightness or more bass. It's quite subjective, sorry to say.

The Take Away

Anyone new to vocal eq'ing should remember the following points:

1. Using some foundational eq'ing to get started.
2. EQ in a way that matches the style of music you are mixing – listen to the same song from a professional recording to hear it.
3. EQ to match what you want to hear. Don't ask the question "*does this sound good?*" Ask the question "*does this sound like I want it to sound?*"

In time, you will find yourself performing less of #1 and #2 and more of #3.

The Next Step

Do You WANT TO LEARN EVERY ASPECT OF MIXING VOCALS? Check out my FREE 10,951 word **Vocal Mixing Guide**!

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Get the FREE checklist so you don't miss a step!