THE ABSOLUTELY SIMPLE GUIDE TO VINYL PRESSING

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www.unifiedmanufacturing.com

First of all, congratulations!

You're finally done recording your album. Buy a bucket of spicy chicken, a big tub of ice cream, and prepare a relaxing bath because you deserve to reward yourself after. You just gave birth to a set of badass songs after spending countless hours writing, rehearsing, molding and perfecting each track. That wasn't easy.

But, as you know, the job is not yet done. After the whole creative phase, you still have to step into mastering, manufacturing, distribution, marketing...the whole nine yards. So go ahead pamper yourself tonight because you have to start rolling your sleeves again tomorrow.

Yes, it's a bit tedious to think about but also very exciting because aside from the usual CD, you want to release it on vinyl.

Making a vinyl record can be overwhelming and intimidating for almost anyone, even the ones who are already in the music and audio industry, that is why we decided to make an easy-to-read guide for those new to vinyl record pressing. Here you will find all the information you need in mastering and manufacturing vinyl.

Vinyl is a totally different beast but we're here to guide you every step of the way.

OVERVIEW OF THE VINYL PRESSING PROCESS

If this is your first time ordering from us so you know exactly what to prepare and what to expect. We made this very simple (but still comprehensive) in our attempt to make your life a little easier. Let's go through the steps in making a record to give you a quick idea of what you'll be doing:

STEP 1: Recording
Recording for digital is the same as recording for vinyl. In other words, you don't need to make a separate recording if you plan to release it on vinyl. If you're reading this, we suppose you already know this step by heart. It's the process when you record your instruments and vocals using microphones or direct inputs in a studio. Most of the time, individual sounds/ instruments are recorded and stored separately (multi-track) so it's easier to adjust in the next step. The files are then stored on a digital audio workstation or in tapes.

STEP 2: Mixing
In this step, the individual files that you recorded are adjusted and mixed artfully to create the right blend for each of your tracks. The volume, bass, and other levels are tweaked until you achieve what you want for each song. Every noticeable flaw like hiss or sound of tongue clicking will also be cured. These mixes are usually two-track stereo and are saved on the hard drive of a DAW.

STEP 3: Mastering
This is the process of editing the individual song mixes done in Step 2 to come up with a record that flows beautifully as a whole album. Some of the things to be adjusted are the spacing between songs, the order of songs, EQ, compression and the levels. In this step, finishing touches are also applied to ensure your music would sound great on vinyl. As mentioned above, vinyl is a different beast and would require an experienced mastering engineer.

STEP 4: Manufacturing
Manufacturing is duplicating or replicating physical copies of your music so your album can be distributed and sold. This is what we do. You have the option of releasing in different formats like CD, USB, tape, and vinyl.

VINYL MASTERING TIPS

Before we start with specific steps and hacks for mastering audio for vinyl, the #1 tip we can give you for a seamless vinyl mastering and manufacturing is this:

HIRE A PROFESSIONAL MASTERING ENGINEER!

And not just a regular mastering engineer, but a mastering engineer that has a lot of experience in mastering vinyl. A master engineer does exactly understand the boundaries where mastering meets cutting and cutting meets vinyl pressing for an optimized result of the highest order possible. The final product of vinyl is essential with an ace sound of mastering!

If you DIY or hire an engineer who has zero experience with mastering vinyl, then your risk of producing a bad record in high. You can try the DIY route but it could cost you time and money. You might even have to redo everything.

However, as the client, it's of course good to read this guide to be aware of the basics of mastering and manufacturing vinyl. When your engineer tells you technical things say, he wants to minimize the bass, then you understand what he's talking about. Vinyl pressing requires that everything must be perfect before you even press hundreds of records and a professional vinyl mastering engineer will make sure you achieve it.

Some things you should know when mastering vinyl:

#1 Volume and bass directly affect audio capacity.
Unlike with CDs, there is a limitation in the amount of recording time on each side of a record. The factors that affect what you can put in each side are the cutting level (volume) and the amount of bass you have in your music. The higher the volume and the more bass you have in your album, the more space it takes up.

The aim to have excellent sound quality and yet provide adequate playing time has been the greatest challenge of vinyl but it remains to be a great way to experience music.

#2 If you want to put more music, here are your options:

RPM affects quality and audio capacity. The faster a record turns, the better the audio sounds and the lesser the chance of music to get distorted. That means, in general 45RPM sounds better than 33RPM. However, the higher the RPM, the lesser amount of music it can hold (approx 25% lesser).

	33 RPM	45 RPM	78 RPM
7”	6 min	4.5 min	
10”	12 min	9 min	4 min
12”	18 min	12 min	

** Take note: Not all turntables can play 78RPM*

To get the best compromise for your high frequency/loud music, we recommend you get the 12” for a maximum of 12 min.

