CYMATICS

The Beginner's Guide:

DJING

Learn the fundamentals of DJing and live performance.

Introduction

The music industry has evolved in countless ways over the course of the last decade. Even a few years ago, many people were solely focused on becoming the best DJ's and didn't even worry about having their own production.

In fact, hundreds to thousands of people around the world saw a decent amount of success—and some of them even went on to an international level—just by being amazing DJ's.

DJ AM is a prime example of this, as he was one of the first, highest paid DJ's to ever be booked in Las Vegas. This also helped propel electronic music in the United States to the spotlight just before it's huge mainstream boom back in 2010-2011.

This not only changed the future of the industry for the next couple of years, but thanks to advancements in technology, it also changed how the younger generations became inspired.

Back then, almost every successful DJ bought turntables at some point and starting practicing on them. Now, it's really common for the younger generations to become music producers first and DJ's second.

And, it's very likely that you are in this situation right now. You may have a couple songs under your belt, and you finally decided it's time to take a leap and start showcasing them to the world.

DJing is one of the best and most common ways producers perform their songs.

Ultimately, to become an amazing DJ, you need to get out there. You will only get so far by practicing in your bedroom, because you need to learn how to read a crowd.

But let's not try to run before we can walk.

There are a few concepts that stand true regardless of the genre and BPM you're trying to mix, and they're critical to your success as a DJ.

Introduction

These concepts are:

1. Beatmatching
2. Track Selection
3. Counting Bars / Phrases
4. EQ'ing

These are simple techniques that any serious DJ understands very well. However, it's also really important to mention that there are multiple DJing styles.

What we mean by this is simply that a Tech-House DJ will have a completely different mindset while mixing and picking tracks compared to a Dubstep DJ.

Try to get a better understanding of your style and the music you want to mix. If you're completely clueless, don't panic. You just need to find out which one will better suit you.

To do this, start by listening to DJ sets by established artists within your genre or from the style of music you're trying to mix. This will point you in the right direction, and all you need to do is ask yourself some basic questions.

Where did the DJ do the mix? Was it at a club, a podcast, a festival, pool party? Context is EXTREMELY important.

> **Pro Tip:** *Crowds will have certain expectations. Know where you're playing. Don't expect people to headbang to dubstep if you somehow managed to get booked at a bar or club where 95% of the bookings are house music DJ's. People go there for a reason.*

Are the tracks transitioning abruptly or smoothly?
Does it sound like multiple tracks are being played at the same time?
Does the mix start low in energy and keeps building up?

So, even though there is always something to learn from everyone, you need to be careful about what advice you're taking on based on what you're trying to achieve stylistically.

Signal Flow

Before we jump straight into the subject of beat matching, it's worth going on a really brief tangent and learning how the basic signal flow of the equipment looks like.

