

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

***icon Audio***

## **BA3 Buffer Amplifier**



Showing the 0A2 on the left and the two 6N6 valves on the right.

***No Compromise High End Pure Valve Buffer Amplifier***

## **About the BA3**

Thank you for purchasing one of our amplifiers, a lot of care has gone into the design, selection of components and production of this amplifier. We are sure that you will hear the difference.

**Designed in Leicester by David Shaw,  
MD and founder of Icon Audio.**

***We created the BA 3 in order to solve several problems in Hi Fi:***

***1, A common complaint from customers is the lack of warmth from their "hi end/high spec" transistor equipment often accompanied by excessive "harshness". This is often prevalent in CD/Digital Radio/MP3 sources etc.***

***2, When driving long and often expensive interconnects it is inevitable that there will be some loss of detail and high frequency, as the output impedance of some pre-amplifiers and other units is either too high, or lacking "muscle" to drive. Conversely the input impedance (load) of some units can be too low, causing the same problem.***

***3, Sometimes, for various reasons two units of Hi Fi just do not seem to work well together. This could be due to poor impedance matching, poor loading or some other unidentified reason.***

**Our BA 3 "buffer amplifier" is designed to overcome all these problems and give a warmer more musical "valve sound". It is an excellent cure for "listening fatigue" (the "sounds great but I can't bear to listen for more than 30 minutes" syndrome).**

**The BA 3 is a small all valve pre-amplifier with zero gain. It is based around the superb 6N6 valve one of the best hi fi valves ever made.**

**Using one 6N6 per channel the BA 3 has a wonderfully detailed smooth fluid quality. It will add "texture" and make your system more "listenable".**

6N6 valves have a reputation for a very long life, they are inexpensive and easily replaceable. There is "new production" and lots of "old stock" to experiment with. The power supply is integrated in the BA 3 so its "footprint" is very small. We use a substantial mains transformer which forms part of a generous power supply.

As with all Icon products we strive for the best sonic performance, this demands hard wiring "point to point". The audio cable is Silver PTFE. Using only high quality audio grade full size components.

The chassis using a combination of Anodised alloy plate and robust matt finish steel plate.

### **Connecting:**

The BA 3 would normally be connected between the output of your source unit (e.g. CD player), or between the output of a pre-amplifier and a power-amplifier. Alternatively the "record loop" of an integrated amplifier may be used.

But there are many other situations where the BA 3 could be used, in studios, AV equipment etc.

### **What will it do for your sound?**

The simple triode design coupled with the superb characteristics of the 6N6 valve will enrich the harmonic detail of your system adding a new dimension to the sound of any musical instrument. Your system will immediately have a richer warmer, more textured sound. But the BA 3's wide bandwidth and low distortion ensure that nothing is detracted from the purity of your system. There will be no loss of information, a glance at the frequency response and distortion will confirm the excellence of the performance.

To get the best out of the BA 3 Please read the enclosed notes. We have tried to give you all the basic information you will need. **We would recommend that everyone follows the 'quick set up guide'.** Should you be uncertain about anything to do with your BA 3 please contact your dealer or us.

Our philosophy is to use traditional valve minimalist, circuitry. The beauty of valve amplifiers is that they are usually very simple; therefore with the use of traditional point-to-point construction, modern high performance low tolerance components, it is possible to very high sonic performance. This simplicity enables us to avoid the use of printed circuit boards, which are not ideal for valve amplifiers despite their common use.

Although technical performance is important, we never forget that sound quality takes overriding priority in our design and production. The BA 3 has a

massive overload capability and even then would go into 'soft clipping', which is much more benign and easier on the ear than overload with transistors.

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 the fabulous 6N6 valves, which are still in production, means that obtaining replacements is easy and inexpensive when necessary.

In the process of building the BA 3 to its high standard no corners have been cut and we have also paid close attention to the appearance.

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

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

# QUICK SET UP GUIDE

**1 Unpack unit carefully.** Make sure that it is in good condition. It is important that you keep packaging for warranty/service return. If damaged contact your supplier.

## **2 Fit the valves if not already fitted**

There is only one type of valve for each socket. The two 6N6 are 9 pin and the 0A2 7 pin (see picture on P1) **Be careful not to bend the pins more than necessary**, this could crack the glass or cause air leaks, damaging the valve.

