

icon Audio

Instruction Manual Covering:

Stereo 300.MK II Integrated Amplifier



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

**Jensen Copper
foil capacitors
fitted**

icon Audio Stereo 300

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1 Introduction

Thank you for purchasing the **Stereo 300**. A great deal of care has been taken in the design, selection of components and production of this amplifier. We are sure that you will hear the difference.

The **Stereo 300** is a push-pull pure triode stereo power amp, using the excellent 300B valves in fixed bias mode. The driver and phase splitting is all triode. The pre-amp is a high quality 'Passive' circuit using silver audio cable and an ALPS 'blue' volume control. It is sensitive enough to be used with all modern source equipment having an output of 500mv or greater. Its simplicity coupled with point to point hand wiring without the use of printed circuit boards results in an open euphoric sound that is wonderfully detailed and warm sounding.

In order to get the best out of your amplifier, please read the enclosed notes even if you are experienced with valve amplifiers, **We would recommend that everyone follow the 'quick set**

up guide'. This will enable to get the best performance from your Stereo 300. Should you be uncertain about anything to do with your amplifier please contact us for advice.

Hi fi reproduction is a long chain of events that includes the recording, editing, mixing etc, before being transferred to a medium such as LP, CD, or FM, and finally played through your own system. Your room acoustics will also affect the sound before it finally reaches your ear. Whilst the amplifier is arguably the most important part of a system, it is important to remember that the weakest link will always affect the final results when making judgements. And not all recordings are 'equal'! Therefore an amplifier which faithfully reproduces the input signal will also reproduce imperfections in the tonal balance and the recording itself. Therefore setting up and judgements should be made with a 'clean' well balanced recording.

Final Inspection - Your Guarantee of Quality

To assure you of optimum performance and reliability, this amplifier has passed our rigorous final inspection and listening test by the Icon Audio team in Leicester, during which the final set up and adjustments were made.

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

Internal wiring check

Run min 6 hour test

Check inputs & tape monitor

Output Valve Bias levelmv

Hum level left/rightmv.....mv

RF Test

Power out 1khz 8ohmsL.....R

Channel balanceV=.....DB

Sound Quality

Valve Microphony

Valve Seating

LED brightness

Serial No sticker and recorded

Mains voltage 115 / 230-240V

IEC Mains FuseA

Remote Control Function

Sales invoice

Bottom label

Credit card receipt

Customer survey form

Test remote control

Bias meter

Remote (send/receive)

Remote (in box)

Transformer Protection

Upgrades:

HT delay fitted? ...Y / N

Capacitors

Output valves

1st Stage valve

2nd Stage valve

Mains lead

Interconnects

Signed off by

Notes:

Please note we do not test the standard mains lead.

IMPORTANT READ THIS FIRST

2 QUICK SET UP GUIDE

1 Unpack unit carefully. Make sure that it is in good condition. If not report to Icon Audio. It is important that you keep packaging for warranty/service return.

2 If Necessary fit the valves, or check that they are firmly in place. The 300Bs should be fitted first observing the numbers 1,2,3,4 on the rear of the valve, this corresponds with the four sockets from left to right viewed from the front. This is essential as each valve is 'set up' in this position. **To prevent inserting the wrong way round, each valve has 4 pins which are different sizes and spacing. But if forced, it is possible to insert the valve the wrong way. This will ruin the valve and damage the amplifier. NOTE THAT THE EACH PAIR OF SOCKETS IS ROTATED BY 180°.**

Do not push or pull the 300Bs by the glass envelope, this could cause the glass envelope to become detached from the base, damaging the valve. The small valves are also numbered 1,2,3,4, and should be inserted left to right. (12AT7= ECC81, outside pair, 6SN7 inside pair). It is normal for the small valves to feel a little loose.

3 Connect to source units, e.g. CD, Tuner, Tape, Phono pre amp (if used) etc via appropriate phono sockets.

4 Connect to speakers (4 to 16 ohms) Make sure that you connect your speaker cables maintaining the correct polarity. (See speaker connections chapter). If 'bi-wiring' both 'common' should go to the black terminal, and both 'positive' (or red) should go to 8 ohm terminals.

5 Connect to 230/240v mains supply using supplied IEC mains lead. **If for some reason the welded plug must be removed, please remove fuse and dispose of immediately.** (As they can be a danger to children if plugged in). The replacement plug should be wired 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 take approximately 40 seconds to start working. All valves should have a visible orange glow from the cathode heaters. With the volume control set to minimum (fully anti-clockwise) there should be no sound coming from the speakers except a barely discernable gentle hum. If there are any unpleasant sounds coming from the speakers, switch off and refer to the 'Trouble Shooting' section or contact Icon Audio. If your unit is fitted with the HT delay timer, operation will begin after the unit switches the HT on (approx 40-70 secs), you may hear very low distorted sound from the speakers during the warm up time. This is because there is virtually no

HT to operate the amplifier. We suggest you reduce the volume until the HT cuts in.

