



## **M10 Signature**

REFERENCE  
LINE LEVEL  
PRE AMPLIFIER

**OWNER'S INFORMATION**



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# ! IMPORTANT SAFETY INFORMATION !



## **RISK OF SHOCK OR ELECTROCUTION! INTERNAL OPERATING VOLTAGES ARE LETHAL!**

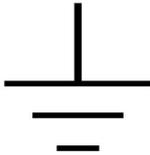
Do not remove top cover, unless specifically instructed to do so in the user manual.

This unit contains fuses and other safety components in accordance with BS60065 requirements.

In the event of failure, replacement fuse or safety component must be of the same part type and value.

### **SUCH REPLACEMENT MUST ONLY BE CARRIED OUT BY A QUALIFIED SERVICE TECHNICIAN.**

Do not attempt to replace any fuses without first disconnecting the unit from the mains electricity supply.



This product must be earthed – ensure that the mains supply cable earth / ground is correctly connected.



This product generates high levels of heat. Adequate ventilation must be provided. Do not restrict airflow through any ventilation slots or place the unit on any surface that may restrict airflow.

Valve equipment operates at extremely high temperatures;  
**KEEP OUT OF THE REACH OF CHILDREN AND ANIMALS.**



Do not store or operate this unit in areas of high humidity or in close proximity to water / moisture.

Do not expose or immerse the unit in liquid of any kind.

### **OTHER SAFETY PRECAUTIONS: -**

Never touch the power cord with wet hands.

Always remove the power cord by grasping the plug, not the cable.

Never expose the unit to excessive heat or magnetism.

Never let an inexperienced person repair or reassemble the unit.

Never put anything, especially metal objects, inside the unit.

Never place excessive weight on the unit.

# CE DECLARATION OF CONFORMITY



We declare under our sole responsibility that this product is in conformity with the following standards or standardized documents:

BS EN 60065 in accordance with the regulations 73/23/EEC, 89/336/EEC (from 1 January 1997)

CE 94

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## DISPOSAL

This product must not be disposed of as normal household waste. To prevent possible harm to the environment please separate the product from other waste to ensure that it can be recycled in an environmentally safe manner. Please contact your retailer or the appropriate local government office for collection facilities.

## POWER REQUIREMENTS

Power requirements for electrical equipment vary depending on your geographical location. Please ensure that your unit meets the power requirements in your area. The power requirement for your unit is marked on the serial number plate, located on the rear panel.

If you are in doubt, please contact your dealer before plugging the unit into the mains supply.

## INTRODUCTION

Thank you for purchasing this Audio Note (UK) product. With the correct care it should give you many years of pleasure and enjoyment.

Please take the time to read all of the information in this manual before connecting your new component to an electrical supply or your system, to ensure both your safety and satisfaction.

Please note that due to our desire to continually improve products, specifications are subject to change without notice. Therefore it is important to refer to the manual that is supplied with your product for the most accurate information; manuals downloaded from our website or obtained from other sources may no longer fully apply to your product.

If you have any questions regarding the information contained within this document or your new component, please feel free to contact us: -

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## M10 SIGNATURE PRE AMPLIFIER

Congratulations on your purchase of the Audio Note (UK) M10 Signature Pre Amplifier. It is without doubt or question, the finest Line Level preamplifier in production today, and is a full Audio Note (UK) Level 5 product. No other preamplifier has ever managed to retrieve such incredible levels of detail, resolution and sheer musicality from your recorded music collection. Its performance will astound and amaze you, and invite you into a world of musical experience that you had previously only imagined.

It is well known that the accurate reproduction of music, not just sound, requires the purity of the incoming signal to be preserved. It is therefore not difficult to conclude that, in order to achieve this goal and to retain the musicality of the original performance, the complexity of the circuitry itself must be kept to a minimum.

In response to this, the M10 Signature preamplifier uses a single-ended, zero feedback circuit topology. This is simply the most linear design possible, demanding pure Class A valve operation and removing the need for a phase splitter, which introduces unnecessary crossover distortion.

In contrast to the majority of the audio industry, we design our circuits with the aim of minimising non-harmonic and time base anomalies, rather than producing vanishingly small harmonic or low intermodulation distortion measurements. These non-harmonic amplitude and time base distortions have a highly perceptible and adverse affect on the signal waveform, and it is far more important to address these factors than participate in the increasingly irrelevant numbers game that chases 'perfect measured response'.

As a result, the M10 Signature was designed for maximum linearity and minimum transient distortion, and avoids the need for detrimental 'corrective' measures, such as inherently error-prone feedback loops.

Rather than using separate controls for volume and balance, the M10 Signature preamplifier is equipped with a dedicated Audio Note (UK) stepped attenuator for each channel. This not only brings the enormous improvements in sound quality expected from the now legendary Audio Note (UK) stepped attenuators, but also provides a level of channel balance accuracy that is impossible to achieve with conventional volume and balance potentiometers.

The M10 Signature features two pairs of correctly engineered balanced / XLR inputs for sources with suitable balanced outputs. Each input is connected directly to an in-house custom designed and produced, silver wired input transformer, which offers the finest possible input for your XLR Line level source outputs.

Each channel is powered by an independent external power supply, based on the Galahad design, first used in the standard M10 Line preamplifier. The M10 Signature version takes this design and improves on it significantly; more about the design concept of this and the rest of the M10 Signature circuit can be found in the section below entitled "*An Introduction from the Designer*".

As one would expect, the output transformers for the M10 Signature are the finest possible examples we can produce. Each transformer is fully silver wound, and feature our own 55% nickel iron C-Cores.

