VINYL HEAVEN 1

TECHNICS SL-1200 MkII

VINYL HEAVEN and The Technics SL-1200 MK2

Now is the time. Unpack your old LPs and singles. Clean up your vinyl. Spin those discs and have some fun....

In this section you can find the way to real vinyl nirvana.....

Get Out Your Vinyl!

There is a certain magic about playing records that is absent from CD's and certainly from those highly compressed and invisible MP3 and AAC files. Part of that magic is the unique ritual of removing a treasured LP or 7 inch single from its sleeve, carefully placing it onto the turntable platter, cleaning the dust off and then gently moving a precision engineered pick-up arm over the lead-in groove and carefully lowering the delicate stylus onto the playing surface of the record, then sitting back to enjoy the mellifluous sound that only vinyl reproduction can provide.

Bear in mind, however, that to get the fullest enjoyment you do need a good turntable, and not all turntables are born equal - in fact I doubt that there are many that are quite as capable and enjoyable as the Technics SL-1200 Mk2.

(Oh, before we carry on here. If you are simply looking to buy a turntable that will enable you to copy your records onto your computer in the form of mp3 files then don't, whatever you do, be tempted to buy one of those crummy plasticky 'USB' style (or similar) turntable packages that you'll see advertised in various magazines, newspapers, electronics shops and gadget websites. These turntables are absolutely useless - more like lathes than precision audio equipment. They are cheaply made have the most rudimentary spring loaded arms that track at FAR too high a weight and not only sound absolutely horrible, but will also damage your records. Be Warned! AVOID! - If £120 really is all you want to spend, then buy a Project Debut III which at least has a reasonable arm and decent cartridge. However I would recommend that you read on and find out that the ONLY turntable that you must buy is the Technics SL-1200 MkII however. Sermon over).

THE Turntable

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Cartridges


Record Care & Cleaning

The Technics SL-1210 Mk 2 (SL-1200 MK 2 PK in N. America)

If you have arrived at this page there is a good chance that you are looking for a turntable to play your precious collection of vinyl records. There is also a very good chance that you are dissatisfied with your current turntable, be it a Dual, Project, Rega or whatever, and are looking for the ultimate turntable upgrade for not too much money.

It is unfortunate that many people believe that vinyl records a greatly inferior to CD's – full stop. This is not really the case. I think that one of the main reasons for the misconception is that the record decks that are supplied with the typical all in one 'stack' or midi system are horribly substandard and will produce extremely poor audio quality. Sadly there are also mini, midi and even full size turntables that are being sold separately for about £100 or less that will produce equally poor sound - such turntables may also have well known manufacturer names on their badges, but appear to be cheaply made 're-badged' products.

However with a turntable of suitably high quality and a vinyl record that is in good condition and clean (see cleaning), the sound quality obtainable from an LP can be just as enjoyable as from a CD, indeed there are some people who would argue that the sound from vinyl is even more enjoyable than from CD! But you do have to use a good turntable.

So, if you are considering buying a new turntable for sensible money (i.e under £300-600) make sure that you put the Technics SL-1200 MkII at the very top of your short-list of one!

Even if you are only considering spending £200 - £300 on a turntable I really would have to say, after hearing the SL-1200 MK2, don't waste your money. Save up another £100 or so and consider the Technics SL-1200 Mk2 – it offers unbeatable sound for pound value.

If you want to know what all the fuss is about, then read on.

Vinyl Heaven 4

High Quality RIAA Phono Preamp

Real Stereo

Links

Technics Resources:

Panasonic Technics

Technics SL-1200 MkII

SL-1200 on KABUSA
KAB's Kevin Barrett is one of the world's SL-1200 authorities

SL-1210 at Superfi

Cartridges:

Audio Technica
the finest cartridges

http://www.audio-technica.com

Real Stereo

MY VINYL EPIPHANY
(Warning .... it does take a little while to get there. Yawn.)

In my younger days my first turntable was one made by Micro Seiki, it was a semi-automatic belt drive model. Although solidly built it didn't have the greatest sound quality; the belt drive system suffered from some noticeable pitch instability and the bearing was rather noisy, so the signal to noise ratio was rather compromised, manifesting as rumble. Additionally it suffered a certain degree of mis-tracking distortion that I could never quite eliminate no matter how I arranged the cartridge in the arm. This became rather irritating at times. The cartridge was quite good, however, being an Ortofon VMS20EII which had an even handed sound and was really quite detailed and revealing - mainly revealing the limitations of the turntable I fear.

Some years later, around 1990, I decided to upgrade. From reading the hi-fi press at that time, it seemed that there was only one budget turntable to buy - a Rega Planar (in fact, for some unfathomable reason the Rega turntable (and its many derivatives) is still recommended by people who really should know better, but I digress). Most so called hi-fi 'experts' seemed to suggest that a belt-drive turntable was the best, if not the only drive method worth considering and so I (along with so many other 'green' and impressionable hi-fi enthusiasts) was convinced (conned) by the magazine reports and hi-fi shop sales-people and decided that I must have this type of turntable. I listened to an example in a hi-fi shop, but I have to admit that while its was certainly better than the budget Micro Seiki, it did not seem to offer the vast improvement that I was expecting. What is true is that I did immediately notice that the arm/ cartridge did track much better.

I then listened to a Systemdek turntable which was vastly superior, but the particular turntable, arm, cartridge combination was ridiculously expensive as I remember. CD's were, of course, around at this time and offered the stability of sound, dynamism and lack of distortion that I was seeking from my collection of records. I continued my search.

After hearing the Rega I just did not believe that it was as good as the magazine reviewers claimed, and certainly it did not seem worth the asking price. Sure, the arm was a very nice piece of metal, but a the rest of the package was basically a bit of wood with a pretty basic motor fixed to it. I trusted my own ears on this matter, as anyone auditioning a turntable or a pair of loudspeakers (or any other component) really should. My suspicions were later confirmed by reading other owners' experiences with this turntable which cited: speed drift, pitch instability and noticeable motor noise and rumble.

The manufacturer apparently refuted these complaints, but strangely some time later these non-existent faults would be 'fixed' if the owners bought an different (quieter?) motor that would be fixed to the wood using glue pads - real high tech stuff eh?

I was saddened, particularly as I like to buy British if possible.