FROM JAMES, OUR CEO:

> ***“****From my experience, if you’re pressing a 12-inch vinyl (with max 22 minutes per side), don’t use up all 22 minutes. In fact, don’t go past 17 minutes. I hear you, and yes I have lost many customers to this issue. You can, in theory, go up to 22 minutes but people, please, the risk of DISTORTION goes up every minute you go past that mark.*
>
> *So what if you really have to put 22- 30 minute of audio per side? Yes, I can get your 22 – 24 – 30 minute of audio onto SIDE A or SIDE B, but you know what I’m going to do to achieve that? It’s something you might not like. I’m going to compress the sh*t out of it…which I won’t do. Why? Because it changes the integrity of the music. It would just sound like an MP3, but the most expensive MP3 in the world. Why make a vinyl if you won’t make it sound like a vinyl? Just make MP3 and save your money.”*

#3 Loud, heavy tracks should be placed at the beginning to prevent distortion.

Louder, heavier tracks should be placed at the beginning to prevent inner-groove distortion. When the needle gets closer to the center of the record (meaning, the end of the side), there’s a chance there’ll be slight distortion. If you put your heavy tracks here, it will be more obvious. The standard rule is to put the louder/heavier tracks at the beginning and the ones with lower frequency in the end. That’s the safest way to arrange your songs in vinyl.

#4 Because of the things mentioned above and more, you should make a separate master for vinyl.

It's not going to sound the same. It's just not. If you use the master you made for your CD as the master for your vinyl, that's fine but don't expect it to sound the same. That is why we suggest to anyone pressing vinyl that if you have the money, make a vinyl master.

If you have a master for CD, here are the additional changes you should do to make it vinyl-ready. Talk to your vinyl mastering guy and make sure you:

- Avoid using "finalizers" on your mixes as they could cause distortion.
- Don't mix hi-hats and cymbals too loudly or the high frequencies will cause distortion.
- Center your bass frequencies
- De-ess your vocal tracks

MASTERING SPECIFICATIONS

Analogue Mastering Specifications:

- Formats: WAV, AIFF, FLAC (lossless) or DDP Image.
- Bit Rate: 24 bits (16 bits works too) 32 bits is overkill.
- Sampling Rate: 44,1 kHz or higher, we prefer 48 khz.
- Tracklist: Tracks with sensible hi end frequencies sound better at the beginning of each side, the highs can sound slightly more distorted and less clear near the end of each side due to less playback speed.
- Compression/Limiting: Slight mixbus compression/limiting is not a problem if you know what you do, otherwise don't use it (recommended).

Reference Tracks:
It can be good to send a reference track along, but only AIFF, WAV or FLAC (uncompressed). MP3 is not a good reference because of the data compression, so links to youtube or soundcloud neither.

Maximum Side Lengths 12″ Records for optimized sound:

- Maximum levels, approx +6 dB: 6 min at 45 RPM, 8 min at 33 RPM.
- Sufficient levels, approx +4 dB: 8 min at 45 RPM, 11 min at 33 RPM.
- For dj use, approx 0 dB: 11min at 45 RPM, 15 min at 33 RPM.
- Maximum playtime albums for optimized sound, approx -6 dB and lower: 18 min at 45 RPM, 24 min at 33 RPM.
  (keep in mind this is not possible or recommended with more bass heavy music, a record with just speech might be even longer than 24 min but not recommended).

* Again, longer playtime is possible but not recommended.

Tips:

- Try to use de-essers on vocal tracks in mixing, it's better then solving these issues in mastering.
- Don't go wild on stereo width enhancers for loud cuts! Keep the stereo content at least lower then half of the mono content, so at least 6db lower (in M/S coding). We use an elliptical filter to transform the lowest stereo information to mono. For loud cuts at least 9 dB difference is nice. Stereo cuts vertical and modulation get's much more limited, which means less hard cuts.

Extra digital masters:
It's possible to order extra digital masters for online distribution. This is what you get by default:

- Streaming Ready Master (iTunes) – 1dbfs, 24 bits (for sending to iTunes) Minimized clipping, better for data reduction and reduced loudness for streaming, so dynamic range before loudness
  Conversion will be done by iTunes. With possibly slight adjustments in sound to reduce issues caused by data reduction.
- MP3 320 kb Normalized Master – minimized clipping, for sharing with MP3 data reduction. With possibly slight adjustments in sound to reduce issues caused by data reduction.
- 16 bit WAV Masters – extra conversion from the original Vinyl master for normal DJ use and digital distribution.

* More formats with different specs on request, price will be customized in that case too.

VINYL MANUFACTURING TIPS

Manufacturing CDs is very different from manufacturing vinyl. Here are the basic differences:

	CD	**Vinyl**
Turnaround	8-15 days	8-15 weeks
Cost	$1- $3/pc	$4- $15/pc
Minimum order	50	100

We want to stress out that pressing vinyl is a very delicate process and it cannot be rushed. You have to be more meticulous because when you don't follow the guidelines in vinyl mastering above and your master is not vinyl-ready, that would add more time and would possibly cost you money if they're already pressed by the hundreds but then later you found out errors.