The red light on the front indicates when the HT delay is operating.

7 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. Do not operate at a high volume for the first five minutes to allow the valves to warm up properly.

Remote Control

The remote control can be found in the bottom of the box. It controls the volume by means of a motorised volume pot. Pressing "mute" will reduce the volume. Make sure that you point the control directly at the sensor on the amplifier front panel. If you are having difficulty operating the handset from an oblique angle, try pointing at something reflective, e.g. the opposite wall, or place a small reflective item at a suitable angle in front of the amplifier. A small dot of white paint or "Tippex" will enable the little "dimple" on the volume control to be more visible.

Please note that upon "switch-on" the volume control is automatically re-set to a low setting. When the handset blue LED gets low you should replace the batteries with 2x AAA cells.

Please note all these things are normal for valve amplifiers:

- A, Valves can get very hot, BEWARE!
- B, The mains transformer will get quite warm
- C, The amplifier will smell slightly for a few weeks.
- D, Mobile phone 'breakthrough' is normal.
- E, Valves may make a 'tinkling' sound when warming up and cooling down.
- F, One channel may come on before the other at switch on.
- G, The volume control may sometimes appear to sound 'Scratchy', this is not a fault!
- H, There may be a 'click' when switching off.

9 Health and Safety. The valves when operating have high surface temperatures. Keep out of reach of children and pets. The use of the supplied guard is recommended in these circumstances. Always unplug when making adjustments. **Like all amplifiers there are potentially lethal high voltages inside (over 500v DC), which when switched off can take several minutes 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.** Do not adjust the 300B grid bias pre sets without reference to the manual. Incorrect adjustment could cause the valves to overheat, with possible damage to valves and amplifier.

3 Connecting inputs & outputs

Many problems associated with electronic equipment involves connecting leads, which are usually either '**BAD CONNECTION**' or a '**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 having an output of 500mv or more, to get full power.

If you wish to use a turntable you will need a suitable phono pre-amp. Your dealer or Icon Audio can advise you. Our new all valve PS1 phono stage is an ideal partner.

To use as a power amplifier. In this mode of operation it is suggested that the volume control be fully clockwise, and volume be controlled on the pre-amplifier for best results. The tape input will provide the most direct signal path. Good quality leads should be used, making sure that you have good connections both ends.

Connecting a tape deck (or CDRW MP3 etc)

The STEREO 300 will work with any tape deck having suitable output, and it is possible to record from any connected source using the terminals marked 'Pre-out'. The STEREO 300 has a 'Tape Monitor' facility, which enables you to use a 'three head deck' or an equalizer.

Some tape decks 'Present a load' to the amplifier terminals, even when not in use, which can affect sound quality. (You can do an audible check for this by removing the plugs and listening for a change). Therefore for best results do not leave anything connected to these terminals unnecessarily.

Connecting loudspeakers

It is important to use good quality loudspeaker cable. This should be relatively thick and multi-stranded. i.e. QED 'Original' or better. Take care to connect the correct polarity. The use of 'Banana plugs' or 'spade' connections will ensure a good connection whilst minimising the risk of 'shorts'.

In our experience valve amplifiers are more tolerant of cables, therefore the benefits of very 'exotic' cables may be wasted! But this is personal taste. Icon or your dealer will advise you.

As all cables have losses, keeping the speaker cables short is best. It may be better and be

cheaper to re-arrange your room and use shorter cables than to spend a fortune on longer cables!

You can either 'hard wire' your cable to the amplifier by baring enough cable to fit in the connector and twist together to avoid any spare strands touching anywhere else (soldering the stands together helps). **Be warned this amplifier does not have an output protection device, which would degrade the sound. So a prolonged short due to strands of wire touching could damage the valves.** Alternatively use good quality 'banana' plugs, once fitted they are trouble free.

Speaker polarity. It is essential that you observe the polarity of the terminals; they must be the same for the left/right connections at the amplifier end and at the loudspeaker end. Otherwise the sound will be 'out of phase' with the sound stage 'inside out' with reduced bass. **If you are unable to check this or confirm the polarity** (e.g. if you have 'built in' wiring), try the following; Connect the system up and play some music with plenty of bass (e.g. dance music), preferably in mono (FM tuners are usually switchable to mono) and stand the speakers close together. If correct you should hear plenty of bass, if not **reverse the terminals for one channel only, either at the amp or speaker.** You will now hear more, or less bass. The higher bass output is the correct setting to use. Another alternative is to use a test disc. If you are 'bi-wiring' your speakers only two terminals, you must use only 4 or 8 ohms, not both, as this will not load the amplifier properly.