In the end, later in 1990, and after more auditions, I settled for a Rotel RP-855 turntable. It was relatively inexpensive, but it did offer an appreciable upgrade over my existing deck. The Rotel RP-855 is still a belt drive affair (I had been convinced that I needed a belt drive turntable, remember), just like the Micro Seiki, Rega and Systemdek. However the Rotel, unlike some other turntables, uses a DC servo motor which has proved to be very accurate and stable and really is quite entertaining to listen to. Apparently a DC Servo systems utilise a sensitive regulator to monitor the voltage to the motor which improves the long term speed drift and static stylus drag susceptibility. Being a DC motor, the Rotel also has the extremely useful feature of being able to adjust the rotational speed so that it would spin accurately at 33 and 45 rpm, a feature that seems impossible to implement on turntables that use AC synchronous motors -

the reason why Rega and Project turntables always seem to rotate several percent faster than they should!

My suspicion about the Regas and Projects is this: Playing music just a few percent faster than it should be makes it sound more energetic - more exciting if you will. This 'excitement effect' may be why such turntables get erroneously good reviews.

That's just my own little suspicion.

The arm is nothing particularly fancy on the RP-855, but has always worked reasonably well, although there is still some noticeable end of side tracking distortion, but the tonality pleasant and accurate, the drive system it is remarkably quiet and the output detailed and very pleasingly musical. Given its strengths, I felt that the Rotel RP-855 was a fair compromise for its reasonable price at the time, though not perfect of course, but offering much better value for money compared to that alternative turntable. The Rotel is certainly very well built and has also proved to be completely reliable during its 17 years of use. However (scratches and static aside) my LP's still did not sound technically as good as most of my CD's, of course, though I tended to prefer vinyl's more inviting feel. I resolved that LP's just can never match the technical standards of Compact Disc and that advertising for the digital format was indeed correct.....

But there again.....maybe just I hadn't found the Holy Grail - yet?

In 2000, after ten years of owning the Rotel RP-855 I thought that it might be time to look for something better with which to spin my collection of vinyl. The Rotel is not at all bad, but I just knew that there was room for improvement - as some school teachers may say. So, I popped into a hi-fi shop and they assured me that the new belt drive turntables that they had on display were the absolute 'bees knees' and went on to demonstrate a couple. Hmmm, the expensive one was not too bad, but it was very expensive indeed at way over £600 or more and really did not offer an appreciable improvement, as far as I could hear. The cheaper one offered no improvement at all over the Rotel , in fact I was not entirely convinced that it was even as musical as the Rotel, it certainly wasn't as well engineered or solid in its construction. I was once again disappointed with what I heard.

I kept the RP-855 - Rotel hadn't done a bad job I mused.

Had I only known, throughout this search for the perfect record player, how misinformed I had been by misguided the hi-fi press, retailers and hi-fi enthusiasts, then I would have disregarded the idea that the only type of turntable to consider is one with a belt drive from the very beginning.

The Holy Grail - found at long last

In 2007 I was looking again, and did some much more thorough research which proved to me that the belt drive system is actually a compromised system that may never be able to provide the stability and lack of unwanted resonances that is needed for truly accurate and, moreover, enjoyable sound. Looking back on the subject now it seems obvious that noisy motors and bearings mounted on bits of MDF, in the typical built down to a price turntable, is surely going to be compromised on an engineering level by speed errors & fluctuations, noise and unwanted resonances and vibrations. The sound quality must suffer.

So let's talk about all those nuts who bury their head in the sand - and maybe that's why they cannot hear how bad some turntables actually are: I have read reviews from proud Rega owners who readily admit to noticeable pitch instability and speed drift, yet go on to recommend the same obviously flawed turntable to others! They certainly seem to be absolute masters of self deception.

When engineered correctly, it appeared from my research, the only drive system capable of providing completely stable, pitch perfect and silent rotation, and therefore the ability to convey musical information accurately, is an accurately controlled Direct Drive system of the type engineered and employed by Technics in their SL-1200 series of turntables. Listening to a 1200 most certainly confirms this and it is the Technics SL-1210 MkII that I bought. The Technics is the Direct Drive stallion to many of the other belt-drive turntable donkeys and is my particular Vinyl Epiphany!

Phew!

Technics SL-1200 on Wakata.cz

SL-1200 MK2 FAQ's

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High Quality RIAA Phono Preamp

The rather good Audio Technica AT120E/T

Nectar For Your Ears

My choice of cartridge for the SL-1210 MkII was an Audio Technica AT120E/T and after playing the first number of LP's my thoughts were that the sound quality is utterly breathtaking - in fact it was like nothing I have ever heard from vinyl records before. The sound is a revelation, incredibly clear, lacking distracting distortions and full of details that I have never previously experienced. The sheer stability of the sound-stage is something to behold, and with good LP's the lack of noise was impressive. The Audio Technica AT120AT cartridge and the marvellous Technics arm seem to work so well together that there are minimal discernible end of side tracking problems (Something that has always seemed to plague record playback for me in the past.), the music is remarkably smooth, with the combination extracting enormous amounts of detail from the record without ever sounding stressed or harsh.

This must be down to the rock solid, utterly stable and 100% accurate Technics Direct Drive system (something not available on any other turntable at this price or anywhere near the price) and the absolute solidity of construction of the SL-1210 and its immunity unwanted resonances.

Credit must also be given to the Audio Technica AT120E cartridge, its musicality and clarity is wonderful. The bass from the AT120ET is clean and musical, utterly controlled and lacking any of the woolliness and 'waffle' that can be apparent on some systems. Initially I noticed a slight lack of bass weight which I thought may have been an effect of the phono pre-amp built into the Marantz integrated amplifier that I was using (* see next paragraph below), but I found that this effect could also be attributed to the fact that the new AT120ET cartridge had not yet been 'run in'. It is worth noting that it can take around 50 to 75 hours for a new cartridge to 'run in'.

During fifty or so hours of playing the AT120ET cartridge the sound gradually changes and gets even better, and when it is fully run-in it really is a wonderful little marvel!

A different and higher quality phono pre-amp will certainly change and improve record playback when compared to some phono pre-amps that are built into integrated amplifiers. You will be able to read more about phono pre-amps later in this article. Different cartridges will also display subtly different sonic characteristics.

It is certainly fair to say that the treble is brilliantly smooth yet very detailed and sparkles really sweetly with none of the roughness and sibilance that can be present on some turntable set-ups.

I also use an Audio Technica AT-110 with the SL-1210, and while it is not quite as refined as the AT120E, it is still weighty and punchy which makes it very suitable for most rock and pop music. It is also amazing value for money and I feel sure that it would meet many listener's requirements.

