icon Audio

Instruction Manual Covering:

Stereo 40 MK IV KT88/EL34

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

Contents

1 Introduction

Thank you for purchasing the *Stereo 40 MK* IV. This is the 4th incarnation of the Stereo 40. First introduced in 2000 it has undergone many refinements and upgrades which make it one of the finest amplifiers in its class having very high resolution when used with high quality input material and loudspeakers.

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 as Icon Audio or your agent for advice.
Valve (or Tube) amplifiers do the same job as a solid state amplifier, but they do it differently and generally have a warmer, more textured sound. Your ears will have become accustomed to your old amplifier, so 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 MK IV* is a push-pull Ultralinear stereo power amp, capable of running in either Ultralinear or pure triode mode, using the excellent KT88 valves in fixed bias. The driver and phase splitting is all triode. The pre-amp is a high quality 'Passive' circuit using PTFE silver coated copper audio cable and an ALPS volume control. It is sensitive enough to be used with all modern source equipment having an output of 250mv 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.

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	ST40 MK IV
Amp Serial Number	…….
Customer	……

Check amplifier finish	…….	RF Test	…….
Check valve cover	…….	Meter brightness	…….
Internal wiring check	…….	Serial No sticker and recorded	…….
Check Triode mode	…….	Mains voltage	117V / 230-240V
Run min 6 hour test	…….	IEC Mains Fuse	1.6A…….
Check inputs & tape monitor	…….	UK Plug fuse	3A.….A
Output Valve Bias level	……mv	Remote Control Function	…….
Power UL 1 kHz 8Ω	.....……L…….R	Headphone socket	…….
Power Triode UL 1 kHz 8Ω	.....……L…….R	Bottom label	…….
Sound Quality	…….	Transformer Protection	…….
Channel Balance	…….	Output valves	……..…….
Valve Microphony	…….	1st Stage valve	…….
Screwdriver included	…….	Phase splitter valve	…….
Hum level left/right	...../…..mv	Mains lead	…….

For EL34 Version
Refer to page P7

Signed off by …….

Checked by …….

Notes:

IMPORTANT READ THIS FIRST

2 QUICK SET UP GUIDE

Box contents:
Amplifier, Cover, 4x KT88, 4x 6SN7, remote control, mains lead, manual, screwdriver.

1 Unpack unit carefully and check that it is in good condition. Report any transit damage to your re-seller immediately. 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 KT88s should be fitted first observing the numbers 1,2,3,4 on the rear of the valve, corresponding with the four sockets viewed left to right from the front. Take care to line up the centre spigot when inserting all valves. **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.
The four smaller 6SN7/CV181 valves are fitted at the front. Again observe the position of "spigot".
Please note the 6SN7 are not interchangeable with the KT88 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 loudspeakers to the BLACK terminal and either 4 or 8 Ohm RED terminals. (See your speaker info). Make sure the polarity is correct. (See speaker connections chapter). If 'bi-wiring' both black and both red leads should be connected together. A second banana plug can go vertically through the terminal hole. Make sure the headphone is set to "SPEAKERS".

5 Connect to mains supply using supplied IEC mains lead to 230/240v supply (or 117v North America). **If for some reason the welded (fixed) plug must be removed, remove the 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.

6 SWITCH ON! With the Standby switch in the "0" position (recommended) The meter should light up, the valves will heat up. The amplifier will start working within about 45 seconds, then take out of standby ("I" position). 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 virtually no sound coming from the speakers except a barely discernible hum. If there are any unpleasant sounds coming from the speakers, switch off and refer to the 'Trouble Shooting' section or contact your dealer or Icon Audio. When using for the first time check the bias reading (see section 6.2)
If you do not intend to use the amplifier for a few hours you can switch into "standby", when it will use minimal power and be ready for use "instantly".

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.

8, Remote Control. If there is a plastic safety tab, loosen rear screws and pull out, re-tighten screws. If the batteries are OK (2x AAA) the blue LED should light when any of the keys are pressed. A little skill is needed in pointing and pressing, as the unit has a motorised "pot" which may not be as responsive as your TV. Maximum range is about 5 meters. System re-sets to 9 o'clock on switch on. Strong light may interfere with operation. Batteries should be replaced every two years to prevent leakage. Remove batteries when amplifier is not in regular use to prevent leakage.

Please note all these things are normal for valve amplifiers:

A, Valves can get very hot, BEWARE!
B, The middle transformer will get "hand hot".
C, The amplifier may 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, The volume control may sometimes appear to sound 'Scratchy', this is not a fault!
G, Valves occasionally "Pop" or "Crackle". If this is regular problem it could be your heating 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. Avoid situations where flammable material such as paper or curtains may come into contact with the valves. Always unplug when making adjustments. **Like all amplifiers there are potentially lethal high voltages inside (over 500v 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 regularly (say monthly using built in meter). Full details will be found in section 7.