Being aware of this since the beginning will aid you in understanding some things that we will be talking about later in this book.
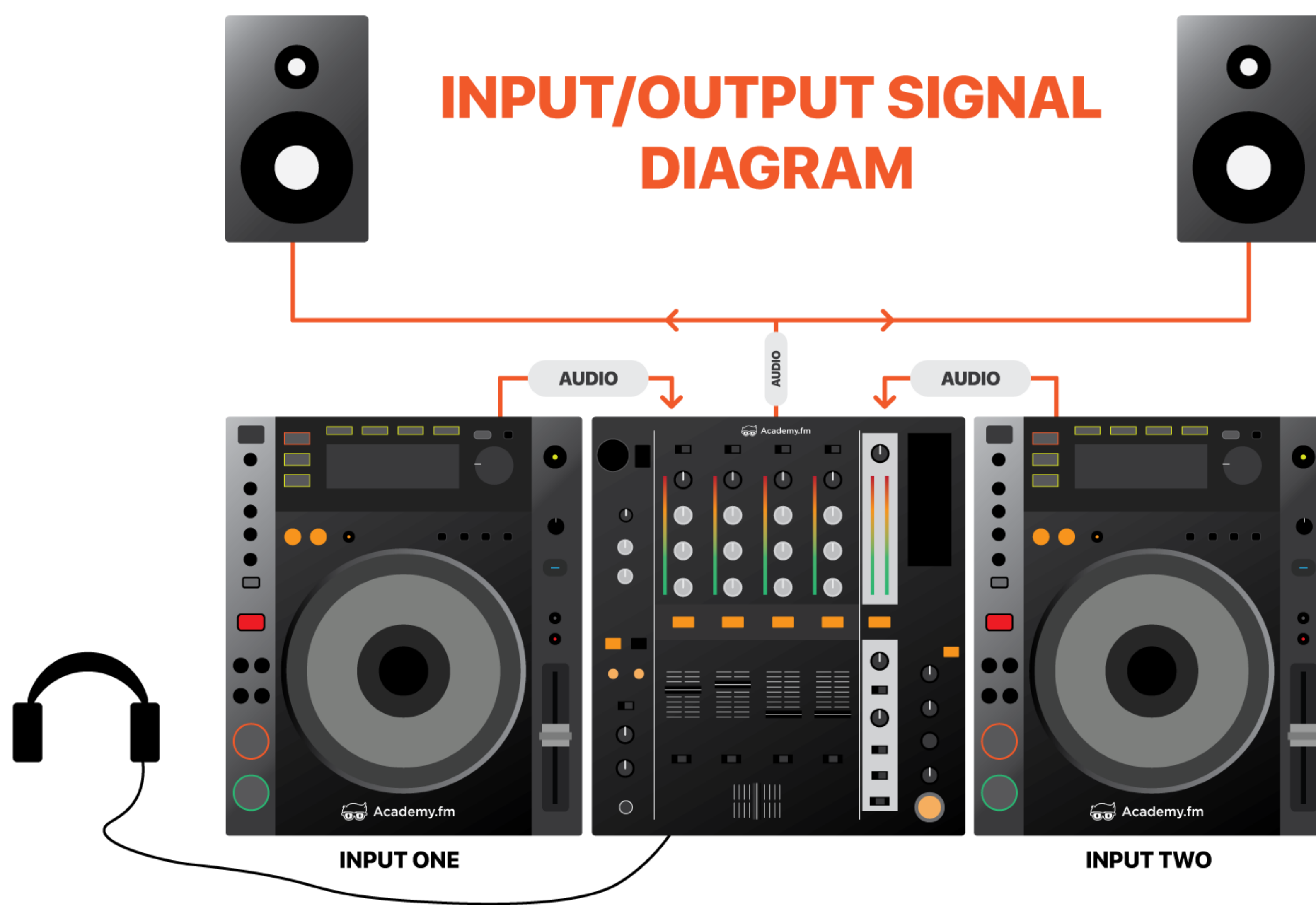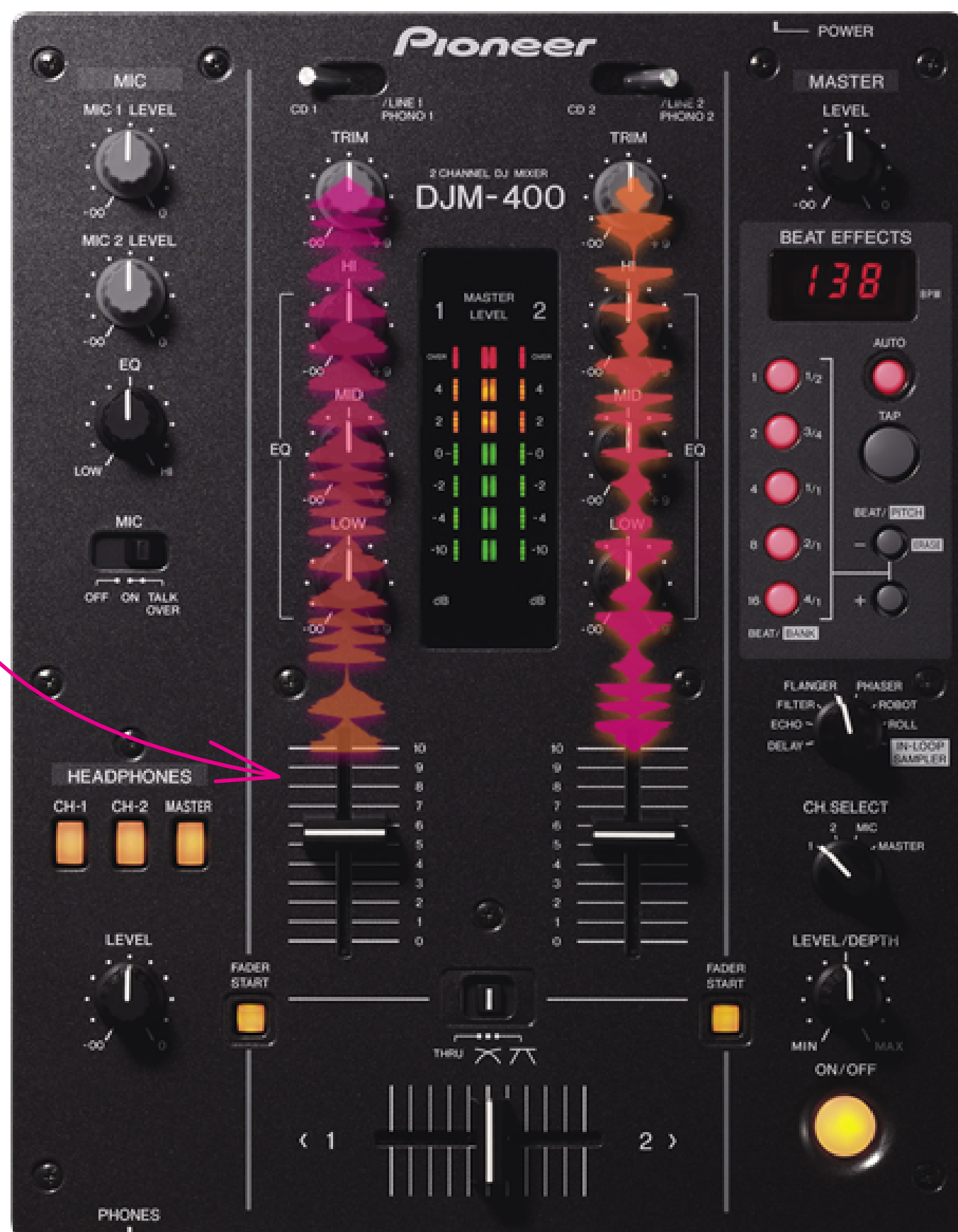