## **3. Connect in your system as follows:**

### **Integrated amp without "Tape" or "Record" loop**

Connect between your source output (e.g. CD or phono stage) and any line RCA input

### **Integrated amp with "Tape" or "Record" loop**

Connect amplifier "Rec" output to BA3 input and BA3 output to "Tape in" on amplifier. You will need to switch the "Tape Monitor" switch to "Tape" (refer to your amplifier manual for more information).

### **Pre amplifier with Power Amplifiers**

Connect Preamplifier "Out" to BA3 "Input" and BA3 "Output" to the "inputs" of your power amplifier(s).

In all cases observe Left and Right channel wiring.

## **4. Position the two units carefully in your system**

far enough apart to eliminate noise or hum. It is desirable to leave a gap between sensitive units such as phono pre-amps, PU arms etc. You may need to do this by "trial and error" with the units working to find the best combination.

**5 Connect to mains** supply using the supplied mains cable to 220-240v supply (or 110-120v for USA etc) .

**If you need to change the plug:** The replacement plug should be wired Brown to Live terminal, Blue to Neutral terminal and Green/Yellow to Earth terminal.

## **6 "By Pass"/Pass Through Switch.**

**(for when unit is not powered)**

**Normal working: switch is "up". The BA3 is active.**

In the "DOWN" position the BA3 is "Bypassed" effectively "out of circuit" so should be switched to this position when switched off or not required.

## **7 SWITCH ON!** By pushing the mains switch down.

The red mains indicator should light up and the unit will take approximately 40 seconds to start working. Both valves should have a visible orange glow from the two cathode heaters.

**8 Your unit should now be functioning.** If not check wiring again and/Use selector/tape monitor/volume to choose source program and suitable listening volume. The best sound quality will be when the unit has warmed up for at least 5-10 minutes.

**9 Health and Safety.** The valves when operating have surface temperatures that are hot to the touch. Keep out of reach of children and pets.

**Under no circumstances operate with valves removed!**

**Like all amplifiers there are dangerous high voltages inside, which when switched off can take up to 10 mins to discharge!** Do not remove bottom panel unless you are a competent engineer. There are no user serviceable parts inside. **Like other**

**household electrical appliances do not leave unattended whilst switched on.**

## **Inputs & outputs**

Many problems with hi fi equipment involve connecting leads which are usually either '**bad, or Wrong connection**'. So it's worth making sure that you have good connections and that your leads are the right way round.

### **Inputs**

The amplifier will work with any standard piece of hi fi e.g. CD, Tuner, Tape Deck, Mini Disc, TV, Video Recorder, DVD etc.

### **Ground Lift Switch**

In some situations a "hum loop" may develop due to the way that the amplifier and sources are "grounded". In this situation switching the GROUND LIFT switch up will disconnect the signal cable "ground" eliminating hum. In normal situations this should be down.

## **General points**

- Mobile phone 'breakthrough' is normal
- A switch-off 'click' through the speakers is normal.
- Storage in damp conditions could permanently damage transformers, contacts and other parts.

### **Connecting Leads**

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

### **Leaving the amp switched on**

People sometimes ask "should the amplifier be left running 24/7 without switching off"?

Whilst the amplifier will sound at its best when it is properly warmed up this only takes 5-10 minutes, so there is no advantage leaving it switched on when it is not in use. It is using electricity and valves have a finite life. Conversely the valves and other components are stressed more at switch on; therefore do not switch on and off unnecessarily. **Although the amplifier should sound good within a few minutes like most hi fi units it can take up to an hour to sound at its best and will take a couple of months of regular use before it is fully 'run in' and settled down.**

### **Cabinet Care**

To remove dust from the cabinet and valves we suggest gentle brushing with a soft paintbrush and a damp cloth, always clean with the power disconnected.

### **CAUTION – HEALTH & SAFETY!**

**When making any adjustments it is essential to isolate from the mains supply, and remember that high voltages can remain present inside for some time after switch off.**

## Trouble Shooting

### **Amplifier Dead**

Check the 1 amp (2 amp USA) mains fuse which is in a fuse holder which forms part of the mains socket on the power supply switch. Replacements should be 20mm 1Amp (2Amp USA) 'anti-surge' or "T" type. These are available free from Icon Audio should you have any difficulty. Try another mains lead.

The fuse in the mains plug (if fitted) should be a 1 or 3 amp fuse.

### **No sound**

Have you selected the right input? Are the connections OK? Is everything switched on?

### **Distorted sound.**

Try another source; if sound improves then it's probably something wrong with the first source. If no improvement try different speakers, if no improvement could be an amplifier problem.

### **Hum Problems**

Try the rear "ground lift switch" in the "up" position, (it would normally be "down").