## AN INTRODUCTION FROM THE DESIGNER

*Andy Grove, Designer in Chief for Audio Note (UK) explains some of the development process behind our new statement line stage: -*

"I realised the core concept of the M10 power supply "Galahad" while I was doing some theoretical work on amplifier topologies. I was analysing compound amplifiers which are connected by bridge circuits, or in other ways, such that one amplifier will correct the output of the other by subtracting distortion from the output. QUAD "Current Dumping" is one such configuration of the many possible.

What I came to think was that, theoretically at least, one could build a simple circuit using a single valve which could completely reject not only all voltage fluctuations from the mains, but which would, to all intents and purposes, be entirely isolated from the mains in every way. Not only that but the output impedance of the supply would be fixed, even across the audio band, and all this would be achieved without high feedback or complex "engineer's ego trip" solutions with hundreds of active devices.

The way this would work, essentially, is that I would use a shunt valve to look ahead at the incoming fluctuations, and to pass a current such that the fluctuations are completely removed. This isn't possible with a feedback topology; for feedback to work there must necessarily be an error to correct. The circuit looks at the error at the output and tries to correct it; therefore there must be an error at the output.

The problem with the kind of setup I was looking at implementing was that they require extremely tight tolerances to work, and valves generally do not provide that, they age and there is sample-to-sample variation. This was the downfall of these schemes in the past – when the circuit drifted off balance then what you are left with is often worse than where you started.

What I realised is that by juggling the arrangement of resistors and the valve transconductance I could eliminate, or at least minimise, the effect of drift and ease up the effect of component tolerances, thereby creating a practical PSU topology.

The question might be asked, "Well, why not just use a conventional power supply?" The answers to that question are: -

- 1) All components inject colourations – even the best components.
- 2) PSU capacitors tend to damp musical dynamics.
- 3) A conventional PSU has an uneven impedance across the audio band.

I saw that the new Galahad configuration had the potential to bypass the above problems, and I knew within my heart or sixth sense that it would work and sound good. I'd had experience with lesser versions of it in the past, and they were very promising, and here I was looking at the ultimate configuration.

## AN INTRODUCTION FROM THE DESIGNER *continued...*

I created a working model of this power supply at Audio Note (UK), and we assembled a very high-end version of what was essentially an M8 preamp to be powered by it, and the results were really mind blowing.

At the same time I designed a special input transformer to receive balanced signals, this transformer has exceptional noise rejection powers, yet has an equally exceptional bandwidth and very low distortion. Of course this component is also wound using silver wire and assembled using the highest quality laminations and materials.

The M10 uses the finest materials and components available, even down to the use of a special 'densified' wood circuit board material.

We know what happened when the M10 was released to market. What was intended to be just a special preamp for a few chosen customers became a phenomena in itself...

If we fast-forward to today, then we can discuss the M10 Signature. The concept is essentially the same, but I have further optimised the PSU by changing valves and utilising their characteristics.

In the M10 Standard, we have an EL34 as the shunt valve and a 6SL7 configured as a current reference, which in turn defines the output voltage. In the Signature I have substituted a 12E1 for the shunt, and a 6SJ7 as the current reference.

The 12E1 is a Special Quality beam tetrode, similar in some ways to the KT88. It has considerably more power capacity than an EL34 so I can increase the shunt current. The fact that it's a beam tetrode lends a harder clarity to the sound, which requires some modification further down the line. I replaced the 6SL7 current source with one built around a 6SJ7, this was done so I could pass more current in the C.S., and because I could create a bootstrap circuit around it and feed a more accurate AC signal to the grid of the 12E1.

## AN INTRODUCTION FROM THE DESIGNER *continued...*

The preamp unit of the Signature is also upgraded, I redesigned the output transformers, this time using a much larger core of the same 55% nickel iron material C-Cores. This allowed me to increase the bandwidth and lower the distortion of the output transformer as compared to the original.

To further improve things I designed a new input transformer, again on a larger core. The results are the same as for the output transformer. However here I have used a double screen between primary and secondary to separate the grounds internal to the preamp and external to it.

These improvements to the transformers are akin to having larger windows on your house, more light is allowed inside so you can see more clearly.

The upgrades to the power supply and to the transformers made an incredible difference to the absolute clarity of the machine. However, we are not in the business of making lab instruments; The M10 is about musicality.

So, the next step was to tune the circuitry by ear, and for an audio component of this quality level that requires time, knowledge, good ears, patience – and a good system in which to insert the unit and listen to it.

In the end not too much was required to be done, the incredible clarity meant that I had to slightly rebalance the voicing of the preamp (I have a box of "magic components"! ). It took some time to get it exactly right, but the results were absolutely worth it.

Not only were we hearing into recordings to an unprecedented depth, but the sound had a beautiful organic tone, for example wooden instruments felt like they were wood, you could feel it inside yourself, not just hear it. Percussion was tidy, but not blunt, rigid and "square edged": Drums had a defined dynamic envelope and resonance.

What really left us with open mouths, and a tear in our eyes, was the representation of voices. It seemed that before, even with the M10 Standard, you heard a voice, but there is a thin veil between the sound of that voice and the communication with your soul. The Signature lifted that veil, and Ella was singing to each of us personally. We know what it means when you look at a pretty girl across the street, and then she turns and looks in your eye..."

*Andy Grove, Designer in Chief for Audio Note (UK), 2012.*

## UNPACKING AND INSTALLATION

Please take care when unpacking your M10 Signature preamplifier. Choose a clean, clear location to unpack your units. Be aware that the preamplifier and its power supplies are extremely heavy; before attempting to unpack or lift the units, check the weight and if necessary use more than one person so that they can be moved safely and easily.