I later changed from using the phono preamp that is built into the Marantz amplifier for a discrete outboard phono stage, this brought about a remarkable change in reproduction. Suddenly there was even more of everything. The new outboard pre-amp was a further revelation, the music gained some weight and scale, there was also noticeably more presence and music had even more focus. The AT120ET had a very slight tendency towards brightness with the Marantz phono pre-amp (probably due to capacitance and loading issues) but this was not an issue with the new pre-amp, and the tremendous levels of detail and enjoyment remained from the SL1210 and AT120 remained. I have to say that the new phono pre-amp really allows the Technics SL-1200 and Audio Technica AT120 to sing a very sweet song and for me the combination makes an ideal partnership.

I can already hear you asking the question "*What is this remarkable phono stage*?".

Well the pre-amp in question is the Elliott Sound Products Hi-Fi Phono Pre-amp. This amazingly high quality device is actually a DIY project, Project 06 on ESP's website in fact. To quote: "It is very easy to build, and gives performance that is second to none. Using 2 op-amps, this preamp will outperform most of the circuits you find anywhere on the Internet or the high fidelity stores, with very low noise and accurate RIAA equalisation (but with an extended bottom end that sounds much better than the "true" RIAA equalisation curve". You can read more here.

So

The Technics is very quiet and extremely stable in operation, the arm works so well that it simply lets the music flow in the most detailed, enjoyable and above all, musical and way - which is what a good turntable should do. The Technics SL-1210 MK2 really is an tremendously musical and highly entertaining piece of equipment, and from my own experience I can honestly say that these turntables cannot be recommended highly enough.

Musicality is brilliant: This combination passes the foot-tapping test every time!

The SL-1200 not only sounds better than anything else I have heard at anywhere near its price, sound is always the premium consideration of course, but if you own a collection of 45 rpm singles this turntable even has the truly modern convenience of being able to switch between 33 and 45 rpm at the press of a button! This might seem obvious, but perhaps will not be appreciated until one realises that on most other turntables currently offered it is necessary to remove the platter, move a belt from one part of a spindle to another and then re-fit the platter.

Can you believe that? What a chore! It's no wonder that many people faced with this bothersome fiddling end up ignoring their collection of 45's. What a shame - if only they'd bought a Technics SL-1200 Mk2**!**

But Why Should All This Be?

Here's why . . . . . .

Development Of An Icon - Why the Technics SL-1210 MkII sounds so good

In the 1970's Technics parent company, Matsushita, invested the equivalent of millions of Dollars, in today's terms, into research and development to produce the best possible no-compromise turntable for Hi-Fi enthusiasts utilising one of the world's finest turntable drive system. The result, today, is the Technics SL-1200 MkII and its other incarnations. (The 1210 is the black version but otherwise identical to the 1200, and you will find other versions up to MK 5, but all offer essentially the same construction as far as the highest quality Hi-Fi reproduction is concerned.)

If an independent turntable manufacturer could afford the massive R&D budget that was lavished on the development of the SL-1200 (which none probably now could), then, with much much smaller sales volumes in today's smaller overall market, the unit cost of the resulting product could well be in excess of £1000 or more. The fact that YOU can buy a brand new miracle of modern engineering in the form of the SL-1200MK2, for less than £400* is in itself a rather significant miracle.

The reason that the cost of the SL1200 MkII is now so reasonable is that the enormous research and development costs have been written down over very many years of production.

*The typical price of a Technics SL-1200 MkII in 2007 was £340.

The Finest Engineering

The construction of the Technics SL-1200 series is extremely solid and non resonant and minimises acoustic feedback that could otherwise mar audio reproduction. The plinth comprises three layers; A special non-resonant composite sandwiched between a high quality cast aluminium top, and a moulded solid rubber base. The feet are also spring loaded, and rubber damped and are adjustable for accurate levelling.

On this extremely solid foundation Technics have built one of the finest drive systems available and fitted a high precision pick up arm:

The FG (frequency generator) Servo Control Quartz Lock Direct Drive system produces the most accurate and consistent speed of any drive system. Unlike most of the common belt drive systems, it is immune to static and dynamic stylus drag. This stable and extremely quiet drive system turns a balanced, heavy 1.7kg cast aluminium platter which is damped not only with a heavy rubber mat but also with additional rubber damping from underneath. The Technics SL-1200 MK2 is topped off by the inclusion of a high precision tone-arm which benefits from bearings polished to a finish of +/- 0.5 microns which have a mere 0.007 grams of friction.

The Technics SL-1200 MK2 turntable must be one of the technological icons of our time.

Hijacked?

It is unfortunate today that the SL-1200 has come to be regarded as purely a DJ's turntable for use in nightclubs and by 'scratching' enthusiasts. While the SL-1200 MK2 certainly **has been adopted by serious DJ's as the de-facto standard turntable, it should not be dismissed by home audio and hi-fi enthusiasts as merely a DJ machine when,** in fact, **Matsushita** embarked on a **no-compromise** mission to develop the finest sounding Hi-Fi turntable possible – the result being the **SL-1200 series.**

Certainly the SL-1200 is built like a tank, it is rock solid and extremely reliable and these strengths have earned the SL-1200 a well deserved reputation as king of all DJ turntables. However the 1200 is more than this, it is also a very fine sounding piece of audio equipment, and certainly far better than anything else in or well in excess of its price bracket. It is **a high precision instrument that is capable of the very finest hi-fi reproduction when combined with a suitable high quality phono cartridge and phono pre-amplifier. The vast sums that were initially lavished by Matsushita on the SL project having been written down during its long production run which makes the SL-1200 series the most competitively priced and best engineered Hi Fi turntables available to serious music enthusiasts.**

The SL-1200 remains the very best Hi-Fi turntable your (sensible amount of) money can buy. A word of warning though; despite being built like a tank, the Technics is possibly the most exquisite piece of precision mechanical engineering you will ever own, so it would be wise not to buy a second hand 1200 that has been used as a DJ deck. It may have undergone all sorts of mis-treatment and mis-handling, such as 'scratching', or if used as part of a mobile disco may even have been dropped. The wear on the platter and arm bearings will be unknown and if any damage has been done it may go unseen. However it is interesting to note that there are reports of Technics SL-1200's being dropped and surviving unscathed – which proves just how strong and well built they are. I doubt that you could drop any other turntable and expect it to still work properly.

If you must buy a second hand SL-1200 MkII ensure that it is known to have only been used for home Hi-Fi use. But the best advice is to avoid all second hand turntables really, as turntables are comprised of many very delicate parts that are easily damaged by clumsy fingers.