The STEREO 300 is designed to work with full range, medium to high efficiency having impedance of 4 ohms to 8 ohms. Speakers having efficiency of lower than 84db may have greater difficulty in providing a high sound level. But this will also depend upon individual speakers, room size, type of music and positioning etc.

Speaker impedance. The output impedance of the Stereo 300 has been optimised to work with 4-12 ohm speakers. The use of one output winding makes for simpler and better quality transformers.

Do not connect to more than one pair of terminals for each channel. If two pairs of speakers are required to be connected, they must both be 8-ohm and connected across the 4 ohm terminals. Contact Icon Audio for more information. Damage could occur if care is not taken.

4 How to get the best out of your amplifier

- Check bias at least twice a year for best performance
- Do not switch off and on without a short rest of 60 seconds (to reset the 'soft start')
- Do not leave the amplifier switched on all the time. This is not necessary
- Do not adjust the output valve grid bias unless you know how
- Do not swop the output valves round as they are set up individually
- Do not operate the amplifier without loudspeakers connected
- Do not use valves other than listed as there could be danger of shock and damage to the amplifier
- Make sure the speakers are in phase.
- Use the best possible source material.
- Use efficient, well-designed speakers.

What is safe maximum volume?

The Stereo 300 will run happily all day long at maximum power; the valves are not stressed any more at full power than at zero volume. Running into gross distortion will however stress the whole amplifier. To find the maximum safe volume, play full range music and advance the volume until distortion occurs, (this is normally between 12 and 3 o'clock on the volume control) back off the volume control about 30 degrees, this is approximately full power. However this position will vary according to the level and type of music and the output of the source unit. For example CD players tend to be higher than say tuners.

DO NOT LEAVE SWITCHED ON 24/7

Whilst the amplifier will sound at its best when it is properly warmed up, there is no advantage leaving it switched on when it is not in use. It is using electricity and as valves have a finite life of very roughly 5000 hrs **WHICH IS ONLY SIX MONTHS CONTINUOUS USE!** (or 4½yrs at 3 hrs a day). Conversely the valves and other components are stressed more at switch on; therefore do not switch on and off unnecessarily.

We would always advise that any item of home electronics is switched off when not in use.

'Burning in'

Although the amp should sound good within about 10 mins it can take up to an hour to sound at its best and will take several months of regular use before it is fully 'run in'.

Upgrading Valves!

This can be a controversial subject, but in our opinion quality valves should have a good service life, maintain their performance and should be reliable, the last three items will make a valve sound better longer. The upgrade valves supplied with selected models are the result of careful comparison with other makes.

Cabinet Care

To remove dust we suggest gentle brushing of the paintwork etc, with a soft paintbrush. Other marks can usually be removed with a damp cloth. On no account use anything wet on the amplifier, and always clean with the power disconnected.

5 Trouble Shooting

Amplifier Dead

Check the 3 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 3.00 Amp 'anti-surge'.

The fuse in the plug should be a 3 or 5 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?

Distorted sound.

Each 300B is protected by a 300ma "T" (or "anti-surge") fuse. If the left or right pair have blown

there will be no sound on that channel. A single fuse will result in distorted sound at higher levels. Also the valve(s) in question will be much cooler (beware if touching). Replacement will require the amplifier inverting on to a soft cloth (beware the height of some 300Bs!) and the bottom removed. Ensure that power is removed at least 10 mins before hand. The supplied meter will assist in fuse checking. Only replace with correct type. (available from Icon free). **Only attempt if you feel confident, or contact your dealer for assistance.**

Hum Problems

If you experience hum, try disconnecting all inputs, if hum persists this is probably an amplifier fault.

If not, identify which input is causing hum. Connect one input at a time. 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. One remedy for this is to use an interconnect which only has the screen connected at one end. 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' connection on either the input or the speakers. 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

Turn volume to minimum on unused input, if problem corrected either fault with source unit or with connection. If noise persists, problem with amplifier.

Valve Problems

If a whole output valve glows red (other than the heater), often accompanied by a hum through the speakers, switch off immediately, and refer to Icon Audio or a service engineer, as this could be valve failure.

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.