We recommend that you retain and carefully store all of the original packing materials, in case transportation / shipping is required at a later date.

Select a suitable location for the units. This should be a dry, dust free and level area, preferably shielded from direct sunlight and free from vibration. Also ensure that the location is stable and capable of carrying the weight of the units.

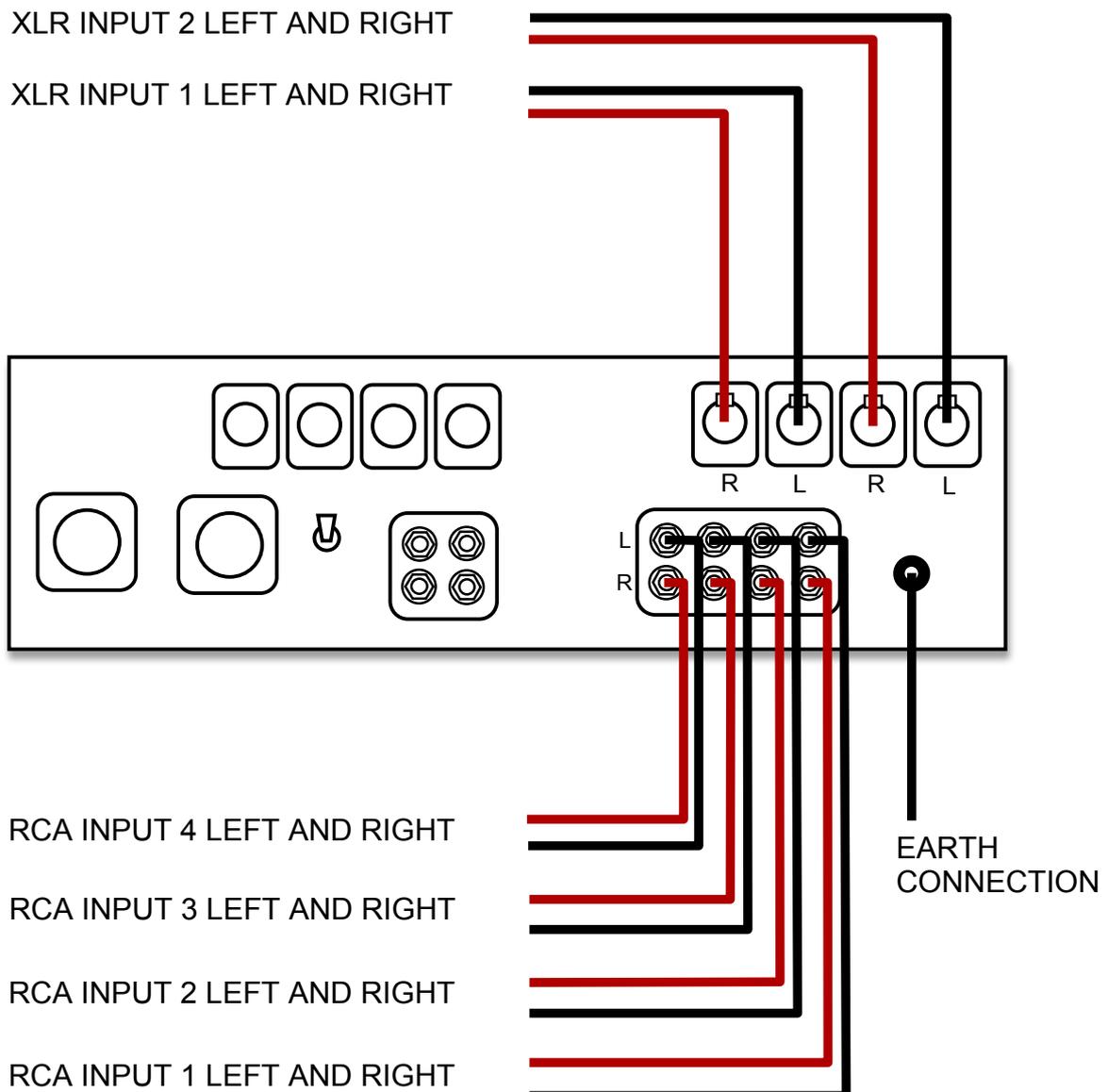
A suitable mains power outlet must be close to the location; power cords must not be pulled or stretched tightly in an attempt to reach a wall socket. If the power cords will not easily reach the socket, choose a closer location!

Please ensure that adequate ventilation for the units is provided, and that airflow through any ventilation slots in the casework is not restricted. We recommend a distance of at least 20cm free space is maintained above each unit. Please also remember that valve equipment operates at extremely high temperatures, so a position that is inaccessible to children or animals is essential.

## CONNECTION OVERVIEW

**RCA Inputs** Four RCA / Single Ended line inputs are available for connection, labeled 'SE1', 'SE2', 'SE3' and 'SE4'; any standard 'line level' source can be connected to these inputs. All sockets are colour coded; **RED** is for RIGHT channel connection, **WHITE** is for LEFT channel connection.

**XLR Inputs** In addition to the four RCA inputs, two pairs of XLR / Balanced inputs are provided, for the connection of sources with the appropriate XLR / Balanced outputs. These sockets are connected to a pair of extremely high quality Audio Note (UK) Balanced input transformers, which offer the best possible connection for correctly designed Balanced equipment. The sockets are marked 'R' for the right input and 'L' for the left input, and the 'BAL1' and 'BAL2' positions on the input selector activates them.



## CONNECTION OVERVIEW continued...

**Umbilicals** Two dedicated cables are supplied for connection of the M10 Signature main unit to the Galahad Signature PSU units. Each cable is colour coded for left and right connection.