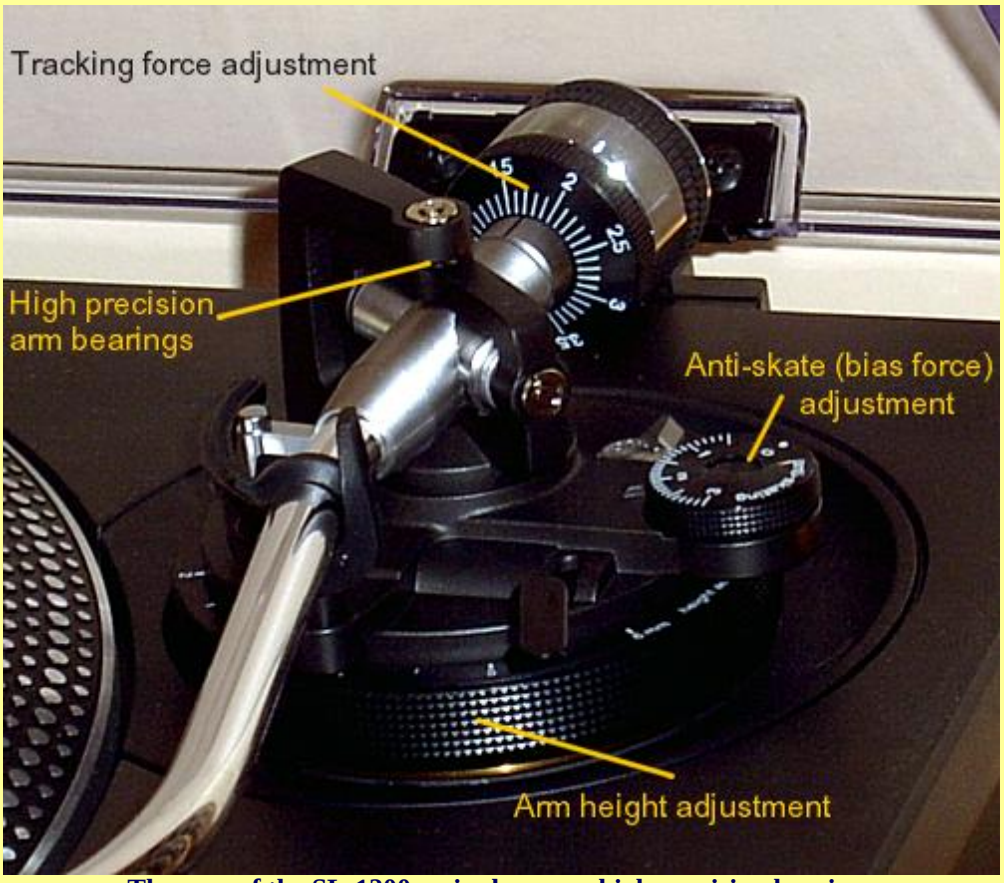
Note: The arm and main bearings can be replaced fairly easily, as can many other important components on the SL-1200 series.

The Hi-Fi press, and consequently many other music and so-called 'hi-fi purists' (Bahh!), seem to look

down their nose at the Technics. This is completely unjustified and is a great shame and may have denied thousands of people the accurate and enjoyable vinyl reproduction that they sought. I believe that the SL-1200 will sound better than most turntables of a similar price, or indeed many costing a good deal more than the 1200's very reasonable asking price.

It is perhaps unfair to say that the Technics has been 'hijacked' by club DJ's and the budding home DJ's fraternity. I should really say that the SL-1200 has been adopted! It is this adoption that has brought about a very beneficial consequence: Without these continuing DJ sales Technics may have ceased production some years ago thereby denying real vinyl enthusiasts access to one of the best sounding and most rewarding and exciting hi-fi products of all time.

So a BIG thank you to all the DJ's who have enabled the production of the world's finest turntable to continue. A big thank you to TECHNICS too for continued production!



The arm of the SL-1200 series has very high precision bearings

SPECIFICATIONS

Big clues as to why the Technics SL-1200 MKII sounds as good as it does:

Turntable Type	**FG Servo Quartz Direct Drive**
Wow and Flutter	**0.01%WRMS,** **+/- 0.035% peak**
Rumble	**-78dB DIN B**
Speeds	**33/45 RPM**

Tonearm Shape	**Universal S-Shaped**
Tonearm Offset Angle	**22°**
Tonearm Effective Mass	**12g**
Tonearm Bearings	**Polished to a finish of +/-0.5 microns Extremely low friction 0.007 grams**
Anti Skate	**0-3g**
Tracking Accuracy	**0° 3' inner groove** (12" record) **2° 32' outer groove** (12" record)
Standard Cable Capacitance	**100pF including tone-arm cable 8pF per 10cm approx**
Dimensions (W x H x D)	**453 x 162 x 360 mm**
Weight	**12 Kg**
Technics SL series turntables are still hand built in Japan and have become legendary with over 3 million sets being produced. All SL models feature the undisputedly accurate, reliable and durable Quartz Direct Drive Motor, with extremely high precision arm, precision Aluminium Diecast cabinet and heavy rubber base for vibration damping and total stability.	

Quartz Lock FG Servo:

Quoting KABUSA: "This is perhaps the best drive system available today. Not only is it dead accurate and stable. But the ability to correct for both static and dynamic load friction is uncanny. This, thanks to the frequency generator servo. Very few 'tables use this technology due in part to it's complexity and also patent infringement consideration. We are intimately familiar with one design the Technics SL1200 MKII. With this system, there are simply no speed variations. You can, for instance, rub your finger on the edge of the platter and the platter will hold perfect speed. We consider this to be a world class reference turntable. The economical price is misleading Since 1,000's are sold monthly worldwide." www.kabusa.com

You will find it very difficult, if not impossible, to find another turntable that has such a low rumble figure and such precise speed accuracy at anywhere near the price of the Technics SL-1200 MK2 turntable, or even at many times its cost. That is how well this turntable is engineered.

The fact that other turntable manufacturers offering devices costing up to many thousands of pounds do not publish any specifications must immediately raise a number of very serious suspicions.

It Really Gets My Goat!

I also get increasingly annoyed by some Hi-Fi magazines that continue to ignore genuinely great products, yet continue to write in glowing terms about products that they state are excellent and yet when I have heard them I know that the claims must be out and out lies - or else the reviewers have cloth ears or have been paid off by the manufacturer. I now know that such Hi-Fi publications must be spewing utter garbage. The only safe way to use such publications is to use

them for clues as to what's currently on the market, then go out and listen for yourself, taking care to ignore all the shop assistant's biased ravings!

Any potential hi-fi buyer really should audition any potential new purchase such as CD player, tuner or amplifier - and absolutely must go out and listen to important items such as loudspeakers, turntables and cartridges since these items will impose a very particular audio signature on the overall sound.

