

Owners Manual For PS 3 MK II Phono Pre Amplifier

David Shaw
Signature Edition
Mundorf Silver Gold
Capacitors

IMPORTANT!
THIS MANUAL CONTAINS
ESSENTIAL HEALTH &
SAFETY INFORMATION FOR
YOU AND YOUR AMPLIFIER.
PLEASE READ & KEEP SAFE
AND REFER TO IF NECESSARY



designed by David Shaw

PS3 MK II fitted with upgrade TJ Full Music6SN7 JJ E88CC and Jensen copper in oil capacitors

A “High-end” All Valve Phono Pre-Amp

Thank you for purchasing the PS3 MKII one of the finest phono pre amplifiers that money can buy.

The PS3 is unique having features not found on any other unit:

1. Large separate power supply for the highest possible quality of power.
2. Valve rectifier for extra warmth.
3. Two large chokes for the ultra smooth DC.
4. Sophisticated all valve voltage regulation using EL84 and ECC83.
5. Voltage reference by gas regulator valve.
6. Double Cascode circuit for low noise and best performance.
7. 6SN7 output valve, the best sounding audio valve.
8. Top quality audio transformers for MC use

This is not an easy way to make a phono preamplifier but if you possess a high end pickup cartridge, tone arm and turntable the phono stage is the final link in you gathering a precious signal off a vinyl disc and processing in the most accurate possible way minimising any loss of definition. And importantly, presenting it in a way which is musical rather than clinical or mechanical.

Our amplifiers have a reputation for excellent performance and reliability endorsed by award winning reviews in the Hi Fi press.

It is well know that for many reasons, valves can sound much better than transistors, this is especially so with vinyl reproduction. Chiefly because:

- The massive headroom of valves does not emphasise irritating clicks noise and distortion on highly modulated or scratched & worn LPs therefore minimising noise.

- The 40db RIAA difference between 20hz and 20kHz is easier for valves than transistors to cope with in the first stages of amplification.
- The “warm” sound of valves is particularly suited to the reproduction of music from vinyl.
- Our “passive” design uses no “feedback”
- Our simple design uses “audiophile” components.
- We use “hard wired” “point to point” wiring with no printed circuit board.

There are several “valve phono pre-amps” that are only part valve or only use valves as an output stage; these will not have the colour and vibrancy of an “all valve” design.

The simplicity of the design means that we were able to avoid the use of printed circuit boards, which are not ideal for valve amplifiers despite their common use.

Although good frequency response, low noise and distortion are important in any hi fi unit, there are several other criteria that are often forgotten. Transistors have a poor overload capability, and the resulting distortion is very unpleasant. The PS3 has a massive overload capability and even then would go into ‘soft clipping’, which is much more benign and easier on the ear.

The simplicity of the circuit means that there are much fewer components for the signal to pass through, fewer connections and switches, again adding to the purity of sound.

This simplicity also means that we can use higher quality oversized components, such as 2w resistors.

The use of popular valves, which are still in production, means that obtaining replacements is easy and inexpensive when necessary. This also means you will be able to change valves yourself and experiment with the different tonal balance of different types.

