icon Audio

Instruction Manual Covering:

Stereo 40 MKII EL34 version

Similar Stereo 50 KT88 pictured

Contents

1 Introduction

Thank you for purchasing the *Stereo 40 MKII*. 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.

In order to get the best out of your amplifier, please read the enclosed notes. Even if you are experienced with hi fi **please read the 'quick set up guide'.** Should you be uncertain about anything to do with your amplifier please contact us for advice.

Valve (or Tube) amplifiers do exactly the same job as a solid state amplifier, but they do it differently. And whilst solid state specifications look good on paper even quite modest valve amplifiers can have a richer, more textured sound. Your ears will have become accustomed to your old amplifier. Sometimes it may take some hours before your ears attune themselves to the new sound.

Your source, loudspeakers and room acoustics will also affect the sound before it finally reaches your ear. Some people find a small adjustment in re positioning their speakers can help too. The weakest link will always affect the final results when making judgements. 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. Setting up and judgements should be made with a 'clean' well balanced recording.

The *Stereo 40 MKII* is a push-pull Ultralinear stereo power amp, capable of running in either pentode ultralinear or pure triode mode, using the excellent EL34 valves in fixed bias. 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 350mv or greater. Its simplicity coupled with point to point wiring hand wiring without the use of printed circuit boards results in an open euphoric sound that is wonderfully detailed and warm sounding.

This manual also covers the SE & 'ie' model, where the tape monitor facility & triode circuit and are omitted.

2 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.

Date ….…./….

Model …….

Amp Serial Number …….

Customer ……

Check amplifier finish …….

Internal wiring check …….

Check Triode mode …….

Run min 6 hour test …….

Check inputs & tape monitor …….

Output Valve Bias level ……mv

Sound Quality …….

Channel Balance …….

Valve Microphony …….

Valve Seating …….

Hum level left/right ...../…..mv

RF Test …….

LED brightness …….

Serial No sticker and recorded …….

Mains voltage 110 / 240V

IEC Mains Fuse ……A

Soft Start Fitted …….

Sales invoice …….

Bottom label …….

Credit card receipt …….

Customer survey form …….

Bias meter …….

Transformer Protection …….

Upgrades:

HT delay fitted? …Y / N

Output valves ……..……

1st Stage valve ……

Phase splitter valve ……

Triode conversion (ie vers only) …….

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 and check that it is in good condition. Transit damage must be reported to Icon Audio within 3 days. 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 EL34s should be fitted first observing the numbers 1, 2 , 3, 4 on the rear of the valve; this corresponds with the four sockets nearest the transformers) from left to right viewed from the front. This is essential as each valve is 'set up' in this position.
The small valves are normally numbered 5, 6 and 7 and should be gently pushed into place. The middle one is a 6SL7, the outside pair are 6SN7. **Do not push or pull the output valves by the glass envelope**, this could cause the glass envelope to become detached from the base, damaging the valve.
Please note the 6SN7/6SL7s are not interchanable with the EL34/KT88s this could be dangerous and will damage the amplifier.

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

4 Connect to speakers making sure that the correct impedance (ohms) is chosen, (see back of speakers). Most modern speakers are 4ohms. Don't forget to get the correct polarity of speaker cables. (See speaker connections chapter). If 'bi-wiring' both 'common' should go to the black terminal, and both 'positive' (or red) should go to either 4 or 8 ohm terminals.

5 Connect to mains supply using supplied IEC mains lead to 240v supply. **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.

6A Put the STANDBY switch in the "up" position.
6B SWITCH ON! The blue mains indicator should light up and the valves will take approximately 60 seconds to start working. All valves should have a visible orange glow from the cathode heaters.
6C With the volume control set to minimum (fully anti-clockwise) push the "Standby" switch down. After a brief "Whum" sound 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 optional HT delay timer, operation will begin after the unit switches the HT on (approx 40-70 secs), your may hear very low distorted sound from the speakers during the warm up time. This is normal. We suggest you reduce the volume until the HT cuts in.

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.

Please note all these things are normal for valve amplifiers:
A, Valves can get very hot, BEWARE!
B, The transformer cover will get quite warm
C, The amplifier may smell 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.
H, Valves occasionally "Pop" or "Crackle". It this is regular problem it could be your CH boiler/cooker/fridge etc. (see trouble shooting).

8 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 400v DC), which when switched off can take twenty 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 output valve grid bias pre sets without reference to the manual. Incorrect adjustment could cause the valves to overheat, with resulting in damage to valves and amplifier.

To maintain the best performance of the amplifier you should check the bias of the output valves from time to time (say twice a year). Full details will be found in section 7.

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 300mv or more, to get full power.
If you wish to use a turntable you will need a suitable phono pre-amp. Icon Audio or your dealer can advise you. Our new all valve 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/Recorder/Equaliser
The STEREO 40 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 40 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 muti-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.
For best results the STEREO 40 is designed to work with medium to high efficiency speakers having impedance of 4 ohms to 8 ohms. Speakers having efficiency of lower than 86db will 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. It is important to use the correct speaker impedance terminals, as this will give the best sound quality and power matching. If using 15-ohm speakers use the 8-ohm connections. If you are unsure or "6 ohms" or "4 to 8 ohms" is quoted; a rule of thumb guide is to try both positions. The loudest being the best match.
Although your personal taste should be the final deciding factor.

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 4 ohm terminals. Contact Icon Audio for more information. Damage could be occur if care is not taken.

4 How to get the best out of your amplifier

- Do not leave the amplifier switched on all the time. This is not necessary
- Do not switch off and on without a short rest of 60 seconds (to reset the 'soft start')
- Do not adjust the output valve grid bias unless you know how
- Do not swap the output valves round as they are set up individually
- Do not switch from Ultralinear to Triode without switching to Standby or switching off
- Do not operate the amplifier without loudspeakers connected
- Do not use valves other than listed as there could be danger of shock or overheating
- 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 40i MKII 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.

