

Reference Series - MC Transformer

High quality step up transformer for Moving Coil Cartridges



The Reference Series MC Step Up Transformer is a high quality transformer based step up device designed for low output moving coil cartridges & is available as an optional add on for owners of our Phono Preamplifier for a superb reference grade sound quality which compliments vinyl perfectly.

Every MC Transformer is made to order personally for each customer, each one being completely hand built with attention to every detail & personalised with a specific build code unique to that individual build.

This is designed to work with virtually any moving coil cartridge & being transformer based provides superb low noise results & excellent sound quality which compliments vinyl perfectly. This is ideal for anyone who is looking to get the very best sound from vinyl with the reassurance of quality British design & build throughout.



As with all of our Reference Series products the MC Transformer is the result of much design & prototyping in order to achieve the results we were looking for. Listening to our own vinyl collection which includes both original & many recently released high quality pressings, we feel this will appeal to like minded enthusiasts like ourselves looking for something a little more special & is a product we feel is another worthy addition to our Reference Series.

Variable Resistive Cartridge Loading...

Another feature we have built into the design of the MC Transformer allows full control over the cartridge loading. Rather than having the loading preset at a fixed value internally which may not suit all cartridges, we have included a switch so you can adjust the loading to suit your own cartridge or preference.

In combination with our Phono Preamplifier which features selectable input impedances of 47K & 100K, a much wider range of loadings can be accomplished to suit virtually any cartridge (see below).



The following chart shows how the resistance & transformer ratio settings effect the actual loading value as seen by the cartridge. Please refer to this chart when using our Phono Preamplifier with the input impedance set to 47K.

Resistance	Ratio Setting: +20dB (1:10)	Ratio Setting: +26dB (1:20)
10K	82 ohms	20 ohms
20K	140 ohms	35 ohms
30K	183 ohms	46 ohms
50K	242 ohms	60 ohms
75K	289 ohms	72 ohms
OC	470 ohms	117 ohms

The following chart is just as above, except this time the input impedance of the Phono Preamplifier has been set to the 100k setting, the following chart shows how this effects the cartridge loading values.

Resistance	Ratio Setting: +20dB (1:10)	Ratio Setting: +26dB (1:20)
10K	91 ohms	23 ohms
20K	166 ohms	42 ohms
30K	230 ohms	57 ohms
50K	333 ohms	83 ohms
75K	428 ohms	107 ohms
OC	1000 ohms	250 ohms

Designed for use with our Reference Series Phono Preamplifier...

The performance of our MC Transformer, including the measured technical specifications, are only valid when used with our matching Reference Series Phono Preamplifier of which the MC Transformer is primarily designed for. This combination provides excellent measured performance/technical specifications ensuring a reference grade sound quality which lacks any audible distortion/colouration, with a highly accurate RIAA frequency response to ensure a balanced & neutral sound.

This also goes a long way to avoiding the common issue when choosing step up transformers of trying to find good matching combinations that compliment one & other, sometimes referred to as "synergy" because it can be difficult enough finding the right cartridge to suit your own preference without the phono stage & step up transformer further adding to the problems.

Two gain settings to suit a wide range of cartridges...

When choosing a moving coil cartridge they can vary significantly in output voltage, the most common is 500uV (0.5mV) while some are even lower at 200uV (0.2mV). Compare this with a moving magnet of 5mV & it is easy to see why a step up device is essential.

Usually the disadvantage when choosing a transformer based step up device is which ratio (gain) do you choose for your cartridge. Too little & there will not be enough voltage gain, too much & you could overload your phono stage.



This is why we have included on the front panel a ratio switch as this changes the actual transformer step up ratio from 20dB to 26dB. This allows a 0.5mV cartridge to be raised to a perfect 5mV output but also gives the option of extra boost when needed for raising those very low output cartridges while maintaining the advantage of extremely low noise.



Variable Compensation...

Another feature we have included unique to the MC Transformer is the compensation adjustment, this ensures that cartridges of any impedance will perform optimally with the transformers, regardless of whether it be a 2 ohm or a 40 ohm cartridge.

Quite often manufactures will just have a fixed setting, while some may offer to optimize to a certain cartridge during the build stage. However, if you change cartridges or own more than one then it makes sense to be able to adjust this, essentially giving you the control to optimize the SUT to suit your own cartridge.

Selectable transformer ground...

We have also included three different grounding options, this allows you to experiment with alternate grounding schemes to ensure perfect results with any turntable.



TECHNICAL SPECIFICATIONS*

Input Impedance:	Six User Selectable Positions from 10k to 75k
Recommended Input Range:	0.15mV to 0.5mV or higher
Maximum Input Level:	1000mV
Frequency Response:	5Hz - 150kHz (-3.0dB @ 150kHz)
Total Harmonic Distortion: (Input=0.5mV (12Ω) / Output=10mV)	0.03% (30Hz) / 0.01% (1kHz) / 0.009% (10kHz)
Maximum Output: (Input=0.5mV)	5mV (+14dB) - 10mV (+25dB)
Stereo Crosstalk:	-124dBu (1kHz) / -110dBu (10kHz) / -104dBu (20kHz)
Warranty:	3 Years UK Warranty
Overall Dimensions/Weight:	210mm x 115mm 70mm (LxWxH) / 1.4Kg
Items supplied in box:	Reference Series MC Step Up Transformer, Instruction Booklet, receipt & ground cable.