Choosing hi-fi is as much about the technical accuracy of a particular component as it is about personal taste. I doubt that many people could easily identify really significant differences between one amplifier and another (as long as they are from decent well respected hi-fi manufacturers) though I am not saying that there is none, but the differences can be quite small. However the differences between components such as loudspeakers and turntables is extremely significant (which is why I now have a Technics SL-1200 of course) as is the huge difference between different loudspeaker models.

Some links that maybe you should see:

Here is a magnificent example of some of the utter nonsense printed, in the guise of a serious review in a hi-fi magazine:

http://sound.westhost.com/madashell8.htm

Here are some brilliant examples that you might think could have been given Best Buy Five Star reviews in a certain hi-fi magazine. High Wot Fi?:

http://sound.westhost.com/satcure/scam.htm

http://www.wrightsaerials.tv/ymbj/directionalcoaxial.html

What Other Equipment Do I Need (further down this page) Digitizing Vinyl (further down this page)

1200 Thoughts

After living with and listening to various typical belt drive turntables I had finally realised that I had indeed been misdirected all along with these offerings. Only after careful consideration and being determined not to be influenced by magazines and dealers who appear to have some axe to grind, the only sensible route to take was to take notice of the specifications - and hear the truth of it.

From now on I will take Hif-Fi magazine's opinions will a large dose of salt.

Specifications can tell you a lot about a product, how well it has been conceived and its ultimate quality. True spec's cannot actually tell you how it will sound in the real world (you'll need an audition for that), but it's a safe bet that poor technical specifications will result in poor sound and that a machine with excellent specifications has a much better chance of producing good sound.

As it happens, the Technics SL-1200 has some of the best specifications in the industry with a highly specified FG servo direct drive system and solid and thoughtful construction. Of course these paper facts, as mentioned, do not guarantee great sound. It turns out though, that upon listening to the SL-1200 MK2, it does indeed sound magnificent, and this must be due to excellent design and engineering. The Technics is the only system that can guarantee absolute unerring speed stability and 'blackness' of background absent from belt drive spinners. No other turntable at its price or even several time its price can match the specifications of the Technics SL-1200 MK2.

I decided on the Technics SL-**1210** MkII because I wanted a black one, well it's Technics own very attractive dark gunmetal grey in actual fact – 1210 denotes black rather than silver. It's called the SL-1200 MKII PK in North America, by the way. Incidentally the MK5 version offers no significant improvement in the way of sound quality over the MK II for Hi-Fi use, merely having some cosmetic changes and ergonomic improvements for DJ usage. The construction is identical save for the better quality wiring,

gold plated sockets and removable phono inter-connect cable. The MKII has captive phono leads.

On unpacking the SL-1210, I was instantly impressed by its battleship build quality and its super-fine engineering quality. Everything about this turntable exudes precision quality. No electric motor glued to the underside of a bit of MDF, or chipboard platters here! The Technics is different to anything else I have seen or heard - it is precision engineered in every way and sports a balanced and rubber-damped METAL platter!

The Technics arm is a precision instrument with bearing tolerances of 0.007mm (another specification other turntable manufactures seem reluctant to quote). The arm is a fairly low mass affair (12g) the wand of which is of the classic 'S' shape and incorporates a useful SME type removable headshell. If you are a follower of trends, the 'S' shape may seem slightly 'old hat' since many other turntables use straight / tapered arms, but I think the Technics arm looks extremely business like and very elegant and having listened extensively proves its worth in every way.

Incidentally the 'S' shape does perform a practical function, as does the taper of a straight arm, in that it eliminates standing waves along the arm, which would otherwise degrade the sound quality.

The Cartridge

The Technics headshell will accommodate all standard ½ inch mount cartridges, such as moving magnet types from Ortofon, Goldring, Shure, Grado and Audio Technica.

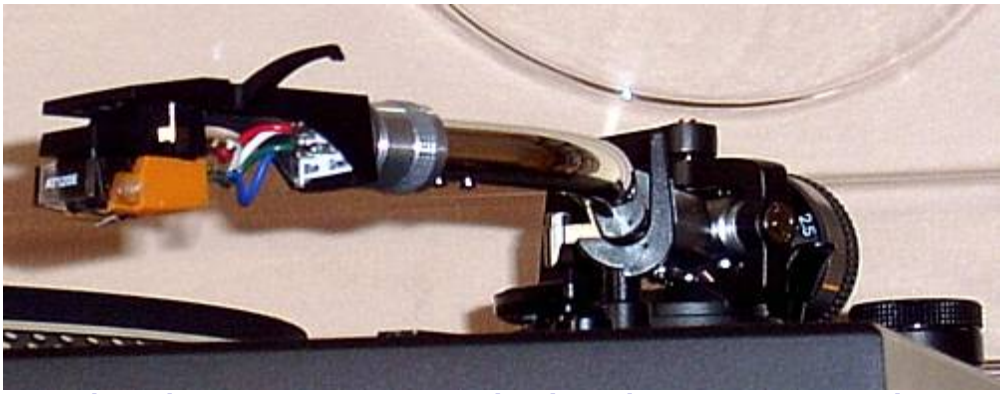
I opted for an Audio Technica AT120E, since I have had very good experiences with other Audio Technica cartridges.

I removed the headshell from the arm and used the cartridge gauge, supplied with the Technics SL-1200, to set the specified overhang when fitting the AT120E. After re-fitting the headshell onto the arm (with the AT120E lightly screwed into place) I also used my "Baerwald" cartridge alignment protractor to check to make some very fine adjustments that I hoped would ensure absolute tracking accuracy:

You can download a very useful Baerwald Protractor as a PDF from the Vinyl Engine. Make sure that you print it out very accurately, otherwise it will be worse than useless, and laminate it if possible. Find it here:
http://www.vinylengine.com/manuals_tonearm_protractors.shtml

Once the turntable had been made completely level by the use of a spirit level, and the tracking weight and anti-skating force had been correctly set to Audio Technica specified 1.7 grams, it was time to play some records.

Read more about Cartridges and setting up HERE >>



The Technics SL-1210 MK2 Arm and Audio Technica AT120E/T Cartridge

While the Audio Technica AT120ET cartridge really is excellent and I can recommend it very highly indeed, there are plenty of high quality alternatives available if one wants to consider a different pick up.

