

icon Audio

Instruction Manual and User Guide:

Stereo 30se KT150/KT120



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

Pictured with upgraded David Shaw 6SN7 and Full Music 6SN7

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1 Introduction

Thank you for purchasing the Stereo 30se. This unique design by David Shaw is the result of a lifetime working with audio amplification. A great deal of care has been taken in the design, selection of components and production of this amplifier. With a little care and attention the ST30se should give a lifetime of pleasure.

The Stereo 30se is an integrated valve amplifier capable of running in either pure triode mode or Ultralinear mode which will give higher power. Because the amplifier operates in PURE CLASS A the ST30 draws constant power at all times giving a very smooth and warm sound.

The pre-amp is a high quality 'Passive' circuit using silver audio cable and an ALPS volume control with remote control. The ST30se is sensitive enough to be used with virtually any modern source. A pre amplifier may be used if desired using the "low sensitivity" mode.

The circuit design is our own using only two stages employing the venerable 6SN7 to giving an excellent combination of the best of vintage valve sound, yet accurate and dynamic to suit modern speakers and recordings.

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

Valve (or Tube) amplifiers do 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. Our "old school" method of point to point wiring hand wiring without using printed circuit boards significantly adds to the sound quality. Your ears may 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 listening quality. When making judgements use a good well balanced recording. Remember that a new amplifier will take a few months to fully "burn in".

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

Check valve cover

Internal wiring check

Check Triode mode

Run min 12 hour test

Check inputs & tape monitor

Output Valve Bias levelmv

Sound Quality

Channel Balance

Valve Microphony

Valve Seating

Hum level left/right/.....mv

RF Test

LED brightness

Serial No sticker and recorded

Mains voltage 117 / 230-240V

IEC Mains Fuse T

UK Plug Mains Fuse5A

Remote Control Function

Sales invoice

Bottom label

IEC power cable type

Customer survey form

Packed for shipping/collection

Upgrades:

Capacitor type

Output valves

1st Stage valves

2nd Stage valves

Other

.....

.....

.....

.....

.....

Signed off by

Checked by

Notes:

IMPORTANT YOU MUST READ THIS FIRST!

2 QUICK SET UP GUIDE

Box contents:

Amplifier, remote control, mains lead, manual 2x KT150/KT120 3x 6SN7

1 Unpack unit carefully and check that it is in good condition. Transit damage must be reported to your reseller immediately. It is important that you keep packaging for warranty/service return.

2 If Necessary fit the valves, or check that they are in the correct position, firmly in place. See P1 photo. The valves and sockets are numbered. The large KT150/KT120 valves need fitting in sockets V1 and V2. Continue fitting the 3 other valves in V3, V4, V5 (3x 6SN7) 6SN7=CV181/6N8. **YOU MUST OBSERVE THE CENTRAL "SPIGOT" WHEN INSERTING THE VALVES.** Inserting the valves incorrectly will damage both valves and amplifier and will not be covered by the warranty.

Do not push or pull the valves excessively by the glass envelope, this could cause the glass envelope to become detached from the base, damaging the valve. Take care to observe the alignment of the centre spigot when inserting all valves.

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

4 Connect to speakers Many modern speakers use 4 Ohms bass units and rise as high as 20 Ohms in the treble, so both 4 and 8 Ohms, most people prefer the results at 8 Ohms, so choose by personal preference.

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. (A second banana plug may be fitted vertically in the hole of the socket stem).

5 Connect to mains supply using supplied IEC mains lead to your wall 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). The replacement plug should be wired in the following way Brown to Live terminal, Blue to Neutral terminal and Green/Yellow to Earth.

6 The "standby" switch should be in the "down" position.

SWITCH ON! The meter should light up. The amplifier should start working after about 60 seconds. 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 discernible gentle hum. If there are any unpleasant sounds coming from the speakers, switch off and refer to the 'Trouble Shooting' section or contact your reseller.

Check the BIAS of the KT150/KT120s by switching the Bias switch "up" and then "down".