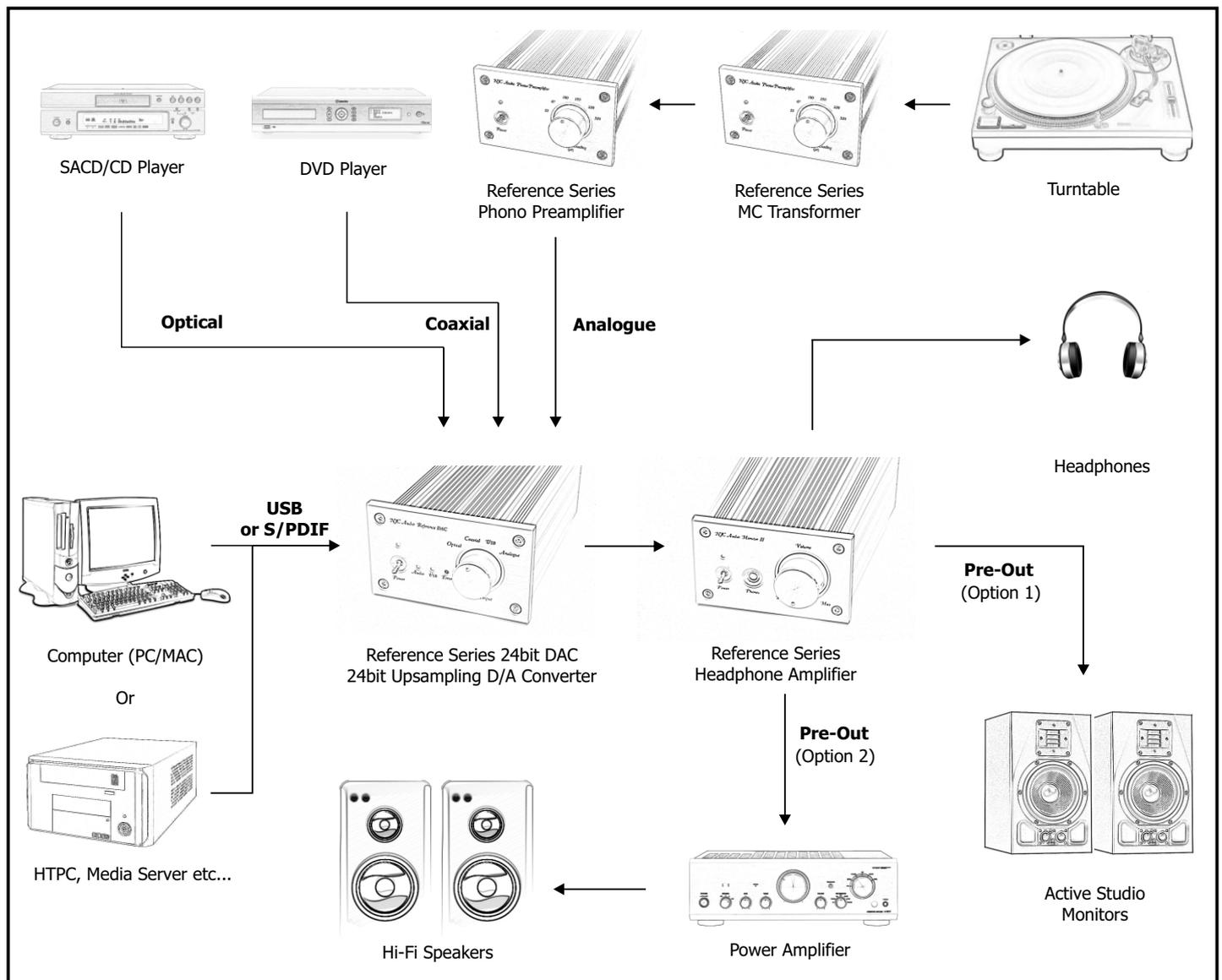
*Test equipment professionally calibrated to UK standards

Connections...

At the rear of the MC Transformer are two pairs of high quality Neutrik gold plated RCA connections, one pair consisting of the "Phono In" for connecting to any moving coil cartridge, with another pair for the "Phono Out" which connects directly to the input of our Phono Preamplifier. Also at the rear of the unit is a grounding post for the turntable, if your turntable has an earth wire then connect this here.

The "Phono In" can accept any moving coil cartridge, ranging from approx 80uV (0.08mV) to 500uV (0.5mV). Never connect anything other than a low output moving coil to the phono input on the transformer.

Shown below is an example of what can be achieved when using a turntable with an MC cartridge, the MC Transformer with Phono Preamplifier, reference headphone amplifier to drive headphones or used as a high quality pre-amp, all combined with the 24bit Reference DAC which allows three digital inputs & one analogue input which can easily be used to incorporate the turntable & phono preamplifier into the entire set up.



3 Year Guarantee....

The MC Transformer is guaranteed for 3 years which is there for peace of mind, if anything should require attention or repairing during this time (even though it would be highly unlikely), then this would be free of charge, terms & conditions are available on our website.



3 Year Warranty

Designed & built by enthusiasts, for enthusiasts.

NJC Audio - Quality British Engineered Audio Equipment
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Hand Made in England