Next >

Cartridges

Record Care & Cleaning

Vinyl Heaven 4

High Quality RIAA Phono Preamp

Revolver

Some other choices might be the Ortofon 2M Red, 2M Blue, Super OM10, OM20 or OM30, the Shure M97XE or a cartridge from the wide Goldring range, maybe the new 2000 series.. Some cartridges offer styli with 'Fine Line' type profiles – much smaller diamond tips that can extract even more information and musical detail from the record groove.

You can see more about Cartridges Here >

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Why consider anything else?

The SL-1200 MK2 is completely different to any other turntable that you may be familiar with – you know the ones, they cost hundreds in the first place and then, when users find the results lacking, despite spending hundreds more on those endless 'essential tweaks' they still just don't ever sound quite right.

From my experience no other turntable comes close for sensible money, and I doubt that spending stupid money on some other turntable would provide a worthwhile improvement. For my money the Technics SL-1200 is head and shoulders above the alternatives.

If anyone now asks me "What is the best turntable you can buy?", I will simply tell them not to waste time even thinking about other turntables and certainly not to waste any money buying one - just buy a Technics SL-1210 MkII and they just cannot go wrong.

The SL-1200 MkII sounds perfect from the moment you start playing records, it is representative of serious engineering quality and musical reproduction. No tweaking needed - no endless expensive upgrades - just sit back, relax and enjoy more and more and more music. And that's what hi fi should be all about - shouldn't it?

-

More background needed?

So now you know exactly why the next (and last) turntable you should buy is a Technics SL-1200 MKII, but let me indulge you a little more by including a few more background words.

When CD's were launched in the early 1980's, I already had a substantial collection of LP's and 45's that I loved. Early adopters of the CD format, in those far off days, said that vinyl (LP's and singles to you and me) were dead. I did not quite believe the 'vinyl is dead' statement then and I'm glad I didn't, otherwise I might have sold or given away all my precious records.

Having said that, the sound from my records was just not good enough on my old belt drive turntable, and when compared directly with a CD the sound of vinyl was unquestionably worse. CD's were sharper and cleaner, and devoid of end-of-side and tracking distortions. CD's, of course, also lack the 'ticks' and 'pops' of a dirty LP and singles, but more of that later >.

Wow

I am quite sensitive to speed fluctuations and quickly notice 'wow' on tape decks and turntables. Wow and flutter is completely absent from digital playback, but can plague magnetic tape and vinyl reproduction. Wow is the effect of the speed moving up and down from the mean pitch slowly, while flutter is the effect of the speed varying up and down from the mean pitch very rapidly and will blur and spoil musical detail. Some players are quite good while others are quite poor - the effect being obvious and completely unmusical, spoiling the enjoyment of an otherwise perfectly good record. Even small, almost imperceptible, speed errors will cause subtle timing problems that will detract from pure musical enjoyment.

Wow is a particularly disconcerting effect that can affect belt drive turntables (and tape machines), it may be caused by a badly engineered motor or motor spindle or a stretched and slipping belt for example. The belt drive system a very low torque and so relies on the flywheel effect of the platter in order to maintain its speed. Sadly many turntable platters are very lightweight especially, it seems, when they are made out of a simple piece of MDF or the like!

The belt can cause other problems, being elastic, it is a very lively affair which will inherently introduce

unwanted resonances into the drive system which will degrade the sound, the tension will also be pulling against both the motor and the platter spindle and bearing which will cause uneven wear in the bearings. Additionally on most familiar turntables the motor is screwed (or glued!?) on to the piece of MDF that supports the spindle bearing of the platter leading to a common problem of motor noise and poor signal-to-noise ratio.

The motors usually used in belt drive turntables are usually be simple AC affairs which are prone to speed errors due to fluctuating mains frequency. Some such turntables are also well known to be prone to running at the incorrect speed, so records will play at the wrong pitch. Without very high quality electronic speed control these turntables will almost inevitably be probe to unwanted speed errors and fluctuations. Some turntables use DC motors with electronic servo control to help reduce speed errors, fluctuations and wow. Apparently, however, DC servo motors can also cause some flutter as the speed is constantly being corrected at a very rapid rate.]I did find that the DC Servo motor in the Rotel RP855 ran spot on the correct speed and with good stability and in this respect scores better than those tables that use AC motors that famously run at the incorrect speed.]

Bad timing - It's a drag!

Apart from 'wow', there other speed inconsistencies inherent with “ordinary” belt drive turntable motor systems that will cause speed, pitch and timing problems, these are the effects of stylus drag.

There are two types of stylus drag, static drag and dynamic drag. Static drag occurs when the stylus is lowered onto the record, it tends to slow the rotational speed of the platter, this applies particularly to belt drive turntables that have low torque (turning power). Towards the end of the record there will be less stylus friction and increased torque available, the rotational speed could therefore increase towards the intended speed - so the speed can vary across the side of an LP.

Additionally dynamic drag occurs in the few moments during and after a loud (highly modulated) sound as the energy is dissipated by the stylus causing increased friction and drag on the rotating record and platter.

Static and dynamic drag will cause subtle speed and timing problems and can only be overcome by extremely heavy belt driven platters (very rare indeed, and very costly) or the type of extremely accurate frequency generator quartz lock servo systems used in the Technics SL-1200 series of turntables.

All speed problems are totally undesirable but are thankfully completely solved by the Technics SL-1200 MK2 system. Not all turntables are the same though, and I doubt that any turntable under £1000 can match the absolute accuracy of the Technics!

Solid & Unerring Stability -
The Highly Entertaining Technics SL-1210 MK2

Propaganda?

Despite the obvious benefits of a technically advanced and well implemented direct drive system of the type used in the Technics SL-1200 MK2 (which solves all of the above problems), due to misconceptions, misinformation, blinkered views, general stubborn ignorance and some downright propaganda by some hi-fi enthusiasts and hi-fi press, the 'Belt Drive' turntable has long been held up as the only way play your vinyl. It appears that the belt drive turntable ended up on this undeserved pedestal due to the fact that there were some cheap and badly designed 'Direct Drive' turntables on the market in the 1970's and 1980's that did sound very poor and so tarnished what should have been the good name of the direct drive system - especially when it is properly and lavishly engineered, as is the case with the SL-1200 system.

It's also probably true that it is easier and cheaper to engineer an 'okayish' sounding belt drive turntable than it is to produce a good quality direct drive machine. For these reasons the compromised belt drive turntable seems to have prevailed in the high street hi-fi shop.

What has been (conveniently) forgotten by the hi-fi journalists and so-called enthusiasts is that when properly designed, engineered and manufactured, a direct drive turntable solves all of the problems and inadequacies inherent in all belt-drive designs.