As you can see in the image above, **Input One** or **Track A** and **Input Two** or **Track B** are where the songs come from. These players can be either turntables, CDJ's, or even digital channels from a computer.

Then, the signals from **Track A** and **Track B** get sent straight into the mixer.

Signal Flow

Finally, the output signal or the **master output** from the mixer gets sent to the speakers. That is what the audience gets to listen.

This is a **DJM-400** two channel mixer by Pioneer, and you get to control with the faders—and in every other mixer— what goes to the **master output** from each channel with them.

So, if both faders are completely up and have songs playing at the same, you will hear all of that in the master output.

Now, you may be wondering where the headphones come into play in all of this. You can plug them into the mixer and hit the **cue button** in every individual channel to send that signal straight into your headphones.

(MASTER CUE)

(TRACK CUE)

This is a 4 channel mixer and it's respective **cue buttons.** If all of them are turned on, you will hear all of the channels in your headphones at the same time.

Note: *Faders **DO NOT** have any direct effect on the cue buttons. If you activate any cue button, you will receive signal in your headphones, regardless if the fader is up or down. Each mixer has its own unique knob to control the volume of the cue on your headphones.*

Some advanced mixers out there, such as the **DJM-900NXS2** shown above, also have a cue button for the master output. This way you can monitor everything the audience is listening to in your headphones.

This is useful because there are some clubs and venues that do not have monitors pointing towards the DJ booth, and it's hard to assess how everything is sounding like on the dancefloor.

Signal Flow

To start wrapping up this section, let's do it by saying that the basic principle of DJing is getting two tracks to play at the same speed, while in phase, at the same time.

This could be either to have them play simultaneously and and create a unique "mash up", or to fade them in and out respectively and start weaving a DJ mix.