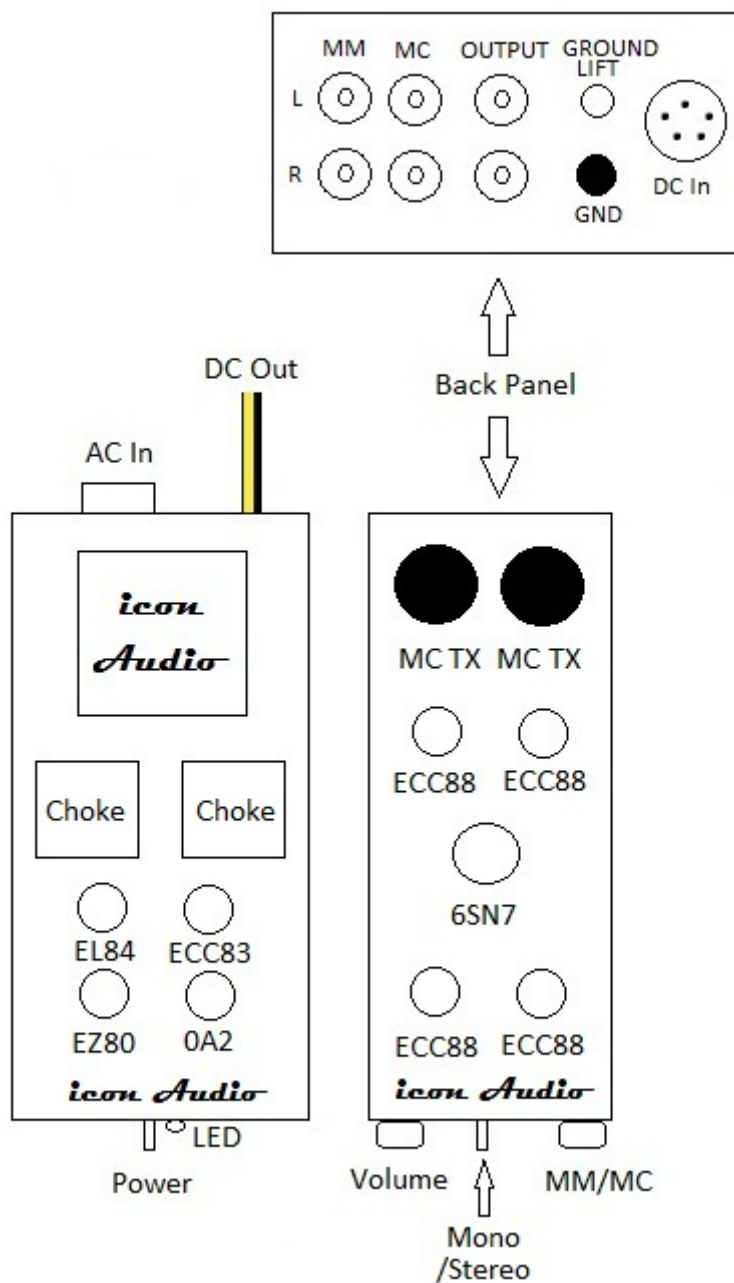
The final result is an amplifier with excellent characteristics, with an accurate yet smooth and transparent quality.

To get the best out of the PS3 Please read the enclosed notes. We have tried to give you all the

Please make sure you read page 4 regarding set up and positioning first

basic information you will need. Should you be uncertain about anything contact your dealer, or ourselves.

Layout and valve positioning



Final Inspection

This amplifier has been carefully checked, tested and final adjustments made by Icon Audio in Leicester.

It has passed our rigorous listening test and final inspection to assure you of optimum performance and reliability.

To get the best out of your unit and to save time please read this information & keep it to hand for reference

Date/...../.....
Model
Amp Serial Number
Customer

Check amplifier finish
Run 6 hour test
Check inputs
Moving Coil TXs fitted Y/N
Sound Quality
Channel Balance
Valve Microphony
Valve Seating
Hum level left/right
RF Test

Serial No sticker and recorded
Mains voltage 110 / 240V
IEC Mains Fuse 1A "T" type

Upgrades:

Valves
Capacitors
Mains lead
Interconnects

Signed off by

Notes:

SET UP GUIDE

Like your turntable, tone arm and cartridge, care should be taken positioning and setting up the PS3 MK II for best results.

1 Unpack unit carefully. Make sure that it is in good condition. It is important that you keep packaging for warranty/service return.

2 Check that the valves are fitted properly. The small valves will normally come fitted, so a visual check that they are upright is normally all that is necessary. If not see the section on "changing valves". The 8 pin 6SN7 may need fitting to the pre amp unit, be careful to align the centre spigot before inserting. See diagram on page 2.

3, Connect the power lead between the power supply unit and the pre-amp. **Please note the DC power lead is permanently connected at the power supply unit. Do not attempt to remove it. Please note that the PS3 must only be used with its own power supply. Neither unit is compatible with any other units. Ensure that the power supply is not switched on until properly connected.**

4, Connect to turntable and amplifier.

Making sure that you connect the "earth" leads from the turntable and/or arm to the earth post on the rear.