From my experiences so far all the problems that I had previously encountered with vinyl reproduction, bar dirty records, have been completely solved with the Technics SL-1200 MkII – the music now flows perfectly, this is surely as a result of the solid and unerring accuracy of the excellent quartz lock direct drive system. Also what is also readily apparent is that audible mis-tracking and tracking error distortion has evaporated now that the Technics SL-1200 MkII is employed for vinyl playback.

The main consideration now is cleaning dirty records and then keeping them clean. See Record Cleaning here.

STILL ALIVE

In 2007-8 vinyl is still alive, and interest in the format is actually growing. Vinyl records are still precious however, and it is more important than ever to preserve them by using a high quality turntable – that turntable is the Technics SL-1200 MkII.

THE TRUTH IS PLAIN FOR ANYONE TO HEAR (The reason that I wrote this page)

If only everyone buying a turntable realised the real truths that I have discovered from my research and through careful listening, then there would not be the continued heartaches, headaches and bank-balance aches of people striving to make their bits of belt driven MDF sound like real music with endless and fruitless tweeks and money draining 'essential upgrades'.

I have written these pages because I feel frustrated that, while I knew that vinyl LP records could sound excellent, none of the solutions promoted and suggested to me could deliver good enough quality at an affordable price. It was not until I did my own more detailed research that I found the perfect solution which had, annoyingly, actually been available all along, from day one in fact!

The SL-1200 had been staring me in the ears (what?) all along. If only I had seen it long ago.

The Technics SL-1200 Mk2 is a one time purchase – you just know it's right from day one, and it will continue to be right.

PROS AND CONS

Pros
Remarkably clear, detailed, punchy and highly musical sound.
Smooth fine treble and well defined bass.
Lack of distortion.
Excellent tracking performance.
Change between 33 and 45 rpm with the touch of a button.
FG Servo Quartz Direct Drive assures absolute speed accuracy.
Excellent signal to noise ratio.
Ease of set up, very good instruction book.
Adjustable feet.
Very heavy and solid construction.
Feedback immunity.

Cons
No phono plugs for audio output (MKII) - connecting lead is fixed so could not easily be changed, though it appears to be of excellent quality anyway and it would be doubtful that a change would offer any real improvement. (MK5 offers gold plated phono sockets rather than captive cable)
When releasing the arm from the arm rest one has to remember to raise the cueing lever before moving the arm over the record. Not really a problem, it might just be different procedure to other turntables.
Styling might be regarded as somewhat out of vogue and the finish of the moulded rubber base is slightly rough in one small patch, perhaps due to the different properties of rubber compared to plastics.

Overall
As you will have gathered I believe that the Technics SL-1200 MK2 is an unbeatable package at the price given its extraordinarily good sound quality fabulous build quality and sheer convenience in use. Okay, it may not look like the most modern piece of hi fi, but when one remembers the quality of design and engineering, unmatched by its peers, that hardly matters one jot. Personally I think it looks rather beautiful with classic hi-fi appeal.

Where To Buy YOUR Technics SL-1200 MK2

As with any piece of sophisticated equipment, such as the Technics SL-1200 MK2, the only safe option is to buy from an approved and authorised dealer. It is only in this way that users will be able to obtain the proper after sales support.

In the UK there should be numerous authorised dealers. SUPERFI is a highly respected hi fi dealer and stocks various Technics SL-1200 models. Visit http://www.superfi.co.uk/index.cfm/page/moreinfo.cfm/Product_ID/228

In North America the renowned Technics turntable experts are KAB Electro Acoustics. There is probably nothing that KAB's Kevin Barrett does not know about the Technics SL-1200 line. Visit http://www.kabusa.com

WHAT OTHER EQUIPMENT WILL I NEED ?

You may already own some sort of stereo system, in which case if its amplifier has a turntable input it will simply be a matter of connecting the turntable (according to the manufacturers instructions) to the phono input.

Place the turntable on a very solid and stable cabinet or a good solid shelf. (No wobbly equipment racks or hi-fi units please.)

The excellent sound quality of the Technics SL-1200 will be immediately apparent on a high quality separates hi-fi system. The improvement is so vast when compared to ordinary 'midi' style record decks, that listeners will probably appreciate the high quality sound even on midi, mini and micro systems.

For the very best musical enjoyment good quality hi-fi separates should be used, although it is not necessary to spend a large amount of money to obtain a taste of real hi-fi sound.

Cartridge:
As mentioned, it will be necessary to fit a suitable cartridge. I can highly recommend the Autio Technica AT120ET. The Audio Technica AT110E is also an excellent cheaper alternative. Cartridges from Ortofon also come highly recommended.
Find out more on the 'Cartridges' page here.

Amplifier:
A good amplifier from a well known hi fi manufacturer, such as Marantz or Denon, can be bought for between £150 and £300 and will probably be all that most people need to enjoy superior results. There are a number alternatives such as those from Cambridge, NAD, Yamaha, Musical Fidelity and Arcam for example with quite a wide variations in price. £400 to £500 will buy a superb amplifier, but remember to audition first!

Phono Pre-Amp:
A turntable needs a special input on a hi fi amplifier in order to work. Many amplifiers sadly omit this facility and it is then necessary to use an external phono pre-amp which can be connected to one of the amplifier's ordinary Line inputs. **Read more on the 'Cartridges' page here.**

If you are handy with a soldering iron you can even build your own extremely high quality phono pre-amp that could very well sound better than anything that you can buy ready made! **Read more about the High Quality Hi Fi RIAA Phono Pre-amp HERE**

Speakers:
A pair of top quality speakers is of utmost importance. Loudspeakers have the most significant influence on the overall sound of a hi-fi system, but there is plenty of choice available. Because speakers from different manufacturers have noticeably different sound characteristics it really is absolutely essential that they should be auditioned before buying. Good quality budget loudspeakers will cost between £180 and £300. Look out for names such as Mission, Acoustic Energy, Tannoy and Monitor Audio for example. The very best sounding speakers will cost somewhat more but will offer a far more detailed, fullsome and musically rewarding sound. Look out for the names Epos, Opera, Revolver and Proac for example consider spending £350 to £800 in this range.

My favourite speakers are Epos and Mission and also the old JPW brand whose directors now run Revolver Audio.

DIGITIZING VINYL RECORDS

It is quite a straightforward matter to record vinyl records onto a home computer (PC, laptop,

Mac) in order to make 'wave' files that can then be made into a CD, or mp3 files that can be used on any portable mp3 player. For the very highest audio quality it is best to save each track as a wave file (.wav) when considering burning them onto a CD. In order to save hard drive space on a computer or MP3 player then another option is to create .mp3 files. MP3 files (and other compressed files such as .ogg .aac and .wma) are popular because they can be as little as one tenth the size of wave files, but being highly compressed do not sound as good.