*IT IS ESSENTIAL THAT THE CORRECT GALAHAD SIGNATURE POWER SUPPLY UNIT IS CONNECTED TO THE CORRECT CORRESPONDING CHANNEL ON THE MAIN UNIT.*

The Galahad Signature power supply units have serial numbers ending with 'L' for the left side input and 'R' for the right side input.

*These serial numbers can be found on the identification badges located on the rear of each power supply unit.*

Make sure you have correctly identified the units before any connections are made.

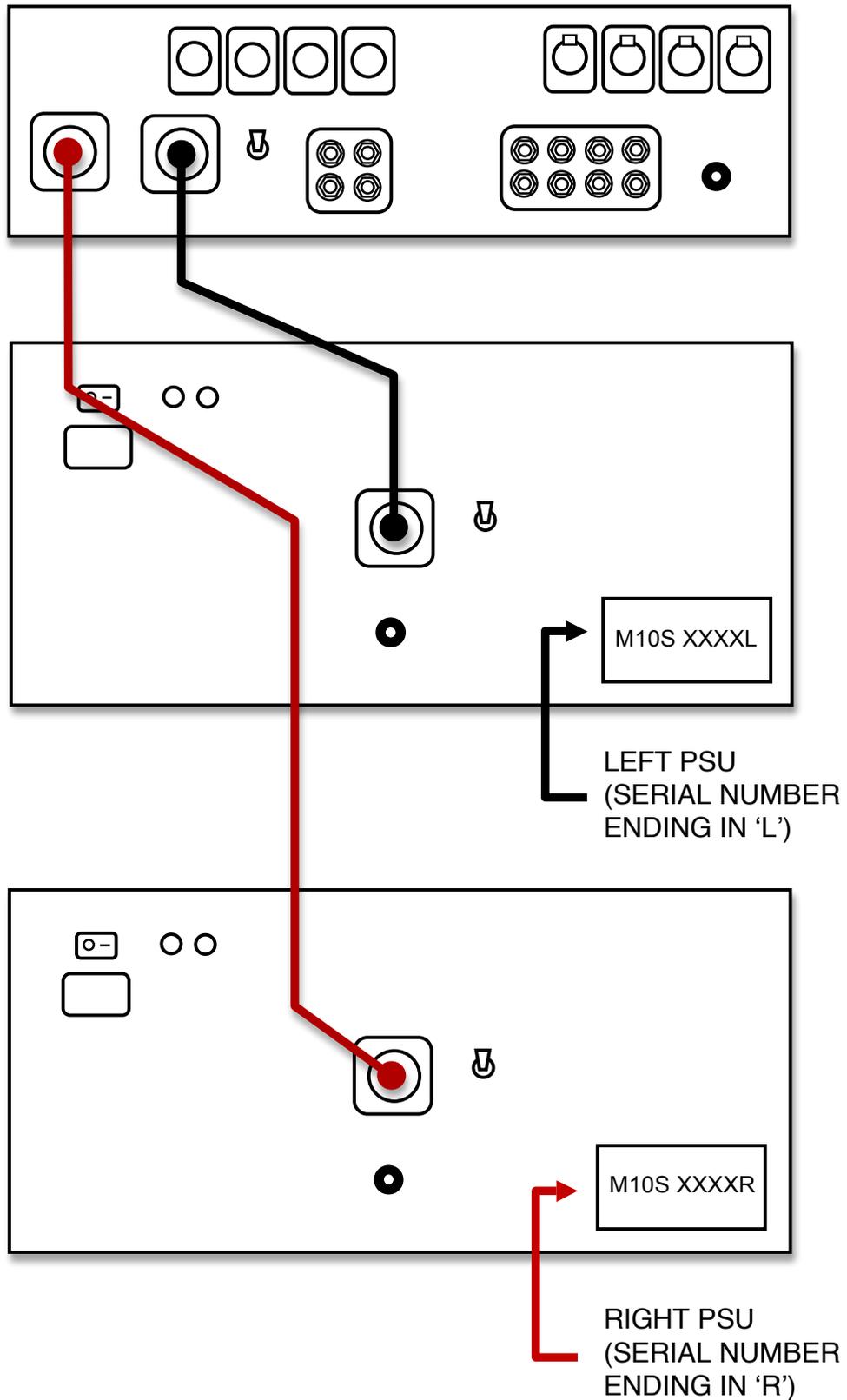
The cables are fitted with Military specification circular connectors, and can only be installed in one direction; the female connector attaches to the Galahad Signature 'power out' socket, the male connector attaches to the M10 Signature main unit 'power supply input' socket. The connectors are a 'push and twist' bayonet design, and once the connector and socket have been aligned, twist the external ring on the connector to secure it to the socket.

If you are in any way uncertain regarding these connections, please consult your official Audio Note (UK) agent.

**Ground Post** Each of the three chassis is fitted with a separate Earth connection / ground post. The post located on the main preamplifier unit is for connection to source components that also use a separate ground terminal. The ground posts located on the Galahad Signature power supplies can be used in situations where the following amplifiers require a separate ground connection to maintain quiet, hum free operation. Please consult your official Audio Note (UK) agent for further information on how best to use these in your system.