5 Connect the power supply unit, and site it away from the preamp to minimise hum, MC models will be more sensitive than MM only models. Connect to the mains using the supplied IEC mains lead. If for some reason the welded plug must be removed wire the replacement plug in the following way Brown to Live terminal, Blue to Neutral terminal and Green/Yellow to Earth terminal.

6 SWITCH ON! The blue mains indicator should light up and unit will start working after about 60 seconds. Most valves should have a visible orange glow from the cathode heaters. Full quality will be reached after 10 minutes.

7, Moving Magnet or Moving Coil?

If your PS3 is fitted with the optional x10 step-up transformers (designated by PS3 MC on the rear) you can select between MM and MC by the selector switch on the front. Otherwise the selector should be left in the "MM" position. High output MC pickups may be used without the MC step-up transformers, but there may be a noise penalty. Or you may choose to use an external step-up device. Moving coil pickups generally give superior performance to MM as records are originally cut with MC cutters. So the two systems are sonically compatible. Our high quality transformers will optimise the performance of your PS3.

The PS3 may be returned to us in the future to have this upgrade fitted (£250.00 @ 01/2013).

8. Volume

The PS3 has a high output (1.6v for 5mv input) and is capable of driving most power amps directly. However the full output may prove too high for some integrated or pre-amps, therefore "back off" the volume control of the PS3 to get a similar level to CD or radio. This will also help with the noise level. Normal position is about "3 o'clock".

Getting the best from your PS3

Hum problems

Like any phono stage the PS3 will pick up hum from other hi fi and electrical units. This can be minimised by sighting the PS3 and power supply away from both each other and other equipment.

On the rear of the PS3 is an "earth" or "ground Lift" switch. This will minimise any hum that is due to an "earth loop" (too many earths). If on initial setting up you are aware of loud hum, try this switch first, and leave in the position that gives the minimum hum. If you do not notice any difference, leave in the "Earth" position. Bear in mind that subsequent alterations to your system may make it necessary to change this setting.

As a rough guide, when set up correctly the hum level (when checking on full volume of your amplifier) should be at about the same level as the background noise. You dealer or Icon can advise you.

The PS3 is not very sensitive to hum in Moving Magnet mode, but this will depend upon the hum field of associated equipment such as amplifiers.

Moving Coil requires 10x more gain and therefore is more sensitive to hum and noise from adjacent equipment, so it makes sense to spend a little time experimenting in order to find the best site for your PS3, arranging your turntable and cables for least interference. Keep the turntable signal lead away from power cables and other equipment.

Most problems associated with hi fi equipment involve connecting leads. Always make sure you have good connections and use good quality interconnects. Your dealer will advise you.

General points

- Some mobile phone 'breakthrough' is normal
- Storage in damp conditions could damage transformers.
- Clean with a damp cloth, with power disconnected. Do not use solvents.
- Keep liquids away from the power supply and pre amp.
- Allow about 60 seconds after switching off before switching on again.
- Always switch off and allow about 20 mins discharge time before removing the cover for changing valves etc.
- Do not operate power supply without connecting to the preamp.

Connecting Leads

Use good quality connecting leads, which are no longer than they need to be.

Leaving the amp switched on

Transistor equipment needs to be left on for a long period to reach its optimum sound. With valves this takes minutes. Therefore there is no advantage in leaving the PS3 switched on when it is not in use. It is using electricity and valves have a finite life, (averaging about 5000 hours or 6000 LPs). Do not switch on and off unnecessarily.

Burning in: This will take at least one to six months of regular use before all the subtle ageing has completed.

Trouble shooting

Amplifier Dead

If the LEDs or valves do not light up, check the 1 amp mains fuse at the back of the amplifier. To gain access, remove the mains lead. The fuse is in a small plastic drawer, which forms part of the socket assembly. To open insert a flat bade screwdriver or similar and prise open. **The fuse in use is the innermost** the outer is a spare. Should the replacement fuse also blow there is a fault. Replacements should be 1Amp 'anti-surge'.

The fuse in the mains plug (where fitted) should be a 3 amp fuse, although unlikely, this should be checked if the amplifier fuse is OK.

No sound

Have you selected the right input? Are the connections OK? Is everything switched on? Are the speakers connected? Is MC selected on the MM only version?