Blown Fuse

Each 300B output valve has an individual 315ma fuse. This is very unlikely to blow unless the amplifier has been misused in some way or one of the 300Bs is faulty. This will cause distortion and you should contact either Icon Audio for replacements or your dealer for guidance on how to proceed.

Valve Replacement (see also section 7)

Valve life will depend upon such things as hours of use and number of on/off cycles, the HT Delay Circuit if fitted will extend the life of the valve by not stressing the cathode when it is cold. It is not good practice to remove the valves unnecessarily as this can strain the pins and cause tiny air leaks.

LEDs

The front power indicating LED and the 4 blue LEDs under the chassis are for power indication and cosmetic reasons only. Should any of these fail the performance of the amplifier is unaffected. Should you prefer to have the amplifier working without the under-chassis LEDs we can supply information how to disconnect upon request.

Service: Should you suspect a problem, you could return the unit to Icon Audio or your dealer for a periodic service or return the valves for testing free of charge. You should carefully remove the valves (the 300Bs should be held by the base when removing, to prevent damage) numbering them with a marker or sticker from left to right from the front, in order that that may be replaced in the same position. They should be well packed in cardboard & foam or similar, (Valves are very rugged if packed properly).

Mains Supply

This amplifier is hard wired to work on 230/240v ac 50/60hz. Use on a different voltage will require an appropriate transformer. Contact for more information.

6 Specification & Features

(Typical conditions @ 240v 50Hz)

- 300B output valves
- 6SN7 first stage
- 12AT7 (ECC81) phase splitter/output driver
- Hand wired point to point components
- No printed circuit board
- No tag board
- Ceramic valve bases for low noise/leakage
- HT delay circuit to protect cathodes (optional)
- 35W min RMS per channel
- Signal to noise level -90db
- Freq response 20-20khz -0.1db
- Power bandwidth 10hz-30khz
- 0.2% THD at full output
- 4 and 8 ohms output taps
- Japanese EI transformers
- Output & driver choke regulated power supply
- Supplied with attractive safety guard
- Minimal feedback used
- 3 potted transformers to reduce noise
- High quality metal film & wire wound resistors
- High quality polypropylene audio caps
- Japanese 'Blue' ALPS volume pot.
- Internal wiring using silver PTFE cable
- Valves carefully matched for best performance
- Gold plated Input & speaker terminals
- Inputs for CD, Tape, Tuner, Aux
- Tape monitor, buffered
- 500 mv sensitivity for full output
- 230/240volts, 300watts
- 3 amp rear fuse (with spare)
- 460W, 400D, 250H, 36kg (remember to allow space for connections and ventilation)
- IEC mains lead, (5amp fused)
- CE certified

(Specifications subject to change, errors & omissions excepted 11/02/20)

7. Bias Checking

It is essential to check the bias at least once a year. This will confirm the condition of the valves and maintain the performance of the amplifier.

Read notes all the way through before commencing. If you are unsure about any aspect contact your retailer, Icon Audio or a competent service engineer.

The Stereo 300 uses the 'Fixed bias' method of valve operation. This has the advantage of higher power, and cooler running. However occasionally (once or twice a year) it is advisable to check the bias reading using the supplied meter to ensure best performance from the amplifier. This is a safe procedure which involves measuring 500mv (or 0.5v) in the four sockets next to each 300B and adjusting if necessary.

1, Tools you will need: The supplied meter or one set to measure approx 500mv, and a small flat blade screwdriver. Adjustments are done at zero volume with speakers connected. Run the amp for at least 15mins (if it is working correctly).

2, Connect: the black probe to the chassis 'earth' by unscrewing the '0' speaker terminal and tightening the probe in the exposed hole. And the other in the test socket adjacent to the valve on test. Set the 'Icon' meter to 2000mv or the 'black mark'. See pics.



Making the 'earth' connection.

3, Checking: You should get a reading of 500mv if valve is conducting correctly. But bear in mind that your mains voltage fluctuations can affect your readings up to 10%. It is more important that both valves of a pair read within about 25mv of each other. **In some areas fluctuating mains may make measurement difficult, in which case use best estimate or use an analogue type "AVO" meter.**



Showing a probe reading 1st output valve

4, Adjusting: If not 500mv, set this by using the bias adjuster adjacent, then check the other valve of the pair, (L to R 1&2, 3&4). The bias adjustment pots from left to right are normally 'mirror image' in rotation, so some will

be anti-clockwise and some clockwise. They are very sensitive so adjust very carefully; use very small turns of the screw. If the reading appears a little unstable this is normally due to mains fluctuations.

5, If one or more valves is showing erratic readings or you cannot set the 500mv, then that valve is probably faulty or out of specification. If you are unable to set the reading high enough this means the emission of the valve is low.