## CONNECTION OVERVIEW continued...

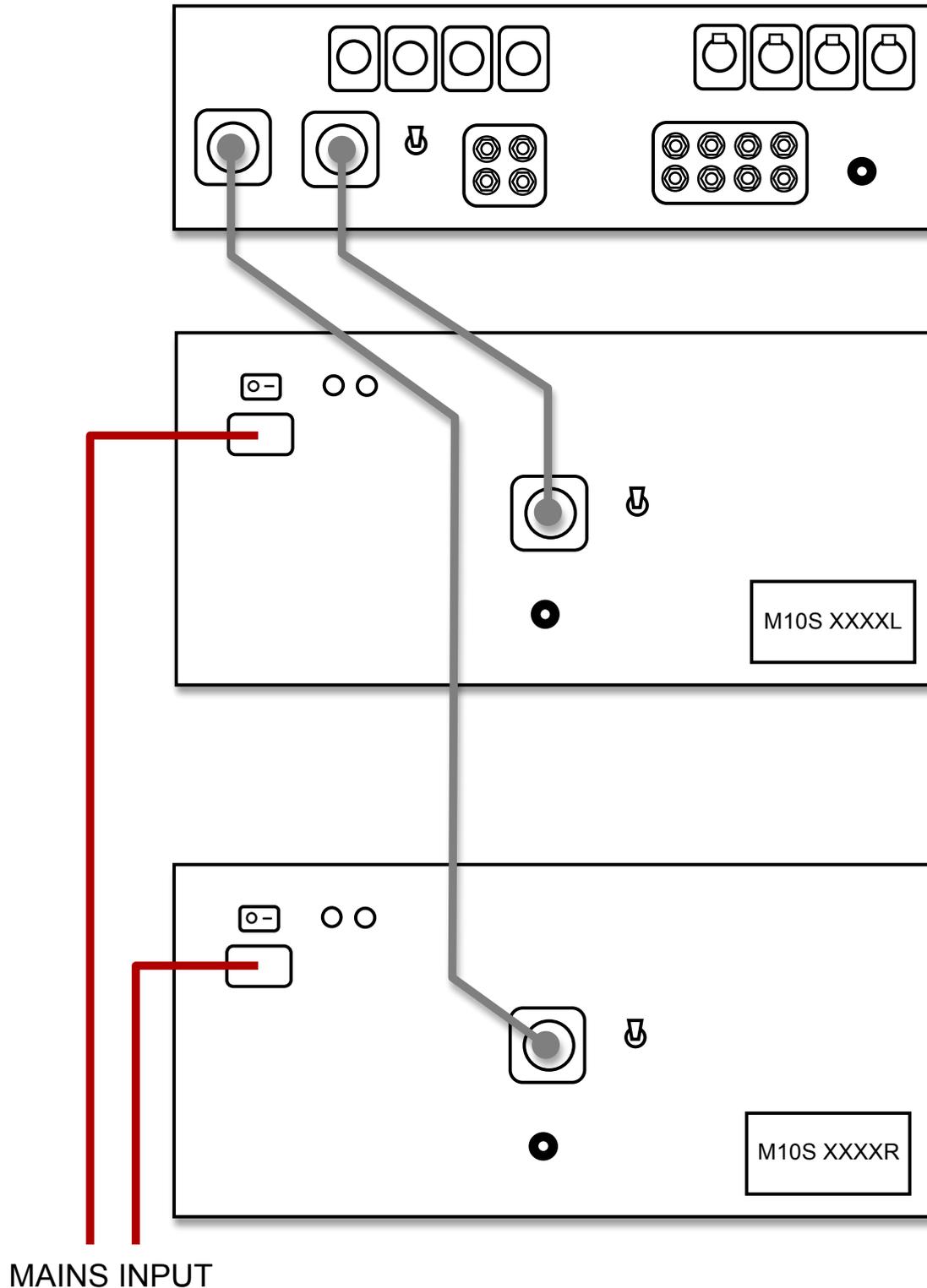
### M10 SIGNATURE UMBILICAL CABLE CONNECTION



## CONNECTION OVERVIEW continued...

### Mains

The M10 Signature preamplifier 'Galahad Signature' power supplies are equipped with IEC 320 mains inlet sockets. Use the supplied mains cables to connect the units to the local mains supply. The mains fuses are located in the circular receptacles to the right of the mains inlet.