3 Connecting inputs & outputs

Many problems associated with Hi Fi 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 equipment having an audio "Line Output" e.g. CD, Tuner, Tape Deck, Streamer, TV, DVD etc having an output of 250mv 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 all valve phono stage is an ideal partner.

"H", "L", "0" sensitivity/Power Amplifier mode.

Located on the rear of the amplifier the High and Low sensitivity switch has two functions. The "High" setting is optimised for use as an integrated amplifier and will give you the most gain.

The "Low" setting may be used if the ST40 is used as a power amplifier together with a pre amplifier, as pre amplifiers generally have a higher output. In this mode 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. If you have too much gain Icon Audio can modify to suit your requirements. The "Low" setting may also be used if the slope of the volume control is too steep. Feel free to experiment for a setting which suits your needs.

There is also a middle "0" position which has no feedback therefore maximum gain. This is primarily for use by engineers for testing the amplifier but if preferred the amplifier may be used in this mode.

Feedback. The sensitivity switch does not attenuate the signal, but alters the gain by adjusting the feedback within the amplifier. In "H" the feedback is low, in "L" position the moderate.

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 'REC OUT'. The STEREO 40 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 "Rec out" unnecessarily.

Connecting loudspeakers

Use only good quality loudspeaker cable. This should be relatively thick and multi-stranded. e.g. QED 'Classic" 79 strand 2.5mm is more than adequate (for amplifiers up to 2,200w!) 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 very tolerant of loudspeaker cables, therefore the benefits of very 'exotic' cables may be wasted! But this is personal taste. Icon Audio or your dealer will advise you.

As all cables have losses, if possible use less than 10m. 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 (most 1950's recordings are 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 40 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 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. 8 Ohms will sound a little louder, the 4 Ohms position having a little more "weight" in the bass end. Although your personal taste should be the final deciding factor.

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 occur if care is not taken.

4 How to get the best out of your amplifier

- Do not leave the amplifier switched on when not in use. Valve life will be reduced.
- Do not switch off and on without a short rest of 60 seconds.
- Do not adjust the output valve grid bias without reading section 6.
- Do not switch from Ultralinear to Triode without switching to Standby to protect the transformer.
- Do not operate the amplifier without loudspeakers connected.
- Do not use valves other than listed as there could be danger of shock or damage.
- Do check the bias regularly at least once a month for best performance.
- Do make sure the speakers are in phase.
- Do use the best possible source material.
- Do use efficient, well-designed speakers.

What is safe maximum volume?
The Stereo 40 MK IV will run happily all day long at a high volume; the valves are hardly stressed any more than at zero volume. Running into distortion will however stress the whole amplifier. The maximum safe volume is just before distortion occurs. However this will vary according to the level and type of music played.

Triode Switch. This switch causes the KT88s to operate as Triode valves. Put the amplifier into **"Standby" first as switching without doing this will stress the output transformers.** The majority of listeners prefer the "triode" sound believing it to be more pleasant to listen to, but the power will drop to about 60% (30 watts). As the gain in triode is nearly the same the volume will be the same. But at higher volumes you may hear some distortion as you are running out of power, in which case switch to ULTRALINEAR. Maximum continuous output reads 100% on the meter with Triode being 75% on the meter. For best results use "H" gain.

Headphone Use. Headphones of 80-250Ω recommended for best quality. Plug in your headphones to the socket on the front panel and use the "Headphone" switch to silence the speakers.
Headphones of lower impedance may hear more amplifier noise, headphones of higher impedance may have reduced volume level. This will vary with model.
If for any reason the "0" speaker terminal is connected to "ground" whilst in Headphone mode you may hear the speakers working. In this case you need to disconnect any device which "grounds" the "0" speaker terminal. E.G. subwoofer.

Leaving the amplifier 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. See (**Standby Switch). We would always advise that any item of home electronics is switched off when not in use**

Standby Switch. If the amplifier is not needed for a few hours, it can be left in the "standby" state. This enables the valves to be fully warmed and ready to use the instant you put the standby switch down. In the "standby" position the amplifier is only using about 50% of normal power. It also enables a healthy cloud of electrons to build up around the hot cathode. Also it 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. There is no benefit to leaving the ST40 on standby indefinitely. If not in use switch off!

'Burning in'
Although the amplifier 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 upgraded valves supplied with selected models are the result of careful comparison with other makes. But beware of paying excessive amounts for "New Old Stock", second hand valves. At this time we recommend Genelex, E.H. Tung Sol, Shuguang, JJ, which we are happy to test and supply.