Select the correct input and adjust the volume.

7 Your amplifier should now be working. 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 Volume Control Operation

We use a motorised version of the excellent Japanese ALPS "Blue" volume pot with a sensor, control board and handset. Enabling both manual and remote operation. If new, activate by removing the tape from the AAA batteries. Point towards the amplifier and operate as required. The maximum range is 5M. The volume control automatically re-sets to 9 o'clock at switch on. The batteries should be changed every two years with alkaline types to prevent damage through leakage and should be removed when not in use.

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 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" when new. If 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

Most problems associated with electronic equipment involve 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 250mv or more, to get full power.

If you wish to use a turntable you will need a phono pre-amp. Icon Audio make several pure valve models ideal for the ST30se. See our website or your dealer can advise you.

"H" & "L" sensitivity/Power Amplifier mode.

Located on the rear of the amplifier the High and Low sensitivity switch has two functions. "H" gives higher sensitivity with lower "feedback". "L" gives lower gain with higher feedback. Either setting may be used depending upon personal preferences. We suggest trying the "High" setting initially, this will give you good volume levels even with low output devices such as an iPhone the low feedback is suited to older speaker designs.

The "Low" setting may be used if you find you find the volume control is "too steep", or if you want to use a line pre-amplifier. Also the higher feedback may better suit more modern design of speakers. Switching may be done during operation The tape input will provide the most direct signal path.

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 30se 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 30se 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

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).

The ST30se 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 30se 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 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 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. Use "Standby" if not required
- Do not switch off and on without a short rest of 60 seconds
- Do not adjust the output valve grid bias unless you know how, see section 6 below
- 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, this could be dangerous and may damage to the amplifier
- Do check the bias regularly at least once a month, small differences are normal.
- Make sure the speakers are in phase.
- Using larger, more efficient well-designed speakers will give a huge benefit in overall sound.

What is safe maximum volume?

If you can hear distortion when operating at high sound levels ensure that you use "UL" mode for higher power. If you cannot get a high level this means your speakers "dB efficiency" is too low.

With a pure "sine" wave full power, both channels = 100% on the meter scale in Ultralinear, Triode is lower at 70%, however because music is intermittent with high transients the maximum volume will normally read around 2/3 of this.

Triode Switch. This switch causes the KT150/KT120s to operate as Triode valves. Please remember to put the amplifier into "**Standby**" first as switching will stress the output transformers. The majority of listeners prefer the "triode" sound believing it to be more pleasant to listen to, the maximum power available is 18w. The volume in triode mode is almost the same. But if you hear distortion at higher volumes you need more power, in which case switch to ULTRALINEAR.

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. **Never leave the amplifier switched on when unattended. Always switch off when not in use.**

Standby Switch. The function of this switch is to prevent damage to the output transformers by high voltages "spikes" during switching from UL to Triode. Should you forget to use this switch the chances of damage are low.

'Burning in'

Although the amp should sound good within about 10 mins it can take up to an 20 mins 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 or "Fake", valves. At this time we recommend Tung Sol, EH, our Russian and US NOS, Shuguang, Treasure, JJ.

Cabinet Care

To remove dust we suggest gentle brushing of the painted steel cabinet and alloy plate with a soft paintbrush. Other marks can usually be removed with a damp cloth. The Perspex valve cover may need a gentle wipe with damp cloth with a gentle detergent to remove finger marks etc, and dry with a duster. On no account use anything wet on the amplifier, and always clean with the power disconnected.

5 Trouble Shooting

1. Amplifier Dead

Check the 3 amp (5 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 and an engineer should be consulted.** Replacements should be 3 (or 5 amp USA) amp 'anti-surge'. Available from Icon Audio free in the UK (outside the UK you must pay postage).

The fuse in the power cord plug (if any) should be a 5 amp fuse, although unlikely, this should be checked if the amplifier fuse is OK.