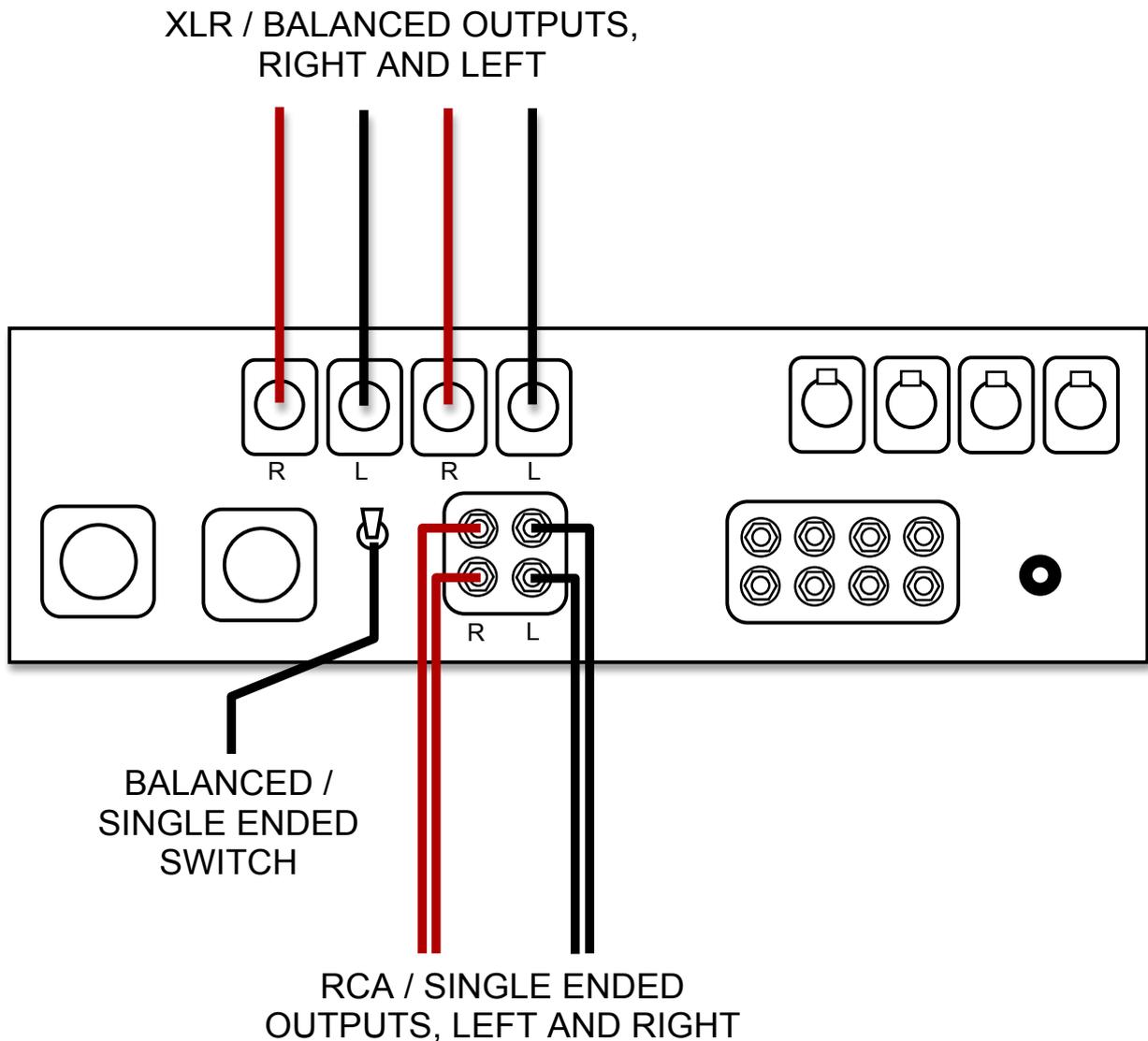


## CONNECTION OVERVIEW continued...

### Outputs

The M10 Signature preamplifier provides two Single Ended / RCA outputs, consisting of two pairs of colour coded RCA / Single Ended sockets. **RED** is for RIGHT channel connection, **WHITE** is for LEFT channel connection.

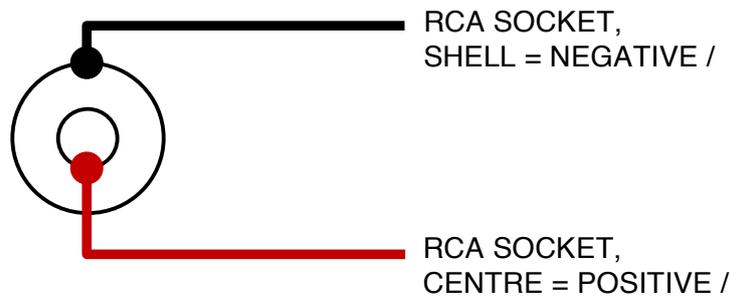
There are also two pairs of balanced outputs, consisting of two pairs of 'male' XLR sockets (see 'Balanced' section, below).



## CONNECTION OVERVIEW continued...

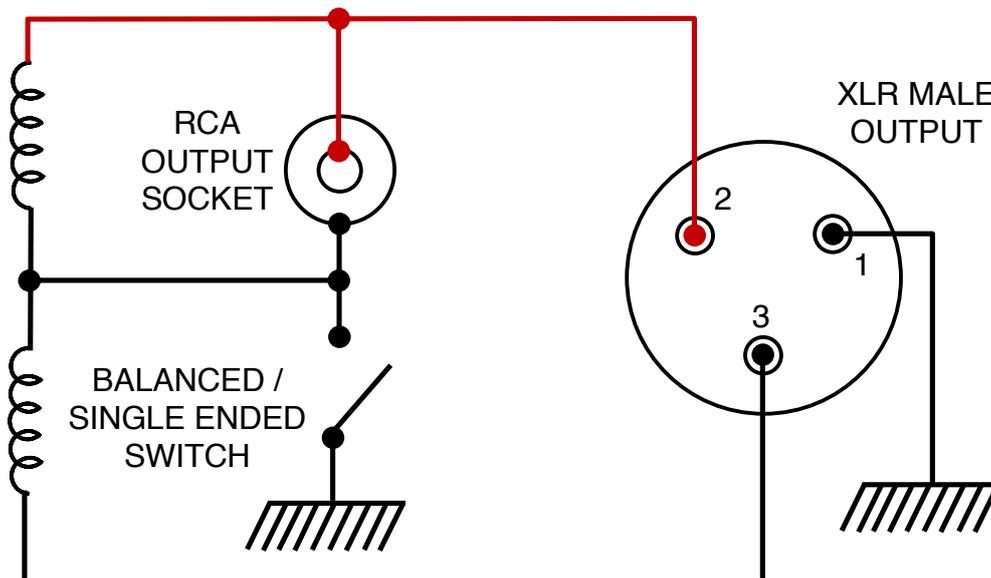
### RCA

The two pairs of RCA / Single Ended outputs are provided for connection to power amplifiers. They are identical, making them suitable for bi-amping.



### Balanced

The M10 Signature preamplifier is equipped with custom designed and manufactured output transformers, which feature an improved output and grounding scheme to provide the best possible connection to the power amplifier.