Two tracks playing at the same speed but out of phase.
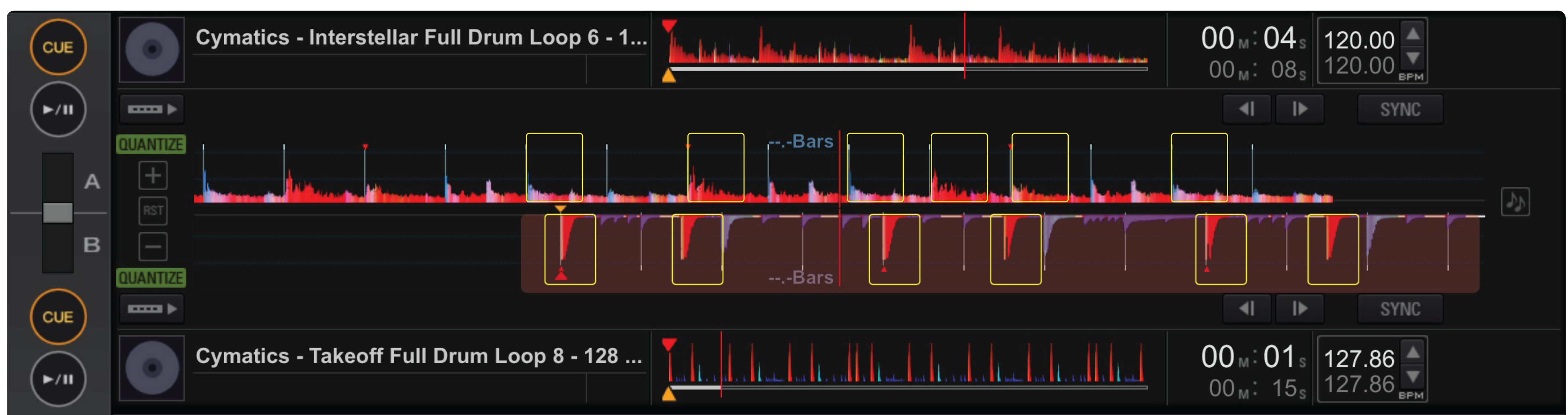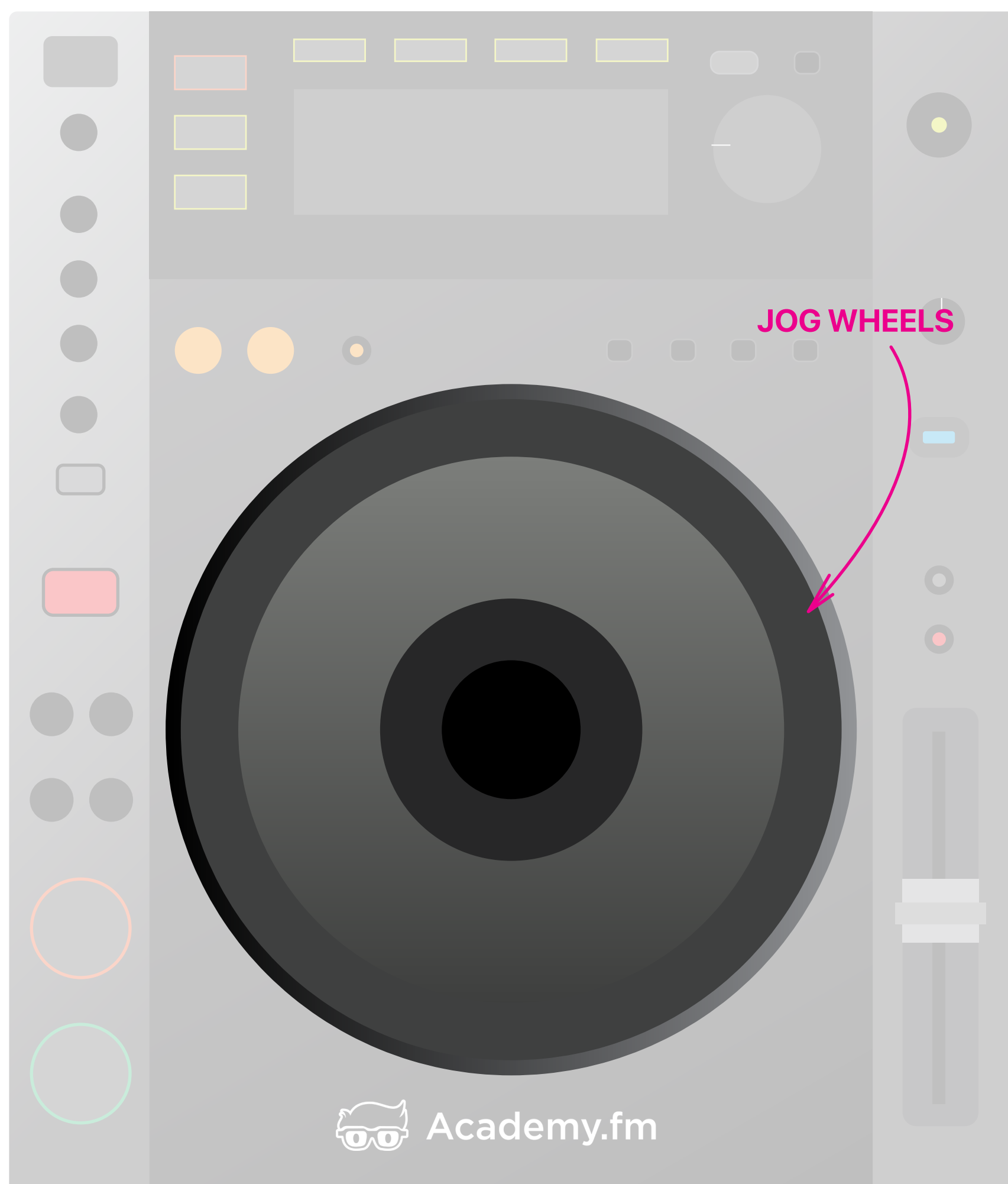

Two tracks playing at the same speed in phase

As you must have inferred by now, it is extremely important that both songs play at the same speed so they don't go out of phase. When any given amount of songs are out of phase, the beats won't line up and it will get messy really quick.

Signal Flow

JOG WHEELS

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But how do you adjust the phase of the track im mixing? Well, that's where the **jog wheels** come into play.

You can move the jog wheels in either direction to nudge your song forward or give it a little push backwards until you make them both line up.

Now that we know about the bigger picture of DJing, let's go a little bit more in-depth into every individual concept that you need to know about to get started as a DJ.

Beatmatching

Beatmatching is the fundamental principle of DJing regardless of the genre.

To be able to beatmatch, we need to understand the concept of tempo. Historically, tempos have been named after certain Italian words that composers would use to express ''how fast'' or at what speed their music should be performed at.

For example, *Andante* means ''at a walking pace'' and it's somewhere between 76 to 110 BPM.

Beatmatching

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This could be either to have them play simultaneously and and create a unique "mash up", or to fade them in and out respectively and start weaving a DJ mix.

Luckily for us, we don't need to use Italian words anymore since modern producers and DJ's use BPM or beats-per-minute to measure tempo. 120 BPM is straightforward and it simply means 120 beats in one minute.