How to digitize your records:

(First of all don't whatever you do, be tempted to buy one of those crummy plasticky 'USB' style (or similar) turntable packages that you'll see advertised in all sorts of magazines, neswpapers, shops and gadget websites. These packages promise to turn your valuable collection of vinyl records into digital mp3 files on your home computer, BUT the turntables provided are absolutely useless - more like lathes than precision audio equipment. They are cheaply made have the most rudimentary spring loaded arms that track at FAR too high a weight and not only sound absolutely dreadful, but will also damage you records. Be Warned! AVOID! - If £120 really is all you want to spend, then buy a Project Debut III which at least has a reasnable arm and decent cartridge. - But I hope that, thus far, I have convinced you that the ONLY turntable to buy is a Technics SL-1200 MKII. Sermon over).

The output of a phono pre-amp or the tape loop output of a hi fi amplifier must be connected to the input of the computer sound card. Generally a fairly inexpensive stereo jack to phono plugs lead is required to do this. Such a lead has two RCA Phono plugs for the left and right channels on one end - these are connected to the left and right outputs of the phono preamp or the tape loop outputs of the hi fi amplifier. The other end has a stereo jack plug which is connected to the audio input of the computer's sound card.

Open the "Control Panel" in Windows (XP) and click on "Sounds and Audio Devices". Click on the tab marked "Audio" and ensure that the Sound Recording is via the main soundcard (e.g. Creative Soundblaster or whatever the main soundcard is installed in your particular PC) - this needs to be set as the 'Default Device' from the drop-down menu. Additionally it might be wise to ensure that Sound Playback is also via the main soundcard - again this can be set as the 'Default Device' from the drop-down menu. Click "OK"

Next, from the "Sounds and Audio Devices" window (accessible from the Control panel) click on the "Sounds" tab. Then click on the "Advanced" button. This will bring up the "Playback Control" window which will have a number of volume 'sliders' on it. (incidentally this can also be accessed by right clicking the volume control icon in the task bar near the clock and selecting Open Volume Control.). From the "Playback Control" window select "Options" then "Properties". In the "Properties" window click the "Recording" button and make sure that box adjacent to the option called "Line In" has a tick in it. Click "OK". The window with the sliders on it will now be showing the "Recording Control" and the slider marked "Line In2 should be ticked and it should be pushed to the top.

The PC is now ready to accept and record the audio input from the Turntable/Amplifier. To make successful recordings and be able to edit them into useful sound files some special software will be needed. Some options are described below:

The Programs:

Audacity - Perhaps the best program for recording and editing music on a computer is Audacity, and what's more it's free. It can record your records and save them as high quality wave (.wav) files which can then be burned to CD using a program such as Windows Media Player, Nero or Easy CD Creator. Alternatively there is a free 'plug in' available for Audacity called Lame which will allow the recorded tracks to be converted to MP3 files at various levels of compression. 128kbps should be seen as the absolute minimum bit rate with 160 or 192 kbps being preferred for better quality.

The Lame encoder has to be downloaded separately as a zip file and once the contents have been unzipped a single DLL file called lame_enc.dll simply has to be copied and pasted into the Audacity program folder. Comprehensive instructions are available from the help files and various websites.

To obtain Audacity and Lame please visit:

http://audacity.sourceforge.net/

http://audacity.sourceforge.net/help/faq?s=install&i=lame-mp3
http://www-users.york.ac.uk/~raa110/audacity/lame.html

Declan Kelly kindly suggests that you might consider FLAC as an option for people wanting to compress WAV files without loss of detail. FLAC typically gets WAV files down to 50% or less of their size, and can be played back in most music player software (though not all portable devices support it). It is mainly useful for archiving, as it un-compresses back to the original WAV with no loss of information.
Visit the website at: http://flac.sf.net

Sound Cards - Some computer sound cards may come with recording software of some sort. For example Creative Sound Cards may come with an application called Wave Studio. Wave Studio is not as comprehensive as Audacity, but may be adequate for most purposes.

AudioGrabber – There is another free program called AudioGrabber which when you first open it looks merely like a CD ripping program (which it is) but it can also do a lot more than rip CD's: If you select the "Line In Sampling" option from the file menu, AudioGrabber can also record the sound input to the sound card.

Helpfully AudioGrabber adds some automation to the process of recording LP's by automatically splitting the tracks. I must add that there needs to be sufficient silence between the tracks in order for it to works correctly, and that it can tend to curtail very quiet lead-in and lead-out tracks. I have used Audiograbber many times with generally good results.

It must also be noted that this program also needs the Lame encoder to make mp3 files, that is if one does not wish to only work with wave files. Like Audacity, Lame has to be downloaded separately as a zip file and once the contents have been unzipped a single DLL file called lame_enc.dll simply has to be copied and pasted into the AudioGrabber program folder.

To obtain AudioGrabber and Lame please visit:

http://www.audiograbber.com-us.net/

http://audacity.sourceforge.net/help/faq?s=install&i=lame-mp3
http://www-users.york.ac.uk/~raa110/audacity/lame.html

Help

There are many help files and pages concerning setting up a PC to record audio and make wave and mp3 files using these programs, and I hope that what is written here is helpful to you and encourages you to have a go!

Cartridges

Record Care & Cleaning

Vinyl Heaven 4

High Quality RIAA Phono Preamp

More About Cartridges and Other Things Here >

Cartridges > **Cleaning Your Records >**

More Testaments To The SL-1200 MkII >

Build A High Quality RIAA Phono Preamp >

Real Stereo

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[Oh, by the way, I don't work for any company or organisation that has any connection with the manufacture or sale of the Technics SL-1200 series turntables. It is when one experiences an epiphany as great as the one I have experienced with my SL-1210 MkII that realise that you just need to shout it from the rooftops. Lacking any suitable rooftops, I am shouting it from the world wide web!]

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LINKS

Links to other Technics SL1200 websites:

RESOURCE: KAB USA - The Technics Turntable experts: http://www.kabusa.com

TNT Audio - Technics SL1200 - review 1: http://www.tnt-audio.com/sorgenti/technics_sl1200_e.html

TNT Audio - Technics SL1200 - review 2: http://www.tnt-audio.com/sorgenti/technics_sl1200_2_e.html

SUPERFI - UK Hi-Fi experts: http://www.superfi.co.uk

Vinyl Engine - an extensive resource centre: http://www.vinylengine.com

OTHER LINKS

Please see subsequent pages for more links >

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