Cabinet Care
To remove dust we suggest gentle brushing of the cabinet paintwork 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

1. Amplifier Dead

Check the 1.6 amp (3 amp USA) 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 (or 3 amp USA) amp 'anti-surge'. Available from Icon Audio free.
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.

2. No sound

The ST40 is lit up but no sound from one channel. And the bias reading is "zero" on that channel. This could be one of the internal HT fuses which are located **inside** the amplifier (its highly unlikely that both will fail). Ideally an engineer would replace these but if this is not possible DISCONNECT THE POWER CABLE, invert the amplifier, remove bottom plate and replace the fuse on the problem channel two spare fuses are attached to the bottom plate. Also look for burnt resistors on the KT88s base as this could be due to valve failure in which case the resistor which protects the amplifier from damage will also need replacing.

Important note:

Fuses normally blow for a reason. Therefore this may indicate an ongoing problem, usually a failed or failing KT88 which may work for a while but is not to be trusted.

(Replacement fuses are available free from Icon Audio in the UK, or from our agents)

If all four of the output valves have a bias reading check:

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

If the problem persists the amplifier may need to be serviced. Contact your dealer or Icon Audio.

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 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.

Interference Problems

The amplifier design incorporates features and devices which make it resistant to mains-born interference. But some heater 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 (contact 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.
(c) If none of these, check internal fuse for that channel (see section 5.2).

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 (usually cold to the touch).

Valve Replacement (see also section 7)

Valve life will depend upon such things as hours of use and number of on/off cycles, Do not switch on and off unnecessarily (see **Standby).** Also 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 KT88s 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 configured to work on 230/240v ac, (or 117v USA, Canada) this may be changed over. Contact us for more information.

6. Bias Checking & Adjustment

If you are unsure about any aspect of bias contact your retailer, Icon Audio or a competent service engineer.

The Stereo 40 MK IV uses the 'Fixed bias' method of valve operation. This has the advantage of higher power, lower feedback and cooler running. However you should regularly check the bias reading using the built in meter to ensure best performance from the amplifier. This is very easy.

1, **Tools you will need:**
A small flat blade screwdriver (normally supplied).
2, **How to read the meter.**
If possible warm up the amplifier for 10 minutes. Standby "off", in Ultralinear mode, volume at "zero". Rotate the bias knob through V1-V4. This corresponds with the rear output valves left to right (viewed from the front). Each valve should have the black pointer in or near the black section. (50-75).
About 10% percent difference ON EACH PAIR (1,2 and 3,4) will make little difference in performance.
Greater than this requires adjustment, especially if the reading is 80 or more it should be reduced as this valve is drawing too much current. Lower than 50 will cause no harm but the performance will be reduced.
NOTE
3. The readings are affected by your local mains voltage. So if they are all slightly high or low this is probably OK, and check again later. If one valve is giving a high or low reading it adjust that one valve in line with the others.

4. **How to adjust the bias:**
Make sure you are reading the valve to adjust, e.g. read V1 to adjust V1 screw. If the reading is incorrect, set this by using the screw very slowly up or down until the correct reading is obtained. They are very sensitive so adjust very carefully. If the reading appears a little unstable this is normally due to mains fluctuations.
You may need to repeat this a couple of times as the adjustment of one valve may affect the other readings slightly.
5, If one or more valves are showing erratic readings or you cannot set the correct voltage, 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 too low. Normally adjustment intervals are 2-3 times a year or if you suspect a problem.
6. **Possible problems:** If the reading is unstable, 100%, or "zero %" this is probably a valve failure, in which case refer to your dealer or Icon Audio. Also the internal HT fuse may have blown (spares inside).

When not reading bias, the meter on the front panel gives an approximate power indication. (Full power both channels in mono = 100%).

EL34 Modified Version

The standard KT88 HT (high voltage) is slightly too high for safe use of EL34s.
If this amplifier is adjusted for EL34 valves. (as indicated in section 2) the power is slightly reduced to approximately 35W UL and 22 W Triode. All other settings remain the same including setting the bias in the "black setting".

This is achieved by reducing the HT voltage by connecting lower voltage "tap" on the power transformer. This modification may easily be reversed by an engineer for the full power with KT88s, please ask us for details.

KT88 tubes may safely be used on this version with the power slightly reduced, the same as EL34s.
The ideal operating point of EL34 valves is lower than for KT88 valves.

Note:
From 12/2023 all ST40 MK IVs have this modification.

Replacing the KT88 Valves

Important: Do not attempt to change the KT88 without reading these notes. Failure to do so could be both dangerous and damaging to the amplifier.
When replacing valves, it is recommended that you use a "matched quad", or two matched pairs for best performance.