Valve Replacement

Before removing valves the power supply should be disconnected from the mains for at least 10 mins to allow for any remaining high voltage to dissipate. NEVER USE WITH THE BOTTOM COVERS REMOVED!

You will need a small Allan Key to remove the valve cover rings on the pre amp unit.

Valve life will depend upon such things as hours of use and number of on/off cycles. A valve may be considered to have come to the end of its life when the sound quality has changed or it has become noisy and/or microphonic typically rustling, spitting, hissing sounds . If the unit has had several years use we would suggest replacing all ECC88s at the same time, The 6SN7 would normally last longer, but Ideally you should replace all at the same time.

Failure of the EZ80/EL84 may give low or no sound. Failure of the ECC83/0A2 may give unstable sound. If the PS3 was previously working correctly valve faults are the most likely cause.

The power supply valves should be routinely replaced as a set, ideally at the same time as the pre-amp valves, as individual power these are not expensive.

As the valves are crucial to maintaining the performance and quality, choose them with care.

We recommend purchasing a replacement set of valves from Icon Audio as these will be tested in an identical unit for several hours so you can be sure of the best performance. The 0A2 (WY1) must be 150v type. Please note this does not "glow" and gets warm but not hot like the other valves.

Warning: It is worth noting that this application is very demanding from the ECC88 valves. Therefore valves which are 100% OK in another application may be noisy/microphonic or hum in the PS3. In the process of testing and commissioning we reject about 10% of valves for this reason. Used valves are unlikely to work well. We have also found many so called "premium" valves to have no advantage. At the time of writing the JJ ECC88 have been consistently good performers. But feel free to experiment!

Icon Audio are happy to replace valves and check to performance of your pre-amplifier, there are often upgrades available.

It is essential that only the correct valves are used as similar looking valves have a different pin connection and insertion could result in damage to the amplifier and risk of electric shock. If in any doubt consult your dealer or Icon.

Service: Should you suspect a problem, you should return the unit to your dealer or Icon Audio for a periodic service or return the valves for testing free of charge.

Specifications and Features

Stereo/mono switch for better S/N and distortion from mono and worn stereo records

- Double Choke regulated power supply
- Built in volume control
- Separate Power supply
- All hand wired point to point
- No printed circuit board to 'colour' sound
- ALPS Japanese ALPS volume pot.
- All Triode valves
- 4x ECC88 (6922) 1x 6SN7 (for pre-amp)
- 1x EZ80/EZ81 1x ECC83 (12AX7) 1x EL84
- 1x 0A2 (WY1) (for power supply)
- Sensitivity: 5mv for 1.6v (0.5mv MC)
- Gain = 320 MM/50dB (2720 MC/69dB)
- Load: imp: 47k MM, 100 ohms MC
- Custom wound MC transformers (option)
- Signal to noise level -75db (MM unweighted)
- RIAA Freq response 20hz-20khz +0 - 2db
- MC transformers x 8.5 gain =18.6dB
- MC transformers 20-20kHz -1dB
- NO feedback used
- High quality close tolerance resistors
- LED mains indicator
- Polypropylene audio capacitors
- Silver PTFE audio cable
- DC supply for valve heaters
- Stainless steel chassis
- 6mm solid alloy front & rear plates
- Gold plated Input terminals
- 230/240volts 30watts 1.0A anti-surge fuse
- USA 115 volts 2.0A anti-surge fuse
- C E certified
- Pre-amp 155mmW, 290mmD, 160mmH*, 3.6kg
- Power Supply 155mmW, 290mmD 160mmH 6.4kg
- Packed: 40cmx40cmx28cm (0.044CM) 11.5KG

*With tall 6SN7. Not allowing for knobs and connections. Minimal ventilation required.
(Specifications subject to change, errors & omissions excepted 17/01/20)

Designed and developed by David Shaw in Leicester, each pre-amp is carefully checked & tweaked plus any custom modifications added as required before undergoing rigorous tests in all its important static & dynamic parameters. Finally each pre-amp is run to allow the valves to "bed in" for 24hrs to ensure you get the best performance.

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gen 17/01/2020

Important!

When unpacking and re-packing, please take care not to damage the three small switches on the front and rear of the two units.

The switch stems may be broken if too much pressure is used while unpacking the unit.