2. No sound on one channel with no bias reading

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

If you think you have tried everything and the meter light is working and the heaters are glowing one of the two internal fuses may have blown. If so there will be no bias reading. These two fuses are located inside the amplifier and should be replaced by a competent engineer. **This**

fuse will only blow if there is a fault condition normally due to a faulty valve. Refer to an engineer.

Spares are inside the amplifier. Replacements free on request from Icon Audio (UK only).

Remote control not working

This is usually due to either: Batteries worn out or corroded terminals. Try replacing or cleaning the terminals. Make sure the blue LED is working. Maximum distance is 4-5m. if still not working it could be the sensor, control board or motor drive, in which case return to Icon or dealer for service.

Distorted sound.

One channel or both? 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. If one channel try swapping the input cables over if the distortion does not move could be an amplifier fault. If so double check by swapping the speaker cables over. If fault moves to the other speaker this will confirm an amplifier fault. If fault does not move this would indicate a speaker 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 heating systems/fridges/cookers etc. can generate RF (radio frequency) interference which travels through the air (and walls). Although rare this can be very irritating. Relocating the equipment will often help. Or a simple suppressor 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.

(c) An internal fuse may have blown. (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 Life and Replacement

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.

The KT150/KT120 valves are operating in "CLASS A" mode they are using high current all of the time. Therefore we would suggest for high use of more than 6 hours per day replace every year.

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. Carefully remove the valves, hold by the base when removing, to prevent damage. Number them with a marker or tape, so they 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 (or 117v US). The transformer may easily be re-configured for 110/120v ac. Contact for more information.

6. KT150/KT120 Bias Check & Adjustment

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

The Stereo 30se 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 using the built in meter, V1 Left, V2 Right.

1, Tools you will need:

A small flat blade screwdriver.

2, How to read the meter.

(If changing valves see next section below)

If possible warm up the amplifier for 10 minutes (unless you suspect a fault), with Standby "off", in Ultralinear mode, volume at "zero". Move the "bias" switch to V1, This corresponds with the output valves left and right (viewed from the front). Each valve should have the black pointer in or near the black section. (50-75).

About 5% percent difference on each KT150/KT120 will make little difference in performance.

Adjust if necessary, repeat for V2.

A high reading (80+) needs adjustment, 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 both slightly high or low this is probably OK, and check again later.

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. Allow 20 minutes to fully warm up.

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.

Replacing the KT150/KT120 Valves

Important: Do not attempt to change the KT150/KT120 without reading these notes. Failure to do so could be both dangerous and damaging to the amplifier.

When replacing valves, we recommend that you use a "matched pairs", for best performance.

Use only KT150/KT120 valves, not KT88, 6550, etc.

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 yourself with the procedure.

Replace and bias one valve at a time. Remove the first old valve and fit the replacement. 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 both 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. 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 KT150/KT120, 6SN7/6N8/CV181 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:

These are three **6SN7 valves**. None 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.

Icon Audio are happy to check your valves Free of Charge if you send them to us in Leicester. We will also gladly check you ST30se and re-bias free of charge for personal callers.

The 3 fuses inside this amplifier are critical safety parts They should only be replaced with the same type. These are available without charge (in the UK) from Icon Audio. Outside the UK postage will be charged.

Use of Sub-woofers.

The output transformers in Icon Audio amplifiers are capable of flat frequency response to below 20 Hz which is well below the deepest musical bass note. Therefore, any overall lack of bass is likely result from your loudspeakers being too small and not reproducing bass notes effectively. Whilst we do not recommend sub-woofers there are obviously some situations where they might help.

Should you wish to connect an active sub-woofer this may done using the loudspeaker terminals. Usually 3 wires are supplied which should be connected to the Left and Right 4 or 8 Ohm terminals (your preference) and a "ground lead" (both "0" terminals are the same). And follow the set up instructions from the manufacturer. There is no RCA sub-woofer output.