Contemporary pop and dance music tracks also have steady BPM's in comparison to classical and jazz pieces which might even have both time signature and tempo changes. This actually makes a DJ's job slightly easier.

This also means that you don't have to worry too much about time signatures, as 98% of the music you will be mixing will be on common time or 4/4.

Even more complex songs like Matt Lange's "Count It" for example, which has a compound time signature, was produced in a way so that it still has a four-to-the-floor kick drum for ease of mixing.

The first step to mix two songs together is to make sure they're playing at the same speed and that the beats line up with each other.

But how do you make two songs play at the same speed if they have different BPM's?
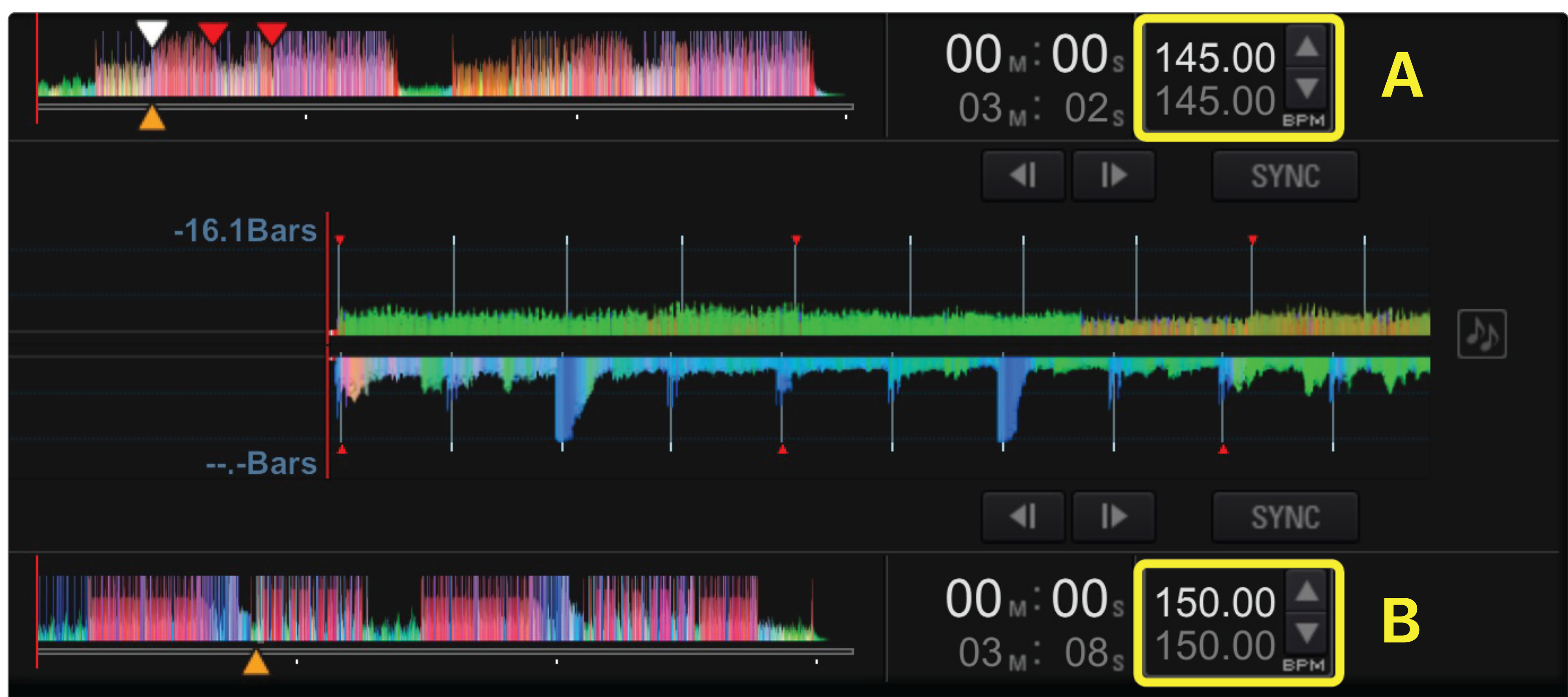
Beatmatching