These are generally caused by "bad" earths or bad connections. A common cause is a 'hum loop' caused by having too many earths, and may be identified by unplugging each input source from the mains.

Other causes of low-level hum can be from adjacent equipment, so experiment with moving equipment around to see if this makes the hum better or worse.

### **One channel missing.**

Usually 'bad' connections are on either the input or the output. Try swapping the connection over to establish if the cause is:

**(a) Input to the amp.** Sound will move to the other channel.

**(b) Amplifier or speakers.** Sound will not move.

### **Strange noises coming from speakers:**

Try the "By Pass" switch in the "down" position if the fault disappears it is the BA3, if the fault remains it is elsewhere in your system.

### **Valve Life and Replacement**

The BA3 was designed to work with excellent Russian 6N6. The ECC88, 6DJ8, 6922 are also compatible. Valve life will depend upon such things as hours of use and number of on/off cycles. As a rough guide we would estimate life of approx 4 to 10 years. But this can vary. For example a unit left on continuously for 6 months is equal to 4,400 hours the nominal life the valves. If the unit is used most days we would recommend changing the valves ever 2-3 years.

### **What can happen?**

A valve that is lit up is not a guarantee that it is working properly. ; conversely a valve that is not lit up will not be working. The single 0A2 regulator valve should get warm with a very dim violet glow which may only be seen in a dark room.

A valve is at the end of its life if one of the following happens:

- 6N6s are twin triode valves. One of the two heaters may fail, causing no sound.
- A valve could get "noisy" or "microphonic"
- The sound quality has deteriorated.
- The valve works intermittantly.

- An air leak causes the silver "getter" material to turn white making the valve useless.

If one channel is not working correctly try swapping the two 6N6s over to prove this.

The 0A2 (150V 7pin regulator) is also known by several other numbers. They generally have a very long life, suggested replacement is 5-10 years or if you suspect it is not working properly.

**It is essential that only the correct valves are used as some similar looking valves have a different pin connection and insertion could result in damage to the amplifier and risk of electric shock.**

It is not good practice to remove the valves unnecessarily as this can strain the pins and cause tiny air leaks. Icon Audio are happy to replace valves and check to performance of your amplifier and advise on the latest upgrades available.

Although the two original 6N6 valves are normally identical we suggest that if removed, they are replaced in the same position. You could mark them, e.g. with a felt tipped pen.

**Service:** Should you suspect a problem; you could return the unit to your dealer or Icon Audio for a periodic service or return the valves for testing free of charge. You should carefully remove the valves they should be well packed in cardboard & foam or similar and returned to Icon Audio for testing. (Valves are very rugged if packed properly).

## **Specification & Features**

- Freq response 10hz-100khz +0 -0.1db
- Gain= 0.96 or -0.35db
- Signal to noise level -100db
- THD 0.01%, @ 1khz, 2v rms 47k load
- Output impedance 150 ohms
- Maximum output 60 volts
- All Triode design
- No printed circuit board
- Hand wired point to point components
- 0A2 gas regulated power supply
- 2x 6N6 Double triode or 6922/ECC88
- High quality metal film resistors
- LED mains indicator
- Audio grade Polypropylene audio capacitors with Jensen copper foil in paper and oil option
- Silver plated OFC PTFE audiophile audio cable
- Rubicon/Nichicon power capacitors
- DC heater power supply for minimum noise.
- Audiophile Gold plated Input & output terminals
- 230/240volts, 20W 1A T (117v 2A USA)
- mains lead, (UK plug 5amp fused)
- C E certified ROHS/WEE compliant
- Size & Weight 33W 14D 13H cm 2.9KG
- Packed 39W 22D 24H 3.2KG

(Specifications subject to change, errors & omissions excepted 25/07/23)

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## 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.*

Date ...../...../.....

Model .....

Amp Serial Number .....

Customer .....

Check amplifier finish .....

Run 6 hour test .....

Check inputs/outputs .....

Sound Quality .....

Channel balance .....

Valve Microphony .....

Valve Seating .....

Hum & noise level .....

RFI Test .....

Serial No sticker and recorded .....

Mains voltage 110-120v / 230-240v

IEC Mains Fuse .....A

Sales invoice .....

Credit card receipt .....

Chassis linearity .....

Bias meter N/A

Transformer Protection N/A

### **Upgrades:**

Output valve .....

Capacitors .....

Interconnects .....

Signed off by .....

Notes:

Please note we do not test the standard mains lead.