7 Specification & Features

(Typical conditions @ 230v 50Hz)

- KT150/KT120 output valves
- 3x 6SN7 double triodes driver stage
- Low or medium feedback used (L and H)
- Icon designed and manufactured Tertiary wound output transformers
- Hand wired point to point components
- No printed circuit board
- Ceramic valve bases for low noise/leakage
- 25w RMS Ultralinear @ 1.2% THD low gain
- 25w RMS Ultralinear @ 2% THD high gain
- 18w RMS Triode @ 0.6% THD low gain
- 18w RMS Triode @ 1% THD high gain
- Signal to noise level -84dB ref 28w low gain UL
- Freq. response 30-20kHz +0-0.5db 8w UL low gain
- Freq. response 30-20kHz +0-0.5db 8w Triode low gain
- 0.4% THD at 8 watts UL and Triode
- Channel balance typically less than 0.1 dB
- 4 and 8 ohms output taps
- Choke regulated power supply
- Supplied with attractive valve cover
- Audiophile quality metal film resistors
- SCR Audiophile polypropylene audio caps
- Optional Jensen copper foil upgrade
- Japanese ALPS volume pot.
- Rubicon/Nichichron power caps.
- Internal wiring using PTFE silver plated cable
- Valves carefully matched for best performance
- Gold plated Input & speaker terminals
- Inputs for CD, Tape, Tuner, Aux, iPhone
- Record loop with monitor switch
- 240mv sensitivity for full output "H" UL/Triode
- 550mv sensitivity for full output "L" UL/Triode
- 220-240volts 50 Hz for EU and UK countries
- 117v 60Hz for USA Canada
- 50 W Standby 180w Min, 220watts max
- IEC SKT 3.0A AS (5A USA) fuse (with spare)
- Internal HT fuse T315ma AS ceramic. (2x spares)
- 380W, 230H, 345D mm Amp overall 21kg
- Carton= 52x44x36cm 28kg packed
- IEC mains lead
- Conforms to CE ROHS and WEEE where applicable

Specification subject to change without notice.

Technical Explanation:

***RMS Watts** Do not literally exist! But this figure is based upon the RMS (Continuous) voltage output (V^2/R). e.g. 12V RMS into 8Ω speakers = $12 \times 12 / 8 = 18$ Watts. "music power" or "peak" are virtually meaningless.

***Class A** Where the valve is configured to work at near their maximum current without "switching off" at all times even at zero volume. Although this uses more power and the valves run a little hotter, this results in a superior sound without harshness or obvious distortion and is often used in conjunction with Single Ended Triode designs.

***Single Ended** is where only one output (or power) valve is used. Although relatively inefficient and of lower power than push-pull designs, these designs offer a very smooth musical sound which many people consider much easier to listen to than more powerful modern designs.

***Triode** a simple valve with only 3 elements, this gives very linear amplification. Many "pentode" (5 element) valves can also be wired to act as triode valves.

***Ultralinear** (or Distributed Load). This is a true "win-win" output stage design. Giving 90% of the power of pure Pentode and 90% of the characteristics of pure Triode valves. But some people still consider the sound slightly inferior to pure triode.

Guarantee

(UK only) This amplifier is guaranteed by your dealer for 12 months from the date of purchase for parts and labour, excluding shipping. Valves are consumables and therefore on a 12 months pro-rata wear basis.

Other countries may vary, ask your re-seller. Please keep your receipt as proof of purchase, this may be needed.

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.

Returning for service

Should your amplifier need service in the UK return it to the address below with a description of the problem.

Outside the UK contact your dealer/distributor. In case of difficulty email us at the address below.

icon Audio (UK) Ltd

351 Aylestone Road Leicester LE2 8TA

Email: sales@iconaudio.com www.iconaudio.com

Phone +44 (0) 116 244 0593 +44 (0) 7787 158791

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 cover, as this is easily damaged. The valve cover is normally supplied in a separate box with the valves. **We recommend that the cover be sent separately as rough handling can damage both cover and amplifier.**

- 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 "Bubblewrap" or similar for protection inside the valve cover.
- If the amplifier is stored in the box, keep upright and remove batteries from remote control to prevent corrosion.