PITCH FADER

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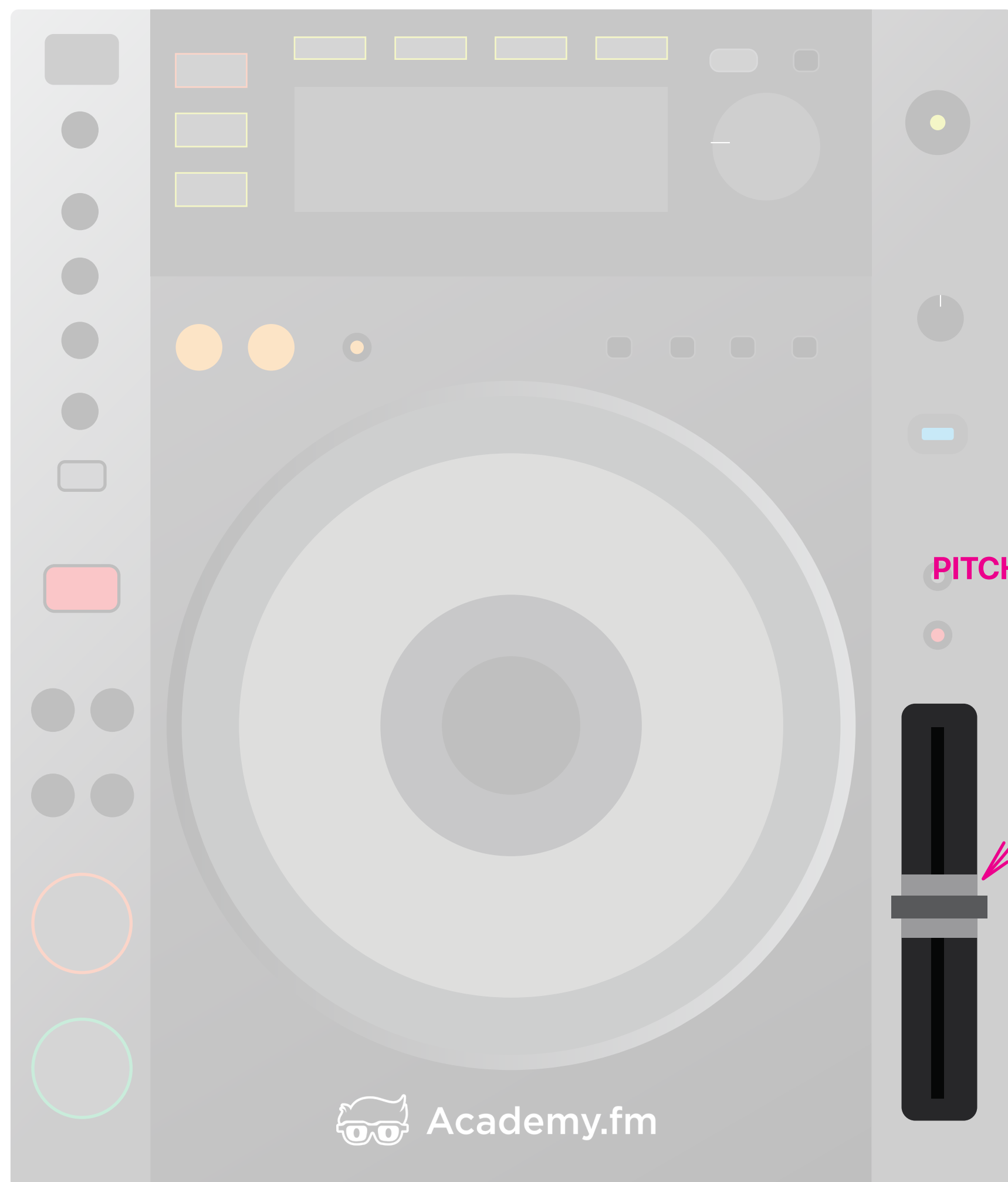
To change the BPM of a song you need to use the **pitch fader**.

You don't have to worry whether a player or controller has a pitch fader or not, because 98% of them have one. Even vinyl players like the legendary Technics 1200 have it.

Note: *Native Instruments' S8 controller doesn't have a pitch fader for example, it has a touch strip instead which serves a fairly similar function.*

This is how it's done in the old fashioned way.

So let's say you have **track A** playing at **145 BPM** and you want to mix in another track which is at **150 BPM**.

Beatmatching

145BPM
150BPM

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There are multiple approaches to do so, and none of them are wrong. However, since we're talking about the very basics over here, the most sensible thing to do would be to move the pitch fader of track B upwards to decrease the BPM.

The goal here should be to move it just enough so that **track B** plays exactly at **145 BPM**. This way, assuming both tracks are in phase, the drum beats from both songs won't create chaos while playing at the same time.

Now, we need to give you a fair warning. We're going to talk about a very controversial subject in the following part, and we don't want to create a stance here.

Our goal is to inform you and teach you how things work, and hopefully you'll come up with your own conclusion.

Moving the pitch fader upwards or downwards to match the BPM sounds easy in words, but it actually gets quite tricky.

Vinyl turntables such as the Technics 1200 **do not have** a digital screen like CDJ's, most controllers, and weren't connected to a laptop either.

All you had was a mixer, 2 vinyl players, and your records.

To beatmatch you had to do it all by ear, and it wasn't a skill that was easy to learn. You had to put in days of hard work and frustration to start getting it.

Of course, this is all assuming you had 2 records at different BPM's. If everything you owned back then was at the same BPM, things were much more simpler. All you had to worry about was making sure that the beats lined up with each other.

Beatmatching

But now we should talk about its modern counterparts, CDJ's and controllers. This type of equipment most of the time will ask of you to analyze your songs first before you're even able to play them back.