FACTORS THAT AFFECT COST:

NUMBER OF COPIES

The more you order, the cheaper it gets per piece. The price difference is more apparent in vinyl. That is because the most expensive part of vinyl manufacturing is the actual cutting of records. Every order, from one piece to a hundred thousand, requires record cutting. Here is a rough estimate of the prices for 12-inch:

100- $1580 ($16/ pc)
500- $2625 ($5.5 /pc)
1000- $3820 ($4/pc)
3000- $9450 ($3/pc)

Of course, your primary consideration should be how many copies do you expect to sell that's why pre-orders are awesome.

COLORS/ DESIGN

I'm sure you're thrilled to make fancy vinyl especially if you've seen our totally awesome Pinterest page with 1000s of cool vinyl designs. We hope you won't get discouraged by the fact that the fancier your vinyl is, the more expensive it is to make.

These are the standard colors we offer:

Opaque vinyl: black, blue, red, violet, & yellow

Transparent vinyl: red, blue, orange/gold, green, crystal clear, and coke clear.

Mixed vinyl: random colors

***If you choose mixed vinyl, each record will be unique and could come in different color combinations and patterns.

WEIGHT/ THICKNESS

The 180 gram record is considered "audiophile quality" because it's believed to sound better, it's less likely to warp than the 140 gram, and it looks durable. If you want the 180g, it is more expensive but totally worth it.

Here is a rough estimate of the price difference for 12” vinyl:

Qty	140g	180g
1000	$3820	$4500
3000	$9450	$11,490

SUPPLYING MUSIC FILES

We prefer 2 WAV files uploaded directly to the Order Form.

Unlike CD replication where you can submit either 1 WAV file or 1 DDPi file, for vinyl the preferred file format is two (2) WAV files, one for each side of the record.

We also accept a DDP master, a burnt CDR, .WAV files but any additional changes would require a fee.

If you want us to cut your lacquer, we need it in a physical format like a standard audio CD If you prefer to send us higher bit rate files in a data format (burned to a CD), we will cut your lacquer using those files.

If you prefer to mail in your masters, you can deliver them to our office:

5029 W Jefferson Blvd, Los Angeles, California 90016.

If you prefer to upload your files, you may upload them to your Order Form.

ARTWORK SPECS

SUBMITTING ARTWORK:
When it comes to artwork, we want to make sure that you get exactly what you expect. Colors, sharpness, and design should be how you want them to be. For this to be achieved, we highly recommend you follow our artwork guidelines:

- Make sure to use our templates. You may download them here.

- Send us 300dpi flattened .PDF files in CMYK only (or Pantone Colors). We don't accept .INDD/.PSD/.AI or any other files. JPG and PNG files will not be accepted.
- Save as PDF/X-1a:2001, exported without scaling or compression.
- To keep things organized, upload artwork files to your Unified MFG Order Form.
- Send us files with the name of the project and the type of file included. And only use the following format for ALL your files (YOUR PROJECT 001 – A1,A2…B1,B2…Sleeve/Label A/Insert, etc). Ex. The Very Best of Danny- Sleeve.
- Don't save visible cutting, folding and punching lines and colorbars in the design you send us, use this only as an example for designing.
- Fill the middleholes of the labels with artwork.
- Bleed for Labels, Sleeves, Inserts is 5 mm extra on all sides. Stickers 2mm, Stamps 0mm

ONCE DONE, upload artwork files to your Order Form. If you're having trouble navigating it, send it directly to us at team@unifiedmanufacturing.com. We will give you a call once we receive your order or you may inquire after 24 hours by calling us **1855-421-9767.**

HOW TO ENSURE YOUR ARTWORK MATCHES THE FINAL OUTPUT:

Fonts

- Embed fonts or convert them into paths, fonts supplied with the various operating systems can not always be used by us.
- Line and font sizes and thicknesses
- Line thicknesses may not be less than 0.15 mm in positive printing and 0.25 mm in negative printing.
- Line thickness for foil and embossed printing should be at least 0.35 mm.
- Fonts should be at least 5pt in positive printing and at least 7pt in negative printing. Please pay attention to our minimum thicknesses for very fine fonts.

Colors

- Black characters and lines with a CMYK background should be overprint, cutout metallic and neon colors in the design.
- The sum of all colors may not exceed 280% of the print coverage.
- For deep black at 100% depth, only use 50% cyan (100T, 50C).
- White writing on black in 1 color, at most 2 colors (+ 50% C).
- Please note that we have a dot gain of about 15% from the file to the print. Be sure contrast for dark colors is at least 15%, for labels or rough background even 20%. So that the individual elements can still be distinguished from one another even after printing.

- Center labels are not stickers. They are paper labels which are pressed into the vinyl compound during the manufacturing process. Because of this, the color of your center labels may shift during the process.

DELIVERING YOUR MASTERS

For analog tapes, ship them to:

Unified Manufacturing
5029 W Jefferson Blvd

5029 W Jefferson Blvd, Los Angeles, CA 90016, USA

***Before you ship us your masters, make sure to coordinate with us by calling: 1855-421-9767 or sending an email to team@unifiedmanufacturing.com

For digital masters, upload them to our FTP Uploader/ Order Form.

PUT LINKS TO WEBSITE, FB, TWITTER, ETC