## CONNECTION OVERVIEW continued...

The pin configuration for all Audio Note (UK) XLR / BALANCED connections is as follows: -

PIN 1	Ground / Shield
PIN 2	Positive / Send
PIN 3	Negative / Return

***The balanced and single ended outputs cannot be used simultaneously;*** select the appropriate output using the toggle switch.

When using an amplifier with a true balanced input, the 'BALANCED / SINGLE ENDED' switch may be set in either position. When set to the 'BALANCED' position, the centre tap of the output transformer secondary is connected to the preamplifier's ground. When set in the 'SINGLE ENDED' position, the secondary 'floats' in relation to the preamplifier ground. This provides the option of either a low or high common mode impedance to ground at the preamplifier output. Experiment with both positions to achieve the lowest background hum from the system.

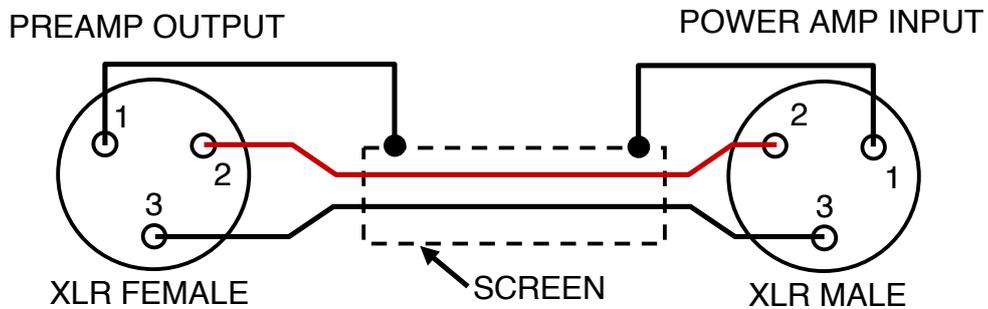
**Ground Float** Each Galahad PSU is fitted with a 10 Ohm Float Ground switch. These can be used in situations where excessive ground noise or hum is experienced within the system, by providing the option of either a low or high common mode impedance to ground. Experiment with both positions to achieve the lowest background hum from the system. Please consult your official Audio Note (UK) agent for further information on how best to implement this feature in your system.

*Special Note – Make sure that all connections are tight and clean. For best results use good quality audio interconnects. Although it is perfectly acceptable to use cables manufactured by other companies, for best results and performance, we recommend our own Audio Note (UK) range of interconnects and loudspeaker cables. For further information, please consult your nearest Audio Note (UK) dealer, or alternatively please feel free to contact us directly.*

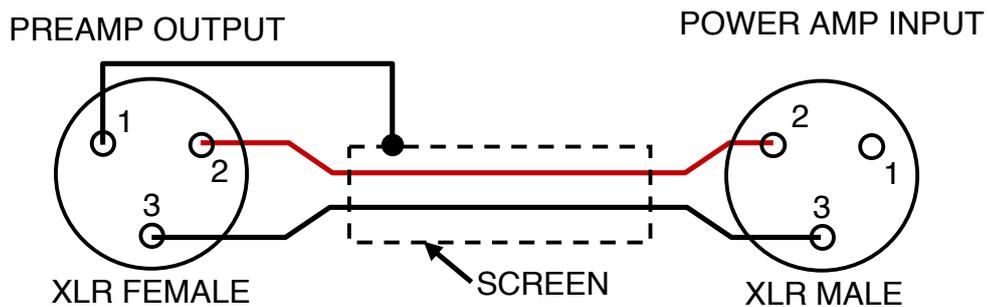
The following page provides a description of the various cable and connection options when connecting the XLR / Balanced outputs to various power amplifier inputs.

## CONNECTION OVERVIEW continued...

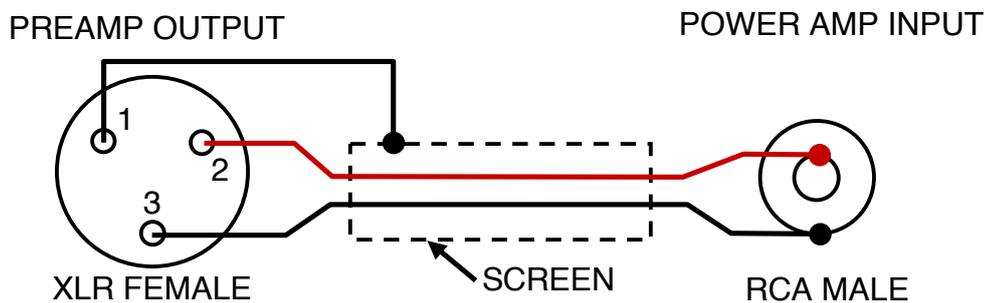
### CABLE CONFIGURATION OPTIONS



CONVENTIONAL: SCREEN CONNECTED AT BOTH ENDS



SCREEN CONNECTED AT PREAMP END ONLY, TO ELIMINATE GROUND LOOPS



CABLE CONFIGURATION FOR XLR BALANCED PREAMP OUTPUT TO RCA UNBALANCED AMPLIFIER INPUT

When connecting the **XLR / BALANCED** outputs to an amplifier with an **RCA / Single Ended** input, the switch must be set to the **'SINGLE ENDED'** position.

## OPERATION

Once all the connections are completed and checked, ensure that the volume controls are at the minimum setting (rotated all the way left).

**Ensure that all source components connected to the M10 Signature preamplifier are switched ON.** Source components should always be the **FIRST** components to be switched on and the **LAST** components to be switched off.