Because of this, the software will show to you the BPM in which your song is currently at. Whether it's at a digital screen the equipment has, or in your laptop.

This actually deals with a lot of the heavy work old DJ's had to worry about, and this is where the controversy lies.

Old school DJ's argument that the art of DJing has gotten lost because of technology aiding the new generation. It was definitely an art that only few managed to master; Mixing hundreds of tracks one into another almost seamlessly while making it look simple.

But technology didn't only bring that to the table, it also brought tons of effects and functionalities into the players and controllers that people couldn't have even imagined before.

It's not the gear, it's the person behind it.

A lot of the newest equipment has integrated the **dreaded sync function**. This is a simple button that will make the computer or your equipment sync your songs instantaneously.

This is where the famous saying "DJ's only hit the play button" comes from. And it's true, we can't try to make up or alter reality. A lot of DJ's are just selecting tracks, syncing them automatically with software, and hitting play at the right time.

So to recap quickly this entire section, you can beatmatch a song in the following ways:

1. By ear.
2. Watching the BPM in any screen available and adjusting the pitch fader manually.
3. Using the sync function.

Beatmatching

If you're interested in learning how to beatmatch by ear, become aware of some important issues regarding this topic, and get some tips and tricks, feel free to keep reading this section.

Otherwise, jump straight to "***Arrangements, Counting Bars & Phrase Mixing***"

The most common performance setup for dance music DJ's right now is to 2-4 CDJ's. However, not everyone is at that level yet, and the majority of beginner producers/DJ's can't afford that type of equipment either. A big percentage of that group also isn't lucky enough to know someone who is willing to let them practice with their equipment.

Bottom line is, **knowing how to beatmatch by ear is still a very valuable skill.**

You never know in what kind of old or cheap equipment you might end up performing at while you're a beginner during your journey.

You might also encounter CDJ's that have a ridiculous mileage. Sometimes the pitch faders are worn out, the screens freeze, and multiple unexpected glitches happen.

Knowing how to beatmatch by ear not only can save your life, it can also help you leave a good impression on the club owners or managers.

You need to be aware that most people running venues, were or had experience DJing. Their views on this subject might differ to yours just because they're older, and you need to understand that they're not wrong either.

The truth of the matter is, no one is going to put a piece of tape on the screen either and force you to beatmatch by ear. The technology is there, and you have free will to use it.

Now we need to talk about something that a lot of old school DJ's don't like to mention, almost intentionally.

Back then, not everyone had access or enough money to buy the necessary equipment, and keep buying vinyl's at a constant basis.

Beatmatching

Most old school DJ's started with a bunch of records and kept expanding it throughout the years.

Old pitch faders were designed to have a range of **+/- 8%**, some of them also had a setting of **+/- 16%**.

But what does this mean?

Well, we learned in the previous section that we use pitch faders to alter the playback speed of a song.

If our pitch fader stayed right at the middle, at **0%**, this simply means that the song would playback at its original BPM.

With a setting of **+/-8%**, this means that whatever song you played, it could only go **8%** faster or **8%** slower.

So, if we loaded a song that has an original BPM of **119**, with the pitch fader setting at **8%**, this means that it can only be sped up or slowed down by **9.52 BPM**.

This makes beatmatching by ear a whole lot simpler.

Going back to our previous example, let's say you want to bring in a track that is originally at **122 BPM**, and the song you're currently playing is at **119 BPM**.

You don't have to do the math every single time, but by knowing this you can tell that if you move the pitch fader all the way up your song will be slowed down by roughly 10 BPM (9.76 exactly).

You only need to bring down the BPM by 3 to go down to **119**. The pitch fader is also linear, so it would be a safe bet to assume that if you move it half way up the BPM would go down by **~5 BPM**.

Half of that would be ~2.5 BPM, so this would give you a pretty solid visual ballpark image of where the pitch fader should be at.

Beatmatching

The rest comes down to a little bit of practice and fine tuning your ears.

Now that you are aware of this, we can go back to our original point. As old school DJ's amassed vinyls (and we're talking hundreds of them), it would be hard to keep track of all of the different BPM's of their records.

Old DJ's would create little cheat sheets or make notes on the vinyl's to aid themselves whenever they played them.

Those who really mastered their craft and had a certain degree of musicianship could also figure out the key of the song by ear, make a note on it, and take it one step further by doing **harmonic mixing**.

If you don't know what that is, don't panic. We'll talk a little bit about harmonic mixing later in this book.

All of this isn't new. It already existed but it was limited to the people who really took the time to master and take their craft to the next level.

To finalize this section, let's do final notes about pitch faders and beat matching.

As a general rule of thumb, **it's usually best practice to NOT alter the BPM of a song by more than +/-8%,** specially in the upper BPM ranges.

For a standard song at 128 BPM this is +/- 10.24 BPM.

This is something that you need to listen by yourself to really understand why. So load up some songs and mess with their BPM's extremely in both directions. For example, picture any progressive house song you might like from 2012 playing at 138.24 BPM.

