



General Compression Cheat Sheet

Introduction

Compression is a fundamental tool in audio production, playing a crucial role in shaping the dynamics of a recording. It helps to control the volume of audio signals, making the loud parts quieter and the quiet parts louder, thereby creating a more balanced and polished sound. Compressors are particularly effective in managing transients—those brief, high-energy spikes that occur at the start of sounds such as drum hits and plucked strings—ensuring they don't dominate the mix. By taming these transients and evening out overall levels, compression can add punch, presence, and sustain to various elements within a mix.

This cheat sheet provides a comprehensive overview of different compressor types and their typical uses, as well as recommended settings for recording, mixing, and mastering. It serves as a starting point for both novice and experienced audio engineers, offering guidance on how to apply compression effectively across a range of sources including vocals, drums, guitars, and more.

General Tips for Using Compression

1. **Understand the Source:** Different instruments and vocals have unique dynamic characteristics. Adjust your compression settings based on the specific needs of each source.
2. **Start Light:** Begin with gentle settings and increase the compression gradually. Over-compression can lead to an unnatural and squashed sound.
3. **Use Your Ears:** Compression settings are highly context-dependent. Use the tables as a starting point, but always trust your ears and adjust as necessary.
4. **Watch the Gain Reduction:** Keep an eye on the gain reduction meter. Typically, 2-4 dB of gain reduction is sufficient for subtle control, while higher amounts may be needed for more aggressive compression.
5. **Experiment with Attack and Release:** The attack and release times can dramatically alter the character of the compression. Faster attack times catch more transients, while slower times allow more natural transients through. Adjust the release time to maintain musicality and avoid pumping effects.
6. **Parallel Compression:** This technique involves blending a heavily compressed signal with the original signal to retain the dynamics while adding punch and presence. It's particularly effective on drums and vocals.

Use the following tables to guide your compression settings for different stages of audio production, including recording, mixing, and mastering.



Overview of Compressor Types and Common Uses

1. VCA (Voltage Controlled Amplifier) Compressors

- **Common Uses:** Versatile for vocals, drums, mix buses. Known for precise control and low noise.
- **Characteristics:** Fast attack and release, clean sound, flexible.
- **Typical Models:** SSL G-Series, DBX 160, Neve 33609, Empirical Labs Distressor



2. FET (Field Effect Transistor) Compressors

- **Common Uses:** Effective for vocals, drums, and aggressive styles. Known for punch and character.
- **Characteristics:** Fast attack, distinctive color, useful for adding presence.
- **Typical Models:** 1176,



3. Optical Compressors

- **Common Uses:** Smooth and transparent compression for vocals, acoustic instruments.
- **Characteristics:** Slower attack and release, smooth, musical nature.
- **Typical Models:** Teletronix LA-2A, Teletronix LA-3A, Tube-Tech CL1B



4. Tube Compressors (many optical compressors also use tubes)

- **Common Uses:** Adds warmth and character, good for vocals, bass, and mix bus.
- **Characteristics:** Warm, saturated sound, slower attack and release, harmonic distortion.
- **Typical Models:** Fairchild 670



5. Diode Bridge Compressors

- **Common Uses:** Mastering and mix buses for cohesion and glue.
- **Characteristics:** Warmth and smoothness, moderate to slow attack and release.
- **Typical Models:** Neve 2264, Neve 33609,

6. Vari-Mu Compressors

- **Common Uses:** Mastering, Broadcasting
- **Characteristics:** Ratio of the gain reduction is increased as you hit the unit harder
- **Typical Models:** Manley Variable Mu



Overview of Attack and Release Times

	Attack	Release
Fast	0.1ms - 5ms	5ms - 50ms
Medium	5ms - 25ms	50ms - 200ms
Slow	25ms - 100ms+	200ms - 1s+

Recording Compression Settings

Source	Compressor Style	Ratio	Attack	Release	Gain Reduction
Vocals	FET	3:1 to 8:1	Fast - Medium	Fast - Medium	3-6 dB
Drums (Kick)	VCA or FET	4:1 to 6:1	Fast	Medium	5-8 dB
Snare	VCA or FET	4:1 to 6:1	Fast	Medium	5-8 dB
Toms	VCA or Tube	3:1 to 4:1	Medium	Medium	3-6 dB
Cymbals	Optical or VCA	1.5:1 to 2:1	Slow	Medium	1-3 dB
Overheads	Optical or VCA	2:1 to 3:1	Slow	Medium	2-4 dB
Bass	Tube or VCA	3:1 to 4:1	Medium	Medium	4-7 dB
Guitar (Clean)	Optical or VCA	2:1 to 4:1	Medium	Medium	2-5 dB
Guitar (Distorted)	FET or VCA	4:1 to 6:1	Fast	Medium	4-7 dB

Personal notes:





Mixing Compression Settings

Source	Compressor Style	Ratio	Attack	Release	Gain Reduction
Vocals	VCA or Optical	2:1 to 4:1	Medium	Medium	2-4 dB
Drums (Kick)	VCA or FET	3:1 to 4:1	Fast	Medium	3-5 dB
Snare	VCA or FET	4:1 to 6:1	Fast	Medium	5-8 dB
Toms	VCA or Tube	3:1 to 4:1	Medium	Medium	3-6 dB
Overheads	Optical or VCA	2:1 to 3:1	Slow	Medium	2-4 dB
Cymbals	Optical or VCA	1.5:1 to 2:1	Slow	Medium	1-3 dB
Bass	VCA or Tube	4:1 to 6:1	Medium	Slow	3-6 dB
Guitar (Clean)	VCA or Optical	3:1 to 5:1	Medium	Medium	2-5 dB
Guitar (Distorted)	VCA or FET	4:1 to 6:1	Fast	Medium	4-7 dB

Serial Vocal Compression Settings

Compressor	Compressor Style	Ratio	Attack	Release	Gain Reduction
Compressor 1	VCA or Optical	3:1 to 4:1	Fast - Medium	Medium	3-5 dB
Compressor 2	Optical or FET	2:1 to 3:1	Medium	Fast - Medium	2-4 dB

👉 *Vocals: Use first compressor to control dynamics and second compressor to shape tone*

Personal notes:





Parallel Compression Settings

Source	Compressor Style	Ratio	Attack	Release	Gain Reduction
Vocals	Optical or VCA	4:1 to 6:1	Fast	Medium	4-8 dB
Drum Bus	VCA or FET	6:1 to 8:1	Fast	Medium	6-10 dB

Mastering Compression Settings

Application	Compressor Style	Ratio	Attack	Release	Gain Reduction
Mixdown	Diode Bridge or VCA	1.5:1 to 4:1	Medium - Slow	Slow / Auto	2-4 dB
Parallel	Diode Bridge or VCA	4:1 to 6:1	Medium	Slow	4-6 dB

Personal notes:

Remember

- 👉 Slower attack = emphasizes attack (Drums)
- 👉 Faster attack = softens transients & brings out ambience (Drum Rooms)
- 👉 Higher ratios = more obvious compression
- 👉 Lower ratios = more transparent
- 👉 Release can control perceived depth (Background Vocals)
- 👉 Use compression to shape transients (Acoustic Guitars)
- 👉 Don't focus on meters too much, trust your ears

...you are allowed to get more than 10db of gain reduction if necessary 😊