**Ensure that all power amplifiers connected to the M10 Signature preamplifier are switched OFF.** Any power amplifiers in use should be the **LAST** components to be switched on, and the **FIRST** components to be switched off.

The above procedure minimizes the possibility of loud noises produced by components at switch on being passed to the loudspeakers and possibly causing damage.

Turn on the M10 Signature preamplifier by using the rocker switches located on the rear panels of each Galahad Signature power supply unit above the mains inlet IEC socket.

The M10 Signature preamplifier requires approximately 45 seconds to initialize before it is ready for operation.

**Input Selector** Turn the selector to the source you wish to listen to.

**Volume Controls** There are two separate volume controls, one dedicated to each channel. For a correctly produced Stereo or Mono recording, adjust both channels to the same level. If it is necessary to equalize the relative levels for each channel, adjust the controls separately to achieve the desired balance.

## OPERATION continued...

### **Bedding in**

The new preamplifier requires around 200 hours of initial use (called “bedding in”) before the circuitry becomes stable and optimum performance is realized.

As the preamplifier “beds in” the sound will become increasingly smoother, detailed and more open.

Once the amplifier has “bedded in” a warm up time of approximately 20 to 30 minutes is required each time the amplifier is switched on before optimum sonic performance is reached.

### **Cleaning**

No special maintenance is required for the preamplifier. Use a soft, clean lint free cloth to remove any surface marks from the casework. For finger marks / grease, use a soft, clean lint free cloth, lightly moistened with a solution of warm water and mild detergent. Do not use any alcohol or solvent based cleaning products, as they may damage the finish of the amplifier.

**ENSURE THAT THE PREAMPLIFIER IS SWITCHED OFF AND DISCONNECTED FROM THE MAINS ELECTRICITY SUPPLY BEFORE UNDERTAKING ANY CLEANING.**

### **Valve Life**

The valves supplied with your M10 Signature preamplifier should provide approximately 3 years of operation. They are specially selected by us, and should only be replaced with valves of the same type and specification. Please consult your Audio Note (UK) dealer should your valves need replacing. Alternatively, feel free to contact us directly.

## TECHNICAL SPECIFICATIONS

<b>INPUT IMPEDANCE</b>	47K Ohms
<b>INPUT SENSITIVITY</b>	160mV for 1V Output
<b>GAIN</b>	16dB at 1KHz
<b>OUTPUT IMPEDANCE</b>	600 Ohms
<b>OUTPUT NOISE</b>	-80dB unweighted (RMS)
<b>TUBE COMPLIMENT</b>	1 x 6463 1 x 12AU7 2 x 5V4GT 2 x 6X5 2 x OD3 2 x 6SJ7 2 x CV345 (12E1)
<b>FUSE RATINGS</b>	1.6A anti-surge (110 / 120V supply) 800mA anti-surge (220 / 240V supply)
<b>MAX. POWER CONSUMPTION</b>	170 VA
<b>TOTAL WEIGHT</b>	65 KG (three units)
<b>TOTAL SHIPPING WEIGHT (ORIGINAL PACKAGING)</b>	70 KG (three cartons)
<b>UNIT DIMENSIONS</b>	140mm (h) x 440mm (w) x 410mm (d) 210mm (h) x 460mm (w) x 450mm (d) 210mm (h) x 460mm (w) x 450mm (d)
<b>PACKAGING DIMENSIONS</b>	420mm (h) x 650mm (w) x 700mm (d) (per carton, three of)
<b>NOTE</b>	Due to Audio Note (UK)'s ongoing research and development program, specifications are subject to change without notice.

## WARRANTY INFORMATION

Audio Note (UK) warrants this product to be free from defects in materials and workmanship for two years from the original date of purchase from an appointed Audio Note (UK) dealer, and agrees to cover the cost of parts and associated labour required to correct such defects, subject to terms & conditions.

This Warranty is offered to the first purchaser only.

Any valves supplied with the unit are warranted for three months from the original date of purchase.

If the product fails in normal domestic use and during the Warranty period due to the above described faults or defects, Audio Note (UK) will, at its discretion, repair or replace the item free of charge within a reasonable time once it has been returned to Audio Note (UK) or an appointed Audio Note (UK) dealer or service engineer.

Audio Note (UK) is not liable for any shipping charges incurred whilst transporting the product to or from Audio Note (UK) or an appointed Audio Note (UK) dealer or service engineer, should the item require service or repair during or after the Warranty period.

If the product must be shipped, please use the original packaging materials and include a copy of the original sales receipt along with a note explaining, in as much detail as possible, the problems you are experiencing with the unit.

**Only use a reputable Courier Service or Shipping Agent, and ensure that your product is insured during transit.**

**Any servicing, repairs or modifications not authorized by Audio Note (UK), or carried out by persons other than appointed Audio Note (UK) service engineers will invalidate any warranty.**

This Warranty does NOT cover: -

Damage sustained whilst in the possession of a shipping agent, retailer or consumer and not caused as a direct result of defects in materials or workmanship.

Damage caused by normal wear and tear.

Damage or defects caused by abnormal or unreasonable use.

Damage caused by accident, acts of nature, misuse or neglect.

Damage caused by a failure to follow the operating and installation instructions supplied with the product.

Damage caused by improper or careless cleaning.

Audio Note (UK) reserves the right to refuse warranty for any component of which the serial number has been removed, defaced or tampered with.

## CONTACT INFORMATION

If in the future your Audio Note (UK) product requires servicing, or if you require technical support or have any questions regarding this or any of our other products, please contact your local Audio Note (UK) dealer.

Alternatively, please feel free to contact us directly: -

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