If you do experiment with this, it is preferred that you try this at least in a controller or in CDJ's. But if you don't own or have access to either, messing with the BPM inside your DAW should suffice.

Moving forward, one of the first things you should check, especially when you're using equipment that is not yours, is to see what's the current range of the pitch faders.

Beatmatching

Standard CDJ's Nexus 2000 have 4 settings available: 6%, 10%, 16% and "wide." Broader BPM pitch fader settings are designed for open format DJ's where they jump between multiple genres, for example hip hop and all the way to drum n' bass.
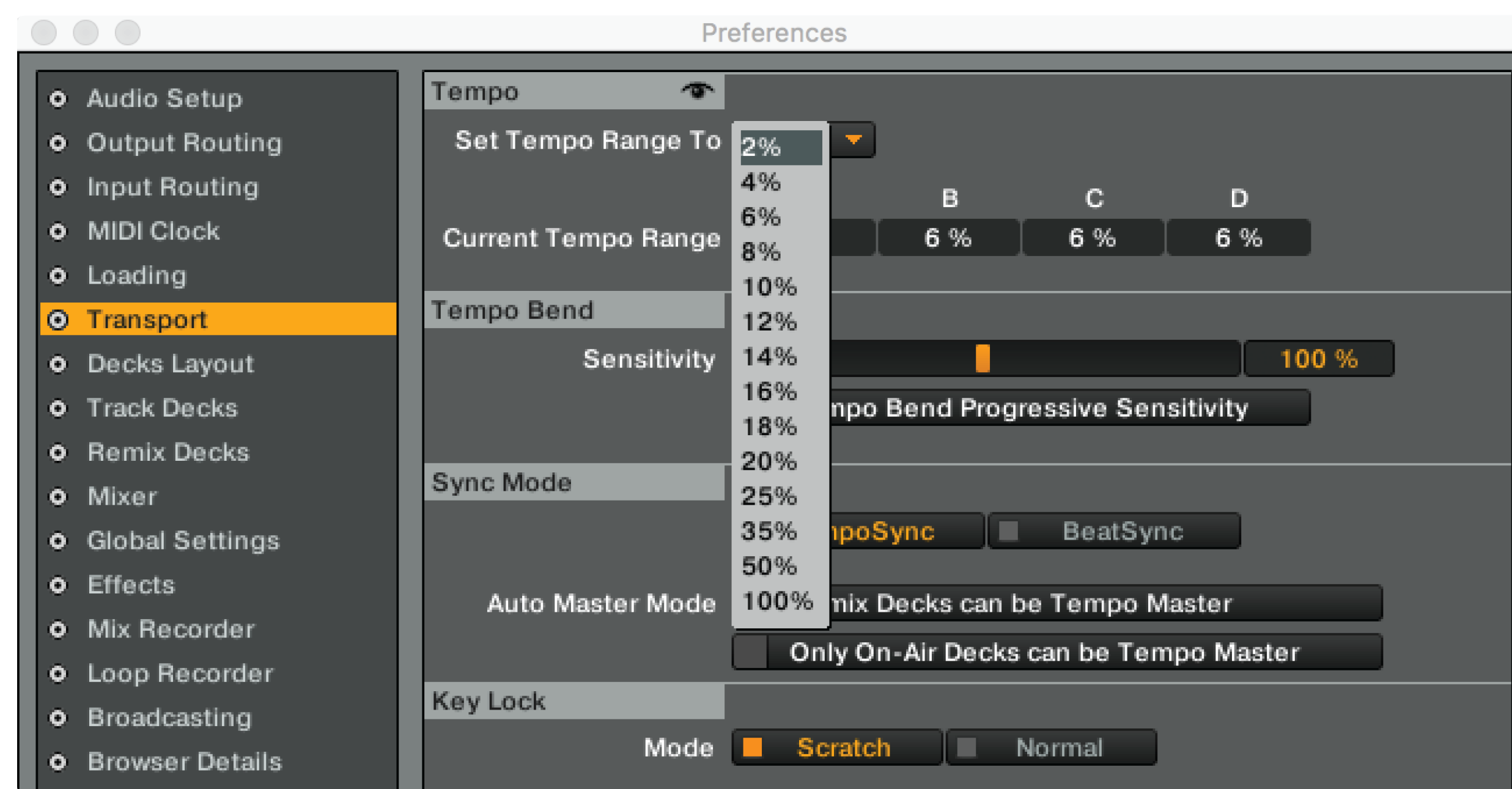
However, if you're mixing strictly house music for example—or just staying within similar genres overall, doesn't have to be strictly house music—it is recommended that you keep the pitch fader settings in either 6% or 10%, as this will make your life easier and give you way more control over the fine tuning.

Software like Traktor allows you to change the pitch fader settings in quite a drastic way, which opens up some creative opportunities for crazy tricks and mixing techniques.

Unfortunately, these techniques are outside the scope of this book.