Replacing The Valves

Icon Audio are happy to advise on replacement valves and the performance of your amplifier, we can also advise on the latest upgrades available. If you decide to do this yourself please read the following notes first.

Important: Do not attempt to change the 300B without reading these notes. Failure to do so could be both dangerous and damaging to the amplifier.

Health & safety: High voltages are present inside the amplifier and on exposed valve sockets when valves are removed, so take suitable care. It is not necessary to remove the bottom cover. Beware valves get hot in operation!

5, Changing valves: You should if possible check the bias setting before you attempt to change the valve(s), in order to familiarise your self with the procedure.

The safe way is to change and check one or two valves at a time. Remove the first old valve and fit the replacement. Switch on and measure bias, you should be setting the reading for each valve to about 500mv (say 400-600), Do not allow the reading to go above 900mv. Don't worry how low the reading goes this will not cause damage. Continue in the same way and fit all four valves. Do final adjustment when the amplifier is fully warmed up.

If all is well there should be no more than a barely detectable hum from the speakers (at zero vol), and the amplifier should sound OK When tested.

6, If you cannot set up 500mv then the valve is probably faulty or is unsuitable.

If the valves are brand new, you will need to check again after approximately 10 & 100 hours, after that only occasionally or if you suspect a problem.

7, To avoid damage to the amplifier and electric shock hazard you must use only valves marked 300B, 12AT7/ECC81 6SN7. Or that you know to be direct equivalents. Use only valves which you know to be new or good condition and test the amplifier thoroughly before resuming normal use.

8, Replacing the small 6SN7/12AT7 valves:

The outer pair are 12AT7/ECC81, the inner pair are 6SN7. Neither of these require any set up procedure. It's just 'plug and play' although care should be taken when removing and inserting not to bend the pins. If this happens gently bend the pins back into shape.

Icon Audio are happy to check the performance of your valves/amplifier and your re-bias it amp free of charge.

8 Guarantee

Thank you for purchasing one of our amplifiers. We hope you will be pleased with it.

Icon Audio guarantee this amplifier for 12 months from the date of purchase for parts and labour. This includes valves at Icon Audio's discretion. Keep your receipt as proof of purchase.

All units are individually tested for performance for at least six hours before despatch to you. In the unlikely event that you believe the unit is not functioning correctly, it may be helpful to contact us first as we may be able to assist you. Then we would request that you return the item to us for further action.

You are advised to inform us of any change of address in order that we may keep you up to date of any upgrades or improvements. Check our website.

Exclusions

Claims for any damage to either amplifiers or valves must be reported within three days of receipt.

Valves are classed as consumables. The 12 month guarantee covers premature failure and not wear and tear. Therefore our guarantee will cover a reducing percentage of the cost of replacement based upon a 12 month period.

LEDs used for aesthetic and décor purposes are not covered.

This amplifier is designed for normal domestic hi fi use. It is not guaranteed for commercial, Public Address use, or use in other situations. The guarantee becomes void if the unit has been modified in any way not approved by Icon Audio.

9 Packing Instructions

It is essential that the original box and packing be kept in good condition, as this provides vital protection during transit. Please do not write on box, but use removable labels. Should the original box and packaging be lost or become unusable a repacking charge of one hundred pounds will be made. If you have any doubts about this please contact us.

- Re-use the supplied plastic bag to keep the amp clean and free from damp.
- The mains lead fits in a foam cut-out underneath the amplifier.
- **Insert the piece of cardboard or pieces of foam between the transformer cover and the valve guard; this will prevent the valve cover damaging the transformer paintwork.**
- **WE WOULD RECOMMEND THAT THE VALVE COVER IS SHIPPED SEPARATELY IN ORDER TO PREVENT DAMAGE.**
- Remove the valves and pack in original boxes and packing.
- If stored in the box, keep upright.

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Caution: This amplifier is very heavy!

Lift the amplifier out of its packing by using the two “hand cut-outs” in the bottom packing near the transformers.

Or you may find it easier to remove the unit using the following procedure:

1. With the top packing in place, turn the box “upside down” with the “flaps” open.
2. Lift the cardboard box off.
3. Remove the bottom packing first.
4. Turn the unit the right way up and remove the top packing.

Please be careful not to damage the small “tape monitor” and “triode” switches on the front panel

When re-packing ensure the two hand cut-outs are towards the rear of the amplifier.

If all four feet do not sit level, small adjustments may be made by adjusting one or more of the screw feet until the unit sits level.

The feet may be removed if preferred in order to reduce the height of the amplifier.

(Please keep this information for future use).