Triode Switch. This switch causes the EL34s to operate as Triode valves. **As switching can stress the output transformers we would recommend that switching be done when the amplifier is in "Standby".** As the gain the amplifier is virtually the same the volume is the same, although at very high volume levels the dynamics may be reduced and distortion could occur as full power is half of Ultralinear mode.

Leaving the amp switched on
Do not leave the amplifier switched on 24/7. Your valves will be worn out in approximately nine months! 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. 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**

Standby Switch
This enables the valves to be fully warmed up before the application of power. Raise the switch into the "standby" position before switching on and wait at least 1 minute before lowering the switch to turn the amplifier "on". In the "standby" position the amplifier is only using about 30% of normal power. It also enables a healthy cloud of electrons to build up around the hot cathode. It also allows the silver "getter" inside the valve to "mop up" any gas that has built up inside and therefore keep the vacuum "hard" for best performance.

'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!
Good quality new valves sound better, have good performance and reliability. The upgrade valves supplied with selected models are the result of careful comparison with other makes. But beware paying excessive amounts for "New Old Stock", second hand or "Fake", valves,

Cabinet Care
To remove dust we suggest gentle brushing of the polished stainless steel cabinet with a soft paintbrush. Other marks can usually be removed with a damp cloth. The Perspex valve cover may need a gentle wipe with soapy water and drying with a duster. On no account use anything wet on the amplifier, and always clean with the power disconnected.

5 Trouble Shooting

Amplifier Dead
Check the 1.6 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 1.6 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.
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
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 to 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.

Interference Problems
The amplifier design incorporates features and devices which make it resistant to mains-born interference. But some CH boilers/fridges/cookers etc can generate RF (radio frequency) interference which travels through the air (and walls). Although rare this can be very irritating. In this case a simple capacitor is often all that is needed to effect a permanent cure (ask us).

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.

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.

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.

Service: Should you suspect a problem, you could return the unit to Icon Audio for a periodic service or return the valves for testing free of charge. You should carefully remove the valves (the EL34s should be held by the base when removing, to prevent damage) numbering them with a marker from left to right as you do so in order that that may be replaced in the same position. They should be well packed in cardboard & foam or similar, and returned to Icon Audio for testing. (Valves are very rugged if packed properly).

Mains Supply
This amplifier is hard wired to work on 230/240v ac. The transformer may easily be re-configured for 110/120v ac. Contact for more information.

6 Specification & Features

(Typical conditions @ 240v 50Hz)

- EL34 output valves or eqv (6CA7)
- 6SL7 double triodes for first stage
- 6SN7 double triodes phase-splitter
- 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)
- 40w RMS per channel Ultralinear
- 20w RMS per channel Triode mode
- Signal to noise level -90db
- Freq response 20-20khz +or- 1db
- Power bandwidth 10hz-30khz
- 0.2% THD at full output
- 4 and 8 ohms output taps
- Japanese EI transformers
- Choke regulated power supply
- Supplied with attractive safety guard
- Minimal feedback used
- 3 section transformer cover to reduce noise
- High quality metal film & wire wound resistors
- High quality polypropylene audio caps
- Japanese 'Blue' ALPS volume pot.
- Rubicon/Nichichron power caps.
- Internal wiring using silver gilt cable
- Valves carefully matched for best performance
- Polished stainless steel chassis
- Gold plated Input & speaker terminals
- Inputs for CD, Tape, Tuner, Aux
- Tape monitor (not ie or SE)
- 300 mv sensitivity for full output
- 230/240volts, 135-200watts
- 1.6 amp rear fuse (with spare)
- 320W, 250D, 180H, 23kg
- IEC mains lead, (5amp fused)
- CE certified
- Conforms to ROHS and WEEE where applicable

Specification subject to change without notice.

7. Bias Checking & Adjustment

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 40i MKII uses the 'Fixed bias' method of valve operation. This has the advantage of higher power, lower feedback and cooler running. However we recommend that once or twice a year you check the bias reading using the supplied meter to ensure best performance from the amplifier. This is a safe procedure which involves measuring 330mv (or 0.33v) in the four sockets next to each EL34 and adjusting if necessary.

1, Tools you will need: The supplied meter (optional with some models) or one set to measure approx more than 330mv, 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 330mv if valve is conducting correctly. But bear in mind that your mains voltage fluctuations can affect your readings up to 10% (i.e. 300 to 360). It is more important that both valves of a pair read within about 10-15mv.

Showing a probe reading 1st output valve

4, Adjusting: If not 330mv, 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 tiny turns of the screw. If the reading appears a little unstable this is normally due to mains fluctuations.

5, If one or more valves are showing erratic readings or you cannot set the 330mv, 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 EL34 Valves

Important: Do not attempt to change the EL34 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 330mv, Do not allow the reading to go above -800mv. 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, and the amplifier should sound OK When tested.

6, If you cannot set up 330mv 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 EL34 (or 6CA7), 6SL7, 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 valves:
6SL7 (centre) and 6SN7 valves. Neither of these requires any set up procedure. It's just 'plug and play', although care should be taken when removing and inserting not to break the centre spigot. (These valves are similar with the same pin connection; accidental wrong insertion would not cause damage).

Icon Audio are happy to check the valves/amp or your re-bias your 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. Valves are consumables and therefore on a pro-rata basis. Please 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.

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 between the transformer cover and the valve guard; this will prevent the valve guard scratching the transformer paintwork.**
- Valves should be removed, numbered and packed in “bubblewrap” or similar for protection inside the valve cover.
- If the amplifier is stored in the box, keep upright.

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