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 to change especially if they are a different type is to change and re-bias one pair at a time.
Remove the first pair of old valves and fit the replacement pair. Switch on and measure and adjust the bias.
Do not allow the reading to go above 95. 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 the bias 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.
NOTE: If you are changing to a different type of valve, be ready to change the bias quickly, as the difference may be quite large, in which case change one valve at a time.
If the meter should go over 100% reading, switch off and allow to cool down, on switching on the valve will warm up slowly allowing time to make adjustment.

7, To avoid damage to the amplifier and electric shock hazard only use valves marked KT88 (or 6550), 6SN7/CV181 Or that you know to be direct equivalents. EL34 valves will work but be at their maximum ratings so KT88s only are recommended. Use only valves which you know to be new or good condition and test the amplifier thoroughly before resuming normal use. The new high power KT120/KT150 are not suitable as they will exceed the maximum heater power and power transformer burn-out may result.

8, Replacing the smaller 6SN7/CV181 valves:
These do not require 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. If using two pairs of different brands use the outer sockets for one pair and the inner sockets for the other pair..

Icon Audio are happy to check the valves/amp or your re-bias your amp free of charge.

Explanation:
Meter Function:
This is set to give optimum bias at 65% reading. When reading power 100% = both channels 2x 50W or one channel 70%. In triode mode 100% = both channels 2x 30W. All continuous at 1kH.
*__RMS watts__ Based upon the RMS voltage output (V^2/R). Indicates the maximum continuous undistorted output power.
***Push Pull** is a very elegant way of 2 valves in opposition, virtually cancelling out non linear distortion, noise and hum. Whilst dramatically increasing the power and damping factor. In Class AB about 1/4 of the output is pure class A. Unlike transistor designs there is no crossover distortion at any power of the Stereo 40.
***Ultralinear** (or Distributed Load). This is a true "win-win" output stage design. Having virtually the all the characteristics and low distortion of pure Triode valves, whilst keeping 90% of the power of pure Pentodes types. But still inferior to pure triode.

7 Specification & Features

(Typical conditions @ 235v 50Hz)

- KT88 or 6550 output valves
- 6SN7 double triodes for first stage
- 6SN7 double triodes phase-splitter
- Low or medium feedback used (L and H)
- Icon in-house designed and wound output transformers with tertiary winding.
- Hand wired point to point components
- Ceramic valve bases for minimum noise/leakage
- 50W RMS per channel Ultralinear at clipping
- 30W RMS per channel Triode at clipping.
- When EL34 converted 35W UL, 22W Triode
- Signal to noise level -85db
- Feedback zero dB, -5.5dB, -14dB
- Damping Factor 4.7, 9.16, 30.6
- Frequency response 20Hz to 20kHz 8 watts
- Medium Feedback -0dB, -0.25dB
- Low Feedback -0.25dB, -0.5dB
- 0 Feedback -2dB, -3dB
- -3dB points Med F.B.75kHz. Low 45kHz
- Typically 0.15% THD at 8 watts, low feedback
- Channel balance typically less than 0.2dB
- 4 and 8 ohms output taps
- Choke regulated power supply
- Supplied with attractive valve cover
- Audiophile quality metal film resistors
- Audiophile quality polypropylene audio caps
- Japanese ALPS volume pot.
- Internal wiring using PTFE silver plated cable
- Valves carefully matched for best performance
- Gold plated Input & speaker terminals
- Inputs for CD, Tape, Tuner, Aux
- Record loop with monitor switch
- 122mV sensitivity for 40w output "0" F.B. UL
- 280mV sensitivity for 40w output low F.B. UL
- 825mV sensitivity for 40w output Med FB UL
- 220-240volts, or 117v for north America
- 76w standby, 190w 0 Signal, 240watts max.
- 1.6 amp (3amp USA) AS rear fuse (with spare)
- 315ma T Ceramic fuse internal HT (critical safety part)
- 390mm W, 210H, 410D amplifier overall, 25kg
- Carton= 38x54x52cm 28kg packed
- IEC mains lead, (5amp fused)
- Conforms to CE ROHS and WEEE where applicable

Specification subject to change without notice.

8 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. If returning for service do not send the valve cover, remote control or mains cable.

If packing the valve cover in the amplifier box ensure that is it does not come into contact with the amplifier paintwork as damage will result during shipping.

- Re-use the supplied plastic bag to keep the amp clean and free from damp.
- The mains lead and remote control fits in a foam cut-out underneath the amplifier.
- Valves should be removed, numbered and packed in “Bubble wrap” or similar for protection.
- If the amplifier is stored in the box, keep upright and remove batteries from remote control to prevent corrosion.

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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 small switches do not foul packaging, the two hand cut-outs are normally towards the rear of the amplifier.

Do not ship with the valve cover as damage is likely to occur, unless you have the original packing. Or send separately. Do not return valve cover for service.

(Please keep this information for future use).